ESCONDIDO
City of Choice

CITY OF ESCONDIDO
PLANNING DIVISION
201 NORTH BROADWAY
ESCONDIDO, CA 92025-2798
(760) 839-4671

NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION FOR

"Escondido Assisted Living"
City File No. ENV 17-0007 and PHG 17-0025

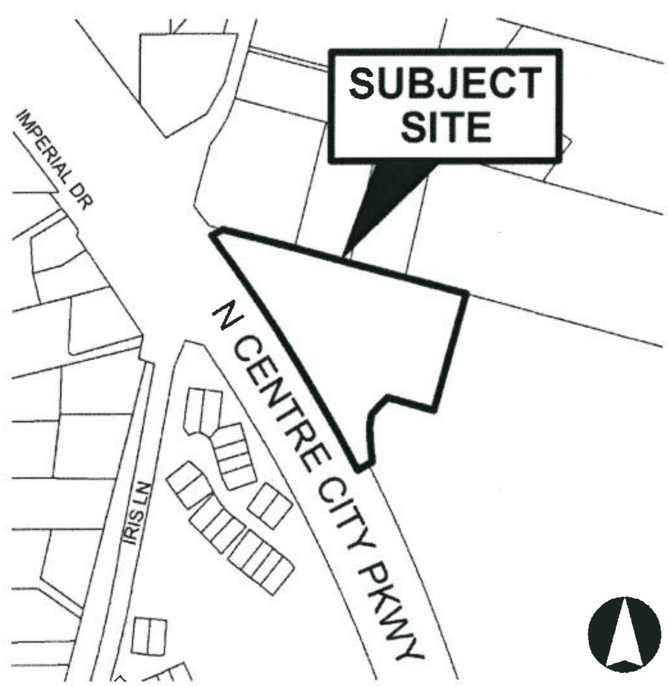
BACKGROUND: The City of Escondido has prepared a Draft Initial Study/Mitigated Negative Declaration (IS/MND) for the project described below. The findings of the Initial Study identified potential effects related to biological, cultural, tribal cultural resources, and noise that might be potentially significant. A Mitigated Negative Declaration is prepared when an Initial Study identifies project related impacts that might be potentially significant, but revisions in the project plans and/or mitigation measures agreed to by the applicant would provide mitigation to a point where potential impacts to the environment are reduced to less than a significant level. The description of the project is as follows:

PROJECT DESCRIPTION: The project requires discretionary approval of a proposed Conditional Use Permit (PHG 17-0025) to allow the development of a residential care facility within a single-family residential zone; Grading Exemption(s) for retaining walls in excess of 10 feet in height; and a General Plan Amendment to allow structures up to three stories in height within the R-1-10 zone (Single-Family Residential, up to 10,000 sf min. lot size). The draft Initial Study/Mitigated Negative Declaration provides a preliminary assessment of the environmental impacts of the proposed new 3-story (median height of 34'5"), approximately 71,316 sf, assisted living/senior care facility to include 22 memory care and 74 assisted living units (totaling 96 beds) and 45 parking spaces, including one van and one accessible space. Access to the project would be provided by a single driveway fronting onto Centre City Parkway on the west side of the subject property. Centre City Parkway is proposed to be widened across the project frontage to provide a transition lane for ingress and egress into the site. The existing creek along the eastern boundary of the proposed development area is proposed to be retained and preserved as a project feature.

LOCATION: The approximately 3.48-acre property is located southeast of the intersection of North Centre City Parkway and North Iris Lane, addressed as 1802 N. Centre City Parkway (APN 226-190-22), City of Escondido, in the County of San Diego, California.

APPLICANT: Tigg Mitchell, The Mitchell Group

PUBLIC REVIEW PERIOD: **The review and comment period will begin on January 11, 2019 and end at 5:00 p.m., on February 11, 2019**. Copies of the Draft Initial Study/Mitigated Negative Declaration are on file and available for public review in the Escondido Planning Division, at 201 N. Broadway, and also posted on the City of Escondido web site at http://www.escondido.org/planning.aspx. **Further information may be obtained by contacting Jay Paul, Senior Planner, at the Planning Division, telephone (760) 839-4537**. Please refer to **Case No. ENV 17-0007**.



Public hearing dates for Planning Commission and City Council consideration of the project and environmental determination have not yet been set. Additional public notice of the hearing dates will be provided as required by CEQA and the Escondido Municipal Code.

Mike Strong
Assistant Planning Director

Dated: January 7, 2019

Draft

Escondido Assisted Living
1802 N. Centre City Parkway

Initial Study/Mitigated Negative Declaration
Project No. ENV17-0007 and PHG17-0025

Prepared by
Blue Consulting
P.O. Box 501115
San Diego, CA 92150

Prepared for
City of Escondido

January 2019

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

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

DETERMINATION: On the basis of this initial evaluation:

☐ The proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ Although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ The proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ The proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (a) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (b) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required.

☐ Although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or (MITIGATED) NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or (MITIGATED) NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature ______________________

January 04, 2019
Date

Jay Paul, Senior Planner
Name Printed

ENV17-0007
1.04.19

DRAFT

MITIGATED NEGATIVE DECLARATION

FOR THE ESCONDIDO ASSISTED LIVING PROJECT

(City File Nos. ENV17-0007 and PHG17-0025)

ENVIRONMENTAL CHECKLIST

SUPPLEMENTAL COMMENTS

An Initial Study Environmental Checklist was prepared for this project and is included with this Draft Negative Declaration (IS/MND). The information contained in the Initial Study and the MND Supplemental Comments will be used by the City of Escondido to determine potential impacts associated with the proposed project.

INTRODUCTION

This Initial Study/Mitigated Negative Declaration assesses the environmental effects of the proposed Escondido Assisted Living Project generally located southeast of the intersection of Centre City Parkway and south of Iris Lane, addressed as 1802 N. Centre City Parkway.

As mandated by CEQA Guidelines Section 15105, affected public agencies and the interested public may submit comments on the Initial Study/Mitigated Negative Declaration in writing before the end of the 30-day public review period starting on January 11, 2019, and ending on February 11, 2019. Written comments on the IS/MND should be submitted to the following address by 5:00 p.m., February 11, 2019.

City of Escondido
Planning Division
201 North Broadway
Escondido, CA 92025-2798

Contact: Jay Paul, Senior Planner
Telephone: (760) 839-4671
Fax: (760) 839-4313
Email: jpaul@escondido.org

All comments received will be considered with the Final IS/MND in determining whether to approve the project. A printed copy of this document and any associated plans and/or documents are available for review during normal operation hours for the duration of the public review period at the City of Escondido Planning Division at the address shown above, and also available on the City's Website at: https://www.escondido.org/planning.aspx.

Click on the Development Project Information button and go to "Escondido Assisted Living 1802 N. CCP" ENV17-0007

According to Section 15150 of the CEQA Guidelines, an MND may incorporate by reference all or portions of another document which is a matter of public record. The incorporated language shall be considered to be set forth in full as part of the text of the MND. All documents incorporated by reference are available for review at, or can be obtained through, the City of Escondido Planning Division located at the address provided above, or on the City of Escondido Web Site.

- City of Escondido, 2012a. City of Escondido General Plan.
- City of Escondido, 2012b. Escondido General Plan Update, Downtown Specific Plan Update, and Climate Action Plan Environmental Impact Report, Volume I – Final Environmental Impact Report

California Environmental Quality Act Compliance

The California Environmental Quality Act (CEQA) applies to proposed projects initiated by, funded by, or requiring discretionary approvals from state or local government agencies. CEQA Guidelines Section 15367 states that the "lead agency," the City, has the principal responsibility for carrying out or approving a project and is responsible for compliance with CEQA. As lead agency, the City must complete an environmental review to determine if implementation of the proposed project would result in significant adverse environmental impacts. In compliance with CEQA, an Initial Study (IS) has been prepared to assist in making that determination. Based on the nature and scope of the proposed project and the evaluation contained in the IS environmental checklist (contained herein), the City has concluded that a Mitigated Negative Declaration (MND) is the appropriate level of analysis for this project. The MND shows that impacts of the proposed project are either less than significant or significant but mitigable with the incorporation of appropriate mitigation measures.

As provided in CEQA Statute Section 21064.5, and stated in CEQA Guidelines Section 15070, a MND can be prepared when "(a) the initial study shows that there is not substantial evidence, in light of the whole record before the agency, that the project may have a significant effect on the environment, or (b) the initial study identifies potentially significant effects, but (1) revisions in the project plans or proposals made by, or agreed to by the applicant before a proposed mitigated negative declaration and initial study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur; and (2) there is no substantial evidence, in light of the whole record before the agency, that the project as revised may have a significant effect on the environment."

Anticipated Public Hearings

The City Council and Planning Commission will consider the IS/MND and the comments received during the public review period in determining whether to approve the proposed project. A public hearing for this project has not been scheduled, but public notice in conformance with the Escondido Municipal Code will be provided when the project is scheduled for Planning Commission and City Council consideration.

PROJECT DESCRIPTION

The primary objective of the proposed residential development is to provide a residential project that preserves the on-site riparian corridor and is consistent with the City's General Plan. This Initial Study provides a preliminary assessment of the environmental impacts of the proposed new 3-story (median height of 34'5"), approximately 71,316 sf, assisted living/senior care facility to include 22 memory care and 74 assisted living units (totaling 96 beds, 88 rooms) and 45 parking spaces, including one van and one accessible space. Room sizes include studio, one-bed and two-bedroom units. The building will consist of three stories and would be type III construction with an automatic fire sprinkler system. The project requires discretionary approval of a Conditional Use Permit to allow a residential care facility within a single-family residential zone; Grading Exemption(s) for retaining walls in excess of 10 feet in height; and a General Plan Amendment to allow structures up to three stories in height within the R-1-10 zone (Single-Family Residential, up to 10,000 sf min. lot size). Access to the project would be provided by a single driveway fronting onto Centre City Parkway on the west. Centre City Parkway is proposed to be widened across the project frontage to provide a transition lane for ingress and egress into the site.

BACKGROUND

Several Conditional Use Permits (CUP) were approved by the City for the development of the site with a residential care facility. The size and design of the proposed facility varied with each CUP. A CUP originally was approved in 1993 (City File No. 93-19-CUP) for the development of a 28,658 SF, 50 room, split-level, residential-care facility on the site to serve up to 75 clients. A modification of the original CUP was approved (City File No. 97-07-CUP/GE) for the development of a 23,426 SF, single-story, residential-care facility, along with grading exemptions for slopes and retaining walls up to 14 feet in height. Grading Plans were approved for the project site and rough grading and retaining walls were constructed. The building was never constructed and the project expired. In 2003 CUP was approved (City File No. 2003-26-CUP) to provide a two and three story, 110 room, approximately 74,903 SF residential-care facility to serve up to 165 residents. The permit was modified in 2004 (Case No. 2004-61-CUP) to construct a separate 900 SF (36' x 25'), seven to nine-foot-high mechanical enclosure area to accommodate a variety of mechanical equipment, trash bins, and a 132 kW emergency standby generator. The permit was modified again in 2007 (Case No. 2007-33-CUP) to revise the enclosure design and construct a 2,478 SF. two-story central plant building. This previously approved project was not implemented and the Conditional Use Permit subsequently expired.

PROJECT LOCATION AND ENVIRONMENTAL SETTING

The triangular, approximately 3.48-acre property is located in the County of San Diego, City of Escondido, southeast of the intersection of North Centre City Parkway and North Iris Lane, addressed as 1802 N. Centre City Parkway (APN 226-190-22). The site is Zoned R-1-10 (Single-Family Residential, 10,000 SF min. lot size) and has a General Plan Designation of Suburban 'S'. The property is generally vacant and severely disturbed due to previous grading and large amounts of material (dirt, etc.) being stockpiled on the property. Soil has been built up in multiple areas and a retaining wall up to 14 feet in height was constructed with a fence on top to stabilize the soil onsite. The property is bordered by Reidy Creek and the Escondido High School's agricultural operations to the east, and limited single-family residential development and the Rincon del Diablo Municipal Water District offices and corporate yard on the north. Centre City Parkway borders the property along the western and southwestern boundary. The Quail Creek Apartment complex (active senior living) is located further to the west across Centre City Parkway.

The site fronts onto and takes access from Centre City Parkway, which is classified as a Major Road (102' ultimate R-O-W) on the City's Mobility and Infrastructure Element. Centre City Parkway in the immediate vicinity of the project site operates as a four-lane major road (two lanes traveling north and two traveling south, with a landscape raised center median) with Class II bike lanes. Parking is restricted on both sides of the roadway. Full width street improvements have been installed along the northern section of the project frontage (curbs and gutters) but not further south of the project site. CCP does not contain sidewalks on either side.

The western section of the property gently slopes in a southeasterly direction due to previous grading on the site. The southern area of the parcel is separated from the graded area by a steep, approximately six-foot-high artificial escarpment. The lower southern area generally slopes and drains in a southerly direction and is comprised primarily of loose fill materials deposited in 1997 and undisturbed areas. The eastern area of the site is separated from the rest of the property by an existing 14-foot-high retaining wall. This lower section of the property generally slopes and drains in a southerly direction. Elevations on the property range from approximately 725' within the northwestern corner of the site, 690' towards the southern corner of the site, 705' along the existing retaining wall, and 690' along the Reidy Creek drainage.

The project site is separated by two distinct areas, which includes disturbed upland vegetation and wetlands. The eastern area of the site is bisected by the Reidy Creek drainage, a tributary of Escondido Creek. Reidy Creek is separated from the disturbed western portion of the property by a 14-foot-high, masonry block retaining wall that was constructed at the western edge of the 100-year creek floodplain by a previous property owner in conformance with Conditional Use Permit 97-07. This wall corresponds to the top of the earthen fill material to the west that was added during the rough grading of the site in 1997. The adjacent creek vegetation consists primarily of Southern Willow Riparian Forest, which is composed of native willows, a few small coast live oaks, and a mixture of non-native trees, shrubs and herbaceous plant species. The southwestern area of the site supports a stand of Eucalyptus trees adjacent to Centre City Parkway. One California pepper tree Is located within the extreme northwest corner of the site.

Adjacent land uses and zoning include the following:

North: R-1-10 zoning (Single-Family Residential, 10,000 SF min. lot size) / Rincon Del Diablo Municipal Water District offices and public works yard are located on the north. Single-Family homes also are located north of the project site on approximately 41,000 SF lots. Reidy Creek natural drainage channel and a two-story, multi-family residential development are located northeast of the project site.

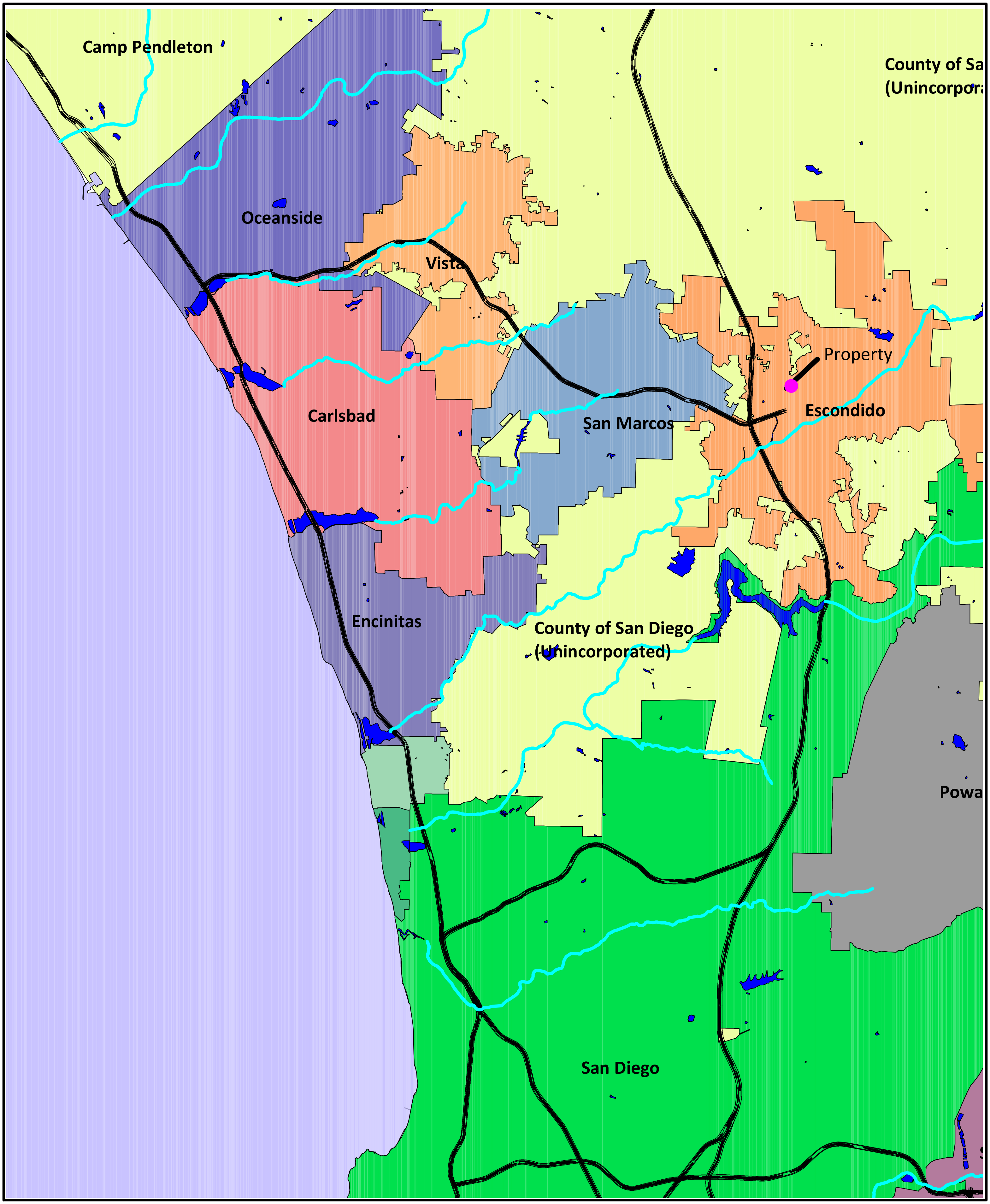
South: R-1-10 (Single-Family Residential, 10,000 SF min. lot size) / Escondido Union High School and Centre City Parkway are located south and southwest of the project site. The high school agricultural operations and several sheds are located immediately south of the project site across the Reidy Creek natural drainage channel. Centre City Parkway is classified as a Major Road (102' R-O-W) on the City's Mobility and Infrastructure Element.

East: R-1-10 (Single-Family Residential, 10,000 SF min. lot size) / Escondido Union High School is located east of the project site. The high school's agricultural fields and baseball fields are located immediately east of the project site. Reidy Creek acts as a physical and visual buffer from the school district property and the proposed development area for the project.

West R-1-10 and R-1-7 zoning (Single-Family Residential, 10,000 SF and 7,000 SF min. lot size) / Centre City Parkway is located immediately west of the project site. Centre City Parkway is classified as a Major Road (102' ultimate R-O-W) with a current right-of-way width of approximately 190' to 200' adjacent to the project site. A religious facility is located northwest of the project site. Single- and multi-family residential development is located west and southwest of the project site across Centre City Parkway.

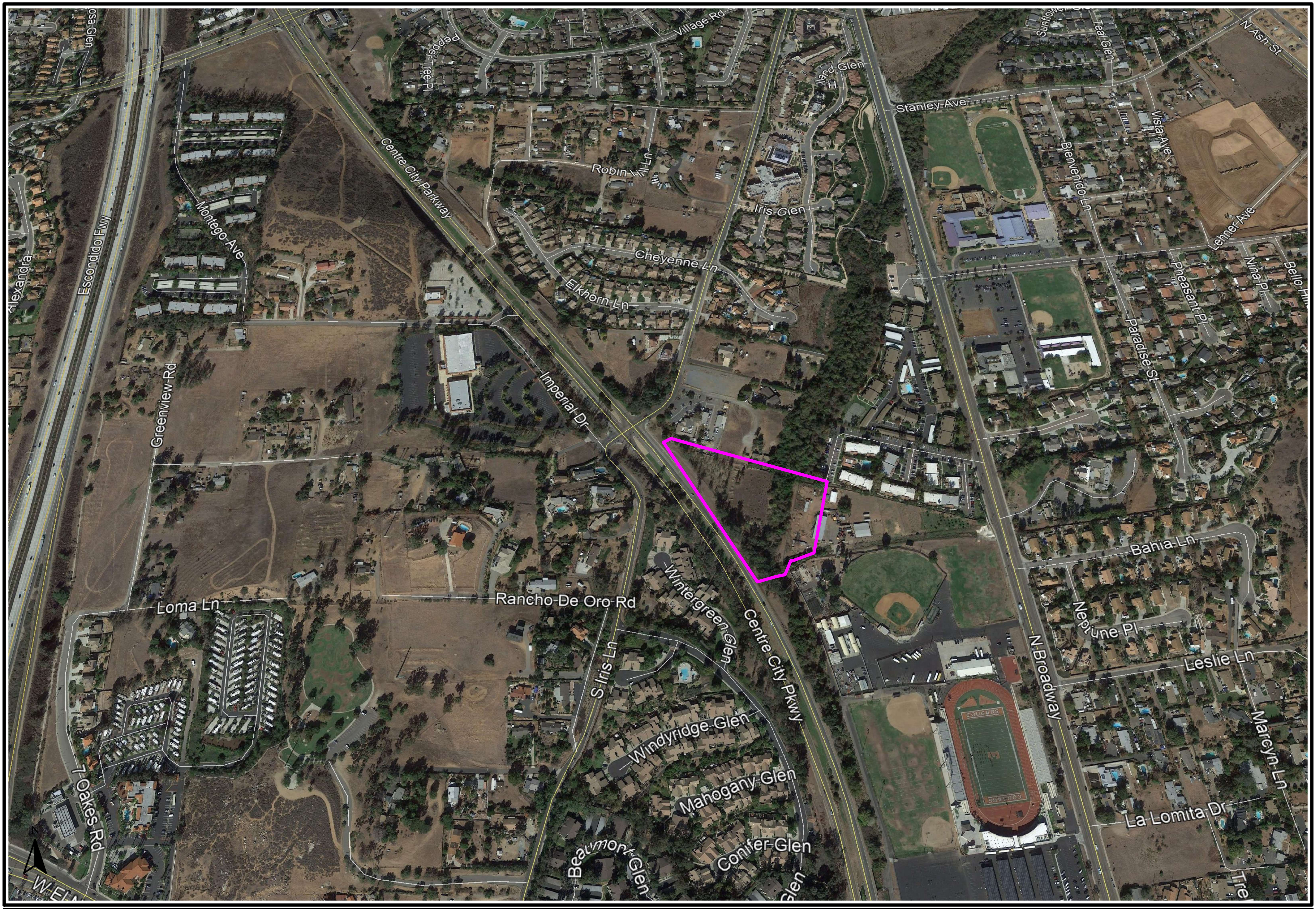
Discretionary Actions

Approval of the project would require the approval of a number of discretionary actions. According to Sections 15050 and 15367 of the CEQA Guidelines, the City of Escondido is designated as the Lead Agency for the project. Responsible agencies are those agencies that have discretionary approval authority over one or more actions involved with the development of a proposed project. The San Diego RWQCB, is a responsible agency for the project. Trustee agencies are state agencies having jurisdiction by law over natural resources affected by a proposed project that are held in trust of the people of the State of California. The California Department of Fish and Wildlife has been identified for the proposed project. The following list indicates the various discretionary



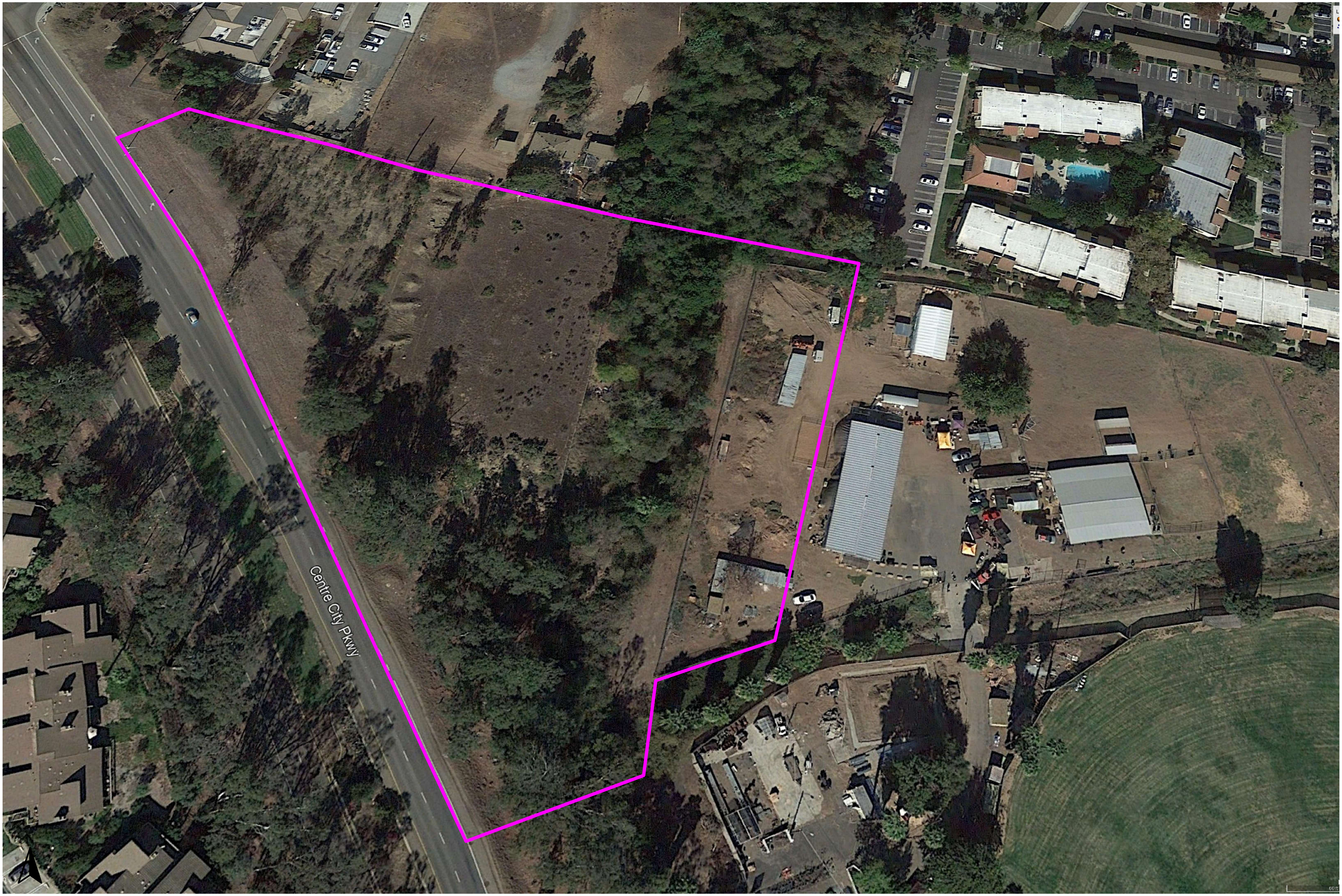
Property

Regional Project Location



Property

Property Location Aerial



Property

Property Aerial

FIGURE 1
Habitat Map

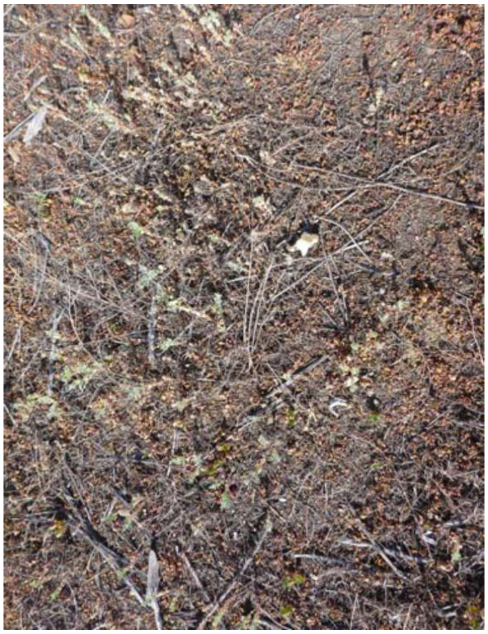
ENV17-0007

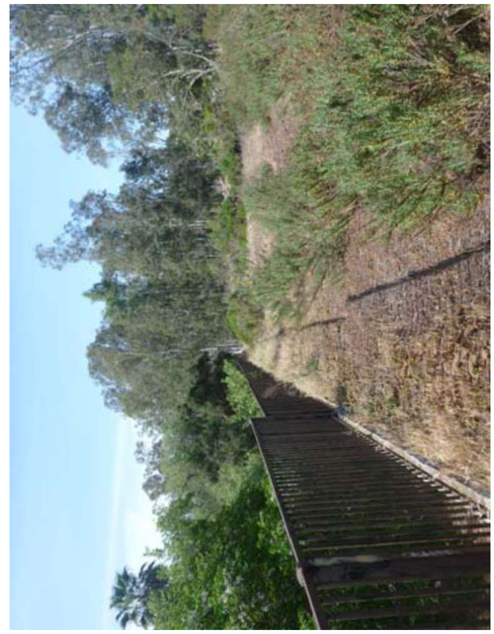
Looking north towards site from Centre City Parkway

Looking east towards project site

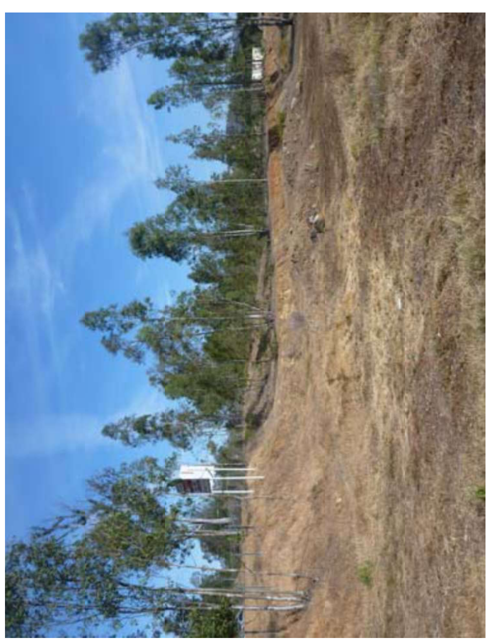
Looking southeast towards project site

Site Photos from Centre City Parkway



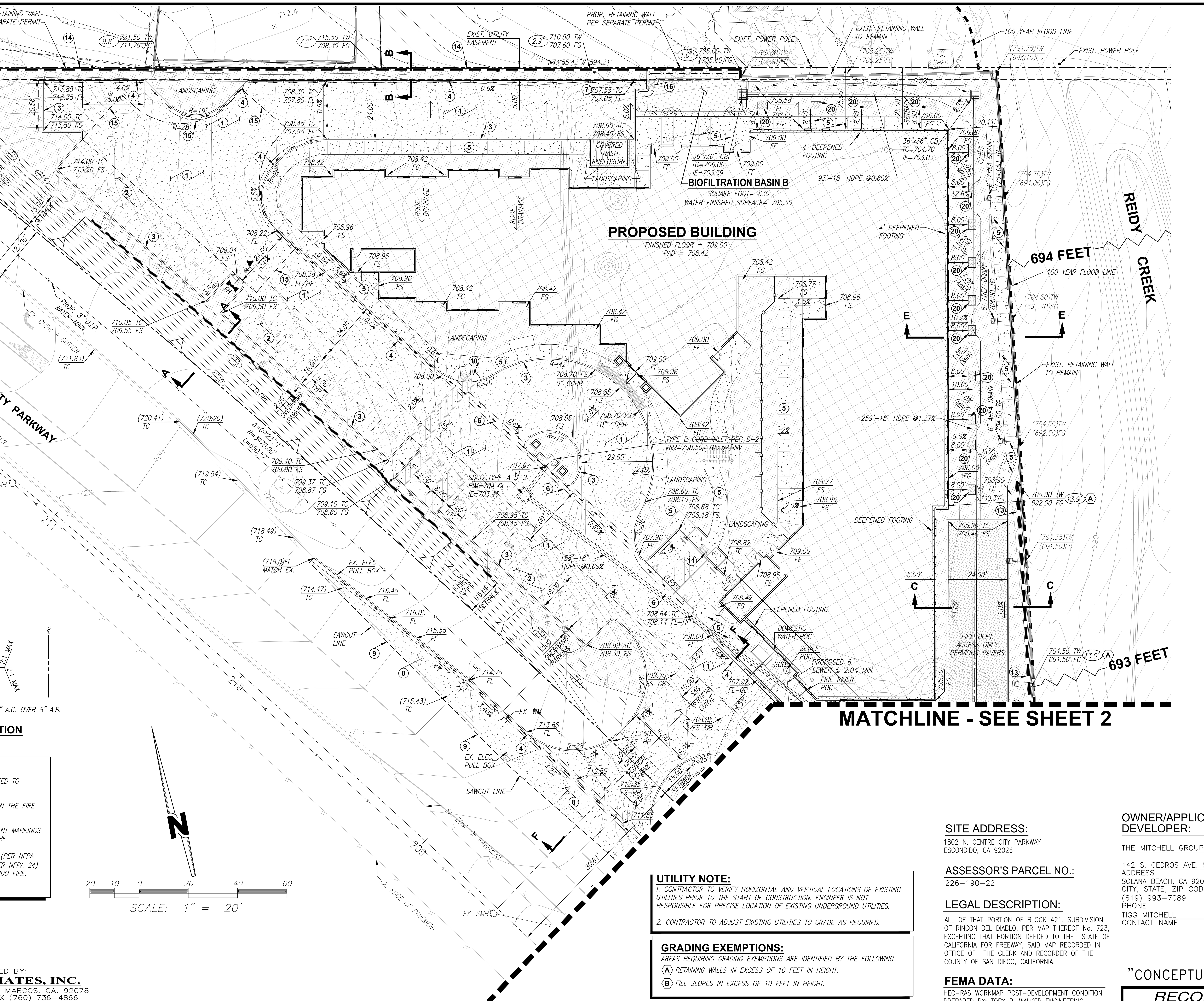


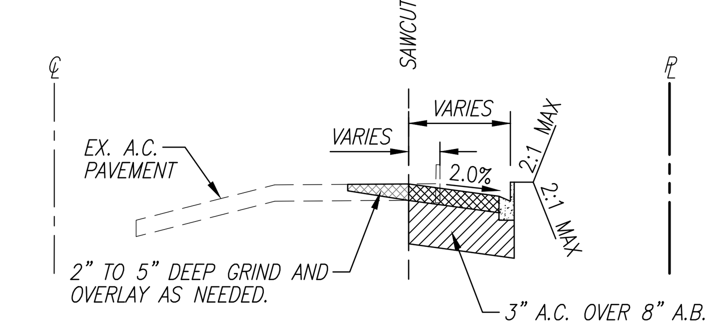



Property
Grading Footprint
Southern Willow Scrub
Non-Native Grassland
Developed
Eucalyptus Trees
Ruderal/Disturbed

FIGURE 2
Impact Map





TYPICAL STREET SECTION
NOT-TO-SCALE

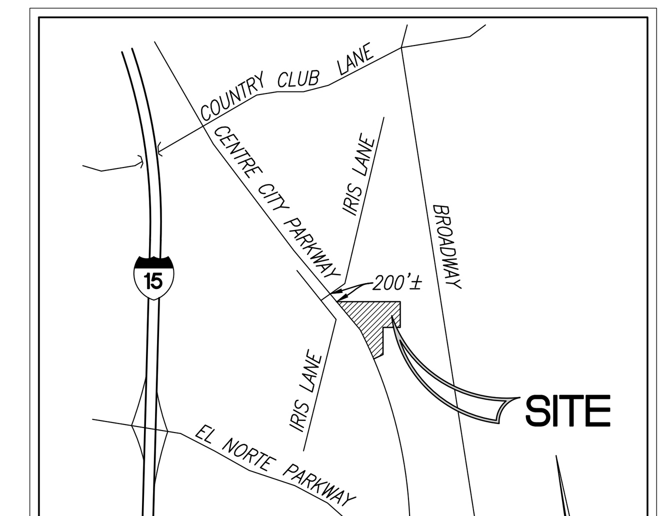
CONSTRUCTION NOTES:

1. *CONSTRUCT 3" AC PAVEMENT OVER 9" A.B. AND 95% COMPACTED SUBGRADE SOIL (HEAVY DRIVE AISLES).
2. *CONSTRUCT 3" AC PAVEMENT OVER 7" A.B. AND 95% COMPACTED SUBGRADE SOIL (PARKING STALLS).
3. CONSTRUCT 6" P.C.C. CURB PER SDRSD G-1 (SDRSD).
4. CONSTRUCT 6" P.C.C. CURB & GUTTER TYPE-G PER SDRSD G-2 (SDRSD).
5. CONSTRUCT 5.0' MIN. WIDE P.C.C. SIDEWALK PER G-7 (SDRSD).
6. CONSTRUCT 3.0' WIDE P.C.C. RIBBON GUTTER PER DETAIL SHEET 1.
7. CONSTRUCT 3.0' CURB OPENING W/SPLASH PAD PER DETAIL SHEET 1.
8. CONSTRUCT AC PAVEMENT OVER APPROVED CL-II AGGREGATE BASE (MATCH EX.)
9. SAWCUT & REMOVE AC. BERM, CURB & GUTTER PER DETAIL SHEET 1.
10. CONSTRUCT SINGLE TYPE PEDESTRIAN ACCESS RAMP W/TRUNCATED DOMES PER DETAIL SHEET 1.
11. CONSTRUCT DOUBLE TYPE PEDESTRIAN ACCESS RAMP W/TRUNCATED DOMES PER DETAIL SHEET 1.
12. CONSTRUCT 26' WIDE ALLEY TYPE DRIVEWAY (MODIFIED) PER COE G-5-E.
13. CONSTRUCT NEW (DSM) SEGMENTAL RETAINING WALL WITH SPLIT FACE BLOCK AND DECORATIVE CAP, (DESIGNED FOR DRIVE AISLE SURCHARGE) PER SEPARATE PERMIT.
14. CONSTRUCT NEW CMU RETAINING WALL WITH SPLIT FACE BLOCK AND DECORATIVE CAP. SEE STRUCTURAL PLANS, PER SEPARATE PERMIT.
15. FIRE TRUCK TURN AROUND AREA. NO PARKING.
16. RIP-RAP ENERGY DISSIPATOR PER D-40 (SDRSD), W=5.0' x L= PER PLAN, TYPE 2 ROCK CLASS, 1' THICK OVER MIRAFI 140N (OR EQUAL) GEOTEXTILE FILTER BLANKET.
17. 4.0'x6.0' TREE WELL W/TREE GRATE PER L-4 (SDRSD) & 18" MIN. CURB OPENING W/SPLASH PAD, PER LATEST COUNTY GREEN STREET DESIGNS & SPECIFICATIONS AS APPROVED BY THE WPP, (PER DETAILS SHEET 3). OWNER TO MAINTAIN TREE WELL.
18. CONSTRUCT WING TYPE HEADWALL PER D-34 (SDRSD).
19. CONSTRUCT NEW CMU RETAINING WALL WITH SPLIT FACE BLOCK, DECORATIVE CAP AND FALL PROTECTION AT TOP OF WALL. SEE STRUCTURAL PLANS, PER SEPARATE PERMIT.
20. INSTALL 3'x4' FIRE DEPARTMENT LADDER LANDING LEVEL PADS IN PERVIOUS PAVERS LOCATED INLINE WITH BUILDING UPPER FLOOR WINDOWS AT 8' TO 10' OFF THE FACE OF BUILDING.

* FINAL PAVEMENT SECTION BASED ON R-VALUE APPROVED BY THE CITY ENGINEER.

LEGEND OF SYMBOLS

- PROPERTY LINE
- STREET CENTERLINE
- EXISTING WATER LINE
- EXISTING SEWER LINE
- EXISTING CONTOURS
- DIRECTION OF DRAINAGE FLOW
- (XX.XX) FL — EXISTING SPOT ELEVATIONS
- XX.XX FL — PROPOSED SPOT ELEVATIONS
- AC PAVEMENT OVER CL-11 AB (PER SOILS REPORT)



VICINITY MAP
NOT TO SCALE
T.B.M. PG. 1109, G-5

FIRE DEPARTMENT NOTES:

1. ALL FIRE ACCESS ROAD SHALL BE CONSTRUCTED TO HANDLE 75,000 POUND FIRE APPARATUS.
2. UNLESS NOTED OTHERWISE, NO PARKING WITHIN THE FIRE ACCESS AND TURN-AROUND AREA.
3. NO PARKING, FIRE LANE SIGNAGE AND PAVEMENT MARKINGS SHALL BE INSTALLED AS REQUIRED BY THE FIRE DEPARTMENT.
4. FIRE SPRINKLER (PER NFPA13), FIRE ALARMS (PER NFPA 72), AND UNDERGROUND FIRE LINE PLANS (PER NFPA 24) SHALL BE A SEPARATE SUBMITTAL TO ESCONDIDO FIRE.
5. FIRE FLOW IS 7000 GPM.

UTILITY NOTE:

1. CONTRACTOR TO VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF EXISTING UTILITIES PRIOR TO THE START OF CONSTRUCTION. ENGINEER IS NOT RESPONSIBLE FOR PRECISE LOCATION OF EXISTING UNDERGROUND UTILITIES.
2. CONTRACTOR TO ADJUST EXISTING UTILITIES TO GRADE AS REQUIRED.

GRADING EXEMPTIONS:

AREAS REQUIRING GRADING EXEMPTIONS ARE IDENTIFIED BY THE FOLLOWING:

- (A) RETAINING WALLS IN EXCESS OF 10 FEET IN HEIGHT.
- (B) FILL SLOPES IN EXCESS OF 10 FEET IN HEIGHT.

SITE ADDRESS:

1802 N. CENTRE CITY PARKWAY
ESCONDIDO, CA 92026

ASSESSOR'S PARCEL NO.:

226-190-22

LEGAL DESCRIPTION:

ALL OF THAT PORTION OF BLOCK 421, SUBDIVISION OF RINCON DEL DIABLO, PER MAP THEREOF No. 723, EXCEPTING THAT PORTION DEEDED TO THE STATE OF CALIFORNIA FOR FREEWAY, SAID MAP RECORDED IN OFFICE OF THE CLERK AND RECORDER OF THE COUNTY OF SAN DIEGO, CALIFORNIA.

FEMA DATA:

HEC-RAS WORKMAP POST-DEVELOPMENT CONDITION
PREPARED BY: TORY R. WALKER ENGINEERING
DATED: 4/28/2008
VERTICAL DATUM: NGVD 29
FEMA PANEL: 06073C0814G

OWNER/APPLICANT DEVELOPER:

THE MITCHELL GROUP
142 S. CEDROS AVE. STE. D
ADDRESS
SOLANA BEACH, CA 92075
CITY, STATE, ZIP CODE
(619) 993-7089
PHONE
TIGG MITCHELL
CONTACT NAME

REGISTERED PROFESSIONAL ENGINEER
JOSHUA R. ZEIGLER
No. 85413
CIVIL
STATE OF CALIFORNIA

"CONCEPTUAL"

RECORD DRAWING

JOSHUA R. ZEIGLER R.C.E. 85413 DATE

ESCONDIDO
City of Choice

CITY OF ESCONDIDO ENGINEERING DEPARTMENT
APPROVED
By______________ Date______
(for City Engineer)
Comments______________

OBTAIN GRADING PERMIT AT FIELD ENGINEERING OFFICE PRIOR TO GRADING

CITY PROJECT NO. ENG

PLANS PREPARED BY:
SPEAR & ASSOCIATES, INC.
475 PRODUCTION STREET, SAN MARCOS, CA. 92078
PHONE (760) 736-2040 FAX (760) 736-4866

CONSTRUCTION RECORD	REFERENCES	Date	By	REVISIONS	App'd	Date	BENCH MARK	EARTHWORK QUANTITIES **	SCALE		Designed By	Drawn By	Checked By	DEPARTMENT OF PUBLIC WORKS - ENGINEERING DIVISION	Drawing No.
Contractor_____ Inspector_____ Date Completed_____	– –						DESCRIPTION: CHISELED SQUARE ON TOP OF CURB INLET AT NW CORNER OF INTERSECTION OF CENTRE CITY PKWY. & IRIS LN. E/S FRONTAGE RD. APPROX. 50FT N. CENTER LINE IRIS LN. AT SW CORNER OF INLET. STATION #540 (Bench Mark No.) 734.20' (Elevation)	CUT: 0 C.Y. FILL: 0 C.Y. EXPORT: 0 C.Y.	Horizontal As Shown; Vertical As Shown	Office ____ Filmed ____ Traffic ____	J.R.Z.	A.J.V.	J.R.Z.	CONCEPTUAL GRADING PLAN FOR, ESCONDIDO ASSISTED LIVING	– Sheet 1 of 3

Plans Prepared Under Supervision Of
Date______ R.C.E. No. 85413

SPEAR & ASSOCIATES, INC. JOB NO: 17-174 JRZ

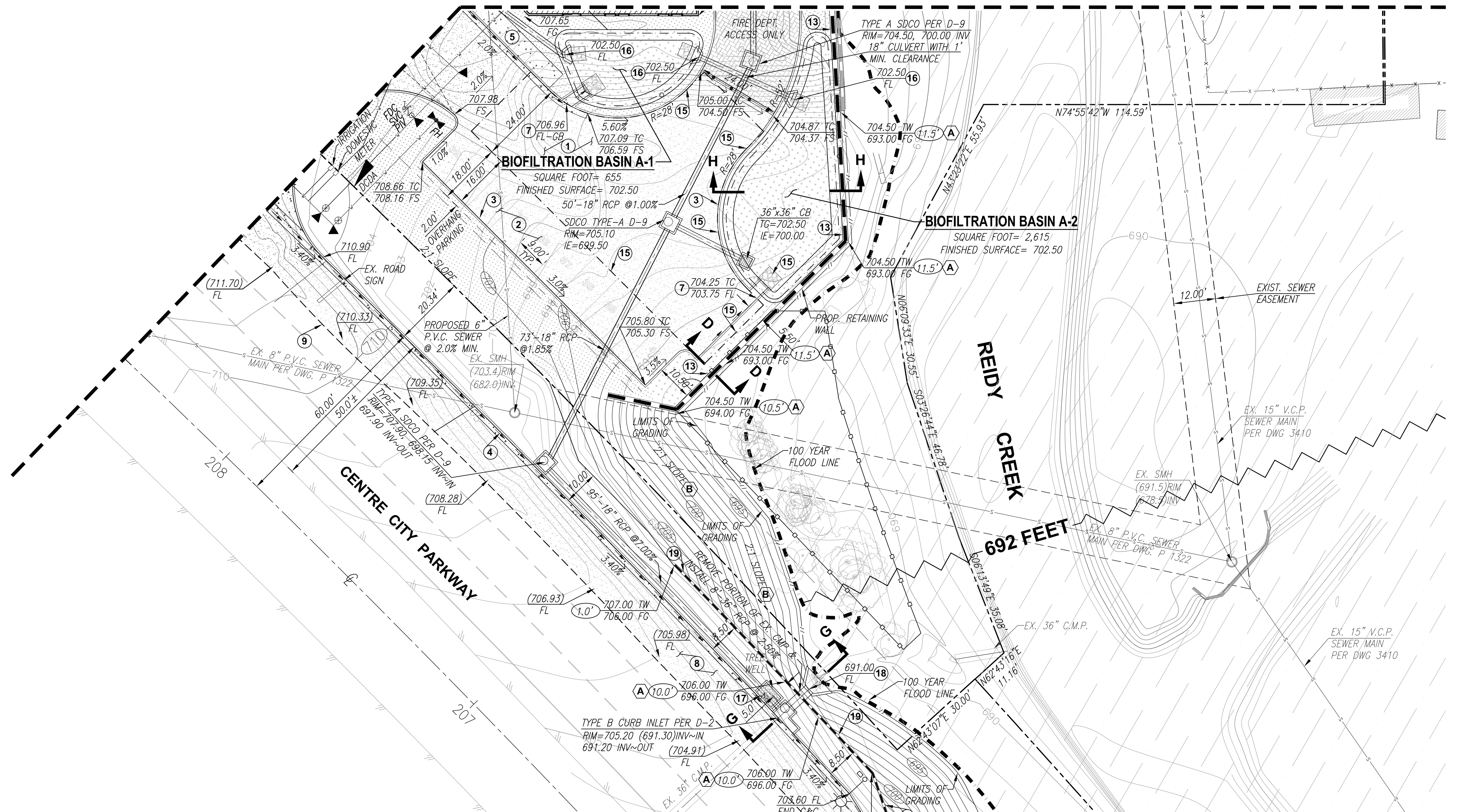
PLOT DATE: 6/22/2018 7:10 AM S:\Spear_Projects\2017\17-174 MITCHELL GROUP - 1802 N. CENTRE CITY - ESC\CAD\17-174CGP.dwg

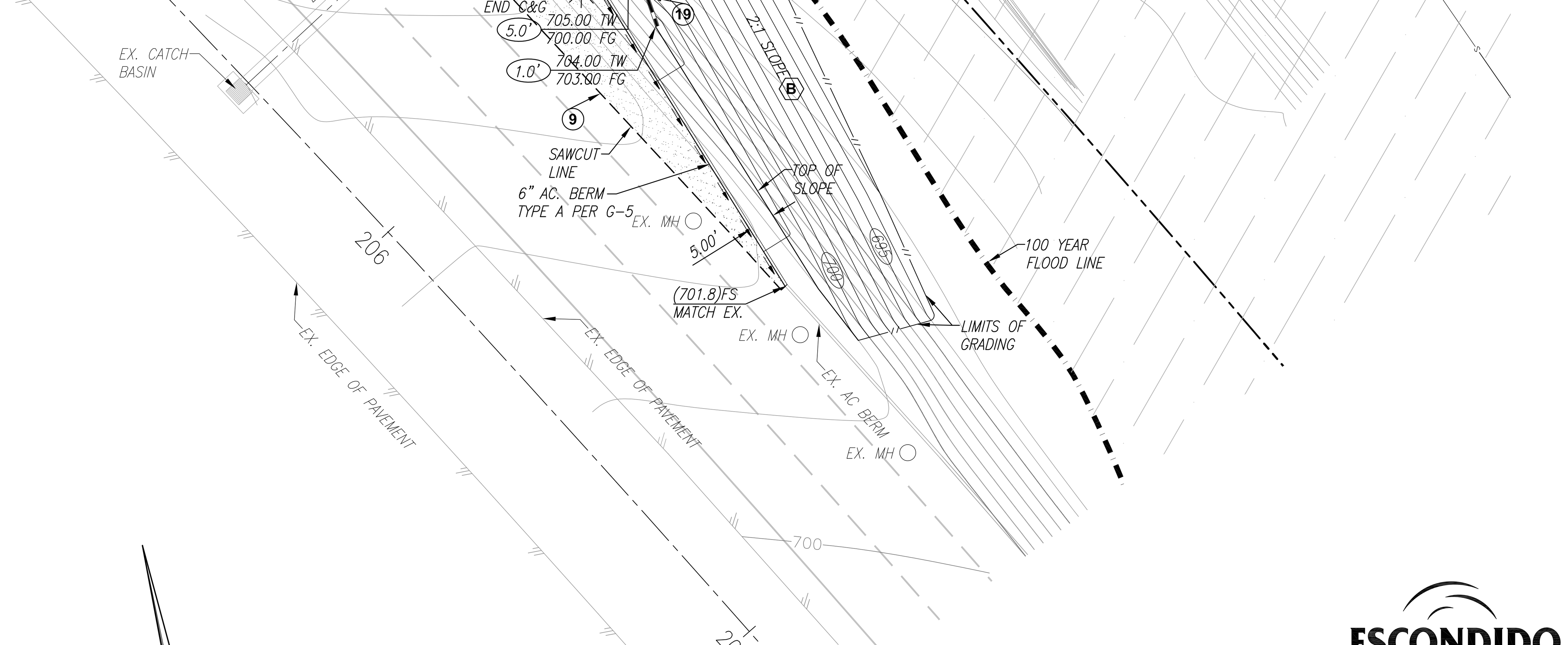
CONSTRUCTION NOTES:

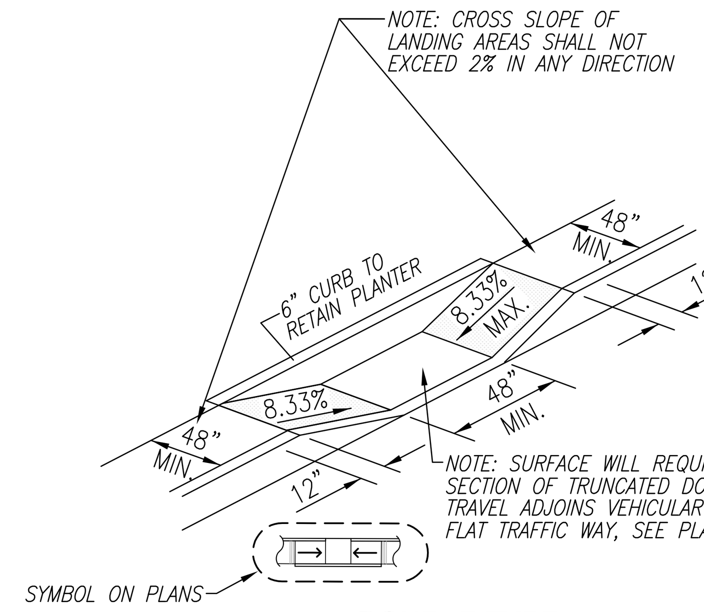
1. *CONSTRUCT 3" AC PAVEMENT OVER 9" A.B. AND 95% COMPACTED SUBGRADE SOIL (HEAVY DRIVE AISLES).
2. *CONSTRUCT 3" AC PAVEMENT OVER 7" A.B. AND 95% COMPACTED SUBGRADE SOIL (PARKING STALLS).
3. CONSTRUCT 6" P.C.C. CURB PER SDRSD G-1 (SDRSD).
4. CONSTRUCT 6" P.C.C. CURB & GUTTER TYPE-G PER SDRSD G-2 (SDRSD).
5. CONSTRUCT 5.0' MIN. WIDE P.C.C. SIDEWALK PER G-7 (SDRSD).
6. CONSTRUCT 3.0' WIDE P.C.C. RIBBON GUTTER PER DETAIL SHEET 1.
7. CONSTRUCT 3.0' CURB OPENING W/SPLASH PAD PER DETAIL SHEET 1.
8. CONSTRUCT AC PAVEMENT OVER APPROVED CL-II AGGREGATE BASE (MATCH EX.)
9. SAWCUT & REMOVE AC. BERM, CURB & GUTTER PER DETAIL SHEET 1.
10. CONSTRUCT SINGLE TYPE PEDESTRIAN ACCESS RAMP W/TRUNCATED DOMES PER DETAIL SHEET 1.
11. CONSTRUCT DOUBLE TYPE PEDESTRIAN ACCESS RAMP W/TRUNCATED DOMES PER DETAIL SHEET 1.
12. CONSTRUCT 26' WIDE ALLEY TYPE DRIVEWAY (MODIFIED) PER COE G-5-E.
13. CONSTRUCT NEW (DSM) SEGMENTAL RETAINING WALL WITH SPLIT FACE BLOCK AND DECORATIVE CAP, (DESIGNED FOR DRIVE AISLE SURCHARGE) PER SEPARATE PERMIT.
14. CONSTRUCT NEW CMU RETAINING WALL WITH SPLIT FACE BLOCK AND DECORATIVE CAP. SEE STRUCTURAL PLANS, PER SEPARATE PERMIT.
15. FIRE TRUCK TURN AROUND AREA. NO PARKING.
16. RIP-RAP ENERGY DISSIPATOR PER D-40 (SDRSD), W=5.0' x L= PER PLAN, TYPE 2 ROCK CLASS, 1' THICK OVER MIRAFI 140N (OR EQUAL) GEOTEXTILE FILTER BLANKET.
17. 4.0'x6.0' TREE WELL W/TREE GRATE PER L-4 (SDRSD) & 18" MIN. CURB OPENING W/SPLASH PAD, PER LATEST COUNTY GREEN STREET DESIGNS & SPECIFICATIONS AS APPROVED BY THE WPP, (PER DETAILS SHEET 3). OWNER TO MAINTAIN TREE WELL.
18. CONSTRUCT WING TYPE HEADWALL PER D-34 (SDRSD).
19. CONSTRUCT NEW CMU RETAINING WALL WITH SPLIT FACE BLOCK, DECORATIVE CAP AND FALL PROTECTION AT TOP OF WALL. SEE STRUCTURAL PLANS, PER SEPARATE PERMIT.
20. INSTALL 3'x4' FIRE DEPARTMENT LADDER LANDING LEVEL PADS IN PERVIOUS PAVERS LOCATED INLINE WITH BUILDING UPPER FLOOR WINDOWS AT 8' TO 10' OFF THE FACE OF BUILDING.

* FINAL PAVEMENT SECTION BASED ON R-VALUE APPROVED BY THE CITY ENGINEER.

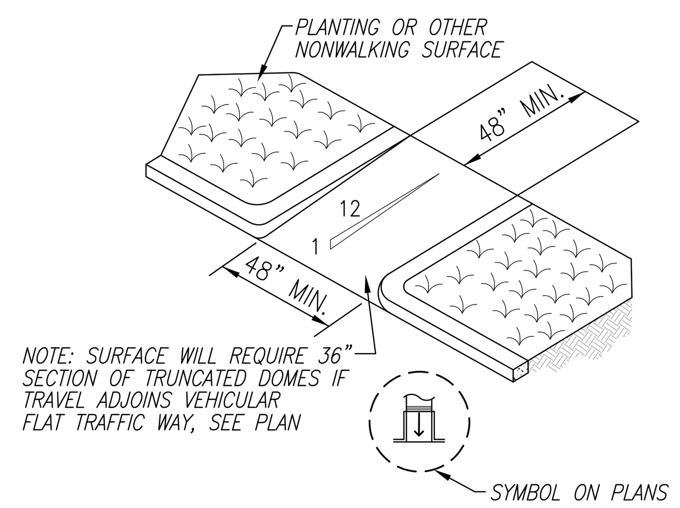
MATCHLINE - SEE SHEET 1



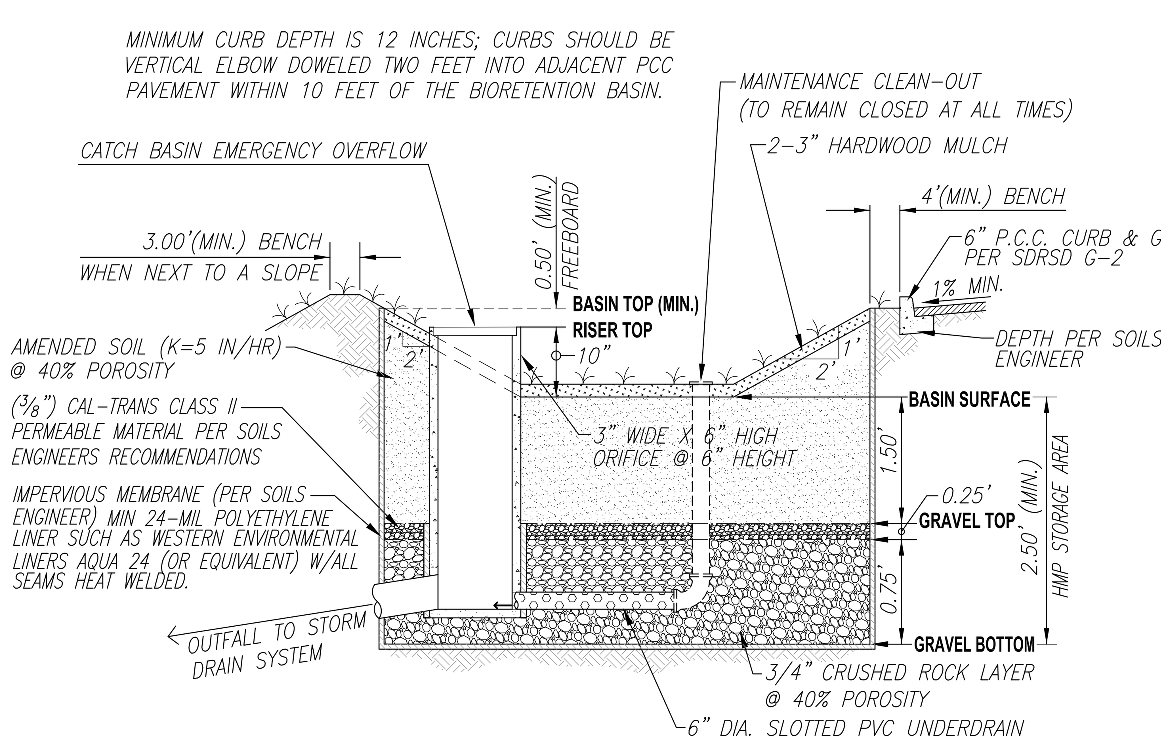




DOUBLE TYPE PEDESTRIAN ACCESS RAMP
MODIFIED PER G-29 (SDRSD)
NOT-TO-SCALE



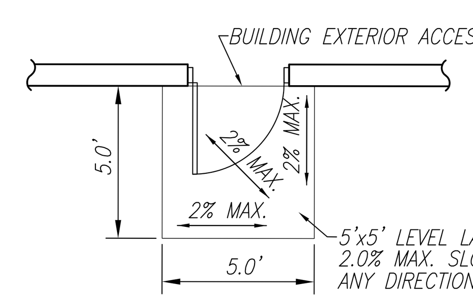
SINGLE TYPE PEDESTRIAN ACCESS RAMP
MODIFIED PER G-31 (SRDSD)
NOT-TO-SCALE



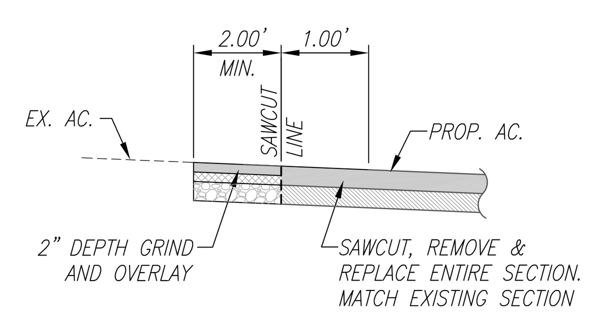
BIOFILTRATION (INF-2) BASIN TYPICAL SECTION
TYPICAL DETAIL & OUTLET CONNECTION
INSTALLED BMP SHALL COMPLY WITH BF-1 BMP DESIGN FACT SHEET
NOT-TO-SCALE

BMP BASIN DATA TABLE

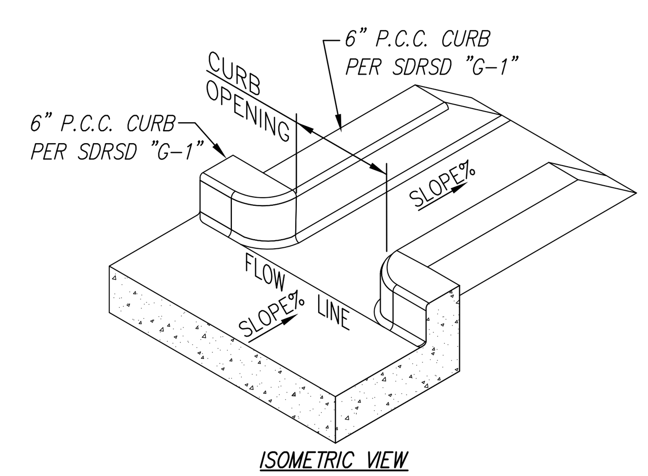
LETTER	ORIFICE SIZE	REQUIRED TREATMENT	PROVIDED TREATMENT	HYDROMODIFICATION VOLUME REQUIRED	HYDROMODIFICATION VOLUME PROVIDED	DESIGN CAPTURE VOLUME	RISER HEIGHT ABOVE BASIN FS
A	N/A	2,612 SF	2,615 SF	1,306 CF	1,308 CF	2,441 CF	6"
B	N/A	627 SF	630 SF	314 CF	315 CF	593 CF	6"



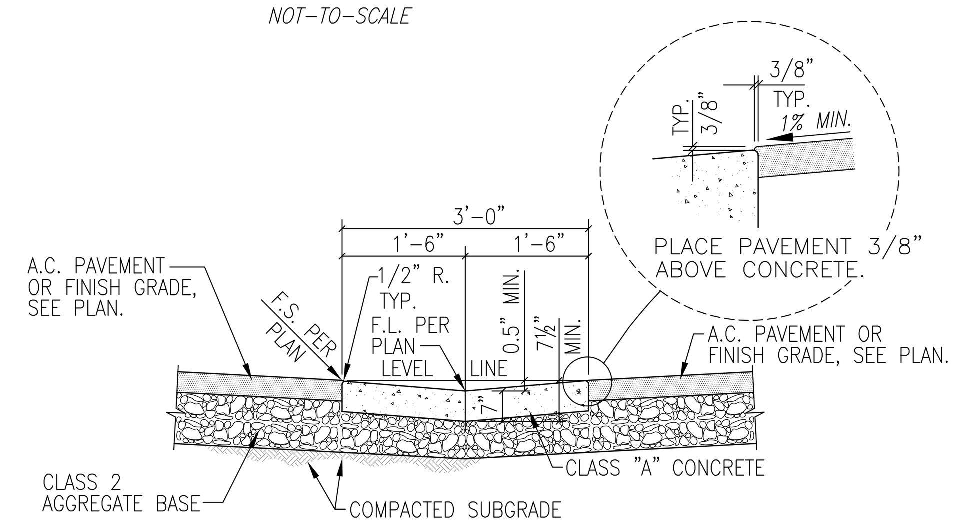
EXTERIOR DOOR LANDING
TYPICAL EXTERIOR DOORWAY LANDING AT ALL EXTERIOR DOORS



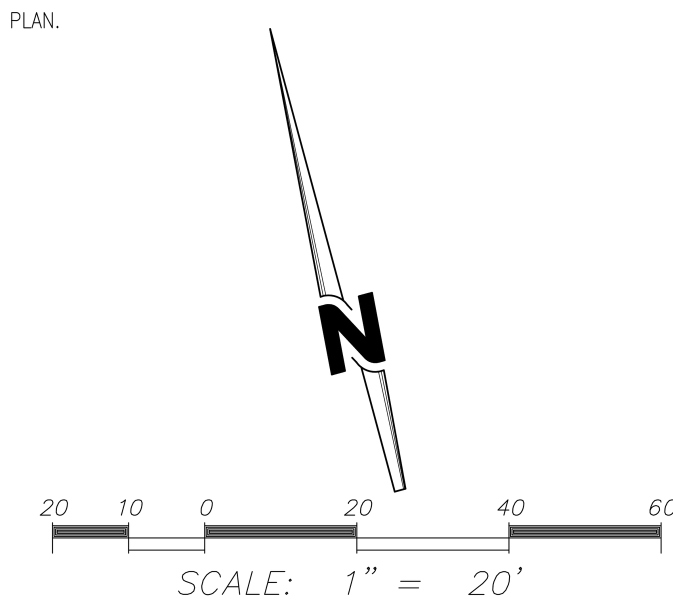
SAWCUT, GRIND AND OVERLAY
TYPICAL SECTION
NOT-TO-SCALE



CURB OPENING DETAIL
TYPICAL P.C.C. SPILLWAY DETAIL
NOT-TO-SCALE



P.C.C. RIBBON GUTTER DETAIL
TYPICAL SECTION
NOT-TO-SCALE



PLANS PREPARED BY:
SPEAR & ASSOCIATES, INC.
475 PRODUCTION STREET, SAN MARCOS, CA. 92078
PHONE (760) 736-2040 FAX (760) 736-4866

UTILITY NOTE:
1. CONTRACTOR TO VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF EXISTING UTILITIES PRIOR TO THE START OF CONSTRUCTION. ENGINEER IS NOT RESPONSIBLE FOR PRECISE LOCATION OF EXISTING UNDERGROUND UTILITIES.
2. CONTRACTOR TO ADJUST EXISTING UTILITIES TO GRADE AS REQUIRED.

GRADING EXEMPTIONS:
AREAS REQUIRING GRADING EXEMPTIONS ARE IDENTIFIED BY THE FOLLOWING:
(A) RETAINING WALLS IN EXCESS OF 10 FEET IN HEIGHT.
(B) FILL SLOPES IN EXCESS OF 10 FEET IN HEIGHT.

"CONCEPTUAL"

REGISTERED PROFESSIONAL ENGINEER — JOSHUA R. ZEIGLER — No. 85413 — CIVIL — STATE OF CALIFORNIA

ESCONDIDO City of Choice

CITY OF ESCONDIDO ENGINEERING DEPARTMENT
APPROVED
By ______ Date ______
(for City Engineer)
Comments ______

RECORD DRAWING
JOSHUA R. ZEIGLER R.C.E. 85413 DATE

OBTAIN GRADING PERMIT AT FIELD ENGINEERING OFFICE PRIOR TO GRADING

CITY PROJECT NO. ENG

CONSTRUCTION RECORD	REFERENCES	Date	By	REVISIONS	App'd	Date
Contractor ______	–					
Inspector ______	–					
Date Completed ______						

BENCH MARK
DESCRIPTION: CHISELED SQUARE ON TOP OF CURB INLET AT NW CORNER OF INTERSECTION OF CENTRE CITY PKWY. & IRIS LN. E/S FRONTAGE RD. APPROX. 50FT N. CENTER LINE IRIS LN. AT SW CORNER OF INLET.
STATION #540 — Bench Mark No.; 734.20' — Elevation

EARTHWORK QUANTITIES **
CUT: 0 C.Y.
FILL: 0 C.Y.
EXPORT: 0 C.Y.

SCALE: Horizontal As Shown; Vertical As Shown

Office ______
Filmed ______
Traffic ______

Designed By	Drawn By	Checked By
J.R.Z.	A.J.V.	J.R.Z.

Plans Prepared Under Supervision Of
Date ______
R.C.E. No. 85413

DEPARTMENT OF PUBLIC WORKS - ENGINEERING DIVISION

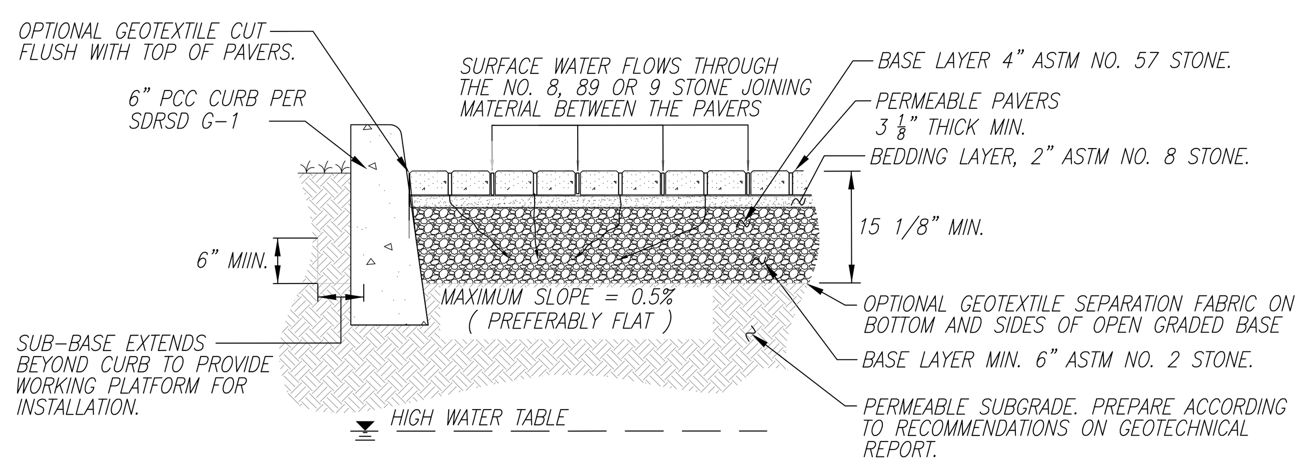
CONCEPTUAL GRADING PLAN FOR, ESCONDIDO ASSISTED LIVING

Drawing No. –

Sheet 2 of 3

SPEAR & ASSOCIATES, INC. JOB NO: 17-174 JRZ

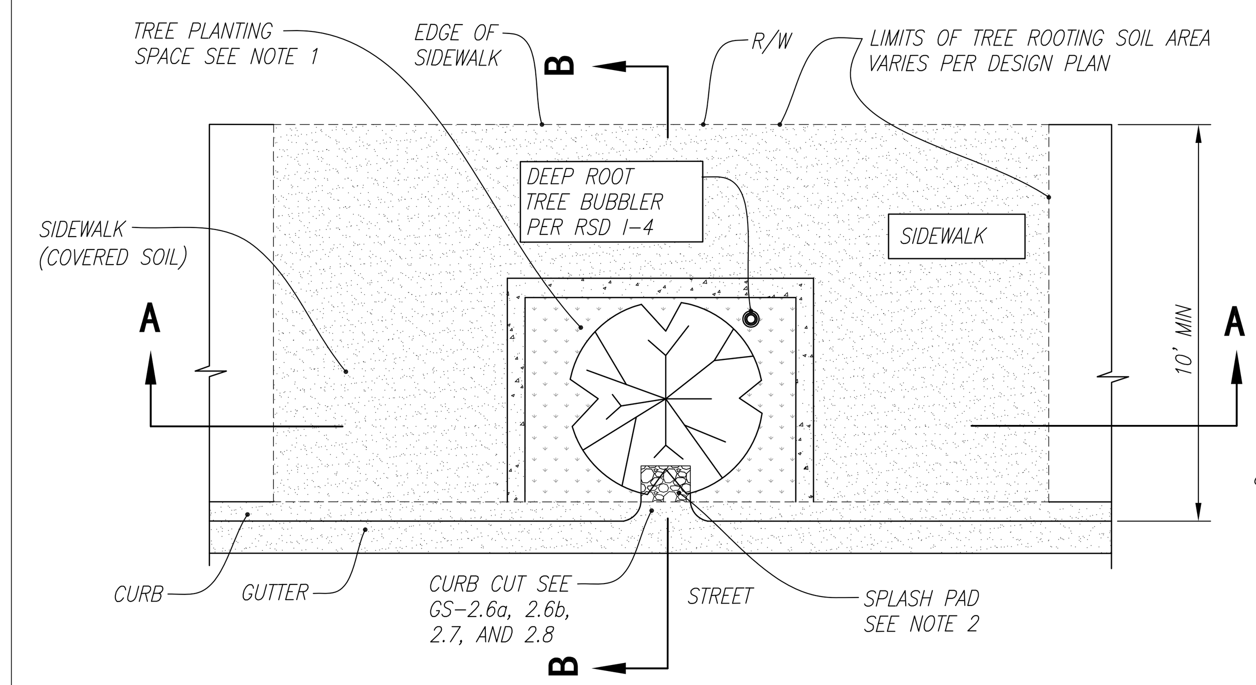
PLOT DATE: 6/21/2018 3:26 PM S:\Spear Projects\2017\17-174 MITCHELL GROUP - 1802 N. CENTRE CITY, ESC\CAD\17-174CGP.dwg



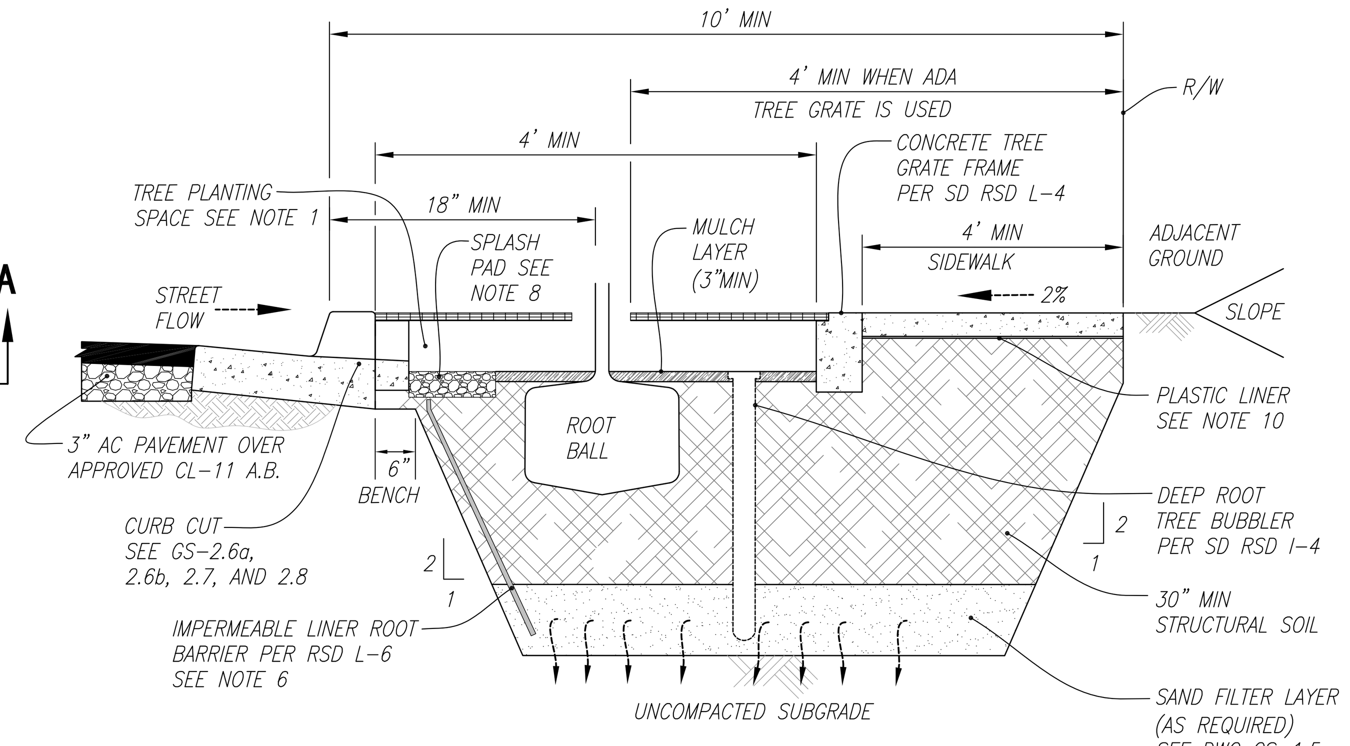
8 BELGARD PERMEABLE PAVING DETAIL
SECTION SHALL CONFORM WITH BELGARD MANUFACTURER'S SPECIFICATIONS
NOT-TO-SCALE

*FIRE DEPARTMENT NOTE: THE BELGARD PERMEABLE PAVERS, BEDDING LAYER, AND BASE LAYER **IS ADEQUATE TO HOLD 75,000 POUNDS.***

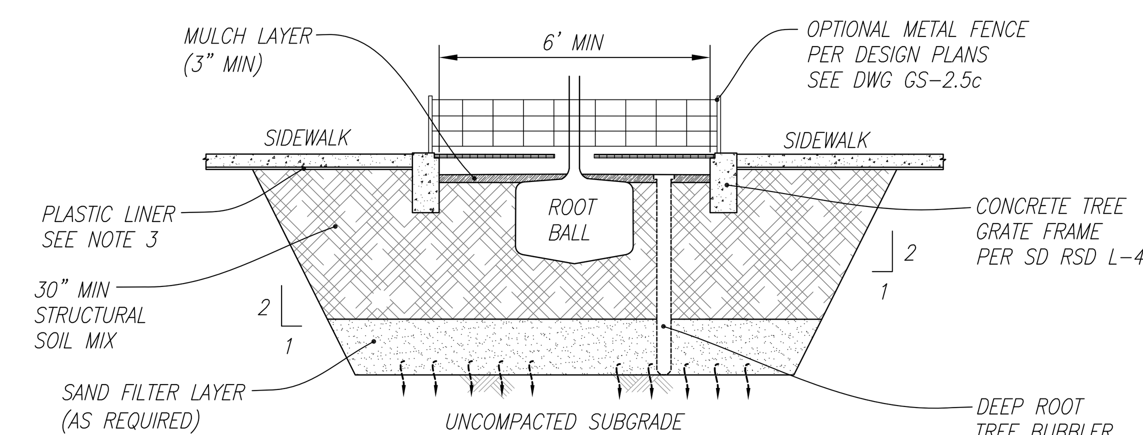
PERMEABLE PAVERS SECTION CONFORMS TO GREEN STREET STANDARDS GS-5.3a



TREE-WELL PLAN VIEW



SECTION B-B



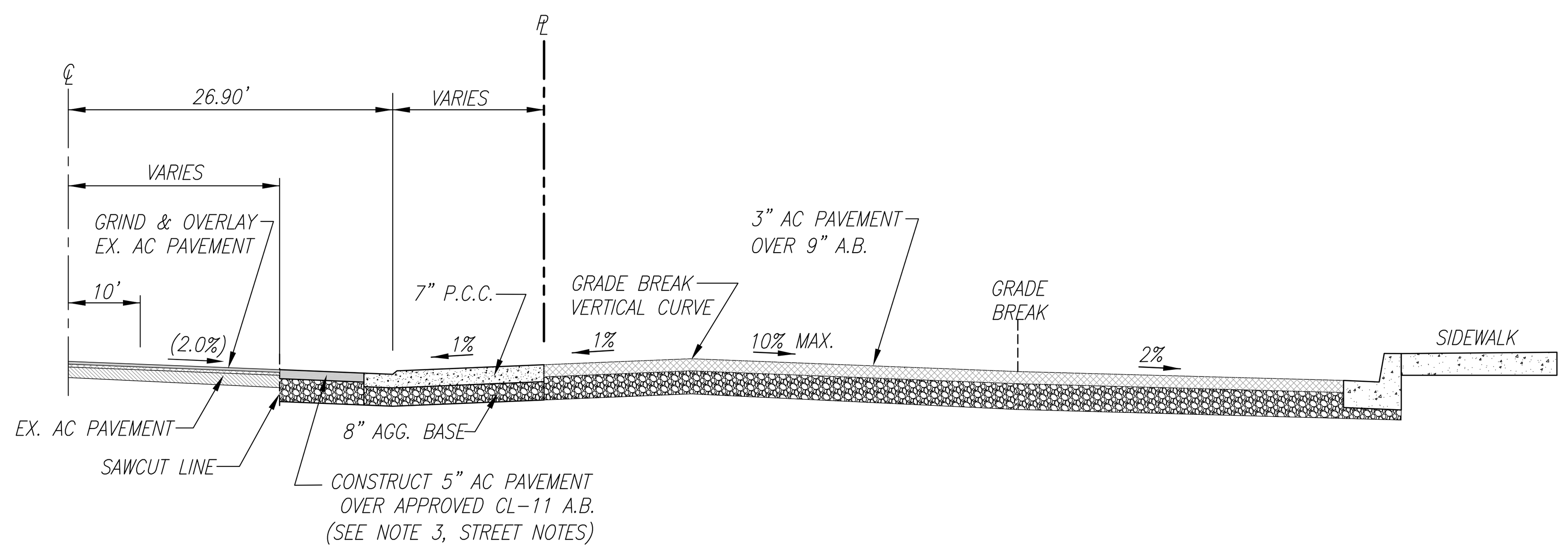
SECTION A-A

NOTES:

1. MINIMUM OPEN TREE PLANTING SPACE DIMENSION 4'x6'.
2. PROVIDE SPLASH PAD FOR TREE PLANTING SPACE PER GS-2.6b.
3. PROVIDE PLASTIC LINER WHERE CONCRETE WILL BE POURED ON TOP OF STRUCTURAL SOIL PER GREEN BOOK STANDARD SPECIFICATIONS SECTION 210-2.
4. MINIMUM VOLUME REQUIRED = 122 C.F. 10' WIDE x 6' LONG x 5' DEEP (30" MEDIA, 30" SAND FILTER LAYER)

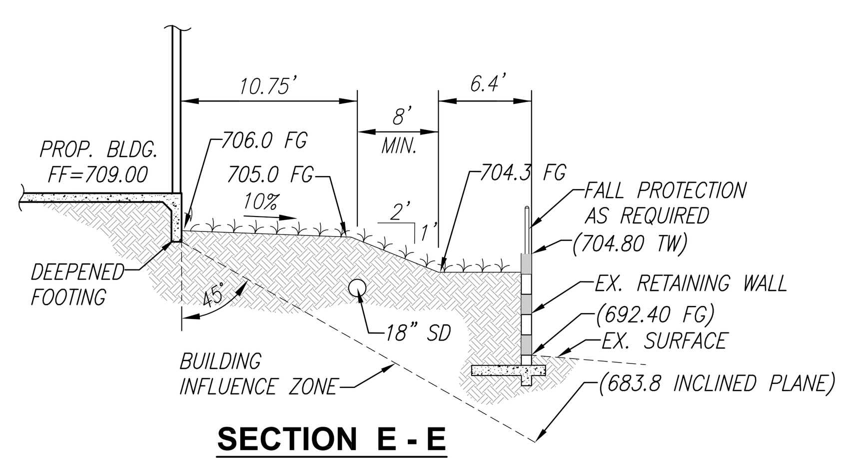
NOTES:

1. MINIMUM OPEN TREE PLANTING SPACE DIMENSION 4'x6'.
2. MAXIMUM WATERSHED AREA:6 TIMES AREA OF THE OPEN TREE PLANTING AREA.
3. SEE DWG GS-1.5 FOR BOTTOM SAND LAYER AND SUBSURFACE DRAINAGE REQUIREMENTS.
4. FOR SIDEWALK OVER STRUCTURAL SOIL DETAIL OPTIONS, SEE DWG GS-1.5.
5. SEE COE DWG L-1-E THROUGH L-2-E FOR TREE INSTALLATION REQUIREMENTS.
6. PROVIDE 36" DEEP ROOT BARRIER ON STREET SIDE OF TREE WELL AS NECESSARY.
7. REMOVE WIRE AND BURLAP FROM ROOT BALL PRIOR TO BACKFILLING.
8. PROVIDE SPLASH PAD FOR TREE PLANTING SPACE PER GS-2.6b.
9. IN SOME INSTANCES A MODIFIED SECTION BELOW CURB MAY BE REQUIRED BASED ON SOIL CONDITIONS.
10. PROVIDE PLASTIC LINER WHERE CONCRETE WILL BE POURED ON TOP OF STRUCTURAL SOIL PER GREEN BOOK STANDARD SPECIFICATIONS SECTION 210-2.

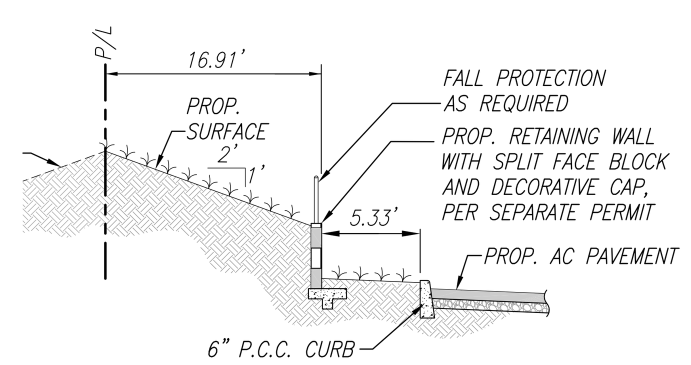


CENTER CITY PARKWAY

SECTION F - F
DRIVEWAY C/L LOOKING EAST
NOT-TO-SCALE



SECTION E - E
NOT-TO-SCALE



SECTION A - A
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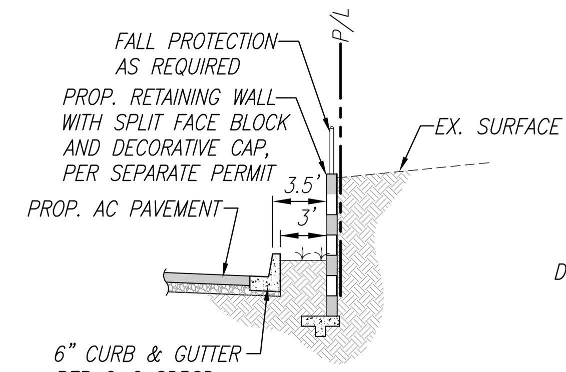
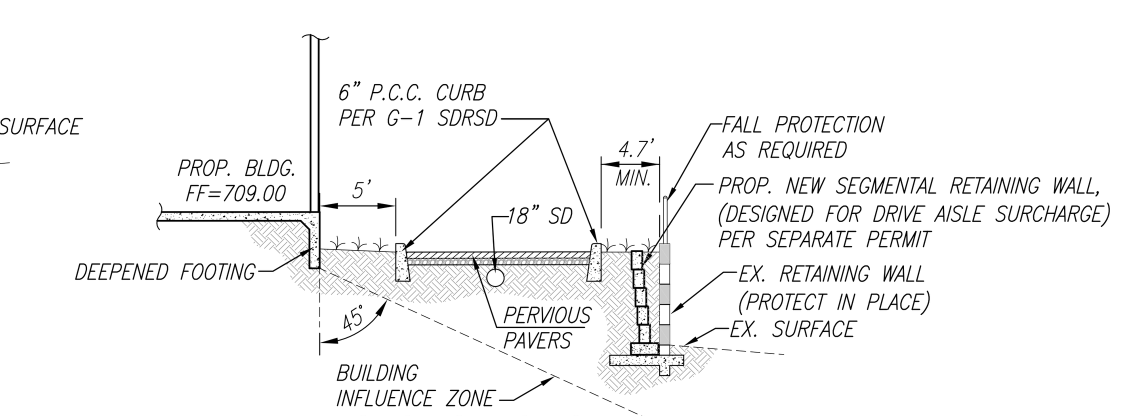
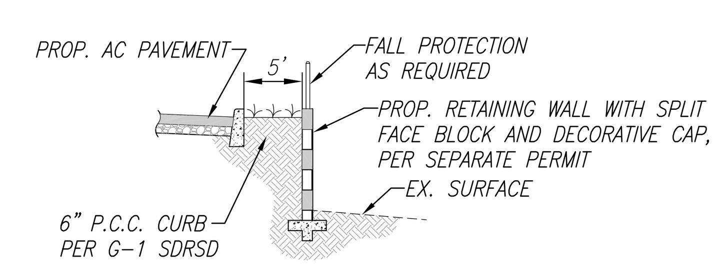


SECTION B - B
NOT-TO-SCALE



SECTION C - C
NOT-TO-SCALE



SECTION D - D
NOT-TO-SCALE

PLANS PREPARED BY:
SPEAR & ASSOCIATES, INC.
475 PRODUCTION STREET, SAN MARCOS, CA. 92078
PHONE (760) 736-2040 FAX (760) 736-4866

REGISTERED PROFESSIONAL ENGINEER JOSHUA R. ZEIGLER No. 85413 CIVIL STATE OF CALIFORNIA

"CONCEPTUAL"

RECORD DRAWING
JOSHUA R. ZEIGLER R.C.E. 85413 DATE

ESCONDIDO City of Choice

CITY OF ESCONDIDO ENGINEERING DEPARTMENT
APPROVED
By ____ Date ____
(for City Engineer)
Comments ____

OBTAIN GRADING PERMIT AT FIELD ENGINEERING OFFICE PRIOR TO GRADING

CITY PROJECT NO. ENG

CONSTRUCTION RECORD	REFERENCES	Date	By	REVISIONS	App'd	Date
Contractor	–					
Inspector	–					
Date Completed						

BENCH MARK
DESCRIPTION: CHISELED SQUARE ON TOP OF CURB INLET AT NW CORNER OF INTERSECTION OF CENTRE CITY PKWY. & IRIS LN. E/S FRONTAGE RD. APPROX. 50FT N. CENTER LINE IRIS LN. AT SW CORNER OF INLET.

Bench Mark No.	Elevation
STATION #540	734.20'

EARTHWORK QUANTITIES **	
CUT:	0 C.Y.
FILL:	0 C.Y.
EXPORT:	0 C.Y.

SCALE	
Horizontal	As Shown
Vertical	As Shown

Office ____
Filmed ____
Traffic ____

Designed By	Drawn By	Checked By
J.R.Z.	A.J.V.	J.R.Z.

Plans Prepared Under Supervision Of
Date ____
R.C.E. No. 85413

DEPARTMENT OF PUBLIC WORKS - ENGINEERING DIVISION

DETAILS PLAN FOR:
ESCONDIDO ASSISTED LIVING

Drawing No. –

Sheet 3 of 3

SPEAR & ASSOCIATES, INC. JOB NO: 17-174 JRZ

PLOT DATE: 4/30/2018 1:24 PM S:\Spear Projects\2017\17-174 MITCHELL GROUP - 1802 N. CENTRE CITY, ESC\CAD\17-174CGP.dwg

Escondido Assisted Living
Mitchell Group

PROJECT DATA

PROJECT DESCRIPTION
PROPOSED NEW 3-STORY SENIOR CARE FACILITY TO INCLUDE 22 MEMORY CARE AND 68 ASSISTED LIVING UNITS. THE BUILDING WILL CONSIST OF THREE STORIES AND SHALL BE TYPE V CONSTRUCTION WITH AN AUTOMATIC FIRE SPRINKLER SYSTEM. THERE WILL BE A 22 BED SKILLED NURSING UNIT AND A 76 BED ASSISTED LIVING UNIT.

PROJECT ADDRESS
1802 N. CENTRE CITY PARKWAY ESCONDIDO CA 92026 UNITED STATES

LEGAL DESCRIPTION
PARCEL 1:
THAT PORTION OF BLOCK 421 OF RANCHO RINCON DEL DIABLO, IN THE CITY OF ESCONDIDO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO.723, MADE BY J.M. GRAHAM, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, AUGUST 13, 1892, DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST CORNER OF SAID BLOCK 421, AS SHOWN ON RECORD OF SURVEY MAP NO. 10306; THENCE ALONG THE NORTH-EASTERLY LINE THEREOF SOUTH 7'41'19" EAST, A DISTANCE OF 1593.59 FEET TO A POINT ON SAID NORTHEASTERLY LINE: SAID POINT BEING ALSO THE NORTHEASTERLY CORNER OF LAND DESCRIBED IN DEED TO B.G. CARROL, ET UX, RECORDED JUNE 22, 1943 IN BOOK 1520, PAGE 99 AS FILE NO. 36643, OFFICIAL RECORDS; THENCE ALONG THE NORTHEASTERLY BOUNDARY OF SAID CARROL'S LAND, NORTH 74'56'12" WEST, A DISTANCE OF 745.04 FEET TO THE TRUE POINT OF BEGINNING; THENCE SOUTH 14'38'48" WEST, A DISTANCE OF 282.17 FEET; THENCE NORTH 74'56'12" WEST, A DISTANCE OF 114.59 FEET; THENCE SOUTH 43'22'52" WEST, A DISTANCE OF 55.93 FEET; THENCE SOUTH 06'9'03" WEST, A DISTANCE OF 30.55 FEET; THENCE SOUTH 3'27'14" EAST, A DISTANCE OF 35.08 FEET; THENCE SOUTH 62'42'46" WEST, A DISTANCE OF 11.10 FEET TO A POINT ON THE NORTHEASTERLY LINE OF CENTRE CITY PARKWAY, BEING ALSO KNOWN AS STATE ROUTE XI-SD-77F AS SHOWN ON M.S. 606; SAID POINT BEING ON A CURVE CONCAVE SOUTHWESTERLY HAVING A RADIUS OF 4000.00 FEET; A RADIAL BEARING TO SAID POINT NORTH 62'42'46" EAST; THENCE NORTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 9'23'15", A DISTANCE OF 655.37 FEET TO A POINT ON THE SOUTHWESTERLY LINE OF THAT LAND DEEDED TO THE RINCON DEL DIABLO MUNICIPAL WATER DISTRICT AS SHOWN ON RECORD OF SURVEY MAP NO. 10306; THENCE ALONG SAID SOUTHWESTERLY LINE AND THE SOUTHEASTERLY PROLONGATION THEREOF, SOUTH 74'56'12" EAST, A DISTANCE OF 594.06 FEET TO THE POINT OF BEGINNING:

PARCEL 2:
THAT PORTION OF BLOCK 421 OF RANCHO RINCON DEL DIABLO, IN THE CITY OF ESCONDIDO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 723, MADE BY J.M. GRAHAM, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, AUGUST 13, 1892, LYING WITHIN CENTRE CITY PARKWAY, A PUBLIC HIGHWAY ALSO KNOWN AS STATE ROUTE XI-SD-77F AS SHOWN ON M.S. 606, BEING A STRIP OF LAND 30.00 FEET IN WIDTH LYING IMMEDIATELY ADJACENT TO AND SOUTHWESTERLY OF THE SOUTHWESTERLY LINE OF PARCEL "A" OF CERTIFICATE OF COMPLIANCE RECORDED SEPTEMBER 3, 1998 AS DOCUMENT NO. 1998-0565667 OF OFFICIAL RECORDS, SAID SOUTHWESTERLY LINE BEING THE NORTHEASTERLY RIGHT-OF-WAY LINE OF SAID CENTRE CITY PARKWAY, SAID SOUTHWESTERLY LINE AND SAID NORTHEASTERLY RIGHT-OF-WAY LINE BEING A CURCE CONCAVE SOUWESTERLY HAVING A RADIUS OF 4000.00 FEET.

SAID 30.00 FOOT STRIP OF LAND TO TERMINATE NORTHERLY AT A LINE RADIAL TO SAID CURVE AT THE NORTHWEST CORNER OF SAID PARCEL "A" AND TERMINATE SOUTHERLY AT A LINE RADIAL TO SAID CURVE AT THE MOST SOUTHERLY SOUTHWEST CORNER OF SAID PARCEL "A"

ASSESSORS PARCEL NUMBER
226-190-2200

REQUIRED PERMITS:

ZONING - R-1-10

GENERAL PLAN - S

PROPOSED LAND USE - USE TITLE 6516 -LICENSED RESIDENTIAL CARE FACILITY
SITE DATA

SITE AREA	151,588.8 SF (3.03 ACRES)
BUILDING FOOTPRINT	26,703 SF
LOT COVERAGE	26,703/151,588.8 = .18
COVERAGE FACTOR	18%
PAVEMENT AREA	37,817 SF (FRONTAGE AREA INCLUDED)
TOTAL LANDSCAPE AREA	38,321 SF
TOTAL DETENTION AREA	2,746 SF
TOTAL BUILDING AREA	69,929 SF
TOTAL PROPOSED DWELLING UNITS	88 UNITS/43,934 SF
PROPOSED DENSITY (UNITS/NET ACRE)	88/3.48 = 25.29
ALLOWABLE AREA	31,500 SF/FLOOR PER CBC 2016 TABLE 506.2
FAR	69,929/151,588.8 = .46 PERMITTED PER SEC 33-173 (e) 46%

PARKING
SPACES REQUIRED 32 (1 SPACE/ 3 BEDS FOR A PROFESSIONAL CARE FACILITY, SEC. 33-765 EMC)

96 BEDS /3 = 32

ACCESSIBLE SPACES REQUIRED PER CBC TABLE 11a (2% OF 88 UNITS) = 2 SPACES (1 VAN & 1 ACCESSIBLE)

SPACES PROVIDED **43** INCLUDING 1 VAN & 1 ACCESSIBLE SPACE

UNIT MIX

Unit Name	Unit Type	Beds	Qty	Area (SF)	Total (SF)
AL-0a	ASSISTED LIVING - STUDIO	1	9	405	3,645
AL-0b	ASSISTED LIVING - STUDIO	1	4	381	1,524
AL-0c	ASSISTED LIVING - STUDIO	1	4	386	1,544
AL-1a	ASSISTED LIVING - 1 BED	1	26	526	13,676
AL-1b	ASSISTED LIVING - 1 BED	1	2	650	1,300
AL-1c	ASSISTED LIVING - 1 BED	1	11	548	6,028
AL-1d	ASSISTED LIVING - 1 BED	1	2	593	1,186
AL-2a	ASSISTED LIVING - 2 BED	2	4	823	3,292
AL-2b	ASSISTED LIVING - 2 BED	2	4	779	3,116
MC-1a	MEMORY CARE - 1 BED	1	11	375	4,125
MC-1b	MEMORY CARE - 1 BED	1	10	406	4,060
MC-1c	MEMORY CARE - 1 BED	1	1	500	500
		96	**88**		**43,996 sq ft**

CODE REQUIREMENTS

APPLICABLE CODES

ALL WORK SHALL BE IN CONFORMANCE WITH ALL THE CODES AND REGULATIONS AS ADOPTED AND AMENDED BY THE CITY OF ESCONDIDO.

2016 California Building Code (CBC)
2016 California Electrical Code (CEC)
2016 California Mechanical Code (CMC)
2016 California Plumbing Code (CPC)
2016 California Fire Code (CFC)
2016 California Green Building Standards Code - CALGREEN
ESCONDIDO MUNICIPAL CODE (EMC)

BUILDING CONSTRUCTION

OCCUPANCY TYPES:
R2.1 24 HOUR RESIDENTIAL CARE FACILITY FOR THE ELDERLY (RCFE)
A-2 DINING ROOM, KITCHEN, LIVING ROOM, ACTIVITIES ROOM
B ADMINISTRATION

CONSTRUCTION TYPE:
TYPE V-A, FULLY SPRINKLERED

SPRINKLERS:
Yes, deferred submittal.

ALLOWABLE BUILDING HEIGHT
35'-0" TO POINT AVERAGED BETWEEN HIGHEST AND LOWEST ROOF POINTS PER SEC. 33-252 OF EMC

ACTUAL BUILDING HEIGHT
34'-5" TO MEDIAN ROOF POINT

ACTUAL BUILDING AREA
71,316 SF

PROJECT NOTES

1. THE WORK SHALL COMPLY WITH ALL LAWS AND REGULATIONS AS REQUIRED BY THE STATE, THE COUNTY, THE CITY OF COSTA MESA AND ALL OTHER AGENCIES HAVING JURISDICTION OVER THE WORK.
2. ALL WORK ON PUBLIC PROPERTY REQUIRES SEPARATE PERMITS ISSUED BY THE CITY.
3. THE GENERAL CONTRACTOR AND SUBCONTRACTORS SHALL FULLY REVIEW THE ENTIRE SET OF CONTRUCTION DOCUMENTS PRIOR TO COMMENCING CONSTRUCTION OF THE WORK.
4. ONLY COMPLETE BUILDING SYSTEMS AND SUBSYSYTEMS THAT HAVE BEEN COORDINATED WITH THE WORK OF ALL DESIGN DISCIPLINES SHALL BE CONSTRUCTED OR INSTALLED.
5. WHERE CONFLICT OCCURS BETWEEN BETWEEN THE DRAWINGS OF ANY DESIGN DISCIPLINE, THE MOST RESTRICTIVE INTERPRETATION OF THE OVERALL DESIGN SHALL GOVERN THE WORK. THE ARCHITECT SHALL RESOLVE DESIGN CONFLICTS BASED ON THE DESIGN INTENT.
6. THE GENERAL CONTRACTOR SHALL COORDINATE ALL CHANGES AND ADJUSTMENTS TO THE WORK THAT VARIES FROM THE CONSTRUCTION DOCUMENTS WITH THE ARCHITECT PRIOR TO FABRICATION, INSTALLATION OR CONSTRUCTION OF THE WORK.
7. DETAIL REFERENCES ARE TYPICAL AND APPLY EQUALLY TO SIMILAR CONDITIONS, UNLESS OTHERWISE NOTED OR OTHERWISE REFERENCED IN THE ARCHITECTURAL DRAWINGS.
8. DO NOT SCALE THE DRAWINGS.
9. DIMENSIONS SHALL BE FIELD VERIFIED. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO FABRICATION, INSTALLATION OR CONSTRUCTION OF THE AFFECTED WORK.
10. SEE THE FLOOR PLANS FOR INFORMATION REGARDING HORIZONTAL DRAWING DIMENSIONS.
11. SEE THE EXTERIOR ELEVATIONS AND BUILDING SECTIONS FOR INFORMATION REGARDING VERTICAL DRAWING DIMENSIONS.
12. THE PUBLIC AREAS AND COMMON AREAS OF THE BUILDING AND SITE ARE REQUIRED TO BE ACCESSIBLE TO PERSONS WITH DISABILITIES AND SHALL BE ON AN ACCESSIBLE ROUTE OF TRAVEL.

DEFERRED SUBMITTALS

DEFERRED SUBMITTAL ITEMS:

SUBJECT TO REVIEW AND APPROVAL OF FIRE AUTHORITY.
FIRE SPRINKLERS NFPA 13 REQUIREMENTS
FIRE ALARM MODIFICATIONS ONLY.

SUBMITTAL DOCUMENTS FOR DEFERRED SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE ARCHITECT OR ENGINEER OF RECORD, WHO SHALL REVIEW THEM AND FORWARD THEM TO THE BUILDING OFFICIAL WITH A NOTATION INDICATING THAT THE DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN REVIEWED AND THAT THEY HAVE BEEN FOUND TO BE IN GENERAL CONFORMANCE WITH THE DESIGN OF THE BUILDING. THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THEIR DESIGN AND SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL.

PLANS FOR THE DEFERRED SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE BUILDING OFFICIAL IN A TIMELY MANNER THAT ALLOWS A MINIMUM OF 30 WORKING DAYS FOR INITIAL PLAN REVIEW. ALL COMMENTS RELATED TO THE DEFERRED SUBMITTAL MUST BE ADDRESSED TO THE SATISFACTION OF THE BUILDING OFFICIAL PRIOR TO APPROVAL OF THE SUBMITTAL ITEMS.

PROJECT TEAM

OWNER
The Mitchell Group
142 South Cedros Ave
Suite D
Solana Beach, CA 92075
T: 619-993-7089
F: 619-272-2670
http://www.themitchellgroup.us
Tigg Mitchell

ARCHITECT
Irwin Partners Architects
245 Fischer Avenue, Suite B2
Costa Mesa, CA 92626
T: 714 557 2448
F: 714 556 1572
www.ipaoc.com
Greg Irwin

CIVIL ENGINEER
Spear & Associates, Inc.
475 Production Street
San Marcos, CA 92708
T: 760-736-2040
F: 760-736-4866
http://spearinc.net
Josh Ziegler

LANDSCAPE ARCHITECT
Materia LLC
La Jolla, CA 92037
T: 310-903-2635
E: twilson@Materia-LLC.com
http://materia-llc.com
Trace Wilson

SHEET INDEX

CIVIL

ARCHITECTURAL

LANDSCAPE

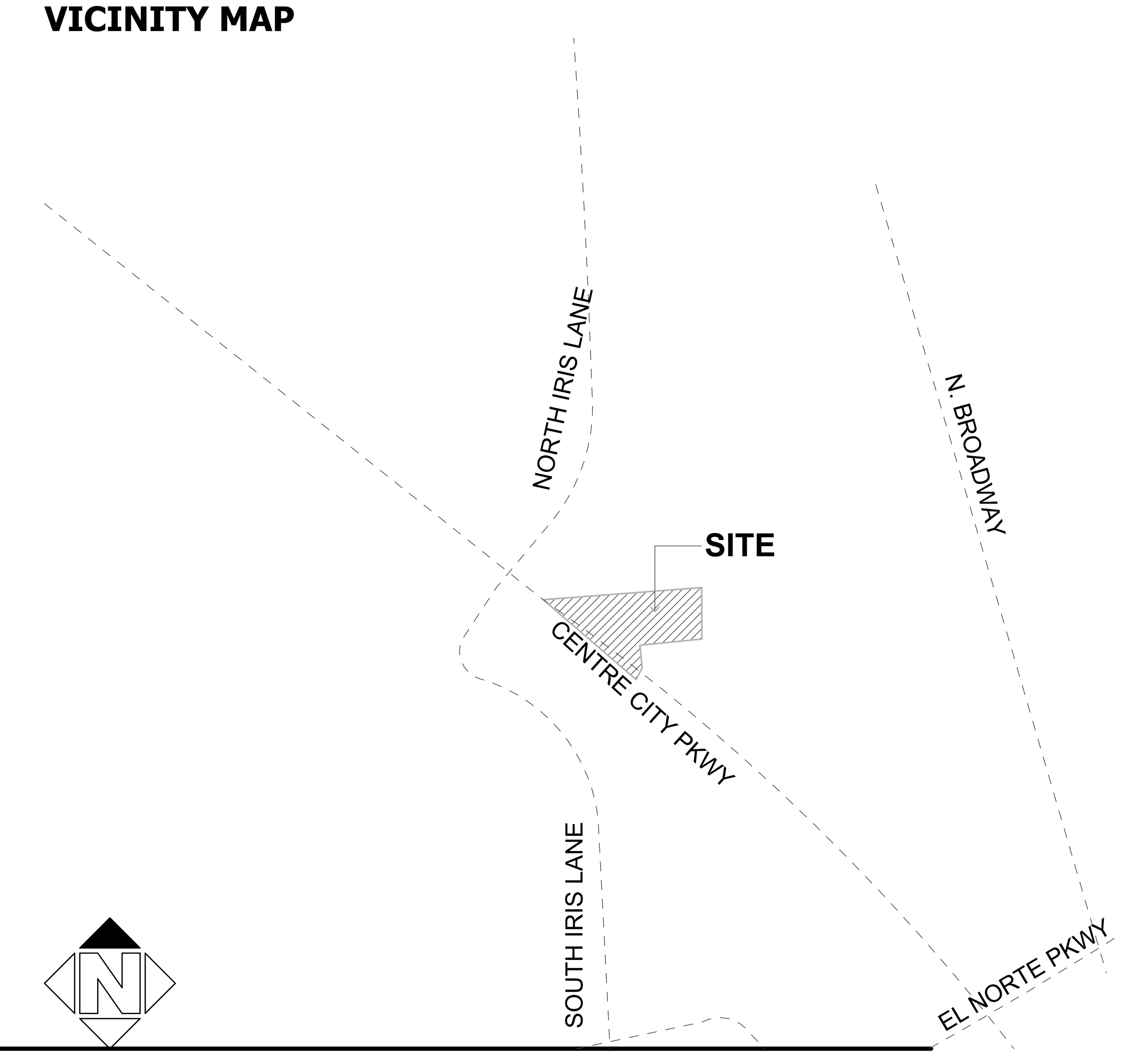
ABBREVIATIONS

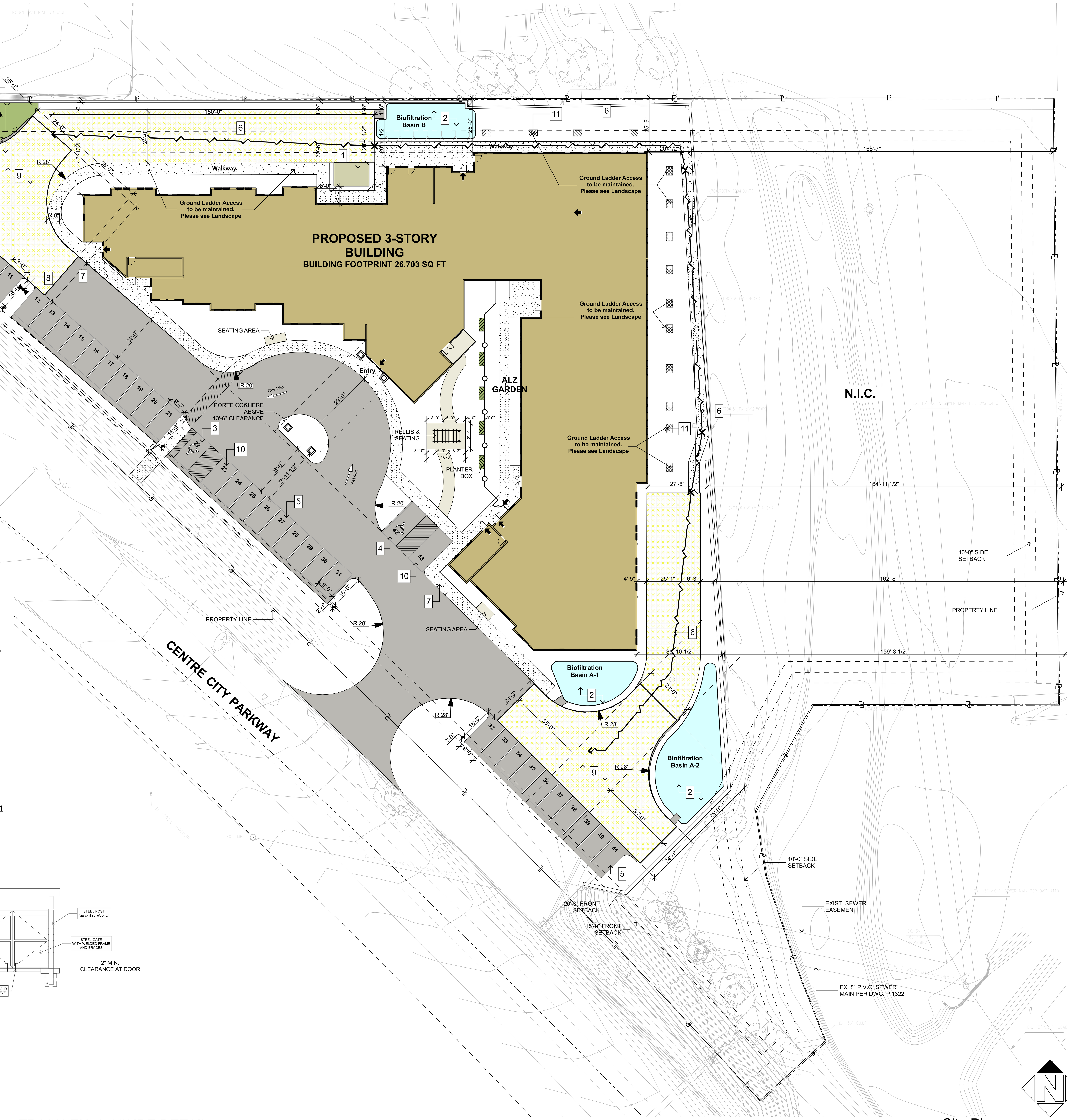
AL	Assisted Living
AL S	Assisted Living Studio Unit
AL 1	Assisted Living 1 Bedroom Unit
AL 2	Assisted Living 2 Bedroom Unit
MC	Memory Care
HK	House Keeping
AL-0	Assisted Living Studio Unit
AL-1	Assisted Living 1 Bedroom Unit
AL-2	Assisted Living 2 Bedroom Unit
RR	Restroom
COR	Corridor

UTILITY CONNECTIONS

UTILITY	PROVIDER
GAS AND ELECTRIC	SDG&E
WATER	RDD
TRASH	Waste Management
SEWER	City of Escondido

VICINITY MAP





01 Site Plan
SCALE: 1" = 20'

SITE PLAN LEGEND

- NEW CONCRETE WALKWAY OR PAVING
- FIRE ACCESS ROAD
- WATER DETENTION
- NOT INCORPORATED, UNDEVELOPED (N.I.C.)
- ACCESSIBLE ROUTE OF TRAVEL - (5% MAX - 2% MAX CROSS SLOPE)
- EGRESS PATH
- SMOKE BARRIER WALL MIN. 1-HOUR
- FIRE HYDRANT
- PROPERTY LINE
- WOOD FENCE
- 150'-0" FIRE ACCESS SPACE
- KEYNOTE NUMBER
- 3'X4' FIRE LADDER LANDING PAD-PERVIOUS

FOR FURTHER SITE INFORMATION, SEE CIVIL AND LANDSCAPE PLANS

SITE PLAN KEYNOTES

1. TRASH ENCLOSURE AREA 07/A0
2. BIOFILTRATION BASIN
3. ACCESSIBLE PARKING STALL TYP.
4. VAN ACCESSIBLE PARKING STALL
5. PARKING STALL TYP.
6. FIRE ACCESS REQ'D LENGTH 150'-0"
7. HARDSCAPE TYP.
8. FIRE HYDRANT
9. FIRE ACCESS ROAD, PAVED SURFACE PER FIRE CODE
10. FUTURE EV PARKING
11. 3'X4' FIRE LADDER LANDING PAD-PERVIOUS

Gross Area Calcs

	Area (SF)
AL 1 GROSS AREA	4,918
AL 2 GROSS AREA	5,067
AL 2 GROSS AREA	13,920
AL 3 GROSS AREA	21,346
COMMON 1 GROSS AREA	9,329
COMMON 2 GROSS AREA	2,893
MC 1 GROSS AREA	12,456
	69,929 sq ft

Parking Count

	Qty
EV	2
HC	1
P	39
VAN	1
	43

Building Area Calculations

Area Type	Qty.	Area (SF)
. CIRCULATION	1	3,997
. DINING	3	1,799
. LOBBY	3	567
. RESIDENT ACTIVITY	9	3,478
	16	9,841 sq ft
. ADMINISTRATION	9	1,239
. ASSISTED LIVING - 1 BED	41	22,190
. ASSISTED LIVING - 2 BED	8	6,408
. ASSISTED LIVING - STUDIO	17	6,713
. CIRCULATION	5	8,031
. CIRCULATION - VERTICAL	6	910
. CTRY KITCHEN	7	1,251
. MECHANICAL	6	596
. MEMORY CARE - 1 BED	22	8,685
. RESIDENT ACTIVITY	1	249
. RESTROOMS	5	358
. SERVICE	18	2,770
. TERRACE	1	219
	146	59,619 sq ft
. MECHANICAL	2	142
. SERVICE	1	160
	3	302 sq ft
	165	69,762 sq ft

ASSESSORS PARCEL NUMBER
226-190-2200

REQUIRED PERMITS:

ZONING - R-1-10

GENERAL PLAN - S

PROPOSED LAND USE - USE TITLE 6516 -LICENSED RESIDENTIAL CARE FACILITY

SITE DATA

SITE AREA	151,588.8 SF (3.03 ACRES)
BUILDING FOOTPRINT	26,703 SF
LOT COVERAGE	26,703/151,588.8 = .18
COVERAGE FACTOR	18%
PAVEMENT AREA	37,817 SF (FRONTAGE AREA INCLUDED)
TOTAL LANDSCAPE AREA	38,321 SF
TOTAL DETENTION AREA	2,746 SF
TOTAL BUILDING AREA	69,929 SF
TOTAL PROPOSED DWELLING UNITS	88 UNITS/43,934 SF
PROPOSED DENSITY (UNITS/NET ACRE)	88/3.48 = 25.29
ALLOWABLE AREA	31,500 SF/FLOOR PER CBC 2016 TABLE 506.2
FAR	69,929/151,588.8 = .46 PERMITTED PER SEC 33-173 (e) 46%

PARKING

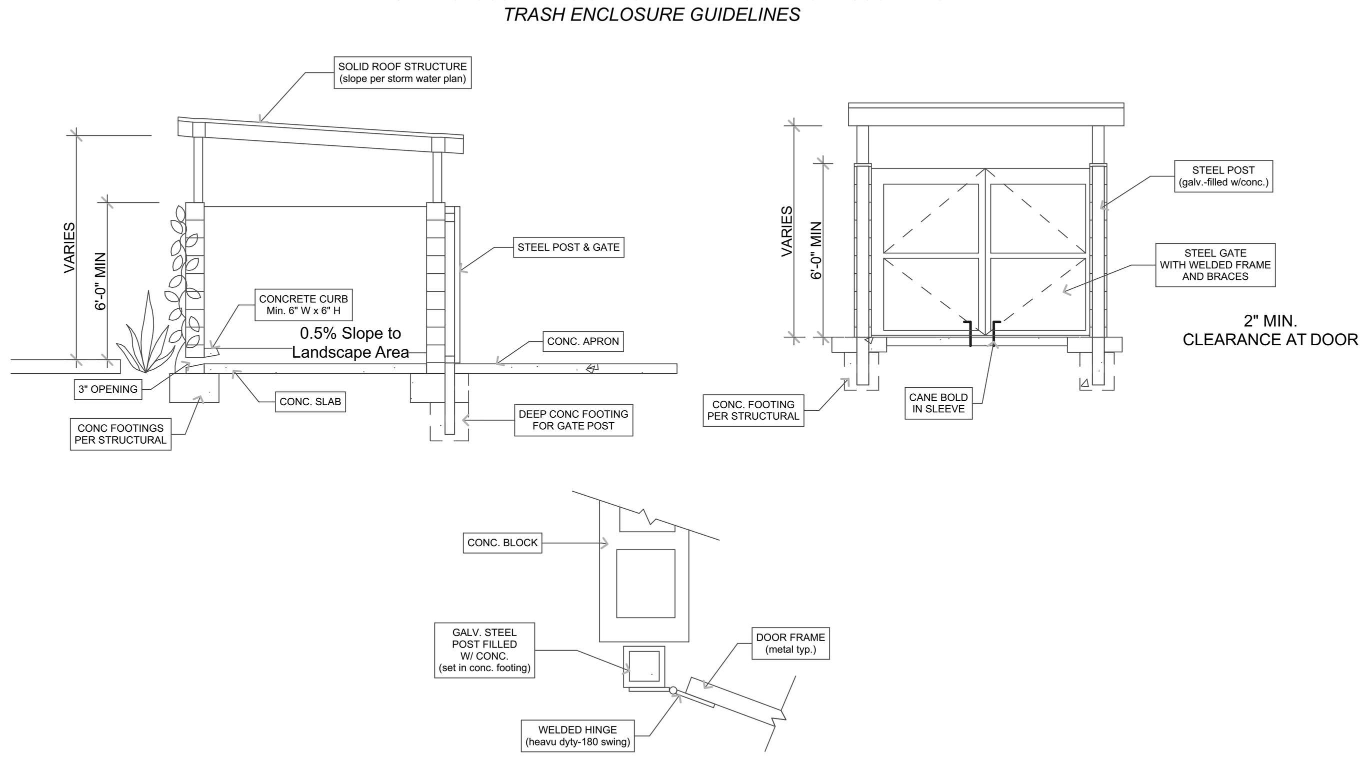
SPACES REQUIRED SEC. 33-765 EMC) 32 (1 SPACE/ 3 BEDS FOR A PROFESSIONAL CARE FACILITY,

96 BEDS /3 = 32

ACCESSIBLE SPACES REQUIRED PER CBC TABLE 11a (2% OF 88 UNITS) = 2 SPACES (1 VAN & 1 ACCESSIBLE)

SPACES PROVIDED **43** INCLUDING 1 VAN & 1 ACCESSIBLE SPACE

TRASH ENCLOSURE DESIGN TO ADHERE TO CITY OF ESCONDIDO TRASH ENCLOSURE GUIDELINES



07 TRASH ENCLOSURE DETAIL
NOT TO SCALE

IRWIN PARTNERS ARCHITECTS
245 Fischer Avenue, Suite B-2 Costa Mesa CA 92626
(714) 557 2448 www.ipaoc.com
ARCHITECTURE PLANNING CONSULTING

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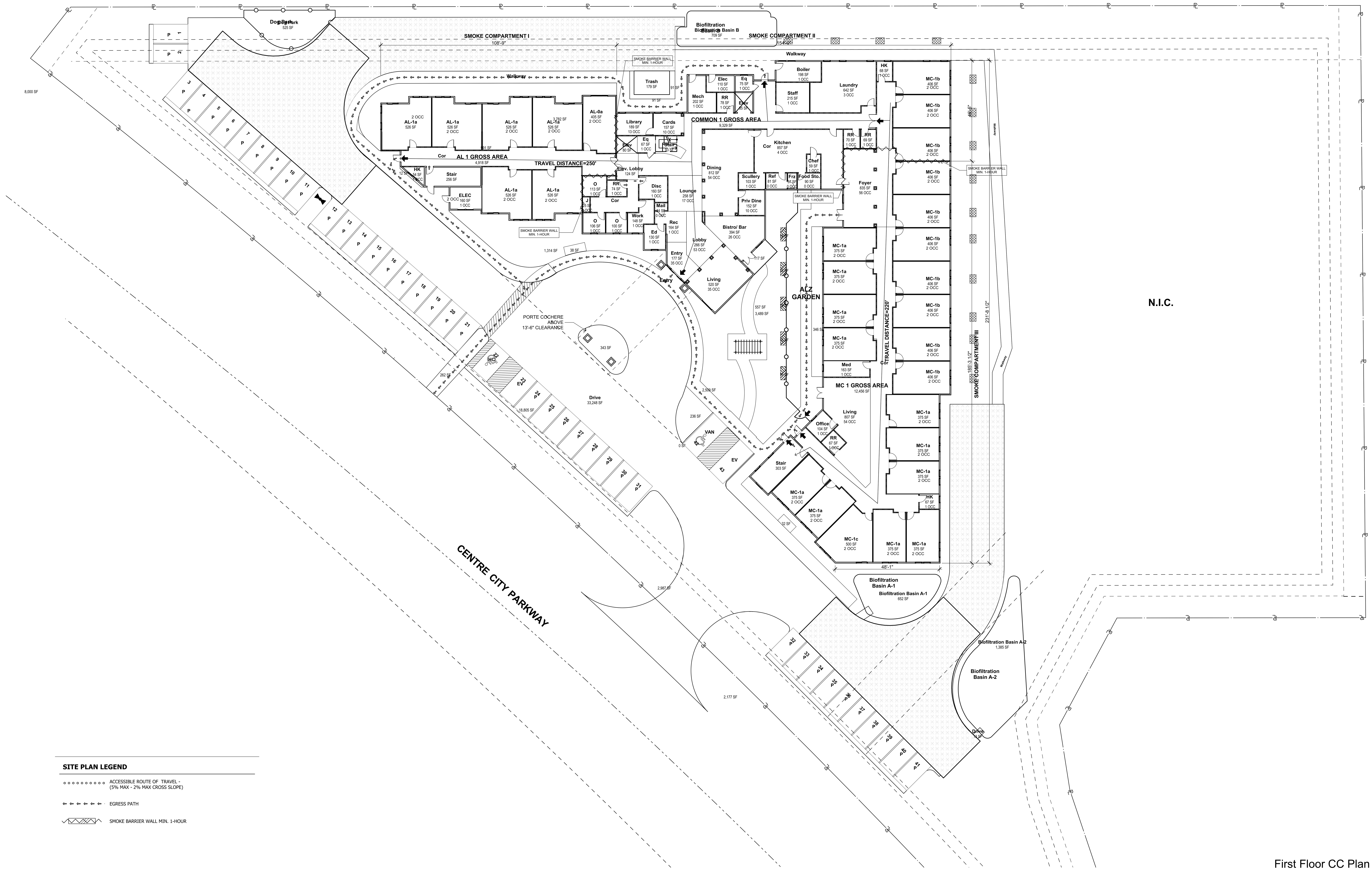
Mitchell Group

1802 N. CENTRE CITY PARKWAY ESCONDIDO CA 92026 UNITED STATES

Site Plan
A0

PROJECT NO: 17011
PLOT DATE: 6/18/2018
17011 Escondido AL SD.pln



SITE PLAN LEGEND

ACCESSIBLE ROUTE OF TRAVEL - (5% MAX - 2% MAX CROSS SLOPE)

EGRESS PATH

SMOKE BARRIER WALL MIN. 1-HOUR

First Floor CC Plan

SCALE: 1/16" = 1'-0"

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245 Fischer Avenue, Suite B-2 Costa Mesa CA 92626
(714) 557 2448 www.ipaoc.com
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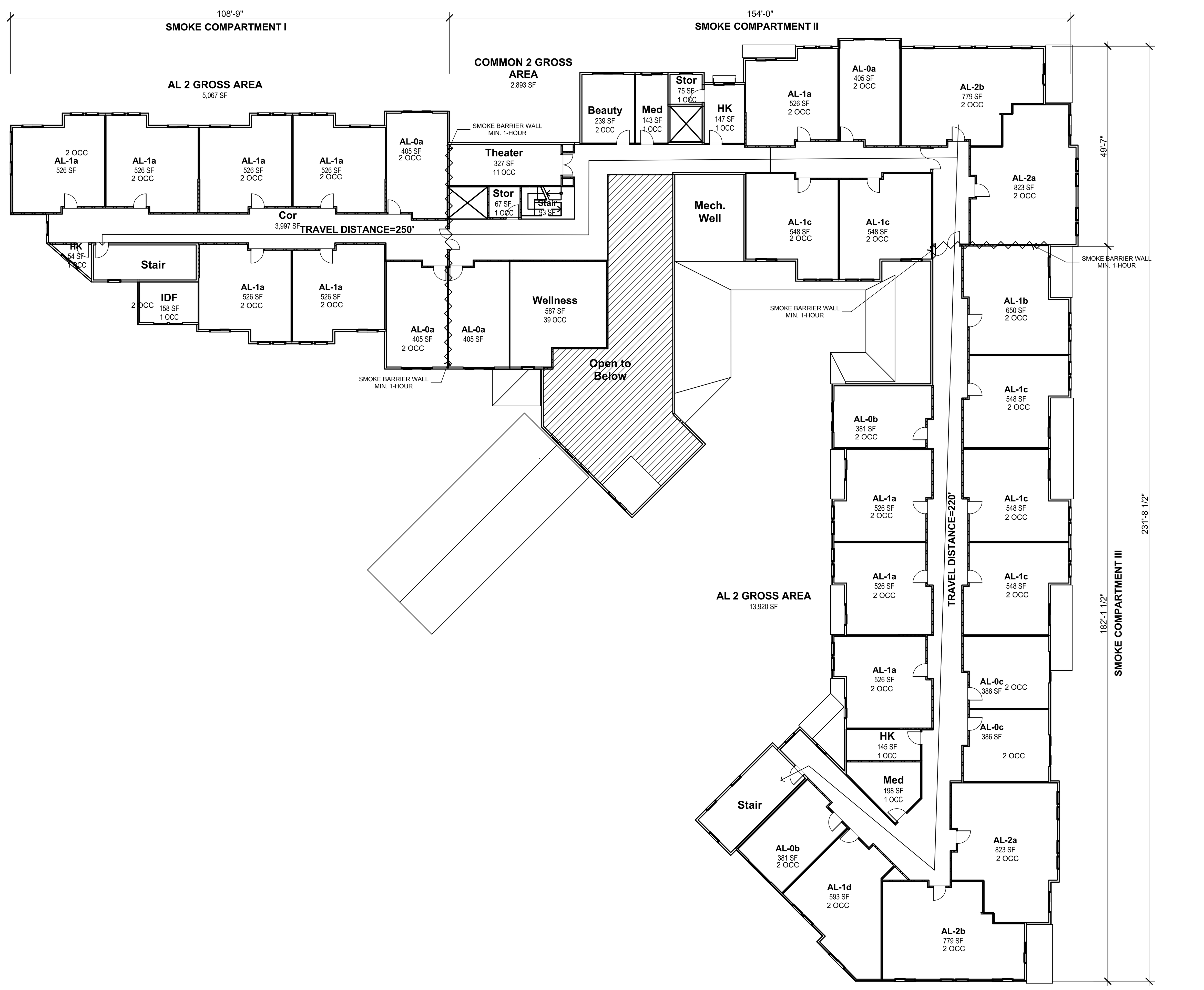
Code Compliance-First Floor

A0.2

PROJECT NO: 17011
PLOT DATE: 6/18/2018
17011 Escondido AL SD.pln



02 Second Floor CC Plan
SCALE: 1/16" = 1'-0"

01 Third Floor CC Plan
SCALE: 1/16" = 1'-0"

SITE PLAN LEGEND

ACCESSIBLE ROUTE OF TRAVEL - (5% MAX - 2% MAX CROSS SLOPE)

EGRESS PATH

SMOKE BARRIER WALL MIN. 1-HOUR

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245 Fischer Avenue, Suite B-2 Costa Mesa CA 92626
(714) 557 2448 www.ipaoc.com
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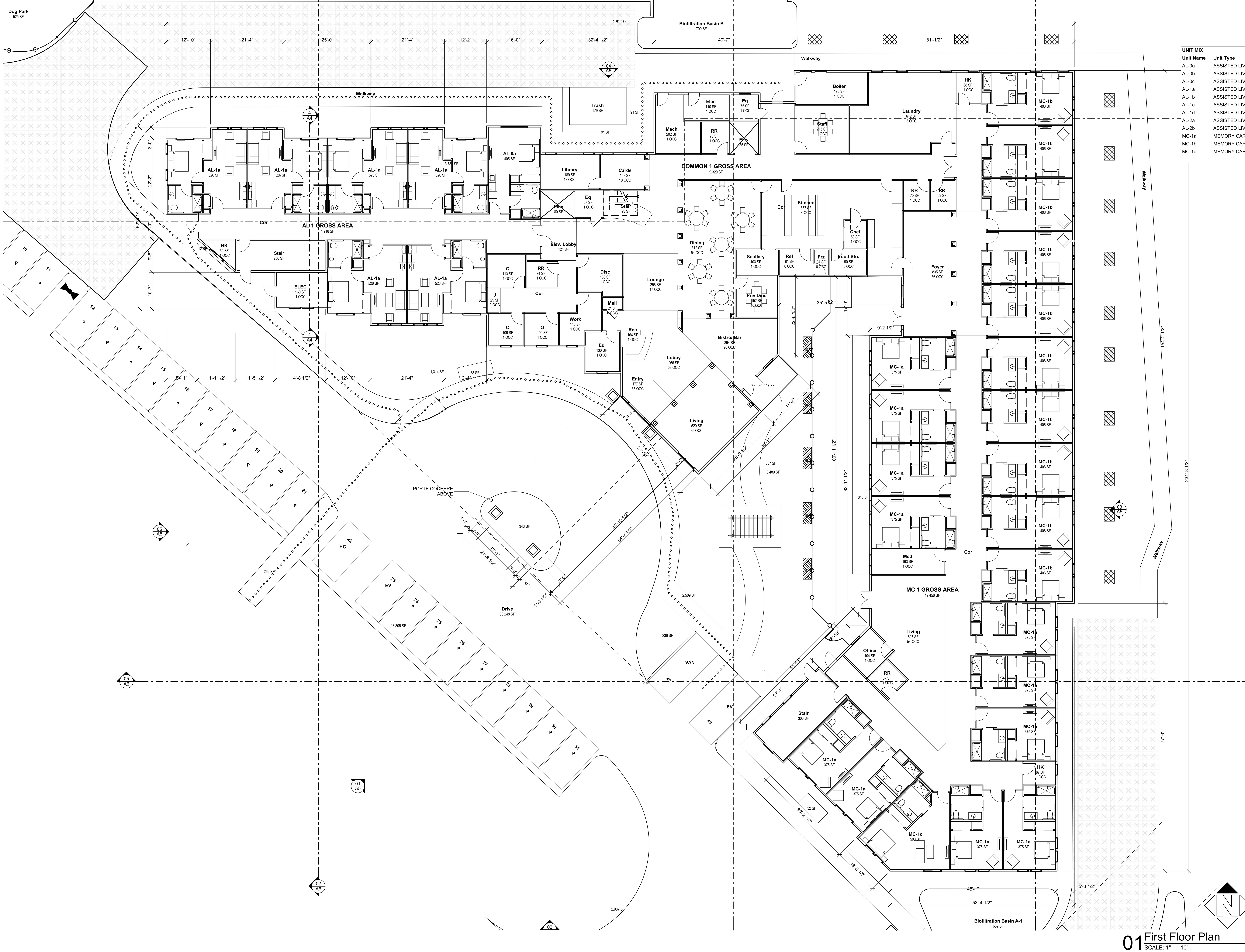
Code Compliance-Second & Third Floors
A0.3

PROJECT NO: 17011
PLOT DATE: 6/18/2018
17011 Escondido AL SD.pln



01 First Floor Plan
SCALE: 1" = 10'

UNIT MIX					
Unit Name	**Unit Type**	**Beds**	**Qty**	**Area (SF)**	**Total (SF)**
AL-0a	ASSISTED LIVING - STUDIO	1	9	405	3,645
AL-0b	ASSISTED LIVING - STUDIO	1	4	381	1,524
AL-0c	ASSISTED LIVING - STUDIO	1	4	386	1,544
AL-1a	ASSISTED LIVING - 1 BED	1	26	526	13,676
AL-1b	ASSISTED LIVING - 1 BED	1	2	650	1,300
AL-1c	ASSISTED LIVING - 1 BED	1	11	548	6,028
AL-1d	ASSISTED LIVING - 1 BED	1	2	593	1,186
AL-2a	ASSISTED LIVING - 2 BED	2	4	823	3,292
AL-2b	ASSISTED LIVING - 2 BED	2	4	779	3,116
MC-1a	MEMORY CARE - 1 BED	1	11	375	4,125
MC-1b	MEMORY CARE - 1 BED	1	10	406	4,060
MC-1c	MEMORY CARE - 1 BED	1	1	500	500
		96	**88**		**43,996 sq ft**

Building Area Calculations by Floor

Area Type	Qty.	Area (SF)
First Floor		
DINING	3	1,799
LOBBY	3	567
RESIDENT ACTIVITY	6	2,325
	12	4,691 sq ft
ADMINISTRATION	9	1,239
ASSISTED LIVING - 1 BED	6	3,156
ASSISTED LIVING - STUDIO	1	405
CIRCULATION	4	4,078
CIRCULATION - VERTICAL	5	817
CTRY KITCHEN	7	1,251
MECHANICAL	4	454
MEMORY CARE - 1 BED	22	8,685
RESTROOMS	5	358
SERVICE	7	1,218
	70	21,661 sq ft
SERVICE	1	160
	1	160 sq ft
Second Floor		
CIRCULATION	1	3,997
RESIDENT ACTIVITY	3	1,153
	4	5,150 sq ft
ASSISTED LIVING - 1 BED	17	9,243
ASSISTED LIVING - 2 BED	4	3,204
ASSISTED LIVING - STUDIO	8	3,154
CIRCULATION - VERTICAL	1	93
SERVICE	6	845
	36	16,539 sq ft
MECHANICAL	2	142
	2	142 sq ft
Third Floor		
ASSISTED LIVING - 1 BED	18	9,791
ASSISTED LIVING - 2 BED	4	3,204
ASSISTED LIVING - STUDIO	8	3,154
CIRCULATION	1	3,953
MECHANICAL	2	142
RESIDENT ACTIVITY	1	249
SERVICE	5	707
TERRACE	1	219
	40	21,419 sq ft
	165	69,762 sq ft

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245 Fischer Avenue, Suite B-2 Costa Mesa CA 92626
(714) 557 2448 www.ipaoc.com
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First Floor Plan
A1

PROJECT NO: 17011
PLOT DATE: 6/18/2018
17011 Escondido AL SD.pln

01 Second Floor Plan
SCALE: 1" = 10'

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Second Floor Plan
A2

PROJECT NO: 17011
PLOT DATE: 6/18/2018
17011 Escondido AL SD.pln

01 Third Floor Plan
SCALE: 1" = 10'

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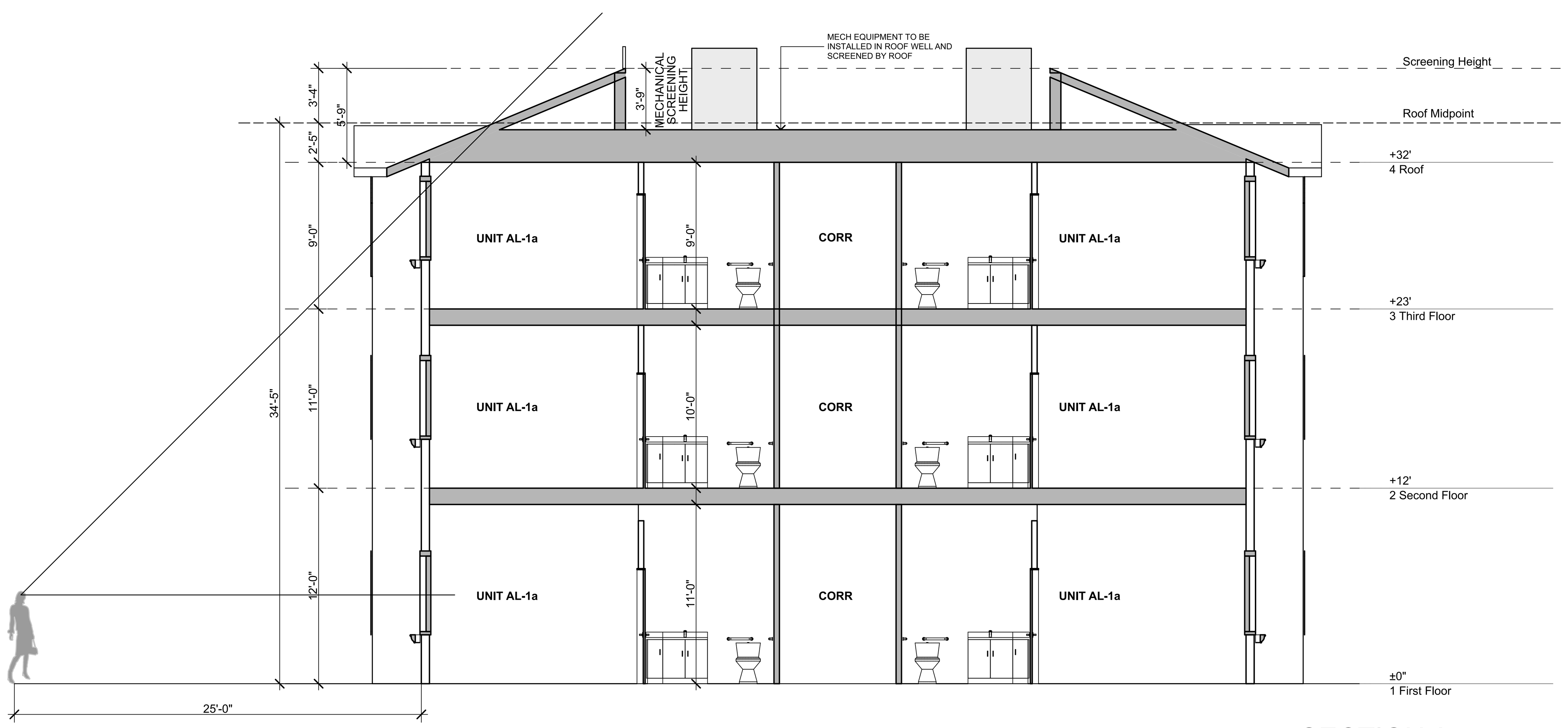
Third Floor Plan
A3

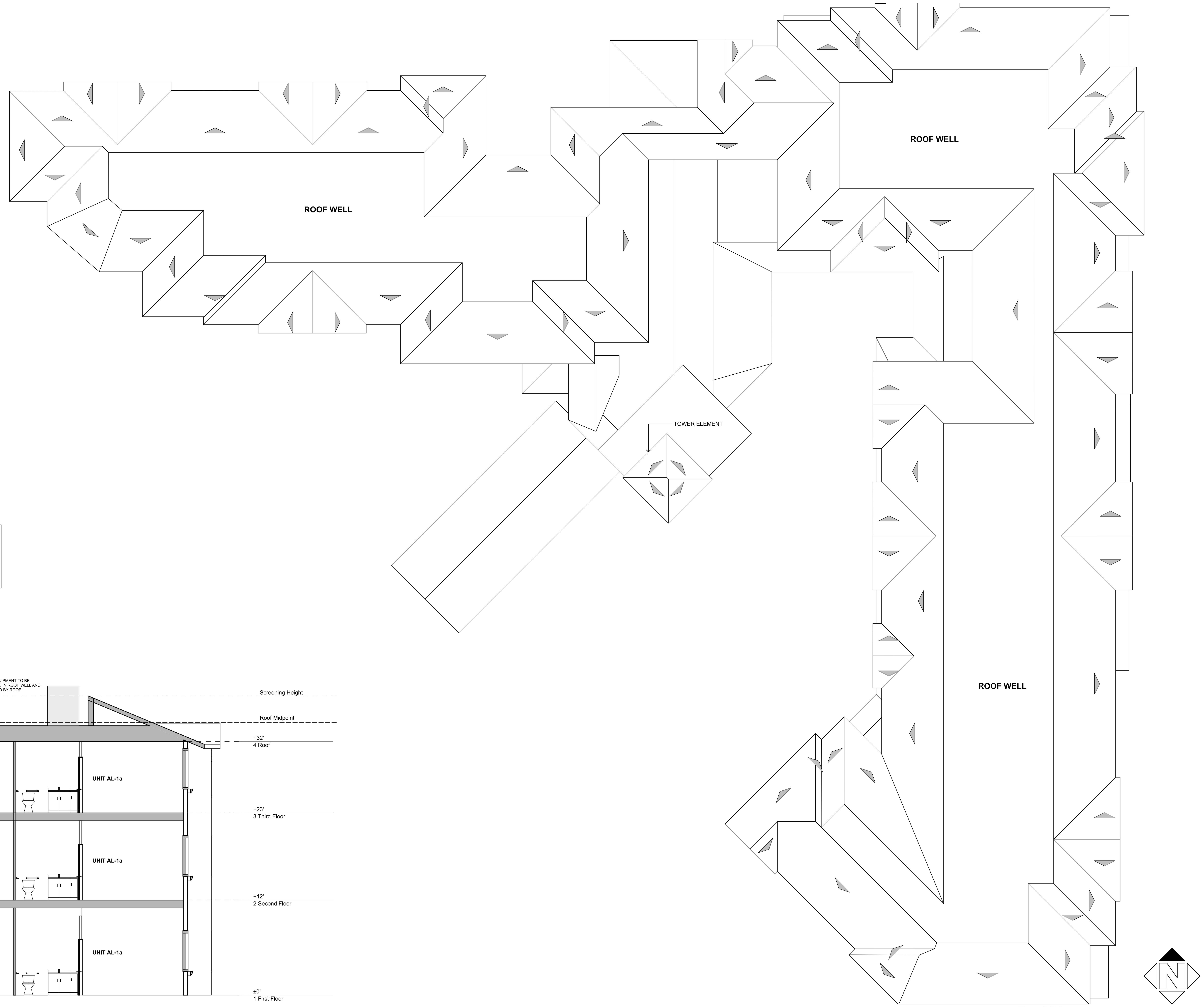
PROJECT NO: 17011
PLOT DATE: 6/18/2018
17011 Escondido AL SD.pln

NOTE:

MECHANICAL EQUIPMENT TO BE PLACED IN ROOF WELL AND SCREENED BY ROOF.



04 SECTION A
SCALE: 3/16" = 1'-0"



01 Roof Plan
SCALE: 1" = 10'

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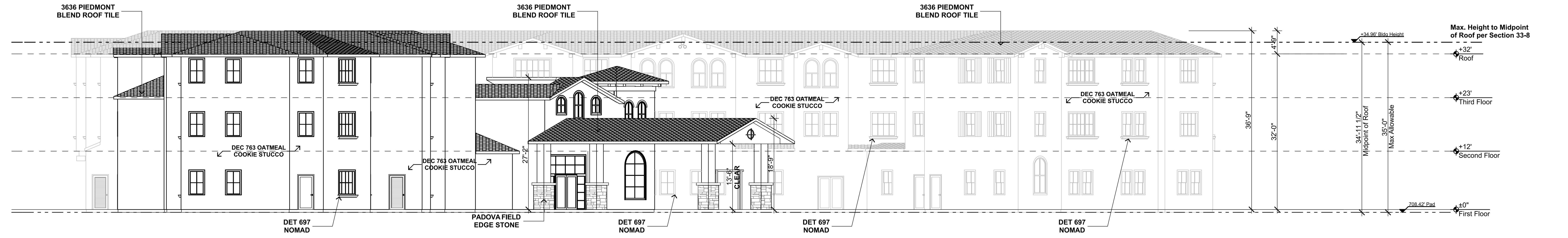
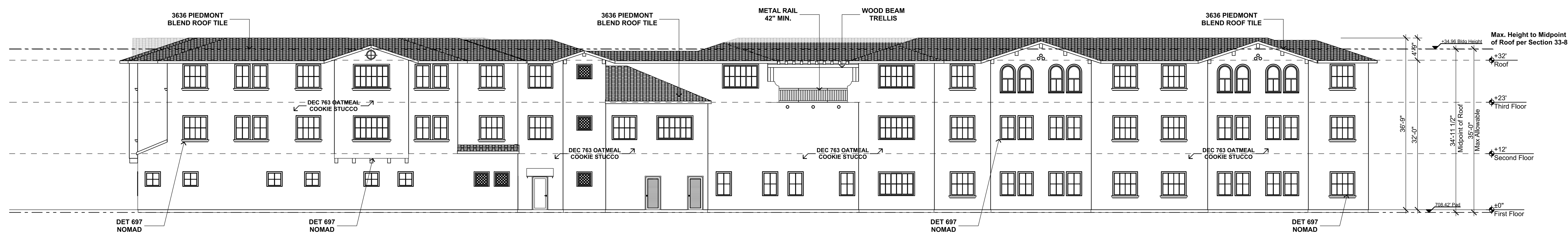
Roof Plan

A4

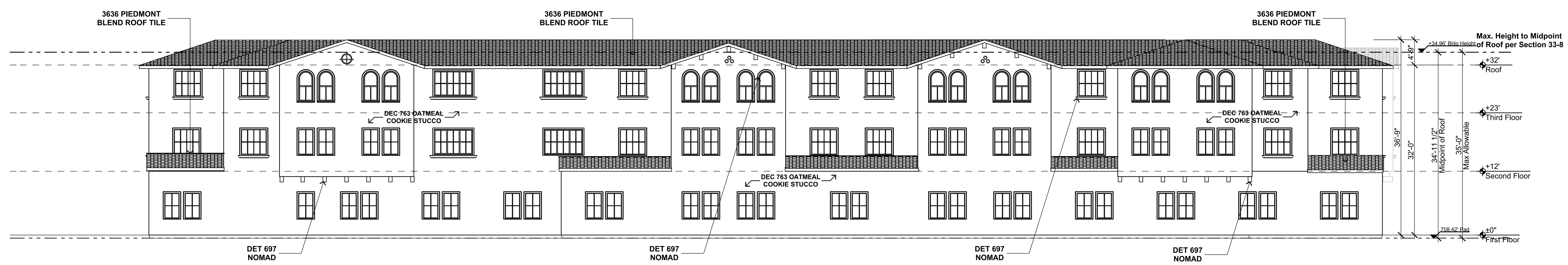
PROJECT NO: 17011
PLOT DATE: 6/18/2018
17011 Escondido AL SD.pln



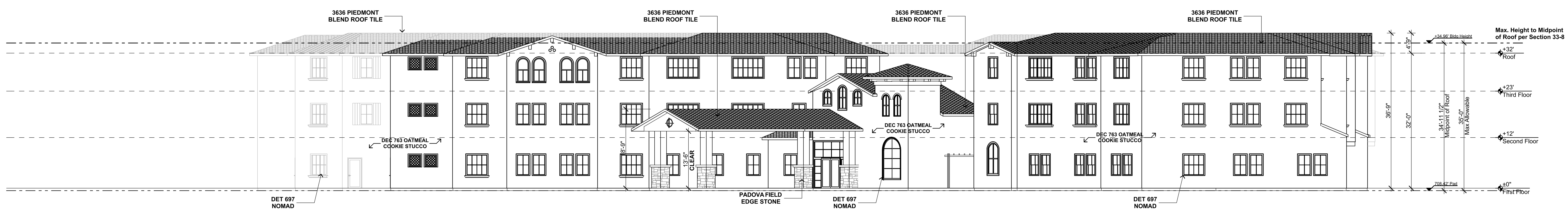
05 West Elevation
SCALE: 3/32" = 1'-0"



04 North Elevation
SCALE: 3/32" = 1'-0"



03 East Elevation
SCALE: 3/32" = 1'-0"



02 South Elevation
SCALE: 3/32" = 1'-0"

01 Main Entrance
SCALE: 3/32" = 1'-0"

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245 Fischer Avenue, Suite B-2 Costa Mesa CA 92626
(714) 557 2448 www.ipaoc.com
ARCHITECTURE PLANNING CONSULTING

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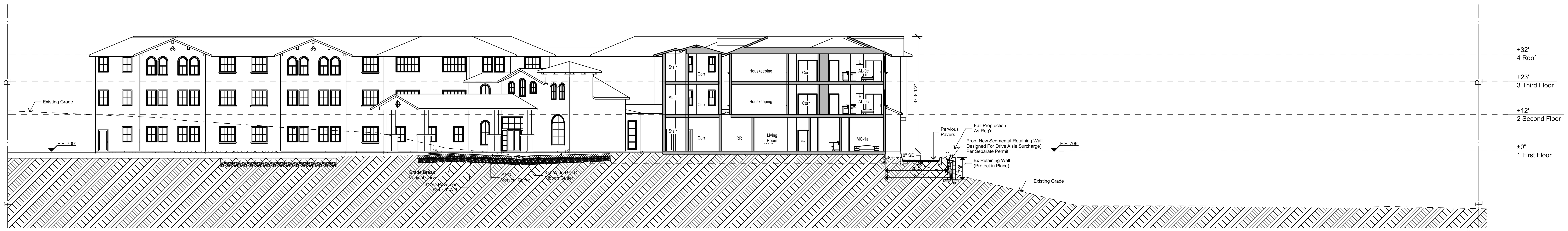
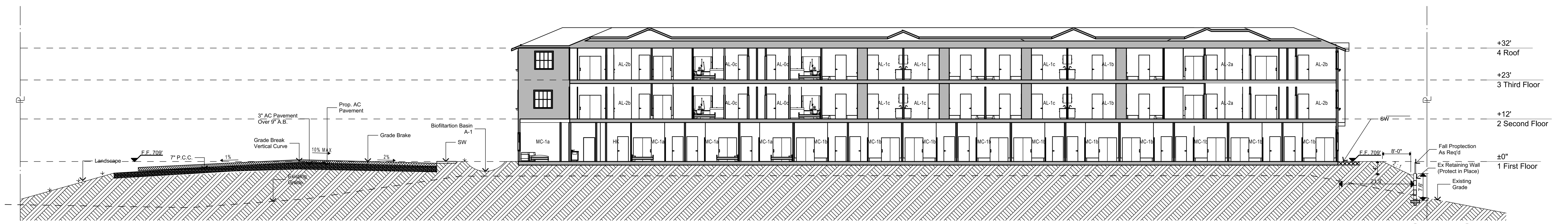
Exterior Elevations
A5

PROJECT NO: 17011
PLOT DATE: 6/18/2018
17011 Escondido AL SD.pln

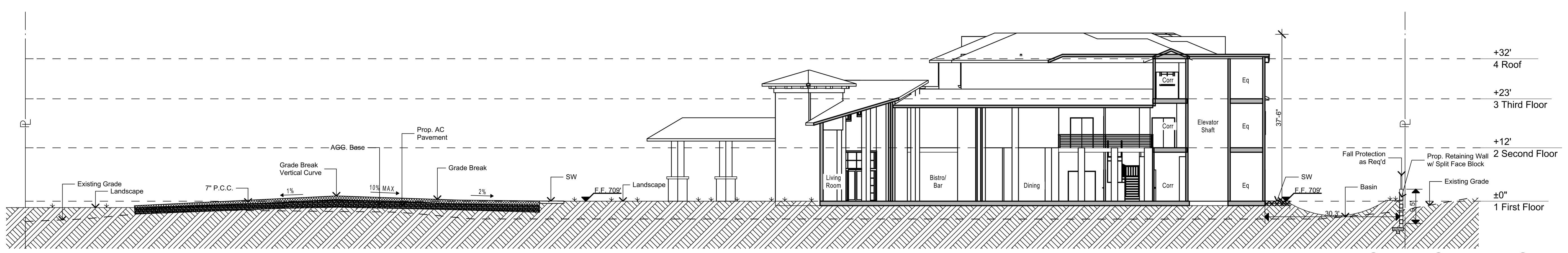
06 Cross Section F
SCALE: 1/16" = 1'-0"



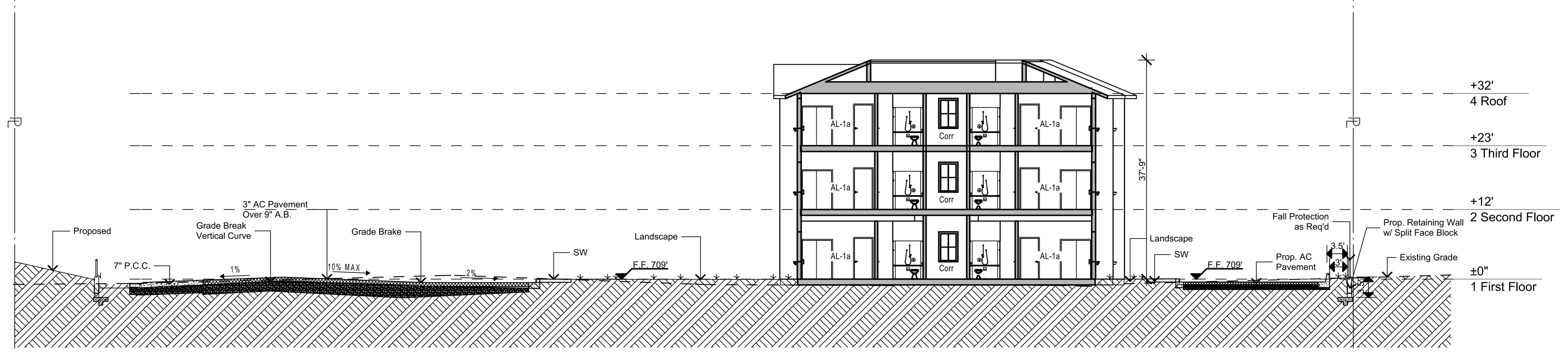
05 Cross Section E
SCALE: 1/16" = 1'-0"



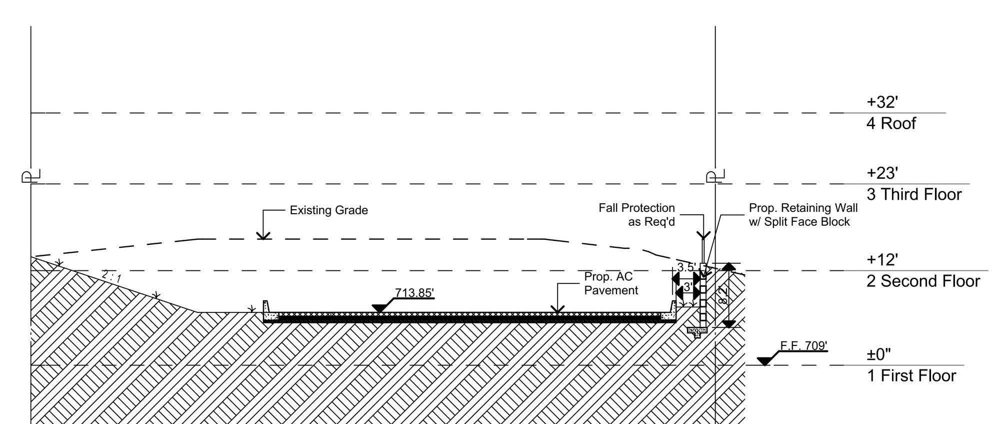
04 Cross Section D
SCALE: 1/16" = 1'-0"



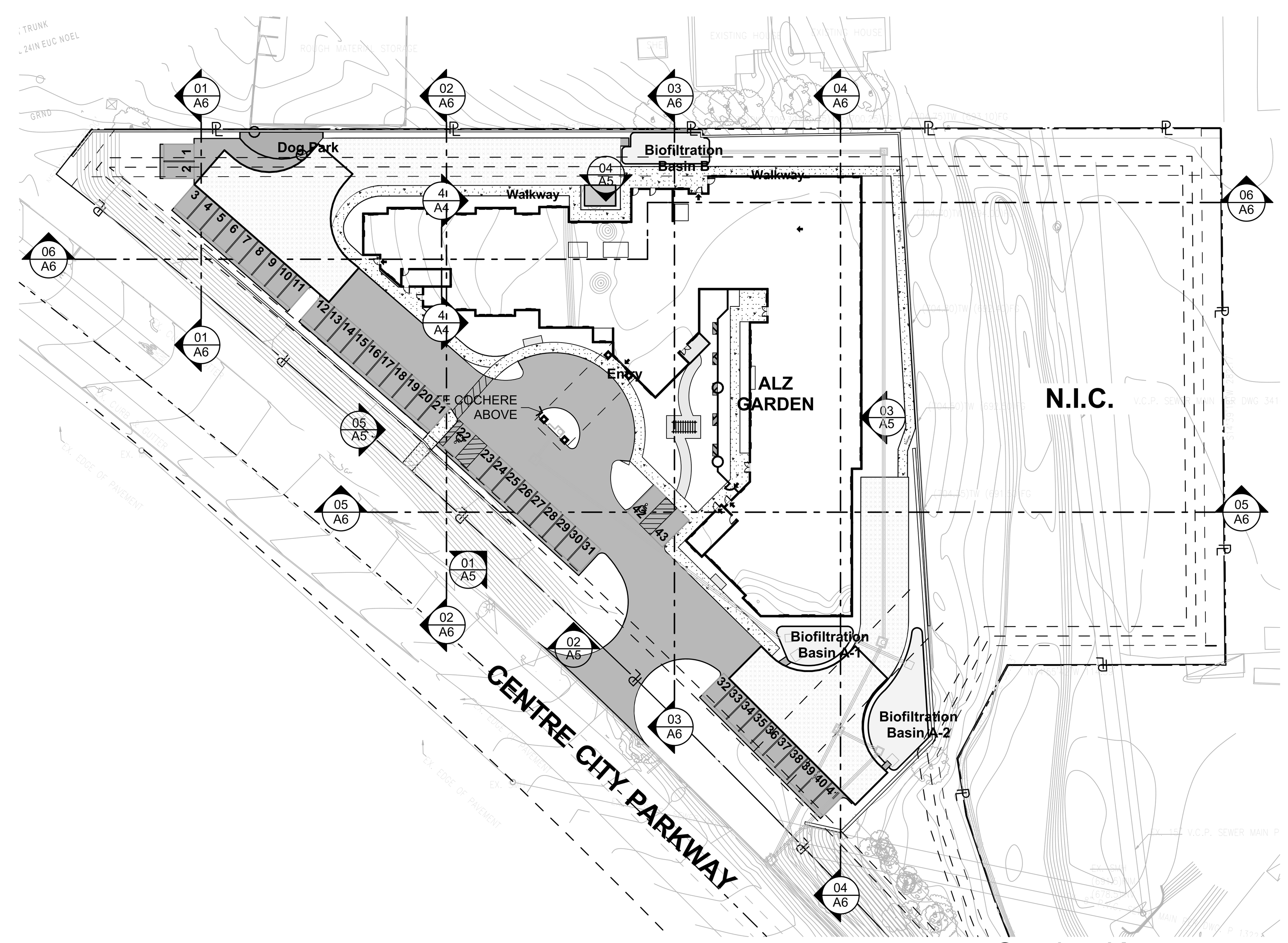
03 Cross Section C
SCALE: 1/16" = 1'-0"



02 Cross Section B
SCALE: 1/16" = 1'-0"



01 Cross Section A
SCALE: 1/16" = 1'-0"



Section Key
SCALE: 1" = 50'

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245 Fischer Avenue, Suite B-2 Costa Mesa CA 92626
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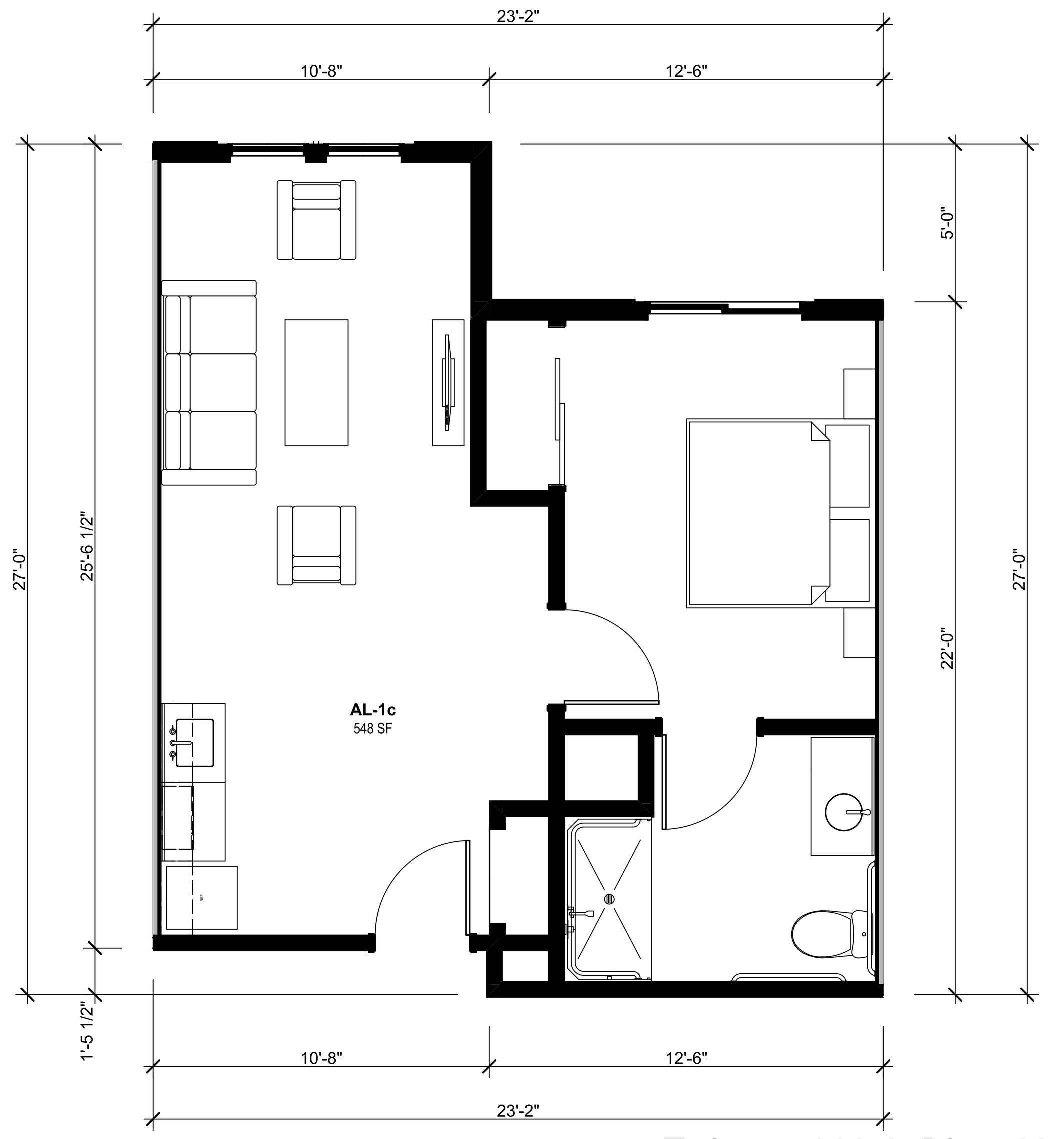
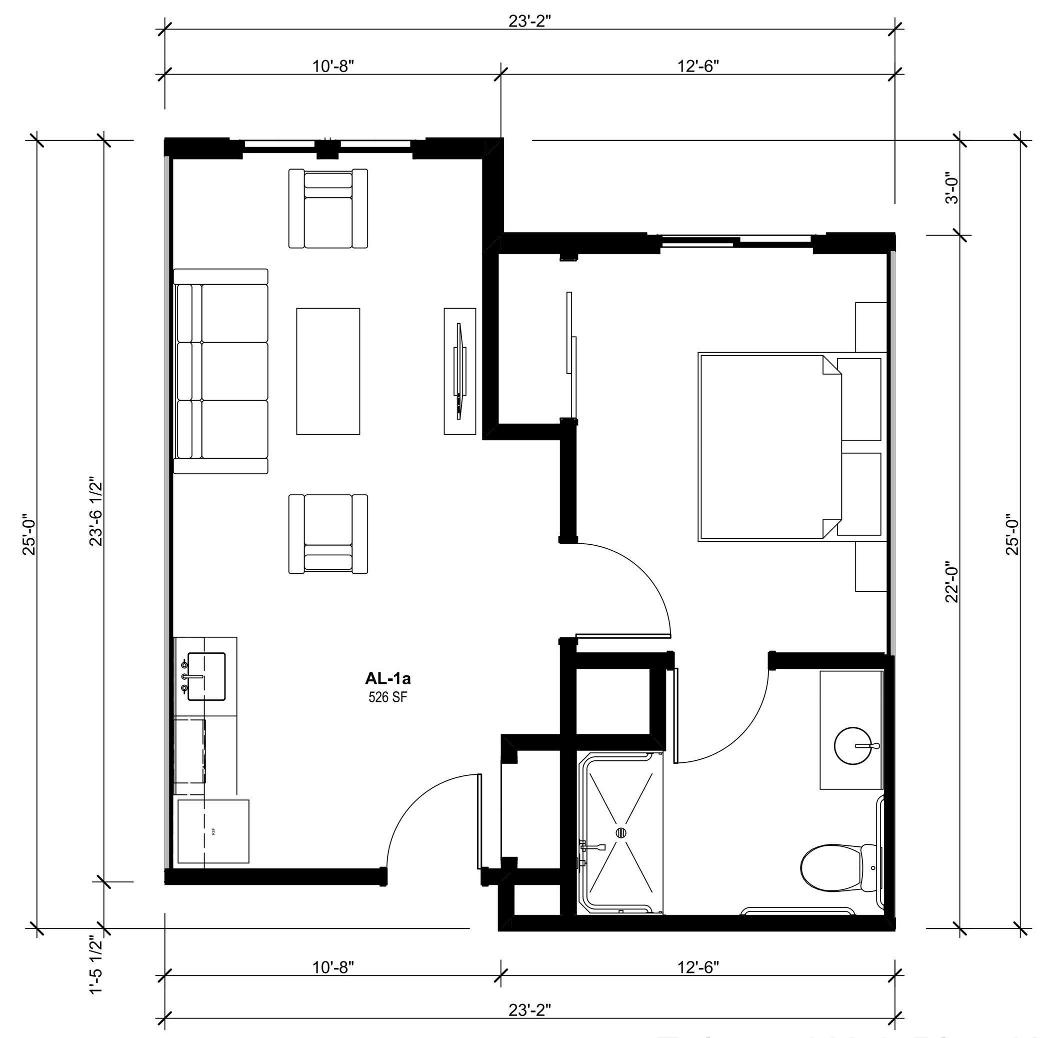
Sections
A6

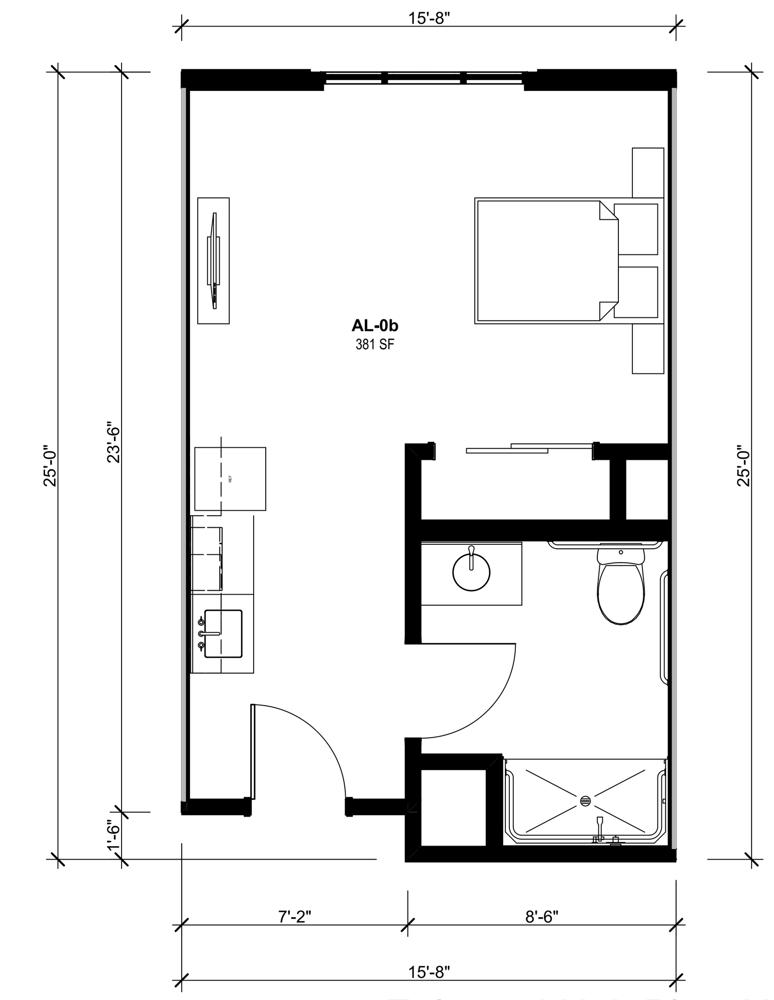
PROJECT NO: 17011
PLOT DATE: 6/18/2018
17011 Escondido AL SD.pln



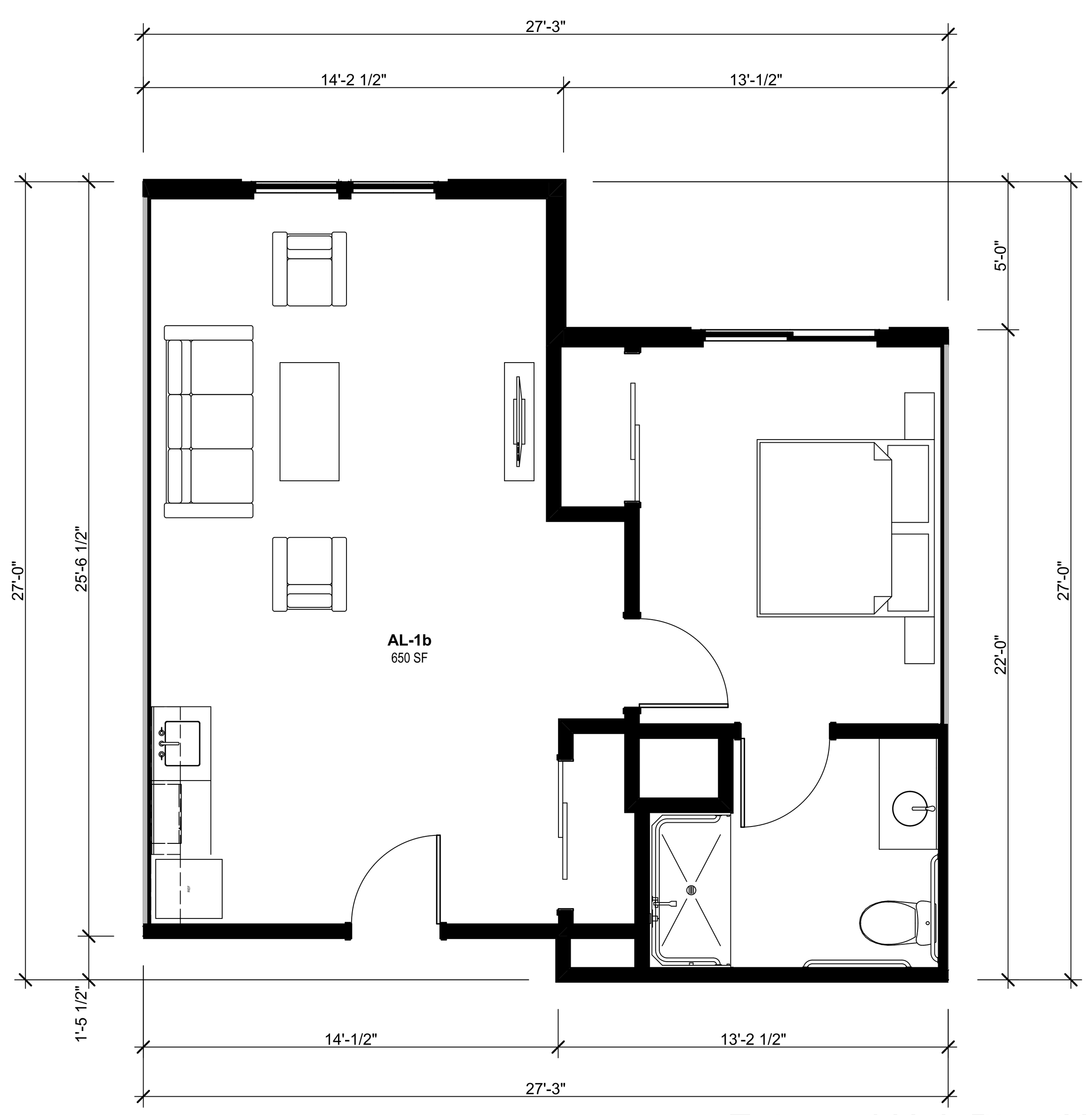
08 Enlarged Unit Plan AL-1c
SCALE: 1/4" = 1'-0"



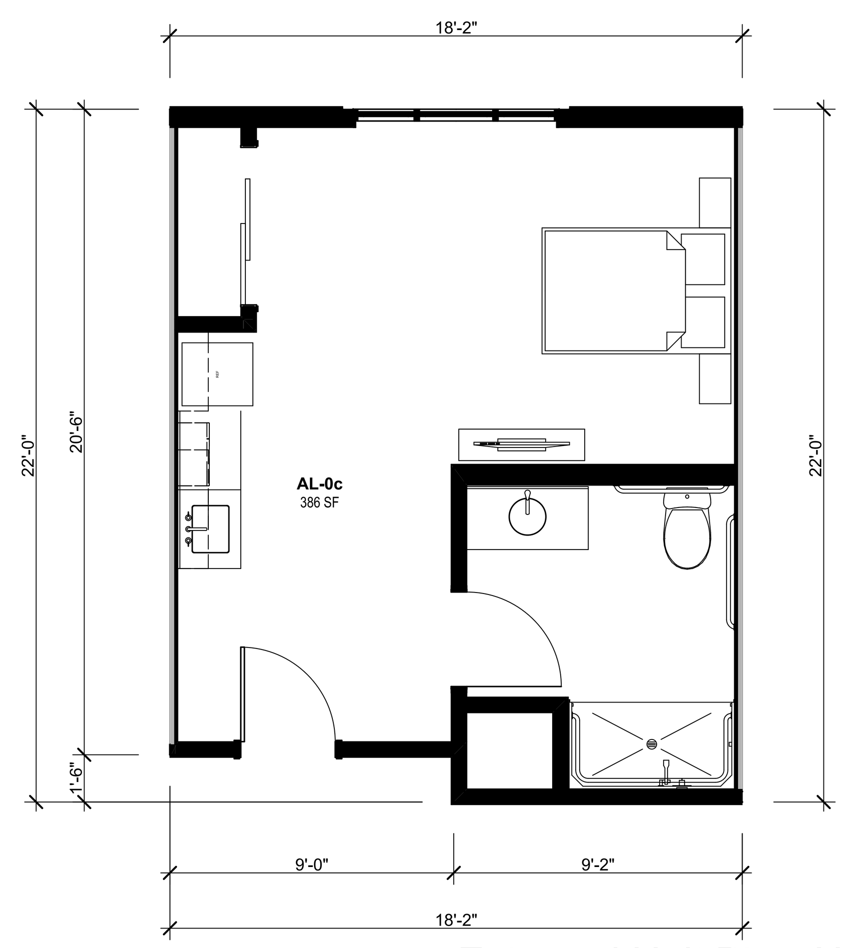
05 Enlarged Unit Plan AL-1a
SCALE: 1/4" = 1'-0"



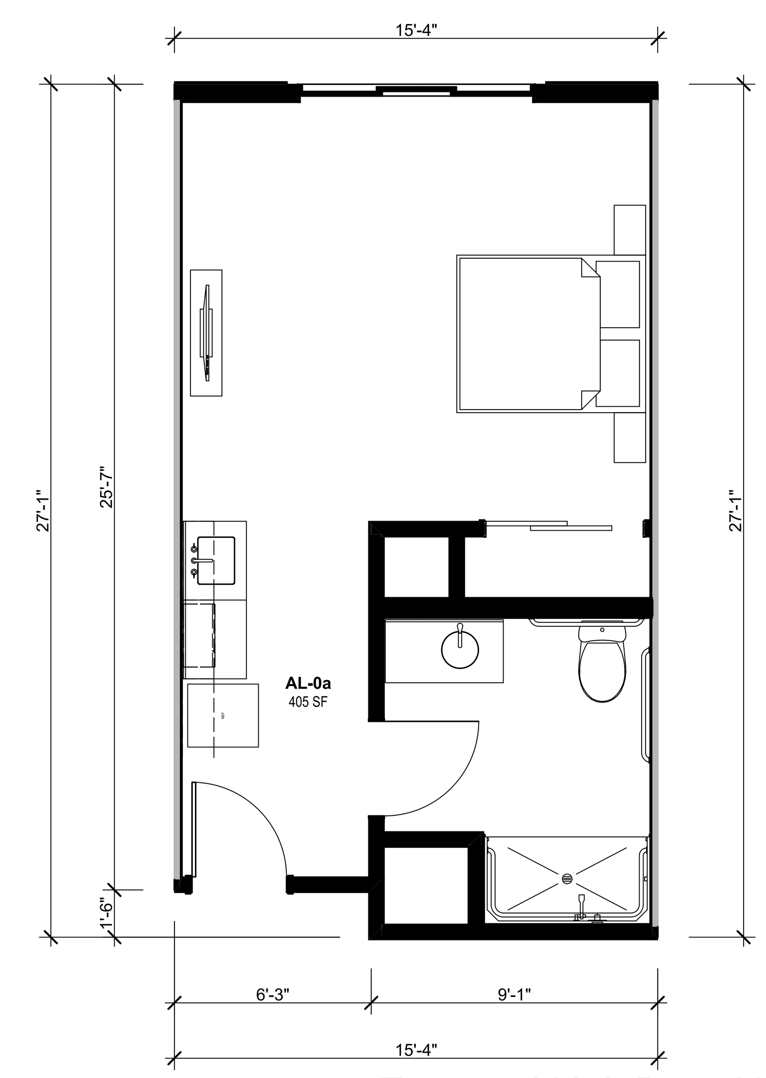
02 Enlarged Unit Plan AL-0b
SCALE: 1/4" = 1'-0"



07 Enlarged Unit Plan AL-1b
SCALE: 1/4" = 1'-0"



04 Enlarged Unit Plan AL-0c
SCALE: 1/4" = 1'-0"



01 Enlarged Unit Plan AL-0a
SCALE: 1/4" = 1'-0"

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245 Fischer Avenue, Suite B-2 Costa Mesa CA 92626
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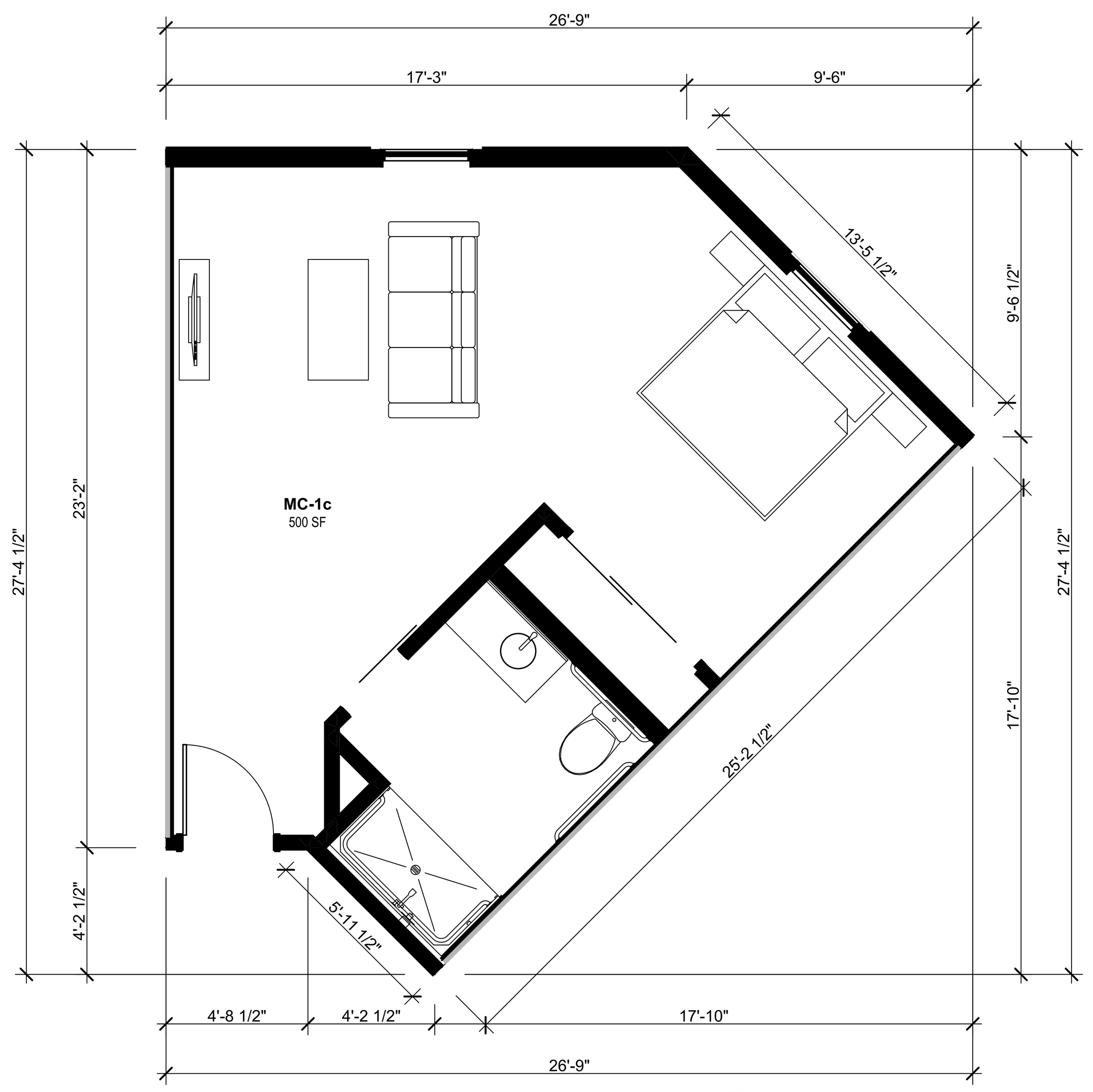
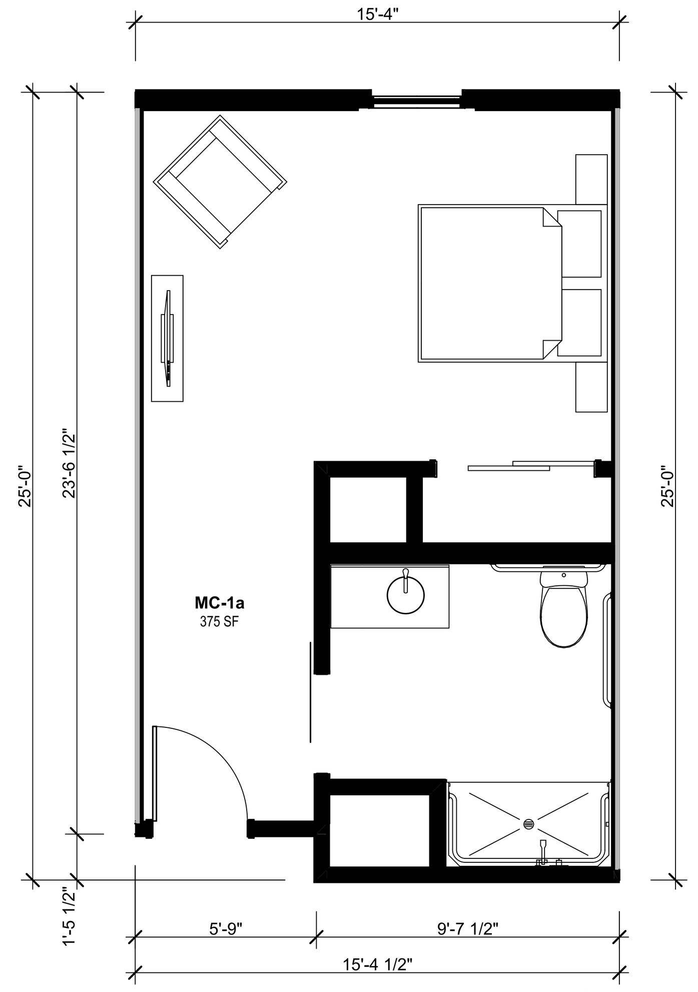
Enlarged Unit Plans
A7

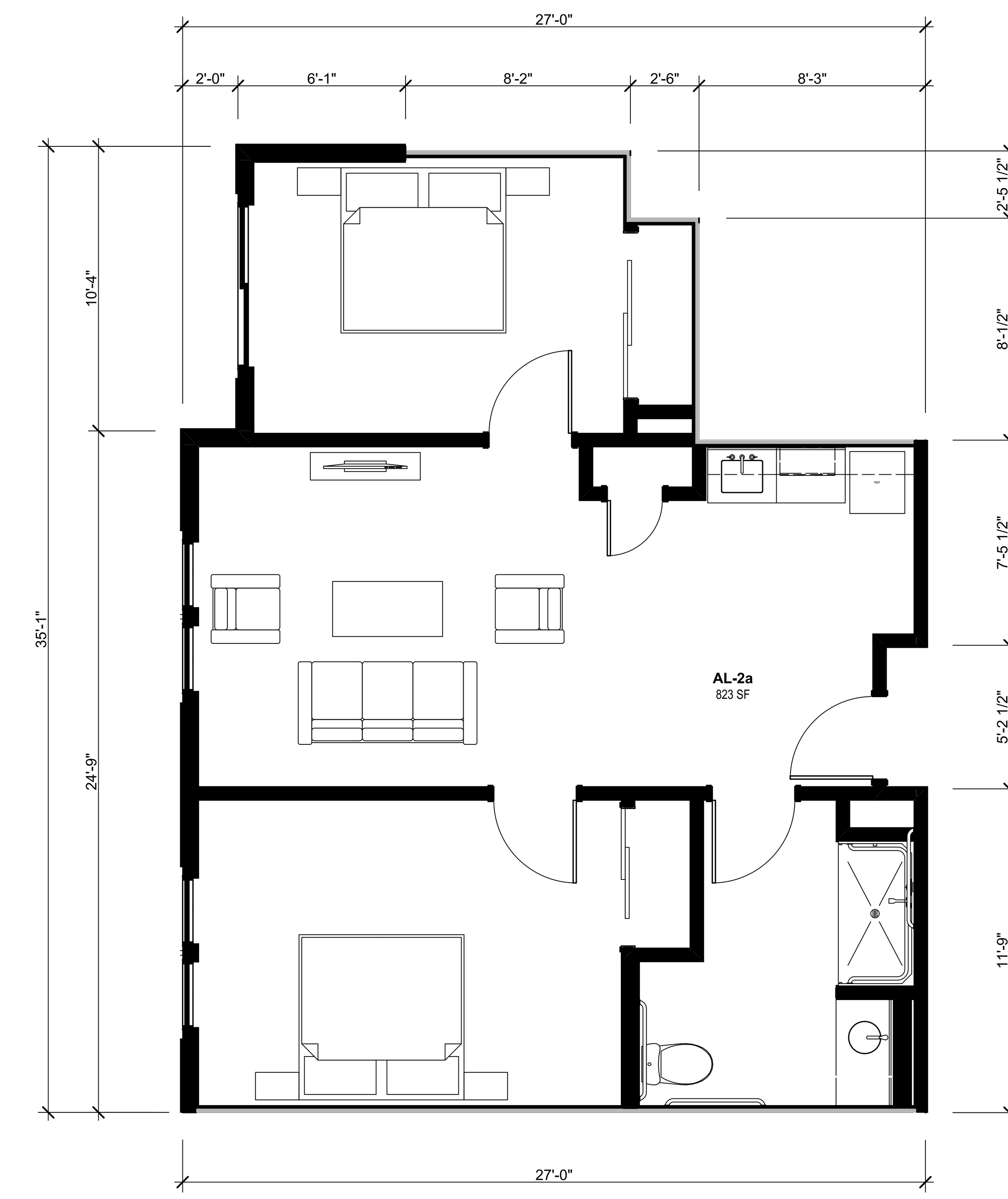
PROJECT NO: 17011
PLOT DATE: 6/18/2018
17011 Escondido AL SD.pln



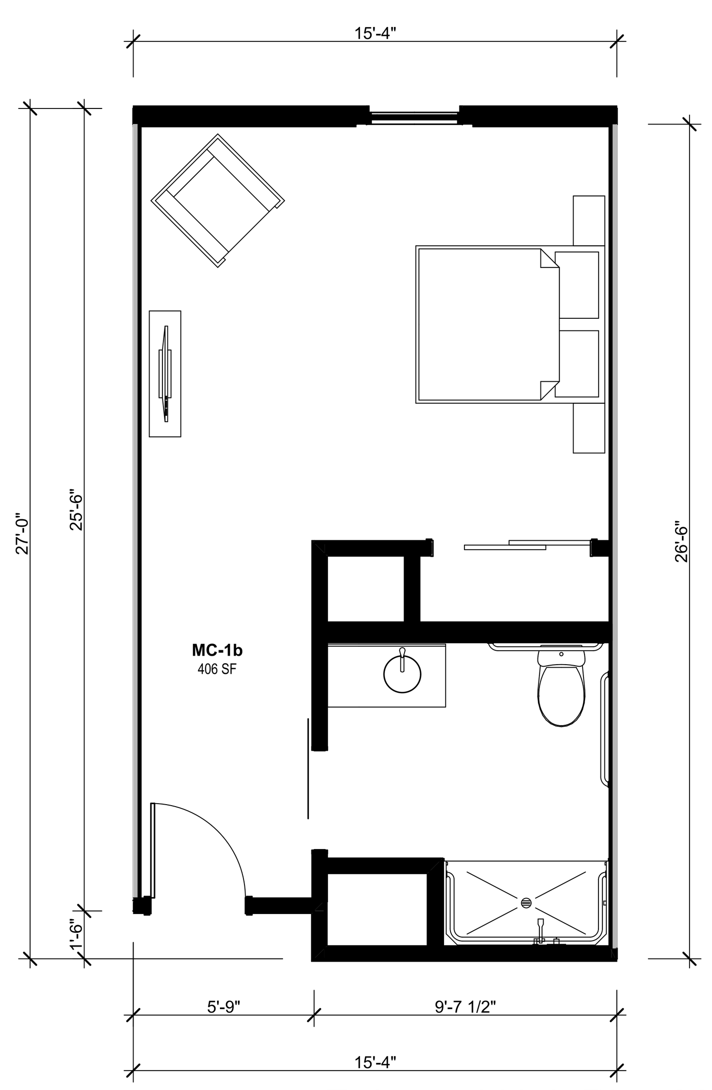
08 Enlarged Unit Plan MC-1c
SCALE: 1/4" = 1'-0"



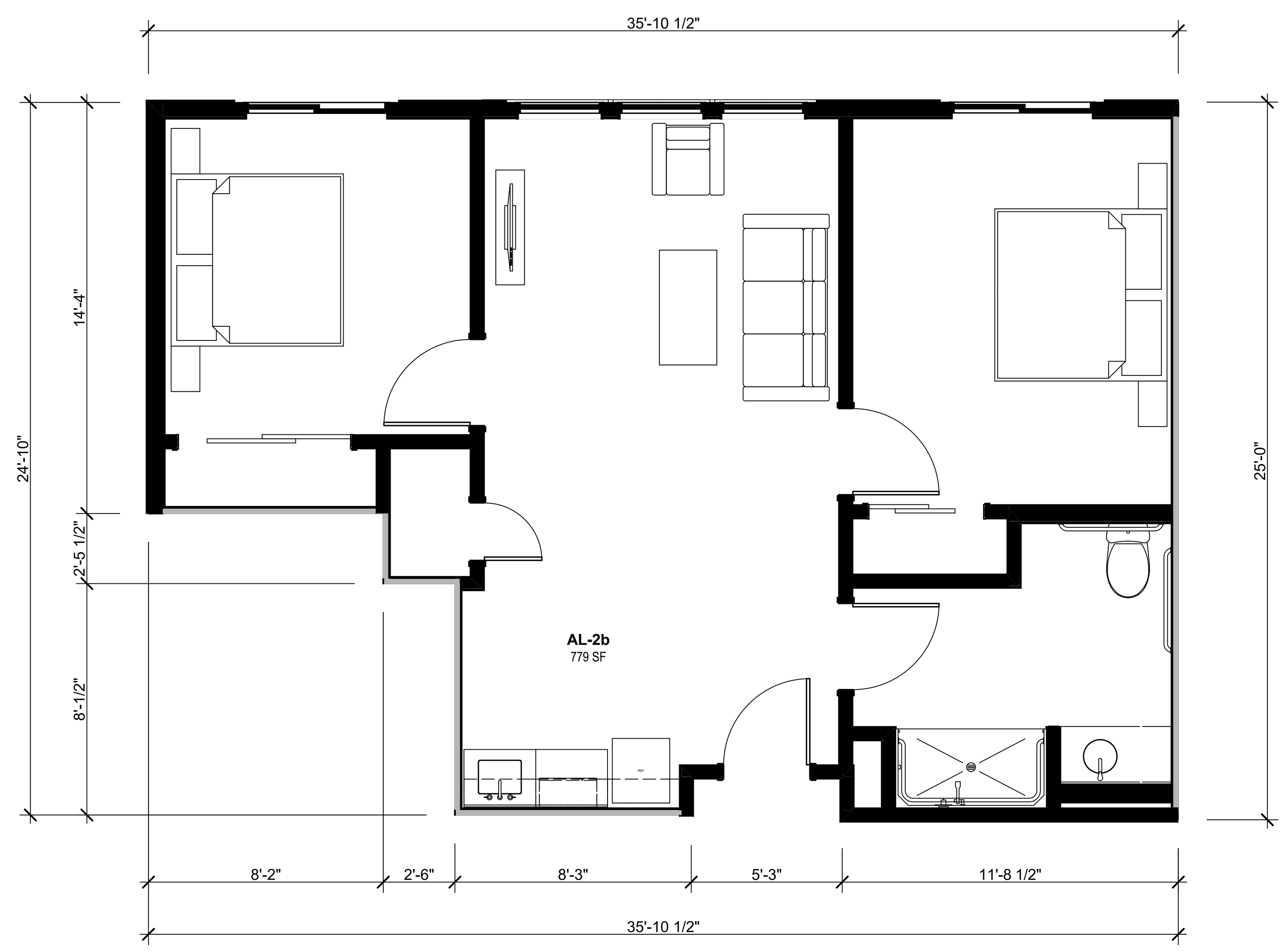
05 Enlarged Unit PLan MC-1a
SCALE: 1/4" = 1'-0"



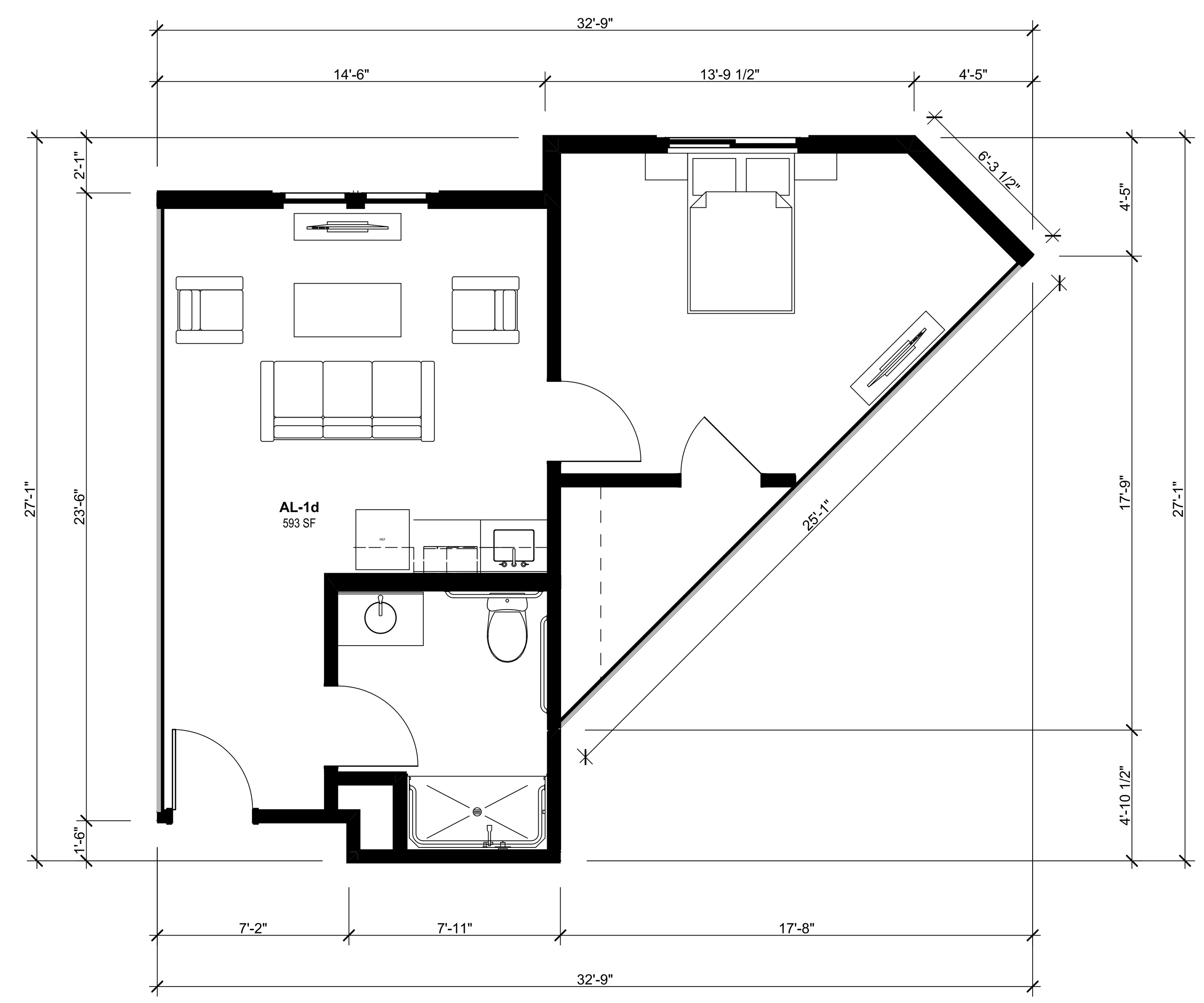
02 Enlarged Unit Plan-2a
SCALE: 1/4" = 1'-0"



07 Enlarged Unit Plan MC-1b
SCALE: 1/4" = 1'-0"



04 Enlarged Unit Plan AL-2b
SCALE: 1/4" = 1'-0"



01 Enlarged Unit Plan AL-1d
SCALE: 1/4" = 1'-0"

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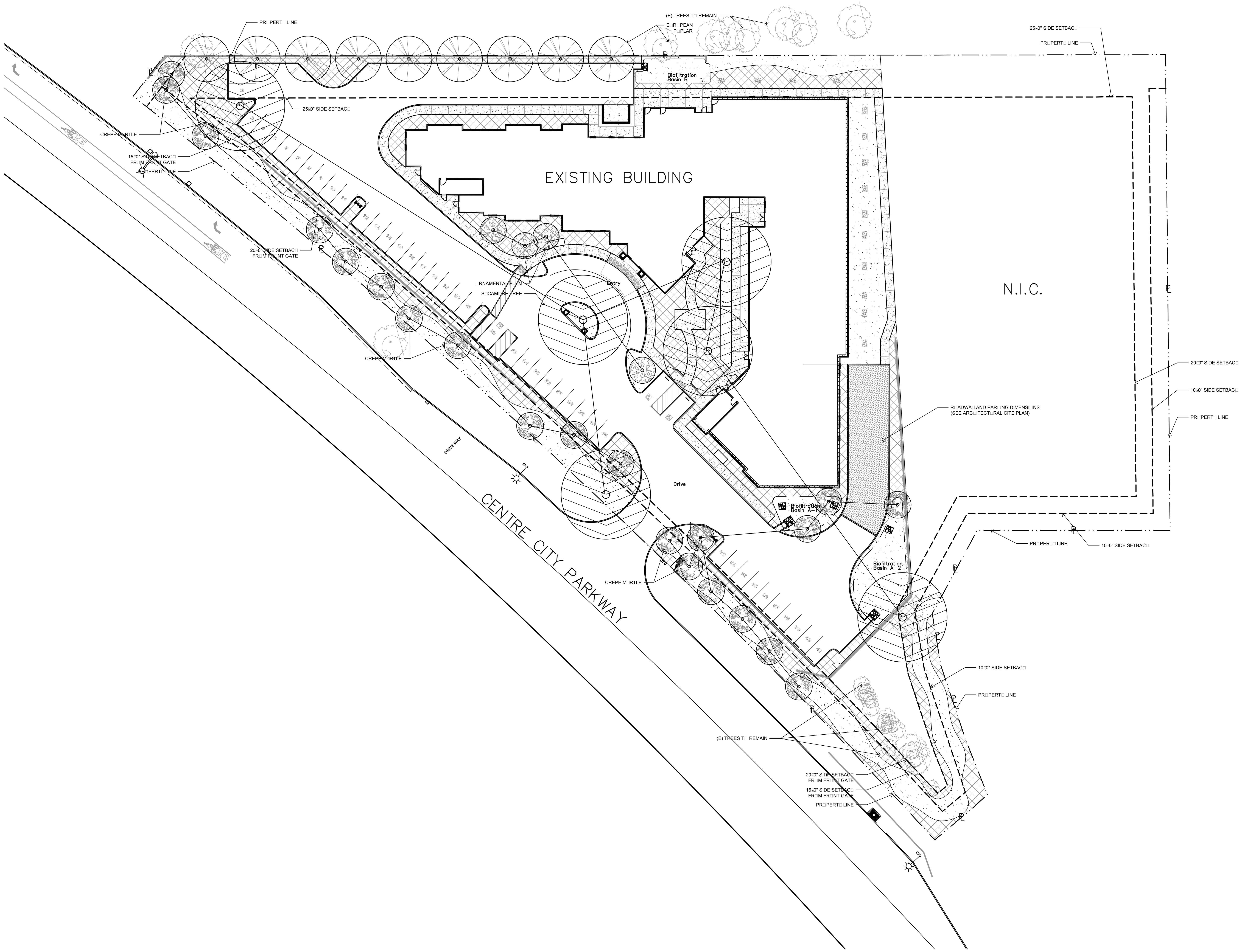
245 Fischer Avenue, Suite B-2 Costa Mesa CA 92626
(714) 557 2448 www.ipaoc.com
ARCHITECTURE PLANNING CONSULTING

Escondido Assisted Living
Mitchell Group

1802 N. CENTRE CITY PARKWAY ESCONDIDO CA 92026 UNITED STATES

Enlarged Unit Plans
A8

PROJECT NO: 17011
PLOT DATE: 6/18/2018
17011 Escondido AL SD.pln



LEGEND		SI□E	SPACING
	LAYERED LANDSCAPE AREA□ DROUG□T TOLERANT PLANT MATERIAL	T.B.D.	
	D.G□ COBBLE AREA□DRY "RIVERBED" AND BASIN AREA		
	Platanus racemosa "C□□□r□□□S□□□□ □r□"	36" BO□	PER PLAN
	Lagerstroemia "Cr□□□M□r□□"	36" BO□	PER PLAN
	Populus "E□r□□□□□ □□□□r"	36" BO□	PER PLAN
	Prunus cerasifera "Or□□□ □□□□P□□□ Tr□□"	36" BO□	PER PLAN

PICTURE	NAME
	LANTANA
	KANGAROO PAW
	CEANOT□US
	ICEBERG ROSE
	GA□ANIA MULTI-COLOR
	RIVER BED
	*Platanus racemosa* "C□□□r□□□S□□□□ □r□"
	*Lagerstroemia* "Cr□□□M□r□□"
	*Populus* "E□r□□□□□ □□□□r"
	*Prunus cerasifera* "Or□□□ □□□□P□□□ Tr□□"

ESC□NDID□ ASSISTED LI□ING: Escondido Landscape Plan

SCALE: 1/32"
1/8/2018

N□RT□

Materia

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tel. 310-903-2635 twilson@materia-llc.com

A PROJECT FOR: MITCHELL GROUP

ESCONDIDO ASSISTED LIVING

Landscape Plan

1802 N. CENTRE CITY PARKWAY
ESCONDIDO CA 92026

NO.	DESCRIPTION	DATE
-	Revision	10.26.2017
-	Revision	1.8.2018
-	Revision	6.21.2018

PA/PM: T. WILSON
DRAWN BY: D. CALDERON
JOB NO.:

SHEET
L-1

actions that would be required to implement the proposed project and the agencies that would grant discretionary approval for these actions.

- ■ Conditional Use Permit Plan by the City of Escondido
- ■ Grading exemptions by the City of Escondido
- ■ General Plan Amendment
- ■ NPDES Construction Activities Storm Water General Permit by the San Diego RWQCB

If it is determined that the proposed project cannot avoid the jurisdictional features on the project site and would result in significant impacts to jurisdictional waters, regulatory permits will be required to be obtained prior to project construction. To comply with the state and federal regulations for impacts on jurisdictional wetland features/resources, the following permits will be required to be obtained, or verified that they are not required: USACE 401 Permit, RWQCB 404 Permit (in accordance with Section 404 and 401 of the Clean Water Act [CWA]), and a CDFW Streambed Alteration Agreement under Section 1600 of California Fish and Game Code (CFGC). Mitigation to offset the impacts to Waters of the U.S. and State will be implemented in accordance with these regulatory permit conditions.

ISSUES:

I. AESTHETICS

Would the project:

a. Have a substantial adverse effect on a scenic vista?
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within 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 which would adversely affect day or nighttime views in the area?

a. Have a substantial adverse effect on a scenic vista?

Less Than Significant Impact. Scenic resources in the City of Escondido include views to and from hillsides and prominent ridgelines and other prominent natural landforms. The project site is primarily undeveloped and located within an urban/suburban neighborhood where vegetation and topography limit views to the site from many of the surrounding areas. As discussed under the environmental setting, a portion of the site previously was graded, including fill material and the construction of a masonry retaining wall along the Reidy Creek drainage channel. The topography of the proposed development area of the site is relatively flat due to the previous grading/fill, and the site generally is situated at a lower elevation than the adjacent Centre City Parkway on the west. Any potential scenic vistas in the proposed project viewshed would consist of distant views of mountains and ridgelines generally located towards the northern and eastern areas of the City. Views of the proposed project primarily would be from travelers along Centre City Parkway and from existing limited development on the north, which includes the Rincon Del Diablo Municipal Yard. The proposed development has the potential to impact some views through the site. However, the current views, to distant hillsides from Centre City Parkway are partially obstructed by existing landscaping, including mature trees. No adverse impacts to scenic vistas or scenic resources would occur from the development of the proposed care facility because the project would not significantly obstruct views from surrounding roadways or developed properties of any scenic resources that are identified as significant in the General Plan (2012), such as "ridgelines, unique landforms, visual gateways and edges of the community." No development within the adjacent drainage feature is proposed and would be avoided, and the drainage feature retained as a natural open space amenity. Therefore, the project would have a less than significant any valuable scenic vista.

b. *Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?*

Less Than Significant Impact. State scenic highways are those highways that are either officially designated as State Scenic Highways by the California Department of Transportation (Caltrans) or are eligible for such designation. There are no officially designated or eligible highways within the project area. There are no designated scenic resources on the site. Therefore, the proposed project would not affect any scenic resources. Within a state scenic highway. There are no historic buildings or resources located on the site and proposed impact to historic buildings/resources is evaluated in Section V. Cultural Resources. No development within the adjacent drainage feature is proposed and would be avoided, and the drainage feature retained as a natural open space amenity.

As identified in the Biological section, the project site contains non-native trees (typically eucalyptus species). These trees generally are located along the Centre City Parkway frontage, with a larger stand located within the southern corner of the site. The grading plan has been designed to retain as many of the trees as possible. The loss of any mature trees would be required to be replaced in conformance with the City's Grading Ordinance and

Landscape Ordinance. These minimal impacts are considered less than significant.

c. Substantially degrade the existing visual character or quality of the site and its surroundings?

Less than Significant Impact. The site is located in the urban/suburban area of the City and situated along a commercial corridor developed with a mix of residential, commercial and institutional type uses. Residential use in the area includes a mix of multi-level and single-story residences. The proposed project would change the undeveloped/disturbed character of the site with a new building, paved parking and driveways, grading, lighting and landscaping. The request includes an amendment to the General Plan to allow structures up to three stories where the current General Plan limits structures to two stories in height. Although the proposed project would introduce a three-story institution/residential type structure up to 38 feet in height (34.5 median height), the architecture of the new building has incorporated a design to be compatible with the mix of single- and multi-family development located throughout the surrounding area. The proposed building incorporates appropriate articulation, design elements, setbacks and perimeter landscaping to further reduce the overall mass and scale of the building. The proposed development also would not be out of character with the surrounding area that includes other nearby multi-story mixed-use developments, commercial/industrial and large non-residential development. While the development of a residential-care facility on the site would result in an increased urban feel, this change would be less than significant considering the existing urbanized character of the area and project design features employed to lessen potential visual impacts. The proposed project also would preserve the adjacent drainage/riparian area as a natural open space feature. Therefore, the proposed project would not significantly degrade the existing visual character or quality of the site or its surroundings and impacts would be less than significant.

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

Less than Significant Impact. Existing lighting sources on the site and surrounding area generally consist of street lights; security lights, parking lot lights, and vehicle headlights. The proposed lighting for the project generally would consist of new or relocated parking lot lighting, new area lighting around the buildings and walkways, and building security lighting, which would be compatible with existing lighting throughout the project vicinity. All new lighting would be required to be in compliance with the City's Outdoor Lighting Ordinance (Zone Code Article 35). The City's Lighting Ordinance is intended to minimize unnecessary nighttime lighting and glare for the benefit of the citizens of the City and astronomical research at Palomar Mountain Observatory. All proposed street lights and parking lot lights would have dark sky compliance certification and be consistent with City requirements, to include appropriate shielding and automatic timing devices. Therefore, new nighttime lighting as a result of the proposed project would be compatible with existing development and would not adversely affect nighttime views in the area. The proposed project's light or glare impacts would be less then significant

II. AGRICULTURE AND FORESTRY RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

a. Convert Prime Farmland, Unique Farmland, or 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. 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 or conversion of forest land to non-forest use?

Based on the reviewed historical topographic maps and aerial photographs, the project site and surrounding area were generally rural agricultural land from 1939 to 1963, when extensive residential and commercial development appeared in the area. Currently, the immediate project area is predominantly developed for a variety of uses, including single- and multi-family residential, high school, Rincon Del Diablo Water District offices and yard, and limited agricultural associated with the adjacent high school agricultural program.

No Impact. The project site does not include any active agricultural uses or agricultural resources. The site is not zoned for agricultural uses and is not adjacent to areas zoned for agricultural use. No farmland, forest land, timberland, or other agricultural uses occur on the project site or surrounding area, except for the small demonstration areas on the Escondido High School grounds. No agricultural land would be converted to non-agricultural uses as a result of project implementation. There are no Williamson Act Contract lands or agricultural zones on or near the site. The property is not listed as agricultural or prime farmland by the California Department of Conservation (CDC) Farmland Mapping and Monitoring Program. The project site and surrounding area is not listed as prime Agricultural Lands in the General Plan Final EIR, which was prepared for the most recent General Plan Update in 2012 (Escondido 2012). The proposed project will not result in the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) to non-agricultural use, or result in the conversion of forest land to non-forest use. Therefore, the project would have no direct or indirect impact to agricultural resources (San Diego Count Important Farmland 2014).

III. AIR QUALITY

Where applicable, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

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?

a. Conflict with or obstruct implementation of the applicable air quality plan?

Less than Significant Impact. The California Clean Air Act requires areas that are designated nonattainment of state ambient air quality standards for ozone, carbon monoxide, sulfur dioxide, and nitrogen dioxide to prepare and implement plans to attain the standards by the earliest practicable date. The San Diego Air Basin (SDAB) is designated nonattainment for ozone. Accordingly, the Regional Air Quality Strategy (RAQS) was developed to identify feasible emission control measures and provide expeditious progress toward attaining the state standard for ozone and particulate matter. The two pollutants addressed in the RAQS are reactive organic gases and oxides of nitrogen, which are precursors to the formation of ozone. Projected increases in motor vehicle usage, population, and growth create challenges in controlling emissions to maintain and further improve air quality. The

RAQS, in conjunction with the Transportation Control Measures, were most recently adopted in 2009 as the air quality plan for the region.

The California State Implementation Plan (SIP) is the document that sets forth the state's strategies for attaining the National Ambient Air Quality Standards (NAAQS). The San Diego Air Pollution Control District (SDAPCD) is the agency responsible for preparing and implementing the portion of the California SIP applicable to the San Diego Air Basin (SDAB). Since the SDAB is designated as in basic non-attainment of the NAAQS and in serious non-attainment of the more stringent California State Ambient Air Quality Standards (AAQS) for ozone, the SDAPCD's Regional Air Quality Strategy (RAQS) outlines the plans and control measures designed to attain the AAQS for ozone. The California SIP and the SDAPCD's RAQS were developed in conjunction with each other to reduce regional ozone emissions. The SDAPCD relies on information from CARB and SANDAG, including projected growth, mobile, area and all other source emissions, in order to predict future emissions and develop appropriate strategies for the reduction of source emissions through regulatory controls. The CARB mobile source emission projections and SANDAG growth projections are based on population and vehicle trends and land use plans developed by the incorporated cities and the County of San Diego. As such, projects that propose development that is consistent with the growth anticipated by SANDAG would be consistent with the RAQS and the SIP. The Escondido General Plan Update FEIR assessed whether development consistent with the General Plan would conflict with or obstruct implementation of the RAQS and SIP. The FEIR determined that the growth accommodated by the General Plan would be consistent with the growth accounted for in the RAQS and SIP. As such, development consistent with the Escondido General Plan would be consistent with the RAQS and SIP. Therefore, the proposed project would be consistent with the General Plan growth assumptions and would not conflict with or obstruct implementation of the applicable air quality plan. Impacts would be less than significant.

The project site is located within a residential area and the site currently is undeveloped. The proposed project includes a residential use that is conditionally permitted within the underlying residential zone, and would be would be consistent with the growth anticipated by the City General Plan. Although the project would require a Conditional Use Permit, this would not affect the growth anticipated by the City General Plan. Additionally, as discussed below in Section III. b), project emissions would not exceed the project-level significance thresholds from the City Municipal Code. These thresholds are intended to both define quality of life standards and implement the Growth Management Element of the City General Plan. The project would therefore not result in an increase in emissions that are not already accounted for in the RAQS. Therefore, the project would not obstruct or conflict with implementation of the RAQS or applicable portions of the SIP. Therefore, project impacts would be less than significant.

b. *Violate any air quality standard or contribute substantially to an existing or projected air quality* violation?
Less than Significant Impact. Air quality impacts can result from the construction and operation activities. Construction impacts are temporary and result from fugitive dust, equipment exhaust and indirect effects associated with construction workers and deliveries. Operational impacts can occur on two levels: regional impacts resulting from development or local effects stemming from sensitive receivers being placed close to roadways or stationary sources. One of the pollutants of concern during construction is particulate matter, because PM10 is emitted as windblown (fugitive) dust during surface disturbance, and as exhaust of diesel-fired construction equipment (particularly as PM2.5). Other emissions of concern include architectural coating products off-gassing (VOCs), and other sources of mobile source (on-road and off-road) combustion (NOx, SOx, CO, PM10, PM2.5, and VOCs) associated with the project.

Operational emissions are those which occur after project construction activities have been completed, and the project becomes operational. These emissions are a result of increased average daily vehicle trips by the new occupants of a facility, as well as any proposed stationary sources associated with the subject facility or development. Depending on the characteristics of the individual project, operational activities have the potential to generate emissions of criteria pollutants. Operational impacts from land development activities are predominantly the result of vehicular traffic associated with projects with combustion emissions (NOx, SOx, CO, PM10, PM2.5, and VOCs). The CEQA Guidelines state that, where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the determinations of environmental impact. The San Diego APCD does not provide quantitative thresholds for determining the significance of construction or mobile source-related impacts. However, the district does specify Air Quality Impact Analysis (AQIA) trigger levels for new or modified stationary sources (APCD Rules 20.2 and 20.3). If these incremental levels for stationary sources are exceeded, an AQIA must be performed for the proposed new or modified source.

Pounds per Day Thresholds

Respiratory Particulate Matter (PM10)	Fine Particulate Matter (PM2.5)	Oxides of Nitrogen (NOx)	Oxides of Sulfur (SOx)	Carbon Monoxide (CO)	Lead and Lead Compounds	Volatile Organic Compounds (VOCs)
100	55	250	250	550	3.2	55/75

Article 47 of the Escondido Zoning Code has similarly adopted these trigger levels to establish Escondido's thresholds of significance. Projects that would not exceed the screening level criteria are considered not to have a significant impact related to air quality violations. The following air quality analysis is based on the Air Quality Conformity Assessment and Green House Gas (GHG) Assessment completed by Investigative Science and Engineering, Inc. (ISE) on June 29, 2018. Based upon the findings in the chart below, no significant construction or operational air quality impacts are expected.

Aggregate Project Emission Summary

	Aggregate Emissions for Criteria Pollutants					
SCENARIO EXAMINED	CO	NO_x	SO_x	PM_{10}	$PM_{2.5}$	ROG
Construction Grading Operations (pounds per day)						
Construction Grading Vehicle Emissions	20.9	50.5	6.6	1.2	1.1	7.3
Surface Grading Dust Generation	- -	- -	- -	3.3	0.7	- -
Powered Haulage Dust Generation	0.0	0.0	0.0	4.6	1.0	0.0
Total (Σ)	20.9	50.5	6.6	9.2	2.8	7.3
Construction Building Operations (pounds per day)						
Architectural Coating Application						71.2
Unmitigated Total (Σ)	- -	- -	- -	- -	- -	71.2
With Low VOC Paint Application (Σ)	- -	- -	- -	- -	- -	25.6
Project Operations (pounds per day)						
Vehicular Traffic Generation	13.7	4.6	0.0	0.1	0.1	0.4
Fixed Source #1 (Small Engines - MF)	26.5	0.5	0.0	0.0	- -	3.0
Fixed Source #2 (Small Engines - CM)	2.8	0.1	0.0	0.0	- -	0.3
Fixed Source #3 (Natural Gas - MF)	0.5	1.2	- -	0.0	- -	0.1
Fixed Source #4 (Natural Gas – CM)	0.0	0.0	- -	0.0	- -	0.0
Total (Σ)	43.5	6.4	0.1	0.1	0.1	3.9
SDAPCD Significance Threshold:	**550**	**250**	**250**	**100**	**55**	**75**

Fugitive Dust: In order to ensure that fugitive dust emissions during construction would not be significant, the General Plan Update FEIR requires future projects to implement construction dust control measures. As part of the project's Grading Plan and Permit, and storm water requirements the project would be required to implement appropriate dust control measures that would reduce the proposed project's potential impact related to air quality violations.

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)?
Less than Significant Impact. As described above in III(b), mobile source emissions associated with the project would be minimal. Project construction would result in emissions, as described above; however, all construction related emissions would be less than established significance thresholds for each criteria pollutant. Emissions would be less than significant, and therefore, the project would not result in a cumulatively considerable increase in any criteria pollutant for which the region is non-attainment.

d. Expose sensitive receptors to substantial pollutant concentrations?
Less than Significant Impact. A sensitive receptor is a person in the population who is more susceptible to health effects due to exposure to an air contaminant than is the population at large. Examples include residences, schools, playgrounds, child care centers, churches, athletic facilities, retirement homes, and long term health care facilities. As described above in III(b), mobile source emissions associated with the project would be minimal. Project construction would result in some construction-related emissions; however, these emissions would be short term and temporary in nature and not exceed established thresholds for criteria pollutants. Sensitive receptors near the project site include adjacent residential uses; however, exposure would be short term and temporary in nature and not exceed established thresholds for criteria pollutants. Impacts would be less than significant.

Toxic Air Contaminants. The Escondido General Plan Update FEIR relies on the CARB's Air Quality and Land Use Handbook to determine whether potential impacts related to TACs, including diesel particulate matter, would occur (Atkins 2012b). CARB lists several potential sources of substantial TAC emissions that currently exist or may be developed under the General Plan Update including: 1) freeways or urban roads with 100,000 vehicles per day; 2) commercial facilities that require heavy-truck deliveries or include drive-through facilities; 3) extraction operations or cement manufacturing; 4) power plants; 5) recycling and garbage transfer stations; 6) industrial land uses; 7) farming operations; 8) dry cleaning facilities, gas stations, and automotive repair facilities; and 9) major medical facilities. If the project would result in these emission sources, then a detailed health risk assessment may be required. The proposed project would result in the development of new residential housing/care facility which are not a typical source of TACs. Therefore, implementation of the proposed project would not result in the exposure of off-site sensitive receptors to substantial TAC concentrations.

e. Create objectionable odors affecting a substantial number of people?
Less than Significant Impact. The project does not include any land uses typically associated with odor complaints. During construction, diesel equipment may generate some nuisance odors. Sensitive receptors near the project site include adjacent residential uses; however, exposure to odors associated with project construction would be short term and temporary in nature. Impacts would be less than significant.

IV. BIOLOGICAL RESOURCES

Would the project:

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 Game 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, regulations, or by the California Department of Fish and Game 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?*

Less than Significant with Mitigation. A Preliminary Biological Reassessment of the project site was prepared by John C. Lovio (dated April 4, 2018) to identify any current biological constraints to modification and development of the largely undeveloped site. A field visit to the property by JCL and botanist Brant Primrose was conducted on February 4, 2018 to assess current general conditions. A Supplemental Biology Study was prepared for the project by John C. Lovio, dated July 2018, to evaluate onsite habitat and sensitive species. A protocol survey also was prepared for two species of federally endangered riparian birds, the Least Bell's Vireo and the Southwestern Willow Flycatcher. The study concluded that no other federally or state listed species were of potential occurrence. No Least Bell's Vireos or Southwestern Willow Flycatchers were detected in more than 12 hours of survey over eight focused visits for these species on the site. Additionally, the riparian channel is densely vegetated with some exposed bedrock and lacks open, sandy pools required for reproduction of the federally endangered Arroyo Toad (Bufo californica).

The approximately 3.48-acre property is triangular-shaped and the approximate western 66% of the property comprises disturbed, partially filled uplands consisting of a higher western terrace and a lower eastern terrace separated by a five-foot high embankment. The remaining eastern third of the property includes a 280-foot section of the Reidy Creek (tributary of Escondido Creek) channel and 100-year floodplain that is below and abruptly separated from the uplands by a 14-foot high retaining wall that was constructed in 1997 by the previous property owner under a valid building permit. The southwestern edge of the uplands supports a stand of large, non-native Eucalyptus trees along the northeastern edge of North Centre City Parkway. All development on the site would be limited to the upland/disturbed section of the parcel, which is entirely west of the retaining wall. All vegetation currently on the upland/disturbed section of the project site appears to represent colonizing growth since 1997. The higher pad area is sparsely vegetated by ruderal herbaceous vegetation and supports several hundred eucalyptus saplings and mature eucalyptus trees. The lower, more undisturbed southern pad area contains mostly ruderal, non-native herbaceous growth, including grasses, ragweed, tumbleweed, and an unidentified species of creeping legume. Approximately 15 individuals each of goldenbrush and broom baccharis also grow on the lower pad. Furthermore, the lower, eastern terrace of non-native grassland (NNG) was mowed in mid-July of 2018 in compliance with local fuel management codes.

<u>Non-Native Grassland</u>. The approximately 0.66-acre NNG within the development area of the site would be directly impacted as part of the project. Any loss of NNG would be subject to mitigation requirements pursuant to the City's draft Subarea Plan, which requires impacts to NNG to be mitigated at a ratio of 0.5:1 through the acquisition of NNG credits from the Daley Ranch Bank or other approved mitigation bank. Thus, impacts to NNG would be reduced to below significance with the implementation of Mitigation Measure BIO-1.

Mitigation Measures

BIO-1: Prior to the issuance of grading permits, impacts to non-native grassland shall be mitigated at a ratio of 0.5:1 and shall consist of 0.33 acres. Mitigation shall be provided by either (1) preservation of equivalent or better habitat at an off-site location via a covenant of easement or other method approved by the City to preserve the habitat in perpetuity, or (2) purchase of non-native grassland or equivalent habitat credits at an approved.

Raptors/Nesting Birds. The mature trees on- and off-site have potential biological value, as they may provide nesting opportunities for songbirds or raptors. No raptors were observed nesting on site during the 2018 field visits. Raptor breeding is protected by the California Department of Fish and Wildlife Code, and migratory bird nesting is protected by the Migratory Bird Treaty Act. Compliance with the California Department of Fish and Wildlife Code and Migratory Bird Treaty Act ensures avoidance of nesting raptor and migratory bird impacts. In accordance with these regulations, the following mitigation measures would reduce the potential direct impacts to nesting birds to a less than significant level and would be required and project condition would be placed on any construction permits issued by the City for this project:

BIO. 2: No clearing, grubbing, grading, or other construction activities shall occur between February 15 and September 15, the raptor and migratory bird nesting season, unless a qualified biologist completes a pre-construction survey to determine if active nests are present or absent. If no active nests are present, then construction activities may proceed. If active raptor nests are present, no grading or removal of habitat shall take place within 300 feet of active nesting sites during the nesting/breeding season (February 15 through September 15).

The pre-construction survey must be conducted within 10 calendar days prior to the start of construction activities (including the removal of vegetation). The applicant shall submit the results of the preconstruction survey to the City for review and approval prior to initiating any construction activities.

BIO-3 Vegetation clearing or brushing shall occur outside of the typical breeding season for raptors and migratory birds (February 15 to September 15). If this is not possible, then a qualified biologist shall conduct a survey for nesting birds no more than five calendar days prior to construction to determine the presence or absence of nests on the project site. The applicant shall submit the results of the pre-construction survey to the City for review and approval prior to initiating any construction activities. No construction activities shall occur within 300 feet of tree dwelling raptor nests, or within 800 feet of ground dwelling raptor nests, until a qualified biologist has determined that they are no longer active or that noise levels will not exceed 60 dB(A) Equivalent Energy Level (Leq) at the nest site. Alternatively, noise minimization measures such as noise barriers shall be constructed to bring noise levels to below 60 dB(A) Leq, which will reduce the impact to below a level of significance.

Riparian/Wetland Habitat. A north-south, 280-foot section of Reidy Creek flows through the eastern, wetland section of the parcel is continuous with stream flow and riparian (streamside) vegetation both upstream and downstream. It supports approximately 0.7 acre of predominantly native riparian and marsh vegetation, including native willows (Salix spp.) and several small Coast Live Oaks (Quercus agrifolia). The creek vegetation consists primarily of southern Willow Riparian Forest, which is composed of native willows, a few small coast live oaks, and a mixture of non-native trees, shrubs and herbaceous plant species. The creek also supports diverse, semi-native understory and year-round water flow owing in part to suburban runoff. The Southern Willow Riparian Forest vegetation on the site supports native trees up to about 60 feet tall, with average tree canopy about 40 feet in height. The project has been designed to avoid any direct impacts to the existing riparian/wetland habitat areas. The biological study concluded that with the exception of a few native, early successional shrubs, no native upland vegetation occurs within the proposed development area of the project, and the upland portion of the site does not likely function in the landscape linkage for wildlife species. No plant or animal species recognized as threatened or endangered by the U.S. Fish and Wildlife Service, or California Department of Fish and Game are located or anticipated to be present on the project site. The site is not listed as an open space corridor or animal migration corridor because much of the property is disturbed and surrounded by development and fencing.

Although the adjacent Riparian Habitat related to Reidy Creek is proposed to be preserved and impacts to the creak avoided with the project design, in order to ensure the project grading/improvements will not encroach into the habitat, a biological monitor is required during the placement of the onsite fencing and grading operations. If the project cannot avoid the jurisdictional feature(s) on the site and would result in significant impacts, then the appropriate regulatory permits will be required to be obtained. The following Mitigation Measures Bio 4 and Bio 5 would ensure that potential impacts would be less than significant:

BIO. 4. During construction activities, the construction contractor shall ensure that the limits of grading are flagged or marked with silt fencing prior to grading to prevent indirect impacts to the adjacent Reidy Creek and sensitive riparian habitat. Prior to grading, a qualified biologist shall review the flagging and silt fencing and during grading the qualified biologist shall monitor the limits of clear and grub and grading activities. Monitoring shall be conducted on an as needed basis as determined by the qualified biologist.

BIO. 5 - If it is determined that the proposed project cannot avoid the jurisdictional features on the project site and would result in significant impacts to jurisdictional waters, regulatory permits will be required to be obtained prior to project construction. To comply with the state and federal regulations for impacts on jurisdictional wetland features/resources, the following permits will be required to be obtained, or verified that they are not required: USACE 401 Permit, RWQCB 404 Permit (in accordance with Section 404 and 401 of the Clean Water Act [CWA]), and a CDFW Streambed Alteration Agreement under Section 1600 of California Fish and Game Code (CFGC). Mitigation to offset the impacts to Waters of the U.S. and State will be implemented in accordance with these regulatory permit conditions.

<u>Mature Trees</u> - The project site contains approximately 0.45 acres of non-native trees (typically Eucalyptus species). These trees generally are located along the Centre City Parkway frontage, with a larger stand located within the southwestern corner of the site. The grading plan has been designed to retain as many of the trees as possible. The loss of any mature trees would be required to be replaced in conformance with the City's Grading Ordinance and Landscape Ordinance at a minimum 1:1 ratio. There are no protected trees (i.e., oak trees [Quercus sp.]) located on-site within the development area of the project. The concept landscape plan includes the replacement of trees with specimen sized trees. Therefore, impacts would be less than significant.

<u>Lighting or Glare</u> - Development of the subject site would create a new source of light and glare within the area. The primary source of light would be from new street lights and outdoor residential lighting. All proposed street lighting near adjacent residential properties and the Reidy Creek drainage area would be designed to minimize the overflow of light onto these properties. The majority of the riparian forest on the site will be partially shielded by the higher building pad and the height of the proposed building (up to 35 feet in height). Compliance with the City's Outdoor Lighting Ordinance would ensure that impacts related to light and glare, resulting from development of the site, are less than significant.

<u>Conflict with any applicable habitat conservation plan or natural community conservation plan?</u>
Less Than Significant Impact with Mitigation: Based on CEQA Guidelines and existing City policies and regulations, the proposed project would result in a significant impact if it would conflict with the provisions of an

adopted habitat conservation plan, NCCP, other approved local, regional, or state habitat conservation plan. The City of Escondido is one of seven jurisdictional areas within the northern subregion of San Diego County covered by the Multiple Habitat Conservation Plan (MHCP) (SANDAG 2003). The MHCP is intended to protect viable populations of native plant and animal species and their habitats, and each of the participating jurisdictions in the program is required to prepare a subarea plan in order to implement the MHCP within its jurisdictional boundaries. The City of Escondido has prepared a Draft Subarea Plan (City of Escondido 2001), but the Plan has not been adopted. Avoidance of impacts to biologically sensitive resources, which include wetlands and other sensitive vegetation communities, is emphasized, and projects, which would directly or indirectly impact sensitive resources, are required to minimize or mitigate any impacts that cannot be avoided.

The City's Draft Subarea Plan identifies the project site as Developed and Disturbed Land and does not identify it for preservation. The eastern portion of the site (Reidy Creek) is identified as Natural Habitat, and thus be considered Constrained Land, but outside of the proposed Focused Planning Area. The project site is not identified as a core biological resource area targeted for conservation, and is not identified as a local or regional wildlife corridor in the MHCP. The adjacent on-site riparian area would be preserved as part of the project design Implementation of mitigation measures MM-BIO-1, MM-BIO- 2, and MM-BIO-3 MM Bio-4 and MM BIO-5 would ensure compliance with the MHCP and City's General Plan Resource Conservation Element and policies. Therefore, the proposed project's development activities impact would be less than significant to habitat conservation plans or natural community conservation plans.

V. CULTURAL RESOURCES

Would the project:

a. Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5 (or conflict with applicable historic thresholds specified in City of Escondido Zoning Code Article 47)?
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §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 dedicated cemeteries?

<u>Historical Resources, Archaeological Resources, and Human Remains</u>
Less Than Significant Impact. A Cultural Resources Survey and Evaluation of Built Environment was prepared by Spindrift Archaeological Consulting, LLC (June 2018) for the proposed development site. This report included records searches, sacred lands searches with local tribes, archaeological survey results, and historian survey results. The area is underlain by the Undifferentiated Cretaceous Granitic Rocks geologic formation which has a low cultural resource sensitivity. An archaeological survey was conducted as part of this study. No potentially significant cultural/paleontological impact has been identified for the project site and no prehistoric resources have been previously recorded on the project site. The site does not appear to contain any indicators of significant cultural resources or geologic features and no cultural resources have been previously documented within the Project APE. The site also does not contain any resources listed on the City's Historic Sites Survey. Therefore, the project would not result in a significant impact to these resources and no mitigation is required.

Field work was conducted by Spindrift Archaeologist/Paleoanthropologist, Paul Howard, on 11 May 2018 during which the 3.48 acres of the Project APE were subjected to an intensive systematic pedestrian survey. Survey began at the center middle west side of the APE, using north-south oriented transects. The survey transects were later re-oriented to east-west due to the terrain. The ground visibility was low at 20%. Grass, and soil that had been stockpiled within the APE, inhibited the ground visibility significantly. Vegetation was occasionally dense throughout the survey, with Eucalypts dominating the APE with new shoots, mature gums and juveniles present; pepper trees, thistles, grasses, Jasmine tree, and mustard were also observed within the Project area. The APE has sandy clay, with some sandy loam areas in the southern part of the Project area. Project area is severely disturbed due to large amounts of soil being dumped in area. Soil has been stockpiled in multiple areas and a wall has been built with a fence on top to stabilize the soil within the APE. Off road vehicles have also impacted the property and have created tracks throughout the north eastern section of the APE. There was no cultural material observed on the ground surface during the survey. Only modern refuse and cattle bones including fragments of ribs, femurs, and tibias were seen throughout the survey.

Due to the low sensitivity of the Project APE for buried prehistoric and historic-period resources in the APE, as well as the absence of cultural materials across the APE on the ground surface, Spindrift does not recommend monitoring for the Project.

No human remains are known to exist within or adjacent to the Project Area, and it is unlikely that the Project would disturb unknown human remains. In the event of any unanticipated discoveries during construction, a less than significant impact to buried resources, if present, would occur with implementation of the **Mitigation Measures C-1 and C-2**, which also is a design feature and would be included in the project conditions of approval.

Mitigation Measures:

CUL-1. If subsurface deposits believed to be cultural or human in origin are discovered during construction, then all work must halt within a 50-foot radius of the discovery. An on-site archaeological monitor or Principal Investigator, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology, shall be retained and afforded a reasonable amount of time to evaluate the significance of the find. Work cannot continue at the discovery site until the archaeologist conducts sufficient research and data collection to make a determination that the resource is either 1) not cultural in origin; or 2) not potentially significant or eligible for listing on the NRHP or CRHR. If a potentially- eligible resource is encountered, then the archaeologist, lead agency, and project proponent shall arrange for either 1) total avoidance of the resource, if possible; or 2) test excavations to evaluate eligibility and, if eligible, total data recovery as mitigation. The determination shall be formally documented in writing and submitted to the lead agency as verification that the provisions in CEQA/NEPA for managing unanticipated discoveries have been met.

CUL-2. In the event that evidence of human remains is discovered, construction activities within 50 feet of the discovery will be halted or diverted, and the requirements above will be implemented. Depending on the occurrence, a larger radius may be necessary and will be required at the discretion of the on-site archaeologist. In addition, the provisions of Section 7050.5 of the California Health and Safety Code, Section 5097.98 of the California Public Resources Code, and Assembly Bill 2641 will be implemented. When human remains are discovered, state law requires that the discovery be reported to the County Coroner (Section 7050.5 of the Health and Safety Code) and that reasonable protection measures be taken during construction to protect the discovery from disturbance (AB 2641). If the Coroner determines the remains are Native American, the Coroner notifies the Native American Heritage Commission, which then designates a Native American Most Likely Descendant (MLD) for the project (Section 5097.98 of the Public Resources Code). The MLD may not be the same person as the tribal monitor. The designated MLD then has 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains (AB 2641). If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (Section 5097.94 of the Public Resources Code). If no agreement is reached, the landowner must rebury the remains in situ, or in a secure location in close proximity to where they were found, where they will not be further disturbed (Section 5097.98 of the Public Resources Code). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a document with the county in which the property is located (AB

2641).

Paleontological Resources

Less Than Significant Impact. The area is underlain by the Undifferentiated Cretaceous Granitic Rocks geologic formation which has a low paleontological sensitivity. No potentially significant paleontological impact has been identified for the project site and no prehistoric resources have been previously recorded on the project site. The site does not appear to contain any indicators of significant cultural resources or geologic features. The site also does not contain any resources listed on the City's Historic Sites Survey. Therefore, the project would not result in a significant impact to these resources and no mitigation is required.

VI.GEOLOGY AND SOILS

Would the project:

a. *Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:*
   i. 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? Refer to Division of Mines and Geology Special Publication 42.
   ii. Strong seismic ground shaking?
   iii. Seismic-related ground failure, including liquefaction?
   iv. Landslides?
b. *Result in substantial soil erosion or the loss of topsoil?*
c. *Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?*
d. *Be located on expansive soil, as defined in Table 18 1 B of the Uniform Building Code (1994), 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. Expose people or structures to potentially substantial adverse effects, including the risk of loss, injury, or death involving:

i. 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? Refer to Division of Mines and Geology Special Publication 42.

Less Than Significant Impact. The majority of the development area has been graded in conformance with a previously approved grading/building permits. A Geotechnical Report was prepared for the project site by Leighton Consulting, Inc. in 2004. An updated report was prepared by Leighton Consulting, Inc., dated November 20, 2007 and a follow up report dated May 18, 2018. The majority of the site is characterized by relatively shallow to moderate depths of colluvium and fill soils, blanketing weathered granite, with relatively fresh unweathered granite at depth. Expansive soils were exposed on the site, and recommendations are included in the report to be incorporated into the final grading design and foundation plans to remove and/or accommodate these soils. Blasting is not anticipated for the site because extensive cut slopes are not proposed. However, any necessary blasting is subject to the provisions of the City's Blasting Ordinance (Ord. No. 95-06). No Califomia Department of Water Resources wells are located on the site or its adjacent properties. Groundwater was not observed within any of the explorations. Groundwater depth and flow direction beneath the site may vary due to land surface elevation, fracture systems in underlying bedrock units, perched groundwater conditions, local irrigation practices, and seasonal rainfall.

According to the Escondido General Plan, the Alquist-Priolo Earthquake Fault Zoning Act does not identify any active faults or fault zones within Escondido; consequently, the risk of surface rupture is low (City of Escondido 2012). Although Escondido is within a Seismic Zone 4, the closest known active fault is the Rose Canyon Fault, located offshore approximately 15 miles southwest of Escondido, the Elsinore Fault located approximately 16 miles east of the site; and the Rose Canyon and Newport-Inglewood (offshore) fault zones approximately 16 and 21 miles southwest and northwest of the site, respectively. Due to the distance from the project site to the closest known active fault, the potential for the proposed project to expose people or structures to substantial adverse effects from fault rupture is low. All new development is required to conform to current seismic building code requirements designated for the specific area. Other potential geologic hazards such as tsunamis, seiches, liquefaction or should be considered to be negligible or nonexistent.

ii. Strong seismic ground shaking?
Less than Significant Impact. The site is located in a seismically active area, as is the majority of southern California. The most significant seismic hazard at the site is considered to be shaking caused by an earthquake occurring on a nearby or distant active fault. Pursuant to the Uniform Building Code (UBC) and the California Building Code (CBC), design and construction of the proposed project would be engineered to withstand the expected ground acceleration that may occur at the project site from regional active faults. Proper engineering and adherence to the UBC and CBC guidelines would minimize the risk to life and property from potential ground motion at the project site. Therefore, impacts associated with strong seismic ground shaking would be less than significant.

iii. Seismic-related ground failure, including liquefaction?
No Impact. The site is underlain predominantly by dense natural deposits (Quaternary alluvial deposits and granitic rocks) which are not considered to be susceptible to liquefaction. Therefore, the potential for liquefaction and the associated ground deformation occurring beneath the structural site areas is considered low, and the project would have no impact related to liquefaction.

iv. Landslides?
No Impact. There are no known landslides on or near the project site, and the site is not located in the path of any known landslides; the site is on relatively level terrain. The Geotechnical Investigation found the potential damage to the proposed project due to landslides or slope instability is considered very low. In addition, the on-site materials are not known to be prone to slope instability in properly engineered slopes.

b. Result in substantial soil erosion or the loss of topsoil?
Less than Significant Impact. The proposed project would involve site grading, which would result in disturbed soils and temporary stockpiles of excavated materials that would be exposed to erosion. However, as indicated in Section IX, Hydrology and Water Quality, compliance with the National Pollution Discharge Elimination System (NPDES) Construction General Permit, which requires the development of a Storm Water Pollution Prevention Plan (SWPPP) for the project site, would minimize the potential for soil erosion and loss of top soil through the implementation of best management practices (BMPs). Once construction is completed, no stockpiles would remain on the project site. The site would be paved, developed, or vegetated. Therefore, with implementation of construction BMPs, impacts associated with soil erosion and loss of topsoil would be less than significant.

c. *Be located on a geologic unit or soil that is unstable, or that would become 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. The site is not located in an area of known ground subsidence due to the withdrawal of subsurface fluids. The potential for subsidence occurring at the site due to the withdrawal of oil, gas, or water is considered remote. There are no known landslides on or near the project site, and the site is not located in

the path of any known landslides. The potential damage to the proposed project due to landslides or slope instability is considered very low. In addition, the on-site materials are not known to be prone to slope instability in properly engineered slopes. The site is underlain by dense natural materials which are not considered susceptible to failure due to lateral spreading; the potential for lateral spreading causing a catastrophic collapse of the proposed structures is considered low. Due to the absence of shallow groundwater table, presence of drains behind the existing and planned retaining walls, and relatively dense nature of the existing compacted fill and underlying bedrock materials, the potential for liquefaction is considered to be low. Therefore, Impacts related to geology and soils would be less than significant

d. *Be located on expansive soil, as defined in Table 18 1 B of the Uniform Building Code (1994), creating substantial risks to life or property?*

Less than Significant Impact. The near-surface materials and underlying geologic formations generally have very low to low expansion potential. The project would include excavation and re-compaction of soils consistent with the Geotechnical Investigation recommendations. Thus, the project would have a less than significant impact related to expansive soils.

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?*

No Impact. The project would connect with the existing City wastewater system and would not use septic tanks or an alternative wastewater disposal system.

VII. GREENHOUSE GAS EMISSIONS AND ENERGY

Would the project:

a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gasses?
c. Result in the use of excessive energy?
d. Affect energy supplies that would serve the project, including peak demand?

<u>GHG Emissions and Plan Consistency</u>

Less than Significant. The City of Escondido prepared a Climate Action Plan (E-CAP) in 2013 that demonstrated how the City will reduce greenhouse gas (GHG) emissions pursuant to Assembly Bill 32 (AB 32).The E-CAP includes CEQA Thresholds and Screening Tables to be used for development projects in order to ensure that the specific reduction strategies in the E-CAP are implemented as part of the CEQA process. The E-CAP establishes a threshold level of 2,500 metric tons of carbon dioxide equivalent (MTCO2E) per year for identifying projects that require the use of screening tables or a project-specific technical analysis to quantify and mitigate project emissions. The project-specific analysis may consist of calculating the MTCO2E for the project or evaluating project features to obtain 100 points minimum per the Screening Tables.

For this project, a GHG Assessment was completed to determine the amount of MTCO2E generated by the project (Investigative Science and Engineering, 2018). The following analysis is based on those project-specific reports and the City's E-CAP.

The GHG Assessment calculation for the proposed residential development includes emissions from diesel vehicles and water use during construction, operational vehicle emissions, operational landscaping equipment use, operational natural gas use, operational electricity use, solid waste disposal, and water use/wastewater generation. The construction emissions were amortized over the course of a 20-year period in order to evaluate the average yearly contribution to the cumulative GHG conditions. Refer to the GHG Assessment for additional details regarding methodology and assumptions. As shown in Table 6, the project would generate 2,056.0 MTCO2E per year, which is below the City's E-CAP screening level of 2,500 MTCO2E per year. Thus, the project would have a less than significant GHG emission impact and would be consistent with the City's E-CAP.

Energy Use

Less than Significant. In accordance with Section II(F) of Appendix F of the CEQA Guidelines, a project would be considered to have a significant energy conservation impact if it would result in wasteful, inefficient, or unnecessary consumption of energy during construction or operation. CEQA Guidelines Appendix F also guides environmental studies to include an analysis of the energy supplies that would serve the project and the potential effects on capacity and peak demand. The following is based on the estimated energy use during construction and operation of the residential development in the Greenhouse Gas Emissions Assessment (ISE 2016b), as well as the technical memorandum prepared for the SAP improvements (Harris & Associates 2016a).

The construction phase would use energy related to the use of demolition and grading equipment on-site, employee vehicular travel, transport of construction materials, and application of water for dust control. Typical equipment would be used for grading and construction activities (e.g., dozers, scrapers, graders, excavators), and is not anticipated to result in the use of excessive energy. Due to the site's proximity to existing urban areas, worker and transport trip distances are not anticipated to be unusually long or excessive relative to average trip lengths in the County. Overall, construction-related energy use would not be excessive.

During operation, the senior residential development would use energy primarily through vehicular travel, home electricity use, and home natural gas use. Solid waste disposal, water consumption, wastewater processing, and maintenance activities (e.g., landscaping) would account for project energy use to a lesser extent. The SAP improvements are not expected to result in a substantial change in operation of Bear Valley Parkway.

The vehicle trips generated by the proposed residential development would be 250 ADT (LOS Engineering, 2018). The daily trips generated by the proposed project would be typical for a residential project and would not be excessive. While the amount of emissions per vehicle are out of the control of the applicant, it is noted that the federal Corporate Average Fuel Economy (CAFE) standards are anticipated to reduce energy consumed by vehicles over time.

The GHG Assessment (ISE, 2018) for the proposed Escondido Assisted Living Facility states the Project would consume on average approximately 480,000 KWh/year. Similarly, natural gas consumption (typically due to usage of water heaters, stoves, and central heating units for this type of proposed use) would produce the following approximate total pounds of combustion emissions. The N2O equivalent CO2e level for the above activity would be 109.2 pounds per day (< 0.1 MT per day). Thus, the final equivalent CO2e GHG load would be roughly 1,636.3 pounds per day (roughly 0.7 MT per day). This total equates to 270.9 MT per year CO2e for this activity.

It is noted that these average consumption rates include all housing types and an average unit size of 1,583 sf. Ultimately, the residential development would comply with existing home energy efficiency standards, including Title 24, Part 6 of the California Code of Regulations. Known as the Building Energy Efficiency Standards, Part 6 of Title 24 establishes energy efficiency standards for residential and non-residential buildings in order to reduce California's energy consumption. The current version became effective July 1, 2014 and requires new construction to reduce energy consumption at a minimum of 25 percent for lighting, heating, cooling, ventilation, and water heating compared to the 2008 Title 24 standards (CEC 2016). In conclusion, the proposed project would not use an unnecessary or wasteful amount of electricity or natural gas.

San Diego Gas and Electric (SDG&E) is responsible for the transmission of energy supplies to the San Diego region. Electricity supplies come from local facilities and the statewide utility grid (SDG&E 2014). Similarly, natural gas comes from a number of major supply basins located across western North America (CPUC 2016). This diverse mix of power insures the local energy transmission system runs smoothly. The proposed project is consistent with the vision for development under the City's General Plan (City 2012b) and is therefore not expected to overburden local energy supplies, including during times of peak demand.

Finally, the Escondido Assisted Living Facility project site would have an onsite solid trash waste storage capacity of 50 cubic yards (cu-yd.), with an average weight of 200 pounds per cubic-yard. Assuming four (4) trash removals per week, in accordance with proposed site requirements, the aggregate total solid waste removed from the site would be 2,080,000.0 lbs/year (or 1,040.0 short tons per year). According to the IPCC, landfill CO2e generation due to trash is approximately 0.3196 pounds per pound of trash per year. Thus, the direct landfill CO2e contribution level would be 301.6 MT/yr.. The proposed project would not generate an excessive level of solid waste.

The proposed project would generate a typical level of water consumption and wastewater processing needs. The development associated with the proposed project would comply with current water conservation laws, including the 2015 Updated Model Water Efficient Landscape Ordinance. The Model Ordinance promotes efficient landscapes in new developments by increasing water efficiency standards for irrigation systems, greywater systems, onsite storm water capture, and by limiting the proportion of landscapes that can be covered in turf. The Model Ordinance requires reporting on local implementation and enforcement (DWR 2016). Furthermore, new development in California is subject to stringent requirements regarding water-efficient house hold fixtures. For example, as of 2016, new toilets are required to use no more than 1.28 gallons per flush and new bathroom faucets no more than 1.2 gallons per minute (Reuters 2015). Compliance with existing regulations would prevent the proposed project from consuming a wasteful amount of water or producing an unnecessary amount of wastewater.

The baseline emissions due to the proposed project action (i.e., traffic generation, onsite uses including maintenance, natural gas and electricity consumption, waste generation and water usage, and the aforementioned pseudo-operational construction emissions) would equate to 2,056.0 MT of CO2e per year. This corresponds to approximately 82.2% percent of the City's recommended screening level of 2,500 MT.

VIII. HAZARDS AND HAZARDOUS MATERIALS

Would the project:

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 one-quarter mile of an existing or proposed school?
d. Be located on a site which is included on a list of hazardous materials 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 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 safety hazard for people residing or working in the project area?
f. For a project within the vicinity of a private airstrip, would the project 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 are adjacent to urbanized areas or where residences are intermixed with wildlands?

Hazardous Materials

Less Than Significant Impact. Project construction activities may involve the use of lubricating oils, paints, solvents, and other materials. Operation and maintenance of the project may involve other regulated common hazardous materials (such as cleaning supplies), although acutely hazardous materials would not be used. Project activities during construction and operation would be undertaken in compliance with applicable federal, state, and local regulations pertaining to the proper use, transport, and disposal of hazardous materials, and impacts would be less than significant. Due to the residential nature of the project, operations would not result in the upset and accidental conditions that would lead to the release of hazardous materials.

Hazardous Materials Near a School

No Impact. Escondido High School is located adjacent to the site on the south and east. However, due to the nature of the project and operational characteristics of a residential-care facility, the project would have no impact related to the emission of a hazardous material within one-quarter mile of an existing or proposed school.

Hazardous Site Listing

No Impact. According to the City's General Plan EIR (City 2012a), the project site does not contain any Hazardous Waste and Substances sites, Leaking Underground Storage Tank sites, Active Cease and Desist Orders or Cleanup and Abatement Orders sites, solid waste disposal sites, contaminated sites as identified by the County of San Diego, or Resource Conservation and Recovery Act facilities. This project would not create a significant hazard to the public or environment as a result of being included on the California Department of Toxic Substances Control Hazardous Waste and Substances Site List - Site Cleanup (Cortese List) created in accordance with Government Code Section 65962.5. A review of said list shows that this site does not appear on that list. Further, the site-specific environmental site assessments for the historically approved Projects did not identify the project site on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. No impact would occur.

Airport Hazards

No Impact. The closest airports to the project site are the Ramona and McClellan-Palomar Airports, both of which are located more than two miles away. The project site is not located within the Airport Influence Area of these airports (San Diego Regional Airport Authority 2011a and 2011b). Due to the distance and relatively low height of the proposed structures, the project would not result in a safety issue related airport hazards. Thus, the project would have no impact related to private or public airports.

Adopted Emergency Response Plan or Emergency Evacuation Plan

No Impact. The project site is covered by the Multi-Jurisdictional Hazard Mitigation Plan which was developed by the Unified Disaster Council which is chaired by a member of the San Diego County Board of Supervisors and comprised of representatives from all 18 incorporated cities in San Diego County, including Escondido. The proposed project site also falls within the San Diego County Operational Area Emergency Plan (OAEP) and the City Emergency Response Team program. The closest emergency evacuation route identified in the City's General Plan is Centre City Parkway. All roads would remain passable to emergency vehicles during construction of the proposed project and during operation of the facility. This project does not include any design features or operational components that would impair implementation of, or physically interfere with, any adopted emergency response plan or emergency evacuation plan. Therefore, the project would not have an impact to an adopted emergency response plan or emergency evacuation plan.

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. Figure VI-6 of the City General Plan Community Protection Element identifies the project site as having a high wildfire risk. The project site is located within a suburban/semi-rural type environment and is adjacent to existing development and/or roads to the north and west. Reidy Creek and the associated riparian vegetation and disturbed habitat located along the eastern boundary of the site are to be avoided and preserved onsite. Preserved riparian vegetation east and southeast of the site typically is well hydrated, and the types of plants/trees are more resistant to ignition, but can ignite and burn during extreme conditions. The project has been designed to comply with applicable City Fire Department and Building Code standards. Inclusion of specific fire prevention measures as may be required by the Fire Department would result in a residential development that is less susceptible to wildfire than surrounding landscapes and that would facilitate fire fighter and medical aid response. Therefore, there impacts related to wildland fires would be less than significant.

IX. HYDROLOGY AND WATER QUALITY

Would the project:

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 of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which 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 which would result in substantial/increased erosion or siltation on-or off-site?
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on-or off-site?
e. Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?
f. Otherwise substantially degrade water quality?
g. Place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?
h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows?
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?
j. Inundation by seiche, tsunami, or mudflow?

A Drainage Study and a Project Storm Water Quality Management Plan (SWQMP) were completed by Spear & Associates, Inc. Civil Engineering & Land Surveying for the proposed residential development on April 24, 2018. The following analysis is based on those reports.

Water Quality

Less than Significant Impact. The existing site drainage is natural with topographic elevations ranging from approximately 728' to 688', sloping in a westerly direction. The drainage flows west towards Reidy Canyon Creek, located adjacent to the site, then approximately 2.6 miles towards the Escondido Creek then 13.8 miles to San Elijo Lagoon and the Pacific Ocean. The project will maintain the existing drainage characteristics of the site. The runoff will be directed to various on-site bioretention basins/features for stormwater treatment and continue west towards Reidy Canyon Creek, located adjacent to the site, through a new storm drain system, then approximately 2.6 miles towards the Escondido Creek then 13.8 miles to San Elijo Lagoon and the Pacific Ocean. The Water Quality Control Plan for the San Diego Basin (San Diego Basin Plan; RWQCB 2016) identifies the beneficial uses of these water bodies to include municipal supply, agricultural supply, industrial supply, processing supply, contact and non-contact water recreation, biological preserve, warm water habitat, cold water habitat, wildlife habitat, and rare species habitat.

To address the potential pollutants of concern, the proposed residential development would implement construction and post-construction Best Management Practices (BMPs) in compliance with the City and Regional Water Quality Control Board regulations. Construction BMPs are anticipated to include measures such as silt fencing, gravel bag barriers, street sweeping, solid waste management, stabilized construction entrance/exits, water conservation practices, and spill prevention and control. Operational BMPs would include source control, site design, and structural BMPs. Source Control BMPs would include (1) Prevention of Illicit Discharges into the MS4, (2) Storm Drain Stenciling or Signage, and (3) Protect Trash Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal. Site design BMPs would include (1) Maintain Natural Drainage Pathways and Hydrologic Features, (2) Conserve Natural Areas, Soils, and Vegetation, (3) Minimize Impervious Area, (4) Minimize Soil Compaction, (5) Impervious Area Dispersion, (6) Runoff Collection, (7) Landscaping with Native or Drought Tolerant Species, and (8) Harvesting and Using Precipitation. Structural BMPs would include two bioretention basins which would both provide biofiltration.

Bioretention was selected as the most efficient BMP to treat the project's anticipated and expected pollutants. Bioretention is used for treatment and hydromodification. The Bioretention basins were designed and sized in accordance with design criteria and considerations listed in the BMP design manual BF-1 Bioretention fact sheets. Runoff factors were adjusted to account for the site design BMPs and the DCV was calculated. Harvest and use of stormwater within the project was found unfeasible because there will be no significant demand with the proposed drought tolerant landscaping and development type, also due to limited space. Infiltration is unfeasible according to Form I-5 determination. 1.25 acres of the site will be self-mitigating.

Ultimately, all components of the project would be required to comply with the drainage and water quality regulations in place at the time of construction. These regulations include the State Water Resources Control Board General Construction Permit Water Quality Order 2009-0009-DWQ, the Municipal Permit Order No. R9-2013-0001 (as amended), the Standard Urban Stormwater Mitigation Plan (SUSMP), and the City of Escondido Grading and Erosion Control Ordinance (Article 55 of the Escondido Municipal Code). Compliance with regulations and the inclusion of BMPs would reduce potential water quality impacts to below a level of significance.

Groundwater Recharge

Less than Significant Impact. The Rincon Del Diablo Municipal Water District (RDDMWD) provides water to the project site from Centre City Parkway. The proposed project would use water supplied by the RDDMWD and would not include the use of on-site groundwater. Implementation of the project would include payment of required connection fees to the RDDMWD to fund any related infrastructure upgrades to meet fire requirements. While the proposed project would not directly use groundwater, the project may incrementally reduce groundwater recharge through the proposed increase in impermeable surfaces. The effect of the increase in impermeable surfaces would be partially offset by the proposed irrigated landscaped areas, bioretention basins that would result in increased infiltration in those areas. As the area is serviced by a municipal water system, and not dependent upon groundwater, the proposed project is not anticipated to result in a groundwater impact that would affect permitted, actively used wells. Thus, groundwater recharge impacts would be less than significant.

Drainage

Less than Significant Impact. As identified in the County of San Diego Hydrology Manual for this report to calculate the 100-year flow generated from the site, using the Rational method. Based on the soil hydrologic group map in Appendix A of the County Hydrology Manual, the northern 2/3 of the site consists of soil type B and the southern 1/3 consists of soil type A. Runoff Coefficient for Undeveloped Areas figure 819.2A, from the Caltrans Storm Water

Handbook, was used to evaluate the existing runoff coefficient because the site was previously graded, is mostly bare and does not conform to the typical undisturbed natural areas. Detention basin calculations were performed with the use of HydroCad and Rathydro.

The existing site drainage is natural with topographic elevations ranging from approximately 728 to 688, sloping in a westerly direction. The drainage flows west towards Reidy Canyon Creek, located adjacent to the site, then approximately 2.6 miles towards the Escondido Creek then 13.8 miles to San Elijo Lagoon and the Pacific Ocean. The project will maintain the existing drainage characteristics of the site. The runoff will be directed to a biofiltration basin for stormwater treatment and continue west towards Reidy Canyon Creek, through a new storm drain system then continue west with the same flow path as in pre-development. This project will maintain existing drainage patterns along the site and will not alter the course of a stream or river and therefore will not contribute to substantial erosion or siltation onsite or offsite. Post development peak flows, flow volumes and velocities will not be increased from predevelopment rates by maximizing pervious surfaces and onsite detention basins (Hydraulic/Hydrology Study; Spear & Associates, Inc. Civil Engineering and Land Surveying, April 2018).

Summary of Flow Rates

100-yr Storm Event	***(cfs)***
Onsite Pre-Dev.	12.8
Onsite Post-Dev.	9.3
Offsite Pre & Post Dev.	3.6

In addition, the project would be required to comply with the drainage and water quality regulations in place at the time of construction. These regulations include the State Water Resources Control Board General Construction Permit Water Quality Order 2009-0009-DWQ, the Municipal Permit Order No. R9-2013-0001 (as amended), the SUSMP, and the City of Escondido Grading and Erosion Control Ordinance (Article 55 of the Escondido Municipal Code). These regulations are intended to protect drainage conditions and preclude significant impacts.

Overall, the project would have a less than significant impact related to changes to the drainage pattern of the site, as the reduction in the runoff rate would reduce the potential for erosion, siltation, flooding, and storm drain capacity issues.

Flood Hazard, Seiche, Tsunami, Mudflow

No Impact. The proposed development area of the project is within Zone X per the Federal Emergency Management Agency (FEMA). Zone X is outside of the 500-year floodplain (FIRM Panel 1081 of 2375; Map Number 06073C1081G). As such, the project would not place any structures or alter areas within a flood hazard. Also, the project would reduce drainage discharge rates and would not exacerbate any downstream flooding issue. Overall, the project would have no impact related to flood zone hazards. The eastern portion of the site (drainage feature) is located within the 100-year floodplain and floodway. The project has been designed to avoid development/encroachments into this area.

The site is located over four miles from the Dixon Lake Dam, over five miles from Lake Wohlford Dam, and upstream from the Lake Hodges Dam. According to the General Plan (City 2012a) Figure VI-8, the site is outside of the dam failure inundation area for Lake Wolford and Dixon Lake. Thus, no impact related to inundation from a dam failure would occur.

The site is not located near any levee and is located about 15 miles from the ocean. The project is located on a hillside, but soils are stable, and the risk of mudflow is not significant (Nightingale Soils Report; Leighton Consulting, Inc., September 2004). Thus, the project would have no impacts related to inundation from a levee, seiche, tsunami, or mudflow.

X. LAND USE PLANNING

Would the project:

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 any applicable habitat conservation plan or natural community conservation plan?

Divide Established Community
No Impact. The proposed project is located on a vacant parcel of land and the project would be considered infill development. The construction of the proposed residential development would not physically divide an established community nor preclude the development of surrounding parcels because it is surrounded by existing development on all sides, and as it is located along a Circulation Element Roadway (Centre City Parkway). Access to the site would be provided by a single driveway from Centre City Parkway. All project roadways and improvements would be within existing right-of-ways, and the project would not block existing connections with an established community. No new roads would be required. Access to the site and the surrounding neighborhoods and roadways would be maintained during and after the implementation of the proposed project. Further, the proposed project is consistent with the General Plan land use designation for the site and the General Plan Mobility and Infrastructure Element. The project is residential in nature and would be compatible with the mix of surrounding land uses and therefore would not disrupt the physical arrangement of the area. Therefore, no impact would occur.

Conflict with Applicable Plan, Policy or Regulation/Habitat Conservation Plan
Less Than Significant Impact. The General Plan designates the site as Suburban, which allows for single-family residential development. The underlying zoning is R-1-10, which allows for residential-care facilities subject to the approval of a Conditional Use Permit. The project is requesting an amendment to the General Plan to allow structures up to three stories in height where two stories currently is allowed. Approval of the requested Conditional Use Permit and amending the General Plan would address this issue. The proposed residential development is consistent with existing planning, policy, regulation and zoning designations. Therefore, impacts would be less than significant. Further analysis is provided in Section IV (Biological Resources) regarding conformance Habitat Conservation Planning) and mitigation measures to address potential impacts.

XI. MINERAL RESOURCES

Would the project:

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?

No Impact.
The City's General Plan EIR (City 2012b) does not identify existing and past extraction facilities at the project site. The project site is unsuitable for mining due to the adjacent residential properties and the General Plan

designation. Thus, implementation of the proposed project would result in a less than significant impact related to the loss of mineral resources.

XII. NOISE

Would the project result in:

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

Construction Noise

Less Than Significant Impact with Mitigation. An Acoustical Site Assessment / CCR Title 24 Interior Noise Survey was completed by Investigative Science and Engineering, Inc. in June 2018 (ISE, 2018). The Acoustical Site Assessment evaluated the existing noise conditions at the project site, noise generated during construction of the residential development, and changes in roadway noise levels resulting from the senior residential development.

Measurements collected reflect the ambient daytime community sound levels in the vicinity of the proposed project site. The hourly average sound level (or Leq-h) recorded over the monitoring period was 63.4 dBA at ML 1 and 54.1 dBA at ML. These levels would be deemed consistent with the observed community setting of the project site, and the relative proximity of the site to Center City Parkway. No unusual existing noise sources were observed.

Construction within the proposed project area would typically occur between the hours of 7:00 a.m. and 3:00 p.m. Monday through Friday. The closest residential receptor (with direct line of sight) would be located approximately 180-feet to the west of the project boundary along Center City Parkway. Additionally, a closer residential receptor is located approximately 60 feet from the northern property of the site. This receptor is located approximately 10 to 15 feet below grade and as such would not have a direct line-of-sight to any construction activities with the exception of those activities occurring directly adjacent to the project property boundary. The predicted worst-case construction noise levels could be as high as 78.4 dBA Leqh at 50-feet. In order to reduce the potential noise impact to the adjacent residential structures on the north, a temporary noise barrier is proposed to reduce impacts to less than a significant level.

Mitigation Measure

NOI. 1 Temporary Construction Barrier. In order to reduce the temporary noise impact from construction along the norther property boundary adjacent to residential development, a temporary noise barrier is required (as detailed in Figure 9b, page 24 of the acoustical assessment, dated October 9, 2018 revised). The barrier would be constructed out of min. 5/8-inch plywood with no gaps, that would span the length of the adjacent property boundary, and would have a minimum height of six feet above the project grade. The barrier shall be installed prior to grading operations on the site. The barrier shall be installed prior to grading operations on the site.

Future Roadway Segment Noise Impacts

The results showing the effect of traffic noise increases on the various servicing roadway segments associated with the proposed Escondido Assisted Living Facility are presented in Tables 5a through f. For each roadway segment examined, the worst case average daily traffic volume (ADT) and observed/predicted speeds are shown, along with the corresponding reference noise level at 50-feet (in dBA). Additionally, the line-of-sight distance from the roadway centerline to the 60, 65, and 75 dBA CNEL contours are provided as an indication of the worst-case unobstructed theoretical traffic noise contour placement. As shown, the worst-case traffic noise condition is expected to occur on Center City Parkway in the vicinity of Iris Lane and El Norte Parkway by a worst case 0.1 dBA CNEL under the existing condition scenario. This would not be deemed a significant impact to the surrounding land uses under City of Escondido Municipal Code Chapter 33, Article 47, Environmental Quality Regulations.

Future Traffic Noise Impacts to Proposed Development

Traffic noise predominately affecting the proposed Escondido Assisted Living Facility is currently, and would continue to be, the aggregation of surface street traffic along Center City Parkway. This roadway has a maximum travel speed of 65 MPH and a future Year 2030 predicted average daily traffic (ADT) volume of 22,822 ADT.15 To a lesser extent, Iris Lane is projected as having a future traffic volume of 7,464 ADT with a maximum travel speed of 35 MPH. The complete model runs are provided as an attachment to this report. Based upon the findings, no proposed exterior use areas would exceed the City's 65 dBA CNEL noise abatement threshold and require mitigation. All façade areas examined were found to exceed the CCR Title 24 noise abatement threshold of 60 dBA CNEL and would require enhanced architectural treatments to ensure interior (closed window) mitigation to 45 dBA CNEL.

CCR Title 24 Interior Noise Compliance of Proposed Development

The ISE Architectural Acoustical Model (AAM) was used to calculate the relative sound insulation characteristics of each construction assembly comprising the finished structure. The following general construction assumptions were applied to each structural façade to determine its sound insulation characteristics:

- The roof/ceiling construction should have a minimum STC rating of 48.
- All living spaces were assumed to have carpet and pad (i.e., Floor Multiplication Parameter or FMP = 0.75), for the purposes of STC calculation.
- Bathrooms, kitchen and dining areas, entry/foyer areas, laundry rooms, hallways, stairways, utility rooms (electrical, mechanical, etc.), storage, and closet areas are considered non-sensitive uses, and were not examined; thus, these have no construction limitations.

The surface areas and materials for the proposed project were obtained from architectural drawings prepared by Irwin Partners Architects, dated 6/18. When the interior noise level was found to be greater than 45 dBA CNEL, the value was recalculated for a closed window condition. Further recalculation was done to determine the minimum window-glazing requirement.

The results of the AAM model are provided as an attachment to this report. The minimum required acoustical treatments (STC ratings) for the proposed development are summarized in Table 7 on the following page. Based upon the model results, the estimated interior noise levels would be as high as 64.9 dBA CNEL (in the third floor Activity Room), when the windows/doors are open, and would require a closed window condition to comply with the CCR Title 24 requirements. Mechanical ventilation would be required per CCR Title 24 and should meet specific City of Escondido building department requirements.

Pursuant with City of Escondido building department practices, the indicated minimum required STC ratings should be incorporated into the architectural door and window schedule of the project plans and submitted with a copy of this report. These measures would reduce interior noise to final maximum closed-window levels of 44.8 to 45.0 dBA CNEL (in the MC-1a Studios, and the third floor Activity Room, respectively). As-built architectural assemblies with a higher STC rating than those indicated, would also be acceptable from a building compliance standpoint.

Ground-Borne Vibration:
The City's General Plan Community Protection Element Noise Policy 5.5 requires construction projects and new development to ensure acceptable vibration levels at nearby noise-sensitive uses based on Federal Transit Administration (FTA) criteria. The FTA Transit Noise Impact and Vibration Assessment (2006) stipulates an impact criterion for groundborne vibration at residences or buildings where people normally sleep of 80 velocity in decibels (VdB) for infrequent events and 75 VdB for occasional events. It also stipulates an impact criterion for groundborne vibration of 0.3 inches per second peak particle velocity (in/sec PPV) at engineered concrete and masonry structures and 0.2 in/sec PPV at non-engineered timber and masonry buildings. Consistent with the methodology of the Noise Technical Report prepared for the Escondido General Plan EIR (Atkins 2011), construction vibration is subject to infrequent event criteria.

The project residential nature of the project would not propose any type of operation uses that would generate ground-borne vibration or noise (such as equipment that would blast or pile drive). Therefore, operation of the project would not have any adverse impacts. Construction activities would be site preparation and building of the structures. Therefore, impacts would be less than significant.

Normal construction activities would use standard equipment such as loaders, backhoes, graders, scrapers, forklift, and rollers that would generate temporary groundborne vibration and groundborne noise. While construction activities would occur during the daytime and would not disturb sleep, residences may be occupied during daytime construction, resulting in nuisance to daily activities. Construction activities are characterized by infrequent (fewer than 30 per day) vibration events, according to the City's General Plan EIR. Therefore, for the purposes of this analysis, an impact would occur if construction would generate vibration levels greater than the threshold described in the City's General Plan Community Protection Element Noise Policy 5.5 (80 VdB or 0.2 in/sec PPV at the nearest residential receptor). An impact would also occur if construction activities were to occur outside of the hours specified in the City's Noise Ordinance.

Table 1: Vibration Levels for Typical Construction Equipment

Equipment	PPV at 25 ft. (in/sec)	PPV at 40 ft. (in/sec)[1]	VdB at 25 ft. (1 μ-in/sec)	VdB at 40 ft. (1 μ-in/sec)[2]	VdB at 75 ft. (1 μ-in/sec)[2]
Vibratory Roller	0.210	0.104	94	88	80
Hoe Ram	0.089	0.044	87	81	73
Large bulldozer	0.089	0.044	87	81	73
Loaded trucks	0.076	0.038	86	80	72
Jackhammer	0.035	0.017	79	73	65
Small bulldozer	0.003	0.001	58	52	44

Notes:
1. Based on the propagation adjustment formula PPV = $PPV_{25\ feet}$ x $(25/\text{distance from the equipment to the receptor})^{1.5}$
2. Based on the propagation adjustment formula VdB = $VdB_{25\ feet}$ – 30log(distance from the equipment to the receptor/25)
Source:
FTA Transit Noise and Vibration Impact Assessment, May 2006

The nearest residences would be located approximately 60 feet from the construction activity along the northern boundary of the project site. As shown in Table 1 above, construction equipment would not exceed the 0.2 in/sec PPV vibration significance criteria for building damage effects at a distance of 60 feet. Therefore, no structural damage impacts to nearby residences are anticipated to result from implementation of the project.

However, as shown in Table 1, at 60 feet from the proposed construction activities, construction equipment including large dozers and rollers would have the potential to generate vibration which exceeds the 80 VdB vibration significance criteria for human annoyance. A distance of 75 feet between the heaviest piece of equipment (vibratory roller) and sensitive receptor would be required before groundborne vibration would fall below the significance criteria. During project construction, equipment would likely be distributed throughout the construction site and would not be used simultaneously such that groundborne vibration in one location would not be constant. Therefore, Implementation of **Mitigation Measures NOI-1 and NOI-**2 would minimize temporary groundborne vibration impacts from construction activities at adjacent residences.

NOI-2 Construction Notification. The construction contractor shall provide written notification to all residences located within 75 feet of the proposed construction activities at least three weeks prior to the start of construction activities, informing them of the estimated start date and duration of daytime vibration-generating construction activities. This notification shall include information about the potential for nuisance vibration. The City shall provide a phone number for the affected residences to call if they have concerns about construction-related vibration.

NOI-3 Vibration Best Management Practices. For construction activities within 75 feet of residences along the northern project boundary, the construction contractor shall implement the following measures during construction:

1. Stationary sources, such as temporary generators, shall be located as far from nearby vibration-sensitive receptors as possible.
2. Trucks shall be prohibited from idling along streets serving the construction site where vibration-sensitive receptors are located.
3. Demolition, earthmoving, and ground-impacting operations shall be phased so as not to occur in the same time period.

Airport Noise

No Impact. The closest airports to the project site are the Ramona and McClellan-Palomar Airports, both of which are located more than two miles away. The project site is not located within the Airport Influence Area of these airports (San Diego Regional Airport Authority 2011). Thus, the project would have no impact related to airport noise.

XIII. POPULATION AND HOUSING

Would the project:

a. 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)?
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

Less than Significant Impact
The City's General Plan anticipates senior housing/residential uses on this site. The proposed project would provide a total of up to 96 beds and the proposed residential development would not be considered growth inducing because the project site is located within an established community, can be considered in-fill, and provides services typically found in residential communities. The site is vacant and would not remove any existing housing units/structures. Therefore, the project would not displace existing housing or people.

Public facilities are readily available within the area to serve the project and expansion of the public facilities would not be necessary. The project would provide assisted living housing for the increasing population in the area. Because of all the aforementioned reasons the project would not result in a significant impact to population and housing.

XIV. PUBLIC SERVICES

Would the project:

a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, 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:
  i. Fire protection?
  ii. Police protection?
  iii. Schools?
  iv. Parks?
  v. Other public facilities?

As indicated above, the proposed senior residential development project would, in a worst case possible scenario in which all residences come in from outside the City, increase the population in the city by approximately 96 people by providing new senior residential housing. This increase in population would incrementally increase the demand for fire protection, police protection, schools, parks, and other public facilities such as libraries. As described below, the proposed residential development project would not result in a need for physical improvements to existing public service facilities or new public service facilities. Impacts related to public services would be less than significant.

Fire Protection
Less than Significant Impact. The proposed project site would be serviced though the Escondido Fire District Service. The site is served by Fire Station No.3, which is located at 2165 Village Road. Development of the site would contribute incremental increases in demand for Fire Services. The Escondido Fire Department indicated their ability to adequately serve the proposed project and no significant impacts to fire services are anticipated. The project would be conditioned to provide appropriate on-site safety measures. The net increase in demand for fire protection services from development of the proposed project would be offset through payment of the Escondido Public Facility Development Fee (Article 18B of Chapter 6 of the Escondido Municipal Code). Impacts would be less than significant.

Police Protection
Less than Significant Impact. Police service would be provided to the proposed project site through the City of Escondido Police Department. According to the General Plan EIR (City 2012b), the existing Escondido Police Headquarters at 1163 North Centre City Parkway is anticipated to provide adequate service for the next 40 years. As the proposed project would be consistent with General Plan anticipated growth, the proposed project demand for police service would be adequately met by the existing facilities. Thus, no new police facility improvements or new police facilities would be required to provide adequate police service. Project impacts to police protection service would be less than significant.

Schools
Less than Significant Impact. The proposed project site is located in the Escondido Union Elementary School District (kindergarten to 8th grade) and the Escondido Union High School District (grades 9 to 12). As required by

Senate Bill 50 and Article 21 of Chapter 6 of the Escondido Municipal Code, the project would be required to provide payment of school fees to offset the demand for school capacity generated by the project. Conformance with statutory requirements for the payment of school fees would ensure that project impacts to school facilities remain below a level of significance (Government Code §65995(b)).

Parks

Less than Significant Impact. Regarding park facilities, the Escondido General Plan Quality of Life Standard #6 establishes criteria that the City must meet to provide adequate park facilities to the residents of Escondido. The Escondido Master Plan for Parks, Trails, and Open Spaces serves as the guide for the City is developing a comprehensive and integrated recreational and open space system. The Master Plan identifies acquisition, development, and joint use arrangements for existing and future parks within the City. Implementation of the Master Plan serves as the governing plan to achieve the Escondido General Plan Quality of Life Standard #6 goal. The proposed project is consistent with the Escondido General Plan which allow for the development of residential and residential care facilities in residential zones subject to a Conditional Use Permit authorization. Therefore, the use of park facilities by the future residents of the project site was accounted for in the Escondido General Plan and the future residents of the proposed project would not result in the substantial deterioration of existing park facilities. Furthermore, the proposed project provides for the preservation of open space associated with the Reidy Creek and its riparian habitat. The project also provides for on-site open space and recreational amenities for the residents. The net increase in demand for recreational services from development of the proposed project would be offset through payment of the Escondido Public Facility Development Fee. Therefore, impacts would be less than significant.

Library

Less than Significant Impact. Library service in the city, including the project site, is provided by the Escondido Public Library Department through the Main Library and the Escondido Pioneer Room. The Main Library provides residents with a source for over 300,000 books, videos, books on tap and compact discs. The Escondido Pioneer Room offers the community a research room for non-circulating reference material. Performance objectives for library service are identified in the General Plan Update Quality of Life Standard #7. At present, the library does not comply with adopted service standards. To achieve quality of life standards, the Escondido Public Library system would need to be physically altered. Future expansions to the library system would be subject to the California Environmental Quality Act. The type of residential development proposed, which conform to the General Plan, will not cause a need to expand the library system or result in deterioration of existing facilities. The net increase in demand for library services from development of the proposed project would be offset through payment of the Escondido Public Facility Development Fee. Therefore, impacts are considered to be less than significant.

Other Public Facilities

Less Than Significant Impact. See Section XVIII Water Services.

XV.RECREATION

Would the project:

a. 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. 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 would result in in incremental increase in demand on the City's recreational facilities. However, the development fees paid by this project would offset the anticipated impact on the existing facilities. The project would not affect existing recreational opportunities because the site is not used for recreational activities and is not listed as a potential park site in the City's Master Plan of Parks, Trails and Open Space. The project will provide on-site recreational and open space facilities for the residents.

XVI. TRANSPORTATION/TRAFFIC

Would the project:

a. Conflict with an applicable plan, ordinance or policy establishing measures 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 (or conflict with applicable traffic thresholds specified in City of Escondido Zoning Code Article 47)?
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 uses (e.g., farm equipment)?
e. Result in inadequate emergency access?
f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

Circulation System Operations
Less Than Significant Impact. The project site fronts onto Centre City Parkway, which is classified as a Major Road (102' ultimate R-O-W). Full width street improvements have been installed along the northern section of the project frontage but has not been Installed along the southern area of the project's frontage. Centre City Parkway in the immediate vicinity of the project site operates as a four-lane major road (two lanes traveling north and two traveling south, with a landscape raised center median) with Class II bike lanes. Parking is restricted on both sides of the roadway. The project would be required to improve Centre City Parkway across the project frontage, and all proposed streets would be constructed to City standards. A Transportation Impact Analysis was prepared for the project by LOS Engineering, Inc. (dated June 6, 2018). Based on San Diego Association of Governments' (SANDAG) traffic generation rates for the San Diego region, the proposed care facility would generate approximately 2.6 trips per bed or up to approximately 250 ADT (based on 96 residents) with 19 AM peak hour trips (12 inbound and 7 outbound) and 25 PM peak hour trips (10 inbound and 15 outbound). Centre City Parkway (between Country Club Lane and El Norte Parkway currently operates at a Level-of-Service "C" or better under existing improvement conditions. The intersection of Centre City Parkway/Iris Lane is signalized.

Operation of the circulation network is described in terms of Level of Service (LOS). Level of service (LOS) values range from LOS A to LOS F. LOS A indicates excellent operating conditions with little delay to motorists, whereas LOS F represents congested conditions with excessive vehicle delay. The analysis of whether project-generated trips would result in a significant impact is evaluated based on the following City of Escondido LOS significance criteria:

1. A significant impact is determined on an LOS mid-D or worse operating roadway segment or intersection if the addition of project traffic:
   a. Exceeds a two percent Volume / Capacity (V/C) ratio increase on a street segment, and/or
   b. Exceeds a two second delay increase at an intersection.
2. Mitigation measures are required when a roadway segment or an intersection is operating at a LOS mid-D or worse and the project has a significant impact. 3. The Quality of Life Standards set out under the Escondido General Plan indicate that any project that adds 200 ADT or more to a roadway segment or intersection that operates at a LOS mid-D, E or F should mitigate the impact or prepare an EIR for the City Council to approve overriding findings.

The Engineering Department indicated that an increase of 250 trips would not significantly impact the existing Levels of Service on the adjacent streets or intersections because a stable flow of traffic is maintained along adjacent streets and ability to maneuver within the vicinity of the project and along the street segment is not significantly restricted. The study concluded the project would not have a direct impact to the study area street segments and intersections because all street segments and intersections would continue to operate at LOS D or better, and the project would not exceed two-percent VC ratio increase on a street segment or exceed a two-second delay increase at a study area intersection. The Engineering Department indicated that based on the traffic impact analysis, the proposed project is not anticipated to have any significant individual or cumulative impacts to the circulation system or degrade the levels of service on any of the adjacent roadways or intersections. Therefore, the project would have less than a significant impact and no mitigation is required.

<u>Alternative Transportation.</u> There are no existing alternative transportation facilities on the project site. A bicycle lane is provided on Centre City Parkway. The proposed project would include improvements to existing Centre City Parkway and the project site access would conform to published local, regional and State standards with respect to signing, striping and corner and stopping sight-distance, to the satisfaction of the City Engineer so that use of Centre City Parkway to serve project traffic would not interfere with safe and effective use of the bicycle lane on Centre City Parkway. Implementation of the proposed project would not result in a significant impact on the performance of the vehicular circulation system, as defined by the City's established significant thresholds. Therefore, impacts would be less than significant.

<u>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</u>?
Less Than Significant Impact. Centre City Parkway is identified as a CMP arterial on the Final 2008 Congestion Management Program Update (SANDAG 2008). SANTEC guidelines, a CMP analysis is required for all large projects, which are defined as generating 2,400 or more average daily trips or 200 or more peak-hour trips. As discussed in the sections above, the proposed project would not adversely affect traffic conditions on the surrounding local circulation system. The project does will improve Centre City Parkway along its frontage and would not result in a substantial number of new trips. Therefore, the proposed project would not conflict with an applicable CMP.

<u>Air Traffic</u>
No Impact. The nearest airports to the project site are McClellan-Palomar Airport and Ramona Airport. The project site is not located within the 60 dBA CNEL noise contour of the McClellan-Palomar and Ramona Airport. The proposed project is not located within an Airport Influence Area and would not affect air traffic patterns. No impact would occur.

Traffic Hazards and Emergency Access

No Impact. Access to the proposed project would be from Center City Parkway. The senior residential development would include appropriate internal circulation and fire truck access lanes. As discussed above, the proposed project site would not result in any significant traffic impacts and would be designed in compliance with all applicable guidelines and regulations. Additionally, project site access would conform to published local, regional and State standards with respect to signing, striping and corner and stopping sight-distance, to the satisfaction of the City Engineer. The project would not include any hazardous design features or accommodate incompatible uses. The proposed project would be compatible with the residential uses surrounding the project site. Therefore, the proposed project would not substantially increase hazards due to a design feature or incompatible uses.

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

No Impact. Centre City Parkway contains Class II bike lanes in both directions on the City's Mobility and Infrastructure Element. There are no North County Transit District Bus/Rail Routes along Centre City Parkway (NCTS 2013). The proposed project would not impact existing bicycle lanes along the project frontage. No sidewalks or off-street paths are located along Centre City Parkway or are planned. Therefore, the proposed project would not decrease the performance or safety of any alternative transportation facility. Impacts would be less than significant.

XVII. TRIBAL CULTURAL RESOURCES

Would the project:

a. C*ause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:*

i. 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

ii. 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 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Less Than Significant with Mitigation. As described under Section V, Cultural Resources, cultural resources report (Spindrift, 2018) was prepared for the proposed senior residential development. The report concluded that no mitigation and/or monitoring would be necessary. The City initiated consultation with the Native American Tribes pursuant to Public Resources Code Section 21080.3.1 consistent with Assembly Bill 52 (AB 52). The City sent out AB 52 notification by mail to the four tribes, and email to three tribes who are traditionally and culturally affiliated with the geographic area of the project. The City also initiated consultation with Native American Tribes based on the recommended Tribal Consultation List provided by the Native American Heritage Commission, pursuant to Senate Bill 18. The Viejas Band of Kumeyaay Indians sent a letter (dated April 9, 2018) noting potential cultural significance or ties to the Kumeyaay Nation, and recommended the San Pasqual Band of Mission Indians be notified of the project. The San Pasqual Band of Mission Indians was sent notification in accordance with Senate Bill 18 requirements. Staff received formal requests from the Rincon Band of Luiseno Indians (Luiseno) and the San Luis Rey Band of Mission Indians (Luiseno) requesting formal consultation. Staff conducted a conference call with Destiny Colocho representing the Rincon Tribe on December 21, 2017 to discuss the project and also met with Ms. Colocho on July 24, 2018. Staff also met with representatives (Cami Mojado and PJ

Stoneburner) of the San Luis Rey Tribe on February 22, 2018 and May 25, 2018. The representative of both tribes acknowledged the previous site disturbance (grading and fill), and that no tribal cultural resources have been identified within the proposed project site. However, there is potential for buried unknown archaeological resources that may qualify as tribal cultural resources. Therefore, implementation of the following **mitigation measures CUL-1 through Cul-9** and would reduce impacts to tribal cultural resources to less than a significant level.

TCUL-1: It is recommended the City of Escondido Planning Division ("City") enter into a Tribal Cultural Resource Treatment and Monitoring Agreement (also known as a preexcavation agreement) with a tribe(s) that is traditionally and culturally affiliated with the Project Location ("TCA Tribe") prior to issuance of a grading permit. The purposes of the agreement are (1) to provide the applicant with clear expectations regarding tribal cultural resources; and (2) to formalize protocols and procedures between the City and the TCA Tribe for the protection and treatment of, including but not limited to, Native American human remains; funerary objects; cultural and religious landscapes; ceremonial items; traditional gathering areas; and cultural items located and/or discovered through a monitoring program in conjunction with the construction of the proposed project, including additional archaeological surveys and/or studies, excavations, geotechnical investigations, grading, and all other ground disturbing activities.

TCUL-2: Prior to issuance of a grading permit, the City shall retain a qualified archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (U.S. Department of the Interior, 2008), and a Native American monitor(s) associated with a TCA Tribe(s) to implement the monitoring program. The archaeologist shall be responsible for coordinating with the Native American monitor(s). This verification shall be presented to the City in a letter from the project archaeologist that confirms the selected Native American monitor(s) is associated with a TCA Tribe(s). The City, prior to any pre-construction meeting, shall approve all persons involved in the monitoring program.

TCUL-3: The qualified archaeologist and a Native American monitor(s) shall attend the pre-grading meeting with the grading contractors to explain and coordinate the requirements of the monitoring program.

TCUL-4: During the initial grubbing, site grading, excavation or disturbance of the ground surface, the qualified archaeologist, or an archaeological monitor working under the direct supervisor of the qualified archaeologist, and the Native American monitor(s) shall be on site full-time. If imported fill materials, or fill used from other areas of the project site, are to be incorporated at the project site, those fill materials shall be absent of any tribal cultural resources. The frequency of inspections shall depend on the rate of excavation, the materials excavated, and any discoveries of cultural resources that qualify as historical, unique archaeological, and/or tribal cultural resources. Archaeological and Native American monitoring will be discontinued when the depth of grading and soil conditions no longer retain the potential to contain cultural deposits. The qualified archaeologist, in consultation with the Native American monitor(s), shall be responsible for determining the duration and frequency of monitoring. In addition, all ground disturbance within 100 feet of resources CA-SDI- 011048 and CA-SDI-015818 shall be monitored full time regardless of depth of excavation or soil observations.

TCUL-5: In the event that previously unidentified cultural resources that qualify as historical, unique archaeological, and/or tribal cultural resources are discovered, the qualified archaeologist and the Native American monitor(s) shall have the authority to temporarily divert or temporarily halt ground disturbance operation in the area of discovery to allow for the evaluation of potentially significant cultural resources. Isolates and clearly non-significant deposits shall be minimally documented in the field and collected so the monitored grading can proceed.

TCUL- 6: If a cultural resource is discovered that may qualify as a historical, unique archaeological, and/or tribal cultural resource, the qualified archaeologist shall notify the City of said discovery, and shall conduct consultation with TCA tribe(s) to determine the most appropriate mitigation. The qualified archaeologist, in consultation with the City, the TCA Tribe and the Native American monitor(s), shall determine the significance of the discovered resource. Recommendations for the resource's treatment and disposition shall be made by the qualified archaeologist in consultation with the TCA Tribe and the Native American monitor(s) and be submitted to the City for review and approval.

TCUL-7: The avoidance and/or preservation of significant cultural resources that qualify as historical, unique archaeological, and/or tribal cultural resources must first be considered and evaluated as required by CEQA. Where any significant resources have been discovered and avoidance and/or preservation measures are deemed to be infeasible by the City, then a research design and data recovery program to mitigate impacts shall be prepared by the qualified archaeologist (using professional archaeological methods), in consultation with the TCA Tribe and the Native American monitor(s), and shall be subject to approval by the City. The archaeological monitor, in consultation with the Native American monitor(s), shall determine the amount of material to be recovered for an adequate artifact sample for analysis. Before construction activities are allowed to resume in the affected area, the research design and data recovery program activities must be concluded to the satisfaction of the City.

TCUL-8: If the qualified archaeologist elects to collect any archaeological materials that qualify as tribal cultural resources, the Native American monitor(s) must be present during any testing or cataloging of those resources. Moreover, if the qualified archaeologist does not collect the archaeological materials that qualify as tribal cultural resources that are unearthed during the ground disturbing activities, the Native American monitor(s), may at their discretion, collect said resources and provide them to the TCA Tribe for respectful and dignified treatment in accordance with the Tribe's cultural and spiritual traditions. The project archaeologist shall document evidence that all cultural materials have been curated and/or repatriated as follows:

1.) It is the preference of the City that all tribal cultural resources be repatriated to the TCA Tribe as such preference would be the most culturally sensitive, appropriate, and dignified. Therefore, any tribal cultural resources collected by the qualified archaeologist shall be provided to the TCA Tribe. Evidence that all cultural materials collected have been repatriated shall be in the form of a letter from the TCA Tribe to whom the tribal cultural resources have been repatriated identifying that the archaeological materials have been received.

OR

2.) Any tribal cultural resources collected by the qualified archaeologist shall be curated with its associated records at a San Diego curation facility or a culturally-affiliated Tribal curation facility that meets federal standards per 36 CFR Part 79, and, therefore, would be professionally curated and made available to other archaeologists/ researchers for further study. The collection and associated records, including title, shall be transferred to the San Diego curation facility or culturally affiliated Tribal curation facility and shall be accompanied by payment of the fees necessary for permanent curation. Evidence that all cultural materials collected have been curated shall be in the form of a letter form the curation facility stating the prehistoric archaeological materials have been received and that all fees have been paid.CUL-8: If the qualified archaeologist elects to collect any archaeological materials that qualify as tribal cultural resources, the Native American monitor(s) must be present during any testing or cataloging of those resources. Moreover, if the qualified archaeologist does not collect the archaeological materials that qualify as tribal cultural resources that are unearthed during the ground disturbing activities, the Native American monitor(s), may at their discretion, collect said resources and provide them to the TCA Tribe for respectful and dignified treatment in accordance with the Tribe's cultural and spiritual traditions. The project archaeologist shall document evidence that all cultural materials have been curated and/or repatriated as follows:

TCUL-9: Prior to the release of the grading bond, a monitoring report and/or evaluation report, if appropriate, which describes the results, analysis and conclusion of the archaeological monitoring program and any data recovery program on the project site shall be submitted by the qualified archaeologist to the City. The Native

American monitor(s) shall be responsible for providing any notes or comments to the qualified archaeologist in a timely manner to be submitted with the report. The report will include California Department of Parks and Recreation Primary and Archaeological Site Forms for any newly discovered resources.

XVIII. UTILITIES AND SERVICE SYSTEMS

Would the project:

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?

Wastewater Facilities and Capacity
Less than Significant Impact. The proposed on-site sewer system for the residential development would include sewer lines within the proposed internal roadways. The internal system would connect to a line in Centre City Parkway. The project's incremental increase in demand for wastewater treatment would not exceed current City wastewater capacity based on the consistency of the proposed use with planned land uses that are considered in the City's wastewater capacity planning. The project is consistent with the General Plan; therefore, no additional wastewater treatment facilities are required. Impacts would be less than significant.

This project will be required to comply with the requirements of the City of Escondido Engineering Design Standards, waste water discharge regulations and the California Plumbing Code as a condition of project approval. All wastewater would be treated consistent with applicable RWQCB treatment requirements at the Hale Avenue Resource Recovery Facility. Because the City of Escondido regulations regarding wastewater discharge are compliant with the Regional Water Quality Control Board waste water treatment requirements, this project will not have any significant impact.

Stormwater Facilities
Less than Significant Impact. As described under Section IX, Hydrology and Water Quality, after project development, onsite runoff from the residential development would be directed towards the bioretention areas. Drainage patterns would remain generally the same as existing conditions, and proposed runoff would drain to the existing culvert under Centre City Parkway. Thus, the proposed project would not result in a need for additional stormwater capacity improvements off-site. Impacts related to stormwater would be less than significant.

Water Facilities and Supplies
Less than Significant Impact. The project would result in an increase demand for water service. Water service would be provided to the proposed project by the Rincon Del Diablo Municipal Water District (RDDMWD) which has water service in the area to serve the project. The total average estimated water demand for the residential

development is 44,000 gallons per day (gpd), with a maximum daily demand of 79,200 gpd. Because the proposed development is consistent with the General Plan, no additional entitlements or resources would be needed to service the project. The proposed project would include construction of on-site water lines and sewer lines to connect the proposed project site to the existing water distribution system and sanitary sewer system Therefore, the proposed project would have a less than significant impact related to water supply and the construction of new water treatment facilities.

Solid Waste Capacity and Compliance

Less than Significant Impact. The proposed project would result in an increased demand for solid waste disposal. The project would generate solid waste during demolition and construction phases, as well as, during operation of the residential development (the SAP improvements are not expected to generate any solid waste). Construction and demolition waste would be disposed of at regional landfills, green waste centers, and recycling centers, as appropriate. Any contaminated soils or other hazardous materials would be disposed of in accordance with regulations. Operational waste would be collected by the Escondido Disposal, Inc. and disposed of at regional landfills. More specifically, the solid waste would be taken to the Escondido Disposal Transfer Station, and then to the Otay Landfill or Sycamore Landfill. The Otay Landfill has a remaining capacity of 25,514,904 cubic yards (cy), and is expected to be operational until 2028 (CalRecycle 2016b). The Sycamore Landfill has a remaining capacity of 71,233,171 cy and an anticipated closure date of 2042 (CalRecycle 2016b). Considering the size of the project and the project consistency with the General Plan, the remaining capacity at these landfills would be sufficient to serve the project and the project would not result in a need for new or expanded landfill facilities. Thus, project impacts related to solid waste would be less than significant.

Comply with federal, state, and local statutes and regulations related to solid waste Numerous federal, state, and local regulations exist that are related to solid waste.

No Impact. These include (1) California Integrated Waste Management Agency, which regulates the management of solid waste within the state; (2) Non-Exclusive Solid Waste Management Agreement, which regulates waste collection in a market-driven business; and (3) the San Diego Integrated Waste Management Plan, which presents strategies to recycle, as well as assist with the siting of solid waste disposal facilities. The project would comply with all regulations related to solid waste such as the California Integrated Waste Management Act and City recycling programs. No impact would occur. No unusual wastes are anticipated from this site or the proposed uses. The project will include trash receptacles and enclosures in accordance with regulations.

XIX. MANDATORY FINDINGS OF SIGNIFICANCE

Would the project:

a. Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to 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 would cause substantial adverse effects on human beings, either directly or indirectly?

d. Where deficiencies exist relative to the City's General Plan Quality of Life Standards, does the project result in deficiencies that exceed the levels identified in the Environmental Quality Regulations {Zoning Code Section 33-924 (a)}?

Less Than Significant Impact with Mitigation Incorporated

Potentially significant impacts to the environment resulting from the proposed project have been identified for the areas of biological resources, cultural and tribal cultural resources, and noise. With implementation of identified project mitigation measures, the project is not expected to have any significant impacts, either long-term or short-term, or result in any substantial adverse effects on human beings, either directly or indirectly. Specifically, the project would not degrade the quality of the environment for plant or animal communities, substantially reduce the habitat of a fish or wildlife species, cause fish or wildlife populations to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of endangered plants or animals. The project would also not eliminate important examples of the major periods of California history or prehistory. The project would not result in deficiencies that exceed the levels identified in the City's Environmental Quality Regulations relative to the City's General Plan Quality of Life Standards. As described, project-related effects either would be avoided by incorporation of project design measures, or mitigated to levels below significance, and no cumulatively considerable impacts would occur. Therefore, the proposed project would not have a significant individual or cumulatively considerable impact on the environment.

<u>Materials Use in Preparation of this Analysis</u>

Appendices (due to the size of the documents, the specific project specific studies and letters use in preparation of this report are provided in electronic form on and also may be viewed on the City's web site at: https://www.escondido.org/planning.aspx

Click on the Development Project Information button at the bottom of the page and go to "Escondido Assisted Living 1802 N. CCP" ENV17-0007

Escondido General Plan Update 2012
City of Escondido, 2012b. Escondido General Plan Update, Downtown Specific Plan Update, and Climate Action Plan Environmental Impact Report, Volume I – Final Environmental Impact Report
Escondido Zoning Code and Land Use Maps
SANDAG Summary of Trip Generation Rates
Escondido Historic Sites Survey
City of Escondido

- Public Works Department
- Engineering Division
- Traffic Division
- Building Division
- Fire Department
- Police Department
- Planning Division

FIRM maps (Flood Insurance Rate Maps)
Draft MHCP maps (Multiple Habitat Conservation Program)
County of San Diego Health Department, Hazardous Material Management Division (HMMD) Hazardous Sites List
Escondido Drainage Master Plan (1995)
Biology Reports, John Lovio, dated: 9-15-03, 10-23-03, 4-19-07 and 6-6-07
Preliminary Biological Reassesment, John Lovio, April 4, 2018.
Supplemental Biology Report, John Lovio, August 24, 2018
Investigative Science And Engineering, Inc., Air Quality Conformity Assessment Escondido Assisted Living Facility Escondido, Ca; June 29, 2018
Investigative Science and Engineering, Inc., Exterior Acoustical Site Assessment CCR Title 24 Interior Noise Survey Escondido Assisted Living Facility Escondido, Ca; October 29, 2018
Investigative Science And Engineering, Inc., Greenhouse Gas Emissions Assessment Escondido Assisted Living Facility Escondido, Ca; June 29, 2018
Leighton Consulting, Inc., Geotechnical Update Report, May 18, 2018
Leighton Consulting, Inc., Geotechnical Investigation, Proposed Nightingale Assisted Living Project; September 20, 204 and November 20, 2007
LOS Engineering, Draft Transportation Impact Analysis - Escondido Assisted Living (96 Beds) City of Escondido (GPA); June 6, 2018
Materia Landscape Architecture, Escondido Assisted Living Landscape Plan(s), June 21, 2018
Spear & Associates, Inc. Priority Development Project (PDP) SWQMP Escondido Assisted Living Phg17-0025 and Env17-0007, April 4, 2018
Spear & Associates, Inc. Hydrology/Hydraulic Study Escondido Assisted Living Phg17-0025 And Env17-0007, April 4, 2018
Spindrift Archaeological. 1802 N Centre City Parkway Survey; June 2018

Summary of Mitigation Measures:

BIO. 1 Prior to the issuance of grading permits, impacts to non-native grassland shall be mitigated at a ratio of 0.5:1 and shall consist of 0.33 acres. Mitigation shall be provided by either (1) preservation of equivalent or better habitat at an off-site location via a covenant of easement or other method approved by the City to preserve the habitat in perpetuity, or (2) purchase of non-native grassland or equivalent habitat credits at an approved.

BIO. 2: No clearing, grubbing, grading, or other construction activities shall occur between February 15 and September 15, the raptor and migratory bird nesting season, unless a qualified biologist completes a pre-construction survey to determine if active nests are present or absent. If no active nests are present, then construction activities may proceed. If active raptor nests are present, no grading or removal of habitat shall take place within 300 feet of active nesting sites during the nesting/breeding season (February 15 through September 15). The pre-construction survey must be conducted within 10 calendar days prior to the start of construction activities (including the removal of vegetation). The applicant shall submit the results of the preconstruction survey to the City for review and approval prior to initiating any construction activities.

BIO-3 Vegetation clearing or brushing shall occur outside of the typical breeding season for raptors and migratory birds (February 15 to September 15). If this is not possible, then a qualified biologist shall conduct a survey for nesting birds no more than five calendar days prior to construction to determine the presence or absence of nests on the project site. The applicant shall submit the results of the pre-construction survey to the City for review and approval prior to initiating any construction activities. No construction activities shall occur within 300 feet of tree dwelling raptor nests, or within 800 feet of ground dwelling raptor nests, until a qualified biologist has determined that they are no longer active or that noise levels will not exceed 60 dB(A) Equivalent Energy Level (Leq) at the nest site. Alternatively, noise minimization measures such as noise barriers shall be constructed to bring noise levels to below 60 dB(A) Leq, which will reduce the impact to below a level of significance.

BIO 4. During construction activities, the construction contractor shall ensure that the limits of grading are flagged or marked with silt fencing prior to grading to prevent indirect impacts to the adjacent Reidy Creek and sensitive riparian habitat. Prior to grading, a qualified biologist shall review the flagging and silt fencing and during grading the qualified biologist shall monitor the limits of clear and grub and grading activities. Monitoring shall be conducted on an as needed basis as determined by the qualified biologist.

BIO 5 - If it is determined that the proposed project cannot avoid the jurisdictional features on the project site and would result in significant impacts to jurisdictional waters, regulatory permits will be required to be obtained prior to project construction. To comply with the state and federal regulations for impacts on jurisdictional wetland features/resources, the following permits will be required to be obtained, or verified that they are not required: USACE 401 Permit, RWQCB 404 Permit (in accordance with Section 404 and 401 of the Clean Water Act [CWA]), and a CDFW Streambed Alteration Agreement under Section 1600 of California Fish and Game Code (CFGC). Mitigation to offset the impacts to Waters of the U.S. and State will be implemented in accordance with these regulatory permit conditions.

CUL-1. If subsurface deposits believed to be cultural or human in origin are discovered during construction, then all work must halt within a 50-foot radius of the discovery. An on-site archaeological monitor or Principal Investigator, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology, shall be retained and afforded a reasonable amount of time to evaluate the significance of the find. Work cannot continue at the discovery site until the archaeologist conducts sufficient research and data collection to make a determination that the resource is either 1) not cultural in origin; or 2) not potentially significant or eligible for listing on the NRHP or CRHR. If a potentially- eligible resource is encountered, then the archaeologist, lead agency, and project proponent shall arrange for either 1) total avoidance of the resource, if possible; or 2) test excavations to evaluate eligibility and, if eligible, total data recovery as mitigation. The determination shall be formally documented in writing and submitted to the lead agency as verification that the provisions in CEQA/NEPA for managing unanticipated discoveries have been met.

CUL-2. In the event that evidence of human remains is discovered, construction activities within 50 feet of the discovery will be halted or diverted, and the requirements above will be implemented. Depending on the occurrence, a larger radius may be necessary and will be required at the discretion of the on-site archaeologist. In addition, the provisions of Section 7050.5 of the California Health and Safety Code, Section 5097.98 of the California Public Resources Code, and Assembly Bill 2641 will be implemented. When human remains are discovered, state law requires that the discovery be reported to the County Coroner (Section 7050.5 of the Health and Safety Code) and that reasonable protection measures be taken during construction to protect the discovery from disturbance (AB 2641). If the Coroner determines the remains are Native American, the Coroner notifies the Native American Heritage Commission, which then designates a Native American Most Likely Descendant (MLD) for the project (Section 5097.98 of the Public Resources Code). The MLD may not be the same person as the tribal monitor. The designated MLD then has 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains (AB 2641). If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (Section 5097.94 of the Public Resources Code). If no agreement is reached, the landowner must rebury the remains in situ, or in a secure location in close proximity to where they were found, where they will not be further disturbed (Section 5097.98 of the Public Resources Code). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a document with the county in which the property is located (AB 2641).

NOI-1. Temporary Construction Barrier. In order to reduce the temporary noise impact from construction along the norther property boundary adjacent to residential development, a temporary noise barrier is required (as detailed in Figure 9b, page 24 of the acoustical assessment dated October 9, 2018 revised). The barrier would be constructed out of min. 5/8-inch plywood with no gaps, that would span the length of the adjacent property boundary, and would have a minimum height of six feet above the project grade. The barrier shall be installed prior to grading operations on the site.

NOI-2 Construction Notification. The construction contractor shall provide written notification to all residences located within 75 feet of the proposed construction activities at least three weeks prior to the start of construction activities, informing them of the estimated start date and duration of daytime vibration-generating construction activities. This notification shall include information about the potential for nuisance vibration. The City shall provide a phone number for the affected residences to call if they have concerns about construction-related vibration.

NOI-3 Vibration Best Management Practices. For construction activities within 75 feet of residences along the northern project boundary, the construction contractor shall implement the following measures during construction:

1. Stationary sources, such as temporary generators, shall be located as far from nearby vibration-sensitive receptors as possible.
2. Trucks shall be prohibited from idling along streets serving the construction site where vibration-sensitive receptors are located.
3. Demolition, earthmoving, and ground-impacting operations shall be phased so as not to occur in the same time period.

TCUL-1: It is recommended the City of Escondido Planning Division ("City") enter into a Tribal Cultural Resource Treatment and Monitoring Agreement (also known as a preexcavation agreement) with a tribe(s) that is traditionally and culturally affiliated with the Project Location ("TCA Tribe") prior to issuance of a grading permit. The purposes of the agreement are (1) to provide the applicant with clear expectations regarding tribal cultural resources; and (2) to formalize protocols and procedures between the City and the TCA Tribe for the protection and treatment of, including but not limited to, Native American human remains; funerary objects; cultural and religious landscapes; ceremonial items; traditional gathering areas; and cultural items located and/or discovered through a monitoring program in conjunction with the construction of the proposed project, including additional archaeological surveys and/or studies, excavations, geotechnical investigations, grading, and all other ground disturbing activities.

TCUL-2: Prior to issuance of a grading permit, the City shall retain a qualified archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (U.S. Department of the Interior, 2008), and a Native American monitor(s) associated with a TCA Tribe(s) to implement the monitoring program. The archaeologist shall be responsible for coordinating with the Native American monitor(s). This verification shall be presented to the City in a letter from the project archaeologist that confirms the selected Native American monitor(s) is associated with a TCA Tribe(s). The City, prior to any pre-construction meeting, shall approve all persons involved in the monitoring program.

TCUL-3: The qualified archaeologist and a Native American monitor(s) shall attend the pre-grading meeting with the grading contractors to explain and coordinate the requirements of the monitoring program.

TCUL-4: During the initial grubbing, site grading, excavation or disturbance of the ground surface, the qualified archaeologist, or an archaeological monitor working under the direct supervisor of the qualified archaeologist, and the Native American monitor(s) shall be on site full-time. If imported fill materials, or fill used from other areas of the project site, are to be incorporated at the project site, those fill materials shall be absent of any tribal cultural resources. The frequency of inspections shall depend on the rate of excavation, the materials excavated, and any discoveries of cultural resources that qualify as historical, unique archaeological, and/or tribal cultural resources. Archaeological and Native American monitoring will be discontinued when the depth of grading and soil conditions no longer retain the potential to contain cultural deposits. The qualified archaeologist, in consultation with the Native American monitor(s), shall be responsible for determining the duration and frequency of monitoring. In addition, all ground disturbance within 100 feet of resources CA-SDI- 011048 and CA-SDI-015818 shall be monitored full time regardless of depth of excavation or soil observations.

TCUL-5: In the event that previously unidentified cultural resources that qualify as historical, unique archaeological, and/or tribal cultural resources are discovered, the qualified archaeologist and the Native American monitor(s) shall have the authority to temporarily divert or temporarily halt ground disturbance operation in the area of discovery to allow for the evaluation of potentially significant cultural resources. Isolates and clearly non-significant deposits shall be minimally documented in the field and collected so the monitored grading can proceed.

TCUL- 6: If a cultural resource is discovered that may qualify as a historical, unique archaeological, and/or tribal cultural resource, the qualified archaeologist shall notify the City of said discovery, and shall conduct consultation with TCA tribe(s) to determine the most appropriate mitigation. The qualified archaeologist, in consultation with the City, the TCA Tribe and the Native American monitor(s), shall determine the significance of the discovered resource. Recommendations for the resource's treatment and disposition shall be made by the qualified archaeologist in consultation with the TCA Tribe and the Native American monitor(s) and be submitted to the City for review and approval.

TCUL-7: The avoidance and/or preservation of significant cultural resources that qualify as historical, unique archaeological, and/or tribal cultural resources must first be considered and evaluated as required by CEQA. Where any significant resources have been discovered and avoidance and/or preservation measures are deemed to be infeasible by the City, then a research design and data recovery program to mitigate impacts shall be prepared by the qualified archaeologist (using professional archaeological methods), in consultation with the TCA Tribe and the Native American monitor(s), and shall be subject to approval by the City. The archaeological monitor, in consultation with the Native American monitor(s), shall determine the amount of material to be recovered for an adequate artifact sample for analysis. Before construction activities are allowed to resume in the affected area, the research design and data recovery program activities must be concluded to the satisfaction of the City.

TCUL-8: If the qualified archaeologist elects to collect any archaeological materials that qualify as tribal cultural resources, the Native American monitor(s) must be present during any testing or cataloging of those resources. Moreover, if the qualified archaeologist does not collect the archaeological materials that qualify as tribal cultural resources that are unearthed during the ground disturbing activities, the Native American monitor(s), may at their discretion, collect said resources and provide them to the TCA Tribe for respectful and dignified treatment in accordance with the Tribe's cultural and spiritual traditions. The project archaeologist shall document evidence that all cultural materials have been curated and/or repatriated as follows:

1.) It is the preference of the City that all tribal cultural resources be repatriated to the TCA Tribe as such preference would be the most culturally sensitive, appropriate, and dignified. Therefore, any tribal cultural resources collected by the qualified archaeologist shall be provided to the TCA Tribe. Evidence that all cultural materials collected have been repatriated shall be in the form of a letter from the TCA Tribe to whom the tribal cultural resources have been repatriated identifying that the archaeological materials have been received.

OR

2.) Any tribal cultural resources collected by the qualified archaeologist shall be curated with its associated records at a San Diego curation facility or a culturally-affiliated Tribal curation facility that meets federal standards per 36 CFR Part 79, and, therefore, would be professionally curated and made available to other archaeologists/ researchers for further study. The collection and associated records, including title, shall be transferred to the San Diego curation facility or culturally affiliated Tribal curation facility and shall be accompanied by payment of the fees necessary for permanent curation. Evidence that all cultural materials collected have been curated shall be in the form of a letter form the curation facility stating the prehistoric archaeological materials have been received and that all fees have been paid.

TCUL-9: Prior to the release of the grading bond, a monitoring report and/or evaluation report, if appropriate, which describes the results, analysis and conclusion of the archaeological monitoring program and any data recovery program on the project site shall be submitted by the qualified archaeologist to the City. The Native American monitor(s) shall be responsible for providing any notes or comments to the qualified archaeologist in a timely manner to be submitted with the report. The report will include California Department of Parks and Recreation Primary and Archaeological Site Forms for any newly discovered resources.

INITIAL STUDY CHECKLIST

1. Project title/Project number:
   "ESCONDIDO ASSISTED LIVING"
   CITY FILE NOS. ENV17-0007 AND PHG17-0025

2. Lead agency name and address:
   City of Escondido
   201 North Broadway
   Escondido, CA 92025

3. Contact person and phone number:
   Jay Paul, Senior Planner
   (760) 839-4537
   jpaul@escondido.org

4. Project location:
   In the County of San Diego, City of Escondido, addressed as 1802 North Center City Parkway
   APN 226-190-22

5. Project Applicant/Sponsor's name and address:
   Tigg Mitchell
   127 Lomas Santa Fe Drive
   Solana Beach, CA 92075

6. General/Community Plan designation:
   Suburban 'S'

7. Zoning:
   R-1-10 (Single-Family Residential, min. 10,000 sf min. lot size)

8. Description of project (Describe the whole action involved, including but not limited to, later phases of the project, and any secondary, support, or off-site features necessary for its implementation)
   A three-story (with a maximum median height of 34'5") 96-bed, 88 room assisted living center and 45 parking spaces. The facility will support a 26,703 sq. foot total footprint and 69,929 square feet of interior area (71,316 total building area). A Conditional Use Permit, Grading Exemption and General Plan Amendment are requested. Offsite improvements include the landscaping of the project's frontage of NCCP and the development of a deceleration and acceleration lane within NCCP, along with street frontage improvements.

9. Surrounding land uses and setting: Briefly describe the project's surroundings:
   North: R-1-10 zoning (Single-Family Residential, 10,000 SF min. lot size) / Rincon Del Diablo Municipal Water District offices and public works yard. Single-Family homes also are located north of the project site on approximately 41,000 SF lots. Reidy Creek natural drainage channel and a two-story, multi-family residential development are located northeast of the project site.

South: R-1-10 (Single-Family Residential, 10,000 SF min. lot size) / Escondido Union High School and Centre City Parkway are located south and southwest of the project site. The high school agricultural operations and several sheds are located immediately south of the project site across the Reidy Creek natural drainage channel. Centre City Parkway is classified as a Major Road (102' R-O-W) on the City's Circulation Element.

East: R-1-10 (Single-Family Residential, 10,000 SF min. lot size) / Escondido Union High School is located east of the project site. The high school's agricultural fields and baseball fields are located immediately east of the project site. Reidy Creek acts as a physical and visual buffer from the school district property and the proposed development area for the project.

West R-1-10 and R-1-7 zoning (Single-Family Residential, 10,000 SF and 7,000 SF min. lot size) / Centre City Parkway is located immediately west of the project site. Centre City Parkway is classified as a Major Road (102' ultimate R-O-W) with a current right-of-way width of approximately 190' to 200' adjacent to the project site. A religious facility is located northwest of the project site. Single family residential development is located west and southwest of the project site across Centre City Parkway.

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.):

If it is determined that the proposed project cannot avoid the jurisdictional features on the project site and would result in significant impacts to jurisdictional waters, regulatory permits will be required to be obtained prior to project construction. To comply with the state and federal regulations for impacts on jurisdictional wetland features/resources, the following permits will be required to be obtained, or verified that they are not required: USACE 401 Permit, RWQCB 404 Permit (in accordance with Section 404 and 401 of the Clean Water Act [CWA]), and a CDFW Streambed Alteration Agreement under Section 1600 of California Fish and Game Code (CFGC). Mitigation to offset the impacts to Waters of the U.S. and State will be implemented in accordance with these regulatory permit conditions. NPDES Construction Activities Storm Water General Permit by the San Diego RWQCB also would be required.

11. Tribal Consultation. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1?

The City initiated consultation with the Native American Tribes pursuant to Public Resources Code Section 21080.3.1 consistent with Assembly Bill 52 (AB 52). The City sent out AB 52 notification by mail to the four tribes, and email to three tribes who are traditionally and culturally affiliated with the geographic area of the project. The City also initiated consultation with Native American Tribes based on the recommended Tribal Consultation List provided by the Native American Heritage Commission, pursuant to Senate Bill 18. Staff received formal requests from the Rincon Band of Luiseno Indians (Luiseno) and the San Luis Rey Band of Mission Indians (Luiseno) requesting formal consultation. Staff conducted a conference call with Destiny Colocho representing the Rincon Tribe on December 21, 2017 to discuss the project and also met with Ms. Colocho on July 24, 2018. Staff also met with representatives (Cami Mojado and PJ Stoneburner) of the San Luis Rey Tribe on February 22, 2018 and May 25, 2018.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

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

DETERMINATION: On the basis of this initial evaluation:

☐ The proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ Although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ The proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ The proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (a) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (b) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required.

☐ Although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or (MITIGATED) NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or (MITIGATED) NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature

January 04, 2019
Date

Jay Paul, Senior Planner
Name Printed

ENV17-0007
1.04.19

EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except “No Impact” answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A “No Impact” answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A “No Impact answer should be explained where it is based on project specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis.)

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. “Potentially Significant Impact” is appropriate if there is substantial evidence that an effect may be significant. If there are one or more “Potentially Significant Impact” entries when the determination is made, an EIR is required.

4) “Negative Declaration: Less Than Significant With Mitigation Incorporated” applies where the incorporation of mitigation measures has reduced an effect from “Potentially Significant Impact” to a “Less Than Significant Impact.” The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from “Earlier Analyses”, as described in (5) below, may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or (mitigated) negative declaration. *Section 15063(c)(3)(D).* In this case, a brief discussion should identify the following:

    a. Earlier Analysis Used. Identify and state where they are available for review.

    b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

    c. Mitigation Measures. For effects that are “Less Than Significant With Mitigation Measures Incorporated”, describe the mitigation measures that were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:

   a. The significance criteria or threshold, if any, used to evaluate each question; and

   b. The mitigation measure identified, if any, to reduce the impact to less than significant.

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I) AESTHETICS – Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within 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 day or nighttime views in the area?	☐	☐	☒	☐

II. AGRICULTURAL AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. – Would the project:

a) Converts Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the	☐	☐	☐	☒

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 1220(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 or conversion of forest land to non-forest use?	☐	☐	☐	☒

III. AIR QUALITY – Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make the following determinations – Would the project:

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐
IV. BIOLOGICAL RESOURCES – Would the project:				
a) Have substantial adverse effects, 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 Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other community identified in local or	☐	☒	☐	☐

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
regional plans, policies, and regulations or by the California Department of Fish and Game 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 a as 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?	☐	☒	☐	☐

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES – Would the project:				
a) Cause a substantial adverse change in the significance of an historical resource as defined in §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
d) Disturb and human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐
VI. GEOLOGY AND SOILS – Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) 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? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. GREENHOUSE GAS EMISSIONS – Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒
VIII. HAZARDS AND HAZARDOUS MATERIALS – Would the project:				
a) Create a significant hazard to the public or the environment through 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 one-quarter mile of an existing or proposed school?	☐	☐	☐	☒

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Be located on a site which is included on a list of hazardous materials 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 within an airport land use plan or, where such a plan has not been adopted, within two mile 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 within the vicinity of a private airstrip, would the project 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 are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. HYDROLOGY AND WATER QUALITY - Would the project:				
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 of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which 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, which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?	☐	☐	☒	☐

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Create or contribute runoff water, which 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 within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area, structures that would impede or redirect flood flows?	☐	☐	☐	☒
X. LAND USE AND PLANNING – Would the project:				
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?	☐	☐	☒	☐

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☒	☐
XI. MINERAL RESOURCES – Would the project?				
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?	☐	☐	☐	☒
XII. NOISE – Would the project result in:				
a) Generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒		☐
b) Generation of, excessive ground borne vibration or ground borne noise levels?	☐	☒	☐	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above existing without the project?	☐	☒	☐	☐
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 expose people residing or working in the 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 levels?	☐	☐	☐	☒
XIII. POPULATION AND HOUSING – Would the project:				
a) 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)?	☐	☐	☒	☐
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV. PUBLIC SERVICES				
a) Would the project result in substantial adverse physical impacts associated with the provisions of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service rations, response times or other performance objectives for any of the public services:				
i) Fire Protection	☐	☐	☒	☐
ii) Police Protection	☐	☐	☒	☐
iii) Schools	☐	☐	☒	☐
v) Parks	☐	☐	☒	☐
vi) Other public facilities	☐	☐	☒	☐
XV. RECREATION				
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?	☐	☐	☒	☐

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. TRANSPORTATION/TRAFFIC – Would the project?				
a) Conflict with an applicable plan, ordinance or policy establishing measures 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 uses (e.g., farm equipment)?	☐	☐	☐	☒

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒

XVII. TRIBAL CULTURAL RESOURCES. Would the project cause a substantial adverse change in the significance of a Tribal Cultural Resource, defined in Public Resources Code §21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Resources, or in a local register of historical resources as defined in Public Resources Code §5020.1(k)? Listed or eligible for listing in the California Register of Historical Resources of Historical Resources, or in a local register or historic resources as defined in Public Resources Code section 520.1(k), o	☐	☐	☒	☐
b) 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 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource of a California Native American tribe	☐	☒	☐	☐

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVIII. UTILITIES AND SERVICE SYSTEMS – Would the project:				
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?	☐	☐	☒	☐

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
g) Comply with federal, state, and local statutes and regulation related to solid waste?	☐	☐	☒	☐

XVIV. MANDATORY FINDINGS OF SIGNIFICANCE –

Issue	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to 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 futures projects)?	☐	☐	☒	☐
c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Materials Used in Preparation of this Analysis

1. BLUE Consulting Group, Biology Impact Assessment Report; December 12, 2018
2. City of Escondido; General Plan and Environmental Impact Report
3. City of Escondido; Zoning Code and Land Use Maps
4. City of Escondido; General Plan Update and Environmental Impact Report, 2000
5. City of Escondido Historical Sites Survey
6. City of Escondido Draft MHCP maps (Multiple Habitat Conservation Program)
7. City of Escondido Drainage Master Plan (1995)
8. City of Escondido, General Plan Update EIR; Estimated long-term daily emission estimates, 2000
9. City of Escondido Staff from:
    - Public Works Department
    - Engineering Division
    - Traffic Division
    - Building Division
    - Fire Department
    - Police Department
    - Planning Division
10. County of San Diego Health Department, Hazardous Material Management Division (HMMD) Hazardous Sites List
11. FIRM maps (Flood Insurance Rate Maps)
12. Investigative Science and Engineering, Inc.; Air Quality Conformity Assessment Escondido Assisted Living Facility Escondido, Ca; June 29, 2018
13. Investigative Science and Engineering, Inc.; Exterior Acoustical Site Assessment CCR Title 24 Interior Noise Survey Escondido Assisted Living Facility Escondido, Ca; October 9, 2018 (revised)
14. John Lovio; Historic Biological Reporting; dated: 9-15-03, 10-23-03, 4-19-07, and 6-6-07
15. John Lovio, Biology Report, April 4, 2018
16. John Lovio, Species Survey and Mapping; August 24, 2018
17. Leighton Consulting, Inc.; Geotechnical Update Report, Proposed Nightingale Assisted Living Project; May 18, 2018
18. Leighton Consulting, Inc.; Geotechnical Investigation, Proposed Nightingale Assisted Living Project; September 20, 2004 and November 20, 2007
19. LOS Engineering; Draft Transportation Impact Analysis - Escondido Assisted Living (96 Beds) City of Escondido (GPA); September 14, 2018 (revised)
20. Material Landscape Architecture; Escondido Assisted Living Landscape Plan(s), June 21, 2018
21. Spear & Associates, Inc. Priority Development Project (PDP)
    SWQMP Escondido Assisted Living Phg17-0025 And Env17-0007, April 4, 2018
22. Spear & Associates, Inc.
    Hydrology/Hydraulic Study Escondido Assisted Living Phg17-0025 And Env17-0007, April 4, 2018
23. Spear and Associated; HVAC screening graphics, October 2018
24. Spindrift Archaeological. 1802 N Centre City Parkway Survey; June 2018

25. U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG). Prior Project (Nightingale Health Services)/John Lovio (prior Project biologist) correspondence; October 23, 2003 and June 21, 2004

Materials Used in Preparation of this Analysis

1. BLUE Consulting Group, Biology Impact Assessment Report; December 12, 2018

December 14, 2018

Tigg Mitchell
C/O The Mitchell Group
127 Lomas Santa Fe Drive
Solana Beach, CA 92075

RE: Biological Assessment Letter Report for the Proposed Assisted Living Development, City of Escondido, San Diego County

Mr. Mitchell,
As requested, BLUE Consulting Group has reviewed the previously prepared reporting for the subject property, completed an onsite update biological resources survey and completed a biological assessment to determine the potential impacts to biological resources on and off-site. To prepare this assessment, prior reporting was utilized, including the most recently completed Biology Survey reports prepared for the project by John C. Lovio, dated April, July and August 2018. In addition to the habitat mapping, John Lovio also completed protocol surveys for two species of federally endangered riparian birds; the Least Bell's Vireo and the Southwestern Willow Flycatcher (August 2018). These surveys concluded that no federally or state listed species were present or had the potential to occur.

PROJECT LOCATION AND ENVIRONMENTAL SETTING

The triangular, approximately 3.48-acre property is located southeast of the junction North Centre City Parkway and North iris Lane in the city of Escondido in Central San Diego County (APN 226-190-22). The site is Zoned R-1 10 (Single-Family Residential, 10,000 SF min. lot size) and has a General Plan Designation of Suburban 'S'.

The project site consists of distinct upland (generally disturbed) and wetland sections. These sections are abruptly separated by a 14-foot-hlgh, cinder block retaining wall that was constructed at the western edge of the 100-year creek floodplain by the previous property owner under a valid grading and building permit. Brush management clearing and maintenance has been completed within all upland portions of the site, west of Reidy Creek.

ONSITE BIOLOGICAL RESOURCES

Onsite, a total of 0.47 acres of mature Southern Willow Scrub wetlands are supported within Reidy Creek and its' associated hydrologic influence. The onsite area immediately adjacent, to the west, is an existing 14-foot-tall retaining wall. This wall, separating the wetland portion of Reidy Creek and the created 'upland portion of the site, supports 0.66 acres of Non-Native Grasslands, a sensitive habitat type. The balance of the Property, 2.35 acres, is comprised of Disturbed/Ruderal Habitat.

All vegetation currently on the upland/disturbed section of the project site appears to represent colonizing growth since 1997. The higher pad area is sparsely vegetated by ruderal herbaceous vegetation and supports several hundred eucalyptus saplings and 40 mature eucalyptus trees, an invasive non-native species supported by the creek's hydrology.

No Least Bell's Vireos or Southwestern Willow Flycatchers were detected during the completed USFWS protocol surveys completed by John Lovio. No sensitive, rare or endangered species were observed during the completed survey by BLUE senior Biologist, Michael Jefferson.

Due to the overall condition of the site, location of the site and the lack of appropriate habitat onsite or adjacent to the site, none are expected to occur.

TABLE 3
ONSITE HABITAT

HABITAT	ACRES
Disturbed/Ruderal	2.35
Non-Native Grasslands	0.66
Southern Willow Scrub	0.47
TOTAL	**3.48**

A jurisdictional waterway flows north-south through the eastern, wetland supporting portion of the parcel. This 280-foot section of Reidy Creek is perennial, presumably due to suburban and agricultural runoff. The creek vegetation consists primarily of southern Willow Riparian Forest, which is composed of native willows, a few small coast live oaks, and a mixture of non-native trees, shrubs and herbaceous plant species. The riparian tree canopy is dense and consists of stout trees 20 to 35 feet tall.

The lower, more undisturbed southern pad area contains mostly ruderal, non-native herbaceous growth, including grasses, ragweed, tumbleweed, and an unidentified species of creeping legume. Approximately 15 individuals each of goldenbush and broom baccharis were also observed. As a result, this 0.66-acre area was determined to qualify as Non-Native Grasslands (NNG).

PROJECT IMPACTS and MITIGATTION REQUIREMENTS

The project was designed to avoid any direct impacts to the existing riparian/wetland habitat areas. All development on the site would be limited to the upland portion of the parcel, which is entirely west of the existing 14-foot-tall retaining wall. As a result, no impacts to the wetlands or Reidy Creek are proposed.

A total of 2.31 acres are proposed to be impacted and 1.17 acres to be preserved onsite. This impact consists of approximately 0.66 acres of sensitive Non-Native Grasslands (NNG) to be permanently impacted (the habitat supported on the lower, previously graded and maintained, pad area).

TABLE 3
ONSITE HABITAT IMPACTS and MITIGATION REQUIREMENTS

Habitat	Acres	Impacts	Preserved	Mitigation ratio	Mitigation Acreage
Disturbed/Ruderal	2.35	1.65	0.7	N/A	0.0
Non-Native Grasslands	0.66	0.66	0.0	0.5:1	0.33
Southern Willow Scrub	0.47	0.0	0.47	N/A	0.0
TOTAL	**3.48**	**2.31**	**1.17**		**0.33**

The impact to the 0.66 acres of sensitive Non-Native Grasslands would be regarded as a potentially significant impact without mitigation.

Mitigation is proposed to be completed with the preservation of approximately 1.17 acres of habitat, including the 0.47 acres of mature Southern Willow Scrub wetlands as well as the purchase of credits from the City of Escondido mitigation bank at Daley Ranch.

A mitigation ratio of 0.5:1 for NNG impacts will be required. As a result, a total of 0.33 acres of NNG mitigation credits are required.

In addition, within the area identified as Ruderal/Disturbed, is a copse of mature non-native trees (typical non-native Eucalyptus species). This area supporting the trees, totaling approximately 0.45 acres of non-native trees are generally are located along the Centre City Parkway frontage, and another located within the southwestern corner of the site. The grading plan has been designed to retain as many of the trees as possible.

The loss of any mature trees would be required to be replaced in conformance with the City's Grading Ordinance and Landscape Ordinance at a minimum 1:1 ratio.

SUMMARY and CONCLISIONS
The development of the proposed project would not conflict with the provisions of an adopted or proposed Habitat Conservation Plan. The proposed development area is not considered biologically significant or strategically located to warrant being included in a regional or local natural open space preserve.

No plant or animal species recognized as threatened or endangered by the U.S. Fish and Wildlife Service, or California Department of Fish and Game are located or anticipated to be present on the project site, and no species-specific mitigation measures are required.

The site is not listed as an open space corridor or animal migration corridor since much of the property is disturbed and surrounded by development.

The project has been designed to avoid any potential impacts to the habitat within the eastern portion of the site, which supports the Reidy Creek drainage and wetland habitat. This area, approximately totally 1.17 acres, would

P.O. Box 501115 San Diego, CA 92150 ☎858.391.8145 Mike@blueconsulting.com

be perpetually preserved (from development) and separated from the Project by an existing and proposed retaining wall and security fencing.

The project site is not listed on the City' Parks, Trails and Open Space Plan, or any local or regional plan. The biological analysis concluded project related impacts are considered less than significant, with the incorporation of the identified project measures, as defined by the California Environmental Quality Act.

Development of the subject site would create a new source of light and glare within the area. The primary source of light would be from new street lights and outdoor residential lighting. All proposed street lighting near adjacent residential properties and the Reidy Creek drainage area would be designed to minimize the overflow of light onto these properties. The majority of the riparian forest on the site will be partially shielded by the higher building pad and the height of the proposed building (up to 35 feet in height). Compliance with the City's Outdoor Lighting Ordinance would ensure that impacts related to light and glare, resulting from development of the site, are less than significant.

The mature trees on-site have potential biological value, as they may provide nesting opportunities. Raptor breeding is protected by the California Department of Fish and Wildlife Code, and migratory bird nesting is protected by the Migratory Bird Treaty Act. In accordance with these regulations, the following avoidance measure and project condition would be placed on any construction permits issued by the City for this project:

> *No clearing, grubbing, grading, or other construction activities shall occur between February 15 and September 15, the raptor and migratory bird nesting season, unless a qualified biologist completes a pre-construction survey to determine if active nests are present or absent. If no active nests are present, then construction activities may proceed. If active raptor nests are present, no grading or removal of habitat shall take place within 300 feet of active nesting sites during the nesting/breeding season (February 15 through September 15).*
>
> *The pre-construction survey must be conducted within 10 calendar days prior to the start of construction activities (including the removal of vegetation). The applicant shall submit the results of the preconstruction survey to the City for review and approval prior to initiating any construction activities.*

Compliance with the California Department of Fish and Wildlife Code and Migratory Bird Treaty Act ensures avoidance of nesting raptor and migratory bird impacts. No biological resource impact would occur.

In addition, several of the mature eucalyptus trees would be removed and the loss of any mature trees would be required to be replaced in conformance with the City's Grading Ordinance and Landscape Ordinance at a minimum 1:1 ratio.

Biological Mitigation Measures:

- B-1. Replacement of impacted mature eucalyptus trees at a 1:1 mitigation ratio
- B-2. Impacts to 0.66 acres of Non-Native Grasslands at a 0.5:1 mitigation ratio (totaling 0.33 acres)
- B-3. Raptor and Migratory Bird pre-construction surveys and reporting (February 15 - September 15)

B-4. Biological monitor during all grading activities to ensure the approved limits of impacts are not exceeded and the preserved area, including the southern will scrub habitat within Reidy Creek.

This concluded the Biological Assessment for the proposed Project. If you have questions or concerns, please feel free to contact me.

Sincerely,

Michael K. Jefferson
President/Senior Biologist
BLUE Consulting Group

Attachments:

Figure 1 – Habitat Map
Figure 2 – Impact Map

Previously completed Biological Reporting:

- John Lovio, Biology Report, April 4, 2018
- John Lovio, Species Survey and Mapping; August 24, 2018
- John Lovio, Email biological habitat; September 15, 2018

FIGURE 1
Habitat Map

Property
Grading Footprint
Southern Willow Scrub
Non-Native Grassland
Developed
Eucalyptus Trees
Ruderal/Disturbed

FIGURE 2
Impact Map

John C. Lovio
Wildlife Biologist-Ecologist
4458 Alabama Street #8
San Diego, CA 92116
Telephone (619) 990-6632
E-mail jlovio@cox.net

PRELIMINARY BIOLOGICAL REASSESMENT OF 1802 North Centre City Parkway, Escondido, San Diego County

4 April, 2018

Background and Procedures

John C. Lovio, Wildlife Biologist – Ecologist (JCL) was retained in January of 2018 by the Mitchell Group of Solana Beach, California to identify any current biological constraints to modification and development of the largely undeveloped, approximately 3.09-acre property at 1802 Centre City Parkway, in the city of Escondido, San Diego County, California (Assessor's Parcel Number 226-1909-22). JCL conducted extensive biological assessments and surveys for a proposed development on this property between 2002 and 2007, producing several reports and letters. The JCL letter reports dated 15 September 2003 and 6 June 2007 particularly form the basis for this biological re-assessment. Additional material considered for this report include a joint comment letter by the wildlife regulatory agencies (U.S. Fish and Wildlife Service [USFWS] and California Department of Fish and Wildlife) dated 21 June 2004, as well as the historical map feature of Google Earth (2018).

The triangular, 3.09-acre property (Figure 1) occurs southeast of the junction North Centre City Parkway and North Iris Lane in the city of Escondido in central San Diego County. The approximate western 66% of the property comprises disturbed, partially filled uplands consisting of a higher western terrace and a lower eastern terrace separated by a five-foot high embankment. The remaining eastern third of the property includes a 280-foot section of the Reidy Creek (tributary of Escondido Creek) channel and 100-year floodplain that is below and abruptly separated from the uplands by a 14-foot high retaining wall that was constructed in 1997. The southwestern edge of the uplands supports a stand of large, non-native Eucalyptus trees along the northeastern edge of North Centre City Parkway.

In terms of vegetation cover, the 2003 JCL report characterizes the upper western terrace of the property as ruderal herbaceous vegetation (defined as formerly disturbed and bearing little to no resemblance to the original, native vegetation, per Holland et al. 1990 and Oberbauer et al. 2008) and dense growth of young Eucalyptus trees. The lower terrace was described as ruderal non-native herbaceous cover with a few colonizing San Diego Goldenbush (*Isocoma mensiesii*) and Broom Baccharis (*Baccharis sarothroides*) shrubs. These native species are adapted to disturbance, readily establishing among non-native weed species. The lower, eastern terrace

Figure 1. Approximate property boundaries (red) and surrounding land use. See Appendix for photographs. Base aerial photograph from Google Earth Pro 2018.

of the site was formerly a gradual slope dropping eastward to the creek, but was made level by filling of soil behind the 1997 retaining wall.

The 280-foot section of Reidy Creek running through the eastern side of the site is continuous with stream flow and riparian (streamside) vegetation both upstream and downstream. It supports approximately 0.5 acre of predominantly native riparian and marsh vegetation, including native willows (*Salix* spp.) and several small Coast Live Oaks (*Quercus agrifolia*).

JCL conducted a full USFWS protocol survey (eight spring-summer visits) in 2003 and partial survey (four visits) in 2007 for the federally endangered Least Bell's Vireo (*Vireo bellii pusillus*), resulting in no detections of the species. This section of creek was determined to not provide suitable habitat conditions for other listed riparian species such as the Arroyo Toad (*Bufo californica*) and Southwestern Willow Flycatcher (*Empidponax traillii extimus*).

The 2004 joint wildlife agency letter raised several questions and identified the following potential issues for the 1802 Centre City Parkway site:

- Whether vegetation on the upland portions of the site should be re-classified as "annual grassland".
- Whether the shallow basin subject to inundation on the lower upland terrace is in fact a sensitive, native vernal pool.

- The nature of vegetation and potential habitat conditions on the site prior to 1997.
- The potential need to conduct major construction activities between 31 August and 15 February to avoid the avian nesting season.

A field visit to the property by JCL and botanist Brant Primrose was conducted on 4 February, 2018 to assess current general conditions and identify any changes that may have occurred over the past 11 years. The visit was preceded by only one significant rain pulse in January, which resulted in delayed and stunted annual plant growth for the early February date. The date of the field visit was considered optimal at the time, in view of forecast continued drought conditions.

Survey Results and Site Assessment

The results of this report are preliminary because the biological reassessment included herein is based on a single field visit conducted by necessity in mid-winter to meet an administrative deadline, which has since been extended. The field visit was conducted early in the season relative to plant germination and flowering (including that of potential rare species), prior to seasonal arrival and/or reproduction of potential special status animal species, and during conditions of unusual drought. Subsequent measurable rainfall did fall between the third week of February and the third week of March of 2018, although the seasonal precipitation total to date has been substantially below average.

General

The 1802 Centre City Parkway property has remained basically unchanged over the 11 years between 2007 and 2018. Additionally, the surrounding land use of mixed urban and semi-rural development has not changed during this period (Figure 1). The upland portion of the site continues to have limited native habitat value, due to its disturbed condition and isolation from other undeveloped areas. The isolation factor also precludes function of the upland part of the site as part of a wildlife corridor. The section of Reidy Creek within the property is small, but continues to support hydrology, native vegetation, and a measure of putative biological connectivity.

Historical Change

The results of historical aerial photograph research (Google Earth 2018) revealed black and white photographs of the 1802 Centre City Parkway property in 1995 and 1996, just prior to earth-moving, rough grading, and retaining wall construction in 1997. The quality of the 1996 photograph is superior to that from 1995, although the detail is not comparable to that available today. Although it is difficult to ascertain fine details of the pre-1997 vegetation on the site, the earlier photographs indicate a matrix of pale, uniform coloration strongly suggestive of dry, low herbaceous cover, as well as a scatter of darker, taller (detectable from shadows), roughly circular patches of vegetation, most likely consisting of non-native trees and/or shrubs. This conclusion is supported by a group of such dark vegetation patches clustered around two or three man-made structures in the north-central part of the upland portion of the site, as is typically planted in rural residential situations.

Examination of the 1996 aerial photograph and the U.S. Geological Survey topographic map of the area reveals a gentle eastward slope across the 1802 Centre City Parkway site down to the creek and no evidence of the steep, approximately five-foot high embankment that exists today.

Aerial photograph comparison also shows that a long, narrow, neatly rectangular, roughly north-south area that supported the building structures in 1996 was excavated during 1997 into a shallow basin, creating the steep embankment. It is likely that the excavated material was used to fill the area west of the retaining wall, creating the level, lower terrace. Distinct heaps of soil and rock rubble from the excavation remain within the basin and in the southeast corner of the lower terrace (Photographs 1 and 3). After more than 20 years these heaps support only sparse, colonizing vegetation.

Vegetation / Plants

The preliminary plant species inventory conducted on 4 February 2018 provides the basis for determining any vegetation changes over 11 years, which could possibly affect native habitat value and the potential occurrence of wildlife species. The inventory also provided survey for any rare plant species occurring on the 1802 Centre City Parkway site.

The results of the floristic inventory are presented in Table 1. Fifty-seven vascular plant species were documented on the property in early February under conditions of early season germination, following drought winter conditions. Plant species in Table 1 are categorized by their occurrences in one or more of five vegetation communities identified on the site (Holland 1986, Holland and Keil 1990, Oberbauer et al. 2008):

- Southern Willow Riparian Forest
- Freshwater Marsh
- Non-Native Grassland
- Eucalyptus woodland
- Ruderal (woody and herbaceous) vegetation.

The shallow, rectangular excavation basin (Photograph 1), dry at the time of survey, was examined for plant species indicative of vernal pools, which are rare, seasonally ephemeral, small-scale aquatic ecosystems typically supporting highly restricted plant and animal species. Vernal pools can occur within any of various larger-scale vegetation communities. No vernal pool plants were found. As described above, the historical aerial photograph comparison clearly demonstrates that this basin did not exist prior to 1997.

The southern willow riparian forest on the small section of Reidy Creek is characterized by dominant native willows (see Table 1) exceeding 20 feet in height (Photograph 4). Water flow on the creek appears to be perennial, probably due in part to frequent suburban runoff. Tree bole diameters also indicate a relatively mature stand. Although the rooted area of the riparian vegetation has not changed over the past 11 years, aerial photograph comparison indicates that the width of the canopy has expanded somewhat, which may be partially attributable to non-native components of the vegetation.

Freshwater marsh plant species (Table 1) occur on the Reidy Creek channel, typically in sections with relatively open tree canopy.

The upland terraces at 1802 Centre City Parkway differ with respect to vegetation changes over 11 years. The lower, eastern terrace, which was partially filled by soil in 1997, has changed from essentially ruderal growth in 2007 (JCL 2003) to a recovering non-native grassland (synonymous with “annual grassland” referred to in the 2004 joint wildlife agency letter; per Oberbauer et al. 2008) dominated by non-native grasses and forbs (see Table 1), but including a small proportion (less than 10%) of native purple needle grass (*Nassella pulchra*). Additionally, the colonizing native shrub cover that was limited to fewer than 20 plants 15 years ago (JCL 2003) now consists of approximately 100 shrubs in uneven, but relatively open dispersion within the herbaceous matrix of the non-native grassland (Photograph 2). Shrub cover is dominated by San Diego goldenbush, but includes lesser amounts of broom Baccharis and coastal deerweed. This open shrub cover, which may eventually succeed into Diegan Coastal Sage Scrub: *Baccharis*-dominated (Oberbauer et al. 2008, alternately classified as *Isocoma menziesii* Shrubland Alliance per Sawyer, Keeler-Wolf, and Evens 2009), but is currently best classified as a sparse woody element in non-native grassland.

The higher, western upland terrace continues to support dense, young growth of Eucalyptus and very sparse herbaceous cover (Photograph 1), the latter of which was in very early stages of germination on 4 February 2018. Eucalyptus trees typically suppress the under-growth of other plant species through chemical compounds in their decomposing leaves. Therefore, this area is still classified as ruderal.

Non-native Eucalyptus woodland occurs in a discontinuous band amid non-native grassland along the north-eastern edge of Centre City Parkway (Photograph 3). The largest trees are approximately 100 feet tall and are concentrated in the southwestern corner of the triangular property. These mature trees are assumed to be the sources of younger growth on the western upland terrace.

Table 1: Vascular Plant Species Observed on the 1802 Centre City Parkway Property, Escondido, California
February 2018

Scientific Name	Common Name	Veg Community	Status**
	ANGIOSPERMS: DICOTS		
Aizoaceae – Fig Marigold Family			
**Carpobrotus edulis*	Hottentot Fig	NNG	
Anacardiaceae - Sumac or Cashew Family			
Malosma laurina	Laurel sumac	NNG	
**Schinus terebinthifolius*	Brazillian Pepper Tree	SWRF	
Apiaceae (Umbelliferae) - Carrot Family			
Apiastrum angustifolium	Mock-parsley	FWM	
**Apium graveolens*	Common Celery	FWM	
Asteraceae (Compositae) - Sunflower Family			
Ambrosia psilostachya	Western ragweed	NNG	
Artemisia palmeri	Douglas mugwort	SWRF	4.2 S3.2 G2
Baccharis pilularis subsp. consanguinea	Coyote Brush	NNG	
Baccharis salicifolia	Mule-fat, seep-willow	SWRF	
Baccharis sarothroides	Broom baccharis	NNG	
Conyza canadensis	Horseweed	NNG	
Corethrogyne filaginigolia	California Sand Aster	NNG	
Deinandra fasciculatea	Fascicled Tarweed	NNG	
**Filago gallica*	Narrow-leaf filago	NNG	
Heterotheca grandiflora	Telegraph weed	NNG	
Isocoma menziesii	San Diego Goldenbush	NNG	
**Lactuca serriola*	Prickly lettuce	SWRF, NNG	
**Logfia gallica*	Narrow leaf cottonrose	NNG	
Psuedogmaphalium californicum	California Everlasting	NNG	
Psuedognaphalium canescens	Everlasting Cudweed	NNG	
Stephanomeria virgata	Tall Wreath Plant	NNG	
Brassicaceae (Cruciferae) - Mustard Family			
**Hirschfeldia incana*	Short-pod mustard	NNG	
Caprifoliaceae [incl. Adoxaceae] - Honeysuckle Family			
Lonicera subspicata var. denudata	Southern honeysuckle	SWRF	
Sambucus nigra	Blue elderberry	SWRF	
Convolvulaceae - Morning-Glory Family			
Calystegia macrostegia	Morning-glory	NNG	
Cucurbitaceae - Gourd Family			
Marah macrocarpus var. macrocarpus	Manroot, wild-cucumber	NNG	
Euphorbiaceae - Spurge Family			
Croton setigerus	Doveweed	NNG	
**Ricinus communis*	Castor Bean	FWM	
Fabaceae (Leguminosae) - Legume Family			
	Spanish Clover		

Scientific Name	Common Name	Veg Community	Status**
Acmispon americanus var. americanus		NNG	
Acmispon glaber	Coastal deerweed	NNG	
**Melilotus indicus*	Indian Sweetclover	NNG	
Fagaceae - Oak Family			
Quercus agrifolia var. agrifolia	Coast live oak, encina	SWRF	
Geraniaceae - Geranium Family			
**Erodium botrys*	Long-beak filaree/storksbill	NNG	
**Erodium cicutarium*	Red-stem filaree/storksbill	NNG	
Lamiaceae (Labiatae) - Mint Family			
Stachys ajugoides var. rigida	Hedge-nettle	FWM	
Meliaceae – Mahogany Family			
**Melia azedarach*	China Berry	SWRF, NNG, EW	
Myrtaceae – Myrtle Family			
**Eucalyptus globulus*	Blue Gum	NNG, Rud	
Onograceae – Evening Primrose Family			
Epilobium ciliatum subsp. *ciliatum*	Willow Herb	NNG, SWRF	
Plantaginaceae - Plantain Family			
**Plantago major*	Common Plantain	NNG	
Polygonaceae - Buckwheat Family			
Eriogonum fasciculatum	California buckwheat	NNG	
Rosaceae - Rose Family			
Rubus parviflorus	Thimbleberry	FWM	
Salicaceae - Willow Family			
Salix laevigata	Red Willow	SWRF	
Salix lasiolepis	Arroyo willow	SWRF	
Saururaceae – Lizard's Tail Family			
Anemopsis californica	Yerba Mansa	FWM, SWRF	
Tamaricaceae – Tamarisk Family			
**Tamarisk* sp.	Saltcedar	FWM, SWRF	
ANGIOSPERMS: MONOCOTS			
Arecaceae (Palmae) - Palm Family			
**Washingtonia robusta*	Mexican fan palm	SWRF, FWM	
Cyperaceae - Sedge Family			
Schoenoplectus californicus	California bulrush	FWM	
Juncaceae - Rush Family			
Juncus sp.	rush	NNG	
Juncus mexicanus	Mexican rush	NNG	
Poaceae (Gramineae) - Grass Family			
**Avena barbata*	Slender wild oat	NNG	
**Bromus hordeaceus*	Soft chess	NNG	
**Bromus madritensis* ssp. *rubens*	Foxtail chess	NNG	
**Cortaderia selloana*	Selloa pampas grass	NNG	
**Cynodon dactylon*	Bermuda grass	NNG	
**Piptatherum miliaceum*	Smilo grass	NNG	
Nassella pulchra	Purple needle grass	NNG	
Themidaceae - Brodiaea Family			

Scientific Name	Common Name	Veg Community	Status**
Dichelostemma capitatum ssp. *capitatum*	Blue dicks	NNG	
Typhaceae – Cattail Family			
Typha latifolia	Broad-Leaf Cattail	FWM, SWRF	

Scientific and common names are from Hickman (1993).

Vegetation Community: SWRF: southern willow riparian forest; FWM: freshwater marsh; NNG: non-native grassland; EW: Eucalyptus Wodland; Rud = ruderal.

* Non-native plant species
** California Native Plant Society 2018

Wildlife

Approximately two acres of predominantly non-native upland vegetation at 1802 Centre City Parkway provides little wildlife habitat value, due to its disturbed condition, small size, and state of isolation from other undeveloped areas. The small area of non-native grassland is of insufficient size to support any sensitive wildlife species associated with that habitat. Furthermore, it is not a habitat remnant, but rather an area that has experienced vegetation regeneration from a state of complete disturbance, thus precluding the occurrence of vestigial populations of any wildlife species.

The small riparian zone on Reidy Creek and within the 1802 Centre City Parkway property retains wildlife habitat value and connectivity. The federally endangered Least Bell's Vireo was not found in riparian habitat on the site or vicinity between 2003 and 2007 and the quality of the habitat has not changed significantly. This riparian zone still does not provide adequate area and canopy volume to support nesting of the federally endangered Southwestern Willow Flycatcher. The riparian channel is densely vegetated, lacking open, sandy pools required for reproduction of the federally endangered Arroyo Toad.

Although non-native, the Eucalyptus stand provides potential nesting habitat for common bird species, including certain raptors (birds of prey), which are all protected by state law. A Red-shouldered Hawk (*Buteo lineatus*) and an unidentified raptor nest were found in this tree grove during the 4 February 2018 field survey. The nest was not determined to be active at the time. Red-shouldered Hawk was found nesting in this grove in 2003.

Summary

The undeveloped, 3.09-acre property at 1802 Centre City Parkway in Escondido has undergone little change between 2007 and 2018 with respect to the state of biological resources. The upland, approximately two-thirds of the site is gradually recovering from intense disturbance more than 20 years ago and, despite some semi-native vegetation development, provides little wildlife habitat value. A 2018 preliminary plant survey revealed no rare species. A short section of semi-native riparian vegetation on Reidy Creek provides some habitat value and connectivity, but no rare plants were found in 2018. Earlier surveys of the riparian zone revealed no special status wildlife.

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APPENDIX

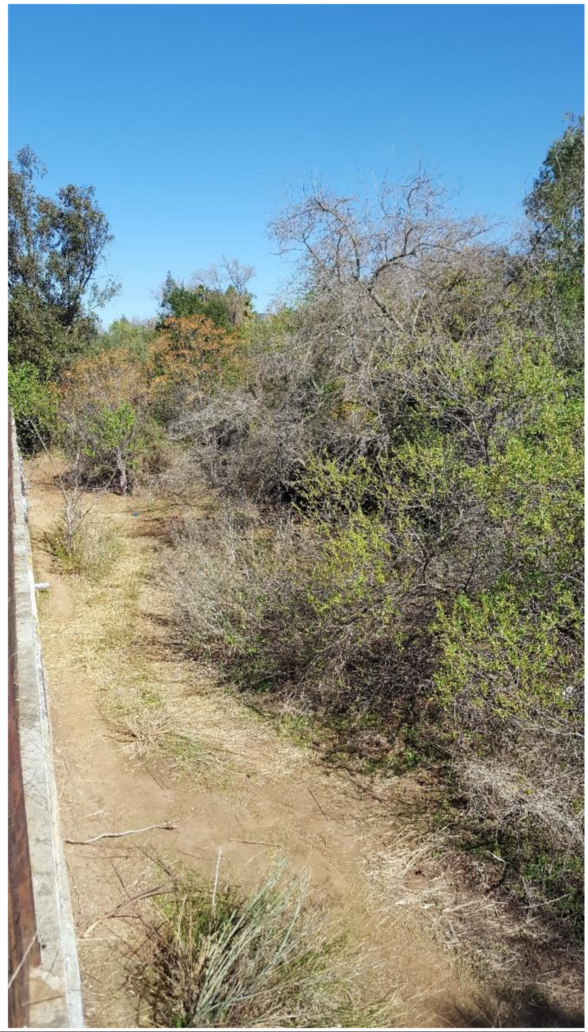
Ground Photographs of
1802 Centre City Parkway Site

4 February, 2018

See Figure 1 for Photo Point locations

Photograph 1: Facing northwest from Photo Point 2 across non-native grassland on the lower upland terrace, the shallow basin with soil and rock rubble heaps, the artificial embankment, to the higher terrace with dense young Eucalyptus growth.

Photograph 2: Facing northeast from Photo Point 1 across the lower upland terrace with non-native grassland and sparse shrub cover. Riparian vegetation on Reidy Creek is visible in the upper right. The building in the upper left is beyond the property line.



Photograph 3 (left): Facing northwest from Photo Point 3 to soil and rock rubble heaps in the southeast corner of the lower upland terrace. Eucalyptus trees along Centre City Parkway are in the background. **Photograph 4 (right):** Facing north-northeast from Photo Point 3 to riparian forest on Reidy Creek.

John C. Lovio
Wildlife Biologist-Ecologist
4458 Alabama Street #8
San Diego, CA 92116
Telephone (619) 990-6632
E-mail jlovio@cox.net

SUPPLEMENTAL BIOLOGICAL STUDIES
ON
1802 North Centre City Parkway, Escondido, San Diego County

24 August, 2018

Background and Procedures

John C. Lovio, Wildlife Biologist – Ecologist (JCL) was retained in January of 2018 by the Mitchell Group of Solana Beach, California to identify any current biological constraints to modification and development of the largely undeveloped, approximately 3.1-acre property at 1802 Centre City Parkway, in the city of Escondido, San Diego County, California (Assessor's Parcel Number 226-1909-22). The property occurs south and east of the intersection of Centre City Parkway and North Iris Lane (Figure 1).

Limited field investigation, historical photograph, and document research by JCL resulted in a preliminary re-assessment of biological changes over a period of 11 years since JCL had conducted more extensive surveys of the property. The results of the preliminary re-assessment are detailed in a report dated 4 April, 2018.

The biological re-assessment in early 2018 determined that the only likely sensitive species to occur on the property is the federal and state endangered Least Bell's Vireo (*Vireo bellii pusillus*) (vireo), a small, migratory songbird that occupies primarily native riparian (i.e., streamside) forests and woodlands in lowland California during the spring and summer months. This species was considered of potential occurrence on the 280-foot section of the Reidy Creek (tributary of Escondido Creek) that flows southward through the eastern third of the 1802 Centre City Parkway property (Figure 1). This stretch of native habitat, which occurs east of and below the elevated and disturbed majority of the property, is not proposed for development of any kind, but is in proximity to proposed development.

Figure 1. Approximate boundaries (red) of 1802 Centre City Parkway property, showing location of riparian vegetation surveyed. Base aerial photograph from Google Earth Pro 2018.

Methods

A survey for the vireo and other riparian bird species was conducted by JCL under authority of federal section 10(a)(1)(A) recovery permit number TE065741-3 in 2018, according to protocol established by the U.S. Fish and Wildlife Service (USFWS). The survey protocol entails eight spring-summer visits spaced at intervals of no less than ten days. All riparian bird species were noted on each visit.

The entire section of riparian habitat within the property, plus a short distance upstream and downstream, was thoroughly surveyed for vireos on each visit. Information on riparian stand composition and structure was collected in the process. Survey was passive; no recorded songs were used to elicit responses from birds.

Supplemental inventory of wildlife and plant species utilizing the entire property was conducted incidental to the riparian bird survey.

A single supplementary site visit was made in mid-summer by botanist Brant Primrose to survey for any late-blooming rare plant species on Reidy Creek or the uplands within the property.

Table 1 summarizes the spring – summer field effort on the property.

Table 1. Times and field conditions for spring-summer survey visits to 1802 Centre City Parkway, Escondido.

Date	Times	Weather	Purpose
4-29-18	0630-0815	58º to 60º F, heavy overcast, wind 0 to 3 mph, SSE	Vireo survey
5-13-18	0700-0800	59º to 61º F, overcast, calm	Vireo survey
5-27-18	0715-0900	59º to 61º F, heavy overcast, wind 0 to 1 mph, W	Vireo survey
6-10-18	0630-0815	65º to 69º F, overcast to clear, wind 0 to 1 mph	Vireo survey
6-21-18	0630-0730	66º to 67º F, overcast, calm	Vireo survey
6-30-18	0745-0830	67º to 68º F, heavy overcast to 70% clouds, wind 0 to 1 mph	Vireo survey
7-01-18	0900-1130		Plant survey
7-11-18	0600-0715	68º to 72º F, clear, calm	Vireo survey
7-21-18	0730-0945	72º to 78º F, overcast to 80% clouds, wind 0 to 5 mph, W	Vireo survey, vegetation mapping

The vireo survey represents 12.5 collective hours of effort on the site.

Survey Results

<u>Habitat</u>

The 280-foot section of Reidy Creek running through the eastern side of the 1802 Centre City Parkway site is continuous with stream flow and riparian vegetation both upstream and downstream. The Southern Willow Riparian Forest vegetation on the site supports native trees up to about 60 feet tall, with average tree canopy about 40 feet in height. The creek also supports diverse, semi-native understory and year-round water flow owing in part to suburban runoff. The riparian stand immediately upstream (north) of the property line is approximately twice as wide (see Figure 1) and the canopy is about 50% taller, suggesting former disturbance on the site in past decades (riparian vegetation on the site was undisturbed, but of lower stature between 2003 and 2007, as discussed below). Downstream of the site, Reidy Creek is channelized, supporting mostly low marshy vegetation and scattered small trees for a short distance before being culverted beneath Centre City Parkway. Approximately 0.7 acre of predominantly native riparian and marsh vegetation, including native willows (*Salix* spp.) and several small Coast Live Oaks (*Quercus agrifolia*), currently occurs on the property.

Although changes in vegetation on the site over 11 years are described in the April 2018 JCL report, more detailed notes were made on the state of the southern willow riparian forest during the spring-summer survey. Comparison of current riparian stand dimensions with habitat descriptions in a 2003 JCL report and aerial photographs from 1996 and 2004 indicate that the section of creek within 1802 Centre City Parkway has increased in height and width over a period of about 20 years. Both average height and two-dimensional canopy area have increased by approximately 50% in about ten years. This increase appears to be attributable to canopy growth, whereas the actual rooted area of riparian vegetation has remained the same over the same period. Dominant willow trees on the creek are relatively old, with trunk diameters of the largest individuals averaging about 17 inches, suggesting that vegetation on this section may be recovering from disturbance decades ago.

<u>Riparian Birds and Other Wildlife</u>

Vireos were not detected during the 2018 survey. This result is consistent with the results from a full USFWS protocol vireo survey conducted on this site by JCL in 2003 and a partial survey (four visits) conducted in 2007 by JCL.

Several bird species with minor sensitive status were documented in or near the riparian stand within the 1802 Centre City Parkway property. Cooper's hawk (*Accipiter cooperi*) (County of San Diego Sensitive Animal List, Group 1) was encountered sporadically on the site, but no evidence was found on nesting on the site. Both Yellow warbler (*Dendroica petechia*) (California Species of Special Concern, County of San Diego Sensitive Animal List, Group 2) and Yellow-breasted chat (*Icteria virens*) (California Species of Special Concern, County of San Diego Sensitive Animal List, Group 1) occurred regularly in riparian vegetation on and upstream (north) of the site.

Red-shouldered Hawk (*Buteo lineatus*) occurred regularly in trees on the site in spring and summer of 2018, but no activity was observed at the unidentified raptor nest in the Eucalyptus stand that was reported in the April 2018 JCL report.

The 2018 survey determined that the riparian zone on 1802 Centre City Parkway still does not provide adequate area and canopy volume to support nesting of the federally endangered Southwestern Willow Flycatcher (*Empidponax traillii extimus*). Additionally, the riparian channel is densely vegetated with some exposed bedrock and lacks open, sandy pools required for reproduction of the federally endangered Arroyo Toad (*Bufo californica*).

Tables 2 and 3 identify all wildlife species documented on the 1802 Centre City Parkway property and its immediate vicinity during 2018 (February through July), including bird species found on Reidy Creek during the riparian bird survey. Bird species found in the riparian forest did not necessarily nest in that habitat.

Only sporadic use of the approximately two acres of disturbed upland vegetation on the 1802 Centre City Parkway site by a few generalist bird and other wildlife species was observed (see Tables 2 and 3), thereby supporting the statements in the April 2018 JCL report that this area provides little wildlife habitat value due to its disturbed condition, small size, and state of isolation from other undeveloped areas. Furthermore, the lower, eastern terrace of non-native grassland was mowed in mid-July of 2018 in compliance with local fuel management codes.

Table 2. Bird species documented on the 1802 Centre City Parkway property in 2018.

Common Name	Scientific Name	Willow Riparian Forest	Non-native Trees	Non-native Grassland – Shrubs
Cooper's Hawk	*Accipiter cooperii*	X	X	
Red-shouldered Hawk	*Buteo lineatus*	X	X	
American Kestrel	*Falco sparverius*		X	
Eurasian Collared Dove	*Streptopelia decaocto*		X	
Mourning Dove	*Zenaida macroura*	X	X	X
Anna's Hummingbird	*Calypte anna*	X	X	
Allen's Hummingbird	*Selasphorus sasin*	X	X	
Nuttall's Woodpecker	*Picoides nuttallii*	X	X	
Black Phoebe	*Sayornis nigricans*	X	X	
American Crow	*Corvus brachyrhynchos*	X	X	
Common Raven	*Corvus corax*		X	
Cliff Swallow	*Petrochelidon pyrrhonota*	X		X
Bushtit	*Psaltriparus minimus*	X	X	X
Bewick's Wren	*Thryomanes bewickii*	X	X	X
House Wren	*Troglodytes aedon*	X	X	
Ruby-crowned Kinglet	*Regulus calendula*	X	X	
Wrentit	*Chamaea fasciata*	X		
Swainson's Thrush	*Catharus ustulatus*	X		
Northern Mockingbird	*Mimus polyglottos*		X	
European Starling	*Sturnus vulgaris*	X	X	
Cedar Waxwing	*Bombycilla cedrorum*	X	X	
Orange-crowned Warbler	*Oreothlypis celata*	X		
Common Yellowthroat	*Geothlypis trichas*	X		
Yellow Warbler	*Setophaga petechia*	X		
Yellow-rumped Warbler	*Setophaga coronata*	X	X	
Yellow-breasted Chat	*Icteria virens*	X		
Spotted Towhee	*Pipilo maculatus*	X		
California Towhee	*Melozone crissalis*	X		X
Song Sparrow	*Melospiza melodia*	X		
Western Tanager	*Piranga ludoviciana*	X	X	
Black-headed Grosbeak	*Pheucticus melanocephalus*	X	X	
Great-tailed Grackle	*Quiscalus mexicanus*		X	
Brown-headed Cowbird	*Molothrus ater*	X		
Hooded Oriole	*Icterus cucullatus*	X	X	
Bullock’s Oriole	*Icterus bullockii*		X	
House Finch	*Carpodacus mexicanus*	X	X	
Lesser Goldfinch	*Spinus psaltria*	X	X	
House Sparrow	*Passer domesticus*	X	X	

Table 3. Non-avian species documented on the 1802 Centre City Parkway property in 2018.

Common Name	Scientific Name	Willow Riparian Forest	Non-native Trees	Non-native Grassland – Shrubs
Butterflies				
Unidentified white	*Pontia / Pieris*			X
Acmon Blue	*Plebejus acmon*			X
Mourning Cloak	*Nymphalis antiopa*	X		
Reptiles				
Western Fence Lizard	*Sceloporus occidentalis*		X	X
Mammals				
Desert Cottontail	*Sylvilagus auduboni*			X
California Ground Squirrel	*Spermophilus beecheyi*			X

Plants

The plant survey visit on 1 July, 2018 did not reveal any rare species. However, continuing work on the site during spring and summer of 2018 resulted in the detection of several additional common plant species that were not included in the April 2018 JCL report. Table 4 below is presented here as a replacement for Table 1 in the April report. Similarly, plant species in Table 4 are categorized by their occurrences in one or more of five vegetation communities identified on the site (Holland 1986, Holland and Keil 1990, Oberbauer et al. 2008):

- Southern Willow Riparian Forest
- Freshwater Marsh
- Non-Native Grassland
- Eucalyptus woodland
- Ruderal (woody and herbaceous) vegetation.

Table 4: Vascular Plant Species Observed on the 1802 Centre City Parkway Property, Escondido, California In 2018

Scientific Name	Common Name	Veg Community	Status**
ANGIOSPERMS: DICOTS			
Aizoaceae – Fig Marigold Family			
**Carpobrotus edulis*	Hottentot Fig	NNG	
Anacardiaceae - Sumac or Cashew Family			
Malosma laurina	Laurel sumac	NNG	
**Schinus terebinthifolius*	Brazillian Pepper Tree	SWRF	
**Schinus molle*	Peruvian Pepper Tree	SWRF	

Scientific Name	Common Name	Veg Community	Status**
Apiaceae (Umbelliferae) - Carrot Family			
Apiastrum angustifolium	Mock-parsley	FWM	
**Apium graveolens*	Common Celery	FWM	
Asteraceae (Compositae) - Sunflower Family			
Ambrosia psilostachya	Western ragweed	NNG	
Artemisia palmeri	Douglas mugwort	SWRF	4.2 S3.2 G2
Baccharis pilularis subsp. consanguinea	Coyote Brush	NNG	
Baccharis salicifolia	Mule-fat, seep-willow	SWRF	
Baccharis sarothroides	Broom baccharis	NNG	
Conyza canadensis	Horseweed	NNG	
Corethrogyne filaginigolia	California Sand Aster	NNG	
Deinandra fasciculatea	Fascicled Tarweed	NNG	
**Filago gallica*	Narrow-leaf filago	NNG	
Heterotheca grandiflora	Telegraph weed	NNG	
Isocoma menziesii	San Diego Goldenbush	NNG	
**Lactuca serriola*	Prickly lettuce	SWRF, NNG	
**Logfia gallica*	Narrow leaf cottonrose	NNG	
Psuedogmaphalium californicum	California Everlasting	NNG	
Psuedognaphalium canescens	Everlasting Cudweed	NNG	
Stephanomeria virgata	Tall Wreath Plant	NNG	
Brassicaceae (Cruciferae) - Mustard Family			
**Hirschfeldia incana*	Short-pod mustard	NNG	
Caprifoliaceae [incl. Adoxaceae] - Honeysuckle Family			
Lonicera subspicata var. denudata	Southern honeysuckle	SWRF	
Sambucus nigra	Blue elderberry	SWRF	
Convolvulaceae - Morning-Glory Family			
Calystegia macrostegia	Morning-glory	NNG	
Cucurbitaceae - Gourd Family			
Marah macrocarpus var. macrocarpus	Manroot, wild-cucumber	NNG	
Euphorbiaceae - Spurge Family			
Croton setigerus	Doveweed	NNG	
**Ricinus communis*	Castor Bean	FWM	
Fabaceae (Leguminosae) - Legume Family			
Acmispon americanus var. americanus	Spanish Clover	NNG	
Acmispon glaber	Coastal deerweed	NNG	
**Melilotus indicus*	Indian Sweetclover	NNG	
Fagaceae - Oak Family			
Quercus agrifolia var. agrifolia	Coast live oak, encina	SWRF	
Geraniaceae - Geranium Family			
**Erodium botrys*	Long-beak filaree/storksbill	NNG	

Scientific Name	Common Name	Veg Community	Status**
**Erodium cicutarium*	Red-stem filaree/storksbill	NNG	
Juglandaceae – Walnut Family			
**Juglans californica*	California Black Walnut	SWRF	
Lamiaceae (Labiatae) - Mint Family			
Stachys ajugoides var. rigida	Hedge-nettle	FWM	
Meliaceae – Mahogany Family			
**Melia azedarach*	China Berry	SWRF, NNG, EW	
Moraceae – Mulberry Family			
*Morus alba	Mulberry	SWRF	
Myrtaceae – Myrtle Family			
**Eucalyptus globulus*	Blue Gum	NNG, Rud	
Oleaceae – Olive Family			
**Olea europaea*	Common Olive	SWRF	
Onograceae – Evening Primrose Family			
Epilobium ciliatum subsp. *ciliatum*	Willow Herb	NNG, SWRF	
Plantaginaceae - Plantain Family			
**Plantago major*	Common Plantain	NNG	
Polygonaceae - Buckwheat Family			
Eriogonum fasciculatum	California buckwheat	NNG	
Rosaceae - Rose Family			
Rubus armeniacus	Himalayan Blackberry	SWRF	
Rubus parviflorus	Thimbleberry	FWM	
Urticaceae – Stinging Nettle Family			
Urtica dioica	Hoary Nettle	SWRT,FWM	
Salicaceae - Willow Family			
Salix gooddingii	Black Willow	SWRF	
Salix laevigata	Red Willow	SWRF	
Salix lasiolepis	Arroyo willow	SWRF	
Saururaceae – Lizard's Tail Family			
Anemopsis californica	Yerba Mansa	FWM, SWRF	
Tamaricaceae – Tamarisk Family			
**Tamarisk* sp.	Saltcedar	FWM, SWRF	
ANGIOSPERMS: MONOCOTS			
Arecaceae (Palmae) - Palm Family			
**Washingtonia robusta*	Mexican fan palm	SWRF, FWM	
Cyperaceae - Sedge Family			
Schoenoplectus californicus	California bulrush	FWM	
Juncaceae - Rush Family			
Juncus sp.	rush	NNG	
Juncus mexicanus	Mexican rush	NNG	
Poaceae (Gramineae) - Grass Family			

Scientific Name	Common Name	Veg Community	Status**
**Avena barbata*	Slender wild oat	NNG	
**Bromus hordeaceus*	Soft chess	NNG	
**Bromus madritensis* ssp. *rubens*	Foxtail chess	NNG	
**Cortaderia selloana*	Selloa pampas grass	NNG	
**Cynodon dactylon*	Bermuda grass	NNG	
**Piptatherum miliaceum*	Smilo grass	NNG	
Nassella pulchra	Purple needle grass	NNG	
Themidaceae - Brodiaea Family			
Dichelostemma capitatum ssp. *capitatum*	Blue dicks	NNG	
Typhaceae – Cattail Family			
Typha latifolia	Broad-Leaf Cattail	FWM, SWRF	

Scientific and common names are from Hickman (1993).

Vegetation Community: SWRF: southern willow riparian forest; FWM: freshwater marsh; NNG: non-native grassland; EW: Eucalyptus Wodland; Rud = ruderal.

* Non-native plant species
** California Native Plant Society 2018

Summary

The section of Reidy Creek on 1802 Centre City Parkway supports viable riparian habitat with hydrological and vegetation connectivity. However, it represents part of the relatively disturbed southern end of the naturally flowing reach of this watercourse before it is culverted below ground and through dense urban development. No federal of state-listed wildlife species were detected during 2018 survey.

The majority of this property consists of predominantly non-native uplands with low natural habitat value due to disturbed conditions and isolation from undeveloped areas of natural habitat.

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Oberbauer, T., M. Kelly, & J. Buegge. 2008. *Draft Vegetation Communities of San Diego County*. Based on "Preliminary Descriptions of the Terrestrial Natural Communities of California." Unpublished report by the County of San Diego.

Howdy Mike,

I completed the Least Bell's Vireo survey and veg mapping at 1802 CCP today. A scan of the hand-drawn map and index are attached. The dashed polygons in red are veg types, but I also added a couple of blue polygons that represent rubble heaps and other remnants of the earlier earth moving (1997 and earlier; see my April report). These may be relevant because the farther west of these two areas ponds water in the rainy season and has been suggested as a possible vernal pool, although I believe I dispelled that notion in my April report.

I added a little extra detail in the veg descriptions, but feel free to use the standard veg names (e.g., veg type 5 can simply be called "Eucalyptus Woodland"). BTW, I use Oberbauer et al. 2008 as a reference for SD County veg (copy attached in case you don't have it).

Hopefully this is pretty straightforward, but please contact me with any questions.

I think I spaced out on sending you the GIS property boundary, etc. file at the end of June. My apology. Hopefully you have obtained it from Tigg for superimposing on the veg cover. I tried to veg-map beyond the edges because I am not sure where the exact property lines are. Please send me the table of veg type acreages when you are finished because I am trying to get an accurate riparian acreage for the riparian bird report, which I am working on now. Thank you.

John C. Lovio

Wildlife Biologist-Ecologist

4458 Alabama Street #8

San Diego, CA 92116

Telephone (619) 990-6632

E-mail jlovio@cox.net


Legend
1802 Centre City Pkwy
Vegetation Types 2018
1
2a
2b
3
4
5
N
300 ft
Google Earth
© 2018 Google

Lorio, JC 2018

QUAG: dbh.

trunks

Salix l
at 43

Index for Mapped Veg Types:
1. Non-native grassland w/ sparse native shrubs
2a. Ruderal
2b. Ruderal w/ Eucalyptus reprod. ≤ ~6m tall
3 (blue). Rubble heaps / basins
4. Southern Willow Riparian Forest / Freshwater Marsh
5. Eucalyptus > Melia, Schinus woodland

2. City of Escondido; General Plan and Environmental Impact Report
3. City of Escondido; Zoning Code and Land Use Maps
4. City of Escondido; General Plan Update and Environmental Impact Report, 2000
5. City of Escondido Historical Sites Survey
6. City of Escondido Draft MHCP maps (Multiple Habitat Conservation Program)
7. City of Escondido Drainage Master Plan (1995)
8. City of Escondido, General Plan Update EIR; Estimated long-term daily emission estimates, 2000
9. City of Escondido Staff from:
   - Public Works Department
   - Engineering Division
   - Traffic Division
   - Building Division
   - Fire Department
   - Police Department
   - Planning Division
10. County of San Diego Health Department, Hazardous Material Management Division (HMMD) Hazardous Sites List
11. FIRM maps (Flood Insurance Rate Maps)

12. Investigative Science and Engineering, Inc.; Air Quality Conformity Assessment Escondido Assisted Living Facility Escondido, Ca; June 29, 2018

AIR QUALITY CONFORMITY ASSESSMENT
ESCONDIDO ASSISTED LIVING FACILITY
ESCONDIDO, CA

Submitted to:

Mr. Tigg Mitchell
The Mitchell Group
127 Lomas Santa Fe Drive
Solana Beach, CA 92075

Investigative Science and Engineering, Inc.
Scientific, Environmental, and Forensic Consultants

P.O. Box 488
Ramona, CA 92065
(760) 787-0016
www.ise.us

Investigative Science and Engineering, Inc.

ISE Project #18-004

June 29, 2018

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LIST OF FIGURES AND MAPS

INTRODUCTION AND DEFINITIONS

Existing Site Characterization

The proposed Escondido Assisted Living Facility site consists of 3.03 acres of fully disturbed land located in the City of Escondido, as shown in Figures 1 and 2 on the following pages. Regional access is obtained from Centre City Parkway from the north and south respectively.[1] The project site currently resides as a rough graded lot, as shown in Figure 3 on Page 4.

Surrounding land uses consist of single- and multi-family residential units, commercial and professional uses, and Escondido High School to the immediate south. Elevations across the project site range from approximately 682 to 722 feet above mean sea level (MSL).

Project Description

The proposed project would construct a three-story single structure, 96-bed residential care facility, as shown previously in Figure 3, and in Figure 4 on Page 5 of this report. The structure would have a physical footprint of 26,703 square-feet (SF) and an internal utilization space of 43,996 SF. Parking would be provided in a periphery manner in front of the structure.

Air Quality Definitions

Air quality is defined by ambient air concentrations of specific pollutants determined by the Environmental Protection Agency (EPA) to be of concern with respect to the health and welfare of the public.[2] The subject pollutants, which are monitored by the EPA, are Carbon Monoxide (CO), Sulfur Dioxide (SO_2), Nitrogen Dioxide (NO_2), Ozone (O_3), respirable 10- and 2.5-micron particulate matter (PM_{10}), Volatile Organic Compounds (VOC), Reactive Organic Gasses (ROG), Hydrogen Sulfide (H_2S), sulfates, lead, and visibility reducing particles. Examples of these EPA monitored pollutant sources and their effects on localized air quality are discussed below.

- **Carbon Monoxide (CO):** Carbon monoxide is a colorless, odorless, tasteless and toxic gas resulting from the incomplete combustion of fossil fuels. CO interferes with the blood's ability to carry oxygen to the body's tissues and results in numerous adverse health effects. CO is a criteria air pollutant.
- **Oxides of Sulfur (SO_x):** Typically strong smelling, colorless gases that are formed by the combustion of fossil fuels. SO_2 and other sulfur oxides contribute to the problem of acid deposition. SO_2 is a criteria pollutant.

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[1] Addressed as 1802 N. Centre City Parkway, Escondido CA 92026, APN 226-190-2200.

[2] Per the Federal Clean Air Act of 1970 (United States Code, Title 42, Chapter 85) and subsequent amendments.

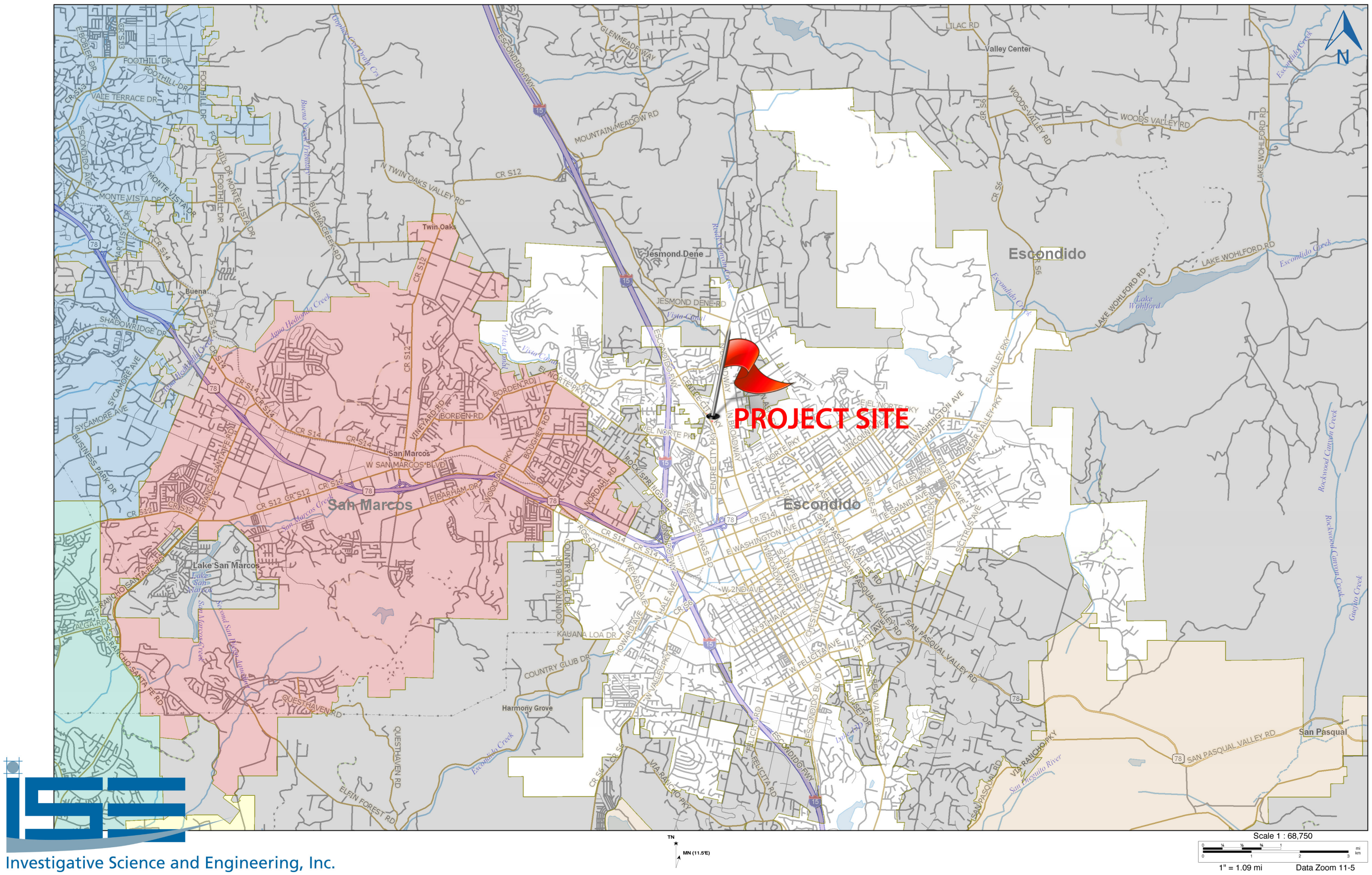

FIGURE 1: Project Study Area Vicinity Map (ISE 5/18)

Investigative Science and Engineering, Inc.

FIGURE 2: Project Study Area Parcel Map (ISE 5/18)

FIGURE 3: Aerial Image Showing Development Area and Surrounding Uses (ISE 5/18)

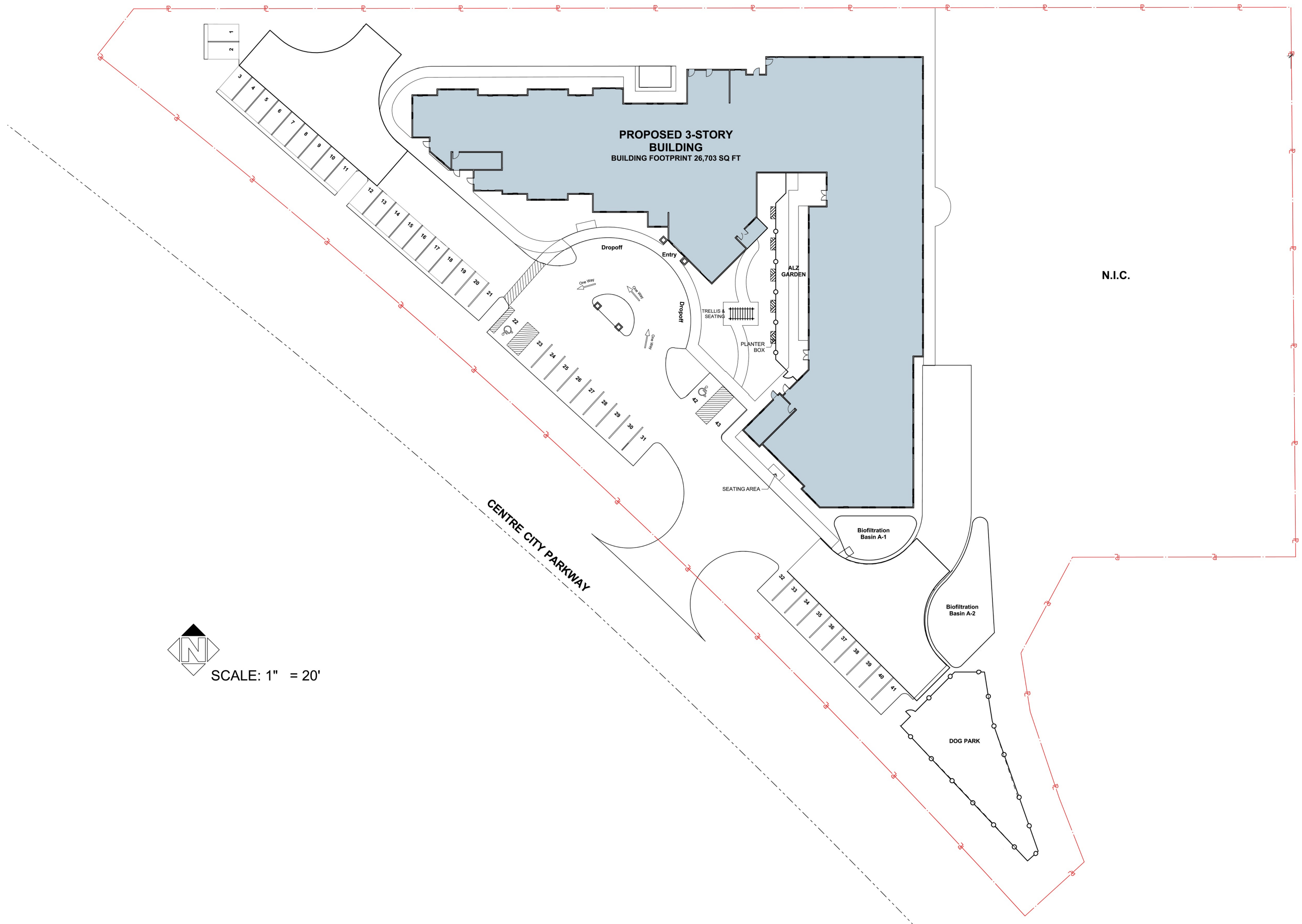

FIGURE 4: Proposed Escondido Assisted Living Facility Development Plan (Irvin Partners Architects, 3/18)

Further examples of EPA monitored pollutant sources include:

- **Nitrogen Oxides (Oxides of Nitrogen, or NO_x):** Nitrogen oxides (NO_x) consist of nitric oxide (NO), nitrogen dioxide (NO_2), and nitrous oxide (N_2O); these are formed when nitrogen (N_2) combines with oxygen (O_2). Their lifespans in the atmosphere range from one to seven days for nitric oxide and nitrogen dioxide, and 170 years for nitrous oxide. Nitrogen oxides are typically created during combustion processes, and are major contributors to smog formation and acid deposition. NO_2 is a criteria air pollutant, and may result in numerous adverse health effects. It absorbs blue light, resulting in a brownish-red cast to the atmosphere and reduced visibility.

- **Ozone (O_3):** A strong smelling, pale blue, reactive toxic chemical gas consisting of three oxygen atoms. It is a product of the photochemical process involving the sun's energy. Ozone exists in the upper atmosphere ozone layer, as well as at the earth's surface. Ozone at the earth's surface causes numerous adverse health effects and is a criteria air pollutant. It is a major component of smog.

- **PM_{10} (Particulate Matter less than 10 microns):** A major air pollutant consisting of tiny solid or liquid particles of soot, dust, smoke, fumes, and aerosols. The size of the particles (10 microns or smaller, about 0.0004 inches or less) allows them to easily enter the lungs, where they may be deposited, resulting in adverse health effects. PM_{10} also causes visibility reduction and is a criteria air pollutant.

- **$PM_{2.5}$ (Particulate Matter less than 2.5 microns):** A similar air pollutant consisting of tiny solid or liquid particles which are 2.5 microns or smaller (often referred to as fine particles). These particles are formed in the atmosphere from primary gaseous emissions that include sulfates formed from SO_2 release from power plants and industrial facilities, and nitrates that are formed from NO_x release from power plants, automobiles and other types of combustion sources. The chemical composition of fine particles highly depends on location, time of year, and weather conditions.

- **Volatile Organic Compounds (VOC):** Volatile organic compounds are hydrocarbon compounds (any compound containing various combinations of hydrogen and carbon atoms) that exist in the ambient air. VOC's contribute to the formation of smog through atmospheric photochemical reactions and/or may be toxic. Compounds of carbon (also known as organic compounds) have different levels of reactivity; that is, they do not react at the same speed or do not form ozone to the same extent, when exposed to photochemical processes. VOC's often have an odor, and some examples include gasoline, alcohol, and the solvents used in paints. Exceptions to the VOC designation include: carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate.

- **Reactive Organic Gasses (ROG):** Similar to VOC, Reactive Organic Gasses (ROG) are also precursors in forming ozone, and consist of compounds containing methane, ethane, propane, butane, and longer chain hydrocarbons which are typically the result of some type of combustion/decomposition process. Smog is formed when ROG and nitrogen oxides react in the presence of sunlight.

- **Hydrogen Sulfide (H_2S):** A colorless, flammable, poisonous compound having a characteristic rotten-egg odor. It often results when bacteria break down organic matter in the absence of oxygen. High concentrations of 500-800 ppm can be fatal and lower levels cause eye irritation and other respiratory effects.
- **Sulfates:** An inorganic ion that is generally naturally occurring and is one of several classifications of minerals containing positive sulfur ions bonded to negative oxygen ions.
- **Lead:** A malleable, metallic element of bluish-white appearance that readily oxidizes to a grayish color. Lead is a toxic substance that can cause damage to the nervous system or blood cells. The use of lead in gasoline, paints, and plumbing compounds has been strictly regulated or eliminated, such that today it poses a very small risk.
- **Visibility Reducing Particles (VRP):** VRP's are just what the name implies, namely, small particles that occlude visibility and/or increase glare or haziness. Since sulfate emissions (notably SO_2) have been found to be a significant contributor to visibility-reducing particles, Congress mandated reductions in annual emissions of SO_2 from fossil fuels starting in 1995.

The EPA has established ambient air quality standards for these pollutants. These standards are called the National Ambient Air Quality Standards (NAAQS).[3] The California Air Resources Board (CARB) subsequently established the more stringent California Ambient Air Quality Standards (CAAQS).[4]

Both sets of standards are shown in Figure 5 on the following page. Areas in California where ambient air concentrations of pollutants are higher than the state standard are considered to be in *"non-attainment"* status for that pollutant.

ENVIRONMENTAL SIGNIFICANCE THRESHOLDS

California Environmental Quality Act (CEQA) Thresholds

Section 15382 of the California Environmental Quality Act (CEQA) guidelines defines a significant impact as,

> *"… a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance."*

The minimum change in ambient air quality conditions within the City of Escondido, as identified by the San Diego Air Pollution Control District (SDAPCD), are outlined starting on Page 9 of this report.

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[3] Under the Federal Clean Air Act of 1970, U.S.C. Title 42, Chapter 85, as amended in 1977 and 1990.

[4] The new CARB eight-hour ozone standard became effective in 2006. The new federal $PM_{2.5}$ standard became effective in 2007.

Pollutant	Averaging Time	California Standards		National Standards		
		Concentration	Method	Primary	Secondary	Method
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)		0.070 ppm (137 µg/m^3)		
Respirable Particulate Matter (PM10)	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		—		
Fine Particulate Matter (PM2.5)	24 Hour	—	—	35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12.0 µg/m^3	15 µg/m^3	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)	—	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	
Nitrogen Dioxide (NO_2)	1 Hour	0.18 ppm (339 µg/m^3)	Gas Phase Chemiluminescence	100 ppb (188 µg/m^3)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)		0.053 ppm (100 µg/m^3)	Same as Primary Standard	
Sulfur Dioxide (SO_2)	1 Hour	0.25 ppm (655 µg/m^3)	Ultraviolet Fluorescence	75 ppb (196 µg/m^3)	—	Ultraviolet Flourescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 µg/m^3)	
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (for certain areas)	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas)	—	
Lead	30 Day Average	1.5 µg/m^3	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m^3 (for certain areas)	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 µg/m^3		
Visibility Reducing Particles	8 Hour	—	Beta Attenuation and Transmittance through Filter Tape	**No National Standards**		
Sulfates	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

FIGURE 5: Ambient Air Quality Standards Matrix (CARB/EPA, 5/16)

CEQA Air Quality Screening Standards

The City of Escondido uses Appendix G.III of the State CEQA guidelines as thresholds of significance, and recognizes the SDAPCD's established screening thresholds for air quality emissions (*Rules 20.1 et. seq.*) as screening standards. The standards focus on the following potential impact areas; namely, would the project:

- Conflict with or obstruct implementation of the applicable air quality plan?
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation?
- 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 which exceed quantitative thresholds for ozone precursors)?
- Expose sensitive receptors to substantial pollutant concentrations?
- Create objectionable odors affecting a substantial number of people?

These screening standards will be applied throughout this air quality conformity assessment for the basis of determination of both regional, as well as localized, air quality impacts due to the proposed project.

SDAPCD Criteria Pollutant Standards

Pursuant to the California Health & Safety Code, jurisdiction for regulation of air emissions from non-mobile sources within San Diego County has been delegated to the San Diego County Air Pollution Control District (SDAPCD).[5] As part of its air quality permitting process, SDAPCD has established thresholds for the preparation of *Air Quality Impact Assessments* (AQIA's) and/or *Air Quality Conformity Assessments* (AQCA's).

SDAPCD Rule 20.2, which outlines these screening level criteria, states that any project that results in an emission increase equal to or greater than any of these levels, must:

> *"…demonstrate through an AQIA… …that the project will not (A) cause a violation of a State or national ambient air quality standard anywhere that does not already exceed such a standard, nor (B) cause additional violations of a national ambient air quality standard anywhere the standard is already being exceeded, nor (C) cause additional violations of a State ambient air quality standard anywhere the standard is already being exceeded, nor (D) prevent or interfere with the attainment or maintenance of any State or national ambient air quality standard."*

[5] Source: California Health & Safety Code, Division 26, Part 3, Chapter 1, Section §40002.

The applicable standards are shown in Table 1 below. For projects whose stationary-source emissions are below these criteria, no AQIA is typically required, and project level emissions are presumed to be less than significant. The City of Escondido accepts the use of these numerical "screening criteria" as *"Thresholds of Significance"* by projects for the purposes of CEQA analysis and incorporates them by reference under the City's Municipal Code Section 33-924(G).

TABLE 1: Thresholds of Significance for Air Quality Impacts

Pollutant	Thresholds of Significance (Pounds per Day)	Clean Air Act Significance Levels (Tons per Year)
Carbon Monoxide (CO)	**550**	100
Oxides of Nitrogen (NO_x)	**250**	50
Oxides of Sulfur (SO_x)	**250**	100
Particulate Matter (PM_{10})	**100**	100
Particulate Matter ($PM_{2.5}$)	**55**	100
VOC's / ROG's	**75**	50

Notes:

- VOC = Volatile Organic Compounds. ROG = Reactive Organic Gasses (ROG's).
- Threshold for VOC's based on the threshold of significance for reactive organic gases (ROG's) from Chapter 6 of the CEQA Air Quality Handbook of the South Coast Air Quality Management District.
- Thresholds are applicable for either construction or operational phases of a project action.
- The PM2.5 threshold is based upon the proposed standard identified in the, *"Final – Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds"*, published by SCAQMD in October 2006.

Source: SDAPCD Rule 1501, 20.2(d)(2), 1995; EPA 40 CFR 93, 1993.

These standards are compatible with those utilized elsewhere in the State (such as South Coast Air Quality Management District standards, etc.) as part of CEQA guidance documents. In the event that project emissions may approach or exceed these screening level criteria, modeling would be required to demonstrate that the project's ground-level concentrations, including appropriate background levels, are below the Federal and State Ambient Air Quality Standards.

The existing ambient conditions are compared for the with- and without-project cases. If emissions exceed the allowable thresholds, additional analysis is conducted to determine whether the emissions would exceed an ambient air quality standard (i.e., the CAAQS values previously shown in Figure 5).

Determination of significance considers both localized impacts (such as CO hotspots) and cumulative impacts. In the event that any criteria pollutant exceeds the threshold levels, the proposed action's impact on air quality is considered significant and mitigation measures would be required.

For CEQA purposes, these screening criteria are used as numeric methods to demonstrate that a project's total emissions (e.g. stationary and fugitive emissions, as well as emissions from mobile sources) would not result in a significant impact to air quality.[6] No differentiation is made between construction and operation emission thresholds.

Finally, under the General Conformity Rule, the EPA has developed a set of *de minimis* thresholds for all proposed federal actions in a non-attainment area for evaluating the significance of air quality impacts. It should be noted that the State (i.e., SDAPCD) standards are equal to, or more stringent than, the Federal Clean Air standards.[7] Development of the proposed project would therefore fall under the stricter SDAPCD guidelines.

Combustion Toxics Risk Factors

When fuel burns in an engine, the resulting exhaust is made up of soot and gases representing hundreds of different chemical substances. The predominant constituents are:

- Nitrous Oxide
- Formaldehyde
- Sulfur Dioxide
- Carbon Dioxide
- Nitrogen Dioxide
- Benzene
- Hydrogen Sulfide
- Carbon Monoxide

Over ninety-percent (90%) of the exhaust emissions from an engine consist of soot particles whose size is equal to, or less than, 10-microns in diameter. Particles of this size can easily be inhaled and deposited in the lungs.

Diesel exhaust contains roughly 20 to 100 times more emissive particles than gasoline exhaust. Of principal concern are particles of cancer causing substances known as *polynuclear aromatic hydrocarbons* (PAH's).[8]

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[6] Since SDAPCD does not have AQIA thresholds for emissions of volatile organic compounds (VOC's), the use of the screening level for reactive organic compounds (ROC) from the CEQA Air Quality Handbook for the South Coast Air Basin (SCAB), which has stricter standards for emissions of ROC's/VOC's than San Diego's, is appropriate.

[7] A fact that can be verified through multiplication of the SDAPCD standards by 365 days and dividing by 2,000 pounds.

[8] Polynuclear aromatic hydrocarbons (PAH's) are hydrocarbon compounds with multiple benzene rings. PAH's are a group of approximately 10,000 compounds which result predominately from the incomplete burning of carbon-containing materials like oil, wood, garbage or coal.

There are inherent uncertainties in risk assessment with regard to the identification of compounds as causing cancer or other adverse health effects in humans, the cancer potencies and Reference Exposure Levels (REL's)[9] of compounds, and the exposure that individuals receive. It is common practice to use conservative (health protective) assumptions with respect to uncertain parameters. The uncertainties and conservative assumptions must be considered when evaluating the results of risk assessments.

Since the potential health effects of contaminants are commonly identified based on animal studies, there is uncertainty in the application of these findings to humans. In addition, for many compounds it is uncertain whether the health effects observed at higher exposure levels in the laboratory or in occupational settings will occur at lower environmental exposure levels. In order to ensure that potential health impacts are not underestimated, it is commonly assumed that effects seen in animals, or at high exposure levels, could potentially occur in humans following low-level environmental exposure.

Estimates of potencies and REL's are derived from experimental animal studies, or from epidemiological studies of exposed workers or other populations.[10] Uncertainty arises from the application of potency, or REL values derived from this data, to the general human population.[11] Using the CARB threshold, a risk concentration level of one in one million (1:1,000,000) of continuous 70-year exposure is considered less than significant. A risk exposure level of ten in one million (10:1,000,000) is acceptable if *Toxic Best Available Control Technologies* (T-BACT's) are used.[12]

For purposes of analysis under this report, and to be consistent with the approaches used for other toxic pollutants, a functional comparison of the aforementioned risk probability per individual person exposed to construction contaminants will be examined. This approach has the advantage of not needing to quantify the population of the statistical group adjacent to the construction (which could yield false values), as well as allowing the per-person risk to be expressed as a final percentage (with a percentage level of 100% being equal to the impact threshold). Of course, for a large enough population sample (i.e., a million people or more) the results are identical to CARB's prediction methodology.

[9] The exposure level at which there are no biologically significant increases in the frequency or severity of adverse effects between the exposed population and the control group. Some effects may be produced at this level, but they are not considered adverse or precursors to adverse effects.

[10] Source: *CalEPA, USEPA, SCAQMD, 2001 et. seq.*

[11] There is debate as to the appropriate levels of risk assigned to diesel particulates, since the USEPA has not yet declared diesel particulates as a toxic air contaminant.

[12] It should be noted that this type of reporting is only strictly applicable to large populations (such as entire air basins), where the sample group is sizeable, and the exposure time is long (which is not the case for project-level construction projects).

APPROACH AND METHODOLOGY

The analysis criteria for air quality impacts are based upon the approach recommended by the *South Coast Air Quality Management District's (SCAQMD) CEQA Handbook*.[13] The handbook establishes aggregate emission calculations for determining the potential significance of a proposed action. In the event that the emissions exceed the established thresholds, air dispersion modeling may be conducted to assess whether the proposed action results in an exceedance of an air quality standard. The City of Escondido has adopted this methodology.

Ambient Air Quality Data Collection

CARB Air Monitoring Station Data within Project Vicinity

The California Air Resources Board (CARB) monitors ambient air quality at approximately 250 air-monitoring stations across the state. Air quality monitoring stations usually measure pollutant concentrations 10 feet above ground level; therefore, air quality is often referred to in terms of ground-level concentrations. Ambient air pollutant concentrations are measured at 10 air-quality-monitoring stations operated by the SDAPCD.

The ambient air-quality-monitoring station (denoted by the symbol in Figure 6 on Page 15 of this report), which is in relative close proximity to the project site, and would be representative of ambient air toxics under both onshore and offshore atmospheric wind conditions, is located within the City of Escondido approximately 1.9 miles from the project site.[14]

Other stations within the project vicinity present either incomplete or redundant data, or were determined not to be representative of localized ambient air quality conditions present at the project site. Finally, due to the type of equipment employed at each station, not every station is capable of recording the entire set of criteria pollutants previously identified in Table 1. Periodic audits are conducted to ensure calibration conformance.[15]

[13] The SCAQMD CEQA Handbook is a reference volume containing an extensive list of semi-empirical (quantified experimental) curve-fit equations describing various emissive sources having important context under CEQA. The equations are not perfect (in that they would not constitute an *'exact solution'* in a scientific sense), but are nonetheless a reasonable approximation of the physical problem. In the same light, programs which utilize the SCAQMD semi-empirical methodology (such as *URBEMIS 2007* and the like) provide no greater problem understanding than using the equations directly. Such programs are still subject to all of the same limitations as the methods and equations on which they rely.

[14] Escondido - E Valley Parkway Station (600 E Valley Parkway, Escondido CA 92019) – ARB Station ID 80115.

[15] Calibration of CARB equipment is performed in accordance with the *U.S. Environmental Protection Agency's 40 CFR, Part 58, Appendix A* protocol with all equipment traceable to National Institute of Standards and Technology (NIST) standards. The typical accuracy of the equipment is ±15% for gasses (such as CO, NO_x, etc.) and ±10% for PM_{10}.

Onsite Air Quality Monitoring and Analysis

Additionally, an ambient air quality sample was collected at an elevated location with respect to the project development area at a height of 5.0-feet above ground level using a negative pressure sampling apparatus. The sampling location is shown in Figure 7 on Page 16 of this report. Each air sample was collected in a 0.7-liter Teflon (Tedlar) sample bag, and sealed upon completion of the testing.

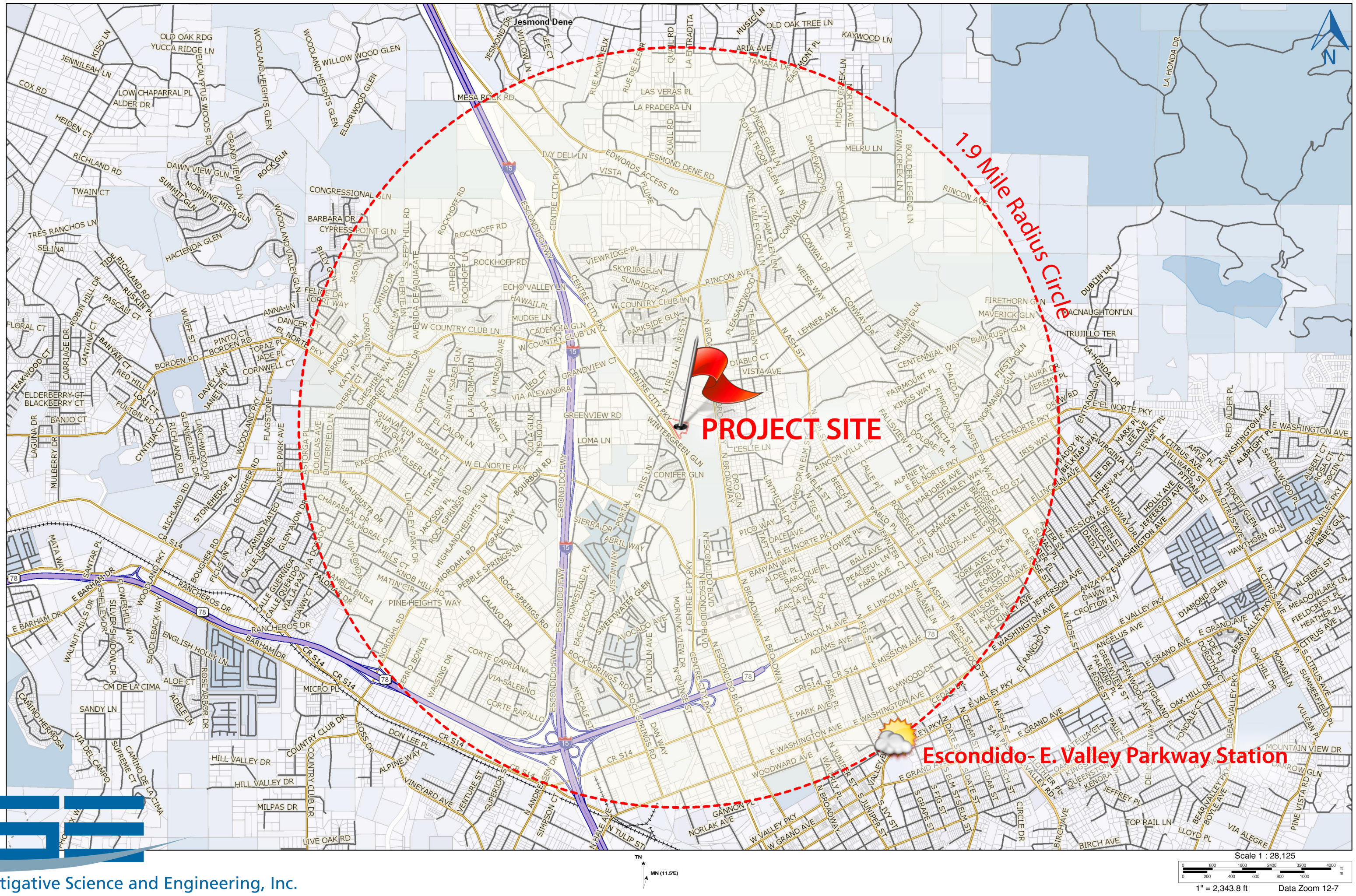
Onsite testing conditions indicated an ambient dry-bulb air temperature of 69.4 degrees Fahrenheit and a relative humidity of 47.0 percent. Wind speeds were light from the southwest, and the average barometric pressure was 29.80 in-Hg. The sample was maintained under *Standard Temperature and Pressure Conditions* (STP) during transit to the ISE test facility.

The bagged samples were tested for airborne toxics, as well as molecular composition using a Stanford Research Systems 300 atomic-mass-unit (AMU) Universal Gas Analyzer (or UGA).[16] This device, which consists of a Faraday cup quadrupole mass spectrometer, analyzes incoming gasses (or any material that can be aerosolized) for content based upon its atomic distribution. In this manner, the UGA analyzes any substance based solely upon its elemental composition. The typical test setup is shown in Figure 8 on Page 17 of this report.

Data from the UGA was then post processed using a process known as *spectral deconvolution* to determine the relative composition of any toxics of interest. A final screening of the data against 191,436 different compounds was performed using the 2008 National Institute of Standards and Technology (NIST11) Mass Spectral Library search program.[17]

[16] The designator AMU stands for Atomic Mass Unit, and is a measure of the atomic weight of a particular element (i.e., the combined nuclear weight of an element's protons and neutrons).

[17] Source: NIST/EPA/NIH Mass Spectral Database (NIST 11) and NIST Mass Spectral Search Program (Version 2.0g), National Institute of Standards and Technology, U.S. Department of Commerce, 5/11.



Investigative Science and Engineering, Inc.

FIGURE 6: Ambient Air Quality Monitoring Station Location Map (ISE 5/18)

FIGURE 7: Ambient Air Quality Sampling Location (ISE 5/18)

FIGURE 8: Laboratory Mass Spectrometry Test Setup (ISE 5/18)

Construction Air Quality Modeling

Construction Vehicle Emission Modeling (CO, NO_x, SO_x, PM_{10}, $PM_{2.5}$, ROG)

Primary construction vehicle pollutant emission generators expected within the Escondido Assisted Living Facility project site would consist predominately of diesel-powered grading and earthwork equipment required for grading activities, underground work, and surface paving. The analysis methodology utilized in this report is based upon the EPA AP-42 tiered emissions report for the various classes of diesel construction equipment.[18,19]

The maximum generation rates of typical equipment would constitute the baseline (unmitigated) construction emission rates as mandated by the EPA. Estimates of daily load factors (i.e., the amount of time during a day that any piece of equipment is under load) were based upon past ISE engineering experience with similar operations, and consultation with the project applicant.

[18] The EPA allowable maximum CO emissions from Tier 2 equipment is 0.0082 pounds per horsepower-hour (lb/HP-hr) for equipment with power ratings between 50 and 175 HP, and 0.0057 lb/HP-hr for equipment with power ratings over 175 HP. Tier 3 ratings only apply between 50 to 750 HP and are identical to Tier 2 requirements. Tier 4 requirements (to be phased-in between 2008 and 2015) set a sliding scale on CO limits ranging from 0.0132 lb/HP-hr for small engines, to 0.0057 lb/HP-hr for engines up to 750 HP.

[19] The EPA allowable maximum NO_x and PM_{10} emissions from Tier 2 equipment are 0.0152 and 0.0003 lb/HP-hr regardless of the engine size. Tier 3 emissions must meet the Tier 2 requirement. Tier 4 standards further reduce this level to 0.0006 lb/HP-hr for NO_x, and 0.00003 lb/HP-hr for PM_{10} for engines over 75 HP.

In cases where the required construction equipment aggregate does not comply with the applicable standards for a pollutant under examination, mitigation is imposed by requiring cleaner (i.e., higher tiered) equipment, as required under the Federal Clean Air Act.[20,21]

Finally, fine particulate dust generation ($PM_{2.5}$) from construction equipment was analyzed using the methodology identified by the SCAQMD.[22] This approach, which utilizes the *California Emission Inventory Development and Reporting System* (CEIDARS) database, estimates $PM_{2.5}$ emissions as a fractional percentage of the aggregate PM_{10} emissions. For diesel construction equipment, the fractional emission factor is 0.920 $PM_{2.5}$ / PM_{10}.

Fugitive Dust Emission Modeling (PM_{10}, $PM_{2.5}$)

Fugitive dust generation from the proposed remedial grading plan was analyzed using the methodology recommended in the SCAQMD CEQA Handbook guidelines for calculating 10-micron Particulate Matter (PM_{10}) due to earthwork movement and stockpiling. The analysis assumed low-wind speeds and active wet suppression control. Aggregate levels of PM_{10}, based upon the best available surface grading estimates, were calculated in pounds per day and compared to the applicable significance criteria previously shown in Table 1.

For surface grading operations, the fractional emission factor is 0.208 $PM_{2.5}$ / PM_{10} based upon the SCAQMD approach. For unpaved road travel, the fractional emission factor is 0.212 $PM_{2.5}$ / PM_{10}.

Combustion-Fired Health-Risk Emission Modeling (PM_{10}, $PM_{2.5}$)

For the purposes of this analysis, worst-case construction vehicle pollutant emission generators would consist entirely of construction activities associated with grading and site preparation of each residential pad, as well as construction of the connecting roadways. The analysis methodology utilized in this report is based upon EPA and CARB guidelines for construction operations. Construction emissions were based upon worst-case Tier 3+ generation rates for the various classes of diesel construction equipment per consultation with the project applicant.

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[20] Source: US Code of Federal Regulations, Title 40, Part 89 [40 CFR Part 89].

[21] In most cases the federal regulations for diesel construction equipment also apply in California, whose authority to set emission standards for new diesel engines is limited. The federal Clean Air Act Amendments of 1990 (CAA) preempt California's authority to control emissions from both new farm and construction equipment under 175 hp [CAA Section 209(e)(1)(A)] and require California to receive authorization from the federal EPA for controls over other off-road sources [CAA Section 209 (e)(2)(A)].

[22] The $PM_{2.5}$ emission factors are based upon the SCAQMD document, "Final – Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds", 10/06. The correction factor for diesel equipment of this type is 0.920.

A screening risk assessment of diesel-fired toxics from construction equipment was performed using the *SCREEN3* dispersion model developed by the *EPA's Office of Air Quality Planning and Standards*.[23] The SCREEN3 model uses a Gaussian plume dispersion algorithm that incorporates source-related and meteorological factors to estimate pollutant concentration from continuous sources.

Modeling under SCREEN3 assumes that the pollutant in question does not undergo any chemical reactions, and that no other removal processes, such as wet or dry deposition, act on the plume during its transport from the source. Using the concentrations obtained from the screening model, the diesel toxic risk can be defined as shown below:

$$Risk = \frac{F_{wind} \cdot EMFAC \cdot URF_{70}}{Dilution}$$

Where the following variables are defined:

Risk = The excess cancer risk (probability in one-million),

F_{wind} = The frequency of the wind blowing from the exhaust source to the receptor (the default value is 1.0),

EMFAC = The exhaust particulate emission factor (the level from the screening model),

URF_{70} = The Air Resource Board unit risk probability factor (300 x 10^{-6}, or 300 in a million cancer risk per µg/m^3 of diesel combustion generated PM_{10} inhaled in a 70-year lifetime,[24] and,

Dilution = The atmospheric dilution ratio during source-to-receptor transport (the default value of 1.0 assumes no dilution).

Given the above assumptions for wind frequency and atmospheric dilution ratio, and substituting the CARB recommended value for the unit risk probability factor, gives the following expression:

$$Risk = \frac{\cancel{1.0} \cdot EMFAC \cdot 300x10^{-6}}{\cancel{1.0}} = 300x10^{-6} \cdot EMFAC \text{ per person}$$

[23] The methodology is based upon the *Industrial Source Complex (ISC3)* source dispersion approach as outlined in the *EPA-454/B-95-003b* technical document. The SCREEN3 model is used within the State of California and is typically more restrictive than the ISC3 model.

[24] Based upon the ARB 1999 Scientific Review Panel staff report on diesel toxic emissions.

Thus, the percentage of risk of cancer to any given person, being exposed to a concentration of pollution equal to EMFAC (in $\mu g/m^3$) over a continuous period of 70-years[25], would be:

$$Risk_{\%} = \left(300x10^{-6} \cdot EMFAC\right) \cdot 100 = 300x10^{-4} \cdot EMFAC \text{ per person}$$

For the construction-related diesel-fired toxics analysis, an area-source consistent in dimensions with the proposed grading area will be assumed. A simplified elevated terrain model (which is consistent with the area surrounding the project site) with no building downwash corrections and a worst-case wind direction was utilized.

VOC Emissions from Architectural Coatings Methodology

Volatile Organic Compound (VOC) emissions from architectural coatings such as painting will be analyzed within this report using the *SCAQMD CEQA Handbook Method A11-13* based upon an expected maximum total square-footage being painted per day. It will be assumed for the purposes of this assessment that all solvents used are water based with a maximum 50-percent by weight solids content, and are capable of generating the maximum CARB level of 250 grams of VOC per liter regardless of the application method.

Aggregate Vehicle Emission Air Quality Modeling

Motor vehicle emissions associated with proposed Escondido Assisted Living Facility project site were calculated by multiplying the appropriate emission factor (in grams per mile) times the estimated average trip length, and the total number of vehicles. CARB estimates on-road motor vehicle emissions by using a series of models called the *Motor Vehicle Emission Inventory* (MVEI) Models.

Four computer models, which form the MVEI, are *CALIMFAC, WEIGHT, EMFAC*, and *BURDEN*.[26] They function as follows:

- ***CALIMFAC*** produces base emission rates for each model year when a vehicle is new and as it accumulates mileage and the emission controls deteriorate.
- ***WEIGHT*** calculates the relative weighting each model year should be given in the total inventory, and each model year's accumulated mileage.

[25] Where it can be directly stated that a risk percentage of, say, 25% would indicate a 25% probability of inhaled cancer risk for the given level of exposure if consumed continuously for a period of 70-years. A 50% probability would correspond to a 50:50 chance of inhaled cancer risk if consumed continuously for a period of 70-years, and so on.

[26] The module named *EMFAC* should not be confused with the entire EMFAC program itself (which calls the subroutines *CALIMFAC, WEIGHT, EMFAC, and BURDEN* to determine the final emission inventory for a particular area).

- ***EMFAC*** uses these pieces of information, along with the correction factors and other data, to produce fleet composite emission factors, and,
- ***BURDEN*** combines the emission factors with county-specific activity data to produce to emission inventories.

For the current analysis, the *EMFAC 2011* of the MVEI was run using input conditions specific to the San Diego air basin to predict operational vehicle emissions from the project based upon a project completion year 2020 scenario.[27,28] The aggregate emission factors from the EMFAC model are provided as an attachment at the end of this report. A mix ratio consistent with the *Caltrans ITS Transportation Project-Level Carbon Monoxide Protocol* was used.[29]

Fine particulate dust generation ($PM_{2.5}$) from motor vehicle operation was analyzed using the aforementioned CEIDARS database. For operational vehicular traffic, the fractional emission factor is 0.998 $PM_{2.5}$ / PM_{10} based upon both the SCAQMD and EMFAC approaches.

Traffic Segment Pollutant Concentration Modeling

A traffic segment hotspot conformity analysis was performed on all project-related roadway segments, using the *California Line Source Emissions Model Version 4* (CALINE4)[30] air dispersion model methodology in order to quantify near term cumulative plus project pollutant concentrations within this portion of the project air basin. CALINE4 is the accepted line source dispersion model within the State of California.

For the hotspot analysis, horizon traffic volumes for all affected roadway segments were used based upon near-term cumulative values provided by the project traffic engineer.[31] Worst case wind speed, aggregate emissions class data, meteorological assumptions, and mean running speeds of 45 MPH and a 10% ADT level was used for all potentially impacted roadway segments. Ambient CO and PM_{10} concentrations were determined through the previously discussed field monitoring effort.[32]

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[27] This is the most current CARB emissions model approved for use within the State of California.

[28] This is a worst-case assumption, since implementation of cleaner vehicle controls ultimately reduces emissions under future year conditions. By applying near-term emission factors to the complete project, an upper bound on project-related emissions is obtained.

[29] This consisted of the following air standard Otto-Cycle engine vehicle distribution percentages: Light Duty Auto (LDA) = 69.0%, Light Duty Truck (LDT1) = 19.4%, Medium Duty Truck (LHD1) = 6.4%, Heavy Duty Truck Gasoline (MH GAS) = 1.2%, Heavy Duty Truck Diesel (MH DSL) = 3.6%, Motorcycle (MCY) = 0.4%.

[30] CALINE4 is a Gaussian line dispersion model, developed by Caltrans, which is used to predict localized vehicle emissions from mobile sources. The model uses source strength, meteorological data, and site geometry to predict pollutant concentrations within 1,500 feet of the roadway.

[31] Source: Draft Transportation Impact Analysis, Escondido Assisted Living (96 Beds) – Escondido CA, LOS Engineering, Inc, 6/6/18.

[32] Levels for NO_x precursors were set to basin-wide levels. The NO_2 photolysis rate was taken at a default atmospheric solar value of 0.004/sec.[32] The CALINE4 solution space is provided as an attachment to this report.

Fixed Source Emissions Modeling

Fixed emission sources under the analysis context within this report would consist predominantly of small gasoline engines used with landscaping equipment, and emissive sources from natural gas powered appliances (such as stoves, hot water heaters, etc.). An analysis of these emission sources, consistent with the *SCAQMD CEQA Handbook* and current EPA protocols, will be quantified with the total aggregate emission levels identified at the end of this report.[33]

CONFORMITY FINDINGS

Existing Climate Conditions

The climate within the region surrounding the proposed Escondido Assisted Living Facility project site is characterized by warm, dry summers and mild, wet winters; it is dominated by a semi-permanent high-pressure cell located over the Pacific Ocean. This high-pressure cell maintains clear skies over the air basin for much of the year. This cell also drives the dominant onshore circulation, as can be seen in Figure 9 on the following page, and helps to create two types of temperature inversions, subsidence and radiation, that contribute to local air quality degradation.

Subsidence inversions occur during the warmer months, as descending air associated with the Pacific high-pressure cell meets cool marine air. The boundary between the two layers of air represents a temperature inversion that traps pollutants below it. Radiation inversion typically develops on winter nights, when air near the ground cools by radiation, and the air aloft remains warm. A shallow inversion layer that can trap pollutants is formed between the two layers.

In the area of the proposed project site, the maximum and minimum average temperatures are 89º F and 42º F, respectively.[34] Precipitation in the area averages 15.1 inches annually, 90 percent of which falls between November and April. Fog can occasionally develop during the winter. The prevailing wind direction at the project site is from the west-southwest, with an annual mean speed of 1 to 5 miles per hour. Frequently, the strongest winds in the basin occur during the night and morning hours due to the absence of onshore sea breezes. The overall result is a noticeable degradation in local air quality.

[33] The analysis presented herein uses the same methodology identified in the CARB *URBEMIS* model, although providing a greater level of detail. The technical details are provided in the SCAQMD CEQA Handbook Tables A9-12 and A9-12A, -B as well as the EPA's AP-42 emission generation document previously referenced.

[34] Source: *National Weather Service (NWS) / National Oceanographic and Atmospheric Administration (NOAA), 2015.*

FIGURE 9: Project Air Basin Aerial Map (Google Earth 2018, ISE 5/18)

Existing Air Quality Levels

CARB Aerometric Station Data within Project Vicinity

The project site is located in the north central portion of the San Diego Air Basin. The Basin continues to have a transitional-attainment status of federal standards for Ozone (O_3) and PM_{10}. The Basin is either in attainment or unclassified for federal standards of CO, SO_2, and NO_2.

Factors affecting ground level pollutant concentrations include the rate at which pollutants are emitted to the atmosphere, the height from which they are released, and topographic and meteorological features.

Tables 2a through -c, starting on the following page, provide a summary of the highest pollutant levels recorded at the previously identified monitoring station for the last year available (2015), based upon the latest data from the CARB Aerometric Data Analysis and Management (ADAM) System database.[35]

Upon examination it can be seen that closest monitoring station reported slight air quality exceedances for the subject criteria pollutant O_3.[36]

Onsite Air Pollutant Concentration Findings

The atomic mass distribution of the onsite ambient air-monitoring sample is shown in Figure 10 on Page 28 of this report.[37] Spectral deconvolution indicated ambient air pollution concentrations, by mass percentage, as shown in Table 3 on Page 29.

Given these findings, no significant ambient air quality impacts are indicated. No respirable 10- and 2.5-micron particulate matter (PM_{10} and $PM_{2.5}$) was indicated in the sample. Toxicity screening against the NIST spectral database indicated no unusual compounds present.

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[35] Averages for O_3 and CO are expressed in parts-per-million, NO_X is expressed in parts-per-billion, and particulate matter is shown in $\mu g/m^3$. CAAQS exceedances are denoted in yellow, while NAAQS exceedances are shown in orange.

[36] Monitoring for lead was discontinued entirely in 1998.

[37] The plot in this figure indicates the partial atmospheric pressure (in Torr) as a function of the atomic mass unit. The larger the vertical bar, the greater the concentration of a particular atom (or diatomic form). The unit of Torr is a very small pressure unit - one atmosphere equals 760 Torr.

TABLE 2a: CARB Aerometric Data Analysis – Escondido Monitoring Station (Panel 1)

Top 4 Summary: Highest 4 Daily Maximum 8-Hour Ozone Averages
at Escondido-E Valley Parkway

	2014		2015		2016	
	Date	8-Hr Average	Date	8-Hr Average	Date	8-Hr Average
National 2015 Std (0.070 ppm):						
First High:	May 2	0.079	Apr 4	0.071		*
Second High:	May 3	0.079	Apr 18	0.071		*
Third High:	Sep 13	0.077	Apr 29	0.070		*
Fourth High:	Sep 14	0.076	Apr 27	0.069		*
National 2008 Std (0.075 ppm):						
First High:	May 2	0.079	Apr 4	0.071		*
Second High:	May 3	0.079	Apr 18	0.071		*
Third High:	Sep 13	0.077	Apr 29	0.070		*
Fourth High:	Sep 14	0.076	Apr 27	0.069		*
National 2015 Std (0.070 ppm):						
# Days Above the Standard:		7		2		*
Nat'l Standard Design Value:		0.072		0.072		*
National Year Coverage:		96		62		*
National 2008 Std (0.075 ppm):						
# Days Above the Standard:		5		0		*
Nat'l Standard Design Value:		0.072		*		*
National Year Coverage:		92		60		*

Highest 4 Daily Maximum 8-Hour Ozone Averages

Top 4 Summary: Highest 4 Daily Maximum Hourly Ozone Measurements
at Escondido-E Valley Parkway

	2014		2015		2016	
	Date	Measurement	Date	Measurement	Date	Measurement
First High:	Sep 14	0.099	Apr 29	0.079		*
Second High:	May 2	0.089	Apr 4	0.078		*
Third High:	Oct 5	0.087	Jun 19	0.076		*
Fourth High:	May 3	0.085	Aug 15	0.075		*
California:						
# Days Above the Standard:		1		0		*
California Designation Value:		0.09		0.10		*
Expected Peak Day Concentration:		0.086		*		*
National:						
# Days Above the Standard:		*0*		*0*		*
3-Year Estimated Expected Number of Exceedance Days:		*0.0*		*0.0*		*
1-Year Estimated Expected Number of Exceedance Days:		*0.0*		*0.0*		*
Nat'l Standard Design Value:		*0.085*		*0.087*		*
Year Coverage:		97		55		*

Highest 4 Daily Maximum Hourly Ozone Measurements

Source: CARB ADAM Ambient Air Quality Inventory – 5/18

TABLE 2b: CARB Aerometric Data Analysis – Escondido Monitoring Station (Panel 2)

Top 4 Summary: Highest 4 Daily 24-Hour PM2.5 Averages

at Escondido-E Valley Parkway

iADAM

	2014		2015		2016	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Jan 1	77.5	Jan 3	29.4		*
Second High:	Jan 12	30.4	Jan 21	25.9		*
Third High:	Dec 31	30.4	Feb 5	19.6		*
Fourth High:	Jan 11	27.8	Jan 18	18.2		*
California:						
First High:	Jan 1	82.3	Jan 1	62.5		*
Second High:	Jan 11	34.1	Jan 4	35.9		*
Third High:	Jan 12	30.4	Jan 3	29.4		*
Fourth High:	Dec 31	30.4	Jan 2	26.2		*
National:						
Estimated # Days > 24-Hour Std:		1.0		*		*
Measured # Days > 24-Hour Std:		1		0		0
24-Hour Standard Design Value:		23		*		*
24-Hour Standard 98th Percentile:		26.1		*		*
2006 Annual Std Design Value:		10.5		*		*
2013 Annual Std Design Value:		10.5		*		*
Annual Average:		9.9		*		*
California:						
Annual Std Designation Value:		11		11		*
Annual Average:		9.6		*		*
Year Coverage:		100		70		*

Highest 4 Daily 24-Hour PM2.5 Averages

Top 4 Summary: Highest 4 Daily 24-Hour PM10 Averages

at Escondido-E Valley Parkway

iADAM

	2014		2015		2016	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Jan 11	43.0	Jan 18	30.0		*
Second High:	May 11	38.0	Feb 5	30.0		*
Third High:	Jan 17	37.0	Mar 25	29.0		*
Fourth High:	Dec 31	37.0	Apr 18	29.0		*
California:						
First High:	Jan 11	44.0	Feb 5	31.0		*
Second High:	Dec 31	39.0	Jan 18	30.0		*
Third High:	May 11	38.0	Mar 25	29.0		*
Fourth High:	Jan 17	37.0	Apr 18	29.0		*
National:						
Estimated # Days > 24-Hour Std:		0.0		*		*
Measured # Days > 24-Hour Std:		0		0		0
3-Yr Avg Est # Days > 24-Hr Std:		0.0		*		*
Annual Average:		*21.6*		*17.5*		*
3-Year Average:		*21*		*21*		*
California:						
Estimated # Days > 24-Hour Std:		0.0		*		*
Measured # Days > 24-Hour Std:		0		0		0
Annual Average:		21.5		*		*
3-Year Maximum Annual Average:		23		23		*
Year Coverage:		100		70		*

Highest 4 Daily 24-Hour PM10 Averages

Source: CARB ADAM Ambient Air Quality Inventory – 5/18

TABLE 2c: CARB Aerometric Data Analysis – Escondido Monitoring Station (Panel 3)

Top 4 Summary: Highest 4 Daily Maximum Hourly Nitrogen Dioxide Measurements

at Escondido-E Valley Parkway

iADAM

	2014		2015		2016	
	Date	Measurement	Date	Measurement	Date	Measurement
National:						
First High:	Oct 3	63.0	Mar 6	48.0		*
Second High:	Jan 13	59.0	Mar 12	47.0		*
Third High:	Feb 14	57.0	Jan 6	46.0		*
Fourth High:	Oct 24	57.0	Feb 5	46.0		*
California:						
First High:	Oct 3	63	Mar 6	48		*
Second High:	Jan 13	59	Mar 12	47		*
Third High:	Feb 14	57	Jan 6	46		*
Fourth High:	Oct 24	57	Feb 5	46		*
National:						
1-Hour Standard Design Value:		52		*		*
1-Hour Standard 98th Percentile:		55.0		46.0		*
# Days Above the Standard:		0		0		0
Annual Standard Design Value:		11		*		*
California:						
1-Hour Std Designation Value:		60		60		*
Expected Peak Day Concentration:		62		64		*
# Days Above the Standard:		0		0		0
Annual Std Designation Value:		13		13		*
Annual Average:		11		*		*
Year Coverage:		88		49		*

Highest 4 Daily Maximum Hourly Nitrogen Dioxide Measurements

Source: CARB ADAM Ambient Air Quality Inventory – 5/18

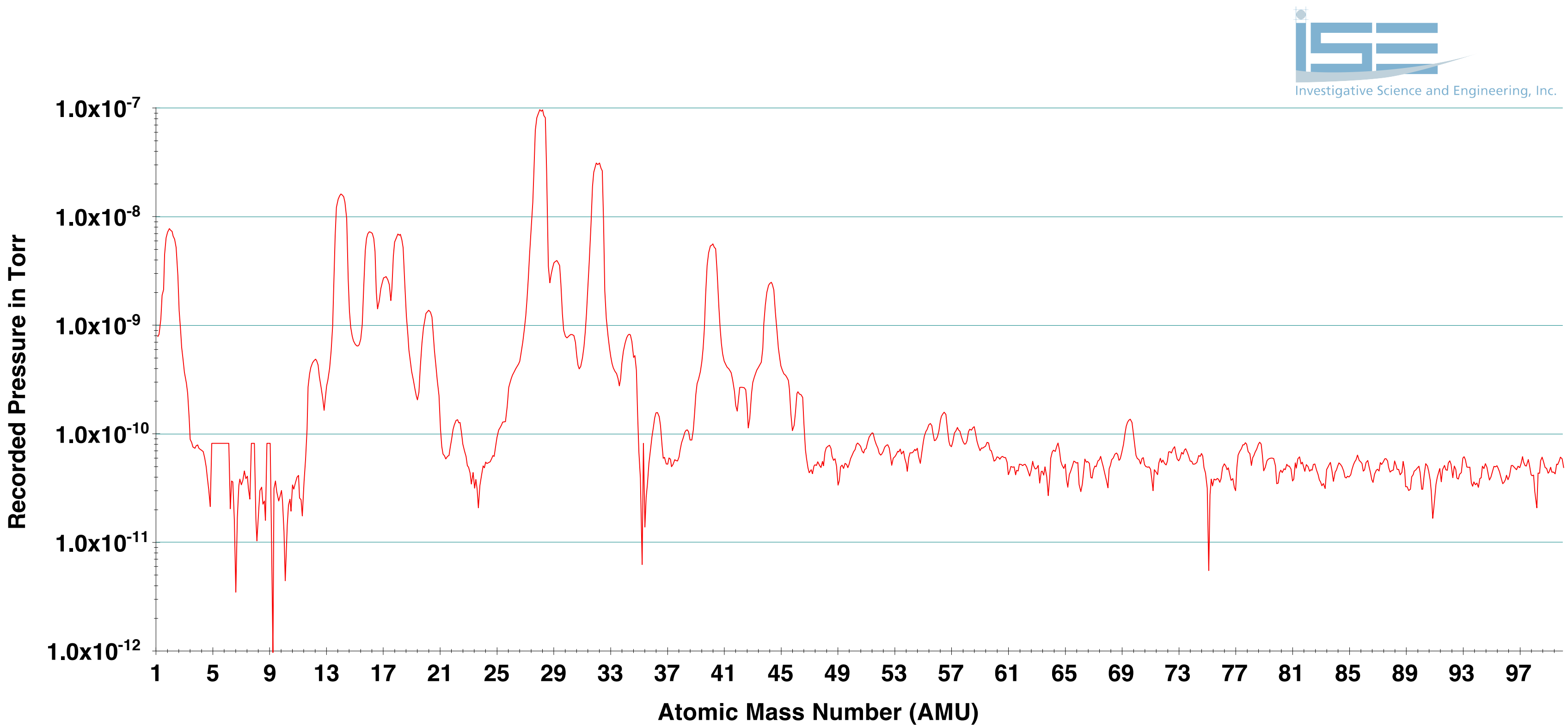

FIGURE 10: Spectral Content of Ambient Air Sample AQ 1 (ISE 5/18)

TABLE 3: Ambient Air Quality Monitoring Results

Chemical Compound Examined	Air Sample Composition (% by wt.)	
	Lab Standard Air Sample (Dry N_2 Mix)	Measured Field Sample (AQ 1)
Ammonia (NH_3)	0.0	0.0
Benzene (C_6H_6)	0.0	0.0
Carbon Dioxide (CO_2)	0.1	0.5
Carbon Monoxide (CO)	0.0	0.0
Hydrogen Sulfide (H_2S)	0.0	0.0
Nitric Oxide (NO)	0.0	0.1
Nitrogen Dioxide (NO_2)	0.0	0.0
Nitrous Oxide (N_2O)	0.0	0.0
Free Nitrogen (N_2)	97.5	80.2
Free Oxygen (O_2)	1.5	17.1
Sulfur Dioxide (SO_2)	0.0	0.0
Water Vapor (H_2O)	0.9	2.1

Partial Pressure Mass Fractions by Percent. Data Margin ± 0.1 percent.

Project Construction Emission Findings

The Escondido Assisted Living Facility project site would be cleared and graded over the course of approximately 90 working days for all earthwork construction phases.[38] Given this, the following construction findings, as shown beginning on the next page, were indicated.

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[38] The typical construction phases for land development, which are independent of the specific project being developed, are as follows:

Construction Phase	Work Performed	Typical Tasks
Rough Grading	Site clearing, grubbing, and general pad and road alignment formation.	Site mobilization, scraper hauls/finishing, and additional site finishing work.
Underground Utility Construction	General trench-work, pipe laying with associated base material and cover, and ancillary earthwork required to facilitate placement of sewer lift stations, manholes, etc.	This is typically performed as a single task.
Paving Activities	Movement of any remaining material as well as necessary curb and gutter work, road base material placement and blacktop.	This is typically performed as a single task.

Construction Vehicle Emissions (CO, NO_x, SO_x, PM_{10}, $PM_{2.5}$, ROG)

The estimated diesel exhaust emission tabulations due to onsite construction equipment operation are provided in Table 4 on Page 31 of this report. Based upon the findings, no significant construction vehicle air quality impacts are expected.

Fugitive Dust Emission Levels (PM_{10}, $PM_{2.5}$)

Construction activities are also a source of fugitive dust emissions that may have a substantial, but temporary, impact on local air quality. These emissions are typically associated with land clearing, excavating, and construction of a proposed action. Substantial dust emissions also occur when vehicles travel on paved and unpaved surfaces, and haul trucks lose material.

Dust emissions and impacts due to the proposed grading vary substantially from day to day, depending on the level of activity, the specific operation being conducted, and the prevailing meteorological conditions.

Wet dust suppression techniques, such as watering and/or applying chemical stabilization, would be used during construction to suppress the fine dust particulates from leaving the ground surface and becoming airborne through the action of mechanical disturbance or wind motion.

Overall grading operations are anticipated as being no greater than a worst-case 11,200 cubic-yards of material moved over an anticipated 90-day total earthwork period. For alluvium-type material similar to what is present at the project site, the project earthwork would have a total working weight of,

$$\text{Working Weight} = 11{,}200 \text{ cubic yards} \times \frac{1.3 \text{ tons}}{\text{cubic yard}} = 14{,}560.0 \text{ tons}$$

Out of the total quantity identified above, it is estimated that roughly 80-percent of the working weight would be capable of generating PM_{10}. Given this, the working weight of earthwork material capable of generating some appreciable amount of PM_{10} would be 11,648.0 tons. Thus, the average earthwork movement for grading activities over the total 90 working days would be 129.4 tons per day.

TABLE 4: Predicted Onsite Diesel Construction Engine Emissions

Equipment Type Model	Selected EPA Tier Level	Quantity Used (#)	Engine Power Rating (HP)	Average Load Factor (%)	Duty Cycle (hrs/day)	Aggregate SDAPCD Criteria Pollutants (Pounds/Day)					
						CO	NO_x	SO_x	PM_{10}	$PM_{2.5}$	ROG
Generic Water Truck (2000 Gal)	3	1	200	50	4	2.3	6.1	0.8	0.1	0.1	0.9
CAT 326FL Hydraulic Excavator	3	1	200	50	4	2.3	6.1	0.8	0.1	0.1	0.9
CAT D6D w- 1406 Blade	3	1	140	50	4	2.3	4.3	0.6	0.1	0.1	0.6
CAT D6R	3	1	180	50	4	2.1	5.5	0.7	0.1	0.1	0.8
CAT 623H Self-loading Scraper	3	1	407	50	4	4.7	12.4	1.6	0.3	0.2	1.8
CAT 420D Rubber Tire Backhoe	3	1	88	50	4	1.4	2.7	0.4	0.1	0.1	0.4
CAT 816K 48-in Compactor	3	1	284	50	4	3.3	8.6	1.1	0.2	0.2	1.3
JD 644E Loader	3	1	160	50	4	2.6	4.9	0.6	0.2	0.1	0.7
	Sum:	**8**				**20.9**	**50.5**	**6.6**	**1.2**	**1.1**	**7.3**
			SDAPCD Significance Threshold:			**550**	**250**	**250**	**100**	**55**	**75**

Following the analysis procedure identified in the *SCAQMD CEQA Handbook* for PM_{10} emissions from fugitive dust gives the following semi-empirical relationship for aggregate respirable dust generation in pounds.

$$PM_{10} = 0.00112 \cdot \left[\frac{\left(\frac{WS}{5}\right)^{1.3}}{\left(\frac{SMC}{2}\right)^{1.4}} \right] \cdot ET$$

Where the following variables are defined:

PM_{10} = Fugitive dust emissions in pounds,

WS = Ambient wind speed,

SMC = Surface Moisture Content, generally defined as the weight of the water (W_w) divided by the weight of the soil (W_s) as measured at the surface in grams per gram, and,

ET = Earthwork Tonnage moved per day.

Substituting a minimum SMC value of 0.25 (which is extremely conservative for an ambient dirt/sand condition), and a maximum credible wind speed scenario of 12 MPH (WS = 12), gives the following result,

$$\mathrm{PM}_{10} = 0.00112 \times \left[\frac{\left(\frac{12}{5}\right)^{1.3}}{\left(\frac{0.25}{2}\right)^{1.4}} \right] \times 129.4 = 8.3 \text{ Pounds}$$

or, a level of 8.3 pounds of PM_{10} generated per day. It should be noted that surface wetting will be utilized during all phases of earthwork operations at a minimum level of three times per day; thus a control efficiency of 34% to 68% reduction in fugitive dust can be applied per the SCAQMD methodology.

Assuming a median 60% control efficiency, due to the aforementioned watering yields,

$$\mathrm{PM}_{10} = (1 - 0.6) \cdot 8.3 = 3.3 \text{ Pounds}$$

or a total fugitive dust generated load of roughly 3.3 pounds per day. This level is far below the 100 pounds per day threshold established by the SDAPCD. Therefore, no impacts are expected from this phase of construction. The commensurate $PM_{2.5}$ level would be 0.7 pounds per day, which is also below the proposed threshold of significance of 55 pounds per day for this pollutant.

Additionally, following the analysis methods identified in the *SCAQMD CEQA Handbook* for PM_{10} emissions due to unpaved haul roads gives the following semi-empirical relationship for aggregate respirable dust generation in pounds.

$$PM_{10} = VMT \times \left[2.1 \left(\frac{SLP}{12} \right) \left(\frac{MVS}{30} \right) \left(\frac{MVW}{3} \right)^{0.7} \left(\frac{NW}{4} \right)^{0.5} \left(\frac{365 - RD}{365} \right) \right]$$

Where the following variables are defined:

PM_{10} =	Fugitive dust emissions in pounds due to haulage on unpaved roads,
VMT =	Vehicle Miles Traveled per day,
SLP =	Soil Silt Loading in Percent,
MVS =	Mean Vehicle Speed in miles per hour,
MVW =	Mean Vehicle Weight in tons,
NW =	Number of Wheels on the vehicle, and,
RD =	Mean number of Rain Days with at least 0.01 inches of precipitation.

Unpaved road travel due to construction activities is also unknown at this time. For the purposes of analysis, it will be assumed that contractors' vehicles moving onsite would traverse a total of five (5) miles per day (VMT) during the earthwork and site preparation phases.

Substituting the applicable project values of VMT = 5, SLP = 6.0 (sand/gravel road with watering), MVS = 5 miles per hour, MVW = 20 tons (gross vehicular weight), NW = 10 wheels (average number of wheels), and RD[39] = 44.0 (rain days), gives the following result,

$$\mathrm{PM}_{10} = 5.0 \times \left[2.1 \left(\frac{6}{12} \right) \left(\frac{5}{30} \right) \left(\frac{20}{3} \right)^{0.7} \left(\frac{10}{4} \right)^{0.5} \left(\frac{365 - 44}{365} \right) \right] = 4.6 \text{ Pounds}$$

or, a level of 4.6 pounds of PM_{10} generated per day. This activity would not generate a significant impact. The commensurate $PM_{2.5}$ level would be 1.0 pounds per day, which is also below the proposed threshold of significance identified above.

[39] Based upon U.S. Weather Service average precipitation year data for Escondido, CA.

Combustion-Fired Health-Risk Emission Levels (PM_{10}, $PM_{2.5}$)

Onsite construction equipment was previously calculated for a worst-case aggregate daily pollutant level during the rough grading phase. These emissions are assumed to occur over any given 24-hour day (thereby providing an upper bound on expected emission concentrations) and direct comparison with CAAQS standards. Although all stable criteria pollutants are provided, it should be noted that for cancer-risk potential, only combustion-fired PM_{10} particulates are considered with $PM_{2.5}$ concentrations being determined through the aforementioned fractional emission estimates.

The proposed Escondido Assisted Living Facility project site has a maximum working footprint of roughly 130,680 square-feet (12,141 m^2) based upon data obtained from the project site plans. The aggregate emission rates for the various criteria pollutants, in grams per second, and grams per square-meter (m^2) per second, are shown in Table 5 below.[40]

TABLE 5: Predicted Onsite Diesel-Fired Construction Emission Rates

Criteria Pollutant	Max Daily Emissions (pounds)	Daily Site Emission Rates (grams/second)	Average Area Emission Rates (grams/m^2/second)
CO	20.9	0.1097	9.0380E-06
NO_x	50.5	0.2650	2.1826E-05
SO_x	6.6	0.0348	2.8696E-06
PM_{10}	**1.2**	**0.0066**	**5.3968E-07**
$PM_{2.5}$	1.1	0.0060	4.9651E-07

Total averaging time is 24 hours or 86,400 seconds per CAAQS standards.
The area emission rates are shown in scientific notation.

The expected combustion-fired emission concentrations from the *SCREEN3* modeling are shown in Table 6. The model results are provided as an attachment to this report. Based upon the analysis, all criteria pollutants were below the recommended health risk level with a PM_{10} probability of 0.1% per 70-year exposure duration, assuming the implementation of T-BACT.[41]

[40] As a required input parameter for the SCREEN3 model.

[41] As part of T-BACT, contractors are required to utilize construction equipment, which are individually permitted through local air districts, or are registered under the Statewide Portable Equipment Registration Program (PERP).

TABLE 6: SCREEN3 Predicted Diesel-Fired Emission Concentrations

Criteria Pollutant	Pollutant Concentration ($\mu g/m^3$)	Pollutant Concentration (ppm)	Pollutant Risk Probability (percent risk per person for 70-year exposure)	Significant?
CO	55.61	0.0484	n/a	No
NO_x	134.30	0.0714	n/a	No
SO_x	17.66	0.0067	n/a	No
PM_{10}	**3.32**	**- -**	**0.100%**	**No**
$PM_{2.5}$	3.06	- -	n/a	No

Diesel risk calculation based upon ARB 1999 Staff Report from the Scientific Review Panel (SRP) on Diesel Toxics inhaled in a 70-year lifetime.

Conversion Factors (approximate):

CO: 1 ppm = 1,150 $\mu g/m^3$ @ 25 deg-C STP, NO_x: 1 ppm = 1,880 $\mu g/m^3$ @ 25 deg-C STP
SO_x: 1 ppm = 2,620 $\mu g/m^3$ @ 25 deg-C STP, PM_{10} and $PM_{2.5}$: 1 ppm = 1 g/m^3 (solid)

$PM_{2.5}$ levels based upon the CEIDARS fractional emission factor of 0.920 $PM_{2.5}$ / PM_{10}.

Given this, no significant carcinogenic impact potential is expected due to proposed grading operations. Additionally, the analysis identified a worst-case PM_{10} level of 3.32 $\mu g/m^3$ occurring at a distance of 295 meters (968 feet) from the project site. This pollutant concentration is below the California Ambient Air Quality Standard (CAAQS) of 50 $\mu g/m^3$ established by the State for any given 24-hour exposure period.

The predicted diesel-fired PM_{10} dispersion pattern as a function of distance from the site can be seen in Figure 11 on the following page. No cumulative contribution from the site would be physically possible beyond the extents identified in this figure.[42]

Finally, anticipated diesel-fired $PM_{2.5}$ levels would not be expected to exceed 3.06 $\mu g/m^3$, which is also below the Federal NAAQS 24-hour threshold of 35 $\mu g/m^3$ (there are no State thresholds for this pollutant). No cumulative contribution of $PM_{2.5}$ from the site would be physically possible due to the reasons cited above.

[42] Using a standard Gaussian distribution, this would yield an effective 'no cumulative effect' distance of 3,872 feet (or 0.73 miles).

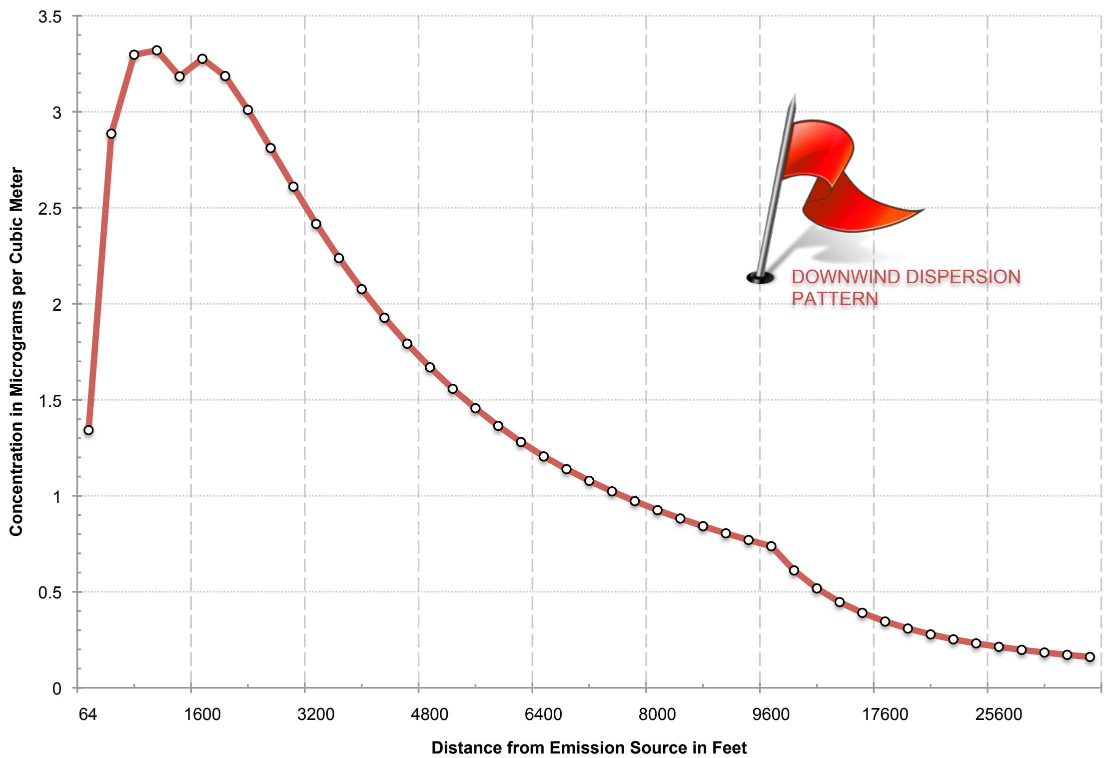

FIGURE 11: Predicted Combustion-Fired Diesel PM_{10} Dispersion Pattern (ISE 6/18)

VOC Emission Potential from Architectural Coatings

Following the analysis methods identified in the *SCAQMD CEQA Handbook* for Volatile Organic Compound (VOC) emissions due to architectural coatings gives the following semi-empirical relationship for aggregate emission levels,

$$VOC_{arch} = \left[\frac{WT \times A}{1000}\right] \times CT$$

Where the following variables are defined:

VOC = Total daily pounds of Volatile Reactive Organic Compounds,

WT = Specific VOC weight in pounds per mil per 1,000 square-foot application area,

A = Total exterior and/or interior area to be coated in square-feet, and,

CT = Paint thickness in mils.

Due to the nature of the project design at this point, exact painting quantities are unknown. It is expected that the Escondido Assisted Living Facility project contractors could completely finish paint[43] a maximum of 5,000 square-feet (denoted as A) of usable surface area every day (denoted as ΔT).

This yields the following modified expression.

$$\mathrm{VOC}_{\mathrm{arch}} = \left[\frac{\frac{WT}{\Delta T} \times A}{1000}\right] \times CT$$

Substituting the applicable unmitigated project values of WT = 7.12 pounds of VOC per 1,000 square-feet of painted area[44], ΔT = 1 day, A = 5,000 square-feet, CT = 2.0 mils (as the default value for two fast passes using an HVLP[45]) gives the following result,

$$\mathrm{VOC}_{\mathrm{arch}} = \left[\frac{7.12 \times 5000}{1000 \times 1}\right] \times 2.0 = 71.2 \text{ Pounds}$$

This yields a total unmitigated architectural-generated VOC level of 71.2 pounds per day. It can be shown that the VOC load can be reduced by a factor of 2.56 / 7.12 = 0.36 through the application of Low VOC paints. This would produce final VOC levels of 0.36 x 71.2 = 25.6 pounds of VOC per day. Thus, no remedial impacts would be expected due to proposed painting activities onsite.

Odor Impact Potential from Proposed Site

The inhalation of VOC's causes smell sensations in humans. These odors can affect human health in four primary ways:

- The VOC's can produce toxicological effects;
- The odorant compounds can cause irritations in the eye, nose, and throat;
- The VOC's can stimulate sensory nerves that can cause potentially harmful health effects; and,

[43] Finish painting implies, in the context of this report, complete surface area painting consisting of two coats as well as any required trim work. The referenced square-footage is the floor area square-footage per SCAQMD.

[44] Per SCAQMD CEQA Handbook, Table A11-13-C.

[45] HVLP = High-Volume, Low-Pressure painting system.

- The exposure to perceived unpleasant odors can stimulate negative cognitive and emotional responses based on previous experiences with such odors.

Development of the proposed project site could generate trace amounts (less than 1 $\mu g/m^3$) of substances such as ammonia, carbon dioxide, hydrogen sulfide, methane, dust, organic dust, and endotoxins (i.e., bacteria are present in the dust).[46]

It should be noted that odor generation impacts due to the project are not expected to be significant, since any odor generation would be intermittent and would terminate upon completion of the construction phase of the project. As a result, no significant air quality impacts are expected to surrounding residential receptors. No mitigation for odors is identified.

Project Vehicular Emission Levels

The Escondido Assisted Living Facility project is expected to have a worst-case trip generation level of 250 ADT based upon the cumulative trip generation produced for the proposed project.[47,48] The average one-way trip length would be 25 miles given the proposed service radius of the facility.[49]

The CARB EMFAC 2011 running emission factors are shown in Table 7a on the following page for a median speed of 45 MPH (which is consistent with travel patterns observed by ISE). The calculated operational daily emissions due to travel to, and from the project site, are tabulated in Table 7b on the same page. Based upon the findings, no significant impacts for any criteria pollutants were identified.

Predicted Traffic Segment Pollutant Concentration Levels

Tables 8a through -f, starting on page 40, lists the roadway segments and volumes identified by the traffic engineer for the existing, cumulative, and build out (Year 2035) conditions, with- and without the project contribution, as well as the expected CO, NO_x, PM_{10}, and $PM_{2.5}$ emissions at 100 feet from the road centerline. Based upon the CALINE4 dispersion model findings, no localized criteria pollutant impacts were identified for any roadway segment examined. The roadway segments examined were found to comply with both the CAAQS and NAAQS standards.

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[46] Additionally, proposed onsite uses could generate substances such as volatile organic acids, alcohols, aldehydes, amines, fixed gases, carbonyls, esters, sulfides, disulfides, mercaptans, and nitrogen heterocycles.

[47] Source: Escondido Assisted Living Facility Draft Traffic Impact Study, LOS Engineering, Inc., 3/16/18.

[48] Motor vehicles are the primary source of emissions associated with the proposed project area. Typically, uses such as the proposed project do not directly emit significant amounts of air pollutants from onsite activities. Rather, vehicular trips to and from these land uses are the significant contributor.

[49] The average assumed trip length is the average travel distance to or from the site and is based upon applicant's expectations for reasonable occupancy of the site. It is anticipated that some end trips will be shorter, and some longer, but for the purposes of analysis, the average value is given.

TABLE 7a: CARB EMFAC 2011 Year 2020 Emission Rates

	Criteria Pollutants Under Examination (in grams per mile)					
EMFAC 2011 Year 2020 Emission Rates	CO	NO_x	SO_x	PM_{10}	$PM_{2.5}$	ROG
Light Duty Auto (LDA)	0.799	0.088	0.003	0.001	0.001	0.018
Light Duty Truck (LDT1)	1.472	0.152	0.003	0.002	0.002	0.027
Medium Duty Truck (LHD1)	0.790	0.392	0.005	0.001	0.001	0.039
Heavy Duty Truck Gasoline (MH GAS)	1.483	0.552	0.013	0.001	0.001	0.044
Heavy Duty Truck Diesel (MH DSL)	0.503	5.781	0.000	0.125	0.115	0.109
Motorcycle (MCY)	17.790	1.168	0.002	0.000	0.000	2.033

TABLE 7b: Anticipated Project Generated Trip Emissions

		Criteria Pollutants Under Examination (in pounds per day)					
Proposed Project Action Emissions	ADT	CO	NO_x	SO_x	PM_{10}	$PM_{2.5}$	ROG
Light Duty Auto (LDA)	173	7.59	0.83	0.03	0.01	0.0	0.17
Light Duty Truck (LDT1)	49	3.93	0.41	0.01	0.01	0.0	0.07
Medium Duty Truck (LHD1)	16	0.70	0.35	0.00	0.00	0.0	0.03
Heavy Duty Truck Gasoline (MH GAS)	3	0.25	0.09	0.00	0.00	0.0	0.01
Heavy Duty Truck Diesel (MH DSL)	9	0.25	2.87	0.00	0.06	0.1	0.05
Motorcycle (MCY)	1	0.98	0.06	0.00	0.00	0.0	0.11
Total:	**250**	**13.7**	**4.6**	**0.0**	**0.1**	**0.1**	**0.4**
SDAPCD Significance Threshold:		**550**	**250**	**250**	**100**	**55**	**75**

TABLE 8a: Existing Traffic Segment Pollutant Concentrations

Roadway	Segment	LOS	ADT	Δ CO (ppm)	Δ NO_X (pphm)	Δ PM_{10} (ppm)	Δ $PM_{2.5}$ (ppm)
Centre City Parkway	Country Club Ln to Iris Ln	B	14,407	0.1	0.6	0.4	0.4
	Iris Ln to El Norte Pkwy	B	17,018	0.1	0.7	0.5	0.5
	El Norte Pkwy to Decatur Wy	C	25,648	0.1	0.8	0.7	0.7
	Decatur Wy to SR-78	D	28,297	0.1	0.8	0.7	0.7
El Norte Parkway	Iris Ln to Centre City Pkwy	B	25,152	0.1	0.8	0.6	0.6
	Centre City Pkwy to Broadway Blvd	D	27,858	0.1	0.8	0.7	0.7
Iris Lane	Country Club to Centre City Pkwy	C	8,996	0.0	0.5	0.3	0.3
	Centre City Pkwy to El Norte Pkwy	B	6,546	0.0	0.5	0.3	0.3

TABLE 8b: Existing + Project Traffic Segment Pollutant Concentrations

Roadway	Segment	LOS	ADT	Δ CO (ppm)	Δ NO_X (pphm)	Δ PM_{10} (ppm)	Δ $PM_{2.5}$ (ppm)
Centre City Parkway	Country Club Ln to Iris Ln	B	14,482	0.1	0.6	0.4	0.4
	Iris Ln to El Norte Pkwy	B	17,268	0.1	0.7	0.5	0.5
	El Norte Pkwy to Decatur Wy	C	25,673	0.1	0.8	0.7	0.7
	Decatur Wy to SR-78	D	28,322	0.1	0.8	0.7	0.7
El Norte Parkway	Iris Ln to Centre City Pkwy	B	25,239	0.1	0.8	0.6	0.6
	Centre City Pkwy to Broadway Blvd	D	27,883	0.1	0.8	0.7	0.7
Iris Lane	Country Club to Centre City Pkwy	C	9,008	0.0	0.5	0.3	0.3
	Centre City Pkwy to El Norte Pkwy	B	6,571	0.0	0.5	0.3	0.3

TABLE 8c: Existing + Cumulative Traffic Segment Pollutant Concentrations

Roadway	Segment	LOS	ADT	Δ CO (ppm)	Δ NO_X (pphm)	Δ PM_{10} (ppm)	Δ $PM_{2.5}$ (ppm)
Centre City Parkway	Country Club Ln to Iris Ln	B	15,102	0.1	0.6	0.4	0.4
	Iris Ln to El Norte Pkwy	B	17,739	0.1	0.7	0.5	0.5
	El Norte Pkwy to Decatur Wy	C	26,758	0.1	0.8	0.7	0.7
	Decatur Wy to SR-78	D	29,407	0.1	0.8	0.7	0.7
El Norte Parkway	Iris Ln to Centre City Pkwy	B	26,120	0.1	0.8	0.7	0.7
	Centre City Pkwy to Broadway Blvd	D	28,940	0.1	0.8	0.7	0.7
Iris Lane	Country Club to Centre City Pkwy	C	9,144	0.0	0.5	0.3	0.3
	Centre City Pkwy to El Norte Pkwy	B	6,826	0.0	0.5	0.3	0.3

TABLE 8d: Existing + Cumulative + Project Traffic Segment Pollutant Concentrations

Roadway	Segment	LOS	ADT	Δ CO (ppm)	Δ NO_X (pphm)	Δ PM_{10} (ppm)	Δ $PM_{2.5}$ (ppm)
Centre City Parkway	Country Club Ln to Iris Ln	B	15,177	0.1	0.6	0.4	0.4
	Iris Ln to El Norte Pkwy	B	17,989	0.1	0.7	0.5	0.5
	El Norte Pkwy to Decatur Wy	C	26,783	0.1	0.8	0.7	0.7
	Decatur Wy to SR-78	D	29,432	0.1	0.8	0.7	0.7
El Norte Parkway	Iris Ln to Centre City Pkwy	B	26,207	0.1	0.8	0.7	0.7
	Centre City Pkwy to Broadway Blvd	D	28,965	0.1	0.8	0.7	0.7
Iris Lane	Country Club to Centre City Pkwy	C	9,156	0.0	0.5	0.3	0.3
	Centre City Pkwy to El Norte Pkwy	B	6,851	0.0	0.5	0.3	0.3

TABLE 8e: Year 2035 Build Out Traffic Segment Pollutant Concentrations

Roadway	Segment	LOS	ADT	∆ CO (ppm)	∆ NO_X (pphm)	∆ PM_{10} (ppm)	∆ $PM_{2.5}$ (ppm)
Centre City Parkway	Country Club Ln to Iris Ln	B	18,200	0.1	0.7	0.5	0.5
	Iris Ln to El Norte Pkwy	C	23,600	0.1	0.7	0.6	0.6
	El Norte Pkwy to Decatur Wy	D	32,800	0.1	0.8	0.8	0.8
	Decatur Wy to SR-78	D	32,800	0.1	0.8	0.8	0.8
El Norte Parkway	Iris Ln to Centre City Pkwy	C	35,700	0.1	0.9	0.8	0.8
	Centre City Pkwy to Broadway Blvd	D	39,200	0.1	0.9	0.9	0.9
Iris Lane	Country Club to Centre City Pkwy	C	8,400	0.0	0.5	0.3	0.3
	Centre City Pkwy to El Norte Pkwy	F	20,400	0.1	0.7	0.5	0.5

TABLE 8f: Year 2035 Build Out + Project Traffic Segment Pollutant Concentrations

Roadway	Segment	LOS	ADT	∆ CO (ppm)	∆ NO_X (pphm)	∆ PM_{10} (ppm)	∆ $PM_{2.5}$ (ppm)
Centre City Parkway	Country Club Ln to Iris Ln	18,275	0.1	0.7	0.5	0.5	18,275
	Iris Ln to El Norte Pkwy	23,850	0.1	0.7	0.6	0.6	23,850
	El Norte Pkwy to Decatur Wy	32,825	0.1	0.8	0.8	0.8	32,825
	Decatur Wy to SR-78	32,825	0.1	0.8	0.8	0.8	32,825
El Norte Parkway	Iris Ln to Centre City Pkwy	35,787	0.1	0.9	0.8	0.8	35,787
	Centre City Pkwy to Broadway Blvd	39,225	0.1	0.9	0.9	0.9	39,225
Iris Lane	Country Club to Centre City Pkwy	8,412	0.0	0.5	0.3	0.3	8,412
	Centre City Pkwy to El Norte Pkwy	20,425	0.1	0.7	0.5	0.5	20,425

Predicted Operational Emission Levels

Fixed emission sources under the context of this project would consist entirely of small gasoline engines used with lawn mowers and landscaping equipment as well as emissive sources from natural gas powered appliances (such as hot water heaters, stoves, etc.). Each of these sources is discussed in detail below.

Small Gasoline Engine Emission Sources

Landscaping equipment utilized in the course of maintenance of the Escondido Assisted Living Facility project site typically would consist of a five horsepower four-stroke lawnmower and a small weed trimmer having a two-stroke engine with approximately 30 to 50 cubic-centimeters of displacement.[50]

For the purposes of analysis, the project site will be treated as a multi-family residential/commercial use consisting of an aggregate 96 living spaces and 10 office uses totaling 2,500 square-feet. This equates to the following fixed emission levels in pounds per day for the development plan:

Land Use Type	CO	NO_x	SO_x	PM_{10}	ROG
Multi-Family Use Space (MF)	**26.5**	**0.5**	**0.0**	**0.0**	**3.0**
Office Space (CM)	**2.8**	**0.1**	**0.0**	**0.0**	**0.3**

These sources would be classified as insignificant emission sources and would not generate an air quality impact.

Natural Gas Emission Sources

Natural gas consumption (typically due to usage of central heating units and water heaters) would produce the following approximate total pounds of combustion emissions:

$$\mathrm{CP}_{\mathrm{combustion}} = ER \times \left[\frac{NU \times UR}{30} \right] \times 1\mathrm{x}10^{-6}$$

[50] Assuming cleaner burning engines purchased new by the ultimate user, the following emissions rates are projected by CARB:

Pollutant	Single-Family Emissions Per Unit (lb/day)	Multi-Family/Retail Emissions Per Unit (lb/day)
CO	0.00576	0.276
NO_x	0.00014	0.005
SO_x	0.0002	0.0001
PM_{10}	0.000005	0.00037
ROG	0.00054	0.0315

It should be noted that these emission factors are also the identical emission factors utilized by the CARB URBEMIS model.

Where the following variables are defined:

CP = The criteria pollutant under examination (i.e., CO, NO_x, PM_{10}, or ROG),

ER = Emissions rate of criteria pollutant per million-cubic-feet of natural gas consumed (e.g., CO = 40 pounds/MM Cubic-feet, NO_x = 94 pounds/MM Cubic-feet, PM_{10} = 0.18 pounds/MM Cubic-feet, ROG = 7.26 pounds/MM Cubic-feet),

NU = Total number of units per land use type (i.e., residential/commercial), and,

UR = Specific natural gas usage rate per development type (Single-Family = 6,665 ft^3/month, Multi-family = 4,011.5 ft^3/month, Retail Space = 2.9 ft^3/SF/month).

As before, the project site will be treated as a multi-family residential/commercial use consisting of an aggregate 96 living spaces and 10 office uses totaling 2,500 square-feet. This equates to the following fixed emission levels in pounds per day for the development plan:

Land Use Type	CO	NO_x	SO_x	PM_{10}	ROG
Multi-Family Use Space (MF)	**0.5**	**1.2**	**- -**	**0.0**	**0.1**
Office Space (CM)	**0.0**	**0.0**	**- -**	**0.0**	**0.0**

These sources would be classified as insignificant emission sources and would not generate an air quality impact.

CONCLUSIONS AND RECOMMENDATIONS

The aggregate emission levels produced by the proposed Escondido Assisted Living Facility project site are shown in Table 9 below. Based upon the findings, no construction or operational air quality impacts are anticipated due to the project.

TABLE 9: Aggregate Project Emissions Summary

	Aggregate Emissions for Criteria Pollutants					
SCENARIO EXAMINED	**CO**	**NO_x**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**	**ROG**
Construction Grading Operations (pounds per day)						
Construction Grading Vehicle Emissions	20.9	50.5	6.6	1.2	1.1	7.3
Surface Grading Dust Generation	- -	- -	- -	3.3	0.7	- -
Powered Haulage Dust Generation	0.0	0.0	0.0	4.6	1.0	0.0
Total (Σ)	20.9	50.5	6.6	9.2	2.8	7.3
Construction Building Operations (pounds per day)						
Architectural Coating Application						71.2
Unmitigated Total (Σ)	- -	- -	- -	- -	- -	71.2
With Low VOC Paint Application (Σ)	- -	- -	- -	- -	- -	25.6
Project Operations (pounds per day)						
Vehicular Traffic Generation	13.7	4.6	0.0	0.1	0.1	0.4
Fixed Source #1 (Small Engines - MF)	26.5	0.5	0.0	0.0	- -	3.0
Fixed Source #2 (Small Engines - CM)	2.8	0.1	0.0	0.0	- -	0.3
Fixed Source #3 (Natural Gas - MF)	0.5	1.2	- -	0.0	- -	0.1
Fixed Source #4 (Natural Gas – CM)	0.0	0.0	- -	0.0	- -	0.0
Total (Σ)	43.5	6.4	0.1	0.1	0.1	3.9
SDAPCD Significance Threshold:	**550**	**250**	**250**	**100**	**55**	**75**

CERTIFICATION OF ACCURACY AND QUALIFICATIONS

This report was prepared by Investigative Science and Engineering, Inc. (ISE). The members of its professional staff contributing to the report are listed below:

Rick Tavares *(rtavares@ise.us)*	Ph.D. Civil Engineering M.S. Structural Engineering M.S. Mechanical Engineering B.S. Aerospace Engineering / Engineering Mechanics
Karen Tavares *(ktavares@ise.us)*	B.S. Electrical Engineering

ISE affirms to the best of its knowledge and belief that the statements and information contained herein are in all respects true and correct as of the date of this report. Content and information contained within this report is intended only for the subject project and is protected under 17 U.S.C. §§ 101 through 810.

Should the reader have any questions regarding the findings and conclusions presented in this report, please do not hesitate to contact ISE at (760) 787-0016.

Approved as to Form and Content:

Rick Tavares, Ph.D.

Project Principal / Director of Engineering
Investigative Science and Engineering, Inc. (ISE)

APPENDICES AND SUPPLEMENTAL INFORMATION

SCREEN3 Model Output for Criteria Pollutants: CO, NO_x, SO_x, and PM_{10}

```
  ***  SCREEN3 MODEL RUN  ***
  *** VERSION DATED 96043 ***

ESCONDIDO ASSISTED LIVING FACILITY GRADING & SITE PREPARATION - CO

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE                =        AREA
   EMISSION RATE (G/(S-M**2)) =     .903800E-05
   SOURCE HEIGHT (M)          =       3.0000
   LENGTH OF LARGER SIDE (M)  =     110.2000
   LENGTH OF SMALLER SIDE (M) =     110.2000
   RECEPTOR HEIGHT (M)        =      10.0000
   URBAN/RURAL OPTION         =        RURAL
THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

   MODEL ESTIMATES DIRECTION TO MAX CONCENTRATION


BUOY. FLUX =     .000 M**4/S**3;  MOM. FLUX =     .000 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN AUTOMATED DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

  DIST     CONC         STAB  U10M   USTK  MIX HT   PLUME  MAX DIR
   (M)   (UG/M**3)            (M/S)  (M/S)   (M)    HT (M)  (DEG)
-------  ----------     ----  -----  -----  ------  ------  -------
    20.   22.47          1     1.0    1.0   320.0    3.00     44.
   100.   48.32          2     1.0    1.0   320.0    3.00     45.
   200.   55.21          4     1.0    1.0   320.0    3.00     45.
   300.   55.60          5     1.0    1.0 10000.0    3.00     45.
   400.   53.33          6     1.0    1.0 10000.0    3.00     45.
   500.   54.87          6     1.0    1.0 10000.0    3.00     45.
   600.   53.35          6     1.0    1.0 10000.0    3.00     45.
   700.   50.41          6     1.0    1.0 10000.0    3.00     45.
   800.   47.08          6     1.0    1.0 10000.0    3.00     45.
   900.   43.70          6     1.0    1.0 10000.0    3.00     45.
  1000.   40.46          6     1.0    1.0 10000.0    3.00     45.
  1100.   37.49          6     1.0    1.0 10000.0    3.00     44.
  1200.   34.76          6     1.0    1.0 10000.0    3.00     45.
  1300.   32.27          6     1.0    1.0 10000.0    3.00     45.
  1400.   30.01          6     1.0    1.0 10000.0    3.00     45.
  1500.   27.95          6     1.0    1.0 10000.0    3.00     45.
  1600.   26.08          6     1.0    1.0 10000.0    3.00     44.
  1700.   24.38          6     1.0    1.0 10000.0    3.00     45.
  1800.   22.84          6     1.0    1.0 10000.0    3.00     44.
  1900.   21.44          6     1.0    1.0 10000.0    3.00     44.
  2000.   20.18          6     1.0    1.0 10000.0    3.00     42.
  2100.   19.07          6     1.0    1.0 10000.0    3.00     42.
  2200.   18.06          6     1.0    1.0 10000.0    3.00     44.
  2300.   17.13          6     1.0    1.0 10000.0    3.00     45.
  2400.   16.28          6     1.0    1.0 10000.0    3.00     45.
  2500.   15.49          6     1.0    1.0 10000.0    3.00     43.
```

```
  2600.   14.77         6      1.0     1.0 10000.0    3.00     44.
  2700.   14.10         6      1.0     1.0 10000.0    3.00     40.
  2800.   13.47         6      1.0     1.0 10000.0    3.00     39.
  2900.   12.89         6      1.0     1.0 10000.0    3.00     37.
  3000.   12.35         6      1.0     1.0 10000.0    3.00     36.
  3500.   10.24         6      1.0     1.0 10000.0    3.00     35.
  4000.   8.671         6      1.0     1.0 10000.0    3.00     43.
  4500.   7.476         6      1.0     1.0 10000.0    3.00     31.
  5000.   6.536         6      1.0     1.0 10000.0    3.00     45.
  5500.   5.783         6      1.0     1.0 10000.0    3.00     42.
  6000.   5.169         6      1.0     1.0 10000.0    3.00     39.
  6500.   4.658         6      1.0     1.0 10000.0    3.00     35.
  7000.   4.229         6      1.0     1.0 10000.0    3.00     32.
  7500.   3.876         6      1.0     1.0 10000.0    3.00     31.
  8000.   3.572         6      1.0     1.0 10000.0    3.00     37.
  8500.   3.308         6      1.0     1.0 10000.0    3.00     44.
  9000.   3.077         6      1.0     1.0 10000.0    3.00     44.
  9500.   2.872         6      1.0     1.0 10000.0    3.00     39.
 10000.   2.691         6      1.0     1.0 10000.0    3.00     31.

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND    20. M:
   295.   55.61         5      1.0     1.0 10000.0    3.00     45.

     ***************************************
     *** SUMMARY OF SCREEN MODEL RESULTS ***
     ***************************************

 CALCULATION         MAX CONC     DIST TO    TERRAIN
  PROCEDURE         (UG/M**3)     MAX (M)     HT (M)
--------------    -----------    -------    -------
SIMPLE TERRAIN       55.61          295.         0.
```

```
 ***  SCREEN3 MODEL RUN  ***
 *** VERSION DATED 96043 ***

ESCONDIDO ASSISTED LIVING FACILITY GRADING & SITE PREPARATION - NOX

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE                 =        AREA
   EMISSION RATE (G/(S-M**2))  =      .218260E-04
   SOURCE HEIGHT (M)           =       3.0000
   LENGTH OF LARGER SIDE (M)   =     110.2000
   LENGTH OF SMALLER SIDE (M)  =     110.2000
   RECEPTOR HEIGHT (M)         =      10.0000
   URBAN/RURAL OPTION          =       RURAL
THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

   MODEL ESTIMATES DIRECTION TO MAX CONCENTRATION


BUOY. FLUX =     .000 M**4/S**3;  MOM. FLUX =     .000 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN AUTOMATED DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

  DIST     CONC             U10M   USTK  MIX HT   PLUME  MAX DIR
   (M)   (UG/M**3)   STAB  (M/S)  (M/S)    (M)   HT (M)   (DEG)
-------  ----------  ----  -----  -----  ------  ------  -------
    20.   54.26        1     1.0    1.0   320.0    3.00     44.
   100.   116.7        2     1.0    1.0   320.0    3.00     45.
   200.   133.3        4     1.0    1.0   320.0    3.00     45.
   300.   134.3        5     1.0    1.0 10000.0    3.00     45.
   400.   128.8        6     1.0    1.0 10000.0    3.00     45.
   500.   132.5        6     1.0    1.0 10000.0    3.00     45.
   600.   128.8        6     1.0    1.0 10000.0    3.00     45.
   700.   121.7        6     1.0    1.0 10000.0    3.00     45.
   800.   113.7        6     1.0    1.0 10000.0    3.00     45.
   900.   105.5        6     1.0    1.0 10000.0    3.00     45.
  1000.   97.71        6     1.0    1.0 10000.0    3.00     45.
  1100.   90.53        6     1.0    1.0 10000.0    3.00     44.
  1200.   83.95        6     1.0    1.0 10000.0    3.00     45.
  1300.   77.94        6     1.0    1.0 10000.0    3.00     45.
  1400.   72.46        6     1.0    1.0 10000.0    3.00     45.
  1500.   67.50        6     1.0    1.0 10000.0    3.00     45.
  1600.   62.98        6     1.0    1.0 10000.0    3.00     44.
  1700.   58.88        6     1.0    1.0 10000.0    3.00     45.
  1800.   55.16        6     1.0    1.0 10000.0    3.00     44.
  1900.   51.79        6     1.0    1.0 10000.0    3.00     44.
  2000.   48.72        6     1.0    1.0 10000.0    3.00     42.
  2100.   46.05        6     1.0    1.0 10000.0    3.00     42.
  2200.   43.62        6     1.0    1.0 10000.0    3.00     44.
  2300.   41.37        6     1.0    1.0 10000.0    3.00     45.
  2400.   39.32        6     1.0    1.0 10000.0    3.00     45.
  2500.   37.42        6     1.0    1.0 10000.0    3.00     43.
```

```
  2600.   35.66         6     1.0     1.0 10000.0    3.00     44.
  2700.   34.04         6     1.0     1.0 10000.0    3.00     40.
  2800.   32.54         6     1.0     1.0 10000.0    3.00     39.
  2900.   31.12         6     1.0     1.0 10000.0    3.00     37.
  3000.   29.82         6     1.0     1.0 10000.0    3.00     36.
  3500.   24.72         6     1.0     1.0 10000.0    3.00     35.
  4000.   20.94         6     1.0     1.0 10000.0    3.00     43.
  4500.   18.05         6     1.0     1.0 10000.0    3.00     31.
  5000.   15.78         6     1.0     1.0 10000.0    3.00     45.
  5500.   13.97         6     1.0     1.0 10000.0    3.00     42.
  6000.   12.48         6     1.0     1.0 10000.0    3.00     39.
  6500.   11.25         6     1.0     1.0 10000.0    3.00     35.
  7000.   10.21         6     1.0     1.0 10000.0    3.00     32.
  7500.   9.360         6     1.0     1.0 10000.0    3.00     31.
  8000.   8.627         6     1.0     1.0 10000.0    3.00     37.
  8500.   7.989         6     1.0     1.0 10000.0    3.00     44.
  9000.   7.430         6     1.0     1.0 10000.0    3.00     44.
  9500.   6.936         6     1.0     1.0 10000.0    3.00     39.
 10000.   6.498         6     1.0     1.0 10000.0    3.00     31.

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND    20. M:
   295.   134.3         5     1.0     1.0 10000.0    3.00     45.

     ***************************************
     *** SUMMARY OF SCREEN MODEL RESULTS ***
     ***************************************

 CALCULATION         MAX CONC     DIST TO    TERRAIN
  PROCEDURE         (UG/M**3)     MAX (M)     HT (M)
--------------     -----------    -------    -------
SIMPLE TERRAIN       134.3          295.          0.
```

```
  ***  SCREEN3 MODEL RUN  ***
  *** VERSION DATED 96043 ***

ESCONDIDO ASSISTED LIVING FACILITY GRADING & SITE PREPARATION - SOX

 SIMPLE TERRAIN INPUTS:
    SOURCE TYPE                  =         AREA
    EMISSION RATE (G/(S-M**2))   =      .286960E-05
    SOURCE HEIGHT (M)            =       3.0000
    LENGTH OF LARGER SIDE (M)    =     110.2000
    LENGTH OF SMALLER SIDE (M)   =     110.2000
    RECEPTOR HEIGHT (M)          =      10.0000
    URBAN/RURAL OPTION           =        RURAL
 THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

    MODEL ESTIMATES DIRECTION TO MAX CONCENTRATION


 BUOY. FLUX =     .000 M**4/S**3;  MOM. FLUX =     .000 M**4/S**2.

 *** FULL METEOROLOGY ***

 **********************************
 *** SCREEN AUTOMATED DISTANCES ***
 **********************************

 *** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

   DIST     CONC            U10M   USTK  MIX HT   PLUME  MAX DIR
    (M)   (UG/M**3)   STAB  (M/S)  (M/S)    (M)   HT (M)  (DEG)
 -------  ----------  ----  -----  -----  ------  ------  -------
     20.   7.135        1     1.0    1.0   320.0    3.00     44.
    100.   15.34        2     1.0    1.0   320.0    3.00     45.
    200.   17.53        4     1.0    1.0   320.0    3.00     45.
    300.   17.65        5     1.0    1.0 10000.0    3.00     45.
    400.   16.93        6     1.0    1.0 10000.0    3.00     45.
    500.   17.42        6     1.0    1.0 10000.0    3.00     45.
    600.   16.94        6     1.0    1.0 10000.0    3.00     45.
    700.   16.01        6     1.0    1.0 10000.0    3.00     45.
    800.   14.95        6     1.0    1.0 10000.0    3.00     45.
    900.   13.88        6     1.0    1.0 10000.0    3.00     45.
   1000.   12.85        6     1.0    1.0 10000.0    3.00     45.
   1100.   11.90        6     1.0    1.0 10000.0    3.00     44.
   1200.   11.04        6     1.0    1.0 10000.0    3.00     45.
   1300.   10.25        6     1.0    1.0 10000.0    3.00     45.
   1400.   9.527        6     1.0    1.0 10000.0    3.00     45.
   1500.   8.875        6     1.0    1.0 10000.0    3.00     45.
   1600.   8.280        6     1.0    1.0 10000.0    3.00     44.
   1700.   7.742        6     1.0    1.0 10000.0    3.00     45.
   1800.   7.253        6     1.0    1.0 10000.0    3.00     44.
   1900.   6.809        6     1.0    1.0 10000.0    3.00     44.
   2000.   6.406        6     1.0    1.0 10000.0    3.00     42.
   2100.   6.054        6     1.0    1.0 10000.0    3.00     42.
   2200.   5.734        6     1.0    1.0 10000.0    3.00     44.
   2300.   5.440        6     1.0    1.0 10000.0    3.00     45.
   2400.   5.170        6     1.0    1.0 10000.0    3.00     45.
   2500.   4.920        6     1.0    1.0 10000.0    3.00     43.
```

```
  2600.   4.688         6     1.0     1.0 10000.0    3.00     44.
  2700.   4.476         6     1.0     1.0 10000.0    3.00     40.
  2800.   4.278         6     1.0     1.0 10000.0    3.00     39.
  2900.   4.092         6     1.0     1.0 10000.0    3.00     37.
  3000.   3.921         6     1.0     1.0 10000.0    3.00     36.
  3500.   3.250         6     1.0     1.0 10000.0    3.00     35.
  4000.   2.753         6     1.0     1.0 10000.0    3.00     43.
  4500.   2.374         6     1.0     1.0 10000.0    3.00     31.
  5000.   2.075         6     1.0     1.0 10000.0    3.00     45.
  5500.   1.836         6     1.0     1.0 10000.0    3.00     42.
  6000.   1.641         6     1.0     1.0 10000.0    3.00     39.
  6500.   1.479         6     1.0     1.0 10000.0    3.00     35.
  7000.   1.343         6     1.0     1.0 10000.0    3.00     32.
  7500.   1.231         6     1.0     1.0 10000.0    3.00     31.
  8000.   1.134         6     1.0     1.0 10000.0    3.00     37.
  8500.   1.050         6     1.0     1.0 10000.0    3.00     44.
  9000.   .9768         6     1.0     1.0 10000.0    3.00     44.
  9500.   .9119         6     1.0     1.0 10000.0    3.00     39.
 10000.   .8543         6     1.0     1.0 10000.0    3.00     31.

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND    20. M:
   295.   17.66         5     1.0     1.0 10000.0    3.00     45.

     ***************************************
     *** SUMMARY OF SCREEN MODEL RESULTS ***
     ***************************************

 CALCULATION         MAX CONC    DIST TO   TERRAIN
  PROCEDURE         (UG/M**3)    MAX (M)    HT (M)
--------------     -----------   -------   -------
SIMPLE TERRAIN       17.66          295.        0.
```

```
 ***  SCREEN3 MODEL RUN  ***
 *** VERSION DATED 96043 ***

ESCONDIDO ASSISTED LIVING FACILITY GRADING & SITE PREPARATION - PM10

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE                 =         AREA
   EMISSION RATE (G/(S-M**2))  =      .539680E-06
   SOURCE HEIGHT (M)           =       3.0000
   LENGTH OF LARGER SIDE (M)   =     110.2000
   LENGTH OF SMALLER SIDE (M)  =     110.2000
   RECEPTOR HEIGHT (M)         =      10.0000
   URBAN/RURAL OPTION          =        RURAL
THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

   MODEL ESTIMATES DIRECTION TO MAX CONCENTRATION


BUOY. FLUX =     .000 M**4/S**3;  MOM. FLUX =     .000 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN AUTOMATED DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

  DIST     CONC            U10M   USTK  MIX HT   PLUME  MAX DIR
   (M)   (UG/M**3)   STAB  (M/S)  (M/S)   (M)    HT (M)  (DEG)
-------  ----------  ----  -----  -----  ------  ------  -------
    20.   1.342        1     1.0    1.0   320.0    3.00     44.
   100.   2.886        2     1.0    1.0   320.0    3.00     45.
   200.   3.297        4     1.0    1.0   320.0    3.00     45.
   300.   3.320        5     1.0    1.0 10000.0    3.00     45.
   400.   3.184        6     1.0    1.0 10000.0    3.00     45.
   500.   3.276        6     1.0    1.0 10000.0    3.00     45.
   600.   3.186        6     1.0    1.0 10000.0    3.00     45.
   700.   3.010        6     1.0    1.0 10000.0    3.00     45.
   800.   2.811        6     1.0    1.0 10000.0    3.00     45.
   900.   2.610        6     1.0    1.0 10000.0    3.00     45.
  1000.   2.416        6     1.0    1.0 10000.0    3.00     45.
  1100.   2.238        6     1.0    1.0 10000.0    3.00     44.
  1200.   2.076        6     1.0    1.0 10000.0    3.00     45.
  1300.   1.927        6     1.0    1.0 10000.0    3.00     45.
  1400.   1.792        6     1.0    1.0 10000.0    3.00     45.
  1500.   1.669        6     1.0    1.0 10000.0    3.00     45.
  1600.   1.557        6     1.0    1.0 10000.0    3.00     44.
  1700.   1.456        6     1.0    1.0 10000.0    3.00     45.
  1800.   1.364        6     1.0    1.0 10000.0    3.00     44.
  1900.   1.280        6     1.0    1.0 10000.0    3.00     44.
  2000.   1.205        6     1.0    1.0 10000.0    3.00     42.
  2100.   1.139        6     1.0    1.0 10000.0    3.00     42.
  2200.   1.078        6     1.0    1.0 10000.0    3.00     44.
  2300.   1.023        6     1.0    1.0 10000.0    3.00     45.
  2400.   .9722        6     1.0    1.0 10000.0    3.00     45.
  2500.   .9252        6     1.0    1.0 10000.0    3.00     43.
```

```
  2600.   .8818        6     1.0     1.0 10000.0    3.00     44.
  2700.   .8417        6     1.0     1.0 10000.0    3.00     40.
  2800.   .8045        6     1.0     1.0 10000.0    3.00     39.
  2900.   .7696        6     1.0     1.0 10000.0    3.00     37.
  3000.   .7374        6     1.0     1.0 10000.0    3.00     36.
  3500.   .6112        6     1.0     1.0 10000.0    3.00     35.
  4000.   .5178        6     1.0     1.0 10000.0    3.00     43.
  4500.   .4464        6     1.0     1.0 10000.0    3.00     31.
  5000.   .3903        6     1.0     1.0 10000.0    3.00     45.
  5500.   .3453        6     1.0     1.0 10000.0    3.00     42.
  6000.   .3087        6     1.0     1.0 10000.0    3.00     39.
  6500.   .2781        6     1.0     1.0 10000.0    3.00     35.
  7000.   .2525        6     1.0     1.0 10000.0    3.00     32.
  7500.   .2314        6     1.0     1.0 10000.0    3.00     31.
  8000.   .2133        6     1.0     1.0 10000.0    3.00     37.
  8500.   .1975        6     1.0     1.0 10000.0    3.00     44.
  9000.   .1837        6     1.0     1.0 10000.0    3.00     44.
  9500.   .1715        6     1.0     1.0 10000.0    3.00     39.
 10000.   .1607        6     1.0     1.0 10000.0    3.00     31.

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND    20. M:
   295.   3.321        5     1.0     1.0 10000.0    3.00     45.

     ***************************************
     *** SUMMARY OF SCREEN MODEL RESULTS ***
     ***************************************

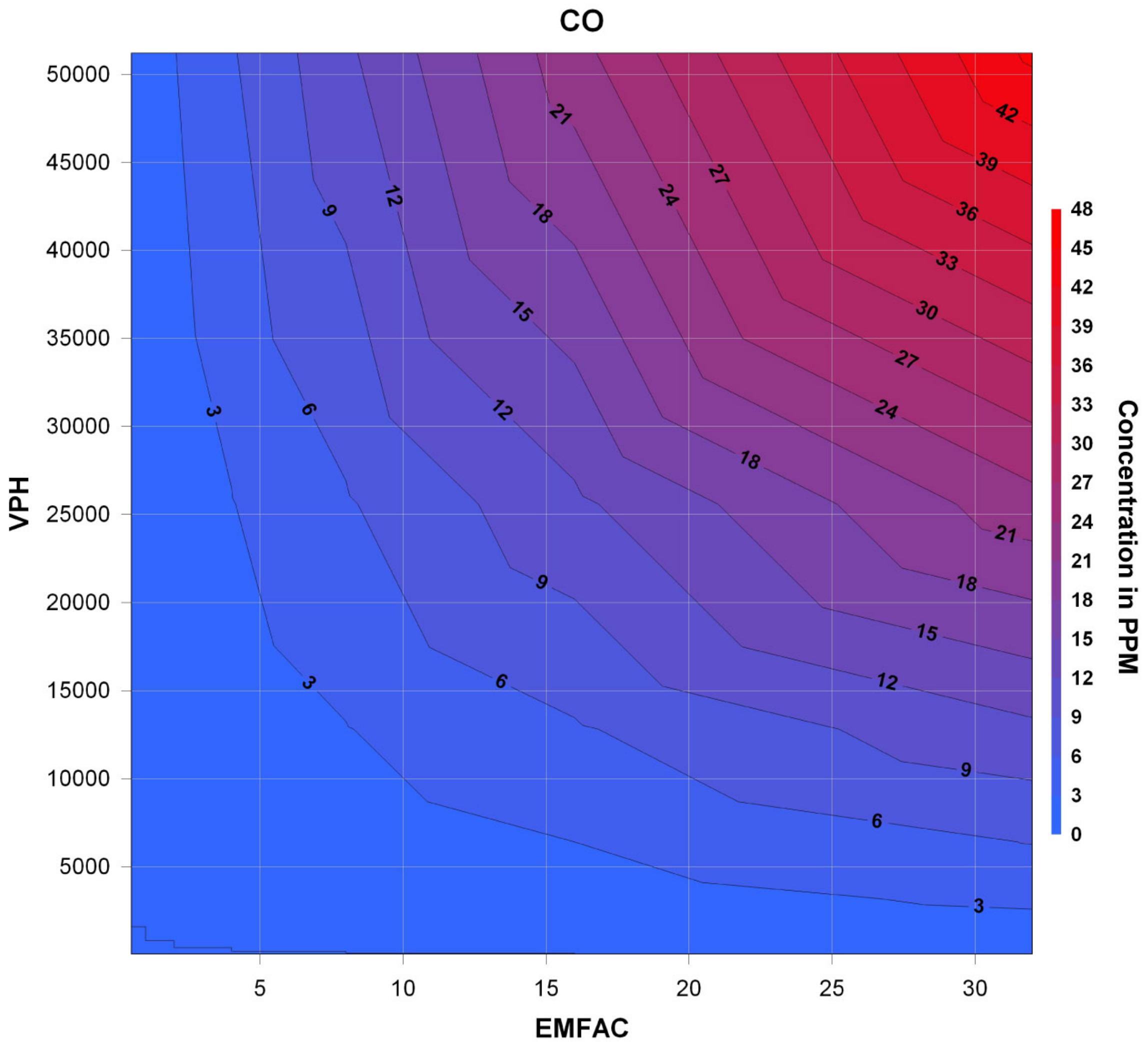
 CALCULATION         MAX CONC     DIST TO   TERRAIN
  PROCEDURE         (UG/M**3)     MAX (M)    HT (M)
--------------     -----------    -------   -------
SIMPLE TERRAIN       3.321          295.        0.
```

EMFAC 2011 EMISSION FACTOR TABULATIONS – SCENARIO YEAR 2020

EMFAC2011 Emission Rates
Region Type: County
Region: San Diego
Calendar Year: 2020
Season: Annual
Vehicle Classification: EMFAC2011 Categories

Region	CalYr	Season	Veh_Class	Fuel	MdlYr	Speed (miles/hr)	VMT (miles/day)	ROG_RUNEX (gms/mile)	TOG_RUNEX (gms/mile)	CO_RUNEX (gms/mile)	NOX_RUNEX (gms/mile)	CO2_RUNEX (gms/mile)	CO2_RUNEX (Pavley I+LCFS) (gms/mile)	PM10_RUNEX (gms/mile)	PM2_5_RUNEX (gms/mile)
San Diego	2020	Annual	**LDA**	**GAS**	Aggregated	45	2242464.381	**0.01800885**	0.025991442	**0.7986615**	**0.08782155**	**283.227013**	**194.62056**	**0.00126358**	**0.001171756**
San Diego	2020	Annual	LDA	DSL	Aggregated	45	9838.147339	0.01573353	0.017911578	0.105103646	0.325845762	297.0356277	210.0277084	0.010881138	0.010010647
San Diego	2020	Annual	**LDT1**	**GAS**	Aggregated	45	322328.281	**0.02655532**	0.039937004	**1.47168894**	**0.15242977**	**327.75106**	**237.40794**	**0.00212512**	**0.001970814**
San Diego	2020	Annual	LDT1	DSL	Aggregated	45	395.3592352	0.028245423	0.032155538	0.143171582	0.37188977	301.7745459	208.1108486	0.022104445	0.02033609
San Diego	2020	Annual	LDT2	GAS	Aggregated	45	838126.6583	0.013177188	0.022497407	0.905772897	0.101977931	385.6305209	290.7469134	0.001247809	0.001157444
San Diego	2020	Annual	LDT2	DSL	Aggregated	45	363.5267772	0.019196041	0.021853415	0.119984215	0.391812714	298.9794062	223.0104307	0.013076198	0.012030102
San Diego	2020	Annual	**LHD1**	**GAS**	Aggregated	45	38808.18589	**0.03897162**	0.048331048	**0.78990108**	**0.39245016**	**452.055847**	**406.85026**	**0.00067839**	**0.000628938**
San Diego	2020	Annual	LHD1	DSL	Aggregated	45	44121.07623	0.111091742	0.126470564	0.560391725	2.606862687	521.200403	469.0803627	0.024710919	0.022734047
San Diego	2020	Annual	LHD2	GAS	Aggregated	45	3218.236203	0.01898113	0.025698977	0.42556526	0.297729368	452.0558068	406.8502261	0.000469757	0.000435111
San Diego	2020	Annual	LHD2	DSL	Aggregated	45	11310.33045	0.101947139	0.116060039	0.536482048	2.420907045	521.2157497	469.0941748	0.023506878	0.021626329
San Diego	2020	Annual	**MCY**	**GAS**	Aggregated	45	28802.32646	**2.03328051**	2.217487704	**17.789901**	**1.16787867**	**138.859592**	**124.97363**	**0.00026983**	**0.000225994**
San Diego	2020	Annual	MDV	GAS	Aggregated	45	573432.1342	0.032021219	0.048593237	1.599921091	0.205190013	492.0704299	390.3938572	0.001449769	0.00134079
San Diego	2020	Annual	MDV	DSL	Aggregated	45	633.2175404	0.019479433	0.022176038	0.115337298	0.319248347	297.5623732	233.6758465	0.015085251	0.013878431
San Diego	2020	Annual	**MH**	**GAS**	Aggregated	45	27371.31064	**0.04404313**	0.056990031	**1.48338751**	**0.55198233**	**452.055858**	**406.85027**	**0.00079062**	**0.000731121**
San Diego	2020	Annual	**MH**	**DSL**	Aggregated	45	3680.803695	**0.10878148**	0.123840481	**0.50298745**	**5.78100093**	**1070.66408**	**963.59767**	**0.12465464**	**0.114682275**
San Diego	2020	Annual	Motor Coach	DSL	Aggregated	45	7985.095821	0.15703997	0.178778052	0.834478884	3.138282148	1624.513043	1462.061739	0.065009578	0.059808812
San Diego	2020	Annual	OBUS	GAS	Aggregated	45	6804.404885	0.072015507	0.08657315	1.536022561	0.850358956	452.0558271	406.8502444	0.000328518	0.000304494
San Diego	2020	Annual	SBUS	GAS	Aggregated	45	878.6398845	0.442762318	0.489092346	8.484772469	2.231064373	452.0558158	406.8502342	0.002306706	0.002095706
San Diego	2020	Annual	SBUS	DSL	Aggregated	45	2276.91643	0.072041767	0.082014067	0.333878476	7.748496101	1073.967436	966.5706926	0.041981697	0.038623161
San Diego	2020	Annual	T6 Ag	DSL	Aggregated	45	538.4805779	0.14236689	0.162073867	0.627616773	2.910517913	1054.347088	948.912379	0.097019827	0.089258241
San Diego	2020	Annual	T6 Public	DSL	Aggregated	45	3409.904163	0.051741473	0.058903729	0.243540937	2.469711818	1056.005237	950.4047137	0.027473686	0.025275791
San Diego	2020	Annual	T6 CAIRP heavy	DSL	Aggregated	45	59.69256382	0.068097095	0.077523359	0.321950143	1.726291417	1050.023396	945.0210567	0.035710913	0.03285404
San Diego	2020	Annual	T6 CAIRP small	DSL	Aggregated	45	204.1592338	0.070761999	0.080557149	0.334750841	0.94725344	1045.931635	941.3384718	0.03799426	0.034954719
San Diego	2020	Annual	T6 OOS heavy	DSL	Aggregated	45	34.22299142	0.068097095	0.077523359	0.321950143	1.726291415	1050.023396	945.0210567	0.035710913	0.03285404
San Diego	2020	Annual	T6 OOS small	DSL	Aggregated	45	117.0487455	0.070761999	0.080557149	0.334750841	0.94725344	1045.931635	941.3384718	0.03799426	0.034954719
San Diego	2020	Annual	tate construction	DSL	Aggregated	45	3647.965062	0.071390036	0.081272121	0.337220996	2.978218782	1056.264609	950.6381477	0.041341491	0.038034172
San Diego	2020	Annual	:tate construction	DSL	Aggregated	45	9928.102112	0.082181974	0.093557921	0.388774838	1.262302074	1047.806302	943.025672	0.050341205	0.046313909
San Diego	2020	Annual	T6 instate heavy	DSL	Aggregated	45	16711.92297	0.071247284	0.08110961	0.33663855	2.682795273	1054.879309	949.3913781	0.040452002	0.037215842
San Diego	2020	Annual	T6 instate small	DSL	Aggregated	45	47609.69556	0.079649614	0.090675022	0.376795109	1.189093728	1047.321584	942.5894257	0.047547703	0.043743887
San Diego	2020	Annual	T6 utility	DSL	Aggregated	45	399.9860169	0.052862786	0.060180258	0.250018935	1.565358189	1052.487807	947.2390264	0.026432401	0.024317809
San Diego	2020	Annual	T6TS	GAS	Aggregated	45	18147.57132	0.077482961	0.091832662	1.62625623	0.763625073	452.0558631	406.8502768	0.000443173	0.000409173
San Diego	2020	Annual	T7 Ag	DSL	Aggregated	45	2436.24535	0.235106843	0.267651244	1.279313014	5.263193311	1632.200553	1468.980498	0.135971057	0.125093372
San Diego	2020	Annual	T7 CAIRP	DSL	Aggregated	45	55275.3491	0.173364836	0.19736267	0.923002748	2.292113748	1617.644548	1455.880093	0.069945392	0.064349761
San Diego	2020	Annual	CAIRP constructi	DSL	Aggregated	45	4663.871851	0.173347807	0.197343283	0.922887885	2.331678434	1617.883124	1456.094812	0.069944363	0.064348814
San Diego	2020	Annual	T7 NNOOS	DSL	Aggregated	45	62182.70159	0.147621371	0.168055694	0.785748024	1.544245477	1615.130787	1453.617708	0.056661235	0.052128336
San Diego	2020	Annual	T7 NOOS	DSL	Aggregated	45	20129.87755	0.173285773	0.197272662	0.922577028	2.296076295	1617.651523	1455.886371	0.069920511	0.06432687
San Diego	2020	Annual	T7 other port	DSL	Aggregated	45	13112.69884	0.390150283	0.444156398	2.070463268	6.950142658	1666.491631	1499.842468	0.10839064	0.099719388
San Diego	2020	Annual	T7 POAK	DSL	Aggregated	45	0	0	0	0	0	0	0	0	0
San Diego	2020	Annual	T7 POLA	DSL	Aggregated	45	6990.380511	0.385313493	0.438650082	2.044795226	6.820262486	1664.806438	1498.325794	0.108292779	0.099629357
San Diego	2020	Annual	T7 Public	DSL	Aggregated	45	2813.335539	0.088506172	0.100757539	0.480395992	7.514561495	1650.005438	1485.004894	0.048882748	0.044972129
San Diego	2020	Annual	T7 Single	DSL	Aggregated	45	29620.85184	0.124895788	0.142184347	0.662753026	3.962537945	1630.680087	1467.612078	0.053059876	0.048815086
San Diego	2020	Annual	single constructi	DSL	Aggregated	45	12064.82284	0.124768128	0.142039016	0.662019851	4.107216905	1631.501795	1468.351616	0.053403728	0.049131429
San Diego	2020	Annual	T7 SWCV	DSL	Aggregated	45	8203.10902	0.093146698	0.106040425	0.498928617	7.400986083	1640.422869	1476.380582	0.046111126	0.042422236
San Diego	2020	Annual	T7 tractor	DSL	Aggregated	45	81660.41384	0.170999468	0.194669877	0.908669319	3.823461779	1626.178907	1463.561016	0.072371705	0.066581968
San Diego	2020	Annual	tractor construct	DSL	Aggregated	45	8995.217136	0.169711373	0.19320348	0.901537144	4.199918533	1627.956865	1465.161179	0.072863281	0.067034219
San Diego	2020	Annual	T7 utility	DSL	Aggregated	45	426.4867188	0.094546059	0.107633491	0.501668244	3.704094409	1632.120114	1468.908102	0.039991319	0.036792014
San Diego	2020	Annual	T7IS	GAS	Aggregated	45	3419.591346	0.437511938	0.525019232	22.53766349	4.8975608	452.0558544	406.850269	0.000285597	0.000262306
San Diego	2020	Annual	UBUS	GAS	Aggregated	45	1734.367182	0.298716401	0.326007237	3.613929472	2.201846498	452.0558754	406.8502879	0.000427296	0.000396461
San Diego	2020	Annual	UBUS	DSL	Aggregated	45	8477.237764	0.346767768	0.394772026	1.302938026	11.32342637	2499.936313	2249.942682	0.139671499	0.12849778
San Diego	2020	Annual	All Other Buses	DSL	Aggregated	45	4370.003165	0.077736952	0.088497603	0.367213193	2.680642702	1053.39159	948.0524307	0.043497025	0.040017263

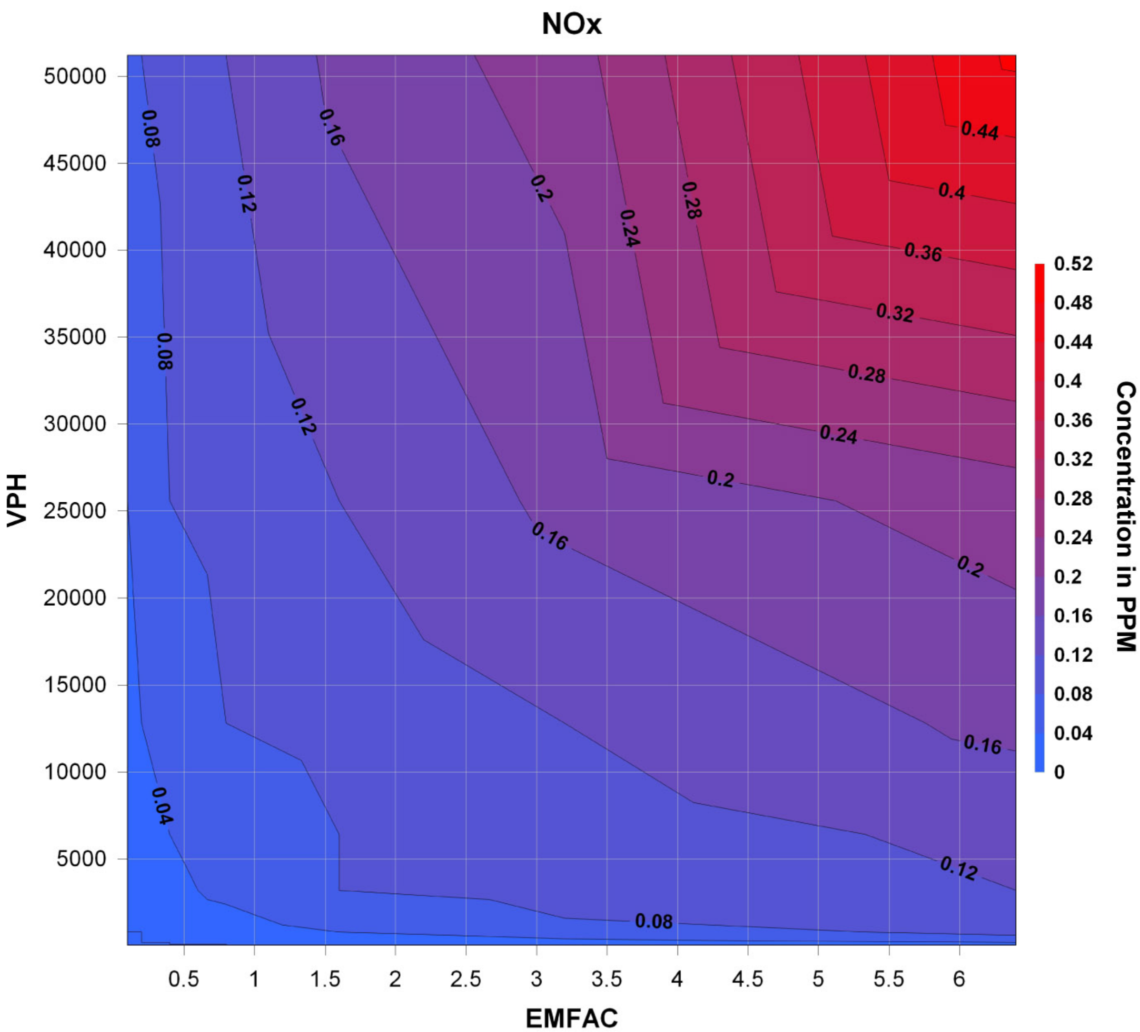
CALINE4 SOLUTION SPACE RESULTS – SCENARIO CO



Rank 1 Eqn 151232682 $\ln z=a+b\ln x+c(\ln y)^2$

r^2 Coef Det	DF Adj r^2	Fit Std Err	F-value
0.9997614637	0.9997516609	0.102880788	155075.68815

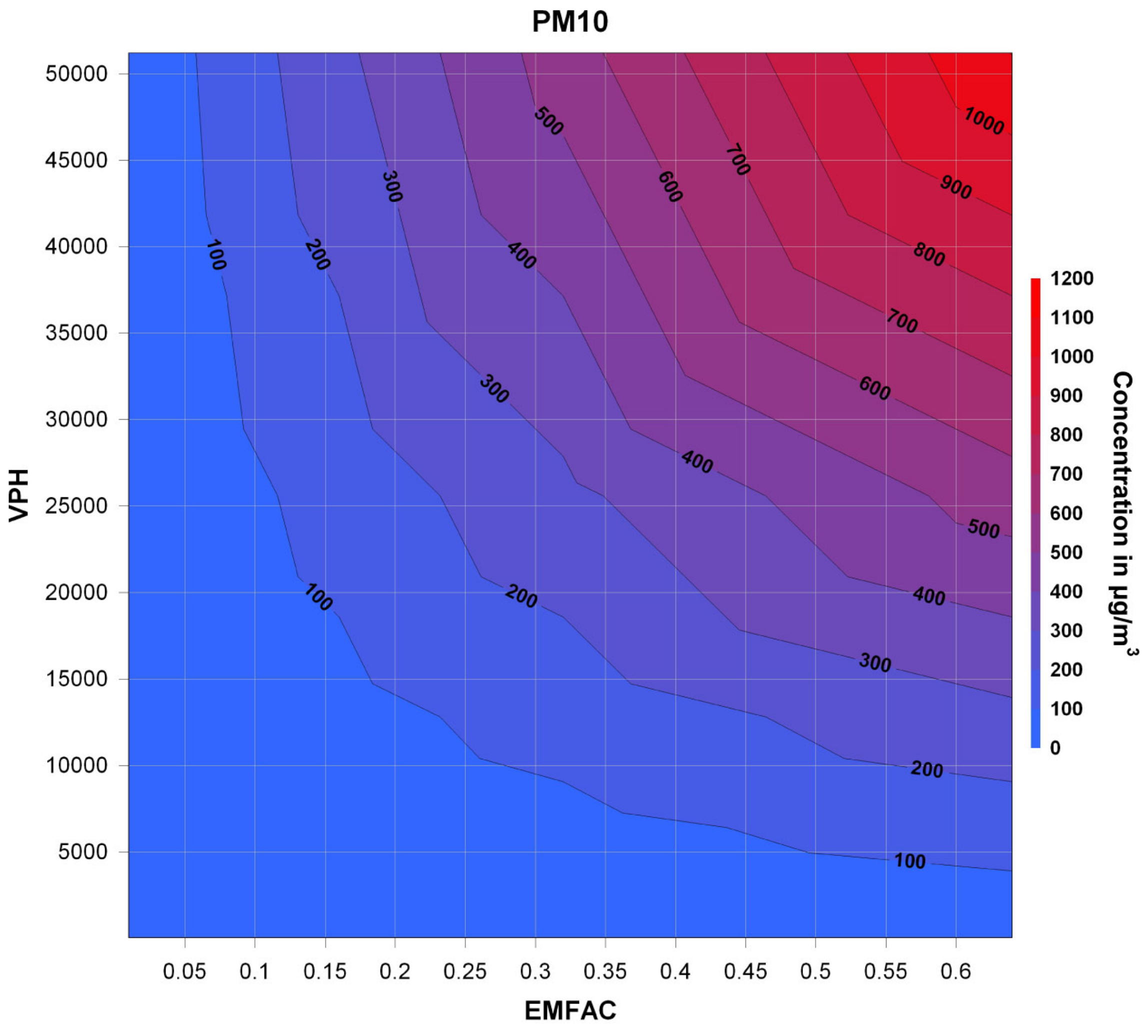
CALINE4 SOLUTION SPACE RESULTS – SCENARIO NOx



Rank 1 Eqn 151232653 $lnz=a+bx^{0.5}+c(lny)^2$

r^2 Coef Det	DF Adj r^2	Fit Std Err	F-value
0.9311638335	0.9283349499	0.0194986151	500.50814223

CALINE4 SOLUTION SPACE RESULTS – SCENARIO PM_{10}



Rank 1 Eqn 151232682 $\ln z = a + b\ln x + c(\ln y)^2$

r^2 Coef Det	DF Adj r^2	Fit Std Err	F-value
0.9998185376	0.9998110803	2.1625247335	203862.00724

INDEX OF IMPORTANT TERMS

12. Investigative Science and Engineering, Inc.; Air Quality Conformity Assessment Escondido Assisted Living Facility Escondido, Ca; June 29, 2018

GREENHOUSE GAS EMISSIONS ASSESSMENT
ESCONDIDO ASSISTED LIVING FACILITY – ESCONDIDO, CA
ENV17-0007, PHG17-0025

Submitted to:

Mr. Tigg Mitchell
The Mitchell Group
127 Lomas Santa Fe Drive
Solana Beach, CA 92075

Investigative Science and Engineering, Inc.
Scientific, Environmental, and Forensic Consultants

P.O. Box 488
Ramona, CA 92065
(760) 787-0016
www.ise.us

Investigative Science and Engineering, Inc.

ISE Project #18-004

June 29, 2018

REPORT CONTENTS

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LIST OF FIGURES AND MAPS

INTRODUCTION AND DEFINITIONS

Existing Site Characterization

The proposed Escondido Assisted Living Facility site consists of 3.03 acres of fully disturbed land located in the City of Escondido, as shown in Figures 1 and 2 on the following pages. Regional access is obtained from Centre City Parkway from the north and south respectively.[1] The project site currently resides as a rough graded lot, as shown in Figure 3 on Page 4.

Surrounding land uses consist of single- and multi-family residential units, commercial and professional uses, and Escondido High School to the immediate south. Elevations across the project site range from approximately 682 to 722 feet above mean sea level (MSL).

Project Description

The proposed project would construct a three-story single structure, 96-bed residential care facility, as shown previously in Figure 3, and in Figure 4 on Page 5 of this report. The structure would have a physical footprint of 26,703 square-feet (SF) and an internal utilization space of 43,996 SF. Parking would be provided in a periphery manner in front of the structure.

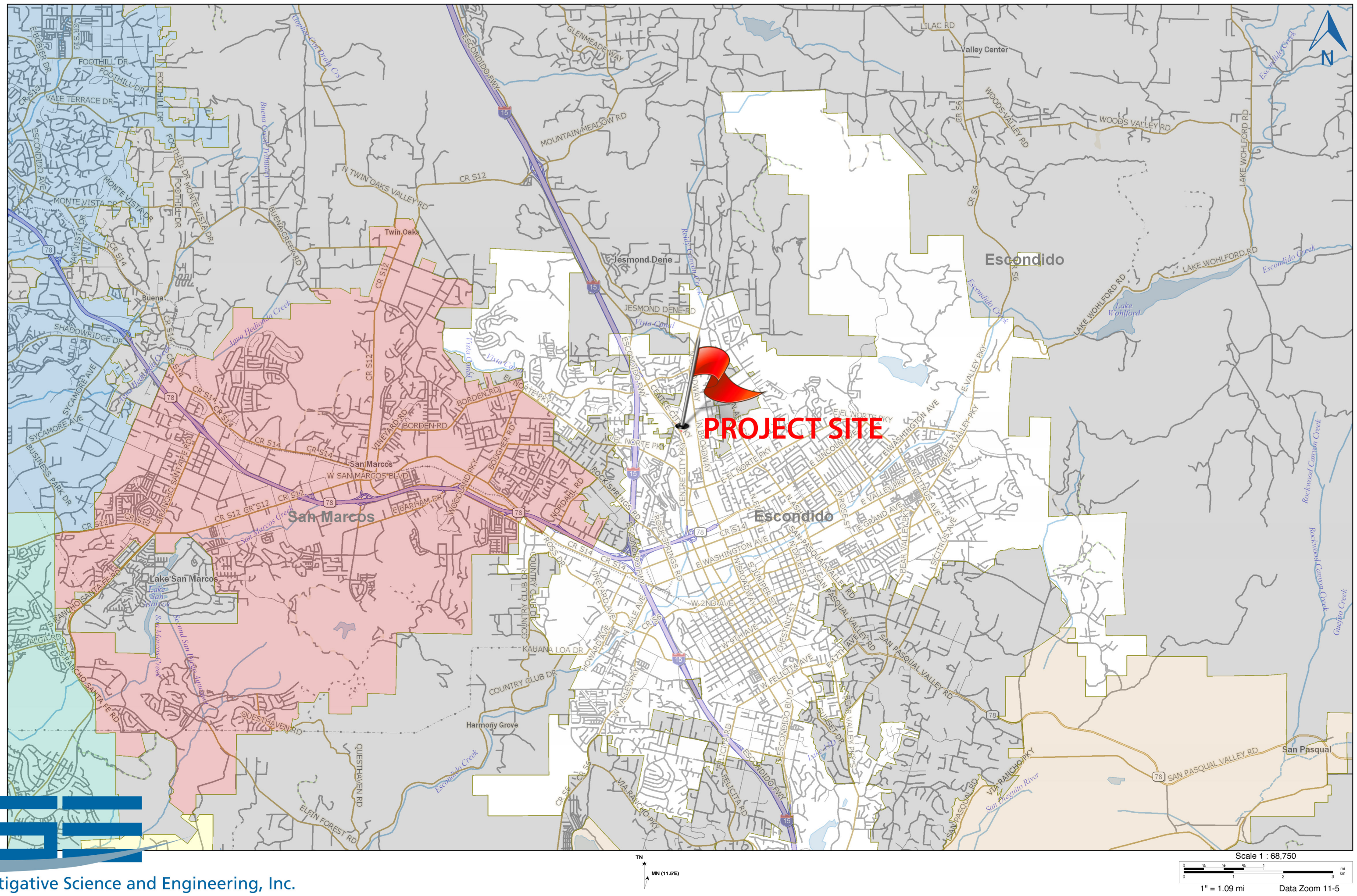
Greenhouse Gases and Global Warming Potential

Greenhouse gases are defined by the Intergovernmental Panel on Climate Change (IPCC) as those naturally occurring and anthropogenic chemical compounds within the atmosphere that absorb and reflect infrared radiation emitted by the Earth's surface.[2] A numerical metric known as the *'Global Warming Potential'* (denoted as CO_{2e}) is a measure of how much a given mass of greenhouse gas is estimated to contribute to global warming relative to an equivalent amount of carbon dioxide (whose CO_{2e} is defined as 1.0). Examples of the more prevalent greenhouse gases are:

- **Carbon dioxide (CO_2):** CO_2 is a naturally occurring gas and is part of the *carbon cycle,* whereby carbon is cycled between the atmosphere, ocean, terrestrial life, and mineral reserves. The predominant source of anthropogenic carbon dioxide emissions is from the combustion of fossil fuels and hydrocarbons. Without CO_2, all life on Earth would cease to exist. Carbon dioxide is the reference gas against which all other greenhouse gases are compared. It makes up approximately 3.6 percent of the global warming gases in the atmosphere today.

[1] Addressed as 1802 N. Centre City Parkway, Escondido CA 92026, APN 226-190-2200.

[2] The basic mechanism can be summarized as follows: 1) solar radiation heats the planet primarily through ultraviolet transmission, 2) Earth warms and is offset by temperature levels in the oceans, 3) Earth emits black-body radiation in the lower infrared portion of the electromagnetic spectrum, 4) most of the infrared radiation escapes the planet, 5) a small portion of the energy is captured through molecular motion changes within the atmospheric greenhouse gases, and 6) this captured energy re-radiates back toward Earth producing a secondary heating effect. However, despite its name, this is not the same mechanism by which a greenhouse operates.



Investigative Science and Engineering, Inc.

FIGURE 1: Project Study Area Vicinity Map (ISE 5/18)

FIGURE 2: Project Study Area Parcel Map (ISE 5/18)

FIGURE 3: Aerial Image Showing Development Area and Surrounding Uses (ISE 5/18)

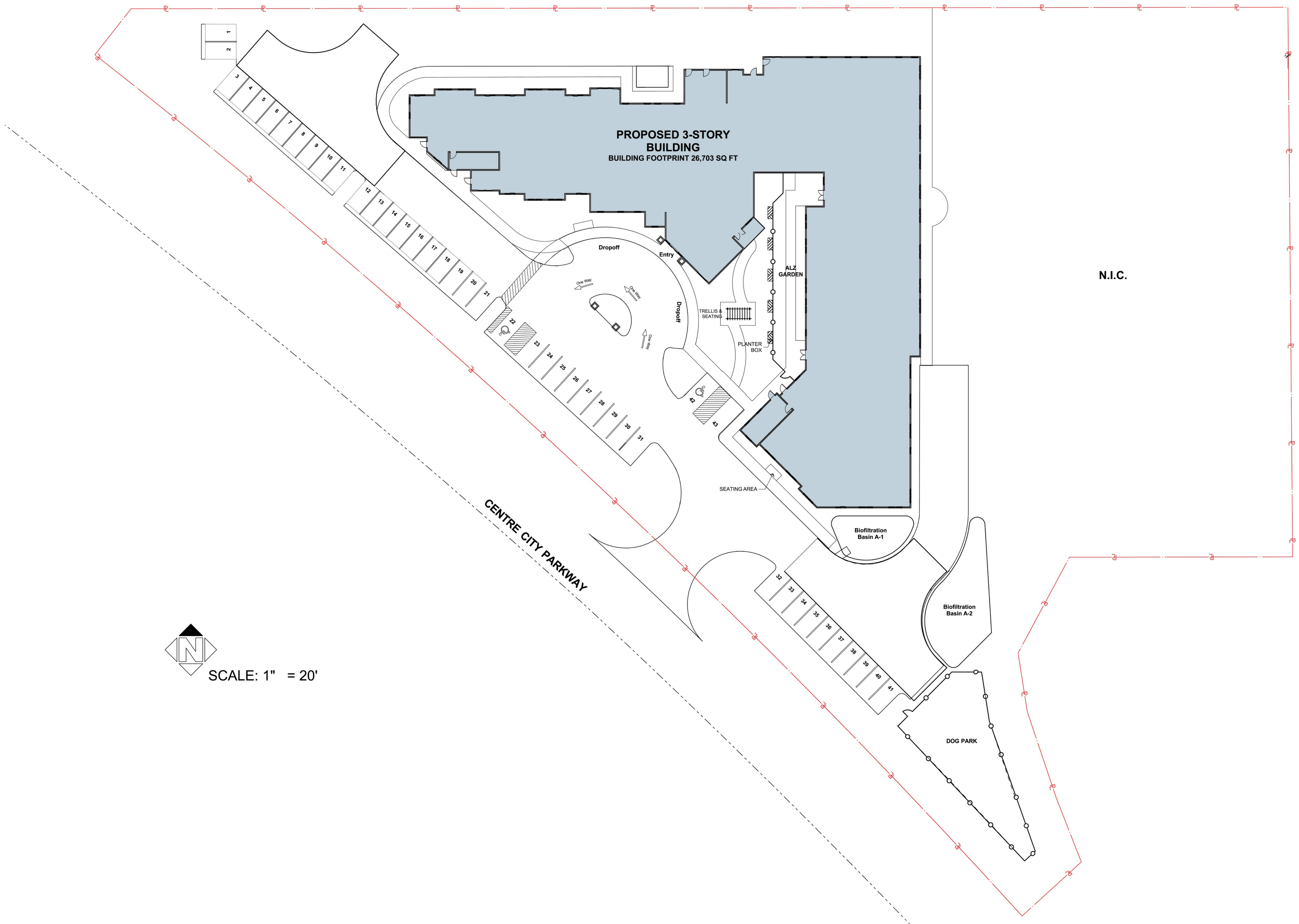


FIGURE 4: Proposed Escondido Assisted Living Facility Development Plan (Irvin Partners Architects, 3/18)

Further examples of greenhouse gasses include:

- **Water Vapor (H_2O):** Water is a chemical compound that is essential to all known forms of life. Water vapor is the gaseous form of water comprising roughly 0.001% of all water on the planet. Without H_2O, all life on Earth would cease to exist. Water vapor captures roughly 10 times as much infrared energy as CO_2.[3] Water vapor makes up approximately 95 percent of the global warming gases in the atmosphere today.
- **Methane (CH_4):** CH_4 is a greenhouse gas with both natural and anthropogenic sources and is believed to have been the primary atmospheric constituent of primordial Earth. Methane is naturally produced by the anaerobic decomposition of organic matter. Methane is also emitted during the production and distribution of natural gas and petroleum, and is released as a by-product of incomplete {low-temperature} fossil fuel combustion. Methane constitutes approximately 0.36 percent of the global warming gases in the atmosphere today.
- **Nitrous Oxide (N_2O):** Primarily, N_2O is naturally produced by bacterial action within the soil, and anthropogenically by high temperature combustion. The result is more-or-less the production of photochemical smog. Lesser sources, such as manufacturing, wastewater treatment, and biomass burning, also produce trace amounts of this substance. N_2O constitutes approximately 0.95 percent of the global warming gases in the atmosphere today.
- **Halocarbons (CFC's) / Perfluorocarbons (PFC's)** are carbon compounds that contain fluorine, chlorine, bromine or iodine. Anthropogenic sources are the primary generator of these substances. These gases constitute roughly 0.072 percent of the global warming gases in the atmosphere today.

A complete listing of known greenhouse gases and their associated GWP is shown in Table 1 starting on the following page.

[3] The IPCC scientific panel states that about half of the projected global temperature increase from CO_2 is due to what is referred to as the *water vapor feedback effect*. Water vapor feedback is caused by the radiative efficiency of H_2O in vaporous form (i.e., its GWP). The UN IPCC report does not currently show this value.

TABLE 1: Known Greenhouse Gases and Global Warming Potential[4]

Greenhouse Gas Name	Chemical Formula	GWP CO_{2e} Relative to CO_2 (100 year horizon)
Carbon Dioxide	CO_2	1
Dibromomethane	CH_2Br_2	1
R-13I1 (Trifluoroiodomethane)	$FIC\text{-}13I_1$	1
R-E170 (Dimethyl ether)	CH_3OCH_3	1
Methyl Bromide	CH_3Br	5
Dichloromethane	CH_2Cl_2	10
R-161 (HFC-161, Fluoroethane)	HFC-161	12
R-40 (Methyl Chloride)	CH_3Cl	16
Methane	CH_4	23
Chloroform	$CHCl_3$	30
2,2,3,3,3-Pentafluoro-1-propanol	$CF_3CF_2CH_2OH$	40
R-152 (HFC-152, 1,1-Difluoroethane)	HFC-152	43
2,2,2-Trifluoro-ethanol	$(CF_3)CH_2OH$	57
R-41 (HFC-41, Methyl fluoride)	HFC-41	97
R-123 (HCFC-123, Dichlorotrifluoroethane)	HCFC-123	120
R-152a (HFC-152a, 1,1-Difluoroethane)	HFC-152a	120
1,1,1-Trichloroethane	CH_3CCl_3	140
1,1,1,3,3,3-Hexafluoro-2-Propanol	$(CF_3)_2CHOH$	190
R-21 (Dichlorofluoromethane)	HCFC-21	210
Nitrous Oxide	N_2O	296
HFC-143, 1,1,2-Trifluoroethane	HFC-143	330
Methyl perfluoroisopropyl ether	$(CF_3)_2CFOCH_3$	330
Bromodifluoromethane	$CHBrF_2$	470
R-32 (HFC-32, Difluoromethane)	HFC-32	550
R-124 (HCFC-124, 2-Chloro-1,1,1,2-Tetrafluoroethane)	HCFC-124	620
R-141b (HCFC-141b, 1,1-Dichloro-1-fluoroethane)	HCFC-141b	700
HFE-143a	HFE-143a	750
HFC-134, 1,1,2,2-Tetrafluoroethane	HFC-134	1,100
R-12B1 (Difluorochlorobromomethane, Halo 1211)	Halon-1211	1,300
R-134a (HFC-134a, 1,1,1,2-Tetrafluoroethane)	HFC-134a	1,300
R-22 (Chlorodifluoromethane)	HCFC-22	1,700
Carbon Tetrachloride	CCl_4	1,800

[4] Source: *Climate Change 2001: The Scientific Basis*. Contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change, IPCC 2001.

TABLE 1 (cont.): Known Greenhouse Gases and Global Warming Potential[5]

Greenhouse Gas Name	Chemical Formula	GWP CO_{2e} Relative to CO_2 (100 year horizon)
R-142b (HCFC-142b, 1-Chloro-1,1-difluoroethane)	HCFC-142b	2,400
R-143a (HFC-143a, 1,1,1-Trifluoroethane)	HFC-143a	4,300
R-11 (Trichlorofluoromethane)	CFC-11	4,600
R-14 (Carbon Tetrafluoride)	CF_4	5,700
R-113 (1,1,2-Trichloro-1,2,2-Trifluoroethane)	CFC-113	6,000
R-E134 (HFE-134, 1,1,1',1'-Tetrafluorodimethyl ether)	HFE-134	6,100
R-13B1 (Trifluorobromomethane, Halo 1301)	$CBrF_3$	6,900
R-115 (Chloropentafluoroethane)	CFC-115	7,200
C_3F_8 (Perfluoropropane)	C_3F_8	8,600
C_4F_{10} (Perfluoro-n-Butane)	C_4F_{10}	8,600
C_5F_{12} (Perfluoropentane)	C_5F_{12}	8,900
C_6F_{14} (Perfluorohexane)	C_6F_{14}	9,000
R-114 (Freon 114, 1,2-Dichlorotetrafluoroethane)	CFC-114	9,800
R-C318 (Freon 318, Octafluorocyclobutane)	C-C_4F_8	10,000
R-12 (Freon 12, Dichlorodifluoromethane)	CFC-12	10,600
Nitrogen Trifluoride; Trifluoramine	NF_3	10,800
R-116 (Perfluoroethane; Hexafluoroethane)	C_2F_6	11,900
R-23 (HFC-23, Trifluoromethane)	HFC-23	12,000
R-13 (Chlorotrifluoromethane)	CFC-13	14,000
R-E125 (HFE-125, Pentafluorodimethyl ether)	HFE-125	14,900
Sulfur Hexafluoride	SF_6	22,200

Source: IPCC, 2001

[5] Ibid., IPCC 2001.

THRESHOLDS OF SIGNIFICANCE

California Environmental Quality Act (CEQA) Thresholds

Section 15382 of the California Environmental Quality Act (CEQA) guidelines defines a significant impact as,

> *"… a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance."*

Senate Bill 97 (2007) set a January 1, 2010, deadline for new CEQA guidelines related to greenhouse gas emissions analysis and mitigation.[6] The new guidelines will require GHG emissions and their effects to be analyzed based on scientific and factual data.[7] The new guidelines do not require CEQA to establish fixed thresholds of significance; rather they serve to update the procedural language of Section 15064(a) leaving individual significance criteria to local agencies.

The California Global Warming Solutions Act (AB 32)

The California State Legislature, operating under the assumption that anthropogenic global warming is a genuine phenomenon, and that atmospheric carbon dioxide is the most significant contributor to this phenomenon, passed the *California Global Warming Solutions Act of 2006* (AB 32). AB 32 requires the California Air Resources Board (CARB) to develop regulations and market mechanisms that will ultimately reduce California's greenhouse gas emissions by 25 percent, by 2020. Mandatory caps began in 2012 for significant sources, and will incrementally become stricter to meet the 2020 goals.

Specifically, AB 32 requires CARB to do the following:

- Establish a statewide greenhouse gas emissions cap for 2020, based on 1990 emissions, by January 1, 2008.
- Adopt mandatory reporting rules for significant sources of greenhouse gases by January 1, 2009.
- Adopt a plan by January 1, 2009 indicating how emission reductions will be achieved from significant greenhouse gas sources via regulations, market mechanisms and other actions.
- Adopt regulations by January 1, 2011 to achieve the maximum technologically feasible and cost-effective reductions in greenhouse gas, including provisions for

[6] An act to add Section 21083.05 to, and to repeal Section 21097 of, the Public Resources Code, relating to the California Environmental Quality Act.

[7] This means that the global warming potential of a project must be determined analytically and can no longer rely on abstract or incorrect policy comparisons or unsubstantiated claims.

using both market mechanisms and alternative compliance mechanisms.

- Convene an Environmental Justice Advisory Committee and an Economic and Technology Advancement Advisory Committee to advise CARB.
- Ensure public notice and opportunity for comment for all CARB actions.
- Prior to imposing any mandates or authorizing market mechanisms, CARB must evaluate several factors, including but not limited to, impacts on California's economy, the environment and public health; equity between regulated entities; electricity reliability; conformance with other environmental laws; and that the rules do not disproportionately impact low-income communities.

For the purposes of analysis within this report (and to be consistent with AB 32), it will be sought to quantify the aggregate greenhouse gas emissions due to the proposed project action, as defined under CEQA.

City of Escondido CEQA Screening Threshold for GHG

The City of Escondido has adopted a greenhouse gas screening threshold as part of the *Escondido Climate Action Plan* (or E-CAP). This plan seeks to reduce 26,807 metric tons (MT) of carbon dioxide equivalents (CO_{2e}) per year from new development by 2020, as compared to the 2020 unmitigated conditions. Under this plan, a threshold level of 2,500 MT CO_{2e} per year is used to identify projects that require the use of 'screening tables', or alternately a 'project-specific technical analysis' were applicable, to quantify and mitigate project emissions. A flowchart of the review process is shown in Figure 5 to the right.

The E-CAP 'screening tables' assign points for each City-approved option incorporated into a project as mitigation, or a project design feature. The point values correspond to the minimum emissions reduction expected from each feature.

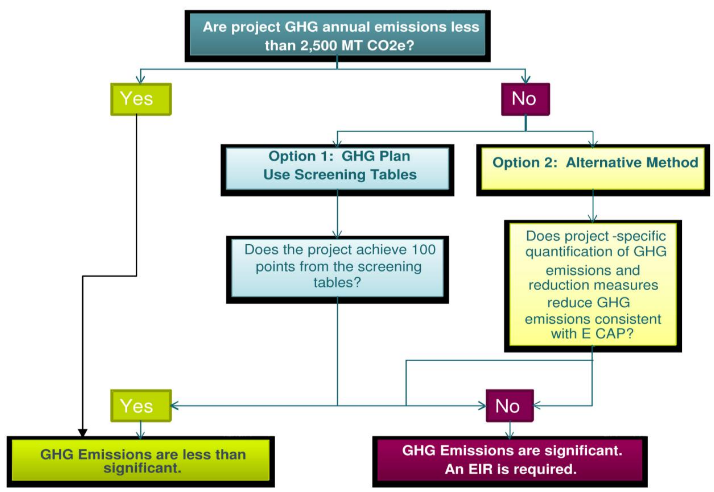


FIGURE 5: E-CAP Development Review Process

Projects that garner at least 100 points will be consistent with the reduction quantities anticipated in the City of Escondido E-CAP, and as such would be determined to have a less than significant individual and cumulative impact for GHG emissions. These projects would be deemed as having no long-term GHG impacts, and would be classified in compliance with the intent of both AB 32, and Executive Order S-3-05.

ANALYSIS METHODOLOGY

Diesel Vehicle (Compression Ignition) CO_{2e} Contribution

Greenhouse gas emissions associated with diesel engine combustion from mass grading and site preparation construction equipment will be assumed to occur for engines running at the correct fuel-to-air ratios.[8] Of principal interest are the emission factors for CO_2 and NO_X[9].

For a four-stroke diesel-cycle engine, the combustion byproducts are approximately 1.5-percent-by-volume O_2, 0.5-percent-by-volume CO, and 13.5-percent-by-volume CO_2.[10] Thus, the ratio of CO_2 (13.5 ppm) to CO (0.5 ppm) production in a properly mixed diesel stroke would be 13.5 divided by 0.5, or 27:1.

Gasoline Vehicle (Spark Ignition) CO_{2e} Contribution

CARB estimates on-road motor vehicle emissions by using a series of models called the *Motor Vehicle Emission Inventory* (MVEI) Models. The four computer models, which form the MVEI, are *CALIMFAC, WEIGHT, EMFAC*, and *BURDEN*.[11]

For the current analysis, the *EMFAC 2011* of the MVEI[12] was run using input conditions specific to the San Diego air basin to predict operational vehicle emissions from the project, based upon a project completion scenario year of 2020.[13]

Of principal interest are the emission factors for CO_2 and NO_X. A mix ratio consistent with the 2010 Caltrans ITS Transportation Project-Level Carbon Monoxide Protocol was used.[14]

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[8] The ratio whereby complete combustion of the diesel fuel occurs.

[9] It will be assumed that the project would generate trace, if not negligible, levels of methane (CH_4), ozone (O_3), fluorine (F_2), chlorine (Cl_2), bromine (Br_2) and/or constituent compounds. NO_x emissions are stoichiometrically composed of roughly 30-percent nitrous oxide (N_2O) by volume and 70-percent nitric oxide (NO), which is the free radical form that immediately combines with ozone (O_3) to form nitrogen dioxide (NO_2) more commonly known as *smog*.

[10] Source: Holtz, J.C., Elliott, M.A., *The Significance of Diesel-Exhaust-Gas Analysis, Transactions of the ASME, Vol. 63, February 1941*.

[11] CALIMFAC produces base emission rates for each model year when a vehicle is new, and as it accumulates mileage and the emission controls deteriorate. WEIGHT calculates the relative weighting each model year should be given in the total inventory, and each model year's accumulated mileage. EMFAC uses these pieces of information, along with the correction factors and other data, to produce fleet composite emission factors. BURDEN combines the emission factors with county-specific activity data to produce the emission inventories.

[12] This is the most current CARB vehicle emissions model approved for use within the State of California. Any subsidiary program (such as the previously discussed *URBEMIS* program) uses this model to determine the applicable vehicle emission factors.

[13] This is a worst-case assumption, since implementation of cleaner vehicle controls ultimately reduces emissions under future year conditions. By applying near-term emission factors to the complete project, an upper bound on project-related emissions is obtained.

[14] This consisted of the following air standard Otto-Cycle engine vehicle distribution percentages: Light Duty Auto (LDA) = 69.0%, Light Duty Truck (LDT1) = 19.4%, Medium Duty Truck (LHD1) = 6.4%, Heavy Duty Truck Gasoline (MH GAS) = 1.2%, Heavy Duty Truck Diesel (MH DSL) = 3.6%, Motorcycle (MCY) = 0.4%.

Small Engine, Natural Gas, Electrical, Waste and Water CO_{2e} Contributions

Finally, secondary operational greenhouse gas sources under the CEQA analysis context within this report would consist entirely of small gasoline engines used with landscaping equipment, emissive sources from natural gas powered appliances (such as hot water heaters, stoves, etc.), electrical consumption at the project site, solid waste trash generation, and water consumption.[15,16,17] An aggregate greenhouse gas tabulation of these sources, consistent with the *SCAQMD CEQA Handbook* and current EPA protocols, will be provided.[18,19]

PROJECT GREENHOUSE GAS EMISSIONS

Diesel Vehicle (Compression Ignition) CO_{2e} Emissions

The proposed Escondido Assisted Living Facility project site would be graded over the course of approximately 90 working days without any deleterious air quality conformity impacts, as shown in Table 2 on the following page.[20,21] Direct CO_2 emissions from CO were found to equate to 50,788.6 pounds (or 23.0 metric tons, MT).

Since N_2O has a GWP of 296 with respect to CO_2, construction-related NO_x emissions can be expressed as an *equivalent CO_2* level (CO_{2e}) of 403,388.8 pounds (183.0 MT). Thus, the final equivalent construction CO_2 load due to the project would be the summation of this value, and the direct CO_2 production (including any water usage for dust control), as shown in Table 2, or 455,013.1 pounds (206.4 MT) CO_{2e}, during all construction activities.

For the purposes of yearly emissions analysis, construction activities will be treated as a 'pseudo-operational' source with a distributed time span of 20 years in order to determine the cumulatively considerable contribution of the project under CEQA. Given this, the yearly contribution to GHG from the aggregate of all project construction would equate to 10.3 MT/year.

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15 The electrical consumption required to produce one-million-gallons (MG) of potable water in Southern California is 13,021 KWh/MG. Using the CARB RPS standards, the baseline CO_{2e} generation rate is 641.86 pounds per Megawatt-hour (MWh). Simple unit conversion provides for a direct conversion value of 0.008357 lbs-CO_{2e}/gallon-H_2O. The conversion value for the mitigated RPS rate of 537.6 pounds per Megawatt-hour (MWh) would consequently be 0.006999 lbs-CO_{2e}/gallon-H_2O.

16 Source: Refining Estimates of Water-Related Energy Use in California, California Energy Commission (CEC) Public Interest Energy Research Program, 12/06.

17 Landfill CO_{2e} generation due to trash equates to approximately 0.1450 kilograms (or 0.3196 pounds) per pound of trash per year, IPCC 2001.

18 The analysis presented herein uses the same methodology identified in the CARB *URBEMIS* model, although providing a greater level of detail. The technical details are provided in the SCAQMD CEQA Handbook Tables A9-12 et. seq. as well as the EPA's AP-42 emission generation document previously referenced.

19 Source: CalEEMod User Guide Appendix D, Table 9.1.

20 The analysis of GHG emissions, unlike air quality conformity, which is a 'per day' threshold, is an aggregate quantity requiring summation over the total estimated number of work days (i.e., the total number of days that any construction grading vehicle would have an engine running).

21 Source: Air Quality Conformity Assessment, Escondido Assisted Living Facility – Escondido, CA, ISE Project #18-004, 6/29/18.

TABLE 2: Diesel-Powered Construction Vehicle GHG Emissions

Equipment Type Model	Selected EPA Tier Level	Daily CO in Pounds from AQIA	Daily NO_X in Pounds from AQIA	Duration (days)	Aggregate CO in Pounds (MT)	Aggregate NO_X in Pounds (MT)	Direct Stoichiometric Gas Emissions: CO_2= 27×CO in Pounds (MT)	Direct Stoichiometric Gas Emissions: N_2O = 0.3×NO_X in Pounds (MT)
Water Truck (2000 Gal)	3	2.3	6.1	90	206.4 (0.1)	547.6 (0.2)	5,571.5 (2.5)	164.3 (0.1)
CAT 326FL Excavator	3	2.3	6.1	90	206.4 (0.1)	547.6 (0.2)	5,571.5 (2.5)	164.3 (0.1)
CAT D6D w- 1406 Blade	3	2.3	4.3	90	205.6 (0.1)	383.3 (0.2)	5,550.1 (2.5)	115.0 (0.1)
CAT D6R	3	2.1	5.5	90	185.7 (0.1)	492.9 (0.2)	5,014.4 (2.3)	147.9 (0.1)
CAT 623H Scraper	3	4.7	12.4	90	419.9 (0.2)	1,114.4 (0.5)	11,338.0 (5.1)	334.3 (0.2)
CAT 420D Backhoe	3	1.4	2.7	90	129.2 (0.1)	241.0 (0.1)	3,488.6 (1.6)	72.3 (0.0)
CAT 816K 48-in Compactor	3	3.3	8.6	90	293.0 (0.1)	777.6 (0.4)	7,911.5 (3.6)	233.3 (0.1)
JD 644E Loader	3	2.6	4.9	90	234.9 (0.1)	438.1 (0.2)	6,343.0 (2.9)	131.4 (0.1)
	Total (Σ):	**20.9**	**50.5**		**1,881.1 (0.9)**	**4,542.6 (2.1)**	**50,788.6 (23.0)**	**1,362.8 (0.6)**
						CO_{2e} from CO:	50,788.6 (23.0)	
						CO_{2e} from N_2O:	403,388.8 (183.0)	
						Direct CO_2 from Wet Suppression Water Usage: [22]	835.7 (0.4)	
						CO_{2e} Total Over Construction Period:	455,013.1 (206.4)	

Rounding margin of error ± 0.1 MT (± 220.5 pounds)

[22] Water usage based upon an assumed wet suppression level of 100,000 gallons over the course of construction.

Gasoline Vehicle (Spark Ignition) CO_{2e} Emissions

Motor vehicles are the primary source of long-term greenhouse gas emissions associated with the proposed project. The proposed Escondido Assisted Living Facility project site is expected to have a cumulative worst-case trip generation level of 250 ADT as previously analyzed within the project's Air Quality Impact Assessment (AQIA).[23,24] The average vehicle trip length would be 25 miles, with a median running speed of 45 MPH.[25] Given this, the aggregate project trip GHG emission levels are shown in Table 3, below.

TABLE 3: Daily Operational Vehicle GHG Levels

		Total Emissions in Pounds per Day (MT per Day)		
Vehicle Classification	**Trip ADT**	**Direct CO_2**	**Direct N_2O**	**CO_{2e}**
Light Duty Auto (LDA)	173	2,035.4 (0.9)	0.3 (0.0)	2,109.5 (1.0)
Light Duty Truck (LDT1)	49	698.1 (0.3)	0.1 (0.0)	734.3 (0.3)
Medium Duty Truck (LHD1)	16	394.7 (0.2)	0.1 (0.0)	425.4 (0.2)
Heavy Duty Truck Gasoline (MH GAS)	3	74.0 (0.0)	0.0 (0.0)	82.1 (0.0)
Heavy Duty Truck Diesel (MH DSL)	9	525.8 (0.2)	0.9 (0.0)	780.4 (0.4)
Motorcycle (MCY)	1	7.6 (0.0)	0.0 (0.0)	13.3 (0.0)
Total (Σ):	**250**	**3,735.5 (1.7)**	**1.4 (0.0)**	**4,145.0 (1.9)**
			CO_{2e} from CO:	3,735.5 (1.7)
			CO_{2e} from N_2O:	409.5 (0.2)
			CO_{2e} Operational Total Per Day:	4,145.0 (1.9)

Rounding margin of error ± 0.1 MT (± 220.5 pounds)
Values rounded to closest whole integer vehicle

Again, since N_2O has a GWP of 296 with respect to CO_2, the *equivalent* CO_{2e} level would be 409.5 pounds (0.2 MT) for N_2O. The final equivalent daily CO_{2e} load due to vehicular traffic would be 4,145.0 pounds (1.9 MT). This equates to 686.2 MT per year CO_{2e} for this activity.

[23] Ibid. ISE, 6/29/18.

[24] Source: CARB *EMFAC 2011*, California Air Resources Board, 2015.

[25] The average assumed trip length is the average travel distance to or from the site and is based upon applicant's expectations for reasonable occupancy of the site. It is anticipated that some end trips will be shorter, and some longer, but for the purposes of analysis, the average value is given.

Small Engine, Natural Gas, Electrical, Waste and Water CO_{2e} Emissions

Small Engine and Natural Gas GHG Emissions

Small engine equipment utilized at the Escondido Assisted Living Facility project site typically would consist of five-horsepower, four-stroke lawnmowers, and small weed trimmers having two-stroke engines with an approximate 30 to 50 cubic-centimeter displacement.

For the purposes of analysis, the project site will be treated as a multi-family residential/commercial use consisting of an aggregate 96 living spaces and 10 office uses totaling 2,500 square-feet. Thus, the following aggregate emissions are anticipated.[26]

Multi-Family Use Space (MF)	CO_2 = 3,263.1 pounds/day ≈ 1.5 MT/day	N_2O = 0.1 pounds/day ≈ < 0.1 MT/day
Office Space (CM)	CO_2 = 339.9 pounds/day ≈ 0.1 MT/day	N_2O = 0.1 pounds/day ≈ < 0.1 MT/day

The N_2O *equivalent* CO_{2e} level for the above activity would be 47.1 pounds per day (< 0.1 MT per day). Thus, the final equivalent CO_{2e} GHG load would be roughly 3,650.1 pounds per day (1.6 MT per day). This total equates to 604.3 MT per year CO_{2e} for this activity.

Similarly, natural gas consumption (typically due to usage of water heaters, stoves, and central heating units for this type of proposed use) would produce the following approximate total pounds of combustion emissions as shown below.[27]

$$GHG_{combustion} = ER \times \left[\frac{NU \times UR}{30}\right] \times 10^{-6}$$

Where the following variables are defined:

GHG = The greenhouse gas under examination (i.e., CO_2 or N_2O),

ER = Emissions rate of criteria pollutant per million-cubic-feet (MCF) of natural gas consumed (e.g., CO_2 = 116,765 lbs/MCF, N_2O = 28.2 lbs/MCF),

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[26] The utilized generation rates are hybrids of the emission factors utilized by the *CARB URBEMIS* model. They are equivalent to 33.99111 pounds direct CO_2 per unit, and 0.0015 pounds direct N_2O per unit.

[27] The free and complete burning of natural gas, which is primarily composed of methane (CH_4), is $CH_4 + 2O_2 \Rightarrow 2H_2O + CO_2 + heat\uparrow$. From a mass balance standpoint one pound of CH_4 can produce 2.75 pounds of CO_2 by the above chemical equation. Since, one cubic-foot of CH_4 weighs 0.04246 pounds, the amount of CO_2 produced per cubic-foot of natural gas burned would therefore be 0.1167 pounds. N_2O generation will be assumed to be a fractional component of total NO_x generation as previously discussed (i.e., $N_2O = 0.3NO_x$).

NU = Total number of units per land use type examined, and,

UR = Natural gas utilization rate (e.g., SF = 6,665 ft^3/month, MF = 4,011.5 ft^3/month, Commercial/Retail/Office Space = 2.9 ft^3/SF/month).

For the aforementioned project plan, this would equate to the following natural gas fired emission levels in pounds per day:

Multi-Family Use Space (MF)	CO_2 = 1,498.9 pounds/day ≈ 0.7 MT/day	N_2O = 0.4 pounds/day ≈ < 0.1 MT/day
Office Space (CM)	CO_2 = 28.2 pounds/day ≈ < 0.1 MT/day	N_2O = 0.0 pounds/day ≈ < 0.1 MT/day

The N_2O *equivalent* CO_{2e} level for the above activity would be 109.2 pounds per day (< 0.1 MT per day). Thus, the final equivalent CO_{2e} GHG load would be roughly 1,636.3 pounds per day (roughly 0.7 MT per day). This total equates to 270.9 MT per year CO_{2e} for this activity.

Electrical Consumption GHG Emissions

The Escondido Assisted Living Facility would consume on average approximately 480,000 KWh/year.[28] Utilizing the SDG&E CO_2 intensity factor consistent for a 20% *Renewable Portfolio Standard* (RPS), gives an annual equivalent CO_{2e} GHG load for the project site due to electrical usage of 139.7 MT/year.[29]

Water Consumption / Wastewater Generation GHG Emissions

The Escondido Assisted Living Facility project site would produce the following direct CO_{2e} emissions as a result of onsite water consumption, as shown in Table 4 on the following page.[30] The aggregate of these emissions was found to produce 85,779.7 pounds of CO_{2e} per year, or roughly 38.9 MT/yr. In a similar fashion, CO_{2e} emissions due to processing wastewater leaving the site, assuming a 100% outflow, would equate to 4.0 MT/yr.[31]

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[28] Based upon project applicant estimates of reasonable and foreseeable site utilization of 5,000 KWh/bed/yr.

[29] The intensity conversion factor is 641.86 lb-CO_2/MWh for the baseline case. This is derived by scaling the SDG&E 2009 CO_2 intensity factor, currently at 10.2% RPS, to account for a state required 20% RPS.

[30] Ibid., CalEEMod Table 9.1.

[31] CalEEMod Table 9.4 for aerobic and anaerobic wastewater treatment types.

TABLE 4: Project CO_{2e} Generation Due to Water Consumption

Proposed Use	Project Quantity Generation	Per Use Metric	Indoor Water Use (gal/yr)	Outdoor Water Use (gal/yr)	Total Water Use (gal/yr)	CO_{2e} Generation (lb/yr)	CO_{2e} Generation (MT/yr)
Hospital	96	Bed	8,622,144.0	1,642,272.0	10,264,416.0	85,779.7	38.9
						Water Consumption CO_{2e} Generation (MT/yr):	**38.9**

Source: CalEEMod User Guide Appendix D, Table 9.1.

Rounding margin of error ± 0.1 MT (± 220.5 pounds)

Solid Waste Generation GHG Emissions

Finally, the Escondido Assisted Living Facility project site would have an onsite solid trash waste storage capacity of 50 cubic yards (cu-yd), with an average weight of 200 pounds per cubic-yard. Assuming four (4) trash removals per week, in accordance with proposed site requirements, the aggregate total solid waste removed from the site would be 2,080,000.0 lbs/year (or 1,040.0 short tons per year). According to the IPCC, landfill CO_{2e} generation due to trash is approximately 0.3196 pounds per pound of trash per year.[32] Thus, the direct landfill CO_{2e} contribution level would be 301.6 MT/yr.

GHG Emissions Summary

The projected greenhouse gas emission budget for the proposed project would be the summation of the individual sources previously identified, as shown in Table 5 below.

TABLE 5: Summary of Significant Project-Related GHG Emissions

Project Phase / Operation	Total CO_{2e} Emissions in MT/year
Construction (All Phases Aggregated)	10.3
Operational Vehicular Emissions	686.2
Small Engine Usage	604.3
Natural Gas Usage	270.9
Electrical Consumption	139.7
Solid Waste Generation	301.6
Water Consumption / Wastewater Processing	42.9
Total GHG Emissions per Year	**2,056.0**

Rounding margin of error ± 0.1 MT (± 220.5 pounds)

The baseline emissions due to the proposed project action (i.e., traffic generation, onsite uses including maintenance, natural gas and electricity consumption, waste generation and water usage, and the aforementioned pseudo-operational construction emissions) would equate to 2,056.0 MT of CO_{2e} per year. This corresponds to approximately 82.2% percent of the City's recommended screening level of 2,500 MT.

[32] Ibid., IPCC 2001.

COMPLIANCE WITH CITY OF ESCONDIDO E-CAP

The project was found to produce an aggregate total of 2,056.0 MT of CO_{2e} per year, which is 17.8% less than the City's E-CAP screening level of 2,500 MT. Therefore, the project would be deemed less than significant under CEQA from an individual, and cumulative standpoint. As a result, no long-term GHG impacts from the project are expected, and the project would be classified in compliance with the intent of both AB 32, and Executive Order S-3-05.

CERTIFICATION OF ACCURACY AND QUALIFICATIONS

This report was prepared by Investigative Science and Engineering, Inc. (ISE). The members of its professional staff contributing to the report are listed below:

Rick Tavares *(rtavares@ise.us)*	Ph.D. Civil Engineering M.S. Structural Engineering M.S. Mechanical Engineering B.S. Aerospace Engineering / Engineering Mechanics
Karen Tavares *(ktavares@ise.us)*	B.S. Electrical Engineering

ISE affirms to the best of its knowledge and belief that the statements and information contained herein are in all respects true and correct as of the date of this report. Should the reader have any questions regarding the findings and conclusions presented in this report, please do not hesitate to contact ISE at (760) 787-0016.

Content and information contained within this report is intended only for the subject project and is protected under 17 U.S.C. §§ 101 through 810.

Approved as to Form and Content:

Rick Tavares, Ph.D.

Project Principal / Director of Engineering
Investigative Science and Engineering, Inc. (ISE)

APPENDICES AND SUPPLEMENTAL INFORMATION

EMFAC 2011 EMISSION FACTOR TABULATIONS – SCENARIO YEAR 2020

EMFAC2011 Emission Rates
Region Type: County
Region: San Diego
Calendar Year: 2020
Season: Annual
Vehicle Classification: EMFAC2011 Categories

Region	CalYr	Season	Veh_Class	Fuel	MdlYr	Speed (miles/hr)	VMT (miles/day)	ROG_RUNEX (gms/mile)	TOG_RUNEX (gms/mile)	CO_RUNEX (gms/mile)	NOX_RUNEX (gms/mile)	CO2_RUNEX (gms/mile)	CO2_RUNEX (Pavley I+LCFS) (gms/mile)	PM10_RUNEX (gms/mile)	PM2_5_RUNEX (gms/mile)
San Diego	2020	Annual	LDA	GAS	Aggregated	45	2242464.381	0.01800885	0.025991442	0.7986615	0.08782155	283.227013	194.62056	0.00126358	0.001171756
San Diego	2020	Annual	LDA	DSL	Aggregated	45	9838.147339	0.01573353	0.017911578	0.105103646	0.325845762	297.0356277	210.0277084	0.010881138	0.010010647
San Diego	2020	Annual	LDT1	GAS	Aggregated	45	322328.281	0.02655532	0.039937004	1.47168894	0.15242977	327.75106	237.40794	0.00212512	0.001970814
San Diego	2020	Annual	LDT1	DSL	Aggregated	45	395.3592352	0.028245423	0.032155538	0.143171582	0.37188977	301.7745459	208.1108486	0.022104445	0.02033609
San Diego	2020	Annual	LDT2	GAS	Aggregated	45	838126.6583	0.013177188	0.022497407	0.905772897	0.101977931	385.6305209	290.7469134	0.001247809	0.001157444
San Diego	2020	Annual	LDT2	DSL	Aggregated	45	363.5267772	0.019196041	0.021853415	0.119984215	0.391812714	298.9794062	223.0104307	0.013076198	0.012030102
San Diego	2020	Annual	LHD1	GAS	Aggregated	45	38808.18589	0.03897162	0.048331048	0.78990108	0.39245016	452.055847	406.85026	0.00067839	0.000628938
San Diego	2020	Annual	LHD1	DSL	Aggregated	45	44121.07623	0.111091742	0.126470564	0.560391725	2.606862687	521.200403	469.0803627	0.024710919	0.022734047
San Diego	2020	Annual	LHD2	GAS	Aggregated	45	3218.236203	0.01898113	0.025698977	0.42556526	0.297729368	452.0558068	406.8502261	0.000469757	0.000435111
San Diego	2020	Annual	LHD2	DSL	Aggregated	45	11310.33045	0.101947139	0.116060039	0.536482048	2.420907045	521.2157497	469.0941748	0.023506878	0.021626329
San Diego	2020	Annual	MCY	GAS	Aggregated	45	28802.32646	2.03328051	2.217487704	17.789901	1.16787867	138.859592	124.97363	0.00026983	0.000225994
San Diego	2020	Annual	MDV	GAS	Aggregated	45	573432.1342	0.032021219	0.048593237	1.599921091	0.205190013	492.0704299	390.3938572	0.001449769	0.00134079
San Diego	2020	Annual	MDV	DSL	Aggregated	45	633.2175404	0.019479433	0.022176038	0.115337298	0.319248347	297.5623732	233.6758465	0.015085251	0.013878431
San Diego	2020	Annual	MH	GAS	Aggregated	45	27371.31064	0.04404313	0.056990031	1.48338751	0.55198233	452.055858	406.85027	0.00079062	0.000731121
San Diego	2020	Annual	MH	DSL	Aggregated	45	3680.803695	0.10878148	0.123840481	0.50298745	5.78100093	1070.66408	963.59767	0.12465464	0.114682275
San Diego	2020	Annual	Motor Coach	DSL	Aggregated	45	7985.095821	0.15703997	0.178778052	0.834478884	3.138282148	1624.513043	1462.061739	0.065009578	0.059808812
San Diego	2020	Annual	OBUS	GAS	Aggregated	45	6804.404885	0.072015507	0.08657315	1.536022561	0.850358956	452.0558271	406.8502444	0.000328518	0.000304494
San Diego	2020	Annual	SBUS	GAS	Aggregated	45	878.6398845	0.442762318	0.489092346	8.484772469	2.231064373	452.0558158	406.8502342	0.002306706	0.002095706
San Diego	2020	Annual	SBUS	DSL	Aggregated	45	2276.91643	0.072041767	0.082014067	0.333878476	7.748496101	1073.967436	966.5706926	0.041981697	0.038623161
San Diego	2020	Annual	T6 Ag	DSL	Aggregated	45	538.4805779	0.14236689	0.162073867	0.627616773	2.910517913	1054.347088	948.912379	0.097019827	0.089258241
San Diego	2020	Annual	T6 Public	DSL	Aggregated	45	3409.904163	0.051741473	0.058903729	0.243540937	2.469711818	1056.005237	950.4047137	0.027473686	0.025275791
San Diego	2020	Annual	T6 CAIRP heavy	DSL	Aggregated	45	59.69256382	0.068097095	0.077523359	0.321950143	1.726291417	1050.023396	945.0210567	0.035710913	0.03285404
San Diego	2020	Annual	T6 CAIRP small	DSL	Aggregated	45	204.1592338	0.070761999	0.080557149	0.334750841	0.94725344	1045.931635	941.3384718	0.03799426	0.034954719
San Diego	2020	Annual	T6 OOS heavy	DSL	Aggregated	45	34.22299142	0.068097095	0.077523359	0.321950143	1.726291415	1050.023396	945.0210567	0.035710913	0.03285404
San Diego	2020	Annual	T6 OOS small	DSL	Aggregated	45	117.0487455	0.070761999	0.080557149	0.334750841	0.94725344	1045.931635	941.3384718	0.03799426	0.034954719
San Diego	2020	Annual	tate construction	DSL	Aggregated	45	3647.965062	0.071390036	0.081272121	0.337220996	2.978218782	1056.264609	950.6381477	0.041341491	0.038034172
San Diego	2020	Annual	:tate construction	DSL	Aggregated	45	9928.102112	0.082181974	0.093557921	0.388774838	1.262302074	1047.806302	943.025672	0.050341205	0.046313909
San Diego	2020	Annual	T6 instate heavy	DSL	Aggregated	45	16711.92297	0.071247284	0.08110961	0.33663855	2.682795273	1054.879309	949.3913781	0.040452002	0.037215842
San Diego	2020	Annual	T6 instate small	DSL	Aggregated	45	47609.69556	0.079649614	0.090675022	0.376795109	1.189093728	1047.321584	942.5894257	0.047547703	0.043743887
San Diego	2020	Annual	T6 utility	DSL	Aggregated	45	399.9860169	0.052862786	0.060180258	0.250018935	1.565358189	1052.487807	947.2390264	0.026432401	0.024317809
San Diego	2020	Annual	T6TS	GAS	Aggregated	45	18147.57132	0.077482961	0.091832662	1.62625623	0.763625073	452.0558631	406.8502768	0.000443173	0.000409173
San Diego	2020	Annual	T7 Ag	DSL	Aggregated	45	2436.24535	0.235106843	0.267651244	1.279313014	5.263193311	1632.200553	1468.980498	0.135971057	0.125093372
San Diego	2020	Annual	T7 CAIRP	DSL	Aggregated	45	55275.3491	0.173364836	0.19736267	0.923002748	2.292113748	1617.644548	1455.880093	0.069945392	0.064349761
San Diego	2020	Annual	CAIRP constructi	DSL	Aggregated	45	4663.871851	0.173347807	0.197343283	0.922887885	2.331678434	1617.883124	1456.094812	0.069944363	0.064348814
San Diego	2020	Annual	T7 NNOOS	DSL	Aggregated	45	62182.70159	0.147621371	0.168055694	0.785748024	1.544245477	1615.130787	1453.617708	0.056661235	0.052128336
San Diego	2020	Annual	T7 NOOS	DSL	Aggregated	45	20129.87755	0.173285773	0.197272662	0.922577028	2.296076295	1617.651523	1455.886371	0.069920511	0.06432687
San Diego	2020	Annual	T7 other port	DSL	Aggregated	45	13112.69884	0.390150283	0.444156398	2.070463268	6.950142658	1666.491631	1499.842468	0.10839064	0.099719388
San Diego	2020	Annual	T7 POAK	DSL	Aggregated	45	0	0	0	0	0	0	0	0	0
San Diego	2020	Annual	T7 POLA	DSL	Aggregated	45	6990.380511	0.385313493	0.438650082	2.044795226	6.820262486	1664.806438	1498.325794	0.108292779	0.099629357
San Diego	2020	Annual	T7 Public	DSL	Aggregated	45	2813.335539	0.088506172	0.100757539	0.480395992	7.514561495	1650.005438	1485.004894	0.048882748	0.044972129
San Diego	2020	Annual	T7 Single	DSL	Aggregated	45	29620.85184	0.124895788	0.142184347	0.662753026	3.962537945	1630.680087	1467.612078	0.053059876	0.048815086
San Diego	2020	Annual	single constructi	DSL	Aggregated	45	12064.82284	0.124768128	0.142039016	0.662019851	4.107216905	1631.501795	1468.351616	0.053403728	0.049131429
San Diego	2020	Annual	T7 SWCV	DSL	Aggregated	45	8203.10902	0.093146698	0.106040425	0.498928617	7.400986083	1640.422869	1476.380582	0.046111126	0.042422236
San Diego	2020	Annual	T7 tractor	DSL	Aggregated	45	81660.41384	0.170999468	0.194669877	0.908669319	3.823461779	1626.178907	1463.561016	0.072371705	0.066581968
San Diego	2020	Annual	tractor construct	DSL	Aggregated	45	8995.217136	0.169711373	0.19320348	0.901537144	4.199918533	1627.956865	1465.161179	0.072863281	0.067034219
San Diego	2020	Annual	T7 utility	DSL	Aggregated	45	426.4867188	0.094546059	0.107633491	0.501668244	3.704094409	1632.120114	1468.908102	0.039991319	0.036792014
San Diego	2020	Annual	T7IS	GAS	Aggregated	45	3419.591346	0.437511938	0.525019232	22.53766349	4.8975608	452.0558544	406.850269	0.000285597	0.000262306
San Diego	2020	Annual	UBUS	GAS	Aggregated	45	1734.367182	0.298716401	0.326007237	3.613929472	2.201846498	452.0558754	406.8502879	0.000427296	0.000396461
San Diego	2020	Annual	UBUS	DSL	Aggregated	45	8477.237764	0.346767768	0.394772026	1.302938026	11.32342637	2499.936313	2249.942682	0.139671499	0.12849778
San Diego	2020	Annual	All Other Buses	DSL	Aggregated	45	4370.003165	0.077736952	0.088497603	0.367213193	2.680642702	1053.39159	948.0524307	0.043497025	0.040017263

INDEX OF IMPORTANT TERMS

13. Investigative Science and Engineering, Inc.; Exterior Acoustical Site Assessment CCR Title 24 Interior Noise Survey Escondido Assisted Living Facility Escondido, Ca; October 9, 2018 (revised)

EXTERIOR ACOUSTICAL SITE ASSESSMENT
CCR TITLE 24 INTERIOR NOISE SURVEY
ESCONDIDO ASSISTED LIVING FACILITY – ESCONDIDO, CA
ENV17-0007, PHG17-0025

Submitted to:

Mr. Tigg Mitchell
The Mitchell Group
127 Lomas Santa Fe Drive
Solana Beach, CA 92075

Investigative Science and Engineering, Inc.
Scientific, Environmental, and Forensic Consultants

P.O. Box 488
Ramona, CA 92065
(760) 787-0016
www.ise.us

Investigative Science and Engineering, Inc.

ISE Project #18-004

October 9, 2018 (Revised)

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REPORT CONTENTS

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INTRODUCTION AND DEFINITIONS

Existing Site Characterization

The proposed Escondido Assisted Living Facility site consists of 3.03 acres of fully disturbed land located in the City of Escondido, as shown in Figures 1 and 2 on the following pages. Regional access is obtained from Centre City Parkway from the north and south respectively.[1] The project site currently resides as a rough graded lot, as shown in Figure 3 on Page 4. Surrounding land uses consist of single- and multi-family residential units, commercial and professional uses, and Escondido High School to the immediate south. Elevations across the project site range from approximately 682 to 722 feet above mean sea level (MSL).

Project Description

The proposed project would construct a three-story, single-structure, 96-bed residential care facility, as shown in Figure 4 on Page 5 of this report. The structure would have a physical footprint of 26,703 square-feet (SF) and an internal utilization space of 43,996 SF. Parking would be provided in a periphery manner in front of the structure.

Acoustical Definitions and Theory

Sound waves are generally described as linearly compressive mechanical waves, which propagate in solids, liquids, and gases. The medium transmitting the wave oscillates in the direction of propagation. All sound waves originate from a vibrating surface, which alternately compress, and then expand, the transmitting medium over a wide range of frequencies causing the sensation of hearing in humans. This nominal range spans from 20 Hz (Hertz, or cycles per second) to as high as 20,000 Hz.

The phenomenon known as 'noise' is defined as the superposition of multiple periodic sound waves each having a large number of frequency components. The principal response to environmental noise is annoyance. The type of noise, its perceived importance, the time of day, and the sensitivity of the individual hearing the sound influence the degree of annoyance.

The human ear has a large dynamic range where sound can be detected. Because of this vast range, any attempt to represent the acoustic intensity of a particular sound on a linear scale becomes unwieldy. As a result, a logarithmic ratio, originally conceived for radio work, known as the decibel (dB), is commonly employed.[2]

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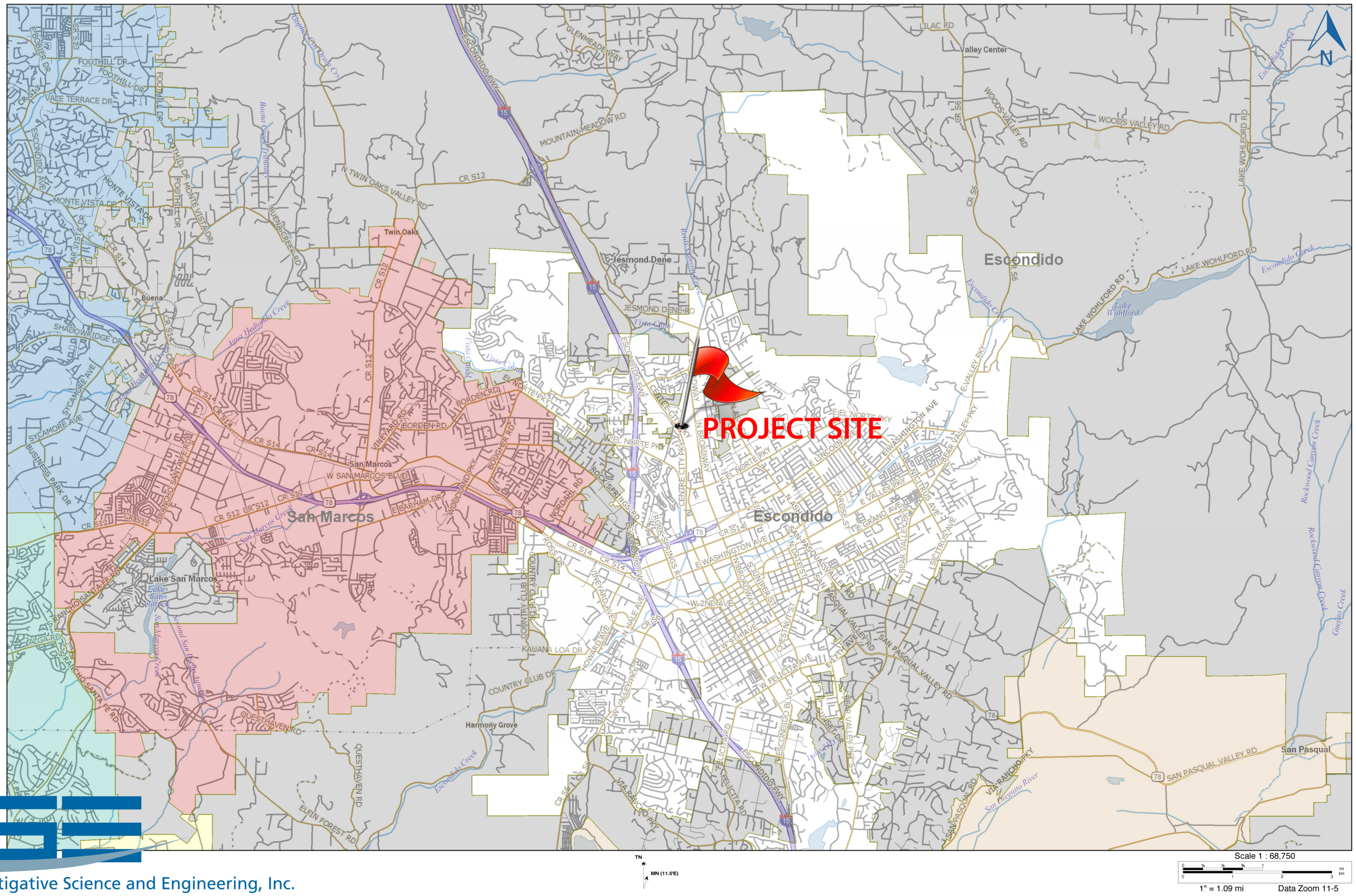
[1] Addressed as 1802 N. Centre City Parkway, Escondido CA 92026, APN 226-190-2200.

[2] The decibel is a unit used to express the relative magnitude of a sound wave. This level is defined as being equal to 20 times the common logarithm of the ratio of the pressure produced by a sound wave of interest, to a 'reference' pressure wave equal to 20 micro Pascal's (μPa) measured at a distance of one meter away. The reference level of 20 μPa is the smallest amount of pressure capable of producing the sensation of hearing in a human.



Investigative Science and Engineering, Inc.

FIGURE 1: Project Study Area Vicinity Map (ISE 5/18)

FIGURE 2: Project Study Area Parcel Map (ISE 5/18)

FIGURE 3: Aerial Image Showing Proposed Development Area and Surrounding Uses (ISE 5/18)

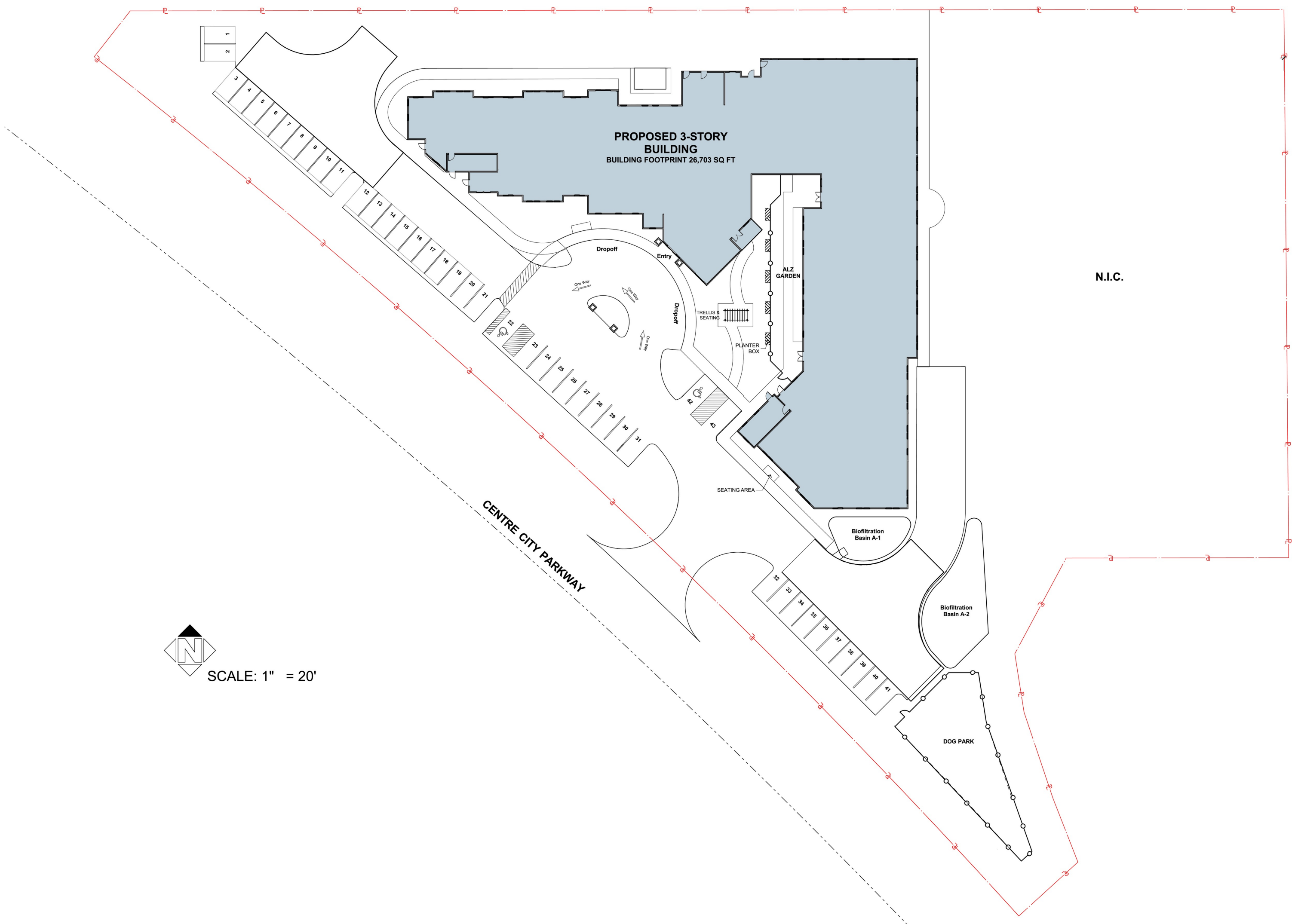


FIGURE 4: Proposed Escondido Assisted Living Facility Development Plan (Irvin Partners Architects, 3/18)

A sound level of zero "0" dB is scaled such that it is defined as the threshold of human hearing, and would be barely audible to an 'average' person under extremely quiet listening conditions. Sound levels above 120 dB roughly correspond roughly to the threshold of pain, while the minimum change in sound level that the human ear can detect is approximately 3.0 dBA.[3] A pressure change of 10 dB is usually perceived by the average person as a doubling (or halving) of the sound's loudness.[4]

Most of the sounds we hear in any environmental setting do not consist of a single frequency, but rather are comprised of a broad band of frequencies differing in intensity. The intensities of each frequency add together to generate the sound we ultimately hear. The method used to quantify environmental sounds of this type, consists of aggregating the frequency spectrum of a sound according to a weighting system that mimics the nonlinear response characteristics of the human ear. This is called "A" weighting, and the decibel level measured is called the A-weighted sound level (or dBA).

Although the A-weighted sound level may adequately indicate the level of environmental noise at any instant, community noise levels over a finite time period vary continuously. Most environmental noise we hear includes a conglomeration of sounds from distant sources that create a relatively steady background level in which no particular source is identifiable. For this type of noise, a single descriptor called the L_{eq} (or equivalent sound level) is used. L_{eq} is the energy-mean A-weighted sound level during a specified time interval, and would be defined mathematically by the following continuous integral,

$$L_{eq} = 10Log_{10}\left[\frac{1}{T}\int_0^T SPL(t)^2\,dt\right]$$

Where the following variables are defined:

- L_{eq} = The energy equivalent sound level, '*t*' is the independent variable of time,
- T = The total time interval of the event, and
- SPL = The sound pressure level *re. 20 μPa*.

Thus, L_{eq} is the 'equivalent sound level' that would have to be produced by a constant source to equal the average of the fluctuating community noise. For most acoustical studies, the study interval is generally taken as one-hour and the abbreviation used is *Leq-h;* however, other time intervals are utilized depending on the jurisdictional preference.

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[3] Every 3 dB equates to a 50% drop (or increase) in wave strength; therefore a 6 dB drop/increase = a loss/increase of 75% of total signal strength and so on.

[4] This is a subjective reference based upon the nonlinear nature of the human ear. This change actually represents an approximate 90 percent change in the sound intensity, but only about a 50 percent change in the perceived loudness. This is due to the nonlinear response of the human ear to sound.

The time-weighted aggregate of all community noise events are typically averaged into a single value known as the *Community Noise Equivalent Level* (CNEL). The CNEL calculated by averaging all events over a specified time interval, and applying a 5-dBA penalty to any sounds occurring between 7:00 p.m. and 10:00 p.m., and a 10-dBA penalty to sounds that occur during nighttime hours (i.e., 10 p.m. to 7 a.m.). This artificial penalty is applied to compensate for the increased sensitivity to noise during the quieter nighttime hours. Mathematically, CNEL can be derived based upon the hourly L_{eq} values, via the following expression:

$$CNEL = 10Log_{10}\frac{1}{n}\sum_{i=1}^{n}\left(10^{\frac{Leq(day)_i}{10}} + 10^{\frac{Leq(evening+5)_i}{10}} + 10^{\frac{Leq(night+10)_i}{10}}\right)$$

With the following variables:

$L_{eq}(x)_i$ = The equivalent sound level during period '*x*' at time interval '*i*', and,

n = The number of time intervals.

Finally, a sound insulation parameter known as the Sound Transmission Class (or STC) of a wall, window, or ceiling assembly is defined as the acoustic transmission of a structural assembly at a frequency of 500 Hertz with respect to an industry-defined *reference transmission curve*. The 'reference curve', to which the actual transmission is compared, is based upon the previously discussed noise sources within the one-third octave frequency bands of 125 to 4,000 Hertz. The STC rating can be used to compare the potential sound insulation properties of structural assemblies tested in a laboratory setting, or between different rooms in an as-built structure. The field rating (or FSTC) for a partition built and tested in a building is typically lower than that obtained for a partition tested in a laboratory because of flanking transmission and construction errors.

Table 1, on the following page, summarizes the relative effectiveness of the STC descriptor as a measure of sound attenuation in a structure. The use of a single-number transmission rating such as the STC, rather than a discrete octave band representation, correlates in a general way with subjective impressions of sound transmission for speech, radio, television, and similar sources of noise in buildings through a single path (i.e., a directed path).[5]

[5] In some cases, it is important to measure the distribution of sound pressure as a function of frequency. Under these circumstances, the incoming sound wave is passed through a series of band pass filters having predefined frequencies where they are resonant. The relative response of each filter (in dB, dBA, etc.) directly corresponds to the amount of sound energy present at that particular frequency. In standard acoustics two unique filter sets are used to accomplish this task, namely the 1/1 octave band and 1/3 octave band set. An octave is defined as the interval between any two frequencies having a ratio of 2 to 1.

By definition, a whole octave filter (1/1) is a band-pass filter having a bandwidth equal to 70.7-percent of its center frequency (i.e., the frequency of interest) distributed across 11 bands between 11 Hz and 22,700 Hz (the effective audio frequency range). A 1/3 Octave Band filter has a bandwidth equal to 23.1% of its center frequency, distributed across 32 bands between 14.1 Hz and 22,390 Hz. Thus, the octave band frequencies would be 16, 31.5, 63, 125, 250, 500, 1000, 2000, 4000, 8000 and 16000 Hz. The corresponding 1/3 octave band

TABLE 1: Common STC Ratings and Insulation Effectiveness

STC Rating	Privacy Afforded
25	Normal speech understood at close distances
30	Normal speech audible, but unintelligible
35	Loud speech understood
40	Loud speech audible, but unintelligible
45	Loud speech barely audible
50	Shouting barely audible
55	Shouting not audible

ENVIRONMENTAL SIGNIFICANCE THRESHOLDS

City of Escondido Noise Regulations

The City of Escondido, through its Noise Element of the General Plan and Community Protection Element, has established criteria for compatibility of noise for various land uses, as shown in Table 2 on the following page. Sound levels up to 65 dBA CNEL are considered compatible with sensitive land uses.[6] Thus for the purposes of analysis, the project will be mitigated to the General Plan Policy level of 65 dBA CNEL, with additional attention being placed on developing Best Mitigation Practices (BMP) to further reduce sound towards the 60 dBA CNEL goal.

State of California CCR Title 24

The California Code of Regulations (CCR), State Building Code, Part 2, Title 24, Appendix Chapter 35; "*Noise Insulation Standards for Multifamily Housing*" requires that multi-family dwellings, hotels, and motels located where the CNEL exceeds 60 dBA require an acoustical analysis showing that the proposed design will limit interior noise to less than 45 dBA CNEL for all residential spaces.[7] Worst-case noise levels, either existing or future, must be used.

The City of Escondido has adopted the CCR Title 24 regulations for all types of residential dwellings.

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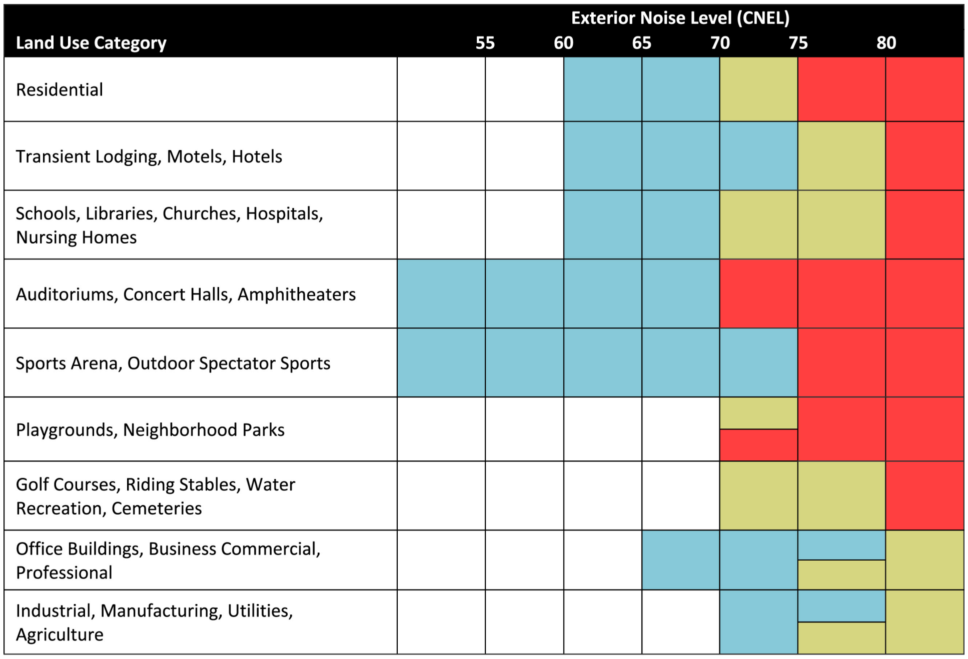
frequencies would be 16, 20, 25, 31.5, 40, 50, 63, 80, 100, 125, 160, 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, 10000, 12500, 16000 and 20000 Hz.

[6] Under the Community Protection and Safety Noise Policy E1.2, a goal has been set to attempt to lower noise within outdoor residential areas to 60 dBA CNEL. It is noted that this is a design goal and not a General Plan Policy, and that mitigation to this level may not be feasible for every case. These standards are typically applied to areas within a proposed development that would be classified as "usable exterior space", such as rear and some side yards.

[7] This standard is also codified in the 2013 version of the California Code of Regulations, Title 24, Part 2, Volume 1, Chapter 12 – Interior Environment, Section 1207 et. seq.

TABLE 2: City of Escondido Land Use Compatibility Matrix



NORMALLY ACCEPTABLE - Specified land use is satisfactory, based upon the assumption that buildings involved are of normal conventional construction, without any special noise insulation requirements.

CONDITIONALLY ACCEPTABLE - New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design.

NORMALLY UNACCEPTABLE - New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made with noise insulation features included in the design.

CLEARLY UNACCEPTABLE - New construction or development clearly should not be undertaken.

City of Escondido Construction Noise Ordinance Regulations

Construction grading noise within the City of Escondido is regulated under Ordinance Section 17-238. The relevant parts are cited below.

- It shall be unlawful for any person, including the City of Escondido, to do any authorized grading at any construction site, except on Mondays through Fridays during a week between the hours of 7:00 a.m. and 6:00 p.m. and, provided a variance has been obtained in advance from the City Manager, on Saturdays from 10:00 a.m. to 5:00 p.m.
- For the purpose of this section, “grading” shall include, but not be limited to, compacting, drilling, rock crushing or splitting, bulldozing, clearing, dredging, digging, filling and blasting.

- In addition, any equipment used for grading shall not be operated so as to cause noise in excess of a one-hour sound level limit of 75 dB at any time when measured at or within the property lines of any property which is developed and used in whole or in part for residential purposes, unless a variance has been obtained in advance from the City Manager.

Thus for the purposes of analysis within this report, construction grading noise will have a threshold of significance of 75 dBA Leq-h and be limited to the normal hours of 7:00 a.m. through 6:00 p.m. weekdays, and 10:00 a.m. to 5:00 p.m. on Saturday.

City of Escondido Permissible Sound Levels by Receiving Land Use

The City of Escondido Municipal Code Section 17-229 establishes permissible sound level limits as a function of the receiving land use zoning. Pursuant to the code, it shall be unlawful for any person to cause or allow the creation of any stationary noise to the extent that the one-hour average sound level, at any point on or beyond the boundaries of the property on which the sound is produced, exceeds the applicable limits set forth in Table 3 below.

TABLE 3: Permissible Sound Levels by Receiving Land Use

Zone	Time	Applicable Limit One-hour Average Sound Level (Decibels)
Residential zones	**7 a.m. to 10 p.m.** **10 p.m. to 7 a.m.**	**50** **45**
Multi-residential zones	7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	55 50
Commercial zones	7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	60 55
Light industrial / Industrial park zones	Anytime	70
General industrial zones	Anytime	75

It should be noted that the sound level limit at a location on a boundary between two (2) land use classifications is the limit applicable to the receiving land use; with the exception that the one-hour average sound level limit applicable to extractive industries including but not limited to borrow pits and mines, shall be seventy-five (75) decibels (dB) at the property line regardless of the zone where the extractive industry is actually located.

The proposed Escondido Assisted Living Facility is zoned R-1-10. Thus, the applicable standard would be 50 dBA Leq-h between the hours of 7 a.m. to 10 p.m., and 45 dBA Leq-h between the hours of 10 p.m. to 7 a.m. For the purposes of municipal code compliance within this report, the most restrictive (45 dBA Leq-h) threshold was applied.

City of Escondido Environmental Quality Regulations

The City of Escondido Municipal Code Chapter 33, Article 47, Environmental Quality Regulations, Section (a)(2), governs noise impacts specifically related to the widening of Mobility and Infrastructure Element streets.

According to this section, the following incremental noise increases are generally not considered significant:

a. Short- or long-term increases, regardless of the extent, that do not result in noise increases in excess of General Plan standards.

b. Short or long-term increases that result in a 3 dBA or less incremental increase in noise beyond the General Plan's noise standards.

These thresholds are consistent with those applied by other jurisdictions for incremental traffic noise increases along circulation element roadways.

APPROACH AND METHODOLOGY

Acoustical Field Reconnaissance

Onsite acoustical monitoring was performed on May 24, 2018 between approximately 11:30 a.m. and 12:45 p.m. for the purpose of determining the ambient baseline community noise levels during normal free-flow weekday traffic conditions. The instrumentation locations, denoted as Monitoring Locations ML 1 and ML 2, are shown in Figure 5 on the following page.

For the field monitoring effort, two Quest SoundPro SP-DL-2 ANSI Type 2 integrating sound level meters were used as the data collection devices. The meters were affixed to tripods five-feet above ground level, in order to simulate the noise exposure of an average-height human being. Photos of the test setup are shown in Figures 6a and -b starting on Page 13. All equipment was calibrated in accordance with ANSI S1-4 1983 Type 2 and IEC 651 Type 2 standards.[8]

[8] All testing and calibration is performed by ISE's Acoustics and Vibration Laboratory using a rubidium atomic frequency and time standard traceable to National Institute of Standards & Technology (NIST). The calibration signal has a long-term stability of 10^{-10}. Specifications for traceability can be obtained at *www.nist.gov*.

FIGURE 5: Ambient Noise Monitoring Locations ML 1 and ML 2 (ISE 5/18)

FIGURE 6a: Photos for Ambient Monitoring Station ML 1 (ISE 5/18)

FIGURE 6b: Photos for Ambient Monitoring Station ML 2 (ISE 5/18)

Construction Noise Impact Assessment Approach

Major construction noise emission generators expected within the project site would consist predominately of diesel-powered earthwork equipment required for grading activities, underground work, and surface paving. Construction noise present at the project site was based upon EPA recommended values, and past levels measured by ISE.[9]

Cumulative (i.e., worst case aggregate) noise levels were calculated for a range of expected emissions from proposed equipment at the closest sensitive receptor, under spherically-soft ground propagation conditions, and compared against the aforementioned City of Escondido Ordinance Section 17-238 thresholds.

Onsite Noise Generation Assessment Approach

Predicted sound emanations from the proposed Escondido Assisted Living Facility site would consist solely of rooftop mounted HVAC equipment located within the screened parapet area. These sources were modeled in a three-dimensional fashion using the ISE Industrial Source Model (IS3) v4.1. The IS3 model calculates the predicted acoustic field pattern using a vector-based summation of all source-receptor pairs. The resulting output consists of an isogram containing the predicted acoustic field. The modeled source locations are shown in Figure 7 on the following page.

For the analysis, proposed structural features were plotted in GIS using a SPCS coordinate system (CA Zone VI) and incorporated into the model. These features included all onsite structures as well as their applicable parapet elevations. Receptor elevations were modeled at five (5) feet above the finished pad elevation.

Acoustical sources were modeled at their full measured and/or published levels, and identified lowest dominant emissive frequency (taken in this case at 250 Hz). A propagation rule consistent with a spherical point source applied 1.4-feet above the final roof height, consistent with manufacturer's specifications, was utilized across the modeling surface. The resulting aggregate noise emission contours were examined for compliance with Escondido Municipal Code Section 17-229.

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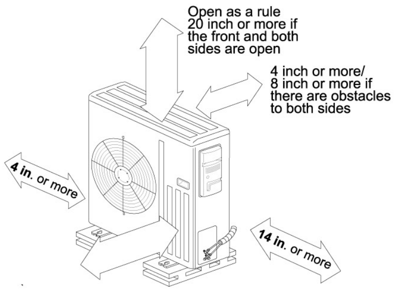
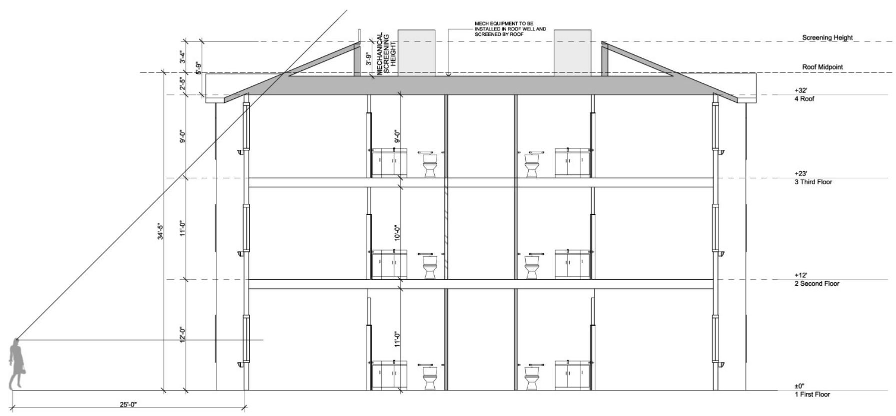
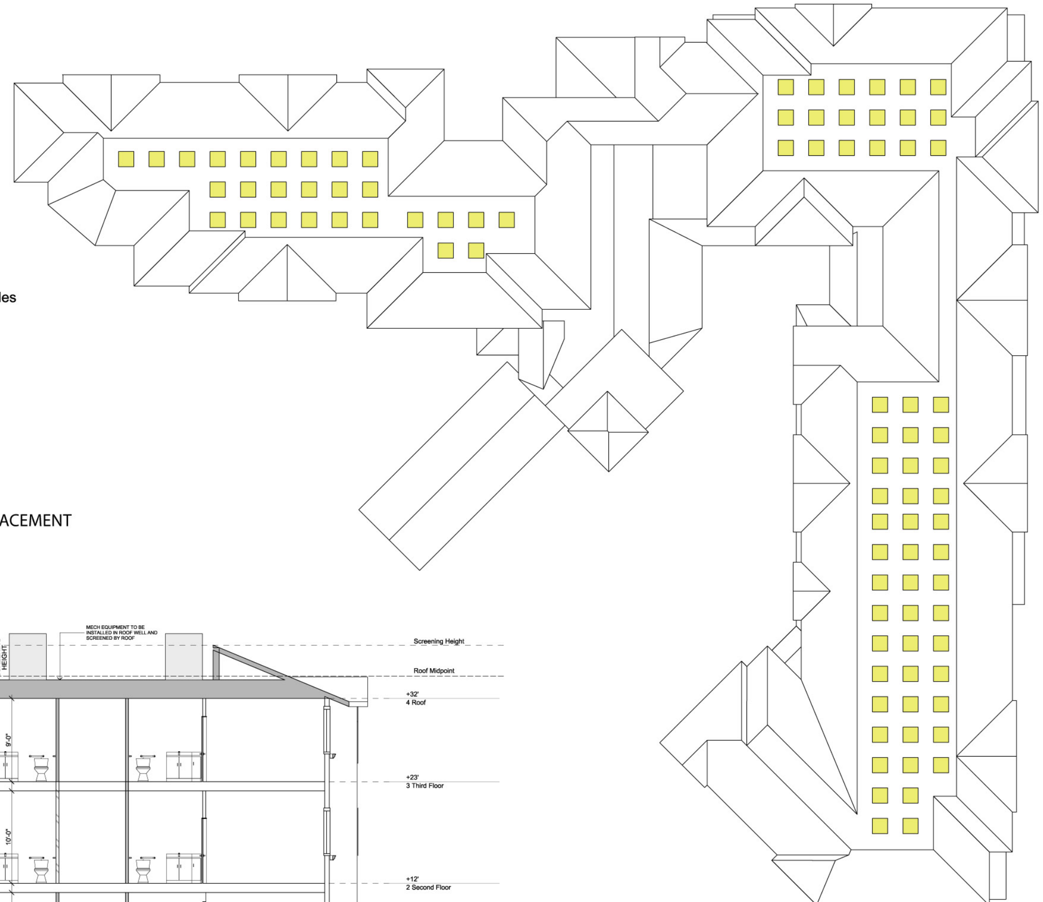
[9] Source: EPA PB 206717, Environmental Protection Agency, 12/31/71, "Noise from Construction Equipment and Operations"



ISOMETRIC PROFILE ROOFTOP CONDENSER UNIT PLACEMENT
MAX EXPOSURE 56 dBA @ 3.0 FT PER AHRI



ELEVATION PROFILE (ROOFTOP PARAPET AS INDICATED)



ROOFTOP HVAC LOCATION PLAN (UNITS INDICATED IN YELLOW)

FIGURE 7: Rooftop Mounted HVAC Unit Locations (Irvin Partners Architects 9/18)

Traffic Segment Impact Assessment Approach

The ISE *RoadNoise v2.5* traffic noise prediction model, which is based on both the FHWA/RD-77/108 and FHWA/CA/TL-87/03 methodologies, was used to calculate the increase in roadway segment noise levels due to the proposed Escondido Assisted Living Facility.[10] The model assumed a 3.0-dBA loss per doubling of distance (DD) propagation rule, and a 95/3/2 mix of automobiles/midsize vehicles/trucks, thereby yielding a representative worst-case noise contour set.

Exterior Traffic Noise Impact Assessment Approach

The *Traffic Noise Model version 2.5* (TNM 2.5) based on FHWA-PD-96-010 and FHWA/CA/TL-87/03 standards was used to calculate future onsite vehicular traffic noise levels.[11] Currently, TNM 2.5 is the only noise-modeling program formally accepted for use within the State of California. Dominant input to the acoustical model included the following:

- The proposed site development plan (Source: Irvin Partners Architects, 3/18).
- A digitized line-of-sight representation of all major roadways affecting the project site under the worst-case future noise condition (i.e., Center City Parkway, North Iris Lane).
- Future Average Daily Trips (ADT's) for major roadway segments for the aforementioned roadway segment (Source: County of San Diego / SANDAG Horizon Year 2030 Traffic Forecast).
- A traffic mix of 88.4% LDA/LDT, 6.4% MDT, 4.7% HDT, and 0.5% MCY in accordance with the Caltrans ITS Transportation Protocols (Source: Caltrans Traffic Data Branch, 3/09). [12]
- A peak hour traffic percentage of 8% of the ADT.[13]
- Receptor and topographic elevations (Source: USGS Digital Elevation Model).
- A composite pavement type, consisting of an average of Portland Cement Concrete (PCC) and Dense-Graded Asphaltic Concrete (DGAC) in accordance with TNM 2.5 test results (1998).

[10] Source: Draft Transportation Impact Analysis, Escondido Assisted Living (96 Beds) – Escondido CA, LOS Engineering, Inc, 6/6/18.

[11] The components of the TNM model are supported by a scientifically founded and experimentally calibrated acoustic computation methodology. The database is made up of over 6,000 individual pass-by events measured at forty sites across the country.

[12] The Caltrans vehicle classifications are as follows: LDA = Light Duty Automobile, LDT = Light Duty Truck, MDT = Medium Duty Truck, HDT = Heavy Duty Truck, and MCY = Motorcycle.

[13] For values between approximately 8 and 12 percent, the energy-mean A-weighted sound level is equivalent to the CNEL.

Modeled receptor areas consisting of useable space locations within the project footprint as well as exterior building façade points were sampled at various locations to determine the variation of all acoustic sources across, and affecting, the project site. The modeled receptor locations are shown graphically in Figure 8 below.

FIGURE 8: Modeled TNM Noise Receptor Locations R1 through R20 (ISE 5/18)

CCR Title 24 Interior Noise Compliance Methodology

The analysis methodology used to examine sound transmission and resultant interior noise levels is identified in the American Society of Testing and Materials (ASTM) guidelines Volume 04.06 entitled, "*Thermal Insulation; Environmental Acoustics*" Test Designation: E 413-87. Acoustical modeling of the project architectural components was performed by ISE in accordance with the above-cited ASTM guidelines.

The exterior noise level at the proposed structures is calculated in terms of decibels A-weighted (dBA), and converted to six octave band sound pressure levels at 125, 250, 500, 1000, 2000 and 4000 Hertz. The interior noise level is a function of the sound transmission loss qualities of the construction material, and the surface area of each element (wall, window, door, etc.). The interior noise level also depends upon the room's sound absorption characteristics (in Sabins).

Mathematically, the acoustical performance of any architectural or structural assembly can be expressed in the form of the following equation,

$$L_{\text{int}_i} = L_{\text{ext}_i} - TL_i - 10Log_{10}(S) - 10Log_{10}(A_i) + F_{\text{corr}} - A_{\text{corr}} + Q_{\text{corr}}$$

Where the following variables, and acoustical corrections[14], are defined:

L_{int_i} = The interior A-weighted sound level at the ith octave band,

L_{ext_i} = The exterior A-weighted sound level at the ith octave band,

TL_i = The sound transmission loss at the ith octave band,

S = The size of the room façade in square feet,

A_i = The total room absorption in Sabins at the ith octave band, and,

F_{corr}, A_{corr}, Q_{corr} = The correction factors for the building façade reflection, incident angle, and construction quality.

ISE assumed that the exterior noise levels were calculated for free-field conditions with no interaction between existing offsite structures. A three-decibel (3-dBA) building facade reflection correction was applied to the as-built structure to simulate local reflection effects within the proposed development. The necessary calculations were performed using the *ISE Architectural Acoustical Model (AAM) v3.0* interior noise computation program.

[14] Acoustical corrections were applied to the modeling process for the following physical parameters in accordance with ASTM guidelines: 1) Exterior noise level adjustment in front of each building element; 2) Exterior noise spectrum placement in front of each building element; 3) Correction for building facade reflection per ASTM Standard E 966-84; 4) Incident angle source correction per ASTM Standard E 966-84; 5) Room absorption correction; 6) Building element correction and adjustment per ASTM Standard E 413-87; and, 7) Geometric sizing and workmanship (construction error) corrections.

FINDINGS AND RECOMMENDATIONS

Acoustical Field Reconnaissance Findings

The results of the field reconnaissance sound level monitoring are shown in Table 4 below with the field data record provided as an attachment to this report. The values for the equivalent sound level (Leq-h), the maximum and minimum measured sound levels (L_{max} and L_{min}), and the statistical indicators L_{10} and L_{90}, are given for the monitoring location examined.

TABLE 4: Measured Onsite Ambient Sound Levels

		One-Hour Noise Level Descriptors in dBA				
Location	**Start Time**	L_{eq}	L_{max}	L_{min}	L_{10}	L_{90}
ML 1	11:39 p.m.	63.4	74.2	50.5	67.2	55.7
ML 2	11:49 p.m.	54.1	61.5	47.5	56.9	50.2

Monitoring Locations:

Location ML 1: Located within the northwestern portion of the project site, near Center City Pkwy.
GPS: N 33° 09.051' , W 117° 05.716'

Location ML 2: Located within the southeastern portion of the project site, near the creek.
GPS: N 33° 09.030' , W 117° 05.665'

Measurements performed by ISE on 5/24/18. EPE = Estimated GPS Position Error = 13 ft.
Temperature = 69.4 °F. Relative Humidity = 47 %. Barometric Pressure = 29.80 in-Hg.

Measurements collected reflect the ambient daytime community sound levels in the vicinity of the proposed project site. As can be seen, the hourly average sound level (or $L_{eq\text{-}h}$) recorded over the monitoring period was 63.4 dBA at ML 1 and 54.1 dBA at ML 2. These levels would be deemed consistent with the observed community setting of the project site, and the relative proximity of the site to Center City Parkway. No unusual existing noise sources were observed.

Construction Noise Emission Levels

Construction within the proposed project area would typically occur between the hours of 7:00 a.m. and 3:00 p.m. Monday through Friday. The closest residential receptor with a direct line-of-sight to any project construction would be located approximately 180-feet to the west of the project boundary along Center City Parkway. Additionally, a closer residential receptor is located approximately 60 feet from the northern property line of the site. This receptor is located roughly 10 to 15 feet below grade and as such would not have a direct line-of-sight to any construction activities, with the exception of those activities occurring directly adjacent to the project property boundary.

The estimated worst-case construction vehicle noise emissions are provided in Table 5 on the following page. As can be seen, predicted worst-case construction noise levels could be as high as 78.4 dBA Leq_h at 50-feet, with expected offsite noise exposure contours as shown in Figure 9a on Page 23 of this report.

The worst-case 75 dBA Leq-h contour line does not impact any sensitive use spaces with the exception of the aforementioned residential receptor located approximately 60 feet from the northern property line of the site. In this case, the 75 dBA Leq-h construction contour line passes above the centerline of the roof of this building due to its depressed nature (i.e., the 75 dBA Leq-h level would only be measured for a receptor standing on the roof of this building). However, per the request of the City, a temporary construction noise barrier is proposed by the applicant, as shown in Figure 9b on Page 24. The identified barrier, which would be constructed out of 5/8-inch plywood with no gaps, would span a length of the property line as shown, and would have a minimum height of six (6) feet above the project grade to preclude any acoustical impacts to this receptor.

Given this, the project would be deemed in compliance with City of Escondido Ordinance Section 17-238 standards.

Onsite Noise Generation and Impact Potential

The Escondido Assisted Living Facility site is expected to operate 88 Mitsubishi Electric Model SUZ-KA18NA horizontally-ducted split system units with each of the condenser/compressor sections being roof-mounted as previously shown in Figure 7. Each of these units produce a maximum (heating mode) source level of 56 dBA at three (3) feet per AHRI Test Standard 270.[15]

Each unit was modeled using the ISE Industrial Source Model (IS3) v4.1 with the results shown in Figure 10 on Page 25 of this report. The IS3 input model decks, and color output contour plot in SPCS CA VI coordinates, are provided as attachments to this report.

As can be seen in the figure, the requisite worst-case 45 dBA Leq-h noise contour, which is the impact threshold delineator per City of Escondido Municipal Code Section 17-229 is contained entirely within the rooftop parapet area. Closest property line noise levels were found to range between 32 to 34 dBA. Thus, no operational noise impacts are expected due to proposed HVAC operation.

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[15] Source: Air conditioning, Heating, and Refrigeration Institute (AHRI) Standard Test 270, Sound Performance Rating of Outdoor Unitary Equipment, 2015.

TABLE 5: Aggregate Construction Noise Levels at Project Site

Equipment Type Model	Selected EPA Tier Level	Quantity Used (#)	Source Level at 50 Feet at Full Load (dBA)	Average Load Factor (%)	Duty Cycle per Hour	Cumulative Effect at 50 Feet (dBA Leq_h)
Generic Water Truck (2000 Gal)	3	1	70	50	0.5	64.0
CAT 326F L Hydraulic Excavator	3	1	75	50	0.5	69.0
CAT D6D w- 1406 Blade	3	1	75	50	0.5	69.0
CAT D6R	3	1	75	50	0.5	69.0
CAT 623H Self-loading Scraper	3	1	80	50	0.5	74.0
CAT 420D Rubber Tire Backhoe	3	1	70	50	0.5	64.0
CAT 816K Self-driving Compactor	3	1	75	50	0.5	69.0
JD 644E Loader	3	1	75	50	0.5	69.0
					Worst-Case Aggregate Sum @ 50 Ft. (Σ):	**78.4**
					Leq_h at Receptor Area 180-Feet Distant:	**64.5**

Source: EPA PB 206717, Environmental Protection Agency, 12/31/71, "Noise from Construction Equipment and Operations"

FIGURE 9a: Expected Construction Noise Exposure Map (ISE 6/18)

FIGURE 9b: Proposed Remedial Construction Mitigation Plan (ISE 10/18)

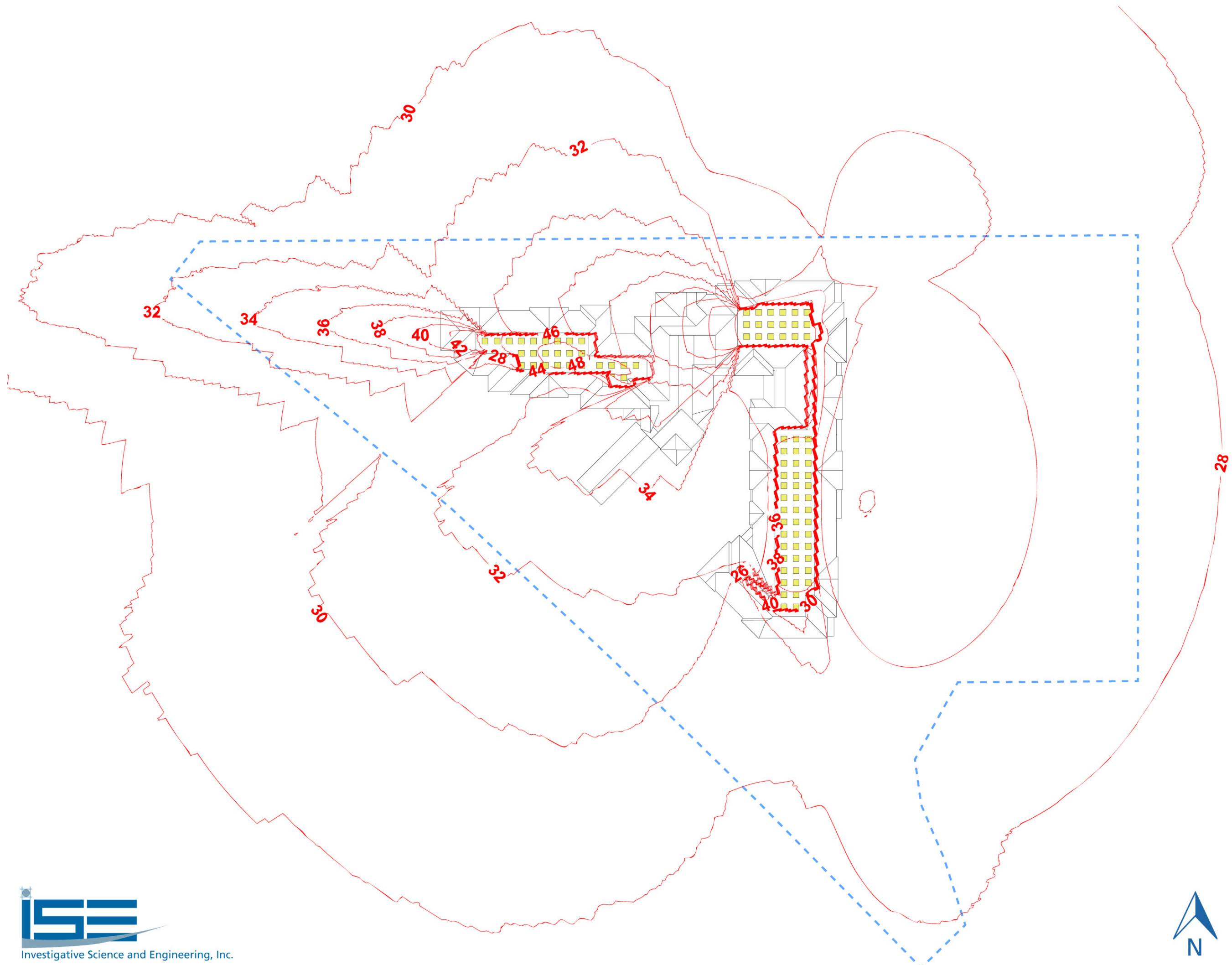


FIGURE 10: Expected HVAC Noise Exposure Contours (ISE 10/18)

Future Roadway Segment Noise Impacts

The results showing the effect of traffic noise increases on the various servicing roadway segments associated with the proposed Escondido Assisted Living Facility are presented in Tables 6a through –f starting on the following page. A comparison matrix of the various scenarios examined is shown in Table 6g on Page 33.

For each roadway segment examined, the worst case average daily traffic volume (ADT) and observed/predicted speeds are shown, along with the corresponding reference noise level at 50-feet (in dBA). Additionally, the line-of-sight distance from the roadway centerline to the 60, 65, and 75 dBA CNEL contours are provided as an indication of the worst-case unobstructed theoretical traffic noise contour placement.

As can be seen, the worst-case traffic noise condition is expected to occur on Center City Parkway in the vicinity of Iris Lane and El Norte Parkway by a worst case 0.1 dBA CNEL under the existing condition scenario. This would not be deemed impactive to the surrounding land uses under City of Escondido Municipal Code Chapter 33, Article 47, Environmental Quality Regulations.

Future Traffic Noise Impacts to Proposed Development

Traffic noise predominately affecting the proposed Escondido Assisted Living Facility is currently, and would continue to be, the aggregation of surface street traffic along Center City Parkway. This roadway has a maximum unposted travel speed of 65 MPH and a future Year 2030 predicted average daily traffic (ADT) volume of 22,822 ADT.[16] To a lesser extent, Iris Lane is projected as having a future traffic volume of 7,464 ADT with a maximum travel speed of 35 MPH.[17]

Table 7, on Page 34 of this report, identified the TNM receptor locations previously shown in Figure 8 on Page 18, and whether or not mitigation measures are indicated. The complete model runs are provided as an attachment to this report. Based upon the findings, no proposed exterior use areas would exceed the City's 65 dBA CNEL noise abatement threshold and require mitigation.

All façade areas examined were found to exceed the CCR Title 24 noise abatement threshold of 60 dBA CNEL and would require enhanced architectural treatments to ensure interior (closed window) mitigation to 45 dBA CNEL.

[16] This equates to the following peak hour estimates of traffic flow: LDA/LDT = 1614, MDT = 117, HDT = 86, UBUS = 1, and, MCY = 9.

[17] This equates to the following peak hour estimates of traffic flow: LDA/LDT = 528, MDT = 38, HDT = 28, UBUS = 1, and, MCY = 3.

TABLE 6a: Existing Segment Noise Conditions

Roadway	Segment	LOS	ADT	Speed (MPH)	SPL	75 dBA CNEL Contour Distance in Feet	65 dBA CNEL Contour Distance in Feet	60 dBA CNEL Contour Distance in Feet
Centre City Parkway	Country Club Ln to Iris Ln	B	14,407	65	74.7	52.8	49.7	47.6
	Iris Ln to El Norte Pkwy	B	17,018	65	75.5	52.9	49.8	47.6
	El Norte Pkwy to Decatur Wy	C	25,648	65	77.2	53.2	49.9	47.7
	Decatur Wy to SR-78	D	28,297	65	77.7	53.2	50.0	47.7
El Norte Parkway	Iris Ln to Centre City Pkwy	B	25,152	45	73.4	51.0	49.3	47.4
	Centre City Pkwy to Broadway Blvd	D	27,858	45	73.9	51.1	49.3	47.4
Iris Lane	Country Club to Centre City Pkwy	C	8,996	35	66.6	48.9	48.4	47.0
	Centre City Pkwy to El Norte Pkwy	B	6,546	35	65.2	48.6	48.3	47.0

SPL values shown in dBA CNEL

TABLE 6b: Existing + Project Segment Noise Conditions

Roadway	Segment	LOS	ADT	Speed (MPH)	SPL	75 dBA CNEL Contour Distance in Feet	65 dBA CNEL Contour Distance in Feet	60 dBA CNEL Contour Distance in Feet
Centre City Parkway	Country Club Ln to Iris Ln	B	14,482	65	74.8	52.8	49.7	47.6
	Iris Ln to El Norte Pkwy	B	17,268	65	75.5	52.9	49.8	47.6
	El Norte Pkwy to Decatur Wy	C	25,673	65	77.2	53.2	49.9	47.7
	Decatur Wy to SR-78	D	28,322	65	77.7	53.2	50.0	47.7
El Norte Parkway	Iris Ln to Centre City Pkwy	B	25,239	45	73.4	51.0	49.3	47.4
	Centre City Pkwy to Broadway Blvd	D	27,883	45	73.9	51.1	49.3	47.4
Iris Lane	Country Club to Centre City Pkwy	C	9,008	35	66.6	48.9	48.4	47.0
	Centre City Pkwy to El Norte Pkwy	B	6,571	35	65.3	48.6	48.3	47.0

SPL values shown in dBA CNEL

TABLE 6c: Existing + Cumulative Segment Noise Conditions

Roadway	Segment	LOS	ADT	Speed (MPH)	SPL	75 dBA CNEL Contour Distance in Feet	65 dBA CNEL Contour Distance in Feet	60 dBA CNEL Contour Distance in Feet
Centre City Parkway	Country Club Ln to Iris Ln	B	15,102	65	74.9	52.8	49.7	47.6
	Iris Ln to El Norte Pkwy	B	17,739	65	75.6	52.9	49.8	47.6
	El Norte Pkwy to Decatur Wy	C	26,758	65	77.4	53.2	49.9	47.7
	Decatur Wy to SR-78	D	29,407	65	77.8	53.2	50.0	47.7
El Norte Parkway	Iris Ln to Centre City Pkwy	B	26,120	45	73.6	51.0	49.3	47.4
	Centre City Pkwy to Broadway Blvd	D	28,940	45	74.0	51.1	49.3	47.4
Iris Lane	Country Club to Centre City Pkwy	C	9,144	35	66.7	48.9	48.5	47.0
	Centre City Pkwy to El Norte Pkwy	B	6,826	35	65.4	48.7	48.3	47.0

SPL values shown in dBA CNEL

TABLE 6d: Existing + Cumulative + Project Segment Noise Conditions

Roadway	Segment	LOS	ADT	Speed (MPH)	SPL	75 dBA CNEL Contour Distance in Feet	65 dBA CNEL Contour Distance in Feet	60 dBA CNEL Contour Distance in Feet
Centre City Parkway	Country Club Ln to Iris Ln	B	15,177	65	75.0	52.8	49.7	47.6
	Iris Ln to El Norte Pkwy	B	17,989	65	75.7	52.9	49.8	47.6
	El Norte Pkwy to Decatur Wy	C	26,783	65	77.4	53.2	49.9	47.7
	Decatur Wy to SR-78	D	29,432	65	77.8	53.2	50.0	47.7
El Norte Parkway	Iris Ln to Centre City Pkwy	B	26,207	45	73.6	51.0	49.3	47.4
	Centre City Pkwy to Broadway Blvd	D	28,965	45	74.0	51.1	49.3	47.4
Iris Lane	Country Club to Centre City Pkwy	C	9,156	35	66.7	48.9	48.5	47.0
	Centre City Pkwy to El Norte Pkwy	B	6,851	35	65.4	48.7	48.3	47.0

SPL values shown in dBA CNEL

TABLE 6e: Year 2035 Build Out Segment Noise Conditions

Roadway	Segment	LOS	ADT	Speed (MPH)	SPL	75 dBA CNEL Contour Distance in Feet	65 dBA CNEL Contour Distance in Feet	60 dBA CNEL Contour Distance in Feet
Centre City Parkway	Country Club Ln to Iris Ln	B	18,200	65	75.7	52.9	49.8	47.6
	Iris Ln to El Norte Pkwy	C	23,600	65	76.9	53.1	49.9	47.7
	El Norte Pkwy to Decatur Wy	D	32,800	65	78.3	53.3	50.0	47.7
	Decatur Wy to SR-78	D	32,800	65	78.3	53.3	50.0	47.7
El Norte Parkway	Iris Ln to Centre City Pkwy	C	35,700	45	74.9	51.2	49.4	47.4
	Centre City Pkwy to Broadway Blvd	D	39,200	45	75.3	51.3	49.5	47.4
Iris Lane	Country Club to Centre City Pkwy	C	8,400	35	66.3	48.8	48.4	47.0
	Centre City Pkwy to El Norte Pkwy	F	20,400	35	70.2	49.4	48.8	47.1

SPL values shown in dBA CNEL

TABLE 6f: Year 2035 Build Out + Project Segment Noise Conditions

Roadway	Segment	LOS	ADT	Speed (MPH)	SPL	75 dBA CNEL Contour Distance in Feet	65 dBA CNEL Contour Distance in Feet	60 dBA CNEL Contour Distance in Feet
Centre City Parkway	Country Club Ln to Iris Ln	B	18,275	65	75.8	52.9	49.8	47.6
	Iris Ln to El Norte Pkwy	C	23,850	65	76.9	53.1	49.9	47.7
	El Norte Pkwy to Decatur Wy	D	32,825	65	78.3	53.3	50.0	47.7
	Decatur Wy to SR-78	D	32,825	65	78.3	53.3	50.0	47.7
El Norte Parkway	Iris Ln to Centre City Pkwy	C	35,787	45	74.9	51.2	49.4	47.4
	Centre City Pkwy to Broadway Blvd	D	39,225	45	75.3	51.3	49.5	47.4
Iris Lane	Country Club to Centre City Pkwy	C	8,412	35	66.3	48.8	48.4	47.0
	Centre City Pkwy to El Norte Pkwy	F	20,425	35	70.2	49.4	48.8	47.1

SPL values shown in dBA CNEL

TABLE 6g: Project Noise Comparison (All Scenarios)

Roadway	Segment	Existing + Project *minus* Existing Conditions SPL	Cumulative + Project *minus* Cumulative Conditions SPL	Year 2035 + Project *minus* Year 2035 Baseline SPL
Centre City Parkway	Country Club Ln to Iris Ln	0.1	0.1	0.1
	Iris Ln to El Norte Pkwy	0.0	0.1	0.0
	El Norte Pkwy to Decatur Wy	0.0	0.0	0.0
	Decatur Wy to SR-78	0.0	0.0	0.0
El Norte Parkway	Iris Ln to Centre City Pkwy	0.0	0.0	0.0
	Centre City Pkwy to Broadway Blvd	0.0	0.0	0.0
Iris Lane	Country Club to Centre City Pkwy	0.0	0.0	0.0
	Centre City Pkwy to El Norte Pkwy	0.1	0.0	0.0

SPL values shown in dBA CNEL

TABLE 7: Predicted Future Exterior Noise Levels

TNM Receptor ID from Figure 7	Unmitigated First Floor Levels in dBA	Unmitigated Second Floor Levels in dBA	Unmitigated Third Floor Levels in dBA	General Plan *Exterior* Mitigation Required?	First Floor CCR Title 24 *Interior* Mitigation Required?	Second Floor CCR Title 24 *Interior* Mitigation Required?	Third Floor CCR Title 24 *Interior* Mitigation Required?	Comments
R1	65.5	67.7	71.2	-	Y	Y	Y	Building Façade Area
R2	65.4	67.9	71.0	-	Y	Y	Y	Building Façade Area
R3	66.2	68.6	70.8	-	Y	Y	Y	Building Façade Area
R4	66.4	66.1	70.1	-	Y	Y	Y	Building Façade Area
R5	66.5	66.3	69.9	-	Y	Y	Y	Building Façade Area
R6	66.0	67.0	68.3	-	Y	Y	Y	Building Façade Area
R7	64.9	65.5	67.0	-	Y	Y	Y	Building Façade Area
R8	66.0	67.3	68.6	-	Y	Y	Y	Building Façade Area
R9	66.3	68.7	70.1	-	Y	Y	Y	Building Façade Area
R10	68.0	68.1	71.4	-	Y	Y	Y	Building Façade Area
R11	68.8	70.5	71.4	-	Y	Y	Y	Building Façade Area
R12	68.5	69.8	70.4	-	Y	Y	Y	Building Façade Area
R13	66.4	67.5	67.6	-	Y	Y	Y	Building Façade Area
R14	64.9	65.5	65.8	N	Y	Y	Y	Façade / Seating & Viewing Area
R15	63.7	64.3	65.3	-	Y	Y	Y	Building Façade Area
R16	64.4	65.3	66.7	-	Y	Y	Y	Building Façade Area
R17	63.9	65.4	67.0	-	Y	Y	Y	Building Façade Area
R18	63.6	65.7	67.8	-	Y	Y	Y	Building Façade Area
R19	63.9	66.1	68.6	-	Y	Y	Y	Building Façade Area
R20	65.3	67.2	70.6	-	Y	Y	Y	Building Façade Area

SPL values shown in dBA CNEL

CCR Title 24 Interior Noise Compliance of Proposed Development

The *ISE Architectural Acoustical Model (AAM)* was used to calculate the relative sound insulation characteristics of each construction assembly comprising the finished structure. The following general construction assumptions were applied to each structural façade to determine its sound insulation characteristics:

- The roof/ceiling construction should have a minimum STC rating of 48.
- All living spaces were assumed to have carpet and pad (i.e., Floor Multiplication Parameter or FMP = 0.75), for the purposes of STC calculation.
- Bathrooms, kitchen and dining areas, entry/foyer areas, laundry rooms, hallways, stairways, utility rooms (electrical, mechanical, etc.), storage, and closet areas are considered non-sensitive uses, and were not examined; thus, these have no construction limitations.

The surface areas and materials for the proposed project were obtained from architectural drawings prepared by Irwin Partners Architects, dated 6/18. When the interior noise level was found to be greater than 45 dBA CNEL, the value was recalculated for a closed window condition. Further recalculation was done to determine the minimum window-glazing requirement.

Construction practices may degrade the calculated acoustical performance of walls and window assembles. The interior noise levels have been predicted in accordance with generally accepted acoustical methods and assume good construction techniques.

The results of the AAM model are provided as an attachment to this report. The minimum required acoustical treatments (STC ratings) for the proposed development are summarized in Table 8 on the following page. Based upon the model results, the estimated interior noise levels would be as high as 66.1 dBA CNEL (in the third floor Activity Room), when the windows/doors are open, and would require a closed window condition to comply with the CCR Title 24 requirements. Mechanical ventilation would be required per CCR Title 24, and should meet specific City of Escondido building department requirements.

Pursuant with City of Escondido building department practices, the indicated minimum required STC ratings should be incorporated into the architectural door and window schedule of the project plans and submitted with a copy of this report. These measures would reduce interior noise to final maximum closed-window levels of 44.9 dBA CNEL (in the AL-1a and AL-1c bedrooms). As-built architectural assemblies with a higher STC rating than those indicated would also be acceptable from a building compliance standpoint.

TABLE 8: Minimum Acoustical Assembly Requirements

Unit Plan	Building Element Assembly	Minimum Required STC Rating
All Rooms	Roof / Ceiling Assembly	48
All Rooms	Wall Assembly	46
All Rooms	All Solid Door Assemblies	27
All Rooms	All French Glass Door Assemblies	26
Third Floor Activity Room	Glass Window Assemblies	30
Floor Plan AL-2b: Bedroom 2	Glass Window Assemblies	28
Floor Plans AL-0a, AL-0b, AL-0c	Glass Window Assemblies	27
Floor Plan AL-1a: Bedroom	Glass Window Assemblies	27
First Floor Cards Room	Glass Window Assemblies	27
Second Floor Wellness Room	Glass Window Assemblies	24
Floor Plan AL-1b: Living Room	Glass Window Assemblies	24
All Other Rooms (in all floor plans)	Glass Window Assemblies	26

Source: ISE Architectural Acoustical Model (AAM) v3.0

CERTIFICATION OF ACCURACY AND QUALIFICATIONS

This report was prepared by Investigative Science and Engineering, Inc. (ISE). The members of its professional staff contributing to the report are listed below:

Rick Tavares *(rtavares@ise.us)*	Ph.D. Civil Engineering M.S. Structural Engineering M.S. Mechanical Engineering B.S. Aerospace Engineering / Engineering Mechanics
Karen Tavares *(ktavares@ise.us)*	B.S. Electrical Engineering

ISE affirms to the best of its knowledge and belief that the statements and information contained herein are in all respects true and correct as of the date of this report. Content and information contained within this report is intended only for the subject project and is protected under 17 U.S.C. §§ 101 through 810.

Should the reader have any questions regarding the findings and conclusions presented in this report, please do not hesitate to contact ISE at (760) 787-0016.

Approved as to Form and Content:

Rick Tavares, Ph.D.

Project Principal / Director of Engineering
Investigative Science and Engineering, Inc. (ISE)

APPENDICES AND SUPPLEMENTAL INFORMATION

Field Reconnaissance Measurement Results

Escondido Assisted Living Facility (ML 1)

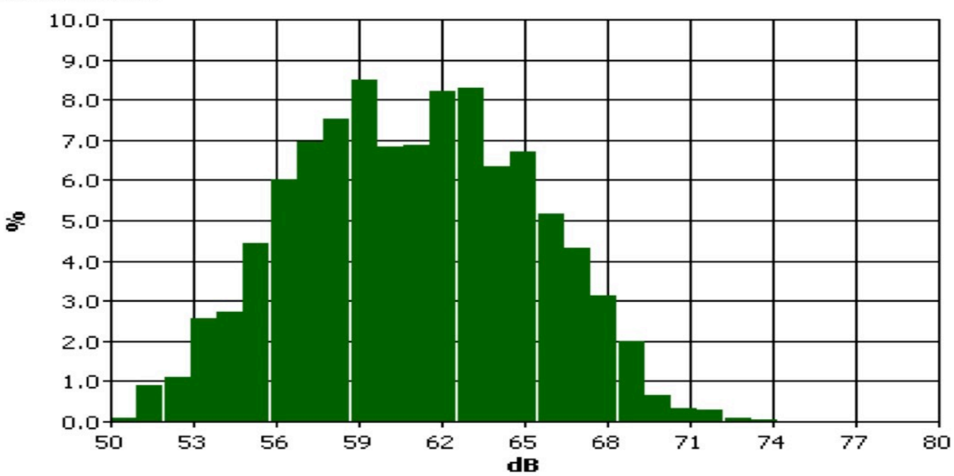
Information Panel

Name	ML 1
Start Time	Thursday, May 24, 2018 11:39:44
Stop Time	Thursday, May 24, 2018 12:39:55
Device Model Type	SoundPro DL
Comments	

General Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	63.4 dB	Exchange Rate	1	3 dB
Weighting	1	A	Response	1	SLOW
Bandwidth	1	OFF	Exchange Rate	2	3 dB
Weighting	2	C	Response	2	FAST

Statistics Chart



Statistics Table

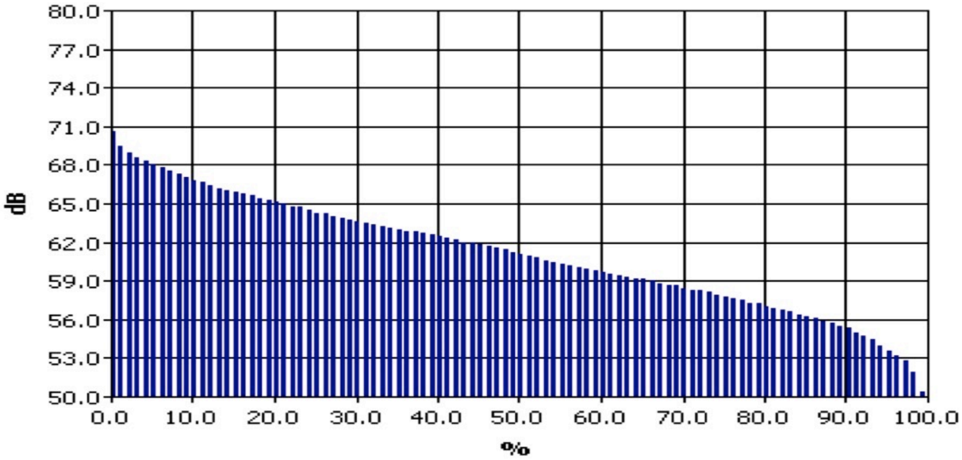
dB	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
51.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.2	0.9
52.0	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	1.1
53.0	0.1	0.2	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	2.6
54.0	0.3	0.3	0.2	0.3	0.2	0.2	0.3	0.3	0.3	0.3	2.7
55.0	0.4	0.3	0.4	0.3	0.4	0.5	0.5	0.6	0.6	0.5	4.4
56.0	0.5	0.6	0.6	0.6	0.6	0.5	0.6	0.5	0.7	0.8	6.0
57.0	0.8	0.8	0.5	0.6	0.6	0.6	0.7	0.7	0.8	0.8	6.9
58.0	0.7	0.6	0.7	0.8	0.8	0.8	0.7	0.8	0.8	0.8	7.5
59.0	0.7	0.8	0.9	0.9	0.8	0.8	0.9	1.0	0.8	0.8	8.5
60.0	0.9	0.7	0.6	0.8	0.7	0.6	0.7	0.6	0.7	0.6	6.8
61.0	0.6	0.6	0.6	0.7	0.7	0.6	0.6	0.7	0.9	0.9	6.9
62.0	1.0	0.8	0.8	0.8	0.7	0.7	0.8	0.7	0.9	1.0	8.2
63.0	1.0	1.0	0.6	0.9	0.9	1.0	0.8	0.7	0.7	0.7	8.3
64.0	0.6	0.6	0.6	0.7	0.7	0.6	0.6	0.6	0.7	0.7	6.4
65.0	0.6	0.7	0.7	0.7	0.6	0.7	0.7	0.7	0.6	0.7	6.7
66.0	0.7	0.6	0.4	0.6	0.6	0.6	0.5	0.4	0.4	0.4	5.2
67.0	0.5	0.5	0.3	0.4	0.5	0.4	0.4	0.3	0.4	0.5	4.3
68.0	0.4	0.4	0.3	0.3	0.3	0.3	0.4	0.3	0.2	0.4	3.1
69.0	0.3	0.3	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.3	2.0
70.0	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.7
71.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
72.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.3
73.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
74.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
76.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
78.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

1

Statistics Table (cont'd)

dB	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
79.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Exceedance Chart



Exceedance Table

	0%	1%	2%	3%	4%	5%	6%	7%	8%	9%
0%		70.6	69.5	69.0	68.6	68.3	68.0	67.8	67.5	67.3
10%	67.0	66.8	66.6	66.4	66.2	66.0	65.9	65.7	65.6	65.4
20%	65.3	65.1	65.0	64.8	64.7	64.5	64.3	64.2	64.0	63.9
30%	63.7	63.6	63.5	63.4	63.2	63.1	63.0	62.9	62.8	62.7
40%	62.6	62.4	62.3	62.2	62.0	61.9	61.8	61.7	61.6	61.4
50%	61.2	61.1	60.9	60.8	60.6	60.4	60.3	60.2	60.0	59.9
60%	59.8	59.6	59.5	59.4	59.3	59.2	59.1	59.0	58.8	58.7
70%	58.6	58.4	58.3	58.2	58.1	57.9	57.8	57.6	57.5	57.3
80%	57.2	57.0	56.9	56.7	56.6	56.4	56.2	56.1	55.9	55.7
90%	55.5	55.3	55.0	54.7	54.4	54.0	53.6	53.2	52.8	51.9
100%	50.4									

2

Escondido Assisted Living Facility (ML 2)

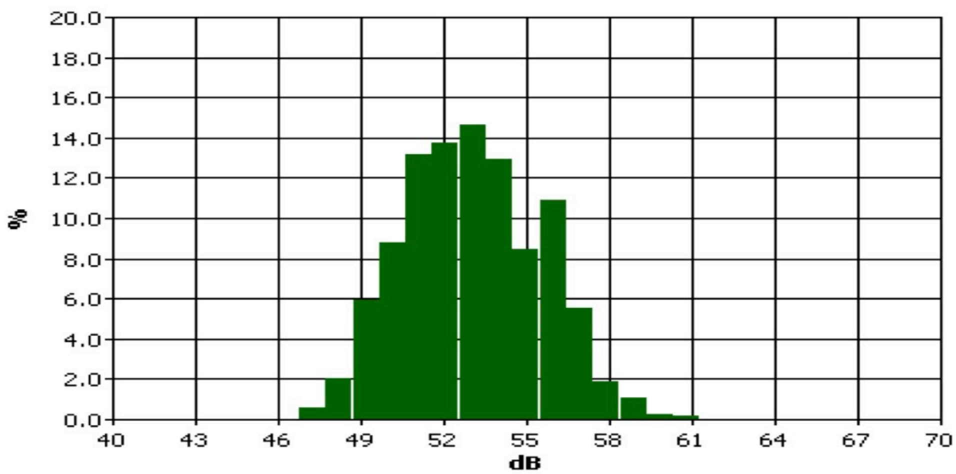
Information Panel

Name	ML 2
Start Time	Thursday, May 24, 2018 11:49:59
Stop Time	Thursday, May 24, 2018 12:49:19
Device Model Type	SoundPro DL
Comments	

General Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	54.1 dB	Exchange Rate	1	3 dB
Weighting	1	A	Response	1	SLOW
Bandwidth	1	OFF	Exchange Rate	2	3 dB
Weighting	2	C	Response	2	FAST

Statistics Chart



Statistics Table

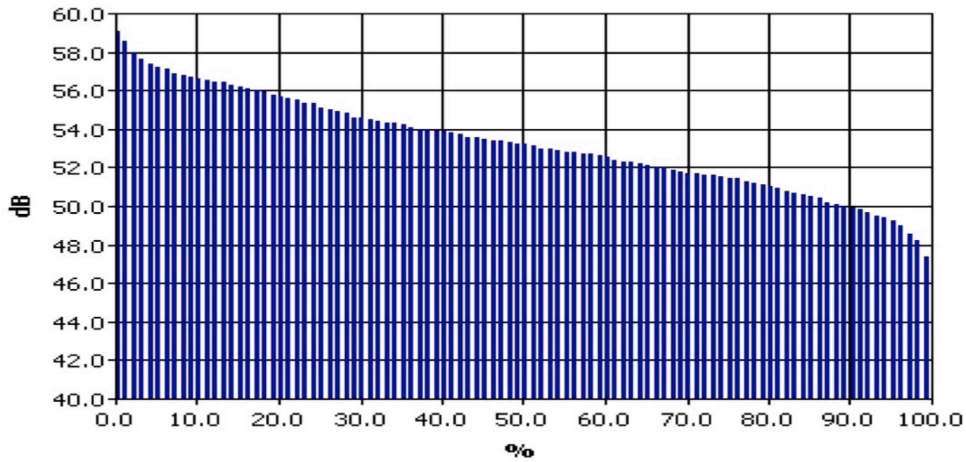
dB	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
40.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
43.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
44.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
45.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
46.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.6
48.0	0.1	0.2	0.1	0.2	0.2	0.3	0.2	0.1	0.2	0.4	2.0
49.0	0.3	0.3	0.4	0.4	0.7	0.7	0.7	0.7	0.7	0.9	5.9
50.0	1.0	0.9	0.7	1.0	0.8	0.6	0.6	1.1	1.1	1.0	8.8
51.0	1.2	1.1	0.7	1.3	1.3	1.6	1.5	1.4	1.6	1.4	13.2
52.0	1.4	1.3	1.5	1.4	1.3	1.2	1.1	1.3	1.6	1.7	13.7
53.0	1.8	1.6	1.4	1.3	1.5	1.4	1.7	1.4	1.2	1.3	14.7
54.0	1.6	1.9	1.2	1.5	1.1	1.4	1.4	1.1	1.0	0.8	13.0
55.0	0.8	0.8	0.7	0.8	1.1	0.9	0.9	0.8	0.9	0.8	8.5
56.0	1.0	1.2	0.9	1.1	1.3	1.2	1.2	1.0	1.1	0.9	10.9
57.0	0.9	0.8	0.4	0.8	0.7	0.7	0.5	0.3	0.3	0.2	5.5
58.0	0.2	0.2	0.3	0.1	0.1	0.1	0.2	0.3	0.2	0.2	1.9
59.0	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.0	1.1
60.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.2
61.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
62.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
63.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
64.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
65.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
66.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
68.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

1

Statistics Table (cont'd)

dB	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	%
69.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Exceedance Chart

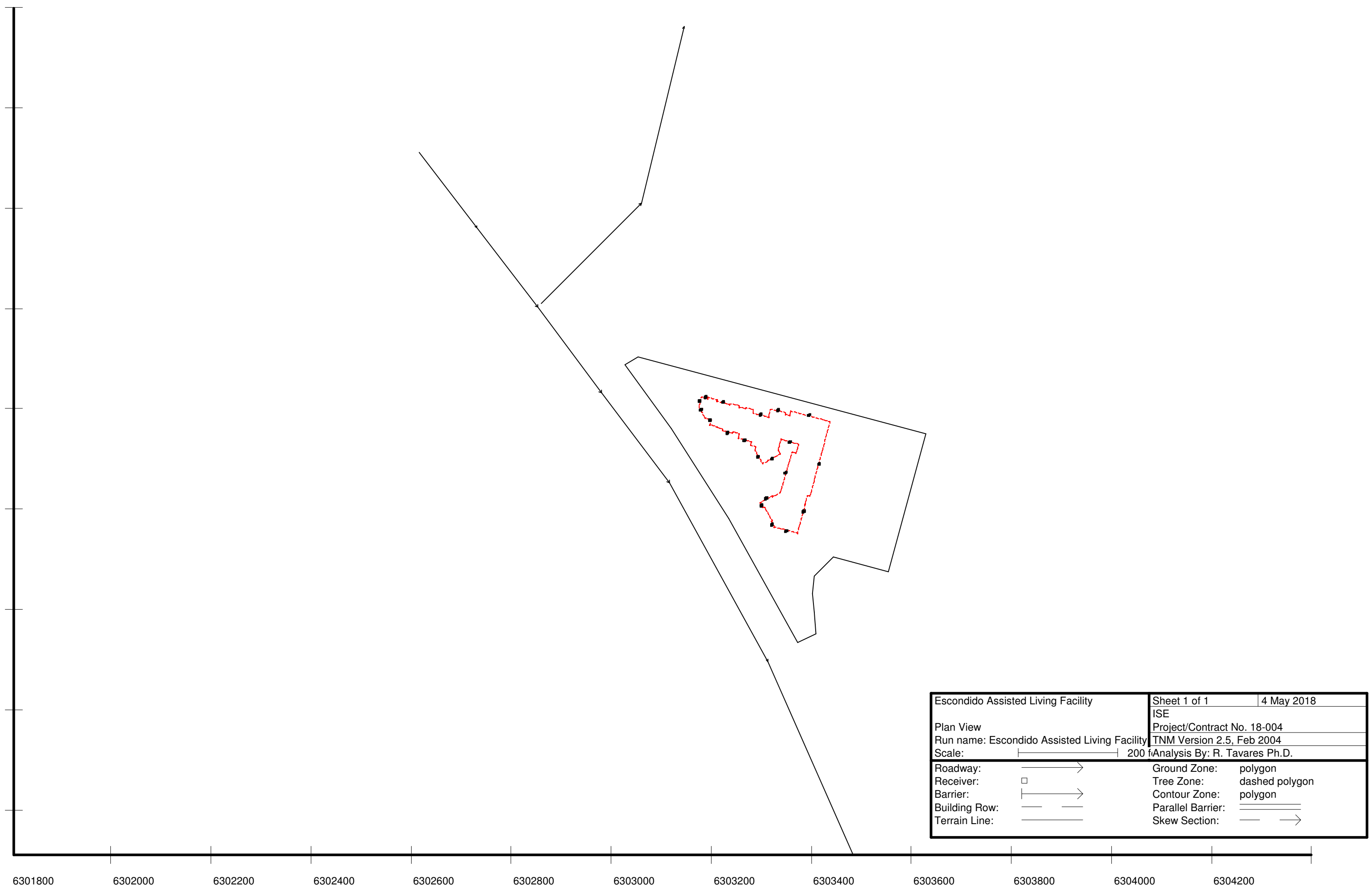


Exceedance Table

	0%	1%	2%	3%	4%	5%	6%	7%	8%	9%
0%		59.1	58.6	58.0	57.6	57.4	57.2	57.1	56.9	56.8
10%	56.7	56.6	56.5	56.4	56.4	56.3	56.2	56.1	56.0	55.9
20%	55.8	55.7	55.6	55.5	55.3	55.3	55.1	55.0	54.9	54.8
30%	54.6	54.6	54.5	54.4	54.3	54.3	54.2	54.1	54.0	54.0
40%	53.9	53.9	53.8	53.7	53.6	53.6	53.5	53.4	53.4	53.3
50%	53.2	53.2	53.1	53.0	53.0	52.9	52.8	52.8	52.7	52.7
60%	52.6	52.5	52.4	52.3	52.3	52.2	52.1	52.0	52.0	51.9
70%	51.8	51.7	51.7	51.6	51.6	51.5	51.4	51.4	51.3	51.2
80%	51.1	51.0	50.9	50.8	50.7	50.6	50.5	50.4	50.2	50.1
90%	50.0	49.9	49.8	49.7	49.5	49.4	49.2	49.0	48.6	48.2
100%	47.4									

2

TNM 2.5 Traffic Noise Prediction Model Input/Output Data



INPUT: ROADWAYS **18-004**

ISE					**25 September 2018**						
R. Tavares Ph.D.					**TNM 2.5**						
INPUT: ROADWAYS							**Average pavement type shall be used unless**				
PROJECT/CONTRACT:	**18-004**						**a State highway agency substantiates the use**				
RUN:	**EALF - RUN #2 (65 MPH MAX)**						**of a different type with the approval of FHWA**				
Roadway		**Points**									
Name	**Width**	**Name**	**No.**	**Coordinates (pavement)**			**Flow Control**			**Segment**	
				X	**Y**	**Z**	**Control Device**	**Speed Constraint**	**Percent Vehicles Affected**	**Pvmt Type**	**On Struct?**
	ft			ft	ft	ft		mph	%		
CENTER CITY PARKWAY	100.0	CCP1	136	6,302,416.0	2,000,112.0	739.20				Average	
		CCP2	137	6,302,531.0	1,999,962.0	728.60				Average	
		CCP3	138	6,302,652.0	1,999,804.0	725.90				Average	
		CCP4	139	6,302,779.0	1,999,634.0	726.70				Average	
		CCP5	140	6,302,915.0	1,999,454.0	722.40				Average	
		CCP6	141	6,303,112.0	1,999,098.0	696.40				Average	
		CCP7	142	6,303,292.0	1,998,691.0	688.30					
N. IRIS LN	40.0	NI1	143	6,302,659.0	1,999,812.0	725.00				Average	
		NI2	144	6,302,859.0	2,000,011.0	708.20				Average	
		NI3	145	6,302,944.0	2,000,364.0	709.90					

INPUT: TRAFFIC FOR LAeq1h Volumes **18-004**

ISE			**25 September 2018**										
R. Tavares Ph.D.			**TNM 2.5**										
INPUT: TRAFFIC FOR LAeq1h Volumes													
PROJECT/CONTRACT:	**18-004**												
RUN:	**EALF - RUN #2 (65 MPH MAX)**												
Roadway	**Points**												
Name	**Name**	**No.**	**Segment**										
			Autos		**MTrucks**		**HTrucks**		**Buses**		**Motorcycles**		
			V	**S**	**V**	**S**	**V**	**S**	**V**	**S**	**V**	**S**	
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	
CENTER CITY PARKWAY	CCP1	136	1614	65	117	65	86	65	1	65	9	65	
	CCP2	137	1614	65	117	65	86	65	1	65	9	65	
	CCP3	138	1614	65	117	65	86	65	1	65	9	65	
	CCP4	139	1614	65	117	65	86	65	1	65	9	65	
	CCP5	140	1614	65	117	65	86	65	1	65	9	65	
	CCP6	141	1614	65	117	65	86	65	1	65	9	65	
	CCP7	142											
N. IRIS LN	NI1	143	528	35	38	35	28	30	1	30	3	35	
	NI2	144	528	35	38	35	28	30	1	30	3	35	
	NI3	145											

INPUT: RECEIVERS **18-004**

ISE						**25 September 2018**					
R. Tavares Ph.D.						**TNM 2.5**					
INPUT: RECEIVERS											
PROJECT/CONTRACT:	**18-004**										
RUN:	**EALF - RUN #2 (65 MPH MAX)**										
Receiver											
Name	**No.**	**#DUs**	**Coordinates (ground)**			**Height**	**Input Sound Levels and Criteria**				**Active**
			X	**Y**	**Z**	**above Ground**	**Existing LAeq1h**	**Impact Criteria LAeq1h**	**Sub'l**	**NR Goal**	**in Calc.**
			ft	ft	ft	ft	dBA	dBA	dB	dB	
R1 (FLOOR 1)	950	1	6,302,978.0	1,999,600.0	700.00	5.00	0.00	65	10.0	8.0	Y
R2 (FLOOR 1)	951	1	6,302,996.0	1,999,579.0	700.00	5.00	0.00	65	10.0	8.0	Y
R3 (FLOOR 1)	952	1	6,303,031.0	1,999,554.0	700.00	5.00	0.00	65	10.0	8.0	Y
R4 (FLOOR 1)	953	1	6,303,065.0	1,999,539.0	700.00	5.00	0.00	65	10.0	8.0	Y
R5 (FLOOR 1)	954	1	6,303,092.0	1,999,506.0	700.00	5.00	0.00	65	10.0	8.0	Y
R6 (FLOOR 1)	955	1	6,303,120.0	1,999,502.0	700.00	5.00	0.00	65	10.0	8.0	Y
R7 (FLOOR 1)	956	1	6,303,155.0	1,999,535.0	700.00	5.00	0.00	65	10.0	8.0	Y
R8 (FLOOR 1)	957	1	6,303,147.0	1,999,474.0	700.00	5.00	0.00	65	10.0	8.0	Y
R9 (FLOOR 1)	958	1	6,303,108.0	1,999,423.0	700.00	5.00	0.00	65	10.0	8.0	Y
R10 (FLOOR 1)	959	1	6,303,099.0	1,999,409.0	700.00	5.00	0.00	65	10.0	8.0	Y
R11 (FLOOR 1)	960	1	6,303,120.0	1,999,371.0	700.00	5.00	0.00	65	10.0	8.0	Y
R12 (FLOOR 1)	961	1	6,303,148.0	1,999,358.0	700.00	5.00	0.00	65	10.0	8.0	Y
R13 (FLOOR 1)	962	1	6,303,183.0	1,999,397.0	700.00	5.00	0.00	65	10.0	8.0	Y
R14 (FLOOR 1)	963	1	6,303,214.0	1,999,492.0	700.00	5.00	0.00	65	10.0	8.0	Y
R15 (FLOOR 1)	964	1	6,303,194.0	1,999,589.0	700.00	5.00	0.00	65	10.0	8.0	Y
R16 (FLOOR 1)	965	1	6,303,132.0	1,999,599.0	700.00	5.00	0.00	65	10.0	8.0	Y
R17 (FLOOR 1)	966	1	6,303,097.0	1,999,590.0	700.00	5.00	0.00	65	10.0	8.0	Y
R18 (FLOOR 1)	967	1	6,303,022.0	1,999,615.0	700.00	5.00	0.00	65	10.0	8.0	Y
R19 (FLOOR 1)	968	1	6,302,987.0	1,999,625.0	700.00	5.00	0.00	65	10.0	8.0	Y
R20 (FLOOR 1)	969	1	6,302,975.0	1,999,617.0	700.00	5.00	0.00	65	10.0	8.0	Y
R1 (FLOOR 2)	971	1	6,302,979.0	1,999,601.0	710.00	5.00	0.00	65	10.0	8.0	Y
R2 (FLOOR 2)	972	1	6,302,997.0	1,999,580.0	710.00	5.00	0.00	65	10.0	8.0	Y

INPUT: RECEIVERS **18-004**

R3 (FLOOR 2)	973	1	6,303,032.0	1,999,555.0	710.00	5.00	0.00	65	10.0	8.0	Y
R4 (FLOOR 2)	974	1	6,303,066.0	1,999,540.0	710.00	5.00	0.00	65	10.0	8.0	Y
R5 (FLOOR 2)	975	1	6,303,093.0	1,999,507.0	710.00	5.00	0.00	65	10.0	8.0	Y
R6 (FLOOR 2)	976	1	6,303,121.0	1,999,503.0	710.00	5.00	0.00	65	10.0	8.0	Y
R7 (FLOOR 2)	977	1	6,303,156.0	1,999,536.0	710.00	5.00	0.00	65	10.0	8.0	Y
R8 (FLOOR 2)	978	1	6,303,148.0	1,999,475.0	710.00	5.00	0.00	65	10.0	8.0	Y
R9 (FLOOR 2)	979	1	6,303,109.0	1,999,424.0	710.00	5.00	0.00	65	10.0	8.0	Y
R10 (FLOOR 2)	980	1	6,303,100.0	1,999,410.0	710.00	5.00	0.00	65	10.0	8.0	Y
R11 (FLOOR 2)	981	1	6,303,121.0	1,999,372.0	710.00	5.00	0.00	65	10.0	8.0	Y
R12 (FLOOR 2)	982	1	6,303,149.0	1,999,359.0	710.00	5.00	0.00	65	10.0	8.0	Y
R13 (FLOOR 2)	983	1	6,303,184.0	1,999,398.0	710.00	5.00	0.00	65	10.0	8.0	Y
R14 (FLOOR 2)	984	1	6,303,215.0	1,999,493.0	710.00	5.00	0.00	65	10.0	8.0	Y
R15 (FLOOR 2)	985	1	6,303,195.0	1,999,590.0	710.00	5.00	0.00	65	10.0	8.0	Y
R16 (FLOOR 2)	986	1	6,303,133.0	1,999,600.0	710.00	5.00	0.00	65	10.0	8.0	Y
R17 (FLOOR 2)	987	1	6,303,098.0	1,999,591.0	710.00	5.00	0.00	65	10.0	8.0	Y
R18 (FLOOR 2)	988	1	6,303,023.0	1,999,616.0	710.00	5.00	0.00	65	10.0	8.0	Y
R19 (FLOOR 2)	989	1	6,302,988.0	1,999,626.0	710.00	5.00	0.00	65	10.0	8.0	Y
R20 (FLOOR 2)	990	1	6,302,976.0	1,999,618.0	710.00	5.00	0.00	65	10.0	8.0	Y
R1 (FLOOR 3)	991	1	6,302,977.0	1,999,599.0	720.00	5.00	0.00	65	10.0	8.0	Y
R2 (FLOOR 3)	992	1	6,302,995.0	1,999,578.0	720.00	5.00	0.00	65	10.0	8.0	Y
R3 (FLOOR 3)	993	1	6,303,030.0	1,999,553.0	720.00	5.00	0.00	65	10.0	8.0	Y
R4 (FLOOR 3)	994	1	6,303,064.0	1,999,538.0	720.00	5.00	0.00	65	10.0	8.0	Y
R5 (FLOOR 3)	995	1	6,303,091.0	1,999,505.0	720.00	5.00	0.00	65	10.0	8.0	Y
R6 (FLOOR 3)	996	1	6,303,119.0	1,999,501.0	720.00	5.00	0.00	65	10.0	8.0	Y
R7 (FLOOR 3)	997	1	6,303,154.0	1,999,534.0	720.00	5.00	0.00	65	10.0	8.0	Y
R8 (FLOOR 3)	998	1	6,303,146.0	1,999,473.0	720.00	5.00	0.00	65	10.0	8.0	Y
R9 (FLOOR 3)	999	1	6,303,107.0	1,999,422.0	720.00	5.00	0.00	65	10.0	8.0	Y
R10 (FLOOR 3)	1000	1	6,303,098.0	1,999,408.0	720.00	5.00	0.00	65	10.0	8.0	Y
R11 (FLOOR 3)	1001	1	6,303,119.0	1,999,370.0	720.00	5.00	0.00	65	10.0	8.0	Y
R12 (FLOOR 3)	1002	1	6,303,147.0	1,999,357.0	720.00	5.00	0.00	65	10.0	8.0	Y
R13 (FLOOR 3)	1003	1	6,303,182.0	1,999,396.0	720.00	5.00	0.00	65	10.0	8.0	Y
R14 (FLOOR 3)	1004	1	6,303,213.0	1,999,491.0	720.00	5.00	0.00	65	10.0	8.0	Y
R15 (FLOOR 3)	1005	1	6,303,193.0	1,999,588.0	720.00	5.00	0.00	65	10.0	8.0	Y
R16 (FLOOR 3)	1006	1	6,303,131.0	1,999,598.0	720.00	5.00	0.00	65	10.0	8.0	Y
R17 (FLOOR 3)	1008	1	6,303,096.0	1,999,589.0	720.00	5.00	0.00	65	10.0	8.0	Y

C:\TNM25\Escondido Assisted Living Facility **2** **2**

INPUT: RECEIVERS **18-004**

R18 (FLOOR 3)	1009	1	6,303,021.0	1,999,614.0	720.00	5.00	0.00	65	10.0	8.0	Y
R19 (FLOOR 3)	1010	1	6,302,986.0	1,999,624.0	720.00	5.00	0.00	65	10.0	8.0	Y
R20 (FLOOR 3)	1011	1	6,302,974.0	1,999,616.0	720.00	5.00	0.00	65	10.0	8.0	Y

INPUT: BUILDING ROWS **18-004**

ISE					**25 September 2018**	
R. Tavares Ph.D.					**TNM 2.5**	
INPUT: BUILDING ROWS						
PROJECT/CONTRACT:	**18-004**					
RUN:	**EALF - RUN #2 (65 MPH MAX)**					
Building Row			**Points**			
Name	**Average**	**Building**	**No.**	**Coordinates (ground)**		
	Height	**Percent**		**X**	**Y**	**Z**
	ft	%		ft	ft	ft
ONSITE STRUCTURE	32.00	80	1401	6,302,974.0	1,999,605.0	32.00
			1402	6,302,979.0	1,999,625.0	32.00
			1403	6,302,991.0	1,999,622.0	32.00
			1404	6,302,992.0	1,999,625.0	32.00
			1405	6,303,010.0	1,999,619.0	32.00
			1406	6,303,010.0	1,999,617.0	32.00
			1407	6,303,035.0	1,999,610.0	32.00
			1408	6,303,036.0	1,999,612.0	32.00
			1409	6,303,055.0	1,999,608.0	32.00
			1410	6,303,055.0	1,999,605.0	32.00
			1411	6,303,067.0	1,999,602.0	32.00
			1412	6,303,068.0	1,999,604.0	32.00
			1413	6,303,083.0	1,999,600.0	32.00
			1414	6,303,082.0	1,999,593.0	32.00
			1415	6,303,113.0	1,999,585.0	32.00
			1416	6,303,117.0	1,999,601.0	32.00
			1417	6,303,146.0	1,999,594.0	32.00
			1418	6,303,146.0	1,999,591.0	32.00
			1419	6,303,156.0	1,999,588.0	32.00
			1420	6,303,158.0	1,999,597.0	32.00
			1421	6,303,236.0	1,999,576.0	32.00
			1422	6,303,196.0	1,999,428.0	32.00
			1423	6,303,191.0	1,999,429.0	32.00

C:\TNM25\Escondido Assisted Living Facility **1**

INPUT: BUILDING ROWS **18-004**

			1424	6,303,171.0	1,999,354.0	32.00
			1425	6,303,125.0	1,999,366.0	32.00
			1426	6,303,119.0	1,999,378.0	32.00
			1427	6,303,120.0	1,999,379.0	32.00
			1428	6,303,105.0	1,999,406.0	32.00
			1429	6,303,102.0	1,999,405.0	32.00
			1430	6,303,097.0	1,999,415.0	32.00
			1431	6,303,120.0	1,999,428.0	32.00
			1432	6,303,121.0	1,999,426.0	32.00
			1433	6,303,137.0	1,999,435.0	32.00
			1434	6,303,160.0	1,999,516.0	32.00
			1435	6,303,168.0	1,999,514.0	32.00
			1436	6,303,173.0	1,999,531.0	32.00
			1437	6,303,138.0	1,999,541.0	32.00
			1438	6,303,132.0	1,999,519.0	32.00
			1439	6,303,136.0	1,999,512.0	32.00
			1440	6,303,101.0	1,999,492.0	32.00
			1441	6,303,086.0	1,999,519.0	32.00
			1442	6,303,087.0	1,999,526.0	32.00
			1443	6,303,077.0	1,999,529.0	32.00
			1444	6,303,079.0	1,999,536.0	32.00
			1445	6,303,052.0	1,999,544.0	32.00
			1446	6,303,054.0	1,999,552.0	32.00
			1447	6,303,042.0	1,999,556.0	32.00
			1448	6,303,041.0	1,999,553.0	32.00
			1449	6,303,021.0	1,999,558.0	32.00
			1450	6,303,022.0	1,999,561.0	32.00
			1451	6,303,009.0	1,999,565.0	32.00
			1452	6,303,010.0	1,999,566.0	32.00
			1453	6,302,996.0	1,999,570.0	32.00
			1454	6,302,998.0	1,999,580.0	32.00
			1455	6,302,987.0	1,999,583.0	32.00
			1456	6,302,979.0	1,999,595.0	32.00
			1457	6,302,981.0	1,999,602.0	32.00

C:\TNM25\Escondido Assisted Living Facility **2**

INPUT: GROUND ZONES **18-004**

ISE				**25 September 2018**	
R. Tavares Ph.D.				**TNM 2.5**	
INPUT: GROUND ZONES					
PROJECT/CONTRACT:	**18-004**				
RUN:	**EALF - RUN #2 (65 MPH MAX)**				
Ground Zone			**Points**		
Name	**Type**	**Flow**	**No.**	**Coordinates**	
		Resistivity		**X**	**Y**
		cgs rayls		ft	ft
Project Site	Pavement	20000	155	6,302,827.0	1,999,690.0
			156	6,302,852.0	1,999,706.0
			157	6,303,428.0	1,999,552.0
			158	6,303,352.0	1,999,277.0
			159	6,303,243.0	1,999,306.0
			160	6,303,204.0	1,999,268.0
			161	6,303,201.0	1,999,233.0
			162	6,303,204.0	1,999,197.0
			163	6,303,208.0	1,999,153.0
			164	6,303,171.0	1,999,135.0
			165	6,303,034.0	1,999,383.0
			166	6,302,918.0	1,999,563.0

C:\TNM25\Escondido Assisted Living Facility **1**

RESULTS: SOUND LEVELS **18-004**

ISE **25 September 2018**
R. Tavares Ph.D. **TNM 2.5**
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: **18-004**
RUN: **EALF - RUN #2 (65 MPH MAX)**
BARRIER DESIGN: **INPUT HEIGHTS**
ATMOSPHERICS: **68 deg F, 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 Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
R1 (FLOOR 1)	950	1	0.0	65.5	65	65.5	10	Snd Lvl	65.5	0.0	8	-8.0
R2 (FLOOR 1)	951	1	0.0	65.4	65	65.4	10	Snd Lvl	65.4	0.0	8	-8.0
R3 (FLOOR 1)	952	1	0.0	66.2	65	66.2	10	Snd Lvl	66.2	0.0	8	-8.0
R4 (FLOOR 1)	953	1	0.0	66.4	65	66.4	10	Snd Lvl	66.4	0.0	8	-8.0
R5 (FLOOR 1)	954	1	0.0	66.5	65	66.5	10	Snd Lvl	66.5	0.0	8	-8.0
R6 (FLOOR 1)	955	1	0.0	66.0	65	66.0	10	Snd Lvl	66.0	0.0	8	-8.0
R7 (FLOOR 1)	956	1	0.0	64.9	65	64.9	10	----	64.9	0.0	8	-8.0
R8 (FLOOR 1)	957	1	0.0	66.0	65	66.0	10	Snd Lvl	66.0	0.0	8	-8.0
R9 (FLOOR 1)	958	1	0.0	66.3	65	66.3	10	Snd Lvl	66.3	0.0	8	-8.0
R10 (FLOOR 1)	959	1	0.0	68.0	65	68.0	10	Snd Lvl	68.0	0.0	8	-8.0
R11 (FLOOR 1)	960	1	0.0	68.8	65	68.8	10	Snd Lvl	68.8	0.0	8	-8.0
R12 (FLOOR 1)	961	1	0.0	68.5	65	68.5	10	Snd Lvl	68.5	0.0	8	-8.0
R13 (FLOOR 1)	962	1	0.0	66.4	65	66.4	10	Snd Lvl	66.4	0.0	8	-8.0
R14 (FLOOR 1)	963	1	0.0	64.9	65	64.9	10	----	64.9	0.0	8	-8.0
R15 (FLOOR 1)	964	1	0.0	63.7	65	63.7	10	----	63.7	0.0	8	-8.0
R16 (FLOOR 1)	965	1	0.0	64.4	65	64.4	10	----	64.4	0.0	8	-8.0
R17 (FLOOR 1)	966	1	0.0	63.9	65	63.9	10	----	63.9	0.0	8	-8.0
R18 (FLOOR 1)	967	1	0.0	63.6	65	63.6	10	----	63.6	0.0	8	-8.0
R19 (FLOOR 1)	968	1	0.0	63.9	65	63.9	10	----	63.9	0.0	8	-8.0
R20 (FLOOR 1)	969	1	0.0	65.3	65	65.3	10	Snd Lvl	65.3	0.0	8	-8.0
R1 (FLOOR 2)	971	1	0.0	67.7	65	67.7	10	Snd Lvl	67.7	0.0	8	-8.0
R2 (FLOOR 2)	972	1	0.0	67.9	65	67.9	10	Snd Lvl	67.9	0.0	8	-8.0
R3 (FLOOR 2)	973	1	0.0	68.6	65	68.6	10	Snd Lvl	68.6	0.0	8	-8.0

RESULTS: SOUND LEVELS **18-004**

R4 (FLOOR 2)	974	1	0.0	66.1	65	66.1	10	Snd Lvl	66.1	0.0	8	-8.0
R5 (FLOOR 2)	975	1	0.0	66.3	65	66.3	10	Snd Lvl	66.3	0.0	8	-8.0
R6 (FLOOR 2)	976	1	0.0	67.0	65	67.0	10	Snd Lvl	67.0	0.0	8	-8.0
R7 (FLOOR 2)	977	1	0.0	65.5	65	65.5	10	Snd Lvl	65.5	0.0	8	-8.0
R8 (FLOOR 2)	978	1	0.0	67.3	65	67.3	10	Snd Lvl	67.3	0.0	8	-8.0
R9 (FLOOR 2)	979	1	0.0	68.7	65	68.7	10	Snd Lvl	68.7	0.0	8	-8.0
R10 (FLOOR 2)	980	1	0.0	68.1	65	68.1	10	Snd Lvl	68.1	0.0	8	-8.0
R11 (FLOOR 2)	981	1	0.0	70.5	65	70.5	10	Snd Lvl	70.5	0.0	8	-8.0
R12 (FLOOR 2)	982	1	0.0	69.8	65	69.8	10	Snd Lvl	69.8	0.0	8	-8.0
R13 (FLOOR 2)	983	1	0.0	67.5	65	67.5	10	Snd Lvl	67.5	0.0	8	-8.0
R14 (FLOOR 2)	984	1	0.0	65.5	65	65.5	10	Snd Lvl	65.5	0.0	8	-8.0
R15 (FLOOR 2)	985	1	0.0	64.3	65	64.3	10	----	64.3	0.0	8	-8.0
R16 (FLOOR 2)	986	1	0.0	65.3	65	65.3	10	Snd Lvl	65.3	0.0	8	-8.0
R17 (FLOOR 2)	987	1	0.0	65.4	65	65.4	10	Snd Lvl	65.4	0.0	8	-8.0
R18 (FLOOR 2)	988	1	0.0	65.7	65	65.7	10	Snd Lvl	65.7	0.0	8	-8.0
R19 (FLOOR 2)	989	1	0.0	66.1	65	66.1	10	Snd Lvl	66.1	0.0	8	-8.0
R20 (FLOOR 2)	990	1	0.0	67.2	65	67.2	10	Snd Lvl	67.2	0.0	8	-8.0
R1 (FLOOR 3)	991	1	0.0	71.2	65	71.2	10	Snd Lvl	71.2	0.0	8	-8.0
R2 (FLOOR 3)	992	1	0.0	71.0	65	71.0	10	Snd Lvl	71.0	0.0	8	-8.0
R3 (FLOOR 3)	993	1	0.0	70.8	65	70.8	10	Snd Lvl	70.8	0.0	8	-8.0
R4 (FLOOR 3)	994	1	0.0	70.1	65	70.1	10	Snd Lvl	70.1	0.0	8	-8.0
R5 (FLOOR 3)	995	1	0.0	69.9	65	69.9	10	Snd Lvl	69.9	0.0	8	-8.0
R6 (FLOOR 3)	996	1	0.0	68.3	65	68.3	10	Snd Lvl	68.3	0.0	8	-8.0
R7 (FLOOR 3)	997	1	0.0	67.0	65	67.0	10	Snd Lvl	67.0	0.0	8	-8.0
R8 (FLOOR 3)	998	1	0.0	68.6	65	68.6	10	Snd Lvl	68.6	0.0	8	-8.0
R9 (FLOOR 3)	999	1	0.0	70.1	65	70.1	10	Snd Lvl	70.1	0.0	8	-8.0
R10 (FLOOR 3)	1000	1	0.0	71.4	65	71.4	10	Snd Lvl	71.4	0.0	8	-8.0
R11 (FLOOR 3)	1001	1	0.0	71.4	65	71.4	10	Snd Lvl	71.4	0.0	8	-8.0
R12 (FLOOR 3)	1002	1	0.0	70.4	65	70.4	10	Snd Lvl	70.4	0.0	8	-8.0
R13 (FLOOR 3)	1003	1	0.0	67.6	65	67.6	10	Snd Lvl	67.6	0.0	8	-8.0
R14 (FLOOR 3)	1004	1	0.0	65.8	65	65.8	10	Snd Lvl	65.8	0.0	8	-8.0
R15 (FLOOR 3)	1005	1	0.0	65.3	65	65.3	10	Snd Lvl	65.3	0.0	8	-8.0
R16 (FLOOR 3)	1006	1	0.0	66.7	65	66.7	10	Snd Lvl	66.7	0.0	8	-8.0
R17 (FLOOR 3)	1008	1	0.0	67.0	65	67.0	10	Snd Lvl	67.0	0.0	8	-8.0
R18 (FLOOR 3)	1009	1	0.0	67.8	65	67.8	10	Snd Lvl	67.8	0.0	8	-8.0
R19 (FLOOR 3)	1010	1	0.0	68.6	65	68.6	10	Snd Lvl	68.6	0.0	8	-8.0
R20 (FLOOR 3)	1011	1	0.0	70.6	65	70.6	10	Snd Lvl	70.6	0.0	8	-8.0
Dwelling Units		**# DUs**	**Noise Reduction**									
			Min	**Avg**	**Max**							
			dB	**dB**	**dB**							

RESULTS: SOUND LEVELS **18-004**

All Selected	60	0.0	0.0	0.0							
All Impacted	52	0.0	0.0	0.0							
All that meet NR Goal	0	0.0	0.0	0.0							

AAM Architectural Interior Noise Transmission Results

ISE ARCHITECTURAL ACOUSTICAL MODEL (AAM) v3.0

Room Geometrics Definition	
Room Designation:	AL-0a Studio
Floor Area (ft^2):	207
Ceiling Height (ft):	9
Room Volume (ft^3):	1863
Room Absorption Ratio FMP:	0.75
Total Room Absorption (Sabins)	155.25

Noise Exposure Definition	
Noise Source:	Traffic (NBS Spectrum, 1978)
Noise Sound Level at Building Façade (dBA CNEL)	71.4
Incident Angle Correction:	-3
Building Façade Correction:	3
Quality Correction:	1

Modeled Octave Band Spectral Parameters for STC Classification

Assembly #	Construction	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
1	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
2	Window - 1/4 Glass (Monsanto)	21	23	26	27	28	29
3	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
4	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
5	-	0	0	0	0	0	0
6	-	0	0	0	0	0	0
7	-	0	0	0	0	0	0
8	-	0	0	0	0	0	0
9	-	0	0	0	0	0	0
10	-	0	0	0	0	0	0
11	-	0	0	0	0	0	0
12	-	0	0	0	0	0	0
13	-	0	0	0	0	0	0
14	-	0	0	0	0	0	0
15	-	0	0	0	0	0	0
16	-	0	0	0	0	0	0
17	-	0	0	0	0	0	0
18	-	0	0	0	0	0	0
19	-	0	0	0	0	0	0
20	-	0	0	0	0	0	0

Calculated Architectural Sound Leakage Through Assemblies

Assembly #	Construction	STC Rating	% Operable	Area (ft^2)	Acoustical Contribution (Closed)	(Open)
1	Stucco Wall (NBS W-50-71)	46	0	131.1	35.0	35.0
2	Window - 1/4 Glass (Monsanto)	27	50	37.5	43.4	56.2
3	Stucco Wall (NBS W-50-71)	46	0	33.0	29.0	29.0
4	Stucco Wall (NBS W-50-71)	46	0	71.5	32.4	32.4
5	-	-	0	0.0	0.0	0.0
6	-	-	0	0.0	0.0	0.0
7	-	-	0	0.0	0.0	0.0
8	-	-	0	0.0	0.0	0.0
9	-	-	0	0.0	0.0	0.0
10	-	-	0	0.0	0.0	0.0
11	-	-	0	0.0	0.0	0.0
12	-	-	0	0.0	0.0	0.0
13	-	-	0	0.0	0.0	0.0
14	-	-	0	0.0	0.0	0.0
15	-	-	0	0.0	0.0	0.0
16	-	-	0	0.0	0.0	0.0
17	-	-	0	0.0	0.0	0.0
18	-	-	0	0.0	0.0	0.0
19	-	-	0	0.0	0.0	0.0
20	-	-	0	0.0	0.0	0.0

	Closed	Open
Compliance Threshold (dBA CNEL):	45.0	-
Predicted Level (dBA CNEL):	44.4	56.2
Complies with Standard:	Yes	

ISE ARCHITECTURAL ACOUSTICAL MODEL (AAM) v3.0

Room Geometrics Definition	
Room Designation:	AL-0b Studio
Floor Area (ft^2):	196
Ceiling Height (ft):	9
Room Volume (ft^3):	1764
Room Absorption Ratio FMP:	0.75
Total Room Absorption (Sabins)	147

Noise Exposure Definition	
Noise Source:	Traffic (NBS Spectrum, 1978)
Noise Sound Level at Building Façade (dBA CNEL)	71.4
Incident Angle Correction:	-3
Building Façade Correction:	3
Quality Correction:	1

Modeled Octave Band Spectral Parameters for STC Classification

Assembly #	Construction	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
1	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
2	Window - 1/4 Glass (Monsanto)	21	23	26	27	28	29
3	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
4	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
5	-	0	0	0	0	0	0
6	-	0	0	0	0	0	0
7	-	0	0	0	0	0	0
8	-	0	0	0	0	0	0
9	-	0	0	0	0	0	0
10	-	0	0	0	0	0	0
11	-	0	0	0	0	0	0
12	-	0	0	0	0	0	0
13	-	0	0	0	0	0	0
14	-	0	0	0	0	0	0
15	-	0	0	0	0	0	0
16	-	0	0	0	0	0	0
17	-	0	0	0	0	0	0
18	-	0	0	0	0	0	0
19	-	0	0	0	0	0	0
20	-	0	0	0	0	0	0

Calculated Architectural Sound Leakage Through Assemblies

					Acoustical Contribution	
Assembly #	Construction	STC Rating	% Operable	Area (ft^2)	(Closed)	(Open)
1	Stucco Wall (NBS W-50-71)	46	0	119.2	34.8	34.8
2	Window - 1/4 Glass (Monsanto)	27	50	37.5	43.6	56.4
3	Stucco Wall (NBS W-50-71)	46	0	30.0	28.8	28.8
4	Stucco Wall (NBS W-50-71)	46	0	125.0	35.0	35.0
5	-	-	0	0.0	0.0	0.0
6	-	-	0	0.0	0.0	0.0
7	-	-	0	0.0	0.0	0.0
8	-	-	0	0.0	0.0	0.0
9	-	-	0	0.0	0.0	0.0
10	-	-	0	0.0	0.0	0.0
11	-	-	0	0.0	0.0	0.0
12	-	-	0	0.0	0.0	0.0
13	-	-	0	0.0	0.0	0.0
14	-	-	0	0.0	0.0	0.0
15	-	-	0	0.0	0.0	0.0
16	-	-	0	0.0	0.0	0.0
17	-	-	0	0.0	0.0	0.0
18	-	-	0	0.0	0.0	0.0
19	-	-	0	0.0	0.0	0.0
20	-	-	0	0.0	0.0	0.0

	Closed	Open
Compliance Threshold (dBA CNEL):	45.0	-
Predicted Level (dBA CNEL):	44.7	56.5
Complies with Standard:	Yes	

ISE ARCHITECTURAL ACOUSTICAL MODEL (AAM) v3.0

Room Geometrics Definition	
Room Designation:	AL-0c Studio
Floor Area (ft^2):	172
Ceiling Height (ft):	9
Room Volume (ft^3):	1548
Room Absorption Ratio FMP:	0.75
Total Room Absorption (Sabins)	129

Noise Exposure Definition	
Noise Source:	Traffic (NBS Spectrum, 1978)
Noise Sound Level at Building Façade (dBA CNEL)	71.4
Incident Angle Correction:	-3
Building Façade Correction:	3
Quality Correction:	1

Modeled Octave Band Spectral Parameters for STC Classification

Assembly #	Construction	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
1	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
2	Window - 1/4 Glass (Monsanto)	21	23	26	27	28	29
3	-	0	0	0	0	0	0
4	-	0	0	0	0	0	0
5	-	0	0	0	0	0	0
6	-	0	0	0	0	0	0
7	-	0	0	0	0	0	0
8	-	0	0	0	0	0	0
9	-	0	0	0	0	0	0
10	-	0	0	0	0	0	0
11	-	0	0	0	0	0	0
12	-	0	0	0	0	0	0
13	-	0	0	0	0	0	0
14	-	0	0	0	0	0	0
15	-	0	0	0	0	0	0
16	-	0	0	0	0	0	0
17	-	0	0	0	0	0	0
18	-	0	0	0	0	0	0
19	-	0	0	0	0	0	0
20	-	0	0	0	0	0	0

Calculated Architectural Sound Leakage Through Assemblies

Assembly #	Construction	STC Rating	% Operable	Area (ft^2)	Acoustical Contribution (Closed)	Acoustical Contribution (Open)
1	Stucco Wall (NBS W-50-71)	46	0	119.1	35.4	35.4
2	Window - 1/4 Glass (Monsanto)	27	50	37.5	44.2	57.0
3	-	-	0	0.0	0.0	0.0
4	-	-	0	0.0	0.0	0.0
5	-	-	0	0.0	0.0	0.0
6	-	-	0	0.0	0.0	0.0
7	-	-	0	0.0	0.0	0.0
8	-	-	0	0.0	0.0	0.0
9	-	-	0	0.0	0.0	0.0
10	-	-	0	0.0	0.0	0.0
11	-	-	0	0.0	0.0	0.0
12	-	-	0	0.0	0.0	0.0
13	-	-	0	0.0	0.0	0.0
14	-	-	0	0.0	0.0	0.0
15	-	-	0	0.0	0.0	0.0
16	-	-	0	0.0	0.0	0.0
17	-	-	0	0.0	0.0	0.0
18	-	-	0	0.0	0.0	0.0
19	-	-	0	0.0	0.0	0.0
20	-	-	0	0.0	0.0	0.0

	Closed	Open
Compliance Threshold (dBA CNEL):	45.0	-
Predicted Level (dBA CNEL):	44.7	57.0
Complies with Standard:	Yes	

ISE ARCHITECTURAL ACOUSTICAL MODEL (AAM) v3.0

Room Geometrics Definition	
Room Designation:	AL-1a BR
Floor Area (ft^2):	135
Ceiling Height (ft):	9
Room Volume (ft^3):	1215
Room Absorption Ratio FMP:	0.75
Total Room Absorption (Sabins)	101.25

Noise Exposure Definition	
Noise Source:	Traffic (NBS Spectrum, 1978)
Noise Sound Level at Building Façade (dBA CNEL)	71.4
Incident Angle Correction:	-3
Building Façade Correction:	3
Quality Correction:	1

Modeled Octave Band Spectral Parameters for STC Classification

Assembly #	Construction	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
1	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
2	Window - 1/4 Glass (Monsanto)	21	23	26	27	28	29
3	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
4	-	0	0	0	0	0	0
5	-	0	0	0	0	0	0
6	-	0	0	0	0	0	0
7	-	0	0	0	0	0	0
8	-	0	0	0	0	0	0
9	-	0	0	0	0	0	0
10	-	0	0	0	0	0	0
11	-	0	0	0	0	0	0
12	-	0	0	0	0	0	0
13	-	0	0	0	0	0	0
14	-	0	0	0	0	0	0
15	-	0	0	0	0	0	0
16	-	0	0	0	0	0	0
17	-	0	0	0	0	0	0
18	-	0	0	0	0	0	0
19	-	0	0	0	0	0	0
20	-	0	0	0	0	0	0

Calculated Architectural Sound Leakage Through Assemblies

Assembly #	Construction	STC Rating	% Operable	Area (ft^2)	Acoustical Contribution (Closed)	(Open)
1	Stucco Wall (NBS W-50-71)	46	0	85.0	35.0	35.0
2	Window - 1/4 Glass (Monsanto)	27	50	25.0	43.4	56.3
3	Stucco Wall (NBS W-50-71)	46	0	148.5	37.4	37.4
4	-	-	0	0.0	0.0	0.0
5	-	-	0	0.0	0.0	0.0
6	-	-	0	0.0	0.0	0.0
7	-	-	0	0.0	0.0	0.0
8	-	-	0	0.0	0.0	0.0
9	-	-	0	0.0	0.0	0.0
10	-	-	0	0.0	0.0	0.0
11	-	-	0	0.0	0.0	0.0
12	-	-	0	0.0	0.0	0.0
13	-	-	0	0.0	0.0	0.0
14	-	-	0	0.0	0.0	0.0
15	-	-	0	0.0	0.0	0.0
16	-	-	0	0.0	0.0	0.0
17	-	-	0	0.0	0.0	0.0
18	-	-	0	0.0	0.0	0.0
19	-	-	0	0.0	0.0	0.0
20	-	-	0	0.0	0.0	0.0

	Closed	Open
Compliance Threshold (dBA CNEL):	45.0	-
Predicted Level (dBA CNEL):	44.9	56.3
Complies with Standard:	Yes	

ISE ARCHITECTURAL ACOUSTICAL MODEL (AAM) v3.0

Room Geometrics Definition	
Room Designation:	AL-1a LivRm
Floor Area (ft²):	263
Ceiling Height (ft):	9
Room Volume (ft³):	2367
Room Absorption Ratio FMP:	0.75
Total Room Absorption (Sabins)	197.25

Noise Exposure Definition	
Noise Source:	Traffic (NBS Spectrum, 1978)
Noise Sound Level at Building Façade (dBA CNEL)	71.4
Incident Angle Correction:	-3
Building Façade Correction:	3
Quality Correction:	1

Modeled Octave Band Spectral Parameters for STC Classification

Assembly #	Construction	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
1	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
2	Window - 1/8 Glass (Monsanto)	20	21	25	27	27	27
3	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
4	-	0	0	0	0	0	0
5	-	0	0	0	0	0	0
6	-	0	0	0	0	0	0
7	-	0	0	0	0	0	0
8	-	0	0	0	0	0	0
9	-	0	0	0	0	0	0
10	-	0	0	0	0	0	0
11	-	0	0	0	0	0	0
12	-	0	0	0	0	0	0
13	-	0	0	0	0	0	0
14	-	0	0	0	0	0	0
15	-	0	0	0	0	0	0
16	-	0	0	0	0	0	0
17	-	0	0	0	0	0	0
18	-	0	0	0	0	0	0
19	-	0	0	0	0	0	0
20	-	0	0	0	0	0	0

Calculated Architectural Sound Leakage Through Assemblies

Assembly #	Construction	STC Rating	% Operable	Area (ft²)	Acoustical Contribution (Closed)	(Open)
1	Stucco Wall (NBS W-50-71)	46	0	87.4	32.2	32.2
2	Window - 1/8 Glass (Monsanto)	26	50	15.0	42.4	54.6
3	Stucco Wall (NBS W-50-71)	46	0	33.0	28.0	28.0
4	-	-	0	0.0	0.0	0.0
5	-	-	0	0.0	0.0	0.0
6	-	-	0	0.0	0.0	0.0
7	-	-	0	0.0	0.0	0.0
8	-	-	0	0.0	0.0	0.0
9	-	-	0	0.0	0.0	0.0
10	-	-	0	0.0	0.0	0.0
11	-	-	0	0.0	0.0	0.0
12	-	-	0	0.0	0.0	0.0
13	-	-	0	0.0	0.0	0.0
14	-	-	0	0.0	0.0	0.0
15	-	-	0	0.0	0.0	0.0
16	-	-	0	0.0	0.0	0.0
17	-	-	0	0.0	0.0	0.0
18	-	-	0	0.0	0.0	0.0
19	-	-	0	0.0	0.0	0.0
20	-	-	0	0.0	0.0	0.0

	Closed	Open
Compliance Threshold (dBA CNEL):	45.0	-
Predicted Level (dBA CNEL):	42.9	54.6
Complies with Standard:	Yes	

ISE ARCHITECTURAL ACOUSTICAL MODEL (AAM) v3.0

Room Geometrics Definition	
Room Designation:	AL-1b BR
Floor Area (ft^2):	142
Ceiling Height (ft):	9
Room Volume (ft^3):	1278
Room Absorption Ratio FMP:	0.75
Total Room Absorption (Sabins)	106.5

Noise Exposure Definition	
Noise Source:	Traffic (NBS Spectrum, 1978)
Noise Sound Level at Building Façade (dBA CNEL)	71.4
Incident Angle Correction:	-3
Building Façade Correction:	3
Quality Correction:	1

Modeled Octave Band Spectral Parameters for STC Classification

Assembly #	Construction	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
1	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
2	Window - 1/8 Glass (Monsanto)	20	21	25	27	27	27
3	-	0	0	0	0	0	0
4	-	0	0	0	0	0	0
5	-	0	0	0	0	0	0
6	-	0	0	0	0	0	0
7	-	0	0	0	0	0	0
8	-	0	0	0	0	0	0
9	-	0	0	0	0	0	0
10	-	0	0	0	0	0	0
11	-	0	0	0	0	0	0
12	-	0	0	0	0	0	0
13	-	0	0	0	0	0	0
14	-	0	0	0	0	0	0
15	-	0	0	0	0	0	0
16	-	0	0	0	0	0	0
17	-	0	0	0	0	0	0
18	-	0	0	0	0	0	0
19	-	0	0	0	0	0	0
20	-	0	0	0	0	0	0

Calculated Architectural Sound Leakage Through Assemblies

Assembly #	Construction	STC Rating	% Operable	Area (ft^2)	Acoustical Contribution (Closed)	(Open)
1	Stucco Wall (NBS W-50-71)	46	0	80.0	34.5	34.5
2	Window - 1/8 Glass (Monsanto)	26	50	25.0	44.3	56.5
3	-	-	0	0.0	0.0	0.0
4	-	-	0	0.0	0.0	0.0
5	-	-	0	0.0	0.0	0.0
6	-	-	0	0.0	0.0	0.0
7	-	-	0	0.0	0.0	0.0
8	-	-	0	0.0	0.0	0.0
9	-	-	0	0.0	0.0	0.0
10	-	-	0	0.0	0.0	0.0
11	-	-	0	0.0	0.0	0.0
12	-	-	0	0.0	0.0	0.0
13	-	-	0	0.0	0.0	0.0
14	-	-	0	0.0	0.0	0.0
15	-	-	0	0.0	0.0	0.0
16	-	-	0	0.0	0.0	0.0
17	-	-	0	0.0	0.0	0.0
18	-	-	0	0.0	0.0	0.0
19	-	-	0	0.0	0.0	0.0
20	-	-	0	0.0	0.0	0.0

	Closed	Open
Compliance Threshold (dBA CNEL):	45.0	-
Predicted Level (dBA CNEL):	44.7	56.5
Complies with Standard:	Yes	

ISE ARCHITECTURAL ACOUSTICAL MODEL (AAM) v3.0

Room Geometrics Definition	
Room Designation:	AL-1b LivRm
Floor Area (ft^2):	373
Ceiling Height (ft):	9
Room Volume (ft^3):	3357
Room Absorption Ratio FMP:	0.75
Total Room Absorption (Sabins)	279.75

Noise Exposure Definition	
Noise Source:	Traffic (NBS Spectrum, 1978)
Noise Sound Level at Building Façade (dBA CNEL)	71.4
Incident Angle Correction:	-3
Building Façade Correction:	3
Quality Correction:	1

Modeled Octave Band Spectral Parameters for STC Classification

Assembly #	Construction	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
1	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
2	Window - 3/32 Glass (NBS W-23-72)	19	18	21	23	27	30
3	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
4	-	0	0	0	0	0	0
5	-	0	0	0	0	0	0
6	-	0	0	0	0	0	0
7	-	0	0	0	0	0	0
8	-	0	0	0	0	0	0
9	-	0	0	0	0	0	0
10	-	0	0	0	0	0	0
11	-	0	0	0	0	0	0
12	-	0	0	0	0	0	0
13	-	0	0	0	0	0	0
14	-	0	0	0	0	0	0
15	-	0	0	0	0	0	0
16	-	0	0	0	0	0	0
17	-	0	0	0	0	0	0
18	-	0	0	0	0	0	0
19	-	0	0	0	0	0	0
20	-	0	0	0	0	0	0

Calculated Architectural Sound Leakage Through Assemblies

Assembly #	Construction	STC Rating	% Operable	Area (ft^2)	Acoustical Contribution (Closed)	(Open)
1	Stucco Wall (NBS W-50-71)	46	0	112.0	31.8	31.8
2	Window - 3/32 Glass (NBS W-23-72)	24	50	15.0	43.8	54.5
3	Stucco Wall (NBS W-50-71)	46	0	50.0	28.3	28.3
4	-	-	0	0.0	0.0	0.0
5	-	-	0	0.0	0.0	0.0
6	-	-	0	0.0	0.0	0.0
7	-	-	0	0.0	0.0	0.0
8	-	-	0	0.0	0.0	0.0
9	-	-	0	0.0	0.0	0.0
10	-	-	0	0.0	0.0	0.0
11	-	-	0	0.0	0.0	0.0
12	-	-	0	0.0	0.0	0.0
13	-	-	0	0.0	0.0	0.0
14	-	-	0	0.0	0.0	0.0
15	-	-	0	0.0	0.0	0.0
16	-	-	0	0.0	0.0	0.0
17	-	-	0	0.0	0.0	0.0
18	-	-	0	0.0	0.0	0.0
19	-	-	0	0.0	0.0	0.0
20	-	-	0	0.0	0.0	0.0

	Closed	Open
Compliance Threshold (dBA CNEL):	45.0	-
Predicted Level (dBA CNEL):	44.2	54.5
Complies with Standard:	Yes	

ISE ARCHITECTURAL ACOUSTICAL MODEL (AAM) v3.0

Room Geometrics Definition	
Room Designation:	AL-1c BR
Floor Area (ft^2):	135
Ceiling Height (ft):	9
Room Volume (ft^3):	1215
Room Absorption Ratio FMP:	0.75
Total Room Absorption (Sabins)	101.25

Noise Exposure Definition	
Noise Source:	Traffic (NBS Spectrum, 1978)
Noise Sound Level at Building Façade (dBA CNEL)	71.4
Incident Angle Correction:	-3
Building Façade Correction:	3
Quality Correction:	1

Modeled Octave Band Spectral Parameters for STC Classification

Assembly #	Construction	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
1	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
2	Window - 1/8 Glass (Monsanto)	20	21	25	27	27	27
3	-	0	0	0	0	0	0
4	-	0	0	0	0	0	0
5	-	0	0	0	0	0	0
6	-	0	0	0	0	0	0
7	-	0	0	0	0	0	0
8	-	0	0	0	0	0	0
9	-	0	0	0	0	0	0
10	-	0	0	0	0	0	0
11	-	0	0	0	0	0	0
12	-	0	0	0	0	0	0
13	-	0	0	0	0	0	0
14	-	0	0	0	0	0	0
15	-	0	0	0	0	0	0
16	-	0	0	0	0	0	0
17	-	0	0	0	0	0	0
18	-	0	0	0	0	0	0
19	-	0	0	0	0	0	0
20	-	0	0	0	0	0	0

Calculated Architectural Sound Leakage Through Assemblies

Assembly #	Construction	STC Rating	% Operable	Area (ft^2)	Acoustical Contribution (Closed)	Acoustical Contribution (Open)
1	Stucco Wall (NBS W-50-71)	46	0	75.0	34.4	34.4
2	Window - 1/8 Glass (Monsanto)	26	50	25.0	44.5	56.7
3	-	-	0	0.0	0.0	0.0
4	-	-	0	0.0	0.0	0.0
5	-	-	0	0.0	0.0	0.0
6	-	-	0	0.0	0.0	0.0
7	-	-	0	0.0	0.0	0.0
8	-	-	0	0.0	0.0	0.0
9	-	-	0	0.0	0.0	0.0
10	-	-	0	0.0	0.0	0.0
11	-	-	0	0.0	0.0	0.0
12	-	-	0	0.0	0.0	0.0
13	-	-	0	0.0	0.0	0.0
14	-	-	0	0.0	0.0	0.0
15	-	-	0	0.0	0.0	0.0
16	-	-	0	0.0	0.0	0.0
17	-	-	0	0.0	0.0	0.0
18	-	-	0	0.0	0.0	0.0
19	-	-	0	0.0	0.0	0.0
20	-	-	0	0.0	0.0	0.0

	Closed	Open
Compliance Threshold (dBA CNEL):	45.0	-
Predicted Level (dBA CNEL):	44.9	56.7
Complies with Standard:	Yes	

ISE ARCHITECTURAL ACOUSTICAL MODEL (AAM) v3.0

Room Geometrics Definition	
Room Designation:	AL-1c LivRm
Floor Area (ft^2):	284
Ceiling Height (ft):	9
Room Volume (ft^3):	2556
Room Absorption Ratio FMP:	0.75
Total Room Absorption (Sabins)	213

Noise Exposure Definition	
Noise Source:	Traffic (NBS Spectrum, 1978)
Noise Sound Level at Building Façade (dBA CNEL)	71.4
Incident Angle Correction:	-3
Building Façade Correction:	3
Quality Correction:	1

Modeled Octave Band Spectral Parameters for STC Classification

Assembly #	Construction	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
1	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
2	Window - 1/8 Glass (Monsanto)	20	21	25	27	27	27
3	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
4	-	0	0	0	0	0	0
5	-	0	0	0	0	0	0
6	-	0	0	0	0	0	0
7	-	0	0	0	0	0	0
8	-	0	0	0	0	0	0
9	-	0	0	0	0	0	0
10	-	0	0	0	0	0	0
11	-	0	0	0	0	0	0
12	-	0	0	0	0	0	0
13	-	0	0	0	0	0	0
14	-	0	0	0	0	0	0
15	-	0	0	0	0	0	0
16	-	0	0	0	0	0	0
17	-	0	0	0	0	0	0
18	-	0	0	0	0	0	0
19	-	0	0	0	0	0	0
20	-	0	0	0	0	0	0

Calculated Architectural Sound Leakage Through Assemblies

Assembly #	Construction	STC Rating	% Operable	Area (ft^2)	Acoustical Contribution (Closed)	(Open)
1	Stucco Wall (NBS W-50-71)	46	0	76.7	31.3	31.3
2	Window - 1/8 Glass (Monsanto)	26	50	15.0	42.0	54.3
3	Stucco Wall (NBS W-50-71)	46	0	50.0	29.4	29.4
4	-	-	0	0.0	0.0	0.0
5	-	-	0	0.0	0.0	0.0
6	-	-	0	0.0	0.0	0.0
7	-	-	0	0.0	0.0	0.0
8	-	-	0	0.0	0.0	0.0
9	-	-	0	0.0	0.0	0.0
10	-	-	0	0.0	0.0	0.0
11	-	-	0	0.0	0.0	0.0
12	-	-	0	0.0	0.0	0.0
13	-	-	0	0.0	0.0	0.0
14	-	-	0	0.0	0.0	0.0
15	-	-	0	0.0	0.0	0.0
16	-	-	0	0.0	0.0	0.0
17	-	-	0	0.0	0.0	0.0
18	-	-	0	0.0	0.0	0.0
19	-	-	0	0.0	0.0	0.0
20	-	-	0	0.0	0.0	0.0

	Closed	Open
Compliance Threshold (dBA CNEL):	45.0	-
Predicted Level (dBA CNEL):	42.6	54.3
Complies with Standard:	Yes	

ISE ARCHITECTURAL ACOUSTICAL MODEL (AAM) v3.0

Room Geometrics Definition	
Room Designation:	AL-1d BR
Floor Area (ft^2):	197
Ceiling Height (ft):	9
Room Volume (ft^3):	1773
Room Absorption Ratio FMP:	0.75
Total Room Absorption (Sabins)	147.75

Noise Exposure Definition	
Noise Source:	Traffic (NBS Spectrum, 1978)
Noise Sound Level at Building Façade (dBA CNEL)	71.4
Incident Angle Correction:	-3
Building Façade Correction:	3
Quality Correction:	1

Modeled Octave Band Spectral Parameters for STC Classification

Assembly #	Construction	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
1	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
2	Window - 1/8 Glass (Monsanto)	20	21	25	27	27	27
3	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
4	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
5	-	0	0	0	0	0	0
6	-	0	0	0	0	0	0
7	-	0	0	0	0	0	0
8	-	0	0	0	0	0	0
9	-	0	0	0	0	0	0
10	-	0	0	0	0	0	0
11	-	0	0	0	0	0	0
12	-	0	0	0	0	0	0
13	-	0	0	0	0	0	0
14	-	0	0	0	0	0	0
15	-	0	0	0	0	0	0
16	-	0	0	0	0	0	0
17	-	0	0	0	0	0	0
18	-	0	0	0	0	0	0
19	-	0	0	0	0	0	0
20	-	0	0	0	0	0	0

Calculated Architectural Sound Leakage Through Assemblies

Assembly #	Construction	STC Rating	% Operable	Area (ft^2)	Acoustical Contribution (Closed)	Acoustical Contribution (Open)
1	Stucco Wall (NBS W-50-71)	46	0	112.5	34.5	34.5
2	Window - 1/8 Glass (Monsanto)	26	50	25.0	42.8	55.1
3	Stucco Wall (NBS W-50-71)	46	0	63.0	32.0	32.0
4	Stucco Wall (NBS W-50-71)	46	0	20.8	27.2	27.2
5	-	-	0	0.0	0.0	0.0
6	-	-	0	0.0	0.0	0.0
7	-	-	0	0.0	0.0	0.0
8	-	-	0	0.0	0.0	0.0
9	-	-	0	0.0	0.0	0.0
10	-	-	0	0.0	0.0	0.0
11	-	-	0	0.0	0.0	0.0
12	-	-	0	0.0	0.0	0.0
13	-	-	0	0.0	0.0	0.0
14	-	-	0	0.0	0.0	0.0
15	-	-	0	0.0	0.0	0.0
16	-	-	0	0.0	0.0	0.0
17	-	-	0	0.0	0.0	0.0
18	-	-	0	0.0	0.0	0.0
19	-	-	0	0.0	0.0	0.0
20	-	-	0	0.0	0.0	0.0

	Closed	Open
Compliance Threshold (dBA CNEL):	45.0	-
Predicted Level (dBA CNEL):	43.8	55.1
Complies with Standard:	Yes	

ISE ARCHITECTURAL ACOUSTICAL MODEL (AAM) v3.0

Room Geometrics Definition	
Room Designation:	AL-1d LivRm
Floor Area (ft^2):	269
Ceiling Height (ft):	9
Room Volume (ft^3):	2421
Room Absorption Ratio FMP:	0.75
Total Room Absorption (Sabins)	201.75

Noise Exposure Definition	
Noise Source:	Traffic (NBS Spectrum, 1978)
Noise Sound Level at Building Façade (dBA CNEL)	71.4
Incident Angle Correction:	-3
Building Façade Correction:	3
Quality Correction:	1

Modeled Octave Band Spectral Parameters for STC Classification

Assembly #	Construction	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
1	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
2	Window - 1/8 Glass (Monsanto)	20	21	25	27	27	27
3	-	0	0	0	0	0	0
4	-	0	0	0	0	0	0
5	-	0	0	0	0	0	0
6	-	0	0	0	0	0	0
7	-	0	0	0	0	0	0
8	-	0	0	0	0	0	0
9	-	0	0	0	0	0	0
10	-	0	0	0	0	0	0
11	-	0	0	0	0	0	0
12	-	0	0	0	0	0	0
13	-	0	0	0	0	0	0
14	-	0	0	0	0	0	0
15	-	0	0	0	0	0	0
16	-	0	0	0	0	0	0
17	-	0	0	0	0	0	0
18	-	0	0	0	0	0	0
19	-	0	0	0	0	0	0
20	-	0	0	0	0	0	0

Calculated Architectural Sound Leakage Through Assemblies

Assembly #	Construction	STC Rating	% Operable	Area (ft^2)	Acoustical Contribution (Closed)	(Open)
1	Stucco Wall (NBS W-50-71)	46	0	115.0	33.3	33.3
2	Window - 1/8 Glass (Monsanto)	26	50	15.0	42.3	54.5
3	-	-	0	0.0	0.0	0.0
4	-	-	0	0.0	0.0	0.0
5	-	-	0	0.0	0.0	0.0
6	-	-	0	0.0	0.0	0.0
7	-	-	0	0.0	0.0	0.0
8	-	-	0	0.0	0.0	0.0
9	-	-	0	0.0	0.0	0.0
10	-	-	0	0.0	0.0	0.0
11	-	-	0	0.0	0.0	0.0
12	-	-	0	0.0	0.0	0.0
13	-	-	0	0.0	0.0	0.0
14	-	-	0	0.0	0.0	0.0
15	-	-	0	0.0	0.0	0.0
16	-	-	0	0.0	0.0	0.0
17	-	-	0	0.0	0.0	0.0
18	-	-	0	0.0	0.0	0.0
19	-	-	0	0.0	0.0	0.0
20	-	-	0	0.0	0.0	0.0

	Closed	Open
Compliance Threshold (dBA CNEL):	45.0	-
Predicted Level (dBA CNEL):	42.8	54.5
Complies with Standard:	Yes	

ISE ARCHITECTURAL ACOUSTICAL MODEL (AAM) v3.0

Room Geometrics Definition	
Room Designation:	AL-2a BR1
Floor Area (ft^2):	191
Ceiling Height (ft):	9
Room Volume (ft^3):	1719
Room Absorption Ratio FMP:	0.75
Total Room Absorption (Sabins)	143.25

Noise Exposure Definition	
Noise Source:	Traffic (NBS Spectrum, 1978)
Noise Sound Level at Building Façade (dBA CNEL)	71.4
Incident Angle Correction:	-3
Building Façade Correction:	3
Quality Correction:	1

Modeled Octave Band Spectral Parameters for STC Classification

Assembly #	Construction	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
1	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
2	Window - 1/8 Glass (Monsanto)	20	21	25	27	27	27
3	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
4	-	0	0	0	0	0	0
5	-	0	0	0	0	0	0
6	-	0	0	0	0	0	0
7	-	0	0	0	0	0	0
8	-	0	0	0	0	0	0
9	-	0	0	0	0	0	0
10	-	0	0	0	0	0	0
11	-	0	0	0	0	0	0
12	-	0	0	0	0	0	0
13	-	0	0	0	0	0	0
14	-	0	0	0	0	0	0
15	-	0	0	0	0	0	0
16	-	0	0	0	0	0	0
17	-	0	0	0	0	0	0
18	-	0	0	0	0	0	0
19	-	0	0	0	0	0	0
20	-	0	0	0	0	0	0

Calculated Architectural Sound Leakage Through Assemblies

Assembly #	Construction	STC Rating	% Operable	Area (ft^2)	Acoustical Contribution (Closed)	(Open)
1	Stucco Wall (NBS W-50-71)	46	0	87.5	33.6	33.6
2	Window - 1/8 Glass (Monsanto)	26	50	15.0	43.8	56.0
3	Stucco Wall (NBS W-50-71)	46	0	80.0	33.2	33.2
4	-	-	0	0.0	0.0	0.0
5	-	-	0	0.0	0.0	0.0
6	-	-	0	0.0	0.0	0.0
7	-	-	0	0.0	0.0	0.0
8	-	-	0	0.0	0.0	0.0
9	-	-	0	0.0	0.0	0.0
10	-	-	0	0.0	0.0	0.0
11	-	-	0	0.0	0.0	0.0
12	-	-	0	0.0	0.0	0.0
13	-	-	0	0.0	0.0	0.0
14	-	-	0	0.0	0.0	0.0
15	-	-	0	0.0	0.0	0.0
16	-	-	0	0.0	0.0	0.0
17	-	-	0	0.0	0.0	0.0
18	-	-	0	0.0	0.0	0.0
19	-	-	0	0.0	0.0	0.0
20	-	-	0	0.0	0.0	0.0

	Closed	Open
Compliance Threshold (dBA CNEL):	45.0	-
Predicted Level (dBA CNEL):	44.5	56.0
Complies with Standard:	Yes	

ISE ARCHITECTURAL ACOUSTICAL MODEL (AAM) v3.0

Room Geometrics Definition	
Room Designation:	AL-2a BR2
Floor Area (ft²):	147
Ceiling Height (ft):	9
Room Volume (ft³):	1323
Room Absorption Ratio FMP:	0.75
Total Room Absorption (Sabins)	110.25

Noise Exposure Definition	
Noise Source:	Traffic (NBS Spectrum, 1978)
Noise Sound Level at Building Façade (dBA CNEL)	71.4
Incident Angle Correction:	-3
Building Façade Correction:	3
Quality Correction:	1

Modeled Octave Band Spectral Parameters for STC Classification

Assembly #	Construction	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
1	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
2	Window - 1/8 Glass (Monsanto)	20	21	25	27	27	27
3	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
4	-	0	0	0	0	0	0
5	-	0	0	0	0	0	0
6	-	0	0	0	0	0	0
7	-	0	0	0	0	0	0
8	-	0	0	0	0	0	0
9	-	0	0	0	0	0	0
10	-	0	0	0	0	0	0
11	-	0	0	0	0	0	0
12	-	0	0	0	0	0	0
13	-	0	0	0	0	0	0
14	-	0	0	0	0	0	0
15	-	0	0	0	0	0	0
16	-	0	0	0	0	0	0
17	-	0	0	0	0	0	0
18	-	0	0	0	0	0	0
19	-	0	0	0	0	0	0
20	-	0	0	0	0	0	0

Calculated Architectural Sound Leakage Through Assemblies

Assembly #	Construction	STC Rating	% Operable	Area (ft²)	Acoustical Contribution (Closed)	(Open)
1	Stucco Wall (NBS W-50-71)	46	0	78.3	34.2	34.2
2	Window - 1/8 Glass (Monsanto)	26	50	25.0	44.1	56.3
3	Stucco Wall (NBS W-50-71)	46	0	60.8	33.1	33.1
4	-	-	0	0.0	0.0	0.0
5	-	-	0	0.0	0.0	0.0
6	-	-	0	0.0	0.0	0.0
7	-	-	0	0.0	0.0	0.0
8	-	-	0	0.0	0.0	0.0
9	-	-	0	0.0	0.0	0.0
10	-	-	0	0.0	0.0	0.0
11	-	-	0	0.0	0.0	0.0
12	-	-	0	0.0	0.0	0.0
13	-	-	0	0.0	0.0	0.0
14	-	-	0	0.0	0.0	0.0
15	-	-	0	0.0	0.0	0.0
16	-	-	0	0.0	0.0	0.0
17	-	-	0	0.0	0.0	0.0
18	-	-	0	0.0	0.0	0.0
19	-	-	0	0.0	0.0	0.0
20	-	-	0	0.0	0.0	0.0

	Closed	Open
Compliance Threshold (dBA CNEL):	45.0	-
Predicted Level (dBA CNEL):	44.8	56.4
Complies with Standard:	Yes	

ISE ARCHITECTURAL ACOUSTICAL MODEL (AAM) v3.0

Room Geometrics Definition	
Room Designation:	AL-2a LivRm
Floor Area (ft²):	302
Ceiling Height (ft):	9
Room Volume (ft³):	2718
Room Absorption Ratio FMP:	0.75
Total Room Absorption (Sabins)	226.5

Noise Exposure Definition	
Noise Source:	Traffic (NBS Spectrum, 1978)
Noise Sound Level at Building Façade (dBA CNEL)	71.4
Incident Angle Correction:	-3
Building Façade Correction:	3
Quality Correction:	1

Modeled Octave Band Spectral Parameters for STC Classification

Assembly #	Construction	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
1	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
2	Window - 1/8 Glass (Monsanto)	20	21	25	27	27	27
3	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
4	-	0	0	0	0	0	0
5	-	0	0	0	0	0	0
6	-	0	0	0	0	0	0
7	-	0	0	0	0	0	0
8	-	0	0	0	0	0	0
9	-	0	0	0	0	0	0
10	-	0	0	0	0	0	0
11	-	0	0	0	0	0	0
12	-	0	0	0	0	0	0
13	-	0	0	0	0	0	0
14	-	0	0	0	0	0	0
15	-	0	0	0	0	0	0
16	-	0	0	0	0	0	0
17	-	0	0	0	0	0	0
18	-	0	0	0	0	0	0
19	-	0	0	0	0	0	0
20	-	0	0	0	0	0	0

Calculated Architectural Sound Leakage Through Assemblies

Assembly #	Construction	STC Rating	% Operable	Area (ft²)	Acoustical Contribution (Closed)	Acoustical Contribution (Open)
1	Stucco Wall (NBS W-50-71)	46	0	96.7	32.0	32.0
2	Window - 1/8 Glass (Monsanto)	26	50	15.0	41.8	54.0
3	Stucco Wall (NBS W-50-71)	46	0	20.0	25.2	25.2
4	-	-	0	0.0	0.0	0.0
5	-	-	0	0.0	0.0	0.0
6	-	-	0	0.0	0.0	0.0
7	-	-	0	0.0	0.0	0.0
8	-	-	0	0.0	0.0	0.0
9	-	-	0	0.0	0.0	0.0
10	-	-	0	0.0	0.0	0.0
11	-	-	0	0.0	0.0	0.0
12	-	-	0	0.0	0.0	0.0
13	-	-	0	0.0	0.0	0.0
14	-	-	0	0.0	0.0	0.0
15	-	-	0	0.0	0.0	0.0
16	-	-	0	0.0	0.0	0.0
17	-	-	0	0.0	0.0	0.0
18	-	-	0	0.0	0.0	0.0
19	-	-	0	0.0	0.0	0.0
20	-	-	0	0.0	0.0	0.0

	Closed	Open
Compliance Threshold (dBA CNEL):	45.0	-
Predicted Level (dBA CNEL):	42.3	54.0
Complies with Standard:	Yes	

ISE ARCHITECTURAL ACOUSTICAL MODEL (AAM) v3.0

Room Geometrics Definition	
Room Designation:	AL-2b BR1
Floor Area (ft^2):	167
Ceiling Height (ft):	9
Room Volume (ft^3):	1503
Room Absorption Ratio FMP:	0.75
Total Room Absorption (Sabins)	125.25

Noise Exposure Definition	
Noise Source:	Traffic (NBS Spectrum, 1978)
Noise Sound Level at Building Façade (dBA CNEL)	71.4
Incident Angle Correction:	-3
Building Façade Correction:	3
Quality Correction:	1

Modeled Octave Band Spectral Parameters for STC Classification

Assembly #	Construction	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
1	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
2	Window - 1/8 Glass (Monsanto)	20	21	25	27	27	27
3	-	0	0	0	0	0	0
4	-	0	0	0	0	0	0
5	-	0	0	0	0	0	0
6	-	0	0	0	0	0	0
7	-	0	0	0	0	0	0
8	-	0	0	0	0	0	0
9	-	0	0	0	0	0	0
10	-	0	0	0	0	0	0
11	-	0	0	0	0	0	0
12	-	0	0	0	0	0	0
13	-	0	0	0	0	0	0
14	-	0	0	0	0	0	0
15	-	0	0	0	0	0	0
16	-	0	0	0	0	0	0
17	-	0	0	0	0	0	0
18	-	0	0	0	0	0	0
19	-	0	0	0	0	0	0
20	-	0	0	0	0	0	0

Calculated Architectural Sound Leakage Through Assemblies

Assembly #	Construction	STC Rating	% Operable	Area (ft^2)	Acoustical Contribution (Closed)	Acoustical Contribution (Open)
1	Stucco Wall (NBS W-50-71)	46	0	91.7	34.4	34.4
2	Window - 1/8 Glass (Monsanto)	26	50	25.0	43.5	55.8
3	-	-	0	0.0	0.0	0.0
4	-	-	0	0.0	0.0	0.0
5	-	-	0	0.0	0.0	0.0
6	-	-	0	0.0	0.0	0.0
7	-	-	0	0.0	0.0	0.0
8	-	-	0	0.0	0.0	0.0
9	-	-	0	0.0	0.0	0.0
10	-	-	0	0.0	0.0	0.0
11	-	-	0	0.0	0.0	0.0
12	-	-	0	0.0	0.0	0.0
13	-	-	0	0.0	0.0	0.0
14	-	-	0	0.0	0.0	0.0
15	-	-	0	0.0	0.0	0.0
16	-	-	0	0.0	0.0	0.0
17	-	-	0	0.0	0.0	0.0
18	-	-	0	0.0	0.0	0.0
19	-	-	0	0.0	0.0	0.0
20	-	-	0	0.0	0.0	0.0

	Closed	Open
Compliance Threshold (dBA CNEL):	45.0	-
Predicted Level (dBA CNEL):	44.0	55.8
Complies with Standard:	Yes	

ISE ARCHITECTURAL ACOUSTICAL MODEL (AAM) v3.0

Room Geometrics Definition	
Room Designation:	AL-2b BR2
Floor Area (ft^2):	128
Ceiling Height (ft):	9
Room Volume (ft^3):	1152
Room Absorption Ratio FMP:	0.75
Total Room Absorption (Sabins)	96

Noise Exposure Definition	
Noise Source:	Traffic (NBS Spectrum, 1978)
Noise Sound Level at Building Façade (dBA CNEL)	71.4
Incident Angle Correction:	-3
Building Façade Correction:	3
Quality Correction:	1

Modeled Octave Band Spectral Parameters for STC Classification

Assembly #	Construction	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
1	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
2	Window - 3/16 Glass (Monsanto)	22	24	27	28	29	30
3	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
4	-	0	0	0	0	0	0
5	-	0	0	0	0	0	0
6	-	0	0	0	0	0	0
7	-	0	0	0	0	0	0
8	-	0	0	0	0	0	0
9	-	0	0	0	0	0	0
10	-	0	0	0	0	0	0
11	-	0	0	0	0	0	0
12	-	0	0	0	0	0	0
13	-	0	0	0	0	0	0
14	-	0	0	0	0	0	0
15	-	0	0	0	0	0	0
16	-	0	0	0	0	0	0
17	-	0	0	0	0	0	0
18	-	0	0	0	0	0	0
19	-	0	0	0	0	0	0
20	-	0	0	0	0	0	0

Calculated Architectural Sound Leakage Through Assemblies

					Acoustical Contribution	
Assembly #	Construction	STC Rating	% Operable	Area (ft^2)	(Closed)	(Open)
1	Stucco Wall (NBS W-50-71)	46	0	81.7	35.0	35.0
2	Window - 3/16 Glass (Monsanto)	28	50	25.0	42.7	56.0
3	Stucco Wall (NBS W-50-71)	46	0	143.0	37.5	37.5
4	-	-	0	0.0	0.0	0.0
5	-	-	0	0.0	0.0	0.0
6	-	-	0	0.0	0.0	0.0
7	-	-	0	0.0	0.0	0.0
8	-	-	0	0.0	0.0	0.0
9	-	-	0	0.0	0.0	0.0
10	-	-	0	0.0	0.0	0.0
11	-	-	0	0.0	0.0	0.0
12	-	-	0	0.0	0.0	0.0
13	-	-	0	0.0	0.0	0.0
14	-	-	0	0.0	0.0	0.0
15	-	-	0	0.0	0.0	0.0
16	-	-	0	0.0	0.0	0.0
17	-	-	0	0.0	0.0	0.0
18	-	-	0	0.0	0.0	0.0
19	-	-	0	0.0	0.0	0.0
20	-	-	0	0.0	0.0	0.0

	Closed	Open
Compliance Threshold (dBA CNEL):	45.0	-
Predicted Level (dBA CNEL):	44.4	56.1
Complies with Standard:	Yes	

ISE ARCHITECTURAL ACOUSTICAL MODEL (AAM) v3.0

Room Geometrics Definition	
Room Designation:	AL-2b LivRm
Floor Area (ft^2):	309
Ceiling Height (ft):	9
Room Volume (ft^3):	2781
Room Absorption Ratio FMP:	0.75
Total Room Absorption (Sabins)	231.75

Noise Exposure Definition	
Noise Source:	Traffic (NBS Spectrum, 1978)
Noise Sound Level at Building Façade (dBA CNEL)	71.4
Incident Angle Correction:	-3
Building Façade Correction:	3
Quality Correction:	1

Modeled Octave Band Spectral Parameters for STC Classification

Assembly #	Construction	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
1	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
2	Window - 1/8 Glass (Monsanto)	20	21	25	27	27	27
3	-	0	0	0	0	0	0
4	-	0	0	0	0	0	0
5	-	0	0	0	0	0	0
6	-	0	0	0	0	0	0
7	-	0	0	0	0	0	0
8	-	0	0	0	0	0	0
9	-	0	0	0	0	0	0
10	-	0	0	0	0	0	0
11	-	0	0	0	0	0	0
12	-	0	0	0	0	0	0
13	-	0	0	0	0	0	0
14	-	0	0	0	0	0	0
15	-	0	0	0	0	0	0
16	-	0	0	0	0	0	0
17	-	0	0	0	0	0	0
18	-	0	0	0	0	0	0
19	-	0	0	0	0	0	0
20	-	0	0	0	0	0	0

Calculated Architectural Sound Leakage Through Assemblies

Assembly #	Construction	STC Rating	% Operable	Area (ft^2)	Acoustical Contribution (Closed)	Acoustical Contribution (Open)
1	Stucco Wall (NBS W-50-71)	46	0	100.0	32.1	32.1
2	Window - 1/8 Glass (Monsanto)	26	50	15.0	43.4	55.7
3	-	-	0	0.0	0.0	0.0
4	-	-	0	0.0	0.0	0.0
5	-	-	0	0.0	0.0	0.0
6	-	-	0	0.0	0.0	0.0
7	-	-	0	0.0	0.0	0.0
8	-	-	0	0.0	0.0	0.0
9	-	-	0	0.0	0.0	0.0
10	-	-	0	0.0	0.0	0.0
11	-	-	0	0.0	0.0	0.0
12	-	-	0	0.0	0.0	0.0
13	-	-	0	0.0	0.0	0.0
14	-	-	0	0.0	0.0	0.0
15	-	-	0	0.0	0.0	0.0
16	-	-	0	0.0	0.0	0.0
17	-	-	0	0.0	0.0	0.0
18	-	-	0	0.0	0.0	0.0
19	-	-	0	0.0	0.0	0.0
20	-	-	0	0.0	0.0	0.0

	Closed	Open
Compliance Threshold (dBA CNEL):	45.0	-
Predicted Level (dBA CNEL):	43.7	55.7
Complies with Standard:	Yes	

ISE ARCHITECTURAL ACOUSTICAL MODEL (AAM) v3.0

Room Geometrics Definition	
Room Designation:	Floor1 Cards Rm
Floor Area (ft^2):	156
Ceiling Height (ft):	11
Room Volume (ft^3):	1716
Room Absorption Ratio FMP:	0.75
Total Room Absorption (Sabins)	117

Noise Exposure Definition	
Noise Source:	Traffic (NBS Spectrum, 1978)
Noise Sound Level at Building Façade (dBA CNEL)	71.4
Incident Angle Correction:	-3
Building Façade Correction:	3
Quality Correction:	1

Modeled Octave Band Spectral Parameters for STC Classification

Assembly #	Construction	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
1	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
2	Window - 1/4 Glass (Monsanto)	21	23	26	27	28	29
3	-	0	0	0	0	0	0
4	-	0	0	0	0	0	0
5	-	0	0	0	0	0	0
6	-	0	0	0	0	0	0
7	-	0	0	0	0	0	0
8	-	0	0	0	0	0	0
9	-	0	0	0	0	0	0
10	-	0	0	0	0	0	0
11	-	0	0	0	0	0	0
12	-	0	0	0	0	0	0
13	-	0	0	0	0	0	0
14	-	0	0	0	0	0	0
15	-	0	0	0	0	0	0
16	-	0	0	0	0	0	0
17	-	0	0	0	0	0	0
18	-	0	0	0	0	0	0
19	-	0	0	0	0	0	0
20	-	0	0	0	0	0	0

Calculated Architectural Sound Leakage Through Assemblies

					Acoustical Contribution	
Assembly #	Construction	STC Rating	% Operable	Area (ft^2)	(Closed)	(Open)
1	Stucco Wall (NBS W-50-71)	46	0	116.3	35.7	35.7
2	Window - 1/4 Glass (Monsanto)	27	50	15.0	43.6	56.4
3	-	-	0	0.0	0.0	0.0
4	-	-	0	0.0	0.0	0.0
5	-	-	0	0.0	0.0	0.0
6	-	-	0	0.0	0.0	0.0
7	-	-	0	0.0	0.0	0.0
8	-	-	0	0.0	0.0	0.0
9	-	-	0	0.0	0.0	0.0
10	-	-	0	0.0	0.0	0.0
11	-	-	0	0.0	0.0	0.0
12	-	-	0	0.0	0.0	0.0
13	-	-	0	0.0	0.0	0.0
14	-	-	0	0.0	0.0	0.0
15	-	-	0	0.0	0.0	0.0
16	-	-	0	0.0	0.0	0.0
17	-	-	0	0.0	0.0	0.0
18	-	-	0	0.0	0.0	0.0
19	-	-	0	0.0	0.0	0.0
20	-	-	0	0.0	0.0	0.0

	Closed	Open
Compliance Threshold (dBA CNEL):	45.0	-
Predicted Level (dBA CNEL):	44.3	56.5
Complies with Standard:	Yes	

ISE ARCHITECTURAL ACOUSTICAL MODEL (AAM) v3.0

Room Geometrics Definition	
Room Designation:	Floor1 Library
Floor Area (ft^2):	189
Ceiling Height (ft):	11
Room Volume (ft^3):	2079
Room Absorption Ratio FMP:	0.75
Total Room Absorption (Sabins)	141.75

Noise Exposure Definition	
Noise Source:	Traffic (NBS Spectrum, 1978)
Noise Sound Level at Building Façade (dBA CNEL)	71.4
Incident Angle Correction:	-3
Building Façade Correction:	3
Quality Correction:	1

Modeled Octave Band Spectral Parameters for STC Classification

Assembly #	Construction	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
1	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
2	Window - 1/8 Glass (Monsanto)	20	21	25	27	27	27
3	-	0	0	0	0	0	0
4	-	0	0	0	0	0	0
5	-	0	0	0	0	0	0
6	-	0	0	0	0	0	0
7	-	0	0	0	0	0	0
8	-	0	0	0	0	0	0
9	-	0	0	0	0	0	0
10	-	0	0	0	0	0	0
11	-	0	0	0	0	0	0
12	-	0	0	0	0	0	0
13	-	0	0	0	0	0	0
14	-	0	0	0	0	0	0
15	-	0	0	0	0	0	0
16	-	0	0	0	0	0	0
17	-	0	0	0	0	0	0
18	-	0	0	0	0	0	0
19	-	0	0	0	0	0	0
20	-	0	0	0	0	0	0

Calculated Architectural Sound Leakage Through Assemblies

Assembly #	Construction	STC Rating	% Operable	Area (ft^2)	Acoustical Contribution (Closed)	Acoustical Contribution (Open)
1	Stucco Wall (NBS W-50-71)	46	0	158.2	36.2	36.2
2	Window - 1/8 Glass (Monsanto)	26	50	15.0	43.8	56.0
3	-	-	0	0.0	0.0	0.0
4	-	-	0	0.0	0.0	0.0
5	-	-	0	0.0	0.0	0.0
6	-	-	0	0.0	0.0	0.0
7	-	-	0	0.0	0.0	0.0
8	-	-	0	0.0	0.0	0.0
9	-	-	0	0.0	0.0	0.0
10	-	-	0	0.0	0.0	0.0
11	-	-	0	0.0	0.0	0.0
12	-	-	0	0.0	0.0	0.0
13	-	-	0	0.0	0.0	0.0
14	-	-	0	0.0	0.0	0.0
15	-	-	0	0.0	0.0	0.0
16	-	-	0	0.0	0.0	0.0
17	-	-	0	0.0	0.0	0.0
18	-	-	0	0.0	0.0	0.0
19	-	-	0	0.0	0.0	0.0
20	-	-	0	0.0	0.0	0.0

	Closed	Open
Compliance Threshold (dBA CNEL):	45.0	-
Predicted Level (dBA CNEL):	44.5	56.1
Complies with Standard:	Yes	

ISE ARCHITECTURAL ACOUSTICAL MODEL (AAM) v3.0

Room Geometrics Definition	
Room Designation:	Floor1 Living Rm Ctr
Floor Area (ft^2):	520
Ceiling Height (ft):	11
Room Volume (ft^3):	5720
Room Absorption Ratio FMP:	0.75
Total Room Absorption (Sabins)	390

Noise Exposure Definition	
Noise Source:	Traffic (NBS Spectrum, 1978)
Noise Sound Level at Building Façade (dBA CNEL)	71.4
Incident Angle Correction:	-3
Building Façade Correction:	3
Quality Correction:	1

Modeled Octave Band Spectral Parameters for STC Classification

Assembly #	Construction	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
1	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
2	Window - 1/8 Glass (Monsanto)	20	21	25	27	27	27
3	-	0	0	0	0	0	0
4	-	0	0	0	0	0	0
5	-	0	0	0	0	0	0
6	-	0	0	0	0	0	0
7	-	0	0	0	0	0	0
8	-	0	0	0	0	0	0
9	-	0	0	0	0	0	0
10	-	0	0	0	0	0	0
11	-	0	0	0	0	0	0
12	-	0	0	0	0	0	0
13	-	0	0	0	0	0	0
14	-	0	0	0	0	0	0
15	-	0	0	0	0	0	0
16	-	0	0	0	0	0	0
17	-	0	0	0	0	0	0
18	-	0	0	0	0	0	0
19	-	0	0	0	0	0	0
20	-	0	0	0	0	0	0

Calculated Architectural Sound Leakage Through Assemblies

Assembly #	Construction	STC Rating	% Operable	Area (ft^2)	Acoustical Contribution (Closed)	Acoustical Contribution (Open)
1	Stucco Wall (NBS W-50-71)	46	0	166.0	32.0	32.0
2	Window - 1/8 Glass (Monsanto)	26	50	54.0	42.0	54.2
3	-	-	0	0.0	0.0	0.0
4	-	-	0	0.0	0.0	0.0
5	-	-	0	0.0	0.0	0.0
6	-	-	0	0.0	0.0	0.0
7	-	-	0	0.0	0.0	0.0
8	-	-	0	0.0	0.0	0.0
9	-	-	0	0.0	0.0	0.0
10	-	-	0	0.0	0.0	0.0
11	-	-	0	0.0	0.0	0.0
12	-	-	0	0.0	0.0	0.0
13	-	-	0	0.0	0.0	0.0
14	-	-	0	0.0	0.0	0.0
15	-	-	0	0.0	0.0	0.0
16	-	-	0	0.0	0.0	0.0
17	-	-	0	0.0	0.0	0.0
18	-	-	0	0.0	0.0	0.0
19	-	-	0	0.0	0.0	0.0
20	-	-	0	0.0	0.0	0.0

	Closed	Open
Compliance Threshold (dBA CNEL):	45.0	-
Predicted Level (dBA CNEL):	42.4	54.2
Complies with Standard:	Yes	

ISE ARCHITECTURAL ACOUSTICAL MODEL (AAM) v3.0

Room Geometrics Definition	
Room Designation:	Floor1 Living Rm SW
Floor Area (ft²):	807
Ceiling Height (ft):	11
Room Volume (ft³):	8877
Room Absorption Ratio FMP:	0.75
Total Room Absorption (Sabins)	605.25

Noise Exposure Definition	
Noise Source:	Traffic (NBS Spectrum, 1978)
Noise Sound Level at Building Façade (dBA CNEL)	71.4
Incident Angle Correction:	-3
Building Façade Correction:	3
Quality Correction:	1

Modeled Octave Band Spectral Parameters for STC Classification

Assembly #	Construction	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
1	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
2	French Door - 3/32 Glass (NBS W-94-71)	21	24	27	27	24	28
3	-	0	0	0	0	0	0
4	-	0	0	0	0	0	0
5	-	0	0	0	0	0	0
6	-	0	0	0	0	0	0
7	-	0	0	0	0	0	0
8	-	0	0	0	0	0	0
9	-	0	0	0	0	0	0
10	-	0	0	0	0	0	0
11	-	0	0	0	0	0	0
12	-	0	0	0	0	0	0
13	-	0	0	0	0	0	0
14	-	0	0	0	0	0	0
15	-	0	0	0	0	0	0
16	-	0	0	0	0	0	0
17	-	0	0	0	0	0	0
18	-	0	0	0	0	0	0
19	-	0	0	0	0	0	0
20	-	0	0	0	0	0	0

Calculated Architectural Sound Leakage Through Assemblies

Assembly #	Construction	STC Rating	% Operable	Area (ft²)	Acoustical Contribution (Closed)	Acoustical Contribution (Open)
1	Stucco Wall (NBS W-50-71)	46	0	103.3	28.0	28.0
2	French Door - 3/32 Glass (NBS W-94-71)	26	100	20.0	38.1	63.6
3	-	-	0	0.0	0.0	0.0
4	-	-	0	0.0	0.0	0.0
5	-	-	0	0.0	0.0	0.0
6	-	-	0	0.0	0.0	0.0
7	-	-	0	0.0	0.0	0.0
8	-	-	0	0.0	0.0	0.0
9	-	-	0	0.0	0.0	0.0
10	-	-	0	0.0	0.0	0.0
11	-	-	0	0.0	0.0	0.0
12	-	-	0	0.0	0.0	0.0
13	-	-	0	0.0	0.0	0.0
14	-	-	0	0.0	0.0	0.0
15	-	-	0	0.0	0.0	0.0
16	-	-	0	0.0	0.0	0.0
17	-	-	0	0.0	0.0	0.0
18	-	-	0	0.0	0.0	0.0
19	-	-	0	0.0	0.0	0.0
20	-	-	0	0.0	0.0	0.0

	Closed	Open
Compliance Threshold (dBA CNEL):	45.0	-
Predicted Level (dBA CNEL):	38.5	63.6
Complies with Standard:	Yes	

ISE ARCHITECTURAL ACOUSTICAL MODEL (AAM) v3.0

Room Geometrics Definition	
Room Designation:	Floor1 Office SW
Floor Area (ft^2):	104
Ceiling Height (ft):	11
Room Volume (ft^3):	1144
Room Absorption Ratio FMP:	0.75
Total Room Absorption (Sabins)	78

Noise Exposure Definition	
Noise Source:	Traffic (NBS Spectrum, 1978)
Noise Sound Level at Building Façade (dBA CNEL)	71.4
Incident Angle Correction:	-3
Building Façade Correction:	3
Quality Correction:	1

Modeled Octave Band Spectral Parameters for STC Classification

Assembly #	Construction	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
1	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
2	Window - 1/8 Glass (Monsanto)	20	21	25	27	27	27
3	-	0	0	0	0	0	0
4	-	0	0	0	0	0	0
5	-	0	0	0	0	0	0
6	-	0	0	0	0	0	0
7	-	0	0	0	0	0	0
8	-	0	0	0	0	0	0
9	-	0	0	0	0	0	0
10	-	0	0	0	0	0	0
11	-	0	0	0	0	0	0
12	-	0	0	0	0	0	0
13	-	0	0	0	0	0	0
14	-	0	0	0	0	0	0
15	-	0	0	0	0	0	0
16	-	0	0	0	0	0	0
17	-	0	0	0	0	0	0
18	-	0	0	0	0	0	0
19	-	0	0	0	0	0	0
20	-	0	0	0	0	0	0

Calculated Architectural Sound Leakage Through Assemblies

Assembly #	Construction	STC Rating	% Operable	Area (ft^2)	Acoustical Contribution (Closed)	(Open)
1	Stucco Wall (NBS W-50-71)	46	0	103.3	36.9	36.9
2	Window - 1/8 Glass (Monsanto)	26	50	15.0	43.4	55.6
3	-	-	0	0.0	0.0	0.0
4	-	-	0	0.0	0.0	0.0
5	-	-	0	0.0	0.0	0.0
6	-	-	0	0.0	0.0	0.0
7	-	-	0	0.0	0.0	0.0
8	-	-	0	0.0	0.0	0.0
9	-	-	0	0.0	0.0	0.0
10	-	-	0	0.0	0.0	0.0
11	-	-	0	0.0	0.0	0.0
12	-	-	0	0.0	0.0	0.0
13	-	-	0	0.0	0.0	0.0
14	-	-	0	0.0	0.0	0.0
15	-	-	0	0.0	0.0	0.0
16	-	-	0	0.0	0.0	0.0
17	-	-	0	0.0	0.0	0.0
18	-	-	0	0.0	0.0	0.0
19	-	-	0	0.0	0.0	0.0
20	-	-	0	0.0	0.0	0.0

	Closed	Open
Compliance Threshold (dBA CNEL):	45.0	-
Predicted Level (dBA CNEL):	44.3	55.7
Complies with Standard:	Yes	

ISE ARCHITECTURAL ACOUSTICAL MODEL (AAM) v3.0

Room Geometrics Definition	
Room Designation:	Floor2 Beauty
Floor Area (ft^2):	239
Ceiling Height (ft):	10
Room Volume (ft^3):	2390
Room Absorption Ratio FMP:	0.75
Total Room Absorption (Sabins)	179.25

Noise Exposure Definition	
Noise Source:	Traffic (NBS Spectrum, 1978)
Noise Sound Level at Building Façade (dBA CNEL)	71.4
Incident Angle Correction:	-3
Building Façade Correction:	3
Quality Correction:	1

Modeled Octave Band Spectral Parameters for STC Classification

Assembly #	Construction	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
1	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
2	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
3	Window - 1/8 Glass (Monsanto)	20	21	25	27	27	27
4	-	0	0	0	0	0	0
5	-	0	0	0	0	0	0
6	-	0	0	0	0	0	0
7	-	0	0	0	0	0	0
8	-	0	0	0	0	0	0
9	-	0	0	0	0	0	0
10	-	0	0	0	0	0	0
11	-	0	0	0	0	0	0
12	-	0	0	0	0	0	0
13	-	0	0	0	0	0	0
14	-	0	0	0	0	0	0
15	-	0	0	0	0	0	0
16	-	0	0	0	0	0	0
17	-	0	0	0	0	0	0
18	-	0	0	0	0	0	0
19	-	0	0	0	0	0	0
20	-	0	0	0	0	0	0

Calculated Architectural Sound Leakage Through Assemblies

					Acoustical Contribution	
Assembly #	Construction	STC Rating	% Operable	Area (ft^2)	(Closed)	(Open)
1	Stucco Wall (NBS W-50-71)	46	0	184.0	35.8	35.8
2	Stucco Wall (NBS W-50-71)	46	0	92.5	32.9	32.9
3	Window - 1/8 Glass (Monsanto)	26	50	37.5	43.8	56.0
4	-	-	0	0.0	0.0	0.0
5	-	-	0	0.0	0.0	0.0
6	-	-	0	0.0	0.0	0.0
7	-	-	0	0.0	0.0	0.0
8	-	-	0	0.0	0.0	0.0
9	-	-	0	0.0	0.0	0.0
10	-	-	0	0.0	0.0	0.0
11	-	-	0	0.0	0.0	0.0
12	-	-	0	0.0	0.0	0.0
13	-	-	0	0.0	0.0	0.0
14	-	-	0	0.0	0.0	0.0
15	-	-	0	0.0	0.0	0.0
16	-	-	0	0.0	0.0	0.0
17	-	-	0	0.0	0.0	0.0
18	-	-	0	0.0	0.0	0.0
19	-	-	0	0.0	0.0	0.0
20	-	-	0	0.0	0.0	0.0

	Closed	Open
Compliance Threshold (dBA CNEL):	45.0	-
Predicted Level (dBA CNEL):	44.7	56.0
Complies with Standard:	Yes	

ISE ARCHITECTURAL ACOUSTICAL MODEL (AAM) v3.0

Room Geometrics Definition	
Room Designation:	Floor2 Theater
Floor Area (ft^2):	327
Ceiling Height (ft):	10
Room Volume (ft^3):	3270
Room Absorption Ratio FMP:	0.75
Total Room Absorption (Sabins)	245.25

Noise Exposure Definition	
Noise Source:	Traffic (NBS Spectrum, 1978)
Noise Sound Level at Building Façade (dBA CNEL)	71.4
Incident Angle Correction:	-3
Building Façade Correction:	3
Quality Correction:	1

Modeled Octave Band Spectral Parameters for STC Classification

Assembly #	Construction	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
1	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
2	-	0	0	0	0	0	0
3	-	0	0	0	0	0	0
4	-	0	0	0	0	0	0
5	-	0	0	0	0	0	0
6	-	0	0	0	0	0	0
7	-	0	0	0	0	0	0
8	-	0	0	0	0	0	0
9	-	0	0	0	0	0	0
10	-	0	0	0	0	0	0
11	-	0	0	0	0	0	0
12	-	0	0	0	0	0	0
13	-	0	0	0	0	0	0
14	-	0	0	0	0	0	0
15	-	0	0	0	0	0	0
16	-	0	0	0	0	0	0
17	-	0	0	0	0	0	0
18	-	0	0	0	0	0	0
19	-	0	0	0	0	0	0
20	-	0	0	0	0	0	0

Calculated Architectural Sound Leakage Through Assemblies

Assembly #	Construction	STC Rating	% Operable	Area (ft^2)	Acoustical Contribution (Closed)	(Open)
1	Stucco Wall (NBS W-50-71)	46	0	280.0	36.3	36.3
2	-	-	0	0.0	0.0	0.0
3	-	-	0	0.0	0.0	0.0
4	-	-	0	0.0	0.0	0.0
5	-	-	0	0.0	0.0	0.0
6	-	-	0	0.0	0.0	0.0
7	-	-	0	0.0	0.0	0.0
8	-	-	0	0.0	0.0	0.0
9	-	-	0	0.0	0.0	0.0
10	-	-	0	0.0	0.0	0.0
11	-	-	0	0.0	0.0	0.0
12	-	-	0	0.0	0.0	0.0
13	-	-	0	0.0	0.0	0.0
14	-	-	0	0.0	0.0	0.0
15	-	-	0	0.0	0.0	0.0
16	-	-	0	0.0	0.0	0.0
17	-	-	0	0.0	0.0	0.0
18	-	-	0	0.0	0.0	0.0
19	-	-	0	0.0	0.0	0.0
20	-	-	0	0.0	0.0	0.0

	Closed	Open
Compliance Threshold (dBA CNEL):	45.0	-
Predicted Level (dBA CNEL):	36.3	36.3
Complies with Standard:	Yes	

ISE ARCHITECTURAL ACOUSTICAL MODEL (AAM) v3.0

Room Geometrics Definition	
Room Designation:	Floor2 Wellness
Floor Area (ft²):	587
Ceiling Height (ft):	10
Room Volume (ft³):	5870
Room Absorption Ratio FMP:	0.75
Total Room Absorption (Sabins)	440.25

Noise Exposure Definition	
Noise Source:	Traffic (NBS Spectrum, 1978)
Noise Sound Level at Building Façade (dBA CNEL)	71.4
Incident Angle Correction:	-3
Building Façade Correction:	3
Quality Correction:	1

Modeled Octave Band Spectral Parameters for STC Classification

Assembly #	Construction	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
1	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
2	Window - 3/32 Glass (NBS W-23-72)	19	18	21	23	27	30
3	-	0	0	0	0	0	0
4	-	0	0	0	0	0	0
5	-	0	0	0	0	0	0
6	-	0	0	0	0	0	0
7	-	0	0	0	0	0	0
8	-	0	0	0	0	0	0
9	-	0	0	0	0	0	0
10	-	0	0	0	0	0	0
11	-	0	0	0	0	0	0
12	-	0	0	0	0	0	0
13	-	0	0	0	0	0	0
14	-	0	0	0	0	0	0
15	-	0	0	0	0	0	0
16	-	0	0	0	0	0	0
17	-	0	0	0	0	0	0
18	-	0	0	0	0	0	0
19	-	0	0	0	0	0	0
20	-	0	0	0	0	0	0

Calculated Architectural Sound Leakage Through Assemblies

Assembly #	Construction	STC Rating	% Operable	Area (ft²)	Acoustical Contribution (Closed)	(Open)
1	Stucco Wall (NBS W-50-71)	46	0	56.7	26.8	26.8
2	Window - 3/32 Glass (NBS W-23-72)	24	50	30.0	41.8	52.5
3	-	-	0	0.0	0.0	0.0
4	-	-	0	0.0	0.0	0.0
5	-	-	0	0.0	0.0	0.0
6	-	-	0	0.0	0.0	0.0
7	-	-	0	0.0	0.0	0.0
8	-	-	0	0.0	0.0	0.0
9	-	-	0	0.0	0.0	0.0
10	-	-	0	0.0	0.0	0.0
11	-	-	0	0.0	0.0	0.0
12	-	-	0	0.0	0.0	0.0
13	-	-	0	0.0	0.0	0.0
14	-	-	0	0.0	0.0	0.0
15	-	-	0	0.0	0.0	0.0
16	-	-	0	0.0	0.0	0.0
17	-	-	0	0.0	0.0	0.0
18	-	-	0	0.0	0.0	0.0
19	-	-	0	0.0	0.0	0.0
20	-	-	0	0.0	0.0	0.0

	Closed	Open
Compliance Threshold (dBA CNEL):	45.0	-
Predicted Level (dBA CNEL):	42.0	52.6
Complies with Standard:	Yes	

ISE ARCHITECTURAL ACOUSTICAL MODEL (AAM) v3.0

Room Geometrics Definition	
Room Designation:	Floor3 Activity Rm
Floor Area (ft²):	249
Ceiling Height (ft):	9
Room Volume (ft³):	2241
Room Absorption Ratio FMP:	0.75
Total Room Absorption (Sabins)	186.75

Noise Exposure Definition	
Noise Source:	Traffic (NBS Spectrum, 1978)
Noise Sound Level at Building Façade (dBA CNEL)	71.4
Incident Angle Correction:	-3
Building Façade Correction:	3
Quality Correction:	1

Modeled Octave Band Spectral Parameters for STC Classification

Assembly #	Construction	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
1	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
2	Window - 1/4 Laminated Glass (Monsanto)	22	24	28	29	31	33
3	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
4	Window - 1/4 Laminated Glass (Monsanto)	22	24	28	29	31	33
5	French Door - 3/32 Glass (NBS W-94-71)	21	24	27	27	24	28
6	-	0	0	0	0	0	0
7	-	0	0	0	0	0	0
8	-	0	0	0	0	0	0
9	-	0	0	0	0	0	0
10	-	0	0	0	0	0	0
11	-	0	0	0	0	0	0
12	-	0	0	0	0	0	0
13	-	0	0	0	0	0	0
14	-	0	0	0	0	0	0
15	-	0	0	0	0	0	0
16	-	0	0	0	0	0	0
17	-	0	0	0	0	0	0
18	-	0	0	0	0	0	0
19	-	0	0	0	0	0	0
20	-	0	0	0	0	0	0

Calculated Architectural Sound Leakage Through Assemblies

Assembly #	Construction	STC Rating	% Operable	Area (ft²)	Acoustical Contribution (Closed)	(Open)
1	Stucco Wall (NBS W-50-71)	46	0	37.0	28.7	28.7
2	Window - 1/4 Laminated Glass (Monsanto)	30	50	37.5	40.8	54.4
3	Stucco Wall (NBS W-50-71)	46	0	28.0	27.5	27.5
4	Window - 1/4 Laminated Glass (Monsanto)	30	50	15.0	36.8	50.4
5	French Door - 3/32 Glass (NBS W-94-71)	26	100	20.0	40.2	65.7
6	-	-	0	0.0	0.0	0.0
7	-	-	0	0.0	0.0	0.0
8	-	-	0	0.0	0.0	0.0
9	-	-	0	0.0	0.0	0.0
10	-	-	0	0.0	0.0	0.0
11	-	-	0	0.0	0.0	0.0
12	-	-	0	0.0	0.0	0.0
13	-	-	0	0.0	0.0	0.0
14	-	-	0	0.0	0.0	0.0
15	-	-	0	0.0	0.0	0.0
16	-	-	0	0.0	0.0	0.0
17	-	-	0	0.0	0.0	0.0
18	-	-	0	0.0	0.0	0.0
19	-	-	0	0.0	0.0	0.0
20	-	-	0	0.0	0.0	0.0

	Closed	Open
Compliance Threshold (dBA CNEL):	45.0	-
Predicted Level (dBA CNEL):	44.6	66.1
Complies with Standard:	Yes	

ISE ARCHITECTURAL ACOUSTICAL MODEL (AAM) v3.0

Room Geometrics Definition	
Room Designation:	MC-1a Studio
Floor Area (ft^2):	249
Ceiling Height (ft):	9
Room Volume (ft^3):	2241
Room Absorption Ratio FMP:	0.75
Total Room Absorption (Sabins)	186.75

Noise Exposure Definition	
Noise Source:	Traffic (NBS Spectrum, 1978)
Noise Sound Level at Building Façade (dBA CNEL)	71.4
Incident Angle Correction:	-3
Building Façade Correction:	3
Quality Correction:	1

Modeled Octave Band Spectral Parameters for STC Classification

Assembly #	Construction	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
1	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
2	Window - 1/8 Glass (Monsanto)	20	21	25	27	27	27
3	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
4	-	0	0	0	0	0	0
5	-	0	0	0	0	0	0
6	-	0	0	0	0	0	0
7	-	0	0	0	0	0	0
8	-	0	0	0	0	0	0
9	-	0	0	0	0	0	0
10	-	0	0	0	0	0	0
11	-	0	0	0	0	0	0
12	-	0	0	0	0	0	0
13	-	0	0	0	0	0	0
14	-	0	0	0	0	0	0
15	-	0	0	0	0	0	0
16	-	0	0	0	0	0	0
17	-	0	0	0	0	0	0
18	-	0	0	0	0	0	0
19	-	0	0	0	0	0	0
20	-	0	0	0	0	0	0

Calculated Architectural Sound Leakage Through Assemblies

Assembly #	Construction	STC Rating	% Operable	Area (ft^2)	Acoustical Contribution (Closed)	Acoustical Contribution (Open)
1	Stucco Wall (NBS W-50-71)	46	0	139.4	34.5	34.5
2	Window - 1/8 Glass (Monsanto)	26	50	15.0	42.6	54.8
3	Stucco Wall (NBS W-50-71)	46	0	129.3	34.1	34.1
4	-	-	0	0.0	0.0	0.0
5	-	-	0	0.0	0.0	0.0
6	-	-	0	0.0	0.0	0.0
7	-	-	0	0.0	0.0	0.0
8	-	-	0	0.0	0.0	0.0
9	-	-	0	0.0	0.0	0.0
10	-	-	0	0.0	0.0	0.0
11	-	-	0	0.0	0.0	0.0
12	-	-	0	0.0	0.0	0.0
13	-	-	0	0.0	0.0	0.0
14	-	-	0	0.0	0.0	0.0
15	-	-	0	0.0	0.0	0.0
16	-	-	0	0.0	0.0	0.0
17	-	-	0	0.0	0.0	0.0
18	-	-	0	0.0	0.0	0.0
19	-	-	0	0.0	0.0	0.0
20	-	-	0	0.0	0.0	0.0

	Closed	Open
Compliance Threshold (dBA CNEL):	45.0	-
Predicted Level (dBA CNEL):	43.7	54.9
Complies with Standard:	Yes	

ISE ARCHITECTURAL ACOUSTICAL MODEL (AAM) v3.0

Room Geometrics Definition	
Room Designation:	MC-1b Studio
Floor Area (ft^2):	273
Ceiling Height (ft):	9
Room Volume (ft^3):	2457
Room Absorption Ratio FMP:	0.75
Total Room Absorption (Sabins)	204.75

Noise Exposure Definition	
Noise Source:	Traffic (NBS Spectrum, 1978)
Noise Sound Level at Building Façade (dBA CNEL)	71.4
Incident Angle Correction:	-3
Building Façade Correction:	3
Quality Correction:	1

Modeled Octave Band Spectral Parameters for STC Classification

Assembly #	Construction	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
1	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
2	Window - 1/8 Glass (Monsanto)	20	21	25	27	27	27
3	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
4	-	0	0	0	0	0	0
5	-	0	0	0	0	0	0
6	-	0	0	0	0	0	0
7	-	0	0	0	0	0	0
8	-	0	0	0	0	0	0
9	-	0	0	0	0	0	0
10	-	0	0	0	0	0	0
11	-	0	0	0	0	0	0
12	-	0	0	0	0	0	0
13	-	0	0	0	0	0	0
14	-	0	0	0	0	0	0
15	-	0	0	0	0	0	0
16	-	0	0	0	0	0	0
17	-	0	0	0	0	0	0
18	-	0	0	0	0	0	0
19	-	0	0	0	0	0	0
20	-	0	0	0	0	0	0

Calculated Architectural Sound Leakage Through Assemblies

Assembly #	Construction	STC Rating	% Operable	Area (ft^2)	Acoustical Contribution (Closed)	(Open)
1	Stucco Wall (NBS W-50-71)	46	0	139.4	34.1	34.1
2	Window - 1/8 Glass (Monsanto)	26	50	15.0	42.2	54.4
3	Stucco Wall (NBS W-50-71)	46	0	148.5	34.3	34.3
4	-	-	0	0.0	0.0	0.0
5	-	-	0	0.0	0.0	0.0
6	-	-	0	0.0	0.0	0.0
7	-	-	0	0.0	0.0	0.0
8	-	-	0	0.0	0.0	0.0
9	-	-	0	0.0	0.0	0.0
10	-	-	0	0.0	0.0	0.0
11	-	-	0	0.0	0.0	0.0
12	-	-	0	0.0	0.0	0.0
13	-	-	0	0.0	0.0	0.0
14	-	-	0	0.0	0.0	0.0
15	-	-	0	0.0	0.0	0.0
16	-	-	0	0.0	0.0	0.0
17	-	-	0	0.0	0.0	0.0
18	-	-	0	0.0	0.0	0.0
19	-	-	0	0.0	0.0	0.0
20	-	-	0	0.0	0.0	0.0

	Closed	Open
Compliance Threshold (dBA CNEL):	45.0	-
Predicted Level (dBA CNEL):	43.4	54.5
Complies with Standard:	Yes	

ISE ARCHITECTURAL ACOUSTICAL MODEL (AAM) v3.0

Room Geometrics Definition	
Room Designation:	MC-1c Studio
Floor Area (ft^2):	368
Ceiling Height (ft):	9
Room Volume (ft^3):	3312
Room Absorption Ratio FMP:	0.75
Total Room Absorption (Sabins)	276

Noise Exposure Definition	
Noise Source:	Traffic (NBS Spectrum, 1978)
Noise Sound Level at Building Façade (dBA CNEL)	71.4
Incident Angle Correction:	-3
Building Façade Correction:	3
Quality Correction:	1

Modeled Octave Band Spectral Parameters for STC Classification

Assembly #	Construction	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
1	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
2	Window - 1/8 Glass (Monsanto)	20	21	25	27	27	27
3	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
4	Stucco Wall (NBS W-50-71)	27	42	44	46	49	54
5	Window - 1/8 Glass (Monsanto)	20	21	25	27	27	27
6	-	0	0	0	0	0	0
7	-	0	0	0	0	0	0
8	-	0	0	0	0	0	0
9	-	0	0	0	0	0	0
10	-	0	0	0	0	0	0
11	-	0	0	0	0	0	0
12	-	0	0	0	0	0	0
13	-	0	0	0	0	0	0
14	-	0	0	0	0	0	0
15	-	0	0	0	0	0	0
16	-	0	0	0	0	0	0
17	-	0	0	0	0	0	0
18	-	0	0	0	0	0	0
19	-	0	0	0	0	0	0
20	-	0	0	0	0	0	0

Calculated Architectural Sound Leakage Through Assemblies

					Acoustical Contribution	
Assembly #	Construction	STC Rating	% Operable	Area (ft^2)	(Closed)	(Open)
1	Stucco Wall (NBS W-50-71)	46	0	118.5	32.1	32.1
2	Window - 1/8 Glass (Monsanto)	26	50	15.0	40.9	53.1
3	Stucco Wall (NBS W-50-71)	46	0	129.3	32.4	32.4
4	Stucco Wall (NBS W-50-71)	46	0	164.8	33.5	33.5
5	Window - 1/8 Glass (Monsanto)	26	50	25.0	40.1	52.3
6	-	-	0	0.0	0.0	0.0
7	-	-	0	0.0	0.0	0.0
8	-	-	0	0.0	0.0	0.0
9	-	-	0	0.0	0.0	0.0
10	-	-	0	0.0	0.0	0.0
11	-	-	0	0.0	0.0	0.0
12	-	-	0	0.0	0.0	0.0
13	-	-	0	0.0	0.0	0.0
14	-	-	0	0.0	0.0	0.0
15	-	-	0	0.0	0.0	0.0
16	-	-	0	0.0	0.0	0.0
17	-	-	0	0.0	0.0	0.0
18	-	-	0	0.0	0.0	0.0
19	-	-	0	0.0	0.0	0.0
20	-	-	0	0.0	0.0	0.0

	Closed	Open
Compliance Threshold (dBA CNEL):	45.0	-
Predicted Level (dBA CNEL):	44.5	55.8
Complies with Standard:	Yes	

Proposed Rooftop HVAC Condenser Unit Specifications

MITSUBISHI ELECTRIC

Mr.SLIM® Split-ductless A/C and Heat Pumps

SUBMITTAL DATA: SEZ-KD18NA & SUZ-KA18NA 18,000 BTU/H HORIZONTAL-DUCTED HEAT-PUMP SYSTEMS

Job Name: Location: Date:

Purchaser: Engineer:

Submitted to: For ☐ Reference ☐ Approval ☐ Construction

System Designation: Schedule No.:

GENERAL FEATURES

- Horizontal-ducted indoor unit for residential applications
- Ultra thin body: 7-7/8" high
- Built-in drain mechanism for condensate removal; lifts to 21-11/16"
- Air filter is included with indoor unit
- Quiet operation — as low as 23 dBA
- PAR-21MAA wired remote controller is included
- Indoor unit powered from outdoor unit using A-Control
- Automatic fan speed control
- Auto restart following a power outage
- Limited warranty: five years on parts and defects and seven years on compressors

OPTIONAL ACCESSORIES

Indoor Unit

- M-NET Control Adapter (MAC-399IF)
- External Heat Adapter (PAC-YU25HT)
- CN24 Relay Kit (CN24RELAY-KIT-CM)
- Three-pole Disconnect Switch (TAZ-MS303)

Outdoor Unit

- Drain Pan Heater (MAC-641BH-U)
- Drain Socket (MAC-811DS)

Cooling*
Rated Capacity . . . . 17,200 Btu/h
Capacity Range . . . . 3,800 - 19,000 Btu/h
SEER 17.5
Total Input . . . . 1,380 W

Heating at 47°F*
Rated Capacity . . . . 21,600 Btu/h
Capacity Range . . . . 4,800 - 24,900 Btu/h
HSPF 10.0
Total Input . . . . 1,700 W

Heating at 17°F*
Rated Capacity . . . . 13,100 Btu/h
Rated Total Input . . . . 1,350 W
Maximum Capacity . . . . 15,000 Btu/h
Maximum Total Input . . . . 1,830 W

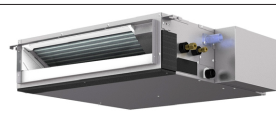
* Rating Conditions (Cooling) - Indoor: 80°F (27°C) DB, 67°F (19°C) WB; Outdoor: 95°F (35°C) DB, 75°F (24°C) WB.
(Heating at 47°F) - Indoor: 70°F (21°C) DB, 60°F (16°C) WB; Outdoor: 47°F (8°C) DB, 43°F (6°C) WB.
(Heating at 17°F) - Indoor: 70°F (21°C) DB, 60°F (16°C) WB; Outdoor: 17°F (-8°C) DB, 15°F (-9°C) WB.

Electrical Requirements
Power Supply . . . . 208 / 230V, 1-Phase, 60 Hz
Breaker Size . . . . 15 A

Voltage
Indoor - Outdoor S1-S2 . . . . AC 208 / 230V
Indoor - Outdoor S2-S3 . . . . DC 12-24V
Indoor - Remote Controller . . . . DC 12V

OPERATING RANGE

		Indoor Intake Air Temp.	Outdoor Intake Air Temp.
Cooling	Maximum	90°F (32°C) DB, 73°F (23°C) WB	115°F (46°C) DB
	Minimum	67°F (19°C) DB, 57°F (14°C) WB	14°F (-10°C) DB
Heating	Maximum	80°F (27°C) DB, 67°F (19°C) WB	75°F (24°C) DB, 65°F (18°C) WB
	Minimum	70°F (21°C) DB, 60°F (16°C) WB	-4°F (-20°C) DB, -5°F (-21°C) WB



Indoor Unit: SEZ-KD18NA

Remote Controller: PAR-21MAA

Outdoor Unit: SUZ-KA18NA

Indoor Unit
MCA . . . . 1 A
Fan Type x Quantity . . . . Sirocco Fan x 4
Fan Motor Type . . . . Direct-driven DC Brushless Motor
Fan Motor Output . . . . 96 W
Fan Motor . . . . 0.74 F.L.A.
Airflow (Lo - Med - Hi) . . . . 423 - 529 - 635 Dry CFM
381 - 476 - 572 Wet CFM
Air Filter . . . . Polypropylene Honeycomb
External Static Pressure . . . . 0.02 - 0.06 - 0.14 - 0.20"WG
Sound Pressure Level (Lo - Med - Hi) . . . . 30 - 34 - 38 dB(A)

DIMENSIONS	UNIT INCHES / MM
W	46-7/8 / 1,190
D	27-9/16 / 700
H	7-7/8 / 200

Weight . . . . 62 lbs. / 28 kg
External Finish . . . . Galvanized-steel Sheets
Field Drainpipe Size O.D. . . . . 1-1/4" / 32 mm
Wall-mounted Remote Controller PAR-21MAA
(see Data Submittal Sheet)

Outdoor Unit
Compressor . . . . DC Inverter-driven Twin Rotary
MCA . . . . 14 A
MOCP . . . . 15 A
Fan Motor . . . . 0.93 F.L.A.
Sound Pressure Level
Cooling . . . . 54 dB(A)
Heating . . . . 56 dB(A)

DIMENSIONS	INCHES / MM
W	33-1/16 / 840
D	13 / 330
H	33-7/16 / 850

Weight . . . . 119 lbs. / 54 kg
External Finish . . . . Munsell No. 3Y 7.8 / 1.1

Refrigerant Type R410A
Refrigerant Pipe Size O.D.
Gas Side . . . . 1/2" / 12.7 mm
Liquid Side . . . . 1/4" / 6.35 mm
Max. Refrigerant Pipe Length . . . . 100' / 30 m
Max. Refrigerant Pipe Height Difference . . . . 50' / 15 m
Connection Method . . . . Flared

R410A INVERTER

IS3 Model Input Deck / Output Plot (Rooftop HVAC)

```
IS3 PROGRAM INPUT DECK - (C) 2018 INVESTIGATIVE SCIENCE & ENGINEERING INC.
GLOBAL VARIABLE DECLARATION
   PROBLEM STATEMENT: EALF HVAC SITE MODELING
   STARTING POINT (XY IN FEET): 6302660.7,1999090.2
   ENDING POINT (XY IN FEET): 6303798.7,1999814.5
   ANALYSIS FREQUENCY (HZ): 250
   REFERENCE DISTANCE FOR SOUND (D IN FEET): 3
   SOUND PROPAGATION COEFF XLOG10: 20
   EXCESS ATTENUATION (DB): 0
   COMPUTATIONAL STEP DISTANCE (IN FEET): 1
   RECEPTOR ELEVATION (IN FEET): 5
ACOUSTIC SOURCE DECLARATION (XYZ - SOUND LEVEL - LABEL)
   NUMBER OF SOURCE POINTS: 88
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   6303037,1999589.25,35.8,56,HVAC UNIT 5
   6303044.5,1999587.25,35.8,56,HVAC UNIT 6
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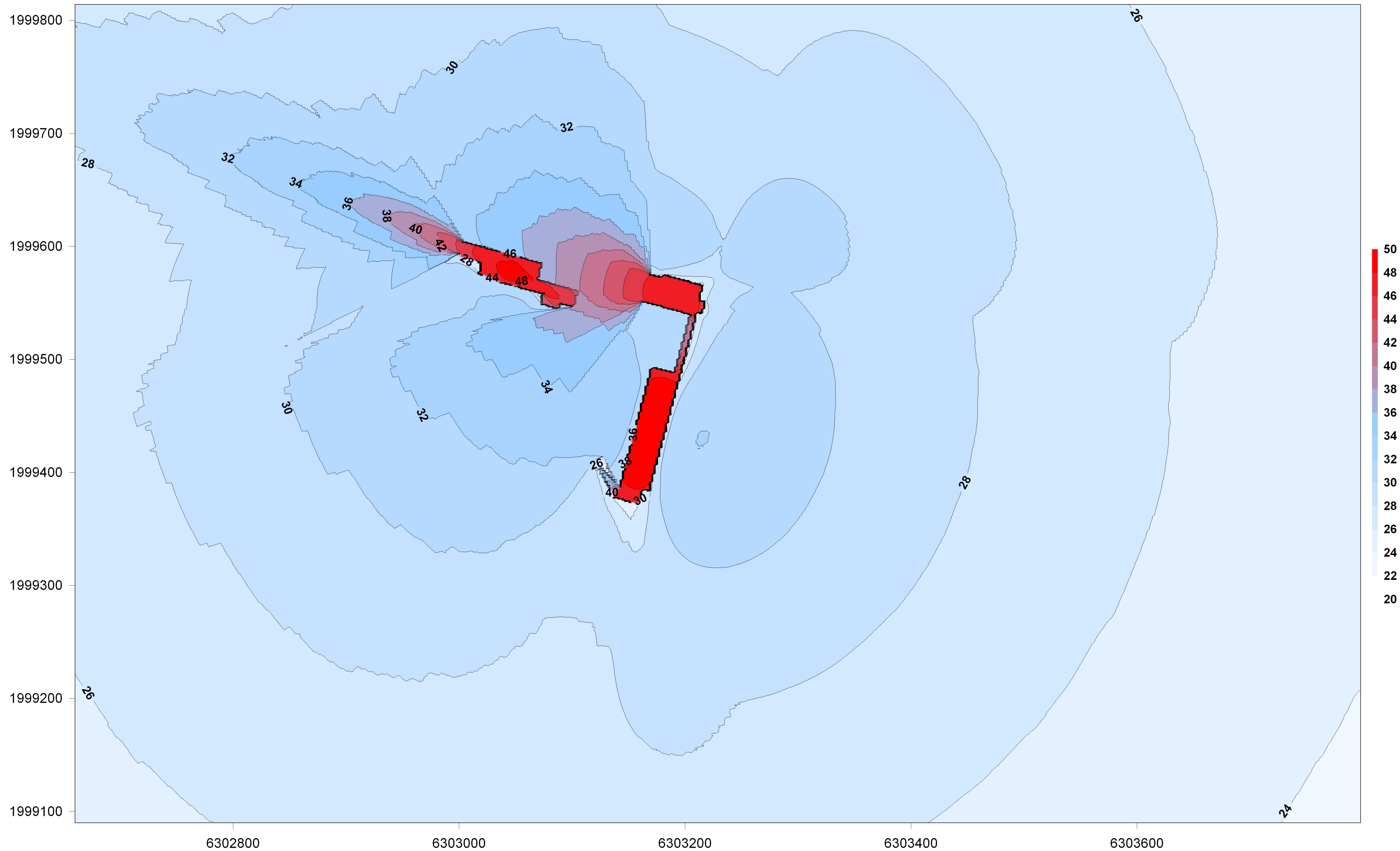
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24
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INDEX OF IMPORTANT TERMS

14. John Lovio; Historic Biological Reporting; dated: 9-15-03, 10-23-03, 4-19-07, and 6-6-07

John C. Lovio
Wildlife Biologist-Ecologist
4502 Maryland Street
San Diego, CA 92116
Telephone/Facsimile (619) 795-1189
E-mail jlovio@cox.net

23 October, 2003

Ms. Janet Stuckrath
U.S. Fish and Wildlife Service
6010 Hidden Valley Road
Carlsbad, CA 92008

Dear Ms. Stuckrath:

This letter presents detailed information intended to address the remaining questions of surface water drainage and lighting posed by the US Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG) with regard to the proposed development of an assisted living facility at 1802 Centre City Parkway, Escondido, by Nightingale Health Services, Inc. (see attached location map).

You will recall that our correspondence on these matters began with my letter of 13 November, 2002 describing the project history and general biological conditions of the site. On behalf of Nightingale, I requested a letter of concurrence on my contention that the proposed project is "not likely to adversely affect" the least Bell's vireo (*Vireo bellii pusillus*) (vireo) and southwest willow flycatcher (*Empidonax trailii extimus*) (flycatcher), given the lack of encroachment of the project into the undeveloped riparian portion of the site. My subsequent conversations by telephone and e-mail with you and Ms. Nancy Frost of CDFG led to a mutual conclusion that the proposed action would not likely result in take of either listed species. However, concurrence could not be issued until the project applicants provided assurance that surface water drainage and artificial lighting resulting from the development would not adversely affect wildlife in the riparian zone in an indirect fashion.

Based on preliminary site plan information, I issued another letter, dated 5 February, 2003, presenting general measures that will be incorporated to ensure water quality and to contain fugitive lighting. At that time, however, plans for storm water management and lighting were merely in their conceptual stages. Later in February 2003, you and representatives of the CDFG responded with a request for more detail on these measures.

During the ensuing months, Nightingale commissioned detailed studies to address these and other regulatory issues. A lighting study was completed in early 2003 by Pacific Lighting and Standard of Lynwood, California. Two documents, *Hydrology and*

Hydraulics Report and *Water Quality Technical Report*, were completed for the project site in August 2003 by Spear and Associates, civil engineers, of Escondido. These studies provide the basis for information presented in this letter. Copies of these reports are available upon request.

Of further relevance is the focused survey that I conducted between June and August 2003 for the vireo and flycatcher along the 280-foot section of Reidy Creek within the Nightingale property. Neither species was detected in riparian habitat within or adjacent to the project site. Official results of this survey are in preparation for submission to the USFWS.

SURFACE WATER DRAINAGE

Site Characteristics

The location, dimensions, and biological features of the Nightingale site were described in detail in my 13 November, 2002 letter. As indicated on the attached site plan map, the total Nightingale property (3.13 acres) includes land on the west and east sides of Reidy Creek, but only the triangular area west of the retaining wall (2.3 acres) is proposed for development. The building, also triangular, will occupy 54% of the development area and the remaining 46% will comprise areas of paved parking and landscaping around the perimeter. The three sides of the drainage perimeter are discussed separately below in terms of drainage pattern and measures that will be implemented to control increased flow volume and pollutants.

Hydrology

The entire Nightingale site is located within the watershed of Reidy Creek, which is part of the Escondido Creek Hydrological Unit, as defined by the San Diego Regional Water Quality Control Board (RWQCB). Development of the site will not significantly alter the current drainage pattern into the creek. Despite channelization of certain sections of Reidy Creek below the project site, it is regarded as part of the natural filtration system for San Elijo Lagoon, approximately 16 miles downstream via Escondido Creek. Water quality control measures discussed below for the Nightingale development will prevent any decrease in the ability of Reidy Creek to perform this function.

The anticipated hydrology of the Nightingale site after development is based on the Conceptual Grading Plan produced by Spear & Associates (see attached plan map). Although the ultimate site drainage pattern is, by association, also conceptual, several structural elements of the drainage system have already been installed in conjunction with the previous rough-grading and retaining wall construction, as described in my 5 February, 2003 letter.

The *Hydrology and Hydraulics Report* calculates surface flow rates on the site before and after development by incorporating information on the grading plan, soil runoff potential maps, overland flow rates, and modeled 2, 10, and 50-year return frequency storm events based on regional rainfall isopluvials. Given the anticipated increase in impermeable surface on the site from 0% to 80%, flow rates on Reidy Creek are expected to increase by an average of 155% of current levels for the three modeled return frequencies.

Water Quality Measures

The Storm Water Management Plan for the Nightingale site will incorporate measures to counter-act increased surface flows resulting from development and maintain them at pre-development levels. These measures will incorporate a series of standard Best Management Practices (BMP's) commonly used during and after development projects. Water quality and storm water control measures are designed in compliance with the City of Escondido Standard Urban Stormwater Mitigation Plan (SUSMP), which incorporates water quality standards set by the San Diego Regional Water Quality Control Board. Two basic aspects of storm water management are considered here: controlling the volume of flow and controlling potential pollutants.

Volume

Runoff collection structures such as catch basins, grates, and filters on the Nightingale site are designed to accommodate a 50-year rainfall season or a single storm event with intensity of 0.2 inches per hour. Catch basins in landscaped areas will be in the form of low-gradient, vegetated swales with drain grates designed to accept runoff from the ground surface and roof drains. The vegetated areas will allow water percolation into the soil, thus reducing runoff into Reidy Creek. This movement of water, in conjunction with landscaping, will also serve to minimize or eliminate erosion from the site. Post-development erosion is expected to be less than pre-development erosion.

Temporary BMP's for the construction phase will be selected in conjunction with the development of a detailed grading plan and will be somewhat dependent on season relative to rainfall. These measures will be primarily concerned with preventing on-site erosion and may include such measures as silt fences, fiber rolls, and/or de-silting basins.

Catch basins in paved areas will have sufficient capacity to accommodate a 50-year rainfall event, providing for collection and controlled release into the creek at pre-development levels.

Pollutants

No data exist for current pollutant levels in the reach of Reidy Creek adjacent to the Nightingale site. However, the development of the site is not anticipated to generate significant amounts of non-visible pollutants, due to its passive function and to pollution control measures. Potential pollutants generally associated with such developments could include sediment, nutrients from fertilizers, trash/debris, oil/grease, pesticides, heavy metals, organic compounds, and oxygen-demanding substances.

Pollutants of primary concern, as defined by the RWQCB, are those that would augment levels of pollutants already impairing receiving waters. San Elijo Lagoon, which ultimately receives water flowing through Reidy Creek, is currently recognized as being impaired by high coliform bacteria, sediment, and compounds contributing to eutrophic conditions.

No increase in pollutant input to Reidy Creek will be allowed as a result of the assisted living facility development. All water drains in vegetated swales and parking areas will be equipped with either sand filtration traps or "fossil filters" designed to remove hydrocarbons and other constituents of fossil fuels. The fossil filters include removable filter inserts, as shown in the attached diagram. These filter inserts must be inspected and replaced annually.

In addition to allowing water percolation, the vegetated areas receiving surface flow will provide biological filtering of pollutants from runoff. Post-construction BMP's will include pollution source elimination measures such as weeding and placement of physical barriers to weed invasion, in lieu of herbicide use. Selection of native and/or drought-tolerant plans for landscaping will also contribute to reduced irrigation. Furthermore, the irrigation system will be monitored to prevent over-watering of landscaped areas and devices will be installed to shut off irrigation after natural precipitation events. Incorporation of as many applicable Integrated Pest Management methods as possible will reduce or eliminate the need for pesticides.

<u>Implementation</u>
All BMP's adopted for the Nightingale construction and post-construction phases must be approved by the Escondido City Engineer. Nightingale Health Services must ensure compliance with the City SUSMP, which requires implementation of regular drainage system maintenance, as a part of the permit approval process of the City. Conditions of the SUSMP include an annual system inspection prior to the winter rainfall season and development of an Operations and Maintenance (O&M) Plan. O&M will include such practices as removal of sediment from drains, management of organic matter, prevention and removal of standing water, equipment maintenance, and erosion protection through immediate slope repair and elimination of animal burrows. O&M inspections will occur monthly throughout the year or more frequently during extended rainy periods.

Specific Drainage Pattern

<u>Southwest Edge</u>
The wide buffer between the front of the proposed assisted living facility building and Centre City Parkway (southwest property edge) will be primarily paved parking. Aside from a few small drains in front of the building, this area will drain to the southeastern corner of the site, which is the lowest point of the 2.3-acre development area and the focal point of site drainage into Reidy Creek. Water in this corner will be directed to a 1 X 1 foot catch basin, which will feed a 15-foot long, 18-inch diameter drainage line leading eastward to the outfall at the edge of the creek. Outflow will run through a rock dissipater to the creek. In the event of unusually high flows (50-year event) or in the unlikely event that the first grate becomes obstructed, the system is designed to allow the excess flow to be diverted 30 feet west to a 3 X 6 foot, Triple "G" type catch basin. The grates for both of these catch basins will be equipped with fossil filters, as described above and in the attached diagram. This overflow system is designed to maintain off-site flow at pre-development levels.

portions of the riparian canopy. Similarly, the two outdoor lighting structures closest to the riparian zone will be on lower ground in the southeastern corner of the development area. Therefore, the majority of the riparian forest on the site (northeast of these structures) will be partially shielded by higher ground and by the building.

On behalf of the Nightingale Health Services team, I propose that the current Nightingale development plan will result in no direct or indirect adverse effects to potentially occurring listed species. This contention is based on the avoidance of sensitive habitat by the development plan, protective measures concerning surface water drainage and artificial lighting, and the observed absence of listed or otherwise sensitive plant or animal species.

Based on the information provided above and in previous correspondence, we renew our request for a letter of concurrence to the affect that adverse effects to listed species will be avoided by the Nightingale development plan and that no mitigation will be required. In consideration of the history of communication on this proposal with staff of the USFWS and CDFG, we kindly request a letter within two weeks of receipt this letter. I remain willing to provide a site visit upon request. Please contact me at the letterhead address or phone number with any questions you may have. We thank you for your consideration and look forward to your response.

Sincerely, John C. Lovio

John C. Lovio
Wildlife Biologist-Ecologist

cc: N. Frost, CDFG
A. Tangonan, Nightingale Health Services
E. Mandel, EMM Architects
D. Ferguson, Attorney at Law
D. Fluke, Spear & Associates Engineers

Attachments: Site location map
Site Conceptual Grading Plan map
Fossil Filter diagram
Lighting structure diagram

John C. Lovio
Wildlife Biologist-Ecologist
4502 Maryland Street
San Diego, CA 92116
Telephone/Facsimile (619) 795-1189
E-mail jlovio@cox.net

Mr. Jay Paul
Associate Planner
City of Escondido Planning Division
201 North Broadway
Escondido, CA 92025-2798

19 April, 2007

Dear Mr. Paul,

This letter addresses potential environmental impacts from the proposed sewer lateral alignment and connection to the sewer main for the Nightingale Health Services project site at 1802 Centre City Parkway in Escondido. As per the discussions at our project team meeting held at your offices on 11 April, 2007, the sewer alignment and other construction footprints were marked on the ground by Spear and Associates on 12 April. I visited the site on 15 April to make detailed measurements and observations of the proposed alignment for the following assessment.

The proposed sewer alignment consists of three segments, as follows: 1) from the existing sewer manhole on the east embankment of Centre City Parkway and near the southern end of the property, southeastward to proposed sewer manhole #1; 2) from proposed sewer manhole #1 east-northeastward to proposed sewer manhole #2; and 3) from proposed sewer manhole #2 northward to proposed sewer manhole #3, where the lateral is to be connected to the sewer main.

The construction of this sewer alignment will involve excavation of a 10-foot deep trench approximately four feet wide. The associated deposition of excavation spoils will occupy approximately another six feet lateral to the trench, so that the total impact zone will be approximately 10 feet wide. All impacts will be temporary.

The conditions are fairly uniform along this entire alignment in that the route occurs below the canopy of the southern Eucalyptus grove and passes almost entirely through non-native grasses and forbs in the grove understory. In this sense, construction of the alignment will result in no direct adverse effects to native habitat or listed or otherwise sensitive plant or animal species. However, each segment exhibits at least one unique feature that warrants brief descriptions below. Sewer manhole locations are marked as green-flagged stakes in the following photographs.

Segment 1 (Figure 1): This section is 135.5 feet long and occurs mostly on the steep embankment of Centre City Parkway. Temporary impacts will be 1355 ft^2. Near its southern end, the line crosses a shallow (up to one foot deep), grassy channel conveying runoff eastward from a road culvert to the creek. This segment passes within seven feet of several Eucalyptus tree boles.

Segment 2 (Figure 2): This section runs 39.6 feet on level ground and crosses through the current property fence, as well as through the shallow drainage channel described for Segment 1. Temporary impacts will be 396 ft^2. The line passes within six to seven feet of two tree boles. Proposed sewer manhole #2 is 11 feet from the edge of the sheer, eight-foot high embankment of Reidy Creek (Figure 3).

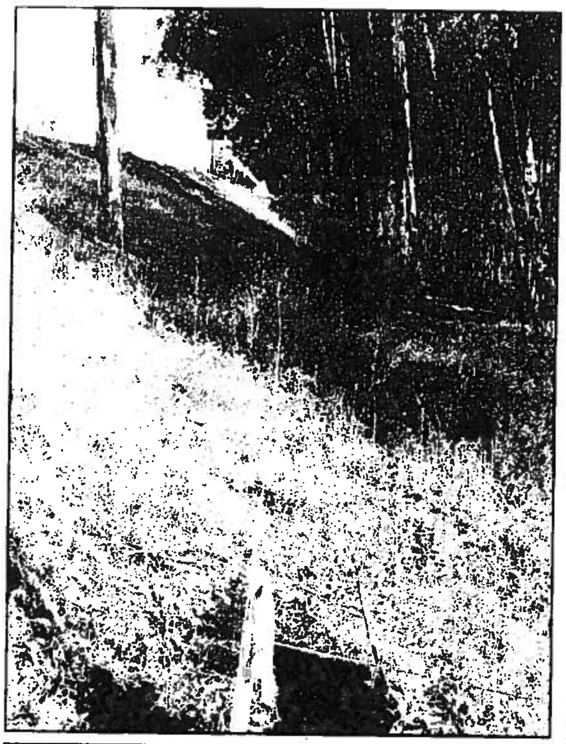

Figure 1. Facing north-northwest from proposed sewer manhole location #1 to the existing sewer manhole (white arrow).

Figure 2. Facing east-northeast from proposed sewer manhole location #1 to proposed manhole #2. Reidy Creek is in the background.

Segment 3 (Figures 3 and 4): This section, also on level ground, is 46.2 feet long and parallels the edge of the Reidy Creek embankment. Temporary impacts will be 462 ft^2. The line touches the bole of one small Eucalyptus tree and passes within two to three feet of two other tree boles. This segment of the alignment will also result in the loss of about 6 plants (approximately 25 to 30 square feet) of native golden bush (*Isocoma* sp.). The center of proposed sewer manhole #3 is proposed to be situated only three feet west of the edge of an unstable, crumbling westward cut that is generally perpendicular to the main creek bank, which is between six and eight feet high at this point.

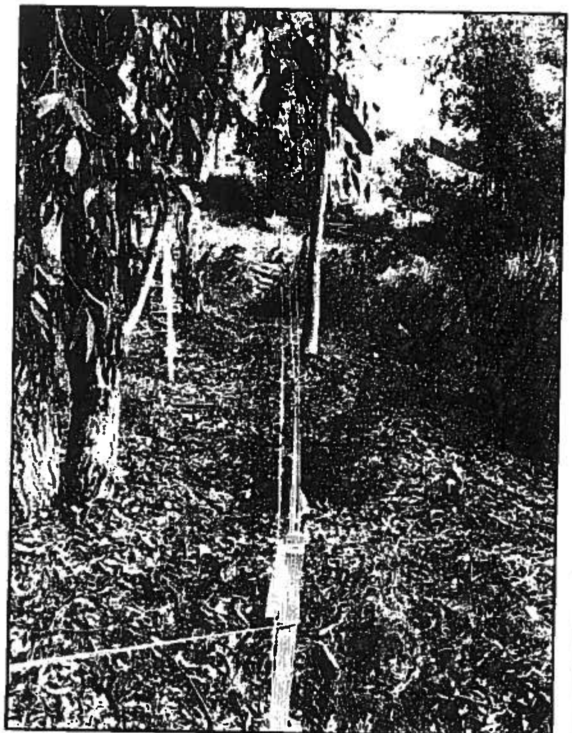

Figure 3. Facing north from proposed sewer manhole location #2 to proposed manhole #3.

Figure 4. Facing south 11 feet to staked location of center of proposed sewer manhole #3. Note unstable creek bank cut to the left (east).

The excavation and placement of sewer alignment Segment 3, in addition to the movement of associated equipment, will likely exacerbate naturally high erosion on approximately 46 feet of the unstable west bank of Reidy Creek. This contribution to bank instability will likely constitute a streambed alteration, which is regulated by the California Department of Fish and Game (CDFG) under section 1600 of the California State Fish and Game Code. Subsection 1602 of the Code states:

> "An entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, steam, or lake, unless all of the following occur …".

The Code continues with a description of the documentary, notification, and response procedures leading to the issuance of a Streambed Alteration Agreement by CDFG. The code requires CDFG to respond with a draft agreement within 60 days of its acceptance of a complete notification (application) package from the project proponent. Such an agreement should include the prescription of reasonable protection measures for the stream course.

However, the sewer placement may actually be considered incidental to the inevitable need for stream bank stabilization on the section of Reidy Creek in question, for the benefit and protection of the greater Nightingale project, as well as the continued integrity of Reidy Creek. Recent conversations with Mr. Jim Peterson of SIMAC Construction (Nightingale building contractor), among others, have indicated that the unstable creek bank will likely present an eventual threat to structures in the southeast corner of the project site. My subsequent conversation with Mr. Tory Walker, the hydrological engineer who conducted a hydrological study for the surrounding Reidy Creek watershed and modeled post-development flow conditions in early 2006, suggested that although there may be no imminent threat to Centre City Parkway, the embankment of this roadway may eventually be damaged by the westward cutting of the creek.

Stabilizing measures and biologically compatible restoration measures may need to be explored in the near future and it would be most logical to incorporate such measures into the Nightingale development. Considering the formerly disturbed and currently non-native condition of the southeast corner (above the creek), compatible creek bank reconstruction will certainly provide an opportunity for enhancement of the local biological values. Such benefits notwithstanding, the need for evaluation by the CDFG via the Streambed Alteration Agreement process may not be obviated, unless a provision exists to exempt emergency prevention measures. I am currently exploring this question. Should involvement in the Streambed Alteration Agreement process be unavoidable, inclusion of recommended biological enhancement measures in the notification package will certainly expedite this process.

In summary, the proposed placement of the sewer lateral alignment is likely to contribute to the natural instability of a section of the bank of Reidy Creek. Should redesign of the sewer alignment not be possible, then I recommend that sewer line placement be approached comprehensively with the apparently inevitable stabilization and restoration of a section of the creek embankment. Should entry into the state Streambed Alteration Agreement process be necessary, inclusion of pro-active remediation and restoration measures in the notification package should expedite the processing by CDFG.

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Mr. Jay Paul
Associate Planner
City of Escondido Planning Division
201 North Broadway
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19 April, 2007

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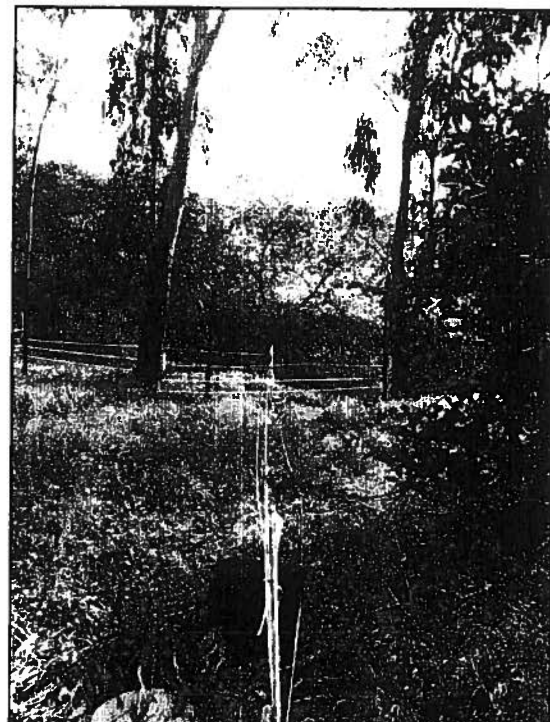

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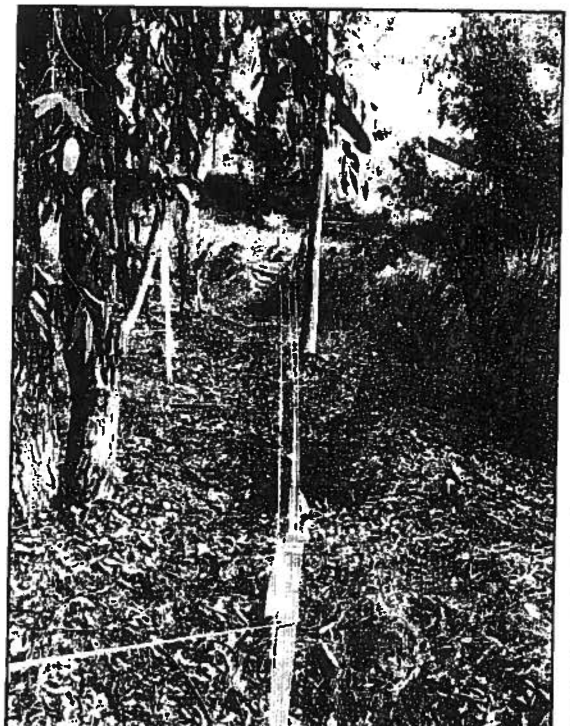

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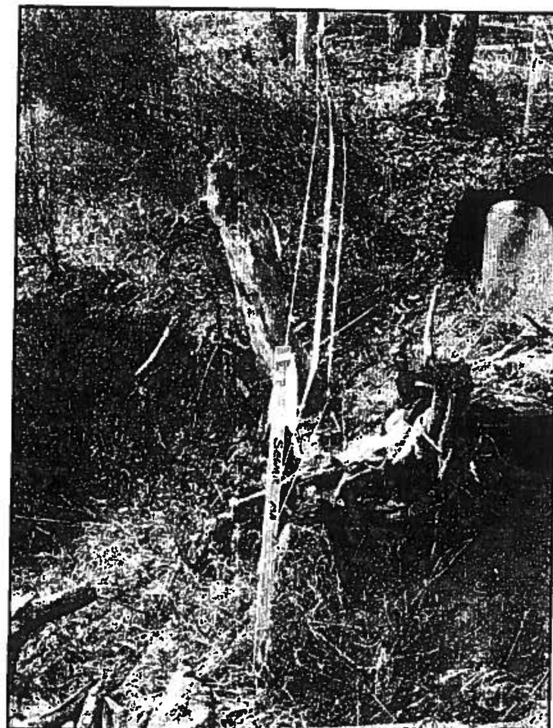

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Please contact me with any questions you may have or to discuss any of the issues addressed herein or otherwise relating to the Nightingale project. Thank you.

Sincerely,

John C. Lovio

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cc: Cesar Tangonan, Nightingale Health Services
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Wildlife Biologist-Ecologist
4502 Maryland Street
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Telephone/Facsimile (619) 795-1189
E-mail jlovio@cox.net

Mr. Jay Paul
Associate Planner
City of Escondido Planning Division
201 North Broadway
Escondido, CA 92025-2798

6 June, 2007

Dear Mr. Paul,

This letter addresses the final environmental issues pertinent to the current plans for development of the Nightingale Health Services facility at 1802 Centre City Parkway in Escondido. As of our meeting on 8 May, 2007, it was decided to eliminate plans for sewer line placement adjacent to the bank of Reidy Creek for this phase of the project, which serves to eliminate any streambed alteration issues that would likely require permitting by the California Department of Fish and Game (CDFG). This leaves several relatively minor issues for discussion.

I made four visits to the Nightingale site in April and early May of 2007 to assess biological conditions relative to their state as of 2003 and early 2004 when I conducted regular visits to the site. The following table indicates the times and conditions of recent site visits.

Date	Times	Weather
4-11-07	1230-1315	70° F, clear with haze, calm to breezy
4-15-07	0730-1100	54° to 60° F, heavy overcast with intermittent rain sprinkles to 80-90% cloud cover, wind 0 to 3 mph, NW
4-26-07	0915-1130	60° to 68° F, overcast to clear, wind 0 to 2 mph
5-8-07	0945-1045	85° F, clear

These visits constituted *ad hoc* survey visits for issues discussed below. This represents a total of 7.5 hours spent on the site during the optimal period for observing biological activity.

You informed me by telephone conversation on 5 April this year that you had identified a raptor nest in the stand of Eucalyptus trees on the southeast edge of the site earlier in the spring. I observed this nest on the above dates and found the nest to be approximately 50 feet up in the tallest trees (80 to 100 feet), near the center of the north end of the stand. I observed no activity at or in close proximity to the nest, indicating that it was either not active this year or that young had already fledged from it prior to early April. The identity of the species that had constructed the nest was not certain, although the general location and construction of the nest, in conjunction with the frequent presence of red-shouldered hawks (*Buteo lineatus*) in trees on the site implicated this species. On 26 April, I observed an adult and well-feathered immature red-shouldered hawk briefly land in the nest tree, further reinforcing the above speculation and indicating that the nest was no longer active.

Hawks in southern latitudes such as San Diego County tend to initiate nesting early in the year, often as early as January. The nesting period requires eight to ten weeks, thus extending potentially into mid or late spring. Major earth-moving activities and/or modification of the tree stand on the Nightingale site will not interfere with hawk nesting if completed prior to January.

As you are aware, I conducted a full protocol survey for the federally endangered least Bell's vireo (*Vireo bellii pusillus*) on the project section of Reidy Creek in the spring and summer of 2003 and concluded that the species was not present. However, the CDFG and the U.S. Fish and Wildlife Service (USFWS) typically require more recent survey information for sites with direct or indirect potential impacts. To this end, I also surveyed for vireos on the above dates and did not detect the species.

A final issue concerns the potential for direct disruption of other nesting birds from construction-related activities within the Eucalyptus stand or the native riparian vegetation on Reidy Creek, pursuant to the federal Migratory Bird Treaty Act. As decided at the 8 May meeting, no direct impacts will occur on the creek and, as discussed in previous correspondence for this project, indirect impacts to the creek from construction are expected to be minimal. To satisfy requirements that are typically prescribed by the CDFG and USFWS, it is recommended that any potentially disruptive activities conducted within the Eucalyptus stand between March and the end of August should be immediately preceded (by no more than one week) by a general nest survey by a qualified biologist. The location of active nests would result in observance of a buffer zone or temporary curtailment of the activity until the completion of nesting (typically two weeks or less), but the failure to locate active nests would allow the activity to proceed immediately.

Please contact me with any questions you may have or to discuss any of the issues addressed herein or otherwise relating to the Nightingale project. Thank you.

Sincerely,

John C. Lovio

John C. Lovio

cc: Cesar Tangonan, Nightingale Health Services

15. John Lovio, Biology Report, April 4, 2018

John C. Lovio
Wildlife Biologist-Ecologist
4458 Alabama Street #8
San Diego, CA 92116
Telephone (619) 990-6632
E-mail jlovio@cox.net

PRELIMINARY BIOLOGICAL REASSESMENT
OF
1802 North Centre City Parkway, Escondido, San Diego County

4 April, 2018

Background and Procedures

John C. Lovio, Wildlife Biologist – Ecologist (JCL) was retained in January of 2018 by the Mitchell Group of Solana Beach, California to identify any current biological constraints to modification and development of the largely undeveloped, approximately 3.09-acre property at 1802 Centre City Parkway, in the city of Escondido, San Diego County, California (Assessor's Parcel Number 226-1909-22). JCL conducted extensive biological assessments and surveys for a proposed development on this property between 2002 and 2007, producing several reports and letters. The JCL letter reports dated 15 September 2003 and 6 June 2007 particularly form the basis for this biological re-assessment. Additional material considered for this report include a joint comment letter by the wildlife regulatory agencies (U.S. Fish and Wildlife Service [USFWS] and California Department of Fish and Wildlife) dated 21 June 2004, as well as the historical map feature of Google Earth (2018).

The triangular, 3.09-acre property (Figure 1) occurs southeast of the junction North Centre City Parkway and North Iris Lane in the city of Escondido in central San Diego County. The approximate western 66% of the property comprises disturbed, partially filled uplands consisting of a higher western terrace and a lower eastern terrace separated by a five-foot high embankment. The remaining eastern third of the property includes a 280-foot section of the Reidy Creek (tributary of Escondido Creek) channel and 100-year floodplain that is below and abruptly separated from the uplands by a 14-foot high retaining wall that was constructed in 1997. The southwestern edge of the uplands supports a stand of large, non-native Eucalyptus trees along the northeastern edge of North Centre City Parkway.

In terms of vegetation cover, the 2003 JCL report characterizes the upper western terrace of the property as ruderal herbaceous vegetation (defined as formerly disturbed and bearing little to no resemblance to the original, native vegetation, per Holland et al. 1990 and Oberbauer et al. 2008) and dense growth of young Eucalyptus trees. The lower terrace was described as ruderal non-native herbaceous cover with a few colonizing San Diego Goldenbush (*Isocoma mensiesii*) and Broom Baccharis (*Baccharis sarothroides*) shrubs. These native species are adapted to disturbance, readily establishing among non-native weed species. The lower, eastern terrace

Figure 1. Approximate property boundaries (red) and surrounding land use. See Appendix for photographs. Base aerial photograph from Google Earth Pro 2018.

of the site was formerly a gradual slope dropping eastward to the creek, but was made level by filling of soil behind the 1997 retaining wall.

The 280-foot section of Reidy Creek running through the eastern side of the site is continuous with stream flow and riparian (streamside) vegetation both upstream and downstream. It supports approximately 0.5 acre of predominantly native riparian and marsh vegetation, including native willows (*Salix* spp.) and several small Coast Live Oaks (*Quercus agrifolia*).

JCL conducted a full USFWS protocol survey (eight spring-summer visits) in 2003 and partial survey (four visits) in 2007 for the federally endangered Least Bell's Vireo (*Vireo bellii pusillus*), resulting in no detections of the species. This section of creek was determined to not provide suitable habitat conditions for other listed riparian species such as the Arroyo Toad (*Bufo californica*) and Southwestern Willow Flycatcher (*Empidponax traillii extimus*).

The 2004 joint wildlife agency letter raised several questions and identified the following potential issues for the 1802 Centre City Parkway site:

- Whether vegetation on the upland portions of the site should be re-classified as "annual grassland".
- Whether the shallow basin subject to inundation on the lower upland terrace is in fact a sensitive, native vernal pool.

- The nature of vegetation and potential habitat conditions on the site prior to 1997.
- The potential need to conduct major construction activities between 31 August and 15 February to avoid the avian nesting season.

A field visit to the property by JCL and botanist Brant Primrose was conducted on 4 February, 2018 to assess current general conditions and identify any changes that may have occurred over the past 11 years. The visit was preceded by only one significant rain pulse in January, which resulted in delayed and stunted annual plant growth for the early February date. The date of the field visit was considered optimal at the time, in view of forecast continued drought conditions.

Survey Results and Site Assessment

The results of this report are preliminary because the biological reassessment included herein is based on a single field visit conducted by necessity in mid-winter to meet an administrative deadline, which has since been extended. The field visit was conducted early in the season relative to plant germination and flowering (including that of potential rare species), prior to seasonal arrival and/or reproduction of potential special status animal species, and during conditions of unusual drought. Subsequent measurable rainfall did fall between the third week of February and the third week of March of 2018, although the seasonal precipitation total to date has been substantially below average.

<u>General</u>

The 1802 Centre City Parkway property has remained basically unchanged over the 11 years between 2007 and 2018. Additionally, the surrounding land use of mixed urban and semi-rural development has not changed during this period (Figure 1). The upland portion of the site continues to have limited native habitat value, due to its disturbed condition and isolation from other undeveloped areas. The isolation factor also precludes function of the upland part of the site as part of a wildlife corridor. The section of Reidy Creek within the property is small, but continues to support hydrology, native vegetation, and a measure of putative biological connectivity.

<u>Historical Change</u>

The results of historical aerial photograph research (Google Earth 2018) revealed black and white photographs of the 1802 Centre City Parkway property in 1995 and 1996, just prior to earth-moving, rough grading, and retaining wall construction in 1997. The quality of the 1996 photograph is superior to that from 1995, although the detail is not comparable to that available today. Although it is difficult to ascertain fine details of the pre-1997 vegetation on the site, the earlier photographs indicate a matrix of pale, uniform coloration strongly suggestive of dry, low herbaceous cover, as well as a scatter of darker, taller (detectable from shadows), roughly circular patches of vegetation, most likely consisting of non-native trees and/or shrubs. This conclusion is supported by a group of such dark vegetation patches clustered around two or three man-made structures in the north-central part of the upland portion of the site, as is typically planted in rural residential situations.

Examination of the 1996 aerial photograph and the U.S. Geological Survey topographic map of the area reveals a gentle eastward slope across the 1802 Centre City Parkway site down to the creek and no evidence of the steep, approximately five-foot high embankment that exists today.

Aerial photograph comparison also shows that a long, narrow, neatly rectangular, roughly north-south area that supported the building structures in 1996 was excavated during 1997 into a shallow basin, creating the steep embankment. It is likely that the excavated material was used to fill the area west of the retaining wall, creating the level, lower terrace. Distinct heaps of soil and rock rubble from the excavation remain within the basin and in the southeast corner of the lower terrace (Photographs 1 and 3). After more than 20 years these heaps support only sparse, colonizing vegetation.

Vegetation / Plants

The preliminary plant species inventory conducted on 4 February 2018 provides the basis for determining any vegetation changes over 11 years, which could possibly affect native habitat value and the potential occurrence of wildlife species. The inventory also provided survey for any rare plant species occurring on the 1802 Centre City Parkway site.

The results of the floristic inventory are presented in Table 1. Fifty-seven vascular plant species were documented on the property in early February under conditions of early season germination, following drought winter conditions. Plant species in Table 1 are categorized by their occurrences in one or more of five vegetation communities identified on the site (Holland 1986, Holland and Keil 1990, Oberbauer et al. 2008):

- Southern Willow Riparian Forest
- Freshwater Marsh
- Non-Native Grassland
- Eucalyptus woodland
- Ruderal (woody and herbaceous) vegetation.

The shallow, rectangular excavation basin (Photograph 1), dry at the time of survey, was examined for plant species indicative of vernal pools, which are rare, seasonally ephemeral, small-scale aquatic ecosystems typically supporting highly restricted plant and animal species. Vernal pools can occur within any of various larger-scale vegetation communities. No vernal pool plants were found. As described above, the historical aerial photograph comparison clearly demonstrates that this basin did not exist prior to 1997.

The southern willow riparian forest on the small section of Reidy Creek is characterized by dominant native willows (see Table 1) exceeding 20 feet in height (Photograph 4). Water flow on the creek appears to be perennial, probably due in part to frequent suburban runoff. Tree bole diameters also indicate a relatively mature stand. Although the rooted area of the riparian vegetation has not changed over the past 11 years, aerial photograph comparison indicates that the width of the canopy has expanded somewhat, which may be partially attributable to non-native components of the vegetation.

Freshwater marsh plant species (Table 1) occur on the Reidy Creek channel, typically in sections with relatively open tree canopy.

The upland terraces at 1802 Centre City Parkway differ with respect to vegetation changes over 11 years. The lower, eastern terrace, which was partially filled by soil in 1997, has changed from essentially ruderal growth in 2007 (JCL 2003) to a recovering non-native grassland (synonymous with “annual grassland” referred to in the 2004 joint wildlife agency letter; per Oberbauer et al. 2008) dominated by non-native grasses and forbs (see Table 1), but including a small proportion (less than 10%) of native purple needle grass (*Nassella pulchra*). Additionally, the colonizing native shrub cover that was limited to fewer than 20 plants 15 years ago (JCL 2003) now consists of approximately 100 shrubs in uneven, but relatively open dispersion within the herbaceous matrix of the non-native grassland (Photograph 2). Shrub cover is dominated by San Diego goldenbush, but includes lesser amounts of broom Baccharis and coastal deerweed. This open shrub cover, which may eventually succeed into Diegan Coastal Sage Scrub: *Baccharis*-dominated (Oberbauer et al. 2008, alternately classified as *Isocoma menziesii* Shrubland Alliance per Sawyer, Keeler-Wolf, and Evens 2009), but is currently best classified as a sparse woody element in non-native grassland.

The higher, western upland terrace continues to support dense, young growth of Eucalyptus and very sparse herbaceous cover (Photograph 1), the latter of which was in very early stages of germination on 4 February 2018. Eucalyptus trees typically suppress the under-growth of other plant species through chemical compounds in their decomposing leaves. Therefore, this area is still classified as ruderal.

Non-native Eucalyptus woodland occurs in a discontinuous band amid non-native grassland along the north-eastern edge of Centre City Parkway (Photograph 3). The largest trees are approximately 100 feet tall and are concentrated in the southwestern corner of the triangular property. These mature trees are assumed to be the sources of younger growth on the western upland terrace.

Table 1: Vascular Plant Species Observed on the 1802 Centre City Parkway Property, Escondido, California
February 2018

Scientific Name	Common Name	Veg Community	Status**
	ANGIOSPERMS: DICOTS		
Aizoaceae – Fig Marigold Family			
**Carpobrotus edulis*	Hottentot Fig	NNG	
Anacardiaceae - Sumac or Cashew Family			
Malosma laurina	Laurel sumac	NNG	
**Schinus terebinthifolius*	Brazillian Pepper Tree	SWRF	
Apiaceae (Umbelliferae) - Carrot Family			
Apiastrum angustifolium	Mock-parsley	FWM	
**Apium graveolens*	Common Celery	FWM	
Asteraceae (Compositae) - Sunflower Family			
Ambrosia psilostachya	Western ragweed	NNG	
Artemisia palmeri	Douglas mugwort	SWRF	4.2 S3.2 G2
Baccharis pilularis subsp. consanguinea	Coyote Brush	NNG	
Baccharis salicifolia	Mule-fat, seep-willow	SWRF	
Baccharis sarothroides	Broom baccharis	NNG	
Conyza canadensis	Horseweed	NNG	
Corethrogyne filaginigolia	California Sand Aster	NNG	
Deinandra fasciculatea	Fascicled Tarweed	NNG	
**Filago gallica*	Narrow-leaf filago	NNG	
Heterotheca grandiflora	Telegraph weed	NNG	
Isocoma menziesii	San Diego Goldenbush	NNG	
**Lactuca serriola*	Prickly lettuce	SWRF, NNG	
**Logfia gallica*	Narrow leaf cottonrose	NNG	
Psuedogmaphalium californicum	California Everlasting	NNG	
Psuedognaphalium canescens	Everlasting Cudweed	NNG	
Stephanomeria virgata	Tall Wreath Plant	NNG	
Brassicaceae (Cruciferae) - Mustard Family			
**Hirschfeldia incana*	Short-pod mustard	NNG	
Caprifoliaceae [incl. Adoxaceae] - Honeysuckle Family			
Lonicera subspicata var. denudata	Southern honeysuckle	SWRF	
Sambucus nigra	Blue elderberry	SWRF	
Convolvulaceae - Morning-Glory Family			
Calystegia macrostegia	Morning-glory	NNG	
Cucurbitaceae - Gourd Family			
Marah macrocarpus var. macrocarpus	Manroot, wild-cucumber	NNG	
Euphorbiaceae - Spurge Family			
Croton setigerus	Doveweed	NNG	
**Ricinus communis*	Castor Bean	FWM	
Fabaceae (Leguminosae) - Legume Family			
	Spanish Clover		

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Acmispon glaber	Coastal deerweed	NNG	
**Melilotus indicus*	Indian Sweetclover	NNG	
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Quercus agrifolia var. agrifolia	Coast live oak, encina	SWRF	
Geraniaceae - Geranium Family			
**Erodium botrys*	Long-beak filaree/storksbill	NNG	
**Erodium cicutarium*	Red-stem filaree/storksbill	NNG	
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Stachys ajugoides var. rigida	Hedge-nettle	FWM	
Meliaceae – Mahogany Family			
**Melia azedarach*	China Berry	SWRF, NNG, EW	
Myrtaceae – Myrtle Family			
**Eucalyptus globulus*	Blue Gum	NNG, Rud	
Onograceae – Evening Primrose Family			
Epilobium ciliatum subsp. *ciliatum*	Willow Herb	NNG, SWRF	
Plantaginaceae - Plantain Family			
**Plantago major*	Common Plantain	NNG	
Polygonaceae - Buckwheat Family			
Eriogonum fasciculatum	California buckwheat	NNG	
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Rubus parviflorus	Thimbleberry	FWM	
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Anemopsis californica	Yerba Mansa	FWM, SWRF	
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**Tamarisk* sp.	Saltcedar	FWM, SWRF	
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**Washingtonia robusta*	Mexican fan palm	SWRF, FWM	
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**Bromus hordeaceus*	Soft chess	NNG	
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**Cortaderia selloana*	Selloa pampas grass	NNG	
**Cynodon dactylon*	Bermuda grass	NNG	
**Piptatherum miliaceum*	Smilo grass	NNG	
Nassella pulchra	Purple needle grass	NNG	
Themidaceae - Brodiaea Family			

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Dichelostemma capitatum ssp. *capitatum*	Blue dicks	NNG	
Typhaceae – Cattail Family			
Typha latifolia	Broad-Leaf Cattail	FWM, SWRF	

Scientific and common names are from Hickman (1993).

Vegetation Community: SWRF: southern willow riparian forest; FWM: freshwater marsh; NNG: non-native grassland; EW: Eucalyptus Wodland; Rud = ruderal.

* Non-native plant species
** California Native Plant Society 2018

Wildlife

Approximately two acres of predominantly non-native upland vegetation at 1802 Centre City Parkway provides little wildlife habitat value, due to its disturbed condition, small size, and state of isolation from other undeveloped areas. The small area of non-native grassland is of insufficient size to support any sensitive wildlife species associated with that habitat. Furthermore, it is not a habitat remnant, but rather an area that has experienced vegetation regeneration from a state of complete disturbance, thus precluding the occurrence of vestigial populations of any wildlife species.

The small riparian zone on Reidy Creek and within the 1802 Centre City Parkway property retains wildlife habitat value and connectivity. The federally endangered Least Bell's Vireo was not found in riparian habitat on the site or vicinity between 2003 and 2007 and the quality of the habitat has not changed significantly. This riparian zone still does not provide adequate area and canopy volume to support nesting of the federally endangered Southwestern Willow Flycatcher. The riparian channel is densely vegetated, lacking open, sandy pools required for reproduction of the federally endangered Arroyo Toad.

Although non-native, the Eucalyptus stand provides potential nesting habitat for common bird species, including certain raptors (birds of prey), which are all protected by state law. A Red-shouldered Hawk (*Buteo lineatus*) and an unidentified raptor nest were found in this tree grove during the 4 February 2018 field survey. The nest was not determined to be active at the time. Red-shouldered Hawk was found nesting in this grove in 2003.

Summary

The undeveloped, 3.09-acre property at 1802 Centre City Parkway in Escondido has undergone little change between 2007 and 2018 with respect to the state of biological resources. The upland, approximately two-thirds of the site is gradually recovering from intense disturbance more than 20 years ago and, despite some semi-native vegetation development, provides little wildlife habitat value. A 2018 preliminary plant survey revealed no rare species. A short section of semi-native riparian vegetation on Reidy Creek provides some habitat value and connectivity, but no rare plants were found in 2018. Earlier surveys of the riparian zone revealed no special status wildlife.

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APPENDIX

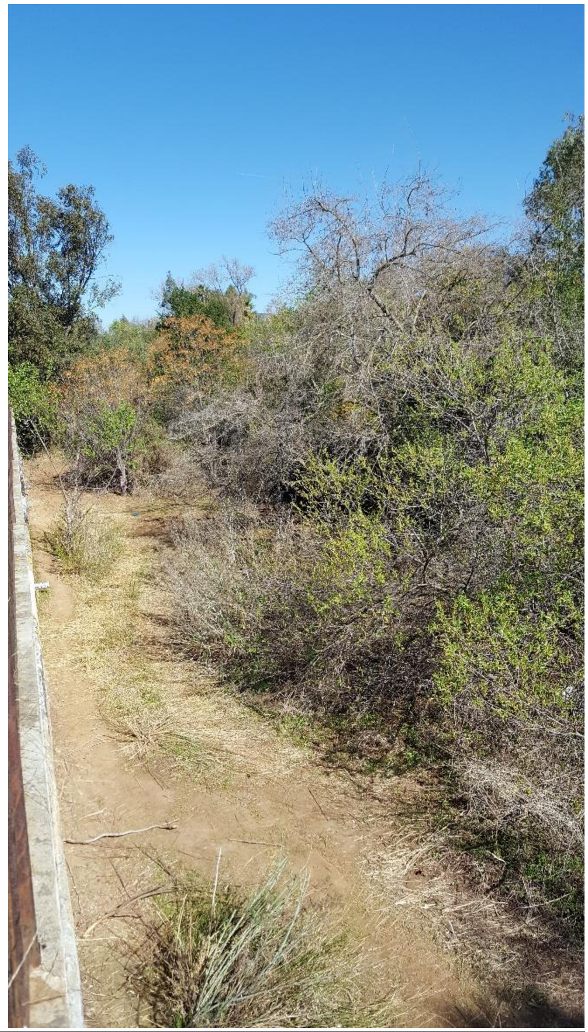
Ground Photographs of
1802 Centre City Parkway Site

4 February, 2018

See Figure 1 for Photo Point locations

Photograph 1: Facing northwest from Photo Point 2 across non-native grassland on the lower upland terrace, the shallow basin with soil and rock rubble heaps, the artificial embankment, to the higher terrace with dense young Eucalyptus growth.

Photograph 2: Facing northeast from Photo Point 1 across the lower upland terrace with non-native grassland and sparse shrub cover. Riparian vegetation on Reidy Creek is visible in the upper right. The building in the upper left is beyond the property line.



Photograph 3 (left): Facing northwest from Photo Point 3 to soil and rock rubble heaps in the southeast corner of the lower upland terrace. Eucalyptus trees along Centre City Parkway are in the background. **Photograph 4 (right):** Facing north-northeast from Photo Point 3 to riparian forest on Reidy Creek.

16. John Lovio, Species Survey and Mapping; August 24, 2018

John C. Lovio
Wildlife Biologist-Ecologist
4458 Alabama Street #8
San Diego, CA 92116
Telephone (619) 990-6632
E-mail jlovio@cox.net

PRELIMINARY BIOLOGICAL REASSESSMENT
OF
1802 North Centre City Parkway, Escondido, San Diego County

4 April, 2018
[This report was revised 12-18-18 to reflect accurate acreages and provide a supplemental map figure]

Background and Procedures

John C. Lovio, Wildlife Biologist – Ecologist (JCL) was retained in January of 2018 by the Mitchell Group of Solana Beach, California to identify any current biological constraints to modification and development of the largely undeveloped, approximately 3.48-acre property at 1802 Centre City Parkway, in the city of Escondido, San Diego County, California (Assessor's Parcel Number 226-1909-22). JCL conducted extensive biological assessments and surveys for a proposed development on this property between 2002 and 2007, producing several reports and letters. The JCL letter reports dated 15 September 2003 and 6 June 2007 particularly form the basis for this biological re-assessment. Additional material considered for this report include a joint comment letter by the wildlife regulatory agencies (U.S. Fish and Wildlife Service [USFWS] and California Department of Fish and Wildlife) dated 21 June 2004, as well as the historical map feature of Google Earth (2018).

The triangular, 3.48-acre property (Figure 1, Figure 1 supplemental) occurs southeast of the junction North Centre City Parkway and North Iris Lane in the city of Escondido in central San Diego County. The approximate western 66% of the property comprises disturbed, partially filled uplands consisting of a higher western terrace and a lower eastern terrace separated by a five-foot high embankment. The remaining eastern third of the property includes a 280-foot section of the Reidy Creek (tributary of Escondido Creek) channel and 100-year floodplain that is below and abruptly separated from the uplands by a 14-foot high retaining wall that was constructed in 1997. The southwestern edge of the uplands supports a stand of large, non-native Eucalyptus trees along the northeastern edge of North Centre City Parkway.

In terms of vegetation cover, the 2003 JCL report characterizes the upper western terrace of the property as ruderal herbaceous vegetation (defined as formerly disturbed and bearing little to no resemblance to the original, native vegetation, per Holland et al. 1990 and Oberbauer et al. 2008) and dense growth of young Eucalyptus trees. The lower terrace was described as ruderal non-native herbaceous cover with a few colonizing San Diego Goldenbush (*Isocoma mensiesii*) and Broom Baccharis (*Baccharis sarothroides*) shrubs. These native species are adapted to disturbance, readily establishing among non-native weed species. The lower, eastern terrace

Figure 1. Approximate property boundaries (red) and surrounding land use. See Appendix for photographs. Base aerial photograph from Google Earth Pro 2018.

of the site was formerly a gradual slope dropping eastward to the creek, but was made level by filling of soil behind the 1997 retaining wall.

The 280-foot section of Reidy Creek running through the eastern side of the site is continuous with stream flow and riparian (streamside) vegetation both upstream and downstream. It supports approximately 0.7 acre of predominantly native riparian and marsh vegetation, including native willows (*Salix* spp.) and several small Coast Live Oaks (*Quercus agrifolia*).

JCL conducted a full USFWS protocol survey (eight spring-summer visits) in 2003 and partial survey (four visits) in 2007 for the federally endangered Least Bell's Vireo (*Vireo bellii pusillus*), resulting in no detections of the species. This section of creek was determined to not provide suitable habitat conditions for other listed riparian species such as the Arroyo Toad (*Bufo californica*) and Southwestern Willow Flycatcher (*Empidponax traillii extimus*).

The 2004 joint wildlife agency letter raised several questions and identified the following potential issues for the 1802 Centre City Parkway site:

- Whether vegetation on the upland portions of the site should be re-classified as "annual grassland".
- Whether the shallow basin subject to inundation on the lower upland terrace is in fact a sensitive, native vernal pool.

Figure 1, supplemental (added 12-18-18). Revised project area map, depicting accurate property boundaries and vegetation / other cover types.

- The nature of vegetation and potential habitat conditions on the site prior to 1997.
- The potential need to conduct major construction activities between 31 August and 15 February to avoid the avian nesting season.

A field visit to the property by JCL and botanist Brant Primrose was conducted on 4 February, 2018 to assess current general conditions and identify any changes that may have occurred over the past 11 years. The visit was preceded by only one significant rain pulse in January, which resulted in delayed and stunted annual plant growth for the early February date. The date of the field visit was considered optimal at the time, in view of forecast continued drought conditions.

Survey Results and Site Assessment

The results of this report are preliminary because the biological reassessment included herein is based on a single field visit conducted by necessity in mid-winter to meet an administrative deadline, which has since been extended. The field visit was conducted early in the season relative to plant germination and flowering (including that of potential rare species), prior to seasonal arrival and/or reproduction of potential special status animal species, and during conditions of unusual drought. Subsequent measurable rainfall did fall between the third week of February and the third week of March of 2018, although the seasonal precipitation total to date has been substantially below average.

General

The 1802 Centre City Parkway property has remained basically unchanged over the 11 years between 2007 and 2018. Additionally, the surrounding land use of mixed urban and semi-rural development has not changed during this period (Figure 1). The upland portion of the site continues to have limited native habitat value, due to its disturbed condition and isolation from other undeveloped areas. The isolation factor also precludes function of the upland part of the site as part of a wildlife corridor. The section of Reidy Creek within the property is small, but continues to support hydrology, native vegetation, and a measure of putative biological connectivity.

Historical Change

The results of historical aerial photograph research (Google Earth 2018) revealed black and white photographs of the 1802 Centre City Parkway property in 1995 and 1996, just prior to earth-moving, rough grading, and retaining wall construction in 1997. The quality of the 1996 photograph is superior to that from 1995, although the detail is not comparable to that available today. Although it is difficult to ascertain fine details of the pre-1997 vegetation on the site, the earlier photographs indicate a matrix of pale, uniform coloration strongly suggestive of dry, low herbaceous cover, as well as a scatter of darker, taller (detectable from shadows), roughly circular patches of vegetation, most likely consisting of non-native trees and/or shrubs. This conclusion is supported by a group of such dark vegetation patches clustered around two or three man-made structures in the north-central part of the upland portion of the site, as is typically planted in rural residential situations.

Examination of the 1996 aerial photograph and the U.S. Geological Survey topographic map of the area reveals a gentle eastward slope across the 1802 Centre City Parkway site down to the creek and no evidence of the steep, approximately five-foot high embankment that exists today.

Aerial photograph comparison also shows that a long, narrow, neatly rectangular, roughly north-south area that supported the building structures in 1996 was excavated during 1997 into a shallow basin, creating the steep embankment. It is likely that the excavated material was used to fill the area west of the retaining wall, creating the level, lower terrace. Distinct heaps of soil and rock rubble from the excavation remain within the basin and in the southeast corner of the lower terrace (Photographs 1 and 3). After more than 20 years these heaps support only sparse, colonizing vegetation.

Vegetation / Plants

The preliminary plant species inventory conducted on 4 February 2018 provides the basis for determining any vegetation changes over 11 years, which could possibly affect native habitat value and the potential occurrence of wildlife species. The inventory also provided survey for any rare plant species occurring on the 1802 Centre City Parkway site.

The results of the floristic inventory are presented in Table 1. Fifty-seven vascular plant species were documented on the property in early February under conditions of early season germination, following drought winter conditions. Plant species in Table 1 are categorized by their occurrences in one or more of five vegetation communities identified on the site (Holland 1986, Holland and Keil 1990, Oberbauer et al. 2008):

- Southern Willow Riparian Forest
- Freshwater Marsh
- Non-Native Grassland
- Eucalyptus woodland
- Ruderal (woody and herbaceous) vegetation.

The shallow, rectangular excavation basin (Photograph 1), dry at the time of survey, was examined for plant species indicative of vernal pools, which are rare, seasonally ephemeral, small-scale aquatic ecosystems typically supporting highly restricted plant and animal species. Vernal pools can occur within any of various larger-scale vegetation communities. No vernal pool plants were found. As described above, the historical aerial photograph comparison clearly demonstrates that this basin did not exist prior to 1997.

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** California Native Plant Society 2018

<u>Wildlife</u>

Approximately two acres of predominantly non-native upland vegetation at 1802 Centre City Parkway provides little wildlife habitat value, due to its disturbed condition, small size, and state of isolation from other undeveloped areas. The small area of non-native grassland is of insufficient size to support any sensitive wildlife species associated with that habitat. Furthermore, it is not a habitat remnant, but rather an area that has experienced vegetation regeneration from a state of complete disturbance, thus precluding the occurrence of vestigial populations of any wildlife species.

The small riparian zone on Reidy Creek and within the 1802 Centre City Parkway property retains wildlife habitat value and connectivity. The federally endangered Least Bell's Vireo was not found in riparian habitat on the site or vicinity between 2003 and 2007 and the quality of the habitat has not changed significantly. This riparian zone still does not provide adequate area and canopy volume to support nesting of the federally endangered Southwestern Willow Flycatcher. The riparian channel is densely vegetated, lacking open, sandy pools required for reproduction of the federally endangered Arroyo Toad.

Although non-native, the Eucalyptus stand provides potential nesting habitat for common bird species, including certain raptors (birds of prey), which are all protected by state law. A Red-shouldered Hawk (*Buteo lineatus*) and an unidentified raptor nest were found in this tree grove during the 4 February 2018 field survey. The nest was not determined to be active at the time. Red-shouldered Hawk was found nesting in this grove in 2003.

Summary

The undeveloped, 3.48-acre property at 1802 Centre City Parkway in Escondido has undergone little change between 2007 and 2018 with respect to the state of biological resources. The upland, approximately two-thirds of the site is gradually recovering from intense disturbance more than 20 years ago and, despite some semi-native vegetation development, provides little wildlife habitat value. A 2018 preliminary plant survey revealed no rare species. A short section of semi-native riparian vegetation on Reidy Creek provides some habitat value and connectivity, but no rare plants were found in 2018. Earlier surveys of the riparian zone revealed no special status wildlife.

References

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APPENDIX

Ground Photographs of
1802 Centre City Parkway Site

4 February, 2018

See Figure 1 for Photo Point locations

Photograph 1: Facing northwest from Photo Point 2 across non-native grassland on the lower upland terrace, the shallow basin with soil and rock rubble heaps, the artificial embankment, to the higher terrace with dense young Eucalyptus growth.

Photograph 2: Facing northeast from Photo Point 1 across the lower upland terrace with non-native grassland and sparse shrub cover. Riparian vegetation on Reidy Creek is visible in the upper right. The building in the upper left is beyond the property line.

Photograph 3 (left): Facing northwest from Photo Point 3 to soil and rock rubble heaps in the southeast corner of the lower upland terrace. Eucalyptus trees along Centre City Parkway are in the background. **Photograph 4 (right):** Facing north-northeast from Photo Point 3 to riparian forest on Reidy Creek.

17. Leighton Consulting, Inc.; Geotechnical Update Report, Proposed Nightingale Assisted Living Project; May 18, 2018

Leighton Consulting, Inc.
A LEIGHTON GROUP COMPANY

May 18, 2018

Project No. 11992.001

The Mitchell Group
127 Lomas Santa Fe Drive
Solana Beach, California 92075

Attention: Mr. Tigg Mitchell

Subject: Geotechnical Update Report
Proposed Escondido Assisted Living Project
Escondido, California

In accordance with your request, we have prepared a geotechnical update to address the changes to the California Building Code, the City of Escondido Storm Water Design Manual (BMP Manual), and changes to the proposed design. As part of this report, we have conducted a supplementary field investigation to address infiltration and provided updated seismic parameters. In addition, we have performed a geotechnical review of the conceptual grading plans. The conclusions and recommendations provided in our referenced reports (Leighton 2004a & 2007b) remain applicable, except as amended in this update report and any future reports.

Subsurface Exploration and Laboratory Testing

The subsurface exploration performed for this update report consisted of the excavation of two hollow stem auger borings (B-11 and B-12) and two percolation tests (P-1 and P-2). The approximate locations of the borings and percolation tests are shown on the Geotechnical Map (Plate 1). The purpose of this subsurface investigation was to confirm the stratigraphy, physical characteristics, and engineering properties determined during previous investigations and to perform percolation tests as required by the current storm water design manual.

The borings ranged in depth from approximately 7 to 18 feet below the existing ground surface. The hollow stem auger borings were excavated using a truck mounted drill rig. During the drilling operations, a geologist from our firm logged the borings. Bulk samples and driven samples were obtained for laboratory testing and evaluation. At the completion of drilling, bore holes were backfilled. Boring logs are provided in Appendix B.

Excavations for percolation tests were advanced to 5 feet below existing ground surface and set with 3-inch diameter perforated Schedule 40 PVC pipe and the annular space filled with gravel. The excavations were pre-soaked and tested in accordance with the Escondido Storm Water Design Manual and Appendices. At the completion of testing, the perforated pipe was removed and the excavation backfilled with cuttings. Results of percolation testing are discussed in the next section.

Laboratory tests were performed on select bulk samples and selected in consideration of previous testing performed for the site. Tests included Expansion Index and corrosion characteristics. Test Results are included in Appendix C.

Infiltration

The guidelines affecting the treatment of storm water and hydromodification (City of Escondido, 2016) have evolved since our original report was issued. As such, we performed two percolation tests as part of our recent investigation. The values obtained from percolation tests were corrected using a void space correction derived from California Test 750 (Caltrans, 1986) and the Porchet Method. The void space correction adjusts the percolation rate for the presence of gravel and pipe within the borehole. The Porchet Method helps account for the three-dimensional flow that occurs in a percolation test and convert it to a one-dimensional infiltration rate. Percolation tests P-1 and P-2 were situated to coincide with the proposed northern and southern basins, Basin B and Basin A, respectively, see Geotechnical Map.

Table 1 Percolation and Infiltration Rates				
Perc. Test No.	Bore Depth (ft)	Measured Percolation Rate (mins/in)	Calculated Infiltration Rate (inches/hr)	Recommended Infiltration Rate w/ FS of 2 (inches/hr)
P-1	5.0	83	0.02	0.01
P-2	5.0	62	0.06	0.03

Based on the calculated infiltration rates and the guidelines set forth in the Escondido Storm Water Design Manual, the site is classified as a non-infiltration site with rates averaging about 0.02 inches per hour. Please see City Form I-5 included as Appendix D of this report. Based on our preliminary review the improvement plans (S&A, 2018) detention basins are planned.

2016 CBC Seismic Parameters

The building code has been updated since our original report was issued, as such, we have provided updated parameters based on the 2016 California Building Code. The effects of seismic shaking may be mitigated by adhering to the California Building Code and state-of-the-art seismic design practices of the Structural Engineers Association of California. Provided below in Table 1 are the risk-targeted spectral acceleration parameters for the project determined in accordance with the 2016 California Building Code (CBSC, 2016) and the USGS U.S. Seismic Design Maps Tool (Version 3.1.0).

Table 2 2016 CBC Risk-Targeted Mapped Spectral Acceleration Parameters	
Generalized Site Latitude and Longitude 33.1508ºN 117.0947ºW	
Site Class	C
Site Coefficients	F_a = 1.000 F_v = 1.392
Mapped MCE_R Spectral Accelerations	S_S = 1.051g S_1 = 0.408g
Site Modified MCE_R Spectral Accelerations	S_{MS} = 1.051g S_{M1} = 0.567g
Design Spectral Accelerations	S_{DS} = 0.700g S_{D1} = 0.378g

Utilizing ASCE Standard 7-10, in accordance with Section 11.8.3, the following additional parameters for the peak horizontal ground acceleration are associated with the Geometric Mean Maximum Considered Earthquake (MCE_G). The mapped MCE_G peak ground acceleration (PGA) is 0.395g for the site. For a Site Class C, the F_{PGA} is 1.005 and the mapped peak ground acceleration adjusted for Site Class effects (PGA_M) is 0.397g for the site.

Fire Lane Retaining Wall

Based on a review of the plans and conversations with the project team, a new segmental retaining wall will be constructed behind the existing retaining wall on the east side of the site. Design documents for the existing wall were not available during preparation of this update report, as such a new wall is currently proposed with the intent to accept vehicular loads imposed by the fire access lane and reduce loading on the existing wall. A previous fluvial study (Chang Consultants, 2005) and investigation by this firm (Leighton, 2007b) outline the scour potential along Reidy Creek. A review of the site map suggests the existing wall foundation will not be undermined by scour.

Foundation dimensions, specifically embedment should be verified to confirm that scour will not pose significant risk to the retaining wall. Once the subject wall plans become available, Leighton should perform a geotechnical review to verify parameters given in previous reports have been incorporated.

Plan Review

We have performed a geotechnical review of the conceptual grading plan prepared by Spears & Associates (S&A, 2018). Our review was performed with the intent to identify potential conflicts with the recommendations provided in our referenced geotechnical report and this update report. Based on our review, our geotechnical recommendations appear to have been incorporated. Final rough grading plans, precise grading plans, foundation plans, retaining wall plans, and other pertinent project plans were not available during the preparation of this report, these documents should be reviewed when they become available.

Limitations

Findings contained in this report are based on our previous site reconnaissance, subsurface explorations, background review, and present knowledge of the proposed project. It is possible that soil conditions vary between or beyond the points explored. If soil conditions are encountered during grading or foundation excavation, which differ from those described in the original geotechnical reports, our firm should be notified immediately in order that a review may be made and any supplemental recommendations provided.

Our firm has performed our services in substantial accordance with the generally accepted geotechnical engineering practice as it exists in the site area at the time of our study. No warranty is made or intended.

If you have any questions regarding this letter, please do not hesitate to contact this office. We appreciate this opportunity to be of service.

Respectfully submitted,

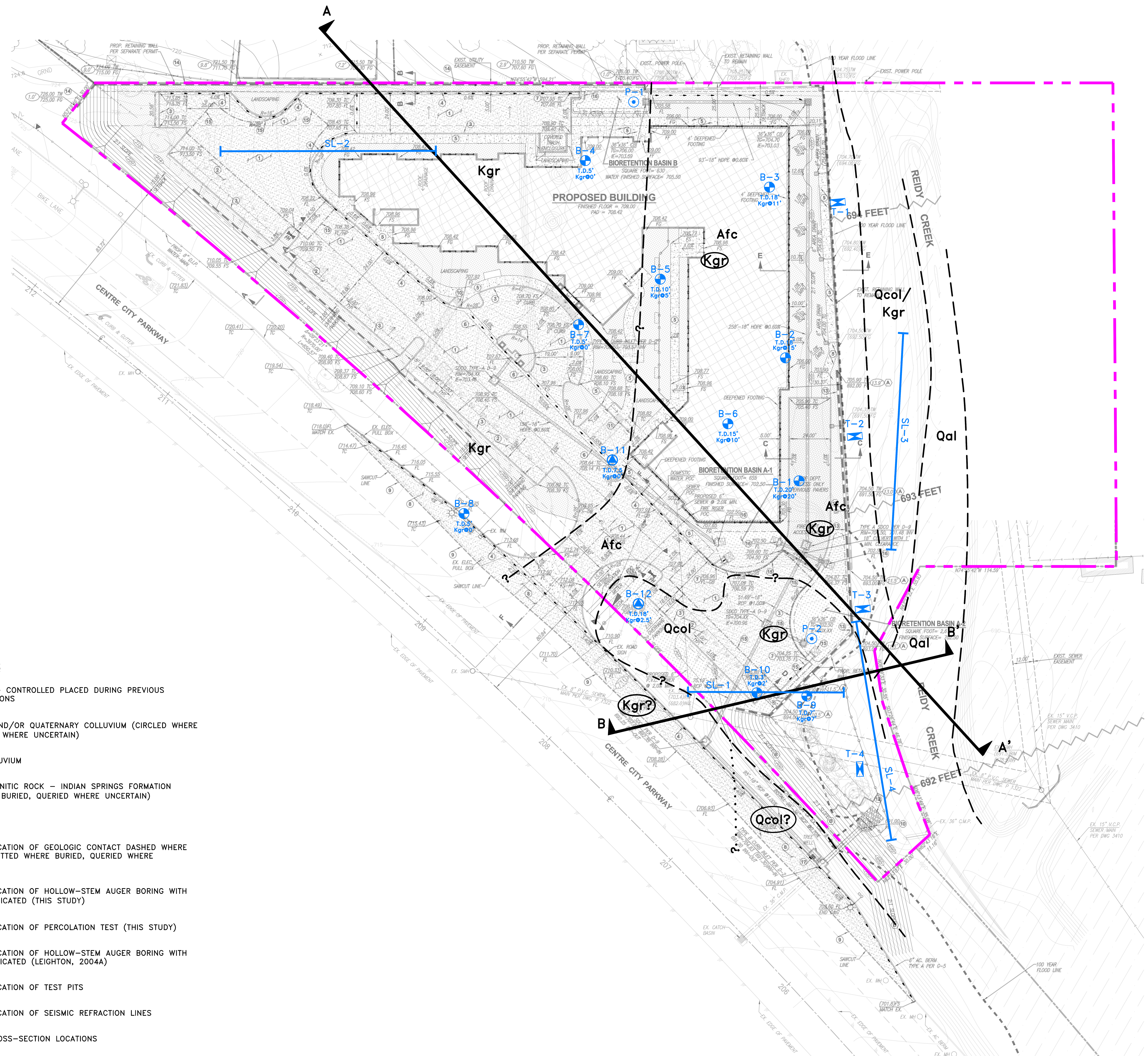
LEIGHTON CONSULTING, INC.

Mike D. Jensen, CEG 2457
Senior Project Geologist

Benjamin R. Grenis, RCE 83971
Project Engineer

Attachments: Plate 1 – Geotechnical Map
Appendix A – References
Appendix B1 – Recent Boring Logs
Appendix B2 – Previous Boring Logs and Test Pit Logs
Appendix C1 – Recent Laboratory Testing
Appendix C2 – Previous Laboratory Testing
Appendix D – Form I-5

Distribution: (1) Addressee (via email)



LEGEND

GEOLOGIC UNITS

Afc	ARTIFICIAL FILL – CONTROLLED PLACED DURING PREVIOUS GRADING OPERATIONS
Qcol	RESIDUAL SOIL AND/OR QUATERNARY COLLUVIUM (CIRCLED WHERE BURIED, QUERIED WHERE UNCERTAIN)
Qal	QUATERNARY ALLUVIUM
Kgr	CRETACEOUS GRANITIC ROCK – INDIAN SPRINGS FORMATION (CIRCLED WHERE BURIED, QUERIED WHERE UNCERTAIN)

MAP SYMBOLS

— — —	APPROXIMATE LOCATION OF GEOLOGIC CONTACT DASHED WHERE APPROXIMATE, DOTTED WHERE BURIED, QUERIED WHERE UNCERTAIN)
B-12 T.D.18'	APPROXIMATE LOCATION OF HOLLOW-STEM AUGER BORING WITH TOTAL DEPTH INDICATED (THIS STUDY)
P-2	APPROXIMATE LOCATION OF PERCOLATION TEST (THIS STUDY)
B-10 T.D.3'	APPROXIMATE LOCATION OF HOLLOW-STEM AUGER BORING WITH TOTAL DEPTH INDICATED (LEIGHTON, 2004A)
T-4	APPROXIMATE LOCATION OF TEST PITS
SL-4	APPROXIMATE LOCATION OF SEISMIC REFRACTION LINES
B B	APPROXIMATE CROSS-SECTION LOCATIONS
	APPROXIMATE PROJECT LIMITS

GEOTECHNICAL MAP Escondido Assisted Living 1802 N. Centre City Parkway Escondido, California	Plate 1
Proj: 11992.001	Eng/Geol: BRG/MDJ
Scale: 1"=30 feet	Date: May 2018

Leighton

APPENDIX A

REFERENCES

APPENDIX A

References

California Building Standards Commission (CBSC), 2016, California Building Code, Volumes 1 and 2.

Caltrans, 1986, California Test 750, Method for Determining the Percolation Rate of Soils Using a 6-inch-Diameter-Test Hole, dated 1986.

Chang Consultants, 2005, Fluvial Study for Channel Bank Protection along Reidy Creek at Planned Assisted Living Facility by Nightingale Health Services, May 2005.

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APPENDIX B1

RECENT BORING LOGS

GEOTECHNICAL BORING LOG KEY

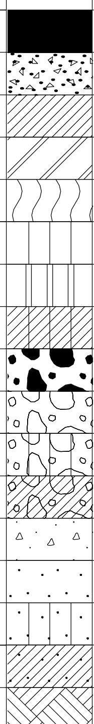
Date ______ **Sheet** 1 **of** 1

Project KEY TO BORING LOG GRAPHICS **Project No.** ______

Drilling Co. ______ **Type of Rig** ______

Hole Diameter ______ **Drive Weight** ______ **Drop** "

Elevation Top of Elevation ' **Location** ______



Elevation Feet	Depth Feet	Graphic Log (N S)	Attitudes	Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	DESCRIPTION Logged By ______ Sampled By ______	Type of Tests
	0								Asphaltic concrete.	
									Portland cement concrete.	
								CL	Inorganic clay of low to medium plasticity; gravelly clay; sandy clay; silty clay; lean clay.	
								CH	Inorganic clay; high plasticity, fat clays.	
								OL	Organic clay; medium to plasticity, organic silts.	
	5							ML	Inorganic silt; clayey silt with low plasticity.	
								MH	Inorganic silt; diatomaceous fine sandy or silty soils; elastic silt.	
								ML-CL	Clayey silt to silty clay.	
								GW	Well-graded gravel; gravel-sand mixture, little or no fines.	
								GP	Poorly graded gravel; gravel-sand mixture, little or no fines.	
	10							GM	Silty gravel; gravel-sand-silt mixtures.	
								GC	Clayey gravel; gravel-sand-clay mixtures.	
								SW	Well-graded sand; gravelly sand, little or no fines.	
								SP	Poorly graded sand; gravelly sand, little or no fines.	
								SM	Silty sand; poorly graded sand-silt mixtures.	
	15							SC	Clayey sand; sand-clay mixtures.	
									Bedrock.	
									Ground water encountered at time of drilling.	
				B-1					Bulk Sample 1.	
	20			B-1					Bulk Sample 2.	
				C-1					Core Sample.	
				G-1					Grab Sample.	
				R-1					Modified California Sampler (3" O.D., 2.5 I.D.).	
				SH-1					Shelby Tube Sampler (3" O.D.).	
	25			S-1					Standard Penetration Test SPT (Sampler (2" O.D., 1.4" I.D.).	
				PUSH					Sampler Penetrates without Hammer Blow.	
									Bulk Sample 2.	
	30									

SAMPLE TYPES:

- S SPLIT SPOON
- R RING SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE
- G GRAB SAMPLE
- SH SHELBY TUBE

TYPE OF TESTS:

- DS DIRECT SHEAR
- MD MAXIMUM DENSITY
- CN CONSOLIDATION
- CR CORROSION
- SA SIEVE ANALYSIS
- AT ATTERBURG LIMITS
- EI EXPANSION INDEX
- RV R-VALUE

LEIGHTON

GEOTECHNICAL BORING LOG B-11

Project No.	11992.001	**Date Drilled**	4-24-18
Project	The Mitchell Group	**Logged By**	ERB
Drilling Co.	Baja Exploration	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger - 140lb - Autohammer - 30" Drop	**Ground Elevation**	705' msl
Location	See Map	**Sampled By**	ERB

Elevation Feet	Depth Feet	Graphic Log (N S)	Attitudes	Sample No.	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
705	0			B-1 0-5'					CRETACEOUS GRANITICS (Kgr) @ 0': Granitic Rock, very dense, light yellowish-brown, dry, trace rounded gravel (1/8"-1/4"), fine SAND	
				S-1	50/2"				@ 2.5': Granitic Rock continues at depth, color changed to dark gray-brown, oxidation throughout, micaceous, manganese nodules, indurated, limited recovery on S-1	
700	5			R-1	50/4"				@ 5': Continues at depth	
				S-2	50/1"				@ 7': Dense gravel encountered, no sample recovery on S-2 @ 7.5': Practical refusal	
									Total Depth = 7.5 Feet (bgs) **No groundwater encountered at time of drilling** **Backfilled with soil cuttings on 4/24/18**	
695	10									
690	15									
685	20									
680	25									
675	30									

This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.

SAMPLE TYPES:
- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:
- -200 % FINES PASSING
- AL ATTERBERG LIMITS
- CN CONSOLIDATION
- CO COLLAPSE
- CR CORROSION
- CU UNDRAINED TRIAXIAL
- DS DIRECT SHEAR
- EI EXPANSION INDEX
- H HYDROMETER
- MD MAXIMUM DENSITY
- PP POCKET PENETROMETER
- RV R VALUE
- SA SIEVE ANALYSIS
- SE SAND EQUIVALENT
- SG SPECIFIC GRAVITY
- UC UNCONFINED COMPRESSIVE STRENGTH

*** * * This log is a part of a report by Leighton and should not be used as a stand-alone document. * * ***

GEOTECHNICAL BORING LOG B-12

Project No.	11992.001	**Date Drilled**	4-24-18
Project	The Mitchell Group	**Logged By**	ERB
Drilling Co.	Baja Exploration	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger - 140lb - Autohammer - 30" Drop	**Ground Elevation**	700' msl
Location	See Map	**Sampled By**	ERB

Elevation Feet	Depth Feet	Graphic Log (N S)	Attitudes	Sample No.	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION *This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.*	Type of Tests
700	0			B-1 0-5'				SM	QUATERNARY COLLUVIUM (Qcol) @ 0': Silty SAND, loose, medium to dark brown, dry, trace pea sized gravel observed, trace micas	
				S-1	10 50/4"				CRETACEOUS GRANITICS (Kgr) @ 2.5': Granitic Rock, very dense, light orangish brown to black, dry, coarse SAND matrix, dry, micaceous, weathered/friable, excavates to silty SAND	
695	5			R-1 B-2 5.5'-7.5'	50/4"				@ 5': Continues at depth	
				R-2	50/3"				@ 7.5': Continues at depth	
690	10			R-3	50/3"				@ 10': Continues at depth	
685	15			R-4	50/2"				@ 15': Continues at depth	
									Total Depth = 15.5 Feet (bgs) **No groundwater encountered at time of drilling** **Backfilled on 4/24/18**	
680	20									
675	25									
670	30									

SAMPLE TYPES:
- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:
- -200 % FINES PASSING
- AL ATTERBERG LIMITS
- CN CONSOLIDATION
- CO COLLAPSE
- CR CORROSION
- CU UNDRAINED TRIAXIAL
- DS DIRECT SHEAR
- EI EXPANSION INDEX
- H HYDROMETER
- MD MAXIMUM DENSITY
- PP POCKET PENETROMETER
- RV R VALUE
- SA SIEVE ANALYSIS
- SE SAND EQUIVALENT
- SG SPECIFIC GRAVITY
- UC UNCONFINED COMPRESSIVE STRENGTH

APPENDIX B2

PREVIOUS BORINGS LOGS AND TEST PIT LOGS

GEOTECHNICAL BORING LOG KEY

Date ______________ Sheet 1 of 1

Project KEY TO BORING LOG GRAPHICS Project No. -

Drilling Co. ______________ Type of Rig ______________

Hole Diameter ______________ Drive Weight ______________ Drop "

Elevation Top of Elevation ' Location ______________

Elevation Feet	Depth Feet	Graphic Log (N S)	Attitudes	Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	DESCRIPTION Logged By ______ Sampled By ______	Type of Tests
	0								Asphaltic concrete	
									Portland cement concrete	
								CL	Inorganic clay of low to medium plasticity; gravelly clay; sandy clay; silty clay; lean clay	
								CH		
								OL		
	5							ML	Inorganic silt; clayey silt with low plasticity	
								MH	Inorganic silt; diatomaceous fine sandy or silty soils; elastic silt	
								ML-CL	Clayey silt to silty clay	
								GW	Well-graded gravel; gravel-sand mixture, little or no fines	
								GP	Poorly graded gravel; gravel-sand mixture, little or no fines	
	10							GM		
								GC	Clayey gravel; gravel-sand-clay mixture	
								SW	Well-graded sand; gravelly sand, little or no fines	
								SP	Poorly graded sand; gravelly sand, little or no fines	
								SM	Silty sand; poorly graded sand-silt mixture	
	15							SC		
									Bedrock	
▽									Ground water encountered at time of drilling	
				B-1					Bulk Sample	
	20			C-1					Core Sample	
				G-1					Grab Sample	
				R-1					Modified California Sampler (3" O.D., 2.5 I.D.)	
				SH-1					Shelby Tube Sampler (3" O.D.)	
				S-1					Standard Penetration Test SPT (Sampler (2" O.D., 1.4" I.D.)	
	25									
	30									

SAMPLE TYPES:

- S SPLIT SPOON
- R RING SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE
- G GRAB SAMPLE
- SH SHELBY TUBE

TYPE OF TESTS:

- DS DIRECT SHEAR
- MD MAXIMUM DENSITY
- CN CONSOLIDATION
- CR CORROSION
- SA SIEVE ANALYSIS
- AT ATTERBURG LIMITS
- EI EXPANSION INDEX
- RV R-VALUE

LEIGHTON

GEOTECHNICAL BORING LOG B-1

Date 8-31-04 | Sheet 1 of 1

Project Nightingale Health Services | Project No. 600594-001

Drilling Co. West Hazmat | Type of Rig CME-75

Hole Diameter 8" | Drive Weight 140 pound hammer | Drop 30"

Elevation Top of Elevation 705' | Location See Map

Logged By HMR

Sampled By HMR

Elevation Feet	Depth Feet	Graphic Log (N S)	Attitudes	Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	DESCRIPTION	Type of Tests
705	0							SM	ARTIFICIAL FILL (Af) @ 0': Brown silty SAND, SM	
				B-1 @2'-4'					@ 1.5: Cobble	CR
700	5								@ 5': Cobble	
				R-1	50/6"	105.0	16.8	SM	@ 6': Silty SAND: Dark gray to black, moist, dense	DS
695	10			S-1	72				@ 10': Silty SAND: Dark gray to black, moist, very dense	SA
690	15			R-2	72	127.2	12.3	SM	@ 15': Silty SAND: Orange-brown, moist, very dense	CN
685	20				62		4.4	SM	WEATHERED CRETACEOUS GRANITIC (Kgr) @ 20': Excavates to silty SAND: Brown, damp, very dense	
									Total Depth = 20 Feet No ground water encountered at time of drilling Backfilled on 8/31/04	
680	25									
675	30									

SAMPLE TYPES:
- S SPLIT SPOON
- R RING SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE
- G GRAB SAMPLE
- SH SHELBY TUBE

TYPE OF TESTS:
- DS DIRECT SHEAR
- MD MAXIMUM DENSITY
- CN CONSOLIDATION
- CR CORROSION
- SA SIEVE ANALYSIS
- AT ATTERBURG LIMITS
- EI EXPANSION INDEX
- RV R-VALUE

LEIGHTON

GEOTECHNICAL BORING LOG B-2

Date 8-31-04 **Sheet** 1 **of** 1
Project Nightingale Health Services **Project No.** 600594-001
Drilling Co. West Hazmat **Type of Rig** CME-75
Hole Diameter 8" **Drive Weight** 140 pound hammer **Drop** 30"
Elevation Top of Elevation 705' **Location** See Map

Logged By: HMR
Sampled By: HMR

Elevation Feet	Depth Feet	Graphic Log (N S)	Attitudes	Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	DESCRIPTION	Type of Tests
705	0							SM	ARTIFICIAL FILL (Af) @ 0': Silty SAND: Orange-brown, damp	EI
				B-1 @2'-4'						
700	5			R-1	90				@ 5': Silty SAND: Orange-brown, damp, very dense, some gravel	
695	10			S-1	50				@ 10': Silty SAND: Dark gray, moist, very dense, tip Weathered Kgr	SA
									WEATHERED CRETACEOUS GRANITIC (Kgr) @ 12'-14': Tightened (driller)	
690	15			R-2	50/6"		2.3		@ 15': Excavates to silty SAND: Light brown, damp, very dense	
				S-2	100-4"				@ 18': Excavates to silty SAND: Light brown, damp, very dense	
685	20								Total Depth = 19 Feet No ground water encountered at time of drilling Backfilled on 8/31/04	
680	25									
675	30									

SAMPLE TYPES:
- S SPLIT SPOON
- R RING SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE
- G GRAB SAMPLE
- SH SHELBY TUBE

TYPE OF TESTS:
- DS DIRECT SHEAR
- MD MAXIMUM DENSITY
- CN CONSOLIDATION
- CR CORROSION
- SA SIEVE ANALYSIS
- AT ATTERBURG LIMITS
- EI EXPANSION INDEX
- RV R-VALUE

LEIGHTON

GEOTECHNICAL BORING LOG B-3

Date 8-31-04 | Sheet 1 of 1
Project Nightingale Health Services | Project No. 600594-001
Drilling Co. West Hazmat | Type of Rig CME-75
Hole Diameter 8" | Drive Weight 140 pound hammer | Drop 30"
Elevation Top of Elevation 705' | Location See Map

Logged By HMR
Sampled By HMR

Elevation Feet	Depth Feet	Graphic Log (N S)	Attitudes	Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	DESCRIPTION	Type of Tests
705	0							SM	ARTIFICIAL FILL (Af) @ 0': Silty SAND: Orange-brown, damp	
				B-1 @2.5'-5'						
700	5			R-1	60	108.0	11.0	ML	@ 5': Sandy SILT: Dark gray to black, moist, dense	DS
695	10			S-1	98		9.6	SM	@ 10': Silty SAND: Black to brown, moist, very dense, sandier than above, tip Weathered Cretaceous Granite (Kgr) WEATHERED CRETACEOUS GRANITIC (Kgr) @ 11': Excavates to silty SAND; Brown, damp	
690	15			R-2	100/4"	117.0	5.3		@ 15': Excavates to silty SAND: Brown, damp, very dense	
				S-2	50/4"				@ 18': Excavates to silty SAND: Brown, damp, very dense	
685	20								Total Depth = 18 Feet No ground water encountered at time of drilling Backfilled on 8/31/04	
680	25									
675	30									

SAMPLE TYPES:
- S SPLIT SPOON
- R RING SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE
- G GRAB SAMPLE
- SH SHELBY TUBE

TYPE OF TESTS:
- DS DIRECT SHEAR
- MD MAXIMUM DENSITY
- CN CONSOLIDATION
- CR CORROSION
- SA SIEVE ANALYSIS
- AT ATTERBURG LIMITS
- EI EXPANSION INDEX
- RV R-VALUE

LEIGHTON

GEOTECHNICAL BORING LOG B-4

Date 8-31-04 | Sheet 1 of 1
Project Nightingale Health Services | Project No. 600594-001
Drilling Co. West Hazmat | Type of Rig CME-75
Hole Diameter 8" | Drive Weight 140 pound hammer | Drop 30"
Elevation Top of Elevation 705' | Location See Map

Logged By HMR
Sampled By HMR

Elevation Feet	Depth Feet	Graphic Log (N S)	Attitudes	Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	DESCRIPTION	Type of Tests
705	0			B-1 @0'-4'				SM	WEATHERED CRETACEOUS GRANITIC (Kgr) @ 0': Excavates to silty SAND: Light brown, damp,	
700	5			S-1	100/4"				@ 5': Excavates to silty SAND: Light brown, damp, very dense	
									Total Depth = 5 Feet No ground water encountered at time of drilling Backfilled on 8/31/04	
695	10									
690	15									
685	20									
680	25									
675	30									

SAMPLE TYPES:
- S SPLIT SPOON
- R RING SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE
- G GRAB SAMPLE
- SH SHELBY TUBE

TYPE OF TESTS:
- DS DIRECT SHEAR
- MD MAXIMUM DENSITY
- CN CONSOLIDATION
- CR CORROSION
- SA SIEVE ANALYSIS
- AT ATTERBURG LIMITS
- EI EXPANSION INDEX
- RV R-VALUE

LEIGHTON

GEOTECHNICAL BORING LOG B-5

Date 8-31-04 | Sheet 1 of 1
Project Nightingale Health Services | Project No. 600594-001
Drilling Co. West Hazmat | Type of Rig CME-75
Hole Diameter 8" | Drive Weight 140 pound hammer | Drop 30"
Elevation Top of Elevation 705' | Location See Map

Logged By HMR
Sampled By HMR

Elevation Feet	Depth Feet	Graphic Log (N S)	Attitudes	Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	DESCRIPTION	Type of Tests
705	0							SM	ARTIFICIAL FILL (Af) @ 0': Silty SAND: Red-brown, moist	
				B-1 @2'-5'						
700	5			R-1	100/4"	124.2	7.9	SM	WEATHERED CRETACEOUS GRANITIC (Kgr) @ 5': Excavates to silty SAND: Brown, damp, very dense	
695	10			S-1	100/6"		3.6		@ 10': Excavates to silty SAND: Brown, damp, very dense	
									Total Depth = 10 Feet No ground water encountered at time of drilling Backfilled on 8/31/04	
690	15									
685	20									
680	25									
675	30									

SAMPLE TYPES:
S SPLIT SPOON
R RING SAMPLE
B BULK SAMPLE
T TUBE SAMPLE
G GRAB SAMPLE
SH SHELBY TUBE

TYPE OF TESTS:
DS DIRECT SHEAR
MD MAXIMUM DENSITY
CN CONSOLIDATION
CR CORROSION
SA SIEVE ANALYSIS
AT ATTERBURG LIMITS
EI EXPANSION INDEX
RV R-VALUE

LEIGHTON

GEOTECHNICAL BORING LOG B-6

Date 8-31-04 | Sheet 1 of 1

Project Nightingale Health Services | Project No. 600594-001

Drilling Co. West Hazmat | Type of Rig CME-75

Hole Diameter 8" | Drive Weight 140 pound hammer | Drop 30"

Elevation Top of Elevation 705' | Location See Map

Logged By HMR

Sampled By HMR

Elevation Feet	Depth Feet	Graphic Log (N S)	Attitudes	Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	DESCRIPTION	Type of Tests
705	0							SM	ARTIFICIAL FILL (Af) @ 0': Silty SAND: Orange-brown, damp	
				B-1 @2'-5'						
700	5			R-1	62	121.1	9.3		@ 5': Silty SAND: Black, moist, very dense	
695	10								WEATHERED CRETACEOUS GRANITE (Kgr)	
				S-1	100/5"		3.7		@ 11': Excavates to silty SAND: Light brown, damp, very dense	
690	15				100/4"				@ 15': Excavates to silty SAND: Light brown, damp, very dense; no recovery	
									Total Depth = 16 Feet No ground water encountered at time of drilling Backfilled on 8/31/04	
685	20									
680	25									
675	30									

SAMPLE TYPES:
S SPLIT SPOON
R RING SAMPLE
B BULK SAMPLE
T TUBE SAMPLE
G GRAB SAMPLE
SH SHELBY TUBE

TYPE OF TESTS:
DS DIRECT SHEAR
MD MAXIMUM DENSITY
CN CONSOLIDATION
CR CORROSION
SA SIEVE ANALYSIS
AT ATTERBURG LIMITS
EI EXPANSION INDEX
RV R-VALUE

LEIGHTON

GEOTECHNICAL BORING LOG B-7

Date 8-31-04 **Sheet** 1 **of** 1
Project Nightingale Health Services **Project No.** 600594-001
Drilling Co. West Hazmat **Type of Rig** CME-75
Hole Diameter 8" **Drive Weight** 140 pound hammer **Drop** 30"
Elevation Top of Elevation 705' **Location** See Map

Logged By HMR
Sampled By HMR

Elevation Feet	Depth Feet	Graphic Log (N S)	Attitudes	Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	DESCRIPTION	Type of Tests
705	0			B-1 @0'-5'				SM	WEATHERED CRETACEOUS GRANITIC (Kgr) @ 0': Excavates to silty SAND: Light brown, damp	
700	5			S-1	50/2"				@ 5': Excavates to silty SAND: Light brown, damp, very dense	
									Total Depth = 5 Feet No ground water encountered at time of drilling Backfilled on 8/31/04	
695	10									
690	15									
685	20									
680	25									
675	30									

SAMPLE TYPES:
- S SPLIT SPOON
- R RING SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE
- G GRAB SAMPLE
- SH SHELBY TUBE

TYPE OF TESTS:
- DS DIRECT SHEAR
- MD MAXIMUM DENSITY
- CN CONSOLIDATION
- CR CORROSION
- SA SIEVE ANALYSIS
- AT ATTERBURG LIMITS
- EI EXPANSION INDEX
- RV R-VALUE

LEIGHTON

GEOTECHNICAL BORING LOG B-8

Date 8-31-04 | Sheet 1 of 1
Project Nightingale Health Services | Project No. 600594-001
Drilling Co. West Hazmat | Type of Rig CME-75
Hole Diameter 8" | Drive Weight 140 pound hammer | Drop 30"
Elevation Top of Elevation 715' | Location See Map

Logged By HMR
Sampled By HMR

Elevation Feet	Depth Feet	Graphic Log (N S)	Attitudes	Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	DESCRIPTION	Type of Tests
715	0			B-1 @0'-5'				SM	WEATHERED CRETACEOUS GRANITIC (Kgr) @ 0': Excavates to silty SAND: Light brown, damp	R-Value
710	5			S-1	100/5"				@ 5': Excavates to silty SAND: Light brown, damp, very dense	
									Total Depth = 5 Feet No ground water encountered at time of drilling Backfilled on 8/31/04	
705	10									
700	15									
695	20									
690	25									
685	30									

SAMPLE TYPES:
S SPLIT SPOON
R RING SAMPLE
B BULK SAMPLE
T TUBE SAMPLE
G GRAB SAMPLE
SH SHELBY TUBE

TYPE OF TESTS:
DS DIRECT SHEAR
MD MAXIMUM DENSITY
CN CONSOLIDATION
CR CORROSION
SA SIEVE ANALYSIS
AT ATTERBURG LIMITS
EI EXPANSION INDEX
RV R-VALUE

LEIGHTON

GEOTECHNICAL BORING LOG B-9

Date: 9-13-04 | Sheet 1 of 1
Project: Nightingale Health Services | Project No. 600594-001
Drilling Co.: Pacific Drilling | Type of Rig: Tripod
Hole Diameter: 6" | Drive Weight: 140 pound hammer | Drop: 30"
Elevation Top of Elevation: 692' | Location: See Map

Logged By: HMR
Sampled By: HMR

Elevation Feet	Depth Feet	Graphic Log (N S)	Attitudes	Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	DESCRIPTION	Type of Tests
	0			B-1 @0-5'				SM	RESIDUAL SOIL/QUATERNARY COLLUVIUM (Qcol) @ 0': Silty SAND: Brown, damp	EI,CR
690									@ 2': Silty SAND: Brown, dense (Residual Soil/Colluvium)	
				S-1	36					
	5			S-2	37				@ 5': Silty SAND: Brown, moist, looks more like Weathered Cretaceous Granite	
685				S-3	50/1"				CRETACEOUS GRANITE (Kgr) @ 7': Excavates to silty SAND: Brown, damp, very dense, drilling very hard per driller Total Depth = 7 Feet No ground water encountered at time of drilling Backfilled on 9/13/04	
	10									
680										
	15									
675										
	20									
670										
	25									
665										
	30									

SAMPLE TYPES:
S SPLIT SPOON
R RING SAMPLE
B BULK SAMPLE
T TUBE SAMPLE
G GRAB SAMPLE
SH SHELBY TUBE

TYPE OF TESTS:
DS DIRECT SHEAR
MD MAXIMUM DENSITY
CN CONSOLIDATION
CR CORROSION
SA SIEVE ANALYSIS
AT ATTERBURG LIMITS
EI EXPANSION INDEX
RV R-VALUE

LEIGHTON

GEOTECHNICAL BORING LOG B-10

Date 9-13-04 | Sheet 1 of 1
Project Nightingale Health Services | Project No. 600594-001
Drilling Co. Pacific Drilling | Type of Rig Tripod
Hole Diameter 6" | Drive Weight 140 pound hammer | Drop 30"
Elevation Top of Elevation 695' | Location See Map

Logged By HMR
Sampled By HMR

Elevation Feet	Depth Feet	Graphic Log (N S)	Attitudes	Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	DESCRIPTION	Type of Tests
695	0			B-1A @0-1'				SM	RESIDUAL SOIL/QUATERNARY COLLUVIUM (Qcol) @ 0': Silty SAND: Brown damp	
				B-1 @0-3'						
				S-1	30 35/2"				CRETACEOUS GRANITE (Kgr) @ 2': Silty SAND: Brown, damp, very dense, hard drilling	
									Total Depth = 3 Feet No ground water encountered at time of drilling Backfilled on 9/13/04 Collected Sample B1-A from around top of boring	
690	5									
685	10									
680	15									
675	20									
670	25									
665	30									

SAMPLE TYPES:
S SPLIT SPOON
R RING SAMPLE
B BULK SAMPLE
T TUBE SAMPLE
G GRAB SAMPLE
SH SHELBY TUBE

TYPE OF TESTS:
DS DIRECT SHEAR
MD MAXIMUM DENSITY
CN CONSOLIDATION
CR CORROSION
SA SIEVE ANALYSIS
AT ATTERBURG LIMITS
EI EXPANSION INDEX
RV R-VALUE

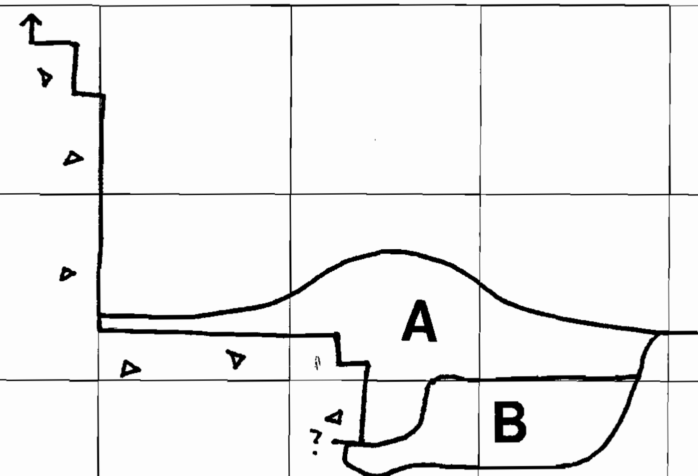
LEIGHTON

LOG OF TRENCH: T-1

Project Name: Nightingale	Logged by: AJB	ENGINEERING PROPERTIES
Project Number: 600594-002	Elevation: 692 Feet	
Equipment: Hand Excavation	Location/Grid:	

GEOLOGIC ATTITUDES	DATE: 12/1/05 DESCRIPTION:	GEOLOGIC UNIT	USCS	Sample No.	Moisture (%)	Density (pcf)
	ARTIFICIAL FILL – UNDOCUMENTED	Afu		B-1 @ 0-1'		
	A @ 0-1': Silty SAND: Brown, dry to slightly moist, loose to medium dense; rootlets present in upper 6 inches		SM			
	CRETACEOUS GRANITICS	Kgr				
	B @ 1'-1.5': Excavates to coarse-grained silty SAND: Gray-brown, slightly moist, moderately indurated; oxidized zones, moderately to highly weathered		SM			

GRAPHICAL REPRESENTATION: Northeast wall SCALE: 1"-2' SURFACE SLOPE: Generally Flat TREND: N25W



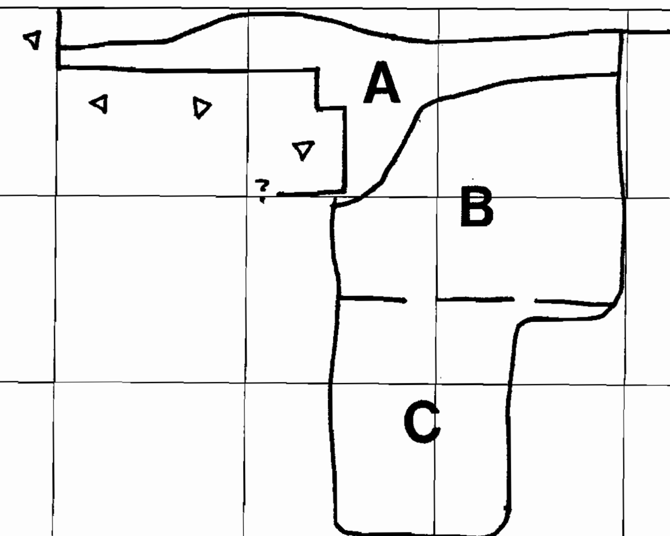
Total Depth = 2.2 Feet
No Ground Water Encountered
Backfilled: 12/1/05

LOG OF TRENCH: T-2

Project Name: Nightingale	Logged by: AJB	ENGINEERING PROPERTIES
Project Number: 600594-002	Elevation: 692 Feet	
Equipment: Hand Excavation	Location/Grid:	

GEOLOGIC ATTITUDES	DATE: 12/1/05 DESCRIPTION:	GEOLOGIC UNIT	USCS	Sample No.	Moisture (%)	Density (pcf)
	ARTIFICIAL FILL – UNDOCUMENTED	Afu		B-1 @ 0-2.5'		
	A @ 0-1': Slightly clayey SAND: Brown, dry to slightly moist, loose to medium dense; debris present		SC			
	ARGILLIC HORIZON	Bt				
	B @ 1'-2': Sandy CLAY: Brown, moist, firm to hard; medium plasticity, Class II carbonate development and manganese nodules present					
	CRETACEOUS GRANITICS (DECOMPOSED GRANITE)	Kgr (dg)				
	C @ 2'-3.5': Excavates to silty SAND: Red-brown, moist, dense to very dense; oxidized, few coarse-grained sands, micaceous, becomes more dense with depth and less highly weathered					

GRAPHICAL REPRESENTATION: Northeast wall SCALE: 1"-2' SURFACE SLOPE: Generally Flat TREND: N25W



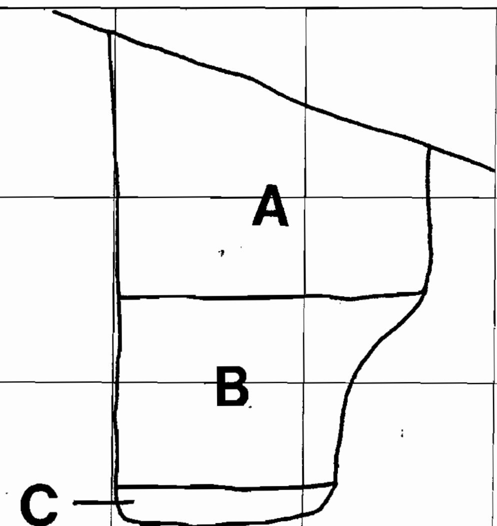
Total Depth =5.2 Feet
No Ground Water Encountered
Backfilled: 12/1/05

LOG OF TRENCH: T-3

Project Name: Nightingale	Logged by: AJB	ENGINEERING PROPERTIES			
Project Number: 600594-002	Elevation: 689 Feet				
Equipment: Hand Excavation	Location/Grid:				

GEOLOGIC ATTITUDES	DATE: 12/1/05 DESCRIPTION:	GEOLOGIC UNIT	USCS	Sample No.	Moisture (%)	Density (pcf)
	ARTIFICIAL FILL – UNDOCUMENTED (Afu)	Afu		B-1 @ 0-3'		
	A @ 0'-3': Silty SAND: Brown, dry to slightly moist, loose to medium dense; debris and roots throughout		SM			
	QUATERNARY COLLUVIUM	Qcol				
	B @ 3'-4.5': Silty SAND: Brown, dry to slightly moist, medium dense		SM			
	CRETACEOUS GRANITICS	Kgr				
	C @ 4.5'-5.3': Excavates to coarse-grained silty SAND: Gray-brown, moist, moderately indurated; highly to moderately weathered		SM			

GRAPHICAL REPRESENTATION: Northeast wall SCALE: 1"-2' SURFACE SLOPE: 20°SE TREND: N55W



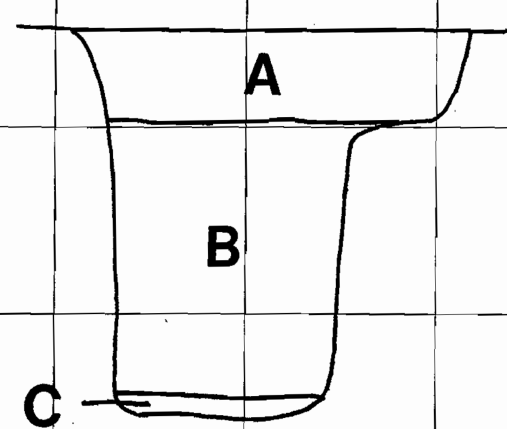
Total Depth = 5.3 Feet
No Ground Water Encountered
Backfilled: 12/1/05

LOG OF TRENCH: T-4

Project Name: Nightingale	Logged by: AJB	ENGINEERING PROPERTIES			
Project Number: 600594-002	Elevation: 691 Feet				
Equipment: Hand Excavation	Location/Grid:				

GEOLOGIC ATTITUDES	DATE: 12/1/05 DESCRIPTION:	GEOLOGIC UNIT	USCS	Sample No.	Moisture (%)	Density (pcf)
	ARTIFICIAL FILL – UNDOCUMENTED (Afu)	Afu		B-1 @ 0-2'		
	A @ 0'-0.8': Silty SAND: Brown, slightly moist, loose to medium dense; roots throughout		SM			
	QUATERNARY COLLUVIUM	Qcol				
	B @ 0.8-3.4': Silty SAND: Brown, slightly moist, medium dense; roots present, calcium carbonate nodules present		SM			
	CRETACEOUS GRANITICS	Kgr				
	C @ 3'-4': Excavates to coarse-grained silty SAND: Gray-brown, slightly moist, moderately indurated; moderately to highly weathered		SM			

GRAPHICAL REPRESENTATION: Northeast wall SCALE: 1"-2' SURFACE SLOPE: Level TREND: N25W



Total Depth = 4 Feet
No Ground Water Encountered
Backfilled: 12/1/05

APPENDIX C1

RECENT LABORATORY TESTING

APPENDIX C

Laboratory Testing Procedures and Test Results

Expansion Index Tests: The expansion index of selected materials was evaluated in general accordance with ASTM D 4829. A specimen was molded under a specified compactive energy at approximately 50 percent saturation (plus or minus 1 percent). The prepared 1-inch thick by 4-inch diameter specimen was loaded with a surcharge of 144 pounds per square foot and were inundated with tap water. Readings of volumetric swell were made for a period of 24 hours. The results are presented in the table below:

Sample Location	Sample Description	Expansion Index	Expansion Potential
B-11 @ 0-5’	Light yellowish-brown Silty SAND	1	Very Low

Minimum Resistivity and pH Tests: Minimum resistivity and pH tests were performed in general accordance with Caltrans Test Method CT643. The results are presented in the table below:

Sample Location	Sample Description	pH	Minimum Resistivity (ohms-cm)
B-11 @ 0-5’	Light yellowish-brown Silty SAND	7.52	4,400

Chloride Content: Chloride content was tested in accordance with Caltrans Test Method CT422. The results are presented below:

Sample Location	Sample Description	Chloride Content, ppm
B-11 @ 0-5’	Light yellowish-brown Silty SAND	15

<u>Soluble Sulfates</u>: The soluble sulfate contents of selected samples were determined by standard geochemical methods (Caltrans Test Method CT417). The test results are presented in the table below:

Sample Location	Sample Description	Sulfate Content (%)	Potential Degree of Sulfate Attack*
B-3 @ 2-4'	Light yellowish-brown Silty SAND	0.0150	Not Applicable

* Based on the 2011 edition of American Concrete Institute (ACI) Committee 318R, Table No. 4.2.1.

APPENDIX C2

PREVIOUS LABORATORY TESTING

APPENDIX C

Laboratory Testing Procedures and Test Results

Moisture Determination Tests: Moisture content determinations were performed on disturbed and relatively undisturbed samples obtained from the trenches. The results of these tests are presented in the boring logs.

Consolidation Tests: Consolidation tests were performed on selected, relatively undisturbed ring samples in accordance with Modified ASTM Test Method D2435. Samples were placed in a consolidometer and loads were applied in geometric progression. The percent consolidation for each load cycle was recorded as the ratio of the amount of vertical compression to the original 1-inch height. The consolidation pressure curves are presented on the attached figures.

Hydroconsolidation Tests: Hydroconsolidation tests were performed on selected relatively undisturbed ring samples. Samples were placed in a consolidometer and a load approximately equal to the in-situ overburden pressure was applied. Water was then added to the sample and the percent hydroconsolidation for the load cycle was recorded as the ratio of the amount of vertical compression to the original 1-inch height. The percent hydroconsolidation is presented below:

Sample Location	Percent Hydroconsolidation
B-1, 15 Feet	0.29 @ 3.1 ksf

Classification or Grain Size Tests: Typical materials were subjected to mechanical grain-size analysis by sieving from U.S. Standard brass screens (ASTM Test Method D422). Hydrometer analyses were performed where appreciable quantities of fines were encountered. The data was evaluated in determining the classification of the materials. The grain-size distribution curves are presented in the test data and the Unified Soil Classification (USCS) is presented in both the test data and the trench logs. Below is a summary of the percent passing the No. 200 Sieve.

Sample Location	Percent Passing No. 200 Sieve
B-1 @ 10 Feet	30
B-2 @ 10 Feet	25

APPENDIX C (Continued)

Expansion Index Tests: The expansion potential of selected materials was evaluated by the Expansion Index Test, ASTM D4829. Specimens are molded under a given compactive energy to approximately the optimum moisture content and approximately 50 percent saturation. The prepared 1-inch thick by 4-inch diameter specimens are loaded to an equivalent 144 psf surcharge and are inundated with water until volumetric equilibrium is reached. The results of these tests are presented in the table below:

Sample Location	Sample Description	Compacted Dry Density (pcf)	Expansion Index	Expansion Potential
B-2 @ 2 to 4 Feet	Brown Silty SAND (SM)	116	0	Very Low
B-9 @ 0 to 5 Feet	Brown Silty SAND (SM)	112.7	36	Low

"R"-Value: The resistance "R"-value was determined by the California Materials Method CT301 for base, subbase, and basement soils. The samples were prepared and exudation pressure and "R"-value determined. The graphically determined "R"-value at exudation pressure of 300 psi is reported.

Sample Number	Sample Location	Sample Description	R-Value
B-1	B-8, 0 to 5 Feet	Brown silty SAND (SM)	78

APPENDIX C (Continued)

Direct Shear Tests: Direct shear tests were performed on selected remolded samples which were soaked for a minimum of 24 hours under a surcharge equal to the applied normal force during testing. After transfer of the sample to the shear box and reloading of the sample, the pore pressures set up in the sample (due to the transfer) were allowed to dissipate for a period of approximately 1-hour prior to application of shearing force. The samples were tested under various normal loads utilizing a motor-driven, strain-controlled, direct-shear testing apparatus at a strain rate of 0.01 inches per minute. After a shear strain of 0.2 inches, the motor was stopped and the sample was allowed to "relax" for approximately 15 minutes. The stress drop during the relaxation period was recorded. It is anticipated that, in a majority of samples tested, the 15 minutes relaxing of the samples is sufficient to allow dissipation of pore pressures that may have set up in the samples due to shearing. The drained peak strength was estimated by deducting the shear force reduction during the relaxation period from the peak shear values. The shear values at the end of shearing are considered to be ultimate values and are shown in parenthesis.

Sample Location	Sample Description	Friction Angle (degrees)	Apparent Cohesion (psf)
B-1 @ 6 Feet	Brown Silty SAND (SM)	42 (39)	450 (400)
B-3 @ 5 Feet	Brown SILT (ML)	42 (39)	500 (450)

Soluble Sulfates: The soluble contents of selected samples were determined by standard geochemical methods. The test results are presented in the table below:

Sample Location	Sulfate Content (%)	Potential Degree of Sulfate Attack*
B-1 @ 2 to 4 Feet	<0.015	Negligible
B-9 @ 0 to 5 Feet	<0.015	Negligible

* Based on the 2001 edition of the California Building Code, Table No. 19-A-4 (CBSC, 2002).

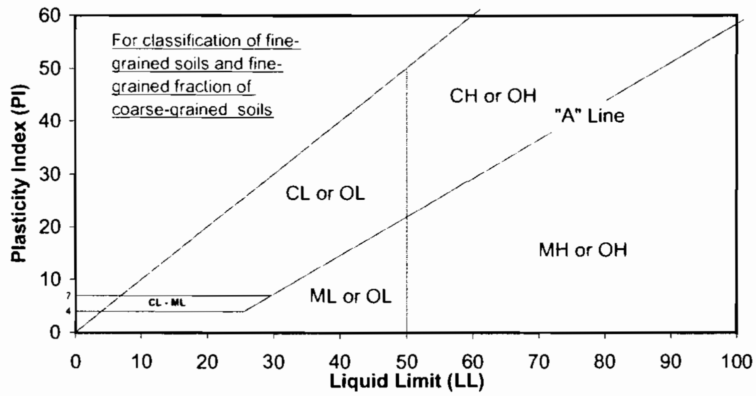
APPENDIX C (Continued)

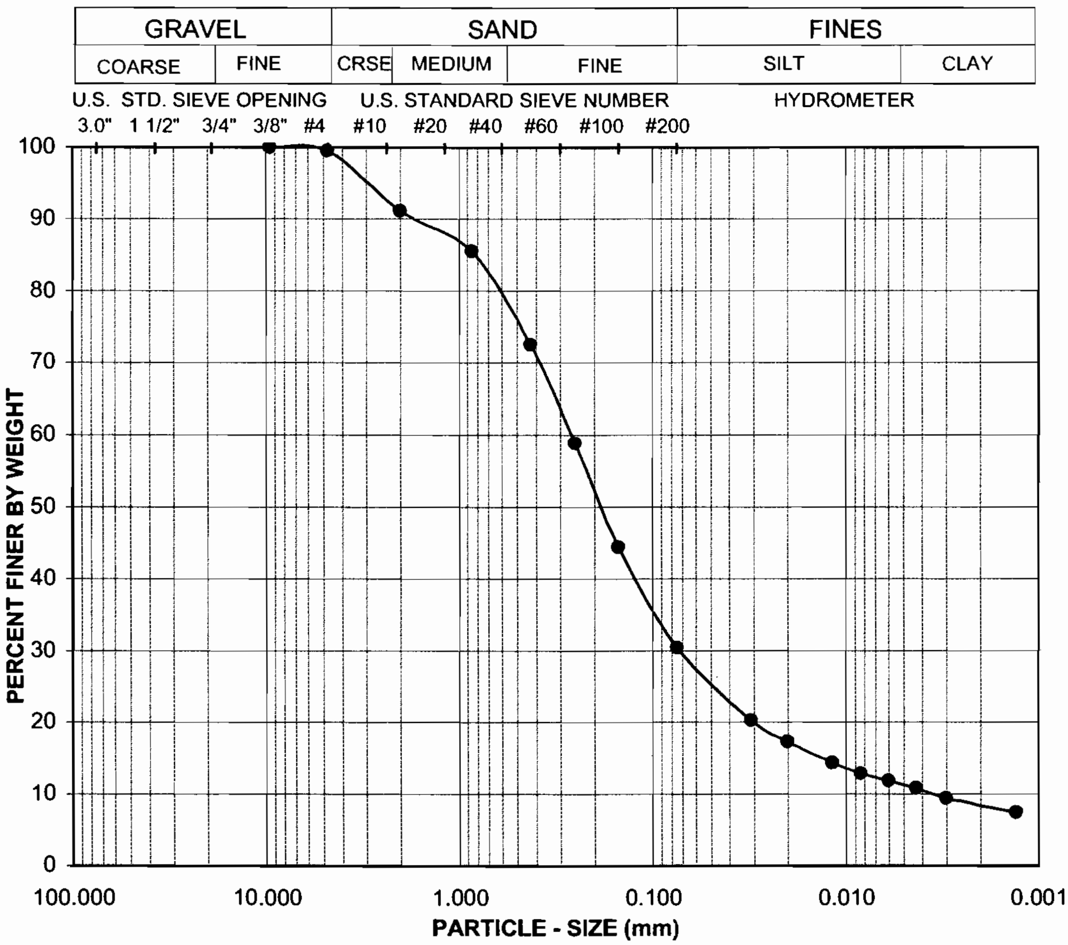
Minimum Resistivity and pH Tests: Minimum resistivity and pH tests were performed in general accordance with California Test Method 643. The results are presented in the table below:

Sample Location	Sample Description	pH	Minimum Resistivity (ohms-cm)
B-1 @ 2 to 4 Feet	Silty SAND (SM)	7.86	10794
B-9 @ 0 to 5 Feet	Silty SAND (SM)	7.28	2496

Chloride Content: Chloride content was tested in accordance with DOT Test Method No. 422. The results are presented below:

Sample Location	Chloride Content, ppm	Chloride Attack Potential
B-1 @ 2 to 4 Feet	<21	Threshold
B-9 @ 0 to 5 Feet	130	Threshold





Boring No.	Sample No.	Depth (ft.)	Soil Type	GR:SA:FI (%)	LL,PL,PI
B-1	S1	10	SM	1:69:30	N/A

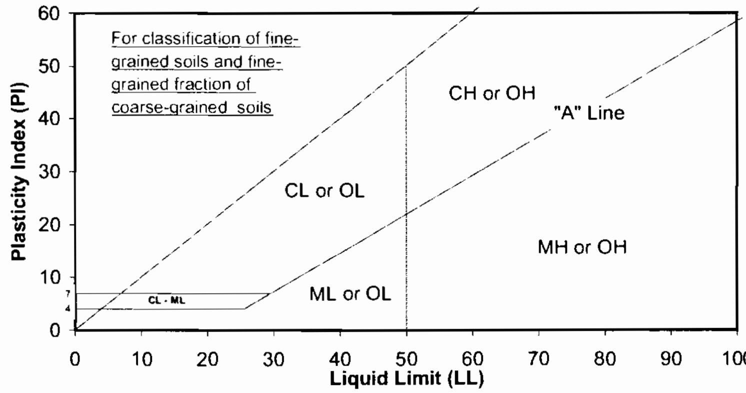
Sample Description:
SM: BROWN SILTY SAND

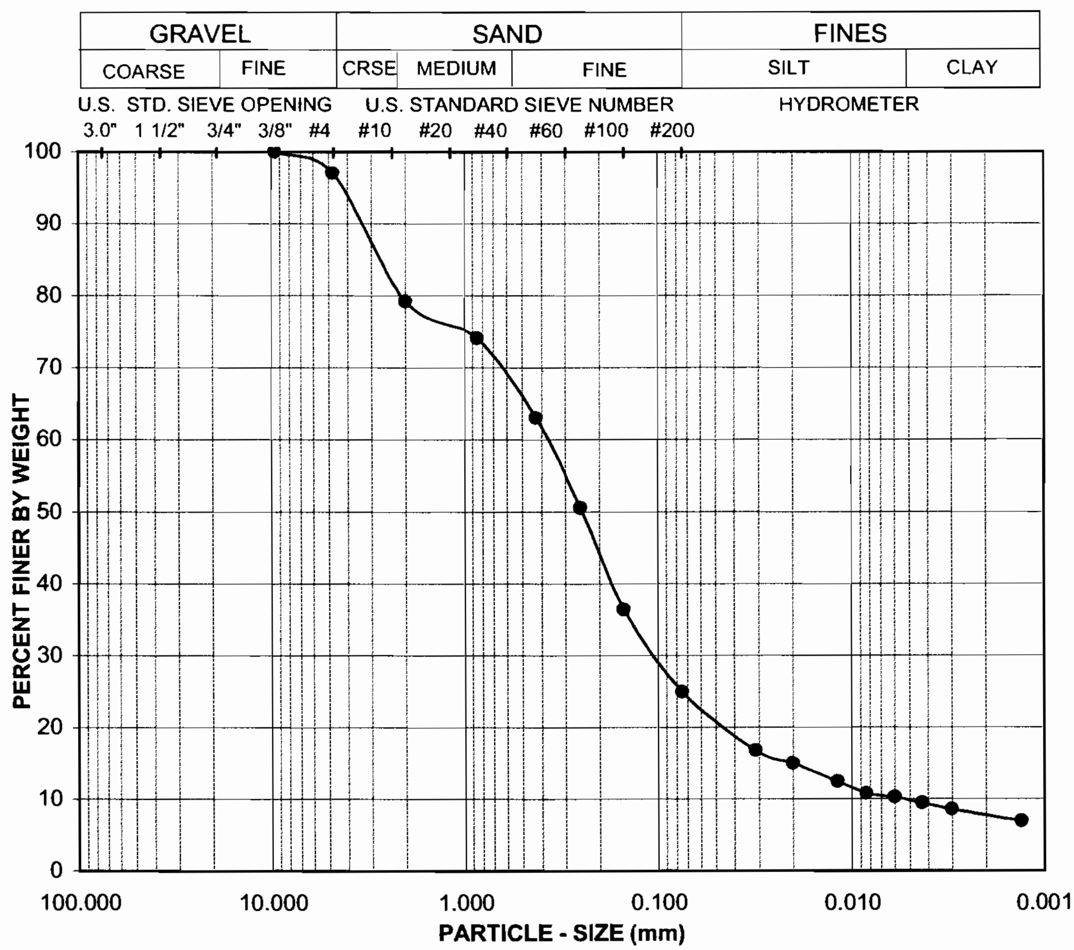
Project No.: 600594-001
NIGHTINGALE ASSISTED LIVING

ATTERBERG LIMITS, PARTICLE - SIZE CURVE
ASTM D 4318, D 422

Leighton

Rev. 08-04





Boring No.	Sample No.	Depth (ft.)	Soil Type	GR:SA:FI (%)	LL,PL,PI
B-2	S1	10	SM	3:72:25	N/A

Sample Description:
SM: BROWN SILTY SAND

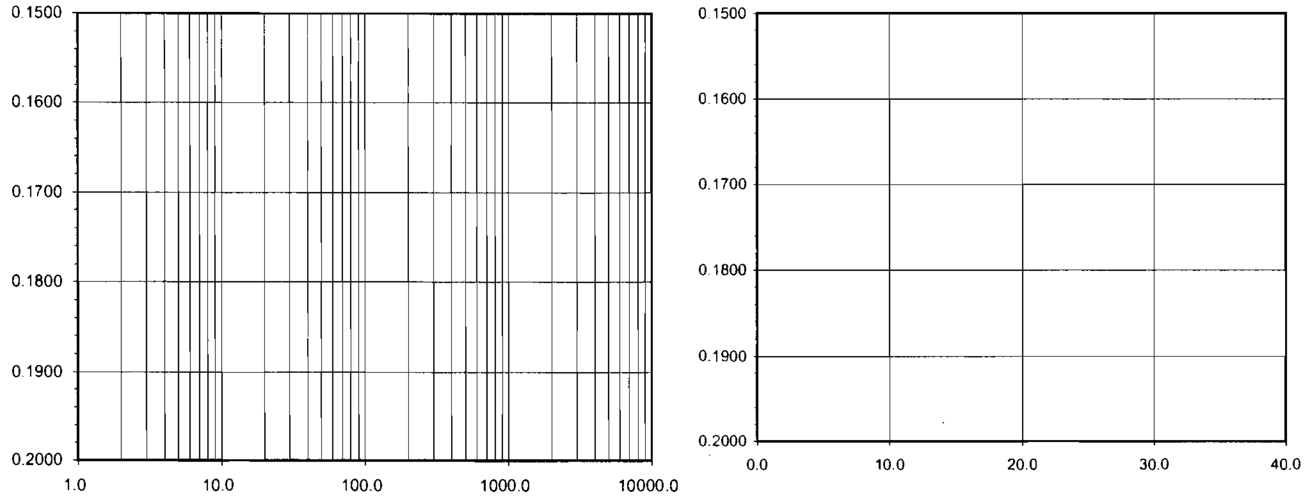
Leighton

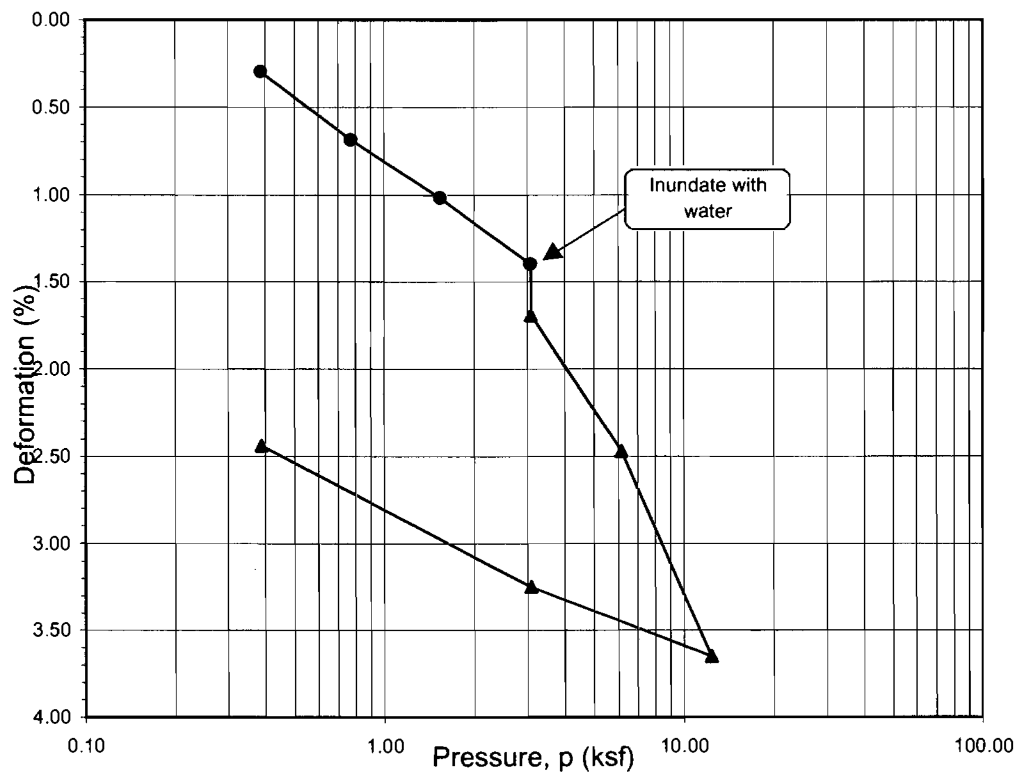
Project No.: 600594-001
NIGHTINGALE ASSISTED LIVING

ATTERBERG LIMITS, PARTICLE - SIZE CURVE
ASTM D 4318, D 422

Rev. 08-04

Time Readings @ 0 ksf





Boring No.	Sample No.:	Depth (ft.)	Moisture Content (%)		Dry Density (pcf)		Void Ratio		Degree of Saturation (%)	
			Initial	Final	Initial	Final	Initial	Final	Initial	Final
B-1	**R2**	**15**	**12.3**	**12.7**	**127.2**	**130.4**	**0.325**	**0.293**	**102**	**118**

Sample Description:

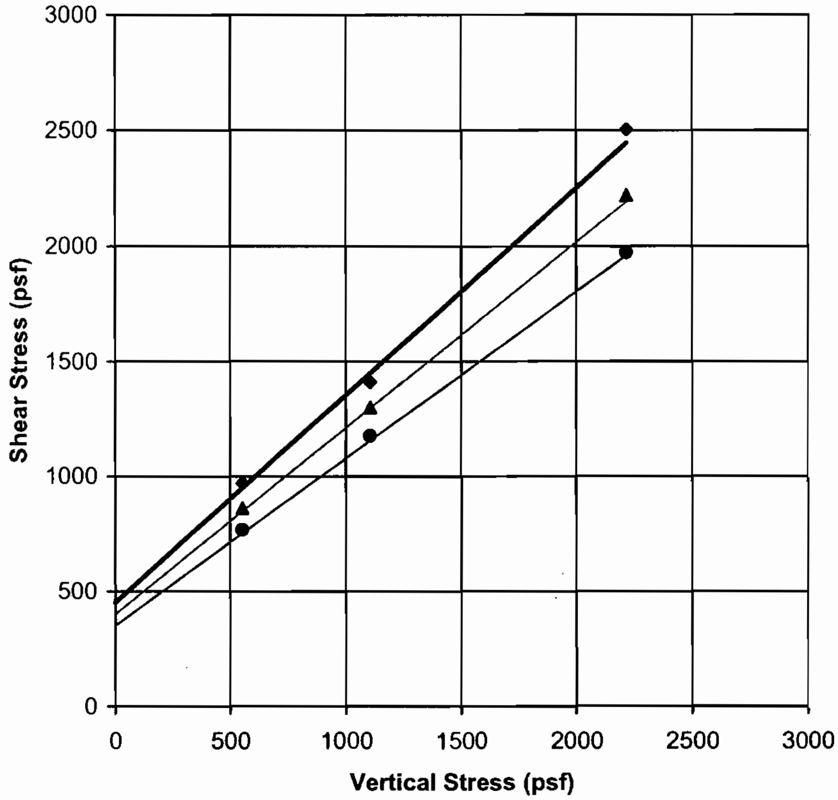
SM: REDDISH-BROWN SILTY SAND

Project No.:	600594-001
Project Name:	NIGHTINGALE ASSISTED LIVING

Leighton

ONE - DIMENSIONAL CONSOLIDATION PROPERTIES of SOILS
ASTM D 2435

Rev. 08-04



Boring Location	**B-1**	Deformation Rate	**0.01 in/min**
Sample Depth (feet)	**6**		

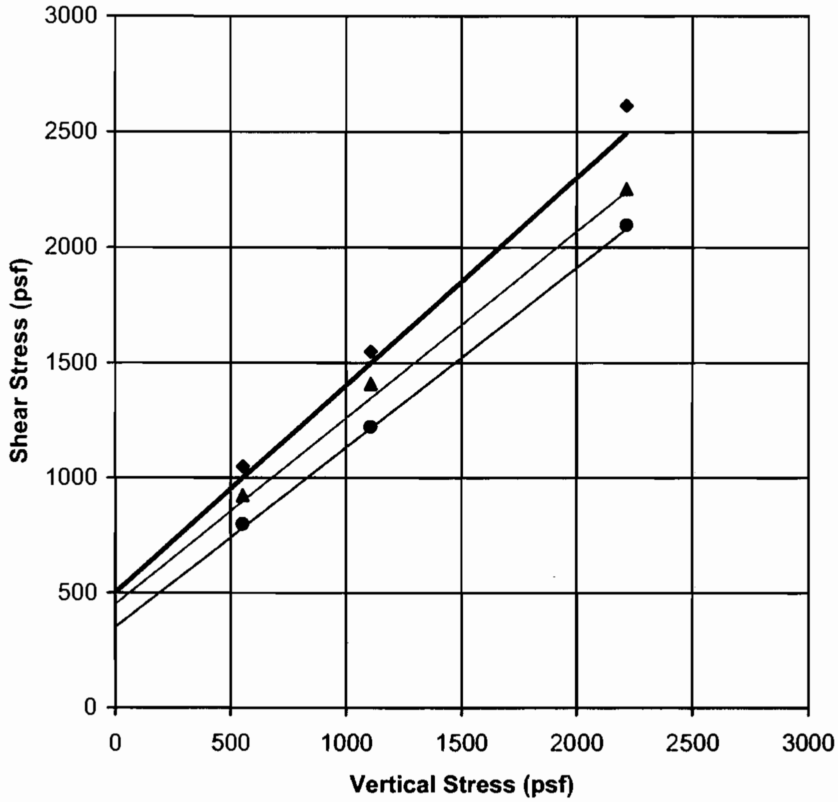
Linear Strength Envelope

Peak	Friction Angle, ϕ'_{peak} (deg)	**42**	**Relaxed**	Friction Angle, $\phi'_{relaxed}$ (deg)	**36**
	Cohesion, c'_{peak} (psf)	**450**		Cohesion, $c'_{relaxed}$ (psf)	**350**
@ 0.2 in	Friction Angle, $\phi'_{@0.2"}$ (deg)	**39**			
	Cohesion, $c'_{@0.2"}$ (psf)	**400**			

DIRECT SHEAR SUMMARY

Project No. 600594-001
Project Name Nightingale Assisted Living

Leighton



Boring Location	**B-3**	Deformation Rate	**0.01 in/min**
Sample Depth (feet)	**5**		

Linear Strength Envelope

Peak	Friction Angle, ϕ'_{peak} (deg)	**42**	**Relaxed**	Friction Angle, $\phi'_{relaxed}$ (deg)	**38**
	Cohesion, c'_{peak} (psf)	**500**		Cohesion, $c'_{relaxed}$ (psf)	**350**
@ 0.2 in	Friction Angle, $\phi'_{@0.2''}$ (deg)	**39**			
	Cohesion, $c'_{@0.2''}$ (psf)	**450**			

DIRECT SHEAR SUMMARY

Project No. 600594-001
Project Name Nightingale Assisted Living

Leighton

APPENDIX D

INFILTRATION FORM I-5

Categorization of Infiltration Feasibility Condition	Form I-5

Part 1 - Full Infiltration Feasibility Screening Criteria

Would infiltration of the full design volume be feasible from a physical perspective without any undesirable consequences that cannot be reasonably mitigated?

Criteria	Screening Question	Yes	No
1	**Is the estimated reliable infiltration rate below proposed facility locations greater than 0.5 inches per hour?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2 and Appendix D.		X

Provide basis:

Based on our field percolation testing, the in-situ infiltration rates of the soils at the subject site are between 0.01 and 0.03 inches per hour. Specifically, the calculated infiltration rate via the California Test 750 Correction, Porchet Method, and applied safety factor of 2 is between 0.01 and 0.03 inches per hour across the site and therefore the site is not considered appropriate for a "Full Infiltration" designation.

Criteria	Screening Question	Yes	No
2	**Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of geotechnical hazards (slope stability, groundwater mounding, utilities, or other factors) that cannot be mitigated to an acceptable level?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2.		X

Provide basis: If the infiltration rates were greater than 0.5 inches per hour, it is possible that the risk of geotechnical hazards would be increased. Specifically, there are existing and proposed retaining walls onsite. Intentional infiltration of storm water behind retaining walls is problematic for two reasons: 1) retaining wall subdrains exist to convey water in the backfill to a storm drain or other outlet, reducing the infiltration, and 2) retaining walls are designed with the expressed intent of removing water from the backfill, intentional infiltration may overwhelm the subdrain system resulting in unplanned hydrostatic pressures and potential wall failure.

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.

<table>
<tr><th>Criteria</th><th>Screening Question</th><th>Yes</th><th>No</th></tr>
<tr><td>3</td><td>Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of groundwater contamination (shallow water table, storm water pollutants or other factors) that cannot be mitigated to an acceptable level? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.</td><td>X</td><td></td></tr>
<tr><td colspan="4">Provide basis:
If the infiltration rates were greater than 0.5 inches per hour, it may be possible that the risk of groundwater contamination would not be increased provided there are no contaminated soil or groundwater sites within 250 feet of the proposed infiltration sites. In addition, groundwater was not encountered during our investigation, but has the potential to match the elevation of Reidy Creek, about 20 feet below design grades.

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative</td></tr>
<tr><td>4</td><td>Can infiltration greater than 0.5 inches per hour be allowed without causing potential water balance issues such as change of seasonality of ephemeral streams or increased discharge of contaminated groundwater to surface waters? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.</td><td></td><td>X</td></tr>
<tr><td colspan="4">Provide basis:

If the infiltration rates were greater than 0.5 inches per hour, it may be possible that potential water balance issues would be affected considering there is a ephemeral stream/Reidy Creek within 250 feet of the proposed infiltration sites.

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.</td></tr>
<tr><td>Part 1 Result*</td><td colspan="2">If all answers to rows 1 - 4 are “Yes” a full infiltration design is potentially feasible. The feasibility screening category is Full Infiltration

If any answer from row 1-4 is “No”, infiltration may be possible to some extent but would not generally be feasible or desirable to achieve a “full infiltration” design. Proceed to Part 2</td><td>Go to Part 2</td></tr>
</table>

Part 2 – Partial Infiltration vs. No Infiltration Feasibility Screening Criteria **Would infiltration of water in any appreciable amount be physically feasible without any negative consequences that cannot be reasonably mitigated?**			
Criteria	Screening Question	**Yes**	**No**
5	**Do soil and geologic conditions allow for infiltration in any appreciable rate or volume?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2 and Appendix D.	X	
Provide basis: Based on our field percolation testing, the in-situ infiltration rates of the soils at the subject site are between 0.01 and 0.03 inches per hour. Specifically, the calculated infiltration rate via the California Test 750 Correction, Porchet Method, and applied safety factor of 2 is between 0.01 and 0.03 inches per hour across the site and therefore the site may be considered appropriate for a "Partial Infiltration" designation. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.			
6	**Can Infiltration in any appreciable quantity be allowed without increasing risk of geotechnical hazards (slope stability, groundwater mounding, utilities, or other factors) that cannot be mitigated to an acceptable level**? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2.		X
Provide basis: If partial infiltration was utilized, it is still possible that the risk of geotechnical hazards would be increased. Specifically there are existing and proposed retaining walls onsite. Intentional infiltration of storm water behind retaining walls is problematic for two reasons: 1) retaining wall subdrains exist to convey water in the backfill to a storm drain or other outlet, reducing infiltration and 2) retaining walls are designed with the expressed intent of removing water from the backfill, intentional infiltration may overwhelm the subdrain system resulting in unplanned hydrostatic pressures and potential wall failure. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.			

<table>
<tr><th>Criteria</th><th>Screening Question</th><th>Yes</th><th>No</th></tr>
<tr><td>7</td><td>Can Infiltration in any appreciable quantity be allowed without posing significant risk for groundwater related concerns (shallow water table, storm water pollutants or other factors)? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.</td><td>X</td><td></td></tr>
<tr><td colspan="4">Provide basis:
Partial infiltration conditions (greater than 0.01 inches per hour) exist, it may be possible that the risk of groundwater contamination will not be increased by partial infiltration provided there are no contaminated soil or groundwater sites within 250 feet of the proposed infiltration site. In addition, groundwater was not encountered during our investigation, but has the potential to match the elevation of Reidy Creek, about 20 feet below design grades.

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.</td></tr>
<tr><td>8</td><td>Can infiltration be allowed without violating downstream water rights? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.</td><td></td><td>X</td></tr>
<tr><td colspan="4">Provide basis:

If partial infiltration conditions (greater than 0.01 inches per hour) existed across the site, violation of downstream water rights is a possibility based on the site location and the proximity to Reidy Creek within 250 feet of the proposed infiltration site.

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.</td></tr>
<tr><td>Part 2 Result*</td><td colspan="2">If all answers from row 5-8 are yes then partial infiltration design is potentially feasible. The feasibility screening category is Partial Infiltration.

If any answer from row 5-8 is no, then infiltration of any volume is considered to be infeasible within the drainage area. The feasibility screening category is No Infiltration.</td><td>No Infiltration</td></tr>
</table>

18. Leighton Consulting, Inc.; Geotechnical Investigation, Proposed Nightingale Assisted Living Project; September 20, 2004 and November 20, 2007

GEOTECHNICAL INVESTIGATION,
PROPOSED NIGHTINGALE ASSISTED LIVING PROJECT,
1802 NORTH CENTRE CITY PARKWAY
ESCONDIDO, CALIFORNIA, 92026

Prepared For

NIGHTINGALE HEALTH SERVICES, INC.
2644 Canyon Road
Escondido, California 92025

Project No. 600594-001

September 20, 2004

Leighton Consulting, Inc.
A LEIGHTON GROUP COMPANY

Leighton Consulting, Inc.
A LEIGHTON GROUP COMPANY

September 20, 2004

Project No. 600594-001

To: Nightingale Health Services, Inc.
2644 Canyon Road
Escondido, California 92025

Attention: Mr. Cesar Tangonan

Subject: Geotechnical Investigation, Proposed Nightingale Assisted Living Project, 1802 North Centre City Parkway, Escondido, California 92026

In accordance with your request and authorization, we have conducted a geotechnical investigation for the proposed Nightingale Assisted Living Project located at 1802 North Centre City Parkway in Escondido, California. Based on the results of our study, it is our opinion that development of the site is feasible provided the geotechnical recommendations contained in this report are implemented during design and construction. The accompanying report presents a summary of our current investigation and provides geotechnical conclusions and recommendations relative to the proposed site development.

If you have any questions regarding our report, please do not hesitate to contact this office. We appreciate this opportunity to be of service.

Respectfully submitted,

LEIGHTON CONSULTING, INC.

REGISTERED PROFESSIONAL ENGINEER
HAZE M. RODGERS
No. 66161
Exp. 6/30/06
CIVIL
STATE OF CALIFORNIA

Haze Rogers, RCE 66161
Project Engineer

REGISTERED GEOLOGIST
MICHAEL R. STEWART
NO. 1349
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER
SEAN A. COLORADO
No. 2507
Exp. 12/31/05
GEOTECHNICAL
STATE OF CALIFORNIA

Sean Colorado, GE 2507
Associate Engineer

Michael R. Stewart, CEG 1349
Principal Geologist

Distribution: (1) Addressee
(3) Simac Construction, Inc.
Attention: Mr. Jim Peterson

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Leighton

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1.0 INTRODUCTION

1.1 Purpose and Scope

This report presents the results of our geotechnical investigation for the proposed Nightingale Assisted Living Project located at 1802 North Centre City Parkway in Escondido, California. The purpose of our investigation was to identify and evaluate the geologic hazards and significant geotechnical conditions present at the site in order to provide geotechnical recommendations for site development. Our scope of services included:

- Review of available pertinent, published and unpublished geotechnical literature and maps. References cited are listed in Appendix A.

- Field reconnaissance of the existing onsite geotechnical conditions.

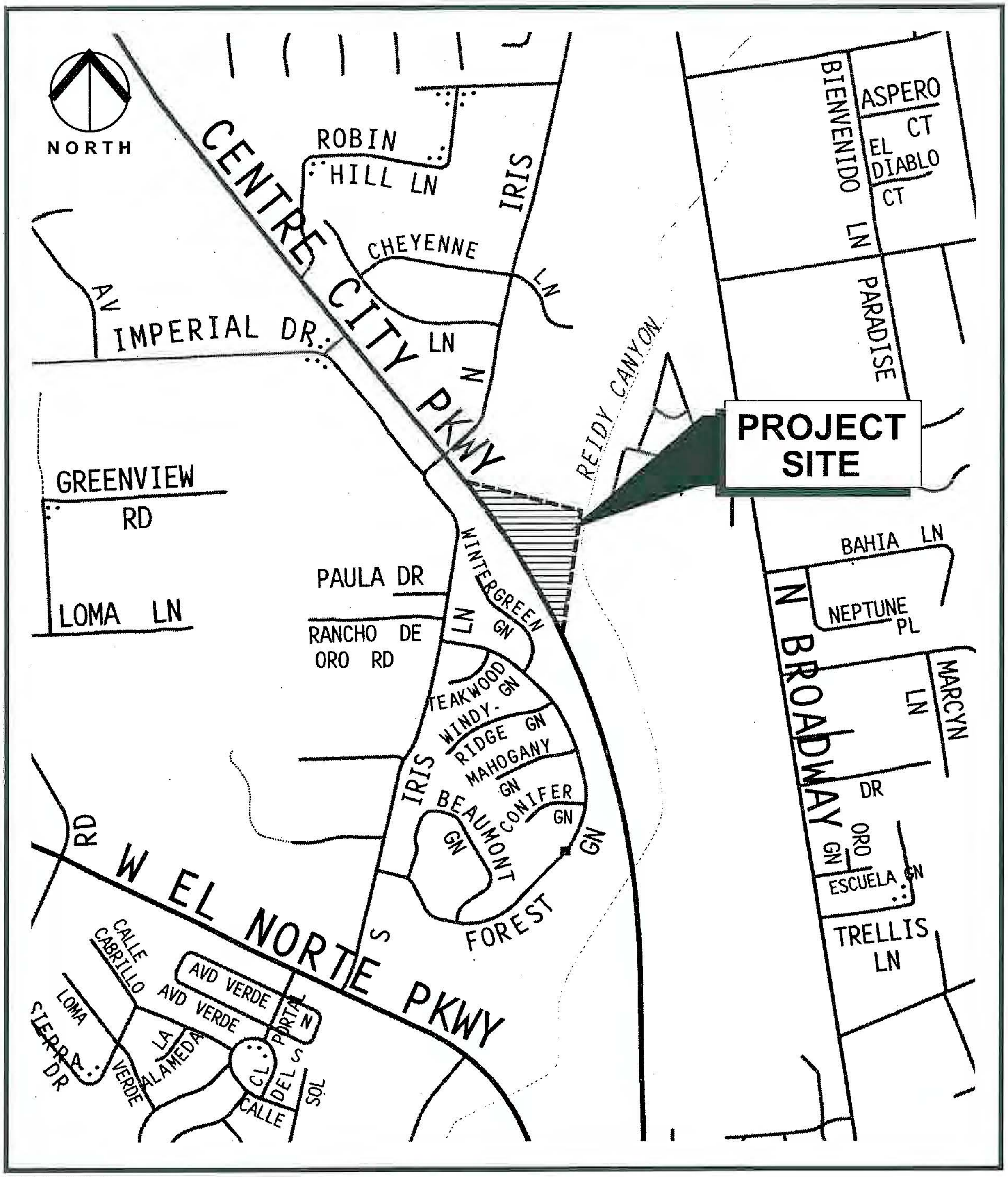
- Subsurface exploration consisting of the excavation, logging, and sampling of 8 hollow stem auger, and two solid stem auger borings across the site. The boring logs are presented in Appendix B and locations are shown on the Geotechnical Map (Plate 1).

- Laboratory testing of representative soil samples obtained from the subsurface exploration program. Results of these tests are presented on the boring logs and in Appendix C.

- Compilation and analysis of the geotechnical data obtained from the field investigation and laboratory testing.

- Assessment of geologic hazards.

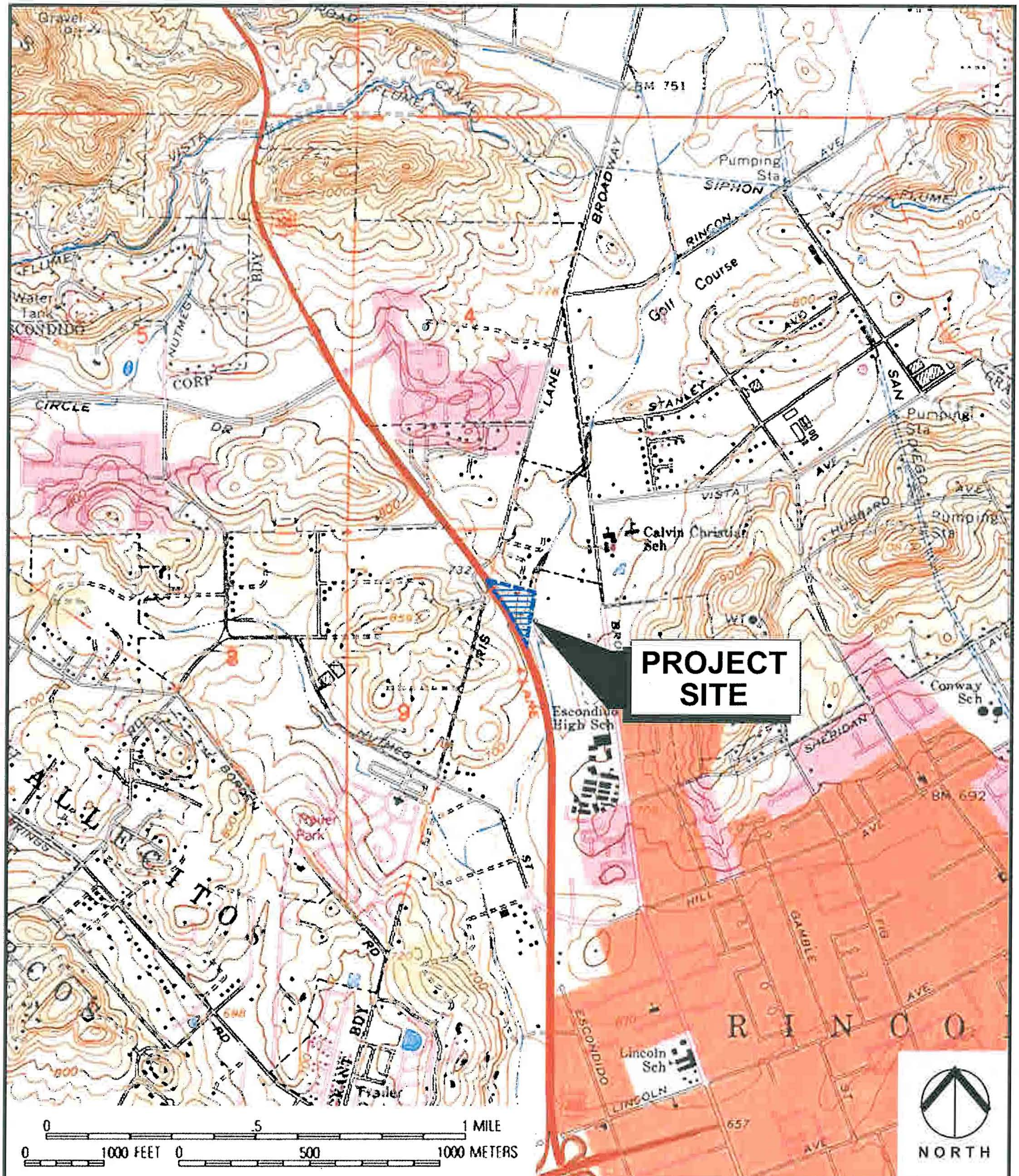
- Preparation of this report presenting our preliminary findings, conclusions, and geotechnical recommendations with respect to the proposed geotechnical design, site grading and general construction considerations.



BASE MAP: 2003 Digital Edition Thomas Guide, San Diego County

NOT TO SCALE

Nightingale Assisted Living 1802 N. Centre City Parkway Escondido, California	**SITE LOCATION MAP**	Project No. **600594-001** Date **September 2004** Figure No. 1



REGIONAL TOPOGRAPHIC MAP

Nightingale Assisted Living
1802 N. Centre City Parkway
Escondido, California

Project No.	600594-001
Scale	See bar scale
Engr./Geol.	SAC/MRS
Drafted By	KAM
Date	September 2004

Leighton Consulting, Inc.
A LEIGHTON GROUP COMPANY

Figure No. 2

1.2 Site Location and Description

The site is located at 1802 North Center City Parkway in Escondido, California (Figures 1 and 2). The site consists of a roughly triangular, undeveloped parcel bounded by single-family residences to the north, North Centre City Parkway to the southwest, and Reidy Creek to the east. The site is consists of three distinct areas. The proposed building and the majority of the proposed parking areas will be located on the upper two areas that have been previously graded. The middle area is generally flat, with a surface elevation of 705 feet mean sea level (msl). The upper and lower areas gently slope to the east at gradient of approximately 13 percent. An existing retaining wall, up to 13 feet high, is located along the east margin of the site. A fill slope with a maximum height of roughly 18 feet currently exists near the southern end of the retaining wall. The eastern half of the site has substantial amounts of undocumented fill piles.

1.3 Previous Investigation and Site Grading

Previously a geotechnical study was performed by Western Soil and Foundation Engineering, Inc. (1997) for a proposed retirement facility at the project site. The locations and logs of the exploratory trenches were unavailable for the preparation of this report. Based on review of the report, granitic bedrock was encountered at depths of 1 to 7 feet below the then existing site grades.

Previous grading and construction operations at the project site consisted of fill placement, retaining wall construction and backfill. The fill placement and compaction of the retaining wall backfill was documented by B&B Engineering, Inc. (1998). The placement of the fill observed as scattered end-dumped debris piles was not documented in the previous geotechnical report or the as graded report provided for the preparation of this report.

1.4 Proposed Development

Leighton Consulting understands that Nightingale Health Services intends to construct an assisted living facility at the site. Based on the preliminary site grading plan (Spear and Associates, 2004), we understand that site development will include a two to three story building, with the lower level being partially below grade, vehicular pavements, widening of North Centre City Parkway, cut and fill slopes, retaining walls, and equipment pads. The first floor (above grade) will be approximately 28,055 square feet. According to the conceptual site plans that were available at the time this report was prepared, it is anticipated that cuts and fills will be required to attain desired grades. The resulting cut and fill slopes will have heights ranging from 3 to 10 feet in height respectively. Retaining walls are planned at a maximum height of approximately 14 feet.

The proposed facility is understood to consist of an assisted living component (City of Escondido) and a skilled nursing facility component (OSHPD). The footprint of the skilled nursing facility wing is approximately 6,800 square feet in plan view. We understand the proposed project is planned to be constructed in two phases, with the skilled nursing facility components to comprise the second phase.

2.0 SUBSURFACE EXPLORATION AND LABORATORY TESTING

The subsurface exploration performed for this geotechnical investigation consisted of the excavation of 8 exploratory hollow stem auger borings across the site (B-1 through B-8), and 2 solid stem auger borings (B-9 and B-10). The approximate locations of the borings are shown on the Geotechnical Map (Plate 1). The purpose of the borings was to investigate the stratigraphy, physical characteristics, and specific engineering properties of the soils that underlie the site.

Depths for the borings ranged from approximately 3 to 20 feet below the existing ground surface (bgs). The hollow stem auger borings were excavated with a CME 75 truck mounted drill rig, and the solid stem auger borings were excavated with a limited-access tripod drill rig. During the drilling operations, an engineer from our firm logged the excavations as they were advanced. Bulk samples and relatively undisturbed samples were obtained from the borings for laboratory testing and evaluation. After logging, the borings that were less than 19 feet were backfilled with native soils, borings that extended to 20 feet were backfilled with bentonite grout. The boring logs are provided in Appendix B and laboratory test results are included in Appendix C.

3.0 SUMMARY OF GEOLOGIC CONDITIONS

3.1 Geologic Setting

The site is located in the coastal section of the Peninsular Range Province, a geomorphic province with a long and active geologic history throughout Southern California. Throughout the last 54 million years, the area known as "San Diego Embayment" has undergone several episodes of marine inundation and subsequent marine regression, resulting in the deposition of a thick sequence of marine and nonmarine sedimentary rocks on the basement rock of the Southern California batholith.

Gradual emergence of the region from the sea occurred in Pleistocene time, and numerous wave-cut platforms, most of which were covered by relatively thin marine and nonmarine terrace deposits, formed as the sea receded from the land. Accelerated fluvial erosion during periods of heavy rainfall, coupled with the lowering of the base sea level during Quaternary times, resulted in the rolling hills, mesas, and deeply incised canyons which characterize the landforms we see in the general site area today.

3.2 Site Geology

Based on our subsurface exploration and review of pertinent geologic literature and maps (Appendix A), the geologic units underlying the site consist of compacted artificial fill, weathered cretaceous granite, residual and colluvial soil. (Figure 3, Plates 1 and 2). A brief description of the geologic units encountered on the site is presented below. The approximate aerial distributions of those units are shown on the Geotechnical Map (Plate 1).

3.2.1 Artificial Fill Controlled (Afc) and Undocumented (Unmapped)

Fill material is present across the eastern half of the site for the entry road, retaining wall backfill, and undocumented debris (fill) piles. As encountered, the compacted fill soils consist of brown and dark gray to black, dense to very dense silty sands. In general, these soils are considered to be sufficiently dense and well compacted and will not require removal and recompaction during site grading, although surficial areas of loose to medium dense layers may be encountered and will require removal and recompaction.

The undocumented debris piles (fill) appear to be composed of large granitic cobbles and boulders intermixed with silty/clayey sand and gravel. These end-dumped piles are not shown on the geotechnical map. The fill slope at the southern end of the retaining wall is mantled with undocumented fill consisting of large granitic boulders. Prior to the site grading the composition of the undocumented debris piles should be evaluated to determine if the material is suitable for reuse as compacted fill.

3.2.2 Topsoil (Unmapped)

A relatively thin veneer of topsoil is present on the majority of the southern half of the site. The topsoil, as encountered, consisted predominately of a dark brown damp, loose, silty fine to medium sand with clay. These soils were generally massive, porous, and contained scattered roots and organics. The topsoil is considered potentially compressible in it current state and should completely removed within the limits of grading at the site.

3.2.3 Residual Soil and Colluvium (Qcol)

Potentially compressible deposits of residual soil and colluvium was encountered in the southern corner of the site. As encountered, the residual soil and colluvium consisted of brown, damp, dense, silty fine to medium sands. The residual soil and colluvium was found to be on the order of approximately 3 to 7 feet in thickness. The residual soil grades to weathered granitic rock at depth. During the grading operations, the residual and colluvial soils should be completely removed to competent material prior to fill placement within the limits of grading.

3.2.4 Cretaceous Granite (Kgr)

The entire site is underlain by bedrock material consisting of Cretaceous-aged Granitic Rock. The granitic bedrock was encountered at grade in the northern portion of the site. As encountered during our field explorations, this unit typically consisted of light orange-brown, and light brown, damp, dense to very dense, weathered granitic rock. The material encountered excavated to silty fine to medium grained sand. This upper mantle of bedrock is considered to be moderately decomposed granite with possibly unweathered rocks within the decomposed granite mass. At relatively shallow depth into the bedrock, the materials are considered to be unweathered fresh granite, and excavations may be difficult with conventional earthwork equipment. The regional geologic map of the area (Figure 3) identifies numerous variety of granitic rock based on mineralogy. For the purposes of this report, all granitic rock on site has been more simply mapped as Kgr.

3.3 Geologic Structure

The Cretaceous Granite is considered generally massive with minor jointing. Based on our field explorations and a review of published geologic maps of the site and vicinity, no faults or landslides have been mapped, nor were any encountered, on or adjacent to the site.

3.4 Surface and Ground Water

Ground water was not encountered during our investigation, however water was flowing in Reidy Creek east of the site. The water surface in the creek was at approximately 685 msl. Ground water levels will likely fluctuate during and following periods of high precipitation. Plate 1 and Figure 4 depict the pregraded floodway limits. Modification of site grades from previous and proposed site grading is expected to constrain the floodway limits with construction of retaining walls. Ground water is not expected to impact the proposed development if the recommendations regarding drainage and hydrostatic pressures outlined in this report are incorporated during design and construction.

3.5 Volcanic Centers

The proposed site is not located near a mapped area of potential volcanic hazard (Figure 5, USGS, 1997).

3.6 Exceptional Geologic Characteristics

Due to the lack of proximal sources of serpentinic or ultramaphic rock bodies, naturally-occurring asbestos is not considered a hazard.

Hazardous materials due to soil contamination are not addressed in this report. No evidence (of soil staining or odors were noted) observed during our investigation.

Historically, Radon-222 gas has not typically been recognized as an environmental consideration in San Diego County. However, this investigation has not included testing for the presence of Radon gas.

4.0 FAULTING AND SEISMICITY

4.1 Faulting

Our discussion of faults on the site is prefaced with a discussion of California legislation and state policies concerning the classification and land-use criteria associated with faults. By definition of the California Geological Survey, an active fault is a fault that has had surface displacement within Holocene time (about the last 11,000 years). The State Geologist has defined a potentially active fault as any fault considered to have been active during Quaternary time (last 1,600,000 years) but that has not been proven to be active or inactive. This definition is used in delineating Fault-Rupture Hazard Zones as mandated by the Alquist-Priolo Earthquake Fault Zoning Act of 1972 and as most recently revised in 1997 (Hart, 1997). The intent of this act is to assure that unwise urban development does not occur across the trace of active faults. Based on our review of the Fault-Rupture Hazard Zones, the site is not located within any Fault-Rupture Hazard Zone as created by the Alquist-Priolo Act (CDMG, 2000).

Our review of geologic literature pertaining to the site area (Appendix A) indicates that there are no known major active faults on or in the immediate vicinity of the site. A Regional Fault Map (Figure 6) is attached to illustrate the proximity of the site to major regional faults. According to the California Geological Survey (CDMG, 1998), the nearest known active regional fault is the Elsinore (Julian) Fault. The primary alignment of the fault is believed to be approximately 15.3 miles (24.7 km) northeast from the site.

Regional faults that are considered capable of producing significant seismic shaking at the site are summarized in Table 1. The slip rates and maximum magnitude events are based on the statewide probabilistic seismic hazard assessment (CDMG, 1996) and the subsequent update of that report (CGS, 2003).

Table 1 Seismic Parameters for Nearby Active Faults						
Fault	Geometry	Closest Distance from Fault to Site		Maximum Moment Magnitude	Average Slip Rate (mm/yr)	Fault Class (CGS, 2003)
		Miles	Kilometers			
Elsinore (Julian)	Right Lateral, Strike Slip	15.3	24.7	7.1	5.0	A
Rose Canyon	Right Lateral Strike Slip	16.1	25.9	7.2	1.5	B
Elsinore (Temecula)	Right Lateral, Strike Slip	16.3	26.3	6.8	5.0	A
Newport-Inglewood (offshore)	Right Lateral Strike Slip	19.3	31.1	7.1	1.5	B
Earthquake Valley	Right Lateral, Strike Slip	29.8	48.0	6.5	2.0	B
Coronado Bank	Right Lateral, Strike Slip	31.0	49.9	7.6	3.0	B
Elsinore (Glen Ivy)	Right Lateral, Strike Slip	37.0	59.5	6.8	5.0	A
San Jacinto-Anza	Right Lateral, Strike Slip	38.0	61.1	7.2	12.0	A
San Jacinto-Coyote Creek	Right Lateral, Strike Slip	40.0	64.4	6.8	4.0	A
San Jacinto-San Jacinto Valley	Right Lateral, Strike Slip	42.0	67.6	6.9	12.0	A
Elsinore (Coyote Mountain)	Right Lateral, Strike Slip	44.3	71.3	6.8	4.0	A
San Jaquine Hills	Reverse, Blind Thrust	45.5	73.2	6.6	0.5	B
Palos Verdes	Right Lateral, Strike Slip	49.7	80.0	7.3	3.0	B
San Jacinto-Borrego	Right Lateral, Strike Slip	52.3	84.1	6.6	4.0	A

4.1.1 Historical Seismicity

The site location with respect to significant past earthquake (≥M5.5) is shown on the Historical Seismicity Map in Appendix D.

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The historic seismicity for the site has been tabulated utilizing the computer software EQSEARCH (Blake, 2000). The results are presented in Appendix D. The results indicate that the maximum historical site acceleration from 1800 to 2004 has been estimated to be 0.13g, with a standard deviation of 0.08g, using the attenuation relationship by Abrahamson and Silva (1997) for rock conditions. The historic M6.5 event occurred in 1800 where the epicenter of the event was thought to be located approximately 15.8 miles from the site.

4.1.2 Non-Tectonic Faulting

Surface expressions of differential settlement, such as ground fissures, can develop in areas affected by ground water withdrawal or banking activities, including geothermal production. The site location, in northern Escondido, is not within an area affected by differential settlement caused by non-tectonic sources.

4.2 Seismicity

The site can be considered to lie within a seismically active region, as can all of Southern California. Site-specific evaluation of the seismic hazard was performed using probabilistic seismic hazard methodology. The design ground motions for this project are the ground motions having a 10 percent probability of being exceeded in 50 and 100 years. These ground motions are referred to as the Design Basis and the Upper Bound Earthquake Ground Motions.

4.2.1 Probabilistic Seismic Hazard Analysis

The average standard penetration blow counts for the upper 100 feet is estimated to be greater than 50 blows per foot (based on the results of the current field investigation). Based on the estimated average blow counts the site soil profile is classified as Soil Profile Type S_B and S_C. The portion of the site that has less than 10 feet of soil (fill or residual soil) can be classified as a soil profile type S_B. The portion of the site that has 10 feet or more of soil on top of the granitic bedrock is classified as a soil profile type S_C. Ground motions were developed using attenuation relationships for a S_B/S_C general profile type.

Probabilistic Seismic Hazard Analysis (PSHA) was performed utilizing the computer software EZ-FRISK version 6.20 (Risk Engineering, 2004). Attenuation relationships utilized in the analysis were Abrahamson & Silva (1997) – Rock, Boore-Joyner-Fumal (1997) Vs = 760 m/sec, Sadigh (1997) – Rock, and Campbell & Bozorgnia (2003). The California Geological Survey (CGS, 2003) fault model was selected for the analysis.

The Design Basis Ground Motion (475-year event) and the Upper Bound Earthquake Ground Motion (949-year event) postulated from the equal weighting of the attenuated ground motions are presented in Table 2.

Table 2 Peak Horizontal Ground Motion	
Design Event	Peak Horizontal Ground Acceleration
475-year	0.26g
949-year	0.32g

Based on deaggregation of the PSHA, a modal magnitude event of M7.1 is considered appropriate for secondary seismic hazard evaluation.

4.3 Secondary Seismic Hazards

In general, secondary seismic hazards can include soil liquefaction, seismically-induced settlement, lateral displacement, surface manifestations of liquefaction, landsliding, seiches, and tsunamis. The potential for secondary seismic hazards at the subject site is discussed below.

4.3.1 Liquefaction Potential

Liquefaction is the loss of soil strength or stiffness due to a buildup of excess pore-water pressure during strong ground shaking. Liquefaction is associated primarily with loose (low density), granular, saturated soil. Effects of severe liquefaction can include sand boils, excessive settlement, bearing capacity failures, and lateral spreading.

Due to absence of a shallow groundwater table, presence of drains behind the existing and planned retaining walls, and relatively dense nature of the existing compacted fill and the underlying bedrock materials, the potential for liquefaction is considered to be low.

4.3.2 Seismically-Induced Settlement

Dynamic settlement of fill soils can occur as a result of strong vibratory ground shaking. Due to the relatively shallow thicknesses and dense nature of the compacted fill materials, the risk and magnitude of dynamic settlement is considered to be negligible (Appendix E).

4.3.3 Surface Manifestation of Liquefaction and Dynamic Settlement

Due to the lack of a shallow groundwater and relatively dense nature of the compacted fill and bedrock materials surface manifestation of liquefaction or dynamic settlement is not anticipated to occur.

4.3.4 Lateral Spreading or Flow Failure

Due to the low potential for liquefaction, and relatively dense nature of the onsite soil the potential for lateral spreading flow failure is considered low.

4.3.5 Tsunamis or Seisches

Tsunamis and seiches are waves generated in the ocean or inland body of water by fault displacement or major ground movement. Based on the inland location of the site and its distance from contained water retention facilities, tsunamis and seiche are not considered a hazard to the site.

4.4 California Building Code Seismic Design Parameters

Seismic design parameters for the site based on the seismic setting (CDMG, 1998 and CGS, 2003) are as follows:

Seismic Zone:	4
Seismic Source:	A
Soil Profile Type:	S_C
Near source Factor, N_a:	1.0
Near Source Factor, N_v:	1.0

The average standard penetration blow counts for the upper 100 feet is estimated to be greater than 50 blows per foot (based on the results of the current field investigation). Based on the estimated average blow counts the site soil profile is classified as Soil Profile Type S_B and S_C. The portion of the site that has less than 10 feet of soil (fill or residual soil) can be classified as a soil profile type S_B. The portion of the site that has 10 feet or more of soil between the bottom of the foundation and the top of the granitic bedrock is classified as a soil profile type S_C. For convenience in design, the entire project site can be conservatively classified as a S_C soil profile.

5.0 CONCLUSIONS

Based on the results of our investigation of the site, it is our opinion that the proposed development is feasible from a geotechnical standpoint, provided the following conclusions and recommendations are incorporated into the project plans and specifications. The following is a summary of the significant geotechnical factors that we expect may affect development of the site.

- An active fault trace is not known to exist on or in the immediate vicinity of the site.
- The active fault nearest the site is the Elsinore (Julian) Fault located approximately 15.3 miles to the northeast.
- The peak horizontal ground acceleration associated with the Design Basis Ground Motion is 0.26g. The peak horizontal ground acceleration associated with the Upper Bound Earthquake Ground Motion is 0.32g.
- Soils that underlie the site were found to exhibit low compressibility, and a very low to low expansion potential.
- Based on the subsurface exploration of the surficial soils present on the site, we anticipate that the artificial fill, residual and colluvial materials can be excavated with conventional heavy-duty earthwork equipment. However excavations in the granitic bedrock may require special techniques and/ or equipment (heavy ripping and/or blasting). In addition, localized dense residual boulders may be encountered within otherwise rippable zones of weathered granitic rock.
- The undocumented debris (fill) piles that are scattered across the site and at the southern end of the existing retaining wall will require removal to competent material prior to the placement of additional fill and/ or structures in the vicinities of these piles. The material in piles may be suitable for reuse as compacted fill, however the characteristics of this material needs to be evaluated prior to there re-use. In addition, localized dense residual boulders may be encountered within otherwise rippable zones of weakened granitic rock.
- The controlled artificial fill is considered to be suitable for support of the proposed structures, however surficial zones of loose material may encountered during site grading requiring removal and re-compaction prior to the placement of additional fill or structures.
- Laboratory test results indicate the onsite soils have a negligible potential for sulfate attack on concrete and do not present high corrosion potential to buried uncoated metals.
- The existing onsite soils were found to have a very low to low potential for expansion.

- Ground water was not encountered during our investigation and is not anticipated to be a constraint to construction of the proposed structure.

- The potential for liquefaction, and seismic settlement, is considered negligible.

- Overexcavation of bedrock to mitigate cut to fill transition is recommended beneath the proposed structure. Overexcavation or line shooting of bedrock to facilitate underground utility construction should be considered in rock areas during mass grading.

6.0 PRELIMINARY RECOMMENDATIONS

6.1 Earthwork

We anticipate that earthwork at the site will consist of site preparation, excavation, and fill operations. We recommend that earthwork on the site be performed in accordance with the following recommendations and the General Earthwork and Grading Specifications for Rough Grading included in Appendix F. In case of conflict, the following recommendations shall supersede those in Appendix F.

6.1.1 Site Preparation

Prior to grading, all areas to receive structural fill, engineered structures, or hardscape should be cleared of surface and subsurface obstructions, including any existing debris and undocumented or loose fill soils, and stripped of vegetation. Removed vegetation and debris should be properly disposed off site. All areas to receive fill and/or other surface improvements should be scarified to a minimum depth of 6 inches, brought to at least 2 percent above-optimum moisture conditions, and recompacted to at least 90 percent relative compaction based on ASTM Test Method D1557.

6.1.2 Removals of Unsuitable Soil

The southern portion of the site is mantled by potentially compressible soils which may collapse as a result of wetting or settle under the surcharge of fill and/or foundation loads. These materials include undocumented artificial fills, desiccated documented fills, residual and colluvial soils. Compressible materials not removed by the planned grading should be excavated to competent material. The lateral limits of the uniform removal should extend outside the building footprint a distance equal to the excavation depth or 5 feet, whichever is greater.

Material that is removed may be placed as fill provided the material is moisture conditioned to at least 2 percent above optimum moisture contents, and then recompacted prior to additional fill placement or construction. Materials with an expansion index greater than 50 should not be used on site within 5 feet of finish grade in the building pad. The actual depth and extent of the required removals should be determined during grading operations by the geotechnical consultant.

6.1.3 Cut/Fill Transition Mitigation

From our review of the conceptual site plan the proposed building will be located across and existing cut/fill transitions. In addition, future grading is also expected to result in cut/fill transitions that will need to be mitigated. Alternative measures to mitigate the cut/fill transition condition beneath the proposed buildings are recommended and presented below:

- Option 1: Overexcavation or Raise Pad Grade

  To mitigate the impact of the underlying cut/fill transition condition beneath buildings that are planned across existing or future cut/fill transitions, the cut portion should be over-excavated to at least 4 feet below the bottoms of proposed foundations. The over-excavated material should be replaced with properly compacted fill. The overexcavation should laterally extend at least 5 feet beyond the building pad area and all associated settlement-sensitive structures. As an alternative to overexcavation of the granitic bedrock, the pad grade may be raised following surficial preparation, to achieve similar results.

- Option 2: Deepened Footings

  All footings for the proposed building should extend a minimum of 6 inches into competent bedrock. For spread footings, the additional depth can be filled with concrete or 2-sack sand/cement/slurry prior to placement of foundation reinforcing steel and concrete. Alternatively, drilled piers and grade beams can be used to support foundation loads. Where this option to found all structure footings on bedrock is elected, overexcavation beneath the building slab can be limited to 1 foot below the underside of the slab.

  The recommendations in this report assume overexcavation will be performed.

6.1.4 Excavations and Oversize Material

Shallow excavations of the onsite fill, residual, and colluvial materials may generally be accomplished with conventional heavy-duty earthwork equipment, while excavations in the granitic bedrock may require special techniques and/ or equipment as discussed above. Due to the engineering characteristics of the onsite materials, temporary excavations such as utility trenches with vertical sides in these units should remain stable for the period required to construct the utility, provided they are free of adverse geologic conditions. In accordance with OSHA requirements, excavations deeper than 5 feet should be shored or be laid back to if workers are to enter such excavations. Temporary sloping gradients should be determined in the field by a "competent person" as defined by OSHA. For preliminary planning, sloping of surficial soils at 1:1 (horizontal to vertical) may be assumed. Excavations greater than 20 feet in height will require an alternative sloping plan or shoring plan prepared by a California registered civil engineer.

6.1.5 Fill Placement and Compaction

The onsite soils are generally suitable for use as compacted fill provided they are free of organic material, debris, and rock fragments larger than 8 inches in maximum dimension. All native fill soils should be brought to a moisture content of at least 2 percent above the laboratory optimum and compacted in uniform lifts to at least 90 percent relative compaction based on laboratory standard ASTM Test Method D1557. Retaining wall backfill that will support foundations should be compacted to 95 percent. The optimum lift thickness required to produce a uniformly compacted fill will depend on the type and size of compaction equipment used. In general, fill should be placed in lifts not exceeding 8 inches in thickness.

The shallow onsite soils typically possesses a moisture content below optimum and may require moisture conditioning prior to use as compacted fill. Fills placed on slopes steeper than 5:1 (horizontal to vertical) should be keyed and benched into competent formational soils as indicated in the General Earthwork and Grading Specifications for Rough Grading presented in Appendix E.

Placement and compaction of fill should be performed in general accordance with the current City of Escondido grading ordinances, California Building Code, sound construction practice, these recommendations and the General Earthwork and Grading Specifications for Rough Grading presented in Appendix F.

6.1.6 Earthwork Shrinkage/Bulking

The volume change of excavated onsite materials upon recompaction as fill is expected to vary with material and location. Typically, the surficial soils and bedrock material vary significantly in natural and compacted density, and therefore, accurate earthwork shrinkage/bulking estimates cannot be determined. However, based on the results of our geotechnical analysis and our experience, a 5 to 15 percent shrinkage factor is considered appropriate for the topsoil and colluvium. Any significant cuts into the weathered and unweathered granitic rock will likely bulk 15 to 25 percent.

6.1.7 Import Soils

If import soils are necessary to bring the site up to the proposed grades, these soils should be granular in nature, and have an expansion index less than 50 (per ASTM Test Method D4829) and have a low corrosion impact to the proposed improvements. Import soils and/or the borrow site should be evaluated by the geotechnical consultant prior to import.

6.1.8 Removal and Recompaction

All undocumented fill and disturbed soils within the limits extending 5 feet outside the building, parking areas or distress-sensitive improvements should be removed, moisture conditioned, and recompacted. All loose surficial fill soils not removed by the planned grading should be excavated, moisture-conditioned, and then compacted prior to placing any additional fill. These soils should be removed down to competent material. The thickness of these soils may vary across the site. In general however we anticipate the depth of surficial removals to be on the order of 1 to 7 feet in depth, although locally deeper removals may occur.

6.1.9 Expansive Soils and Selective Grading

Based on our laboratory testing, the onsite soil materials have a Low expansion potential. Should expansive material be encountered selective grading may need to be performed. To accommodate conventional foundation design, the upper 5 feet of materials within the building pad and 5 feet outside the limits of the building foundation should have a very low to low expansion potential (EI<50).

6.2 Slope Stability

Based on our review of the preliminary site grading plans, cut and fill slopes on the order of approximately 3 and 10 feet, respectively, are anticipated. Based on our review of the geotechnical conditions and the preliminary grading plan, the proposed slopes were analyzed for gross stability. The results of our slope stability analysis is presented below.

6.2.1 Deep-Seated Stability

Our analysis indicates that the proposed slopes have a calculated factor of safety of 1.5 or greater, with respect to deep rotational failure when constructed to slope inclinations of 2:1 (horizontal to vertical or flatter), using compacted fill material engineering characteristics similar to the existing controlled fill.

We recommend that the geotechnical consultant document and geologically map all excavations during grading. The purpose of this mapping is to substantiate the geologic conditions assumed in our analysis. Additional investigation and stability analysis may be required if unanticipated or adverse conditions are encountered.

6.2.2 Surficial Slope Stability

In general, sandy soils are highly susceptible to erosion and methods of slope stabilization should be implemented as soon as practical to reduce the potential for erosion. Erosion and/or surficial failure potential of slopes may be reduced if the following measures are implemented during design and construction of the slopes.

- Fill Slope Face Compaction and Finishing

  We recommend fill slope faces be compacted by backrolling with a sheepsfoot roller generally at 2- to 3-foot intervals of slope height. Slope finishing should be achieved by trimming and/or track rolling.

- Slope Landscaping and Drainage

  We recommend that all graded slopes be provided with appropriate surface drainage features and landscaped with drought-tolerant, slope stabilizing vegetation as soon as possible to minimize the potential for erosion. Berms or swales should be provided at the top of all slopes and drainage directed such that surface runoff on slope faces is minimized. Grade slopes should be overlain with jute netting prior to establishment of landscaping.

6.3 Surface Drainage and Erosion

Surface drainage should be controlled at all times. The proposed structure should have appropriate drainage systems to collect roof runoff. Positive surface drainage should be provided to direct surface water away from the structures toward the street or suitable drainage facilities. Positive drainage may be accomplished by providing a minimum 2 percent gradient from the structures. Below grade planters should not be situated adjacent to structures or pavements unless provisions for drainage such as catch basins and drains are made. In general, ponding of water should be avoided adjacent to structures or pavements.

The introduction of select materials into the site may create a condition where surface infiltration may accumulate below grade. As such, overexcavation of bedrock should be sloped at 2 percent toward the cut/fill transition.

6.4 Foundation and Slab Considerations

The proposed structure may be constructed with a conventional foundation. Foundations and slabs should be designed in accordance with structural considerations and the following recommendations. These recommendations assume that the soils encountered within 5 feet of pad grade have a very low to low potential for expansion (EI<50). If more expansive materials are encountered and selective grading can not be accomplished, additional foundation recommendations may be necessary. The foundation recommendations below assume that the building all building foundations will be underlain by properly compacted fill or competent bedrock material.

6.4.1 Shallow Spread Footing Foundations

Where soils within 5 feet of pad grade have a very low to low expansion potential (EI <50), proposed buildings may be supported by spread footings. Footings should extend a minimum of 18 inches beneath the lowest adjacent finish grade. At these depths, footings may be designed for a maximum allowable bearing pressure of 3,500 pounds per square foot when founded in properly compacted fill, 5,000 pounds per square foot when founded in competent bedrock material. The allowable pressures may be increased by one-third when considering loads of short duration such as wind or seismic forces. The minimum recommended width of footings is 12 inches for continuous footings and 18 inches for square or round footings. Footings should be designed in accordance with the structural engineer's requirements and have a minimum reinforcement of four No. 5 reinforcing bars (two tops and two bottoms). Reinforcement of column footings should be per structural requirements.

6.4.2 Foundation Setback

We recommend a minimum horizontal setback distance from the face of slopes for all structural foundations, footings, and other settlement-sensitive structures as indicated on Table 3. The minimum recommended setback distance from the face of retaining walls is equal to the 1.5 times height of the retaining wall. This distance is measured from the outside bottom edge of the footing, horizontally to the slope face or retaining wall, and is based on the slope height and type of soil. However, the foundation setback distance may be revised by the geotechnical consultant on a case-by-case basis if the geotechnical conditions are different than anticipated.

Table 3

Minimum Foundation Setback from Slope Faces

Slope Height	Minimum Recommended Foundation Setback
less than 5 feet	5 feet
5 to 15 feet	7 feet
Greater than 15 feet	H/3, where H is slope height; not to exceed 40 feet

Please note that the soils within the structural setback area possess poor lateral stability, and improvements (such as retaining walls, sidewalks, fences, pavements, etc.) constructed within this setback area may be subject to lateral movement and/or differential settlement. Potential distress to such improvements may be mitigated by providing a deepened footing or a pier and grade beam foundation system to support the improvement. In addition, utility trenches that parallel or nearly parallel structure footings should not encroach within an imaginary 1:1 (horizontal to vertical) plane extending downward from the outside edge of the footing. Deepened footings should meet the setbacks as described above.

6.4.3 Floor Slabs

Slab-on-grade should be at least 5 inches thick and be reinforced with No. 4 rebars 18 inches on center each way (minimum) placed at mid-height in the slab. Slabs should be underlain by a 2-inch layer of clean sand or clean crushed gravel. If reduction of moisture migration up through the slab is desired, the sand or gravel layer should be additionally underlain by a 10-mil visqueen moisture barrier underlain by an additional 2 inches of sand or gravel. We recommend control joints be provided across the slab at appropriate intervals as designed by the project architect.

The potential for slab cracking may be reduced by careful control of water/cement ratios. The contractor should take appropriate curing precautions during the pouring of concrete in hot weather to minimize cracking of slabs. We recommend that a slipsheet (or equivalent) be utilized if grouted tile, marble tile, or other crack-sensitive floor covering is planned directly on concrete slabs. All slabs should be designed in accordance with structural considerations. If heavy vehicle or equipment loading is proposed for the slabs, greater thickness and increased reinforcing may be required. Additional moisture/waterproofing measures that may be needed to accomplish desired serviceability of the building finishes should be designed by the project architect.

6.4.4 Settlement

The recommended allowable-bearing capacity is based on a maximum total and differential static settlements of 1/2 inch and 1/2 inch. Since settlements are a function of footing size and contact bearing pressures, some differential settlement can be expected where a large differential loading condition exists. However for most cases, differential settlements are considered unlikely to exceed 1/4 inch.

6.4.5 Moisture Conditioning

With the assumption of low expansive soils, prior to the placement of the floor slabs or site hardscape, the subgrade soils should be thoroughly wetted.

6.5 Lateral Earth Pressures and Retaining Wall Design

For design purposes, the Table 4 presents the lateral earth pressure values for level or sloping backfill are recommended for walls backfilled with import soils of very low to low expansion potential (less than 50 per UBC 18-2).

Table 4

Static Equivalent Fluid Weight (pcf)

Conditions	Level	2:1 Slope
Active	35	55
At-Rest	55	65
Passive	350 (Maximum of 3 ksf)	150 (sloping down)

Unrestrained (yielding) cantilever walls up to 14 feet in height should be designed for an active equivalent pressure value provided above. In the design of walls restrained from movement at the top (nonyielding) such as basement walls, the at-rest pressures should be used. If conditions other than those covered herein are anticipated, the equivalent fluid pressure values should be provided on an individual case-by-case basis by the geotechnical engineer. A surcharge load for a restrained or unrestrained wall resulting from automobile traffic may be assumed to be equivalent to a uniform pressure of 75 psf which is in addition to the equivalent fluid pressure given above. For other uniform surcharge loads, a uniform pressure equal to 0.35q should be applied to the wall as illustrated in Figures 7 and 8 (where q is the surcharge pressure in psf). The wall pressures assume walls are backfilled with free draining materials and water is not allowed to accommodate behind walls. A typical drainage design is contained in Appendix F. Wall backfill should be compacted by mechanical methods to at least 90 percent relative compaction (based on ASTM D1557). If foundations are planned over the backfill, the backfill should be compacted to 95 percent. Wall footings should be designed in accordance with the foundation design recommendations and reinforced in accordance with structural considerations. For all retaining walls, we recommend a minimum horizontal distance from the outside base of the footing to daylight as outlined in Section 6.4.2.

Lateral soil resistance developed against lateral structural movement can be obtained from the passive pressure value provided above. Further, for sliding resistance, the friction coefficient of 0.3 may be used at the concrete and soil interface. These values may be increased by one-third when considering loads of short duration including wind or seismic loads. The total resistance may be taken as the sum of the frictional and passive resistance provided that the passive portion does not exceed two-thirds of the total resistance.

For Seismic Design of the retaining walls an additional lateral load of 6H or 7.5H pounds per square foot needs to be considered for the design of the retaining walls. The additional seismic lateral loads should be applied as a uniformly distributed load as shown in Figure 7.

6.6 Geochemical Considerations

Geochemical screening of the onsite soils was performed. The screening is meant to serve as an indicator for the design professionals in determining the level of input necessary from a qualified corrosion engineer. Review of geochemical test results by a corrosion engineer is recommended.

Concrete in direct contact with soil or water that contains a high concentration of soluble sulfates can be subject to chemical deterioration commonly known as "sulfate attack." Soluble sulfate results (Appendix C) indicated a soluble sulfate content less than 0.015 percent for the onsite soil. This is in the negligible range. The California Building Code Table 19-A-4 provides minimum concrete design requirements based on sulfate exposure conditions.

Minimum resistivity, chloride content, and pH tests were performed on representative samples of subgrade soils (Appendix C). Based on our results, the site soils are believed to be moderately corrosive to buried uncoated ferrous metal.

6.7 Preliminary Pavement Design

The appropriate pavement section depends primarily on the type of subgrade soil, shear strength, traffic load, and planned pavement life. Since an evaluation of the characteristics of the actual soils at pavement subgrade cannot be made at this time, we have provided the following range of pavement sections in Table 5 to be used for planning purposes only. The preliminary pavement recommendations presented in Table 5 are consistent with the pavement structural sections for the City of Escondido (City of Escondido, 1999). The final subgrade characteristics will be highly dependent on the soils present at finish pavement subgrade. We expect that the proposed grading will expose the granitic bedrock through most of the parking areas, except for the areas in the southern portion of the site, which will be on compacted artificial fill.

For preliminary planning purposes, we have estimated an R-Value of 60 for the granitic bedrock materials and an R-Value of 20 for the compacted artificial fill. Final pavement design should be evaluated based on R-value tests performed upon completion of grading.

Table 5 Preliminary Pavement Design			
Pavement Loading Condition	Traffic Index (20-Year Life)	Preliminary Pavement Section	
		R-Value= 20	R-Value= 60
Parking Areas	4.5	3 inches AC over 8 inches Class 2 base	3 inches AC over 6 inches Class 2 base
Drive Areas and Truck Driveways	6.0	3 inches AC over 11 inches Class 2 base	3 inches AC over 8 inches Class 2 base
Additional Lane For Centre City Parkway	9	5 inches AC over 17 inches Class 2 base	5 inches AC over 8 inches Class 2 base

For areas subject to regular truck loading (i.e., trash trucks), we recommend a full depth of Portland Cement Concrete (P.C.C.) section of 7 inches with appropriate steel reinforcement and crack-control joints as designed by the project structural engineer. We recommend that sections be as nearly square as possible. A 3,500-psi mix that produces a 600-psi modulus of rupture should be utilized. The actual pavement construction should also be in accordance with ACI design criteria.

All pavement section materials conform to and be placed in accordance with the latest revision of the California Department of Transportation Standard Specifications (Caltrans) and American Concrete Institute (ACI) codes. The upper 12 inches of subgrade soil and all aggregate base should be compacted to a relative compaction of at least 95 percent (based on ASTM Test Method D1557).

If pavement areas are adjacent to heavily watered landscape areas, we recommend some measure of moisture control be taken to prevent the subgrade soils from becoming saturated. It is recommended that the concrete curing separating the landscaping area from the pavement extend below the aggregate base to help seal the ends of the sections where heavy landscape watering may have access to the aggregate base. Concrete swales should be designed in roadway or parking areas subject to concentrated surface runoff.

6.8 Concrete Flatwork

Concrete sidewalks and other flatwork (including construction joints) should be designed by the project civil engineer and should have a minimum thickness of 4 inches. For all concrete flatwork, the upper 6 inches of subgrade soils should be moisture conditioned to at least 2 percent above optimum moisture content and compacted to at least 90 percent relative compaction based on ASTM Test Method D1557 prior to the concrete placement.

6.9 Construction Observation

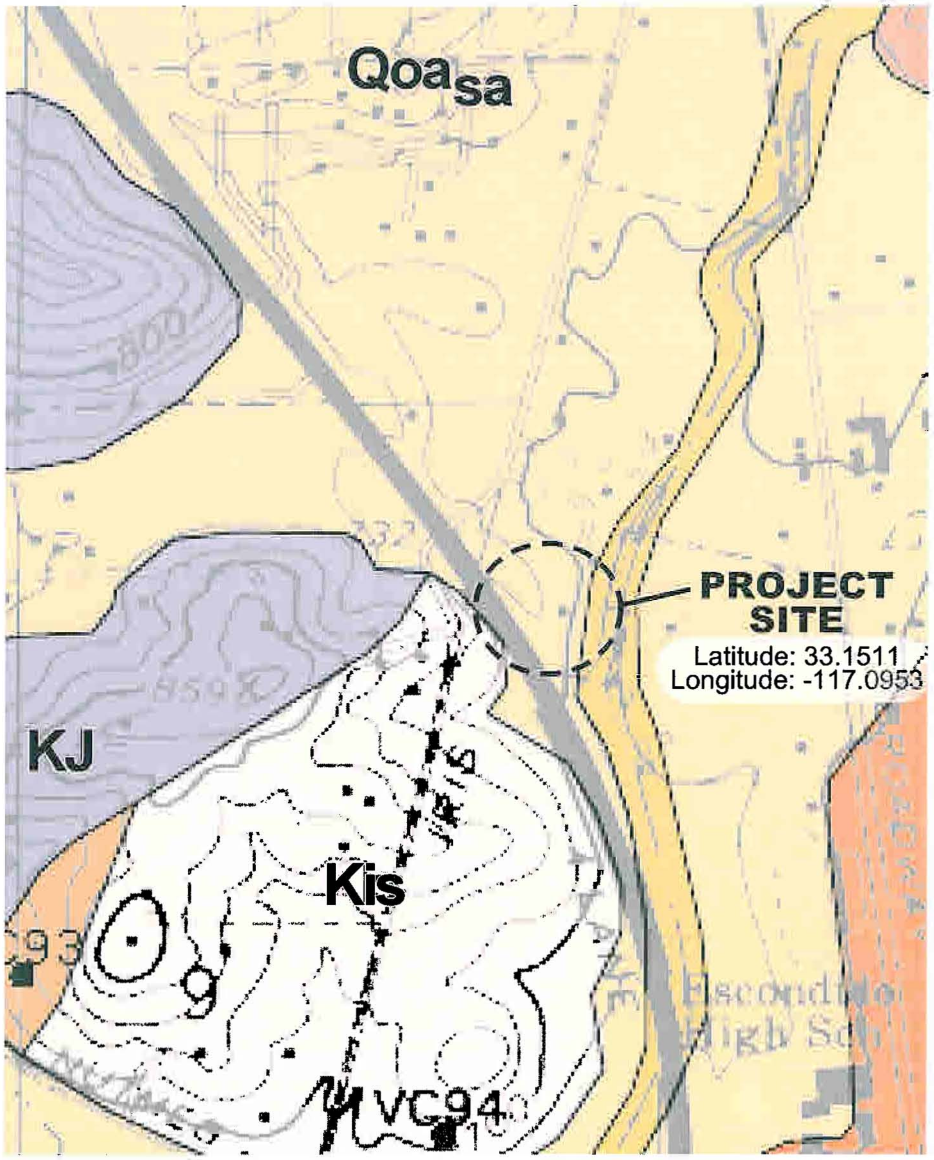
The recommendations provided in this report are based on preliminary design information and subsurface conditions disclosed by widely spaced excavations. The interpolated subsurface conditions should be checked in the field during construction. Construction observation of all onsite excavations and field density testing of all compacted fill should be performed by a representative of this office so that construction is in accordance with the recommendations of this report. We recommend that all excavations be mapped by the geotechnical consultant during grading for the presence of potentially adverse geologic conditions.

6.10 Plan Review

Final project drawings should be checked by Leighton and Associates before grading to ensure that recommendations in this report are incorporated in project plans.

7.0 LIMITATIONS

The conclusions and recommendations in this report are based in part upon data that were obtained from a limited number of observations, site visits, excavations, samples, and tests. Such information is by necessity incomplete. The nature of many sites is such that differing geotechnical or geological conditions can occur within small distances and under varying climatic conditions. Changes in subsurface conditions can and do occur over time. Therefore, the findings, conclusions, and recommendations presented in this report can be relief upon only if Leighton has the opportunity to observe the subsurface conditions during grading and construction of the project, in order to confirm that our preliminary findings are representative for the site.



DESCRIPTION OF MAP UNITS

Qoa	Older alluvial flood plain deposits (Pleistocene, younger than 500,000 years) - Mostly moderately well consolidated, poorly sorted, permeable flood plain deposits.
Kis	Granite of Indian Springs (Cretaceous) - Biotite granite: fine grained granite similar in appearance to Kdl.
KJ	Metavolcanic and metasedimentary rocks undivided (Cretaceous and Jurassic) - low grade (greenschist facies) rocks that are in part coeval with and in part older than the Cretaceous plutonic rocks they lie in contact with.

Reference: CDMG, 1999, Geologic Map of the Valley Center 7.5' Quadrangle San Diego County, California

REGIONAL GEOLOGY MAP

Nightingale Assisted Living
1802 N. Centre City Parkway
Escondido, California

Project No.	600594-001
Scale	1"=750'
Engr./Geol.	SAC/MRS
Drafted By	KAM
Date	September 2004

Leighton Consulting, Inc.
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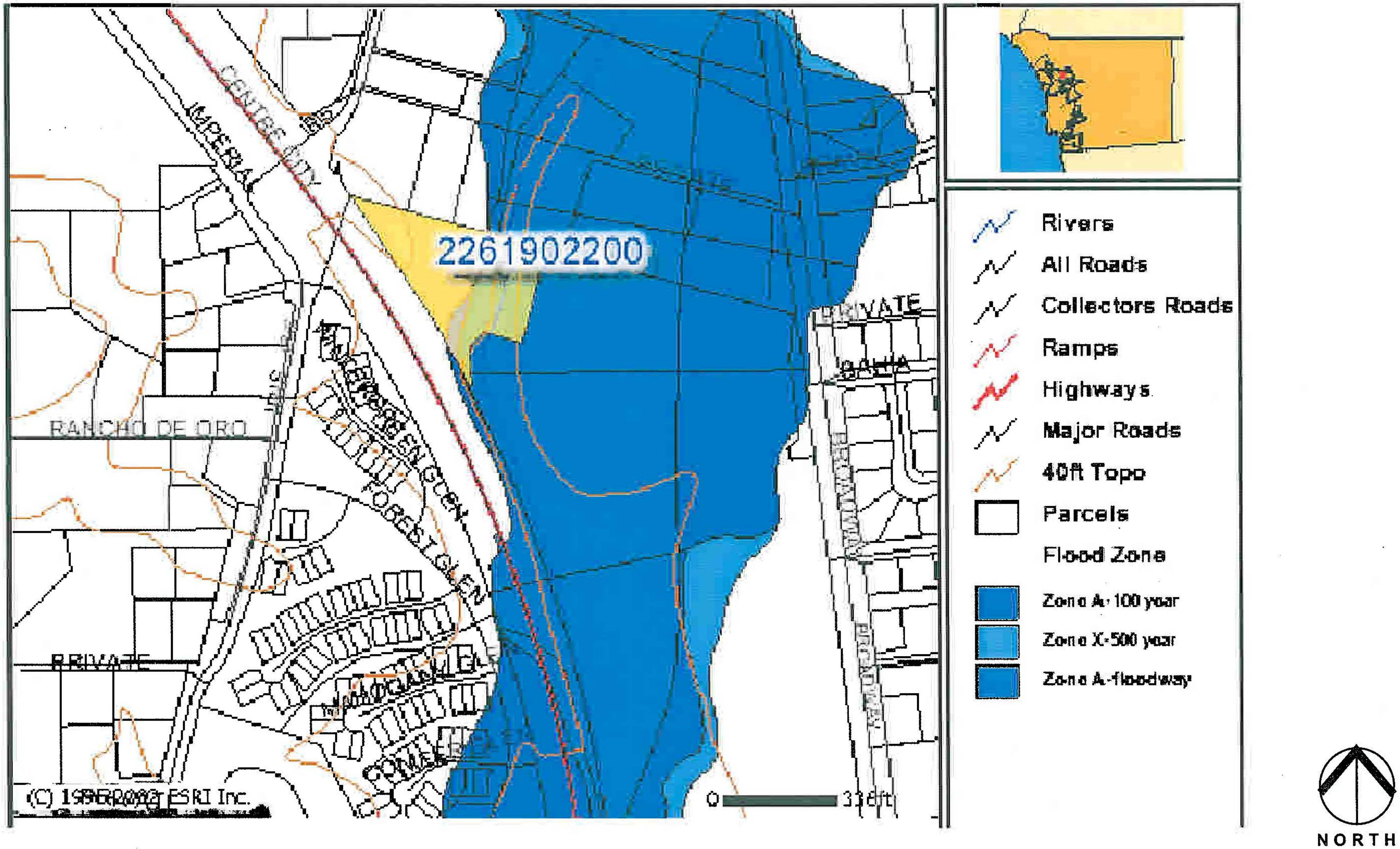
Figure No. 3



SANGIS FLOODWAY MAP

Nightingale Assisted Living
1802 N. Centre City Parkway
Escondido, California

Project No.	600594-001
Scale	No scale
Engr./Geol.	SAC/MRS
Drafted By	KAM
Date	September 2004

Leighton Consulting, Inc.
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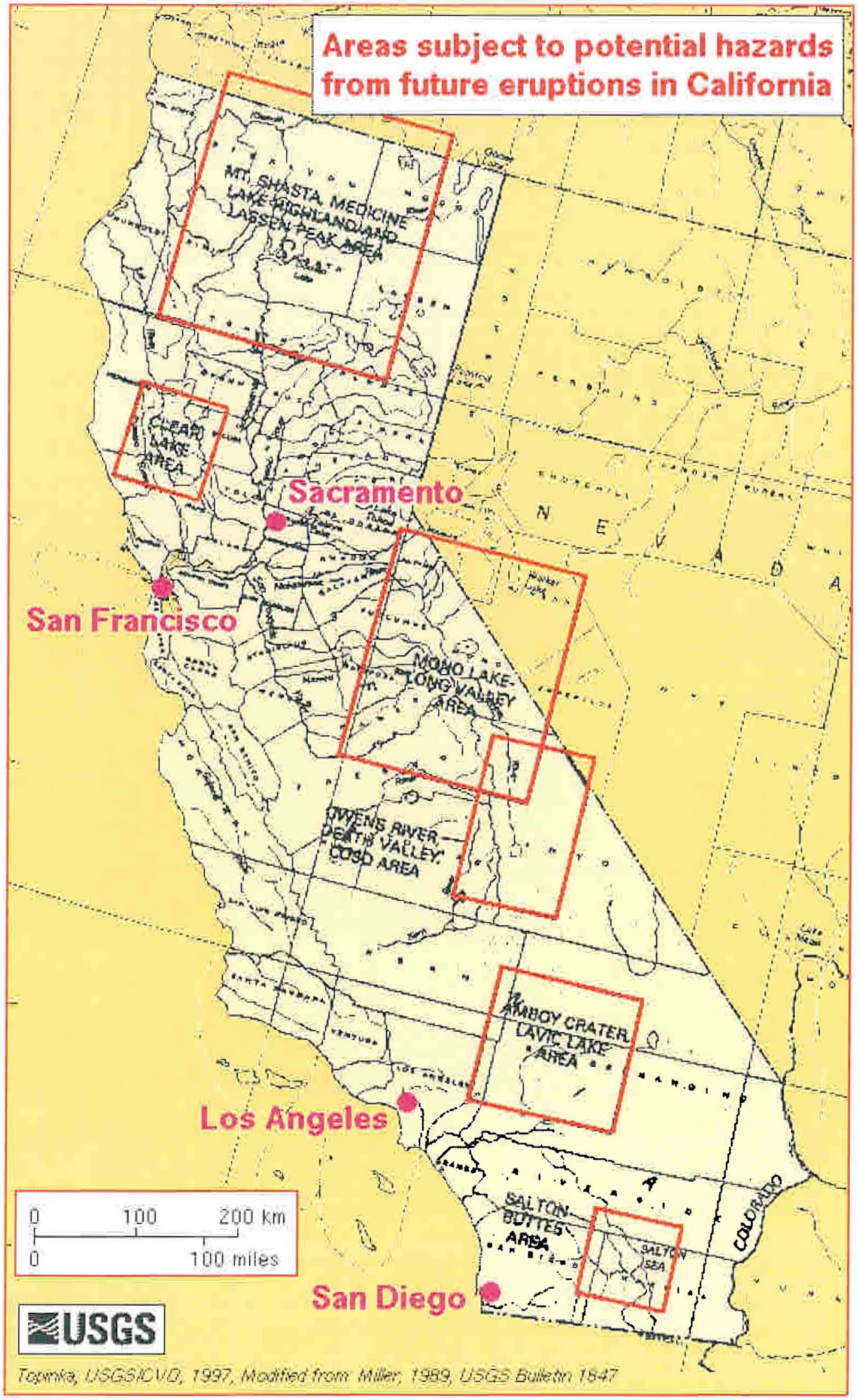
Figure No. 4



VOLCANIC HAZARD MAP

Nightingale Assisted Living
1802 N. Centre City Parkway
Escondido, California

Project No.	600594-001
Scale	1"=100 miles
Engr./Geol.	SAC/MRS
Drafted By	KAM
Date	September 2004

Leighton Consulting, Inc.
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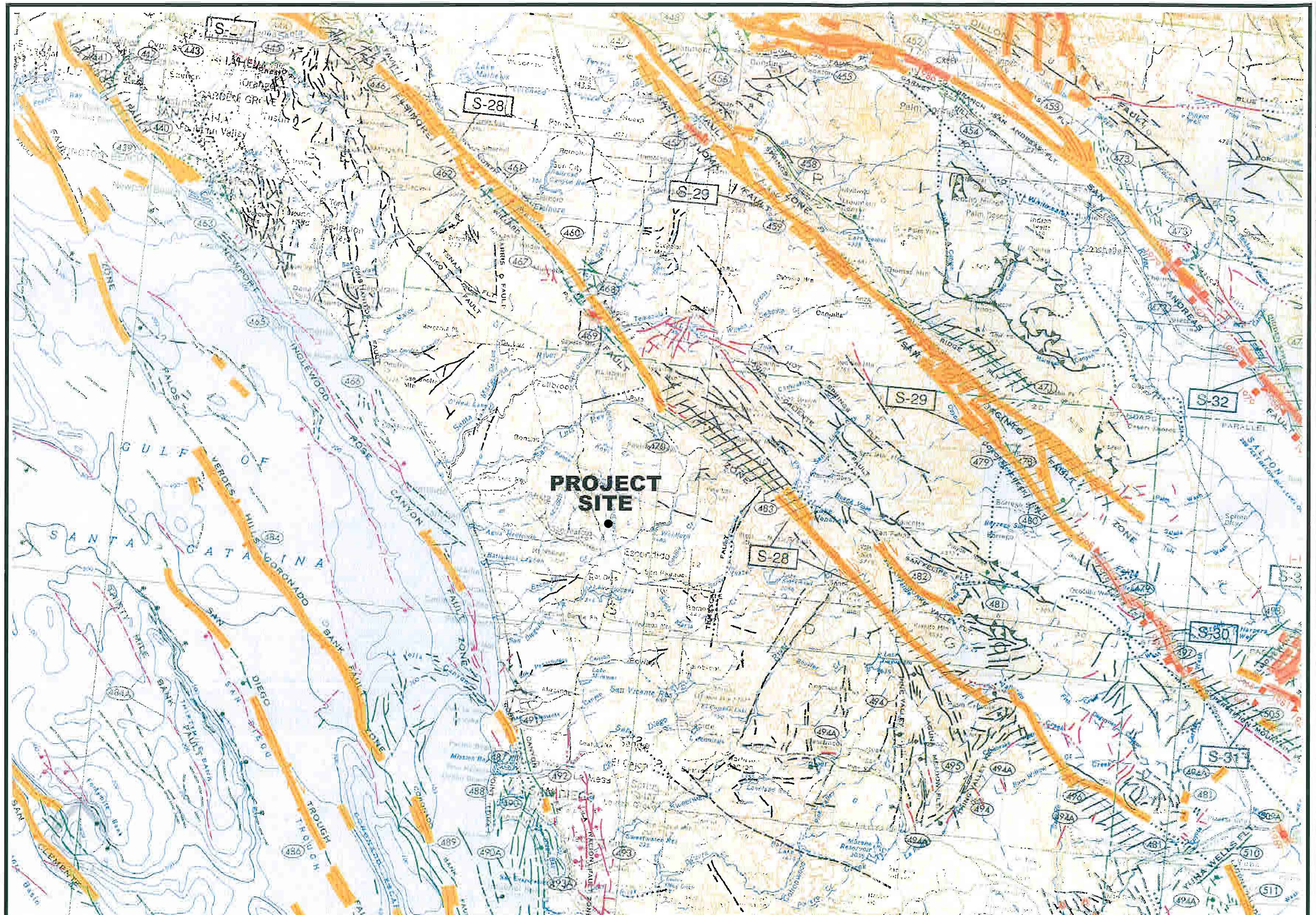
Figure No. 5



Adapted from Jennings, 1994, Fault Activity Map of California and Adjacent Areas: CDMG, California Geologic Data Map Series, Map No. 6

EXPLANATION

Fault traces are indicated by solid lines where well located, by dashed lines where approximate or inferred, by dotted lines where concealed and queried where uncertain. Coloring and highlighting indicate the age or regency of displacement:

PINK	Faults that show displacement during historic time (i.e. last 200 years)
ORANGE	Faults that show displacement during Holocene (i.e. last 10,000 years)
GREEN	Faults that show displacement during late Quaternary (i.e. last 700,000 years)
PURPLE	Faults that show displacement during Quaternary (i.e. last 1.6 million years)
BLACK	Faults without recognized Quaternary displacement (considered inactive faults)

REGIONAL FAULT LOCATION MAP

Nightingale Assisted Living
1802 N. Centre City Parkway
Escondido, California

Project No.	600594-001
Scale	1"=62,500'
Engr./Geol.	SAC/MRS
Drafted By	KAM
Date	September 2004

Leighton Consulting, Inc.
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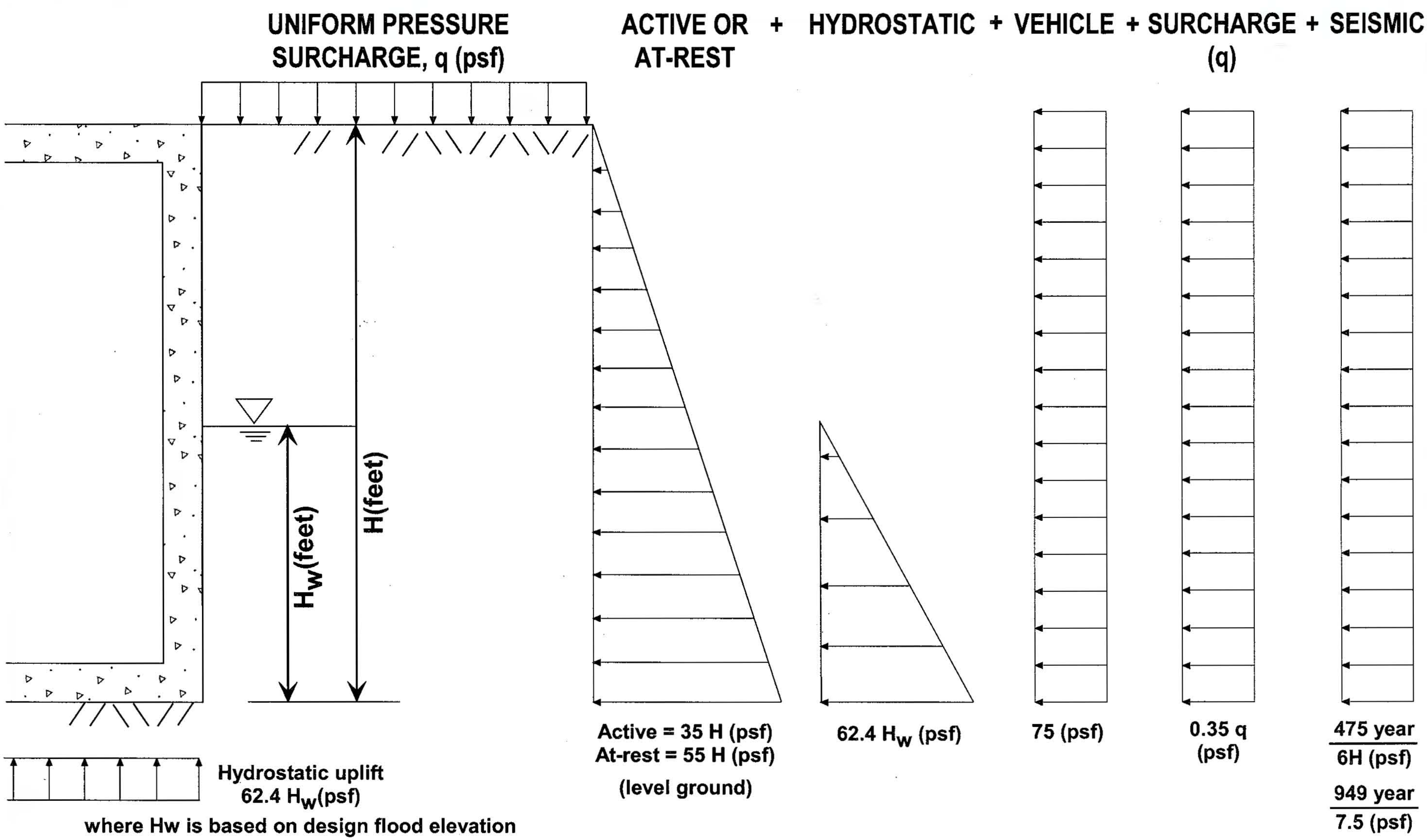
Figure No. 6



LATERAL EARTH AND HYDROSTATIC PRESSURES

Nightingale Assisted Living
1802 N. Centre City Parkway
Escondido, California

Project No.	600594-001
Scale	Not to scale
Engr./Geol.	SAC/MRS
Drafted By	KAM
Date	September 2004

Leighton Consulting, Inc.
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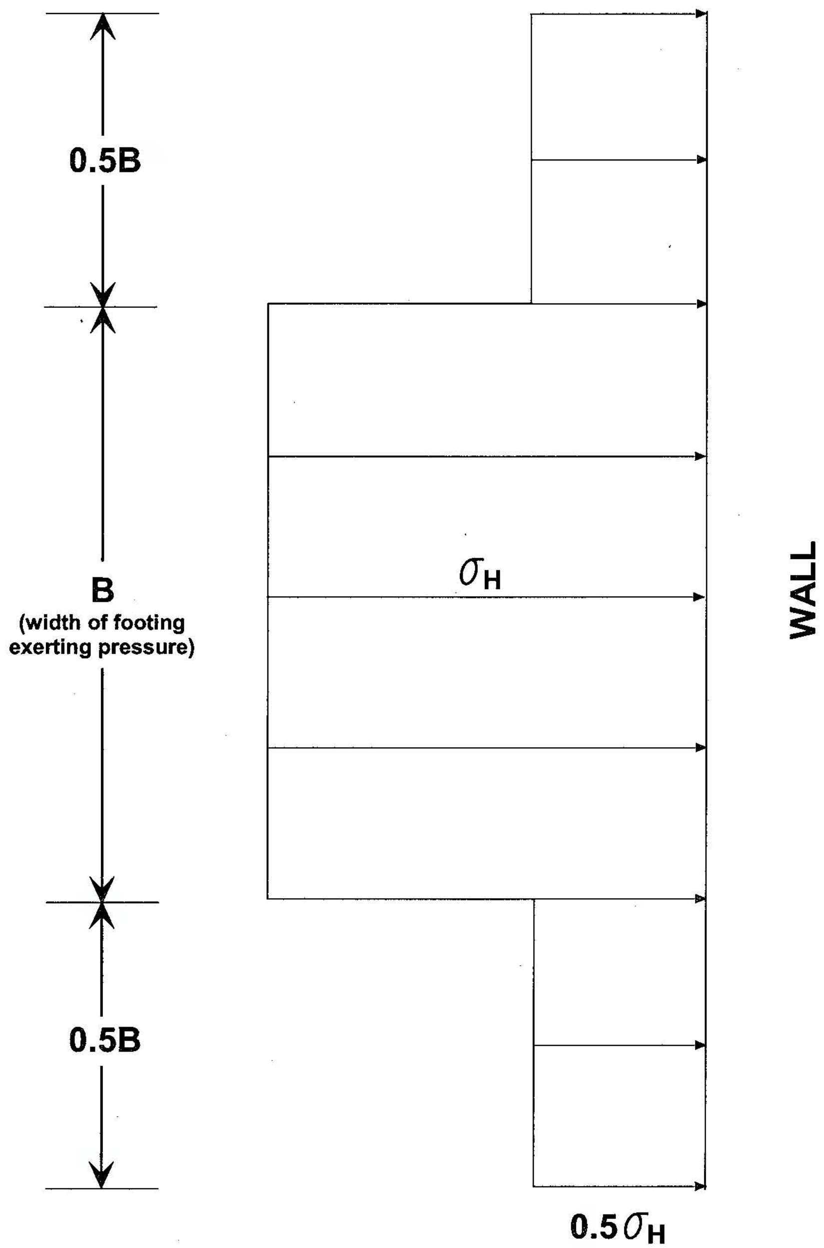
Figure No. 7



LATERAL DISTRIBUTION OF SURCHARGE PRESSURE FROM FOOTING SURCHARGE

Nightingale Assisted Living
1802 N. Centre City Parkway
Escondido, California

Project No.	600594-001
Scale	Not to scale
Engr./Geol.	SAC/MRS
Drafted By	KAM
Date	September 2004

Leighton Consulting, Inc.
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Figure No. 8


LEGEND
GEOLOGIC UNITS
Afc ARTIFICIAL FILL - CONTROLLED, PLACED DURING PREVIOUS GRADING OPERATIONS
Qcol RESIDUAL SOIL AND/OR QUATERNARY COLLUVIUM (CIRCLE WHERE BURIED, QUERIED WHERE UNCERTAIN)
Qal QUATERNARY ALLUVIUM
Kgr CRETACEOUS GRANITIC ROCK - INDIAN SPRINGS FORMATION (CIRCLED WHERE BURIED, QUERIED WHERE UNCERTAIN)
MAP SYMBOLS
APPROXIMATE LOCATION OF GEOLOGIC CONTACT (DASHED WHERE APPROXIMATE, DOTTED WHERE BURIED, QUERIED WHERE UNCERTAIN)
B-10 TD=3' APPROXIMATE LOCATION OF GEOTECHNICAL BORING WITH TOTAL DEPTH INDICATED
A A' APPROXIMATE CROSS-SECTION LOCATION
SKILLED NURSING COMPONENT (OSHPD)
A
A'
Kgr
Afc
Qcol
Qal
Qcol/ Kgr
Kgr?
Qcol?
B-1 TD=20' Kgr@20'
B-2 TD=18' Kgr@15'
B-3 TD=18' Kgr@11'
B-4 TD=5' Kgr@0'
B-5 TD=10' Kgr@5'
B-6 TD=15' Kgr@10'
B-7 TD=5' Kgr@0'
B-8 TD=5' Kgr@0'
B-9 TD=7' Kgr@7'
B-10 TD=3' Kgr@2'
PROPOSED BUILDING
LOWER F.F.= 703.00
FIRST F.F.= 713.00
SECOND F.F.= 723.50
CENTRE CITY PARKWAY
REIDY CREEK
PROP. 100 YEAR FLOOD LINE
693' BASE FLOOD ELEVATION LINE
692' BASE FLOOD ELEVATION LINE
691' BASE FLOOD ELEVATION LINE PER F.E.M.A. F.I.R.M. DATED 6-19-1997
SECTION A-A NOT TO SCALE
SECTION B-B NOT TO SCALE
SECTION C-C NOT TO SCALE
SECTION D-D NOT TO SCALE
SECTION E-E NOT TO SCALE
NORTH
0 30 60 Scale in Feet
BASE MAP: Grading Site Plan prepared by Spears Associates, undated
PLATE 1
GEOTECHNICAL MAP
Nightingale Assisted Living
1802 N. Centre City Parkway
Escondido, California
PROJECT: 600594-001
SCALE: 1"=30'
DATE: Sept. 2004
ENGINEER/GEOLOGIST: SAC/MRS
DRAFTING BY: KAM
Leighton Consulting, Inc.
REGISTERED GEOLOGIST NO. 1347 CERTIFIED ENGINEERING GEOLOGIST STATE OF CALIFORNIA

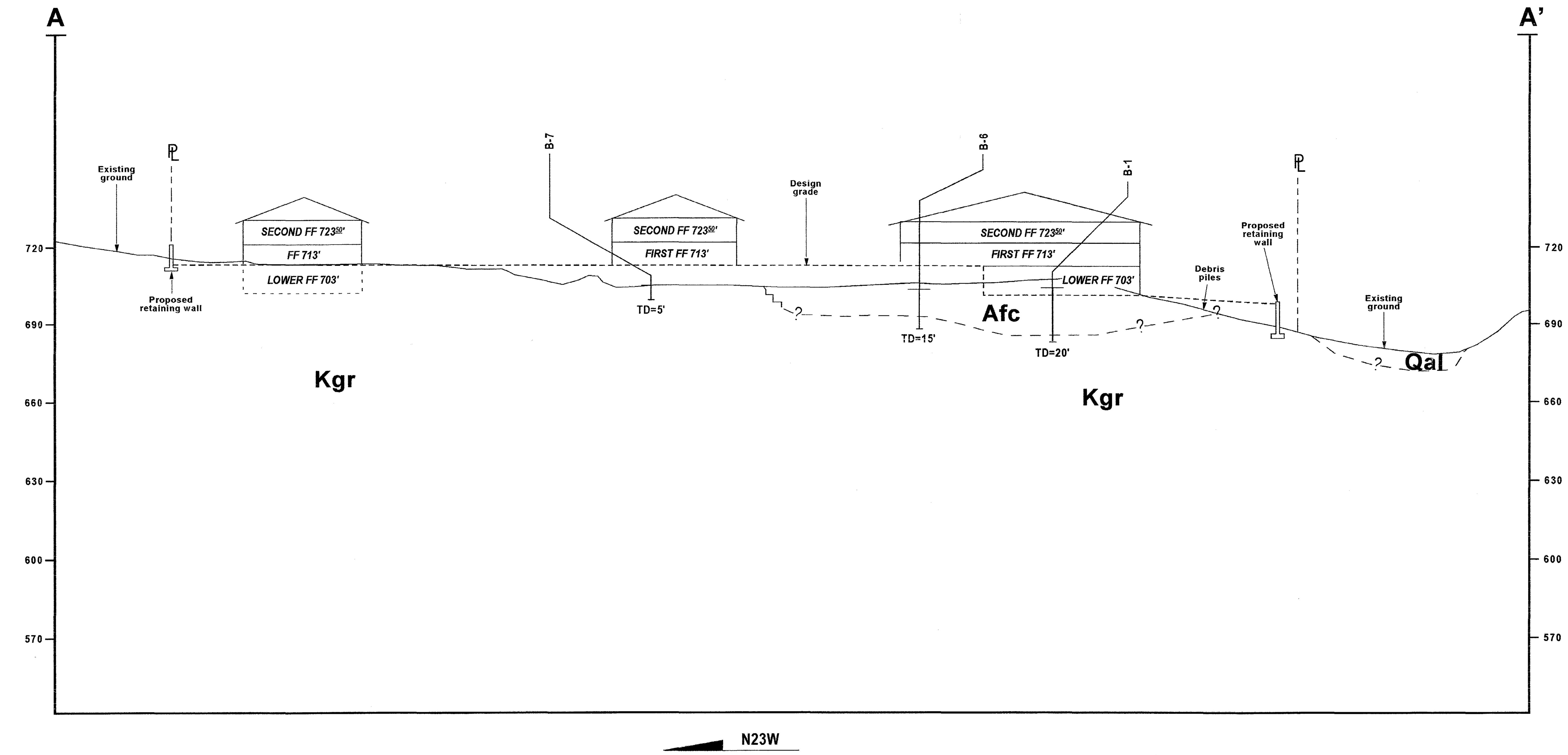

PLATE 2

MICHAEL R. STEWART
NO. 1349
CERTIFIED ENGINEERING GEOLOGIST
REGISTERED GEOLOGIST
STATE OF CALIFORNIA

CROSS-SECTION A-A'

Nightingale Assisted Living
1802 N. Centre City Parkway
Escondido, California

PROJECT: 600594-001	SCALE: 1"=30'	DATE: Sept. 2004
ENGINEER/GEOLOGIST: SAC/MRS		DRAFTING BY: KAM

Leighton Consulting, Inc.
A LEIGHTON GROUP COMPANY

APPENDIX A

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GEOTECHNICAL BORING LOG KEY

Date ______________________ Sheet 1 of 1

Project KEY TO BORING LOG GRAPHICS Project No. -

Drilling Co. ______________________ Type of Rig ______________________

Hole Diameter __________ Drive Weight ______________________ Drop "

Elevation Top of Hole ' Location ______________________

Elevation Feet	Depth Feet	Graphic Log N S	Attitudes	Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	DESCRIPTION Logged By ______________________ Sampled By ______________________	Type of Tests
	0								Asphaltic concrete	
									Portland cement concrete	
								CL	Inorganic clay of low to medium plasticity; gravelly clay; sandy clay; silty clay; lean clay	
								CH		
								OL		
	5							ML	Inorganic silt; clayey silt with low plasticity	
								MH	Inorganic silt; diatomaceous fine sandy or silty soils; elastic silt	
								ML-CL	Clayey silt to silty clay	
								GW	Well-graded gravel; gravel-sand mixture, little or no fines	
								GP	Poorly graded gravel; gravel-sand mixture, little or no fines	
	10							GM		
								GC	Clayey gravel; gravel-sand-clay mixture	
								SW	Well-graded sand; gravelly sand, little or no fines	
								SP	Poorly graded sand; gravelly sand, little or no fines	
								SM	Silty sand; poorly graded sand-silt mixture	
	15							SC		
									Bedrock	
									Ground water encountered at time of drilling	
				B-1					Bulk Sample	
	20			C-1					Core Sample	
				G-1					Grab Sample	
				R-1					Modified California Sampler (3" O.D., 2.5 I.D.)	
				SH-1					Shelby Tube Sampler (3" O.D.)	
				S-1					Standard Penetration Test SPT (Sampler (2" O.D., 1.4" I.D.)	
	25									
	30									

SAMPLE TYPES:

- S SPLIT SPOON
- R RING SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE
- G GRAB SAMPLE
- C CORE SAMPLE

TYPE OF TESTS:

- DS DIRECT SHEAR
- MD MAXIMUM DENSITY
- CN CONSOLIDATION
- CR CORROSION
- SA SIEVE ANALYSIS
- R-VALUE
- EI EXPANSION INDEX
- PI ATTERBERG LIMIT

LEIGHTON CONSULTING, INC.

GEOTECHNICAL BORING LOG B-1

Date	8-31-04	Sheet	1 of 1
Project	Nightingale Assistant Living	Project No.	600594-001
Drilling Co.	West Hazmat	Type of Rig	CME-75
Hole Diameter	8"	Drive Weight	140 pound hammer; Drop 30"
Elevation Top of Hole	705'	Location	See Map

Logged By HMR
Sampled By HMR

Elevation Feet	Depth Feet	Graphic Log (N–S)	Attitudes	Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	DESCRIPTION	Type of Tests
705	0							SM	ARTIFICIAL FILL (Af) @ 0': Brown silty SAND, SM	
									@ 1.5: Cobble	CR
				B-1 @2'-4'						
700	5								@ 5': Cobble	
				R-1	50/6"	105.0	16.8	SM	@ 6': Silty SAND: Dark gray to black, moist, dense	DS
695	10			S-1	72				@ 10': Silty SAND: Dark gray to black, moist, very dense	SA
690	15			R-2	72	127.2	12.3	SM	@ 15': Silty SAND: Orange-brown, moist, very dense	CN
685	20				62		4.4	SM	WEATHERED CRETACEOUS GRANITIC (Kgr) @ 20': Excavates to silty SAND: Brown, damp, very dense	
									Total Depth = 20 Feet No ground water encountered at time of drilling Backfilled on 8/31/04	
680	25									
675	30									

SAMPLE TYPES:
S SPLIT SPOON
R RING SAMPLE
B BULK SAMPLE
T TUBE SAMPLE
G GRAB SAMPLE
C CORE SAMPLE

TYPE OF TESTS:
DS DIRECT SHEAR
MD MAXIMUM DENSITY
CN CONSOLIDATION
CR CORROSION
SA SIEVE ANALYSIS
R-VALUE
EI EXPANSION INDEX
PI ATTERBERG LIMIT

LEIGHTON CONSULTING, INC.

GEOTECHNICAL BORING LOG B-2

Date 8-31-04 **Sheet** 1 **of** 1
Project Nightingale Assistant Living **Project No.** 600594-001
Drilling Co. West Hazmat **Type of Rig** CME-75
Hole Diameter 8" **Drive Weight** 140 pound hammer **Drop** 30"
Elevation Top of Hole 705' **Location** See Map

Logged By HMR
Sampled By HMR

Elevation Feet	Depth Feet	Graphic Log (N S)	Attitudes	Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	DESCRIPTION	Type of Tests
705	0							SM	ARTIFICIAL FILL (Af) @ 0': Silty SAND: Orange-brown, damp	EI
				B-1 @2'-4'						
700	5			R-1	90				@ 5': Silty SAND: Orange-brown, damp, very dense, some gravel	
695	10			S-1	50				@ 10': Silty SAND: Dark gray, moist, very dense, tip Weathered Kgr WEATHERED CRETACEOUS GRANITIC (Kgr) @ 12'-14': Tightened (driller)	SA
690	15			R-2	50/6"		2.3		@ 15': Excavates to silty SAND: Light brown, damp, very dense	
				S-2	100-4"				@ 18': Excavates to silty SAND: Light brown, damp, very dense	
685	20								Total Depth = 19 Feet No ground water encountered at time of drilling Backfilled on 8/31/04	
680	25									
675	30									

SAMPLE TYPES:
S SPLIT SPOON
R RING SAMPLE
B BULK SAMPLE
T TUBE SAMPLE
G GRAB SAMPLE
C CORE SAMPLE

TYPE OF TESTS:
DS DIRECT SHEAR
MD MAXIMUM DENSITY
CN CONSOLIDATION
CR CORROSION
SA SIEVE ANALYSIS
R-VALUE
EI EXPANSION INDEX
PI ATTERBERG LIMIT

LEIGHTON CONSULTING, INC.

GEOTECHNICAL BORING LOG B-3

Date 8-31-04 | Sheet 1 of 1
Project Nightingale Assistant Living | Project No. 600594-001
Drilling Co. West Hazmat | Type of Rig CME-75
Hole Diameter 8" | Drive Weight 140 pound hammer | Drop 30"
Elevation Top of Hole 705' | Location See Map

Logged By HMR
Sampled By HMR

Elevation Feet	Depth Feet	Graphic Log (N S)	Attitudes	Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	DESCRIPTION	Type of Tests
705	0							SM	ARTIFICIAL FILL (Af) @ 0': Silty SAND: Orange-brown, damp	
				B-1 @2.5'-5'						
700	5			R-1	60	108.0	11.0	ML	@ 5': Sandy SILT: Dark gray to black, moist, dense	DS
695	10			S-1	98		9.6	SM	@ 10': Silty SAND: Black to brown, moist, very dense, sandier than above, tip Weathered Cretaceous Granite (Kgr) WEATHERED CRETACEOUS GRANITIC (Kgr) @ 11': Excavates to silty SAND; Brown, damp	
690	15			R-2	100/4"	117.0	5.3		@ 15': Excavates to silty SAND: Brown, damp, very dense	
				S-2	50/4"				@ 18': Excavates to silty SAND: Brown, damp, very dense	
									Total Depth = 18 Feet No ground water encountered at time of drilling Backfilled on 8/31/04	
685	20									
680	25									
675	30									

SAMPLE TYPES:
S SPLIT SPOON
R RING SAMPLE
B BULK SAMPLE
T TUBE SAMPLE
G GRAB SAMPLE
C CORE SAMPLE

TYPE OF TESTS:
DS DIRECT SHEAR
MD MAXIMUM DENSITY
CN CONSOLIDATION
CR CORROSION
SA SIEVE ANALYSIS
R-VALUE
EI EXPANSION INDEX
PI ATTERBERG LIMIT

LEIGHTON CONSULTING, INC.

GEOTECHNICAL BORING LOG B-4

Date 8-31-04 **Sheet** 1 of 1
Project Nightingale Assistant Living **Project No.** 600594-001
Drilling Co. West Hazmat **Type of Rig** CME-75
Hole Diameter 8" **Drive Weight** 140 pound hammer **Drop** 30"
Elevation Top of Hole 705' **Location** See Map

Elevation Feet	Depth Feet	Graphic Log (N S)	Attitudes	Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	DESCRIPTION Logged By HMR Sampled By HMR	Type of Tests
705	0			B-1 @0'-4'				SM	WEATHERED CRETACEOUS GRANITIC (Kgr) @ 0': Excavates to silty SAND: Light brown, damp,	
700	5			S-1	100/4"				@ 5': Excavates to silty SAND: Light brown, damp, very dense	
									Total Depth = 5 Feet No ground water encountered at time of drilling Backfilled on 8/31/04	
695	10									
690	15									
685	20									
680	25									
675	30									

SAMPLE TYPES:
S SPLIT SPOON
R RING SAMPLE
B BULK SAMPLE
T TUBE SAMPLE
G GRAB SAMPLE
C CORE SAMPLE

TYPE OF TESTS:
DS DIRECT SHEAR
MD MAXIMUM DENSITY
CN CONSOLIDATION
CR CORROSION
SA SIEVE ANALYSIS
R-VALUE
EI EXPANSION INDEX
PI ATTERBERG LIMIT

LEIGHTON CONSULTING, INC.

GEOTECHNICAL BORING LOG B-5

Date 8-31-04 **Sheet** 1 **of** 1
Project Nightingale Assistant Living **Project No.** 600594-001
Drilling Co. West Hazmat **Type of Rig** CME-75
Hole Diameter 8" **Drive Weight** 140 pound hammer **Drop** 30"
Elevation Top of Hole 705' **Location** See Map

Logged By HMR
Sampled By HMR

Elevation Feet	Depth Feet	Graphic Log (N S)	Attitudes	Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	DESCRIPTION	Type of Tests
705	0							SM	ARTIFICIAL FILL (Af) @ 0': Silty SAND: Red-brown, moist	
				B-1 @2'-5'						
700	5			R-1	100/4"	124.2	7.9	SM	WEATHERED CRETACEOUS GRANITIC (Kgr) @ 5': Excavates to silty SAND: Brown, damp, very dense	
695	10			S-1	100/6"		3.6		@ 10': Excavates to silty SAND: Brown, damp, very dense	
									Total Depth = 10 Feet No ground water encountered at time of drilling Backfilled on 8/31/04	
690	15									
685	20									
680	25									
675	30									

SAMPLE TYPES:
S SPLIT SPOON
R RING SAMPLE
B BULK SAMPLE
T TUBE SAMPLE
G GRAB SAMPLE
C CORE SAMPLE

TYPE OF TESTS:
DS DIRECT SHEAR
MD MAXIMUM DENSITY
CN CONSOLIDATION
CR CORROSION
SA SIEVE ANALYSIS
R-VALUE
EI EXPANSION INDEX
PI ATTERBERG LIMIT

LEIGHTON CONSULTING, INC.

GEOTECHNICAL BORING LOG B-6

Date 8-31-04 **Sheet** 1 **of** 1
Project Nightingale Assistant Living **Project No.** 600594-001
Drilling Co. West Hazmat **Type of Rig** CME-75
Hole Diameter 8" **Drive Weight** 140 pound hammer **Drop** 30"
Elevation Top of Hole 705' **Location** See Map

Logged By HMR
Sampled By HMR

Elevation Feet	Depth Feet	Graphic Log (N S)	Attitudes	Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	DESCRIPTION	Type of Tests
705	0							SM	ARTIFICIAL FILL (Af) @ 0': Silty SAND: Orange-brown, damp	
				B-1 @2'-5'						
700	5			R-1	62	121.1	9.3		@ 5': Silty SAND: Black, moist, very dense	
695	10								WEATHERED CRETACEOUS GRANITE (Kgr)	
				S-1	100/5"		3.7		@ 11': Excavates to silty SAND: Light brown, damp, very dense	
690	15				100/4"				@ 15': Excavates to silty SAND: Light brown, damp, very dense; no recovery	
									Total Depth = 16 Feet No ground water encountered at time of drilling Backfilled on 8/31/04	
685	20									
680	25									
675	30									

SAMPLE TYPES:
S SPLIT SPOON
R RING SAMPLE
B BULK SAMPLE
T TUBE SAMPLE
G GRAB SAMPLE
C CORE SAMPLE

TYPE OF TESTS:
DS DIRECT SHEAR
MD MAXIMUM DENSITY
CN CONSOLIDATION
CR CORROSION
SA SIEVE ANALYSIS
R-VALUE
EI EXPANSION INDEX
PI ATTERBERG LIMIT

LEIGHTON CONSULTING, INC.

GEOTECHNICAL BORING LOG B-7

Date 8-31-04 | Sheet 1 of 1
Project Nightingale Assistant Living | Project No. 600594-001
Drilling Co. West Hazmat | Type of Rig CME-75
Hole Diameter 8" | Drive Weight 140 pound hammer | Drop 30"
Elevation Top of Hole 705' | Location See Map

Logged By HMR
Sampled By HMR

Elevation Feet	Depth Feet	Graphic Log (N S)	Attitudes	Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	DESCRIPTION	Type of Tests
705	0			B-1 @0'-5'				SM	WEATHERED CRETACEOUS GRANITIC (Kgr) @ 0': Excavates to silty SAND: Light brown, damp	
700	5			S-1	50/2"				@ 5': Excavates to silty SAND: Light brown, damp, very dense	
									Total Depth = 5 Feet No ground water encountered at time of drilling Backfilled on 8/31/04	
695	10									
690	15									
685	20									
680	25									
675	30									

SAMPLE TYPES:
S SPLIT SPOON
R RING SAMPLE
B BULK SAMPLE
T TUBE SAMPLE
G GRAB SAMPLE
C CORE SAMPLE

TYPE OF TESTS:
DS DIRECT SHEAR
MD MAXIMUM DENSITY
CN CONSOLIDATION
CR CORROSION
SA SIEVE ANALYSIS
R-VALUE
EI EXPANSION INDEX
PI ATTERBERG LIMIT

LEIGHTON CONSULTING, INC.

GEOTECHNICAL BORING LOG B-8

Date 8-31-04 **Sheet** 1 **of** 1
Project Nightingale Assistant Living **Project No.** 600594-001
Drilling Co. West Hazmat **Type of Rig** CME-75
Hole Diameter 8" **Drive Weight** 140 pound hammer **Drop** 30"
Elevation Top of Hole 715' **Location** See Map

Logged By HMR
Sampled By HMR

Elevation Feet	Depth Feet	Graphic Log (N S)	Attitudes	Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	DESCRIPTION	Type of Tests
715	0			B-1 @0'-5'				SM	<u>WEATHERED CRETACEOUS GRANITIC (Kgr)</u> @ 0': Excavates to silty SAND: Light brown, damp	R-Value
710	5			S-1	100/5"				@ 5': Excavates to silty SAND: Light brown, damp, very dense	
									Total Depth = 5 Feet No ground water encountered at time of drilling Backfilled on 8/31/04	
705	10									
700	15									
695	20									
690	25									
685	30									

SAMPLE TYPES:
S SPLIT SPOON
R RING SAMPLE
B BULK SAMPLE
T TUBE SAMPLE
G GRAB SAMPLE
C CORE SAMPLE

TYPE OF TESTS:
DS DIRECT SHEAR
MD MAXIMUM DENSITY
CN CONSOLIDATION
CR CORROSION
SA SIEVE ANALYSIS
R-VALUE
EI EXPANSION INDEX
PI ATTERBERG LIMIT

LEIGHTON CONSULTING, INC.

GEOTECHNICAL BORING LOG B-9

Date 9-13-04 | Sheet 1 of 1
Project Nightingale Assistant Living | Project No. 600594-001
Drilling Co. Pacific Drilling | Type of Rig Tripod
Hole Diameter 6" | Drive Weight 140 pound hammer | Drop 30"
Elevation Top of Hole 692' | Location See Map

Logged By HMR
Sampled By HMR

Elevation Feet	Depth Feet	Graphic Log (N S)	Attitudes	Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	DESCRIPTION	Type of Tests
	0			B-1 @0-5'				SM	RESIDUAL SOIL/QUATERNARY COLLUVIUM (Qcol) @ 0': Silty SAND: Brown, damp	EI,CR
690				S-1	36				@ 2': Silty SAND: Brown, dense (Residual Soil/Colluvium)	
	5			S-2	37				@ 5': Silty SAND: Brown, moist, looks more like Weathered Cretaceous Granite	
685				S-3	50/1"				CRETACEOUS GRANITE (Kgr) @ 7': Excavates to silty SAND: Brown, damp, very dense, drilling very hard per driller	
									Total Depth = 7 Feet No ground water encountered at time of drilling Backfilled on 9/13/04	
	10									
680										
	15									
675										
	20									
670										
	25									
665										
	30									

SAMPLE TYPES:
S SPLIT SPOON
R RING SAMPLE
B BULK SAMPLE
T TUBE SAMPLE
G GRAB SAMPLE
C CORE SAMPLE

TYPE OF TESTS:
DS DIRECT SHEAR
MD MAXIMUM DENSITY
CN CONSOLIDATION
CR CORROSION
SA SIEVE ANALYSIS
R-VALUE
EI EXPANSION INDEX
PI ATTERBERG LIMIT

LEIGHTON CONSULTING, INC.

GEOTECHNICAL BORING LOG B-10

Date 9-13-04 **Sheet** 1 **of** 1
Project Nightingale Assistant Living **Project No.** 600594-001
Drilling Co. Pacific Drilling **Type of Rig** Tripod
Hole Diameter 6" **Drive Weight** 140 pound hammer **Drop** 30"
Elevation Top of Hole 695' **Location** See Map

Logged By HMR
Sampled By HMR

Elevation Feet	Depth Feet	Graphic Log (N S)	Attitudes	Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	DESCRIPTION	Type of Tests
695	0			B-1A @0-1' B-1 @0-3' S-1	30 35/2"			SM	RESIDUAL SOIL/QUATERNARY COLLUVIUM (Qcol) @ 0': Silty SAND: Brown damp CRETACEOUS GRANITE (Kgr) @ 2': Silty SAND: Brown, damp, very dense, hard drilling Total Depth = 3 Feet No ground water encountered at time of drilling Backfilled on 9/13/04 Collected Sample B1-A from around top of boring	
690	5									
685	10									
680	15									
675	20									
670	25									
665	30									

SAMPLE TYPES:
S SPLIT SPOON
R RING SAMPLE
B BULK SAMPLE
T TUBE SAMPLE
G GRAB SAMPLE
C CORE SAMPLE

TYPE OF TESTS:
DS DIRECT SHEAR
MD MAXIMUM DENSITY
CN CONSOLIDATION
CR CORROSION
SA SIEVE ANALYSIS
R-VALUE
EI EXPANSION INDEX
PI ATTERBERG LIMIT

LEIGHTON CONSULTING, INC.

APPENDIX C

Laboratory Testing Procedures and Test Results

Moisture Determination Tests: Moisture content determinations were performed on disturbed and relatively undisturbed samples obtained from the trenches. The results of these tests are presented in the boring logs.

Consolidation Tests: Consolidation tests were performed on selected, relatively undisturbed ring samples in accordance with Modified ASTM Test Method D2435. Samples were placed in a consolidometer and loads were applied in geometric progression. The percent consolidation for each load cycle was recorded as the ratio of the amount of vertical compression to the original 1-inch height. The consolidation pressure curves are presented on the attached figures.

Hydroconsolidation Tests: Hydroconsolidation tests were performed on selected relatively undisturbed ring samples. Samples were placed in a consolidometer and a load approximately equal to the in-situ overburden pressure was applied. Water was then added to the sample and the percent hydroconsolidation for the load cycle was recorded as the ratio of the amount of vertical compression to the original 1-inch height. The percent hydroconsolidation is presented below:

Sample Location	Percent Hydroconsolidation
B-1, 15 Feet	0.29 @ 3.1 ksf

Classification or Grain Size Tests: Typical materials were subjected to mechanical grain-size analysis by sieving from U.S. Standard brass screens (ASTM Test Method D422). Hydrometer analyses were performed where appreciable quantities of fines were encountered. The data was evaluated in determining the classification of the materials. The grain-size distribution curves are presented in the test data and the Unified Soil Classification (USCS) is presented in both the test data and the trench logs. Below is a summary of the percent passing the No. 200 Sieve.

Sample Location	Percent Passing No. 200 Sieve
B-1 @ 10 Feet	30
B-2 @ 10 Feet	25

APPENDIX C (Continued)

Expansion Index Tests: The expansion potential of selected materials was evaluated by the Expansion Index Test, ASTM D4829. Specimens are molded under a given compactive energy to approximately the optimum moisture content and approximately 50 percent saturation. The prepared 1-inch thick by 4-inch diameter specimens are loaded to an equivalent 144 psf surcharge and are inundated with water until volumetric equilibrium is reached. The results of these tests are presented in the table below:

Sample Location	Sample Description	Compacted Dry Density (pcf)	Expansion Index	Expansion Potential
B-2 @ 2 to 4 Feet	Brown Silty SAND (SM)	116	0	Very Low
B-9 @ 0 to 5 Feet	Brown Silty SAND (SM)	112.7	36	Low

"R"-Value: The resistance "R"-value was determined by the California Materials Method CT301 for base, subbase, and basement soils. The samples were prepared and exudation pressure and "R"-value determined. The graphically determined "R"-value at exudation pressure of 300 psi is reported.

Sample Number	Sample Location	Sample Description	R-Value
B-1	B-8, 0 to 5 Feet	Brown silty SAND (SM)	78

APPENDIX C (Continued)

Direct Shear Tests: Direct shear tests were performed on selected remolded samples which were soaked for a minimum of 24 hours under a surcharge equal to the applied normal force during testing. After transfer of the sample to the shear box and reloading of the sample, the pore pressures set up in the sample (due to the transfer) were allowed to dissipate for a period of approximately 1-hour prior to application of shearing force. The samples were tested under various normal loads utilizing a motor-driven, strain-controlled, direct-shear testing apparatus at a strain rate of 0.01 inches per minute. After a shear strain of 0.2 inches, the motor was stopped and the sample was allowed to "relax" for approximately 15 minutes. The stress drop during the relaxation period was recorded. It is anticipated that, in a majority of samples tested, the 15 minutes relaxing of the samples is sufficient to allow dissipation of pore pressures that may have set up in the samples due to shearing. The drained peak strength was estimated by deducting the shear force reduction during the relaxation period from the peak shear values. The shear values at the end of shearing are considered to be ultimate values and are shown in parenthesis.

Sample Location	Sample Description	Friction Angle (degrees)	Apparent Cohesion (psf)
B-1 @ 6 Feet	Brown Silty SAND (SM)	42 (39)	450 (400)
B-3 @ 5 Feet	Brown SILT (ML)	42 (39)	500 (450)

Soluble Sulfates: The soluble contents of selected samples were determined by standard geochemical methods. The test results are presented in the table below:

Sample Location	Sulfate Content (%)	Potential Degree of Sulfate Attack*
B-1 @ 2 to 4 Feet	<0.015	Negligible
B-9 @ 0 to 5 Feet	<0.015	Negligible

* Based on the 2001 edition of the California Building Code, Table No. 19-A-4 (CBSC, 2002).

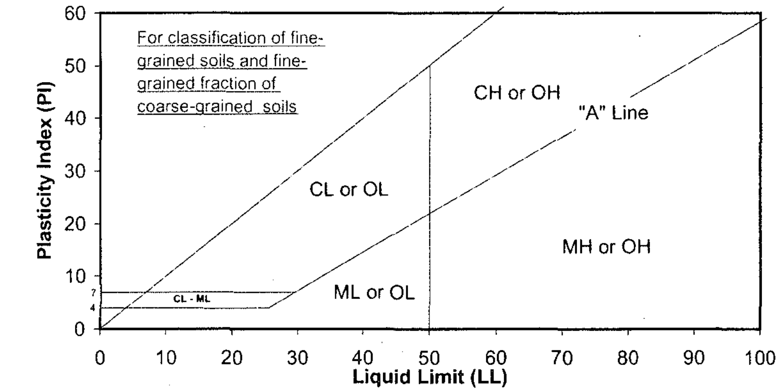
APPENDIX C (Continued)

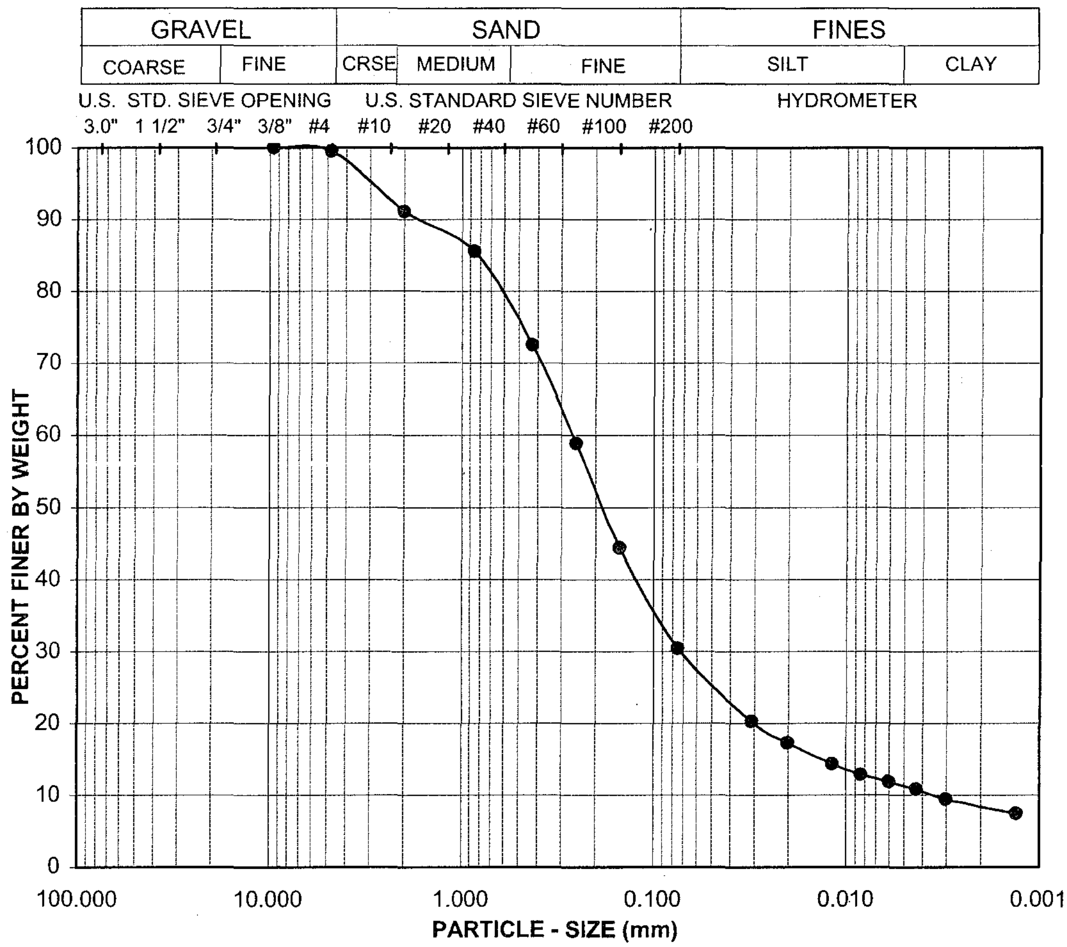
Minimum Resistivity and pH Tests: Minimum resistivity and pH tests were performed in general accordance with California Test Method 643. The results are presented in the table below:

Sample Location	Sample Description	pH	Minimum Resistivity (ohms-cm)
B-1 @ 2 to 4 Feet	Silty SAND (SM)	7.86	10794
B-9 @ 0 to 5 Feet	Silty SAND (SM)	7.28	2496

Chloride Content: Chloride content was tested in accordance with DOT Test Method No. 422. The results are presented below:

Sample Location	Chloride Content, ppm	Chloride Attack Potential
B-1 @ 2 to 4 Feet	<21	Threshold
B-9 @ 0 to 5 Feet	130	Threshold





Boring No.	Sample No.	Depth (ft.)	Soil Type	GR:SA:FI (%)	LL,PL,PI
B-1	S1	10	SM	1:69:30	N/A

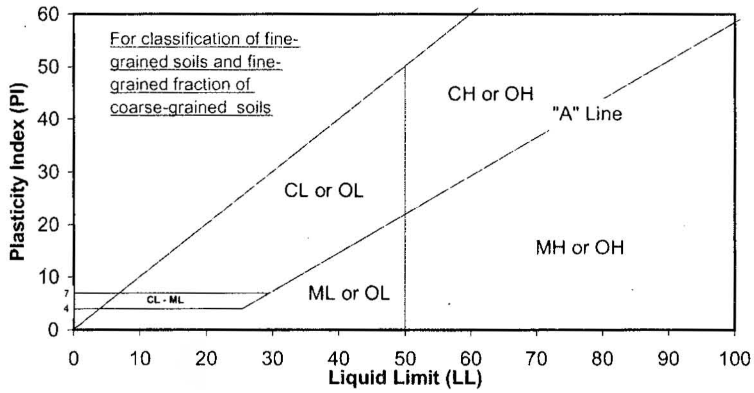
Sample Description:
SM: BROWN SILTY SAND

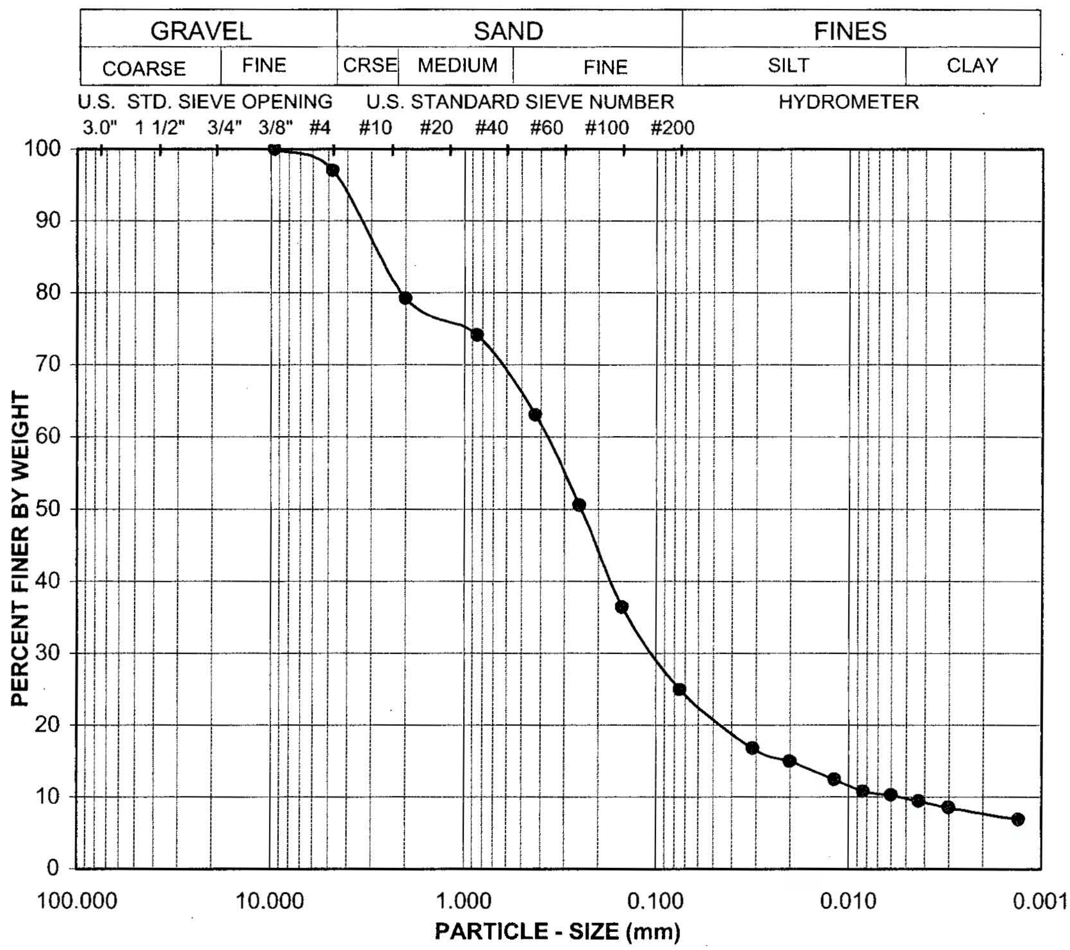
Project No.: 600594-001
NIGHTINGALE ASSISTED LIVING

ATTERBERG LIMITS, PARTICLE - SIZE CURVE
ASTM D 4318, D 422

Leighton

Rev. 08-04





Boring No.	Sample No.	Depth (ft.)	Soil Type	GR:SA:FI (%)	LL,PL,PI
B-2	S1	10	SM	3:72:25	N/A

Sample Description:
SM: BROWN SILTY SAND

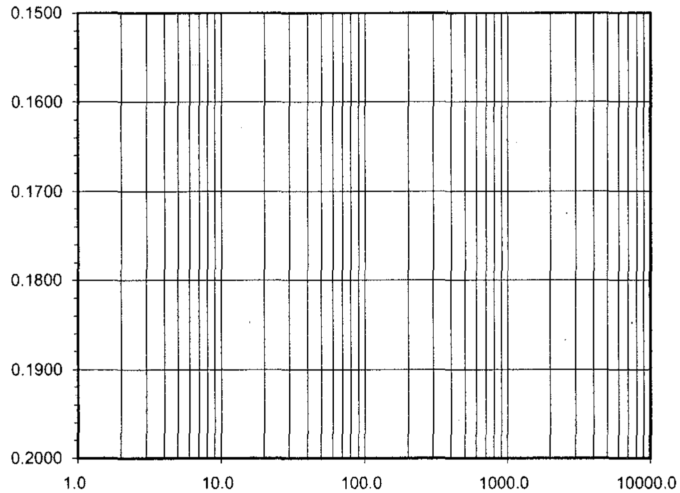
Leighton

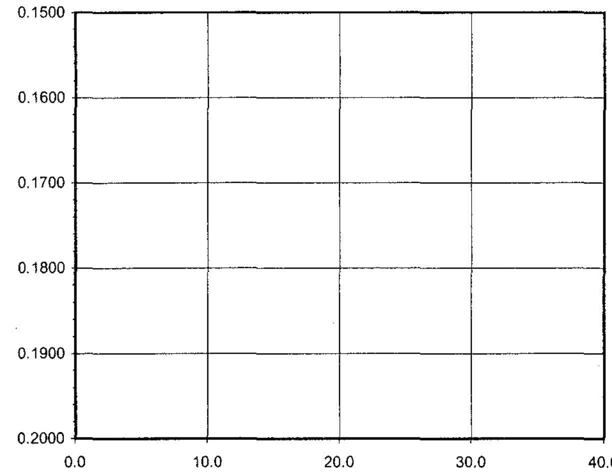
Project No.: 600594-001
NIGHTINGALE ASSISTED LIVING

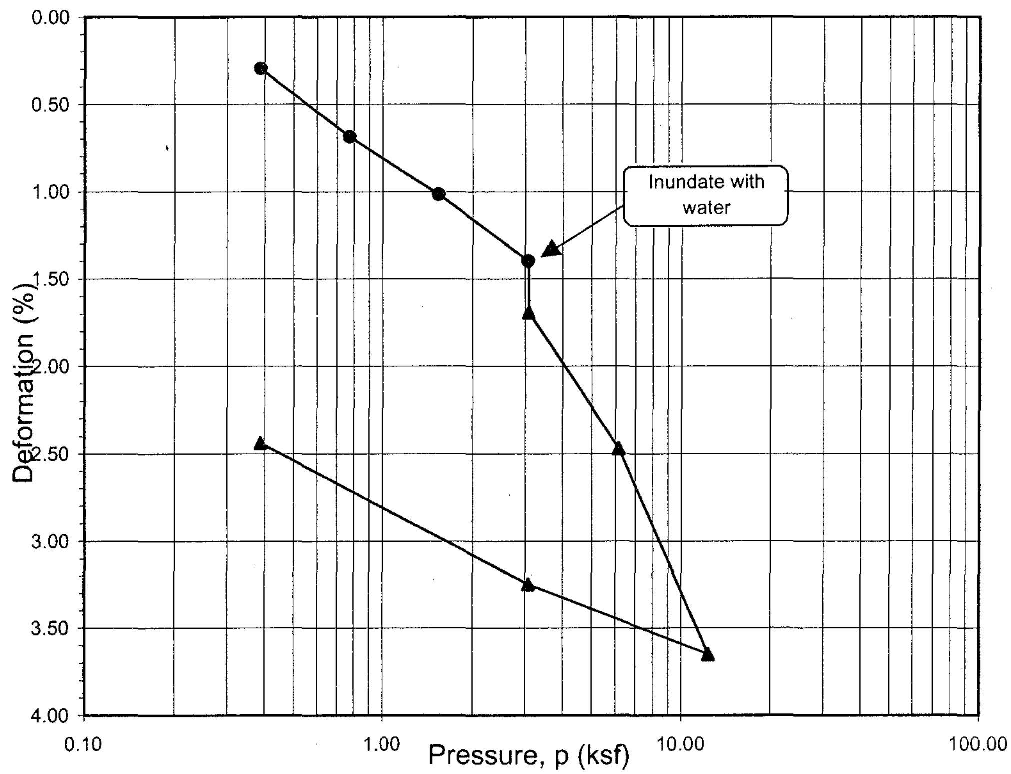
ATTERBERG LIMITS, PARTICLE - SIZE CURVE
ASTM D 4318, D 422

Rev. 08-04

Time Readings @ 0 ksf







Boring No.	Sample No.:	Depth (ft.)	Moisture Content (%)		Dry Density (pcf)		Void Ratio		Degree of Saturation (%)	
			Initial	Final	Initial	Final	Initial	Final	Initial	Final
B-1	**R2**	**15**	**12.3**	**12.7**	**127.2**	**130.4**	**0.325**	**0.293**	**102**	**118**

Sample Description:

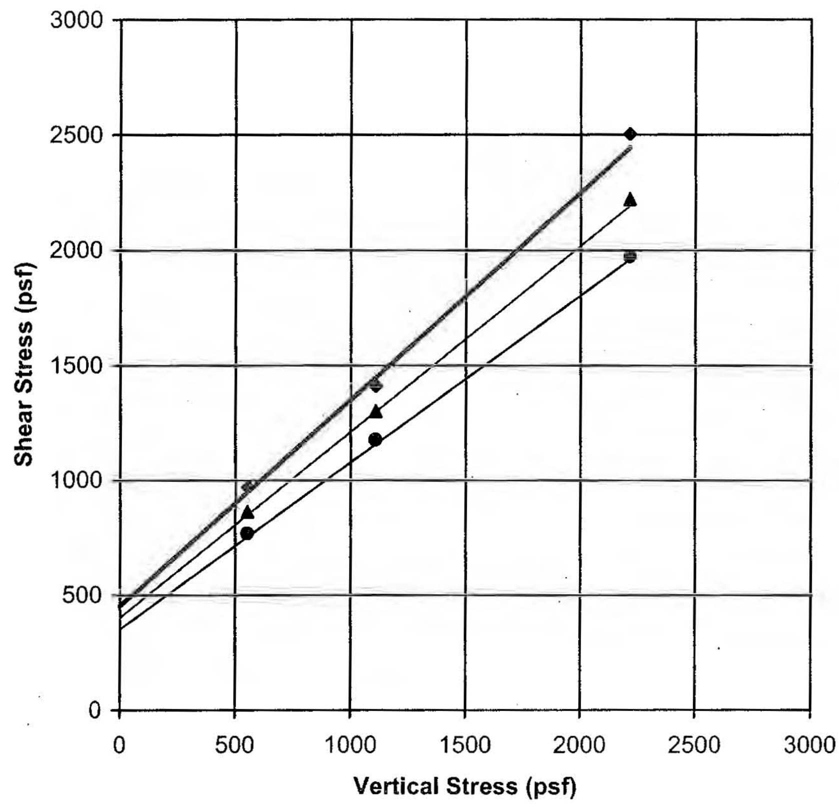
SM: REDDISH-BROWN SILTY SAND

Leighton

Project No.:	600594-001
Project Name:	NIGHTINGALE ASSISTED LIVING

ONE - DIMENSIONAL CONSOLIDATION PROPERTIES of SOILS
ASTM D 2435

Rev. 08-04



Boring Location	B-1	Deformation Rate	0.01 in/min
Sample Depth (feet)	6		

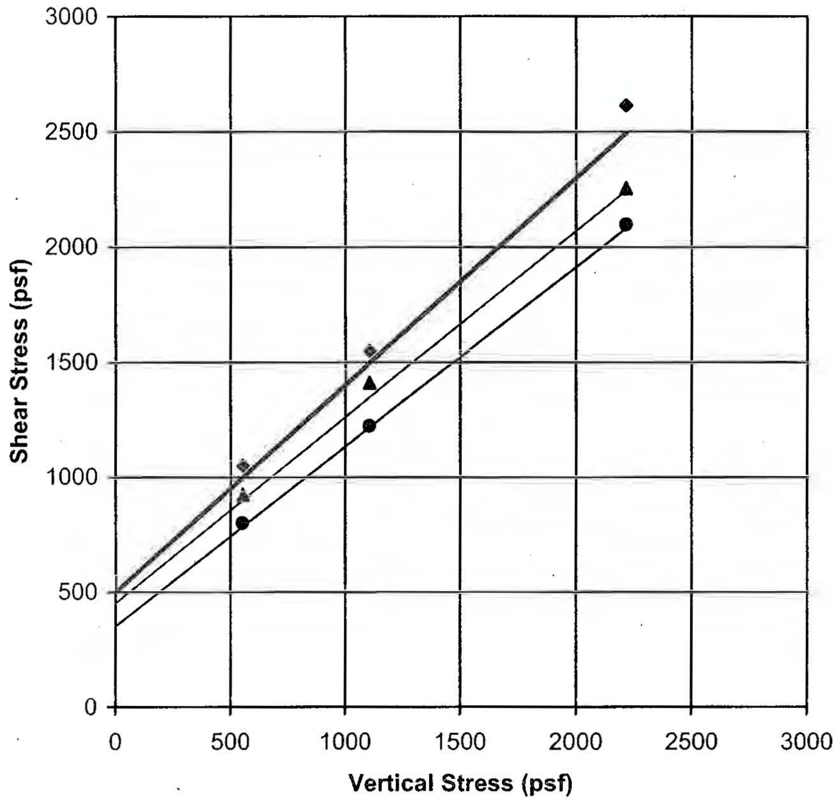
Linear Strength Envelope

Peak	Friction Angle, ϕ'_{peak} (deg)	42	**Relaxed**	Friction Angle, $\phi'_{relaxed}$ (deg)	36
	Cohesion, c'_{peak} (psf)	450		Cohesion, $c'_{relaxed}$ (psf)	350
@ 0.2 in	Friction Angle, $\phi'_{@0.2"}$ (deg)	39			
	Cohesion, $c'_{@0.2"}$ (psf)	400			

DIRECT SHEAR SUMMARY

Project No. 600594-001
Project Name Nightingale Assisted Living

Leighton



Boring Location	B-3	Deformation Rate	0.01 in/min
Sample Depth (feet)	5		

Linear Strength Envelope

Peak	Friction Angle, ϕ'_{peak} (deg)	42	**Relaxed**	Friction Angle, $\phi'_{relaxed}$ (deg)	38
	Cohesion, c'_{peak} (psf)	500		Cohesion, $c'_{relaxed}$ (psf)	350
@ 0.2 in	Friction Angle, $\phi'_{@0.2"}$ (deg)	39			
	Cohesion, $c'_{@0.2"}$ (psf)	450			

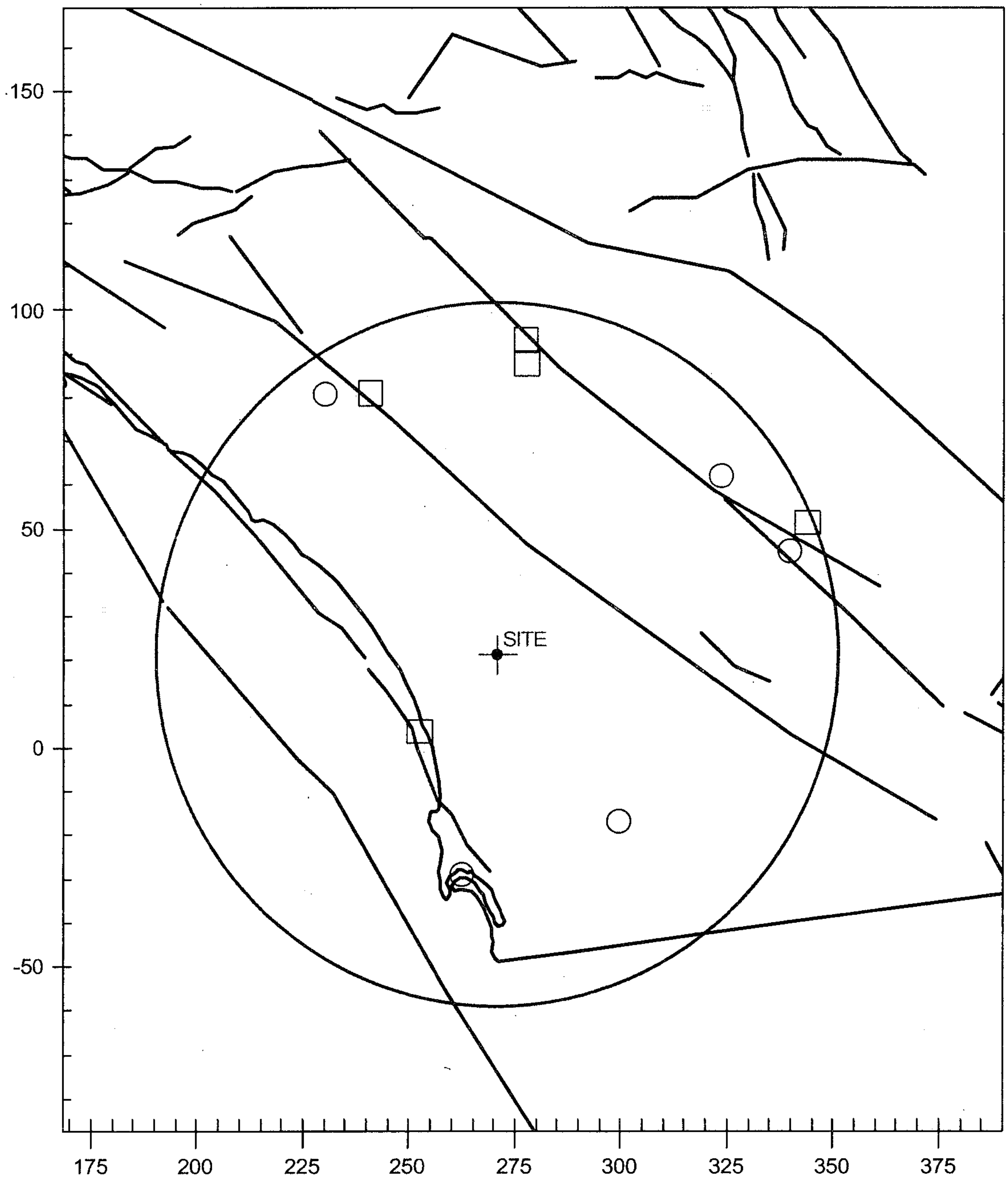
DIRECT SHEAR SUMMARY

Project No. 600594-001
Project Name Nightingale Assisted Living

Leighton

EARTHQUAKE EPICENTER MAP

Nightengale Assisted Living Project



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ESTIMATION OF
PEAK ACCELERATION FROM
CALIFORNIA EARTHQUAKE CATALOGS

JOB NUMBER: 600594-001

DATE: 09-14-2004

JOB NAME: Nightengale Assisted Living Project

EARTHQUAKE-CATALOG-FILE NAME: ALLQUAKE.DAT

MAGNITUDE RANGE:
MINIMUM MAGNITUDE: 5.50
MAXIMUM MAGNITUDE: 9.00

SITE COORDINATES:
SITE LATITUDE: 33.1511
SITE LONGITUDE: 117.0953

SEARCH DATES:
START DATE: 1800
END DATE: 2004

SEARCH RADIUS:
50.0 mi
80.5 km

ATTENUATION RELATION: 22) Abrahamson & Silva (1995b/1997) Horiz.- Rock
UNCERTAINTY (M=Median, S=Sigma): M Number of Sigmas: 0.0
ASSUMED SOURCE TYPE: SS [SS=Strike-slip, DS=Reverse-slip, BT=Blind-thrust]
SCOND: 1 Depth Source: A
Basement Depth: 5.00 km Campbell SSR: Campbell SHR:
COMPUTE PEAK HORIZONTAL ACCELERATION

MINIMUM DEPTH VALUE (km): 0.0

EARTHQUAKE SEARCH RESULTS

Page 1

FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	33.0000	117.3000	11/22/1800	2130 0.0	0.0	6.50	0.129	VIII	15.8(25.4)
DMG	32.8000	116.8000	10/23/1894	23 3 0.0	0.0	5.70	0.027	V	29.7(47.7)
DMG	32.7000	117.2000	05/27/1862	20 0 0.0	0.0	5.90	0.031	V	31.7(51.1)
PAS	33.5010	116.5130	02/25/1980	104738.5	13.6	5.50	0.014	IV	41.4(66.6)
DMG	33.7500	117.0000	04/21/1918	223225.0	0.0	6.80	0.052	VI	41.7(67.1)
DMG	33.7000	117.4000	05/15/1910	1547 0.0	0.0	6.00	0.025	V	41.8(67.2)
DMG	33.6990	117.5110	05/31/1938	83455.4	10.0	5.50	0.013	III	44.8(72.1)
DMG	33.8000	117.0000	12/25/1899	1225 0.0	0.0	6.40	0.038	V	45.1(72.6)
DMG	33.3430	116.3460	04/28/1969	232042.9	20.0	5.80	0.018	IV	45.2(72.8)
DMG	33.4000	116.3000	02/09/1890	12 6 0.0	0.0	6.30	0.031	V	49.0(78.9)

****

-END OF SEARCH- 10 EARTHQUAKES FOUND WITHIN THE SPECIFIED SEARCH AREA.

TIME PERIOD OF SEARCH: 1800 TO 2004

LENGTH OF SEARCH TIME: 205 years

THE EARTHQUAKE CLOSEST TO THE SITE IS ABOUT 15.8 MILES (25.4 km) AWAY.

LARGEST EARTHQUAKE MAGNITUDE FOUND IN THE SEARCH RADIUS: 6.8

LARGEST EARTHQUAKE SITE ACCELERATION FROM THIS SEARCH: 0.129 g

COEFFICIENTS FOR GUTENBERG & RICHTER RECURRENCE RELATION:
-a-value= 0.770
b-value= 0.120
beta-value= 0.277

TABLE OF MAGNITUDES AND EXCEEDANCES:

Earthquake Magnitude	Number of Times Exceeded	Cumulative No. / Year
4.0	10	0.04902
4.5	10	0.04902
5.0	10	0.04902
5.5	10	0.04902
6.0	5	0.02451
6.5	2	0.00980

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*     Version 3.00      *
*                       *
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ESTIMATION OF
PEAK ACCELERATION FROM
CALIFORNIA EARTHQUAKE CATALOGS

JOB NUMBER: 600594-001

DATE: 09-14-2004

JOB NAME: Nightengale Assisted Living Project

EARTHQUAKE-CATALOG-FILE NAME: ALLQUAKE.DAT

MAGNITUDE RANGE:
   MINIMUM MAGNITUDE: 5.50
   MAXIMUM MAGNITUDE: 9.00

SITE COORDINATES:
   SITE LATITUDE: 33.1511
   SITE LONGITUDE: 117.0953

SEARCH DATES:
   START DATE: 1800
   END DATE: 2004

SEARCH RADIUS:
   50.0 mi
   80.5 km

ATTENUATION RELATION: 22) Abrahamson & Silva (1995b/1997) Horiz.- Rock
   UNCERTAINTY (M=Median, S=Sigma): S   Number of Sigmas: 1.0
   ASSUMED SOURCE TYPE: SS [SS=Strike-slip, DS=Reverse-slip, BT=Blind-thrust]
   SCOND: 1 Depth Source: A
   Basement Depth: 5.00 km   Campbell SSR: Campbell SHR:
   COMPUTE PEAK HORIZONTAL ACCELERATION

MINIMUM DEPTH VALUE (km): 0.0

EARTHQUAKE SEARCH RESULTS

Page 1

FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	33.0000	117.3000	11/22/1800	2130 0.0	0.0	6.50	0.212	VIII	15.8(25.4)
DMG	32.8000	116.8000	10/23/1894	23 3 0.0	0.0	5.70	0.049	VI	29.7(47.7)
DMG	32.7000	117.2000	05/27/1862	20 0 0.0	0.0	5.90	0.056	VI	31.7(51.1)
PAS	33.5010	116.5130	02/25/1980	104738.5	13.6	5.50	0.026	V	41.4(66.6)
DMG	33.7500	117.0000	04/21/1918	223225.0	0.0	6.80	0.083	VII	41.7(67.1)
DMG	33.7000	117.4000	05/15/1910	1547 0.0	0.0	6.00	0.045	VI	41.8(67.2)
DMG	33.6990	117.5110	05/31/1938	83455.4	10.0	5.50	0.024	IV	44.8(72.1)
DMG	33.8000	117.0000	12/25/1899	1225 0.0	0.0	6.40	0.063	VI	45.1(72.6)
DMG	33.3430	116.3460	04/28/1969	232042.9	20.0	5.80	0.033	V	45.2(72.8)
DMG	33.4000	116.3000	02/09/1890	12 6 0.0	0.0	6.30	0.052	VI	49.0(78.9)

****

-END OF SEARCH- 10 EARTHQUAKES FOUND WITHIN THE SPECIFIED SEARCH AREA.

TIME PERIOD OF SEARCH: 1800 TO 2004

LENGTH OF SEARCH TIME: 205 years

THE EARTHQUAKE CLOSEST TO THE SITE IS ABOUT 15.8 MILES (25.4 km) AWAY.

LARGEST EARTHQUAKE MAGNITUDE FOUND IN THE SEARCH RADIUS: 6.8

LARGEST EARTHQUAKE SITE ACCELERATION FROM THIS SEARCH: 0.212 g

COEFFICIENTS FOR GUTENBERG & RICHTER RECURRENCE RELATION:
-a-value= 0.770
b-value= 0.120
beta-value= 0.277

TABLE OF MAGNITUDES AND EXCEEDANCES:

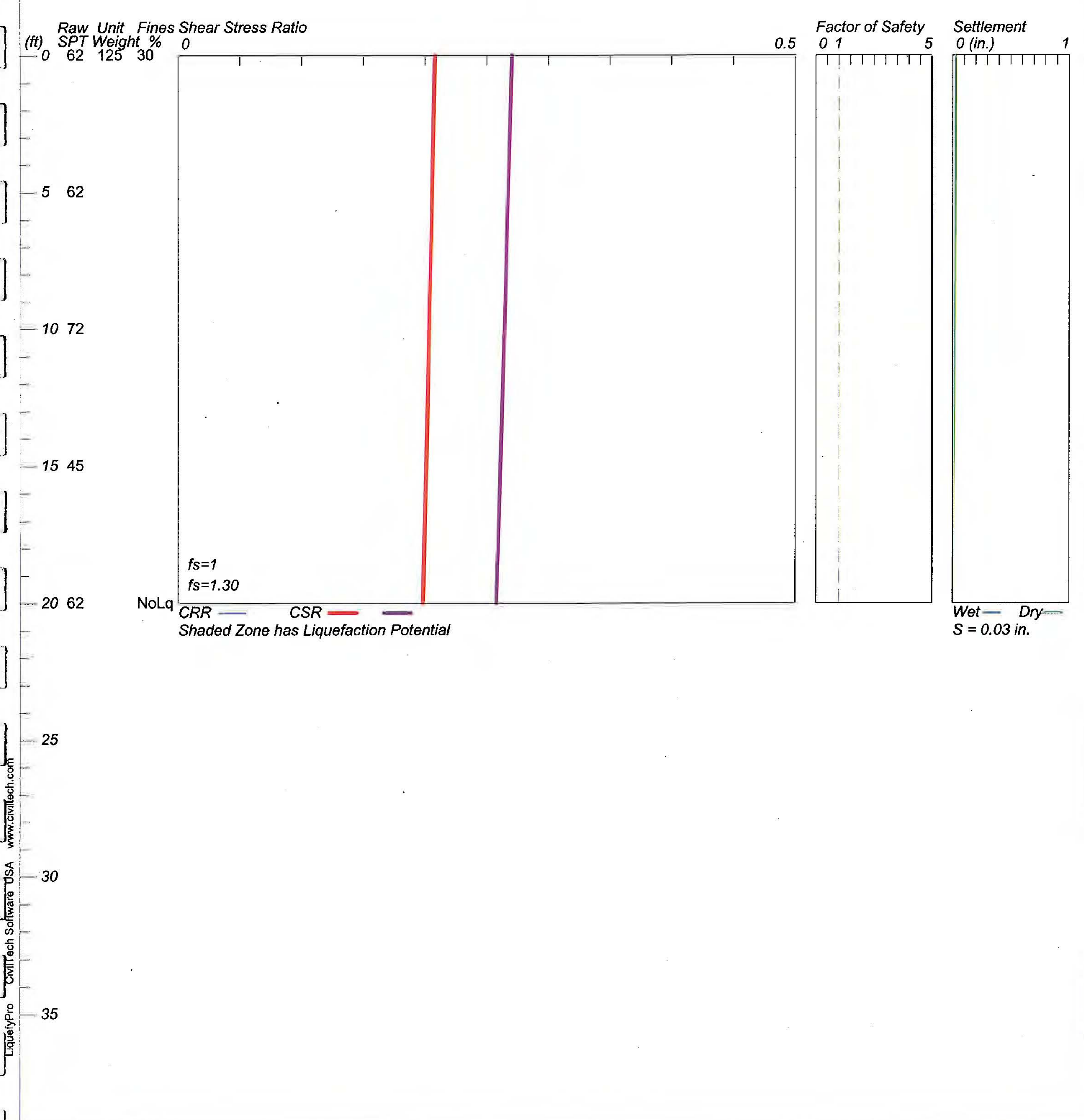
Earthquake Magnitude	Number of Times Exceeded	Cumulative No. / Year
4.0	10	0.04902
4.5	10	0.04902
5.0	10	0.04902
5.5	10	0.04902
6.0	5	0.02451
6.5	2	0.00980

LIQUEFACTION ANALYSIS

Nightingale Assisted Living

Hole No.=B-1 Water Depth=100 ft Surface Elev.=705

Magnitude=7.1
Acceleration=.32g



600594-001

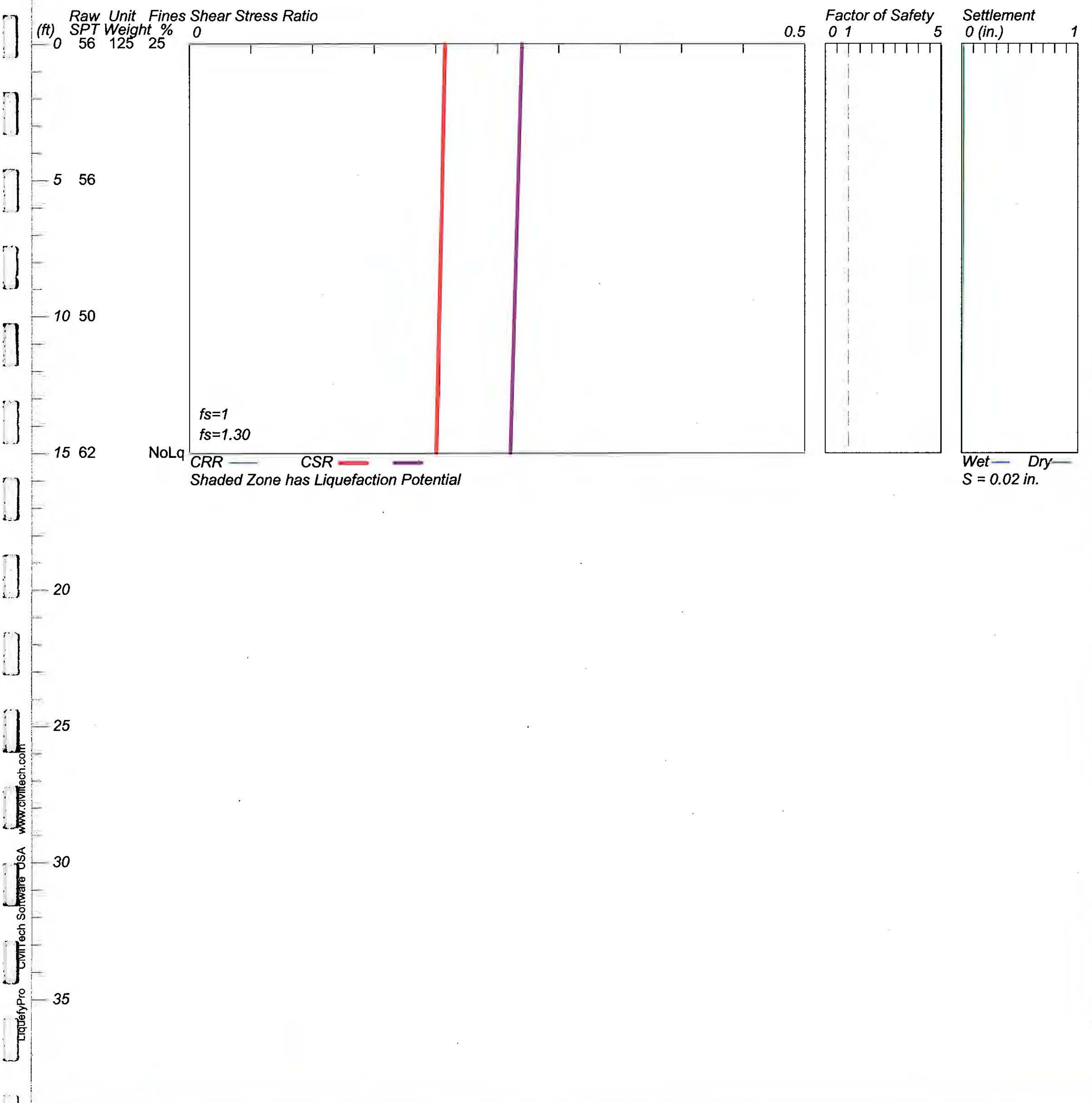
Leighton & Associates, Inc.

LIQUEFACTION ANALYSIS

Nightingale Assisted Living

Hole No.=B-2 Water Depth=100 ft Surface Elev.=705

Magnitude=7.1
Acceleration=.32g



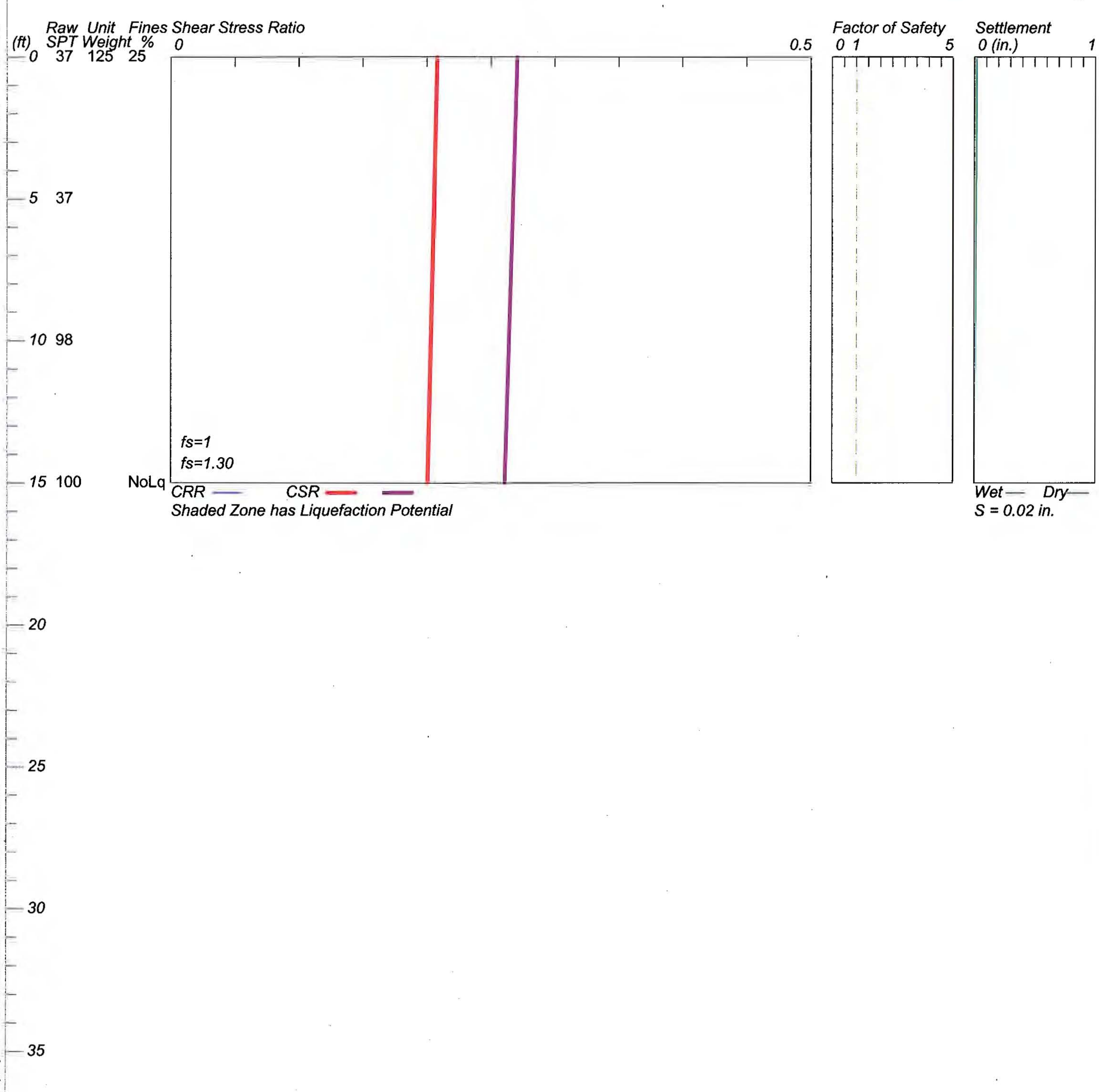
600594-001

Leighton & Associates, Inc.

LIQUEFACTION ANALYSIS
Nightingale Assisted Living

Hole No.=B-3 Water Depth=100 ft Surface Elev.=705

Magnitude=7.1
Acceleration=.32g



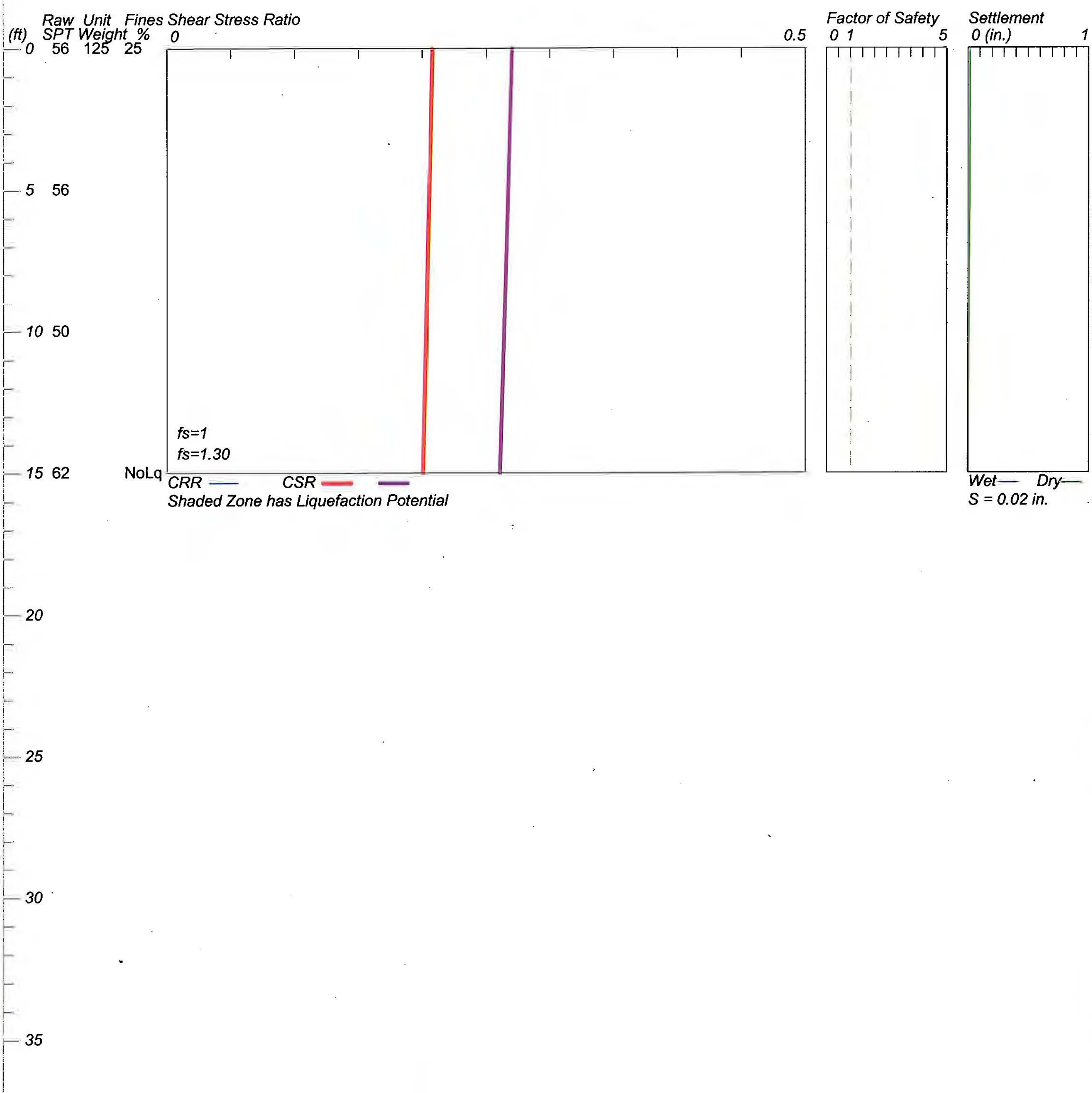
Leighton & Associates, Inc.

LIQUEFACTION ANALYSIS

Nightingale Assisted Living

Hole No.=B-5   Water Depth=100 ft   Surface Elev.=705

Magnitude=7.1
Acceleration=.32g



600594-001

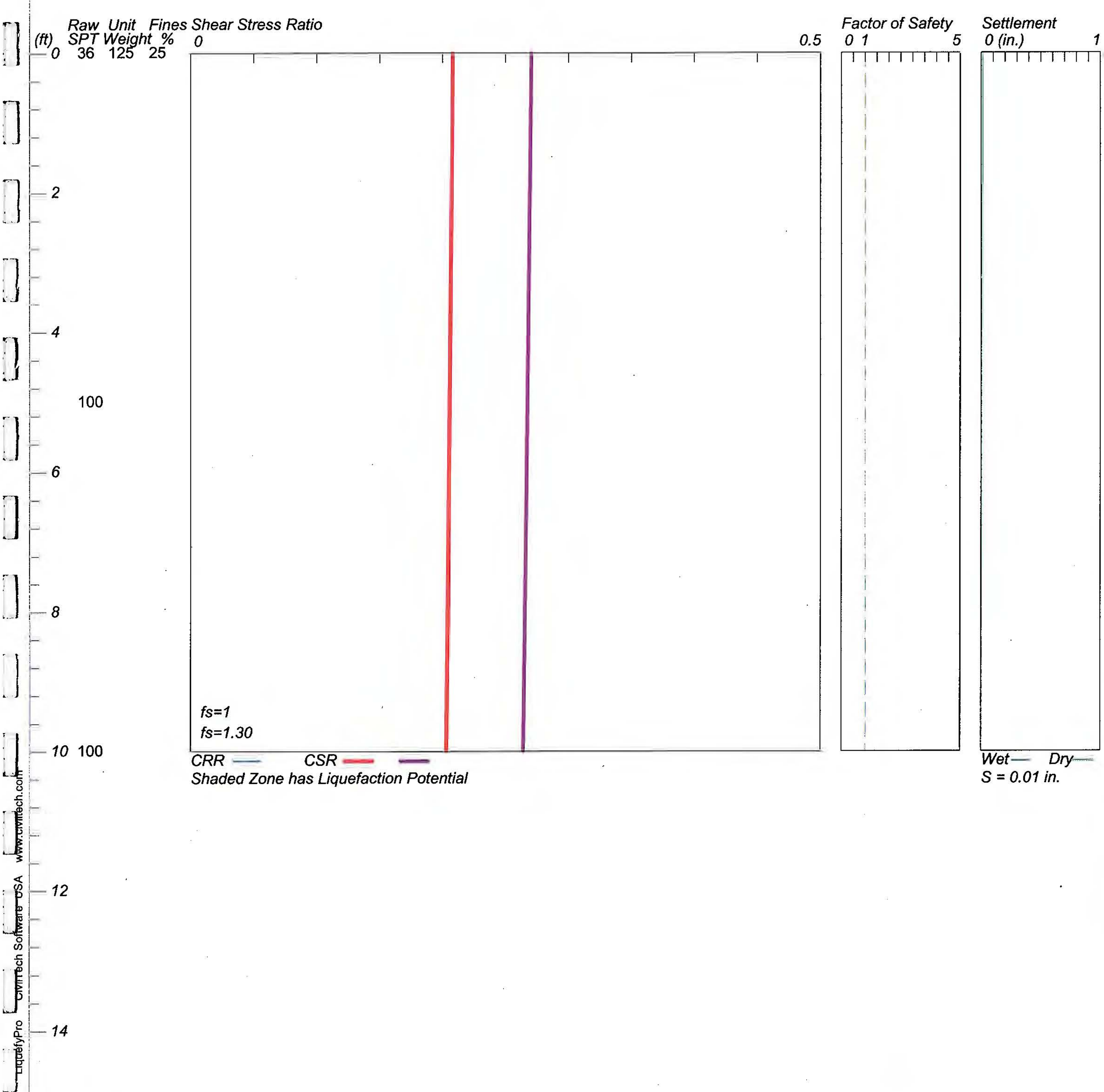
Leighton & Associates, Inc.

LIQUEFACTION ANALYSIS

Nightingale Assisted Living

Hole No.=B-6 Water Depth=100 ft Surface Elev.=705

Magnitude=7.1
Acceleration=.32g



600594-001

Leighton & Associates, Inc.

LEIGHTON CONSULTING, INC.

GENERAL EARTHWORK AND GRADING SPECIFICATIONS FOR ROUGH GRADING

1.0 General

1.1 Intent: These General Earthwork and Grading Specifications are for the grading and earthwork shown on the approved grading plan(s) and/or indicated in the geotechnical report(s). These Specifications are a part of the recommendations contained in the geotechnical report(s). In case of conflict, the specific recommendations in the geotechnical report shall supersede these more general Specifications. Observations of the earthwork by the project Geotechnical Consultant during the course of grading may result in new or revised recommendations that could supersede these specifications or the recommendations in the geotechnical report(s).

1.2 The Geotechnical Consultant of Record: Prior to commencement of work, the owner shall employ the Geotechnical Consultant of Record (Geotechnical Consultant). The Geotechnical Consultants shall be responsible for reviewing the approved geotechnical report(s) and accepting the adequacy of the preliminary geotechnical findings, conclusions, and recommendations prior to the commencement of the grading.

Prior to commencement of grading, the Geotechnical Consultant shall review the "work plan" prepared by the Earthwork Contractor (Contractor) and schedule sufficient personnel to perform the appropriate level of observation, mapping, and compaction testing.

During the grading and earthwork operations, the Geotechnical Consultant shall observe, map, and document the subsurface exposures to verify the geotechnical design assumptions. If the observed conditions are found to be significantly different than the interpreted assumptions during the design phase, the Geotechnical Consultant shall inform the owner, recommend appropriate changes in design to accommodate the observed conditions, and notify the review agency where required. Subsurface areas to be geotechnically observed, mapped, elevations recorded, and/or tested include natural ground after it has been cleared for receiving fill but before fill is placed, bottoms of all "remedial removal" areas, all key bottoms, and benches made on sloping ground to receive fill.

The Geotechnical Consultant shall observe the moisture-conditioning and processing of the subgrade and fill materials and perform relative compaction testing of fill to determine the attained level of compaction. The Geotechnical Consultant shall provide the test results to the owner and the Contractor on a routine and frequent basis.

1.3 The Earthwork Contractor: The Earthwork Contractor (Contractor) shall be qualified, experienced, and knowledgeable in earthwork logistics, preparation and processing of ground to receive fill, moisture-conditioning and processing of fill, and compacting fill. The Contractor shall review and accept the plans, geotechnical report(s), and these Specifications prior to commencement of grading. The Contractor shall be solely responsible for performing the grading in accordance with the plans and specifications. The Contractor shall prepare and submit to the owner and the Geotechnical Consultant a work plan that indicates the sequence of earthwork grading, the number of "spreads" of work and the estimated quantities of daily earthwork contemplated for the site prior to commencement of grading. The Contractor shall inform the owner and the Geotechnical Consultant of changes in work schedules and updates to the work plan at least 24 hours in advance of such changes so that appropriate observations and tests can be planned and accomplished. The Contractor shall not assume that the Geotechnical Consultant is aware of all grading operations.

The Contractor shall have the sole responsibility to provide adequate equipment and methods to accomplish the earthwork in accordance with the applicable grading codes and agency ordinances, these Specifications, and the recommendations in the approved geotechnical report(s) and grading plan(s). If, in the opinion of the Geotechnical Consultant, unsatisfactory conditions, such as unsuitable soil, improper moisture condition, inadequate compaction, insufficient buttress key size, adverse weather, etc., are resulting in a quality of work less than required in these specifications, the Geotechnical Consultant shall reject the work and may recommend to the owner that construction be stopped until the conditions are rectified.

2.0 Preparation of Areas to be Filled

2.1 Clearing and Grubbing: Vegetation, such as brush, grass, roots, and other deleterious material shall be sufficiently removed and properly disposed of in a method acceptable to the owner, governing agencies, and the Geotechnical Consultant.

The Geotechnical Consultant shall evaluate the extent of these removals depending on specific site conditions. Earth fill material shall not contain more than 1 percent of organic materials (by volume). No fill lift shall contain more than 5 percent of organic matter. Nesting of the organic materials shall not be allowed.

If potentially hazardous materials are encountered, the Contractor shall stop work in the affected area, and a hazardous material specialist shall be informed immediately for proper evaluation and handling of these materials prior to continuing to work in that area.

As presently defined by the State of California, most refined petroleum products (gasoline, diesel fuel, motor oil, grease, coolant, etc.) have chemical constituents that are considered to be hazardous waste. As such, the indiscriminate dumping or spillage of these fluids onto the ground may constitute a misdemeanor, punishable by fines and/or imprisonment, and shall not be allowed.

2.2 Processing: Existing ground that has been declared satisfactory for support of fill by the Geotechnical Consultant shall be scarified to a minimum depth of 6 inches. Existing ground that is not satisfactory shall be overexcavated as specified in the following section. Scarification shall continue until soils are broken down and free of large clay lumps or clods and the working surface is reasonably uniform, flat, and free of uneven features that would inhibit uniform compaction.

2.3 Overexcavation: In addition to removals and overexcavations recommended in the approved geotechnical report(s) and the grading plan, soft, loose, dry, saturated, spongy, organic-rich, highly fractured or otherwise unsuitable ground shall be overexcavated to competent ground as evaluated by the Geotechnical Consultant during grading.

2.4 Benching: Where fills are to be placed on ground with slopes steeper than 5:1 (horizontal to vertical units), the ground shall be stepped or benched. Please see the Standard Details for a graphic illustration. The lowest bench or key shall be a minimum of 15 feet wide and at least 2 feet deep, into competent material as evaluated by the Geotechnical Consultant. Other benches shall be excavated a minimum height of 4 feet into competent material or as otherwise recommended by the Geotechnical Consultant. Fill placed on ground sloping flatter than 5:1 shall also be benched or otherwise overexcavated to provide a flat subgrade for the fill.

2.5 Evaluation/Acceptance of Fill Areas: All areas to receive fill, including removal and processed areas, key bottoms, and benches, shall be observed, mapped, elevations recorded, and/or tested prior to being accepted by the Geotechnical Consultant as suitable to receive fill. The Contractor shall obtain a written acceptance from the Geotechnical Consultant prior to fill placement. A licensed surveyor shall provide the survey control for determining elevations of processed areas, keys, and benches.

3.0 Fill Material

3.1 General: Material to be used as fill shall be essentially free of organic matter and other deleterious substances evaluated and accepted by the Geotechnical Consultant prior to placement. Soils of poor quality, such as those with unacceptable gradation, high expansion potential, or low strength shall be placed in areas acceptable to the Geotechnical Consultant or mixed with other soils to achieve satisfactory fill material.

3.2 Oversize: Oversize material defined as rock, or other irreducible material with a maximum dimension greater than 8 inches, shall not be buried or placed in fill unless location, materials, and placement methods are specifically accepted by the Geotechnical Consultant. Placement operations shall be such that nesting of oversized material does not occur and such that oversize material is completely surrounded by compacted or densified fill. Oversize material shall not be placed within 10 vertical feet of finish grade or within 2 feet of future utilities or underground construction.

3.3 Import: If importing of fill material is required for grading, proposed import material shall meet the requirements of Section 3.1. The potential import source shall be given to the Geotechnical Consultant at least 48 hours (2 working days) before importing begins so that its suitability can be determined and appropriate tests performed.

4.0 Fill Placement and Compaction

4.1 Fill Layers: Approved fill material shall be placed in areas prepared to receive fill (per Section 3.0) in near-horizontal layers not exceeding 8 inches in loose thickness. The Geotechnical Consultant may accept thicker layers if testing indicates the grading procedures can adequately compact the thicker layers. Each layer shall be spread evenly and mixed thoroughly to attain relative uniformity of material and moisture throughout.

4.2 Fill Moisture Conditioning: Fill soils shall be watered, dried back, blended, and/or mixed, as necessary to attain a relatively uniform moisture content at or slightly over optimum. Maximum density and optimum soil moisture content tests shall be performed in accordance with the American Society of Testing and Materials (ASTM Test Method D1557-91).

4.3 Compaction of Fill: After each layer has been moisture-conditioned, mixed, and evenly spread, it shall be uniformly compacted to not less than 90 percent of maximum dry density (ASTM Test Method D1557-91). Compaction equipment shall be adequately sized and be either specifically designed for soil compaction or of proven reliability to efficiently achieve the specified level of compaction with uniformity.

4.4 Compaction of Fill Slopes: In addition to normal compaction procedures specified above, compaction of slopes shall be accomplished by backrolling of slopes with sheepsfoot rollers at increments of 3 to 4 feet in fill elevation, or by other methods producing satisfactory results acceptable to the Geotechnical Consultant. Upon completion of grading, relative compaction of the fill, out to the slope face, shall be at least 90 percent of maximum density per ASTM Test Method D1557-91.

4.5 Compaction Testing: Field tests for moisture content and relative compaction of the fill soils shall be performed by the Geotechnical Consultant. Location and frequency of tests shall be at the Consultant's discretion based on field conditions encountered. Compaction test locations will not necessarily be selected on a random basis. Test locations shall be selected to verify adequacy of compaction levels in areas that are judged to be prone to inadequate compaction (such as close to slope faces and at the fill/bedrock benches).

4.6 Frequency of Compaction Testing: Tests shall be taken at intervals not exceeding 2 feet in vertical rise and/or 1,000 cubic yards of compacted fill soils embankment. In addition, as a guideline, at least one test shall be taken on slope faces for each 5,000 square feet of slope face and/or each 10 feet of vertical height of slope. The Contractor shall assure that fill construction is such that the testing schedule can be accomplished by the Geotechnical Consultant. The Contractor shall stop or slow down the earthwork construction if these minimum standards are not met.

4.7 Compaction Test Locations: The Geotechnical Consultant shall document the approximate elevation and horizontal coordinates of each test location. The Contractor shall coordinate with the project surveyor to assure that sufficient grade stakes are established so that the Geotechnical Consultant can determine the test locations with sufficient accuracy. At a minimum, two grade stakes within a horizontal distance of 100 feet and vertically less than 5 feet apart from potential test locations shall be provided.

5.0 Subdrain Installation

Subdrain systems shall be installed in accordance with the approved geotechnical report(s), the grading plan, and the Standard Details. The Geotechnical Consultant may recommend additional subdrains and/or changes in subdrain extent, location, grade, or material depending on conditions encountered during grading. All subdrains shall be surveyed by a land surveyor/civil engineer for line and grade after installation and prior to burial. Sufficient time should be allowed by the Contractor for these surveys.

6.0 Excavation

Excavations, as well as over-excavation for remedial purposes, shall be evaluated by the Geotechnical Consultant during grading. Remedial removal depths shown on geotechnical plans are estimates only. The actual extent of removal shall be determined by the Geotechnical Consultant based on the field evaluation of exposed conditions during grading. Where fill-over-cut slopes are to be graded, the cut portion of the slope shall be made, evaluated, and accepted by the Geotechnical Consultant prior to placement of materials for construction of the fill portion of the slope, unless otherwise recommended by the Geotechnical Consultant.

7.0 Trench Backfills

7.1 The Contractor shall follow all OHSA and Cal/OSHA requirements for safety of trench excavations.

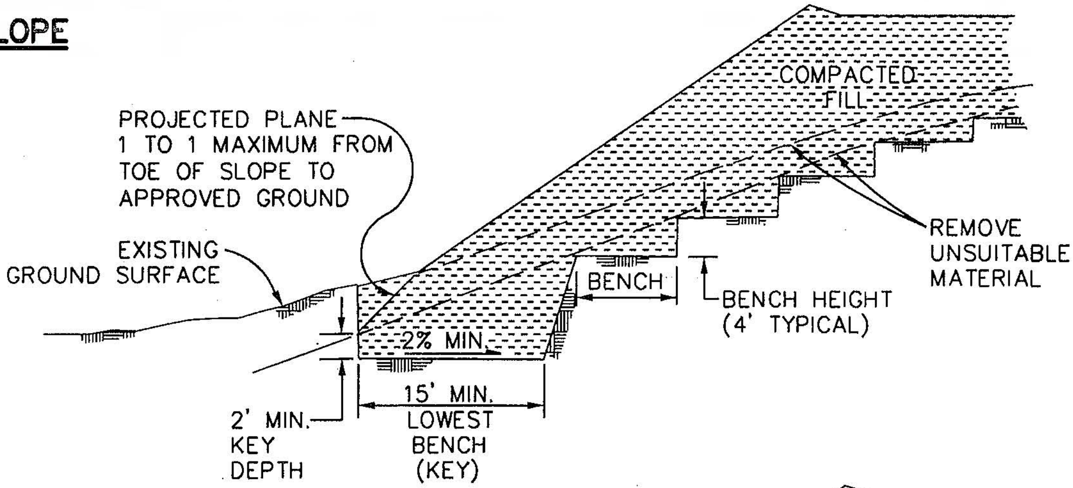
7.2 All bedding and backfill of utility trenches shall be done in accordance with the applicable provisions of Standard Specifications of Public Works Construction. Bedding material shall have a Sand Equivalent greater than 30 (SE>30). The bedding shall be placed to 1 foot over the top of the conduit and densified by jetting. Backfill shall be placed and densified to a minimum of 90 percent of maximum from 1 foot above the top of the conduit to the surface.

7.3 The jetting of the bedding around the conduits shall be observed by the Geotechnical Consultant.

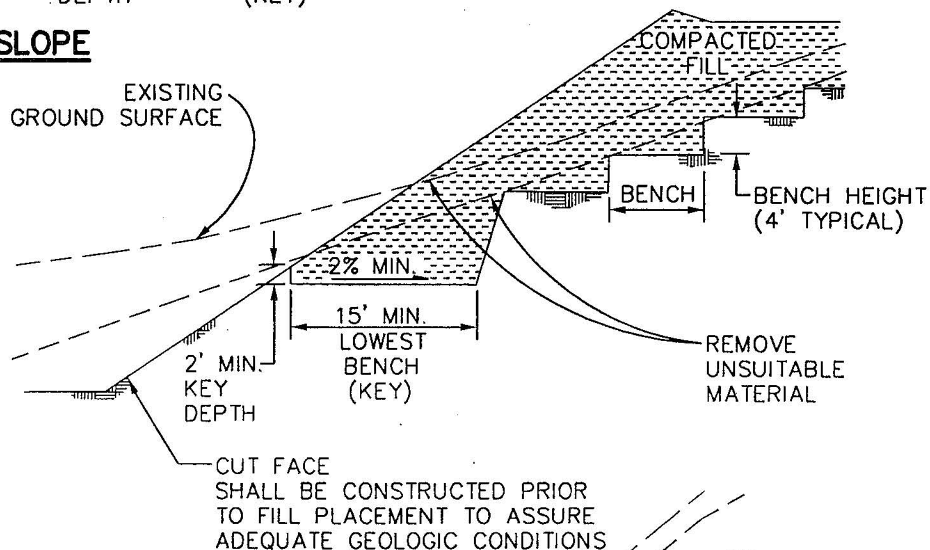
7.4 The Geotechnical Consultant shall test the trench backfill for relative compaction. At least one test should be made for every 300 feet of trench and 2 feet of fill.

7.5 Lift thickness of trench backfill shall not exceed those allowed in the Standard Specifications of Public Works Construction unless the Contractor can demonstrate to the Geotechnical Consultant that the fill lift can be compacted to the minimum relative compaction by his alternative equipment and method.

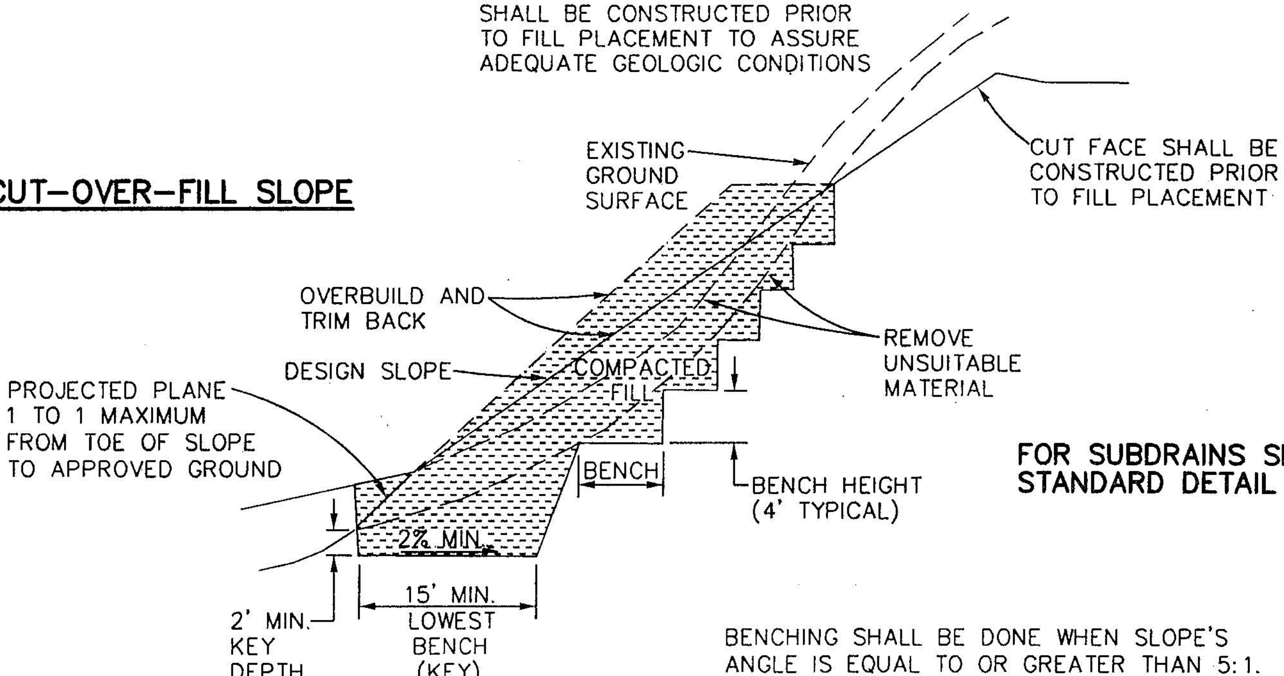
FILL SLOPE



FILL-OVER-CUT SLOPE



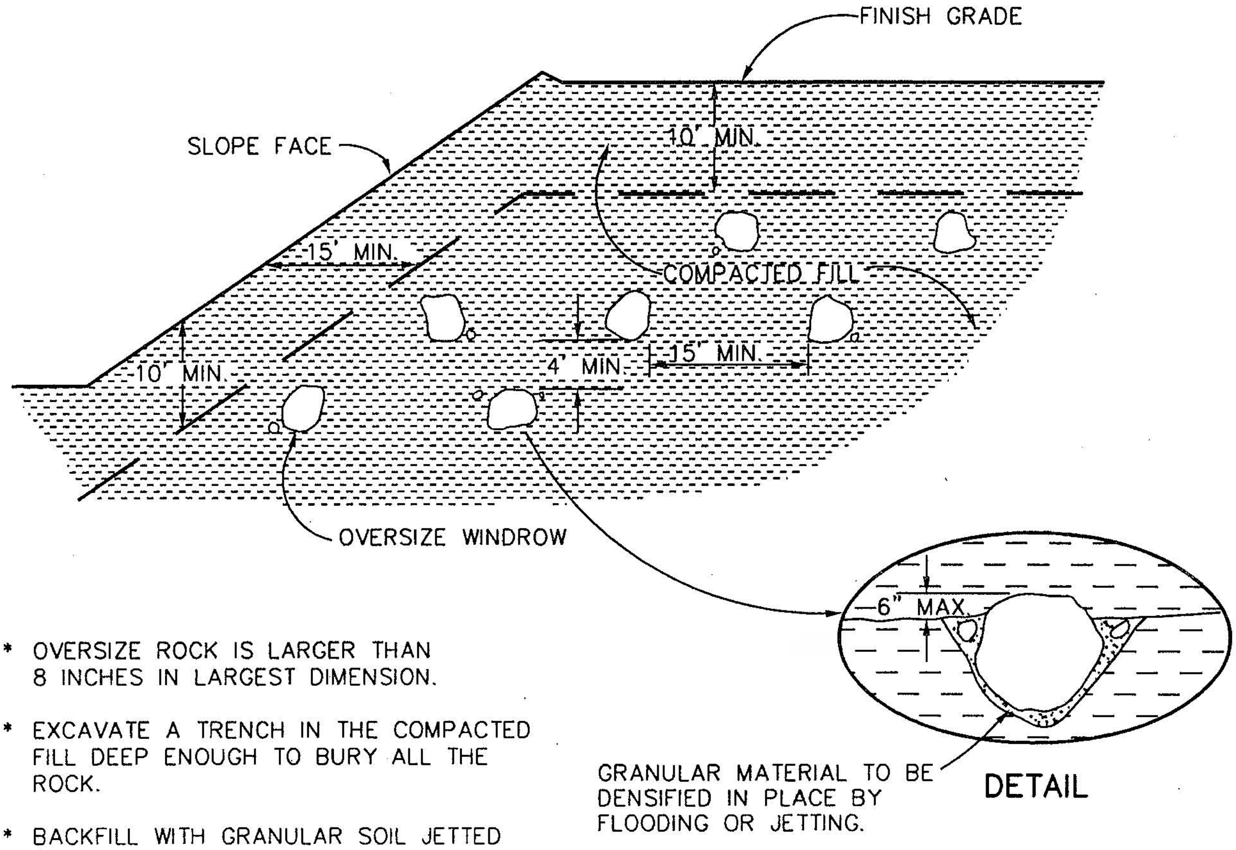
CUT-OVER-FILL SLOPE



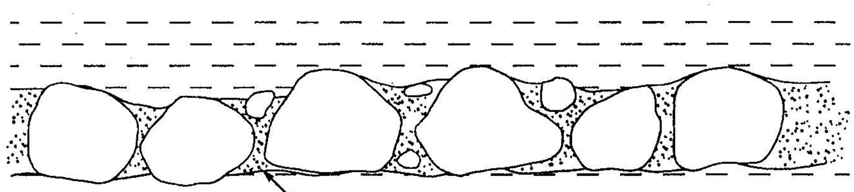
FOR SUBDRAINS SEE STANDARD DETAIL C

BENCHING SHALL BE DONE WHEN SLOPE'S ANGLE IS EQUAL TO OR GREATER THAN 5:1. MINIMUM BENCH HEIGHT SHALL BE 4 FEET AND MINIMUM FILL WIDTH SHALL BE 9 FEET.

KEYING AND BENCHING	GENERAL EARTHWORK AND GRADING SPECIFICATIONS STANDARD DETAILS A

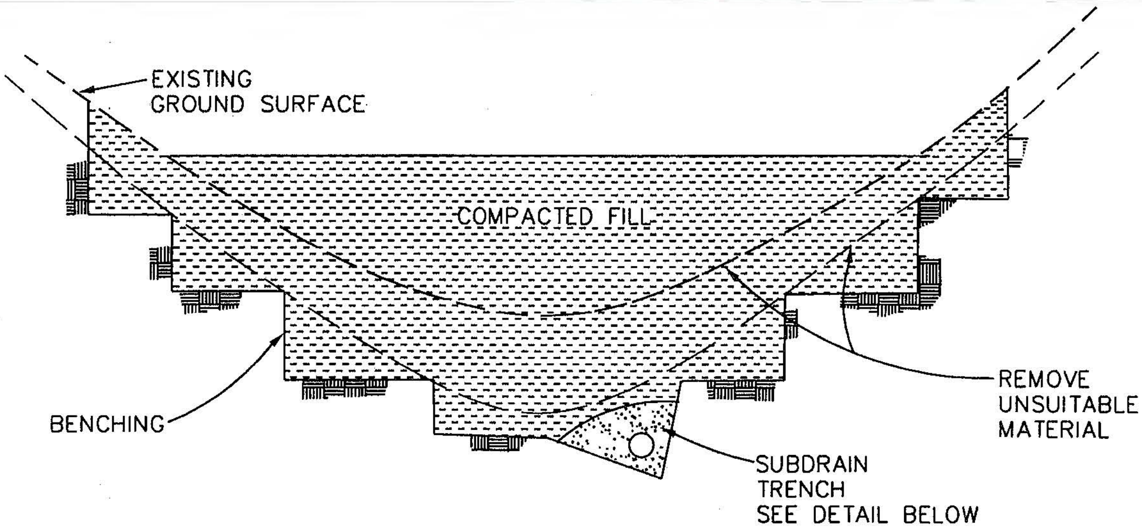


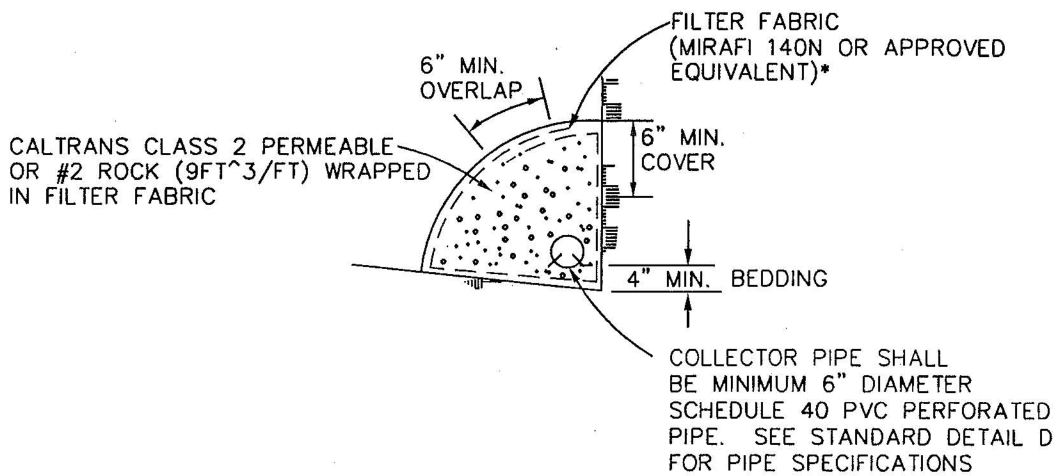
* OVERSIZE ROCK IS LARGER THAN 8 INCHES IN LARGEST DIMENSION.
* EXCAVATE A TRENCH IN THE COMPACTED FILL DEEP ENOUGH TO BURY ALL THE ROCK.
* BACKFILL WITH GRANULAR SOIL JETTED OR FLOODED IN PLACE TO FILL ALL THE VOIDS.
* DO NOT BURY ROCK WITHIN 10 FEET OF FINISH GRADE.
* WINDROW OF BURIED ROCK SHALL BE PARALLEL TO THE FINISHED SLOPE.



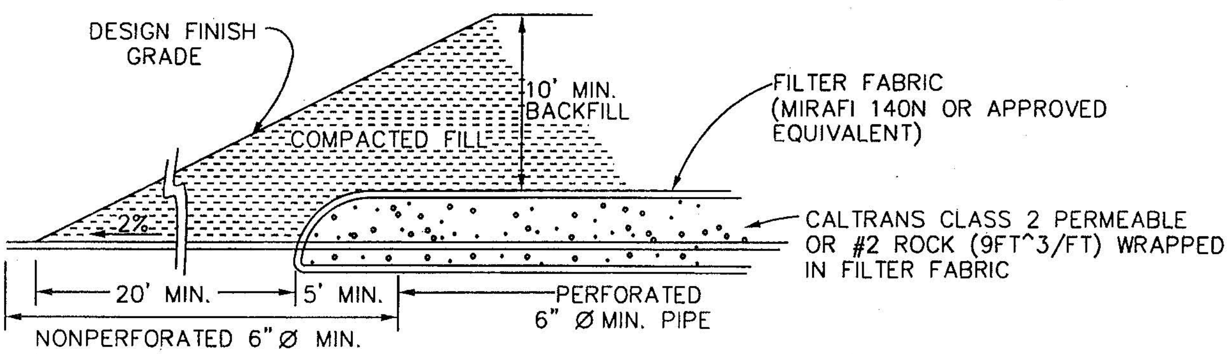
TYPICAL PROFILE ALONG WINDROW

OVERSIZE ROCK DISPOSAL	GENERAL EARTHWORK AND GRADING SPECIFICATIONS STANDARD DETAILS B



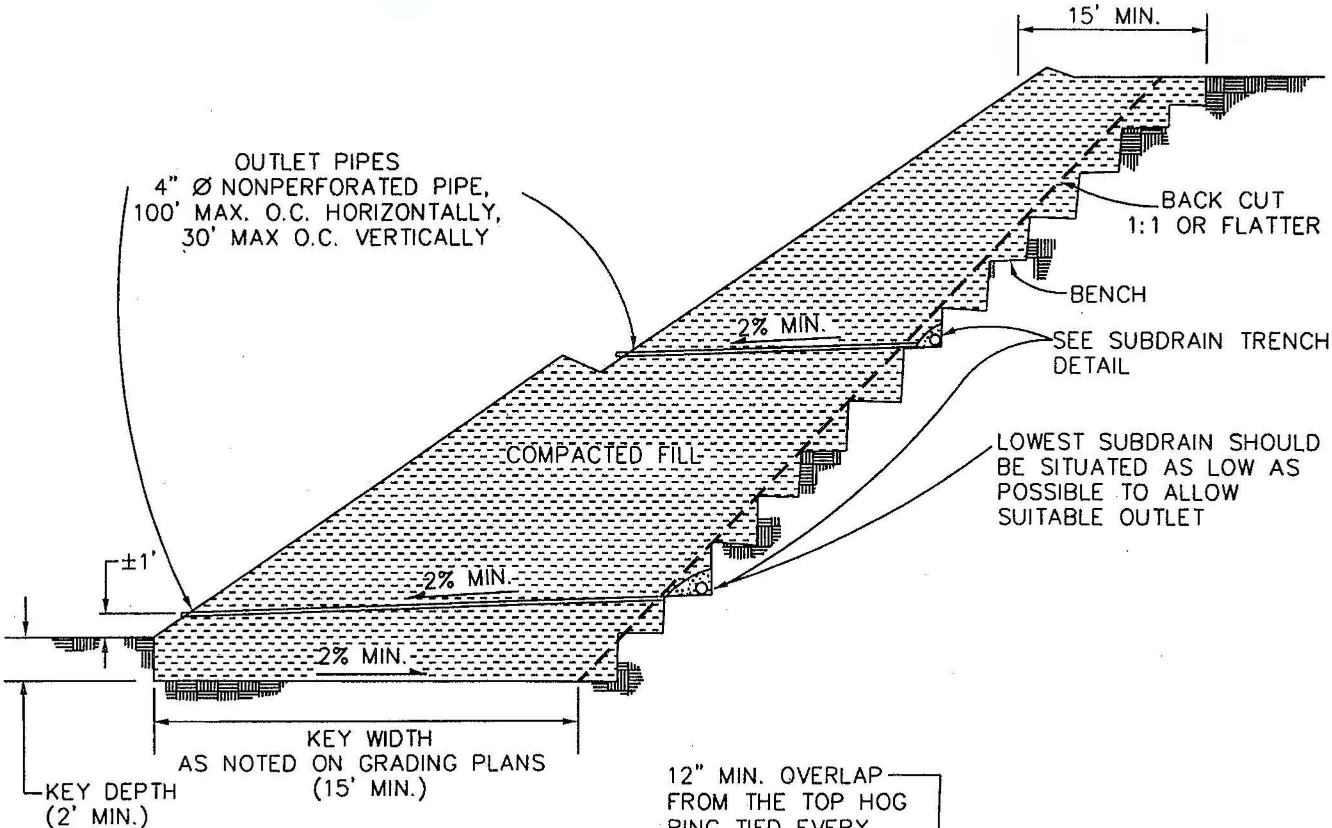


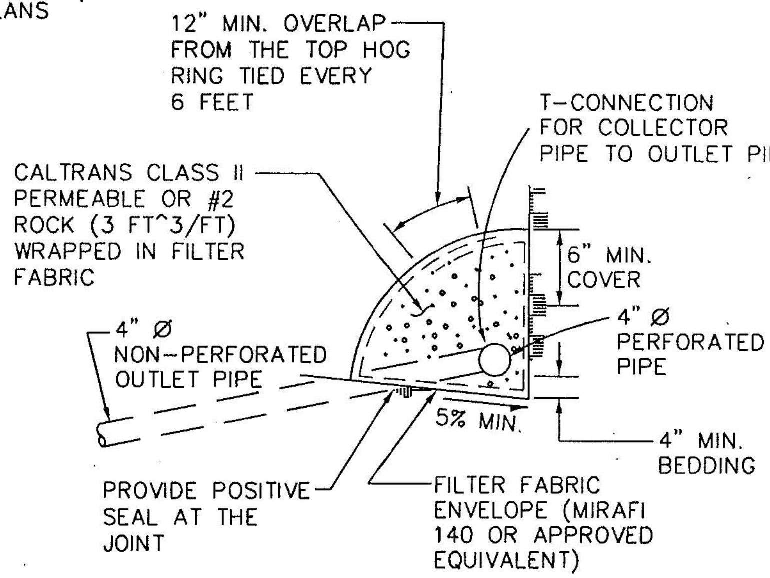
SUBDRAIN DETAIL



DETAIL OF CANYON SUBDRAIN OUTLET

CANYON SUBDRAINS	GENERAL EARTHWORK AND GRADING SPECIFICATIONS STANDARD DETAILS C





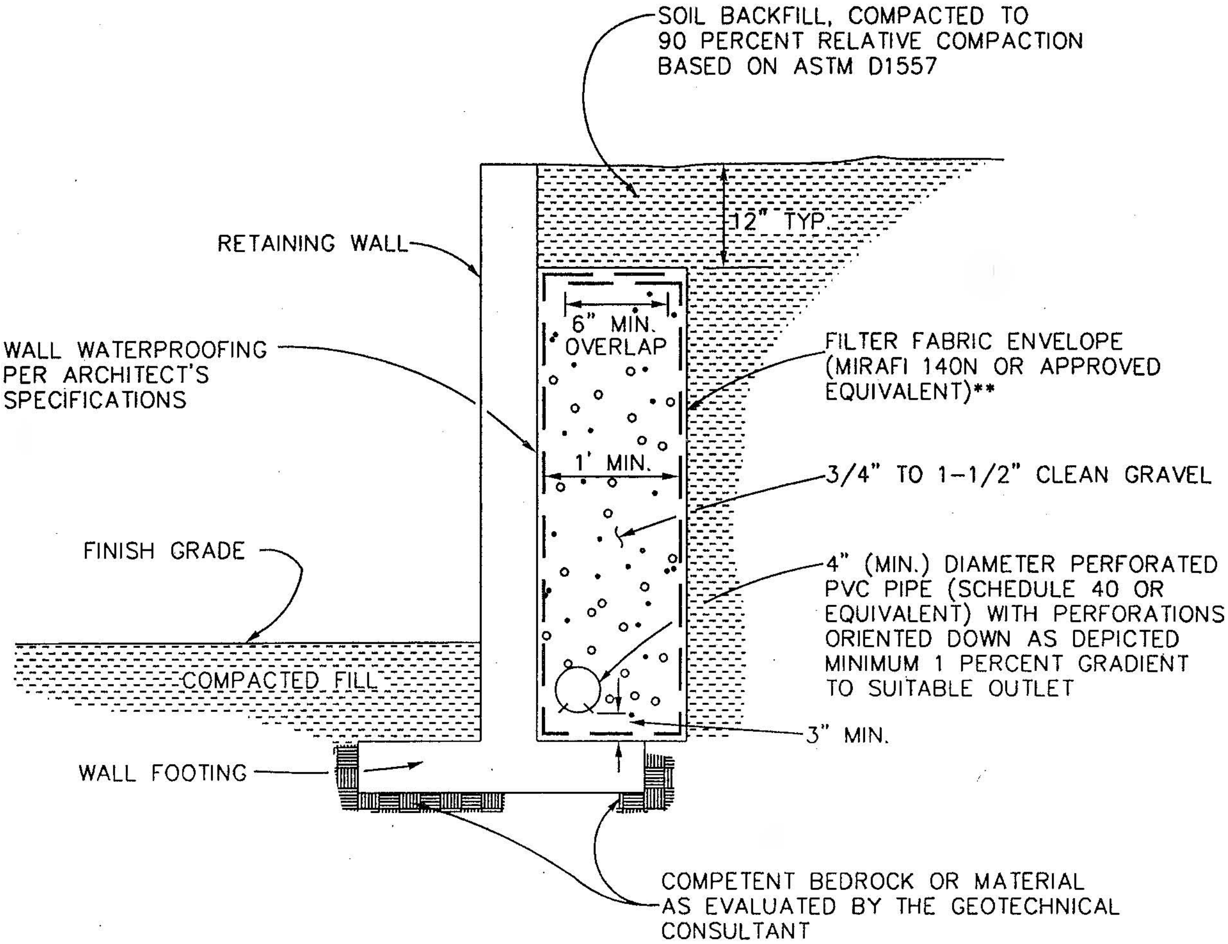
SUBDRAIN TRENCH DETAIL

SUBDRAIN INSTALLATION – subdrain collector pipe shall be installed with perforation down or, unless otherwise designated by the geotechnical consultant. Outlet pipes shall be non-perforated pipe. The subdrain pipe shall have at least 8 perforations uniformly spaced per foot. Perforation shall be 1/4" to 1/2" if drill holes are used. All subdrain pipes shall have a gradient of at least 2% towards the outlet.

SUBDRAIN PIPE – Subdrain pipe shall be ASTM D2751, SDR 23.5 or ASTM D1527, Schedule 40, or ASTM D3034, SDR 23.5, Schedule 40 Polyvinyl Chloride Plastic (PVC) pipe.

All outlet pipe shall be placed in a trench no wide than twice the subdrain pipe. Pipe shall be in soil of SE >/=30 jetted or flooded in place except for the outside 5 feet which shall be native soil backfill.

BUTTRESS OR REPLACEMENT FILL SUBDRAINS	**GENERAL EARTHWORK AND GRADING SPECIFICATIONS STANDARD DETAILS D**



NOTE: UPON REVIEW BY THE GEOTECHNICAL CONSULTANT, COMPOSITE DRAINAGE PRODUCTS SUCH AS MIRADRAIN OR J-DRAIN MAY BE USED AS AN ALTERNATIVE TO GRAVEL OR CLASS 2 PERMEABLE MATERIAL. INSTALLATION SHOULD BE PERFORMED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

RETAINING WALL DRAINAGE DETAIL

GENERAL EARTHWORK AND GRADING SPECIFICATIONS
STANDARD DETAILS E

19. LOS Engineering; Draft Transportation Impact Analysis - Escondido Assisted Living (96 Beds) City of Escondido (GPA); September 14, 2018 (revised)

Escondido Assisted Living (96 Beds)
City of Escondido (PHG17-0025)
1802 N. Centre City Parkway
Escondido, California

September 14, 2018

Draft Transportation Impact Analysis

Prepared for:
The Mitchell Group
127 Loma Santa Fe Dr
Solana Beach, CA 92075

Prepared by Justin Rasas (RCE 60690) a principal with:

LOS Engineering, Inc.
11622 El Camino Real, Suite 100, San Diego, CA 92130
Phone 619-890-1253

Job #1813

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Appendices

Executive Summary

The project is an Assisted Living residential community with 96 beds located at 1802 N. Centre City Parkway in Escondido, California. The site is generally vacant (APN 226-190-22). The project applicant is processing a Community Plan Amendment.

The project trip generation for the project was calculated using trip rates from the Institute of Transportation Engineers (ITE) 10^{th} Edition *Trip Generation*, September 2017. The project is calculated to generate 250 ADT with 19 AM peak hour trips (12 inbound and 7 outbound) and 25 PM peak hour trips (10 inbound and 15 outbound).

The following scenarios were analyzed: Existing, Existing plus Project, Existing + Cumulative, Existing + Cumulative + Project, Year 2035, and Year 2035 + Project Conditions. For each scenario, the findings include:

1) Under existing conditions, the study intersections and segments were calculated to operate at LOS D or better.
2) Under existing plus project conditions, the study intersections and segments were calculated to operate at LOS D or better. There are no significant direct impacts because the addition of project traffic does not exceed the significance thresholds.
3) Under existing plus cumulative conditions, the study intersections and segments were calculated to operate at LOS D or better.
4) Under existing plus cumulative plus project conditions, the study intersections and segments were calculated to operate at LOS D or better. There are no significant direct impacts because the addition of project traffic does not exceed the significance thresholds.
5) Under Year 2035 conditions, the study intersections and segments were calculated to operate at LOS D or better, except for:
    a. Intersection of Centre City Pkwy/Iris Ln (LOS F AM),
    b. Intersection of Center City Pkwy/El Norte Pkwy (LOS E AM & PM), and
    c. Segment of Iris Lane between Centre City Pkwy to El Norte Pkwy (LOS F).

6) Under Year 2035 plus project conditions, the study intersections and segments were calculated to operate at LOS D or better, except for:
    a. Intersection of Centre City Pkwy/Iris Ln (LOS F AM),
    b. Intersection of Center City Pkwy/El Norte Pkwy (LOS E AM & PM), and
    c. Segment of Iris Lane between Centre City Pkwy to El Norte Pkwy (LOS F).

   There are no significant horizon year impacts because the addition of project traffic does not exceed the significance thresholds.

The project has no calculated traffic impacts based on the significance criteria; therefore, mitigation measures are not required.

1.0 Introduction

The project is an Assisted Living residential community with 96 beds located at 1802 N. Centre City Parkway in Escondido, California. The site is generally vacant. The project is planned to open by the year 2020. The location of the project is shown in **Figure 1**. A site plan is shown in **Figure 2**.

The purpose of this study is to analyze how the proposed project traffic will affect the study roadways and intersections during weekday daily, AM peak hour and PM peak hour conditions when the project is completed. This report includes the following chapters:

1.0 Introduction
2.0 Study Methodology
3.0 Existing Conditions
4.0 Project Description
5.0 Existing plus Project Conditions
6.0 Cumulative Projects
7.0 Existing plus Cumulative Conditions
8.0 Existing plus Cumulative plus Project Conditions
9.0 Horizon Year Conditions
10.0 Horizon Year plus Project Conditions
11.0 Conclusion
12.0 References and List of Prepares

Figure 1: Project Location

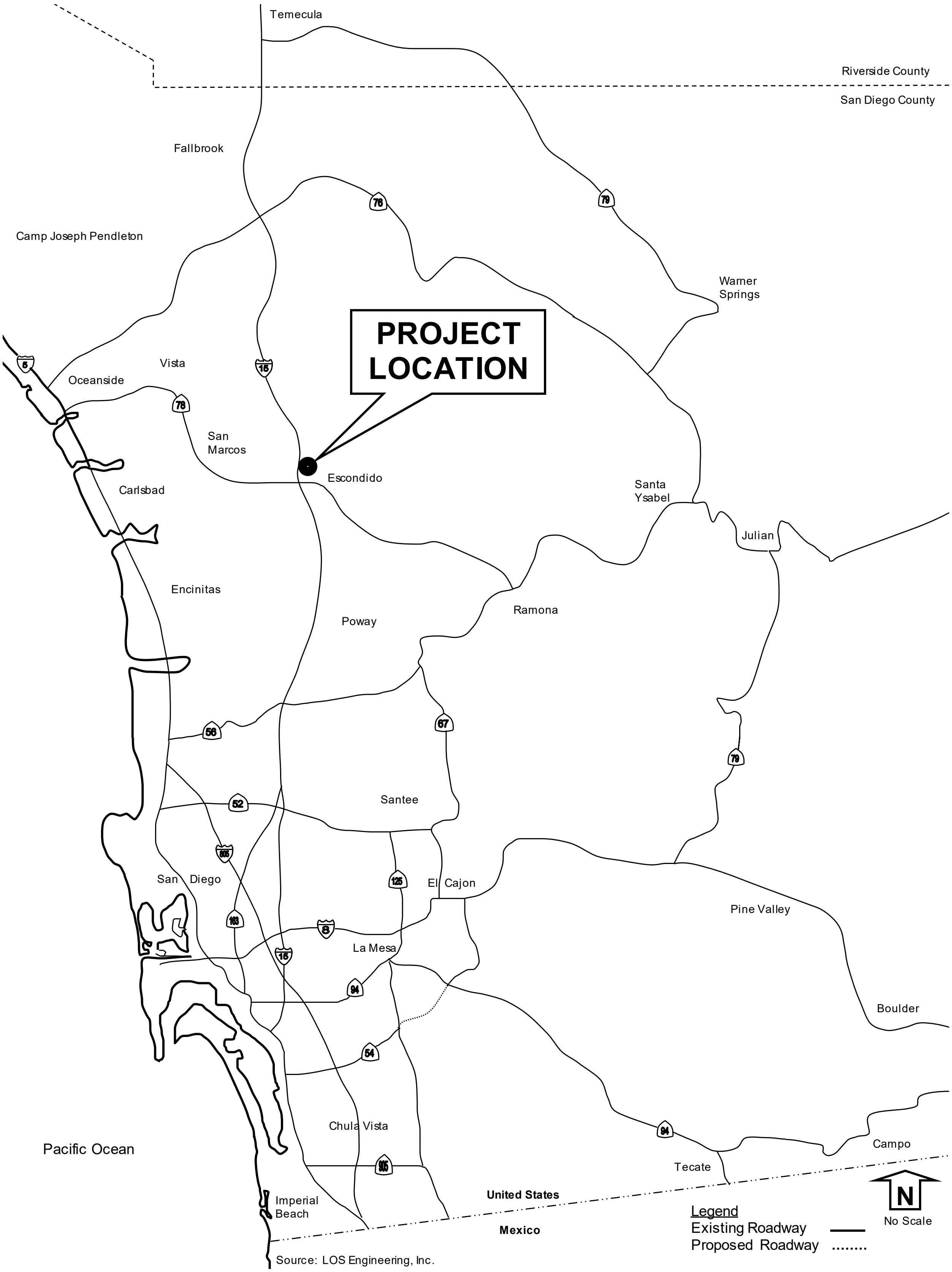
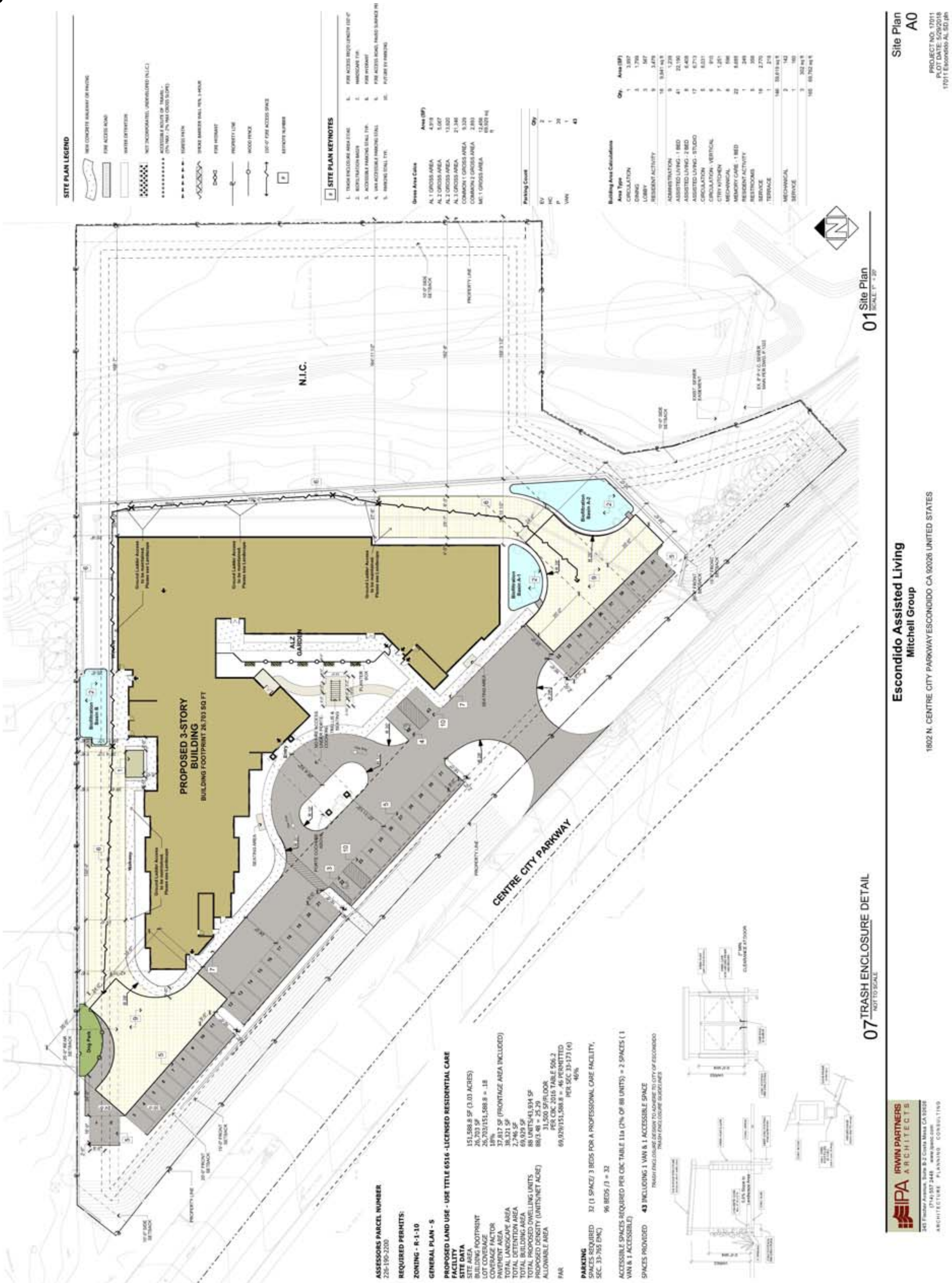


Figure 2: Site Plan



Source: Irwin Partners Architects

2.0 Study Methodology

The parameters by which this transportation impact analysis was prepared included the determination of what transportation facilities are to be analyzed, the scenarios to be analyzed and the methods required for analysis. The analysis is based on the *2010 Highway Capacity Manual* (HCM) operations analysis using Level of Service (LOS) evaluation criteria and the threshold for determining an impact is based on the city of Escondido traffic impact significance thresholds.

2.1 Study Area Criteria

The project study area is generally determined by the City of Escondido *Traffic Impact Analysis Guideline*, October 10, 2013 (copy included in **Appendix A**). The following intersections were included in this study based on coordination with City of Escondido staff:

1) Centre City Pkwy/Country Club Lane (signalized)
2) Centre City Pkwy/Iris Lane (signalized)
3) Centre City Pkwy/El Norte Pkwy (signalized)
4) Centre City Pkwy/Decatur Way (signalized)

The following street segments were also analyzed as part of this study:

1) Centre City Pkwy from Country Club Lane to Iris Lane
2) Centre City Pkwy from Iris Lane to El Norte Pkwy
3) Centre City Pkwy from El Norte Pkwy to Decatur Way
4) Centre City Pkwy from Decatur Way to SR-78
5) Iris from Country Club Ln to Centre City Pkwy
6) Iris from Centre City Pkwy to El Norte Pkwy
7) El Norte Pkwy from Iris Ln to Centre City Pkwy
8) El Norte Pkwy from Centre City Pkwy to Escondido Blvd

Traffic count data are included in **Appendix B.**

2.2 Scenario Criteria

The following study scenarios were based on coordination with City staff:

1) Existing Conditions
2) Existing plus Project Conditions
3) Existing plus Cumulative Conditions
4) Existing plus Cumulative plus Project Conditions
5) Year 2035 Conditions
6) Year 2035 plus Project Conditions

2.3 Traffic Analysis Criteria

The traffic analyses prepared for this study were based on the *2010 Highway Capacity Manual* (HCM) operations analysis using Level of Service (LOS) evaluation criteria. The operating conditions of the study intersections were measured using the HCM LOS designations, which ranges from A through F. LOS A represents the best operating condition and LOS F denotes the worst operating condition. For this traffic study, the intersections were analyzed using the City of Escondido criteria. The LOS criteria for each roadway component are described below.

2.3.1 Intersections

The study intersections were analyzed based on the **operational analysis** outlined in the 2010 HCM. This process defines LOS in terms of **average control delay** per vehicle, which is measured in seconds. LOS at the intersections were calculated using the computer software program Synchro 10 (Trafficware Corporation). The HCM LOS for the range of delay by seconds for un-signalized and signalized intersections is described in **Table 1**.

TABLE 1: INTERSECTION LEVEL OF SERVICE DEFINITIONS (HCM 2010)

Level of Service	Un-Signalized (TWSC and AWSC) Control Delay (seconds/vehicle)	Signalized Control Delay (seconds/vehicle)
A	0-10	≤ 10
B	> 10-15	> 10-20
C	> 15-25	> 20-35
D	> 25-35	> 35-55
E	> 35-50	> 55-80
F	> 50	> 80

TWSC: Two Way Stop Control. AWSC: All Way Stop Control. Source: Highway Capacity Manual 2010 (exhibit 19-1 for two way stop control, exhibit 20-2 for all way stop control, and exhibit 18-4 for signalized intersections).

2.3.2 Street Segments

The street segments were analyzed based on the functional classification of the roadway using the City of Escondido Street Segment Average Daily Vehicle Trip Thresholds table. The roadway segment capacity and LOS standards used to analyze street segments are summarized in **Table 2**.

TABLE 2: STREET SEGMENT DAILY CAPACITY AND LOS (CITY OF ESCONDIDO)

Circulation Element Road Classification	Cross Sections (ft)	LOS A	LOS B	LOS C	LOS D	LOS E
Prime Arterial – 8 Lanes	116/136 (NP)	23,800	37,800	51,800	62,300	70,000
Prime Arterial – 6 Lanes	106/126 (NP)	20,400	32,400	44,400	53,400	60,000
Major Road – 6 Lanes	90/110(NP)	17,000	27,000	37,000	44,500	50,000
Major Road – 4 Lanes	82/102 (NP)	12,600	20,000	27,400	32,900	37,000
Collector – 4 Lanes	64/84 (NP)	11,600	18,500	25,300	30,400	34,200
Collector – 4 Lanes	(WP)	6,800	10,800	14,800	17,800	20,000
Local Collector – 2 Lanes	42/66 (NP)	5,100	8,100	11,100	13,400	15,000
Local Collector – 2 Lanes	(WP)	3,400	5,400	7,400	8,900	10,000

Source: City of Escondido *Traffic Impact Analysis Guideline* October 10, 2013. NP: No Parking. WP: With Parking.

2.4 Traffic Significance Criteria

If the project's traffic exceeds the City of Escondido defined threshold values in **Table 3** on a roadway segment or at an intersection that is operating at a LOS D or worse, then the impact is considered significant and potential mitigation measure(s) should be proposed.

TABLE 3: CITY OF ESCONDIDO IMPACT SIGNIFICANT THRESHOLDS

Level of Service with Project	Allowable Increase Due to Project Impacts		
	Roadway Segments		Intersections
	V/C	Speed Reduction (mph)	Delay (sec.)
D, E or F	0.02	1	2

Source: City of Escondido *Traffic Impact Analysis Guideline* October 10, 2013.

3.0 Existing Conditions

This section describes the study area street system, daily volumes, and LOS.

3.1 Existing Street System

In the vicinity of the project, the following roadways were analyzed as part of this study:

Centre City Parkway from Country Club Lane to SR-78 is classified as a *Major Road* in the City of Escondido 2012 General Plan (excerpt included in **Appendix C**). This segment of roadway is construct as a 4-lane divided roadway with Class II bike lanes. Parking is prohibited on both side of the roadway. A posted speed limit was not observed on this segment; however, City staff provided a Prima Facie speed limit of 65 Miles Per Hour (MPH).

El Norte Parkway from Iris Lane to Broadway Boulevard is classified as a *Major Road* in the City of Escondido 2012 General Plan. From Iris Lane to Centre City Parkway, El Norte Parkway is generally constructed as a 7-lane divided roadway (3 eastbound lanes and 4 westbound lanes), a 45 MPH posted speed limit, Class III bike route signs with "Sharrow" bike markings on the outside lane, and parking prohibited on both sides of the roadway. El Norte Parkway from Centre City Parkway to Escondido Boulevard is constructed as a 4-lane divided roadway, Class II bike lanes, and parking prohibited on both side of the roadway. A posted speed limit was not observed on this segment; however, City staff indicated a recent speed survey indicates 40 MPH.

Iris Lane from Country Club Lane to El Norte Parkway is classified as a *Local Collector* in the City of Escondido 2012 General Plan. This segment of roadway is construct as a 2-lane un-divided roadway. Iris Lane from Country Club Lane to Centre City Parkway is posted at 35 MPH with no bike lanes. From Center City Parkway to El Norte Parkway, Iris Lane is posted at 30 MPH with no bike lanes.

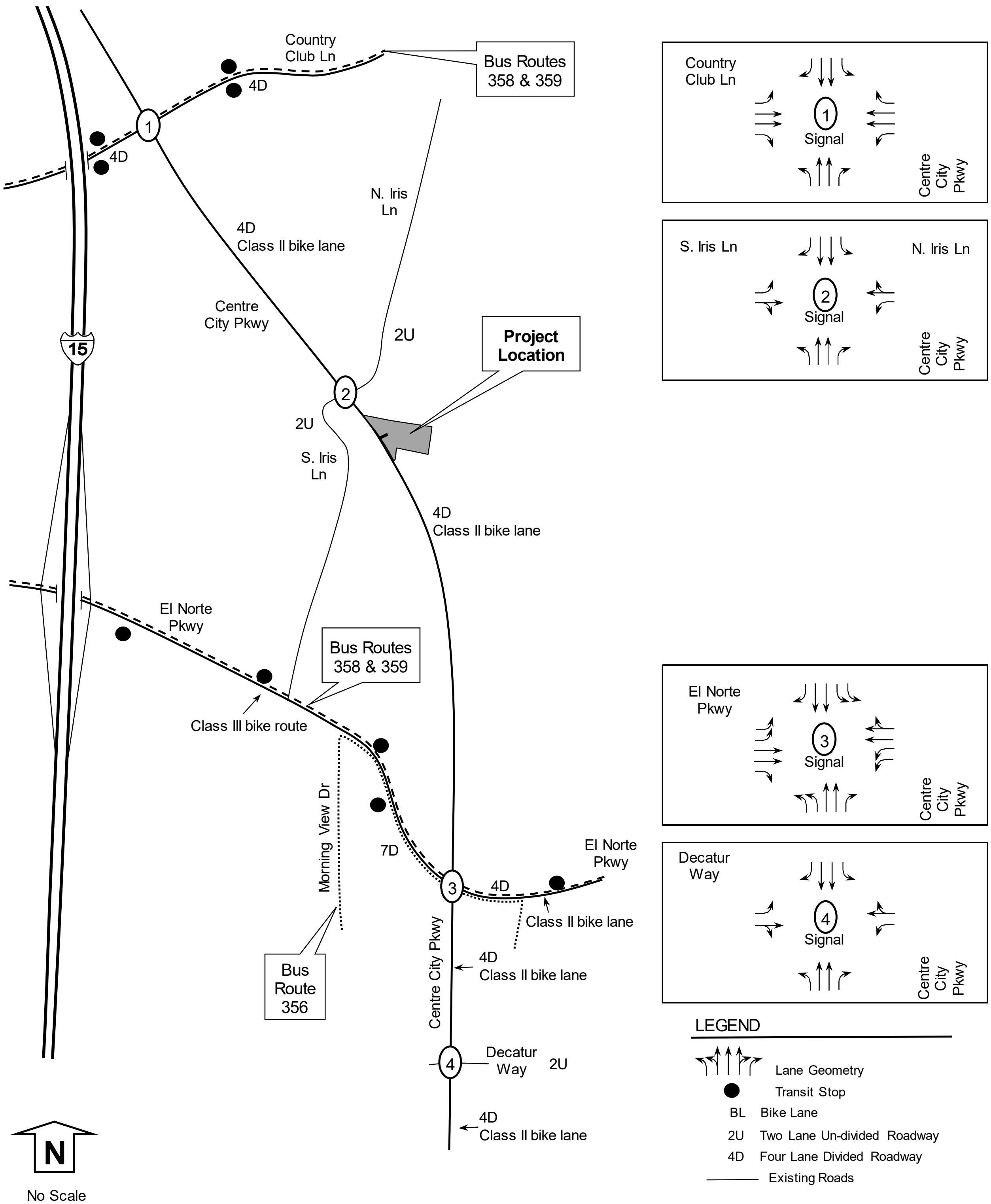
3.2 Multi-Modal Transportation

North County Transit District (NCTD) provides bus service as Route 356, 358, and 350 along portions of El Norte Parkway south of the project site. No bus service is provided along the project frontage. A route map is included in **Appendix D**.

The City of Escondido *Bicycle Master Plan*, October 2012 shows a Class II bike route along the project frontage on Centre City Parkway. Excerpts from the City of Escondido *Bicycle Master Plan* are included in **Appendix E**.

The existing roadway conditions along with the bus route and bus stops are shown in **Figure 3**.

Figure 3: Existing Multi-Modal Conditions



3.3 Existing Traffic Volumes and LOS Analysis

Intersection counts were collected on Thursday May 3, 2018 between 7:00 AM to 9:00 AM for the AM commuter period and from 4:00 PM to 6:00 PM for the PM commuter period. The count dates are noted in parentheses for the study intersections below:

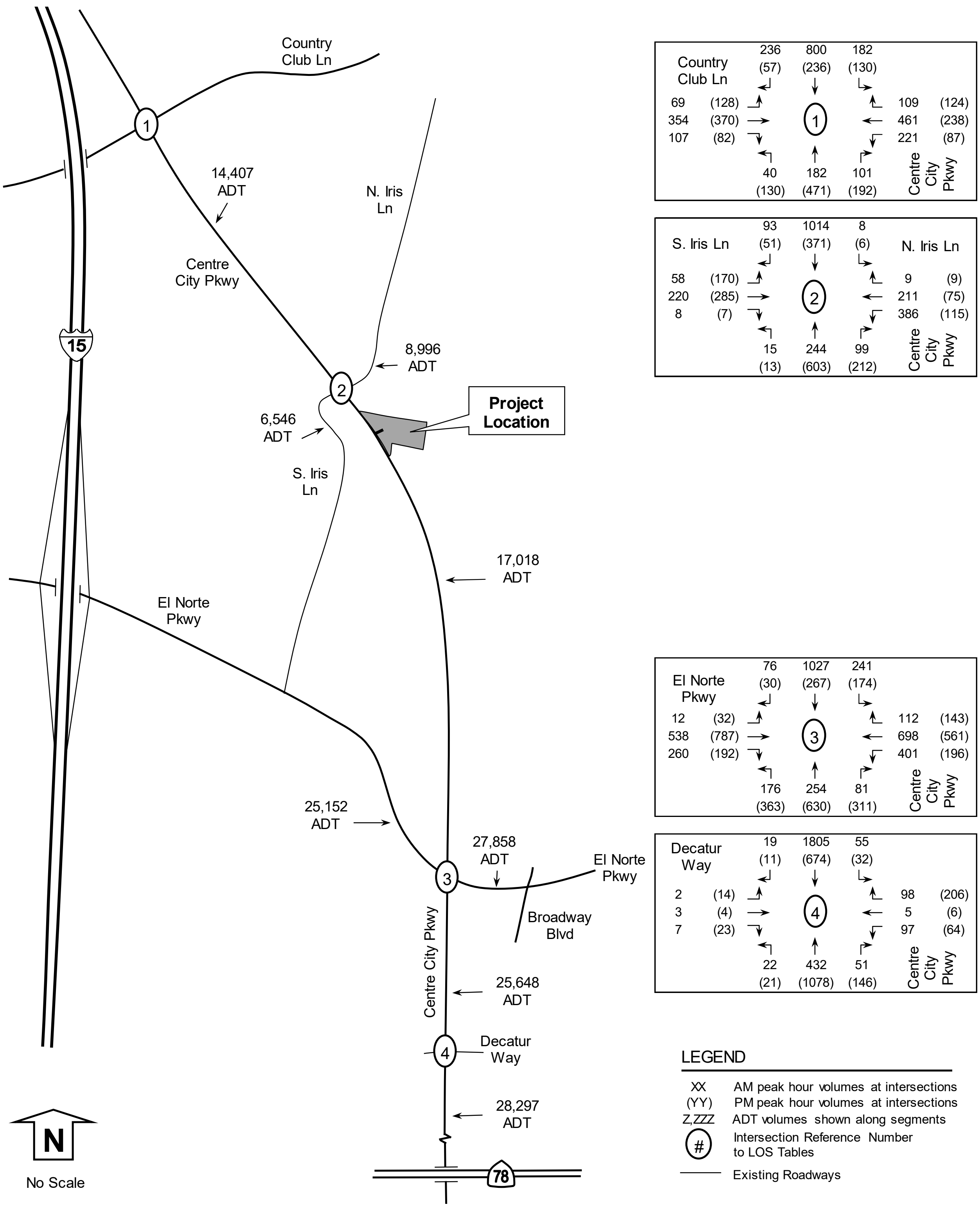
1) Centre City Parkway/Country Club Lane
2) Centre City Parkway/Iris Lane
3) Centre City Parkway/El Norte Parkway
4) Centre City Parkway/Decatur Way

Twenty-four hours of traffic volumes were collected on Thursday, May 3, 2018 on the following segments:

1) Centre City Parkway from Country Club Lane to Iris Lane
2) Centre City Parkway from Iris Lane to El Norte Pkwy
3) Centre City Parkway from El Norte Pkwy to Decatur Way
4) Centre City Parkway from Decatur Way to SR-78
5) Iris from Country Club Ln to Centre City Pkwy
6) Iris from Centre City Pkwy to El Norte Pkwy
7) El Norte Parkway from Iris Ln to Centre City Pkwy
8) El Norte Parkway from Centre City Pkwy to Escondido Blvd

The existing weekday daily and peak hour volumes are shown in **Figure 4**.

Figure 4: Existing Volumes



The LOS calculated for the intersections and roadway segments are included in **Tables 4 and 5**. Intersection LOS calculations are included in **Appendix F**.

TABLE 4: EXISTING INTERSECTION LEVEL OF SERVICE

Intersection and (Analysis)[1]	Movement	Study Period	Existing Delay[2]	Existing LOS[3]
1) Centre City Pkwy	All	AM	45.4	D
at Country Club Ln (S)	All	PM	46.1	D
2) Centre City Pkwy	All	AM	39.1	D
at Iris Ln (S)	All	PM	26.3	C
3) Centre City Pkwy	All	AM	53.8	D
at El Norte Pkwy (S)	All	PM	46.0	D
4) Centre City Pkwy	All	AM	10.6	B
at Decatur Wy (S)	All	PM	18.0	B

Notes: 1) Intersection Analysis - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds. 3) LOS: Level of Service.

TABLE 5: EXISTING SEGMENT VOLUMES AND LEVEL OF SERVICE

Segment	General Plan Classification	LOS E Capacity	Existing Daily Volume	Existing V/C	Existing LOS
Centre City Parkway					
Country Club Ln to Iris Ln	4-Ln Major	37,000	14,407	0.389	B
Iris Ln to El Norte Pkwy	4-Ln Major	37,000	17,018	0.460	B
El Norte Pkwy to Decatur Wy	4-Ln Major	37,000	25,648	0.693	C
Decatur Wy to SR-78	4-Ln Major	37,000	28,297	0.765	D
El Norte Parkway					
Iris Ln to Centre City Pkwy	6-Ln Major	50,000	25,152	0.503	B
Centre City Pkwy to Broadway Blvd	4-Ln Major	37,000	27,858	0.753	D
Iris Lane					
Country Club to Centre City Pkwy	2-Ln Local Coll.	15,000	8,996	0.600	C
Centre City Pkwy to El Norte Pkwy	2-Ln Local Coll.	15,000	6,546	0.436	B

Notes: Coll. = Collector. Daily volume is a 24 hour volume. V/C: Volume to Capacity Ratio. LOS: Level of Service.

Under existing conditions, the study intersections and segments were calculated to operate at LOS D or better.

4.0 Project Description

The project is an Assisted Living residential community with 96 beds located at 1802 N. Centre City Parkway in Escondido, California. The site is generally vacant. The project applicant is processing a Community Plan Amendment.

4.1 Project Trip Generation

The project trip generation for the project was calculated using trip rates from the Institute of Transportation Engineers (ITE) 10th Edition *Trip Generation*, September 2017 (excerpts included in **Appendix G**). The project is calculated to generate 250 Average Daily Trips (ADT) with 19 AM peak hour trips (12 inbound and 7 outbound) and 25 PM peak hour trips (10 inbound and 15 outbound) as shown in **Table 6**.

TABLE 6: PROJECT TRIP GENERATION

ITE 10th Edition Code and Land Use Description	Rates & Size			Daily	AM Peak Hour IN	AM Peak Hour OUT	AM Peak Hour Total	PM Peak Hour IN	PM Peak Hour OUT	PM Peak Hour Total
ITE (254) Weekday	Rates:	2.60	/Bed		0.12	0.07	0.19	0.10	0.16	0.26
Assisted Living	*Size:*	*96*	*Beds Trips:*	***250***	*12*	*7*	***19***	*10*	*15*	***25***

Source: Institute of Transportation Engineers (ITE) 10th Edition *Trip Generation*.

4.2 Project Access

Project access is from a single driveway on Centre City Parkway. The driveway design will be submitted under separate cover.

4.3 Project Parking

The project is proposed with 45 parking spaces including 1 van and 1 accessible space.

4.4 Project Trip Distribution and Assignment

The distribution was based on surrounding traffic patterns and proximity to I-15. The project distribution is shown in **Figure 5** while the trip assignment is shown in **Figure 6.**

Figure 5: Project Distribution

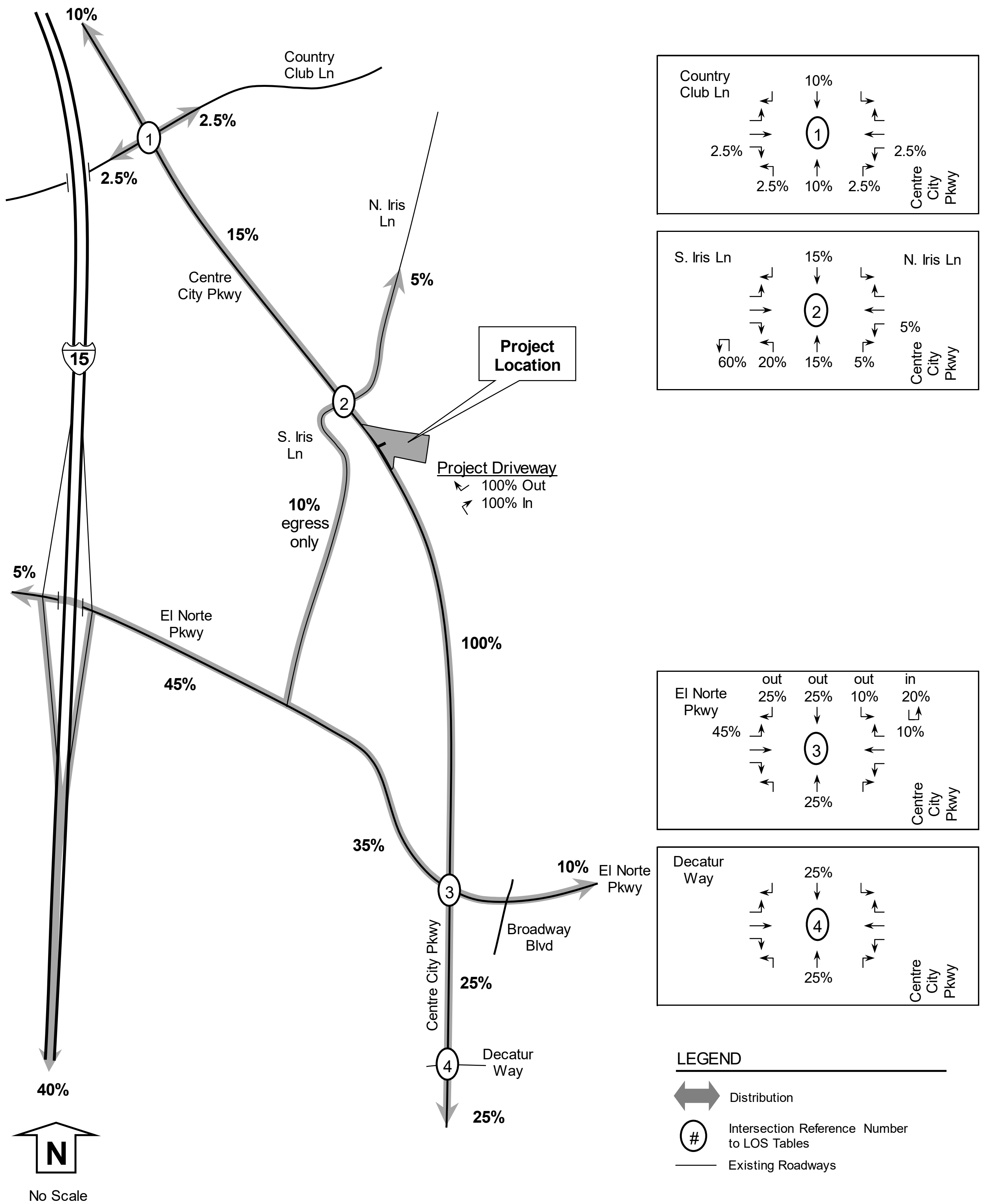
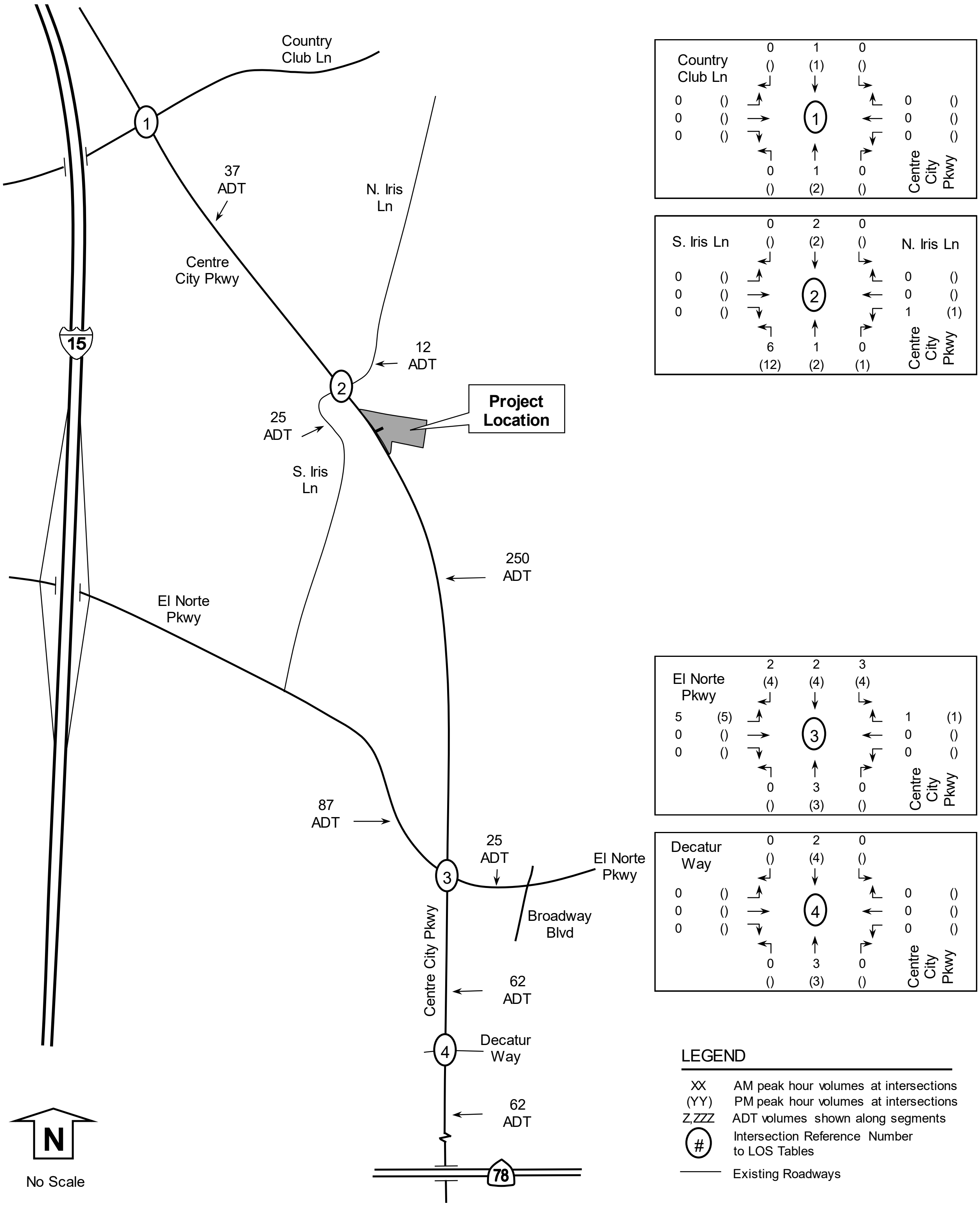


Figure 6: Project Assignment



5.0 Existing plus Project Conditions

This scenario accounts for the addition of project traffic onto existing conditions. The traffic volumes are shown in **Figure 9.** The LOS calculated for the study intersections and segments are included in **Tables 7 and 8**. Intersection LOS calculations are included in **Appendix H**.

TABLE 7: EXISTING PLUS PROJECT INTERSECTION LEVEL OF SERVICE

Intersection and	Movement	Study	Existing		Existing + Project			
(Analysis)[1]		Period	Delay[2]	LOS[3]	Delay[2]	LOS[3]	Delta[4]	Direct Impact?[6]
1) Centre City Pkwy	All	AM	45.4	D	45.4	D	0.0	No
at Country Club Ln (S)	All	PM	46.1	D	46.1	D	0.0	No
2) Centre City Pkwy	All	AM	39.1	D	39.7	D	0.6	No
at Iris Ln (S)	All	PM	26.3	C	27.0	C	0.7	No
3) Centre City Pkwy	All	AM	53.8	D	53.9	D	0.1	No
at El Norte Pkwy (S)	All	PM	46.0	D	46.1	D	0.1	No
4) Centre City Pkwy	All	AM	10.6	B	10.6	B	0.0	No
at Decatur Wy (S)	All	PM	18.0	B	18.0	B	0.0	No

Notes: 1) Intersection Analysis - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds. 3) LOS: Level of Service. 4) Delta is the increase in delay from project. 5) Critical Movement Volume. 6) Direct Impact if project traffic exceeds threshold.

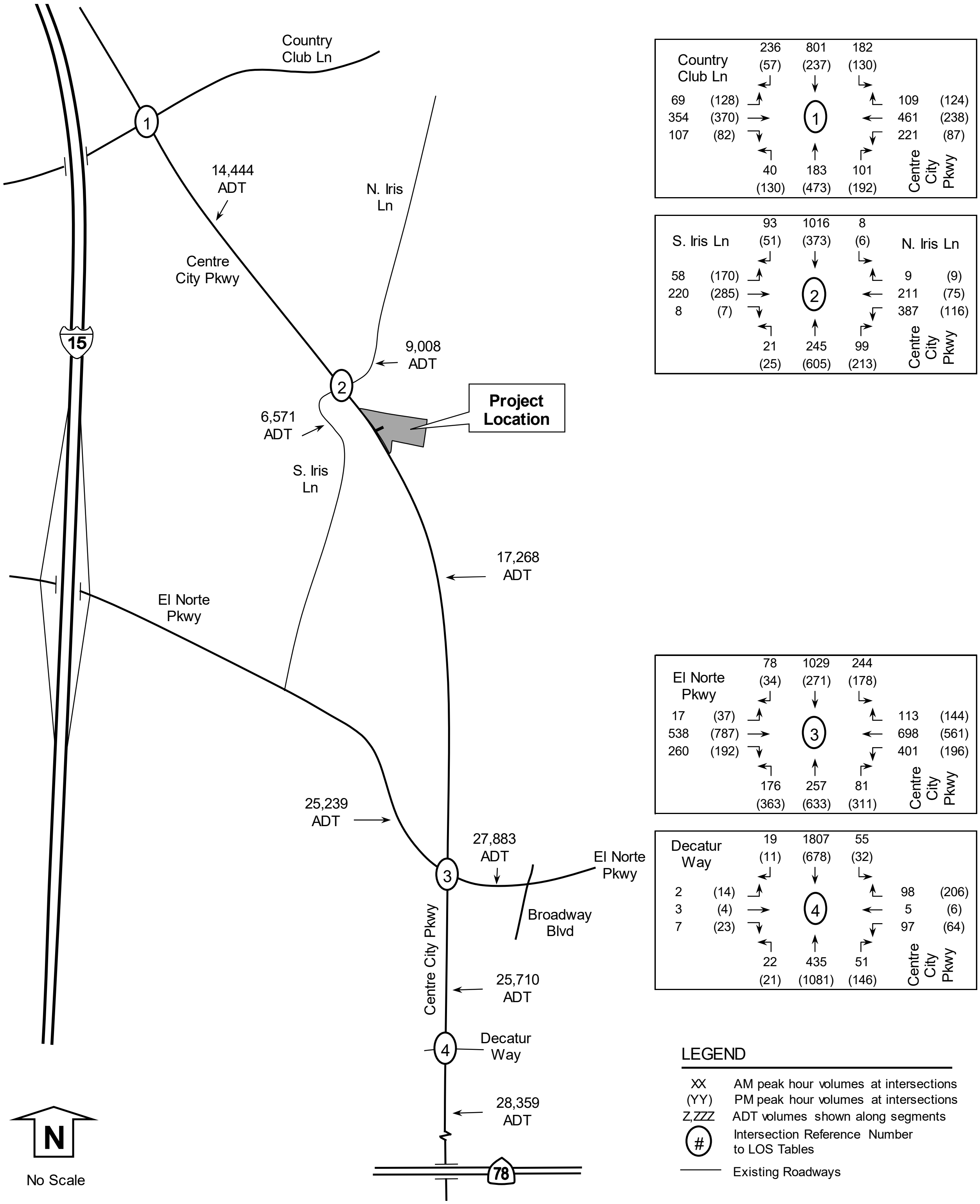
TABLE 8: EXISTING PLUS PROJECT SEGMENT VOLUMES AND LEVEL OF SERVICE

Segment	General Plan Classification	LOS E Capacity	Existing Daily Volume	Existing V/C	Existing LOS	Project Daily Volume	Existing + Project Daily Volume	Existing + Project V/C	Existing + Project LOS	Change in V/C	Direct Impact?
Centre City Parkway											
Country Club Ln to Iris Ln	4-Ln Major	37,000	14,407	0.389	B	37	14,444	0.390	B	0.001	No
Iris Ln to El Norte Pkwy	4-Ln Major	37,000	17,018	0.460	B	250	17,268	0.467	B	0.007	No
El Norte Pkwy to Decatur Wy	4-Ln Major	37,000	25,648	0.693	C	62	25,710	0.695	C	0.002	No
Decatur Wy to SR-78	4-Ln Major	37,000	28,297	0.765	D	62	28,359	0.766	D	0.002	No
El Norte Parkway											
Iris Ln to Centre City Pkwy	6-Ln Major	50,000	25,152	0.503	B	87	25,239	0.505	B	0.002	No
Centre City Pkwy to Broadway Blvd	4-Ln Major	37,000	27,858	0.753	D	25	27,883	0.754	D	0.001	No
Iris Lane											
Country Club to Centre City Pkwy	2-Ln Local Coll.	15,000	8,996	0.600	C	12	9,008	0.601	C	0.001	No
Centre City Pkwy to El Norte Pkwy	2-Ln Local Coll.	15,000	6,546	0.436	B	25	6,571	0.438	B	0.002	No

Notes: Coll. = Collector. Daily volume is a 24 hour volume. V/C: Volume to Capacity Ratio. LOS: Level of Service. Impact: Yes or No.

Under existing plus project conditions, the study intersections and segments were calculated to operate at LOS D or better. <u>There are no significant direct impacts because the addition of project traffic does not exceed the significance thresholds.</u>

Figure 7: Existing plus Project Volumes



6.0 Cumulative Projects

Based on a review of City of Escondido on-line cumulative projects and coordination with Escondido staff the following cumulative projects were determined to add traffic to the study area. A map showing the cumulative project locations and trip assignments are included in **Appendix I**. The following cumulative project (referenced by city map # included in Appendix I) were included in this analysis.

Map #7: Hidden Valley Ranch Tract 932. A single family residential subdivision with 179 homes generally located east of Vista Ave/Century Way. This project was under initial construction during traffic data collection.

Map #13: Zenner SUB 14-0002. A single family residential subdivision with 40 homes generally located on the northwest corner of Vista Ave and Ash St. This project had at least half of the home completed when existing traffic counts were collected; however, to be conservative, cumulative traffic from all 40 homes were incorporated in this analysis.

Map #29: Econdido Country Club – The Villages. A mixed-use project with 392 single family homes, recreational amenities, and an urban farm generally located north of El Norte Parkway, west of I-15, along on both side of Country Club Lane.

Map #44: Hubbard Tract 929. A single family residential subdivision with 12 homes generally located on the northwest corner of Hubbard Ave/Conway Dr. The Tentative Map for this project has expired; however, to be conservative, it was included in this analysis.

Map #47: Pradera Tracts 889 & 894 SUB 13-003. A single family residential subdivision with 70 homes generally located on the northeast corner of Ash St/Lehner Ave. More than half of this project were observed as completed when existing traffic counts were collected; therefore, cumulative traffic from 35 homes were incorporated in this analysis.

Map #53: Baker Conway Tract 928. A single family residential subdivision with 14 homes generally located on the northwest corner of Lehner Ave/Conway Dr. The Tentative Map for this project has not yet been submitted; however, to be conservative, it was included in this analysis.

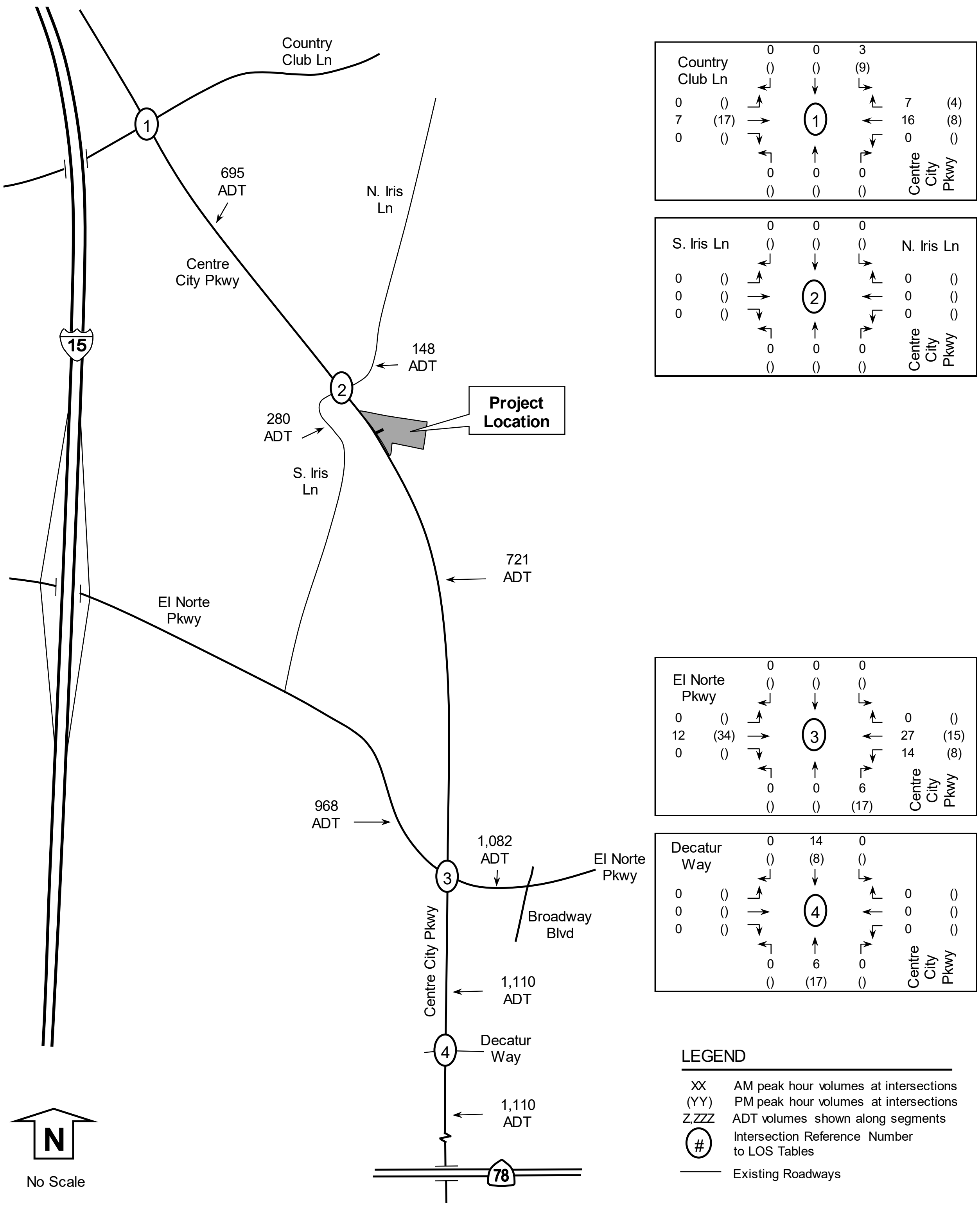
Map #59: Jungman Specific Plan. A mixed-use project with 20,000 sf office and 36 condominiums generally located on the northwest corner of El Norte Pkwy/Iris Ln. The Tentative Map for this project has not yet been submitted; however, to be conservative, it was included in this analysis.

Map #74: Meadowbrook PHG 13-0010. A 66 unit senior apartment project generally located on the northeast corner of Iris Ln/Iris Glen. This project was under construction during traffic data collection.

Map #80: United Reformed Church PHG14-0021. A new 12,243 SF sanctuary and 5,250 sf classroom building. This project was under construction during traffic data collection.

The cumulative project volumes are shown in **Figure 8.**

Figure 8: Cumulative Project Volumes



7.0 Existing plus Cumulative Conditions

Existing plus cumulative conditions describe the anticipated roadway operations for opening day anticipated to be year 2020. The Existing plus Cumulative without project volumes are shown in **Figure 9**. The LOS calculated for the study intersections and segments are included in **Tables 9 and 10**. Intersection LOS calculations are included in **Appendix J**.

TABLE 9: EXISTING PLUS CUMULATIVE INTERSECTION LEVEL OF SERVICE

Intersection and	Movement	Peak	Existing		Existing + Cumulative	
(Analysis)[1]		Hour	Delay[2]	LOS[3]	Delay[2]	LOS[3]
1) Centre City Pkwy	All	AM	45.4	D	45.7	D
at Country Club Ln (S)	All	PM	46.1	D	46.4	D
2) Centre City Pkwy	All	AM	39.1	D	39.1	D
at Iris Ln (S)	All	PM	26.3	C	26.3	C
3) Centre City Pkwy	All	AM	53.8	D	54.3	D
at El Norte Pkwy (S)	All	PM	46.0	D	46.2	D
4) Centre City Pkwy	All	AM	10.6	B	10.6	B
at Decatur Wy (S)	All	PM	18.0	B	18.0	B

Notes: 1) Intersection Analysis - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds. 3) LOS: Level of Service.

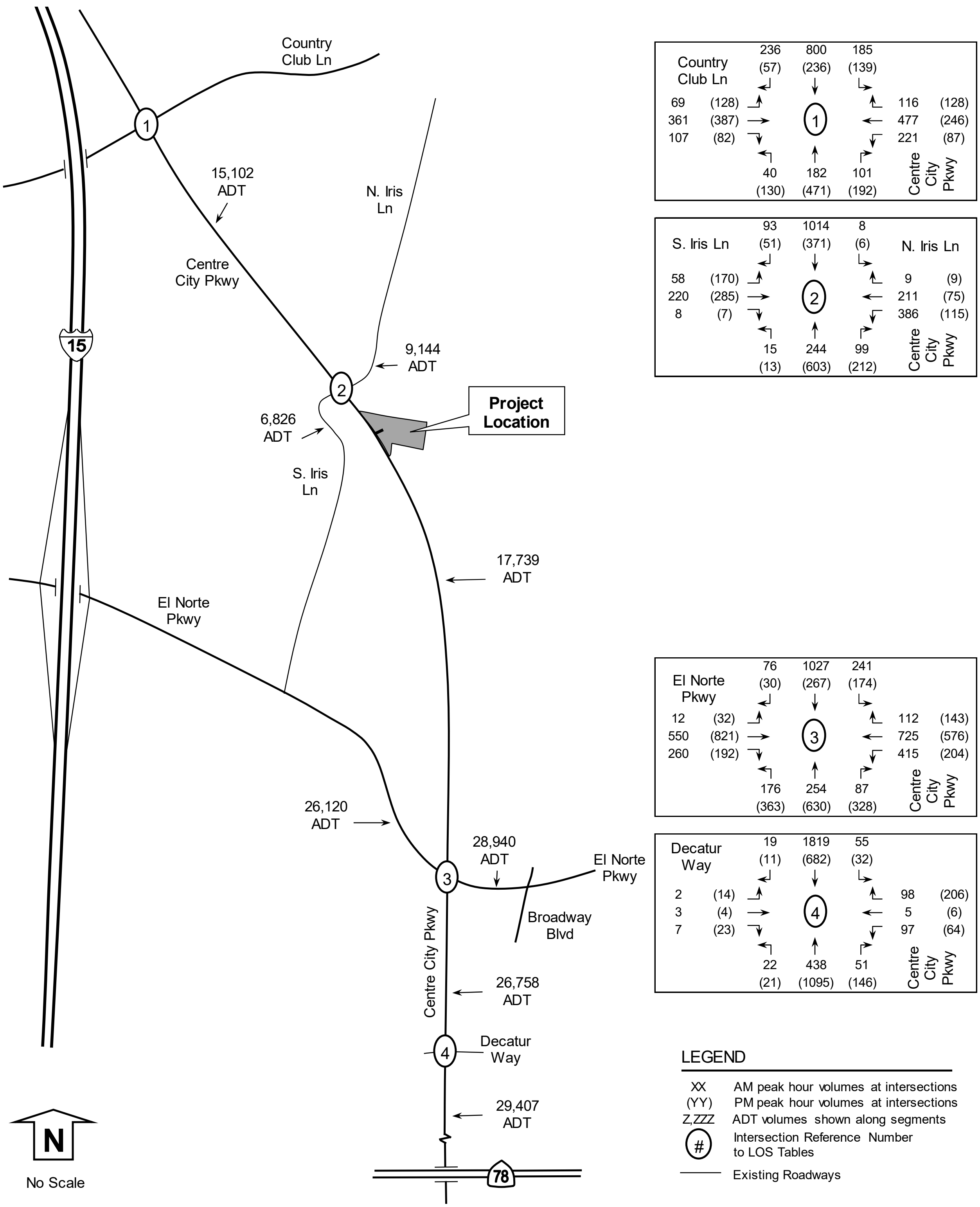
TABLE 10: EXISTING PLUS CUMULATIVE SEGMENT VOLUMES AND LEVEL OF SERVICE

Segment	General Plan Classification	LOS E Capacity	Existing Daily Volume	Existing V/C	Existing LOS	Cumulative Daily Volume	Existing + Cumulative Daily Volume	Existing + Cumulative V/C	Existing + Cumulative LOS
Centre City Parkway									
Country Club Ln to Iris Ln	4-Ln Major	37,000	14,407	0.389	B	695	15,102	0.408	B
Iris Ln to El Norte Pkwy	4-Ln Major	37,000	17,018	0.460	B	721	17,739	0.479	B
El Norte Pkwy to Decatur Wy	4-Ln Major	37,000	25,648	0.693	C	1,110	26,758	0.723	C
Decatur Wy to SR-78	4-Ln Major	37,000	28,297	0.765	D	1,110	29,407	0.795	D
El Norte Parkway									
Iris Ln to Centre City Pkwy	6-Ln Major	50,000	25,152	0.503	B	968	26,120	0.522	B
Centre City Pkwy to Broadway Blvd	4-Ln Major	37,000	27,858	0.753	D	1,082	28,940	0.782	D
Iris Lane									
Country Club to Centre City Pkwy	2-Ln Local Coll.	15,000	8,996	0.600	C	148	9,144	0.610	C
Centre City Pkwy to El Norte Pkwy	2-Ln Local Coll.	15,000	6,546	0.436	B	280	6,826	0.455	B

Notes: Coll. = Collector. Daily volume is a 24 hour volume. V/C: Volume to Capacity Ratio. LOS: Level of Service.

Under existing plus cumulative conditions, the study intersections and segments were calculated to operate at LOS D or better.

Figure 9: Existing plus Cumulative Volumes



8.0 Existing plus Cumulative plus Project Conditions

The existing plus cumulative plus project conditions describe the anticipated roadway operations during opening day of the project. Existing plus cumulative plus project traffic volumes are shown in **Figure 10.** The LOS calculated for the study intersections and segments are included in **Tables 11 and 12**. Intersection LOS calculations are included in **Appendix K**.

TABLE 11: EXISTING PLUS CUMULATIVE PLUS PROJECT INTERSECTION LEVEL OF SERVICE

Intersection and	Movement	Peak	Existing + Cumulative		Existing + Cumulative + Project			
(Analysis)[1]		Hour	Delay[2]	LOS[3]	Delay[2]	LOS[3]	Delta[4]	Cumulative Imp.[5]
1) Centre City Pkwy	All	AM	45.7	D	45.7	D	0.0	No
at Country Club Ln (S)	All	PM	46.4	D	46.4	D	0.0	No
2) Centre City Pkwy	All	AM	39.1	D	39.7	D	0.6	No
at Iris Ln (S)	All	PM	26.3	C	27.0	C	0.7	No
3) Centre City Pkwy	All	AM	54.3	D	54.5	D	0.2	No
at El Norte Pkwy (S)	All	PM	46.2	D	46.3	D	0.1	No
4) Centre City Pkwy	All	AM	10.6	B	10.6	B	0.0	No
at Decatur Wy (S)	All	PM	18.0	B	18.0	B	0.0	No

Notes: 1) Intersection Analysis - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds. 3) LOS: Level of Service. 4) Delta is the increase in delay from project. 5) Cumulative Impact if project traffic exceeds threshold.

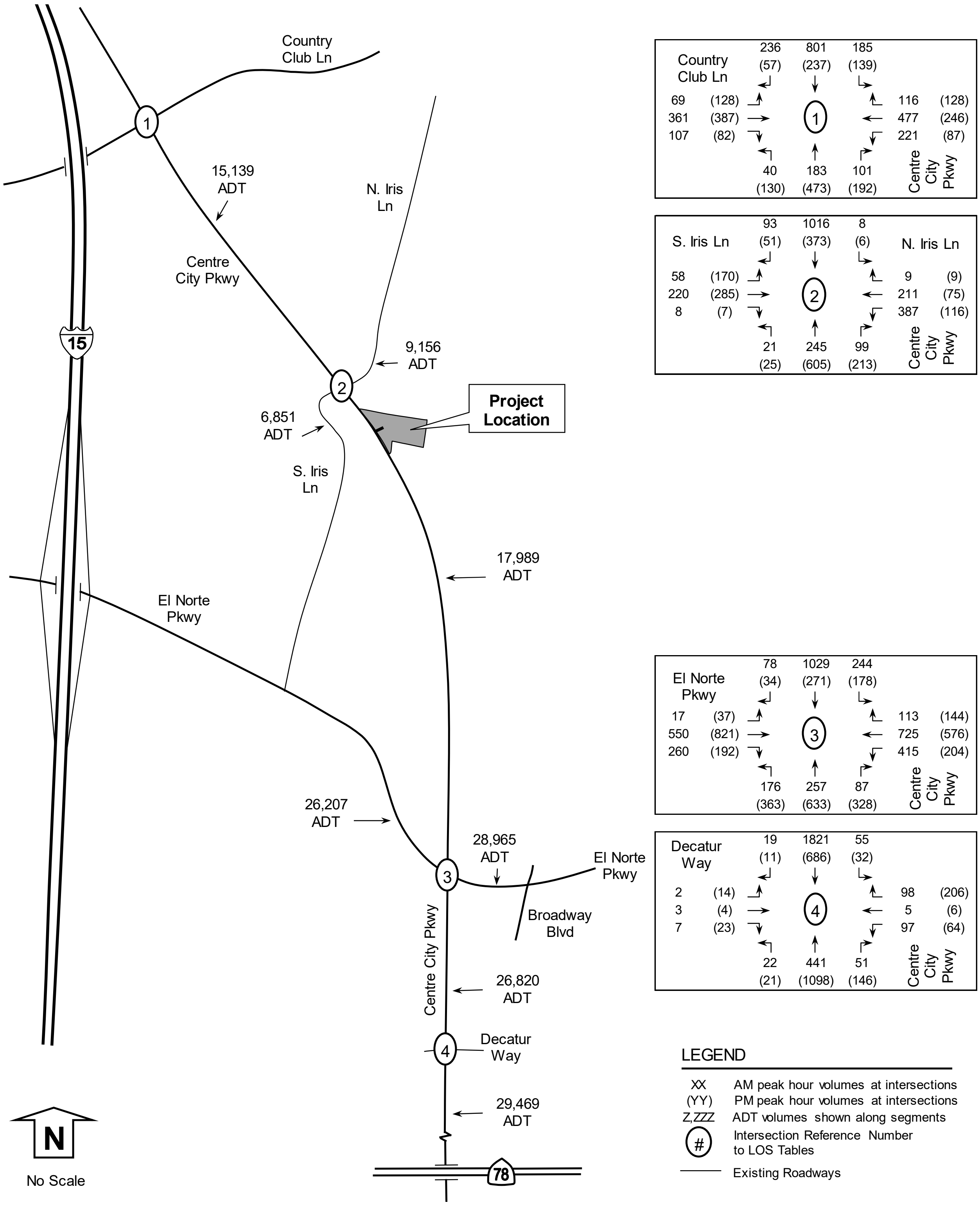
TABLE 12: EXISTING PLUS CUMULATIVE PLUS PROJECT SEGMENT VOLUMES AND LEVEL OF SERVICE

Segment	General Plan Classification	LOS E Capacity	Existing + Cumulative Daily Volume	V/C	LOS	Project Daily Volume	Existing + Cumulative + Project Daily Volume	V/C	LOS	Change in V/C	Cumulative Impact?
Centre City Parkway											
Country Club Ln to Iris Ln	4-Ln Major	37,000	15,102	0.408	B	37	15,139	0.409	B	0.001	No
Iris Ln to El Norte Pkwy	4-Ln Major	37,000	17,739	0.479	B	250	17,989	0.486	B	0.007	No
El Norte Pkwy to Decatur Wy	4-Ln Major	37,000	26,758	0.723	C	62	26,820	0.725	C	0.002	No
Decatur Wy to SR-78	4-Ln Major	37,000	29,407	0.795	D	62	29,469	0.796	D	0.002	No
El Norte Parkway											
Iris Ln to Centre City Pkwy	6-Ln Major	50,000	26,120	0.522	B	87	26,207	0.524	B	0.002	No
Centre City Pkwy to Broadway Blvd	4-Ln Major	37,000	28,940	0.782	D	25	28,965	0.783	D	0.001	No
Iris Lane											
Country Club to Centre City Pkwy	2-Ln Local Coll.	15,000	9,144	0.610	C	12	9,156	0.610	C	0.001	No
Centre City Pkwy to El Norte Pkwy	2-Ln Local Coll.	15,000	6,826	0.455	B	25	6,851	0.457	B	0.002	No

Notes: Coll. = Collector. Daily volume is a 24 hour volume. V/C: Volume to Capacity Ratio. LOS: Level of Service. Impact: Yes or No.

Under existing plus cumulative plus project conditions, the study intersections and segments were calculated to operate at LOS D or better. There are no significant cumulative impacts because the addition of project traffic does not exceed the significance thresholds.

Figure 10: Existing plus Cumulative plus Project Volumes



9.0 Year 2035 Conditions

Year 2035 conditions were analyzed using Year 2035 volumes and geometric conditions documented in the *City of Escondido General Plan*, May 2012. The segment volumes were obtained from the *City of Escondido General Plan* Table 4.16-2 (excerpts included in **Appendix L**). The *City of Escondido General Plan* did not post peak hour intersection volumes; therefore, an average growth rate of 37% was calculated between existing 2018 and year 2035 volumes (calculations included in Appendix L) and was applied to year 2018 peak hour volumes to reflect year 2035 peak hour volumes. Year 2035 volumes are shown in **Figure 11.** Roadway geometric conditions used for the year 2035 analysis were based on conditions documented in the *City of Escondido General Plan* as shown in **Figure 12**. The LOS calculated for the study intersections and segments are included in **Tables 13 and 14**. Intersection LOS calculations are included in **Appendix M**.

TABLE 13: YEAR 2035 INTERSECTION LEVEL OF SERVICE

Intersection and (Analysis)[1]	Movement	Study Period	Year 2035 Delay[2]	Year 2035 LOS[3]
1) Centre City Pkwy	All	AM	48.5	D
at Country Club Ln (S)	All	PM	51.7	D
2) Centre City Pkwy	All	AM	85.7	F
at Iris Ln (S)	All	PM	27.7	C
3) Centre City Pkwy	All	AM	68.9	E
at El Norte Pkwy (S)	All	PM	59.4	E
4) Centre City Pkwy	All	AM	34.3	C
at Decatur Wy (S)	All	PM	22.0	C

Notes: 1) Intersection Analysis - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds. 3) LOS: Level of Service.

TABLE 14: YEAR 2035 SEGMENT VOLUMES AND LEVEL OF SERVICE

Segment	General Plan Classification	LOS E Capacity	Year 2035 Daily Volume	Year 2035 V/C	Year 2035 LOS
Centre City Parkway					
Country Club Ln to Iris Ln	4-Ln Major	37,000	18,200	0.492	B
Iris Ln to El Norte Pkwy	4-Ln Major	37,000	23,600	0.638	C
El Norte Pkwy to Decatur Wy	4-Ln Major	37,000	32,800	0.886	D
Decatur Wy to SR-78	4-Ln Major	37,000	32,800	0.886	D
El Norte Parkway					
Iris Ln to Centre City Pkwy	6-Ln Major	50,000	35,700	0.714	C
Centre City Pkwy to Broadway Blvd	6-Ln Major (1)	50,000	39,200	0.784	D
Iris Lane					
Country Club to Centre City Pkwy	2-Ln Local Coll.	15,000	8,400	0.560	C
Centre City Pkwy to El Norte Pkwy	2-Ln Local Coll.	15,000	20,400	1.360	F

Notes: Coll. = Collector. Daily volume is a 24 hour volume. V/C: Volume to Capacity Ratio. LOS: Level of Service.
(1) General Plan assumes roadwyas will be improved to their Mobility Element classifications. Therefore, this segment analyzed with General Plan capacity of 50,000 for a 6-lane roadway.

Under Year 2035 conditions, the study intersections and segments were calculated to operate at LOS C or better, except for:

1) Intersection of Centre City Pkwy/Iris Ln (LOS F AM),
2) Intersection of Center City Pkwy/El Norte Pkwy (LOS E AM & PM), and
3) Segment of Iris Lane between Centre City Pkwy to El Norte Pkwy (LOS F).

Figure 11: Year 2035 Volumes

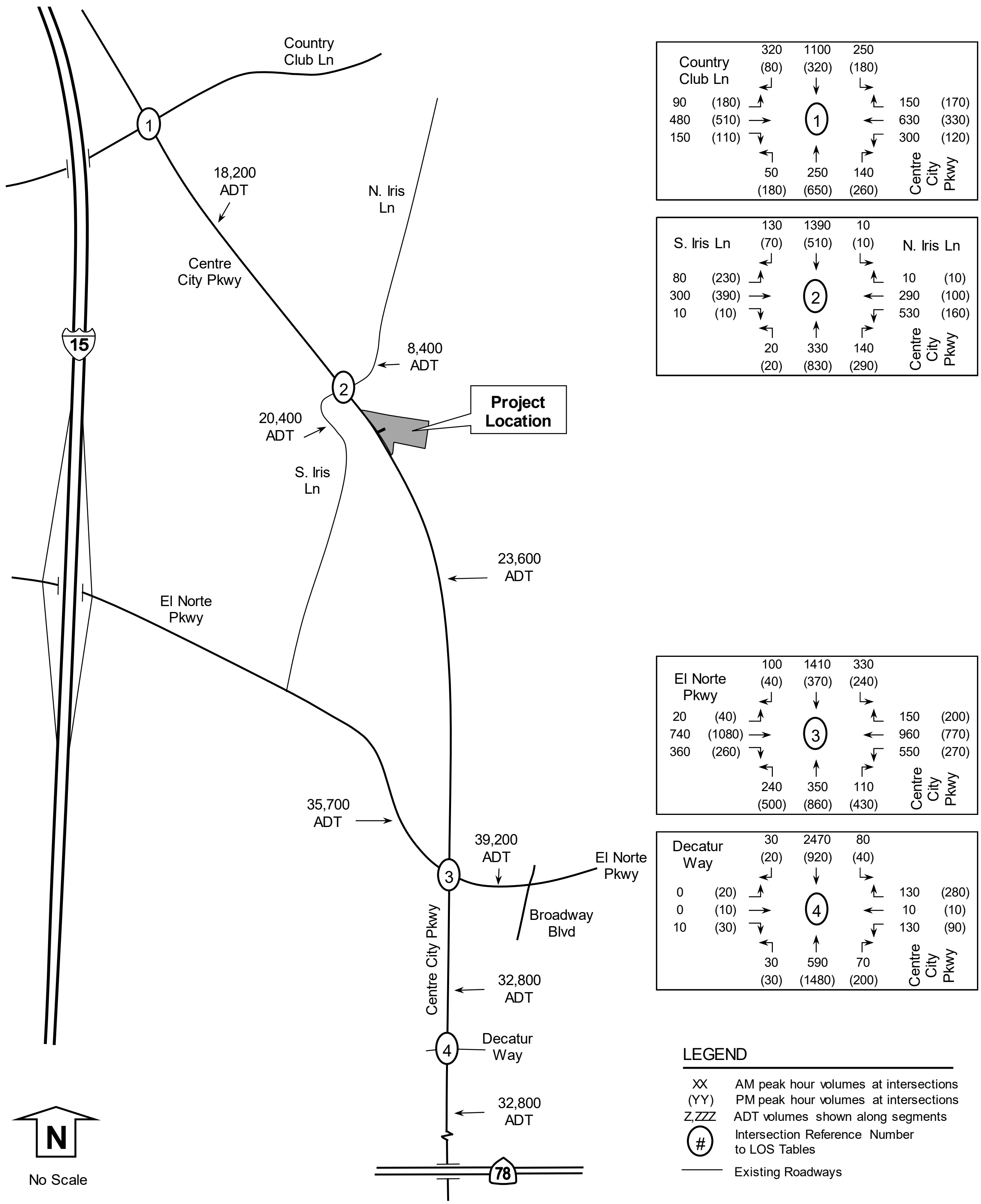
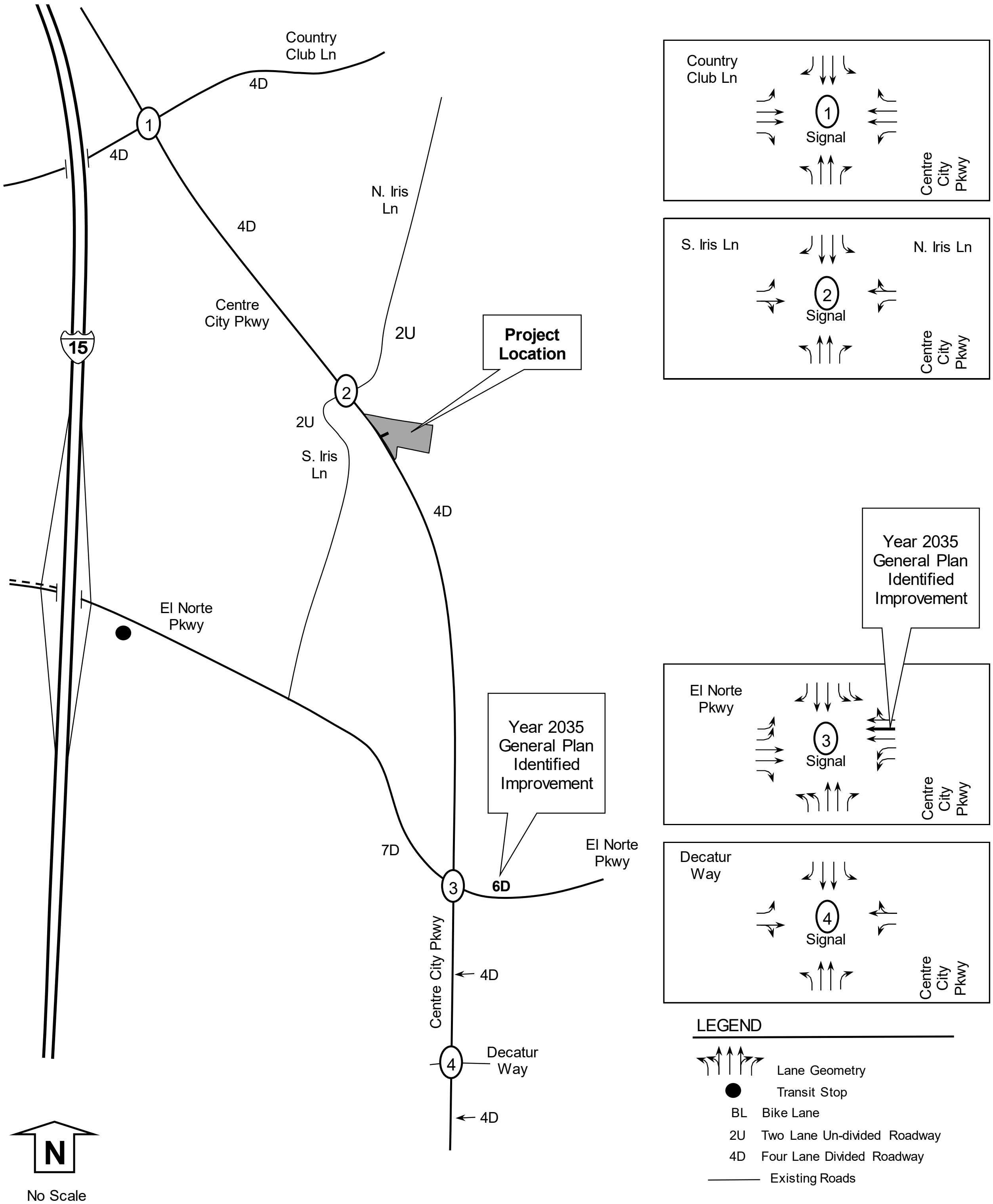


Figure 12: Year 2035 Analysis Roadway Geometry



10.0 Year 2035 plus Project Conditions

The Year 2035 with the project conditions were analyzed by adding the project traffic onto Year 2035 volumes. The Year 2035 volumes plus Project traffic are shown in **Figure 13.** The LOS calculated for the study intersections and segments are included in **Tables 15 and 16**. LOS calculations are included in **Appendix N**.

TABLE 15: YEAR 2035 PLUS PROJECT INTERSECTION LEVEL OF SERVICE

Intersection and	Movement	Study	Year 2035		Year 2035 + Project			
(Analysis)[1]		Period	Delay[2]	LOS[3]	Delay[2]	LOS[3]	Delta[4]	Horizon Impact?[6]
1) Centre City Pkwy	All	AM	48.5	D	48.5	D	0.0	No
at Country Club Ln (S)	All	PM	51.7	D	51.7	D	0.0	No
2) Centre City Pkwy	All	AM	85.7	F	86.7	F	1.0	No
at Iris Ln (S)	All	PM	27.7	C	27.9	C	0.2	No
3) Centre City Pkwy	All	AM	68.9	E	69.7	E	0.8	No
at El Norte Pkwy (S)	All	PM	59.4	E	59.6	E	0.2	No
4) Centre City Pkwy	All	AM	34.3	C	34.3	C	0.0	No
at Decatur Wy (S)	All	PM	22.0	C	22.0	C	0.0	No

Notes: 1) Intersection Analysis - (S) Signalized, (U) Unsignalized. 2) Delay - HCM Average Control Delay in seconds. 3) LOS: Level of Service. 4) Delta is the increase in delay from project. 5) Critical Movement Volume. 6) Horizon Year Impact if project traffic exceeds threshold.

TABLE 16: YEAR 2035 PLUS PROJECT SEGMENT VOLUMES AND LEVEL OF SERVICE

			Year 2035			Project	Year 2035 + Project				
Segment	General Plan Classification	LOS E Capacity	Daily Volume	V/C	LOS	Daily Volume	Daily Volume	V/C	LOS	Change In V/C	Year 2035 Impact?
Centre City Parkway											
Country Club Ln to Iris Ln	4-Ln Major	37,000	18,200	0.492	B	37	18,237	0.493	B	0.001	No
Iris Ln to El Norte Pkwy	4-Ln Major	37,000	23,600	0.638	C	250	23,850	0.645	C	0.007	No
El Norte Pkwy to Decatur Wy	4-Ln Major	37,000	32,800	0.886	D	62	32,862	0.888	D	0.002	No
Decatur Wy to SR-78	4-Ln Major	37,000	32,800	0.886	D	62	32,862	0.888	D	0.002	No
El Norte Parkway											
Iris Ln to Centre City Pkwy	6-Ln Major	50,000	35,700	0.714	C	87	35,787	0.716	C	0.002	No
Centre City Pkwy to Broadway Blvd	6-Ln Major (1)	50,000	39,200	0.784	D	25	39,225	0.785	D	0.000	No
Iris Lane											
Country Club to Centre City Pkwy	2-Ln Local Coll.	15,000	8,400	0.560	C	12	8,412	0.561	C	0.001	No
Centre City Pkwy to El Norte Pkwy	2-Ln Local Coll.	15,000	20,400	1.360	F	25	20,425	1.362	F	0.002	No

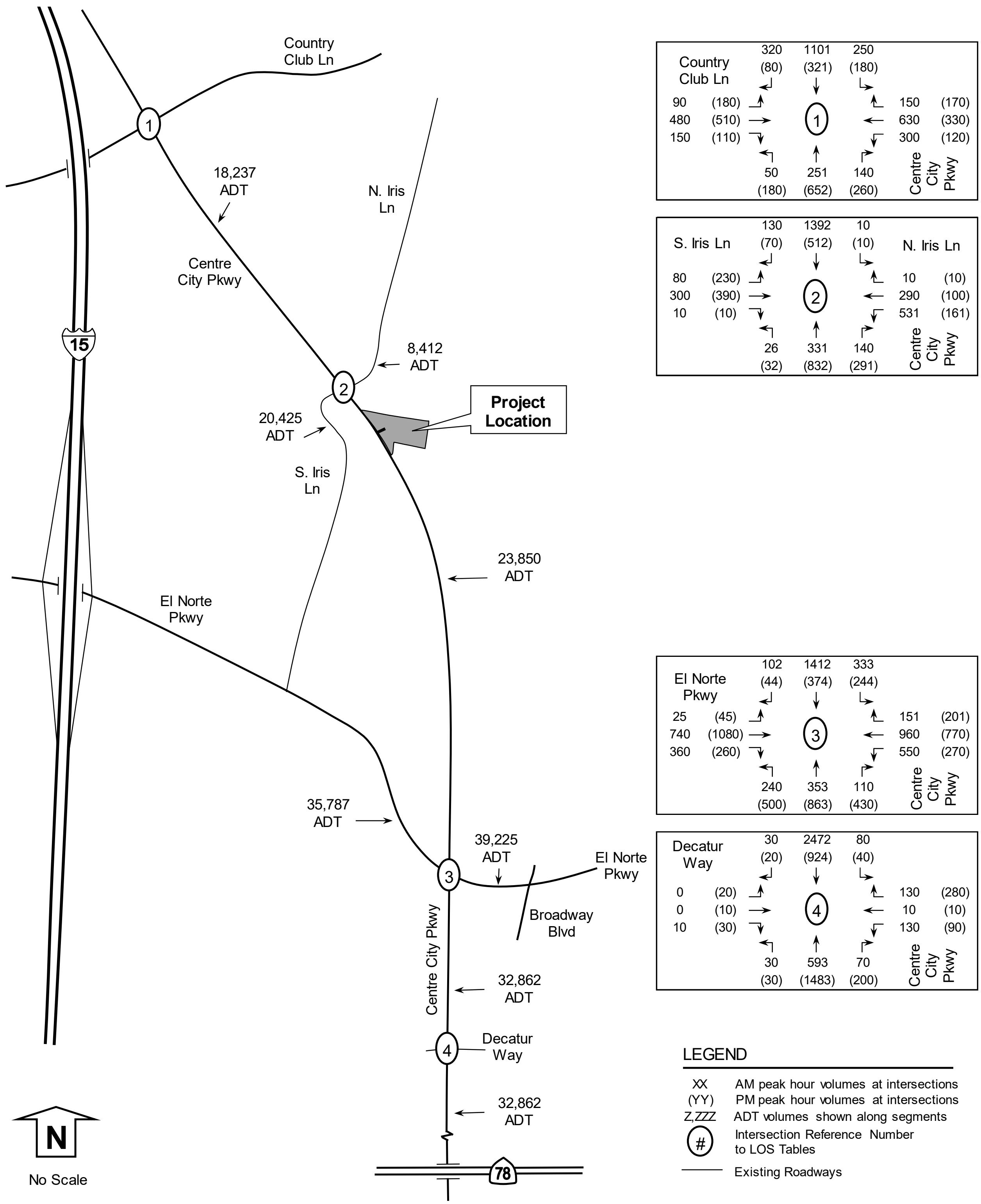
Notes: Coll. = Collector. Daily volume is a 24 hour volume. V/C: Volume to Capacity Ratio. LOS: Level of Service. Impact: Yes or No. (1) General Plan assumes roadwyas will be improved to their Mobility Element classifications. Therefore, this segment analyzed with General Plan capacity of 50,000 for a 6-lane roadway.

Under Year 2035 plus project conditions, the study intersections and segments were calculated to operate at LOS D or better, except for:

1) Intersection of Centre City Pkwy/Iris Ln (LOS F AM),
2) Intersection of Center City Pkwy/El Norte Pkwy (LOS E AM & PM), and
3) Segment of Iris Lane between Centre City Pkwy to El Norte Pkwy (LOS F).

<u>There are no significant horizon year impacts because the addition of project traffic does not exceed the significance thresholds.</u>

Figure 13: Year 2035 plus Project Volumes



11.0 Conclusion

The project is an Assisted Living residential community with 96 beds located at 1802 N. Centre City Parkway in Escondido, California. The site is generally vacant. The project applicant is processing a Community Plan Amendment.

The project trip generation for the project was calculated using trip rates from the Institute of Transportation Engineers (ITE) 10th Edition *Trip Generation*, September 2017. The project is calculated to generate 250 ADT with 19 AM peak hour trips (12 inbound and 7 outbound) and 25 PM peak hour trips (10 inbound and 15 outbound).

The following scenarios were analyzed: Existing, Existing plus Project, Existing + Cumulative, Existing + Cumulative + Project, Year 2035, and Year 2035 + Project Conditions. For each scenario, the findings include:

1) Under existing conditions, the study intersections and segments were calculated to operate at LOS D or better.
2) Under existing plus project conditions, the study intersections and segments were calculated to operate at LOS D or better. There are no significant direct impacts because the addition of project traffic does not exceed the significance thresholds.
3) Under existing plus cumulative conditions, the study intersections and segments were calculated to operate at LOS D or better.
4) Under existing plus cumulative plus project conditions, the study intersections and segments were calculated to operate at LOS D or better. There are no significant direct impacts because the addition of project traffic does not exceed the significance thresholds.
5) Under Year 2035 conditions, the study intersections and segments were calculated to operate at LOS D or better, except for:
    a. Intersection of Centre City Pkwy/Iris Ln (LOS F AM),
    b. Intersection of Center City Pkwy/El Norte Pkwy (LOS E AM & PM), and
    c. Segment of Iris Lane between Centre City Pkwy to El Norte Pkwy (LOS F).

6) Under Year 2035 plus project conditions, the study intersections and segments were calculated to operate at LOS D or better, except for:
    a. Intersection of Centre City Pkwy/Iris Ln (LOS F AM),
    b. Intersection of Center City Pkwy/El Norte Pkwy (LOS E AM & PM), and
    c. Segment of Iris Lane between Centre City Pkwy to El Norte Pkwy (LOS F).

    There are no significant horizon year impacts because the addition of project traffic does not exceed the significance thresholds.

The project has no calculated traffic impacts based on the significance criteria; therefore, mitigation measures are not required.

12.0 References and List of Preparers

12.1 References

City of Escondido *Traffic Impact Study Manual,* July 1998.

Escondido Traffic Engineers' Council (SANTEC). March 2, 2002. *SANTEC/ITE Guidelines for Traffic Impact Studies in the Escondido Region.*

Trafficware Corporation, 2006. Synchro Version 10 computer software.

Transportation Research Board National Research Council Washington, D.C. *Highway Capacity Manual 2000 and 2010*. CD ROM.

12.2 List of Preparers

Justin Rasas, P.E. (TR 2135), LOS Engineering, Inc. Author

Appendix A

City of Escondido Traffic Impact Analysis Guidelines

ESCONDIDO
City of Choice

CITY OF ESCONDIDO
Traffic Impact Analysis Guideline

The City's General Plan (2012) established a goal of L.O.S. "C" for all City streets, however, due to overall citywide traffic conditions, L.O.S. "D" was considered acceptable. If the existing LOS is "D" or worse, preservation of the existing LOS must be maintained, or acceptable mitigation must be identified.
Currently the approved level-of-service standards for different street segments based on their classifications and ADT within the City of Escondido are as follows:

CITY OF ESCONDIDO PROPOSED LEVEL OF SERVICE STANDARDS
STREET SEGMENT AVERAGE DAILY VEHICLE TRIP THRESHOLDS

Street Classification	Lanes	Cross Sections	Level of Service				
			A	B	C	D	E
Prime Arterial	(8 lanes) (6 lanes)	116/136 (NP) 106/126 (NP)	23,800 20,400	37,800 32,400	51,800 44,400	62,300 53,400	70,000 60,000
Major Road	(6 lanes) (4 lanes)	90/110 (NP) 82/102 (NP)	17,000 12,600	27,000 20,000	37,000 27,400	44,500 32,900	50,000 37,000
Collector	(4 lanes) (4 lanes)	64/84 (NP) (WP)	11,600 6,800	18,500 10,800	25,300 14,800	30,400 17,800	34,200 20,000
Local Collector	(2 lanes)	42/66 (NP) (WP)	5,100 3,400	8,100 5,400	11,100 7,400	13,400 8900	15,000 10,000

NP: No Parking, WP: With Parking
The following V/C Ratios were utilized for determining Existing and Future Level of Service.

Level of Service	(V/C Ratio)
A - Less than or Equal to	0.00 to 0.34
B - Less than or Equal to	0.35 to 0.54
C - Less than or Equal to	0.55 to 0.74
D - Less than or Equal to	0.75 to 0.89
E - Less than or Equal to	0.90 to 1.00

For any development, passenger vehicle trips shall be estimated using the rates and methodologies outlined in "Trip Generation Rates for San Diego Region", latest edition, published by SANDAG (if rates not available, ITE rates shall be used). Since based on the adopted 2013 General Plan of the City of Escondido, the goal Level-Of-Service is C, a Traffic Impact Analysis (TIA) must be prepared for any project that generates and adds more than 2% of the ADT for LOS C to any street segment within the preliminary study area identified by the City staff. Based on the above mentioned threshold, the following table contains the trigger-points for Traffic Impact Analysis within the City of Escondido for different street classifications.

PROPOSED A.D.T. THRESHOLDS FOR ROADWAY SEGMENTS TO
TRIGGER TRAFFIC IMPACT ANALYSIS FOR NEW DEVELOPMENTS

Street Classification	Lanes	Cross Sections (ft.)	TIA Trigger-Points (ADT generation)
Prime Arterial	(8 lanes) (6 lanes)	116/136 (NP) 106/126 (NP)	900 800
Major Road	(6 lanes) (4 lanes)	90/110 (NP) 82/102 (NP)	700 500
Collector	(4 lanes) (4 lanes)	64/84 (NP) (WP)	500 250
Local Collector and other	(2 lanes) (2 lanes)	42/66 (NP) (WP)	200

A Traffic Impact Analysis should be undertaken for any type of development that generates daily trips more than the above mentioned trigger-points. Certain types of projects which generate less than 500 ADTs may be considered by the City staff for a TIA waiver only where the affected segments and intersections operate at LOS C or better. On the contrary, City staff may require a TIA for any kind of development if the possible traffic impact of the project is believed to be considerable. The study area would be identified based on the fact that any complete transportation impact analysis should include at least all site access points and major intersections (signalized and un-signalized) adjacent to the site in the study area. Below are the proposed trigger-points to identify if an intersection should be included in the TIA or not:

PROPOSED A.D.T. THRESHOLDS FOR INTERSECTIONS TO
BE INCLUDED IN THE TRAFFIC IMPACT ANALYSIS

Intersection Classification (Minor leg of the intersection)	**TIA Trigger-Points (AM or PM peak hour trips added to any leg)**
Prime Arterial	50
Major Road	40
Collector	30
Local Collector	20

* 2% of A.D.T. for LOS "C" has been used as a guide to calculate the trigger-point values
* Study area can be expanded by City Engineer

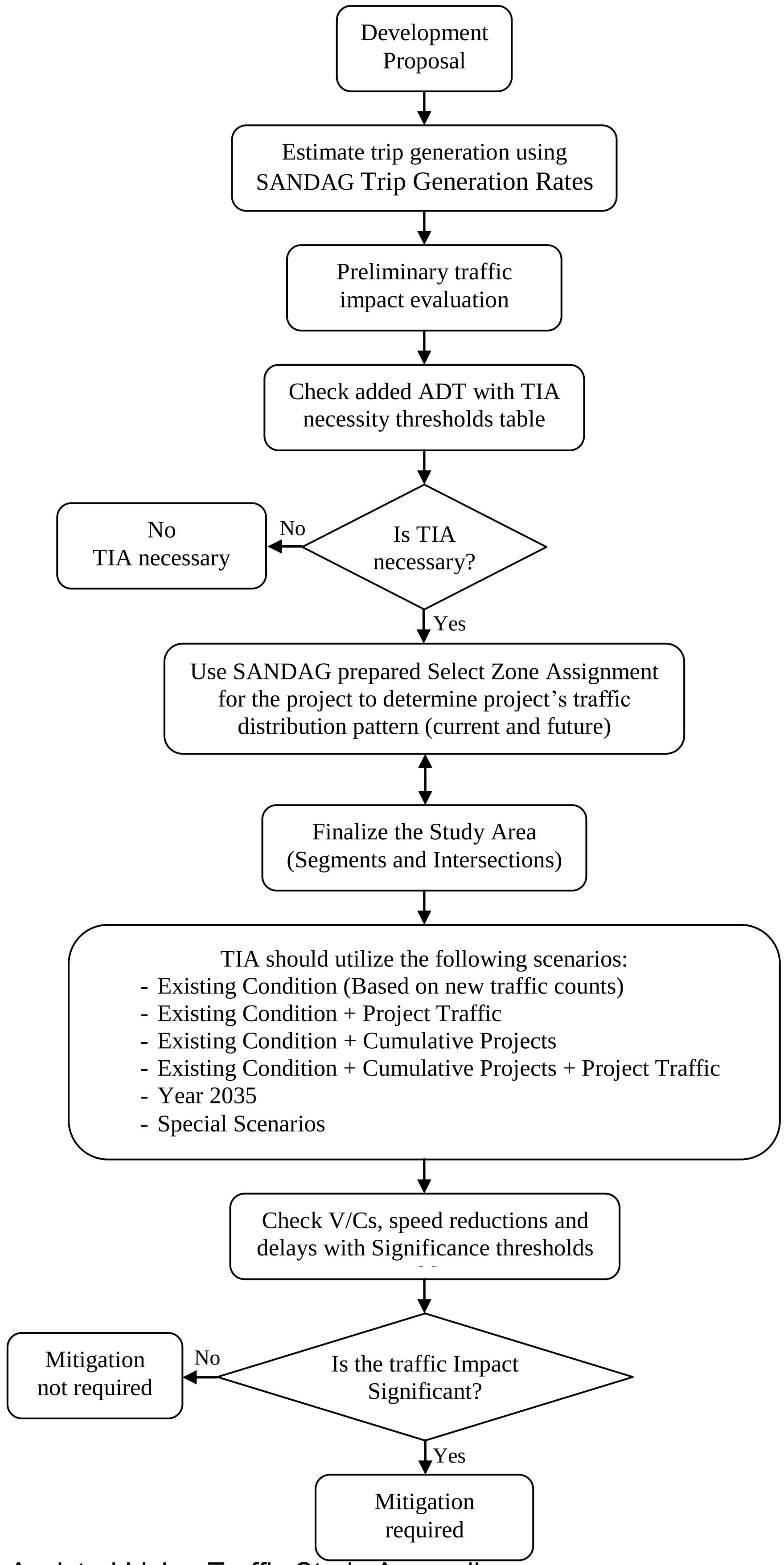
Certain types of developments that their traffic impact is found to be significant need to identify measures to mitigate the traffic impact. In accordance with "SANTEC/ITE Guidelines for Traffic Impact Studies in the San Diego Region", the following thresholds shall be used to identify if a project is of significance traffic impact under any scenario. Based on SANTEC/ITE guidelines, if now or in the future, the project's traffic impact causes the values in the table below to be exceeded in a roadway segment or an intersection that is operating at a LOS D or worse, it is determined to be a significant project and it shall identify mitigation measures. Below are the proposed thresholds for determining significant traffic impacts to a roadway segment or an intersection.

CITY OF ESCONDIDO PROPOSED THRESHOLDS TO
IDENTIFY PROJECTS SIGNIFICANT TRAFFIC IMPACT

Level of Service With Project	**Allowable Change due to Project Impact**		
	Roadway Segments		**Intersections**
	V/C	**Speed Reduction(mph)**	**Delay (sec.)**
D, E or F	0.02	1	2

* No Significant Impact occurs at areas in GP Downtown Specific Area that operates on LOS "D" or better
* Mitigation measures should also be considered for any segment or intersection operating on LOS "F" subject to less than significant impact.
* V: Volume C: Capacity (use LOS "E")

CITY OF ESCONDIDO PROPOSED GUIDELINE FOR PREPARATION OF TRAFFIC IMPACT ANALYSIS



Appendix B

Count Data

PO Box 1178
Corona, CA 92880
951-268-6268

Location: Escondido
N/S: Centre City Parkway
E/W: W Country Club Lane

Date: 5/3/2018
Day: THURSDAY
Project # 143-18341

TURNING MOVEMENT COUNT

Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:00AM to 8:00 AM

Vehicle Counts

	Centre City Parkway Northbound			Centre City Parkway Southbound			W Country Club Lane Eastbound			W Country Club Lane Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	11	36	17	47	186	54	13	82	28	42	95	29	640
7:15 AM	6	37	34	43	210	65	22	89	29	69	102	23	729
7:30 AM	13	49	26	48	216	61	18	95	26	50	124	30	756
7:45 AM	10	60	24	44	188	56	16	88	24	60	140	27	737
8:00 AM	11	43	12	24	191	58	10	40	20	48	119	31	607
8:15 AM	13	53	11	16	165	36	9	19	27	43	76	19	487
8:30 AM	11	57	10	23	156	31	12	27	24	33	42	17	443
8:45 AM	11	48	16	20	104	20	13	36	20	27	44	17	376
TOTAL VOLUMES:	86	383	150	265	1416	381	113	476	198	372	742	193	4775

AM Peak Hr Begins at: 700 AM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	40	182	101	182	800	236	69	354	107	221	461	109	2862

PEAK HR FACTOR:	0.859	0.937	0.946	0.871	0.946

Bicycle Counts

	Centre City Parkway Northbound			Centre City Parkway Southbound			W Country Club Lane Eastbound			W Country Club Lane Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
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	1	0	0	0	0	0	1
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	1	0	0	0	0	1
TOTAL VOLUMES:	0	1	0	0	0	0	1	2	0	0	0	0	4

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	1	0	0	0	0	0	1	0	0	0	0	2

Pedestrian Counts

	Centre City Parkway North Leg	Centre City Parkway South Leg	W Country Club Lane East Leg	W Country Club Lane West Leg	TOTAL
7:00 AM	0	0	0	1	1
7:15 AM	0	2	0	2	4
7:30 AM	0	0	0	0	0
7:45 AM	1	1	0	0	2
8:00 AM	2	0	0	1	3
8:15 AM	2	1	1	0	4
8:30 AM	0	2	1	1	4
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	5	6	2	5	18

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	1	3	0	3	7

PO Box 1178
Corona, CA 92880
951-268-6268

Location: Escondido
N/S: Centre City Parkway
E/W: W Country Club Lane

Date: 5/3/2018
Day: THURSDAY
Project # 143-18341

TURNING MOVEMENT COUNT

Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM

Vehicle Counts

	Centre City Parkway Northbound			Centre City Parkway Southbound			W Country Club Lane Eastbound			W Country Club Lane Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	23	91	46	29	68	23	30	64	11	32	42	22	481
4:15 PM	24	95	42	29	75	15	41	97	12	25	47	29	531
4:30 PM	13	119	38	29	68	17	36	75	15	30	66	32	538
4:45 PM	29	116	47	35	60	12	41	94	18	17	59	29	557
5:00 PM	26	107	33	29	61	12	30	87	17	22	62	23	509
5:15 PM	37	136	59	31	71	20	28	97	27	23	60	34	623
5:30 PM	38	112	53	35	44	13	29	92	20	25	57	38	556
5:45 PM	22	101	39	36	49	12	23	88	16	26	58	28	498
TOTAL VOLUMES:	212	877	357	253	496	124	258	694	136	200	451	235	4293

PM Peak Hr Begins at: 445 PM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	130	471	192	130	236	57	128	370	82	87	238	124	2245

PEAK HR FACTOR:	0.855	0.867	0.948	0.935	0.901

Bicycle Counts

	Centre City Parkway Northbound			Centre City Parkway Southbound			W Country Club Lane Eastbound			W Country Club Lane Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
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	1	0	0	0	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	1	0	0	1	0	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	1	0	0	0	0	0	0	1	0	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	1	1	0	0	0	0	0	1	1	0	2	0	6

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	1	0	0	0	0	0	1	1	0	2	0	5

Pedestrian Counts

	Centre City Parkway North Leg	Centre City Parkway South Leg	W Country Club Lane East Leg	W Country Club Lane West Leg	TOTAL
4:00 PM	0	2	0	1	3
4:15 PM	0	0	1	0	1
4:30 PM	0	0	0	0	0
4:45 PM	3	0	3	0	6
5:00 PM	0	0	0	0	0
5:15 PM	0	4	0	3	7
5:30 PM	2	0	0	0	2
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	5	6	4	4	19

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	5	4	3	3	15

PO Box 1178
Corona, CA 92880
951-268-6268

Location:	Escondido	Date: 5/3/2018
N/S:	Centre City Parkway	Day: THURSDAY
E/W:	Iris Lane	Project # 143-18341

TURNING MOVEMENT COUNT

Count Period: **7:00 AM to 9:00 AM**
Peak Hour: **7:15 AM to 8:15 AM**

Vehicle Counts

	Centre City Parkway Northbound			Centre City Parkway Southbound			Iris Lane Eastbound			Iris Lane Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	3	47	17	4	215	21	14	39	5	82	36	2	485
7:15 AM	5	56	27	1	267	19	15	80	3	87	46	3	609
7:30 AM	4	60	32	3	270	20	26	64	1	97	43	4	624
7:45 AM	4	76	21	3	257	29	13	51	3	108	70	1	636
8:00 AM	2	52	19	1	220	25	4	25	1	94	52	1	496
8:15 AM	3	65	18	1	248	22	14	16	4	60	26	2	479
8:30 AM	2	71	13	0	191	15	7	13	2	55	18	0	387
8:45 AM	3	62	19	2	139	13	11	20	1	53	14	1	338
TOTAL VOLUMES:	26	489	166	15	1807	164	104	308	20	636	305	14	4054

AM Peak Hr Begins at: 715 AM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	15	244	99	8	1014	93	58	220	8	386	211	9	2365

PEAK HR FACTOR:	0.886	0.951	0.730	0.846	0.930

Bicycle Counts

	Centre City Parkway Northbound			Centre City Parkway Southbound			Iris Lane Eastbound			Iris Lane Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
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	0	0	0	1	0	0	0	0	0	0	0	1
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	1	0	0	1
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	1	0	0	0	0	0	0	0	0	0	0	1
TOTAL VOLUMES:	0	1	0	0	2	0	0	0	0	1	0	0	4

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	0	2	0	0	0	0	1	0	0	3

Pedestrian Counts

	Centre City Parkway North Leg	Centre City Parkway South Leg	Iris Lane East Leg	Iris Lane West Leg	TOTAL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	1	0	0	1
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	0	1	0	0	1

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	0	1	0	0	1

PO Box 1178
Corona, CA 92880
951-268-6268

Location: Escondido
N/S: Centre City Parkway
E/W: Iris Lane

Date: 5/3/2018
Day: THURSDAY
Project # 143-18341

TURNING MOVEMENT COUNT

Count Period: **4:00 PM to 6:00 PM**
Peak Hour: **4:45 PM to 5:45 PM**

Vehicle Counts

	Centre City Parkway Northbound			Centre City Parkway Southbound			Iris Lane Eastbound			Iris Lane Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	1	125	62	1	103	13	36	62	3	37	23	2	468
4:15 PM	2	118	48	3	90	15	39	47	2	35	18	3	420
4:30 PM	2	142	53	2	94	11	30	44	0	29	15	2	424
4:45 PM	7	143	51	1	88	12	35	77	3	26	14	3	460
5:00 PM	2	115	37	0	99	17	48	62	2	40	22	4	448
5:15 PM	2	186	55	4	105	12	43	71	1	28	14	1	522
5:30 PM	2	159	69	1	79	10	44	75	1	21	25	1	487
5:45 PM	1	126	46	1	87	11	35	62	9	34	23	1	436
TOTAL VOLUMES:	19	1114	421	13	745	101	310	500	21	250	154	17	3665

PM Peak Hr Begins at: 445 PM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	13	603	212	6	371	51	170	285	7	115	75	9	1917

PEAK HR FACTOR:	0.852	0.884	0.963	0.754	0.918

Bicycle Counts

	Centre City Parkway Northbound			Centre City Parkway Southbound			Iris Lane Eastbound			Iris Lane Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	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
TOTAL VOLUMES:	0	1	1	0	0	0	0	0	0	0	0	0	2

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	0	0	0	0	0	0	0	0	0	0

Pedestrian Counts

	Centre City Parkway North Leg	Centre City Parkway South Leg	Iris Lane East Leg	Iris Lane West Leg	TOTAL
4:00 PM	0	0	0	0	0
4:15 PM	0	1	0	1	2
4:30 PM	0	0	0	1	1
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	1	0	1
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	0	1	1	2	4

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	0	0	1	0	1

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951-268-6268

Location:	Escondido		Date: 5/3/2018
N/S:	Centre City Parkway		Day: THURSDAY
E/W:	El Norte Parkway		Project # 143-18341

TURNING MOVEMENT COUNT

Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:15 AM to 8:15 AM

Vehicle Counts

	Centre City Parkway Northbound			Centre City Parkway Southbound			El Norte Parkway Eastbound			El Norte Parkway Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	30	43	16	46	205	16	2	145	62	87	152	23	827
7:15 AM	39	65	23	71	253	22	3	127	55	110	200	27	995
7:30 AM	38	69	14	56	253	15	4	138	70	96	192	31	976
7:45 AM	47	56	17	44	247	26	2	143	68	112	166	36	964
8:00 AM	52	64	27	70	274	13	3	130	67	83	140	18	941
8:15 AM	42	37	22	39	197	12	3	138	83	123	175	27	898
8:30 AM	34	64	13	47	197	13	2	104	72	100	124	30	800
8:45 AM	44	58	22	38	110	18	4	128	41	76	136	24	699
TOTAL VOLUMES:	326	456	154	411	1736	135	23	1053	518	787	1285	216	7100

AM Peak Hr Begins at: 715 AM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	176	254	81	241	1027	76	12	538	260	401	698	112	3876

PEAK HR FACTOR:	0.893	0.941	0.951	0.898	0.974

Bicycle Counts

	Centre City Parkway Northbound			Centre City Parkway Southbound			El Norte Parkway Eastbound			El Norte Parkway Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
7:30 AM	0	0	0	0	1	0	0	1	0	0	0	0	2
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	1	1	2
8:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
TOTAL VOLUMES:	0	0	0	0	1	0	0	4	0	0	1	1	7

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	0	0	0	1	0	0	2	0	0	0	0	3

Pedestrian Counts

	Centre City Parkway North Leg	Centre City Parkway South Leg	El Norte Parkway East Leg	El Norte Parkway West Leg	TOTAL
7:00 AM	5	0	0	0	5
7:15 AM	1	2	0	1	4
7:30 AM	1	1	1	0	3
7:45 AM	0	3	0	0	3
8:00 AM	0	2	0	0	2
8:15 AM	0	2	0	0	2
8:30 AM	1	1	1	0	3
8:45 AM	1	3	0	0	4
TOTAL VOLUMES:	9	14	2	1	26

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	2	8	1	1	12

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951-268-6268

Location: Escondido
N/S: Centre City Parkway
E/W: El Norte Parkway

Date: 5/3/2018
Day: THURSDAY
Project # 143-18341

TURNING MOVEMENT COUNT

Count Period: **4:00 PM to 6:00 PM**
Peak Hour: **4:45 PM to 5:45 PM**

Vehicle Counts

	Centre City Parkway Northbound			Centre City Parkway Southbound			El Norte Parkway Eastbound			El Norte Parkway Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	76	125	57	38	66	9	11	223	52	50	149	17	873
4:15 PM	105	147	71	50	78	13	4	183	36	47	118	33	885
4:30 PM	76	126	71	30	60	12	15	206	48	42	168	30	884
4:45 PM	110	173	79	52	64	8	6	191	52	58	125	31	949
5:00 PM	43	90	64	28	56	7	7	184	39	50	136	30	734
5:15 PM	111	198	92	64	96	9	7	211	50	46	153	45	1082
5:30 PM	99	169	76	30	51	6	12	201	51	42	147	37	921
5:45 PM	78	117	87	48	69	6	7	186	51	49	139	34	871
TOTAL VOLUMES:	698	1145	597	340	540	70	69	1585	379	384	1135	257	7199

PM Peak Hr Begins at: 445 PM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	363	630	311	174	267	30	32	787	192	196	561	143	3686

PEAK HR FACTOR:	0.813	0.697	0.943	0.922	0.852

Bicycle Counts

	Centre City Parkway Northbound			Centre City Parkway Southbound			El Norte Parkway Eastbound			El Norte Parkway Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	1	2	0	3
4:15 PM	0	0	0	0	1	0	0	1	0	0	0	0	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	2	0	2
4:45 PM	0	0	0	0	0	0	0	0	1	0	0	0	1
5:00 PM	0	0	0	0	1	0	0	0	0	0	0	1	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	1	0	0	0	0	0	0	0	3	0	1	5
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	1	0	0	2	0	0	1	1	4	4	2	15

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	1	0	0	1	0	0	0	1	3	0	2	8

Pedestrian Counts

	Centre City Parkway North Leg	Centre City Parkway South Leg	El Norte Parkway East Leg	El Norte Parkway West Leg	TOTAL
4:00 PM	8	1	0	0	9
4:15 PM	2	2	1	0	5
4:30 PM	3	3	1	0	7
4:45 PM	3	2	5	0	10
5:00 PM	2	4	2	1	9
5:15 PM	1	2	0	0	3
5:30 PM	1	3	1	2	7
5:45 PM	0	1	0	0	1
TOTAL VOLUMES:	20	18	10	3	51

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	7	11	8	3	29

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951-268-6268

Location: Escondido
N/S: Centre City Parkway
E/W: Decatur Way

Date: 5/3/2018
Day: THURSDAY
Project # 143-18341

TURNING MOVEMENT COUNT

Count Period: **7:00 AM to 9:00 AM**
Peak Hour: **7:15 AM to 8:15 AM**

Vehicle Counts

	Centre City Parkway Northbound			Centre City Parkway Southbound			Decatur Way Eastbound			Decatur Way Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	4	78	9	9	393	3	0	0	1	29	0	9	535
7:15 AM	8	130	11	14	469	5	0	0	1	18	0	20	676
7:30 AM	2	94	14	11	475	1	1	3	3	22	0	20	646
7:45 AM	4	98	15	14	419	10	0	0	1	31	3	31	626
8:00 AM	8	110	11	16	442	3	1	0	2	26	2	27	648
8:15 AM	2	80	9	18	424	3	2	0	2	21	1	27	589
8:30 AM	3	102	2	16	373	2	0	0	4	18	0	20	540
8:45 AM	3	101	14	12	255	1	1	0	1	25	2	15	430
TOTAL VOLUMES:	34	793	85	110	3250	28	5	3	15	190	8	169	4690

AM Peak Hr Begins at: 715 AM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	22	432	51	55	1805	19	2	3	7	97	5	98	2596

PEAK HR FACTOR:	0.847	0.963	0.429	0.769	0.960

Bicycle Counts

	Centre City Parkway Northbound			Centre City Parkway Southbound			Decatur Way Eastbound			Decatur Way Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	0	0	0	0	0	0	1	2	0	0	0	0	3
7:15 AM	0	1	0	3	1	0	0	0	0	0	0	0	5
7:30 AM	0	0	0	1	2	0	0	0	0	0	0	0	3
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	1	0	0	0	0	0	0	0	1
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	1	0	0	0	0	1
TOTAL VOLUMES:	0	1	0	4	4	0	1	3	0	0	0	0	13

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	1	0	4	3	0	0	0	0	0	0	0	8

Pedestrian Counts

	Centre City Parkway North Leg	Centre City Parkway South Leg	Decatur Way East Leg	Decatur Way West Leg	TOTAL
7:00 AM	3	0	0	2	5
7:15 AM	4	1	0	5	10
7:30 AM	2	0	0	0	2
7:45 AM	2	0	0	1	3
8:00 AM	3	0	0	0	3
8:15 AM	2	1	0	2	5
8:30 AM	1	0	0	1	2
8:45 AM	2	0	1	0	3
TOTAL VOLUMES:	19	2	1	11	33

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	11	1	0	6	18

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Location: Escondido
N/S: Centre City Parkway
E/W: Decatur Way

Date: 5/3/2018
Day: THURSDAY
Project # 143-18341

TURNING MOVEMENT COUNT

Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM

Vehicle Counts

	Centre City Parkway Northbound			Centre City Parkway Southbound			Decatur Way Eastbound			Decatur Way Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	4	248	33	11	170	0	1	1	14	12	1	44	539
4:15 PM	2	260	33	7	182	1	1	0	7	15	2	37	547
4:30 PM	7	252	24	15	147	2	5	1	10	15	0	53	531
4:45 PM	3	291	34	6	171	3	2	1	3	15	1	44	574
5:00 PM	9	227	37	9	151	3	4	2	12	10	2	59	525
5:15 PM	5	276	54	8	179	3	7	1	6	20	3	51	613
5:30 PM	4	284	21	9	173	2	1	0	2	19	0	52	567
5:45 PM	5	258	29	7	176	0	0	0	3	8	0	46	532
TOTAL VOLUMES:	39	2096	265	72	1349	14	21	6	57	114	9	386	4428

PM Peak Hr Begins at: 445 PM

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	21	1078	146	32	674	11	14	4	23	64	6	206	2279

PEAK HR FACTOR:	0.929	0.943	0.569	0.932	0.929

Bicycle Counts

	Centre City Parkway Northbound			Centre City Parkway Southbound			Decatur Way Eastbound			Decatur Way Westbound			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	1	0	0	0	1	2
4:30 PM	0	1	0	0	0	0	1	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	1
5:00 PM	0	1	0	0	0	1	0	1	0	0	0	0	3
5:15 PM	0	0	0	0	2	2	0	0	0	0	0	1	5
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	1	0	0	0	0	2	3
TOTAL VOLUMES:	0	2	0	0	3	3	3	2	0	0	0	4	17

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
PEAK VOLUMES:	0	1	0	0	2	3	1	1	0	0	0	1	9

Pedestrian Counts

	Centre City Parkway North Leg	Centre City Parkway South Leg	Decatur Way East Leg	Decatur Way West Leg	TOTAL
4:00 PM	3	0	0	0	3
4:15 PM	0	0	0	2	2
4:30 PM	0	1	0	5	6
4:45 PM	0	0	0	2	2
5:00 PM	0	1	0	0	1
5:15 PM	2	0	0	1	3
5:30 PM	0	1	0	2	3
5:45 PM	0	0	1	4	5
TOTAL VOLUMES:	5	3	1	16	25

	North Leg	South Leg	East Leg	West Leg	TOTAL
PEAK VOLUMES:	2	2	0	5	9

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City of Escondido
Centre City Parkway
B/ Country Club Lane - Iris Lane

File Name 001
Site Code: 143-18341
24 Hour Directional Volume Count

Date:	Northbound				Southbound					
5/3/2018	15 Minute Totals		Hourly Totals		15 Minute Totals		Hourly Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	9	86			6	92				
12:15	14	78			3	81				
12:30	11	91			2	83				
12:45	4	75	38	330	2	104	13	360	51	690
1:00	6	107			2	84				
1:15	5	115			0	114				
1:30	6	106			2	107				
1:45	3	112	20	440	4	115	8	420	28	860
2:00	3	101			0	117				
2:15	8	109			5	103				
2:30	3	102			4	99				
2:45	3	112	17	424	6	107	15	426	32	850
3:00	3	135			3	106				
3:15	4	154			8	123				
3:30	3	151			7	105				
3:45	3	153	13	593	12	127	30	461	43	1054
4:00	5	160			12	111				
4:15	1	161			21	112				
4:30	4	170			23	113				
4:45	13	192	23	683	26	95	82	431	105	1114
5:00	13	166			52	100				
5:15	18	232			52	121				
5:30	32	203			83	89				
5:45	40	162	103	763	79	91	266	401	369	1164
6:00	43	157			97	73				
6:15	40	137			126	78				
6:30	57	109			183	76				
6:45	72	116	212	519	195	82	601	309	813	828
7:00	64	105			256	78				
7:15	78	98			308	72				
7:30	87	84			292	56				
7:45	94	81	323	368	272	52	1128	258	1451	626
8:00	66	81			259	41				
8:15	77	77			235	37				
8:30	78	59			213	37				
8:45	75	76	296	293	151	36	858	151	1154	444
9:00	75	71			98	36				
9:15	42	71			99	46				
9:30	67	53			86	31				
9:45	77	62	261	257	96	25	379	138	640	395
10:00	57	42			98	25				
10:15	59	32			112	15				
10:30	75	33			100	15				
10:45	67	21	258	128	90	16	400	71	658	199
11:00	79	23			102	11				
11:15	73	22			105	13				
11:30	83	15			95	5				
11:45	87	13	322	73	106	7	408	36	730	109
Totals	1886	4871			4188	3462				
Combined Totals		6757				7650				
ADT										14407
AM Peak Hour	715	AM			715	AM				
Volume	325				1131					
P.H.F.	0.864				0.918					
PM Peak Hour		445	PM			315	PM			
Volume		793				466				
P.H.F.		0.855				0.917				
Percentage	27.9%	72.1%			54.7%	45.3%				

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City of Escondido
Centre City Parkway
B/ Iris Lane - El Norte Parkway

File Name 002
Site Code: 143-18341
24 Hour Directional Volume Count

Date:	Northbound				Southbound					
5/3/2018	15 Minute Totals		Hourly Totals		15 Minute Totals		Hourly Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	10	100			4	125				
12:15	14	82			5	84				
12:30	10	115			4	111				
12:45	4	78	38	375	3	119	16	439	54	814
1:00	6	114			3	120				
1:15	5	132			1	135				
1:30	5	121			3	125				
1:45	5	110	21	477	3	169	10	549	31	1026
2:00	7	118			3	138				
2:15	6	109			4	129				
2:30	3	118			6	152				
2:45	4	117	20	462	4	133	17	552	37	1014
3:00	3	126			4	141				
3:15	5	165			8	149				
3:30	3	159			6	141				
3:45	3	164	14	614	10	148	28	579	42	1193
4:00	4	188			9	143				
4:15	1	168			18	127				
4:30	8	197			30	123				
4:45	10	201	23	754	32	117	89	510	112	1264
5:00	15	154			58	141				
5:15	18	243			69	134				
5:30	37	230			99	101				
5:45	40	173	110	800	118	130	344	506	454	1306
6:00	42	176			135	88				
6:15	36	149			165	86				
6:30	51	125			241	114				
6:45	85	149	214	599	274	99	815	387	1029	986
7:00	67	112			302	100				
7:15	88	131			357	77				
7:30	96	97			368	64				
7:45	101	98	352	438	368	63	1395	304	1747	742
8:00	73	104			315	49				
8:15	86	105			312	51				
8:30	86	76			248	50				
8:45	84	81	329	366	193	36	1068	186	1397	552
9:00	76	96			150	44				
9:15	51	81			136	48				
9:30	64	63			118	31				
9:45	82	75	273	315	123	31	527	154	800	469
10:00	69	56			113	31				
10:15	70	33			143	18				
10:30	81	37			128	17				
10:45	76	32	296	158	108	14	492	80	788	238
11:00	83	22			115	8				
11:15	78	23			109	21				
11:30	91	20			106	5				
11:45	96	21	348	86	120	5	450	39	798	125
Totals	2038	5444			5251	4285				
Combined Totals		7482				9536				
ADT										17018
AM Peak Hour	715	AM			715	AM				
Volume	358				1408					
P.H.F.	0.886				0.957					
PM Peak Hour		445	PM			145	PM			
Volume		828				588				
P.H.F.		0.852				0.870				
Percentage	27.2%	72.8%			55.1%	44.9%				

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PO Box 1178
Corona, CA 92878

City of Escondido
Centre City Parkway
B/ El Norte Parkway - Decatur Way

File Name 003
Site Code: 143-18341
24 Hour Directional Volume Count

Date:	Northbound				Southbound					
5/3/2018	15 Minute Totals		Hourly Totals		15 Minute Totals		Hourly Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	17	164			9	204				
12:15	23	162			11	178				
12:30	18	179			11	169				
12:45	12	164	70	669	8	200	39	751	109	1420
1:00	7	177			9	167				
1:15	8	209			4	169				
1:30	6	194			3	190				
1:45	12	206	33	786	7	225	23	751	56	1537
2:00	5	181			2	202				
2:15	10	239			3	175				
2:30	5	205			10	229				
2:45	4	205	24	830	11	190	26	796	50	1626
3:00	5	252			8	205				
3:15	6	254			13	213				
3:30	6	244			17	208				
3:45	10	301	27	1051	8	155	46	781	73	1832
4:00	8	258			23	168				
4:15	3	323			36	161				
4:30	7	273			66	150				
4:45	12	362	30	1216	77	174	202	653	232	1869
5:00	15	197			71	145				
5:15	12	401			119	192				
5:30	37	344			143	144				
5:45	42	282	106	1224	212	169	545	650	651	1874
6:00	43	291			237	141				
6:15	43	240			252	153				
6:30	74	243			340	146				
6:45	98	181	258	955	385	150	1214	590	1472	1545
7:00	89	221			354	142				
7:15	127	178			418	97				
7:30	121	157			419	112				
7:45	120	143	457	699	427	82	1618	433	2075	1132
8:00	143	159			424	98				
8:15	101	168			403	81				
8:30	111	123			369	91				
8:45	124	148	479	598	227	60	1423	330	1902	928
9:00	100	108			226	71				
9:15	99	120			188	46				
9:30	110	94			201	51				
9:45	112	125	421	447	184	54	799	222	1220	669
10:00	116	89			179	47				
10:15	103	79			213	37				
10:30	160	52			184	34				
10:45	175	41	554	261	207	32	783	150	1337	411
11:00	128	39			195	20				
11:15	170	34			211	20				
11:30	147	25			185	11				
11:45	210	31	655	129	187	15	778	66	1433	195
Totals	3114	8865			7496	6173				
Combined Totals		11979				13669				
ADT										25648
AM Peak Hour	1100	AM			715	AM				
Volume	655				1688					
P.H.F.	0.780				0.988					
PM Peak Hour		515	PM			230	PM			
Volume		1318				837				
P.H.F.		0.822				0.914				
Percentage	26.0%	74.0%			54.8%	45.2%				

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878

City of Escondido
Centre City Parkway
S/ Decatur Way

File Name 004
Site Code: 143-18341
24 Hour Directional Volume Count

Date: 5/3/2018	Northbound				Southbound				Combined Totals	
	15 Minute Totals		Hourly Totals		15 Minute Totals		Hourly Totals			
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	26	151			18	221				
12:15	26	149			13	277				
12:30	17	193			18	191				
12:45	16	164	85	657	12	206	61	895	146	1552
1:00	11	194			15	214				
1:15	13	172			12	205				
1:30	7	217			5	210				
1:45	10	183	41	766	5	214	37	843	78	1609
2:00	7	183			9	226				
2:15	9	222			4	264				
2:30	7	218			7	218				
2:45	8	214	31	837	14	235	34	943	65	1780
3:00	8	239			16	256				
3:15	6	255			6	243				
3:30	5	223			17	241				
3:45	11	275	30	992	24	219	63	959	93	1951
4:00	8	289			26	192				
4:15	10	303			37	220				
4:30	10	262			57	208				
4:45	17	336	45	1190	67	174	187	794	232	1984
5:00	16	285			89	181				
5:15	17	332			102	195				
5:30	39	311			142	227				
5:45	52	285	124	1213	242	190	575	793	699	2006
6:00	53	240			272	176				
6:15	57	243			314	185				
6:30	72	231			385	162				
6:45	103	187	285	901	428	196	1399	719	1684	1620
7:00	106	198			402	162				
7:15	141	184			444	149				
7:30	104	150			476	126				
7:45	122	176	473	708	491	115	1813	552	2286	1260
8:00	131	152			475	112				
8:15	102	174			474	134				
8:30	106	141			439	99				
8:45	120	154	459	621	390	104	1778	449	2237	1070
9:00	84	111			279	88				
9:15	112	134			249	79				
9:30	121	95			220	73				
9:45	140	116	457	456	236	61	984	301	1441	757
10:00	114	94			226	65				
10:15	123	69			208	60				
10:30	154	54			260	48				
10:45	156	51	547	268	238	51	932	224	1479	492
11:00	156	48			230	36				
11:15	156	30			225	31				
11:30	149	34			224	27				
11:45	168	35	629	147	213	14	892	108	1521	255
Totals	3206	8756			8755	7580				
Combined Totals		11962				16335				
ADT										28297
AM Peak Hour	1100	AM			730	AM				
Volume	629				1916					
P.H.F.	0.936				0.976					
PM Peak Hour		445	PM			245	PM			
Volume		1264				975				
P.H.F.		0.940				0.952				
Percentage	26.8%	73.2%			53.6%	46.4%				

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878

City of Escondido
El Norte Parkway
E/ Centre City Parkway

File Name 007
Site Code: 143-18341
24 Hour Directional Volume Count

Date:	Eastbound				Westbound					
5/3/2018	15 Minute Totals		Hourly Totals		15 Minute Totals		Hourly Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	21	156			25	197				
12:15	28	134			26	185				
12:30	17	172			12	187				
12:45	17	185	83	647	20	169	83	738	166	1385
1:00	10	197			18	165				
1:15	9	205			12	191				
1:30	5	198			10	232				
1:45	8	189	32	789	11	194	51	782	83	1571
2:00	11	205			10	222				
2:15	9	196			4	174				
2:30	10	230			6	266				
2:45	7	264	37	895	22	274	42	936	79	1831
3:00	6	225			8	212				
3:15	9	230			20	264				
3:30	4	256			22	241				
3:45	10	284	29	995	15	194	65	911	94	1906
4:00	2	318			27	216				
4:15	16	304			36	198				
4:30	12	308			55	240				
4:45	15	322	45	1252	62	214	180	868	225	2120
5:00	24	276			65	216				
5:15	33	366			116	244				
5:30	43	307			138	226				
5:45	55	321	155	1270	169	222	488	908	643	2178
6:00	64	277			223	218				
6:15	67	262			237	228				
6:30	133	215			280	200				
6:45	155	251	419	1005	282	234	1022	880	1441	1885
7:00	207	209			262	164				
7:15	221	212			337	168				
7:30	208	176			319	156				
7:45	204	175	840	772	314	154	1232	642	2072	1414
8:00	227	138			241	152				
8:15	199	161			325	121				
8:30	164	146			254	146				
8:45	188	150	778	595	236	105	1056	524	1834	1119
9:00	120	136			194	127				
9:15	127	120			214	94				
9:30	129	92			207	88				
9:45	136	111	512	459	220	89	835	398	1347	857
10:00	114	99			157	77				
10:15	125	85			198	71				
10:30	140	66			198	74				
10:45	151	46	530	296	192	55	745	277	1275	573
11:00	140	43			218	48				
11:15	193	50			179	33				
11:30	145	32			189	35				
11:45	184	33	662	158	203	35	789	151	1451	309
Totals	4122	9133			6588	8015				
Combined Totals		13255				14603				
ADT										27858
AM Peak Hour	715	AM			700	AM				
Volume	860				1232					
P.H.F.	0.947				0.914					
PM Peak Hour		430	PM			230	PM			
Volume		1272				1016				
P.H.F.		0.869				0.927				
Percentage	31.1%	68.9%			45.1%	54.9%				

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878

City of Escondido
El Norte Parkway
W/ Centre City Parkway

File Name 008
Site Code: 143-18341
24 Hour Directional Volume Count

Date:	Eastbound				Westbound					
5/3/2018	15 Minute Totals		Hourly Totals		15 Minute Totals		Hourly Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	17	169			25	194				
12:15	24	136			25	166				
12:30	17	175			18	183				
12:45	14	169	72	649	20	161	88	704	160	1353
1:00	11	185			16	157				
1:15	8	185			12	205				
1:30	6	180			11	205				
1:45	6	168	31	718	11	192	50	759	81	1477
2:00	11	202			11	221				
2:15	4	144			2	186				
2:30	10	191			5	221				
2:45	7	238	32	775	16	278	34	906	66	1681
3:00	4	207			2	223				
3:15	7	208			14	264				
3:30	5	208			14	197				
3:45	9	238	25	861	21	237	51	921	76	1782
4:00	6	286			21	234				
4:15	22	223			19	236				
4:30	17	269			22	256				
4:45	23	249	68	1027	26	243	88	969	156	1996
5:00	28	230			43	186				
5:15	38	268			57	273				
5:30	48	264			75	252				
5:45	55	244	169	1006	82	223	257	934	426	1940
6:00	66	237			117	242				
6:15	95	214			129	220				
6:30	133	202			215	224				
6:45	152	213	446	866	176	208	637	894	1083	1760
7:00	209	179			198	177				
7:15	185	173			261	170				
7:30	212	134			245	137				
7:45	213	159	819	645	239	148	943	632	1762	1277
8:00	200	116			205	149				
8:15	224	135			229	133				
8:30	178	126			171	150				
8:45	173	131	775	508	198	116	803	548	1578	1056
9:00	127	104			171	117				
9:15	143	93			202	92				
9:30	139	72			171	92				
9:45	131	76	540	345	178	103	722	404	1262	749
10:00	133	81			138	84				
10:15	120	70			161	83				
10:30	155	53			192	56				
10:45	152	37	560	241	203	41	694	264	1254	505
11:00	142	37			179	49				
11:15	191	50			163	41				
11:30	162	23			181	29				
11:45	160	28	655	138	206	31	729	150	1384	288
Totals	4192	7779			5096	8085				
Combined Totals		11971				13181				
ADT										25152
AM Peak Hour	730	AM			715	AM				
Volume	849				950					
P.H.F.	0.948				0.910					
PM Peak Hour		400	PM			515	PM			
Volume		1027				990				
P.H.F.		0.898				0.907				
Percentage	35.0%	65.0%			38.7%	61.3%				

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878

City of Escondido
Iris Lane
NE/ Centre City Parkway

File Name 005
Site Code: 143-18341
24 Hour Directional Volume Count

Date:	Northeastbound				Southwestbound					
5/3/2018	15 Minute Totals		Hourly Totals		15 Minute Totals		Hourly Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	6	53			1	49				
12:15	8	56			4	46				
12:30	3	65			0	45				
12:45	3	53	20	227	1	53	6	193	26	420
1:00	4	67			0	48				
1:15	4	99			0	47				
1:30	1	88			0	66				
1:45	4	70	13	324	3	87	3	248	16	572
2:00	5	91			2	71				
2:15	5	76			1	61				
2:30	2	86			3	83				
2:45	4	79	16	332	0	74	6	289	22	621
3:00	1	77			1	61				
3:15	3	114			1	66				
3:30	0	80			3	66				
3:45	2	117	6	388	2	63	7	256	13	644
4:00	3	125			1	62				
4:15	2	98			9	56				
4:30	5	99			20	46				
4:45	5	129	15	451	18	43	48	207	63	658
5:00	7	99			35	66				
5:15	4	130			42	43				
5:30	6	145			61	47				
5:45	10	109	27	483	75	58	213	214	240	697
6:00	15	91			89	50				
6:15	11	95			97	39				
6:30	33	100			126	51				
6:45	56	93	115	379	119	46	431	186	546	565
7:00	60	97			120	50				
7:15	108	89			136	35				
7:30	99	83			144	30				
7:45	75	65	342	334	179	31	579	146	921	480
8:00	45	75			147	30				
8:15	35	73			88	27				
8:30	26	49			73	25				
8:45	41	54	147	251	68	17	376	99	523	350
9:00	28	65			68	18				
9:15	35	55			58	18				
9:30	29	45			78	14				
9:45	32	44	124	209	59	11	263	61	387	270
10:00	39	31			48	12				
10:15	46	28			59	8				
10:30	46	27			56	10				
10:45	43	14	174	100	46	6	209	36	383	136
11:00	35	17			53	4				
11:15	39	21			33	8				
11:30	45	14			40	4				
11:45	58	24	177	76	44	4	170	20	347	96
Totals	1176	3554			2311	1955				
Combined Totals		4730				4266				
ADT										8996
AM Peak Hour	700	AM			715	AM				
Volume	342				606					
P.H.F.	0.792				0.846					
PM Peak Hour		445	PM			145	PM			
Volume		503				302				
P.H.F.		0.867				0.868				
Percentage	24.9%	75.1%			54.2%	45.8%				

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878

City of Escondido
Iris Lane
SW/ Centre City Parkway

File Name 006
Site Code: 143-18341
24 Hour Directional Volume Count

Date:	Northeastbound				Southwestbound					
5/3/2018	15 Minute Totals		Hourly Totals		15 Minute Totals		Hourly Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	5	45			2	34				
12:15	8	51			3	28				
12:30	7	55			0	33				
12:45	3	42	23	193	1	26	6	121	29	314
1:00	6	58			1	22				
1:15	4	83			0	21				
1:30	3	70			0	40				
1:45	2	70	15	281	3	47	4	130	19	411
2:00	1	72			1	46				
2:15	6	66			2	30				
2:30	2	76			1	49				
2:45	3	77	12	291	1	43	5	168	17	459
3:00	0	80			1	29				
3:15	3	99			3	27				
3:30	0	71			3	38				
3:45	2	101	5	351	3	36	10	130	15	481
4:00	3	101			4	37				
4:15	3	88			7	35				
4:30	2	74			19	28				
4:45	5	115	13	378	16	33	46	133	59	511
5:00	3	112			22	41				
5:15	6	115			28	28				
5:30	5	120			42	37				
5:45	13	106	27	453	37	35	129	141	156	594
6:00	10	75			51	41				
6:15	18	80			53	22				
6:30	34	85			54	27				
6:45	44	68	106	308	56	28	214	118	320	426
7:00	58	85			60	25				
7:15	98	65			70	24				
7:30	91	66			67	23				
7:45	67	55	314	271	103	19	300	91	614	362
8:00	30	57			79	22				
8:15	34	46			51	20				
8:30	22	35			35	12				
8:45	32	45	118	183	30	19	195	73	313	256
9:00	29	44			32	16				
9:15	25	42			29	16				
9:30	34	31			48	13				
9:45	21	32	109	149	33	11	142	56	251	205
10:00	31	20			31	9				
10:15	40	29			29	8				
10:30	38	16			28	7				
10:45	39	9	148	74	34	8	122	32	270	106
11:00	27	19			40	6				
11:15	36	20			30	2				
11:30	35	11			27	3				
11:45	52	16	150	66	29	5	126	16	276	82
Totals	1040	2998			1299	1209				
Combined Totals		4038				2508				
ADT										6546
AM Peak Hour	700	AM			715	AM				
Volume	314				319					
P.H.F.	0.801				0.774					
PM Peak Hour		445	PM			145	PM			
Volume		462				172				
P.H.F.		0.963				0.878				
Percentage	25.8%	74.2%			51.8%	48.2%				

Appendix C

City of Escondido General Plan Excerpts

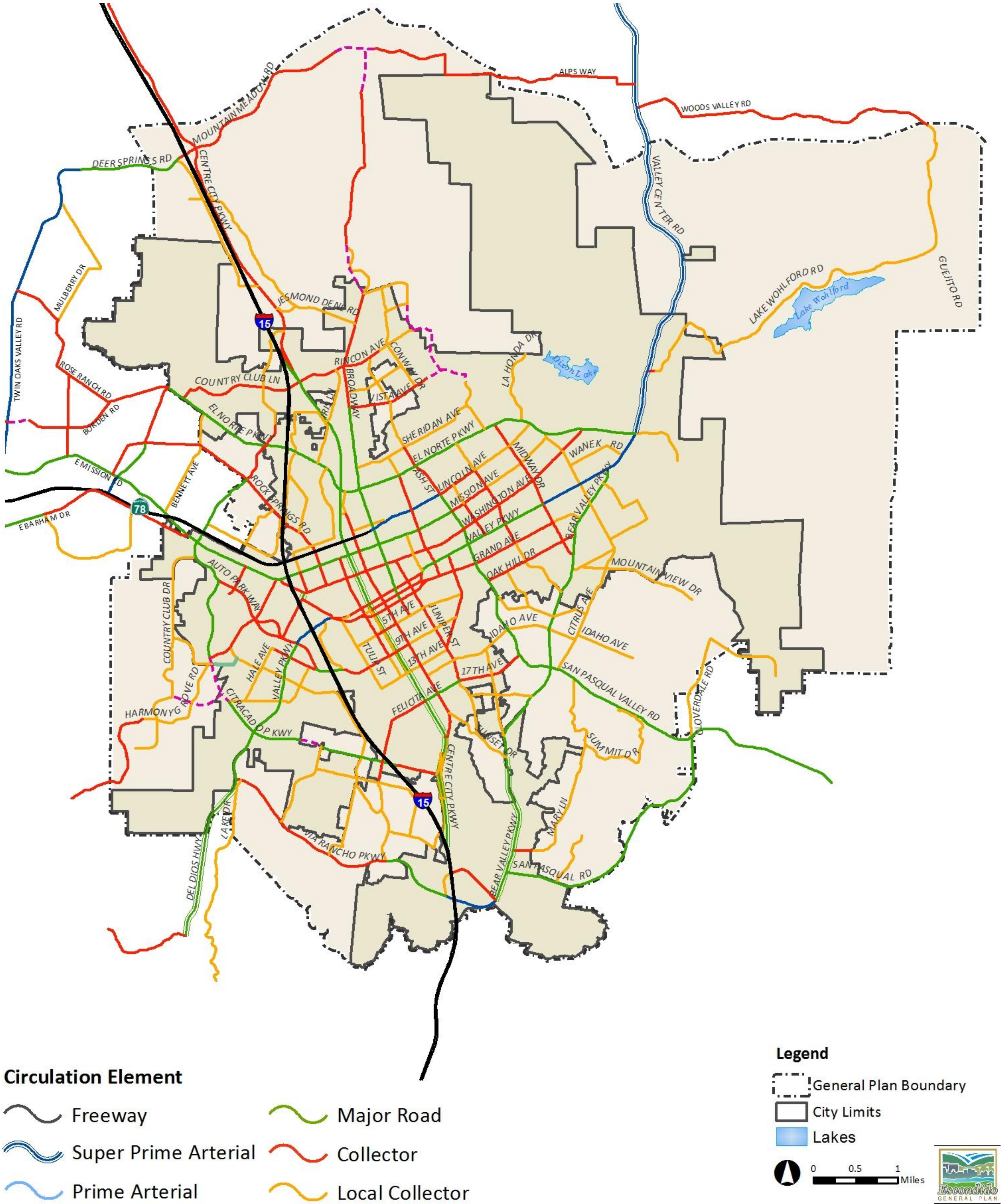
City of Escondido

GENERAL PLAN

MAY 2012 **Resolution 2012-52**







Escondido General Plan

Circulation Diagram

Figure III-6

Appendix D

Transit Map and Schedule

Center
Country Club
358
359
Rincon
Escondido
en
El Norte Pkwy
Rock Springs Rd
Mission Rd
Woodland Pkwy
Center Dr
Nordahl Rd
Barham Dr
Centre City Pkwy
355
357
El Norte Pkwy
El No
354
Fig
Ash
Lincoln
Mission
Washington
Midway
Broadway
356
Valley Pkwy
Grand Ave
rdahl Rd
5, 353, SPRINTER
305
Auto Pkwy
2nd Ave
351
352
Palomar Medical Center
Juniper
Escondido Blvd
Centre City Pkwy
Quince St
Bear Valley Pkwy
Country Club Dr
Citracado
353
Hale
9th Ave
Harmony Grove
te San Marcos
RINTER
Palomar Health Downtown
308
Sunset
Valley Pkwy
Escondido Transit Center
305, 308, 350, 351/352, 353,

Appendix E

City of Escondido *Bicycle Master Plan* Excerpts

Bicycle Master Plan

City of Escondido

Case File No. PHG 12-0018

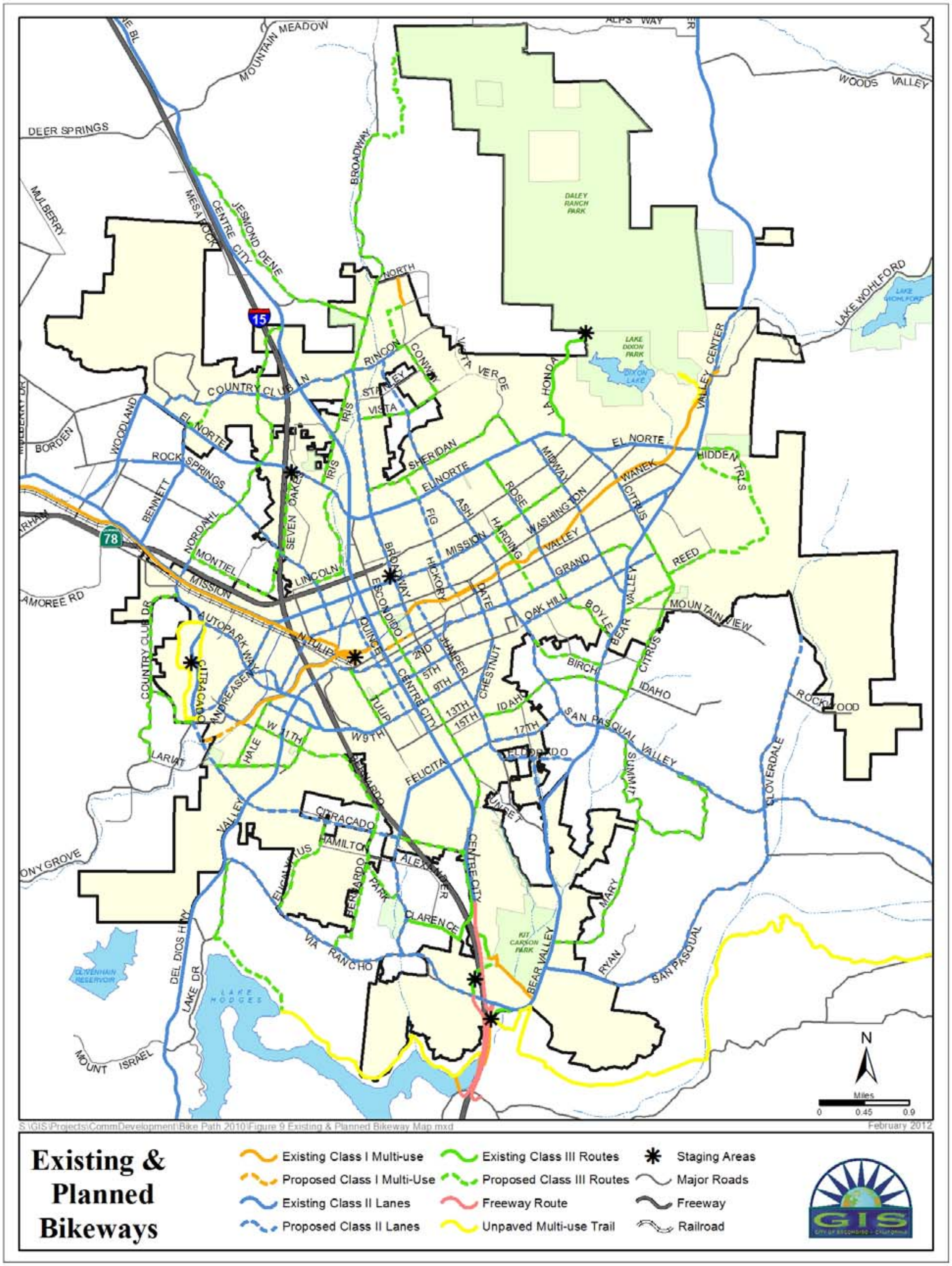
City Council
Sam Abed, Mayor
Marie Waldron, Deputy Mayor
Olga Diaz, Council Member
Ed Gallo, Council Member
Michael Morasco, Council Member

Staff Recognition
Jay Paul, Associate Planner-Project Manager
Jay Petrek-Principal Planner
Peggy Chapin – Contract Planner
Homi Namdari-Assistant City Engineer
Ali Shahzad-Associate Engineer, Traffic
Samuel Cottrell-Associate Engineer, Design
Daniel Hildebrand-GIS Manager
Jennifer Kay-GIS Technician

(Draft CC – October 2012)

Adopted by City Council Resolution No. 2012-162 on October ________ 2012

Figure ES 1 Existing and Proposed Bicycle Facilities



Appendix F

Existing LOS Calculations

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	354	107	221	461	109	40	182	101	182	800	236
Future Volume (veh/h)	69	354	107	221	461	109	40	182	101	182	800	236
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	75	385	116	240	501	118	43	198	110	198	870	257
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	93	466	202	264	808	353	55	1760	774	221	2092	921
Arrive On Green	0.05	0.13	0.13	0.15	0.23	0.23	0.06	0.99	0.99	0.12	0.59	0.59
Sat Flow, veh/h	1774	3539	1534	1774	3539	1547	1774	3539	1556	1774	3539	1557
Grp Volume(v), veh/h	75	385	116	240	501	118	43	198	110	198	870	257
Grp Sat Flow(s),veh/h/ln	1774	1770	1534	1774	1770	1547	1774	1770	1556	1774	1770	1557
Q Serve(g_s), s	6.9	17.5	11.7	22.0	21.0	10.5	3.9	0.1	0.1	18.1	22.0	13.3
Cycle Q Clear(g_c), s	6.9	17.5	11.7	22.0	21.0	10.5	3.9	0.1	0.1	18.1	22.0	13.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	93	466	202	264	808	353	55	1760	774	221	2092	921
V/C Ratio(X)	0.80	0.83	0.57	0.91	0.62	0.33	0.78	0.11	0.14	0.89	0.42	0.28
Avail Cap(c_a), veh/h	161	665	288	452	1244	544	118	1760	774	376	2092	921
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99	1.00	1.00	1.00
Uniform Delay (d), s/veh	77.3	69.8	67.3	69.1	57.2	53.2	76.8	0.2	0.2	71.1	18.3	16.5
Incr Delay (d2), s/veh	14.7	5.8	2.6	13.4	0.8	0.6	20.5	0.1	0.4	13.7	0.6	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	8.9	5.1	11.8	10.4	4.6	2.2	0.1	0.1	9.8	10.9	5.9
LnGrp Delay(d),s/veh	92.0	75.6	69.8	82.5	58.0	53.8	97.3	0.3	0.6	84.8	18.9	17.3
LnGrp LOS	F	E	E	F	E	D	F	A	A	F	B	B
Approach Vol, veh/h		576			859			351			1325	
Approach Delay, s/veh		76.6			64.3			12.3			28.4	
Approach LOS		E			E			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.6	86.1	28.6	25.7	9.1	101.5	12.7	41.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	35.0	41.0	42.0	31.0	11.0	65.0	15.0	58.0
Max Q Clear Time (g_c+I1), s	20.1	2.1	24.0	19.5	5.9	24.0	8.9	23.0
Green Ext Time (p_c), s	0.5	1.7	0.6	2.3	0.0	8.8	0.1	4.2

Intersection Summary	
HCM 2010 Ctrl Delay	45.4
HCM 2010 LOS	D

AM Existing
2: Centre City Pkwy & Iris Ln

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	220	8	386	211	9	15	244	99	8	1014	93
Future Volume (veh/h)	58	220	8	386	211	9	15	244	99	8	1014	93
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	63	239	9	420	229	10	16	265	108	9	1102	101
Adj No. of Lanes	1	1	0	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	491	841	32	484	836	36	22	1582	687	15	1566	680
Arrive On Green	0.47	0.47	0.47	0.47	0.47	0.47	0.01	0.45	0.45	0.01	0.44	0.44
Sat Flow, veh/h	1136	1782	67	1127	1770	77	1774	3539	1536	1774	3539	1536
Grp Volume(v), veh/h	63	0	248	420	0	239	16	265	108	9	1102	101
Grp Sat Flow(s),veh/h/ln	1136	0	1849	1127	0	1847	1774	1770	1536	1774	1770	1536
Q Serve(g_s), s	5.9	0.0	13.5	59.8	0.0	12.9	1.5	7.4	6.9	0.8	41.6	6.5
Cycle Q Clear(g_c), s	18.8	0.0	13.5	73.3	0.0	12.9	1.5	7.4	6.9	0.8	41.6	6.5
Prop In Lane	1.00		0.04	1.00		0.04	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	491	0	873	484	0	872	22	1582	687	15	1566	680
V/C Ratio(X)	0.13	0.00	0.28	0.87	0.00	0.27	0.72	0.17	0.16	0.62	0.70	0.15
Avail Cap(c_a), veh/h	554	0	975	546	0	974	43	1582	687	43	1566	680
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.99	0.99	0.99	0.85	0.85	0.85
Uniform Delay (d), s/veh	32.1	0.0	26.6	48.9	0.0	26.4	81.2	27.3	27.1	81.6	37.2	27.4
Incr Delay (d2), s/veh	0.1	0.0	0.2	12.9	0.0	0.2	34.3	0.2	0.5	31.2	2.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	6.9	20.3	0.0	6.7	0.9	3.7	3.0	0.5	20.9	2.8
LnGrp Delay(d),s/veh	32.2	0.0	26.7	61.8	0.0	26.6	115.4	27.5	27.6	112.8	39.5	27.8
LnGrp LOS	C		C	E		C	F	C	C	F	D	C
Approach Vol, veh/h		311			659			389			1212	
Approach Delay, s/veh		27.8			49.0			31.2			39.1	
Approach LOS		C			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.4	77.8		81.9	6.1	77.0		81.9
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	62.0		87.0	4.0	62.0		87.0
Max Q Clear Time (g_c+I1), s	2.8	9.4		20.8	3.5	43.6		75.3
Green Ext Time (p_c), s	0.0	2.3		1.9	0.0	8.2		2.6

Intersection Summary	
HCM 2010 Ctrl Delay	39.1
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	538	260	401	698	112	176	254	81	241	1027	76
Future Volume (veh/h)	12	538	260	401	698	112	176	254	81	241	1027	76
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	13	585	283	436	759	122	191	276	88	262	1116	83
Adj No. of Lanes	2	2	1	2	2	0	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	37	722	313	496	1027	165	233	1647	721	308	1724	755
Arrive On Green	0.01	0.20	0.20	0.14	0.34	0.34	0.11	0.78	0.78	0.09	0.49	0.49
Sat Flow, veh/h	3442	3539	1533	3442	3043	489	3442	3539	1551	3442	3539	1551
Grp Volume(v), veh/h	13	585	283	436	441	440	191	276	88	262	1116	83
Grp Sat Flow(s),veh/h/ln	1721	1770	1533	1721	1770	1762	1721	1770	1551	1721	1770	1551
Q Serve(g_s), s	0.6	26.0	29.7	20.5	36.3	36.3	9.0	3.3	2.3	12.4	39.0	4.8
Cycle Q Clear(g_c), s	0.6	26.0	29.7	20.5	36.3	36.3	9.0	3.3	2.3	12.4	39.0	4.8
Prop In Lane	1.00		1.00	1.00		0.28	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	37	722	313	496	597	595	233	1647	721	308	1724	755
V/C Ratio(X)	0.35	0.81	0.90	0.88	0.74	0.74	0.82	0.17	0.12	0.85	0.65	0.11
Avail Cap(c_a), veh/h	229	772	334	730	643	641	313	1647	721	396	1724	755
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99	0.57	0.57	0.57
Uniform Delay (d), s/veh	81.0	62.6	64.1	69.2	48.2	48.3	72.2	10.2	10.1	74.0	31.7	22.9
Incr Delay (d2), s/veh	5.4	6.1	25.8	8.4	4.2	4.2	11.9	0.2	0.3	8.0	1.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	13.4	14.8	10.3	18.5	18.4	4.6	1.6	1.0	6.2	19.3	2.1
LnGrp Delay(d),s/veh	86.4	68.7	89.9	77.6	52.4	52.5	84.1	10.4	10.4	82.0	32.8	23.1
LnGrp LOS	F	E	F	E	D	D	F	B	B	F	C	C
Approach Vol, veh/h		881			1317			555			1461	
Approach Delay, s/veh		75.8			60.8			35.8			41.1	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.8	80.8	27.8	37.7	15.2	84.4	5.8	59.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	19.0	59.0	35.0	36.0	15.0	63.0	11.0	60.0
Max Q Clear Time (g_c+I1), s	14.4	5.3	22.5	31.7	11.0	41.0	2.6	38.3
Green Ext Time (p_c), s	0.4	2.3	1.3	2.0	0.2	9.0	0.0	6.0

Intersection Summary			
HCM 2010 Ctrl Delay			53.8
HCM 2010 LOS			D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	3	7	97	5	98	22	432	51	55	1805	19
Future Volume (veh/h)	2	3	7	97	5	98	22	432	51	55	1805	19
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.95	0.97		0.95	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	2	3	8	105	5	107	24	470	55	60	1962	21
Adj No. of Lanes	1	1	0	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	76	42	113	168	7	142	30	2784	1210	76	2874	1249
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.02	0.79	0.79	0.09	1.00	1.00
Sat Flow, veh/h	1255	432	1152	1357	68	1445	1774	3539	1538	1774	3539	1539
Grp Volume(v), veh/h	2	0	11	105	0	112	24	470	55	60	1962	21
Grp Sat Flow(s),veh/h/ln	1255	0	1584	1357	0	1513	1774	1770	1538	1774	1770	1539
Q Serve(g_s), s	0.3	0.0	1.0	12.6	0.0	11.9	2.2	5.4	1.3	5.5	0.0	0.0
Cycle Q Clear(g_c), s	12.2	0.0	1.0	13.6	0.0	11.9	2.2	5.4	1.3	5.5	0.0	0.0
Prop In Lane	1.00		0.73	1.00		0.96	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	76	0	155	168	0	148	30	2784	1210	76	2874	1249
V/C Ratio(X)	0.03	0.00	0.07	0.62	0.00	0.75	0.79	0.17	0.05	0.79	0.68	0.02
Avail Cap(c_a), veh/h	136	0	230	232	0	220	65	2784	1210	129	2874	1249
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.64	0.64	0.64
Uniform Delay (d), s/veh	78.4	0.0	67.6	73.8	0.0	72.5	80.8	4.3	3.9	74.8	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.2	3.8	0.0	8.0	35.4	0.1	0.1	11.3	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.5	4.9	0.0	5.3	1.4	2.7	0.6	2.9	0.3	0.0
LnGrp Delay(d),s/veh	78.5	0.0	67.8	77.5	0.0	80.5	116.2	4.5	4.0	86.1	0.9	0.0
LnGrp LOS	E		E	E		F	F	A	A	F	A	A
Approach Vol, veh/h		13			217			549			2043	
Approach Delay, s/veh		69.4			79.0			9.3			3.4	
Approach LOS		E			E			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.0	133.8		20.2	6.8	138.0		20.2
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	12.0	117.0		24.0	6.0	123.0		24.0
Max Q Clear Time (g_c+I1), s	7.5	7.4		14.2	4.2	2.0		15.6
Green Ext Time (p_c), s	0.0	3.8		0.0	0.0	40.4		0.6

Intersection Summary			
HCM 2010 Ctrl Delay			10.6
HCM 2010 LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	128	370	82	87	238	124	130	471	192	130	236	57
Future Volume (veh/h)	128	370	82	87	238	124	130	471	192	130	236	57
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	139	402	89	95	259	135	141	512	209	141	257	62
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	162	494	214	116	402	174	162	2144	944	164	2148	945
Arrive On Green	0.09	0.14	0.14	0.07	0.11	0.11	0.18	1.00	1.00	0.09	0.61	0.61
Sat Flow, veh/h	1774	3539	1535	1774	3539	1529	1774	3539	1558	1774	3539	1558
Grp Volume(v), veh/h	139	402	89	95	259	135	141	512	209	141	257	62
Grp Sat Flow(s),veh/h/ln	1774	1770	1535	1774	1770	1529	1774	1770	1558	1774	1770	1558
Q Serve(g_s), s	12.7	18.2	8.7	8.7	11.5	14.2	12.7	0.0	0.0	12.9	5.1	2.7
Cycle Q Clear(g_c), s	12.7	18.2	8.7	8.7	11.5	14.2	12.7	0.0	0.0	12.9	5.1	2.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	162	494	214	116	402	174	162	2144	944	164	2148	945
V/C Ratio(X)	0.86	0.81	0.42	0.82	0.64	0.78	0.87	0.24	0.22	0.86	0.12	0.07
Avail Cap(c_a), veh/h	355	858	372	258	665	287	366	2144	944	366	2148	945
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	0.94	1.00	1.00	1.00
Uniform Delay (d), s/veh	73.9	68.9	64.8	76.2	69.9	71.1	66.5	0.0	0.0	73.8	13.7	13.3
Incr Delay (d2), s/veh	12.3	3.3	1.3	13.3	1.7	7.3	12.6	0.2	0.5	12.3	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	9.2	3.8	4.7	5.7	6.4	6.8	0.1	0.1	6.9	2.5	1.2
LnGrp Delay(d),s/veh	86.2	72.2	66.1	89.5	71.7	78.4	79.1	0.2	0.5	86.1	13.9	13.4
LnGrp LOS	F	E	E	F	E	E	E	A	A	F	B	B
Approach Vol, veh/h		630			489			862			460	
Approach Delay, s/veh		74.4			77.0			13.2			35.9	
Approach LOS		E			E			B			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.2	104.0	14.7	27.0	19.1	104.1	19.0	22.8				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	34.0	51.0	24.0	40.0	34.0	51.0	33.0	31.0				
Max Q Clear Time (g_c+I1), s	14.9	2.0	10.7	20.2	14.7	7.1	14.7	16.2				
Green Ext Time (p_c), s	0.3	4.8	0.2	2.9	0.3	2.0	0.3	1.8				
Intersection Summary												
HCM 2010 Ctrl Delay			46.1									
HCM 2010 LOS			D									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	285	7	115	75	9	13	603	212	6	371	51
Future Volume (veh/h)	170	285	7	115	75	9	13	603	212	6	371	51
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	185	310	8	125	82	10	14	655	230	7	403	55
Adj No. of Lanes	1	1	0	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	361	512	13	186	460	56	20	2255	982	12	2238	974
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.01	0.64	0.64	0.01	1.00	1.00
Sat Flow, veh/h	1296	1807	47	1057	1625	198	1774	3539	1541	1774	3539	1541
Grp Volume(v), veh/h	185	0	318	125	0	92	14	655	230	7	403	55
Grp Sat Flow(s),veh/h/ln	1296	0	1853	1057	0	1823	1774	1770	1541	1774	1770	1541
Q Serve(g_s), s	20.7	0.0	24.5	19.1	0.0	6.3	1.3	13.6	10.5	0.6	0.0	0.0
Cycle Q Clear(g_c), s	27.0	0.0	24.5	43.6	0.0	6.3	1.3	13.6	10.5	0.6	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.11	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	361	0	525	186	0	517	20	2255	982	12	2238	974
V/C Ratio(X)	0.51	0.00	0.61	0.67	0.00	0.18	0.69	0.29	0.23	0.59	0.18	0.06
Avail Cap(c_a), veh/h	677	0	977	444	0	961	43	2255	982	43	2238	974
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.89	0.89	0.89	0.97	0.97	0.97
Uniform Delay (d), s/veh	54.8	0.0	51.1	70.0	0.0	44.6	81.3	13.3	12.8	81.2	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.0	1.1	4.1	0.0	0.2	30.7	0.3	0.5	38.6	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.6	0.0	12.7	5.8	0.0	3.2	0.8	6.7	4.6	0.4	0.1	0.0
LnGrp Delay(d),s/veh	55.9	0.0	52.3	74.2	0.0	44.8	112.0	13.6	13.3	119.8	0.2	0.1
LnGrp LOS	E		D	E		D	F	B	B	F	A	A
Approach Vol, veh/h		503			217			899			465	
Approach Delay, s/veh		53.6			61.7			15.1			2.0	
Approach LOS		D			E			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.1	109.1		50.8	5.9	108.3		50.8
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	62.0		87.0	4.0	62.0		87.0
Max Q Clear Time (g_c+I1), s	2.6	15.6		29.0	3.3	2.0		45.6
Green Ext Time (p_c), s	0.0	6.3		2.8	0.0	3.2		1.1

Intersection Summary			
HCM 2010 Ctrl Delay			26.3
HCM 2010 LOS			C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	787	192	196	561	143	363	630	311	174	267	30
Future Volume (veh/h)	32	787	192	196	561	143	363	630	311	174	267	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	35	855	209	213	610	155	395	685	338	189	290	33
Adj No. of Lanes	2	2	1	2	2	0	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	67	1000	436	260	942	239	448	1688	740	234	1468	643
Arrive On Green	0.02	0.28	0.28	0.08	0.34	0.34	0.22	0.80	0.80	0.07	0.41	0.41
Sat Flow, veh/h	3442	3539	1542	3442	2782	705	3442	3539	1551	3442	3539	1549
Grp Volume(v), veh/h	35	855	209	213	387	378	395	685	338	189	290	33
Grp Sat Flow(s),veh/h/ln	1721	1770	1542	1721	1770	1718	1721	1770	1551	1721	1770	1549
Q Serve(g_s), s	1.7	37.7	18.6	10.1	30.6	30.7	18.3	9.6	11.5	8.9	8.6	2.1
Cycle Q Clear(g_c), s	1.7	37.7	18.6	10.1	30.6	30.7	18.3	9.6	11.5	8.9	8.6	2.1
Prop In Lane	1.00		1.00	1.00		0.41	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	67	1000	436	260	599	582	448	1688	740	234	1468	643
V/C Ratio(X)	0.53	0.85	0.48	0.82	0.65	0.65	0.88	0.41	0.46	0.81	0.20	0.05
Avail Cap(c_a), veh/h	104	1287	561	396	794	770	667	1688	740	355	1468	643
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.86	0.86	0.86
Uniform Delay (d), s/veh	80.2	56.0	49.1	75.2	46.2	46.2	63.4	9.8	10.0	75.8	30.8	28.9
Incr Delay (d2), s/veh	6.3	4.7	0.8	7.9	1.2	1.2	8.5	0.7	1.9	6.9	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	19.1	8.0	5.1	15.2	14.8	9.2	4.7	5.1	4.5	4.3	0.9
LnGrp Delay(d),s/veh	86.4	60.7	49.9	83.1	47.4	47.5	71.9	10.4	11.8	82.7	31.0	29.0
LnGrp LOS	F	E	D	F	D	D	E	B	B	F	C	C
Approach Vol, veh/h		1099			978			1418			512	
Approach Delay, s/veh		59.4			55.2			27.9			50.0	
Approach LOS		E			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.2	82.7	16.4	50.6	25.5	72.5	7.2	59.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	17.0	53.0	19.0	60.0	32.0	38.0	5.0	74.0
Max Q Clear Time (g_c+I1), s	10.9	13.5	12.1	39.7	20.3	10.6	3.7	32.7
Green Ext Time (p_c), s	0.3	7.1	0.4	6.9	1.1	2.0	0.0	5.8

Intersection Summary	
HCM 2010 Ctrl Delay	46.0
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	4	23	64	6	206	21	1078	146	32	674	11
Future Volume (veh/h)	14	4	23	64	6	206	21	1078	146	32	674	11
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	0.99		0.96	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	15	4	25	70	7	224	23	1172	159	35	733	12
Adj No. of Lanes	1	1	0	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	73	37	233	256	8	256	29	2583	1122	45	2614	1136
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.02	0.73	0.73	0.05	1.00	1.00
Sat Flow, veh/h	1145	216	1350	1356	47	1489	1774	3539	1537	1774	3539	1537
Grp Volume(v), veh/h	15	0	29	70	0	231	23	1172	159	35	733	12
Grp Sat Flow(s),veh/h/ln	1145	0	1566	1356	0	1536	1774	1770	1537	1774	1770	1537
Q Serve(g_s), s	2.1	0.0	2.6	7.6	0.0	24.2	2.1	22.1	5.1	3.2	0.0	0.0
Cycle Q Clear(g_c), s	26.3	0.0	2.6	10.2	0.0	24.2	2.1	22.1	5.1	3.2	0.0	0.0
Prop In Lane	1.00		0.86	1.00		0.97	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	73	0	270	256	0	264	29	2583	1122	45	2614	1136
V/C Ratio(X)	0.21	0.00	0.11	0.27	0.00	0.87	0.79	0.45	0.14	0.78	0.28	0.01
Avail Cap(c_a), veh/h	167	0	399	368	0	391	108	2583	1122	129	2614	1136
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92
Uniform Delay (d), s/veh	79.4	0.0	57.6	61.9	0.0	66.5	80.9	9.0	6.7	77.9	0.0	0.0
Incr Delay (d2), s/veh	1.4	0.0	0.2	0.6	0.0	13.6	36.8	0.6	0.3	22.8	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	1.1	2.9	0.0	11.3	1.3	11.0	2.2	1.9	0.1	0.0
LnGrp Delay(d),s/veh	80.7	0.0	57.8	62.5	0.0	80.1	117.7	9.6	7.0	100.6	0.2	0.0
LnGrp LOS	F		E	E		F	F	A	A	F	A	A
Approach Vol, veh/h		44			301			1354			780	
Approach Delay, s/veh		65.6			76.0			11.1			4.7	
Approach LOS		E			E			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.2	124.4		32.4	6.7	125.9		32.4
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	12.0	99.0		42.0	10.0	101.0		42.0
Max Q Clear Time (g_c+I1), s	5.2	24.1		28.3	4.1	2.0		26.2
Green Ext Time (p_c), s	0.0	13.6		0.1	0.0	6.3		1.5

Intersection Summary		
HCM 2010 Ctrl Delay		18.0
HCM 2010 LOS		B

Appendix G

ITE Trip Generation Rates

Trip Generation Manual

10th Edition • Volume 2: Data

Port and Terminal (Land Uses 000–099)

SEPTEMBER 2017

INSTITUTE OF TRANSPORTATION ENGINEERS

Land Use: 254
Assisted Living

Description

An assisted living complex is a residential setting that provides either routine general protective oversight or assistance with activities necessary for independent living to mentally or physically limited persons. It commonly has separate living quarters for residents. Its services typically include dining, housekeeping, social and physical activities, medication administration, and transportation. Alzheimer's and ALS care are commonly offered by these facilities, though the living quarters for these patients may be located separately from the other residents. Assisted care commonly bridges the gap between independent living and nursing homes. In some areas of the country, assisted living residences may be called personal care, residential care, or domiciliary care. Staff may be available at an assisted care facility 24 hours a day, but skilled medical care—which is limited in nature—is not required. Congregate care facility (Land Use 253), continuing care retirement community (Land Use 255), and nursing home (Land Use 620) are related uses.

Additional Data

The rooms in these facilities may be private or shared accommodations, consisting of either a single room or a small apartment-style unit with a kitchenette and living space.

Time-of-day distribution data for this land use are presented in Appendix A. For the four general urban/suburban sites with data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 11:30 a.m. and 12:30 p.m. and 12:30 and 1:30 p.m., respectively.

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in New Jersey, New York, Oregon, Pennsylvania, Tennessee, and Texas.

Source Numbers

244, 573, 581, 611, 725, 876, 877, 912

Assisted Living
(254)

Vehicle Trip Ends vs: **Beds**
On a: **Weekday**

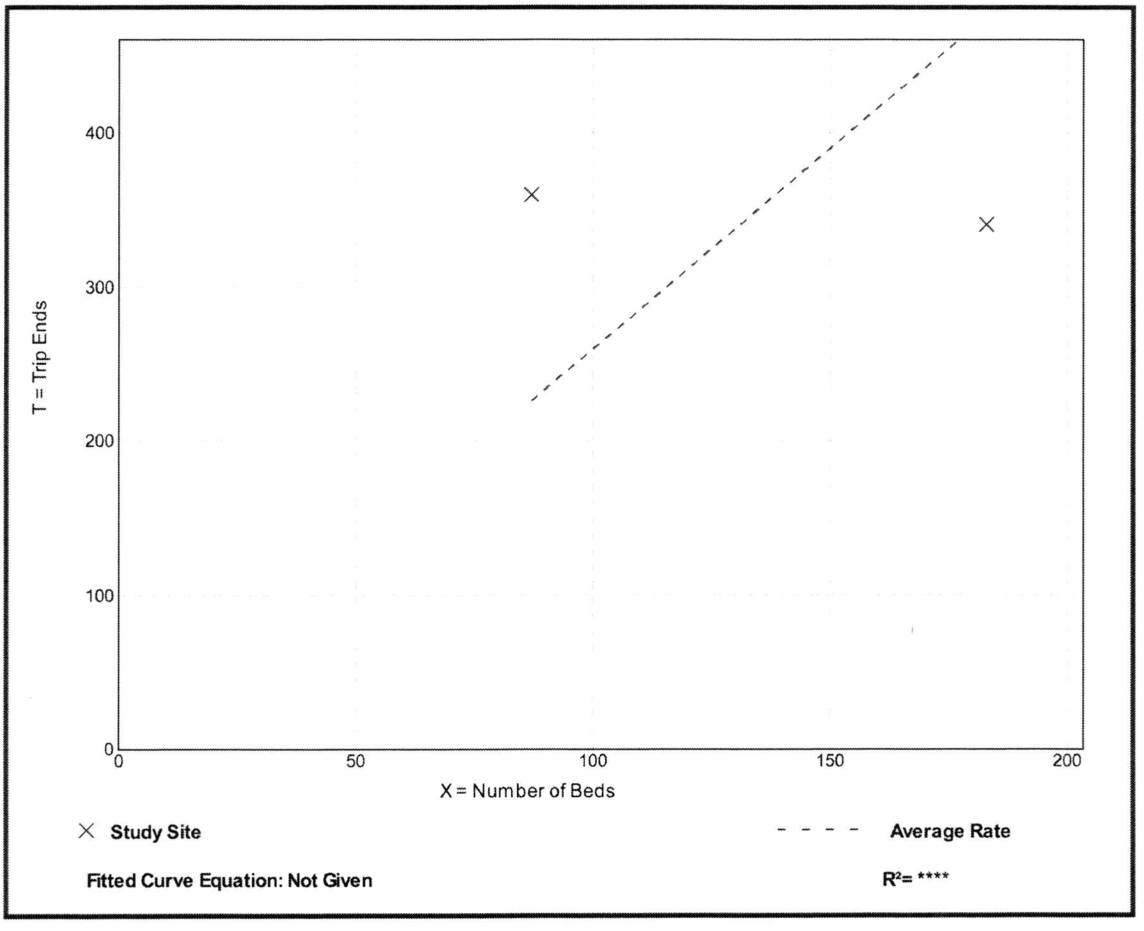
Setting/Location: **General Urban/Suburban**
Number of Studies: 2
Avg. Num. of Beds: 135
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Bed

Average Rate	Range of Rates	Standard Deviation
2.60	1.86 - 4.14	*

Data Plot and Equation

Caution – Small Sample Size



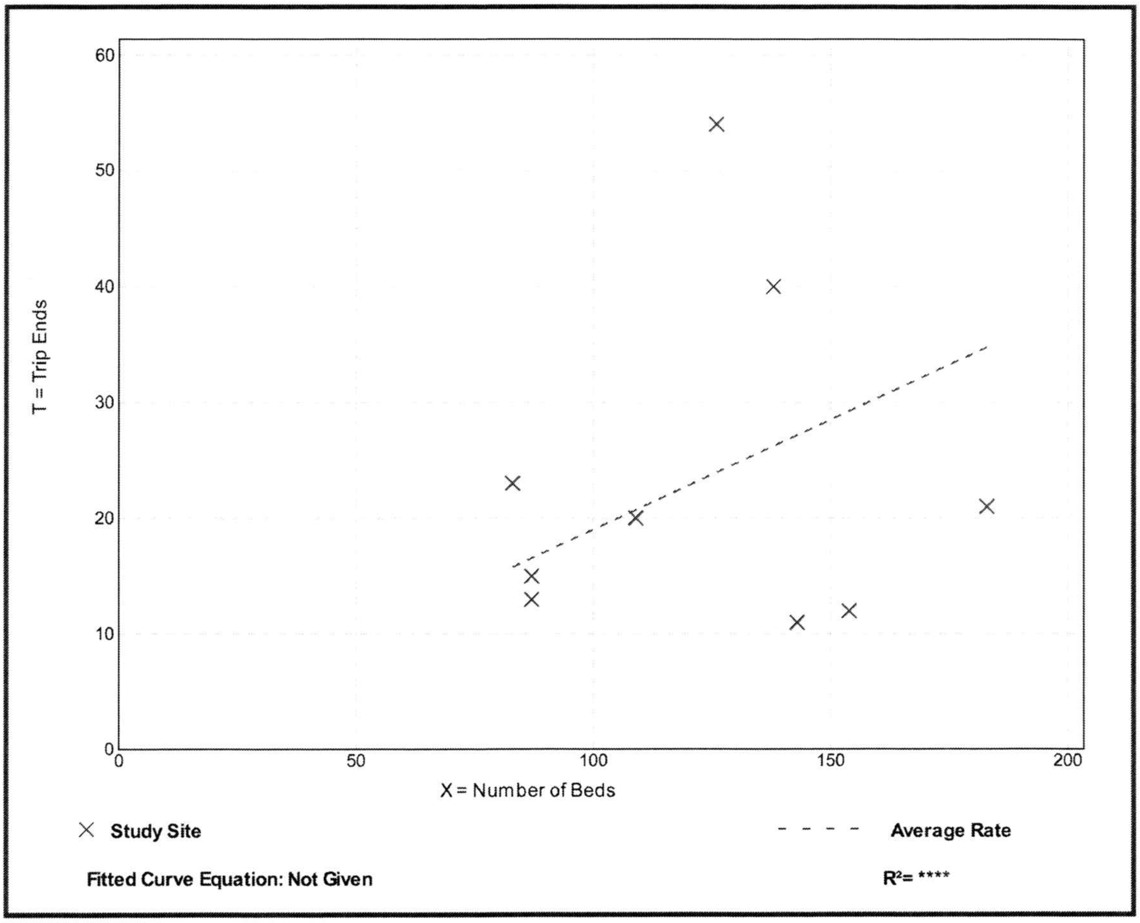
Assisted Living
(254)

Vehicle Trip Ends vs:	**Beds**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	9
Avg. Num. of Beds:	123
Directional Distribution:	63% entering, 37% exiting

Vehicle Trip Generation per Bed

Average Rate	Range of Rates	Standard Deviation
0.19	0.08 - 0.43	0.12

Data Plot and Equation



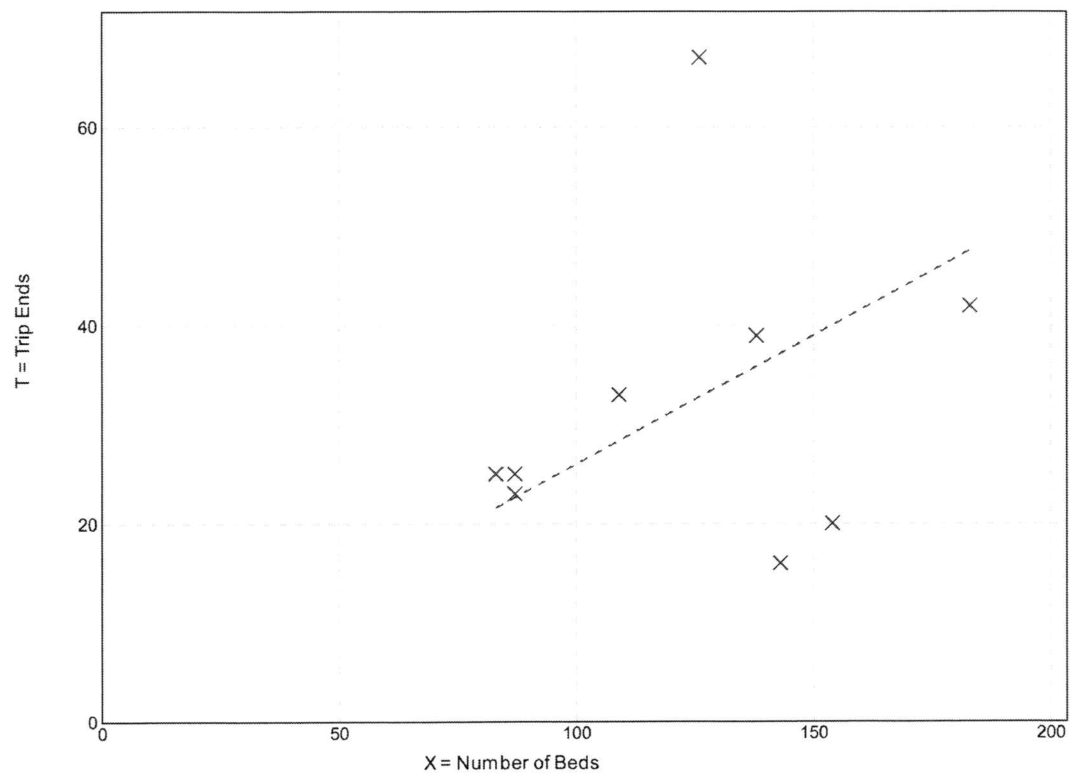
Assisted Living
(254)

Vehicle Trip Ends vs:	**Beds**
On a:	**Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.**
Setting/Location:	**General Urban/Suburban**
Number of Studies:	9
Avg. Num. of Beds:	123
Directional Distribution:	38% entering, 62% exiting

Vehicle Trip Generation per Bed

Average Rate	Range of Rates	Standard Deviation
0.26	0.11 - 0.53	0.13

Data Plot and Equation



× Study Site - - - - Average Rate

Fitted Curve Equation: Not Given R^2= ****

Appendix H

Existing plus Project LOS Calculations

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	354	107	221	461	109	40	183	101	182	801	236
Future Volume (veh/h)	69	354	107	221	461	109	40	183	101	182	801	236
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	75	385	116	240	501	118	43	199	110	198	871	257
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	93	466	202	264	808	353	55	1760	774	221	2092	921
Arrive On Green	0.05	0.13	0.13	0.15	0.23	0.23	0.06	0.99	0.99	0.12	0.59	0.59
Sat Flow, veh/h	1774	3539	1534	1774	3539	1547	1774	3539	1556	1774	3539	1557
Grp Volume(v), veh/h	75	385	116	240	501	118	43	199	110	198	871	257
Grp Sat Flow(s),veh/h/ln	1774	1770	1534	1774	1770	1547	1774	1770	1556	1774	1770	1557
Q Serve(g_s), s	6.9	17.5	11.7	22.0	21.0	10.5	3.9	0.1	0.1	18.1	22.0	13.3
Cycle Q Clear(g_c), s	6.9	17.5	11.7	22.0	21.0	10.5	3.9	0.1	0.1	18.1	22.0	13.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	93	466	202	264	808	353	55	1760	774	221	2092	921
V/C Ratio(X)	0.80	0.83	0.57	0.91	0.62	0.33	0.78	0.11	0.14	0.89	0.42	0.28
Avail Cap(c_a), veh/h	161	665	288	452	1244	544	118	1760	774	376	2092	921
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99	1.00	1.00	1.00
Uniform Delay (d), s/veh	77.3	69.8	67.3	69.1	57.2	53.2	76.8	0.2	0.2	71.1	18.3	16.5
Incr Delay (d2), s/veh	14.7	5.8	2.6	13.4	0.8	0.6	20.5	0.1	0.4	13.7	0.6	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	8.9	5.1	11.8	10.4	4.6	2.2	0.1	0.1	9.8	10.9	5.9
LnGrp Delay(d),s/veh	92.0	75.6	69.8	82.5	58.0	53.8	97.3	0.3	0.6	84.8	18.9	17.3
LnGrp LOS	F	E	E	F	E	D	F	A	A	F	B	B
Approach Vol, veh/h		576			859			352			1326	
Approach Delay, s/veh		76.6			64.3			12.3			28.4	
Approach LOS		E			E			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.6	86.1	28.6	25.7	9.1	101.5	12.7	41.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	35.0	41.0	42.0	31.0	11.0	65.0	15.0	58.0
Max Q Clear Time (g_c+I1), s	20.1	2.1	24.0	19.5	5.9	24.0	8.9	23.0
Green Ext Time (p_c), s	0.5	1.7	0.6	2.3	0.0	8.9	0.1	4.2

Intersection Summary	
HCM 2010 Ctrl Delay	45.4
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	220	8	387	211	9	21	245	99	8	1016	93
Future Volume (veh/h)	58	220	8	387	211	9	21	245	99	8	1016	93
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	63	239	9	421	229	10	23	266	108	9	1104	101
Adj No. of Lanes	1	1	0	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	492	843	32	484	837	37	29	1579	686	15	1551	673
Arrive On Green	0.47	0.47	0.47	0.47	0.47	0.47	0.02	0.45	0.45	0.01	0.44	0.44
Sat Flow, veh/h	1136	1782	67	1127	1770	77	1774	3539	1536	1774	3539	1536
Grp Volume(v), veh/h	63	0	248	421	0	239	23	266	108	9	1104	101
Grp Sat Flow(s),veh/h/ln	1136	0	1849	1127	0	1847	1774	1770	1536	1774	1770	1536
Q Serve(g_s), s	5.9	0.0	13.5	59.9	0.0	12.9	2.1	7.4	6.9	0.8	42.0	6.5
Cycle Q Clear(g_c), s	18.8	0.0	13.5	73.4	0.0	12.9	2.1	7.4	6.9	0.8	42.0	6.5
Prop In Lane	1.00		0.04	1.00		0.04	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	492	0	874	484	0	874	29	1579	686	15	1551	673
V/C Ratio(X)	0.13	0.00	0.28	0.87	0.00	0.27	0.79	0.17	0.16	0.62	0.71	0.15
Avail Cap(c_a), veh/h	554	0	975	546	0	974	43	1579	686	43	1551	673
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.99	0.99	0.99	0.85	0.85	0.85
Uniform Delay (d), s/veh	32.0	0.0	26.5	48.8	0.0	26.3	80.9	27.4	27.2	81.6	37.9	27.9
Incr Delay (d2), s/veh	0.1	0.0	0.2	13.0	0.0	0.2	43.8	0.2	0.5	31.2	2.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	6.9	20.3	0.0	6.6	1.4	3.7	3.0	0.5	21.1	2.9
LnGrp Delay(d),s/veh	32.1	0.0	26.7	61.8	0.0	26.5	124.7	27.6	27.7	112.8	40.2	28.3
LnGrp LOS	C		C	E		C	F	C	C	F	D	C
Approach Vol, veh/h		311			660			397			1214	
Approach Delay, s/veh		27.8			49.0			33.2			39.8	
Approach LOS		C			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.4	77.6		82.0	6.7	76.3		82.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	62.0		87.0	4.0	62.0		87.0
Max Q Clear Time (g_c+I1), s	2.8	9.4		20.8	4.1	44.0		75.4
Green Ext Time (p_c), s	0.0	2.3		1.9	0.0	8.1		2.6

Intersection Summary	
HCM 2010 Ctrl Delay	39.7
HCM 2010 LOS	D

LOS Engineering, Inc.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	538	260	401	698	113	176	257	81	244	1029	78
Future Volume (veh/h)	17	538	260	401	698	113	176	257	81	244	1029	78
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	18	585	283	436	759	123	191	279	88	265	1118	85
Adj No. of Lanes	2	2	1	2	2	0	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	47	722	313	496	1017	165	233	1644	720	311	1724	755
Arrive On Green	0.01	0.20	0.20	0.14	0.33	0.33	0.11	0.78	0.78	0.09	0.49	0.49
Sat Flow, veh/h	3442	3539	1533	3442	3039	492	3442	3539	1551	3442	3539	1551
Grp Volume(v), veh/h	18	585	283	436	442	440	191	279	88	265	1118	85
Grp Sat Flow(s),veh/h/ln	1721	1770	1533	1721	1770	1762	1721	1770	1551	1721	1770	1551
Q Serve(g_s), s	0.9	26.0	29.7	20.5	36.5	36.6	9.0	3.4	2.3	12.5	39.1	4.9
Cycle Q Clear(g_c), s	0.9	26.0	29.7	20.5	36.5	36.6	9.0	3.4	2.3	12.5	39.1	4.9
Prop In Lane	1.00		1.00	1.00		0.28	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	47	722	313	496	592	590	233	1644	720	311	1724	755
V/C Ratio(X)	0.38	0.81	0.90	0.88	0.75	0.75	0.82	0.17	0.12	0.85	0.65	0.11
Avail Cap(c_a), veh/h	229	772	334	730	643	641	313	1644	720	396	1724	755
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99	0.56	0.56	0.56
Uniform Delay (d), s/veh	80.7	62.6	64.1	69.2	48.7	48.7	72.2	10.3	10.2	74.0	31.7	23.0
Incr Delay (d2), s/veh	5.1	6.1	25.8	8.4	4.4	4.4	11.9	0.2	0.3	8.1	1.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	13.4	14.8	10.3	18.6	18.6	4.6	1.7	1.1	6.3	19.4	2.1
LnGrp Delay(d),s/veh	85.8	68.7	89.9	77.6	53.0	53.1	84.1	10.5	10.5	82.1	32.8	23.1
LnGrp LOS	F	E	F	E	D	D	F	B	B	F	C	C
Approach Vol, veh/h		886			1318			558			1468	
Approach Delay, s/veh		75.8			61.2			35.7			41.2	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.9	80.6	27.8	37.7	15.2	84.4	6.2	59.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	19.0	59.0	35.0	36.0	15.0	63.0	11.0	60.0
Max Q Clear Time (g_c+I1), s	14.5	5.4	22.5	31.7	11.0	41.1	2.9	38.6
Green Ext Time (p_c), s	0.4	2.3	1.3	2.0	0.2	9.0	0.0	5.9

Intersection Summary	
HCM 2010 Ctrl Delay	53.9
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	3	7	97	5	98	22	435	51	55	1807	19
Future Volume (veh/h)	2	3	7	97	5	98	22	435	51	55	1807	19
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.95	0.97		0.95	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	2	3	8	105	5	107	24	473	55	60	1964	21
Adj No. of Lanes	1	1	0	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	76	42	113	168	7	142	30	2784	1210	76	2874	1249
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.02	0.79	0.79	0.09	1.00	1.00
Sat Flow, veh/h	1255	432	1152	1357	68	1445	1774	3539	1538	1774	3539	1539
Grp Volume(v), veh/h	2	0	11	105	0	112	24	473	55	60	1964	21
Grp Sat Flow(s),veh/h/ln	1255	0	1584	1357	0	1513	1774	1770	1538	1774	1770	1539
Q Serve(g_s), s	0.3	0.0	1.0	12.6	0.0	11.9	2.2	5.4	1.3	5.5	0.0	0.0
Cycle Q Clear(g_c), s	12.2	0.0	1.0	13.6	0.0	11.9	2.2	5.4	1.3	5.5	0.0	0.0
Prop In Lane	1.00		0.73	1.00		0.96	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	76	0	155	168	0	148	30	2784	1210	76	2874	1249
V/C Ratio(X)	0.03	0.00	0.07	0.62	0.00	0.75	0.79	0.17	0.05	0.79	0.68	0.02
Avail Cap(c_a), veh/h	136	0	230	232	0	220	65	2784	1210	129	2874	1249
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.64	0.64	0.64
Uniform Delay (d), s/veh	78.4	0.0	67.6	73.8	0.0	72.5	80.8	4.3	3.9	74.8	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.2	3.8	0.0	8.0	35.4	0.1	0.1	11.3	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.5	4.9	0.0	5.3	1.4	2.7	0.6	2.9	0.3	0.0
LnGrp Delay(d),s/veh	78.5	0.0	67.8	77.5	0.0	80.5	116.2	4.5	4.0	86.0	0.9	0.0
LnGrp LOS	E		E	E		F	F	A	A	F	A	A
Approach Vol, veh/h		13			217			552			2045	
Approach Delay, s/veh		69.4			79.0			9.3			3.3	
Approach LOS		E			E			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.0	133.8		20.2	6.8	138.0		20.2
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	12.0	117.0		24.0	6.0	123.0		24.0
Max Q Clear Time (g_c+I1), s	7.5	7.4		14.2	4.2	2.0		15.6
Green Ext Time (p_c), s	0.0	3.8		0.0	0.0	40.5		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	10.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	128	370	82	87	238	124	130	473	192	130	237	57
Future Volume (veh/h)	128	370	82	87	238	124	130	473	192	130	237	57
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	139	402	89	95	259	135	141	514	209	141	258	62
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	161	494	214	116	404	174	162	2144	944	164	2148	945
Arrive On Green	0.09	0.14	0.14	0.07	0.11	0.11	0.18	1.00	1.00	0.09	0.61	0.61
Sat Flow, veh/h	1774	3539	1535	1774	3539	1529	1774	3539	1558	1774	3539	1558
Grp Volume(v), veh/h	139	402	89	95	259	135	141	514	209	141	258	62
Grp Sat Flow(s),veh/h/ln	1774	1770	1535	1774	1770	1529	1774	1770	1558	1774	1770	1558
Q Serve(g_s), s	12.8	18.2	8.7	8.7	11.5	14.2	12.7	0.0	0.0	12.9	5.1	2.7
Cycle Q Clear(g_c), s	12.8	18.2	8.7	8.7	11.5	14.2	12.7	0.0	0.0	12.9	5.1	2.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	161	494	214	116	404	174	162	2144	944	164	2148	945
V/C Ratio(X)	0.86	0.81	0.42	0.82	0.64	0.77	0.87	0.24	0.22	0.86	0.12	0.07
Avail Cap(c_a), veh/h	269	858	372	258	837	361	366	2144	944	366	2148	945
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	0.94	1.00	1.00	1.00
Uniform Delay (d), s/veh	74.0	68.9	64.8	76.2	69.9	71.0	66.5	0.0	0.0	73.8	13.7	13.3
Incr Delay (d2), s/veh	14.0	3.3	1.3	13.3	1.7	7.1	12.5	0.2	0.5	12.3	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	9.2	3.8	4.7	5.7	6.4	6.8	0.1	0.1	6.9	2.5	1.2
LnGrp Delay(d),s/veh	88.0	72.2	66.1	89.5	71.6	78.1	79.0	0.2	0.5	86.1	13.9	13.4
LnGrp LOS	F	E	E	F	E	E	E	A	A	F	B	B
Approach Vol, veh/h		630			489			864			461	
Approach Delay, s/veh		74.8			76.9			13.2			35.9	
Approach LOS		E			E			B			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.2	104.0	14.7	27.0	19.1	104.1	19.0	22.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	34.0	51.0	24.0	40.0	34.0	51.0	25.0	39.0
Max Q Clear Time (g_c+I1), s	14.9	2.0	10.7	20.2	14.7	7.1	14.8	16.2
Green Ext Time (p_c), s	0.3	4.8	0.2	2.9	0.3	2.0	0.2	2.1

Intersection Summary			
HCM 2010 Ctrl Delay			46.1
HCM 2010 LOS			D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	285	7	116	75	9	25	605	213	6	373	51
Future Volume (veh/h)	170	285	7	116	75	9	25	605	213	6	373	51
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	185	310	8	126	82	10	27	658	232	7	405	55
Adj No. of Lanes	1	1	0	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	363	513	13	187	462	56	34	2253	981	12	2208	961
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.02	0.64	0.64	0.01	1.00	1.00
Sat Flow, veh/h	1296	1807	47	1057	1625	198	1774	3539	1541	1774	3539	1541
Grp Volume(v), veh/h	185	0	318	126	0	92	27	658	232	7	405	55
Grp Sat Flow(s),veh/h/ln	1296	0	1853	1057	0	1823	1774	1770	1541	1774	1770	1541
Q Serve(g_s), s	20.7	0.0	24.5	19.3	0.0	6.3	2.5	13.7	10.6	0.6	0.0	0.0
Cycle Q Clear(g_c), s	27.0	0.0	24.5	43.8	0.0	6.3	2.5	13.7	10.6	0.6	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.11	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	363	0	527	187	0	518	34	2253	981	12	2208	961
V/C Ratio(X)	0.51	0.00	0.60	0.67	0.00	0.18	0.79	0.29	0.24	0.59	0.18	0.06
Avail Cap(c_a), veh/h	677	0	977	444	0	961	43	2253	981	43	2208	961
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.89	0.89	0.89	0.97	0.97	0.97
Uniform Delay (d), s/veh	54.7	0.0	51.0	69.9	0.0	44.5	80.6	13.4	12.8	81.2	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.0	1.1	4.1	0.0	0.2	47.6	0.3	0.5	38.6	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	0.0	12.7	5.9	0.0	3.2	1.7	6.8	4.6	0.4	0.1	0.0
LnGrp Delay(d),s/veh	55.8	0.0	52.1	74.1	0.0	44.7	128.2	13.7	13.3	119.8	0.2	0.1
LnGrp LOS	E		D	E		D	F	B	B	F	A	A
Approach Vol, veh/h		503			218			917			467	
Approach Delay, s/veh		53.5			61.7			17.0			2.0	
Approach LOS		D			E			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.1	109.0		50.9	7.2	106.9		50.9
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	62.0		87.0	4.0	62.0		87.0
Max Q Clear Time (g_c+I1), s	2.6	15.7		29.0	4.5	2.0		45.8
Green Ext Time (p_c), s	0.0	6.3		2.8	0.0	3.2		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	27.0
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	787	192	196	561	144	363	633	311	178	271	34
Future Volume (veh/h)	37	787	192	196	561	144	363	633	311	178	271	34
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	40	855	209	213	610	157	395	688	338	193	295	37
Adj No. of Lanes	2	2	1	2	2	0	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	70	1000	436	260	937	241	448	1684	738	238	1468	643
Arrive On Green	0.02	0.28	0.28	0.08	0.34	0.34	0.22	0.79	0.79	0.07	0.41	0.41
Sat Flow, veh/h	3442	3539	1542	3442	2774	712	3442	3539	1551	3442	3539	1549
Grp Volume(v), veh/h	40	855	209	213	389	378	395	688	338	193	295	37
Grp Sat Flow(s),veh/h/ln	1721	1770	1542	1721	1770	1716	1721	1770	1551	1721	1770	1549
Q Serve(g_s), s	1.9	37.7	18.6	10.1	30.8	30.9	18.3	9.8	11.6	9.1	8.8	2.4
Cycle Q Clear(g_c), s	1.9	37.7	18.6	10.1	30.8	30.9	18.3	9.8	11.6	9.1	8.8	2.4
Prop In Lane	1.00		1.00	1.00		0.41	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	70	1000	436	260	598	580	448	1684	738	238	1468	643
V/C Ratio(X)	0.57	0.85	0.48	0.82	0.65	0.65	0.88	0.41	0.46	0.81	0.20	0.06
Avail Cap(c_a), veh/h	104	1287	561	396	794	770	667	1684	738	355	1468	643
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.85	0.85	0.85
Uniform Delay (d), s/veh	80.1	56.0	49.1	75.2	46.4	46.4	63.4	9.9	10.1	75.7	30.8	28.9
Incr Delay (d2), s/veh	7.1	4.7	0.8	7.9	1.2	1.3	8.5	0.7	1.9	7.3	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	19.1	8.0	5.1	15.2	14.8	9.2	4.8	5.3	4.6	4.4	1.0
LnGrp Delay(d),s/veh	87.2	60.7	49.9	83.1	47.6	47.7	71.9	10.6	11.9	83.0	31.1	29.1
LnGrp LOS	F	E	D	F	D	D	E	B	B	F	C	C
Approach Vol, veh/h		1104			980			1421			525	
Approach Delay, s/veh		59.6			55.3			27.9			50.0	
Approach LOS		E			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.4	82.5	16.4	50.6	25.5	72.5	7.4	59.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	17.0	53.0	19.0	60.0	32.0	38.0	5.0	74.0
Max Q Clear Time (g_c+I1), s	11.1	13.6	12.1	39.7	20.3	10.8	3.9	32.9
Green Ext Time (p_c), s	0.3	7.1	0.4	6.9	1.1	2.1	0.0	5.8

Intersection Summary	
HCM 2010 Ctrl Delay	46.1
HCM 2010 LOS	D

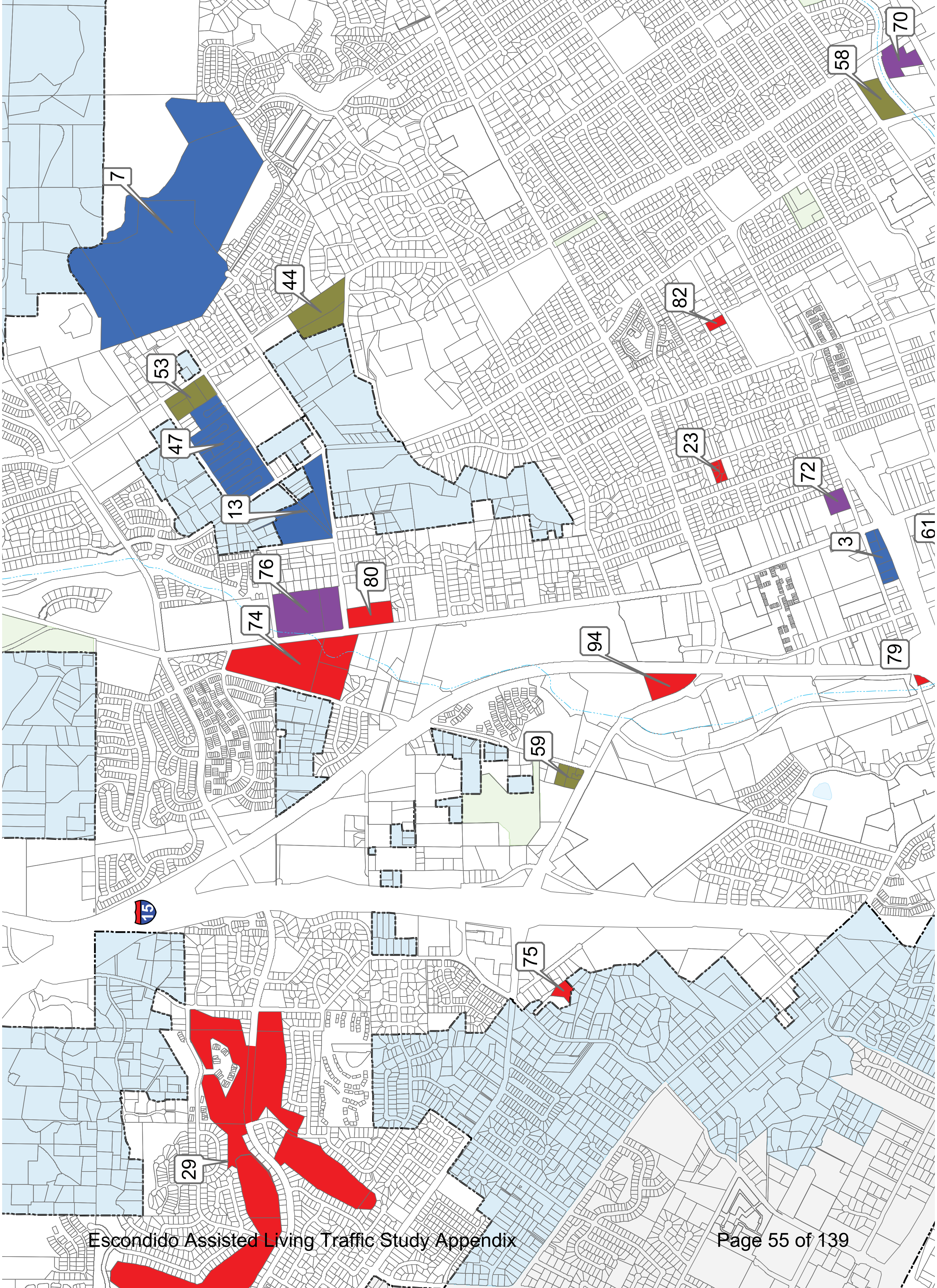
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	4	23	64	6	206	21	1081	146	32	678	11
Future Volume (veh/h)	14	4	23	64	6	206	21	1081	146	32	678	11
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	0.99		0.96	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	15	4	25	70	7	224	23	1175	159	35	737	12
Adj No. of Lanes	1	1	0	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	73	37	232	256	8	256	29	2583	1122	45	2615	1136
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.02	0.73	0.73	0.05	1.00	1.00
Sat Flow, veh/h	1145	216	1350	1356	47	1489	1774	3539	1537	1774	3539	1537
Grp Volume(v), veh/h	15	0	29	70	0	231	23	1175	159	35	737	12
Grp Sat Flow(s),veh/h/ln	1145	0	1566	1356	0	1536	1774	1770	1537	1774	1770	1537
Q Serve(g_s), s	2.1	0.0	2.6	7.6	0.0	24.2	2.1	22.2	5.1	3.2	0.0	0.0
Cycle Q Clear(g_c), s	26.3	0.0	2.6	10.2	0.0	24.2	2.1	22.2	5.1	3.2	0.0	0.0
Prop In Lane	1.00		0.86	1.00		0.97	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	73	0	270	256	0	264	29	2583	1122	45	2615	1136
V/C Ratio(X)	0.21	0.00	0.11	0.27	0.00	0.87	0.79	0.45	0.14	0.78	0.28	0.01
Avail Cap(c_a), veh/h	160	0	389	359	0	382	108	2583	1122	129	2615	1136
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92
Uniform Delay (d), s/veh	79.4	0.0	57.6	61.9	0.0	66.5	80.9	9.0	6.7	77.9	0.0	0.0
Incr Delay (d2), s/veh	1.4	0.0	0.2	0.6	0.0	14.3	36.8	0.6	0.3	22.8	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	1.1	2.9	0.0	11.3	1.3	11.0	2.2	1.9	0.1	0.0
LnGrp Delay(d),s/veh	80.7	0.0	57.8	62.5	0.0	80.9	117.7	9.6	7.0	100.6	0.2	0.0
LnGrp LOS	F		E	E		F	F	A	A	F	A	A
Approach Vol, veh/h		44			301			1357			784	
Approach Delay, s/veh		65.6			76.6			11.1			4.7	
Approach LOS		E			E			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.2	124.4		32.4	6.7	125.9		32.4
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	12.0	100.0		41.0	10.0	102.0		41.0
Max Q Clear Time (g_c+I1), s	5.2	24.2		28.3	4.1	2.0		26.2
Green Ext Time (p_c), s	0.0	13.7		0.1	0.0	6.3		1.4

Intersection Summary	
HCM 2010 Ctrl Delay	18.0
HCM 2010 LOS	B

Appendix I

Cumulative Project Information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Major Development Project Processing

Dec-17

MAP LEGEND NUMBER	PROJECT	PROJECT DESCRIPTION	ENTITLEMENT STATUS
1	ADM15-0106 - ERTC Medical Office (EAST)	74,400 SF Medical Office	Approved 11-3-15. Extension of time for ERTC development agreement approved 11-4-15.
2	PHG14-0035 - Westminster Student Housing	72 student housing units on 18.07 ac. Campus	Approved 11-10-15. Under construction.
3	ADM13-0127 - Centerpointe	43,681 SF grocery store and 3,200 SF drive-through	Approved 12-9-15. Under construction.
4	PHG14-0030 - Emmanuel Faith	Phased expansion of campus to add 191,813 SF on 17.6 ac. site	Under construction.
5	SUB13-0008 - 15th	4 SFR lots on 0.95 ac.	Approved.
6	SUB15-0002 - Latitude II	112 condominium units on 3.44 ac.	CC approved 8-19-15. Under construction.
7	Tract 932 - Hidden Valley Ranch	179 SFR lots on 111.54 ac.	Under construction.
8	PHG15-0010 - EDI CUP	Expansion of Materials Recovery Facility	Phase 1 Approved 8-25-15 and completed. Phase 2 planning in development.
9	PHG14-0032 - Ford/Hyundai dealership	2 new showrooms + wash/detail building	Under construction.
10	PHG14-0020 - Veterans Village	48 new units (54 total) + 1,500 SF commercial on 1.8 ac.	Under construction.
11	SUB13-0002 - Oak Creek	65 SFR lots on 41.39 ac.	Approved. LAFCO approved annexation 10/05/15.
12	SUB13-0007 - Amanda Estates	21 SFR lots on 11.2 ac.	Approved. LAFCO approved annexation on 8/3/15.
13	SUB14-0002 - Zenner	40 SFR lots on 13.97 ac.	Approved. Under construction.
14	PHG14-0022 - La Terraza Office Building/Parking Lot	36,614 SF office	Approved. In Plan Check.
15	TPM 2006-08 - E. Mission	3 SFR lots on 0.88 ac.	Approved.

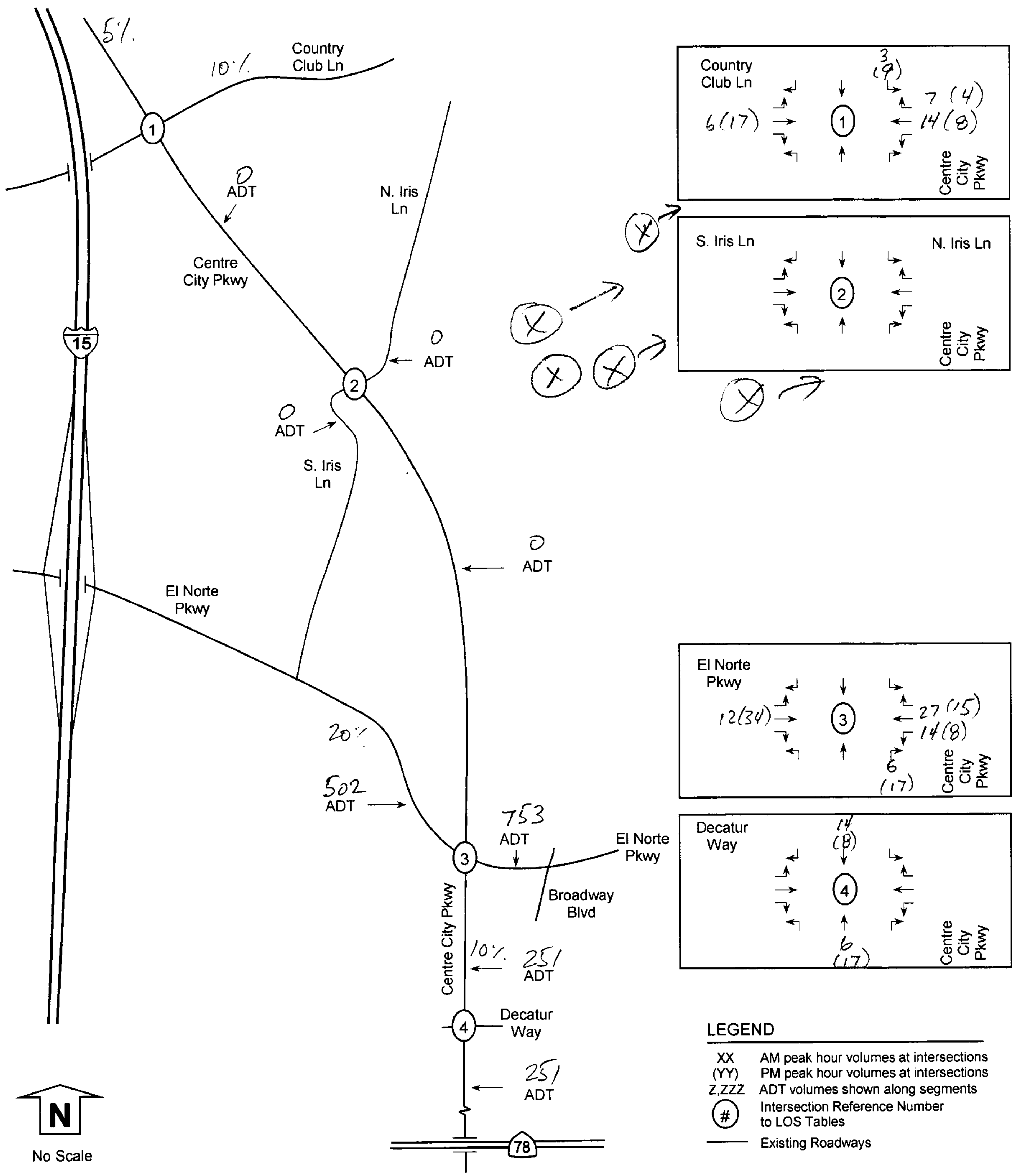
16	Tract 877 - Bernardo	13 SFR lots on 0.9 ac.	Under construction.
17	Tract 848 - Idaho Ave	9 SFR lots on 3.55 ac.	Approved
18	2007-18-PD - Springhill Suites (La Terraza Hotel)	105-room hotel	Under construction.
19	SUB 08-0030 - Reed Rd	4 SFR lots on 14.37 ac.	Approved - no recent action.
20	TPM 2004-16 - Tulip	3 SFR on 1.03 ac.	Approved.
21	Tract 951 - Jacks Creek	12 SFR lots on 3.31 ac.	Approved .
22	SUB13-0005 - El Norte	6 SFR lots on 1.15 ac.	Approved.
23	SUB09-0005 - 1221 N. Gamble St.	3 SFR lots on 0.64 ac.	Approved.
24	Tract 934 - 1207 N. Gamble St.	5 SFR lots on 1.19 ac.	Final Map to CC 11-18-15 to approve for recordation.
25	SUB15-0019 - Safari Highlands	Specific Plan for 550 SFR lots on 1,100 ac.	Submitted; under review.
28	PHG15-0026 - Westfield Theater	Multi-plex theater	BEZ- CC approved 11-4-15.
29	Escondido Country Club - The Villages	392 SFR, recreational amenities, and urban farm	Approved on 11-15-17.
30	SUB15-0002 - Wohlford, 661 Bear Valley Pkwy	55 SFR lots on 40.9 ac.	Scheduled for consideration in early 2018.
31	SUB14-0018 - Kaen	65 townhomes on 2.29 ac.	Under construction.
33	PHG15-0009 - Solutions for Change Housing	33 affordable units & 1,120 SF commercial	PC approved 10-13-15. Under construction.
36	Tract 933/TM SUB14-0010 - Moser	16 SFR lots on 6.4 ac. (revised submittal)	Tentative Map Expired.
37	Tract 878 - Lion Valley	11 SFR lots on 2.3 ac.	Tentative Map extension requested.
38	Tract 890 - Midway Dr.	10 SFR lots on 2.3 ac.	Tentative Map extension requested.
43	TM SUB13-0001 Cranston	6 SFR lots on 7.41 ac.	Approved - pursue zone chg only.
44	Tract 929 - Hubbard	12 SFR lots on 8.92 ac.	Tentative Map Expired.
45	Tract 895 - Boyle	8 SFR lots on 5.42 ac.	Tentative Map extension requested.

46	PHG15-0016 Wismer - Felicita Hotels	140-unit hotel, 80-unit extended stay hotel, 120-bed assisted living facility and gas station on 6.9 ac.	In review.
47	Pradera - Tracts 889 & 894, SUB13-0003, SUB13-0010, SUB13-0011	70 SFR lots on 21.3 ac.	Under construction.
49	Tract 956 - Silva	13 SFR lots on 4.19 ac.	Approved; development agreement expired.
50	SUB09-0002 Harmony Grove Specific Plan (Dentt/Ray)	Industrial subdivision	Anticipated.
51	ADM15-0123 ERTC Kidney Dialysis Center	12,000 SF Medical office and dialysis center	In review.
52	Del Prado- North & South (Woody's site); SUB 15-0023 & SUB15-0022	Mixed-use residential - 113 units	Approved.
53	Baker Conway (formerly Tract 928)	14 SFR lots on 3.91 ac.	Not yet submitted.
56	Sager Ranch Specific Plan & Annexation	Residential subdivision and density transfer	Not yet submitted. Contract Planner assigned. Anticipated in early 2018.
57	Integral Communities/Lyon Living (SUB16-0001)	Mixed-use residential - 126 units	Approved. 10-12-16. Under construction.
58	MFRO	Water treatment facility	Approved. 1-13-17.
59	Jungman Specific Plan	Mixed use: 20,000 SF office & 36 condominiums	Not yet submitted.
60	ADM12-0014 - Stone Brewery Hotel	99-room boutique hotel	On hold at applicant's request.
61	Self-storage facility (220 W. Mission)	Self Storage Units	Approved.
62	LaCaze (Grand Ave)	Mixed-use	Not yet submitted.
63	TM 220 S. Citrus (SUB17-0013)	8 SFR lots	In review.
64	ADM15-0121 (Valley/Ivy)	Mixed-use 2,378 SF retail + 20 apartment units	Submitted; under review.
65	PHG12-0015 - Talk of the Town	4,156 SF Restaurant and Carwash	Completed.
66	2007-11-SP/PD/DA - City Plaza	9,356 SF commercial + 56 residential units	In construction.
67	SUB13-0009 - Zak/2412 S. Escondido Blvd.	76 condominium units on 2.53 ac.	Completed.

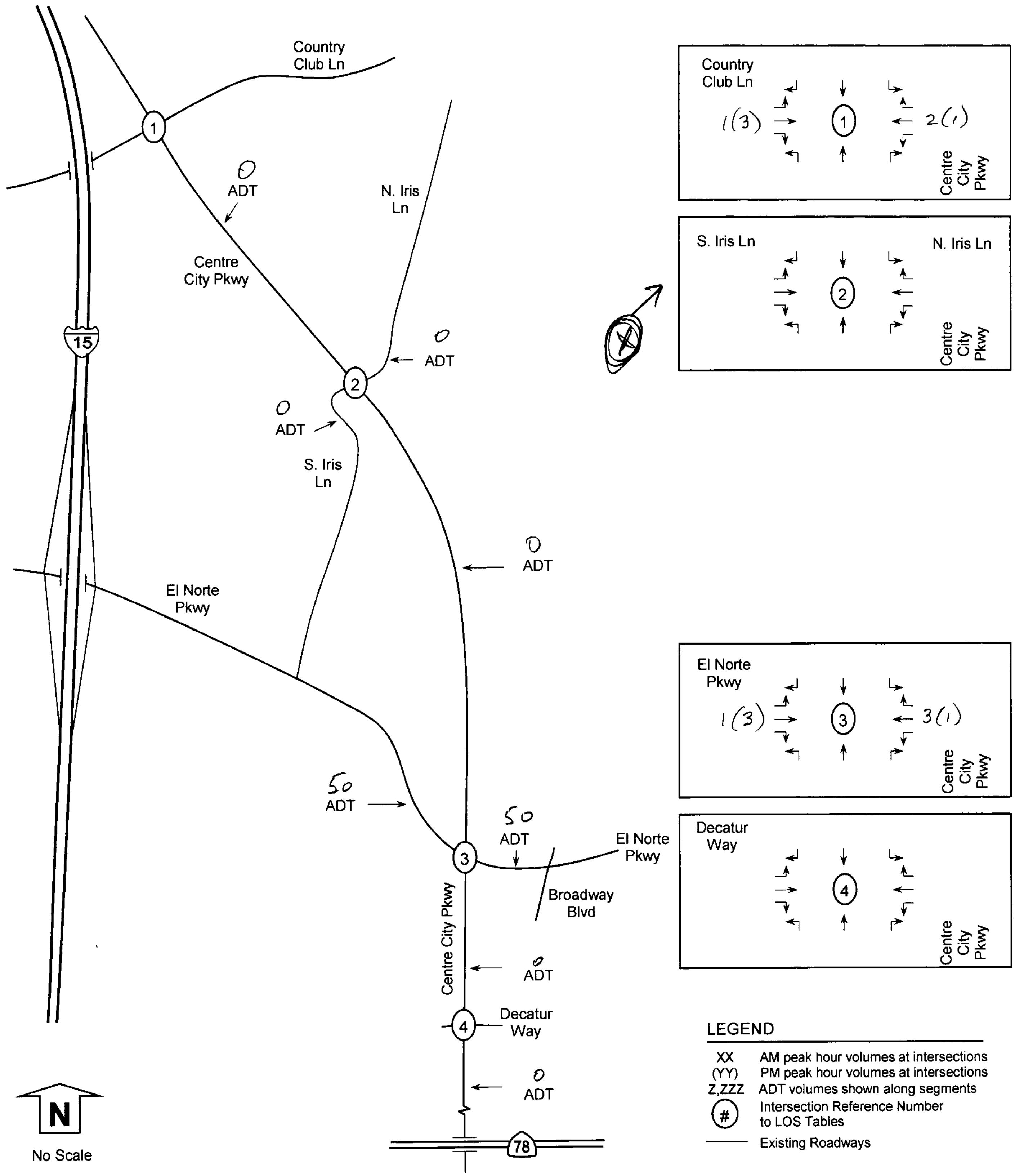
68	Wismer TM, Johnston Rd.	Annexation and SFR subdivision	Not yet submitted.
69	PHG15-0018 - HARRF Collections Facility	3 new maintenance buildings (14,875 SF)	Approved.
70	ADM 14-0013 - Trafalgar Square	Shopping center renovation + new grocery store	Completed.
71	ADM13-0176 - Taco Bell	New regional office and restaurant renovation	Completed.
72	PHG15-0002 - Escondido Sports/Banquet Facility	Convert gym to banquet hall	Completed.
73	PHG14-0019 - Redwood Terrace	Convert daycare facility to 24-hour memory care center	Completed.
74	PHG13-0010 - Meadowbrook	66 unit senior apartments	Approved; building permits issued.
75	PHG15-0011 - Champine Manor, Tobacco Rd.	Expand existing residential care facility from 6 to 12 beds	In review.
76	PHG15-0001 - Calvin Christian	New 15,515SF auditorium	Completed.
77	PHG10-0023 - St. Mary's Parish Center	New 18,400 SF parish center	Completed.
78	ADM14-0043 - 130 N. Hale - Southland Paving	3,509 SF office, 1,717 wash bay & 6,991 maintenance shop	Approved. Phase 1 completed.
79	TPM 2003-07 - W. Lincoln	4 units on 0.45 ac.	Approved.
80	PHG14-0021 - United Reformed Church	New 12,243 SF sanctuary & 5,250 SF classroom building	Approved. Some phase work complete. Modification to CUP recently approved.
82	TPM 2006-06 Farr Ave	4 SFR lots on0.93 ac.	Approved - no recent action.
83	SUB15-0005 - Birch	3 SFR lots on 0.95 ac.	Submitted; under review.
84	Tract 900 - Self storage PD	4 SFR lots on 1.38 ac. & 1 commercial lot on 1.82 ac.	TM approved. Modification to TM recently approved.
85	Self Realization Fellowship Expansion		Submitted; under review.
87	ENV13-0005 - Lake Wohlford Dam Reconstruction	Dam reconstruction	DEIR underway.
88	Sav-A-Lot Food Market	Convert building to new grocery store (14,000 SF)	Approved.
89	Talone's Landscape Headquarters		In review.
91	PHG 16-0012 Innovative Industrial	210,000 SF Industrial	In construction.
92	ADM 16-0101 Office Condos		Approved.
93	PHG 15-0041 OAAI	Mini-Market expansion	Approved.

94	PHG 16-0017 Starbucks	2,200 SF drive through	Approved.
95	PHG15-0028 Home Depot	Clean Energy Saver	Submitted; under review.
96	ADM16-0138 - Apartments	10 units above parking	Submitted; under review.
97	PHG 15-0013	New MBH space @ Casa Grande	Submitted; under review.
98	PHG 15-0039 - Chalice Unitarian Universalist	Congregating expansion	Submitted; under review.
99	Touchstone - Aspire	6 story, 106 new units above 5,000 SF of commercial	In review.
100	SUB17-0001 Centre City Shopping Center	16,000 SF of commercial with car wash and drive-thrus	Under construction.
101	New apartment complex		Anticipated.
102	PHG17-0016 Home Depot MDP Modification	Outdoor storage/display	In review.
103	SUB17-0007 North Avenue Estates	34 homes	In review.
104	Touchstone - Ivy	4 story, 95 new units	In review.
105	Touchstone - Parking Garage	New multi-level parking garage	In review.

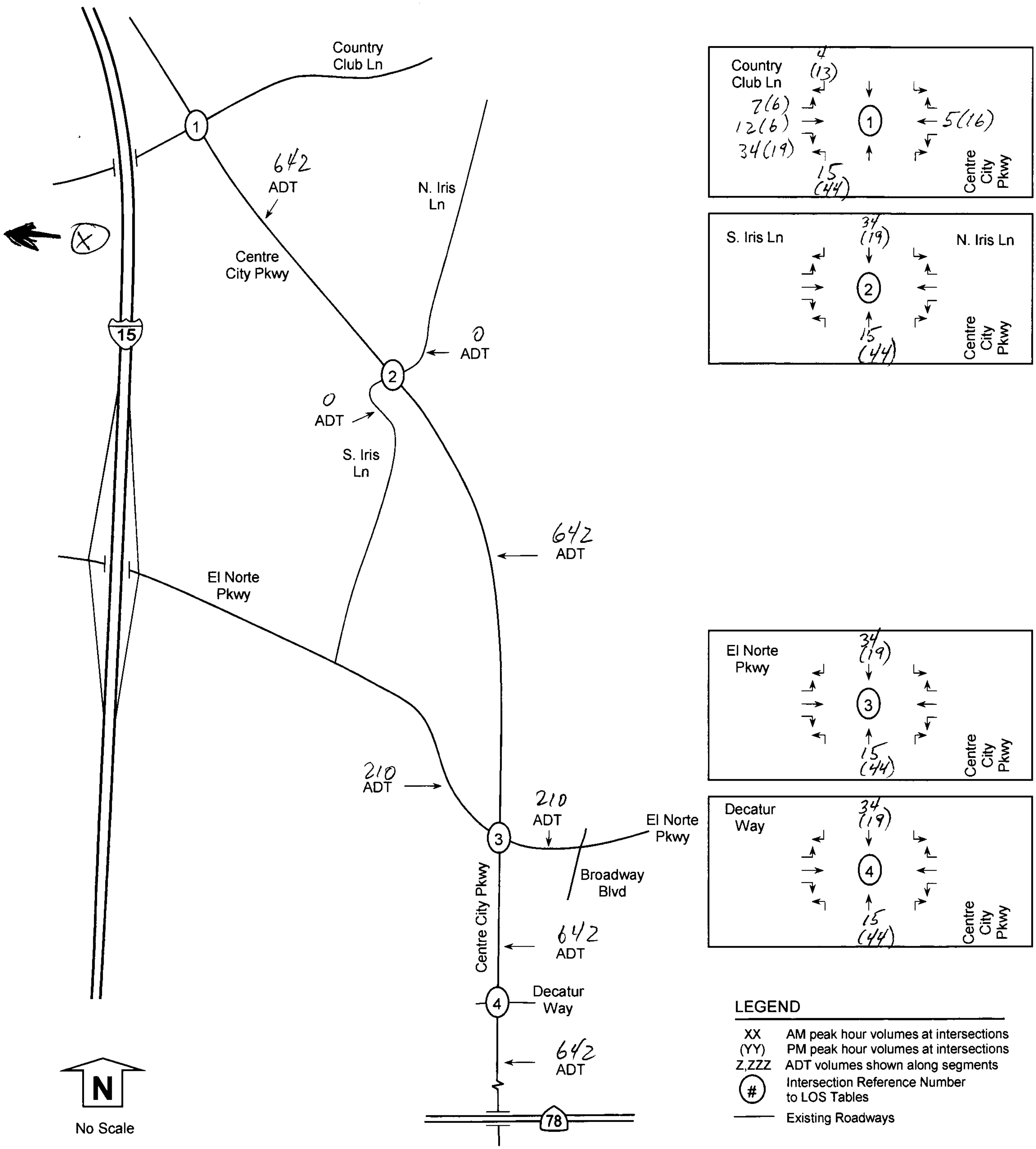
Cumulative 7, 44, 47, 53, & 80



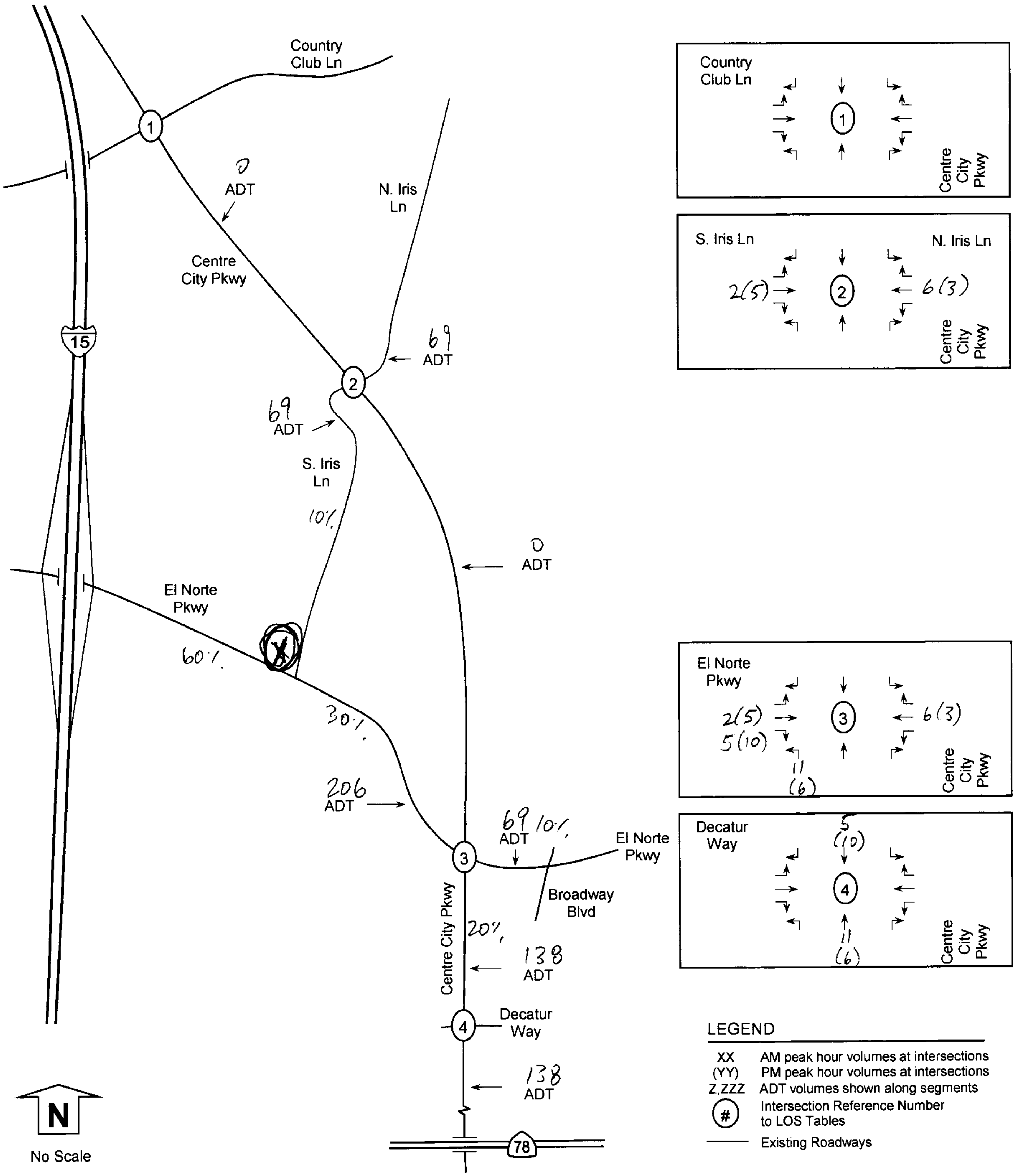
Cumulative ZENNER #13



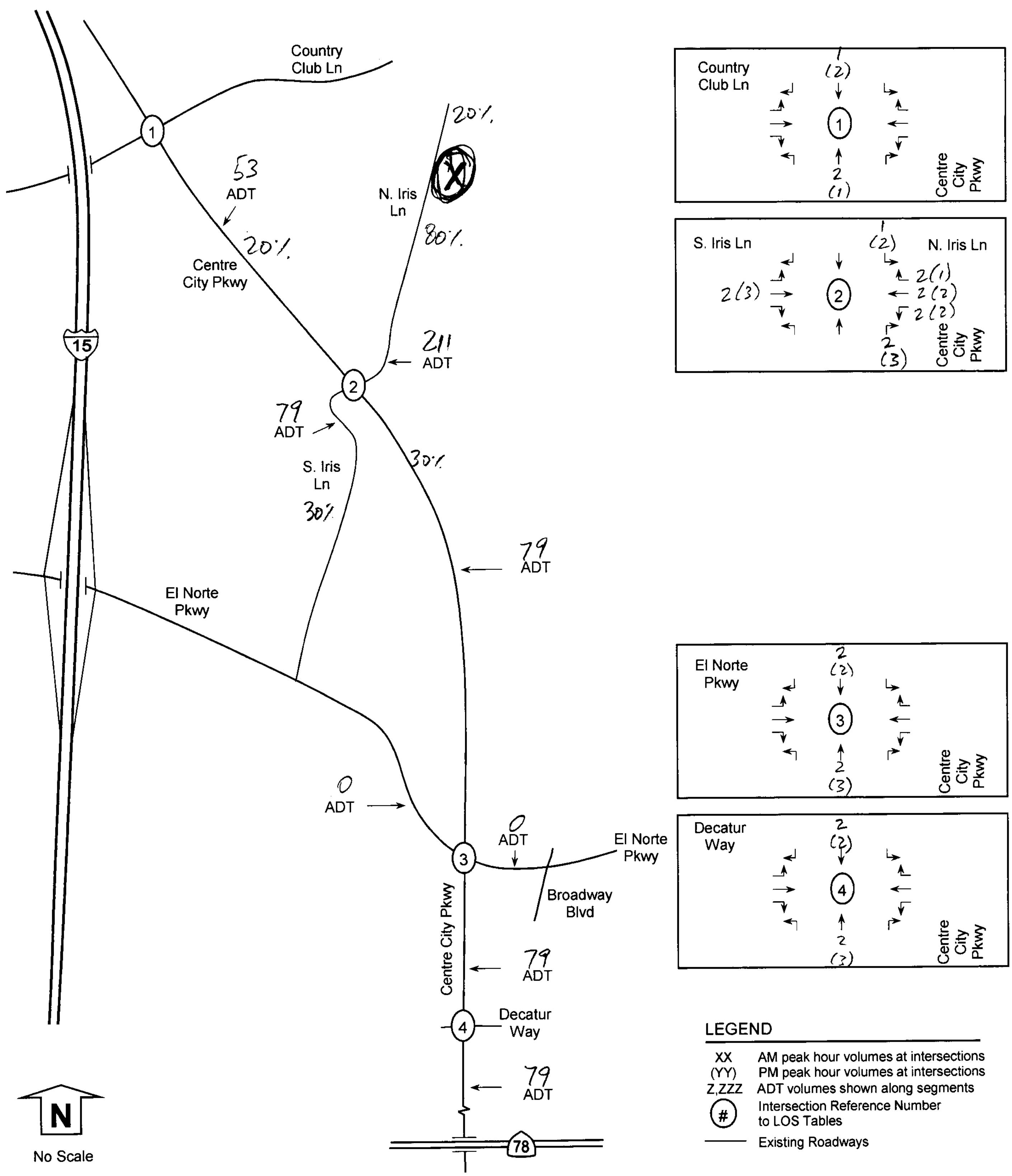
Cumulative #29 ESCONDIDO COUNTRY CLUB - THE VILLAGES



Cumulative #59 JUNGMAN



Cumulative #74 MEADOWBROOK



7.0 TRIP GENERATION/DISTRIBUTION/ASSIGNMENT

The following is a discussion of the Project trip generation calculations and the Project traffic distribution and assignment through the local network.

7.1 Trip Generation

The Project traffic generation calculations were conducted using the trip generation rates published in SANDAG's *"Not so Brief Guide of Vehicular Traffic Generation Rates for San Diego Region" (April 2002).* Based on the most conservative type and density of homes proposed by the Project (single family residential), SANDAG specifies a residential trip rate of 10 ADT/ unit. The Project has stated an intent to possibly market some units to 55+ seniors, although age-restrictions are not proposed. It should be noted that the rate for "retirement community" (which matches a 55+ demographic) is 4 ADT/unit, or 60% less than that analyzed. If any of the units are ultimately marketed to seniors, this analysis will have conservatively over-estimated Project impacts.

Several amenities are proposed for both the homeowner's association (HOA) members and the nearby community. A 1,500 square foot restaurant space is proposed that would primarily serve the HOA and nearby community, but could potentially draw some small amount of trips from greater Escondido area and beyond. Also proposed is a small (1,000 SF) market that would serve the local neighborhood. A trip rate of 40 trips/1,000 SF for the "specialty retail" land use was applied to this specialty market.

In addition to the restaurant and retail uses, the Project will develop ancillary uses for the primary use of the local residents, including a clubhouse lobby, a swimming pool and a 1,600 SF gymnasium. The HOA will also have office and meeting space and banquet facilities. While it is proposed to sell memberships to the broader public to have access to these amenities, the weekday trip associated with them would be very modest and the trip generation volumes associated with those ancillary uses reflects this. It is also important to note that LLG did not take trip reductions for mixed-use/internal capture of residential and restaurant/amenity trips. Therefore, the analysis is ultimately considered to be conservative.

Table 7–1 shows a summary of the Project traffic generation. As tabulated the Project is calculated to generate 4,280 daily trips with 319 total AM peak hour trips (97 inbound/ 222 outbound) and 420 total PM peak hour trips (293 inbound/127 outbound).

7.2 Trip Distribution/Assignment

Trip distribution is the process of determining traffic percentage splits on the regional and local roadway network. Trip distribution is determined based on the characteristics of the Project and upon the general location of other land uses to which Project trips would originate or terminate, such as employment, housing, schools, recreation and shopping. LLG utilized the SANDAG regional traffic model to establish the regional cordons and distribution. The results of the Select Zone Assignment were reviewed by City staff, who provided additional comment and direction.

LLG used local traffic patterns as well as commercial GIS software to determine the local traffic distribution of each village's driveway individually. All local driveway distributions ultimately conform to the broader regional distribution described above. The percentage of overall Project traffic assigned to each driveway is based on the relative percentage of overall units in each village. The public and HOA-related uses were only assigned to the Village 1 driveway (Driveway A), as it is the most proximate to these uses.

Figures 7–1a through ***7–1g*** depict the Project trip distribution percentages for each of seven individual Project driveways, as a percentage of the trips assigned to that particular driveway. ***Figure 7–2*** shows the percentage of total Project trips distributed to each driveway. ***Figure 7–3*** depicts the assigned total Project traffic volumes. ***Figure 7–4*** depicts Existing + Project traffic volumes.

TABLE 7–1
PROJECT TRIP GENERATION

Land Use	Size	Daily Trip Ends (ADTs)		AM Peak Hour					PM Peak Hour				
		Rate [a]	Volume	% of ADT	In:Out Split	Volume In	Volume Out	Volume Total	% of ADT	In:Out Split	Volume In	Volume Out	Volume Total
Village 1													
Residential (SFDU)	155 DU	10 / DU [a]	1,550	8%	30:70	37	87	124	10%	70:30	109	46	155
Village 2													
Residential (SFDU)	91 DU	10 / DU [a]	910	8%	30:70	22	51	73	10%	70:30	64	27	91
Village 3													
Residential (SFDU)	146 DU	10 / DU [a]	1,460	8%	30:70	35	82	117	10%	70:30	102	44	146
Subtotal - Residential	*392 DU*	–	*3,920*	–	–	*94*	*220*	*314*	–	–	*275*	*117*	*392*
Local Retail													
Restaurant	1,500 SF	100/ KSF [a]	150	1%	60:40	1	1	2	8%	70:30	8	4	12
Market	1,000 SF	40/ KSF [a]	40	3%	60:40	1	0	1	9%	50:50	2	2	4
Subtotal: Local Retail	*2,500 SF*	–	*190*	–	–	*2*	*1*	*3*	–	–	*10*	*6*	*16*
Local HOA Amenities													
Various Amenities	–	[b]	170	1%	50:50	1	1	2	7%	75:25	9	3	12
Grand Total	**–**	**–**	***4,280***	**–**	**–**	***97***	***222***	***319***	**–**	**–**	***294***	***126***	***420***

Footnotes:

a. Rate is based on SANDAG's (Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, April 2002.

b. "Local HOA Amenities" are assigned a nominal number of daily and peak hour trips

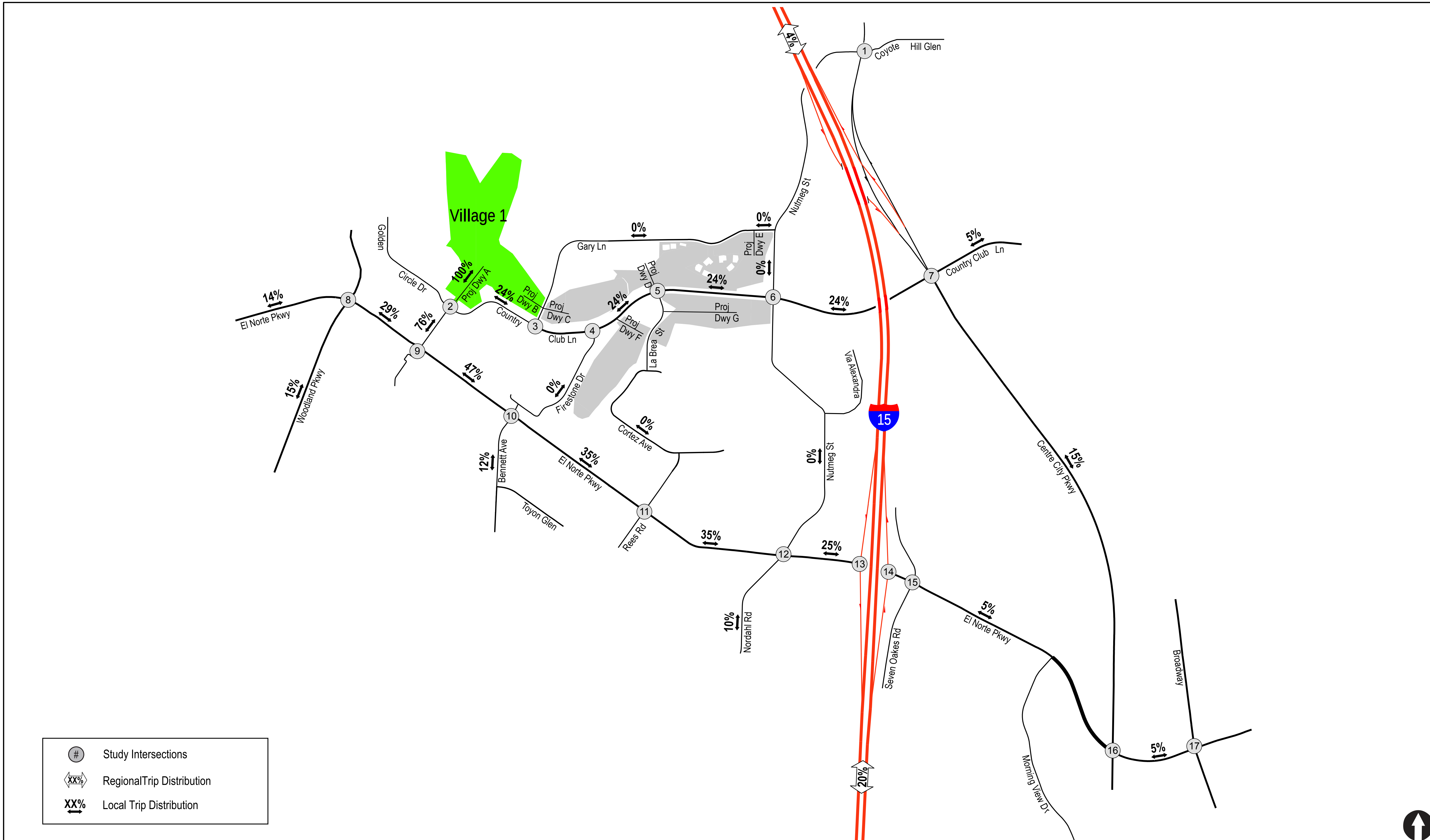


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Figure 7-1a
Project Traffic Distribution
(Village 1, Project Driveway A)

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THE VILLAGES

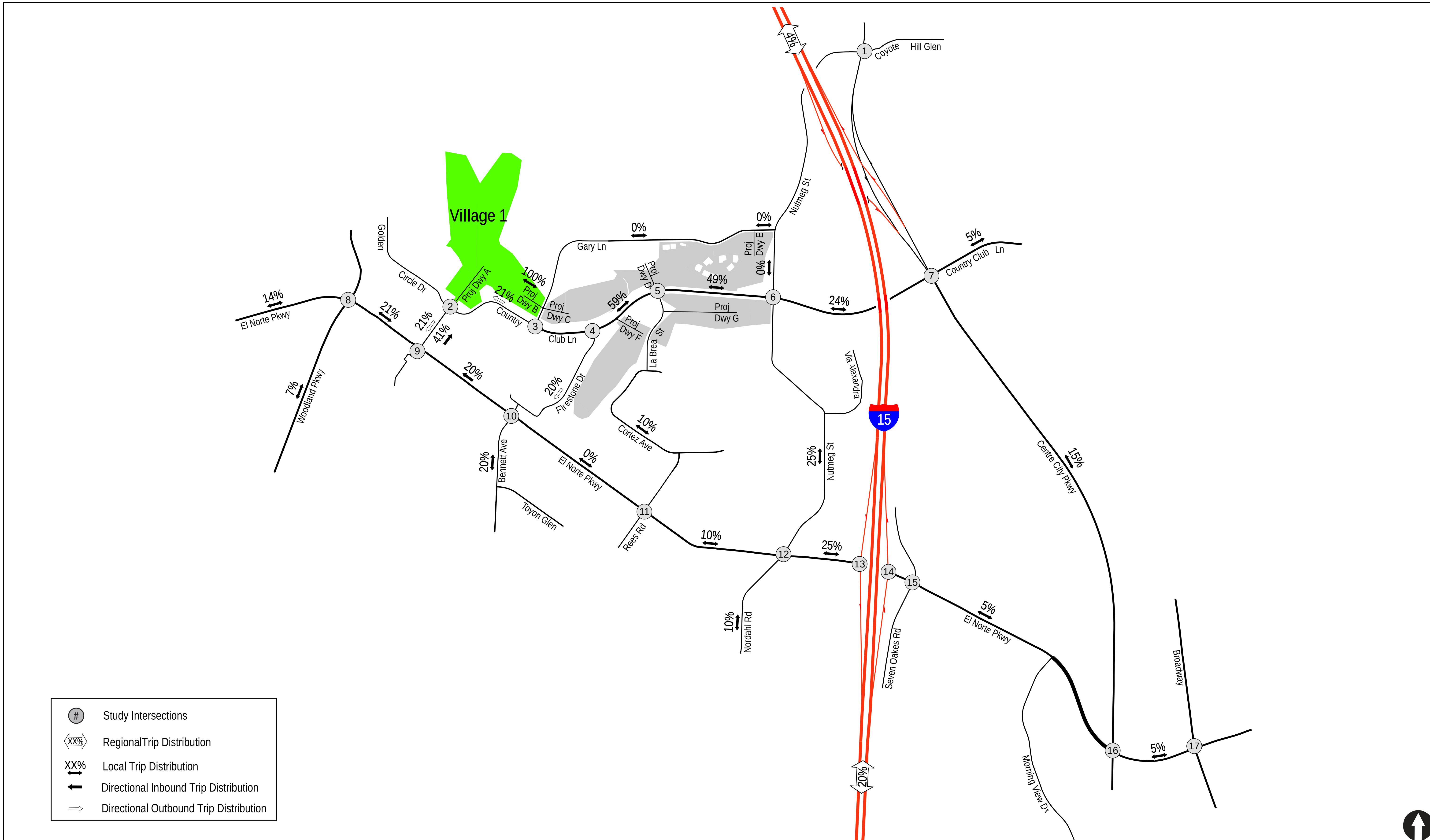

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Figure 7-1b

Project Traffic Distribution

(Village 1, Project Driveway B)

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Date: 06/19/17

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Figure 7-1c

Project Traffic Distribution

(Village 2, Project Driveway C)

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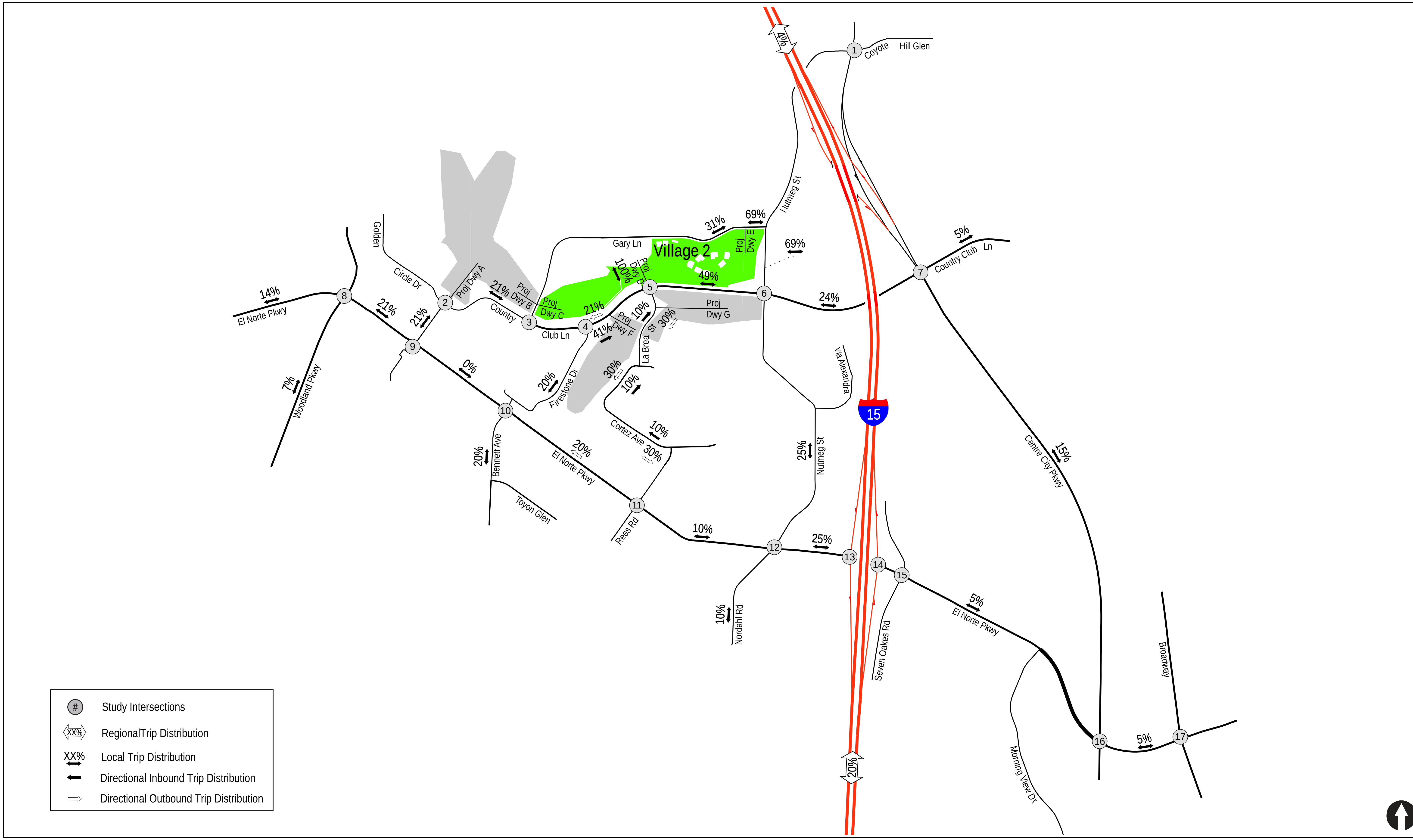

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Figure 7-1d

Project Traffic Distribution

(Village 2, Project Driveway D)

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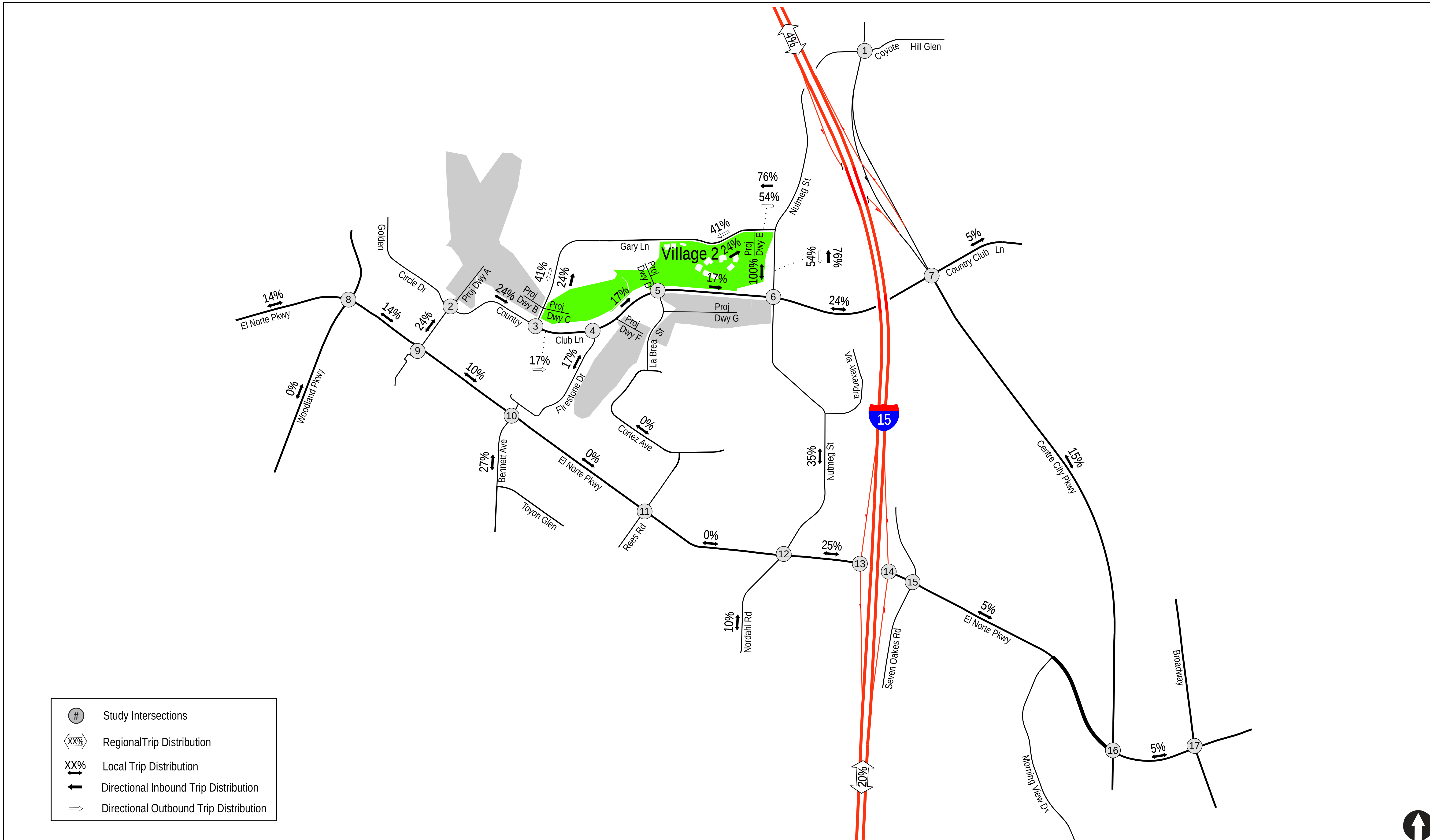

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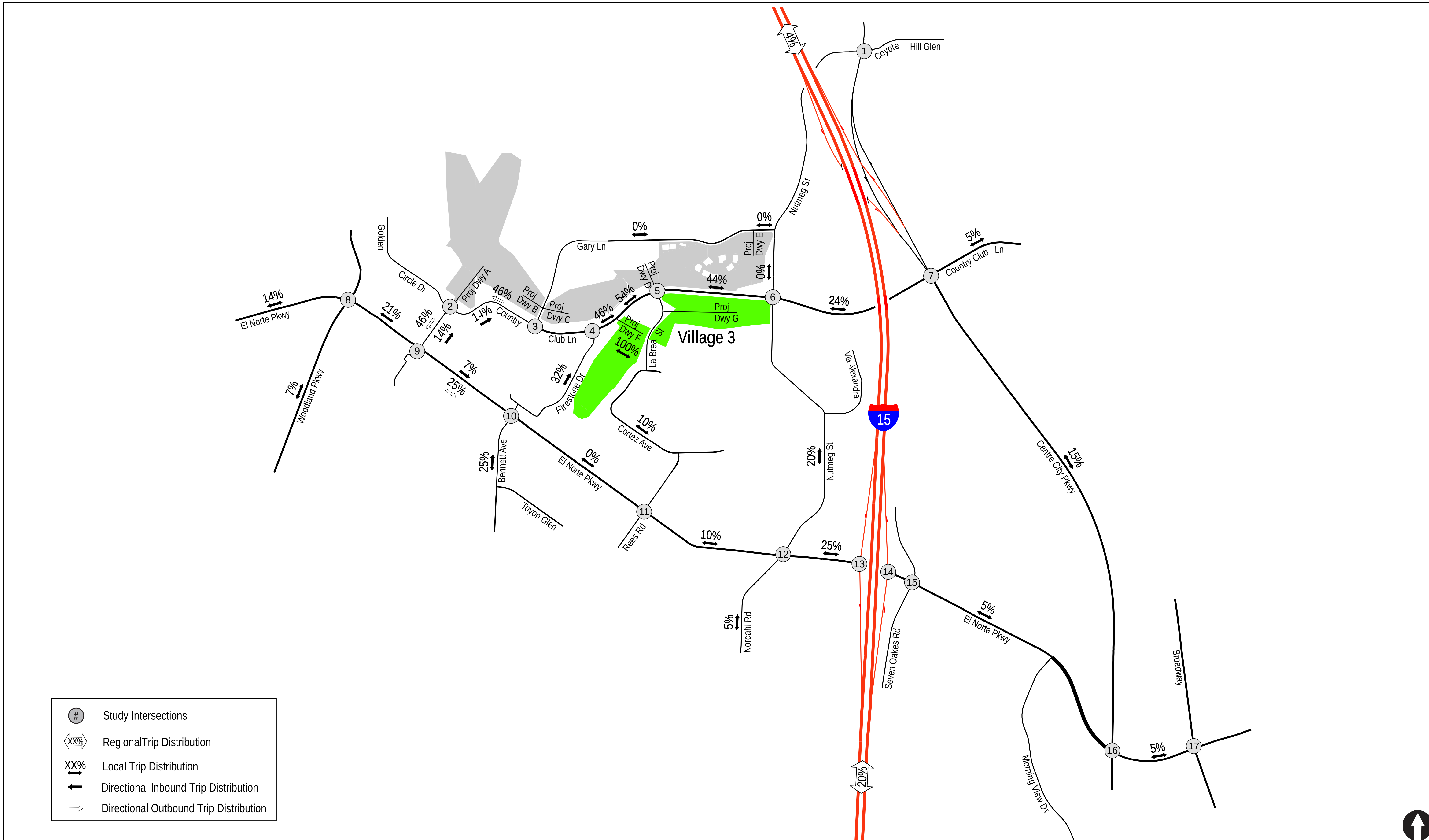
Figure 7-1e
Project Traffic Distribution
(Village 2, Project Driveway E)

THE VILLAGES



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Date: 06/19/17

Figure 7-1f

Project Traffic Distribution

(Village 3, Project Driveway F)

THE VILLAGES

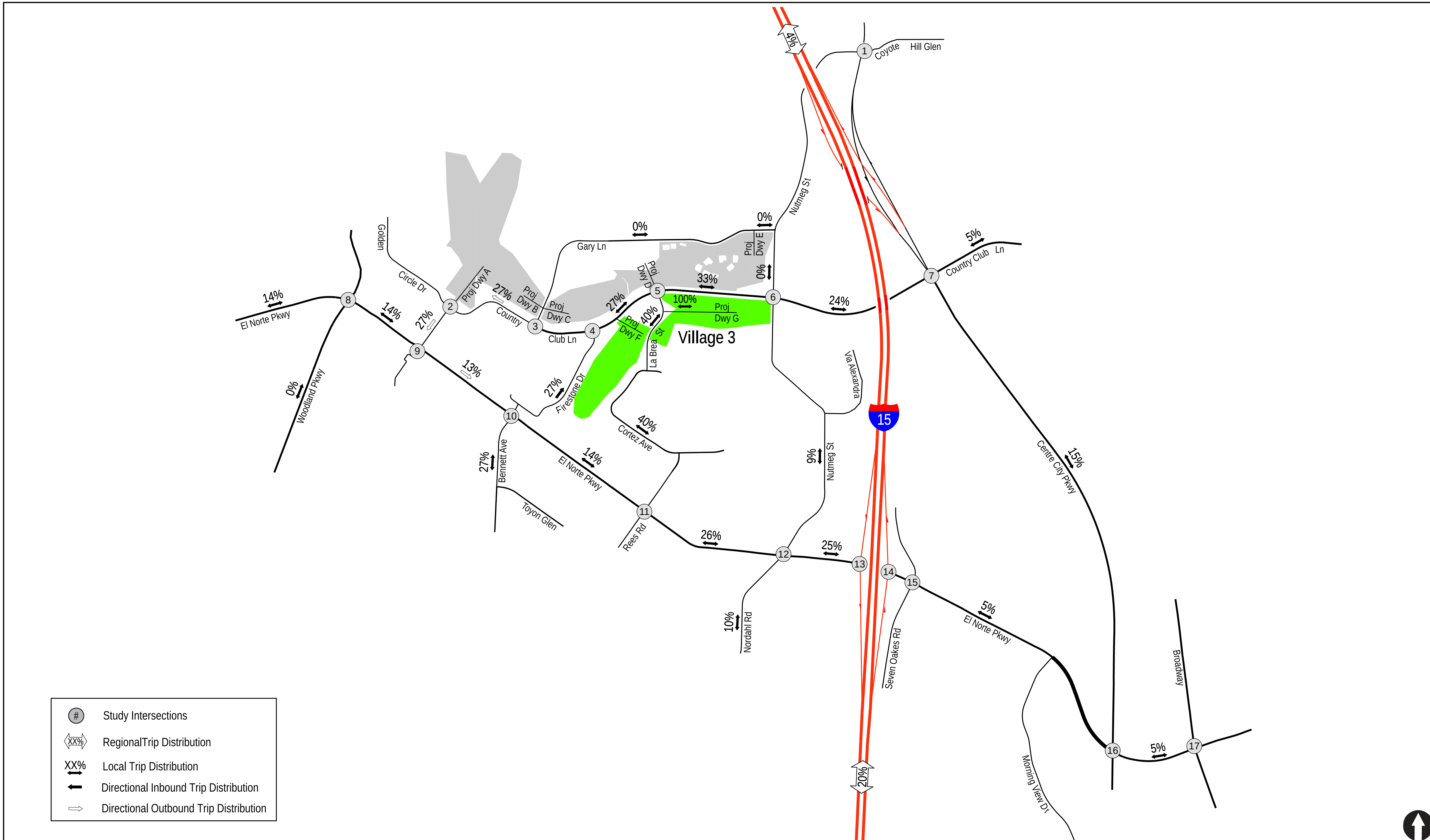

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Figure 7-1g

Project Traffic Distribution

(Village 3, Project Driveway G)

THE VILLAGES

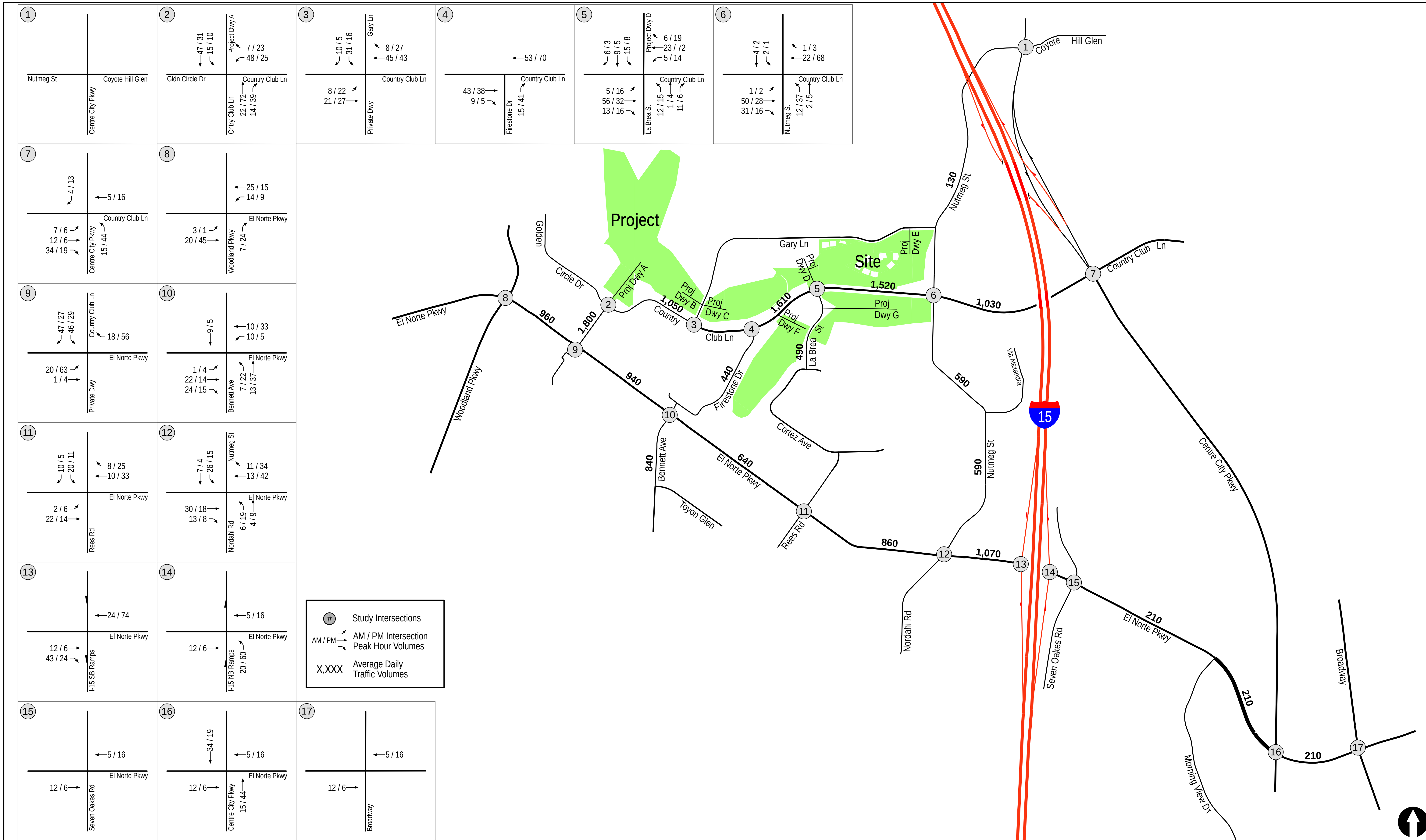

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Figure 7-3

Total Project Traffic Volumes

THE VILLAGES

7.0 TRIP GENERATION/DISTRIBUTION/ASSIGNMENT

The following is a discussion of the Project trip generation calculations and the Project traffic distribution and assignment through the local network.

7.1 Trip Generation

The Project proposes to develop 40 single-family homes. Homes will be constructed to City of Escondido R-1-10 zoning standards (Single-Family Residential - 10,000 SF minimum lot size).

The Project traffic generation calculations were conducted using the trip generation rates published in the SANDAG's *"Not so Brief Guide of Vehicular Traffic Generation Rates for San Diego Region" (April 2002).*Based on the type and density of homes proposed by the Project, SANDAG specifies a trip rate of 10.0/ unit.

Table 7–1 shows a summary of the Project traffic generation. As tabulated the Project is calculated to generate 400 daily trips with 32 trips (10 inbound/22 outbound) in the AM peak hour, 30 trips (22 inbound/8 outbound) in the Mid-Afternoon peak hour and 40 trips (28 inbound/12 outbound) during the PM peak hour.

7.2 Trip Distribution/Assignment

The Project traffic was distributed to the local street system based on the Project's proximity to I-15, local roadway network, employment centers, commercial areas, local schools and traffic circulation. One portion of the project consisting of 7 dwelling units will be accessed via a driveway on N. Ash Street just north of Vista Avenue and the traffic generated by these 7 units was assigned separately. The remaining 33 units access N. Ash Street on Lehner Avenue and the traffic generated by these units was assigned separately and added to the traffic generated by the 7 units to obtain the total traffic generated by the entire project.

Figure 7–1 depicts the Project trip distribution percentages. ***Figure 7–2*** depicts the AM/PM peak hour Project traffic volumes. ***Figure 7–3*** depicts Existing + Project traffic volumes.

TABLE 7–1
PROJECT TRIP GENERATION

Land Use	Size [a]	Daily Trip Ends (ADTs)		AM Peak Hour					Mid Afternoon Peak Hour (Between 2:00 PM and 4:00 PM					PM Peak Hour				
		Rate [b]	Volume	% of ADT	In:Out Split	Volume			% of ADT [b]	In:Out Split	Volume			% of ADT	In:Out Split	Volume		
						In	Out	Total			In	Out	Total			In	Out	Total
Residential	40 DU	10 /DU	70	8%	30:70	10	22	32	7.5%	70:30	22	8	30	10%	70:30	28	12	40

Footnotes:

a. Rate is based on SANDAG's (Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, April 2002.

b. Mid-Afternoon peak hour percentages estimated based on vehicles on roadways serving primarily residential traffic.

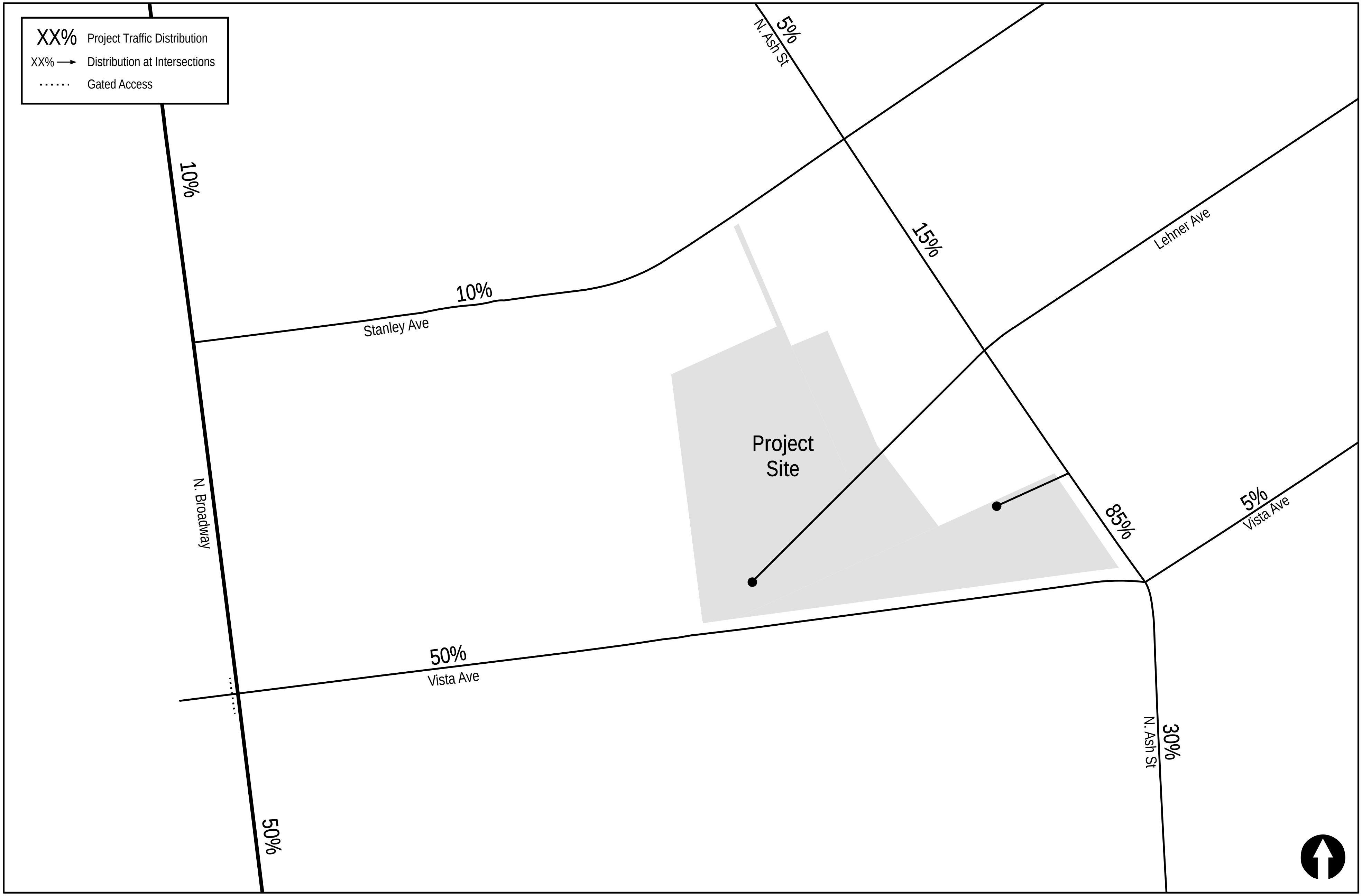

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Figure 7-1

Project Traffic Distribution

LENNER RESIDENTIAL

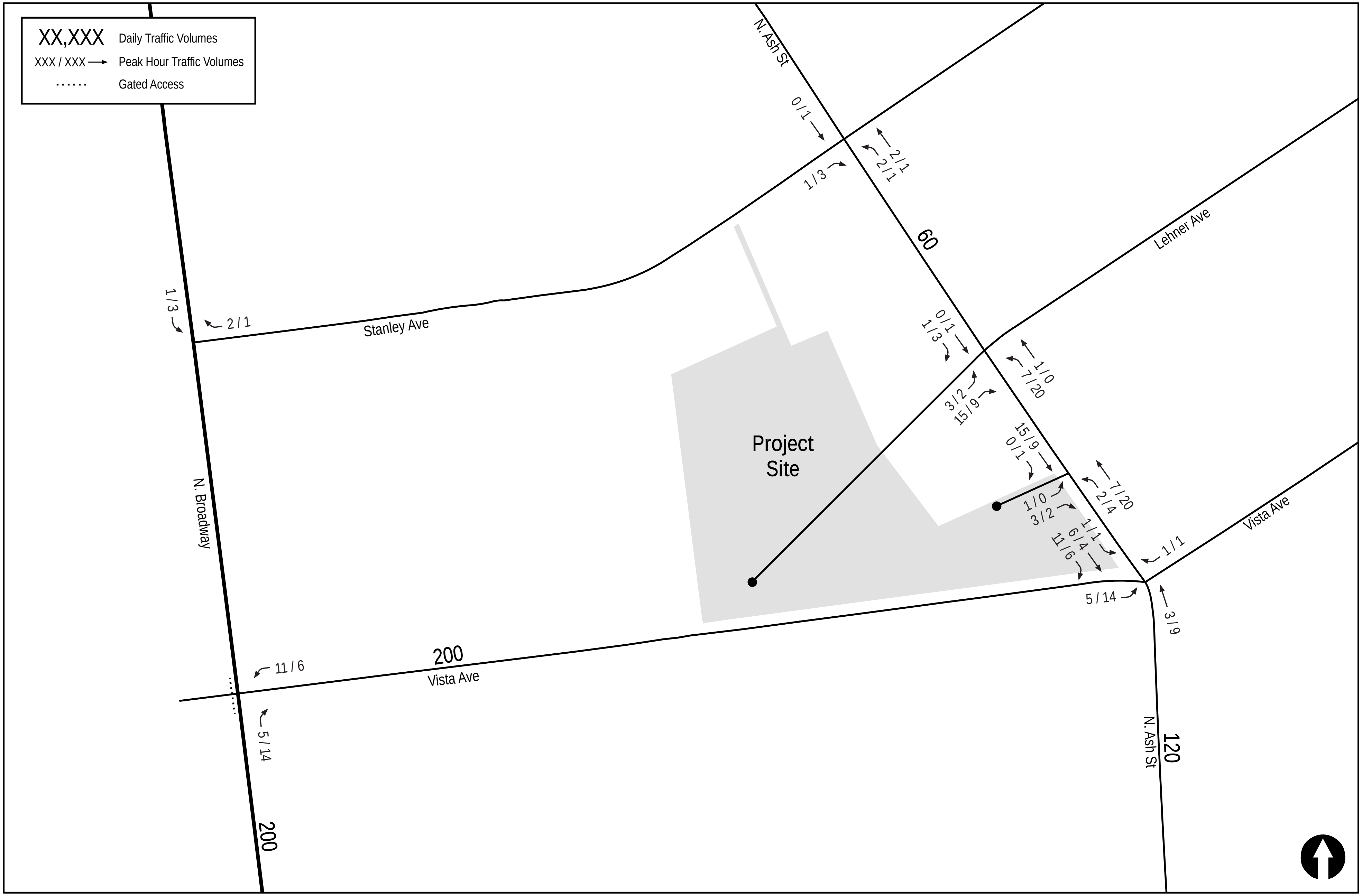

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Figure 7-2

Project Traffic Volumes

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LENNER RESIDENTIAL

Cumulative Projects: 7, 44, 47, 53 & 80

Proposed Land Use	Rate		Size & Units		ADT	%	Split		AM IN	AM OUT	%	Split		PM IN	PM OUT
#7 Tract 932 Residential - Single Family	10	/DU	179	DU	**1,790**	8%	0.3	0.7	**43**	**100**	10%	0.7	0.3	**125**	**54**
#44 Tract 929 Residential - Single Family	10	/DU	12	DU	**120**	8%	0.3	0.7	**3**	**7**	10%	0.7	0.3	**8**	**4**
#47 Tract 929 Single Family few remaining unoccupied	10	/DU	35	DU	**350**	8%	0.3	0.7	**8**	**20**	10%	0.7	0.3	**25**	**11**
#53 Tract 929 Residential - Single Family	10	/DU	14	DU	**140**	8%	0.3	0.7	**3**	**8**	10%	0.7	0.3	**10**	**4**
#80 United Reformed Church	9	/KSF	12,243	SF	**110**	5%	0.6	0.4	**3**	**2**	8%	0.5	0.5	**4**	**4**
TOTAL					**2,510**				**61**	**137**				**172**	**76**

Appendix J

Existing plus Cumulative LOS Calculations

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	361	107	221	477	116	40	182	101	185	800	236
Future Volume (veh/h)	69	361	107	221	477	116	40	182	101	185	800	236
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	75	392	116	240	518	126	43	198	110	201	870	257
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	93	473	205	264	815	356	55	1747	768	224	2085	918
Arrive On Green	0.05	0.13	0.13	0.15	0.23	0.23	0.06	0.99	0.99	0.13	0.59	0.59
Sat Flow, veh/h	1774	3539	1534	1774	3539	1547	1774	3539	1556	1774	3539	1557
Grp Volume(v), veh/h	75	392	116	240	518	126	43	198	110	201	870	257
Grp Sat Flow(s),veh/h/ln	1774	1770	1534	1774	1770	1547	1774	1770	1556	1774	1770	1557
Q Serve(g_s), s	6.9	17.8	11.7	22.0	21.8	11.3	3.9	0.1	0.2	18.4	22.1	13.4
Cycle Q Clear(g_c), s	6.9	17.8	11.7	22.0	21.8	11.3	3.9	0.1	0.2	18.4	22.1	13.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	93	473	205	264	815	356	55	1747	768	224	2085	918
V/C Ratio(X)	0.80	0.83	0.57	0.91	0.64	0.35	0.78	0.11	0.14	0.90	0.42	0.28
Avail Cap(c_a), veh/h	161	665	288	452	1244	544	118	1747	768	376	2085	918
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99	1.00	1.00	1.00
Uniform Delay (d), s/veh	77.3	69.6	67.0	69.1	57.3	53.2	76.8	0.5	0.5	71.0	18.5	16.7
Incr Delay (d2), s/veh	14.7	6.1	2.4	13.4	0.8	0.6	20.5	0.1	0.4	14.2	0.6	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	9.1	5.1	11.8	10.7	4.9	2.2	0.1	0.1	9.9	10.9	6.0
LnGrp Delay(d),s/veh	92.0	75.7	69.4	82.5	58.1	53.8	97.3	0.7	0.9	85.2	19.1	17.4
LnGrp LOS	F	E	E	F	E	D	F	A	A	F	B	B
Approach Vol, veh/h		583			884			351			1328	
Approach Delay, s/veh		76.5			64.1			12.6			28.8	
Approach LOS		E			E			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.9	85.5	28.6	26.1	9.1	101.2	12.7	42.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	35.0	41.0	42.0	31.0	11.0	65.0	15.0	58.0
Max Q Clear Time (g_c+I1), s	20.4	2.2	24.0	19.8	5.9	24.1	8.9	23.8
Green Ext Time (p_c), s	0.5	1.7	0.6	2.3	0.0	8.8	0.1	4.3

Intersection Summary	
HCM 2010 Ctrl Delay	45.7
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	220	8	386	211	9	15	244	99	8	1014	93
Future Volume (veh/h)	58	220	8	386	211	9	15	244	99	8	1014	93
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	63	239	9	420	229	10	16	265	108	9	1102	101
Adj No. of Lanes	1	1	0	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	491	841	32	484	836	36	22	1582	687	15	1566	680
Arrive On Green	0.47	0.47	0.47	0.47	0.47	0.47	0.01	0.45	0.45	0.01	0.44	0.44
Sat Flow, veh/h	1136	1782	67	1127	1770	77	1774	3539	1536	1774	3539	1536
Grp Volume(v), veh/h	63	0	248	420	0	239	16	265	108	9	1102	101
Grp Sat Flow(s),veh/h/ln	1136	0	1849	1127	0	1847	1774	1770	1536	1774	1770	1536
Q Serve(g_s), s	5.9	0.0	13.5	59.8	0.0	12.9	1.5	7.4	6.9	0.8	41.6	6.5
Cycle Q Clear(g_c), s	18.8	0.0	13.5	73.3	0.0	12.9	1.5	7.4	6.9	0.8	41.6	6.5
Prop In Lane	1.00		0.04	1.00		0.04	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	491	0	873	484	0	872	22	1582	687	15	1566	680
V/C Ratio(X)	0.13	0.00	0.28	0.87	0.00	0.27	0.72	0.17	0.16	0.62	0.70	0.15
Avail Cap(c_a), veh/h	554	0	975	546	0	974	43	1582	687	43	1566	680
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.99	0.99	0.99	0.85	0.85	0.85
Uniform Delay (d), s/veh	32.1	0.0	26.6	48.9	0.0	26.4	81.2	27.3	27.1	81.6	37.2	27.4
Incr Delay (d2), s/veh	0.1	0.0	0.2	12.9	0.0	0.2	34.3	0.2	0.5	31.2	2.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	6.9	20.3	0.0	6.7	0.9	3.7	3.0	0.5	20.9	2.8
LnGrp Delay(d),s/veh	32.2	0.0	26.7	61.8	0.0	26.6	115.4	27.5	27.6	112.8	39.5	27.8
LnGrp LOS	C		C	E		C	F	C	C	F	D	C
Approach Vol, veh/h		311			659			389			1212	
Approach Delay, s/veh		27.8			49.0			31.2			39.1	
Approach LOS		C			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.4	77.8		81.9	6.1	77.0		81.9
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	62.0		87.0	4.0	62.0		87.0
Max Q Clear Time (g_c+I1), s	2.8	9.4		20.8	3.5	43.6		75.3
Green Ext Time (p_c), s	0.0	2.3		1.9	0.0	8.2		2.6

Intersection Summary			
HCM 2010 Ctrl Delay			39.1
HCM 2010 LOS			D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	550	260	415	725	112	176	254	87	241	1027	76
Future Volume (veh/h)	12	550	260	415	725	112	176	254	87	241	1027	76
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	13	598	283	451	788	122	191	276	95	262	1116	83
Adj No. of Lanes	2	2	1	2	2	0	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	37	723	313	511	1047	162	233	1631	714	308	1708	748
Arrive On Green	0.01	0.20	0.20	0.15	0.34	0.34	0.11	0.77	0.77	0.09	0.48	0.48
Sat Flow, veh/h	3442	3539	1533	3442	3061	474	3442	3539	1550	3442	3539	1551
Grp Volume(v), veh/h	13	598	283	451	455	455	191	276	95	262	1116	83
Grp Sat Flow(s),veh/h/ln	1721	1770	1533	1721	1770	1766	1721	1770	1550	1721	1770	1551
Q Serve(g_s), s	0.6	26.7	29.7	21.2	37.6	37.6	9.0	3.4	2.6	12.4	39.3	4.8
Cycle Q Clear(g_c), s	0.6	26.7	29.7	21.2	37.6	37.6	9.0	3.4	2.6	12.4	39.3	4.8
Prop In Lane	1.00		1.00	1.00		0.27	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	37	723	313	511	605	604	233	1631	714	308	1708	748
V/C Ratio(X)	0.35	0.83	0.90	0.88	0.75	0.75	0.82	0.17	0.13	0.85	0.65	0.11
Avail Cap(c_a), veh/h	229	772	335	730	643	642	313	1631	714	396	1708	748
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99	0.57	0.57	0.57
Uniform Delay (d), s/veh	81.0	62.9	64.1	68.8	48.1	48.1	72.2	10.6	10.6	74.0	32.3	23.3
Incr Delay (d2), s/veh	5.4	7.1	25.7	9.0	4.7	4.7	11.9	0.2	0.4	8.0	1.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	13.7	14.8	10.7	19.1	19.1	4.6	1.7	1.2	6.2	19.5	2.1
LnGrp Delay(d),s/veh	86.4	69.9	89.7	77.8	52.8	52.8	84.1	10.9	10.9	82.0	33.4	23.5
LnGrp LOS	F	E	F	E	D	D	F	B	B	F	C	C
Approach Vol, veh/h		894			1361			562			1461	
Approach Delay, s/veh		76.4			61.1			35.8			41.6	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.8	80.0	28.5	37.7	15.2	83.6	5.8	60.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	19.0	59.0	35.0	36.0	15.0	63.0	11.0	60.0
Max Q Clear Time (g_c+I1), s	14.4	5.4	23.2	31.7	11.0	41.3	2.6	39.6
Green Ext Time (p_c), s	0.4	2.3	1.3	2.0	0.2	9.0	0.0	6.1

Intersection Summary	
HCM 2010 Ctrl Delay	54.3
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	3	7	97	5	98	22	438	51	55	1819	19
Future Volume (veh/h)	2	3	7	97	5	98	22	438	51	55	1819	19
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.95	0.97		0.95	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	2	3	8	105	5	107	24	476	55	60	1977	21
Adj No. of Lanes	1	1	0	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	76	42	113	168	7	142	30	2784	1210	76	2874	1249
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.02	0.79	0.79	0.09	1.00	1.00
Sat Flow, veh/h	1255	432	1152	1357	68	1445	1774	3539	1538	1774	3539	1539
Grp Volume(v), veh/h	2	0	11	105	0	112	24	476	55	60	1977	21
Grp Sat Flow(s),veh/h/ln	1255	0	1584	1357	0	1513	1774	1770	1538	1774	1770	1539
Q Serve(g_s), s	0.3	0.0	1.0	12.6	0.0	11.9	2.2	5.5	1.3	5.5	0.0	0.0
Cycle Q Clear(g_c), s	12.2	0.0	1.0	13.6	0.0	11.9	2.2	5.5	1.3	5.5	0.0	0.0
Prop In Lane	1.00		0.73	1.00		0.96	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	76	0	155	168	0	148	30	2784	1210	76	2874	1249
V/C Ratio(X)	0.03	0.00	0.07	0.62	0.00	0.75	0.79	0.17	0.05	0.79	0.69	0.02
Avail Cap(c_a), veh/h	136	0	230	232	0	220	65	2784	1210	129	2874	1249
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.63	0.63	0.63
Uniform Delay (d), s/veh	78.4	0.0	67.6	73.8	0.0	72.5	80.8	4.3	3.9	74.8	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.2	3.8	0.0	8.0	35.4	0.1	0.1	11.1	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.5	4.9	0.0	5.3	1.4	2.7	0.6	2.9	0.3	0.0
LnGrp Delay(d),s/veh	78.5	0.0	67.8	77.5	0.0	80.5	116.2	4.5	4.0	85.9	0.9	0.0
LnGrp LOS	E		E	E		F	F	A	A	F	A	A
Approach Vol, veh/h		13			217			555			2058	
Approach Delay, s/veh		69.4			79.0			9.3			3.3	
Approach LOS		E			E			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.0	133.8		20.2	6.8	138.0		20.2
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	12.0	117.0		24.0	6.0	123.0		24.0
Max Q Clear Time (g_c+I1), s	7.5	7.5		14.2	4.2	2.0		15.6
Green Ext Time (p_c), s	0.0	3.8		0.0	0.0	41.2		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	10.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	128	387	82	87	246	128	130	471	192	139	236	57
Future Volume (veh/h)	128	387	82	87	246	128	130	471	192	139	236	57
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	139	421	89	95	267	139	141	512	209	151	257	62
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	161	515	223	116	424	183	162	2104	926	174	2128	936
Arrive On Green	0.09	0.15	0.15	0.07	0.12	0.12	0.18	1.00	1.00	0.10	0.60	0.60
Sat Flow, veh/h	1774	3539	1536	1774	3539	1531	1774	3539	1557	1774	3539	1558
Grp Volume(v), veh/h	139	421	89	95	267	139	141	512	209	151	257	62
Grp Sat Flow(s),veh/h/ln	1774	1770	1536	1774	1770	1531	1774	1770	1557	1774	1770	1558
Q Serve(g_s), s	12.8	19.0	8.7	8.7	11.8	14.5	12.7	0.0	0.0	13.8	5.2	2.7
Cycle Q Clear(g_c), s	12.8	19.0	8.7	8.7	11.8	14.5	12.7	0.0	0.0	13.8	5.2	2.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	161	515	223	116	424	183	162	2104	926	174	2128	936
V/C Ratio(X)	0.86	0.82	0.40	0.82	0.63	0.76	0.87	0.24	0.23	0.87	0.12	0.07
Avail Cap(c_a), veh/h	269	858	372	258	837	362	366	2104	926	366	2128	936
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	0.94	1.00	1.00	1.00
Uniform Delay (d), s/veh	74.0	68.4	64.0	76.2	69.1	70.3	66.5	0.0	0.0	73.4	14.1	13.7
Incr Delay (d2), s/veh	14.0	3.3	1.1	13.3	1.5	6.3	12.6	0.3	0.5	12.2	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	9.6	3.8	4.7	5.9	6.5	6.8	0.1	0.1	7.4	2.5	1.2
LnGrp Delay(d),s/veh	88.0	71.7	65.1	89.5	70.7	76.6	79.1	0.3	0.5	85.5	14.3	13.8
LnGrp LOS	F	E	E	F	E	E	E	A	A	F	B	B
Approach Vol, veh/h		649			501			862			470	
Approach Delay, s/veh		74.3			75.9			13.2			37.1	
Approach LOS		E			E			B			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.2	102.1	14.7	28.0	19.1	103.2	19.0	23.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	34.0	51.0	24.0	40.0	34.0	51.0	25.0	39.0
Max Q Clear Time (g_c+I1), s	15.8	2.0	10.7	21.0	14.7	7.2	14.8	16.5
Green Ext Time (p_c), s	0.4	4.8	0.2	3.0	0.3	2.0	0.2	2.2

Intersection Summary			
HCM 2010 Ctrl Delay			46.4
HCM 2010 LOS			D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	285	7	115	75	9	13	603	212	6	371	51
Future Volume (veh/h)	170	285	7	115	75	9	13	603	212	6	371	51
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	185	310	8	125	82	10	14	655	230	7	403	55
Adj No. of Lanes	1	1	0	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	361	512	13	186	460	56	20	2255	982	12	2238	974
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.01	0.64	0.64	0.01	1.00	1.00
Sat Flow, veh/h	1296	1807	47	1057	1625	198	1774	3539	1541	1774	3539	1541
Grp Volume(v), veh/h	185	0	318	125	0	92	14	655	230	7	403	55
Grp Sat Flow(s),veh/h/ln	1296	0	1853	1057	0	1823	1774	1770	1541	1774	1770	1541
Q Serve(g_s), s	20.7	0.0	24.5	19.1	0.0	6.3	1.3	13.6	10.5	0.6	0.0	0.0
Cycle Q Clear(g_c), s	27.0	0.0	24.5	43.6	0.0	6.3	1.3	13.6	10.5	0.6	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.11	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	361	0	525	186	0	517	20	2255	982	12	2238	974
V/C Ratio(X)	0.51	0.00	0.61	0.67	0.00	0.18	0.69	0.29	0.23	0.59	0.18	0.06
Avail Cap(c_a), veh/h	677	0	977	444	0	961	43	2255	982	43	2238	974
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.88	0.88	0.88	0.97	0.97	0.97
Uniform Delay (d), s/veh	54.8	0.0	51.1	70.0	0.0	44.6	81.3	13.3	12.8	81.2	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.0	1.1	4.1	0.0	0.2	30.5	0.3	0.5	38.6	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.6	0.0	12.7	5.8	0.0	3.2	0.8	6.7	4.6	0.4	0.1	0.0
LnGrp Delay(d),s/veh	55.9	0.0	52.3	74.2	0.0	44.8	111.8	13.6	13.3	119.8	0.2	0.1
LnGrp LOS	E		D	E		D	F	B	B	F	A	A
Approach Vol, veh/h		503			217			899			465	
Approach Delay, s/veh		53.6			61.7			15.0			2.0	
Approach LOS		D			E			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.1	109.1		50.8	5.9	108.3		50.8
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	62.0		87.0	4.0	62.0		87.0
Max Q Clear Time (g_c+I1), s	2.6	15.6		29.0	3.3	2.0		45.6
Green Ext Time (p_c), s	0.0	6.3		2.8	0.0	3.2		1.1

Intersection Summary			
HCM 2010 Ctrl Delay			26.3
HCM 2010 LOS			C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	821	192	204	576	143	363	630	328	174	267	30
Future Volume (veh/h)	32	821	192	204	576	143	363	630	328	174	267	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	35	892	209	222	626	155	395	685	357	189	290	33
Adj No. of Lanes	2	2	1	2	2	0	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	67	1036	452	269	984	243	448	1643	720	234	1423	623
Arrive On Green	0.02	0.29	0.29	0.08	0.35	0.35	0.22	0.78	0.78	0.07	0.40	0.40
Sat Flow, veh/h	3442	3539	1543	3442	2799	692	3442	3539	1551	3442	3539	1548
Grp Volume(v), veh/h	35	892	209	222	395	386	395	685	357	189	290	33
Grp Sat Flow(s),veh/h/ln	1721	1770	1543	1721	1770	1721	1721	1770	1551	1721	1770	1548
Q Serve(g_s), s	1.7	39.3	18.3	10.5	30.8	30.9	18.3	10.6	13.9	8.9	8.8	2.1
Cycle Q Clear(g_c), s	1.7	39.3	18.3	10.5	30.8	30.9	18.3	10.6	13.9	8.9	8.8	2.1
Prop In Lane	1.00		1.00	1.00		0.40	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	67	1036	452	269	622	605	448	1643	720	234	1423	623
V/C Ratio(X)	0.53	0.86	0.46	0.83	0.64	0.64	0.88	0.42	0.50	0.81	0.20	0.05
Avail Cap(c_a), veh/h	104	1287	561	396	794	772	667	1643	720	355	1423	623
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.86	0.86	0.86
Uniform Delay (d), s/veh	80.2	55.2	47.7	75.0	44.7	44.7	63.4	11.1	11.5	75.8	32.1	30.1
Incr Delay (d2), s/veh	6.3	5.2	0.7	8.9	1.1	1.1	8.5	0.7	2.2	6.9	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	19.9	7.9	5.3	15.2	14.9	9.2	5.2	6.3	4.5	4.4	0.9
LnGrp Delay(d),s/veh	86.4	60.3	48.5	83.9	45.8	45.9	71.9	11.8	13.7	82.7	32.4	30.3
LnGrp LOS	F	E	D	F	D	D	E	B	B	F	C	C
Approach Vol, veh/h		1136			1003			1437			512	
Approach Delay, s/veh		59.0			54.2			28.8			50.8	
Approach LOS		E			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.2	80.6	16.9	52.3	25.5	70.4	7.2	62.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	17.0	53.0	19.0	60.0	32.0	38.0	5.0	74.0
Max Q Clear Time (g_c+I1), s	10.9	15.9	12.5	41.3	20.3	10.8	3.7	32.9
Green Ext Time (p_c), s	0.3	7.2	0.4	7.0	1.1	2.0	0.0	5.9

Intersection Summary			
HCM 2010 Ctrl Delay			46.2
HCM 2010 LOS			D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	4	23	64	6	206	21	1095	146	32	682	11
Future Volume (veh/h)	14	4	23	64	6	206	21	1095	146	32	682	11
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	0.99		0.96	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	15	4	25	70	7	224	23	1190	159	35	741	12
Adj No. of Lanes	1	1	0	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	73	37	232	256	8	256	29	2583	1122	45	2615	1136
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.02	0.73	0.73	0.05	1.00	1.00
Sat Flow, veh/h	1145	216	1350	1356	47	1489	1774	3539	1537	1774	3539	1537
Grp Volume(v), veh/h	15	0	29	70	0	231	23	1190	159	35	741	12
Grp Sat Flow(s),veh/h/ln	1145	0	1566	1356	0	1536	1774	1770	1537	1774	1770	1537
Q Serve(g_s), s	2.1	0.0	2.6	7.6	0.0	24.2	2.1	22.6	5.1	3.2	0.0	0.0
Cycle Q Clear(g_c), s	26.3	0.0	2.6	10.2	0.0	24.2	2.1	22.6	5.1	3.2	0.0	0.0
Prop In Lane	1.00		0.86	1.00		0.97	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	73	0	270	256	0	264	29	2583	1122	45	2615	1136
V/C Ratio(X)	0.21	0.00	0.11	0.27	0.00	0.87	0.79	0.46	0.14	0.78	0.28	0.01
Avail Cap(c_a), veh/h	160	0	389	359	0	382	108	2583	1122	129	2615	1136
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92
Uniform Delay (d), s/veh	79.4	0.0	57.6	61.9	0.0	66.5	80.9	9.1	6.7	77.9	0.0	0.0
Incr Delay (d2), s/veh	1.4	0.0	0.2	0.6	0.0	14.3	36.8	0.6	0.3	22.7	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	1.1	2.9	0.0	11.3	1.3	11.1	2.2	1.9	0.1	0.0
LnGrp Delay(d),s/veh	80.7	0.0	57.8	62.5	0.0	80.9	117.7	9.7	7.0	100.5	0.2	0.0
LnGrp LOS	F		E	E		F	F	A	A	F	A	A
Approach Vol, veh/h		44			301			1372			788	
Approach Delay, s/veh		65.6			76.6			11.2			4.7	
Approach LOS		E			E			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.2	124.4		32.4	6.7	125.9		32.4
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	12.0	100.0		41.0	10.0	102.0		41.0
Max Q Clear Time (g_c+I1), s	5.2	24.6		28.3	4.1	2.0		26.2
Green Ext Time (p_c), s	0.0	14.0		0.1	0.0	6.3		1.4

Intersection Summary			
HCM 2010 Ctrl Delay			18.0
HCM 2010 LOS			B

Appendix K

Existing plus Cumulative plus Project LOS Calculations

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	361	107	221	477	116	40	183	101	185	801	236
Future Volume (veh/h)	69	361	107	221	477	116	40	183	101	185	801	236
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	75	392	116	240	518	126	43	199	110	201	871	257
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	93	473	205	264	815	356	55	1747	768	224	2085	918
Arrive On Green	0.05	0.13	0.13	0.15	0.23	0.23	0.06	0.99	0.99	0.13	0.59	0.59
Sat Flow, veh/h	1774	3539	1534	1774	3539	1547	1774	3539	1556	1774	3539	1557
Grp Volume(v), veh/h	75	392	116	240	518	126	43	199	110	201	871	257
Grp Sat Flow(s),veh/h/ln	1774	1770	1534	1774	1770	1547	1774	1770	1556	1774	1770	1557
Q Serve(g_s), s	6.9	17.8	11.7	22.0	21.8	11.3	3.9	0.1	0.2	18.4	22.1	13.4
Cycle Q Clear(g_c), s	6.9	17.8	11.7	22.0	21.8	11.3	3.9	0.1	0.2	18.4	22.1	13.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	93	473	205	264	815	356	55	1747	768	224	2085	918
V/C Ratio(X)	0.80	0.83	0.57	0.91	0.64	0.35	0.78	0.11	0.14	0.90	0.42	0.28
Avail Cap(c_a), veh/h	161	665	288	452	1244	544	118	1747	768	376	2085	918
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99	1.00	1.00	1.00
Uniform Delay (d), s/veh	77.3	69.6	67.0	69.1	57.3	53.2	76.8	0.5	0.5	71.0	18.5	16.7
Incr Delay (d2), s/veh	14.7	6.1	2.4	13.4	0.8	0.6	20.5	0.1	0.4	14.2	0.6	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	9.1	5.1	11.8	10.7	4.9	2.2	0.1	0.1	9.9	10.9	6.0
LnGrp Delay(d),s/veh	92.0	75.7	69.4	82.5	58.1	53.8	97.3	0.7	0.9	85.2	19.1	17.4
LnGrp LOS	F	E	E	F	E	D	F	A	A	F	B	B
Approach Vol, veh/h		583			884			352			1329	
Approach Delay, s/veh		76.5			64.1			12.5			28.8	
Approach LOS		E			E			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.9	85.5	28.6	26.1	9.1	101.2	12.7	42.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	35.0	41.0	42.0	31.0	11.0	65.0	15.0	58.0
Max Q Clear Time (g_c+I1), s	20.4	2.2	24.0	19.8	5.9	24.1	8.9	23.8
Green Ext Time (p_c), s	0.5	1.7	0.6	2.3	0.0	8.9	0.1	4.3

Intersection Summary	
HCM 2010 Ctrl Delay	45.7
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	220	8	387	211	9	21	245	99	8	1016	93
Future Volume (veh/h)	58	220	8	387	211	9	21	245	99	8	1016	93
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	63	239	9	421	229	10	23	266	108	9	1104	101
Adj No. of Lanes	1	1	0	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	492	843	32	484	837	37	29	1579	686	15	1551	673
Arrive On Green	0.47	0.47	0.47	0.47	0.47	0.47	0.02	0.45	0.45	0.01	0.44	0.44
Sat Flow, veh/h	1136	1782	67	1127	1770	77	1774	3539	1536	1774	3539	1536
Grp Volume(v), veh/h	63	0	248	421	0	239	23	266	108	9	1104	101
Grp Sat Flow(s),veh/h/ln	1136	0	1849	1127	0	1847	1774	1770	1536	1774	1770	1536
Q Serve(g_s), s	5.9	0.0	13.5	59.9	0.0	12.9	2.1	7.4	6.9	0.8	42.0	6.5
Cycle Q Clear(g_c), s	18.8	0.0	13.5	73.4	0.0	12.9	2.1	7.4	6.9	0.8	42.0	6.5
Prop In Lane	1.00		0.04	1.00		0.04	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	492	0	874	484	0	874	29	1579	686	15	1551	673
V/C Ratio(X)	0.13	0.00	0.28	0.87	0.00	0.27	0.79	0.17	0.16	0.62	0.71	0.15
Avail Cap(c_a), veh/h	554	0	975	546	0	974	43	1579	686	43	1551	673
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.99	0.99	0.99	0.85	0.85	0.85
Uniform Delay (d), s/veh	32.0	0.0	26.5	48.8	0.0	26.3	80.9	27.4	27.2	81.6	37.9	27.9
Incr Delay (d2), s/veh	0.1	0.0	0.2	13.0	0.0	0.2	43.8	0.2	0.5	31.2	2.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	6.9	20.3	0.0	6.6	1.4	3.7	3.0	0.5	21.1	2.9
LnGrp Delay(d),s/veh	32.1	0.0	26.7	61.8	0.0	26.5	124.6	27.6	27.7	112.7	40.2	28.3
LnGrp LOS	C		C	E		C	F	C	C	F	D	C
Approach Vol, veh/h		311			660			397			1214	
Approach Delay, s/veh		27.8			49.0			33.2			39.8	
Approach LOS		C			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.4	77.6		82.0	6.7	76.3		82.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	62.0		87.0	4.0	62.0		87.0
Max Q Clear Time (g_c+I1), s	2.8	9.4		20.8	4.1	44.0		75.4
Green Ext Time (p_c), s	0.0	2.3		1.9	0.0	8.1		2.6

Intersection Summary	
HCM 2010 Ctrl Delay	39.7
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	550	260	415	725	113	176	257	87	244	1029	78
Future Volume (veh/h)	17	550	260	415	725	113	176	257	87	244	1029	78
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	18	598	283	451	788	123	191	279	95	265	1118	85
Adj No. of Lanes	2	2	1	2	2	0	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	47	723	313	511	1037	162	233	1628	713	311	1708	748
Arrive On Green	0.01	0.20	0.20	0.15	0.34	0.34	0.11	0.77	0.77	0.09	0.48	0.48
Sat Flow, veh/h	3442	3539	1533	3442	3057	477	3442	3539	1550	3442	3539	1551
Grp Volume(v), veh/h	18	598	283	451	456	455	191	279	95	265	1118	85
Grp Sat Flow(s),veh/h/ln	1721	1770	1533	1721	1770	1765	1721	1770	1550	1721	1770	1551
Q Serve(g_s), s	0.9	26.7	29.7	21.2	37.9	37.9	9.0	3.5	2.6	12.5	39.4	5.0
Cycle Q Clear(g_c), s	0.9	26.7	29.7	21.2	37.9	37.9	9.0	3.5	2.6	12.5	39.4	5.0
Prop In Lane	1.00		1.00	1.00		0.27	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	47	723	313	511	600	599	233	1628	713	311	1708	748
V/C Ratio(X)	0.38	0.83	0.90	0.88	0.76	0.76	0.82	0.17	0.13	0.85	0.65	0.11
Avail Cap(c_a), veh/h	229	772	335	730	643	642	313	1628	713	396	1708	748
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99	0.56	0.56	0.56
Uniform Delay (d), s/veh	80.7	62.9	64.1	68.8	48.5	48.5	72.2	10.7	10.6	74.0	32.3	23.4
Incr Delay (d2), s/veh	5.1	7.1	25.7	9.0	4.9	4.9	11.9	0.2	0.4	8.1	1.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	13.7	14.8	10.7	19.3	19.3	4.6	1.7	1.2	6.3	19.5	2.1
LnGrp Delay(d),s/veh	85.8	69.9	89.7	77.8	53.5	53.5	84.0	11.0	11.0	82.1	33.4	23.5
LnGrp LOS	F	E	F	E	D	D	F	B	B	F	C	C
Approach Vol, veh/h		899			1362			565			1468	
Approach Delay, s/veh		76.5			61.5			35.7			41.6	
Approach LOS		E			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.9	79.9	28.5	37.7	15.2	83.6	6.2	60.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	19.0	59.0	35.0	36.0	15.0	63.0	11.0	60.0
Max Q Clear Time (g_c+I1), s	14.5	5.5	23.2	31.7	11.0	41.4	2.9	39.9
Green Ext Time (p_c), s	0.4	2.3	1.3	2.0	0.2	9.0	0.0	6.0

Intersection Summary	
HCM 2010 Ctrl Delay	54.5
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	3	7	97	5	98	22	441	51	55	1821	19
Future Volume (veh/h)	2	3	7	97	5	98	22	441	51	55	1821	19
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.95	0.97		0.95	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	2	3	8	105	5	107	24	479	55	60	1979	21
Adj No. of Lanes	1	1	0	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	76	42	113	168	7	142	30	2784	1210	76	2874	1249
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.02	0.79	0.79	0.09	1.00	1.00
Sat Flow, veh/h	1255	432	1152	1357	68	1445	1774	3539	1538	1774	3539	1539
Grp Volume(v), veh/h	2	0	11	105	0	112	24	479	55	60	1979	21
Grp Sat Flow(s),veh/h/ln	1255	0	1584	1357	0	1513	1774	1770	1538	1774	1770	1539
Q Serve(g_s), s	0.3	0.0	1.0	12.6	0.0	11.9	2.2	5.5	1.3	5.5	0.0	0.0
Cycle Q Clear(g_c), s	12.2	0.0	1.0	13.6	0.0	11.9	2.2	5.5	1.3	5.5	0.0	0.0
Prop In Lane	1.00		0.73	1.00		0.96	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	76	0	155	168	0	148	30	2784	1210	76	2874	1249
V/C Ratio(X)	0.03	0.00	0.07	0.62	0.00	0.75	0.79	0.17	0.05	0.79	0.69	0.02
Avail Cap(c_a), veh/h	136	0	230	232	0	220	65	2784	1210	129	2874	1249
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.63	0.63	0.63
Uniform Delay (d), s/veh	78.4	0.0	67.6	73.8	0.0	72.5	80.8	4.3	3.9	74.8	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.2	3.8	0.0	8.0	35.4	0.1	0.1	11.1	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.5	4.9	0.0	5.3	1.4	2.7	0.6	2.9	0.3	0.0
LnGrp Delay(d),s/veh	78.5	0.0	67.8	77.5	0.0	80.5	116.2	4.5	4.0	85.8	0.9	0.0
LnGrp LOS	E		E	E		F	F	A	A	F	A	A
Approach Vol, veh/h		13			217			558			2060	
Approach Delay, s/veh		69.4			79.0			9.2			3.3	
Approach LOS		E			E			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.0	133.8		20.2	6.8	138.0		20.2
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	12.0	117.0		24.0	6.0	123.0		24.0
Max Q Clear Time (g_c+I1), s	7.5	7.5		14.2	4.2	2.0		15.6
Green Ext Time (p_c), s	0.0	3.9		0.0	0.0	41.3		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	10.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	128	387	82	87	246	128	130	473	192	139	237	57
Future Volume (veh/h)	128	387	82	87	246	128	130	473	192	139	237	57
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	139	421	89	95	267	139	141	514	209	151	258	62
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	161	515	223	116	424	184	162	2104	926	174	2128	936
Arrive On Green	0.09	0.15	0.15	0.07	0.12	0.12	0.18	1.00	1.00	0.10	0.60	0.60
Sat Flow, veh/h	1774	3539	1536	1774	3539	1531	1774	3539	1557	1774	3539	1558
Grp Volume(v), veh/h	139	421	89	95	267	139	141	514	209	151	258	62
Grp Sat Flow(s),veh/h/ln	1774	1770	1536	1774	1770	1531	1774	1770	1557	1774	1770	1558
Q Serve(g_s), s	12.8	19.0	8.7	8.7	11.8	14.5	12.7	0.0	0.0	13.8	5.2	2.7
Cycle Q Clear(g_c), s	12.8	19.0	8.7	8.7	11.8	14.5	12.7	0.0	0.0	13.8	5.2	2.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	161	515	223	116	424	184	162	2104	926	174	2128	936
V/C Ratio(X)	0.86	0.82	0.40	0.82	0.63	0.76	0.87	0.24	0.23	0.87	0.12	0.07
Avail Cap(c_a), veh/h	258	858	372	258	858	371	366	2104	926	366	2128	936
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	0.94	1.00	1.00	1.00
Uniform Delay (d), s/veh	74.0	68.4	64.0	76.2	69.1	70.3	66.5	0.0	0.0	73.4	14.1	13.7
Incr Delay (d2), s/veh	15.7	3.3	1.1	13.3	1.5	6.3	12.5	0.3	0.5	12.2	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	9.6	3.8	4.7	5.9	6.5	6.8	0.1	0.1	7.4	2.5	1.2
LnGrp Delay(d),s/veh	89.8	71.7	65.1	89.5	70.7	76.5	79.0	0.3	0.5	85.5	14.3	13.8
LnGrp LOS	F	E	E	F	E	E	E	A	A	F	B	B
Approach Vol, veh/h		649			501			864			471	
Approach Delay, s/veh		74.6			75.9			13.2			37.1	
Approach LOS		E			E			B			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.2	102.1	14.7	28.0	19.1	103.2	19.0	23.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	34.0	51.0	24.0	40.0	34.0	51.0	24.0	40.0
Max Q Clear Time (g_c+I1), s	15.8	2.0	10.7	21.0	14.7	7.2	14.8	16.5
Green Ext Time (p_c), s	0.4	4.8	0.2	3.0	0.3	2.0	0.2	2.2

Intersection Summary	
HCM 2010 Ctrl Delay	46.4
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	285	7	116	75	9	25	605	213	6	373	51
Future Volume (veh/h)	170	285	7	116	75	9	25	605	213	6	373	51
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	185	310	8	126	82	10	27	658	232	7	405	55
Adj No. of Lanes	1	1	0	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	363	513	13	187	462	56	34	2253	981	12	2208	961
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.02	0.64	0.64	0.01	1.00	1.00
Sat Flow, veh/h	1296	1807	47	1057	1625	198	1774	3539	1541	1774	3539	1541
Grp Volume(v), veh/h	185	0	318	126	0	92	27	658	232	7	405	55
Grp Sat Flow(s),veh/h/ln	1296	0	1853	1057	0	1823	1774	1770	1541	1774	1770	1541
Q Serve(g_s), s	20.7	0.0	24.5	19.3	0.0	6.3	2.5	13.7	10.6	0.6	0.0	0.0
Cycle Q Clear(g_c), s	27.0	0.0	24.5	43.8	0.0	6.3	2.5	13.7	10.6	0.6	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.11	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	363	0	527	187	0	518	34	2253	981	12	2208	961
V/C Ratio(X)	0.51	0.00	0.60	0.67	0.00	0.18	0.79	0.29	0.24	0.59	0.18	0.06
Avail Cap(c_a), veh/h	677	0	977	444	0	961	43	2253	981	43	2208	961
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.88	0.88	0.88	0.97	0.97	0.97
Uniform Delay (d), s/veh	54.7	0.0	51.0	69.9	0.0	44.5	80.6	13.4	12.8	81.2	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.0	1.1	4.1	0.0	0.2	47.3	0.3	0.5	38.6	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	0.0	12.7	5.9	0.0	3.2	1.7	6.8	4.6	0.4	0.1	0.0
LnGrp Delay(d),s/veh	55.8	0.0	52.1	74.1	0.0	44.7	127.9	13.7	13.3	119.8	0.2	0.1
LnGrp LOS	E		D	E		D	F	B	B	F	A	A
Approach Vol, veh/h		503			218			917			467	
Approach Delay, s/veh		53.5			61.7			17.0			2.0	
Approach LOS		D			E			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.1	109.0		50.9	7.2	106.9		50.9
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	62.0		87.0	4.0	62.0		87.0
Max Q Clear Time (g_c+I1), s	2.6	15.7		29.0	4.5	2.0		45.8
Green Ext Time (p_c), s	0.0	6.3		2.8	0.0	3.2		1.1

Intersection Summary			
HCM 2010 Ctrl Delay			27.0
HCM 2010 LOS			C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	821	192	204	576	144	363	633	328	178	271	34
Future Volume (veh/h)	37	821	192	204	576	144	363	633	328	178	271	34
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	40	892	209	222	626	157	395	688	357	193	295	37
Adj No. of Lanes	2	2	1	2	2	0	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	70	1036	452	269	978	245	448	1639	718	238	1423	623
Arrive On Green	0.02	0.29	0.29	0.08	0.35	0.35	0.22	0.77	0.77	0.07	0.40	0.40
Sat Flow, veh/h	3442	3539	1543	3442	2791	699	3442	3539	1551	3442	3539	1548
Grp Volume(v), veh/h	40	892	209	222	397	386	395	688	357	193	295	37
Grp Sat Flow(s),veh/h/ln	1721	1770	1543	1721	1770	1720	1721	1770	1551	1721	1770	1548
Q Serve(g_s), s	1.9	39.3	18.3	10.5	31.0	31.1	18.3	10.8	14.0	9.1	9.0	2.4
Cycle Q Clear(g_c), s	1.9	39.3	18.3	10.5	31.0	31.1	18.3	10.8	14.0	9.1	9.0	2.4
Prop In Lane	1.00		1.00	1.00		0.41	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	70	1036	452	269	620	603	448	1639	718	238	1423	623
V/C Ratio(X)	0.57	0.86	0.46	0.83	0.64	0.64	0.88	0.42	0.50	0.81	0.21	0.06
Avail Cap(c_a), veh/h	104	1287	561	396	794	771	667	1639	718	355	1423	623
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.85	0.85	0.85
Uniform Delay (d), s/veh	80.1	55.2	47.7	75.0	44.9	44.9	63.4	11.3	11.6	75.7	32.2	30.2
Incr Delay (d2), s/veh	7.1	5.2	0.7	8.9	1.1	1.2	8.5	0.7	2.2	7.3	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	19.9	7.9	5.3	15.3	14.9	9.2	5.2	6.3	4.6	4.4	1.1
LnGrp Delay(d),s/veh	87.2	60.3	48.5	83.9	46.0	46.1	71.9	12.0	13.9	83.0	32.4	30.4
LnGrp LOS	F	E	D	F	D	D	E	B	B	F	C	C
Approach Vol, veh/h		1141			1005			1440			525	
Approach Delay, s/veh		59.1			54.4			28.9			50.9	
Approach LOS		E			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.4	80.4	16.9	52.3	25.5	70.4	7.4	61.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	17.0	53.0	19.0	60.0	32.0	38.0	5.0	74.0
Max Q Clear Time (g_c+I1), s	11.1	16.0	12.5	41.3	20.3	11.0	3.9	33.1
Green Ext Time (p_c), s	0.3	7.2	0.4	7.0	1.1	2.1	0.0	5.9

Intersection Summary	
HCM 2010 Ctrl Delay	46.3
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	4	23	64	6	206	21	1098	146	32	686	11
Future Volume (veh/h)	14	4	23	64	6	206	21	1098	146	32	686	11
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	0.99		0.96	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	15	4	25	70	7	224	23	1193	159	35	746	12
Adj No. of Lanes	1	1	0	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	73	37	232	256	8	256	29	2583	1122	45	2615	1136
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.02	0.73	0.73	0.05	1.00	1.00
Sat Flow, veh/h	1145	216	1350	1356	47	1489	1774	3539	1537	1774	3539	1537
Grp Volume(v), veh/h	15	0	29	70	0	231	23	1193	159	35	746	12
Grp Sat Flow(s),veh/h/ln	1145	0	1566	1356	0	1536	1774	1770	1537	1774	1770	1537
Q Serve(g_s), s	2.1	0.0	2.6	7.6	0.0	24.2	2.1	22.7	5.1	3.2	0.0	0.0
Cycle Q Clear(g_c), s	26.3	0.0	2.6	10.2	0.0	24.2	2.1	22.7	5.1	3.2	0.0	0.0
Prop In Lane	1.00		0.86	1.00		0.97	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	73	0	270	256	0	264	29	2583	1122	45	2615	1136
V/C Ratio(X)	0.21	0.00	0.11	0.27	0.00	0.87	0.79	0.46	0.14	0.78	0.29	0.01
Avail Cap(c_a), veh/h	153	0	380	351	0	372	108	2583	1122	129	2615	1136
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92
Uniform Delay (d), s/veh	79.4	0.0	57.6	61.9	0.0	66.5	80.9	9.1	6.7	77.9	0.0	0.0
Incr Delay (d2), s/veh	1.4	0.0	0.2	0.6	0.0	15.1	36.8	0.6	0.3	22.7	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	1.1	2.9	0.0	11.4	1.3	11.1	2.2	1.9	0.1	0.0
LnGrp Delay(d),s/veh	80.7	0.0	57.8	62.5	0.0	81.6	117.7	9.7	7.0	100.5	0.3	0.0
LnGrp LOS	F		E	E		F	F	A	A	F	A	A
Approach Vol, veh/h		44			301			1375			793	
Approach Delay, s/veh		65.6			77.2			11.2			4.7	
Approach LOS		E			E			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.2	124.4		32.4	6.7	125.9		32.4
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	12.0	101.0		40.0	10.0	103.0		40.0
Max Q Clear Time (g_c+I1), s	5.2	24.7		28.3	4.1	2.0		26.2
Green Ext Time (p_c), s	0.0	14.0		0.1	0.0	6.4		1.4

Intersection Summary			
HCM 2010 Ctrl Delay			18.0
HCM 2010 LOS			B

Appendix L

City of Escondido General Plan Horizon Year Volumes

City of Escondido

GENERAL PLAN

MAY 2012 **Resolution 2012-52**

Table 4.16-2 Existing and Proposed Roadway Operations

Street Segment	Roadway Direction	Existing Capacity(1) (LOS E)	Existing Conditions (Year 2011) ADT(2)	Existing Conditions (Year 2011) LOS(3)	Existing Conditions (Year 2011) V/C(4)	Adopted City General Plan Classification (County Classification)(5)	Adopted ~~CE~~MIE Capacity (LOS E)	Proposed Classification	Proposed ~~CE~~MIE Capacity (LOS E)	Proposed Project (Year 2035) ADT(2)	Proposed Project (Year 2035) LOS(3)	Proposed Project (Year 2035) V/C(4)
1. Imperial Oaks Specific Plan Area												
Centre City Parkway												
Country Club Lane to South Iris Lane	North/South	37,000	15,400	B	0.42	4-Ln Major	37,000	4-Ln Major	37,000	18,200	B	0.49
S Iris Lane to El Norte Parkway	North/South	37,000	20,600	C	0.56	4-Ln Major	37,000	4-Ln Major	37,000	23,600	C	0.64
South Iris Lane												
Centre City Parkway to El Norte Parkway	North/South	15,000	5,400	B	0.36	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	20,400	F~~(5)~~(6)	1.36
Country Club Lane												
Nutmeg Street to Centre City Parkway	East/West	34,200	5,000	A	0.15	4-Ln Collector	34,200	4-Ln Collector	34,200	11,800	A	0.35
El Norte Parkway												
Nutmeg Street to I-15 SB Ramps	East/West	37,000	29,700	D	0.80	6-Ln Super Major	50,000	6-Ln Super Major	50,000	40,800	D	0.82
I-15 SB Ramps to I-15 NB Ramps	East/West	37,000	27,500	C	0.74	6-Ln Super Major	50,000	4-Ln Major	37,000	35,200	E~~(5)~~(6)	0.95
I-15 NB Ramps to S. Iris Lane	East/West	37,000	24,900	C	0.67	6-Ln Super Major	50,000	4-Ln Major	37,000	31,200	D	0.84
S Iris Lane to Morning View Drive	East/West	37,000	24,700	C	0.67	6-Ln Super Major	50,000	6-Ln Super Major	50,000	33,500	C	0.67
2. Highway 78 / Broadway Target Area												
Broadway												
Lincoln Avenue to Mission Avenue	North/South	34,200	25,500	C	0.75	4-Ln Major	37,000	4-Ln Major	37,000	28,700	D	0.78
Mission Avenue to Washington Avenue	North/South	34,200	23,700	C	0.69	4-Ln Major	37,000	4-Ln Major	37,000	29,600	D	0.80
Centre City Parkway												
SR-78 EB Off-Ramp to Mission Avenue	North/South	37,000	**35,400**	**E**	**0.96**	6-Ln Super Major	50,000	6-Ln Super Major	50,000	46,400	E~~(5)~~(6)	0.93
Mission Avenue to Washington Avenue	North/South	37,000	29,400	D	0.79	4-Ln Major	37,000	6-Ln Super Major	50,000	41,500	D	0.83
Escondido Boulevard												
Lincoln Avenue to Mission Avenue	North/South	34,200	9,700	A	0.28	4-Ln Collector	34,200	4-Ln Collector	34,200	29,100	D	0.85
Mission Avenue to Washington Avenue	North/South	34,200	15,100	B	0.44	4-Ln Collector	34,200	4-Ln Collector	34,200	21,500	C	0.63
Lincoln Avenue												
Escondido Boulevard to Broadway	East/West	10,000	3,200	A	0.32	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	4,800	A	0.32
Broadway to SR-78/Lincoln Avenue (Before Merge)	East/West	10,000	4,000	B	0.40	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	6,300	B	0.42
Mission Avenue												
Centre City Parkway to Escondido Boulevard	East/West	34,200	24,600	C	0.72	6-Ln Super Major	50,000	6-Ln Super Major	50,000	39,800	D	0.80
Escondido Boulevard to Broadway	East/West	34,200	21,000	C	0.61	6-Ln Super Major	50,000	4-Ln Major	37,000	35,500	E~~(5)~~(6)	0.96
Broadway to Hickory Street	East/West	34,200	18,500	B	0.54	6-Ln Super Major	50,000	4-Ln Major	37,000	26,700	C	0.72

Table 4.16-2 continued

Street Segment	Roadway Direction	Existing Capacity(1) (LOS E)	Existing Conditions (Year 2011) ADT(2)	LOS(3)	V/C(4)	Adopted City General Plan Classification (County Classification)(5)	Adopted ~~CE~~MIE Capacity (LOS E)	Proposed Classification	Proposed ~~CE~~MIE Capacity (LOS E)	Proposed Project (Year 2035) ADT(2)	LOS(3)	V/C(4)
3. Transit Station Target Area												
Metcalf Street												
Lincoln Avenue to Mission Avenue	North/South	10,000	2,200	A	0.22	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	5,100	A	0.34
Mission Avenue to Washington Avenue	North/South	10,000	7,700	D	0.77	4-Ln Collector	34,200	4-Ln Collector	34,200	7,900	A	0.23
Quince Street												
Mission Avenue to Washington Avenue	North/South	34,200	8,700	A	0.25	4-Ln Collector	34,200	4-Ln Collector	34,200	14,500	B	0.42
Washington Avenue to W. Valley Parkway	North/South	34,200	10,700	A	0.31	4-Ln Collector	34,200	4-Ln Collector	34,200	25,600	C	0.75
Rock Springs Road												
Lincoln Avenue to Mission Avenue	North/South	15,000	13,400	D	0.89	4-Ln Collector	34,200	4-Ln Collector	34,200	18,300	B	0.54
Mission Avenue to Washington Avenue	North/South	15,000	7,000	B	0.47	4-Ln Collector	34,200	4-Ln Collector	34,200	11,100	A	0.32
Tulip Street												
Hale Avenue to W. Valley Parkway	North/South	34,200	14,900	B	0.44	4-Ln Collector	34,200	4-Ln Collector	34,200	24,300	C	0.71
Hale Avenue												
I-15 NB HOV Off-Ramp to Tulip Street	East/West	34,200	18,700	B	0.55	4-Ln Collector	34,200	6-Ln Super Major	50,000	**40,700**	**D**	**0.81**
Tulip Street to Metcalf Street	East/West	34,200	16,900	B	0.49	4-Ln Collector	34,200	6-Ln Super Major	50,000	**35,100**	**C**	**0.70**
Mission Avenue												
Andreasen Drive to Metcalf Street	East/West	34,200	20,000	C	0.58	4-Ln Major	37,000	4-Ln Major	37,000	21,100	C	0.57
Metcalf Street to Rock Springs Road	East/West	34,200	16,500	B	0.48	4-Ln Major	37,000	4-Ln Major	37,000	21,300	C	0.58
Rock Springs Road to Quince Street	East/West	34,200	28,100	D	0.82	6-Ln Super Major	50,000	6-Ln Super Major	50,000	44,400	D	0.89
Quince Street to Centre City Parkway	East/West	37,000	27,900	D	0.75	6-Ln Super Major	50,000	6-Ln Super Major	50,000	44,500	D	0.89
Washington Avenue												
Metcalf Street to Rock Springs Road	East/West	34,200	16,800	B	0.49	4-Ln Collector	34,200	4-Ln Collector	34,200	30,300	D	0.89
Rock Springs Road to Quince Street	East/West	34,200	14,400	B	0.42	4-Ln Collector	34,200	4-Ln Collector	34,200	30,100	D	0.88
Quince Street to Centre City Parkway	East/West	34,200	17,900	B	0.52	4-Ln Collector	34,200	4-Ln Collector	34,200	30,000	D	0.88
4. South Quince Street Target Area												
Centre City Parkway												
5^{th} Avenue to 9^{th} Avenue	North/South	37,000	27,500	C	0.74	4-Ln Major	37,000	6-Ln Super Major	50,000	28,800	C	0.58
9^{th} Avenue to 13^{th} Avenue	North/South	37,000	30,600	D	0.83	4-Ln Major	37,000	6-Ln Super Major	50,000	35,100	C	0.70

Table 4.16-2 continued

Street Segment	Roadway Direction	Existing Capacity[1] (LOS E)	Existing Conditions (Year 2011)			Adopted City General Plan Classification (County Classification)[5]	Adopted ~~CE~~MIE Capacity (LOS E)	Proposed Classification	Proposed ~~CE~~MIE Capacity (LOS E)	Proposed Project (Year 2035)		
			ADT[2]	LOS[3]	V/C[4]					ADT[2]	LOS[3]	V/C[4]
Quince Street												
2nd Avenue to 5th Avenue	North/South	34,200	6,900	A	0.20	4-Ln Collector	34,200	4-Ln Collector	34,200	12,000	B	0.35
5th Avenue to 9th Avenue	North/South	34,200	5,700	A	0.29	4-Ln Collector	34,200	4-Ln Collector	34,200	16,700	B	0.49
9th Avenue to 13th Avenue	North/South	15,000	3,400	A	0.34	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	6,800	B	0.45
5th Avenue												
Tulip Street to Quince Street	East/West	10,000	2,300	A	0.23	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	3,000	A	0.20
Quince Street to Centre City Parkway	East/West	10,000	5,000	B	0.50	4-Ln Collector	34,200	4-Ln Collector	34,200	13,700	B	0.40
9th Avenue												
Tulip Street to Quince Street	East/West	15,000	**19,000**	**F**	**1.27**	4-Ln Collector	34,200	4-Ln Collector	34,200	29,900	D	0.87
Quince Street to Centre City Parkway	East/West	34,200	17,500	B	0.51	4-Ln Collector	34,200	4-Ln Collector	34,200	23,800	C	0.70
13th Avenue												
Tulip Street to Quince Street	East/West	10,000	3,700	B	0.37	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	4,200	A	0.28
Quince Street to Centre City Parkway	East/West	15,000	2,700	A	0.18	4-Ln Collector	34,200	2-Ln Local Collector	15,000	7,000	B	0.47
5. ERTC North SPA												
Auto Park Way												
SR-78 EB Ramps to Mission Avenue	North/South	34,200	**33,600**	**E**	**0.98**	6-Ln Super Major	50,000	6-Ln Super Major	50,000	44,500	D	0.89
Mission Road to Country Club Drive	North/South	34,200	24,800	C	0.73	6-Ln Super Major	50,000	6-Ln Super Major	50,000	**38,200**	**D**	**0.76**
Country Club Drive to Citracado Parkway	North/South	34,200	18,300	B	0.54	6-Ln Super Major	50,000	6-Ln Super Major	50,000	27,300	B	0.55
Barham Drive												
West of Mission Road	East/West	15,000	6,100	B	0.41	4-Ln Major	37,000	4-Ln Collector	34,200	15,500	B	0.45
Mission Road												
Barham Drive to Auto Park Way	East/West	37,000	20,600	C	0.56	4-Ln Major	37,000	4-Ln Major	37,000	**36,100**	**E**	**0.98**
Auto Park Way to Enterprise Road	East/West	34,200	18,900	C	0.55	6-Ln Super Major	50,000	4-Ln Major	37,000	31,600	D	0.85
6. ERTC South SPA												
Citracado Parkway												
Kauana Loa Drive to Lariat Drive[11]	North/South	DNE	DNE	DNE	DNE	6-Ln Super Major	50,000	4-Ln Major	37,000	22,100	C	0.60
Lariat Drive to Avenida del Diablo	North/South	DNE	DNE	DNE	DNE	6-Ln Super Major	50,000	4-Ln Major	37,000	28,600	D	0.77
Hale Avenue												
11th Street/Enterprise Road to Avenida del Diablo	North/South	10,000	5,300	B	0.53	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	6,000	B	0.40

Table 4.16-2 continued

Street Segment	Roadway Direction	Existing Capacity[1] (LOS E)	Existing Conditions (Year 2011)			Adopted City General Plan Classification (County Classification)[5]	Adopted ~~CE~~MIE Capacity (LOS E)	Proposed Classification	Proposed ~~CE~~MIE Capacity (LOS E)	Proposed Project (Year 2035)		
			ADT[2]	LOS[3]	V/C[4]					ADT[2]	LOS[3]	V/C[4]
Harmony Grove Road												
Kauana Loa Drive to Lariat Drive[11]	North/South	15,000	2,700	A	0.18	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	3,800	A	0.25
Lariat Drive to Country Club Lane[11]	North/South	15,000	400	A	0.03	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	500	A	0.03
Avenida del Diablo												
Citracado Parkway to Hale Avenue	East/West	15,000	3,900	A	0.26	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	4,500	A	0.30
Enterprise Street												
Andreasen Drive to Hale Avenue	East/West	10,000	7,300	C	0.73	4-Ln Collector	34,200	2-Ln Local Collector	15,000	8,300	C	0.55
Kauana Loa Drive												
Country Club Lane to Harmony Grove Road[12]	East/West	15,000	1,500	A	0.10	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	2,400	A	0.16
Harmony Grove Road to Citracado Parkway	East/West	15,000	4,400	A	0.29	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	6,400	B	0.43
Lariat Drive												
Country Club Lane to Harmony Grove Road[11]	East/West	DNE	DNE	DNE	DNE	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	7,200	B	0.48
Harmony Grove Road to Citracado Parkway [12]	East/West	DNE	DNE	DNE	DNE	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	6,600	B	0.44
7. I-15 / Felicita Road Corporate Office Target Area												
Felicita Road												
Tulip Street to Citracado Parkway	North/South	10,000	**15,000**	**F**	**1.50**	4-Ln Collector	34,200	4-Ln Collector	34,200	30,000	D	0.88
Citracado Parkway to Hamilton Lane	North/South	10,000	5,900	C	0.59	4-Ln Collector	34,200	4-Ln Collector	34,200	11,500	A	0.34
Citracado Parkway												
Bernardo Avenue to I-15 SB Off-Ramp[11]	East/West	10,000	7,400	C	0.74	4-Ln Major	37,000	4-Ln Major	37,000	23,600	C	0.64
I-15 SB Off-Ramp to Felicita Road	East/West	37,000	12,600	A	0.34	4-Ln Major	37,000	4-Ln Major	37,000	31,200	D	0.84
Felicita Road to I-15 SB On-Ramp	East/West	37,000	6,900	A	0.19	4-Ln Major	37,000	4-Ln Major	37,000	24,300	C	0.66
I-15 SB On-Ramp to I-15 NB Ramps	East/West	37,000	9,000	A	0.24	4-Ln Major	37,000	4-Ln Major	37,000	20,700	C	0.56
I-15 NB Ramps to Centre City Parkway	East/West	15,000	6,200	B	0.41	4-Ln Collector	34,200	4-Ln Collector	34,200	16,900	B	0.49
8. Promenade Retail Center & Vicinity Target Area												
Del Dios Road												
9th Avenue to 11th Avenue	North/South	10,000	6,400	C	0.64	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	11,400	D	0.76
Valley Parkway												
11th Avenue to West 9th Avenue	North/South	50,000	18,200	B	0.36	6-Ln Super Major	50,000	4-Ln Major	37,000	20,700	C	0.56
9th Avenue to Auto Park Way	North/South	60,000	27,800	B	0.46	6-Ln Prime	60,000	4-Ln Major	37,000	31,700	D	0.86
Auto Park Way to I-15 SB Ramps	North/South	60,000	42,500	C	0.71	6-Ln Prime	60,000	6-Ln Prime	60,000	50,000	D	0.83

Table 4.16-2 continued

Street Segment	Roadway Direction	Existing Capacity[1] (LOS E)	Existing Conditions (Year 2011) ADT[2]	LOS[3]	V/C[4]	Adopted City General Plan Classification (County Classification)[5]	Adopted ~~CE~~MIE Capacity (LOS E)	Proposed Classification	Proposed ~~CE~~MIE Capacity (LOS E)	Proposed Project (Year 2035) ADT[2]	LOS[3]	V/C[4]
I-15 SB Ramps to I-15 NB Ramps	North/South	60,000	44,100	C	0.74	8-Ln Prime	70,000	8-Ln Prime	70,000	57,100	D	0.82
9th Avenue												
Valley Parkway to Del Dios Road	East/West	10,000	**10,000**	**E**	**1.00**	4-Ln Collector	34,200	4-Ln Collector	34,200	10,900	A	0.32
Del Dios Road to Auto Park Way	East/West	10,000	**14,800**	**F**	**1.48**	4-Ln Collector	34,200	4-Ln Collector	34,200	19,400	C	0.57
Auto Park Way to I-15 SB Ramps	East/West	43,500~~(5)~~(6)	30,300	C	0.70	6-Ln Super Major	50,000	6-Ln Super Major	50,000	40,200	D	0.80
I-15 SB Ramps to I-15 NB Ramps	East/West	37,000	20,200	B	0.55	6-Ln Super Major	50,000	6-Ln Super Major	50,000	27,600	C	0.55
Auto Park Way												
Valley Parkway to 9th Avenue	East/West	34,200	14,100	B	0.41	4-Ln Collector	34,200	4-Ln Collector	34,200	28,500	D	0.83
9. Nutmeg Street Study Area												
Centre City Parkway												
Ivy Dell Lane to Nutmeg Street(11)	North/South	15,000	10,000	C	0.67	4-Ln Collector	34,200	4-Ln Collector	34,200	19,800	C	0.58
Nutmeg Street to I-15 Ramps	North/South	15,000	7,200	B	0.48	4-Ln Collector	34,200	4-Ln Collector	34,200	14,000	B	0.41
I-15 Ramps to Country Club Lane	North/South	37,000	15,700	B	0.42	4-Ln Major	37,000	4-Ln Major	37,000	25,500	C	0.69
Nutmeg Street												
I-15 to Country Club Lane(11)	North/South	15,000	4,200	A	0.28	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	9,300	C	0.62
Nutmeg Street												
I-15 to Centre City Parkway	East/West	10,000	3,800	B	0.38	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	8,300	C	0.55
10. Downtown Specific Planning Area												
Broadway												
Washington Avenue to Valley Parkway	North/South	34,200	18,700	B	0.55	4-Ln Major	37,000	4-Ln Major	37,000	27,700	C	0.75
Valley Parkway to Grand Avenue	North/South	20,000	11,700	C	0.59	4-Ln Major	37,000	4-Ln Major	37,000	24,700	C	0.67
Grand Avenue to 2nd Avenue	North/South	10,000	8,200	D	0.82	4-Ln Major	37,000	4-Ln Major	37,000	13,900	B	0.38
2nd Avenue to 5th Avenue	North/South	10,000	6,000	C	0.60	4-Ln Collector	34,200	4-Ln Collector	34,200	11,000	A	0.32
Centre City Parkway												
Washington Avenue to Valley Parkway	North/South	37,000	29,600	D	0.80	4-Ln Major	37,000	6-Ln Super Major	50,000	31,700	C	0.63
Valley Parkway to Grand Avenue	North/South	37,000	26,100	C	0.71	4-Ln Major	37,000	6-Ln Super Major	50,000	29,700	C	0.59
Grand Avenue to 2nd Avenue	North/South	37,000	27,900	D	0.75	4-Ln Major	37,000	6-Ln Super Major	50,000	31,900	C	0.64
2nd Avenue to 5th Avenue	North/South	37,000	27,400	C	0.74	4-Ln Major	37,000	6-Ln Super Major	50,000	31,900	C	0.64

Table 4.16-2 continued

Street Segment	Roadway Direction	Existing Capacity[1] (LOS E)	Existing Conditions (Year 2011) ADT[2]	LOS[3]	V/C[4]	Adopted City General Plan Classification (County Classification)[5]	Adopted ~~CE~~MIE Capacity (LOS E)	Proposed Classification	Proposed ~~CE~~MIE Capacity (LOS E)	Proposed Project (Year 2035) ADT[2]	LOS[3]	V/C[4]
Escondido Boulevard												
Washington Avenue to Valley Parkway	North/South	34,200	18,200	B	0.53	4-Ln Collector	34,200	4-Ln Collector	34,200	26,500	D	0.77
Valley Parkway to Grand Avenue	North/South	34,200	15,600	B	0.46	4-Ln Collector	34,200	4-Ln Collector	34,200	22,300	C	0.65
Grand Avenue to 2nd Avenue	North/South	34,200	16,200	B	0.47	4-Ln Collector	34,200	4-Ln Collector	34,200	23,700	C	0.69
2nd Avenue to 5th Avenue	North/South	34,200	13,800	B	0.40	4-Ln Collector	34,200	4-Ln Collector	34,200	19,300	C	0.56
Hickory Street												
Washington Avenue to Valley Parkway	North/South	10,000	3,100	A	0.31	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	10,600	C	0.71
Juniper Street												
Washington Avenue to Valley Parkway	North/South	10,000	3,500	B	0.35	4-Ln Collector	34,200	4-Ln Collector	34,200	9,500	A	0.28
Valley Parkway to Grand Avenue	North/South	19,000~~(5)~~(6)	5,400	A	0.28	4-Ln Collector	34,200	4-Ln Collector	34,200	9,700	A	0.28
Grand Avenue to 2nd Avenue	North/South	19,000~~(5)~~(6)	8,800	B	0.46	4-Ln Collector	34,200	4-Ln Collector	34,200	14,000	B	0.41
2nd Avenue to 5th Avenue	North/South	19,000~~(5)~~(6)	9,700	B	0.51	4-Ln Collector	34,200	4-Ln Collector	34,200	13,600	B	0.40
Quince Street												
Valley Parkway to Grand Avenue	North/South	34,200	9,500	A	0.28	4-Ln Collector	34,200	4-Ln Collector	34,200	18,300	B	0.54
Grand Avenue to 2nd Avenue	North/South	34,200	9,500	A	0.28	4-Ln Collector	34,200	4-Ln Collector	34,200	16,900	B	0.49
2nd Avenue												
Grand Avenue to Quince Street (one-way street)	East/West	30,000~~(5)~~(6)	19,800	C	0.66	4-Ln Collector	30,000(7~~6~~)	4-Ln Collector	30,000	27,100	E~~(5)~~(6)	0.90
Quince Street to Centre City Parkway (one-way street)	East/West	30,000~~(5)~~(6)	17,700	C	0.59	4-Ln Collector	30,000~~(6)~~(7)	4-Ln Collector	30,000	26,100	D	0.87
Centre City Parkway to Escondido Boulevard (one-way street)	East/West	30,000~~(5)~~(6)	20,200	C	0.67	4-Ln Collector	30,000~~(6)~~(7)	4-Ln Collector	30,000	30,200	F~~(5)~~(6)	1.01
Escondido Boulevard to Broadway (one-way street)	East/West	30,000~~(5)~~(6)	17,300	C	0.58	4-Ln Collector	30,000~~(6)~~(7)	4-Ln Collector	30,000	25,400	D	0.85
Broadway to Juniper Street (one-way street)	East/West	30,000~~(5)~~(6)	17,000	C	0.57	4-Ln Collector	30,000~~(6)~~(7)	4-Ln Collector	30,000	24,500	D	0.82
Juniper Street to Grand Avenue (one-way street)	East/West	30,000~~(5)~~(6)	15,900	B	0.53	4-Ln Collector	30,000~~(6)~~(7)	4-Ln Collector	30,000	26,800	D	0.89
Grand Avenue to Valley Parkway (one-way street)	East/West	30,000~~(5)~~(6)	12,900	B	0.43	4-Ln Collector	30,000~~(6)~~(7)	4-Ln Collector	30,000	24,700	D	0.82
5th Avenue												
Centre City Parkway to Escondido Boulevard	East/West	10,000	**9,000**	**E**	**0.90**	4-Ln Collector	34,200	4-Ln Collector	34,200	16,800	B	0.49
Escondido Boulevard to Broadway	East/West	10,000	5,200	B	0.52	4-Ln Collector	34,200	2-Ln Local Collector	15,000	10,600	C	0.71
Broadway to Juniper Street	East/West	10,000	6,000	C	0.60	4-Ln Collector	34,200	2-Ln Local Collector	15,000	8,400	C	0.56
Juniper Street to Date Street	East/West	10,000	3,500	B	0.35	4-Ln Collector	34,200	2-Ln Local Collector	15,000	4,000	A	0.27

Table 4.16-2 continued

Street Segment	Roadway Direction	Existing Capacity(1) (LOS E)	Existing Conditions (Year 2011) ADT(2)	LOS(3)	V/C(4)	Adopted City General Plan Classification (County Classification)(5)	Adopted ~~CE~~MIE Capacity (LOS E)	Proposed Classification	Proposed ~~CE~~MIE Capacity (LOS E)	Proposed Project (Year 2035) ADT(2)	LOS(3)	V/C(4)
Grand Avenue												
Valley Parkway to 2nd Avenue (one-way street)	East/West	35,000~~(5)~~(6)	22,700	C	0.65	4-Ln Collector	35,000	4-Ln Collector	35,000	34,400	E~~(7)~~(8)	0.98
2nd Avenue to Quince Street	East/West	10,000	2,600	A	0.26	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	8,300	C	0.55
Quince Street to Centre City Parkway~~(7)~~(8)	East/West	10,000	2,300	A	0.23	4-Ln Collector	34,200	2-Ln Local Collector	15,000	6,000	B	0.40
Centre City Parkway to Escondido Boulevard	East/West	20,000	12,600	C	0.63	4-Ln Collector	34,200	4-Ln Collector	34,200	15,300	B	0.45
Escondido Boulevard to Broadway	East/West	20,000	12,800	C	0.64	4-Ln Collector	34,200	4-Ln Collector	34,200	19,300	C	0.56
Broadway to Juniper Street	East/West	20,000	13,600	C	0.68	4-Ln Collector	34,200	4-Ln Collector	34,200	23,300	C	0.68
Juniper Street to Valley Boulevard	East/West	20,000	13,700	C	0.69	4-Ln Collector	34,200	4-Ln Collector	34,200	24,900	C	0.73
Valley Boulevard to Fig Street	East/West	30,000	14,300	B	0.48	4-Ln Collector	34,200	4-Ln Collector	34,200	17,600	B	0.51
Valley Parkway												
I-15 NB Ramps to La Terraza Boulevard	East/West	60,000	37,000	C	0.62	6-Ln Prime	60,000	6-Ln Prime	60,000	56,200	E	0.94
La Terraza Boulevard to N. Tulip Street	East/West	65,000	39,400	C	0.61	6-Ln Prime	60,000	6-Ln Prime	60,000	53,800	D	0.90
N. Tulip Street to S. Tulip Street	East/West	65,000	18,300	A	0.28	4-Ln Collector	34,200	4-Ln Collector	34,200	28,300	D	0.83
Tulip Street to Quince Street (one-way street)	East/West	30,000	21,000	C	0.70	4-Ln Collector	30,000~~(8)~~(9)	4-Ln Collector	30,000~~(8)~~(9)	33,700	F~~(5)~~(6)	1.12
Quince Street to Centre City Parkway (one-way street)	East/West	30,000	18,900	C	0.63	4-Ln Collector	30,000~~(8)~~(9)	4-Ln Collector	30,000~~(8)~~(9)	29,100	E~~(5)~~(6)	0.97
Centre City Parkway to Escondido Boulevard (one-way street)	East/West	43,500	20,700	B	0.48	4-Ln Collector	43,500(~~9~~10)	4-Ln Collector	43,500(~~9~~10)	33,600	D	0.77
Escondido Boulevard to Broadway (one-way street)	East/West	30,000	18,700	C	0.62	4-Ln Collector	30,000~~(8)~~(9)	4-Ln Collector	30,000~~(8)~~(9)	29,700	E~~(5)~~(6)	0.99
Broadway to Juniper Street (one-way street)	East/West	30,000	17,000	C	0.57	4-Ln Collector	30,000~~(8)~~(9)	4-Ln Collector	30,000~~(8)~~(9)	28,000	E~~(5)~~(6)	0.93
Juniper Street to Hickory Street (one-way street)	East/West	30,000	14,000	B	0.47	4-Ln Collector	30,000~~(8)~~(9)	4-Ln Collector	30,000~~(8)~~(9)	23,600	D	0.79
Washington Avenue												
Centre City Parkway to Escondido Boulevard	East/West	34,200	20,200	C	0.59	4-Ln Collector	34,200	4-Ln Collector	34,200	28,800	D	0.84
Escondido Boulevard to Broadway	East/West	34,200	22,000	C	0.64	4-Ln Collector	34,200	4-Ln Collector	34,200	25,600	C	0.75
Broadway to Juniper Street	East/West	34,200	23,800	C	0.70	4-Ln Collector	34,200	4-Ln Collector	34,200	28,500	D	0.83
Juniper Street to Hickory Street	East/West	20,000	**22,600**	**F**	**1.13**	4-Ln Collector	34,200	4-Ln Collector	34,200	24,900	C	0.73
Hickory Street to Fig Street	East/West	20,000	**20,500**	**F**	**1.03**	4-Ln Collector	34,200	4-Ln Collector	34,200	26,900	D	0.79
11. East Valley Parkway Target Area												
Ash Street												
Washington Avenue to Valley Parkway	North/South	34,200	20,300	C	0.59	6-Ln Super Major	50,000	4-Ln Major	37,000	25,100	C	0.68
Valley Parkway to Grand Avenue	North/South	34,200	21,000	C	0.61	4-Ln Major	37,000	4-Ln Major	37,000	29,100	D	0.79

Table 4.16-2 continued

Street Segment	Roadway Direction	Existing Capacity[1] (LOS E)	Existing Conditions (Year 2011) ADT[2]	LOS[3]	V/C[4]	Adopted City General Plan Classification (County Classification)[5]	Adopted ~~CE~~MIE Capacity (LOS E)	Proposed Classification	Proposed ~~CE~~MIE Capacity (LOS E)	Proposed Project (Year 2035) ADT[2]	LOS[3]	V/C[4]
Date Street												
Valley Parkway to Grand Avenue	North/South	10,000	3,300	A	0.33	4-Ln Collector	34,200	4-Ln Collector	34,200	7,500	A	0.22
Fig Street												
Washington Avenue to Valley Parkway	North/South	10,000	**9,700**	**E**	**0.97**	4-Ln Collector	34,200	4-Ln Collector	34,200	20,300	C	0.59
Valley Parkway to Grand Avenue	North/South	10,000	2,500	A	0.25	4-Ln Collector	34,200	4-Ln Collector	34,200	4,700	A	0.14
Harding Street												
Washington Avenue to Valley Parkway	North/South	34,200	5,600	A	0.16	4-Ln Collector	34,200	4-Ln Collector	34,200	6,200	A	0.18
Midway Drive												
Washington Avenue to Valley Parkway	North/South	10,000	**15,500**	**F**	**1.55**	4-Ln Collector	34,200	4-Ln Collector	34,200	16,800	B	0.49
Valley Parkway to Grand Avenue	North/South	34,200	15,000	B	0.44	4-Ln Collector	34,200	4-Ln Collector	34,200	16,600	B	0.49
Rose Street												
Washington Avenue to Valley Parkway	North/South	15,000	**15,000**	**F**	**1.00**	4-Ln Collector	34,200	4-Ln Collector	34,200	18,300	B	0.54
Valley Parkway to Grand Avenue	North/South	15,000	11,900	D	0.79	4-Ln Collector	34,200	4-Ln Collector	34,200	16,900	B	0.49
Grand Avenue												
Fig Street to Date Street	East/West	30,000	19,100	C	0.64	4-Ln Collector	34,200	4-Ln Collector	34,200	29,900	D	0.87
Date Street to Ash Street	East/West	30,000	17,100	C	0.57	4-Ln Collector	34,200	4-Ln Collector	34,200	27,900	D	0.82
Ash Street to Rose Street	East/West	20,000	17,600	D	0.88	4-Ln Collector	34,200	4-Ln Collector	34,200	27,100	D	0.79
Valley Parkway												
Hickory Street to Fig Street	East/West	20,000	**27,500**	**F**	**1.38**	4-Ln Major	37,000	4-Ln Major	37,000	**38,800**	**F**	**1.05**
Fig Street to Date Street	East/West	34,200	27,600	D	0.81	4-Ln Major	37,000	4-Ln Major	37,000	**40,900**	**F**	**1.11**
Date Street to Ash Street	East/West	34,200	27,500	D	0.80	4-Ln Major	37,000	4-Ln Major	37,000	**41,800**	**F**	**1.13**
Ash Street to Harding Street	East/West	37,000	20,500	C	0.55	4-Ln Major	37,000	4-Ln Major	37,000	32,000	D	0.86
Harding Street to Rose Street	East/West	37,000	27,400	C	0.74	4-Ln Major	37,000	4-Ln Major	37,000	32,100	D	0.87
Rose Street to Midway Drive	East/West	37,000	31,500	D	0.85	4-Ln Major	37,000	4-Ln Major	37,000	37,900	F~~[5]~~[6]	1.02
Midway Drive to Citrus Avenue	East/West	60,000	28,100	B	0.47	6-Ln Prime	60,000	6-Ln Prime	60,000	32,000	B	0.53
Washington Avenue												
Fig Street to Ash Street	East/West	20,000	**19,600**	**E**	**0.98**	4-Ln Collector	34,200	4-Ln Collector	34,200	26,500	D	0.77
Ash Street to Harding Street	East/West	20,000	16,000	D	0.80	4-Ln Collector	34,200	4-Ln Collector	34,200	24,600	C	0.72

Table 4.16-2 continued

Street Segment	Roadway Direction	Existing Capacity[1] (LOS E)	Existing Conditions (Year 2011) ADT[2]	LOS[3]	V/C[4]	Adopted City General Plan Classification (County Classification)[5]	Adopted ~~CE~~MIE Capacity (LOS E)	Proposed Classification	Proposed ~~CE~~MIE Capacity (LOS E)	Proposed Project (Year 2035) ADT[2]	LOS[3]	V/C[4]
12. South Escondido Boulevard / Centre City Parkway Target Area												
Escondido Boulevard												
5th Avenue to 9th Avenue	North/South	19,000	14,100	C	0.74	4-Ln Collector	34,200	4-Ln Collector	34,200	26,500	D	0.77
9th Avenue to 13th Avenue	North/South	19,000	13,600	C	0.72	4-Ln Collector	34,200	4-Ln Collector	34,200	29,600	D	0.87
13th Avenue to 15th Avenue	North/South	19,000	**19,700**	**F**	**1.04**	4-Ln Collector	34,200	4-Ln Collector	34,200	**31,100**	**E**	**0.91**
13th Avenue												
Centre City Parkway to Escondido Boulevard	East/West	10,000	5,900	C	0.59	4-Ln Collector	34,200	2-Ln Local Collector	15,000	9,000	C	0.60
9th Avenue												
Centre City Parkway to Escondido Boulevard	East/West	10,000	**14,200**	**F**	**1.42**	4-Ln Collector	34,200	4-Ln Collector	34,200	24,400	C	0.71
13. South Escondido Boulevard / Felicita Avenue Target Area												
Centre City Parkway												
13th Avenue to Felicita Avenue	North/South	37,000	31,800	D	0.86	4-Ln Major	37,000	6-Ln Super Major	50,000	**49,000**	**E**	**0.98**
Felicita Avenue to Escondido Boulevard	North/South	37,000	26,500	C	0.72	4-Ln Major	37,000	6-Ln Super Major	50,000	44,400	D	0.89
Escondido Boulevard												
15th Avenue to Felicita Avenue	North/South	20,000	**20,800**	**F**	**1.04**	4-Ln Collector	34,200	4-Ln Collector	34,200	**31,700**	**E**	**0.93**
Felicita Avenue to Sunset Drive	North/South	20,000	16,700	D	0.84	4-Ln Collector	34,200	4-Ln Collector	34,200	**33,600**	**E**	**0.98**
Sunset Drive to Centre City Parkway	North/South	20,000	12,700	C	0.64	4-Ln Collector	34,200	4-Ln Collector	34,200	26,000	D	0.76
Felicita Avenue												
Tulip Street to Centre City Parkway	East/West	10,000	**15,000**	**F**	**1.50**	4-Ln Collector	34,200	4-Ln Collector	34,200	26,900	D	0.79
Centre City Parkway to Escondido Boulevard	East/West	34,200	26,300	D	0.77	6-Ln Super Major	50,000	6-Ln Super Major	50,000	**39,100**	**D**	**0.78**
Escondido Boulevard to Juniper Street	East/West	15,000	**18,200**	**F**	**1.21**	6-Ln Super Major	50,000	4-Ln Major	37,000	31,800	D	0.86
14. Centre City Parkway / Brotherton Road Target Area												
Centre City Parkway												
Escondido Boulevard to Citracado Parkway	East/West	37,000	29,600	D	0.80	4-Ln Major	37,000	6-Ln Super Major	50,000	57,800	F~~(5)~~(6)	1.16
Citracado Parkway to I-15 SB On-Ramp	East/West	37,000	30,000	D	0.81	4-Ln Major	37,000	6-Ln Super Major	50,000	49,800	E~~(5)~~(6)	1.00
Centre City Parkway Frontage Road												
Brotherton Road to Citracado Parkway	East/West	15,000	2,100	A	0.14	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	10,700	C	0.71
Citracado Parkway to Clarence Lane	East/West	15,000	600	A	0.04	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	1,900	A	0.13
Escondido Boulevard												
Centre City Parkway to Citracado Parkway	East/West	10,000	4,700	B	0.47	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	7,400	B	0.49
Citracado Parkway to Centre City Parkway (intersection)	East/West	10,000	800	A	0.08	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	3,300	A	0.22

Table 4.16-2 continued

Street Segment	Roadway Direction	Existing Capacity[1] (LOS E)	Existing Conditions (Year 2011) ADT[2]	LOS[3]	V/C[4]	Adopted City General Plan Classification (County Classification)[5]	Adopted ~~CE~~MIE Capacity (LOS E)	Proposed Classification	Proposed ~~CE~~MIE Capacity (LOS E)	Proposed Project (Year 2035) ADT[2]	LOS[3]	V/C[4]
15. Westfield Shoppingtown Target Area												
Del Lago Boulevard/Beethoven Drive												
I-15 to HOV Access	North/South	34,200	7,300	A	0.21	2-Ln Local Collector	15,000	4-Ln Collector	34,200	9,600	A	0.28
HOV Access to Via Rancho Parkway	North/South	15,000	9,400	C	0.63	2-Ln Unclassified	15,000	4-Ln Collector	34,200	22,900	C	0.67
Via Rancho Parkway												
Quiet Hills Road to I-15 SB Ramps[12]	East/West	50,000	14,800	A	0.30	4-Ln Major	37,000	4-ln Major	37,000	18,200	B	0.49
I-15 SB Ramps to I-15 NB Ramps	East/West	60,000	44,100	C	0.74	6-Ln Prime	60,000	6-Ln Prime	60,000	47,700	D	0.80
I-15 NB Ramps to Beethoven Drive	East/West	65,000	34,700	B	0.53	6-Ln Prime	60,000	6-Ln Prime	60,000	42,500	C	0.71
16. Northwest Quadrant												
Bennett Avenue												
El Norte Parkway to Rock Springs Road	North/South	10,000	7,300	C	0.73	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	12,100	D	0.81
Nordahl Road												
Rock Springs Road to Knob Hill Road	North/South	15,000	**15,400**	**F**	**1.03**	4-Ln Major	37,000	4-Ln Major	37,000	19,500	B	0.53
Knob Hill Road to Montiel Road	North/South	37,000	16,200	B	0.44	4-Ln Major	37,000	4-Ln Major	37,000	21,200	C	0.57
Montiel Road to SR-78 WB Ramps	North/South	37,000	18,200	B	0.49	4-Ln Major	37,000	4-Ln Major	37,000	28,300	D	0.76
Nutmeg Street												
Country Club Lane to Sunset Heights Road	North/South	15,000	5,500	B	0.37	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	9,200	C	0.61
Sunset Heights Road to El Norte Parkway	North/South	15,000	7,400	B	0.49	4-Ln Collector	34,200	4-Ln Collector	34,200	10,700	A	0.31
El Norte Parkway to Rock Springs Road[12]	North/South	15,000	8,100	B	0.54	4-Ln Collector	34,200	4-Ln Collector	34,200	10,900	A	0.32
Country Club Lane												
El Norte Parkway to Nutmeg Street	East/West	34,200	7,100	A	0.21	4-Ln Collector	34,200	4-Ln Collector	34,200	11,300	A	0.33
Deer Springs Road												
West of I-15 Ramps[11]	East/West	15,000	**15,100**	**F**	**1.01**	6-Ln Super Major	50,000	6-Ln Super Major	50,000	39,100	D	0.78
El Norte Parkway												
Woodland Parkway to Country Club Lane	East/West	37,000	13,100	B	0.35	4-Ln Major	37,000	4-Ln Major	37,000	20,400	C	0.55
Country Club Lane to Bennett Avenue	East/West	37,000	12,600	A	0.34	4-Ln Major	37,000	4-Ln Major	37,000	17,900	B	0.48
Bennett Avenue to Nutmeg Street[11]	East/West	34,200	19,200	C	0.56	4-Ln Major	37,000	4-Ln Major	37,000	28,000	D	0.76
Montiel Road												
Nordahl Road to Deodar Road (San Marcos)	East/West	10,000	**11,500**	**F**	**1.15**	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	**14,700**	**E**	**0.98**

Table 4.16-2 continued

Street Segment	Roadway Direction	Existing Capacity[1] (LOS E)	Existing Conditions (Year 2011) ADT[2]	LOS[3]	V/C[4]	Adopted City General Plan Classification (County Classification)[5]	Adopted ~~CE~~MIE Capacity (LOS E)	Proposed Classification	Proposed ~~CE~~MIE Capacity (LOS E)	Proposed Project (Year 2035) ADT[2]	LOS[3]	V/C[4]
Rock Springs Road												
Bennett Avenue to Nordahl Road	East/West	10,000	5,400	B	0.54	4-Ln Collector	34,200	4-Ln Collector	34,200	9,200	A	0.27
Nordahl Road to Deodar Road[12]	East/West	10,000	3,100	A	0.31	4-Ln Collector	34,200	4-Ln Collector	34,200	6,600	A	0.19
Deodar Road to Montiel Road	East/West	10,000	5,400	B	0.54	4-Ln Collector	34,200	4-Ln Collector	34,200	9,000	A	0.26
17. Northeast Quadrant												
Ash Street												
Rincon Avenue to Stanley Avenue[12]	North/South	10,000	4,000	B	0.40	4-Ln Collector	34,200	2-Ln Local Collector	15,000	5,200	A	0.35
Stanley Avenue to Vista Avenue[11]	North/South	10,000	4,400	B	0.44	4-Ln Collector	34,200	2-Ln Local Collector	15,000	5,300	B	0.35
Vista Avenue to Sheridan Avenue[12]	North/South	10,000	8,400	D	0.84	4-Ln Collector	34,200	2-Ln Local Collector	15,000	9,100	C	0.61
Sheridan Avenue to El Norte Parkway	North/South	10,000	6,200	C	0.62	4-Ln Collector	34,200	4-Ln Collector	34,200	7,900	A	0.23
El Norte Parkway to Lincoln Avenue	North/South	15,000	11,900	D	0.79	4-Ln Collector	34,200	4-Ln Collector	34,200	13,800	B	0.40
Broadway												
Mountain Meadow Road to North Avenue[11]	North/South	15,000	4,700	A	0.31	4-Ln Collector (2-Ln Community Collector)	34,200	4-Ln Collector	34,200	7,700	A	0.23
North Avenue to Jesmond Dene Road	North/South	34,200	5,700	A	0.17	4-Ln Collector	34,200	4-Ln Collector	34,200	12,500	B	0.37
Jesmond Dene Road to Country Club Lane	North/South	34,200	11,600	A	0.34	4-Ln Collector	34,200	4-Ln Collector	34,200	20,100	C	0.59
Country Club Lane to Stanley Avenue	North/South	34,200	6,600	A	0.19	4-Ln Collector	34,200	4-Ln Collector	34,200	12,800	B	0.37
Stanley Avenue to Vista Avenue	North/South	34,200	8,100	A	0.24	4-Ln Collector	34,200	4-Ln Collector	34,200	14,800	B	0.43
Vista Avenue to Sheridan Avenue	North/South	34,200	9,700	A	0.28	4-Ln Major	37,000	4-Ln Major	37,000	16,100	B	0.44
Sheridan Avenue to El Norte Parkway	North/South	34,200	16,200	B	0.47	4-Ln Major	37,000	4-Ln Major	37,000	22,400	C	0.61
Centre City Parkway												
Mountain Meadow Road to Jesmond Dene Road[11]	North/South	15,000	6,000	B	0.40	4-Ln Collector	34,200	4-Ln Collector	34,200	19,900	C	0.58
Jesmond Dene Road to Mesa Rock Road[11]	North/South	15,000	5,700	B	0.38	4-Ln Collector	34,200	4-Ln Collector	34,200	16,800	B	0.49
Mesa Rock Road to Ivy Dell Lane[11]	North/South	15,000	9,600	C	0.64	4-Ln Collector	34,200	4-Ln Collector	34,200	21,200	C	0.62
El Norte Parkway to Lincoln Avenue	North/South	37,000	33,100	D	0.89	4-Ln Major	37,000	4-Ln Major	37,000	32,800	D	0.89
Conway Drive												
Cleveland Avenue to Rincon Avenue	North/South	10,000	2,100	A	0.21	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	3,100	A	0.21
Rincon Avenue to Stanley Avenue	North/South	10,000	1,400	A	0.14	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	7,200	B	0.48
Stanley Avenue to Vista Avenue	North/South	10,000	2,000	A	0.20	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	7,800	B	0.52

Table 4.16-2 continued

			Existing Conditions (Year 2011)							Proposed Project (Year 2035)		
Street Segment	**Roadway Direction**	**Existing Capacity[1] (LOS E)**	**ADT[2]**	**LOS[3]**	**V/C[4]**	**Adopted City General Plan Classification (County Classification)[5]**	**Adopted ~~CE~~MIE Capacity (LOS E)**	**Proposed Classification**	**Proposed ~~CE~~MIE Capacity (LOS E)**	**ADT[2]**	**LOS[3]**	**V/C[4]**
Escondido Boulevard												
El Norte Parkway to Lincoln Avenue	North/South	19,000	9,700	C	0.65	4-Ln Collector	34,200	4-Ln Collector	34,200	25,900	D	0.76
Fig Street												
El Norte Parkway to Lincoln Avenue	North/South	15,000	3,800	A	0.25	4-Ln Collector	34,200	4-Ln Collector	34,200	6,000	A	0.18
Jesmond Dene Road												
Centre City Parkway to Ivy Dell Lane[11]	North/South	15,000	2,100	A	0.14	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	10,900	C	0.73
Ivy Dell Lane to Broadway[12]	North/South	15,000	2,900	A	0.19	4-Ln Collector	34,200	2-Ln Local Collector	15,000	8,400	C	0.56
Midway Drive												
El Norte Parkway to Lincoln Avenue	North/South	10,000	4,600	B	0.46	4-Ln Collector	34,200	4-Ln Collector	34,200	8,200	A	0.24
Morning View Road												
El Norte Parkway to Lincoln Avenue	North/South	15,000	8,200	B	0.55	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	9,200	C	0.61
North Iris Lane												
Country Club Road to Centre City Parkway	North/South	15,000	5,300	B	0.35	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	8,400	C	0.56
Rose Street												
El Norte Parkway to Lincoln Avenue	North/South	10,000	3,100	A	0.31	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	3,900	A	0.26
Seven Oaks Road												
El Norte Parkway to Borden Road	North/South	15,000	3,400	A	0.23	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	5,200	A	0.35
Borden Road to Rock Springs Road	North/South	15,000	2,100	A	0.14	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	2,700	A	0.18
Valley Center Road												
El Norte Parkway to Lake Wohlford Road	North/South	43,500	29,700	C	0.68	8-Ln Prime	70,000	8-Ln Prime	70,000	55,400	D	0.79
North of Lake Wohlford Road	North/South	37,000	21,300	C	0.58	8-Ln Prime (4-Ln Major Road)	70,000	8-Ln Prime	70,000	42,800	C	0.61
Vista Verde Way												
Vista Avenue to El Norte Parkway	North/South	10,000	2,400	A	0.24	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	10,900	C	0.73
Country Club Lane												
Centre City Parkway to Iris Lane	East/West	34,200	5,200	A	0.15	4-Ln Collector	34,200	4-Ln Collector	34,200	16,900	B	0.49
Iris Lane to Broadway	East/West	34,200	11,500	A	0.34	4-Ln Collector	34,200	4-Ln Collector	34,200	19,500	C	0.57
Broadway to Ash Street	East/West	34,200	6,700	A	0.20	4-Ln Collector	34,200	4-Ln Collector	34,200	12,900	B	0.38

Table 4.16-2 continued

			Existing Conditions (Year 2011)							Proposed Project (Year 2035)		
Street Segment	Roadway Direction	Existing Capacity[1] (LOS E)	ADT[2]	LOS[3]	V/C[4]	Adopted City General Plan Classification (County Classification)[5]	Adopted ~~CE~~MIE Capacity (LOS E)	Proposed Classification	Proposed ~~CE~~MIE Capacity (LOS E)	ADT[2]	LOS[3]	V/C[4]
El Norte Parkway												
Morning View Drive to Centre City Parkway	East/West	50,000	28,600	C	0.57	4-Ln Major	37,000	6-Ln Super Major	50,000	35,700	C	0.71
Centre City Parkway to Escondido Boulevard	East/West	37,000	26,800	C	0.72	6-Ln Super Major	50,000	6-Ln Super Major	50,000	39,200	D	0.78
Escondido Boulevard to Broadway	East/West	37,000	26,700	C	0.72	6-Ln Super Major	50,000	6-Ln Super Major	50,000	31,400	C	0.63
Broadway to Fig Street	East/West	37,000	24,300	C	0.66	4-Ln Major	37,000	4-Ln Major	37,000	27,300	C	0.74
Fig Street to Ash Street	East/West	37,000	24,100	C	0.65	4-Ln Major	37,000	4-Ln Major	37,000	26,900	C	0.73
Ash Street to Rose Street	East/West	37,000	18,000	B	0.49	4-Ln Major	37,000	4-Ln Major	37,000	21,800	C	0.59
Rose Street to Vista Verde Way	East/West	37,000	14,800	B	0.40	4-Ln Major	37,000	4-Ln Major	37,000	20,000	B	0.54
Vista Verde Way to Midway Drive	East/West	37,000	16,500	B	0.45	4-Ln Major	37,000	4-Ln Major	37,000	25,800	C	0.70
Midway Drive to Lincoln Avenue	East/West	37,000	9,900	A	0.27	4-Ln Major	37,000	4-Ln Major	37,000	15,000	B	0.41
Ivy Dell Lane												
Centre City Parkway to Jesmond Dene Road[11]	East/West	15,000	1,800	A	0.12	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	5,900	B	0.39
Lincoln Avenue												
Metcalf Street to Rock Springs Road	East/West	10,000	2,400	A	0.24	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	5,400	B	0.36
Rock Springs Road to Morning View Drive	East/West	10,000	7,500	D	0.75	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	9,500	C	0.63
Mountain Meadow Road												
Champagne Road to Broadway[11]	East/West	15,000	7,900	B	0.53	4-Ln Collector	34,200	4-Ln Collector	34,200	28,100	D	0.82
Broadway to Valley Center Road[11]	East/West	DNE	DNE	DNE	DNE	4-Ln Collector	34,200	4-Ln Collector	34,200	18,200	B	0.53
North Avenue												
Broadway to Vista Verde Way[12]	East/West	10,000	3,100	A	0.31	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	9,700	C	0.65
18. Southwest Quadrant												
Andreasen Drive												
Mission Road to Simpson Way	North/South	10,000	8,900	D	0.89	4-Ln Collector	34,200	4-Ln Collector	34,200	18,600	B	0.54
Simpson Way to Auto Park Way	North/South	10,000	4,200	B	0.42	4-Ln Collector	34,200	4-Ln Collector	34,200	7,600	A	0.22
Auto Park Way to Enterprise Street	North/South	10,000	7,100	C	0.71	4-Ln Collector	34,200	4-Ln Collector	34,200	8,100	A	0.24
Enterprise Street to Citracado Parkway	North/South	20,000	6,300	A	0.32	4-Ln Collector	34,200	4-Ln Collector	34,200	8,000	A	0.23
Bernardo Avenue												
11th Avenue to Citracado Parkway[11]	North/South	DNE	DNE	DNE	DNE	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	4,100	A	0.27
Citracado Parkway to Hamilton Lane	North/South	15,000	6,800	B	0.45	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	10,000	C	0.67

Table 4.16-2 continued

Street Segment	Roadway Direction	Existing Capacity(1) (LOS E)	Existing Conditions (Year 2011) ADT(2)	Existing Conditions (Year 2011) LOS(3)	Existing Conditions (Year 2011) V/C(4)	Adopted City General Plan Classification (County Classification)(5)	Adopted ~~CE~~MIE Capacity (LOS E)	Proposed Classification	Proposed ~~CE~~MIE Capacity (LOS E)	Proposed Project (Year 2035) ADT(2)	Proposed Project (Year 2035) LOS(3)	Proposed Project (Year 2035) V/C(4)
Citracado Parkway												
Auto Park Way to Andreasen Drive	North/South	37,000	6,100	A	0.16	4-Ln Major	37,000	4-Ln Major	37,000	30,100	D	0.81
Andreasen Drive to Kauana Loa Drive	North/South	DNE	DNE	DNE	DNE	4-Ln Major	37,000	4-Ln Major	37,000	24,100	C	0.65
Avenida del Diablo to Valley Parkway	North/South	15,000	7,500	B	0.50	4-Ln Major	37,000	4-Ln Major	37,000	29,200	D	0.79
Del Dios Road												
11th Avenue to Avenida del Diablo	North/South	10,000	2,900	A	0.29	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	8,900	C	0.59
Del Dios Highway												
Via Rancho Parkway to Mount Israel Road(12)	North/South	15,000	**23,900**	**F**	**1.59**	6-Ln Super Major (2-Ln Community Collector)	50,000	6-Ln Super Major	50,000	32,700	C	0.65
Enterprise Street												
Mission Avenue to Auto Park Way	North/South	15,000	2,800	A	0.19	4-Ln Collector	34,200	4-Ln Collector	34,200	11,600	A	0.34
Felicita Road												
Hamilton Lane to Via Rancho Parkway(11)	North/South	10,000	4,200	B	0.42	4-Ln Collector	34,200	2-Ln Local Collector	15,000	9,200	C	0.61
Hale Avenue												
I-15 HOV Off-Ramp to Industrial Avenue	North/South	10,000	**18,700**	**F**	**1.87**	4-Ln Collector	34,200	4-Ln Collector	34,200	20,900	C	0.61
Industrial Avenue to Auto Park Way	North/South	10,000	**12,500**	**F**	**1.25**	4-Ln Collector	34,200	4-Ln Collector	34,200	18,500	B	0.54
9th Avenue to 11th Avenue	North/South	10,000	8,900	D	0.89	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	12,200	D	0.81
Valley Parkway												
Via Rancho Parkway to Citracado Parkway	North/South	37,000	21,000	C	0.57	6-Ln Super Major	50,000	4-Ln Major	37,000	34,200	E~~(5)~~(6)	0.92
Citracado Parkway to Avenida del Diablo	North/South	37,000	22,700	C	0.61	6-Ln Super Major	50,000	4-Ln Major	37,000	24,000	C	0.65
Avenida del Diablo to 11th Avenue	North/South	37,000	16,500	B	0.45	6-Ln Super Major	50,000	4-Ln Major	37,000	18,800	B	0.51
11th Avenue												
Del Dios Road to Bernardo Avenue	East/West	10,000	1,700	A	0.17	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	4,800	A	0.32
9th Avenue												
Hale Avenue to Valley Parkway	East/West	17,500	13,400	D	0.77	4-Ln Collector	34,200	4-Ln Collector	34,200	15,300	B	0.45
Auto Park Way												
Citracado Parkway to Enterprise Street	East/West	10,000	**10,300**	**F**	**1.03**	4-Ln Collector	34,200	4-Ln Collector	34,200	11,800	A	0.35
Enterprise Street to Venture Street	East/West	10,000	**20,600**	**F**	**2.06**	4-Ln Collector	34,200	4-Ln Collector	34,200	22,200	C	0.65
Venture Street to Andreasen Drive	East/West	10,000	**13,200**	**F**	**1.32**	4-Ln Collector	34,200	4-Ln Collector	34,200	15,100	B	0.44

Table 4.16-2 continued

Street Segment	Roadway Direction	Existing Capacity[1] (LOS E)	Existing Conditions (Year 2011) ADT[2]	Existing Conditions (Year 2011) LOS[3]	Existing Conditions (Year 2011) V/C[4]	Adopted City General Plan Classification (County Classification)[5]	Adopted ~~CE~~MIE Capacity (LOS E)	Proposed Classification	Proposed ~~CE~~MIE Capacity (LOS E)	Proposed Project (Year 2035) ADT[2]	Proposed Project (Year 2035) LOS[3]	Proposed Project (Year 2035) V/C[4]
Andreasen Drive to Hale Avenue	East/West	34,200	21,400	C	0.63	4-Ln Collector	34,200	4-Ln Collector	34,200	24,400	C	0.71
Hale Avenue to Valley Parkway	East/West	34,200	25,000	C	0.73	4-Ln Collector	34,200	4-Ln Collector	34,200	28,200	D	0.82
Avenida del Diablo												
Valley Parkway to Del Dios Road	East/West	15,000	1,800	A	0.12	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	7,700	B	0.51
Citracado Parkway												
Valley Parkway to Eucalyptus Avenue[12]	East/West	15,000	1,200	A	0.08	4-Ln Major	37,000	4-Ln Major	37,000	16,700	B	0.45
Eucalyptus Avenue to Bernardo Avenue	East/West	DNE	DNE	DNE	DNE	4-Ln Major	37,000	4-Ln Major	37,000	16,500	B	0.45
Clarence Lane												
Felicita Road to Alexander Drive[11]	East/West	10,000	1,700	A	0.17	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	5,400	B	0.36
Mission Road												
Bennett Avenue to Barham Drive	East/West	37,000	20,400	C	0.55	4-Ln Major	37,000	4-Ln Major	37,000	24,400	C	0.66
Enterprise Street to Andreasen Drive	East/West	34,200	17,100	B	0.50	6-Ln Super Major	50,000	4-Ln Major	37,000	21,500	C	0.58
Via Rancho Parkway												
Valley Parkway to Eucalyptus Road[11]	East/West	15,000	12,200	D	0.81	4-Ln Major	37,000	4-Ln Collector	34,200	12,600	B	0.37
Eucalyptus Avenue to Bernardo Avenue[11]	East/West	15,000	10,000	C	0.67	4-Ln Major	37,000	4-Ln Collector	34,200	11,900	A	0.35
Bernardo Avenue to Felicita Road[11]	East/West	15,000	12,000	D	0.80	4-Ln Major	37,000	4-Ln Collector	34,200	13,300	B	0.39
Felicita Road to Quiet Hills Road[12]	East/West	50,000	14,800	A	0.30	4-Ln Major	37,000	4-Ln Major	37,000	19,900	B	0.54
19. Southeast Quadrant												
Ash Street												
Lincoln Avenue to Mission Avenue	North/South	34,200	19,000	C	0.56	4-Ln Major	37,000	4-Ln Major	37,000	21,200	C	0.57
Mission Avenue to Washington Avenue	North/South	34,200	21,700	C	0.63	6-Ln Super Major	50,000	4-Ln Major	37,000	28,300	D	0.76
Bear Valley Parkway												
Beethoven Drive to San Pasqual Road	North/South	37,000	**37,600**	**F**	**1.02**	6-Ln Super Major	50,000	8-Ln Prime	60,000	58,900	E~~(5)~~(6)	0.98
San Pasqual Road to Mary Lane	North/South	37,000	**37,800**	**F**	**1.02**	6-Ln Super Major	50,000	8-Ln Prime	60,000	51,500	D	0.86
Mary Lane to Sunset Drive	North/South	37,000	30,400	D	0.82	6-Ln Super Major (4-Ln Major Road)	50,000	8-Ln Prime	60,000	45,600	D	0.76
Sunset Drive to San Pasqual Valley Road[12]	North/South	15,000	**25,700**	**F**	**1.71**	6-Ln Super Major (4-Ln Major Road)	50,000	6-Ln Super Major	50,000	40,800	D	0.82
San Pasqual Valley Road to Idaho Avenue[11]	North/South	15,000	**16,900**	**F**	**1.13**	4-Ln Major	37,000	4-Ln Major	37,000	22,200	C	0.60
Idaho Avenue to Birch Avenue[11]	North/South	15,000	**17,600**	**F**	**1.17**	4-Ln Major	37,000	4-Ln Major	37,000	24,700	C	0.67

Table 4.16-2 continued

			Existing Conditions (Year 2011)							Proposed Project (Year 2035)		
Street Segment	**Roadway Direction**	**Existing Capacity[1] (LOS E)**	**ADT[2]**	**LOS[3]**	**V/C[4]**	**Adopted City General Plan Classification (County Classification)[5]**	**Adopted ~~CE~~MIE Capacity (LOS E)**	**Proposed Classification**	**Proposed ~~CE~~MIE Capacity (LOS E)**	**ADT[2]**	**LOS[3]**	**V/C[4]**
Birch Avenue to Rose Street[12]	North/South	15,000	**17,100**	**F**	**1.14**	4-Ln Major	37,000	4-Ln Major	37,000	20,600	C	0.56
Rose Street to Midway Drive	North/South	37,000	11,400	A	0.31	4-Ln Major	37,000	4-Ln Major	37,000	13,000	B	0.35
Midway Drive to Citrus Avenue	North/South	37,000	9,900	A	0.27	4-Ln Major	37,000	4-Ln Major	37,000	14,400	B	0.39
Citrus Avenue to Valley Parkway	North/South	34,200	13,700	B	0.40	4-Ln Major	37,000	4-Ln Major	37,000	21,300	C	0.58
Chestnut Street												
5th Avenue to 9th Avenue	North/South	10,000	5,500	C	0.55	4-Ln Collector	34,200	4-Ln Collector	34,200	11,400	A	0.33
9th Avenue to 13th Avenue	North/South	10,000	6,100	C	0.61	4-Ln Collector	34,200	4-Ln Collector	34,200	11,000	A	0.32
Citrus Avenue												
El Norte Parkway to Mission Avenue	North/South	10,000	**9,300**	**E**	**0.93**	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	10,100	C	0.67
Mission Avenue to Washington Avenue	North/South	15,000	5,300	B	0.35	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	6,000	B	0.40
Washington Avenue to Valley Parkway	North/South	15,000	11,200	C	0.75	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	**13,700**	**E**	**0.91**
Valley Parkway to Bear Valley Parkway	North/South	15,000	11,400	D	0.76	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	12,000	D	0.80
Bear Valley Parkway to Glen Ridge Road	North/South	15,000	8,600	C	0.57	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	**14,000**	**E**	**0.93**
Glen Ridge Road to Mountain View Road	North/South	15,000	4,800	A	0.32	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	12,400	D	0.83
Mountain View Road to Birch Avenue[12]	North/South	15,000	5,000	A	0.33	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	13,100	D	0.87
Birch Avenue to Idaho Avenue[11]	North/South	15,000	5,600	B	0.37	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	13,300	D	0.89
Idaho Avenue to San Pasqual Valley Road[11]	North/South	15,000	5,100	A	0.34	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	13,000	D	0.89
Cloverdale Road												
Rockwood Road to San Pasqual Valley Road (SR-78)[11]	North/South	15,000	7,200	B	0.48	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	8,000	B	0.53
Date Street												
Grand Avenue to 5th Avenue	North/South	34,200	7,100	A	0.21	4-Ln Collector	34,200	4-Ln Collector	34,200	13,900	B	0.41
Fig Street												
Lincoln Avenue to Mission Avenue	North/South	15,000	10,100	C	0.67	4-Ln Collector	34,200	4-Ln Collector	34,200	16,400	B	0.48
Mission Avenue to Washington Avenue	North/South	15,000	7,100	B	0.47	4-Ln Collector	34,200	4-Ln Collector	34,200	15,700	B	0.46
Harding Street												
Lincoln Avenue to Mission Avenue	North/South	15,000	3,700	A	0.25	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	5,500	B	0.37
Mission Avenue to Washington Avenue	North/South	15,000	3,700	A	0.25	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	3,400	A	0.23
Hickory Street												
Mission Avenue to Washington Avenue	North/South	10,000	2,500	A	0.25	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	7,200	B	0.48

Table 4.16-2 continued

Street Segment	Roadway Direction	Existing Capacity(1) (LOS E)	Existing Conditions (Year 2011) ADT(2)	LOS(3)	V/C(4)	Adopted City General Plan Classification (County Classification)(5)	Adopted ~~CE~~MIE Capacity (LOS E)	Proposed Classification	Proposed ~~CE~~MIE Capacity (LOS E)	Proposed Project (Year 2035) ADT(2)	LOS(3)	V/C(4)
Juniper Street												
5th Avenue to 9th Avenue	North/South	10,000	**9,600**	**E**	**0.96**	4-Ln Collector	34,200	4-Ln Collector	34,200	12,000	B	0.35
9th Avenue to Chestnut Street	North/South	10,000	6,400	C	0.64	4-Ln Collector	34,200	4-Ln Collector	34,200	7,300	A	0.21
Chestnut Street to 13th Avenue	North/South	10,000	**13,700**	**F**	**1.37**	4-Ln Collector	34,200	4-Ln Collector	34,200	15,600	B	0.46
13th Avenue to 15th Avenue	North/South	10,000	**12,500**	**F**	**1.25**	4-Ln Collector	34,200	4-Ln Collector	34,200	13,500	B	0.39
15th Avenue to 17th Avenue	North/South	15,000	12,700	D	0.85	4-Ln Collector	34,200	4-Ln Collector	34,200	15,600	B	0.46
17th Avenue to Sunset Drive	North/South	15,000	7,200	B	0.48	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	8,400	C	0.56
La Terraza Boulevard												
Valley Parkway to 9th Avenue	North/South	20,000	5,200	A	0.26	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	5,900	B	0.39
Midway Drive												
Lincoln Avenue to Mission Avenue	North/South	10,000	**9,300**	**E**	**0.93**	4-Ln Collector	34,200	4-Ln Collector	34,200	10,500	A	0.31
Mission Avenue to Washington Avenue	North/South	10,000	**10,900**	**F**	**1.09**	4-Ln Collector	34,200	4-Ln Collector	34,200	12,500	B	0.37
Grand Avenue to Oak Hill Drive	North/South	10,000	**12,400**	**F**	**1.24**	4-Ln Collector	34,200	4-Ln Collector	34,200	13,100	B	0.38
Oak Hill Drive to Bear Valley Parkway	North/South	10,000	7,500	D	0.75	4-Ln Collector	34,200	4-Ln Collector	34,200	8,600	A	0.25
Rose Street												
Lincoln Avenue to Mission Avenue	North/South	10,000	7,000	C	0.70	4-Ln Collector	34,200	4-Ln Collector	34,200	11,800	A	0.35
Mission Avenue to Washington Avenue	North/South	10,000	4,400	B	0.44	4-Ln Collector	34,200	4-Ln Collector	34,200	6,800	A	0.20
Grand Avenue to Oak Hill Drive	North/South	10,000	5,100	B	0.51	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	10,500	C	0.70
Oak Hill Drive to Bear Valley Parkway	North/South	10,000	4,800	B	0.48	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	9,500	C	0.63
San Pasqual Road												
San Pasqual Valley Road (SR-78) to Ryan Drive(12)	North/South	15,000	10,200	C	0.68	4-Ln Major	37,000	4-Ln Major	37,000	15,600	B	0.42
Ryan Drive to Bear Valley Parkway	North/South	37,000	8,000	A	0.22	4-Ln Major	37,000	4-Ln Major	37,000	18,100	B	0.49
San Pasqual Valley Road (SR-78)												
Grand Avenue to Oak Hill Drive	North/South	34,200	21,000	C	0.61	4-Ln Major	37,000	4-Ln Major	37,000	27,200	C	0.74
Oak Hill Drive to Birch Avenue	North/South	15,000	**15,400**	**F**	**1.03**	4-Ln Major	37,000	4-Ln Major	37,000	23,400	C	0.63
Birch Avenue to Idaho Avenue(11)	North/South	15,000	**15,600**	**F**	**1.04**	4-Ln Major	37,000	4-Ln Major	37,000	20,700	C	0.56
Idaho Avenue to 17th Avenue(11)	North/South	15,000	12,900	D	0.86	4-Ln Major	37,000	4-Ln Major	37,000	15,800	B	0.43
17th Avenue to Bear Valley Parkway(11)	North/South	15,000	**13,800**	**E**	**0.92**	4-Ln Major	37,000	4-Ln Major	37,000	15,800	B	0.43
Bear Valley Parkway to Citrus Avenue(11)	North/South	15,000	**18,900**	**F**	**1.26**	6-Ln Super Major	50,000	6-Ln Super Major	50,000	27,200	B	0.54
Citrus Avenue to Summit Drive(11)	North/South	15,000	**17,800**	**F**	**1.19**	4-Ln Major	37,000	4-Ln Major	37,000	20,600	C	0.56

Table 4.16-2 continued

			Existing Conditions (Year 2011)								Proposed Project (Year 2035)	
Street Segment	**Roadway Direction**	**Existing Capacity[1] (LOS E)**	**ADT[2]**	**LOS[3]**	**V/C[4]**	**Adopted City General Plan Classification (County Classification)[5]**	**Adopted ~~CE~~MIE Capacity (LOS E)**	**Proposed Classification**	**Proposed ~~CE~~MIE Capacity (LOS E)**	**ADT[2]**	**LOS[3]**	**V/C[4]**
Summit Drive to Old San Pasqual Road[11]	North/South	15,000	**15,200**	**F**	**1.01**	4-Ln Major	37,000	4-Ln Major	37,000	17,600	B	0.48
Old San Pasqual Road to Cloverdale Road[11]	North/South	15,000	**14,700**	**E**	**0.98**	4-Ln Major	37,000	4-Ln Major	37,000	16,200	B	0.44
Sunset Drive												
Escondido Boulevard to Juniper Street[12]	North/South	15,000	5,100	A	0.34	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	8,200	B	0.55
Juniper Street to Bear Valley Parkway[11]	North/South	15,000	7,000	B	0.47	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	9,400	C	0.63
Tulip Street												
Grand Avenue to 5th Avenue	North/South	10,000	3,500	B	0.35	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	4,000	A	0.27
5th Avenue to 9th Avenue	North/South	10,000	1,700	A	0.17	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	3,800	A	0.25
9th Avenue to 13th Avenue	North/South	10,000	2,900	A	0.29	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	4,800	A	0.32
13th Avenue												
Escondido Boulevard to Juniper Street	East/West	10,000	4,700	B	0.47	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	7,200	B	0.48
17th Avenue												
Juniper Street to Encino Drive	East/West	15,000	10,200	C	0.68	4-Ln Collector	34,200	4-Ln Collector	34,200	16,200	B	0.47
Encino Drive to San Pasqual Valley Road[12]	East/West	15,000	9,600	C	0.64	4-Ln Collector	34,200	4-Ln Collector	34,200	14,500	B	0.42
9th Avenue												
I-15 NB Ramps to La Terraza Boulevard	East/West	37,000	17,800	B	0.48	6-Ln Super Major	50,000	6-Ln Super Major	50,000	28,100	C	0.56
La Terraza Boulevard to Tulip Street	East/West	15,000	**18,000**	**F**	**1.20**	4-Ln Collector	34,200	4-Ln Collector	34,200	**31,600**	**E**	**0.92**
Escondido Boulevard to Juniper Street	East/West	10,000	5,300	B	0.53	4-Ln Collector	34,200	4-Ln Collector	34,200	8,400	A	0.25
Juniper Street to Chestnut Street	East/West	10,000	2,900	A	0.29	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	4,600	A	0.31
El Norte Parkway												
Lincoln Avenue to Mission Avenue/Citrus Avenue	East/West	37,000	9,300	A	0.25	4-Ln Major	37,000	4-Ln Major	37,000	23,600	C	0.64
Mission Avenue/Citrus Avenue to Washington Avenue	East/West	37,000	9,900	A	0.27	4-Ln Major	37,000	4-Ln Major	37,000	21,900	C	0.59
Washington Avenue to Bear Valley Parkway/Valley Parkway	East/West	20,000	13,400	C	0.67	4-Ln Major	37,000	4-Ln Major	37,000	26,100	C	0.71
Grand Avenue												
Rose Street to Midway Drive	East/West	20,000	12,400	C	0.62	4-Ln Collector	34,200	4-Ln Collector	34,200	13,500	B	0.39
Midway Drive to Bear Valley Parkway	East/West	10,000	5,300	B	0.53	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	5,900	B	0.39

Table 4.16-2 continued

Street Segment	Roadway Direction	Existing Capacity[1] (LOS E)	Existing Conditions (Year 2011) ADT[2]	LOS[3]	V/C[4]	Adopted City General Plan Classification (County Classification)[5]	Adopted ~~CE~~MIE Capacity (LOS E)	Proposed Classification	Proposed ~~CE~~MIE Capacity (LOS E)	Proposed Project (Year 2035) ADT[2]	LOS[3]	V/C[4]
Idaho Avenue												
Juniper Street to Encino Drive	East/West	15,000	4,800	A	0.32	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	5,500	B	0.37
Encino Drive to San Pasqual Valley Road[11]	East/West	15,000	5,900	B	0.39	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	7,600	B	0.51
San Pasqual Valley Road to Bear Valley Parkway[11]	East/West	15,000	2,400	A	0.16	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	3,500	A	0.23
Bear Valley Parkway to Citrus Avenue[11]	East/West	15,000	1,000	A	0.07	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	2,700	A	0.18
East of Citrus Avenue[11]	East/West	15,000	2,100	A	0.14	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	5,500	B	0.37
Lincoln Avenue												
Lincoln Parkway (SR-78) to Fig Street	East/West	34,200	**36,500**	**F**	**1.07**	6-Ln Prime	60,000	6-Ln Prime	60,000	**54,400**	**E**	**0.91**
Fig Street to Ash Street	East/West	34,200	**31,800**	**E**	**0.93**	6-Ln Prime	60,000	6-Ln Prime	60,000	42,400	C	0.71
Ash Street to Harding Street	East/West	10,000	**17,800**	**F**	**1.78**	4-Ln Collector	34,200	4-Ln Collector	34,200	29,200	D	0.85
Harding Street to Rose Street	East/West	10,000	**15,100**	**F**	**1.51**	4-Ln Collector	34,200	4-Ln Collector	34,200	24,800	C	0.73
Rose Street to Midway Drive	East/West	10,000	**11,100**	**F**	**1.11**	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	13,000	D	0.87
Midway Drive to El Norte Parkway	East/West	10,000	4,600	B	0.46	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	11,600	D	0.77
Mission Avenue												
Hickory Street to Fig Street	East/West	34,200	15,900	B	0.46	6-Ln Super Major	50,000	4-Ln Major	37,000	20,900	C	0.56
Fig Street to Ash Street	East/West	10,000	**15,500**	**F**	**1.55**	6-Ln Super Major	50,000	4-Ln Major	37,000	18,100	B	0.49
Ash Street to Harding Street	East/West	10,000	**9,900**	**E**	**0.99**	4-Ln Collector	34,200	4-Ln Collector	34,200	11,300	A	0.33
Harding Street to Rose Street	East/West	10,000	**9,900**	**E**	**0.99**	4-Ln Collector	34,200	4-Ln Collector	34,200	11,300	A	0.33
Rose Street to Midway Drive	East/West	10,000	**9,200**	**E**	**0.92**	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	**14,200**	**E**	**0.95**
Midway Drive to Citrus Avenue	East/West	10,000	7,600	D	0.76	2-Ln Local Collector	15,000	2-Ln Local Collector	15,000	10,100	C	0.67
Oak Hill Drive												
San Pasqual Valley Road to Rose Street	East/West	10,000	**9,000**	**E**	**0.90**	4-Ln Collector	34,200	4-Ln Collector	34,200	13,400	B	0.39
Rose Street to Midway Drive	East/West	10,000	5,200	B	0.52	4-Ln Collector	34,200	4-Ln Collector	34,200	7,700	A	0.23
Midway Drive to Bear Valley Parkway	East/West	10,000	2,500	A	0.25	4-Ln Collector	34,200	4-Ln Collector	34,200	3,700	A	0.11
Valley Parkway												
Citrus Avenue to Bear Valley Parkway	East/West	60,000	17,600	A	0.29	6-Ln Prime	60,000	6-Ln Prime	60,000	23,500	B	0.39
Bear Valley Parkway to El Norte Parkway	East/West	60,000	20,900	A	0.35	6-Ln Prime	60,000	6-Ln Prime	60,000	35,300	C	0.59

Table 4.16-2 continued

Street Segment	Roadway Direction	Existing Capacity[1] (LOS E)	Existing Conditions (Year 2011) ADT[2]	LOS[3]	V/C[4]	Adopted City General Plan Classification (County Classification)[5]	Adopted ~~CE~~MIE Capacity (LOS E)	Proposed Classification	Proposed ~~CE~~MIE Capacity (LOS E)	Proposed Project (Year 2035) ADT[2]	LOS[3]	V/C[4]
Washington Avenue												
Harding Street to Rose Street	East/West	20,000	14,200	C	0.71	4-Ln Collector	34,200	4-Ln Collector	34,200	21,000	C	0.61
Rose Street to Midway Drive	East/West	20,000	11,200	C	0.56	4-Ln Collector	34,200	4-Ln Collector	34,200	18,500	B	0.54
Midway Drive to Citrus Avenue	East/West	20,000	9,800	B	0.49	4-Ln Collector	34,200	4-Ln Collector	34,200	11,200	A	0.33
Citrus Avenue to El Norte Parkway	East/West	20,000	6,800	A	0.34	4-Ln Collector	34,200	4-Ln Collector	34,200	7,800	A	0.23

(1) Capacities based on City of Escondido Roadway Classification & LOS table (see Table 4.16–1).
(2) Average Daily Traffic.
(3) Level of Service.
(4) Volume to Capacity ratio.
~~(4)~~(5) County of San Diego roadway classification included only for roadways within the unincorporated area where the County' proposed classification is different than the adopted County classification.
~~(5)~~(6) Due to LOS D or better operations at adjacent intersections along this segment, a significant segment impact is not calculated.
~~(6)~~(7) Roadway currently built as three lanes traveling in one direction and a capacity of 30,000 ADT used in this roadway segment analysis. This portion of 2nd Avenue is classified as a 4-lane collector on the Escondido General Plan ~~Circulation Element~~Mobility and Infrastructure Element; however, since this roadway is likely to continue operating as a one-way roadway, the existing one-way capacity was used in the Year 2035 analysis.
~~(7)~~(8) Roadway currently built as three to four lanes traveling in one direction and a capacity of 35,000 ADT was used in analysis. This portion of Grand Avenue is classified as a 4-Lane Collector on the Escondido General Plan ~~Circulation~~ Mobility and Infrastructure Element; however, since this roadway is likely to continue operating as a one-way roadway, the existing one-way capacity was used in the Year 2035 analysis.
~~(8)~~(9) Roadway currently built as three lanes traveling in one direction and a capacity of 30,000 ADT was used in analysis. This portion of Valley Parkway is classified as a 4-lane collector on the Escondido General Plan ~~Circulation Element~~Mobility and Infrastructure Element; however, since this roadway is likely to continue operating as a one-way roadway, the existing one-way capacity was used in the Year 2035 analysis.
(10) Roadway currently built as five lanes traveling in one direction and an average of 4-lane Major and 6-lane Super Major used in analysis. This portion of Valley Parkway is classified as a 4-lane collector on the Escondido General Plan ~~Circulation~~ Mobility and Infrastructure Element; however, since this roadway is likely to continue operating as a one-way roadway, the exiting one-way capacity was used in the 2035 analysis.
(11) This roadway segment is currently within the jurisdiction of the County of San Diego.
~~(9)~~(12) This roadway segment is partially within the jurisdiction of the County of San Diego.

Bold typeface represents an LOS worse that City standards.
GP = General Plan; LU = Land Use; ~~CE~~MIE = ~~Circulation Element~~Mobility and Infrastructure Element
Source: LLG 2011a

LOS	V/C Ratio
A	0.00 ≥ 0.34
B	0.35 ≥ 0.54
C	0.55 ≥ 0.74
D	0.75 ≥ 0.89
E	0.90 ≥ 1.00
F	>1.00

	Existing 2018 Vol.	General Plan 2035 Vol.
Centre City Parkway		
Country Club Ln to Iris Ln	14,407	18,200
Iris Ln to El Norte Pkwy	17,018	23,600
El Norte Pkwy to Decatur Wy	25,648	32,800
Decatur Wy to SR-78	28,297	32,800
El Norte Parkway		
Iris Ln to Centre City Pkwy	25,152	35,700
Centre City Pkwy to Broadway Blvd	27,858	39,200
Iris Lane		
Country Club to Centre City Pkwy	8,996	8,400
Centre City Pkwy to El Norte Pkwy	6,546	20,400
Sum of above ADTs:	153,922	211,100
	Percent growth:	**37%**

Appendix M

Horizon Year LOS Calculations

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	480	150	300	630	150	50	250	140	250	1100	320
Future Volume (veh/h)	90	480	150	300	630	150	50	250	140	250	1100	320
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	98	522	163	326	685	163	54	272	152	272	1196	348
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	120	597	260	353	1060	465	70	1237	543	300	1696	745
Arrive On Green	0.07	0.17	0.17	0.20	0.30	0.30	0.01	0.12	0.12	0.17	0.48	0.48
Sat Flow, veh/h	1774	3539	1540	1774	3539	1551	1774	3539	1553	1774	3539	1556
Grp Volume(v), veh/h	98	522	163	326	685	163	54	272	152	272	1196	348
Grp Sat Flow(s),veh/h/ln	1774	1770	1540	1774	1770	1551	1774	1770	1553	1774	1770	1556
Q Serve(g_s), s	7.6	20.1	13.8	25.3	23.5	11.5	4.2	9.8	12.5	21.1	37.2	21.0
Cycle Q Clear(g_c), s	7.6	20.1	13.8	25.3	23.5	11.5	4.2	9.8	12.5	21.1	37.2	21.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	120	597	260	353	1060	465	70	1237	543	300	1696	745
V/C Ratio(X)	0.81	0.87	0.63	0.92	0.65	0.35	0.78	0.22	0.28	0.91	0.71	0.47
Avail Cap(c_a), veh/h	190	657	286	431	1138	498	89	1237	543	418	1696	745
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.98	0.98	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.4	56.7	54.1	55.1	42.6	38.4	68.5	44.6	45.8	57.1	28.7	24.5
Incr Delay (d2), s/veh	13.5	11.8	3.7	23.0	1.2	0.5	27.0	0.4	1.3	18.5	2.5	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	10.8	6.1	14.7	11.7	5.0	2.6	4.9	5.6	11.9	18.7	9.4
LnGrp Delay(d),s/veh	77.9	68.5	57.8	78.1	43.7	38.8	95.5	45.0	47.1	75.6	31.2	26.6
LnGrp LOS	E	E	E	E	D	D	F	D	D	E	C	C
Approach Vol, veh/h		783			1174			478			1816	
Approach Delay, s/veh		67.5			52.6			51.4			37.0	
Approach LOS		E			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.6	52.9	31.8	27.6	9.5	71.1	13.5	45.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	33.0	31.0	34.0	26.0	7.0	57.0	15.0	45.0
Max Q Clear Time (g_c+I1), s	23.1	14.5	27.3	22.1	6.2	39.2	9.6	25.5
Green Ext Time (p_c), s	0.6	2.0	0.6	1.5	0.0	9.7	0.1	5.2

Intersection Summary			
HCM 2010 Ctrl Delay			48.5
HCM 2010 LOS			D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	300	10	530	290	10	20	330	140	10	1390	130
Future Volume (veh/h)	80	300	10	530	290	10	20	330	140	10	1390	130
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	87	326	11	576	315	11	22	359	152	11	1511	141
Adj No. of Lanes	1	1	0	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	400	806	27	392	805	28	29	1608	698	18	1585	688
Arrive On Green	0.45	0.45	0.45	0.45	0.45	0.45	0.02	0.45	0.45	0.00	0.15	0.15
Sat Flow, veh/h	1050	1790	60	1039	1788	62	1774	3539	1537	1774	3539	1536
Grp Volume(v), veh/h	87	0	337	576	0	326	22	359	152	11	1511	141
Grp Sat Flow(s),veh/h/ln	1050	0	1851	1039	0	1850	1774	1770	1537	1774	1770	1536
Q Serve(g_s), s	8.4	0.0	17.1	45.9	0.0	16.5	1.7	8.6	8.4	0.9	59.3	11.3
Cycle Q Clear(g_c), s	24.9	0.0	17.1	63.0	0.0	16.5	1.7	8.6	8.4	0.9	59.3	11.3
Prop In Lane	1.00		0.03	1.00		0.03	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	400	0	833	392	0	833	29	1608	698	18	1585	688
V/C Ratio(X)	0.22	0.00	0.40	1.47	0.00	0.39	0.75	0.22	0.22	0.62	0.95	0.20
Avail Cap(c_a), veh/h	400	0	833	392	0	833	51	1608	698	51	1585	688
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.96	0.96	0.96	0.61	0.61	0.61
Uniform Delay (d), s/veh	34.0	0.0	25.9	50.1	0.0	25.7	68.6	23.2	23.1	69.5	58.2	37.7
Incr Delay (d2), s/veh	0.3	0.0	0.3	225.1	0.0	0.3	31.0	0.3	0.7	19.8	9.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	8.8	39.6	0.0	8.5	1.1	4.3	3.7	0.5	31.2	4.9
LnGrp Delay(d),s/veh	34.3	0.0	26.2	275.2	0.0	26.0	99.5	23.5	23.8	89.3	67.8	38.2
LnGrp LOS	C		C	F		C	F	C	C	F	E	D
Approach Vol, veh/h		424			902			533			1663	
Approach Delay, s/veh		27.9			185.1			26.7			65.5	
Approach LOS		C			F			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.4	67.6		67.0	6.3	66.7		67.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	61.0		63.0	4.0	61.0		63.0
Max Q Clear Time (g_c+I1), s	2.9	10.6		26.9	3.7	61.3		65.0
Green Ext Time (p_c), s	0.0	3.2		2.6	0.0	0.0		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		85.7
HCM 2010 LOS		F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	740	360	550	960	150	240	350	110	330	1410	100
Future Volume (veh/h)	20	740	360	550	960	150	240	350	110	330	1410	100
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	22	804	391	598	1043	163	261	380	120	359	1533	109
Adj No. of Lanes	2	2	1	2	3	0	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	57	784	340	590	1665	260	270	1315	575	417	1466	642
Arrive On Green	0.02	0.22	0.22	0.17	0.38	0.38	0.13	0.62	0.62	0.12	0.41	0.41
Sat Flow, veh/h	3442	3539	1536	3442	4422	690	3442	3539	1547	3442	3539	1549
Grp Volume(v), veh/h	22	804	391	598	799	407	261	380	120	359	1533	109
Grp Sat Flow(s),veh/h/ln	1721	1770	1536	1721	1695	1722	1721	1770	1547	1721	1770	1549
Q Serve(g_s), s	0.9	31.0	31.0	24.0	26.9	27.0	10.6	7.0	4.7	14.3	58.0	6.2
Cycle Q Clear(g_c), s	0.9	31.0	31.0	24.0	26.9	27.0	10.6	7.0	4.7	14.3	58.0	6.2
Prop In Lane	1.00		1.00	1.00		0.40	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	57	784	340	590	1276	648	270	1315	575	417	1466	642
V/C Ratio(X)	0.39	1.03	1.15	1.01	0.63	0.63	0.97	0.29	0.21	0.86	1.05	0.17
Avail Cap(c_a), veh/h	98	784	340	590	1276	648	270	1315	575	541	1466	642
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.98	0.98	0.09	0.09	0.09
Uniform Delay (d), s/veh	68.2	54.5	54.5	58.0	35.6	35.6	60.6	18.0	17.6	60.3	41.0	25.8
Incr Delay (d2), s/veh	4.3	38.9	96.0	40.5	1.0	1.9	44.4	0.5	0.8	1.1	22.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	19.4	22.2	14.7	12.7	13.1	6.7	3.4	2.1	6.9	32.9	2.7
LnGrp Delay(d),s/veh	72.5	93.4	150.5	98.5	36.6	37.6	105.1	18.6	18.4	61.4	63.8	25.9
LnGrp LOS	E	F	F	F	D	D	F	B	B	E	F	C
Approach Vol, veh/h		1217			1804			761			2001	
Approach Delay, s/veh		111.4			57.3			48.2			61.3	
Approach LOS		F			E			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	56.0	28.0	35.0	15.0	62.0	6.3	56.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	22.0	47.0	24.0	31.0	11.0	58.0	4.0	51.0
Max Q Clear Time (g_c+I1), s	16.3	9.0	26.0	33.0	12.6	60.0	2.9	29.0
Green Ext Time (p_c), s	0.7	3.2	0.0	0.0	0.0	0.0	0.0	8.9

Intersection Summary	
HCM 2010 Ctrl Delay	68.9
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	10	130	10	130	30	590	70	80	2470	30
Future Volume (veh/h)	0	0	10	130	10	130	30	590	70	80	2470	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	0.97		0.95	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	0	11	141	11	141	33	641	76	87	2685	33
Adj No. of Lanes	1	1	0	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	51	0	172	198	13	162	42	2615	1136	109	2747	1194
Arrive On Green	0.00	0.00	0.11	0.11	0.11	0.11	0.02	0.74	0.74	0.04	0.52	0.52
Sat Flow, veh/h	1230	0	1509	1363	111	1419	1774	3539	1537	1774	3539	1538
Grp Volume(v), veh/h	0	0	11	141	0	152	33	641	76	87	2685	33
Grp Sat Flow(s),veh/h/ln	1230	0	1509	1363	0	1530	1774	1770	1537	1774	1770	1538
Q Serve(g_s), s	0.0	0.0	0.9	14.4	0.0	13.7	2.6	8.1	1.9	6.8	103.7	1.5
Cycle Q Clear(g_c), s	0.0	0.0	0.9	15.3	0.0	13.7	2.6	8.1	1.9	6.8	103.7	1.5
Prop In Lane	1.00		1.00	1.00		0.93	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	51	0	172	198	0	175	42	2615	1136	109	2747	1194
V/C Ratio(X)	0.00	0.00	0.06	0.71	0.00	0.87	0.78	0.25	0.07	0.80	0.98	0.03
Avail Cap(c_a), veh/h	51	0	172	198	0	175	51	2615	1136	165	2747	1194
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.09	0.09	0.09
Uniform Delay (d), s/veh	0.0	0.0	55.3	62.2	0.0	61.0	68.0	5.8	5.0	66.3	32.4	7.9
Incr Delay (d2), s/veh	0.0	0.0	0.2	11.2	0.0	34.4	47.4	0.2	0.1	1.5	2.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.4	6.1	0.0	7.5	1.8	4.0	0.8	3.4	51.6	0.6
LnGrp Delay(d),s/veh	0.0	0.0	55.5	73.4	0.0	95.3	115.4	6.1	5.1	67.8	34.5	7.9
LnGrp LOS			E	E		F	F	A	A	E	C	A
Approach Vol, veh/h		11			293			750			2805	
Approach Delay, s/veh		55.5			84.8			10.8			35.2	
Approach LOS		E			F			B			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.6	107.4		20.0	7.3	112.7		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	13.0	99.0		16.0	4.0	108.0		16.0
Max Q Clear Time (g_c+I1), s	8.8	10.1		2.9	4.6	105.7		17.3
Green Ext Time (p_c), s	0.1	5.5		0.0	0.0	2.3		0.0

Intersection Summary			
HCM 2010 Ctrl Delay			34.3
HCM 2010 LOS			C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	510	110	120	330	170	180	650	260	180	320	80
Future Volume (veh/h)	180	510	110	120	330	170	180	650	260	180	320	80
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	196	554	120	130	359	185	196	707	283	196	348	87
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	219	652	284	152	518	225	218	1804	793	219	1806	794
Arrive On Green	0.12	0.18	0.18	0.09	0.15	0.15	0.16	0.68	0.68	0.12	0.51	0.51
Sat Flow, veh/h	1774	3539	1542	1774	3539	1537	1774	3539	1556	1774	3539	1556
Grp Volume(v), veh/h	196	554	120	130	359	185	196	707	283	196	348	87
Grp Sat Flow(s),veh/h/ln	1774	1770	1542	1774	1770	1537	1774	1770	1556	1774	1770	1556
Q Serve(g_s), s	18.0	25.0	11.4	11.9	15.9	19.3	17.9	14.5	12.7	18.0	8.8	4.8
Cycle Q Clear(g_c), s	18.0	25.0	11.4	11.9	15.9	19.3	17.9	14.5	12.7	18.0	8.8	4.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	219	652	284	152	518	225	218	1804	793	219	1806	794
V/C Ratio(X)	0.89	0.85	0.42	0.86	0.69	0.82	0.90	0.39	0.36	0.89	0.19	0.11
Avail Cap(c_a), veh/h	355	858	374	258	665	289	355	1804	793	355	1806	794
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.87	0.87	0.87	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.2	65.1	59.5	74.5	66.9	68.4	68.0	15.4	15.1	71.2	21.9	21.0
Incr Delay (d2), s/veh	15.6	6.3	1.0	13.1	2.2	13.9	14.4	0.6	1.1	15.6	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.8	12.8	4.9	6.4	7.9	9.1	9.6	7.2	5.7	9.8	4.4	2.1
LnGrp Delay(d),s/veh	86.8	71.4	60.5	87.6	69.1	82.2	82.4	15.9	16.2	86.8	22.2	21.2
LnGrp LOS	F	E	E	F	E	F	F	B	B	F	C	C
Approach Vol, veh/h		870			674			1186			631	
Approach Delay, s/veh		73.4			76.3			27.0			42.1	
Approach LOS		E			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.4	88.1	18.1	34.4	24.3	88.2	24.4	28.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	33.0	52.0	24.0	40.0	33.0	52.0	33.0	31.0
Max Q Clear Time (g_c+I1), s	20.0	16.5	13.9	27.0	19.9	10.8	20.0	21.3
Green Ext Time (p_c), s	0.4	6.9	0.2	3.4	0.4	2.8	0.4	2.1

Intersection Summary		
HCM 2010 Ctrl Delay		51.7
HCM 2010 LOS		D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	390	10	160	100	10	20	830	290	10	510	70
Future Volume (veh/h)	230	390	10	160	100	10	20	830	290	10	510	70
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	250	424	11	174	109	11	22	902	315	11	554	76
Adj No. of Lanes	1	1	0	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	480	701	18	234	645	65	28	1875	815	17	1854	806
Arrive On Green	0.39	0.39	0.39	0.39	0.39	0.39	0.02	0.53	0.53	0.02	1.00	1.00
Sat Flow, veh/h	1264	1807	47	950	1662	168	1774	3539	1539	1774	3539	1539
Grp Volume(v), veh/h	250	0	435	174	0	120	22	902	315	11	554	76
Grp Sat Flow(s),veh/h/ln	1264	0	1853	950	0	1829	1774	1770	1539	1774	1770	1539
Q Serve(g_s), s	26.6	0.0	31.0	29.6	0.0	7.1	2.0	26.5	20.0	1.0	0.0	0.0
Cycle Q Clear(g_c), s	33.7	0.0	31.0	60.6	0.0	7.1	2.0	26.5	20.0	1.0	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.09	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	480	0	719	234	0	710	28	1875	815	17	1854	806
V/C Ratio(X)	0.52	0.00	0.61	0.74	0.00	0.17	0.80	0.48	0.39	0.65	0.30	0.09
Avail Cap(c_a), veh/h	602	0	899	326	0	887	86	1875	815	54	1854	806
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.56	0.56	0.56	0.95	0.95	0.95
Uniform Delay (d), s/veh	44.1	0.0	40.4	64.6	0.0	33.1	81.0	24.5	22.9	80.6	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.8	5.8	0.0	0.1	24.5	0.5	0.8	32.8	0.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.4	0.0	16.0	8.2	0.0	3.6	1.2	13.0	8.7	0.7	0.1	0.0
LnGrp Delay(d),s/veh	45.0	0.0	41.2	70.4	0.0	33.2	105.4	25.0	23.7	113.4	0.4	0.2
LnGrp LOS	D		D	E		C	F	C	C	F	A	A
Approach Vol, veh/h		685			294			1239			641	
Approach Delay, s/veh		42.6			55.2			26.1			2.3	
Approach LOS		D			E			C			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.6	91.4		68.0	6.6	90.4		68.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	5.0	68.0		80.0	8.0	65.0		80.0
Max Q Clear Time (g_c+I1), s	3.0	28.5		35.7	4.0	2.0		62.6
Green Ext Time (p_c), s	0.0	9.6		4.0	0.0	4.6		1.4

Intersection Summary	
HCM 2010 Ctrl Delay	27.7
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	1080	260	270	770	200	500	860	430	240	370	40
Future Volume (veh/h)	40	1080	260	270	770	200	500	860	430	240	370	40
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	43	1174	283	293	837	217	543	935	467	261	402	43
Adj No. of Lanes	2	2	1	2	3	0	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	73	1276	557	334	1750	450	604	1266	553	303	956	416
Arrive On Green	0.02	0.36	0.36	0.10	0.44	0.44	0.12	0.24	0.24	0.09	0.27	0.27
Sat Flow, veh/h	3442	3539	1547	3442	4012	1033	3442	3539	1546	3442	3539	1541
Grp Volume(v), veh/h	43	1174	283	293	706	348	543	935	467	261	402	43
Grp Sat Flow(s),veh/h/ln	1721	1770	1547	1721	1695	1654	1721	1770	1546	1721	1770	1541
Q Serve(g_s), s	2.0	52.4	23.6	13.9	24.5	24.8	25.7	40.3	47.5	12.3	15.4	3.5
Cycle Q Clear(g_c), s	2.0	52.4	23.6	13.9	24.5	24.8	25.7	40.3	47.5	12.3	15.4	3.5
Prop In Lane	1.00		1.00	1.00		0.62	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	73	1276	557	334	1479	722	604	1266	553	303	956	416
V/C Ratio(X)	0.59	0.92	0.51	0.88	0.48	0.48	0.90	0.74	0.84	0.86	0.42	0.10
Avail Cap(c_a), veh/h	104	1330	581	355	1520	742	730	1266	553	334	956	416
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.72	0.72	0.72	0.80	0.80	0.80
Uniform Delay (d), s/veh	80.1	50.5	41.3	73.5	33.1	33.2	71.3	55.6	58.3	74.3	49.6	45.2
Incr Delay (d2), s/veh	7.4	10.3	0.7	20.6	0.2	0.5	9.4	2.8	11.0	15.7	1.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	27.4	10.2	7.5	11.5	11.4	13.0	20.3	22.0	6.5	7.7	1.5
LnGrp Delay(d),s/veh	87.5	60.8	42.0	94.1	33.4	33.7	80.8	58.4	69.3	90.0	50.7	45.6
LnGrp LOS	F	E	D	F	C	C	F	E	E	F	D	D
Approach Vol, veh/h		1500			1347			1945			706	
Approach Delay, s/veh		58.0			46.7			67.3			64.9	
Approach LOS		E			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.5	63.0	20.0	63.5	33.0	48.6	7.5	76.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	16.0	54.0	17.0	62.0	35.0	35.0	5.0	74.0
Max Q Clear Time (g_c+I1), s	14.3	49.5	15.9	54.4	27.7	17.4	4.0	26.8
Green Ext Time (p_c), s	0.2	3.0	0.1	5.1	1.3	2.6	0.0	9.3

Intersection Summary	
HCM 2010 Ctrl Delay	59.4
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	10	30	90	10	280	30	1480	200	40	920	20
Future Volume (veh/h)	20	10	30	90	10	280	30	1480	200	40	920	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	0.99		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	22	11	33	98	11	304	33	1609	217	43	1000	22
Adj No. of Lanes	1	1	0	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	79	92	277	324	12	343	42	2357	1023	55	2383	1034
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.02	0.67	0.67	0.06	1.00	1.00
Sat Flow, veh/h	1060	402	1205	1344	54	1492	1774	3539	1536	1774	3539	1536
Grp Volume(v), veh/h	22	0	44	98	0	315	33	1609	217	43	1000	22
Grp Sat Flow(s),veh/h/ln	1060	0	1607	1344	0	1546	1774	1770	1536	1774	1770	1536
Q Serve(g_s), s	3.4	0.0	3.6	10.3	0.0	32.5	3.1	45.9	9.1	3.9	0.0	0.0
Cycle Q Clear(g_c), s	35.9	0.0	3.6	13.8	0.0	32.5	3.1	45.9	9.1	3.9	0.0	0.0
Prop In Lane	1.00		0.75	1.00		0.97	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	79	0	370	324	0	356	42	2357	1023	55	2383	1034
V/C Ratio(X)	0.28	0.00	0.12	0.30	0.00	0.89	0.78	0.68	0.21	0.78	0.42	0.02
Avail Cap(c_a), veh/h	118	0	429	373	0	412	86	2357	1023	97	2383	1034
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.80	0.80	0.80
Uniform Delay (d), s/veh	78.7	0.0	50.3	55.7	0.0	61.4	80.1	16.9	10.7	76.8	0.0	0.0
Incr Delay (d2), s/veh	1.9	0.0	0.1	0.5	0.0	18.2	25.6	1.6	0.5	17.1	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	1.6	3.9	0.0	15.7	1.8	22.9	4.0	2.2	0.1	0.0
LnGrp Delay(d),s/veh	80.6	0.0	50.4	56.3	0.0	79.6	105.6	18.5	11.2	93.9	0.4	0.0
LnGrp LOS	F		D	E		E	F	B	B	F	A	A
Approach Vol, veh/h		66			413			1859			1065	
Approach Delay, s/veh		60.5			74.0			19.2			4.2	
Approach LOS		E			E			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.1	113.9		42.0	7.9	115.1		42.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	9.0	100.0		44.0	8.0	101.0		44.0
Max Q Clear Time (g_c+I1), s	5.9	47.9		37.9	5.1	2.0		34.5
Green Ext Time (p_c), s	0.0	22.6		0.1	0.0	9.8		1.7

Intersection Summary			
HCM 2010 Ctrl Delay			22.0
HCM 2010 LOS			C

Appendix N

Horizon Year plus Project LOS Calculations

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	480	150	300	630	150	50	251	140	250	1101	320
Future Volume (veh/h)	90	480	150	300	630	150	50	251	140	250	1101	320
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	98	522	163	326	685	163	54	273	152	272	1197	348
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	120	597	260	353	1060	465	70	1237	543	300	1696	745
Arrive On Green	0.07	0.17	0.17	0.20	0.30	0.30	0.01	0.12	0.12	0.17	0.48	0.48
Sat Flow, veh/h	1774	3539	1540	1774	3539	1551	1774	3539	1553	1774	3539	1556
Grp Volume(v), veh/h	98	522	163	326	685	163	54	273	152	272	1197	348
Grp Sat Flow(s),veh/h/ln	1774	1770	1540	1774	1770	1551	1774	1770	1553	1774	1770	1556
Q Serve(g_s), s	7.6	20.1	13.8	25.3	23.5	11.5	4.2	9.8	12.5	21.1	37.3	21.0
Cycle Q Clear(g_c), s	7.6	20.1	13.8	25.3	23.5	11.5	4.2	9.8	12.5	21.1	37.3	21.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	120	597	260	353	1060	465	70	1237	543	300	1696	745
V/C Ratio(X)	0.81	0.87	0.63	0.92	0.65	0.35	0.78	0.22	0.28	0.91	0.71	0.47
Avail Cap(c_a), veh/h	190	657	286	431	1138	498	89	1237	543	418	1696	745
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.98	0.98	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.4	56.7	54.1	55.1	42.6	38.4	68.5	44.6	45.8	57.1	28.7	24.5
Incr Delay (d2), s/veh	13.5	11.8	3.7	23.0	1.2	0.5	27.0	0.4	1.3	18.5	2.5	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	10.8	6.1	14.7	11.7	5.0	2.6	4.9	5.6	11.9	18.7	9.4
LnGrp Delay(d),s/veh	77.9	68.5	57.8	78.1	43.7	38.8	95.5	45.0	47.1	75.6	31.2	26.6
LnGrp LOS	E	E	E	E	D	D	F	D	D	E	C	C
Approach Vol, veh/h		783			1174			479			1817	
Approach Delay, s/veh		67.5			52.6			51.4			37.0	
Approach LOS		E			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.6	52.9	31.8	27.6	9.5	71.1	13.5	45.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	33.0	31.0	34.0	26.0	7.0	57.0	15.0	45.0
Max Q Clear Time (g_c+I1), s	23.1	14.5	27.3	22.1	6.2	39.3	9.6	25.5
Green Ext Time (p_c), s	0.6	2.0	0.6	1.5	0.0	9.7	0.1	5.2

Intersection Summary	
HCM 2010 Ctrl Delay	48.5
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	300	10	531	290	10	26	331	140	10	1392	130
Future Volume (veh/h)	80	300	10	531	290	10	26	331	140	10	1392	130
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	87	326	11	577	315	11	28	360	152	11	1513	141
Adj No. of Lanes	1	1	0	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	400	806	27	392	805	28	35	1608	698	18	1573	683
Arrive On Green	0.45	0.45	0.45	0.45	0.45	0.45	0.02	0.45	0.45	0.00	0.15	0.15
Sat Flow, veh/h	1050	1790	60	1039	1788	62	1774	3539	1537	1774	3539	1536
Grp Volume(v), veh/h	87	0	337	577	0	326	28	360	152	11	1513	141
Grp Sat Flow(s),veh/h/ln	1050	0	1851	1039	0	1850	1774	1770	1537	1774	1770	1536
Q Serve(g_s), s	8.4	0.0	17.1	45.9	0.0	16.5	2.2	8.7	8.4	0.9	59.5	11.3
Cycle Q Clear(g_c), s	24.9	0.0	17.1	63.0	0.0	16.5	2.2	8.7	8.4	0.9	59.5	11.3
Prop In Lane	1.00		0.03	1.00		0.03	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	400	0	833	392	0	833	35	1608	698	18	1573	683
V/C Ratio(X)	0.22	0.00	0.40	1.47	0.00	0.39	0.79	0.22	0.22	0.62	0.96	0.21
Avail Cap(c_a), veh/h	400	0	833	392	0	833	51	1608	698	51	1573	683
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.96	0.96	0.96	0.61	0.61	0.61
Uniform Delay (d), s/veh	34.0	0.0	25.9	50.1	0.0	25.7	68.3	23.2	23.1	69.5	58.6	38.0
Incr Delay (d2), s/veh	0.3	0.0	0.3	226.2	0.0	0.3	39.4	0.3	0.7	19.8	10.8	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	8.8	39.7	0.0	8.5	1.5	4.3	3.7	0.5	31.6	4.9
LnGrp Delay(d),s/veh	34.3	0.0	26.2	276.3	0.0	26.0	107.7	23.5	23.8	89.3	69.3	38.4
LnGrp LOS	C		C	F		C	F	C	C	F	E	D
Approach Vol, veh/h		424			903			540			1665	
Approach Delay, s/veh		27.9			185.9			28.0			66.8	
Approach LOS		C			F			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.4	67.6		67.0	6.8	66.2		67.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	61.0		63.0	4.0	61.0		63.0
Max Q Clear Time (g_c+I1), s	2.9	10.7		26.9	4.2	61.5		65.0
Green Ext Time (p_c), s	0.0	3.2		2.6	0.0	0.0		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		86.7
HCM 2010 LOS		F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	740	360	550	960	151	240	353	110	333	1412	102
Future Volume (veh/h)	25	740	360	550	960	151	240	353	110	333	1412	102
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	27	804	391	598	1043	164	261	384	120	362	1535	111
Adj No. of Lanes	2	2	1	2	3	0	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	64	784	340	590	1654	260	295	1312	574	420	1441	631
Arrive On Green	0.02	0.22	0.22	0.17	0.37	0.37	0.17	0.74	0.74	0.12	0.41	0.41
Sat Flow, veh/h	3442	3539	1536	3442	4418	693	3442	3539	1547	3442	3539	1549
Grp Volume(v), veh/h	27	804	391	598	800	407	261	384	120	362	1535	111
Grp Sat Flow(s),veh/h/ln	1721	1770	1536	1721	1695	1721	1721	1770	1547	1721	1770	1549
Q Serve(g_s), s	1.1	31.0	31.0	24.0	27.1	27.1	10.4	5.0	3.3	14.4	57.0	6.4
Cycle Q Clear(g_c), s	1.1	31.0	31.0	24.0	27.1	27.1	10.4	5.0	3.3	14.4	57.0	6.4
Prop In Lane	1.00		1.00	1.00		0.40	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	64	784	340	590	1269	644	295	1312	574	420	1441	631
V/C Ratio(X)	0.42	1.03	1.15	1.01	0.63	0.63	0.88	0.29	0.21	0.86	1.07	0.18
Avail Cap(c_a), veh/h	98	784	340	590	1269	644	295	1312	574	541	1441	631
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.98	0.98	0.09	0.09	0.09
Uniform Delay (d), s/veh	68.0	54.5	54.5	58.0	35.9	35.9	57.3	12.0	11.8	60.3	41.5	26.5
Incr Delay (d2), s/veh	4.4	38.9	96.0	40.5	1.0	2.0	25.2	0.6	0.8	1.1	31.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	19.4	22.2	14.7	12.8	13.2	6.0	2.4	1.5	7.0	34.0	2.8
LnGrp Delay(d),s/veh	72.3	93.4	150.5	98.5	36.9	37.9	82.6	12.6	12.6	61.4	72.6	26.6
LnGrp LOS	E	F	F	F	D	D	F	B	B	E	F	C
Approach Vol, veh/h		1222			1805			765			2008	
Approach Delay, s/veh		111.2			57.5			36.5			68.0	
Approach LOS		F			E			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.1	55.9	28.0	35.0	16.0	61.0	6.6	56.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	22.0	47.0	24.0	31.0	12.0	57.0	4.0	51.0
Max Q Clear Time (g_c+I1), s	16.4	7.0	26.0	33.0	12.4	59.0	3.1	29.1
Green Ext Time (p_c), s	0.7	3.2	0.0	0.0	0.0	0.0	0.0	8.9

Intersection Summary	
HCM 2010 Ctrl Delay	69.7
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	10	130	10	130	30	593	70	80	2472	30
Future Volume (veh/h)	0	0	10	130	10	130	30	593	70	80	2472	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	0.97		0.95	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	0	0	11	141	11	141	33	645	76	87	2687	33
Adj No. of Lanes	1	1	0	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	51	0	172	198	13	162	42	2615	1136	109	2747	1194
Arrive On Green	0.00	0.00	0.11	0.11	0.11	0.11	0.02	0.74	0.74	0.04	0.52	0.52
Sat Flow, veh/h	1230	0	1509	1363	111	1419	1774	3539	1537	1774	3539	1538
Grp Volume(v), veh/h	0	0	11	141	0	152	33	645	76	87	2687	33
Grp Sat Flow(s),veh/h/ln	1230	0	1509	1363	0	1530	1774	1770	1537	1774	1770	1538
Q Serve(g_s), s	0.0	0.0	0.9	14.4	0.0	13.7	2.6	8.1	1.9	6.8	103.8	1.5
Cycle Q Clear(g_c), s	0.0	0.0	0.9	15.3	0.0	13.7	2.6	8.1	1.9	6.8	103.8	1.5
Prop In Lane	1.00		1.00	1.00		0.93	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	51	0	172	198	0	175	42	2615	1136	109	2747	1194
V/C Ratio(X)	0.00	0.00	0.06	0.71	0.00	0.87	0.78	0.25	0.07	0.80	0.98	0.03
Avail Cap(c_a), veh/h	51	0	172	198	0	175	51	2615	1136	165	2747	1194
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.09	0.09	0.09
Uniform Delay (d), s/veh	0.0	0.0	55.3	62.2	0.0	61.0	68.0	5.8	5.0	66.3	32.4	7.9
Incr Delay (d2), s/veh	0.0	0.0	0.2	11.2	0.0	34.4	47.4	0.2	0.1	1.5	2.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.4	6.1	0.0	7.5	1.8	4.0	0.8	3.4	51.6	0.6
LnGrp Delay(d),s/veh	0.0	0.0	55.5	73.4	0.0	95.3	115.4	6.1	5.1	67.8	34.6	7.9
LnGrp LOS			E	E		F	F	A	A	E	C	A
Approach Vol, veh/h		11			293			754			2807	
Approach Delay, s/veh		55.5			84.8			10.8			35.3	
Approach LOS		E			F			B			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.6	107.4		20.0	7.3	112.7		20.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	13.0	99.0		16.0	4.0	108.0		16.0
Max Q Clear Time (g_c+I1), s	8.8	10.1		2.9	4.6	105.8		17.3
Green Ext Time (p_c), s	0.1	5.6		0.0	0.0	2.2		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	34.3
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	510	110	120	330	170	180	652	260	180	321	80
Future Volume (veh/h)	180	510	110	120	330	170	180	652	260	180	321	80
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	196	554	120	130	359	185	196	709	283	196	349	87
Adj No. of Lanes	1	2	1	1	2	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	219	652	284	152	518	225	218	1804	793	219	1806	794
Arrive On Green	0.12	0.18	0.18	0.09	0.15	0.15	0.16	0.68	0.68	0.12	0.51	0.51
Sat Flow, veh/h	1774	3539	1542	1774	3539	1537	1774	3539	1556	1774	3539	1556
Grp Volume(v), veh/h	196	554	120	130	359	185	196	709	283	196	349	87
Grp Sat Flow(s),veh/h/ln	1774	1770	1542	1774	1770	1537	1774	1770	1556	1774	1770	1556
Q Serve(g_s), s	18.0	25.0	11.4	11.9	15.9	19.3	17.9	14.5	12.7	18.0	8.8	4.8
Cycle Q Clear(g_c), s	18.0	25.0	11.4	11.9	15.9	19.3	17.9	14.5	12.7	18.0	8.8	4.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	219	652	284	152	518	225	218	1804	793	219	1806	794
V/C Ratio(X)	0.89	0.85	0.42	0.86	0.69	0.82	0.90	0.39	0.36	0.89	0.19	0.11
Avail Cap(c_a), veh/h	355	858	374	258	665	289	355	1804	793	355	1806	794
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.87	0.87	0.87	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.2	65.1	59.5	74.5	66.9	68.4	68.0	15.4	15.1	71.2	22.0	21.0
Incr Delay (d2), s/veh	15.6	6.3	1.0	13.1	2.2	13.9	14.4	0.6	1.1	15.6	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.8	12.8	4.9	6.4	7.9	9.1	9.6	7.2	5.7	9.8	4.4	2.1
LnGrp Delay(d),s/veh	86.8	71.4	60.5	87.6	69.1	82.2	82.4	15.9	16.2	86.8	22.2	21.2
LnGrp LOS	F	E	E	F	E	F	F	B	B	F	C	C
Approach Vol, veh/h		870			674			1188			632	
Approach Delay, s/veh		73.4			76.3			27.0			42.1	
Approach LOS		E			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.4	88.1	18.1	34.4	24.3	88.2	24.4	28.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	33.0	52.0	24.0	40.0	33.0	52.0	33.0	31.0
Max Q Clear Time (g_c+I1), s	20.0	16.5	13.9	27.0	19.9	10.8	20.0	21.3
Green Ext Time (p_c), s	0.4	7.0	0.2	3.4	0.4	2.8	0.4	2.1

Intersection Summary	
HCM 2010 Ctrl Delay	51.7
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	390	10	161	100	10	32	832	291	10	512	70
Future Volume (veh/h)	230	390	10	161	100	10	32	832	291	10	512	70
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	250	424	11	175	109	11	35	904	316	11	557	76
Adj No. of Lanes	1	1	0	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	481	702	18	235	646	65	45	1872	814	17	1816	790
Arrive On Green	0.39	0.39	0.39	0.39	0.39	0.39	0.03	0.53	0.53	0.02	1.00	1.00
Sat Flow, veh/h	1264	1807	47	950	1662	168	1774	3539	1539	1774	3539	1538
Grp Volume(v), veh/h	250	0	435	175	0	120	35	904	316	11	557	76
Grp Sat Flow(s),veh/h/ln	1264	0	1853	950	0	1829	1774	1770	1539	1774	1770	1538
Q Serve(g_s), s	26.6	0.0	30.9	29.8	0.0	7.1	3.2	26.7	20.1	1.0	0.0	0.0
Cycle Q Clear(g_c), s	33.7	0.0	30.9	60.7	0.0	7.1	3.2	26.7	20.1	1.0	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.09	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	481	0	720	235	0	711	45	1872	814	17	1816	790
V/C Ratio(X)	0.52	0.00	0.60	0.75	0.00	0.17	0.78	0.48	0.39	0.65	0.31	0.10
Avail Cap(c_a), veh/h	602	0	899	326	0	887	86	1872	814	54	1816	790
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.56	0.56	0.56	0.95	0.95	0.95
Uniform Delay (d), s/veh	44.0	0.0	40.3	64.5	0.0	33.0	79.9	24.6	23.0	80.6	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.8	5.9	0.0	0.1	14.6	0.5	0.8	32.8	0.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.4	0.0	16.0	8.2	0.0	3.6	1.8	13.2	8.7	0.7	0.1	0.1
LnGrp Delay(d),s/veh	44.9	0.0	41.1	70.4	0.0	33.1	94.5	25.1	23.8	113.4	0.4	0.2
LnGrp LOS	D		D	E		C	F	C	C	F	A	A
Approach Vol, veh/h		685			295			1255			644	
Approach Delay, s/veh		42.5			55.2			26.7			2.3	
Approach LOS		D			E			C			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.6	91.3		68.1	8.2	88.7		68.1
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	5.0	68.0		80.0	8.0	65.0		80.0
Max Q Clear Time (g_c+I1), s	3.0	28.7		35.7	5.2	2.0		62.7
Green Ext Time (p_c), s	0.0	9.6		4.0	0.0	4.7		1.4

Intersection Summary	
HCM 2010 Ctrl Delay	27.9
HCM 2010 LOS	C

LOS Engineering, Inc.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	1080	260	270	770	201	500	863	430	244	374	44
Future Volume (veh/h)	45	1080	260	270	770	201	500	863	430	244	374	44
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	49	1174	283	293	837	218	543	938	467	265	407	48
Adj No. of Lanes	2	2	1	2	3	0	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	81	1276	557	334	1739	450	604	1262	552	306	956	416
Arrive On Green	0.02	0.36	0.36	0.10	0.43	0.43	0.12	0.24	0.24	0.09	0.27	0.27
Sat Flow, veh/h	3442	3539	1547	3442	4007	1036	3442	3539	1546	3442	3539	1541
Grp Volume(v), veh/h	49	1174	283	293	707	348	543	938	467	265	407	48
Grp Sat Flow(s),veh/h/ln	1721	1770	1547	1721	1695	1653	1721	1770	1546	1721	1770	1541
Q Serve(g_s), s	2.3	52.4	23.6	13.9	24.6	24.9	25.7	40.5	47.5	12.5	15.6	3.9
Cycle Q Clear(g_c), s	2.3	52.4	23.6	13.9	24.6	24.9	25.7	40.5	47.5	12.5	15.6	3.9
Prop In Lane	1.00		1.00	1.00		0.63	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	81	1276	557	334	1471	717	604	1262	552	306	956	416
V/C Ratio(X)	0.61	0.92	0.51	0.88	0.48	0.48	0.90	0.74	0.85	0.87	0.43	0.12
Avail Cap(c_a), veh/h	104	1330	581	355	1520	742	730	1262	552	334	956	416
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.72	0.72	0.72	0.79	0.79	0.79
Uniform Delay (d), s/veh	79.8	50.5	41.3	73.5	33.4	33.5	71.3	55.8	58.5	74.2	49.7	45.4
Incr Delay (d2), s/veh	7.1	10.3	0.7	20.6	0.2	0.5	9.4	2.9	11.2	16.0	1.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	27.4	10.2	7.5	11.5	11.5	13.0	20.3	22.1	6.6	7.8	1.7
LnGrp Delay(d),s/veh	86.9	60.8	42.0	94.1	33.7	34.0	80.8	58.7	69.6	90.2	50.8	45.8
LnGrp LOS	F	E	D	F	C	C	F	E	E	F	D	D
Approach Vol, veh/h		1506			1348			1948			720	
Approach Delay, s/veh		58.1			46.9			67.5			65.0	
Approach LOS		E			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.7	62.9	20.0	63.5	33.0	48.6	7.9	75.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	16.0	54.0	17.0	62.0	35.0	35.0	5.0	74.0
Max Q Clear Time (g_c+I1), s	14.5	49.5	15.9	54.4	27.7	17.6	4.3	26.9
Green Ext Time (p_c), s	0.1	3.0	0.1	5.1	1.3	2.6	0.0	9.4

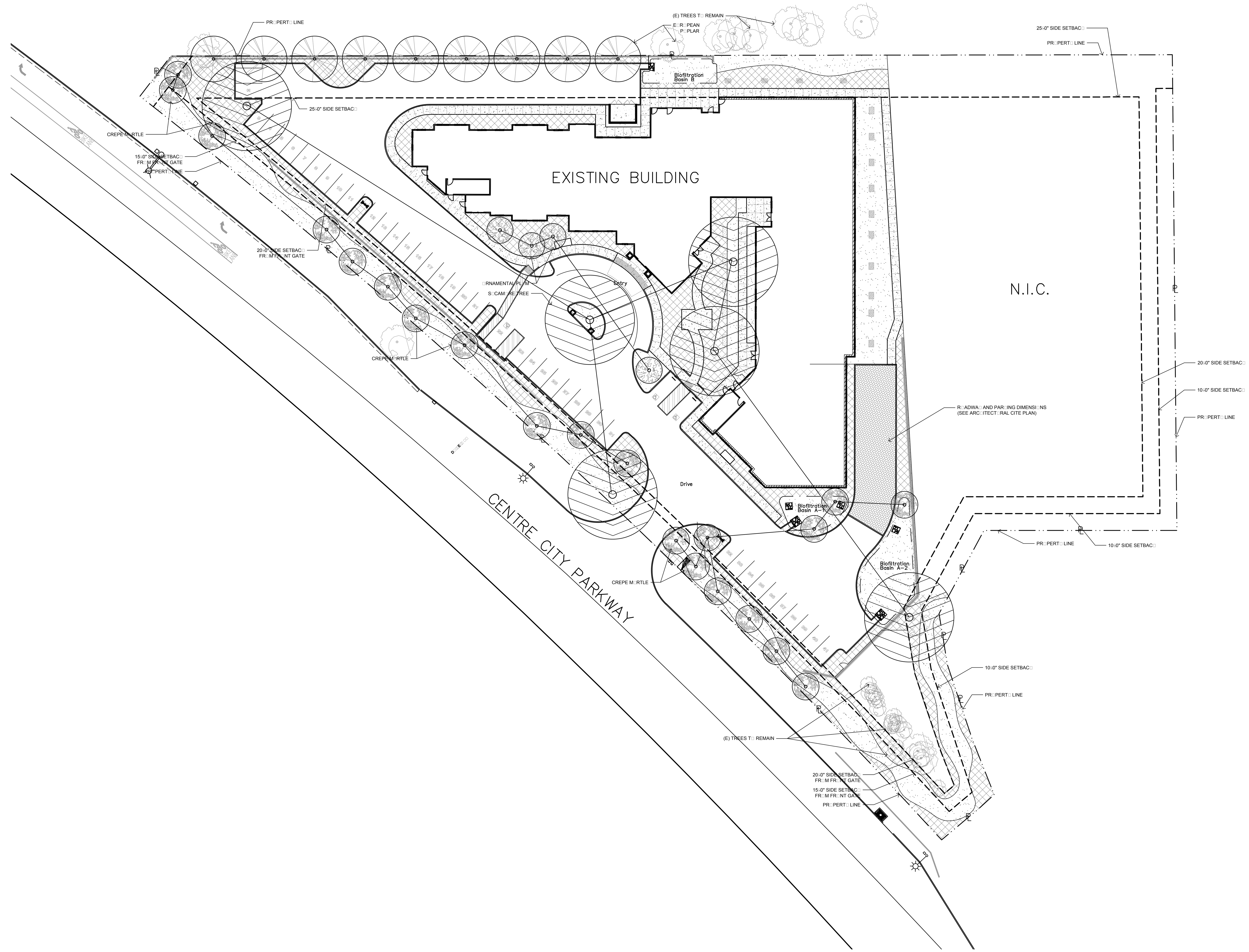
Intersection Summary	
HCM 2010 Ctrl Delay	59.6
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	10	30	90	10	280	30	1483	200	40	924	20
Future Volume (veh/h)	20	10	30	90	10	280	30	1483	200	40	924	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	0.99		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	22	11	33	98	11	304	33	1612	217	43	1004	22
Adj No. of Lanes	1	1	0	1	1	0	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	79	92	277	324	12	343	42	2357	1023	55	2383	1034
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.02	0.67	0.67	0.06	1.00	1.00
Sat Flow, veh/h	1060	402	1205	1344	54	1492	1774	3539	1536	1774	3539	1536
Grp Volume(v), veh/h	22	0	44	98	0	315	33	1612	217	43	1004	22
Grp Sat Flow(s),veh/h/ln	1060	0	1607	1344	0	1546	1774	1770	1536	1774	1770	1536
Q Serve(g_s), s	3.4	0.0	3.6	10.3	0.0	32.5	3.1	46.1	9.1	3.9	0.0	0.0
Cycle Q Clear(g_c), s	35.9	0.0	3.6	13.8	0.0	32.5	3.1	46.1	9.1	3.9	0.0	0.0
Prop In Lane	1.00		0.75	1.00		0.97	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	79	0	370	324	0	356	42	2357	1023	55	2383	1034
V/C Ratio(X)	0.28	0.00	0.12	0.30	0.00	0.89	0.78	0.68	0.21	0.78	0.42	0.02
Avail Cap(c_a), veh/h	111	0	419	365	0	403	86	2357	1023	97	2383	1034
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.80	0.80	0.80
Uniform Delay (d), s/veh	78.8	0.0	50.3	55.8	0.0	61.4	80.1	16.9	10.7	76.8	0.0	0.0
Incr Delay (d2), s/veh	1.9	0.0	0.1	0.5	0.0	18.8	25.6	1.6	0.5	17.1	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	1.6	3.9	0.0	15.8	1.8	22.9	4.0	2.2	0.1	0.0
LnGrp Delay(d),s/veh	80.7	0.0	50.4	56.3	0.0	80.3	105.6	18.5	11.2	93.9	0.4	0.0
LnGrp LOS	F		D	E		F	F	B	B	F	A	A
Approach Vol, veh/h		66			413			1862			1069	
Approach Delay, s/veh		60.5			74.6			19.2			4.2	
Approach LOS		E			E			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.1	113.9		42.0	7.9	115.1		42.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	9.0	101.0		43.0	8.0	102.0		43.0
Max Q Clear Time (g_c+I1), s	5.9	48.1		37.9	5.1	2.0		34.5
Green Ext Time (p_c), s	0.0	22.9		0.1	0.0	9.8		1.6

Intersection Summary			
HCM 2010 Ctrl Delay			22.0
HCM 2010 LOS			C

20. Material Landscape Architecture; Escondido Assisted Living Landscape Plan(s), June 21, 2018



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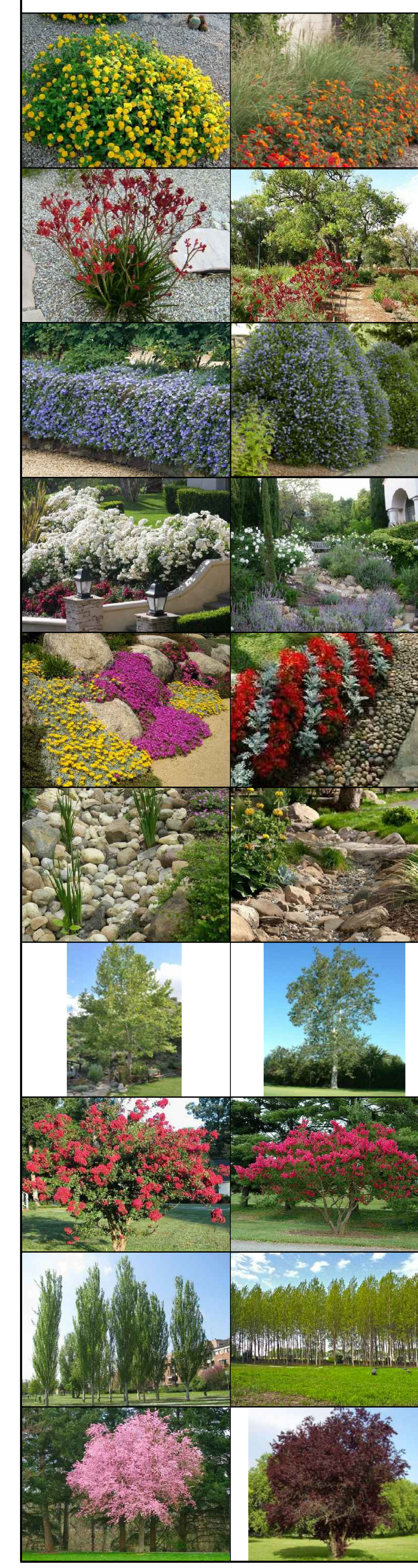

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	Prunus cerasifera "□r□□□□□□□□□□□r□□"

ESC□NDID□ ASSISTED LI□ING: Escondido Landscape Plan

SCALE: 1/32"
1/8/2018

N□RT□

Materia
Architecture . Urbanism . Landscape
5979 Camino de la costa . La Jolla . California . 92037
tel: 310-903-2635 twilson@materia-llc.com

A PROJECT FOR: MITCHELL GROUP

ESCONDIDO ASSISTED LIVING
Landscape Plan

1802 N. CENTRE CITY PARKWAY
ESCONDIDO CA 92026

NO.	DESCRIPTION	DATE
-	Revision	10.26.2017
-	Revision	1.8.2018
-	Revision	6.21.2018

PA/PM: T. WILSON
DRAWN BY: D. CALDERON
JOB NO.:

SHEET
L□□

21. Spear & Associates, Inc. Priority Development Project (PDP); SWQMP Escondido Assisted Living Phg17-0025 And Env17-0007, April 4, 2018

City of Escondido
PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Escondido Assisted Living
PHG17-0025 and ENV17-0007

1802 N. Centre City Parkway, Escondido
CA 92026

ASSESSOR'S PARCEL NUMBER(S):
226-190-22

ENGINEER OF WORK:

REGISTERED PROFESSIONAL ENGINEER
DANNY ABADA
No. 45381
CIVIL
STATE OF CALIFORNIA

Danny Abada, PE # 45381

PREPARED FOR:
The Mitchell Group
Attn: Tigg Mitchell
142 South Cedros Avenue, Suite D, Solana Beach, CA 92075
Tel: 619-993-7089
Email: tigg@themitchellgroup.us

PDP SWQMP PREPARED BY:
SPEAR & ASSOCIATES, INC.
CIVIL ENGINEERING & LAND SURVEYING
475 Production Street
San Marcos, CA 92078
Telephone: (760) 736-2040

DATE OF SWQMP: 4/24/18

PLANS PREPARED BY:
SPEAR & ASSOCIATES, INC.

SWQMP APPROVED BY:
[FOR CITY STAFF ONLY]

APPROVAL DATE:

ESCONDIDO
City of Choice

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TABLE OF CONTENTS

ATTACHMENTS

ACRONYMS

ACP	Alternative Compliance Project
APN	Assessor's Parcel Number
BMP	Best Management Practice
DMA	Drainage Management Area
EOW	Engineer of Work
HMP	Hydromodification Management Plan
HSG	Hydrologic Soil Group
MS4	Municipal Separate Storm Sewer System
N/A	Not Applicable
PDP	Priority Development Project
PE	Professional Engineer
SC	Source Control
SD	Site Design
SDRWQCB	San Diego Regional Water Quality Control Board
SIC	Standard Industrial Classification
SWDM	Storm Water Design Manual
SWQMP	Storm Water Quality Management Plan
WMAA	Watershed Management Area Analysis
WQIP	Water Quality Improvement Plan

PDP SWQMP PREPARER'S CERTIFICATION PAGE

Project Name: Escondido Assisted Living
Permit Application Number: PHG17-0025 and ENV17-0007

PREPARER'S CERTIFICATION

I hereby declare that I am the Engineer in Responsible Charge of design of storm water best management practices (BMPs) for this project, and that I have exercised responsible charge over the design of the BMPs as defined in Section 6703 of the Business and Professions Code, and that the design is consistent with the PDP requirements of the City of Escondido Storm Water Design Manual, which is a design manual for compliance with the City of Escondido Municipal Code (Chapter 22, Article 2) and regional MS4 Permit (California Regional Water Quality Control Board San Diego Region Order No. R9-2013-0001 as amended by R9-2015-0001 and R9-2015-0100) requirements for storm water management.

I have read and understand that the City of Escondido has adopted minimum requirements for managing urban runoff, including storm water, from land development activities, as described in the Storm Water Design Manual. I certify that this PDP SWQMP has been completed to the best of my ability and accurately reflects the project being proposed and the applicable BMPs proposed to minimize the potentially negative impacts of this project's land development activities on water quality. I understand and acknowledge that the plan check review of this PDP SWQMP by City staff is confined to a review and does not relieve me, as the Engineer in Responsible Charge of design of storm water BMPs for this project, of my responsibilities for project design.

____
RCE # 45381, Expires 9/30/18

Danny Abada, PE
Print Name

Spear & Associates Inc.
Company

4/24/18
Date

Engineer's Seal:

SUBMITTAL RECORD

Use this Table to keep a record of submittals of this PDP SWQMP. Each time the PDP SWQMP is re-submitted, provide the date and status of the project. In column 4 summarize the changes that have been made or indicate if response to plancheck comments is included. When applicable, insert response to plancheck comments behind this page.

Preliminary Design / Planning / CEQA

Submittal Number	Date	Summary of Changes
1	10/23/17	Initial Submittal
2	1/12/18	Initial Submittal
3	4/24/18	
4		

Final Design

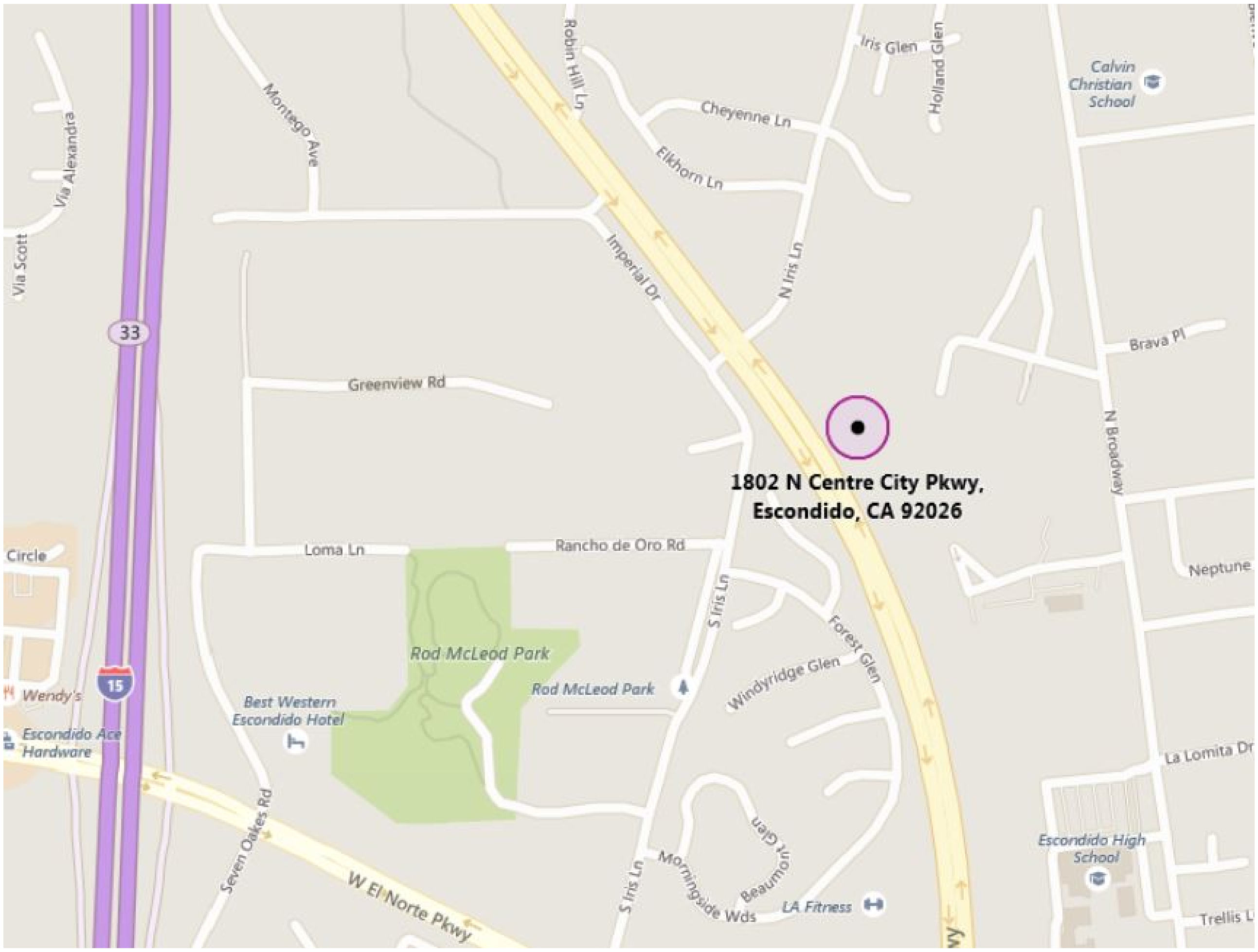
Submittal Number	Date	Summary of Changes
1		Initial Submittal
2		
3		
4		

Plan Changes

Submittal Number	Date	Summary of Changes
1		Initial Submittal
2		
3		
4		

PROJECT VICINITY MAP

Project Name: Escondido Assisted Living
Record ID: PHG17-0025 and ENV17-0007



Step 1: Project type determination (Standard or Priority Development Project) (Form I-2a)

Project Summary Information	
Project Name	Escondido Assisted Living
Project Address	1802 N. Centre City Parkway, Escondido CA 92026
Assessor's Parcel Number(s)	226-190-22
Permit Application Number	PHG17-0025 and ENV17-0007
Project Watershed (Hydrologic Unit)	Select One: X Carlsbad 904 ☐ San Dieguito 905
Parcel Area (total area of Assessor's Parcel(s) associated with the project)	3.48 Acres (151742 Square Feet)
Area to be disturbed by the project (Project Area)	3.48 Acres (151742 Square Feet)
Project Proposed Impervious Area (subset of Project Area)	1.4 Acres (61157 Square Feet)
Project Proposed Pervious Area (subset of Project Area)	2.08 Acres (90,585 Square Feet)
Note: Proposed Impervious Area + Proposed Pervious Area = Area to be Disturbed by the Project. This may be less than the Parcel Area.	

Confirmation of Priority Development Project Determination
The project is (select one): ☐ New Development X Redevelopment[1]
The total proposed newly created or replaced impervious area is: 61157 ft^2

[1] Redevelopment is defined as: The creation and/or replacement of impervious surface on an already developed site. Examples include the expansion of a building footprint, road widening, the addition to or replacement of a structure, and creation or addition of impervious surfaces. Replacement of impervious surfaces includes any activity that is not part of a routine maintenance activity where impervious material(s) are removed, exposing underlying soil during construction. Redevelopment does not include routine maintenance activities, such as trenching and resurfacing associated with utility work; pavement grinding; resurfacing existing roadways; new sidewalks construction; pedestrian ramps; or bike lanes on existing roads; and routine replacement of damaged pavement, such as pothole repair.

Solar energy farms that are not also one of the categories listed in Step 2b of Table 1-1. City staff must also determine that appropriate BMPs are provided to mitigate for downstream impacts due to significant changes to the existing hydrology

Is the project in any of the following categories, (a) through (f)?			
Yes ☓	No ☐	(a)	New development projects that create 10,000 square feet or more of impervious surfaces (collectively over the entire project site). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
Yes ☐	No ☐	(b)	Redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site on an existing site of 10,000 square feet or more of impervious surfaces). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
Yes ☐	No ☓	(c)	New and redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site), and support one or more of the following uses: (i) Restaurants. This category is defined as a facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (Standard Industrial Classification (SIC) code 5812). (ii) Hillside development projects. This category includes development on any natural slope that is twenty-five percent or greater. (iii) Parking lots. This category is defined as a land area or facility for the temporary parking or storage of motor vehicles used personally, for business, or for commerce. (iv) Streets, roads, highways, freeways, and driveways. This category is defined as any paved impervious surface used for the transportation of automobiles, trucks, motorcycles, and other vehicles.
Yes ☓	No ☐	(d)	New or redevelopment projects that create and/or replace 2,500 square feet or more of impervious surface (collectively over the entire project site), and discharging directly to an Environmentally Sensitive Area (ESA). "Discharging directly to" includes flow that is conveyed overland a distance of 200 feet or less from the project to the ESA, or conveyed in a pipe or open channel any distance as an isolated flow from the project to the ESA (i.e. not commingled with flows from adjacent lands). *Note: ESAs are areas that include but are not limited to all Clean Water Act Section 303(d) impaired water bodies; areas designated as Areas of Special Biological Significance by the State Water Board and San Diego Water Board; State Water Quality Protected Areas; water bodies designated with the RARE beneficial use by the State Water Board and San Diego Water Board; and any other equivalent environmentally sensitive areas which have been identified by the Copermittees.*
Yes ☐	No ☓	(e)	New development projects, or redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface, that support one or more of the following uses: (i) Automotive repair shops. This category is defined as a facility that is categorized in any one of the following SIC codes: 5013, 5014, 5541, 7532-7534, or 7536-7539. (ii) Retail gasoline outlets (RGOs). This category includes RGOs that meet the following criteria: (a) 5,000 square feet or more or (b) a projected Average Daily Traffic (ADT) of 100 or more vehicles per day.

Yes	No	(f)	New or redevelopment projects that result in the disturbance of one or more acres of land and are expected to generate pollutants post construction. *Note: See Storm Water Design Manual Section 1.4.2 for additional guidance.*
X	☐		

Does the project meet the definition of one or more of the Priority Development Project categories (a) through (f) listed above?

☐ No – the project is <u>not</u> a Priority Development Project (Standard Project).

X Yes – the project is a Priority Development Project (PDP).

Further guidance may be found in Chapter 1 and Table 1-2 of the Storm Water Design Manual.

The following is for **redevelopment PDPs only**:

The area of existing (pre-project) impervious area at the project site is: 0 ft^2 (A)

The total proposed newly created or replaced impervious area is 61157 ft^2 (B)

Percent impervious surface created or replaced (B/A)*100: 100%

The percent impervious surface created or replaced is (select one based on the above calculation):

☐ less than or equal to fifty percent (50%) – **only newly created or replaced impervious areas are considered a PDP and subject to stormwater requirements**

OR

X greater than fifty percent (50%) – **the entire project site is considered a PDP and subject to stormwater requirements**

Step 1.1: Storm Water Quality Management Plan requirements

Step	Answer	Progression
Is the project a Standard Project, Priority Development Project (PDP), or exception to PDP definitions? To answer this item, complete Step 1 Project Type Determination Checklist on Pages 1 and 2, and see PDP exemption information below. For further guidance, see Section 1.4 of the Storm Water Design Manual *in its entirety*.	☐ Standard Project	Standard Project requirements apply, including Standard Project SWQMP. **Complete Form I-1.**
	X PDP ☐ PDP with ACP	Standard and PDP requirements apply, including PDP SWQMP. **SWQMP Required.** If participating in offsite alternative compliance, **complete Step 6.3 and an ACP SWQMP.**
	☐ PDP Exemption	**Go to Step 1.2 below.**

Step 1.2: Exemption to PDP definitions

Is the project exempt from PDP definitions based on either of the following:	If so:
☐ Projects that are only new or retrofit paved sidewalks, bicycle lanes, or trails that meet the following criteria: (i) Designed and constructed to direct storm water runoff to adjacent vegetated areas, or other non-erodible permeable areas; OR (ii) Designed and constructed to be hydraulically disconnected from paved streets or roads [i.e., runoff from the new improvement does not drain directly onto paved streets or roads]; OR (iii) Designed and constructed with permeable pavements or surfaces in accordance with County of San Diego Green Streets Infrastructure;	Standard Project requirements apply, AND any additional requirements specific to the type of project. City concurrence with the exemption is required. *Provide discussion and list any additional requirements below in this form.*
☐ Projects that are only retrofitting or redeveloping existing paved alleys, streets or roads that are designed and constructed in accordance with the City of Escondido Guidance on Green Infrastructure.	**PDP Exempt.**
Discussion / justification, and additional requirements for exceptions to PDP definitions, if applicable:	

Step 2: Construction Storm Water BMPs

Construction storm water BMPs shall be shown on the Grading Plan and (if applicable) included in the Storm Water Pollution Prevention Plan (SWPPP).

Step 3: City of Escondido PDP SWQMP Site Information Checklist (Form I-2a)

Step 3.1: Description of Existing Site Condition

Current Status of the Site (select all that apply): ☐ Existing development ☓ Previously graded but not built out ☐Demolition completed without new construction ☐Agricultural or other non-impervious use ☐Vacant, undeveloped/natural *Description / Additional Information:*
Existing Land Cover Includes (select all that apply and provide each area on site): ☐ Vegetative Cover ____Acres (______Square Feet) ☓ Non-Vegetated Pervious Areas _3.48____Acres (_151742______Square Feet) ☐ Impervious Areas ____Acres (______Square Feet) *Description / Additional Information:*
Underlying Soil belongs to Hydrologic Soil Group (select all that apply): ☓ NRCS Type A ☓ NRCS Type B ☐ NRCS Type C ☐NRCS Type D
Approximate Depth to Groundwater (GW) (or N/A for no infiltration BMPs): ☐GW Depth < 5 feet ☐5 feet < GW Depth < 10 feet ☓ 10 feet < GW Depth < 20 feet ☐GW Depth > 20 feet
Existing Natural Hydrologic Features (select all that apply): ☐Watercourses ☐Seeps ☐Springs ☐Wetlands ☓ None ☐Other *Description / Additional Information:*

Step 3.2: Description of Existing Site Drainage Patterns

How is storm water runoff conveyed from the site? At a minimum, this description should answer:

(1) Whether existing drainage conveyance is natural or urban;
(2) Is runoff from offsite conveyed through the site? if yes, quantify all offsite drainage areas, design flows, and locations where offsite flows enter the project site, and summarize how such flows are conveyed through the site;
(3) Provide details regarding existing project site drainage conveyance network, including any existing storm drains, concrete channels, swales, detention facilities, storm water treatment facilities, natural or constructed channels; and
(4) Identify all discharge locations from the existing project site along with a summary of conveyance system size and capacity for each of the discharge locations. Provide summary of the pre-project drainage areas and design flows to each of the existing runoff discharge locations.

Describe existing site drainage patterns: The existing site drainage is natural with topographic elevations ranging from approximately 728 to 688, sloping in a westerly direction. The drainage flows west towards Reidy Canyon Creek, located adjacent to the site, then approximately 2.6 miles towards the Escondido Creek then 13.8 miles to San Elijo Lagoon and the Pacific Ocean.

Step 3.3: Description of Proposed Site Development

Project Description / Proposed Land Use and/or Activities:

Project consists of constructing a 3-story building with a parking lot, landscaping and Bioretention basins for stormwater treatment.

List/describe proposed impervious features of the project (e.g., buildings, roadways, parking lots, courtyards, athletic courts, other impervious features):

Impervious features include building rooftops, sidewalks, driveways and a parking lot.

List/describe proposed pervious features of the project (e.g., landscape areas):

Pervious features include Pervious Turf block, landscaping and Bioretention basins for stormwater treatment.

Does the project include grading and changes to site topography?

X Yes

☐No

Description / Additional Information:

Minimal grading is proposed to accommodate the development.

Insert acreage or square feet for the different land cover types in the table below:

Change in Land Cover Type Summary			
Land Cover Type	Existing (acres)	Proposed (acres)	Percent Change
Vegetation	0	2.03	100 %
Pervious (non-vegetated)	3.48	0	100%
Impervious	0	1.4	100 %

Step 3.4: Description of Proposed Site Drainage Patterns

Does the project include changes to site drainage (e.g., installation of new storm water conveyance systems)?

X Yes

☐No

If yes, provide details regarding the proposed project site drainage conveyance network, including storm drains, concrete channels, swales, detention facilities, storm water treatment facilities, natural or constructed channels, and the method for conveying offsite flows through or around the proposed project site. Identify all discharge locations from the proposed project site along with a summary of the conveyance system size and capacity for each of the discharge locations. Provide a summary of pre- and post-project drainage areas and design flows to each of the runoff discharge locations. Reference the drainage study for detailed calculations.

Describe proposed site drainage patterns:

The project will maintain the existing drainage characteristics of the site. The runoff will be directed to a Bioretention basin for stormwater treatment and continue west towards Reidy Canyon Creek , located adjacent to the site, through a new storm drain system, then approximately 2.6 miles towards the Escondido Creek then 13.8 miles to San Elijo Lagoon and the Pacific Ocean.

Step 3.5: Potential Pollutant Source Areas

Identify whether any of the following features, activities, and/or pollutant source areas will be present (select all that apply).

X On-site storm drain inlets
X Interior floor drains and elevator shaft sump pumps
☐ Interior parking garages
☐ Need for future indoor & structural pest control
X Landscape/Outdoor Pesticide Use
☐ Pools, spas, ponds, decorative fountains, and other water features
☐ Food service
X Refuse areas
☐ Industrial processes
☐ Outdoor storage of equipment or materials
☐ Vehicle and Equipment Cleaning
☐ Vehicle/Equipment Repair and Maintenance
☐ Fuel Dispensing Areas
☐ Loading Docks
X Fire Sprinkler Test Water
☐ Miscellaneous Drain or Wash Water
X Plazas, sidewalks, and parking lots
☐ Other (provide description)

Description / Additional Information:

Step 3.6: Identification and Narrative of Receiving Water and Pollutants of Concern

Describe flow path of storm water from the project site discharge location(s), through urban storm conveyance systems as applicable, to receiving creeks, rivers, and lagoons as applicable, and ultimate discharge to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable): The drainage flows west towards Reidy Canyon Creek, located adjacent to the site, then approximately 2.6 miles towards the Escondido Creek then 13.8 miles to San Elijo Lagoon and the Pacific Ocean.
List any 303(d) impaired water bodies[2] within the path of storm water from the project site to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable), identify the pollutant(s)/stressor(s) causing impairment, and identify any TMDLs and/or Highest Priority Pollutants from the WQIP for the impaired water bodies:

303(d) Impaired Water Body	Pollutant(s)/Stressor(s)	TMDLs / WQIP Highest Priority Pollutant
Reidy Canyon Creek	Nitrogen, Nitrite, Phosphorus, Total Nitrogen as N, Turbidity	
Escondido Creek	DDT, Enterococcus, Fecal Coliform, Manganese, Phosphate, Selenium, Sulfates, Total Dissolved Solids, Total Nitrogen as N, Toxicity	
San Elijo Lagoon	Eutrophic, Indicator Bacteria, Sedimentation/Siltation	
Pacific Ocean Shoreline, San Elijo	Total Coliform	

Identification of Project Site Pollutants* *Identification of project site pollutants below is only required if flow-thru treatment BMPs are implemented onsite in lieu of retention or biofiltration BMPs. Note the project must also participate in an alternative compliance program (unless prior lawful approval to meet earlier PDP requirements is demonstrated).
Identify pollutants expected from the project site based on all proposed use(s) of the site (see Storm Water Design Manual Appendix B.6):

Pollutant	Not Applicable to the Project Site	Anticipated from the Project Site	Also a Receiving Water Pollutant of Concern
Sediment			
Nutrients			
Heavy Metals			
Organic Compounds			
Trash & Debris			

Oxygen Demanding Substances			
Oil & Grease			
Bacteria & Viruses			
Pesticides			

[2] The current list of Section 303(d) impaired water bodies can be found at http://www.waterboards.ca.gov/water_issues/programs/water_quality_assessment/#impaired

Step 3.7: Hydromodification Management Requirements

Do hydromodification management requirements apply (see Section 1.6 of the Storm Water Design Manual)?

☒ Yes, hydromodification management requirements for flow control and preservation of critical coarse sediment yield areas are applicable.
☐ No, the project will discharge runoff directly to existing underground storm drains discharging directly to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean.
☐ No, the project will discharge runoff directly to conveyance channels whose bed and bank are concrete-lined all the way from the point of discharge to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean.
☐ No, the project will discharge runoff directly to an area identified as appropriate for an exemption by the WMAA[3] for the watershed in which the project resides.

Description / Additional Information (to be provided if a 'No' answer has been selected above):

[3]The Watershed Management Area Analysis (WMAA) is an optional element for inclusion in the Water Quality Improvement Plans (WQIPs) described in the 2013 MS4 Permit [Provision B.3.b.(4)]. It is available online at the Project Clean Water website: http://www.projectcleanwater.org/index.php?option=com_content&view=article&id=248

Step 3.7.1: Critical Coarse Sediment Yield Areas*

***This Section only required if hydromodification management requirements apply**

Based on the maps provided within the WMAA, do potential critical coarse sediment yield areas exist within the project drainage boundaries?

Yes
X No, no critical coarse sediment yield areas to be protected based on WMAA maps

If yes, have any of the optional analyses presented in Section 6.2 of the manual been performed?

6.2.1 Verification of GLUs (classification that provides an estimate of sediment yield based on geology, hillslope, and land cover) Onsite
6.2.2 Downstream Systems Sensitivity to Coarse Sediment
6.2.3 Optional Additional Analysis of Potential Critical Coarse Sediment Yield Areas Onsite
No optional analyses performed, the project will avoid critical coarse sediment yield areas identified based on WMAA maps

If optional analyses were performed, what is the final result?

No critical coarse sediment yield areas to be protected based on verification of GLUs onsite.
Critical coarse sediment yield areas exist but additional analysis has determined that protection is not required. Documentation attached in Attachment 8 of the SWQMP.
Critical coarse sediment yield areas exist and require protection. The project will implement management measures described in Sections 6.2.4 and 6.2.5 as applicable, and the areas are identified on the SWQMP Exhibit.

Discussion / Additional Information:

Flow Control for Post-Project Runoff*

***This Section only required if hydromodification management requirements apply**
List and describe point(s) of compliance (POCs) for flow control for hydromodification management (see Section 6.3.1). For each POC, provide a POC identification name or number correlating to the project's HMP Exhibit and a receiving channel identification name or number correlating to the project's HMP Exhibit. POC 1 Located at the southwest corner of the site
Has a geomorphic assessment been performed for the receiving channel(s)? ☐No, the low flow threshold is 0.1Q2 (default low flow threshold) ☐Yes, the result is the low flow threshold is 0.1Q2 ☐Yes, the result is the low flow threshold is 0.3Q2 X Yes, the result is the low flow threshold is 0.5Q2 *If a geomorphic assessment has been performed, provide title, date, and preparer:* *The city has performed a geomorphic assessment for Escondido Creek determining Low Suceptibility.* *Discussion / Additional Information: (optional)*

Step 3.8: Other Site Requirements and Constraints

When applicable, list other site requirements or constraints that will influence storm water management design, such as zoning requirements including setbacks and open space, or local codes governing minimum street width, sidewalk construction, allowable pavement types, and drainage requirements.

Optional Additional Information or Continuation of Previous Sections As Needed
This space provided for additional information or continuation of information from previous sections as needed.

Step 4: Source Control BMP Checklist (Form I-2b)

Source Control BMPs			
All development projects must implement source control BMPs 4.2.1 through 4.2.6 where applicable and feasible. See Chapter 4.2 and Appendix E of the City Storm Water Design Manual for information to implement source control BMPs shown in this checklist. The following checklists serve as guides only. Mark what elements are included in your project. See Storm Water Design Manual Chapter 4 and Appendix E for more information on determining appropriate BMPs for your project. Answer each category below pursuant to the following: • "Yes" means the project will implement the source control BMP as described in Chapter 4.2 and/or Appendix E of the City Storm Water Design Manual. Discussion / justification is not required. • "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided. • "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project has no outdoor materials storage areas). Discussion / justification must be provided.			
Source Control Requirement	**Applied?**		
SC-1 Prevention of Illicit Discharges into the MS4	X Yes	☐No	☐N/A
X Direct irrigation water away from impervious surfaces X Direct vehicle wash water away from impervious surfaces ☐ Other: ____________ *Discussion / justification if SC-1 not implemented:*			
SC-2 Storm Drain Stenciling or Signage	X Yes	☐No	☐N/A
X Stencil or stamp storm drains with anti-dumping message X Post signs prohibiting illegal dumping ☐ Other *Discussion / justification if SC-2 not implemented:*			
SC-3 Protect Outdoor Materials Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☐Yes	☐No	X N/A
☐ Store materials inside a covered enclosure ☐ Direct runoff from downspouts and roofs away from storage areas ☐ Other *Discussion / justification if SC-3 not implemented:* *Not Proposed*			

SC-4 Protect Materials Stored in Outdoor Work Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☐Yes	☐No	X N/A
☐ Locate work area away from storm drains or catch basins ☐ Work over impermeable surfaces where spills and pollutants can be captured and removed *Discussion / justification if SC-4 not implemented:* Not Proposed			
SC-5 Protect Trash Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	XYes	☐No	☐N/A
X Locate trash containers in a roofed, walled enclosure X Locate trash containers away from storm drains *Discussion / justification if SC-5 not implemented:*			
SC-6 Additional BMPs Based on Potential Sources of Runoff Pollutants (must answer for each source listed below):			
X A. On-site storm drain inlets	XYes	☐No	☐N/A
X B. Interior floor drains and elevator shaft sump pumps	XYes	☐No	☐N/A
☐ C. Interior parking garages	☐Yes	☐No	XN/A
☐ D. Need for future indoor & structural pest control	☐Yes	☐No	XN/A
X E. Landscape/outdoor pesticide use	XYes	☐No	☐N/A
☐ F. Pools, spas, ponds, fountains, and other water features	☐Yes	☐No	XN/A
☐ G. Food service	☐Yes	☐No	XN/A
X H. Refuse areas	XYes	☐No	☐N/A
☐ I. Industrial processes	☐Yes	☐No	XN/A
☐ J. Outdoor storage of equipment or materials	☐Yes	☐No	XN/A
☐ K. Vehicle and equipment cleaning	☐Yes	☐No	XN/A
☐ L. Vehicle/equipment repair and maintenance	☐Yes	☐No	XN/A
☐ M. Fuel dispensing areas	☐Yes	☐No	XN/A
☐ N. Loading docks	☐Yes	☐No	XN/A
X O. Fire sprinkler test water	XYes	☐No	☐N/A
☐ P. Miscellaneous drain or wash water	☐Yes	☐No	XN/A
X Q. Plazas, sidewalks, and parking lots	XYes	☐No	☒N/A
Discussion / justification if SC-6 not implemented. Clearly identify which sources of runoff pollutants are discussed. Justification must be provided for all "No" answers shown above.			

Note: Show all source control measures described above that are included in design capture volume calculations in the plan sheets of Attachment 5.

Step 5: Site Design BMP Checklist (Form I-2c)

Site Design BMPs			
All development projects must implement site design BMPs SD-A through SD-H where applicable and feasible. See Chapter 4.3 and Appendix E of the City Storm Water Design Manual for information to implement site design BMPs shown in this checklist. The following checklists serve as guides only. Mark what elements are included in your project. See Storm Water Design Manual Chapter 4 and Appendix E for more information on determining appropriate BMPs for your project. Answer each category below pursuant to the following: • "Yes" means the project will implement the site design BMP as described in Chapter 4.3 and/or Appendix E of the City Storm Water Design Manual. Discussion / justification is not required. • "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided. • "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project site has no existing natural areas to conserve). Discussion / justification must be provided.			
Site Design Requirement	**Applied?**		
SD-1 Maintain Natural Drainage Pathways and Hydrologic Features	X Yes	☐No	☐N/A
X Maintain existing drainage patterns *Discussion / justification if SD-1 not implemented:*			
SD-2 Conserve Natural Areas, Soils, and Vegetation	☐Yes	☐No	X N/A
☐ Preserve trees (see Zoning Code Art. 55 Grading & Erosion Control; Art. 62 Landscape Regulations) ☐ Avoid sensitive areas such as wetlands and waterways *Discussion / justification if SD-2 not implemented:* *None existing*			
SD-3 Minimize Impervious Area	xYes	☐No	☐N/A
x Install parking and driving aisles to minimum width required to meet standards *Discussion / justification if SD-3 not implemented:*			

SD-4 Minimize Soil Compaction	xYes	☐No	☐N/A
x Avoid compaction in planned landscaped spaces x Till and amend soil for improved infiltration capacity *Discussion / justification if SD-4 not implemented:*			
SD-5 Impervious Area Dispersion	☐Yes	X No	☐N/A
☐ Drain rooftops, roads or sidewalks into adjacent landscape areas ☐ Drain impervious surfaces through pervious areas *Discussion / justification if SD-5 not implemented:* Note feasible due to distant location of landscaped areas			
SD-6 Runoff Collection			
Discussion / justification if SD-6 not implemented: Not feasible due to lack of space and low water demand	☐Yes	X No	☐N/A
SD-7 Landscaping with Native or Drought Tolerant Species			
Discussion / justification if SD-7 not implemented:	XYes	☐No	☐N/A
SD-8 Harvesting and Using Precipitation			
Discussion / justification if SD-8 not implemented: *Harvesting is unfeasible due to low water demand and lack of space.*	☐Yes	X No	☐N/A

Note: Show all site design measures described above that are included in design capture volume calculations in the plan sheets of Attachment 5.

Step 6: PDP Structural BMPs (Form I-3)

All PDPs must implement structural BMPs for storm water pollutant control (see Chapter 5 of the Storm Water Design Manual). Selection of PDP structural BMPs for storm water pollutant control must be based on the selection process described in Chapter 5. PDPs subject to hydromodification management requirements must also implement structural BMPs for flow control for hydromodification management (see Chapter 6 of the Storm Water Design Manual). Both storm water pollutant control and flow control for hydromodification management can be achieved within the same structural BMP(s).

PDP structural BMPs must be verified by the City at the completion of construction. This may include requiring the project owner or project owner's representative and engineer of record to certify construction of the structural BMPs (see Section 8.2.3.2 of the Storm Water Design Manual). PDP structural BMPs must be maintained into perpetuity, and the City must confirm the maintenance (see Section 7 of the Storm Water Design Manual).

Use this section to provide narrative description of the general strategy for structural BMP implementation at the project site in the box below. Then complete the PDP structural BMP summary information sheet (Step 6.2) for each structural BMP within the project (copy the BMP summary information sheet [Step 6.2] as many times as needed to provide summary information for each individual structural BMP).

Step 6.1: Description of structural BMP strategy

Describe the general strategy for structural BMP implementation at the site. This information must describe how the steps for selecting and designing storm water pollutant control BMPs presented in Section 5.1 of the Storm Water D*esign Manual were followed, and the results (type of BMPs selected). For projects requiring hydromodification flow control BMPs, indicate whether pollutant control and flow control BMPs are integrated or separate. At the end of this discussion provide a summary of all the structural BMPs within the project including the type and number.*

Bioretention was selected as the most efficient BMP to treat the project's anticipated and expected pollutants. Bioretention is used for treatment and hydromodification.

The Bioretention basins were designed and sized in accordance with design criteria and considerations listed in the BMP design manual BF-1 Bioretention fact sheets.

Runoff factors were adjusted to account for the site design BMPs and the DCV was calculated.

Harvest and use of stormwater within the project was found unfeasible because there will be no significant demand with the proposed drought tolerant landscaping and development type, also due to limited space.

Infiltration is unfeasible according to Form I-5 determination.

1.25 acres of the site will be self-mitigating.

(Continue on following page as necessary.)

Description of structural **BMP** strategy continued (Page reserved for continuation of description of general strategy for structural **BMP** implementation at the site)
(Continued from previous page)

Step 6.2: Structural BMP Checklist

(Copy this page as needed to provide information for each individual proposed structural BMP)	
Structural BMP ID No. DMA A	
Construction Plan Sheet No. BMP Map	
Type of structural BMP: ☐Retention by harvest and use (HU-1) ☐Retention by infiltration basin (INF-1) ☓ Retention by bioretention (INF-2) ☐Retention by permeable pavement (INF-3) ☐ Partial retention by biofiltration with partial retention (PR-1) ☐ Biofiltration (BF-1) ☐Biofiltration with Nutrient Sensitive Media Design (BF-2) ☐Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F ☐Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) ☐ Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below) ☐Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) ☐Detention pond or vault for hydromodification management ☐Other (describe in discussion section below)	
Purpose: ☐Pollutant control only ☐Hydromodification control only ☓ Combined pollutant control and hydromodification control ☐Pre-treatment/forebay for another structural BMP ☐Other (describe in discussion section below)	
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms (See Section 8.2.3.2 of the Storm Water Design Manual)	SPEAR & ASSOCIATES, INC. c/o Josh Ziegler, P.E. 475 Production Street, San Marcos, CA 92078 Phone: (760) 736-2040
Who will be the final owner of this BMP?	☐HOA ☓ Property Owner ☐City ☐Other (describe)
Who will maintain this BMP into perpetuity?	☐HOA ☓ Property Owner ☐City ☐Other (describe)
Discussion (as needed):	

(Copy this page as needed to provide information for each individual proposed structural BMP)	
Structural BMP ID No. DMA B	
Construction Plan Sheet No. BMP Map	
Type of structural BMP: ☐Retention by harvest and use (HU-1) ☐Retention by infiltration basin (INF-1) X Retention by bioretention (INF-2) ☐Retention by permeable pavement (INF-3) ☐ Partial retention by biofiltration with partial retention (PR-1) ☐ Biofiltration (BF-1) ☐Biofiltration with Nutrient Sensitive Media Design (BF-2) ☐Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F ☐Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) ☐ Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below) ☐Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) ☐Detention pond or vault for hydromodification management ☐Other (describe in discussion section below)	
Purpose: ☐Pollutant control only ☐Hydromodification control only X Combined pollutant control and hydromodification control ☐Pre-treatment/forebay for another structural BMP ☐Other (describe in discussion section below)	
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms (See Section 8.2.3.2 of the Storm Water Design Manual)	SPEAR & ASSOCIATES, INC. c/o Josh Ziegler, P.E. 475 Production Street, San Marcos, CA 92078 Phone: (760) 736-2040
Who will be the final owner of this BMP?	☐HOA X Property Owner ☐City ☐Other (describe)
Who will maintain this BMP into perpetuity?	☐HOA X Property Owner ☐City ☐Other (describe)
Discussion (as needed):	

Step 6.3: Offsite Alternative Compliance Participation Form

THIS FORM IS NOT APPLICABLE AT THIS TIME: An Alternative Compliance Program is under consideration by the City of Escondido.	
PDP INFORMATION	
Record ID:	
Assessor's Parcel Number(s) [APN(s)]	
What are your PDP Pollutant Control Debits? *See Attachment 1 of the PDP SWQMP	
What are your PDP HMP Debits? (if applicable) *See Attachment 2 of the PDP SWQMP	
ACP Information	
Record ID:	
Assessor's Parcel Number(s) [APN(s)]	
Project Owner/Address	
What are your ACP Pollutant Control Credits? *See Attachment 1 of the ACP SWQMP	
What are your ACP HMP Debits? (if applicable) *See Attachment 2 of the ACP SWQMP	
Is your ACP in the same watershed as your PDP? ☐Yes ☐No	Will your ACP project be completed prior to the completion of the PDP? ☐Yes ☐No
Does your ACP account for all Deficits generated by the PDP? ☐Yes ☐No (PDP and/or ACP must be redesigned to account for all deficits generated by the PDP.)	What is the difference between your PDP debits and ACP Credits? *(ACP Credits -Total PDP Debits = Total Earned Credits) ____________________________

ATTACHMENT 1

BACKUP FOR PDP POLLUTANT CONTROL BMPS

This is the cover sheet for Attachment 1.

Indicate which Items are Included behind this cover sheet:

Attachment Sequence	**Contents**	**Checklist**
Attachment 1a	Storm Water Pollutant Control Worksheet Calculations -Worksheet B.2-1 (Required) -Worksheet B.3-1 (Form I-4; Required) -Worksheet B.4-1 (if applicable) -Worksheet B.5-1 (if applicable) -Worksheet B.5-2 (if applicable) -Worksheet B.5-3 (if applicable) -Worksheet B.6-1 (if applicable) -Summary Worksheet (optional)	X Included
Attachment 1b	Form I-5, Categorization of Infiltration Feasibility Condition (Required unless the project will use harvest and use BMPs) Refer to Appendices C and D of the Storm Water Design Manual to complete Form I-5.	X Included ☐ Not included because the entire project will use harvest and use BMPs
Attachment 1c	Form I-6, Factor of Safety and Design Infiltration Rate Worksheet (Required unless the project will use harvest and use BMPs) Refer to Appendices C and D of the Storm Water Design Manual to complete Form I-6.	X Included ☐ Not included because the entire project will use harvest and use BMPs
Attachment 1d	DMA Exhibit (Required) See DMA Exhibit Checklist on the back of this Attachment cover sheet.	X Included
Attachment 1e	Individual Structural BMP DMA Mapbook (Required) -Place each map on 8.5"x11" paper. -Show at a minimum the DMA, Structural BMP, and any existing hydrologic features within the DMA.	X Included

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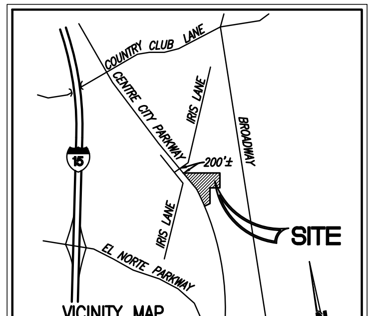
Use this checklist to ensure the required information has been included on the DMA Exhibit:

The DMA Exhibit must identify:

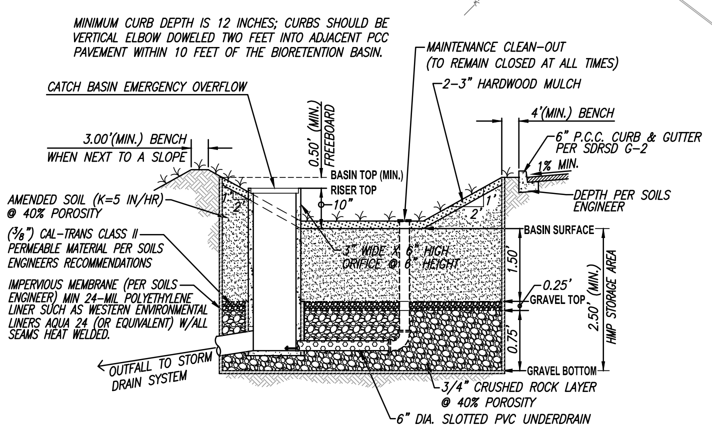
☐Underlying hydrologic soil group
☐Approximate depth to groundwater
☐Existing natural hydrologic features (watercourses, seeps, springs, wetlands)
☐Critical coarse sediment yield areas to be protected
☐Existing topography and impervious areas
☐Existing and proposed site drainage network and connections to drainage offsite
☐Proposed demolition
☐Proposed grading
☐Proposed impervious features
☐Proposed design features and surface treatments used to minimize imperviousness
☐Drainage management area (DMA) boundaries, DMA ID numbers, and DMA areas (square footage or acreage), and DMA type (i.e., drains to BMP, self-retaining, or self-mitigating)
☐Potential pollutant source areas and corresponding required source controls (see Chapter 4, Appendix E.1, and Step 3.5)
☐Structural BMPs (identify location, structural BMP ID#, type of BMP, and size/detail)

Self Mitigating Area

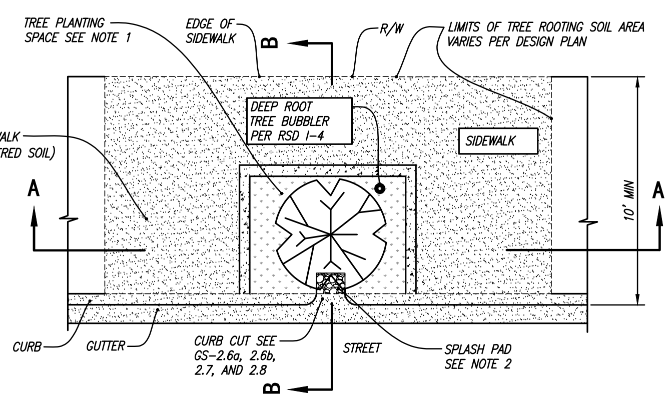
SM-1 = 54,285 s.f.



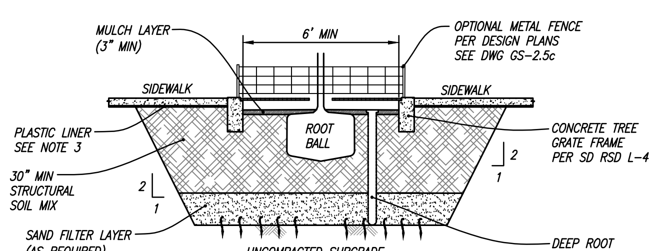
VICINITY MAP
NOT TO SCALE
T.B.M. PG. 1109, G-5



BIORETENTION (INF-2) BASIN TYPICAL SECTION
TYPICAL DETAIL & OUTLET CONNECTION
INSTALLED BMP SHALL COMPLY WITH BF-1 BMP DESIGN FACT SHEET
NOT-TO-SCALE



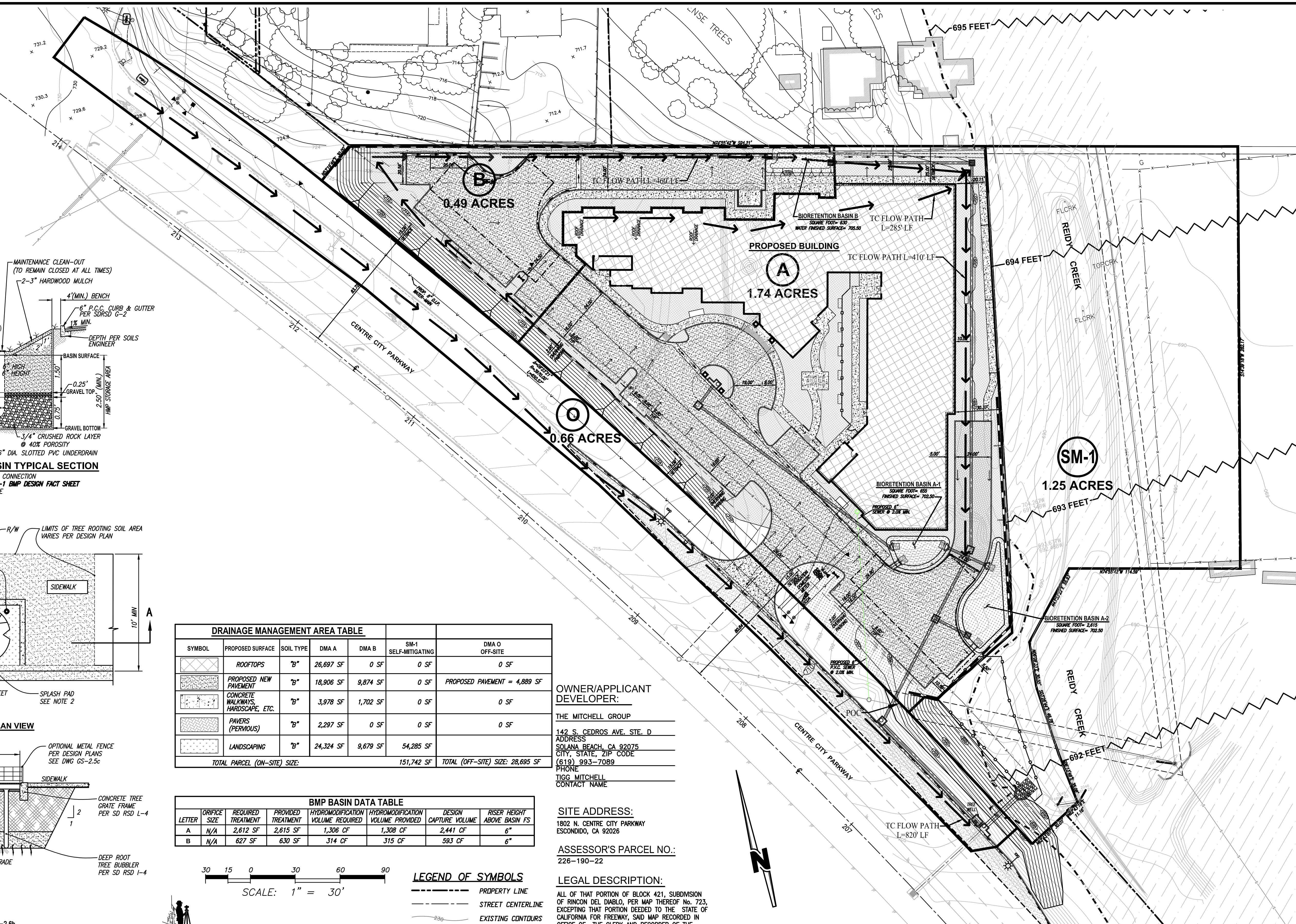
TREE-WELL PLAN VIEW



SECTION A-A

NOTES:

1. MINIMUM OPEN TREE PLANTING SPACE DIMENSION 4'x6'.
2. PROVIDE SPLASH PAD FOR TREE PLANTING SPACE PER GS-2.6b.
3. PROVIDE PLASTIC LINER WHERE CONCRETE WILL BE POURED ON TOP OF STRUCTURAL SOIL PER GREEN BOOK STANDARD SPECIFICATIONS SECTION 210-2.
4. MINIMUM VOLUME REQUIRED = 122 C.F. 10' WIDE x 6' LONG x 5' DEEP (30" MEDIA, 30" SAND FILTER LAYER)



DRAINAGE MANAGEMENT AREA TABLE

SYMBOL	PROPOSED SURFACE	SOIL TYPE	DMA A	DMA B	SM-1 SELF-MITIGATING	DMA O OFF-SITE
	ROOFTOPS	"B"	26,697 SF	0 SF	0 SF	0 SF
	PROPOSED NEW PAVEMENT	"B"	18,906 SF	9,874 SF	0 SF	PROPOSED PAVEMENT = 4,889 SF
	CONCRETE WALKWAYS, HARDSCAPE, ETC.	"B"	3,978 SF	1,702 SF	0 SF	0 SF
	PAVERS (PERVIOUS)	"B"	2,297 SF	0 SF	0 SF	0 SF
	LANDSCAPING	"B"	24,324 SF	9,679 SF	54,285 SF	
TOTAL PARCEL (ON-SITE) SIZE:					151,742 SF	TOTAL (OFF-SITE) SIZE: 28,695 SF

BMP BASIN DATA TABLE

LETTER	ORIFICE SIZE	REQUIRED TREATMENT	PROVIDED TREATMENT	HYDROMODIFICATION VOLUME REQUIRED	HYDROMODIFICATION VOLUME PROVIDED	DESIGN CAPTURE VOLUME	RISER HEIGHT ABOVE BASIN FS
A	N/A	2,612 SF	2,615 SF	1,306 CF	1,308 CF	2,441 CF	6"
B	N/A	627 SF	630 SF	314 CF	315 CF	593 CF	6"

30 15 0 30 60 90
SCALE: 1" = 30'

LEGEND OF SYMBOLS

- PROPERTY LINE
- STREET CENTERLINE
- 230 EXISTING CONTOURS
- LONGEST FLOW PATH
- DRAINAGE AREA

NOTE:
INTERIOR FLOOR DRAINS AND ELEVATOR SHAFT SUMP WILL DRAIN TO THE SANITARY SEWER SYSTEM.

OWNER/APPLICANT DEVELOPER:

THE MITCHELL GROUP

142 S. CEDROS AVE. STE. D
ADDRESS
SOLANA BEACH, CA 92075
CITY, STATE, ZIP CODE
(619) 993-7089
PHONE
TIGG MITCHELL
CONTACT NAME

SITE ADDRESS:
1802 N. CENTRE CITY PARKWAY
ESCONDIDO, CA 92026

ASSESSOR'S PARCEL NO.:
226-190-22

LEGAL DESCRIPTION:
ALL OF THAT PORTION OF BLOCK 421, SUBDIVISION OF RINCON DEL DIABLO, PER MAP THEREOF No. 723, EXCEPTING THAT PORTION DEEDED TO THE STATE OF CALIFORNIA FOR FREEWAY, SAID MAP RECORDED IN OFFICE OF THE CLERK AND RECORDER OF THE COUNTY OF SAN DIEGO, CALIFORNIA.

PLANS PREPARED BY:
SPEAR & ASSOCIATES, INC.
475 PRODUCTION STREET, SAN MARCOS, CA. 92078
PHONE (760) 736-2040 FAX (760) 736-4866

ESCONDIDO ASSISTED LIVING
POST-DEVELOPMENT DRAINAGE AREA MAP

SPEAR & ASSOCIATES, INC. JOB NO: 17-174 JRZ

Automated Worksheet B.3-1: Project-Scale BMP Feasibility Analysis (V1.3)

Category	#	Description	Value	Units
Capture & Use Inputs	0	Design Capture Volume for Entire Project Site	3,034	cubic-feet
	1	Proposed Development Type	Office	unitless
	2	Number of Residents or Employees at Proposed Development	20	#
	3	Total Planted Area within Development	88,288	sq-ft
	4	Water Use Category for Proposed Planted Areas	Low	unitless
Infiltration Inputs	5	Is Average Site Design Infiltration Rate ≤0.500 Inches per Hour?	Yes	yes/no
	6	Is Average Site Design Infiltration Rate ≤0.010 Inches per Hour?	No	yes/no
	7	Is Infiltration of the Full DCV Anticipated to Produce Negative Impacts?	Yes	yes/no
	8	Is Infiltration of Any Volume Anticipated to Produce Negative Impacts?	Yes	yes/no
Calculations	9	36-Hour Toilet Use Per Resident or Employee	1.40	cubic-feet
	10	Subtotal: Anticipated 36 Hour Toilet Use	28	cubic-feet
	11	Anticipated 1 Acre Landscape Use Over 36 Hours	52.14	cubic-feet
	12	Subtotal: Anticipated Landscape Use Over 36 Hours	106	cubic-feet
	13	Total Anticipated Use Over 36 Hours	134	cubic-feet
	14	Total Anticipated Use / Design Capture Volume	0.04	cubic-feet
	15	Are Full Capture and Use Techniques Feasible for this Project?	No	unitless
	16	Is Full Retention Feasible for this Project?	No	yes/no
	17	Is Partial Retention Feasible for this Project?	No	yes/no
Result	18	Feasibility Category	5	1, 2, 3, 4, 5

Worksheet B.3-1 General Notes:

A. Applicants may use this worksheet to determine the types of structural BMPs that are acceptable for implementation at their project site (as required in Section 5 of the BMPDM). User input should be provided for yellow shaded cells, values for all other cells will be automatically generated. Projects demonstrating feasibility or potential feasibility via this worksheet are encouraged to incorporate capture and use features in their project.

B. Negative impacts associated with retention may include geotechnical, groundwater, water balance, or other issues identified by a geotechnical engineer and substantiated through completion of Form I-8.

C. Feasibility Category 1: Applicant must implement capture & use, retention, and/or infiltration elements for the entire DCV.

D. Feasibility Category 2: Applicant must implement capture & use elements for the entire DCV.

E. Feasibility Category 3: Applicant must implement retention and/or infiltration elements for all DMAs with Design Infiltration Rates greater than 0.50 in/hr.

F. Feasibility Category 4: Applicant must implement standard unlined biofiltration BMPs sized at ≥3% of the effective impervious tributary area for all DMAs with Design Infiltration Rates of 0.011 to 0.50 in/hr. Applicants may be permitted to implement lined BMPs, reduced size BMPs, and/or specialized biofiltration BMPs provided additional criteria identified in "Supplemental Retention Criteria for Non-Standard Biofiltration BMPs" are satisfied.

G. Feasibility Category 5: Applicant must implement standard lined biofiltration BMPs sized at ≥3% of the effective impervious tributary area for all DMAs with Design Infiltration Rates of 0.010 in/hr or less. Applicants may also be permitted to implement reduced size and/or specialized biofiltration BMPs provided additional criteria identified in "Supplemental Retention Criteria for Non-Standard Biofiltration BMPs" are satisfied.

H. PDPs participating in an offsite alternative compliance program are not held to the feasibility categories presented herein.

Automated Worksheet B.1-1: Calculation of Design Capture Volume (V1.3)

Category	#	Description	*i*	*ii*	*iii*	*iv*	*v*	*vi*	*vii*	*viii*	*ix*	*x*	Units
Standard Drainage Basin Inputs	0	Drainage Basin ID or Name	A	B	O (road)								unitless
	1	Basin Drains to the Following BMP Type	Biofiltration	Biofiltration	Biofiltration								unitless
	2	85th Percentile 24-hr Storm Depth	0.62	0.62	0.62								inches
	3	Design Infiltration Rate Recommended by Geotechnical Engineer	0.125	0.125	0.125								in/hr
	4	Impervious Surfaces Not Directed to Dispersion Area (C=0.90)	49,581	11,576	4,889								sq-ft
	5	Semi-Pervious Surfaces Not Serving as Dispersion Area (C=0.30)											sq-ft
	6	Engineered Pervious Surfaces Not Serving as Dispersion Area (C=0.10)	26,621	9,679									sq-ft
	7	Natural Type A Soil Not Serving as Dispersion Area (C=0.10)											sq-ft
	8	Natural Type B Soil Not Serving as Dispersion Area (C=0.14)											sq-ft
	9	Natural Type C Soil Not Serving as Dispersion Area (C=0.23)											sq-ft
	10	Natural Type D Soil Not Serving as Dispersion Area (C=0.30)											sq-ft
Dispersion Area, Tree Well & Rain Barrel Inputs (Optional)	11	Does Tributary Incorporate Dispersion, Tree Wells, and/or Rain Barrels?	No	No	Yes	No	No	No	No	No	No	No	yes/no
	12	Impervious Surfaces **Directed to Dispersion Area** per SD-B (Ci=0.90)											sq-ft
	13	Semi-Pervious Surfaces **Serving as Dispersion Area** per SD-B (Ci=0.30)											sq-ft
	14	Engineered Pervious Surfaces **Serving as Dispersion Area** per SD-B (Ci=0.10)											sq-ft
	15	Natural Type A Soil **Serving as Dispersion Area** per SD-B (Ci=0.10)											sq-ft
	16	Natural Type B Soil **Serving as Dispersion Area** per SD-B (Ci=0.14)											sq-ft
	17	Natural Type C Soil **Serving as Dispersion Area** per SD-B (Ci=0.23)											sq-ft
	18	Natural Type D Soil **Serving as Dispersion Area** per SD-B (Ci=0.30)											sq-ft
	19	Number of Tree Wells Proposed per SD-A			1								#
	20	Average Mature Tree Canopy Diameter			25								ft
	21	Number of Rain Barrels Proposed per SD-E											#
	22	Average Rain Barrel Size											gal
Treatment Train Inputs & Calculations	23	Does BMP Overflow to Stormwater Features in Downstream Drainage?	No	No	No	No	No	No	No	No	No	No	unitless
	24	Identify Downstream Drainage Basin Providing Treatment in Series											unitless
	25	Percent of Upstream Flows Directed to Downstream Dispersion Areas											percent
	26	Upstream Impervious Surfaces Directed to Dispersion Area (Ci=0.90)	0	0	0	0	0	0	0	0	0	0	cubic-feet
	27	Upstream Impervious Surfaces Not Directed to Dispersion Area (C=0.90)	0	0	0	0	0	0	0	0	0	0	cubic-feet
Initial Runoff Factor Calculation	28	Total Tributary Area	76,202	21,255	4,889	0	0	0	0	0	0	0	sq-ft
	29	Initial Runoff Factor for Standard Drainage Areas	0.62	0.54	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	30	Initial Runoff Factor for Dispersed & Dispersion Areas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	31	Initial Weighted Runoff Factor	0.62	0.54	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	32	Initial Design Capture Volume	2,441	593	227	0	0	0	0	0	0	0	cubic-feet
Dispersion Area Adjustments	33	Total Impervious Area Dispersed to Pervious Surface	0	0	0	0	0	0	0	0	0	0	sq-ft
	34	Total Pervious Dispersion Area	0	0	0	0	0	0	0	0	0	0	sq-ft
	35	Ratio of Dispersed Impervious Area to Pervious Dispersion Area	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	ratio
	36	Adjustment Factor for Dispersed & Dispersion Areas	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	ratio
	37	Runoff Factor After Dispersion Techniques	0.62	0.54	0.90	n/a	n/a	n/a	n/a	n/a	n/a	n/a	unitless
	38	Design Capture Volume After Dispersion Techniques	2,441	593	227	0	0	0	0	0	0	0	cubic-feet
Tree & Barrel Adjustments	39	Total Tree Well Volume Reduction	0	0	290	0	0	0	0	0	0	0	cubic-feet
	40	Total Rain Barrel Volume Reduction	0	0	0	0	0	0	0	0	0	0	cubic-feet
Results	41	Final Adjusted Runoff Factor	0.62	0.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	42	Final Effective Tributary Area	47,245	11,478	0	0	0	0	0	0	0	0	sq-ft
	43	Initial Design Capture Volume Retained by Site Design Elements	0	0	290	0	0	0	0	0	0	0	cubic-feet
	44	Final Design Capture Volume Tributary to BMP	2,441	593	0	0	0	0	0	0	0	0	cubic-feet

Worksheet B.1-1 General Notes:

A. Applicants may use this worksheet to calculate design capture volumes for up to 10 drainage areas User input must be provided for yellow shaded cells, values for all other cells will be automatically generated, errors/notifications will be highlighted in red and summarized below. Upon completion of this worksheet, proceed to the appropriate BMP Sizing worksheet(s).

Appendix B: Storm Water Pollutant Control Hydrologic Calculations and Sizing Methods

Worksheet B.5-1: Simple Sizing Method for Biofiltration BMPs

DMA A

Simple Sizing Method for Biofiltration BMPs		Worksheet B.5-1	
1	Remaining DCV after implementing retention BMPs	2,441.00	cubic- feet
Partial Retention			
2	Infiltration rate from Worksheet D.5-1 if partial infiltration is feasible	0.000	in/hr.
3	Allowable drawdown time for aggregate storage below the underdrain	36	hours
4	Depth of runoff that can be infiltrated [Line 2 x Line 3]	0	inches
5	Aggregate pore space	0.4	in/in
6	Required depth of gravel below the underdrain [Line 4/ Line 5]	0	inches
7	Assumed surface area of the biofiltration BMP	2,615.00	sq-ft
8	Media retained pore storage	0.1	in/in
9	Volume retained by BMP [[Line 4 + (Line 12 x Line 8)]/12] x Line 7	392.25	cubic- feet
10	DCV that requires biofiltration [Line 1 – Line 9]	2,048.75	cubic- feet
BMP Parameters			
11	Surface Ponding [6 inch minimum, 12 inch maximum]	6.00	inches
12	Media Thickness [18 inches minimum], also add mulch layer thickness to this line for sizing calculations	18.00	inches
13	Aggregate Storage above underdrain invert (12 inches typical) – use 0 inches for sizing if the aggregate is not over the entire bottom surface area	9.00	inches
14	Freely drained pore storage	0.2	in/in
15	Media filtration rate to be used for sizing (5 in/hr. with no outlet control; if the filtration rate is controlled by the outlet use the outlet controlled rate which will be less than 5 in/hr.)	5.00	in/hr.
Baseline Calculations			
16	Allowable Routing Time for sizing	6	hours
17	Depth filtered during storm [Line 15 x Line 16]	30	inches
18	Depth of Detention Storage [Line 11 + (Line 12 x Line 14) + (Line 13 x Line 5)]	13.2	inches
19	Total Depth Treated [Line 17 + Line 18]	43.2	inches
Option 1 – Biofilter 1.5 times the DCV			
20	Required biofiltered volume [1.5 x Line 10]	3,073.13	cubic- feet
21	Required Footprint [Line 20/ Line 19] x 12	853.65	sq-ft
Option 2 - Store 0.75 of remaining DCV in pores and ponding			
22	Required Storage (surface + pores) Volume [0.75 x Line 10]	1,536.56	cubic- feet
23	Required Footprint [Line 22/ Line 18] x 12	1,396.88	sq-ft
Footprint of the BMP			
24	Area draining to the BMP	76,202.00	sq-ft
25	Adjusted Runoff Factor for drainage area (Refer to Appendix B.1 and	0.62	
26	BMP Footprint Sizing Factor (Default 0.03 or an alternative)	0.03	
27	Minimum BMP Footprint [Line 24 x Line 25 x Line 26]	1,417	sq-ft
28	Footprint of the BMP = Maximum(Minimum(Line 21, Line 23), Line 27)	1,417	sq-ft
Check for Volume Reduction [Not applicable for No Infiltration Condition] (N/A per form I-8)			
29	Calculate the fraction of DCV retained in the BMP [Line 9/Line 1]	0.16	unitless
30	Minimum required fraction of DCV retained for partial infiltration	0.375	unitless
31	Is the retained DCV ≥ 0.375? If the answer is no increase the footprint sizing	☐ Yes ☐ No X N/A	

Appendix B: Storm Water Pollutant Control Hydrologic Calculations and Sizing Methods

Worksheet B.5-1: Simple Sizing Method for Biofiltration BMPs

DMA B

Simple Sizing Method for Biofiltration BMPs		Worksheet B.5-1	
1	Remaining DCV after implementing retention BMPs	593.00	cubic- feet
Partial Retention			
2	Infiltration rate from Worksheet D.5-1 if partial infiltration is feasible	0.000	in/hr.
3	Allowable drawdown time for aggregate storage below the underdrain	36	hours
4	Depth of runoff that can be infiltrated [Line 2 x Line 3]	0	inches
5	Aggregate pore space	0.4	in/in
6	Required depth of gravel below the underdrain [Line 4/ Line 5]	0	inches
7	Assumed surface area of the biofiltration BMP	630.00	sq-ft
8	Media retained pore storage	0.1	in/in
9	Volume retained by BMP [[Line 4 + (Line 12 x Line 8)]/12] x Line 7	94.50	cubic- feet
10	DCV that requires biofiltration [Line 1 – Line 9]	498.50	cubic- feet
BMP Parameters			
11	Surface Ponding [6 inch minimum, 12 inch maximum]	6.00	inches
12	Media Thickness [18 inches minimum], also add mulch layer thickness to this line for sizing calculations	18.00	inches
13	Aggregate Storage above underdrain invert (12 inches typical) – use 0 inches for sizing if the aggregate is not over the entire bottom surface area	9.00	inches
14	Freely drained pore storage	0.2	in/in
15	Media filtration rate to be used for sizing (5 in/hr. with no outlet control; if the filtration rate is controlled by the outlet use the outlet controlled rate which will be less than 5 in/hr.)	5.00	in/hr.
Baseline Calculations			
16	Allowable Routing Time for sizing	6	hours
17	Depth filtered during storm [Line 15 x Line 16]	30	inches
18	Depth of Detention Storage [Line 11 + (Line 12 x Line 14) + (Line 13 x Line 5)]	13.2	inches
19	Total Depth Treated [Line 17 + Line 18]	43.2	inches
Option 1 – Biofilter 1.5 times the DCV			
20	Required biofiltered volume [1.5 x Line 10]	747.75	cubic- feet
21	Required Footprint [Line 20/ Line 19] x 12	207.71	sq-ft
Option 2 - Store 0.75 of remaining DCV in pores and ponding			
22	Required Storage (surface + pores) Volume [0.75 x Line 10]	373.88	cubic- feet
23	Required Footprint [Line 22/ Line 18] x 12	339.89	sq-ft
Footprint of the BMP			
24	Area draining to the BMP	21,255.00	sq-ft
25	Adjusted Runoff Factor for drainage area (Refer to Appendix B.1 and	0.54	
26	BMP Footprint Sizing Factor (Default 0.03 or an alternative)	0.03	
27	Minimum BMP Footprint [Line 24 x Line 25 x Line 26]	344	sq-ft
28	Footprint of the BMP = Maximum(Minimum(Line 21, Line 23), Line 27)	344	sq-ft
Check for Volume Reduction [Not applicable for No Infiltration Condition] (N/A per form I-8)			
29	Calculate the fraction of DCV retained in the BMP [Line 9/Line 1]	0.16	unitless
30	Minimum required fraction of DCV retained for partial infiltration	0.375	unitless
31	Is the retained DCV ≥ 0.375? If the answer is no increase the footprint sizing	☐ Yes ☐ No X N/A	

Categorization of Infiltration Feasibility Condition	Form I-8

Part 1 - Full Infiltration Feasibility Screening Criteria

Would infiltration of the full design volume be feasible from a physical perspective without any undesirable consequences that cannot be reasonably mitigated?

Criteria	Screening Question	Yes	No
1	**Is the estimated reliable infiltration rate below proposed facility locations greater than 0.5 inches per hour?** The response to this Screening Question must be based on a comprehensive evaluation of the factors presented in Appendix C.2 and Appendix D.		X
Provide basis: Per GIS data, the soil is Type B with average infiltration of 0.25 in/hr Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			
2	**Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of geotechnical hazards (slope stability, groundwater mounding, utilities, or other factors) that cannot be mitigated to an acceptable level?** The response to this Screening Question must be based on a comprehensive evaluation of the factors presented in Appendix C.2.		X
Provide basis: There would be potential structural damage to the adjacent retaining wall. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			

<table>
<tr><th colspan="4">Form I-8 Page 2 of 4</th></tr>
<tr><th>Criteria</th><th>Screening Question</th><th>Yes</th><th>No</th></tr>
<tr><td>3</td><td>Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of groundwater contamination (shallow water table, storm water pollutants or other factors) that cannot be mitigated to an acceptable level? The response to this Screening Question must be based on a comprehensive evaluation of the factors presented in Appendix C.3.</td><td>X</td><td></td></tr>
<tr><td colspan="4">Provide basis:

Groundwater depth is estimated between 10' to 20' and should not be affected.

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.</td></tr>
<tr><td>4</td><td>Can infiltration greater than 0.5 inches per hour be allowed without causing potential water balance issues such as change of seasonality of ephemeral streams or increased discharge of contaminated groundwater to surface waters? The response to this Screening Question must be based on a comprehensive evaluation of the factors presented in Appendix C.3.</td><td>X</td><td></td></tr>
<tr><td colspan="4">Provide basis:

infiltration should not cause water balance issues such as seasonality of ephemeral streams or increased discharge of contaminated groundwater to surface water

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.</td></tr>
<tr><td>Part 1 Result *</td><td colspan="2">If all answers to rows 1 - 4 are “Yes” a full infiltration design is potentially feasible. The feasibility screening category is Full Infiltration

If any answer from row 1-4 is “No”, infiltration may be possible to some extent but would not generally be feasible or desirable to achieve a “full infiltration” design. Proceed to Part 2</td><td>No full Infiltration</td></tr>
</table>

*To be completed using gathered site information and best professional judgment considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by Agency/Jurisdictions to substantiate findings

Form I-8 Page 3 of 4

Part 2 – Partial Infiltration vs. No Infiltration Feasibility Screening Criteria

Would infiltration of water in any appreciable amount be physically feasible without any negative consequences that cannot be reasonably mitigated?

Criteria	Screening Question	Yes	No
5	**Do soil and geologic conditions allow for infiltration in any appreciable rate or volume?** The response to this Screening Question must be based on a comprehensive evaluation of the factors presented in Appendix C.2 and Appendix D.	X	

Provide basis: The soil is type B with moderate infiltration rate

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.

Criteria	Screening Question	Yes	No
6	**Can Infiltration in any appreciable quantity be allowed without increasing risk of geotechnical hazards (slope stability, groundwater mounding, utilities, or other factors) that cannot be mitigated to an acceptable level**? The response to this Screening Question must be based on a comprehensive evaluation of the factors presented in Appendix C.2.		X

Provide basis:

There would be potential structural damage to the adjacent retaining wall.

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.

Form I-8 Page 4 of 4			
Criteria	Screening Question	Yes	No
7	**Can Infiltration in any appreciable quantity be allowed without posing significant risk for groundwater related concerns (shallow water table, storm water pollutants or other factors)?** The response to this Screening Question must be based on a comprehensive evaluation of the factors presented in Appendix C.3.	X	
Provide basis: Groundwater depth is estimated between 10' to 20' and should not be affected. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.			
8	**Can infiltration be allowed without violating downstream water rights**? The response to this Screening Question must be based on a comprehensive evaluation of the factors presented in Appendix C.3.	X	
Provide basis: No downstream water rights violations are anticipated. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.			
Part 2 Result*	If all answers from row 1-4 are yes then partial infiltration design is potentially feasible. The feasibility screening category is **Partial Infiltration.** If any answer from row 5-8 is no, then infiltration of any volume is considered to be **infeasible** within the drainage area. The feasibility screening category is **No Infiltration.**	No Partial Infiltration	

*To be completed using gathered site information and best professional judgment considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by Agency/Jurisdictions to substantiate findings

Factor of Safety and Design Infiltration Rate Worksheet					Form I-9
Factor Category		Factor Description	Assigned Weight (w)	Factor Value (v)	Product (p) p = w x v
A	Suitability Assessment	Soil assessment methods	0.25		
		Predominant soil texture	0.25		
		Site soil variability	0.25		
		Depth to groundwater / impervious layer	0.25		
		Suitability Assessment Safety Factor, $S_A = \Sigma p$			
B	Design	Level of pretreatment/ expected sediment loads	0.5		
		Redundancy/resiliency	0.25		
		Compaction during construction	0.25		
		Design Safety Factor, $S_B = \Sigma p$			
Combined Safety Factor, $S_{total} = S_A \times S_B$					2.0
Observed Infiltration Rate, inch/hr, $K_{observed}$ (corrected for test-specific bias)					0.25
Design Infiltration Rate, in/hr, $K_{design} = K_{observed} / S_{total}$					0.125
Supporting Data					
Briefly describe infiltration test and provide reference to test forms:					

E.1 Source Control BMP Requirements

Worksheet E.1-1: Source Control BMP Requirements

How to comply: Projects must comply with this requirement by implementing all source control BMPs listed in this section that are applicable and feasible for their project. Applicability must be determined through consideration of the development project's features and anticipated pollutant sources. Appendix E.1 provides guidance for identifying source control BMPs applicable to a project. The Standard and PDP SWQMP templates include sections that must be used to document compliance with source control BMP requirements.

How to use this worksheet:

1. Review Column 1 and identify which of these potential sources of storm water pollutants apply to your site. Check each box that applies.

2. Review Column 2 and incorporate all of the corresponding applicable BMPs in your project site plan.

3. Review Columns 3 and 4 and incorporate all of the corresponding applicable permanent controls and operational BMPs in a table in your project-specific storm water management report. Describe your specific BMPs in an accompanying narrative, and explain any special conditions or situations that required omitting BMPs or substituting alternatives.

If These Sources Will Be on the Project Site …	… Then Your SWQMP Must Consider These Source Control BMPs		
1 **Potential Sources of Runoff Pollutants**	**2** **Permanent Controls—Show on Drawings**	**3** **Permanent Controls—List in Table and Narrative**	**4** **Operational BMPs—Include in Table and Narrative**
☒ **A.** Onsite storm drain inlets ☐ Not Applicable	☒ Locations of inlets.	☒ Mark all inlets with the words "No Dumping! Flows to Bay" or similar. See stencil template provided in Appendix I-4	☒ Maintain and periodically repaint or replace inlet markings. ☒ Provide storm water pollution prevention information to new site owners, lessees, or operators. ☒ See applicable operational BMPs in Fact Sheet SC-44, "Drainage System Maintenance," in the CASQA Storm Water Quality Handbooks at www.casqa.org/resources/bmp-handbooks/municipal-bmp-handbook. ☒ Include the following in lease agreements: "Tenant shall not allow anyone to discharge anything to storm drains or to store or deposit materials so as to create a potential discharge to storm drains."

If These Sources Will Be on the Project Site …	… Then Your SWQMP must consider These Source Control BMPs		
1 **Potential Sources of Runoff Pollutants**	**2** **Permanent Controls—Show on Drawings**	**3** **Permanent Controls—List in Table and Narrative**	**4** **Operational BMPs—Include in Table and Narrative**
☒ **B.** Interior floor drains and elevator shaft sump pumps ❑ Not Applicable		☒ State that interior floor drains and elevator shaft sump pumps will be plumbed to sanitary sewer.	☒ Inspect and maintain drains to prevent blockages and overflow.
❑ **C.** Interior parking garages ☒ Not Applicable		❑ State that parking garage floor drains will be plumbed to the sanitary sewer.	❑ Inspect and maintain drains to prevent blockages and overflow.
❑ **D1.** Need for future indoor & structural pest control ☒ Not Applicable		❑ Note building design features that discourage entry of pests.	❑ Provide Integrated Pest Management information to owners, lessees, and operators.

If These Sources Will Be on the Project Site …	… Then Your SWQMP must consider These Source Control BMPs		
1 **Potential Sources of Runoff Pollutants**	2 **Permanent Controls—Show on Drawings**	3 **Permanent Controls—List in Table and Narrative**	4 **Operational BMPs—Include in Table and Narrative**
☒ **D2.** Landscape/ Outdoor Pesticide Use ❑ Not Applicable	☒ Show locations of existing trees or areas of shrubs and ground cover to be undisturbed and retained. ☒ Show self-retaining landscape areas, if any. ☒ Show storm water treatment facilities.	State that final landscape plans will accomplish all of the following. ☒ Preserve existing drought tolerant trees, shrubs, and ground cover to the maximum extent possible. ☒ Design landscaping to minimize irrigation and runoff, to promote surface infiltration where appropriate, and to minimize the use of fertilizers and pesticides that can contribute to storm water pollution. ☒ Where landscaped areas are used to retain or detain storm water, specify plants that are tolerant of periodic saturated soil conditions. ☒ Consider using pest-resistant plants, especially adjacent to hardscape. ☒ To ensure successful establishment, select plants appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions.	☒ Maintain landscaping using minimum or no pesticides. ☒ See applicable operational BMPs in Fact Sheet SC-41, "Building and Grounds Maintenance," in the CASQA Storm Water Quality Handbooks at www.casqa.org/resources/bmp-handbooks/municipal-bmp-handbook. ☒ Provide IPM information to new owners, lessees and operators.

If These Sources Will Be on the Project Site …	… Then Your SWQMP must consider These Source Control BMPs		
1 **Potential Sources of Runoff Pollutants**	**2** **Permanent Controls—Show on Drawings**	**3** **Permanent Controls—List in Table and Narrative**	**4** **Operational BMPs—Include in Table and Narrative**
❑ **E.** Pools, spas, ponds, decorative fountains, and other water features. ☒ Not Applicable	❑ Show location of water feature and a sanitary sewer cleanout in an accessible area within 10 feet.	❑ If the local municipality requires pools to be plumbed to the sanitary sewer, place a note on the plans and state in the narrative that this connection will be made according to local requirements.	❑ See applicable operational BMPs in Fact Sheet SC-72, "Fountain and Pool Maintenance," in the CASQA Storm Water Quality Handbooks at www.casqa.org/resources/bmp-handbooks/municipal-bmp-handbook.
❑ **F.** Food service ☒ Not Applicable	❑ For restaurants, grocery stores, and other food service operations, show location (indoors or in a covered area outdoors) of a floor sink or other area for cleaning floor mats, containers, and equipment. ❑ On the drawing, show a note that this drain will be connected to a grease interceptor before discharging to the sanitary sewer.	❑ Describe the location and features of the designated cleaning area. ❑ Describe the items to be cleaned in this facility and how it has been sized to ensure that the largest items can be accommodated.	

If These Sources Will Be on the Project Site …	… Then Your SWQMP must consider These Source Control BMPs		
1 Potential Sources of	**2 Permanent Controls—Show on Drawings**	**3 Permanent Controls—List in Table and Narrative**	**4 Operational BMPs—Include in Table and Narrative**
☒ **G.** Refuse areas ☐ Not Applicable	☒ Show where site refuse and recycled materials will be handled and stored for pickup. See local municipal requirements for sizes and other details of refuse areas. ☒ If dumpsters or other receptacles are outdoors, show how the designated area will be covered, graded, and paved to prevent run-on and show locations of berms to prevent runoff from the area. Also show how the designated area will be protected from wind dispersal. ☒ Any drains from dumpsters, compactors, and tallow bin areas must be connected to a grease removal device before discharge to sanitary sewer.	☒ State how site refuse will be handled and provide supporting detail to what is shown on plans. ☒ State that signs will be posted on or near dumpsters with the words "Do not dump hazardous materials here" or similar.	☒ State how the following will be implemented: Provide adequate number of receptacles. Inspect receptacles regularly; repair or replace leaky receptacles. Keep receptacles covered. Prohibit/prevent dumping of liquid or hazardous wastes. Post "no hazardous materials" signs. Inspect and pick up litter daily and clean up spills immediately. Keep spill control materials available on- site. See Fact Sheet SC-34, "Waste Handling and Disposal" in the CASQA Storm Water Quality Handbooks at www.casqa.org/resources/bmp-handbooks/municipal-bmp-handbook.

If These Sources Will Be on the Project Site …	… Then Your SWQMP must consider These Source Control BMPs		
1 **Potential Sources of Runoff Pollutants**	**2** **Permanent Controls—Show on Drawings**	**3** **Permanent Controls—List in Table and Narrative**	**4** **Operational BMPs—Include in Table and Narrative Table and Narrative**
❑ **H.** Industrial processes. ☒ Not Applicable	❑ Show process area.	❑ If industrial processes are to be located onsite, state: "All process activities to be performed indoors. No processes to drain to exterior or to storm drain system."	❑ See Fact Sheet SC-10, "Non-Storm Water Discharges" in the CASQA Storm Water Quality Handbooks at https://www.casqa.org/resources/bmp-handbooks.
❑ **I.** Outdoor storage of equipment or materials. (See rows J and K for source control measures for vehicle cleaning, repair, and maintenance.) ☒ Not Applicable	❑ Show any outdoor storage areas, including how materials will be covered. Show how areas will be graded and bermed to prevent run-on or runoff from area and protected from wind dispersal. ❑ Storage of non-hazardous liquids must be covered by a roof and/or drain to the sanitary sewer system, and be contained by berms, dikes, liners, or vaults. ❑ Storage of hazardous materials and wastes must be in compliance with the local hazardous materials ordinance and a Hazardous Materials Management Plan for the site.	❑ Include a detailed description of materials to be stored, storage areas, and structural features to prevent pollutants from entering storm drains. Where appropriate, reference documentation of compliance with the requirements of local Hazardous Materials Programs for: ▪ Hazardous Waste Generation ▪ Hazardous Materials Release Response and Inventory ▪ California Accidental Release Prevention Program ▪ Aboveground Storage Tank ▪ Uniform Fire Code Article 80 Section 103(b) & (c) 1991 ▪ Underground Storage Tank	❑ See the Fact Sheets SC-31, "Outdoor Liquid Container Storage" and SC-33, "Outdoor Storage of Raw Materials" in the CASQA Storm Water Quality Handbooks at www.casqa.org/resources/bmp-handbooks/municipal-bmp-handbook.

If These Sources Will Be on the Project Site …	… Then Your SWQMP must consider These Source Control BMPs		
1 **Potential Sources of Runoff Pollutants**	**2** **Permanent Controls—Show on Drawings**	**3** **Permanent Controls—List in Table and Narrative**	**4** **Operational BMPs—Include in Table and Narrative**
❑ **J.** Vehicle and Equipment Cleaning ☒ Not Applicable	❑ Show on drawings as appropriate: (1) Commercial/industrial facilities having vehicle /equipment cleaning needs must either provide a covered, bermed area for washing activities or discourage vehicle/equipment washing by removing hose bibs and installing signs prohibiting such uses. (2) Multi-dwelling complexes must have a paved, bermed, and covered car wash area (unless car washing is prohibited onsite and hoses are provided with an automatic shut-off to discourage such use). (3) Washing areas for cars, vehicles, and equipment must be paved, designed to prevent run-on to or runoff from the area, and plumbed to drain to the sanitary sewer. (4) Commercial car wash facilities must be designed such that no runoff from the facility is discharged to the storm drain system. Wastewater from the facility must discharge to the sanitary sewer, or a wastewater reclamation system must be installed.	❑ If a car wash area is not provided, describe measures taken to discourage onsite car washing and explain how these will be enforced.	Describe operational measures to implement the following (if applicable): ❑ Washwater from vehicle and equipment washing operations must not be discharged to the storm drain system. ❑ Car dealerships and similar may rinse cars with water only. ❑ See Fact Sheet SC-21, "Vehicle and Equipment Cleaning," in the CASQA Storm Water Quality Handbooks at www.casqa.org/resources/bmp-handbooks/municipal-bmp-handbook.

If These Sources Will Be on the Project Site …	… Then Your SWQMP must consider These Source Control BMPs		
1 **Potential Sources of Runoff Pollutants**	**2** **Permanent Controls—Show on Drawings**	**3** **Permanent Controls—List in Table and Narrative**	**4** **Operational BMPs—Include in Table and Narrative**
❑ **K.** Vehicle/Equipment Repair and Maintenance ☒ Not Applicable	❑ Accommodate all vehicle equipment repair and maintenance indoors. Or designate an outdoor work area and design the area to protect from rainfall, run-on runoff, and wind dispersal. ❑ Show secondary containment for exterior work areas where motor oil, brake fluid, gasoline, diesel fuel, radiator fluid, acid-containing batteries or other hazardous materials or hazardous wastes are used or stored. Drains must not be installed within the secondary containment areas. ❑ Add a note on the plans that states either (1) there are no floor drains, or (2) floor drains are connected to wastewater pretreatment systems prior to discharge to the sanitary sewer and an industrial waste discharge permit will be obtained.	❑ State that no vehicle repair or maintenance will be done outdoors, or else describe the required features of the outdoor work area. ❑ State that there are no floor drains or if there are floor drains, note the agency from which an industrial waste discharge permit will be obtained and that the design meets that agency's requirements. ❑ State that there are no tanks, containers or sinks to be used for parts cleaning or rinsing or, if there are, note the agency from which an industrial waste discharge permit will be obtained and that the design meets that agency's requirements.	In the report, note that all of the following restrictions apply to use the site: ❑ No person must dispose of, nor permit the disposal, directly or indirectly of vehicle fluids, hazardous materials, or rinsewater from parts cleaning into storm drains. ❑ No vehicle fluid removal must be performed outside a building, nor on asphalt or ground surfaces, whether inside or outside a building, except in such a manner as to ensure that any spilled fluid will be in an area of secondary containment. Leaking vehicle fluids must be contained or drained from the vehicle immediately. ❑ No person must leave unattended drip parts or other open containers containing vehicle fluid, unless such containers are in use or in an area of secondary containment.

If These Sources Will Be on the Project Site …	… Then Your SWQMP must consider These Source Control BMPs		
1 **Potential Sources of Runoff Pollutants**	**2** **Permanent Controls—Show on Drawings**	**3** **Permanent Controls—List in Table and Narrative**	**4** **Operational BMPs—Include in Table and Narrative**
❑ **L.** Fuel Dispensing Areas ☒ Not Applicable	❑ Fueling areas[16] must have impermeable floors (i.e., portland cement concrete or equivalent smooth impervious surface) that are (1) graded at the minimum slope necessary to prevent ponding; and (2) separated from the rest of the site by a grade break that prevents run-on of storm water to the MEP. ❑ Fueling areas must be covered by a canopy that extends a minimum of ten feet in each direction from each pump. [Alternative: The fueling area must be covered and the cover's minimum dimensions must be equal to or greater than the area within the grade break or fuel dispensing area1.] The canopy [or cover] must not drain onto the fueling area.		❑ The property owner must dry sweep the fueling area routinely. ❑ See the Business Guide Sheet, "Automotive Service—Service Stations" in the CASQA Storm Water Quality Handbooks at https://www.casqa.org/resources/bmp-handbooks.

[16] The fueling area must be defined as the area extending a minimum of 6.5 feet from the corner of each fuel dispenser or the length at which the hose and nozzle assembly may be operated plus a minimum of one foot, whichever is greater.

If These Sources Will Be on the Project Site …	… Then Your SWQMP must consider These Source Control BMPs		
1 **Potential Sources of Runoff Pollutants**	**2** **Permanent Controls—Show on Drawings**	**3** **Permanent Controls—List in**	**4** **Operational BMPs—Include in Table and Narrative**
M. Loading Docks ☒ Not Applicable	❑ Show a preliminary design for the loading dock area, including roofing and drainage. Loading docks must be covered and/or graded to minimize run-on to and runoff from the loading area. Roof downspouts must be positioned to direct storm water away from the loading area. Water from loading dock areas should be drained to the sanitary sewer where feasible. Direct connections to storm drains from depressed loading docks are prohibited. ❑ Loading dock areas draining directly to the sanitary sewer must be equipped with a spill control valve or equivalent device, which must be kept closed during periods of operation. ❑ Provide a roof overhang over the loading area or install door skirts (cowling) at each bay that enclose the end of the trailer.		❑ Move loaded and unloaded items indoors as soon as possible. ❑ See Fact Sheet SC-30, "Outdoor Loading and Unloading," in the CASQA Storm Water Quality Handbooks at www.casqa.org/resources/bmp-handbooks/municipal-bmp-handbook.

If These Sources Will Be on the Project Site …	… Then Your SWQMP must consider These Source Control BMPs		
1 **Potential Sources of Runoff Pollutants**	**2** **Permanent Controls—Show on Drawings**	**3** **Permanent Controls—List in Table and Narrative**	**4** **Operational BMPs—Include in Table and Narrative**
☑ **N.** Fire Sprinkler Test Water ❑ Not Applicable		☑ Provide a means to drain fire sprinkler test water to the sanitary sewer.	☒ See the note in Fact Sheet SC-41, "Building and Grounds Maintenance," in the CASQA Storm Water Quality Handbooks at www.casqa.org/resources/bmp-handbooks/municipal-bmp-handbook
O. Miscellaneous Drain or Wash Water ❑ Boiler drain lines ❑ Condensate drain lines ❑ Rooftop equipment ❑ Drainage sumps ❑ Roofing, gutters, and trim ☒ Not Applicable		❑ Boiler drain lines must be directly or indirectly connected to the sanitary sewer system and may not discharge to the storm drain system. ❑ Condensate drain lines may discharge to landscaped areas if the flow is small enough that runoff will not occur. Condensate drain lines may not discharge to the storm drain system. ❑ Rooftop mounted equipment with potential to produce pollutants must be roofed and/or have secondary containment. ❑ Any drainage sumps onsite must feature a sediment sump to reduce the quantity of sediment in pumped water. ❑ Avoid roofing, gutters, and trim made of copper or other unprotected metals that may leach into runoff.	

If These Sources Will Be on the Project Site …	… Then Your SWQMP must consider These Source Control BMPs		
1 Potential Sources of Runoff Pollutants	**2 Permanent Controls—Show on Drawings**	**3 Permanent Controls—List in Table and Narrative**	**4 Operational BMPs—Include in Table and Narrative**
☒ **P.** Plazas, sidewalks, and parking lots. ❑ Not Applicable			☒ Plazas, sidewalks, and parking lots must be swept regularly to prevent the accumulation of litter and debris. Debris from pressure washing must be collected to prevent entry into the storm drain system. Washwater containing any cleaning agent or degreaser must be collected and discharged to the sanitary sewer and not discharged to a storm drain.

ATTACHMENT 2

BACKUP FOR PDP HYDROMODIFICATION CONTROL MEASURES

This is the cover sheet for Attachment 2.

☐Mark this box if this attachment is empty because the project is exempt from PDP hydromodification management requirements.

Indicate which Items are Included behind this cover sheet:

Attachment Sequence	**Contents**	**Checklist**
Attachment 2a	Flow Control Facility Design, including Structural BMP Drawdown Calculations and Overflow Design Summary (Required) See Chapter 6 and Appendix G of the Storm Water Design Manual	X Included ☐Submitted as separate stand-alone document
Attachment 2b	Hydromodification Management Exhibit (Required)	X Included See Hydromodification Management Exhibit Checklist on the back of this Attachment cover sheet.
Attachment 2c	Management of Critical Coarse Sediment Yield Areas See Section 6.2 and Appendix H of the Storm Water Design Manual.	☐Exhibit depicting onsite and/or upstream sources of critical coarse sediment as mapped in the WMAA AND, ☐Demonstration that the project effectively avoids and bypasses sources of mapped critical coarse sediment OR, X Demonstration that project does not generate a net impact on the receiving water.
Attachment 2d	Geomorphic Assessment of Receiving Channels (Optional) See Section 6.3.4 of the Storm Water Design Manual.	X Not performed ☐Included ☐Submitted as separate stand-alone document
Attachment 2e	Vector Control Plan (Required when structural BMPs will not drain in 96 hours)	☐Included X Not required because BMPs will drain in less than 96 hours

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Use this checklist to ensure the required information has been included on the Hydromodification Management Exhibit:

The Hydromodification Management Exhibit must identify:

☐Underlying hydrologic soil group
☐Approximate depth to groundwater
☐Existing natural hydrologic features (watercourses, seeps, springs, wetlands)
☐Critical coarse sediment yield areas to be protected
☐Existing topography
☐Existing and proposed site drainage network and connections to drainage offsite
☐Proposed grading
☐Proposed impervious features
☐Proposed design features and surface treatments used to minimize imperviousness
☐Point(s) of Compliance (POC) for Hydromodification Management
☐Existing and proposed drainage boundary and drainage area to each POC (when necessary, create separate exhibits for pre-development and post-project conditions)
☐Structural BMPs for hydromodification management (identify location, type of BMP, and size/detail)

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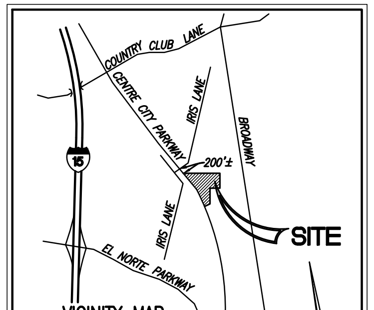
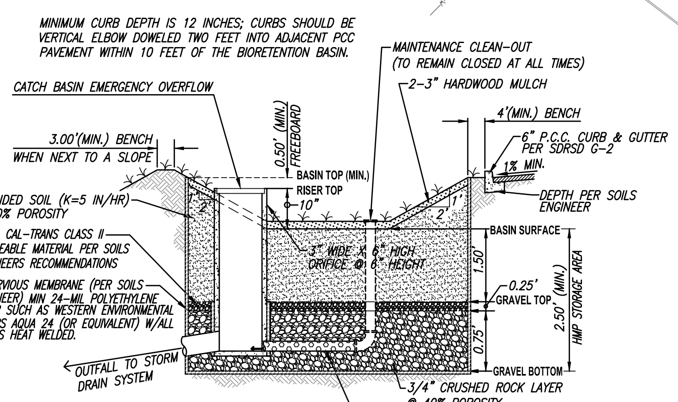
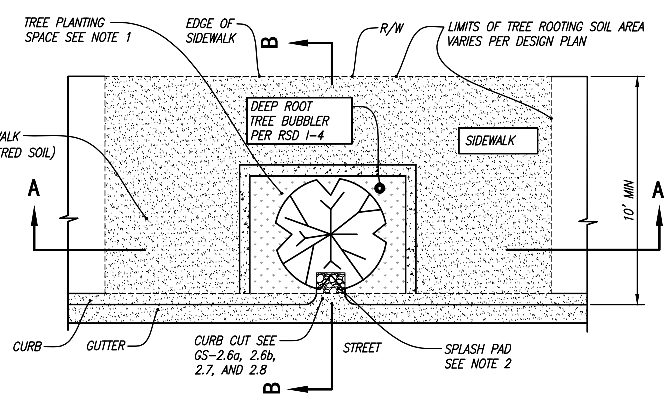


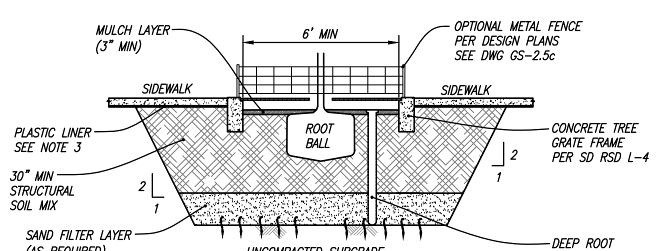
VICINITY MAP
NOT TO SCALE
T.B.M. PG. 1109, G-5



BIORETENTION (INF-2) BASIN TYPICAL SECTION
TYPICAL DETAIL & OUTLET CONNECTION
INSTALLED BMP SHALL COMPLY WITH BF-1 BMP DESIGN FACT SHEET
NOT-TO-SCALE



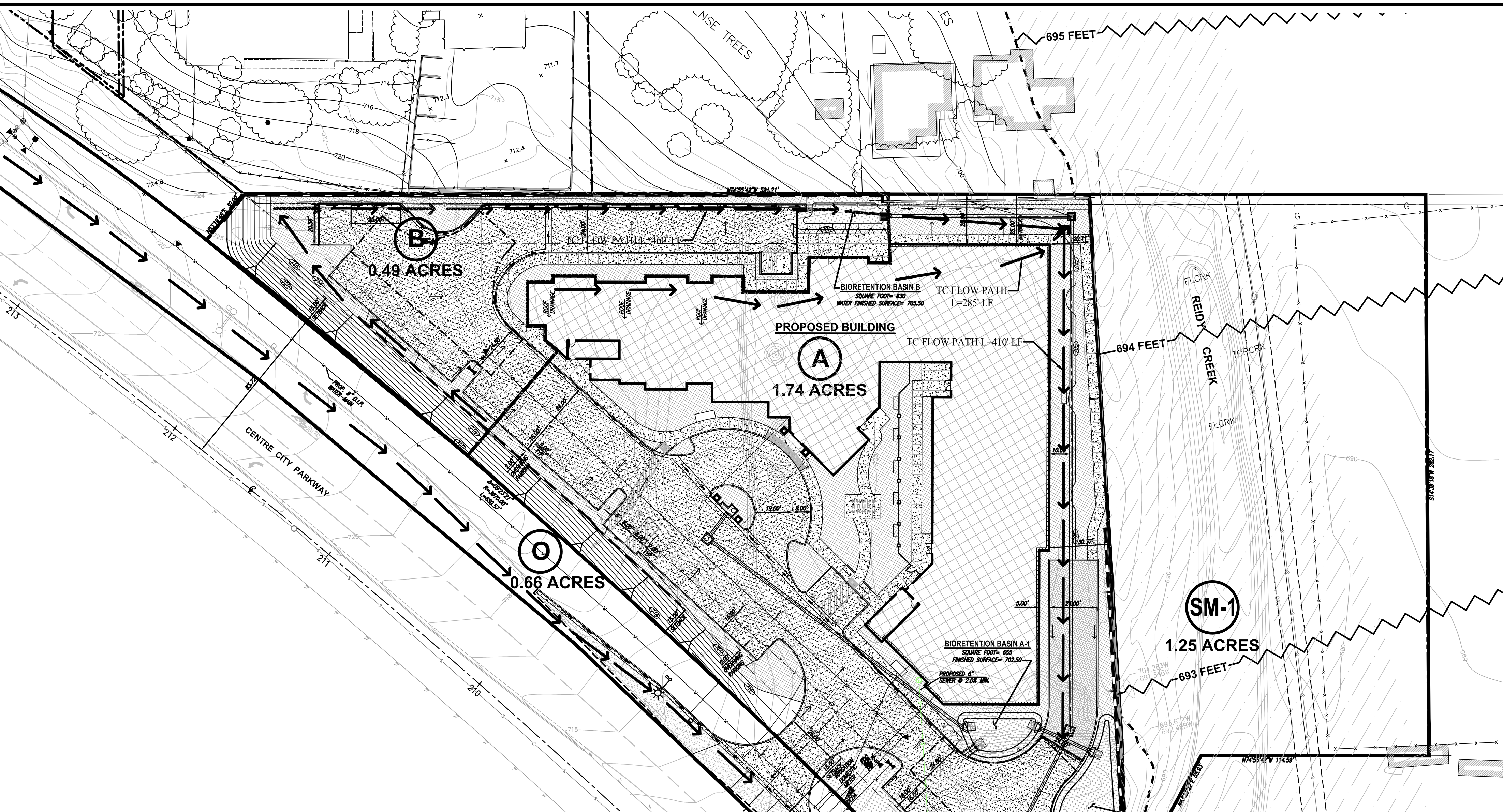
TREE-WELL PLAN VIEW



SECTION A-A

NOTES:

1. MINIMUM OPEN TREE PLANTING SPACE DIMENSION 4'x6'.
2. PROVIDE SPLASH PAD FOR TREE PLANTING SPACE PER GS-2.6b.
3. PROVIDE PLASTIC LINER WHERE CONCRETE WILL BE POURED ON TOP OF STRUCTURAL SOIL PER GREEN BOOK STANDARD SPECIFICATIONS SECTION 210-2.
4. MINIMUM VOLUME REQUIRED = 122 C.F. 10' WIDE x 6' LONG x 5' DEEP (30" MEDIA, 30" SAND FILTER LAYER)



DRAINAGE MANAGEMENT AREA TABLE						
SYMBOL	PROPOSED SURFACE	SOIL TYPE	DMA A	DMA B	SM-1 SELF-MITIGATING	DMA O OFF-SITE
	ROOFTOPS	"B"	26,697 SF	0 SF	0 SF	0 SF
	PROPOSED NEW PAVEMENT	"B"	18,906 SF	9,874 SF	0 SF	PROPOSED PAVEMENT = 4,889 SF
	CONCRETE WALKWAYS, HARDSCAPE, ETC.	"B"	3,978 SF	1,702 SF	0 SF	0 SF
	PAVERS (PERVIOUS)	"B"	2,297 SF	0 SF	0 SF	0 SF
	LANDSCAPING	"B"	24,324 SF	9,679 SF	54,285 SF	
TOTAL PARCEL (ON-SITE) SIZE:					151,742 SF	TOTAL (OFF-SITE) SIZE: 28,695 SF

BMP BASIN DATA TABLE							
LETTER	ORIFICE SIZE	REQUIRED TREATMENT	PROVIDED TREATMENT	HYDROMODIFICATION VOLUME REQUIRED	HYDROMODIFICATION VOLUME PROVIDED	DESIGN CAPTURE VOLUME	RISER HEIGHT ABOVE BASIN FS
A	N/A	2,612 SF	2,615 SF	1,306 CF	1,308 CF	2,441 CF	6"
B	N/A	627 SF	630 SF	314 CF	315 CF	593 CF	6"

30 15 0 30 60 90
SCALE: 1" = 30'

LEGEND OF SYMBOLS

- PROPERTY LINE
- STREET CENTERLINE
- 230 EXISTING CONTOURS
- LONGEST FLOW PATH
- DRAINAGE AREA

NOTE:
INTERIOR FLOOR DRAINS AND ELEVATOR SHAFT SUMP WILL DRAIN TO THE SANITARY SEWER SYSTEM.

PLANS PREPARED BY:
SPEAR & ASSOCIATES, INC.
475 PRODUCTION STREET, SAN MARCOS, CA. 92078
PHONE (760) 736-2040 FAX (760) 736-4866

OWNER/APPLICANT DEVELOPER:

THE MITCHELL GROUP

142 S. CEDROS AVE. STE. D
ADDRESS
SOLANA BEACH, CA 92075
CITY, STATE, ZIP CODE
(619) 993-7089
PHONE
TIGG MITCHELL
CONTACT NAME

SITE ADDRESS:
1802 N. CENTRE CITY PARKWAY
ESCONDIDO, CA 92026

ASSESSOR'S PARCEL NO.:
226-190-22

LEGAL DESCRIPTION:
ALL OF THAT PORTION OF BLOCK 421, SUBDIVISION OF RINCON DEL DIABLO, PER MAP THEREOF No. 723, EXCEPTING THAT PORTION DEEDED TO THE STATE OF CALIFORNIA FOR FREEWAY, SAID MAP RECORDED IN OFFICE OF THE CLERK AND RECORDER OF THE COUNTY OF SAN DIEGO, CALIFORNIA.

ESCONDIDO ASSISTED LIVING
POST-DEVELOPMENT DRAINAGE AREA MAP

SPEAR & ASSOCIATES, INC. JOB NO: 17-174 JRZ


Nearest CCSYA
1802 Centre City Parkway
Rancho De Oro Rd
Imperial Dr
Wintergreen Glen
Teakwood Glen
S Iris Ln
Morningside Glen
Windyridge Glen
Centre City Pkwy
Bahia
N Broa
COUGARS
© 2017 Google

Worksheet G.2-1: Sizing Factor Worksheet

Site Information			
Project Name:	Escondido Assisted Living	**Hydrologic Unit**	Carlsbad
Project Applicant:	Tigg Mitchell	**Rain Gauge:**	Oceanside
Jurisdiction:	City of Escondido	**Total Project Area:**	33183
Assessor's Parcel Number:	226-190-22	**Low Flow Threshold:**	**0.1Q2**
BMP Name:	A	**BMP Type:**	Bioretention

Areas Draining to BMP						Sizing Factors		Minimum BMP Size	
DMA Name	**Area (sf)**	**Soil Type**	**Slope**	**Post Project Surface Type**	**Runoff Factor (From Table G.2-1)**	**Surface Area**	**Surface Volume**	**Surface Area (sf)**	**Volume (cf)**
A	26,697	B	Moderate	Roof	1	0.05	0.5	1334.9	667.4
A	18,906	B	Moderate	Pvmt	1	0.05	0.5	945.3	472.7
A	3,978	B	Moderate	Hardscape	0.1	0.05	0.5	19.9	9.9
A	2,297	B	Moderate	Perv. Turf	0.1	0.05	0.5	11.5	5.7
A	24,324	B	Moderate	Landscape	0.1	0.05	0.5	121.6	60.8
Total DMA Area	76202						**Minimum BMP Size***	2433.1	1217
							Proposed BMP Size*	2615.0	1308

***Minimum BMP Size = Total of rows above.**
***Proposed BMP Size ≥ Minimum BMP size.**

(Orifice Flow) $h = Q^2 / (Cd^2 \times 2g \times A^2)$

Pipe Dia. (in)=	**6**
Pipe Dia. (ft)=	0.500
A (ft2)=	0.20
h (in) (above pipe CL) =	22.7
C_d=	0.62
Q (cfs)=	**1.3437**

Surface Ponding (in)	6
Surface Volume (c.f.)	2,179
Dewatering Time (hours) =	0.5

Worksheet G.2-1: Sizing Factor Worksheet

Site Information			
Project Name:	Escondido Assisted Living	**Hydrologic Unit**	Carlsbad
Project Applicant:	Tigg Mitchell	**Rain Gauge:**	Oceanside
Jurisdiction:	City of Escondido	**Total Project Area:**	33183
Assessor's Parcel Number:	226-190-22	**Low Flow Threshold:**	**$0.1Q_2$**
BMP Name:	B	**BMP Type:**	Bioretention

Areas Draining to BMP						Sizing Factors		Minimum BMP Size	
DMA Name	**Area (sf)**	**Soil Type**	**Slope**	**Post Project Surface Type**	**Runoff Factor (From Table G.2-1)**	**Surface Area**	**Surface Volume**	**Surface Area (sf)**	**Volume (cf)**
B	0	B	Moderate	Roof	1	0.05	0.5	0.0	0.0
B	9,874	B	Moderate	Pvmt	1	0.05	0.5	493.7	246.9
B	1,702	B	Moderate	Hardscape	1	0.05	0.5	85.1	42.6
B	0	B	Moderate	Perv. Turf	0.1	0.05	0.5	0.0	0.0
B	9,679	B	Moderate	Landscape	0.1	0.05	0.5	48.4	24.2
Total DMA Area	21255						**Minimum BMP Size***	627.2	314
							Proposed BMP Size*	630.0	315

***Minimum BMP Size = Total of rows above.**
***Proposed BMP Size ≥ Minimum BMP size.**

(Orifice Flow) $h = Q^2 / (Cd^2 \times 2g \times A^2)$

Pipe Dia. (in)=	**6**
Pipe Dia. (ft)=	0.500
A (ft2)=	0.20
h (in) (above pipe CL) =	22.7
C_d=	0.62
Q (cfs)=	**1.3437**

Surface Ponding (in)	6
Surface Volume (c.f.)	525
Dewatering Time (hours) =	0.1

Worksheet G.2-1: Sizing Factor Worksheet

Site Information			
Project Name:	Escondido Assisted Living	**Hydrologic Unit**	Carlsbad
Project Applicant:	Tigg Mitchell	**Rain Gauge:**	Oceanside
Jurisdiction:	City of Escondido	**Total Project Area:**	33183
Assessor's Parcel Number:	226-190-22	**Low Flow Threshold:**	**0.1Q2**
BMP Name:	Offsite Road New Pavement	**BMP Type:**	Bioretention

Areas Draining to BMP						Sizing Factors		Minimum BMP Size	
DMA Name	**Area (sf)**	**Soil Type**	**Slope**	**Post Project Surface Type**	**Runoff Factor (From Table G.2-1)**	**Surface Area**	**Surface Volume**	**Surface Area (sf)**	**Volume (cf)**
							Tree Well	0.0	
O	4,889	B	Moderate	Pvmt	1	0.05	0.5	244.5	122.2
								0.0	0.0
								0.0	0.0
								0.0	0.0
Total DMA Area	4889						**Minimum BMP Size***	244.5	122
							Proposed BMP Size*		0

***Minimum BMP Size = Total of rows above.**
***Proposed BMP Size ≥ Minimum BMP size.**

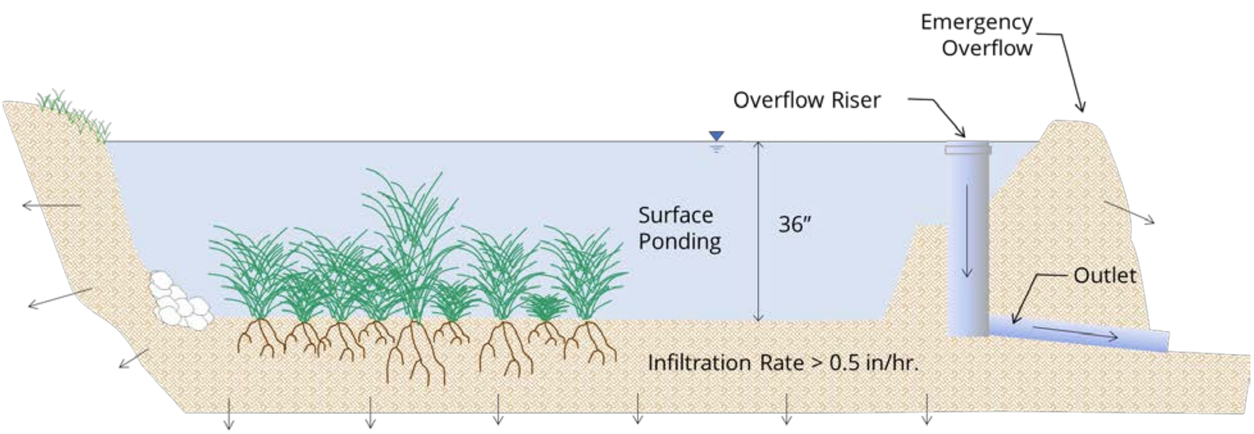
Tree Well Min. Infiltration Volume = 122 c.f.

Surface Ponding (in)	6
Surface Volume (c.f.)	0
Dewatering Time (hours) =	0.0

G.2.2 Sizing Factors for "Infiltration" BMP

Table G.2-3 presents sizing factors for calculating the required surface area (A) for an infiltration BMP. There is no underdrain and therefore no low flow orifice in the infiltration BMP. Sizing factors were developed for hydrologic soil groups A B, C, and D. This BMP is generally not applicable in hydrologic soil groups C and D, but applicants have the option if there are no geotechnical or water balance issues and the underlying design infiltration rate for the BMP is greater than 0.5 inches per hour. The infiltration BMP is surface ponding feature that allows infiltration into the native or amended soils of the BMP surface.

- **Ponding layer:** a nominal 36-inch ponding layer shall be included below the overflow elevation.
- **Design infiltration rate:** the design infiltration rate shall be greater than 0.5 inches per hour.
- **Overflow structure:** San Diego Regional Standard Drawing Type I Catch Basin (D-29). For the purposes of hydromodification flow control other type of overflow structures are allowed.



Infiltration BMP Example Illustration

How to use the sizing factors for flow control BMP Sizing:

Obtain sizing factors from Table G.2-3 based on the project's lower flow threshold fraction of Q_2, hydrologic soil group, post-project slope, and rain gauge (rainfall basin). Multiply the area tributary to the structural BMP (A, square feet) by the area weighted runoff factor (C, unitless) (see Table G.2-1) by the sizing factors to determine the required surface area (A, square feet) for the infiltration BMP. The civil engineer shall provide the necessary surface area of the BMP on the plans.

Additional steps to use this BMP as a combined pollutant control and flow control BMP:

The BMP sized using the sizing factors in Table G.2-3 meets both pollutant control and flow control requirements.

Table G.2-3: Sizing Factors for Hydromodification Flow Control Infiltration BMPs Designed Using Sizing Factor Method

Lower Flow Threshold	Soil Group	Slope	Rain Gauge	A
$0.1Q_2$	A	Flat	Lindbergh	0.055
$0.1Q_2$	A	Moderate	Lindbergh	0.055
$0.1Q_2$	A	Steep	Lindbergh	0.055
$0.1Q_2$	B	Flat	Lindbergh	0.045
$0.1Q_2$	B	Moderate	Lindbergh	0.045
$0.1Q_2$	B	Steep	Lindbergh	0.045
$0.1Q_2$	C	Flat	Lindbergh	0.035
$0.1Q_2$	C	Moderate	Lindbergh	0.035
$0.1Q_2$	C	Steep	Lindbergh	0.035
$0.1Q_2$	D	Flat	Lindbergh	0.030
$0.1Q_2$	D	Moderate	Lindbergh	0.030
$0.1Q_2$	D	Steep	Lindbergh	0.030
$0.1Q_2$	A	Flat	Oceanside	0.060
$0.1Q_2$	A	Moderate	Oceanside	0.060
$0.1Q_2$	A	Steep	Oceanside	0.060
$0.1Q_2$	B	Flat	Oceanside	0.050
$0.1Q_2$	B	Moderate	Oceanside	0.050
$0.1Q_2$	B	Steep	Oceanside	0.050
$0.1Q_2$	C	Flat	Oceanside	0.050
$0.1Q_2$	C	Moderate	Oceanside	0.050
$0.1Q_2$	C	Steep	Oceanside	0.045
$0.1Q_2$	D	Flat	Oceanside	0.035
$0.1Q_2$	D	Moderate	Oceanside	0.035
$0.1Q_2$	D	Steep	Oceanside	0.035

Lower Flow Threshold	Soil Group	Slope	Rain Gauge	A
$0.1Q_2$	A	Flat	L Wohlford	0.085
$0.1Q_2$	A	Moderate	L Wohlford	0.085
$0.1Q_2$	A	Steep	L Wohlford	0.085
$0.1Q_2$	B	Flat	L Wohlford	0.070
$0.1Q_2$	B	Moderate	L Wohlford	0.070
$0.1Q_2$	B	Steep	L Wohlford	0.070
$0.1Q_2$	C	Flat	L Wohlford	0.055
$0.1Q_2$	C	Moderate	L Wohlford	0.055
$0.1Q_2$	C	Steep	L Wohlford	0.055
$0.1Q_2$	D	Flat	L Wohlford	0.040
$0.1Q_2$	D	Moderate	L Wohlford	0.040
$0.1Q_2$	D	Steep	L Wohlford	0.040

Q_2 = 2-year pre-project flow rate based upon partial duration analysis of long-term hourly rainfall records
A = Surface area (at surface of the BMP before any ponding occurs) sizing factor for flow control

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ATTACHMENT 3

Structural BMP Maintenance Information

This is the cover sheet for Attachment 3.

Indicate which Items are Included behind this cover sheet:

Attachment Sequence	**Contents**	**Checklist**
Attachment 3a	Structural BMP Maintenance Plan (Required)	X Included See Structural BMP Maintenance Information Checklist on the back of this Attachment cover sheet.
Attachment 3b	Draft Storm Water Control Facilities Maintenance Agreement (SWCFMA) (when applicable)	X Included ☐Not Applicable

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Use this checklist to ensure the required information has been included in the Structural BMP Maintenance Information Attachment:

Attachment 3a must identify:

☐Specific maintenance indicators and actions for proposed structural BMP(s). This must be based on Section 7.7 of the Storm Water Design Manual and enhanced to reflect actual proposed components of the structural BMP(s)
☐How to access the structural BMP(s) to inspect and perform maintenance
☐Features that are provided to facilitate inspection (e.g., observation ports, cleanouts, silt posts, or other features that allow the inspector to view necessary components of the structural BMP and compare to maintenance thresholds)
☐Manufacturer and part number for proprietary parts of structural BMP(s) when applicable
☐Maintenance thresholds specific to the structural BMP(s), with a location-specific frame of reference (e.g., level of accumulated materials that triggers removal of the materials, to be identified based on viewing marks on silt posts or measured with a survey rod with respect to a fixed benchmark within the BMP)
☐Recommended equipment to perform maintenance
☐When applicable, necessary special training or certification requirements for inspection and maintenance personnel such as confined space entry or hazardous waste management

Attachment 3b: For all Structural BMPs, Attachment 3b must include a draft maintenance agreement in the City’s standard format (PDP applicant to contact City staff to obtain the current maintenance agreement forms or download from City’s website).

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OPERATION & MAINTENANCE (O&M) PLAN

1. Contents

1. PROJECT DESCRIPTION

Project consists of constructing a 3-story building with a parking lot, landscaping and bioretention basins for stormwater treatment

2. OPERATION & MAINTENANCE (O&M) PLAN

This document has been prepared in compliance with the San Diego Regional Water Quality Control Board requirements and in accordance with requirements set by the City. A Storm Water Quality Management Plan (SWQMP) has been prepared for the project. It identifies the specific Best Management Practices (BMPs) required for the project. Refer to this project's SWQMP for additional information on BMPs. Proper maintenance of the project BMP's is required for their intended and effective function. This O&M Plan provides operation and maintenance procedures for the BMPs designated in the SWQMP. It includes procedures to be followed for inspection and maintenance of the BMPs, instructions for documenting the work performed, record keeping, and outlining the requirement and procedures for training of personnel involved in the process.

3. Operation & Maintenance of BMP'S

It shall be the responsibility of the "Owner or Designated Responsible Party" to maintain and to train all employees for the maintenance and operation of all BMPs, to achieve the maximum pollutant reduction they are designed for, as addressed in the approved Project's SWQMP. The following schedule of O&M's must be followed to satisfy the Conditions of Concern and the Pollutants of Concern as addressed in the approved Project's SWQMP. This schedule shall include periodic inspections of all Source Control and Treatment Control BMP's. All maintenance records for training, inspection and maintenance shall be retained and provided to the city or county upon request.

The owner may also be required to provide to the City, as part of the maintenance and operation agreement an executed access easement that shall be binding on the land throughout the life of the project.

Responsible Party for O&M and For Training

The Mitchell Group
c/o Tigg Mitchell
142 South Cedros Avenue, Suite D, Solana Beach, CA 92075
Phone: 619-993-7089
tigg@themitchellgroup.us

The Designated Responsible Party will be responsible for ensuring that individuals involved in O&M activities, including but not limited to contractors and new owners, will be trained according to the training program herein, Additionally, upon any future sale of the property, the Owner will be responsible for ensuring that the new Designated Responsible Party is familiar with the contents of the plan and the requirements for the routine inspection, routine and non-routine maintenance and record keeping tasks as described herein. All parties involved in the O&M activities will be required to read this plan.

A. Training

Personnel training is an important component of the Implementation of this O&M Plan. The employee training program may consist of a meeting with any new owners, Designated Responsible Party or contractor/employees Involved in the O&M activities to review the contents of this plan and to physically tour the facility to observe the BMPs and describe O&M requirements for each BMP. The Designated Responsible Party will implement the training program. All new contractors involved in landscape and/or facility maintenance at the site shall receive training within 30-days of hire and shall receive updated annual training. Maintenance contractor shall verify staff training annually.

The Designated Responsible Party shall be responsible for documenting all training activities and for maintaining records related to training. Forms for documentation of training are included in Attachment C1 of this plan. Training records must be shall be retained and provided to the city upon request.

B. Landscaping

Operational and maintenance needs include:

- Vegetation management to maintain adequate drainage and to limit habitat for mosquitoes, rodents and other disease-carrying vectors.
- Parking lot sweeping.
- Animal and vector control (any method to limit or eradicate the mammals, birds, insects or other arthropods which transmit disease pathogens).
- Periodic sediment removal to optimize performance.
- Trash, debris, grass trimmings, tree pruning, and leaf collection and removal to prevent obstruction of landscape areas so as not to prohibit their use as a BMP.
- Monitoring irrigation equipment.
- Removal of standing water, which may contribute to the development of aquatic plant communities or mosquito breeding areas.
- Preventive maintenance on sampling, flow measurement, and associated BMP equipment and structures.
- Erosion and structural maintenance to prevent the loss of soil and maintain the performance of all landscaping.

<u>Inspection Frequency</u>

The facility will be inspected and inspection visits will be completely documented:

- Once a month at a minimum.
- After every large storm (after every storm monitored or these storms with more than 0.50 inch of precipitation.)
- On a weekly basis during extended periods of wet weather.

Inspect for proper irrigation and fertilizer use, and ensure that all landscaped areas have minimum of 80% coverage.

Visual Inspection as part of landscape maintenance

- Inspect before and after the rainy season (Prior to August 31).

Aesthetic Maintenance

The following activities will be included in the aesthetic maintenance program:

Grass Trimming: Trimming of grass will be done on all landscaped areas, around fences, at the inlet and outlet structures, and sampling structures.
Weed Control. Weeds will be removed through mechanical means. Herbicide shall not be used because these chemicals will impact the water quality monitoring.

Functional Maintenance

Functional maintenance has two components:

- Preventive maintenance
- Corrective maintenance

Preventive Maintenance

Preventive maintenance activities to be instituted for landscaped areas are:

- Grass Mowing: Vegetation seed, mix within the landscaped areas, are to be designed to be kept short to maintain adequate drainage and to limit the development of faunal habitats.
- Prohibitive dumping placards.
- Trash and Debris: During each inspection and maintenance visit to the site, debris and trash removal will be conducted to reduce the potential for inlet and outlet structures and other components from becoming clogged and inoperable during storm events.
- Sediment Removal: Sediment accumulation, as part of the operation and maintenance program at of landscaped areas, will be monitored once a month during the dry season, after every large storm (0.50 inch), and monthly during the wet season. Specifically, if sediment reaches a level at or near plant height, or could interfere with flow or operation, the sediment will be removed. If accumulation of debris or sediment is determined to be the cause of decline in design performance, prompt action (i.e., within ten working days) will be taken to restore the landscaped areas to design performance standards. Actions will include using additional fill and vegetation and/or removing accumulated sediment to correct channeling or ponding. Characterization and Appropriate disposal of sediment will comply with applicable local, county, state, or federal requirements. The landscaped areas will be re-graded, if the flow gradient has changed, and then replanted with sod.
- Removal of Standing Water: Standing water must be removed if it contributes to the development of aquatic plant communities or mosquito breeding areas.
- Fertilization and Irrigation: The vegetation seed mix is to been designed so that fertilization and irrigation is to be kept at a minimum.

- Elimination of Mosquito Breeding Habitats. The most effective mosquito control program is one that eliminates potential breeding habitats.

Corrective Maintenance

Corrective maintenance is required on an emergency or non-routine basis to correct problems and to restore the intended operation and safe function of all landscaped areas.

Corrective maintenance activities include:
Removal of Debris and Sediment: Sediment, debris, and trash, which impede the hydraulic functioning of landscaping and prevent vegetative growth, will be removed and properly disposed. Temporary arrangements will be made for handling the sediments until a permanent arrangement is made. Vegetation will be re-established after sediment removal.
Structural Repairs: Once deemed necessary, repairs to structural components of landscaping will be done within 10 working days. Qualified individuals (i.e., the designers or contractors) will conduct repairs where structural damage has occurred.
Embankment and Slope Repairs: Once deemed necessary, damage to the embankments and slopes of landscaped areas will be repaired as soon as possible, and within 10 working days maximum.
Erosion Repair: Where a reseeding program has been ineffective, or where other factors have created erosive conditions (i.e., pedestrian traffic, concentrated flow, etc.), corrective steps will be taken to prevent loss of soil and any subsequent danger to the performance and use of landscaped areas as BMPs. There are a number of corrective actions than can be taken.
These include erosion control blankets, riprap, sodding, or reduced flow through the area. Designers or contractors will be consulted to address erosion problems if the solution is not evident.

Elimination of Animal Burrows

Animal burrows will be filled and steps taken to remove the animals if burrowing problems continue to occur (filling and compacting). If the problem persists, vector control specialists will be consulted regarding removal steps. This consulting is necessary as the threat of rabies in some areas may necessitate the animals being destroyed rather than relocated. If the BMP performance is affected, abatement will begin. Otherwise, abatement will be performed annually in September.
General Facility Maintenance: In addition to the above elements of corrective maintenance, general corrective maintenance will address the overall facility and its associated components. If corrective maintenance is being done to one component, other components will be inspected to see if maintenance is needed.

Maintenance Frequency
The Inspection & Maintenance Schedule included in enclosed Attachment A1 for all BMPs lists the schedule of maintenance activities to be implemented.

Debris and Sediment Disposal
Waste generated onsite is ultimately the responsibility of the Owner. Disposal of sediments, debris, and trash will comply with applicable local, county, state, and federal waste control programs.

Hazardous Waste

Suspected hazardous wastes will be analyzed to determine disposal options. Hazardous wastes generated onsite will be handled and disposed of according to applicable local, state, and federal regulations. A solid or liquid waste is considered a hazardous waste if it exceeds the criteria listed in the CCR, Title 22, Article 11.

C. Irrigation System

Inspection Frequency and Procedure

The Irrigation system shall be checked each week as a minimum. The following items shall be checked to insure that they are functioning properly:

- Shut-off devices
- Pressure drop sensors
- Moisture sensors
- All piping and sprinkler heads to insure there are no leaks and that proper water spread is maintained.
- All flow reducers.
- Check for overspray/runoff

D. Roof Drains

All roof drains shall be inspected Prior to August 31 of each year to ensure that they are clean and free from trash and in good repair. They shall be flushed and any leaks or damages piping shall be either replaced or repaired. Where roof drains flow onto grass areas splash structures and or rock rip-rap shall be maintained so the flow from the roof drains do not cause erosion or damage to the grass area. During the rain season roof drains shall be inspected weekly and after each rain storm to insure that there is no trash and or silt build up that will restrict the run-off flow from the roof. All trash and/or silt build up shall be removed immediately.

- It is not permissible to directly connect roof drains into a drain system.
- Roof drain downspouts shall discharge runoff to a landscaped area, and to allow the runoff to flow through landscape, prior to entering a private yard drain system.

E. Storm Water Conveyance System Stenciling and Signing

- Signage/stenciling are to be inspected for legibility and visual obstruction and shall be Repaired and cleared of any obstruction within 5 working day of inspection.
- Inspection Frequency: Semi-annually, Prior to August 31 each year, and monthly during rainy season.

F. Structural BMP: Bioretention

Vegetated Infiltration or Filtration BMP

Maintenance Indicators and Actions for Vegetated BMPs

Typical Maintenance Indicator(s) for Vegetated BMPs	Maintenance Actions
Accumulation of sediment, litter, or debris	Remove and properly dispose of accumulated materials, without damage to the vegetation.
Poor vegetation establishment	Re-seed, re-plant, or re-establish vegetation per original plans.
Overgrown vegetation	Mow or trim as appropriate, but not less than the design height of the vegetation per original plans when applicable (e.g. a vegetated swale may require a minimum vegetation height).
Erosion due to concentrated irrigation flow	Repair/re-seed/re-plant eroded areas and adjust the irrigation system.
Erosion due to concentrated storm water runoff flow	Repair/re-seed/re-plant eroded areas, and make appropriate corrective measures such as adding erosion control blankets, adding stone at flow entry points, or minor re-grading to restore proper drainage according to the original plan. If the issue is not corrected by restoring the BMP to the original plan and grade, The City or County must be contacted prior to any additional repairs or reconstruction.
Standing water in vegetated swales	Make appropriate corrective measures such as adjusting irrigation system, removing obstructions of debris or invasive vegetation, loosening or replacing top soil to allow for better infiltration, or minor re-grading for proper drainage. If the issue is not corrected by restoring the BMP to the original plan and grade, City staff must be contacted prior to any additional repairs or reconstruction.
Standing water in bioretention, biofiltration with partial retention, or biofiltration areas, or flow-through planter boxes for longer than 96 hours following a storm event*	Make appropriate corrective measures such as adjusting irrigation system, removing obstructions of debris or invasive vegetation, clearing underdrains (where applicable), or repairing/replacing clogged or compacted soils.
Obstructed inlet or outlet structure	Clear obstructions.
Damage to structural components such as weirs, inlet or outlet structures	Repair or replace as applicable.
*These BMPs typically include a surface ponding layer as part of their function which may take 96 hours to drain following a storm event.	

Inspection Frequency

The facility will be inspected and inspection visits will be completely documented:

- Once a month at a minimum.
- After every large storm (after every storm monitored or these storms with more than 0.50 inch of precipitation.)
- On a weekly basis during extended periods of wet weather.

Maintenance is needed if vegetation height is greater than 5” (height shall be kept between 2” and 5”); if there is standing water; if debris are present or if sedimentation is occurring at the vegetation height; ensure that all landscaped areas have minimum of 80% coverage and that no animal burrows are present.

Visual Inspection as part of landscape maintenance

- Inspect before and after the rainy season (Prior to August 31).

G. Outlet Structures

All outlet structures shall be kept functional at all times. Routine inspection and corrective maintenance shall include removal of trash sediment and debris and repair of any structural damage or clogging of orifice outlets. The minimum maintenance frequency shall be Prior to August 31 each year, weekly during rainy season or within 24 hours prior to rain forecasts.

H. Pervious Pavement

Prevent soil being washed out onto the pavement and keep landscaped areas well maintained. Vacuum surface using commercially available sweeping machines as needed and at a minimum frequency of 2 times per year (at the end of winter and after autumn). If routine cleaning does not restore infiltration rates, then reconstruction of the pervious surface may be required.

- The surface area affected by hydraulic failure should be lifted for inspection of the internal materials to identify the location and extent of the blockage.
- Sub-surface layers may need cleaning and replacing.
- Removed silts may need to be disposed of as controlled waste.

I. Vector Control Owner Responsibilities

VECTOR MANAGEMET CONTROL REQUIREMENTS

Any method to limit or eradicate the mammals, birds, insects or other arthropods which transmit disease pathogens. Management of mosquitoes and other vectors in stormwater management structures, such as Bioretention Facilities and Best Management Practices, is critical for protecting public health.

In order to implement vector controls including minimizing the risk for mosquito-borne disease transmission, It is the responsibility of the Owner to regularly maintain the outlet structures and monitor the site after every storm event to ensure that the system (comprising of above and below ground storage facilities) is dewatered in less than 72 hours. Otherwise the owner will be required to implement a vector control plan in accordance with California Department of Public Health.

- Maintain all drainage inlets and outlets trash free; remove silt; make sure to clear any standing water after 72-hours of ponding.

Vector Control Resources:

1. For County of San Diego vector educational brochures please reference the following website: http://www.sdcounty.ca.gov/deh/pests/vector_disease.html
2. Please contact the County of San Diego vector control program with specific questions or concerns.

ATTACHMENT "A1"
INSPECTION & MAINTENANCE SCHEDULE

PREVENTATIVE MAINTENANCE AND ROUTINE INSPECTION					
TYPE BMP	Routine Action	Maintenance Indicator	Maintenance Frequency	MAINTENANCE ACTIVITY	SITE-SPECIFIC REQUIREMENTS
Landscaping & irrigation	Proper irrigation & Fertilizer.	Less than 80% coverage	Prior to August 31 each year and once during rainy season (Prior to August 31)	Re-plant. Repair Irrigation system within 5-days.	All slopes and landscaped areas are to have a minimum coverage of 80%
Trash storage areas	Trash free and removal of silt	Visual Inspection	Daily inspection	Remove trash and silt Daily.	All trash storage areas to be free from trash and silt at all times
Roof drain	Trash free and removal of silt, sedimentation & Debris	Silt build up of more than 1" no trash	Prior to August 31 each year and weekly during rain season.	Remove all trash and silt and repair any damage to roof drains,	All Roof to be free from trash and silt and in good repair
Bioretention – Biofiltration Facilities	Trash free and removal of silt. Clear Clogged outlets and Standing Water.	Silt build up of more than 2" no trash, Exposed soils, dead vegetation, ponded water, and excessive vegetation (see TC-30)	Prior to August 31 each year, monthly during rainy season, and after Storm Event	Remove trash and silt –repair and reseed exposed areas, maintain grass height so as not be shorter than 2" or higher than 5" remove all ponded water weekly inspections, (See TC-30)	All bio-filters to be free from trash and silt at all times, grass area to be free from exposed soil and maintained to proper height, removal of any ponding of water for more than 72 hours.
Storm Water Conveyance system Stenciling & Signing	Must be legible at all times and have a clear view.	Fading of paint or illegible letters or	Semi-annually, Prior to August 31 each year & monthly during rainy season	Repaint stenciling and/or replace signs Prior to August 31.	Appies to all stenciling and signs
Outlet Structures	Must be kept functional at all times. Clear Clogged outlets and Standing Water.	Silt, debris, trash accumulation, Ponding Water	Prior to August 31 each year and weekly during rainy season or within 24 hours prior to rain forecasts.	Silt, debris, trash accumulation and repair any structural damage to the outlet structures.	All outlet structures shall be kept functional at all times.
Pervious Pavement	Must be kept clean to allow for proper infiltration.	Silt, debris, trash accumulation, Ponding Water	Weekly	Vacuum surface using commercially available sweeping machines as needed and at a minimum frequency of 2 times per year (at the end of winter and after autumn)	If routine cleaning does not restore infiltration rates, then reconstruction of pervious surface may be required.

ATTACHMENT "B1"

Annual Estimate to Maintain all BMPs	**Annual**	**10-Year**
Landscaping & Bioretention Maintenance of landscaping and bio-filters is already included in the property management responsibilities. Additional cost:	$400	$4,000
Irrigation System: Inspection and maintenance of the irrigation system is already included in the property management responsibilities, Additional cost:	$100	$1,000
Roof Drains: Roof drain inspection and maintenance is already included in the property management responsibilities.		
Training: Once a year & training of new employees within their first week of employment.	$100	$1,000
Stormdrain Signage (As needed or every 2 years)	$100	$1,000
Trash Storage Areas: Inspection of trash storage area & maintenance to those areas is already included in the property management responsibilities. Additional cost:	$50	$500
Total Estimated Annual Cost to Maintain BMPs	$750	$7,500

ATTACHMENT "C1"

BMP TRAINING LOG

Date MO/Day/Yr	**Type of Training**	**Personnel Trained**	**Trainer**

ATTACHMENT "D1"

INSPECTION AND MAINTENANCE LOG				
BMP TYP & LOCATION	DATE M/D/Y	Name of Person Inspecting	Description of BMP Condition/ Description repair required if any	Date Repair made and Description repair made and by whom

ATTACHMENT 4

City of Escondido PDP Structural BMP Verification for Permitted Land Development Projects

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City of Escondido Storm Water Structural BMP Verification Form Page 1 of 4	
Project Summary Information	
Project Name	Escondido Assisted Living
Record ID (e.g., grading/improvement plan number)	
Project Address	1802 N. Centre City Parkway, Escondido CA 92026
Assessor's Parcel Number(s) (APN(s))	226-190-22
Project Watershed (Complete Hydrologic Unit, Area, and Subarea Name with Numeric Identifier)	Carlsbad HU, Escondido HAS 904.62
Maintenance Notification / Agreement No.	
Responsible Party for Construction Phase	
Developer's Name	Tigg Mitchell
Address	142 South Cedros Avenue, Suite D, Solana Beach, CA 92075
Email Address	tigg@themitchellgroup.us
Phone Number	619-993-7089
Engineer of Work	Spear & Associates Inc.
Engineer's Phone Number	760-736-2040
Responsible Party for Ongoing Maintenance	
Owner's Name(s)*	SAME AS DEVELOPER
Address	
Email Address	
Phone Number	
*Note: If a corporation or LLC, provide information for principal partner or Agent for Service of Process. If an HOA, provide information for the Board or property manager at time of project closeout.	

City of Escondido Storm Water Structural BMP Verification Form Page 2 of 4				
Stormwater Structural Pollutant Control & Hydromodification Control BMPs* (List all from SWQMP)				
Description/Type of Structural BMP	**Plan Sheet #**	**Structural BMP ID#**	**Maintenance Agreement Recorded Doc #**	**Revisions**
Retention by bioretention (INF-2)	BMP map	DMA A		
Retention by bioretention (INF-2)	BMP map	DMA B		
*All Priority Development Projects (PDPs) require a Structural BMP				

Note: If this is a partial verification of Structural BMPs, provide a list and map denoting Structural BMPs that have already been submitted, those for this submission, and those anticipated in future submissions.

City of Escondido Storm Structural BMP Verification Form Page 3 of 4

Checklist for Engineer of Work (EOW) to submit to Field Engineering:

- ☐ Copy of the final accepted SWQMP and any accepted addendum.
- ☐ Copy of the most current plan showing the Storm Water Structural BMP Table, plans/cross-section sheets of the Structural BMPs and the location of each verified as-built Structural BMP.
- ☐ Photograph of each Structural BMP.
- ☐ Photograph(s) of each Structural BMP during the construction process to illustrate proper construction.
- ☐ Copy of the approved Structural BMP maintenance agreement and associated security

By signing below, I certify that the Structural BMP(s) for this project have been constructed and all BMPs are in substantial conformance with the approved plans and applicable regulations. I understand the City reserves the right to inspect the above BMPs to verify compliance with the approved plans and Storm Water Ordinance. Should it be determined that the BMPs were not constructed to plan or code, corrective actions may be necessary before permits can be closed.

Please sign your name and seal.

Professional Engineer's Printed Name:

____

Professional Engineer's Signed Name:

____

Date: ________________________________

[SEAL]

City of Escondido Storm Water Structural BMP Verification Form Page 4 of 4

CITY - OFFICIAL USE ONLY:

Permit #:___________

City Inspector: ____

Date Project has/expects to close: ________________________________

Date verification received from Engineer of Work (EOW): _____________________

By signing below, City Inspector concurs that every noted Structural BMP has been installed per plan.

City Inspector's Signature: ______________________Date: _____________

FOR Environmental Programs:

Date Received from Field Engineering:______________________________

Environmental Programs Submittal Reviewer:__________________________

Environmental Programs Reviewer concurs that the information provided for the following Structural BMPs is acceptable to enter into the Structural BMP Maintenance verification inventory:

List **acceptable** Structural BMPs:

Environmental Programs Reviewer's Signature: ________________________

Date: ____________

ATTACHMENT 5

Copy of Plan Sheets Showing Permanent Storm Water BMPs, Source Control, and Site Design

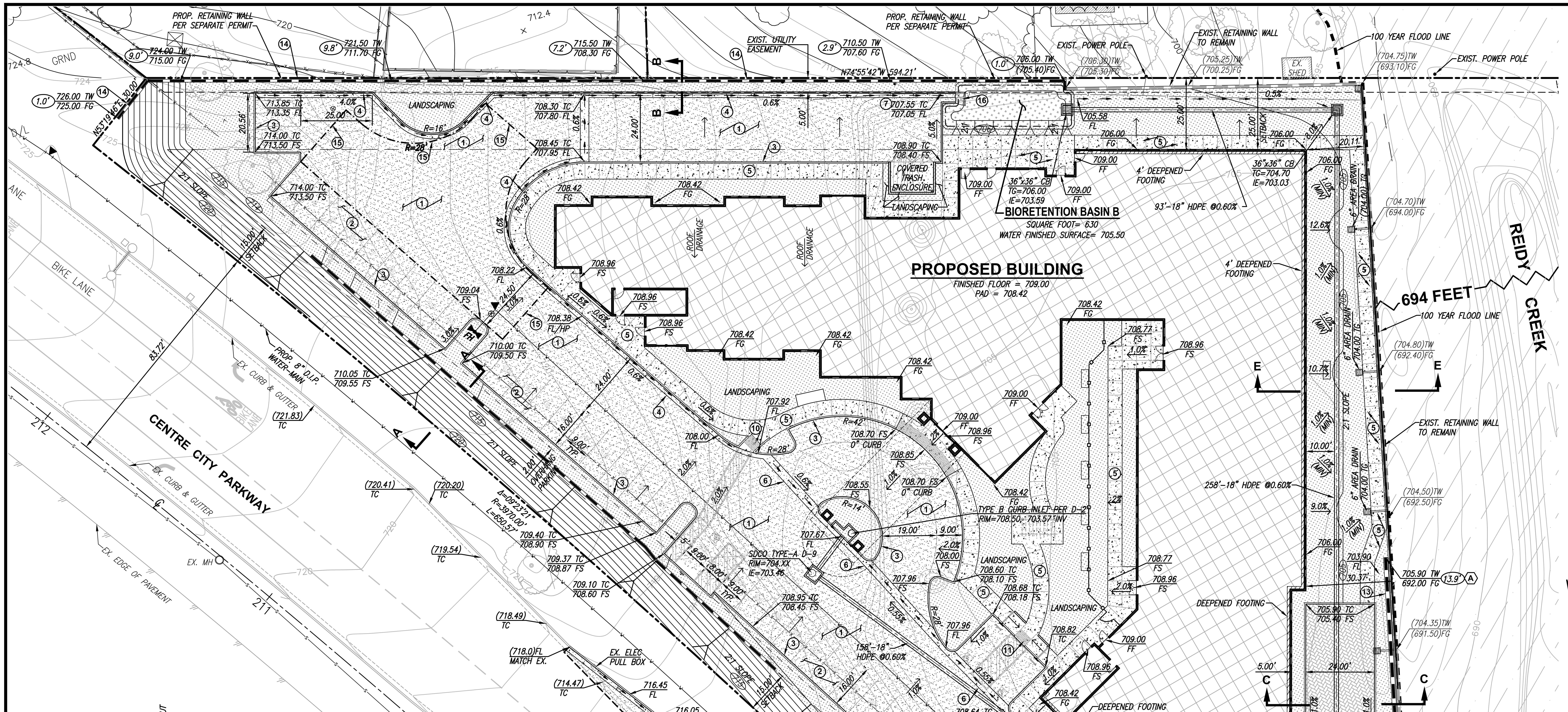
This is the cover sheet for Attachment 5.

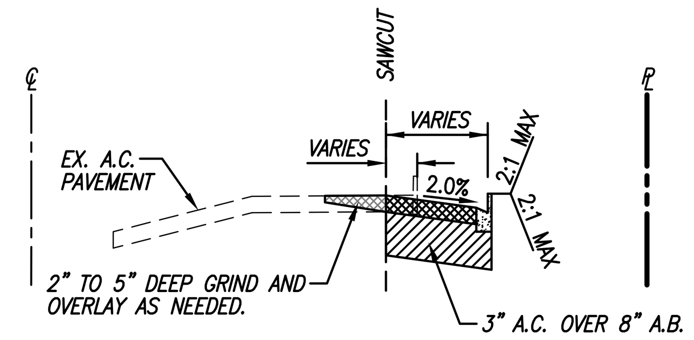
Use this checklist to ensure the required information has been included on the plans:

The plans must identify:

☐Structural BMP(s) with ID numbers matching Step 6 Summary of PDP Structural BMPs
☐The grading and drainage design shown on the plans must be consistent with the delineation of DMAs shown on the DMA exhibit
☐Details and specifications for construction of structural BMP(s)
☐Signage indicating the location and boundary of structural BMP(s) as required by City staff
☐How to access the structural BMP(s) to inspect and perform maintenance
☐Features that are provided to facilitate inspection (e.g., observation ports, cleanouts, silt posts, or other features that allow the inspector to view necessary components of the structural BMP and compare to maintenance thresholds)
☐Manufacturer and part number for proprietary parts of structural BMP(s) when applicable
☐Maintenance thresholds specific to the structural BMP(s), with a location-specific frame of reference (e.g., level of accumulated materials that triggers removal of the materials, to be identified based on viewing marks on silt posts or measured with a survey rod with respect to a fixed benchmark within the BMP)
☐Recommended equipment to perform maintenance
☐When applicable, necessary special training or certification requirements for inspection and maintenance personnel such as confined space entry or hazardous waste management
☐Include landscaping plan sheets showing vegetation requirements for vegetated structural BMP(s)
☐All BMPs must be fully dimensioned on the plans
☐When proprietary BMPs are used, site-specific cross section with outflow, inflow, and model number must be provided. Photocopies of general brochures are not acceptable.
☐Include all source control and site design measures described in Steps 4 and 5 of the SWQMP. Can be included as a separate exhibit as necessary.

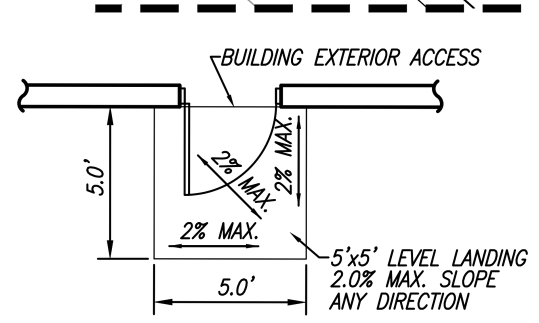
***Note: Plan sheets included in this attachment can be full size or half size.**





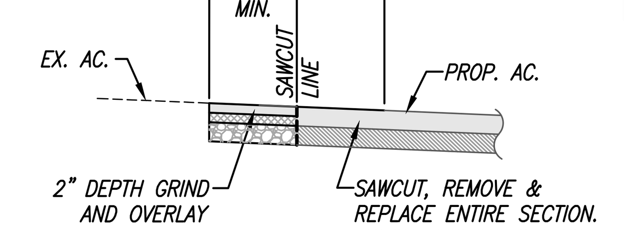
TYPICAL STREET SECTION

NOT-TO-SCALE



EXTERIOR DOOR LANDING

TYPICAL EXTERIOR DOORWAY LANDING AT ALL EXTERIOR DOORS

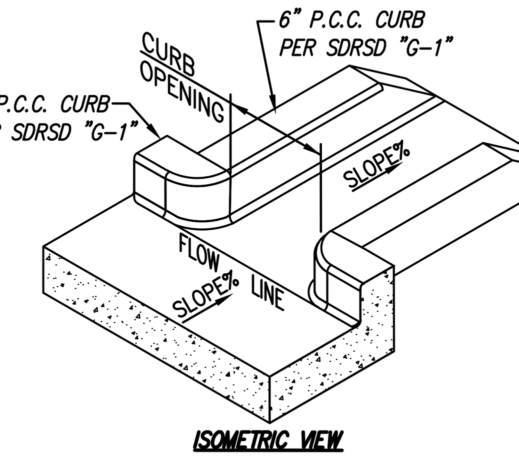


SAWCUT, GRIND AND OVERLAY

TYPICAL SECTION
NOT-TO-SCALE

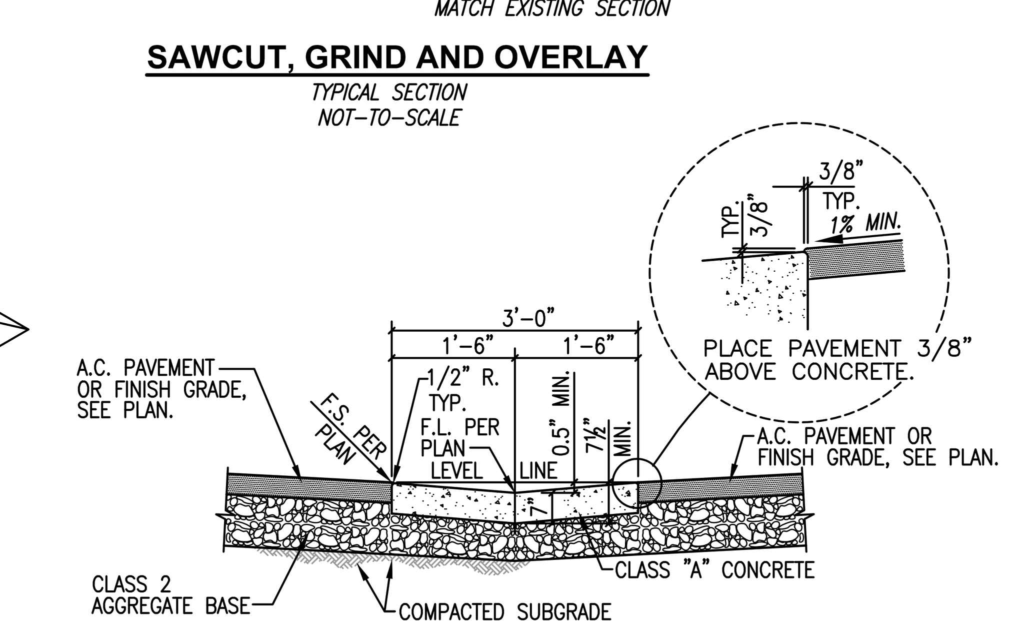
FIRE DEPARTMENT NOTES:

1. ALL FIRE ACCESS ROAD SHALL BE CONSTRUCTED TO HANDLE 75,000 POUND FIRE APPARATUS.
2. UNLESS NOTED OTHERWISE, NO PARKING WITHIN THE FIRE ACCESS AND TURN-AROUND AREA.
3. NO PARKING, FIRE LANE SIGNAGE AND PAVEMENT MARKINGS SHALL BE INSTALLED AS REQUIRED BY THE FIRE DEPARTMENT.
4. FIRE SPRINKLER (PER NFPA13), FIRE ALARMS (PER NFPA 72), AND UNDERGROUND FIRE LINE PLANS (PER NFPA 24) SHALL BE A SEPARATE SUBMITTAL TO ESCONDIDO FIRE.
5. FIRE FLOW IS 7000 GPM.



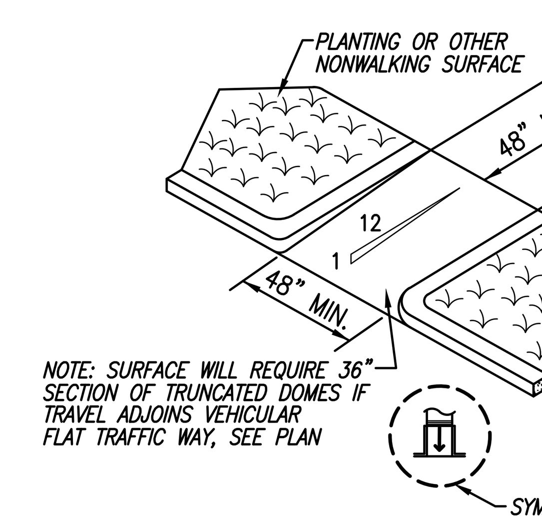
CURB OPENING DETAIL

TYPICAL P.C.C. SPILLWAY DETAIL
NOT-TO-SCALE



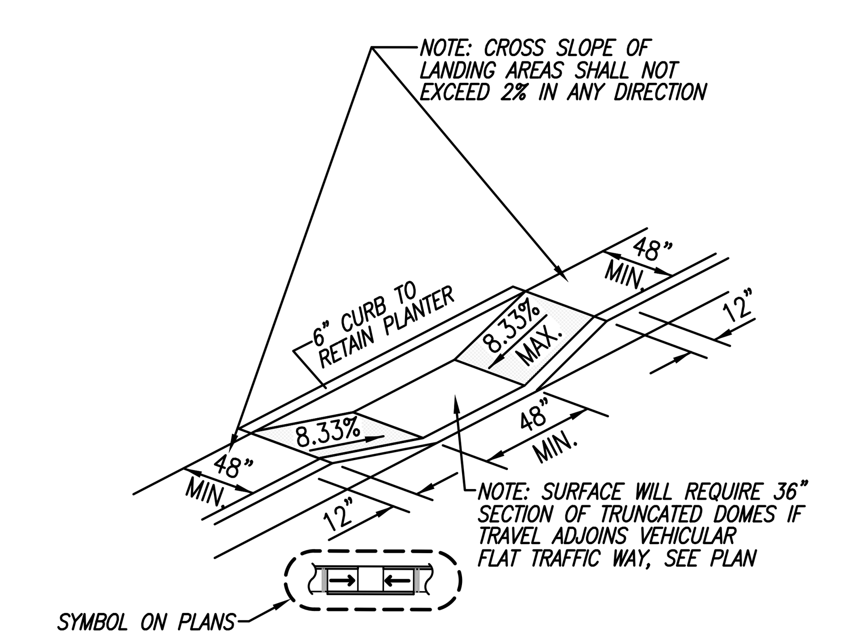
P.C.C. RIBBON GUTTER DETAIL

TYPICAL SECTION
NOT-TO-SCALE



SINGLE TYPE PEDESTRIAN ACCESS RAMP

MODIFIED PER G-31 (SRDSD)
NOT-TO-SCALE



DOUBLE TYPE PEDESTRIAN ACCESS RAMP

MODIFIED PER G-29 (SDRSD)
NOT-TO-SCALE

GRADING EXEMPTIONS:

AREAS REQUIRING GRADING EXEMPTIONS ARE IDENTIFIED BY THE FOLLOWING:

(A) RETAINING WALLS IN EXCESS OF 10 FEET IN HEIGHT.

(B) FILL SLOPES IN EXCESS OF 10 FEET IN HEIGHT.

UTILITY NOTE:

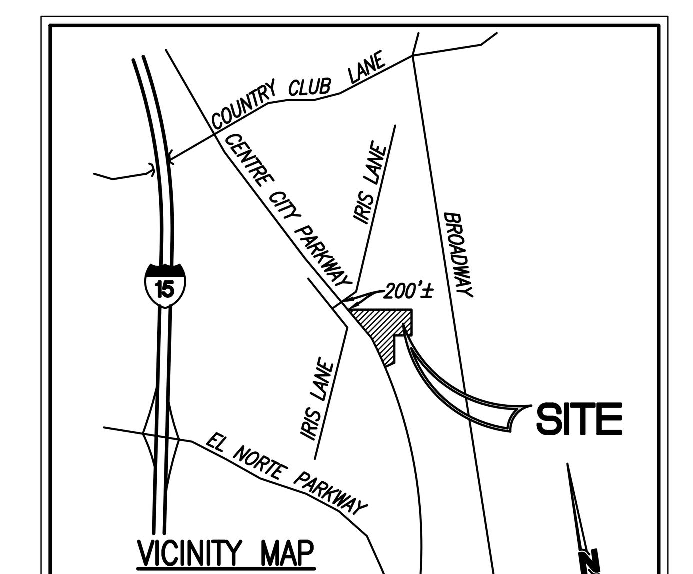
1. CONTRACTOR TO VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF EXISTING UTILITIES PRIOR TO THE START OF CONSTRUCTION. ENGINEER IS NOT RESPONSIBLE FOR PRECISE LOCATION OF EXISTING UNDERGROUND UTILITIES.
2. CONTRACTOR TO ADJUST EXISTING UTILITIES TO GRADE AS REQUIRED.

CONSTRUCTION NOTES:

1. *CONSTRUCT 3" AC PAVEMENT OVER 9" A.B. AND 95% COMPACTED SUBGRADE SOIL (HEAVY DRIVE AISLES).
2. *CONSTRUCT 3" AC PAVEMENT OVER 7" A.B. AND 95% COMPACTED SUBGRADE SOIL (PARKING STALLS).
3. CONSTRUCT 6" P.C.C. CURB PER SDRSD G-1 (SDRSD).
4. CONSTRUCT 6" P.C.C. CURB & GUTTER TYPE-G PER SDRSD G-2 (SDRSD).
5. CONSTRUCT 5.0' MIN. WIDE P.C.C. SIDEWALK PER G-7 (SDRSD).
6. CONSTRUCT 3.0' WIDE P.C.C. RIBBON GUTTER PER DETAIL SHEET 1.
7. CONSTRUCT 3.0' CURB OPENING W/SPLASH PAD PER DETAIL SHEET 1.
8. CONSTRUCT AC PAVEMENT OVER APPROVED CL-II AGGREGATE BASE (MATCH EX.)
9. SAWCUT & REMOVE AC. BERM, CURB & GUTTER PER DETAIL SHEET 1.
10. CONSTRUCT SINGLE TYPE PEDESTRIAN ACCESS RAMP W/TRUNCATED DOMES PER DETAIL SHEET 1.
11. CONSTRUCT DOUBLE TYPE PEDESTRIAN ACCESS RAMP W/TRUNCATED DOMES PER DETAIL SHEET 1.
12. CONSTRUCT 26' WIDE ALLEY TYPE DRIVEWAY (MODIFIED) PER COE G-5-E.
13. CONSTRUCT NEW SEGMENTAL RETAINING WALL WITH SPLIT FACE BLOCK AND DECORATIVE CAP, (DESIGNED FOR DRIVE AISLE SURCHARGE) PER SEPARATE PERMIT.
14. CONSTRUCT NEW CMU RETAINING WALL WITH SPLIT FACE BLOCK AND DECORATIVE CAP. SEE STRUCTURAL PLANS, PER SEPARATE PERMIT.
15. FIRE TRUCK TURN AROUND AREA. NO PARKING.
16. RIP-RAP ENERGY DISSIPATOR PER D-40 (SDRSD), W=5.0' x L= PER PLAN, TYPE 2 ROCK CLASS, 1' THICK OVER MIRAFI 140N (OR EQUAL) GEOTEXTILE FILTER BLANKET.

LEGEND OF SYMBOLS

	PROPERTY LINE
	STREET CENTERLINE
	EXISTING WATER LINE
	EXISTING SEWER LINE
	EXISTING CONTOURS
	DIRECTION OF DRAINAGE FLOW
(XX.XX) FL	EXISTING SPOT ELEVATIONS
XX.XX FL	PROPOSED SPOT ELEVATIONS
	AC PAVEMENT OVER CL-11 AB (PER SOILS REPORT)



VICINITY MAP

NOT TO SCALE
T.B.M. PG. 1109, G-5

SITE ADDRESS:
1802 N. CENTRE CITY PARKWAY
ESCONDIDO, CA 92026

ASSESSOR'S PARCEL NO.:
226-190-22

LEGAL DESCRIPTION:
ALL OF THAT PORTION OF BLOCK 421, SUBDIVISION OF RINCON DEL DIABLO, PER MAP THEREOF No. 723, EXCEPTING THAT PORTION DEEDED TO THE STATE OF CALIFORNIA FOR FREEWAY, SAID MAP RECORDED IN OFFICE OF THE CLERK AND RECORDER OF THE COUNTY OF SAN DIEGO, CALIFORNIA.

FEMA DATA:
HEC-RAS WORKMAP POST-DEVELOPMENT CONDITION
PREPARED BY: TORY R. WALKER ENGINEERING
DATED: 4/28/2008
VERTICAL DATUM: NGVD 29
FEMA PANEL: 06073C0814G

OWNER/APPLICANT DEVELOPER:
THE MITCHELL GROUP
142 S. CEDROS AVE. STE. D
ADDRESS
SOLANA BEACH, CA 92075
CITY, STATE, ZIP CODE
(619) 993-7089
PHONE
TIGG MITCHELL
CONTACT NAME

ESCONDIDO City of Choice

REGISTERED PROFESSIONAL ENGINEER JOSHUA R. ZEIGLER No. 85413 CIVIL STATE OF CALIFORNIA

"CONCEPTUAL"

RECORD DRAWING

JOSHUA R. ZEIGLER R.C.E. 85413 DATE

CITY OF ESCONDIDO ENGINEERING DEPARTMENT
APPROVED
By ____ Date ____ (for City Engineer)
Comments ____
OBTAIN GRADING PERMIT AT FIELD ENGINEERING OFFICE PRIOR TO GRADING
CITY PROJECT NO. ENG

SCALE: 1" = 20'

PLANS PREPARED BY:
SPEAR & ASSOCIATES, INC.
475 PRODUCTION STREET, SAN MARCOS, CA. 92078
PHONE (760) 736-2040 FAX (760) 736-4866

CONSTRUCTION RECORD	REFERENCES	Date	By	REVISIONS	App'd	Date	BENCH MARK	EARTHWORK QUANTITIES **	SCALE
Contractor	–						DESCRIPTION: CHISELED SQUARE ON TOP OF CURB INLET AT NW CORNER OF INTERSECTION OF CENTRE CITY PKWY. & IRIS LN. E/S FRONTAGE RD. APPROX. 50FT N. CENTER LINE IRIS LN. AT SW CORNER OF INLET.	CUT: 0 C.Y.	Horizontal As Shown
Inspector	–						STATION #540 734.20'	FILL: 0 C.Y.	Vertical As Shown
Date Completed							Bench Mark No. Elevation	EXPORT: 0 C.Y.	

Office	Designed By J.R.Z.	Drawn By A.J.V.	Checked By J.R.Z.
Filmed	Plans Prepared Under Supervision Of		
Traffic	Date ____ R.C.E. No. 85413		

DEPARTMENT OF PUBLIC WORKS - ENGINEERING DIVISION

CONCEPTUAL GRADING PLAN FOR,
ESCONDIDO ASSISTED LIVING

Drawing No. –

Sheet 1 of 3

SPEAR & ASSOCIATES, INC. JOB NO: 17-174 JRZ

PLOT DATE: 5/1/2018 1:47 PM S:\Spear Projects\2017\17-174 MITCHELL GROUP - 1802 N. CENTRE CITY, ESC\CAD\17-174CGP.dwg

CONSTRUCTION NOTES:

1. *CONSTRUCT 3" AC PAVEMENT OVER 9" A.B. AND 95% COMPACTED SUBGRADE SOIL (HEAVY DRIVE AISLES).
2. *CONSTRUCT 3" AC PAVEMENT OVER 7" A.B. AND 95% COMPACTED SUBGRADE SOIL (PARKING STALLS).
3. CONSTRUCT 6" P.C.C. CURB PER SDRSD G-1 (SDRSD).
4. CONSTRUCT 6" P.C.C. CURB & GUTTER TYPE-G PER SDRSD G-2 (SDRSD).
5. CONSTRUCT 5.0' MIN. WIDE P.C.C. SIDEWALK PER G-7 (SDRSD).
6. CONSTRUCT 3.0' WIDE P.C.C. RIBBON GUTTER PER DETAIL SHEET 1.
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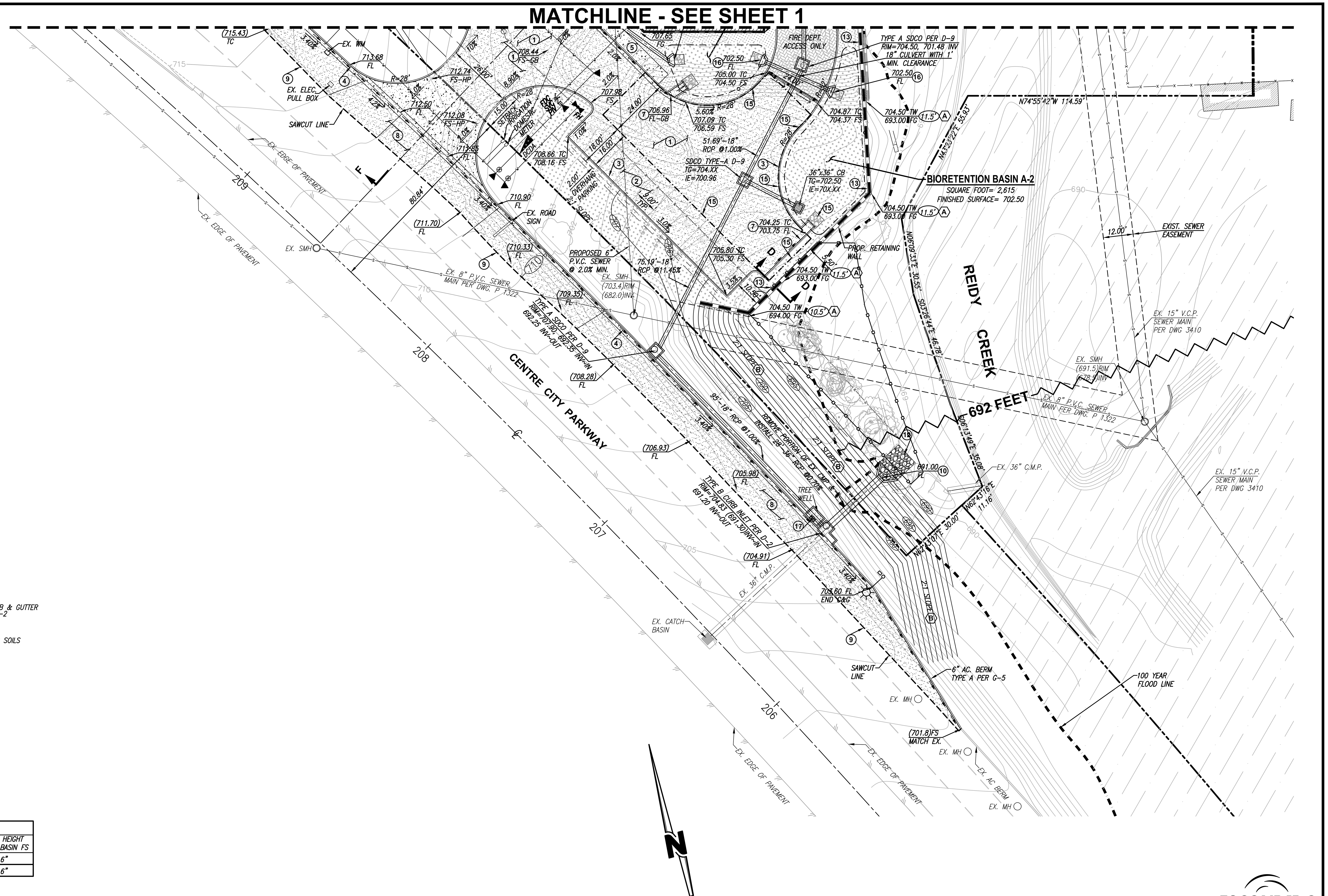
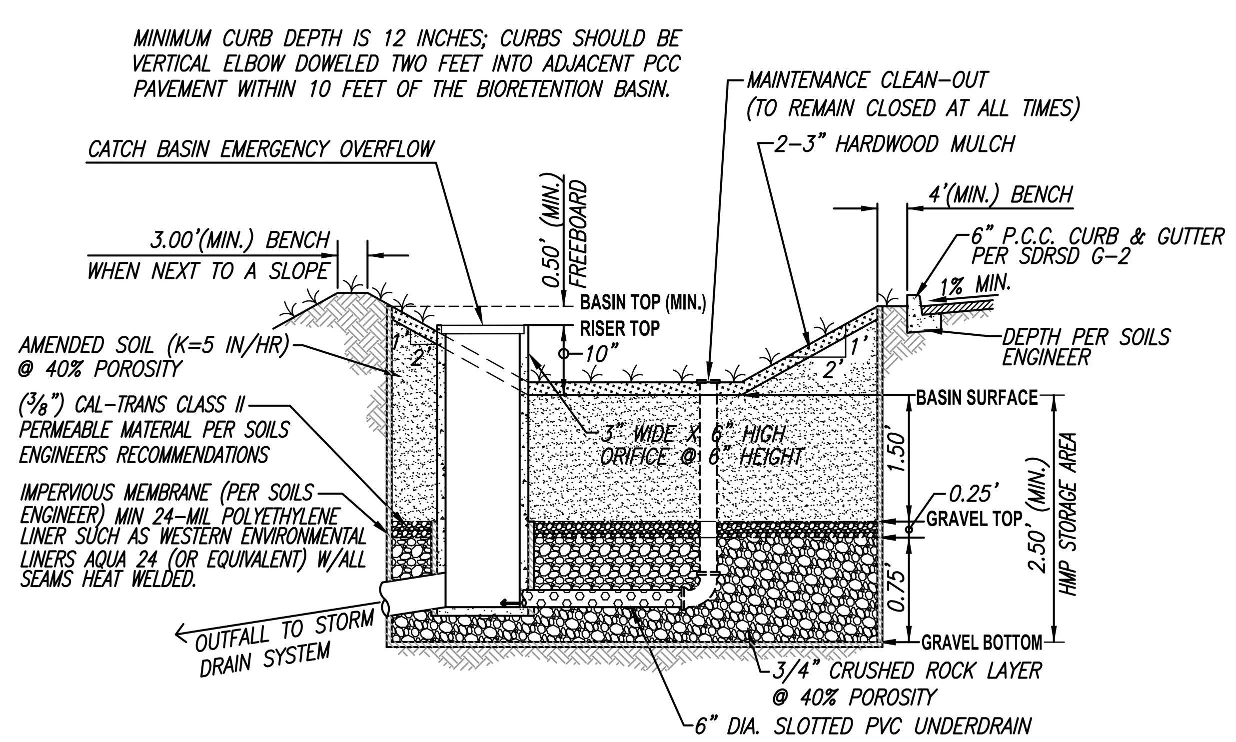
15. FIRE TRUCK TURN AROUND AREA. NO PARKING.
16. RIP-RAP ENERGY DISSIPATOR PER D-40 (SDRSD), W=5.0' x L= PER PLAN, TYPE 2 ROCK CLASS, 1' THICK OVER MIRAFI 140N (OR EQUAL) GEOTEXTILE FILTER BLANKET.
17. 4.0'x6.0' TREE WELL WITH 18" MIN. CURB OPENING W/SPLASH PAD, PER LATEST COUNTY GREEN STREET DESIGNS & SPECIFICATIONS AS APPROVED BY THE WPP, (PER DETAILS SHEET 3). OWNER TO MAINTAIN THREE WELL.

* FINAL PAVEMENT SECTION BASED ON R-VALUE APPROVED BY THE CITY ENGINEER.





BIORETENTION (INF-2) BASIN TYPICAL SECTION

TYPICAL DETAIL & OUTLET CONNECTION

INSTALLED BMP SHALL COMPLY WITH BF-1 BMP DESIGN FACT SHEET

NOT-TO-SCALE

BMP BASIN DATA TABLE

LETTER	ORIFICE SIZE	REQUIRED TREATMENT	PROVIDED TREATMENT	HYDROMODIFICATION VOLUME REQUIRED	HYDROMODIFICATION VOLUME PROVIDED	DESIGN CAPTURE VOLUME	RISER HEIGHT ABOVE BASIN FS
A	N/A	2,612 SF	2,615 SF	1,306 CF	1,308 CF	2,441 CF	6"
B	N/A	627 SF	630 SF	314 CF	315 CF	593 CF	6"

PLANS PREPARED BY:
SPEAR & ASSOCIATES, INC.
475 PRODUCTION STREET, SAN MARCOS, CA. 92078
PHONE (760) 736-2040 FAX (760) 736-4866

UTILITY NOTE:

1. CONTRACTOR TO VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF EXISTING UTILITIES PRIOR TO THE START OF CONSTRUCTION. ENGINEER IS NOT RESPONSIBLE FOR PRECISE LOCATION OF EXISTING UNDERGROUND UTILITIES.
2. CONTRACTOR TO ADJUST EXISTING UTILITIES TO GRADE AS REQUIRED.

GRADING EXEMPTIONS:

AREAS REQUIRING GRADING EXEMPTIONS ARE IDENTIFIED BY THE FOLLOWING:

(A) RETAINING WALLS IN EXCESS OF 10 FEET IN HEIGHT.

(B) FILL SLOPES IN EXCESS OF 10 FEET IN HEIGHT.

SCALE: 1" = 20'

"CONCEPTUAL"

RECORD DRAWING

JOSHUA R. ZEIGLER R.C.E. 85413 DATE

REGISTERED PROFESSIONAL ENGINEER JOSHUA R. ZEIGLER No. 85413 CIVIL STATE OF CALIFORNIA

ESCONDIDO City of Choice

CITY OF ESCONDIDO ENGINEERING DEPARTMENT

APPROVED

By ________ Date ________

(for City Engineer)

Comments ________

OBTAIN GRADING PERMIT AT FIELD ENGINEERING OFFICE PRIOR TO GRADING

CITY PROJECT NO. ENG

CONSTRUCTION RECORD	REFERENCES	Date	By	REVISIONS	App'd	Date	BENCH MARK	EARTHWORK QUANTITIES**	SCALE
Contractor	–						DESCRIPTION: CHISELED SQUARE ON TOP OF CURB INLET AT NW CORNER OF INTERSECTION OF CENTRE CITY PKWY. & IRIS LN. E/S FRONTAGE RD. APPROX. 50FT N. CENTER LINE IRIS LN. AT SW CORNER OF INLET.	CUT: 0 C.Y.	Horizontal As Shown
Inspector	–						STATION #540 / Bench Mark No.	FILL: 0 C.Y.	Vertical As Shown
Date Completed							734.20' / Elevation	EXPORT: 0 C.Y.	

Office	Designed By	Drawn By	Checked By
Filmed	J.R.Z.	A.J.V.	J.R.Z.
Traffic	Plans Prepared Under Supervision Of	Date	R.C.E. No. 85413

DEPARTMENT OF PUBLIC WORKS - ENGINEERING DIVISION

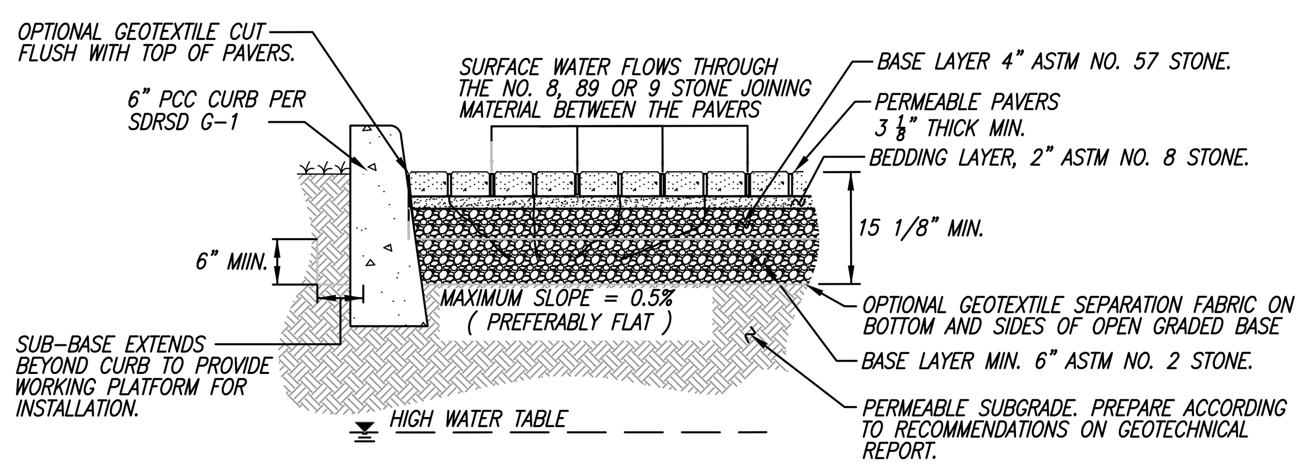
CONCEPTUAL GRADING PLAN FOR, ESCONDIDO ASSISTED LIVING

Drawing No. –

Sheet 2 of 3

SPEAR & ASSOCIATES, INC. JOB NO: 17-174 JRZ

PLOT DATE: 5/1/2018 1:48 PM S:\Spear_Projects\2017\17-174 MITCHELL GROUP - 1802 N. CENTRE CITY, ESC\CAD\17-174CGP.dwg

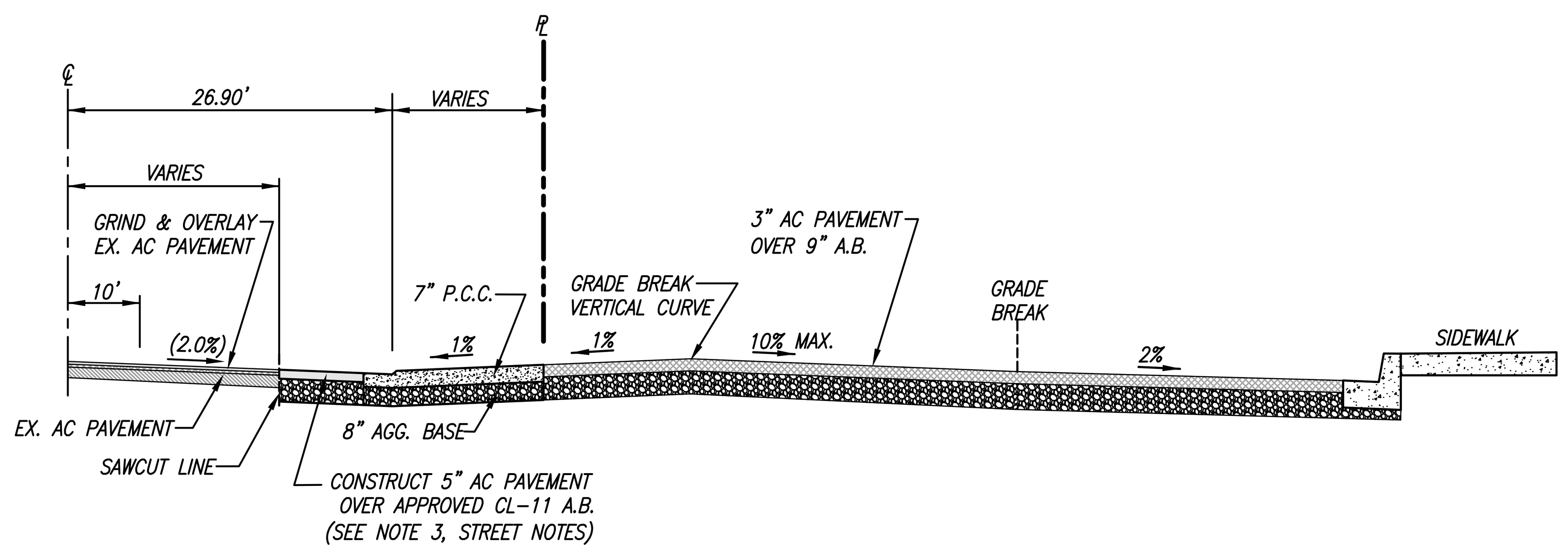


8 BELGARD PERMEABLE PAVING DETAIL

SECTION SHALL CONFORM WITH BELGARD MANUFACTURER'S SPECIFICATIONS
NOT-TO-SCALE

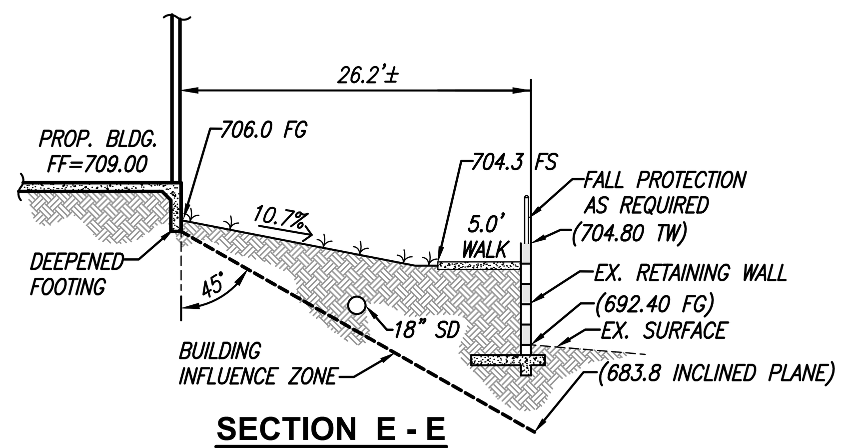
FIRE DEPARTMENT NOTE: *THE BELGARD PERMEABLE PAVERS, BEDDING LAYER, AND BASE LAYER **IS ADEQUATE TO HOLD 75,000 POUNDS.***

PERMEABLE PAVERS SECTION CONFORMS TO GREEN STREET STANDARDS GS-5.3a

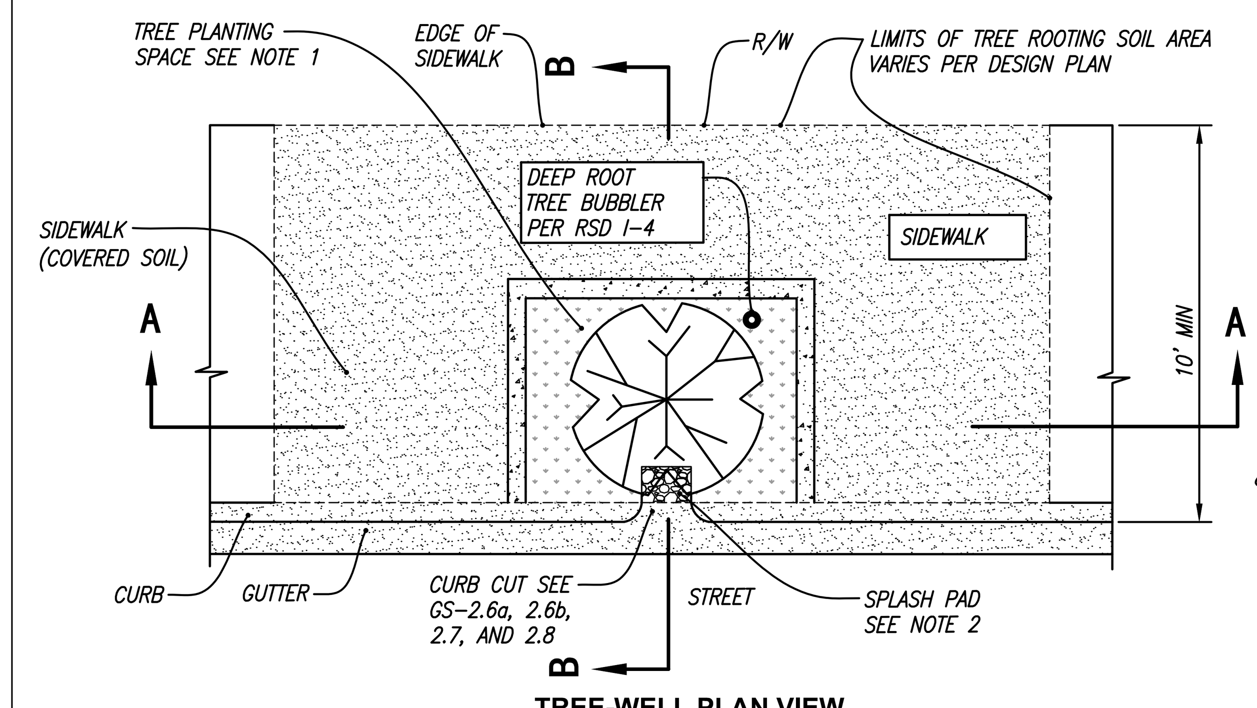


CENTER CITY PARKWAY

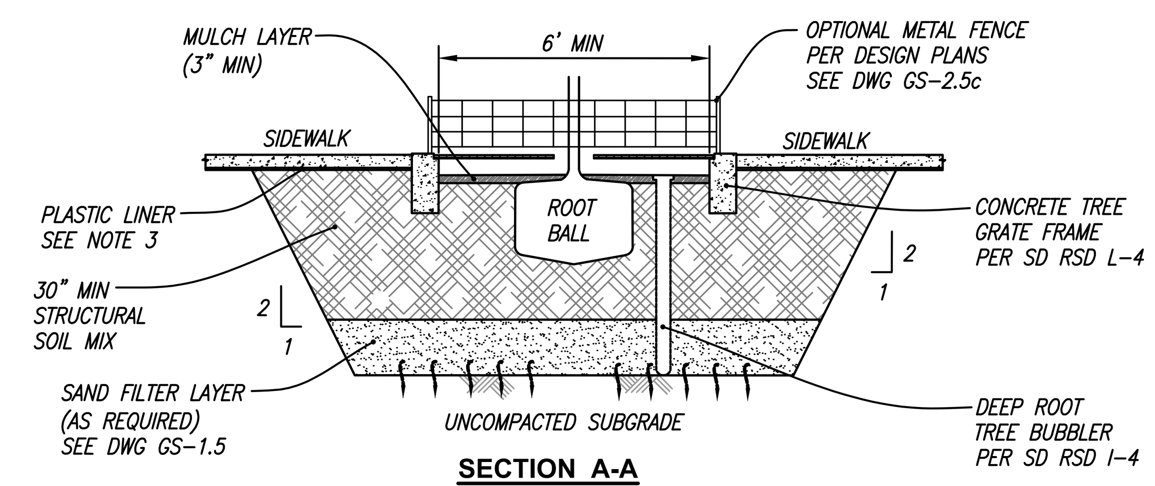
SECTION F - F
DRIVEWAY C/L
LOOKING EAST
NOT-TO-SCALE



SECTION E - E
NOT-TO-SCALE



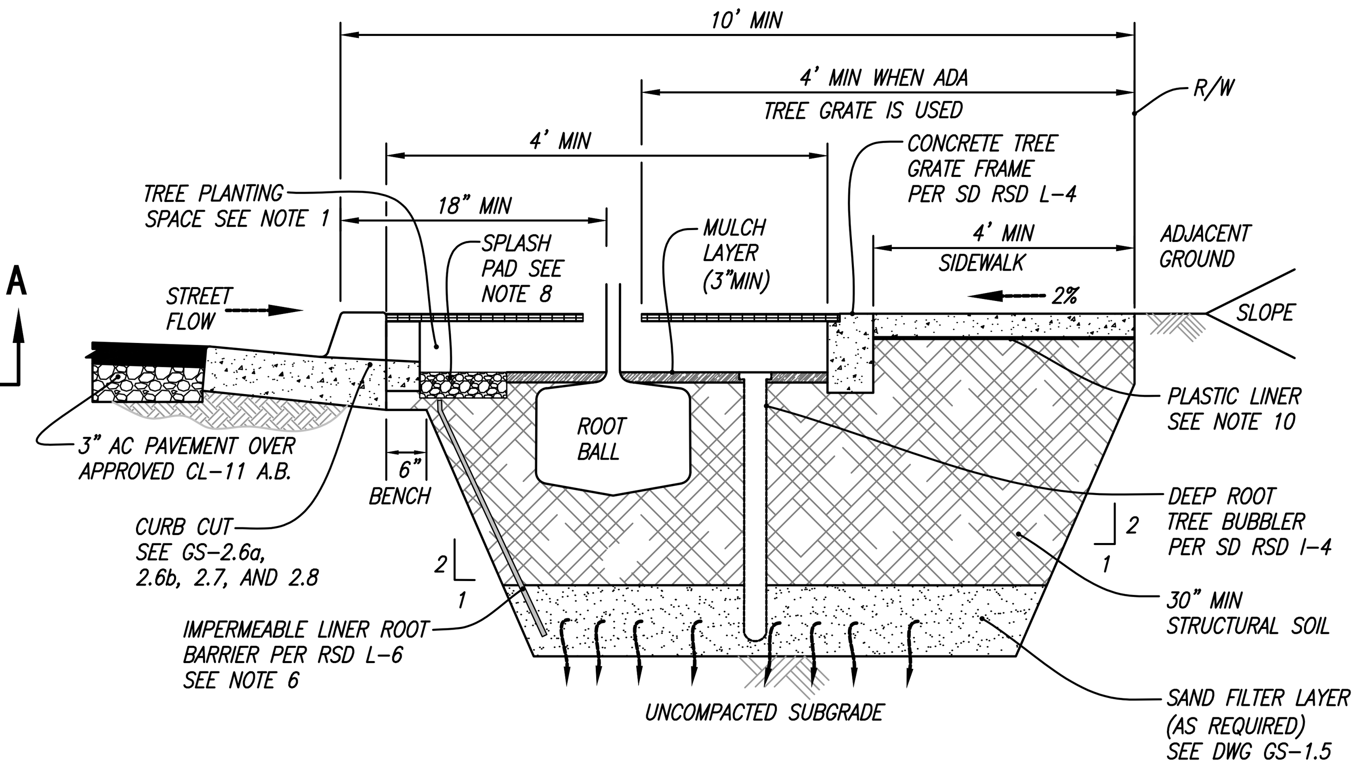
TREE-WELL PLAN VIEW



SECTION A-A

NOTES:

1. MINIMUM OPEN TREE PLANTING SPACE DIMENSION 4'x6'.
2. PROVIDE SPLASH PAD FOR TREE PLANTING SPACE PER GS-2.6b.
3. PROVIDE PLASTIC LINER WHERE CONCRETE WILL BE POURED ON TOP OF STRUCTURAL SOIL PER GREEN BOOK STANDARD SPECIFICATIONS SECTION 210-2.
4. MINIMUM VOLUME REQUIRED = 122 C.F. 10' WIDE x 6' LONG x 5' DEEP (30" MEDIA, 30" SAND FILTER LAYER)

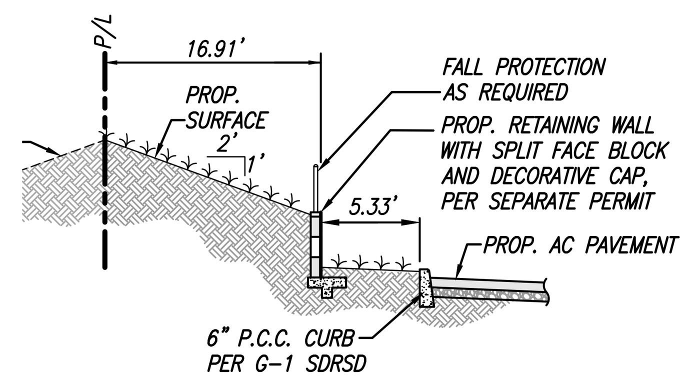


SECTION B-B

NOTES:

1. MINIMUM OPEN TREE PLANTING SPACE DIMENSION 4'x6'.
2. MAXIMUM WATERSHED AREA:6 TIMES AREA OF THE OPEN TREE PLANTING AREA.
3. SEE DWG GS-1.5 FOR BOTTOM SAND LAYER AND SUBSURFACE DRAINAGE REQUIREMENTS.
4. FOR SIDEWALK OVER STRUCTURAL SOIL DETAIL OPTIONS, SEE DWG GS-1.5.
5. SEE COE DWG L-1-E THROUGH L-2-E FOR TREE INSTALLATION REQUIREMENTS.
6. PROVIDE 36" DEEP ROOT BARRIER ON STREET SIDE OF TREE WELL AS NECESSARY.
7. REMOVE WIRE AND BURLAP FROM ROOT BALL PRIOR TO BACKFILLING.
8. PROVIDE SPLASH PAD FOR TREE PLANTING SPACE PER GS-2.6b.
9. IN SOME INSTANCES A MODIFIED SECTION BELOW CURB MAY BE REQUIRED BASED ON SOIL CONDITIONS.
10. PROVIDE PLASTIC LINER WHERE CONCRETE WILL BE POURED ON TOP OF STRUCTURAL SOIL PER GREEN BOOK STANDARD SPECIFICATIONS SECTION 210-2.

PLANS PREPARED BY:
SPEAR & ASSOCIATES, INC.
475 PRODUCTION STREET, SAN MARCOS, CA. 92078
PHONE (760) 736-2040 FAX (760) 736-4866



SECTION A - A
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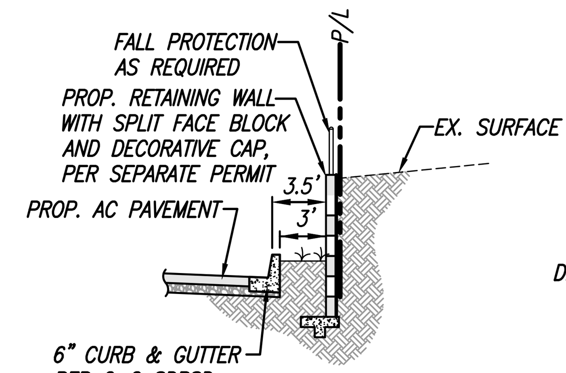
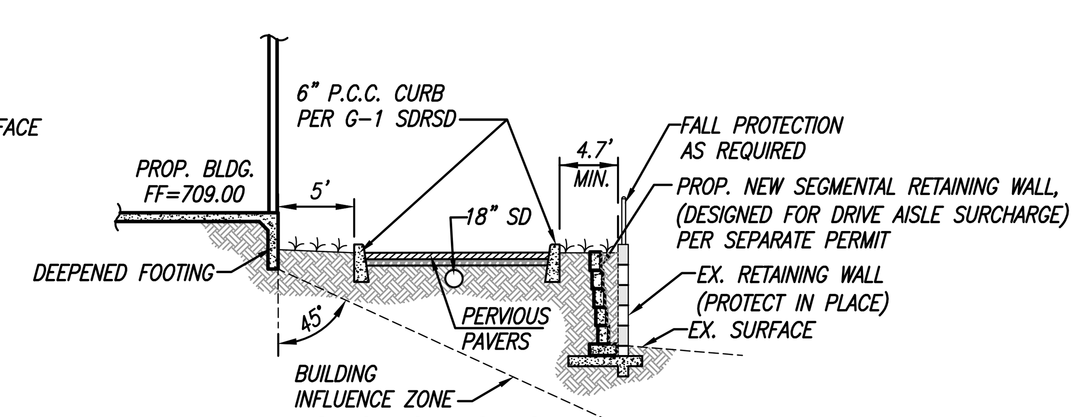
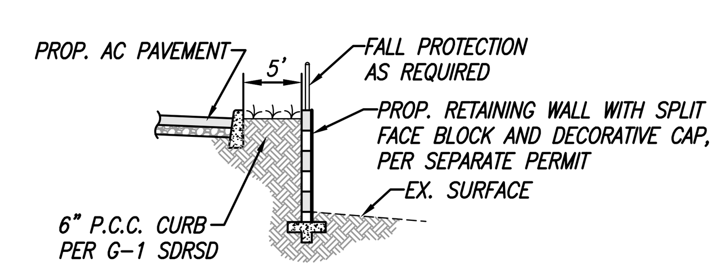


SECTION B - B
NOT-TO-SCALE



SECTION C - C
NOT-TO-SCALE



SECTION D - D
NOT-TO-SCALE

"CONCEPTUAL"

REGISTERED PROFESSIONAL ENGINEER
JOSHUA R. ZEIGLER
No. 85413
CIVIL
STATE OF CALIFORNIA

RECORD DRAWING

JOSHUA R. ZEIGLER R.C.E. 85413 DATE

ESCONDIDO
City of Choice

CITY OF ESCONDIDO ENGINEERING DEPARTMENT
APPROVED
By ____ Date ____
(for City Engineer)
Comments ____

OBTAIN GRADING PERMIT AT FIELD ENGINEERING OFFICE PRIOR TO GRADING

CITY PROJECT NO. ENG

CONSTRUCTION RECORD	REFERENCES	Date	By	REVISIONS	App'd	Date
Contractor	–					
Inspector	–					
Date Completed						

BENCH MARK
DESCRIPTION: CHISELED SQUARE ON TOP OF CURB INLET AT NW CORNER OF INTERSECTION OF CENTRE CITY PKWY. & IRIS LN. E/S FRONTAGE RD. APPROX. 50FT N. CENTER LINE IRIS LN. AT SW CORNER OF INLET.
STATION #540 — Bench Mark No.; 734.20' — Elevation

EARTHWORK QUANTITIES**
CUT: 0 C.Y.
FILL: 0 C.Y.
EXPORT: 0 C.Y.

SCALE: Horizontal As Shown; Vertical As Shown
Office ____ Filmed ____ Traffic ____

Designed By	Drawn By	Checked By
J.R.Z.	A.J.V.	J.R.Z.

Plans Prepared Under Supervision Of
Date ____
R.C.E. No. 85413

DEPARTMENT OF PUBLIC WORKS - ENGINEERING DIVISION

DETAILS PLAN FOR:
ESCONDIDO ASSISTED LIVING

Drawing No. –

SPEAR & ASSOCIATES, INC. JOB NO: 17-174 JRZ

22. Spear & Associates, Inc.; Hydrology/Hydraulic Study Escondido Assisted Living Phg17-0025 And Env17-0007, April 4, 2018

HYDROLOGY/HYDRAULIC STUDY

DATED 4/24/18

Escondido Assisted Living

LOCATION: 1802 N. Centre City Parkway, Escondido 92026
APN: 226-190-22

OWNER:
The Mitchell Group
c/o Tigg Mitchell
142 South Cedros Avenue, Suite D, Solana Beach, CA 92075
Phone: 619-993-7089
tigg@themitchellgroup.us

BY: SPEAR & ASSOCIATES, INC.
CIVIL ENGINEERING AND LAND SURVEYING
475 Production Street
San Marcos, CA 92078
PHONE: (760) 736-2040

Danny Abada, PE

TABLE OF CONTENTS

I. INTRODUCTION

This hydrology report was prepared for the Escondido Assisted Living, located at 1802 N. Centre City Parkway, Escondido CA 92026. APN: 226-190-22. The site encompasses approximately 3.48 acres and is zoned for Commercial use.

Project consists of constructing a 3-story building with a parking lot, landscaping and bioretention basins for stormwater treatment.

The existing site drainage is natural with topographic elevations ranging from approximately 728 to 688, sloping in a westerly direction. The drainage flows west towards Reidy Canyon Creek, located adjacent to the site, then approximately 2.6 miles towards the Escondido Creek then 13.8 miles to San Elijo Lagoon and the Pacific Ocean.

The project will maintain the existing drainage characteristics of the site. The runoff will be directed to a biofiltration basin for stormwater treatment and and continue west towards Reidy Canyon Creek, through a new storm drain system then continue west with the same flow path as in pre-development

The development utilizes low impact development strategies, which mimic the site's pre-development hydrology, and maximize pervious surfaces with landscaping and a biofiltration basin.

We have used the County of San Diego Hydrology Manual for this report to calculate the 100-year flow generated from the site, using the Rational method. Based on the soil hydrologic group map in Appendix A of the County Hydrology Manual, the northern 2/3 of the site consists of soil type B and the southern 1/3 consists of soil type A. Runoff Coefficient for Undeveloped Areas figure 819.2A, from the Caltrans Storm Water Handbook, was used to evaluate the existing runoff coefficient because the site was previously graded, is mostly bare and does not conform to the typical undisturbed natural areas. Detention basin calculations were performed with the use of HydroCad and Rathydro.

II. DISCUSSION/CONCLUSION

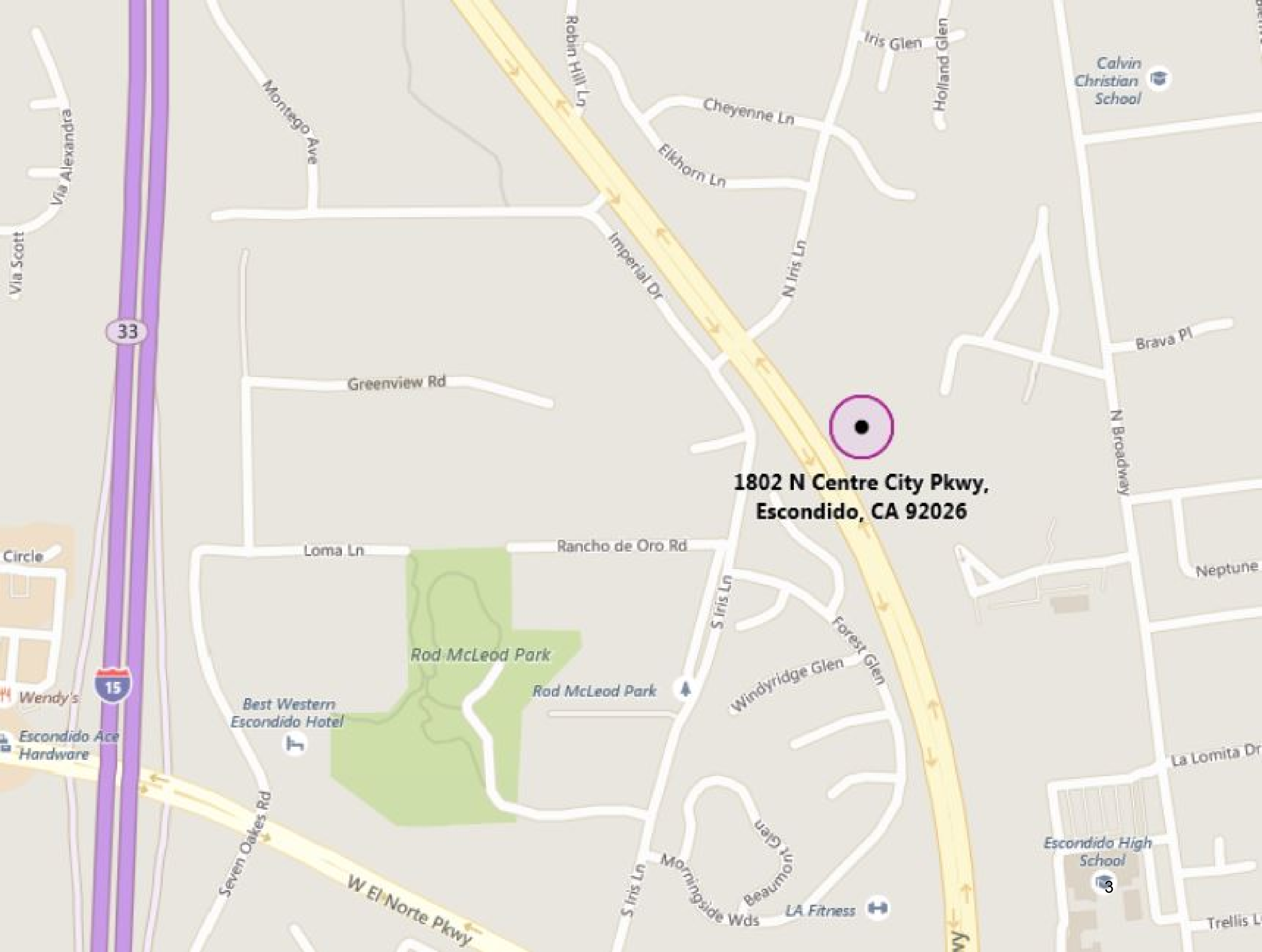
This project will maintain existing drainage patterns along the site and will not alter the course of a stream or river and therefore will not contribute to substantial erosion or siltation onsite or offsite.

Post development peak flows, flow volumes and velocities will not be increased from pre-development rates by maximizing pervious surfaces and onsite detention basins.

Summary of Flow Rates

100-yr Storm Event	***(cfs)***
Onsite Pre-Dev.	12.8
Onsite Post-Dev.	9.3
Offsite Pre & Post Dev.	3.6

ATTACHMENT A


1802 N Centre City Pkwy,
Escondido, CA 92026
Calvin Christian School
Iris Glen
Holland Glen
Robin Hill Ln
Cheyenne Ln
Elkhorn Ln
Montego Ave
Via Alexandra
Via Scott
Imperial Dr
N Iris Ln
Brava Pl
N Broadway
33
Greenview Rd
Loma Ln
Rancho de Oro Rd
Circle
S Iris Ln
Forest Glen
Neptune
Rod McLeod Park
Rod McLeod Park
Windyridge Glen
15
Wendy's
Best Western Escondido Hotel
Escondido Ace Hardware
La Lomita Dr
Seven Oakes Rd
Morningside Wds
Beaumont Glen
Escondido High School
LA Fitness
W El Norte Pkwy
S Iris Ln
Trellis L
3

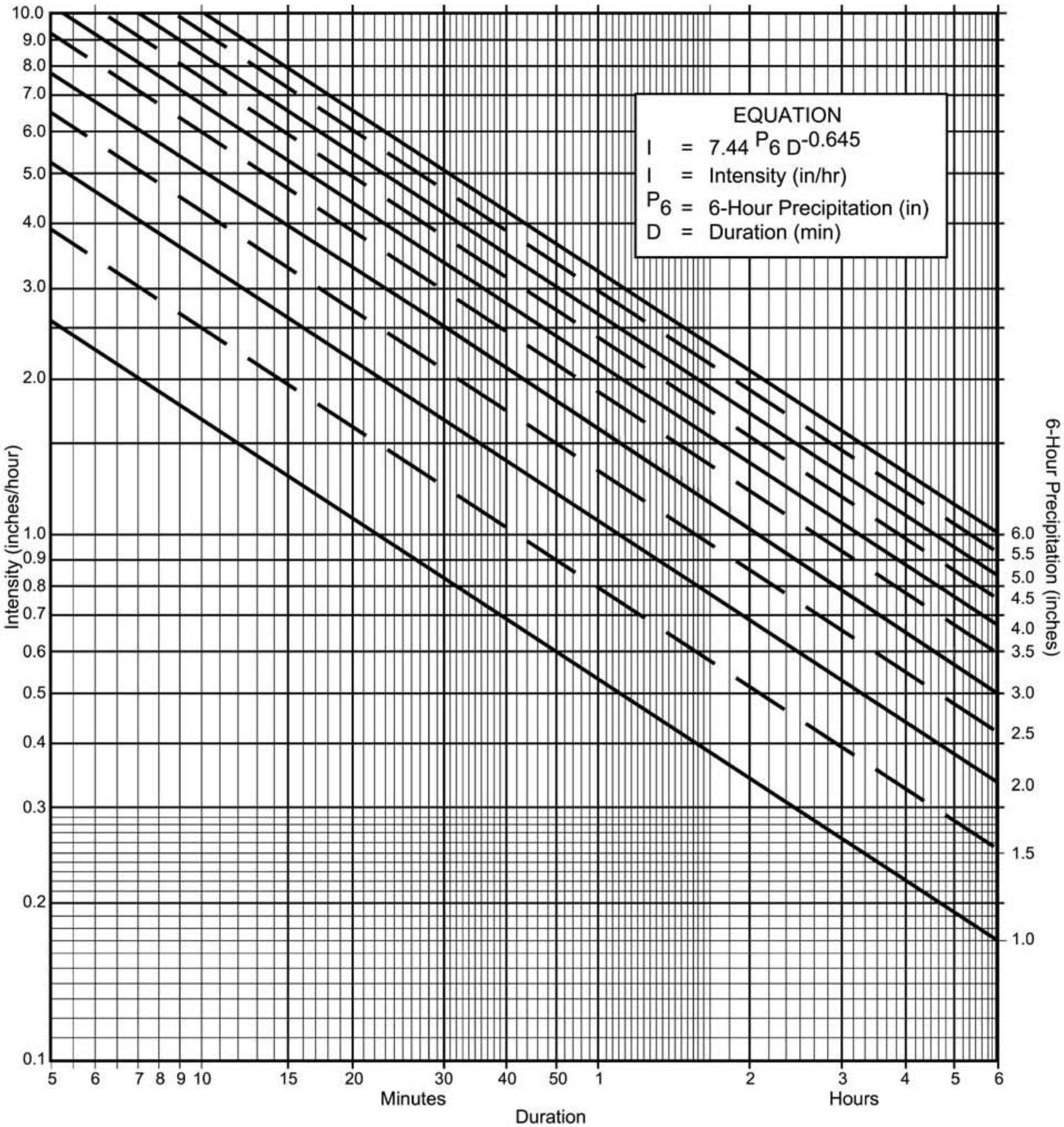
ATTACHMENT B

Post-Development **Rational Method, 100yr Event**

REACH	TC	C	A	CA	∑CA	P_6	I	**Q cfs**	**W/Detention Basin Q cfs**
Area A	10.1	0.5	1.74	0.87	0.87	3.34	5.59	**4.9**	
Area B	12.5	0.5	0.49	0.25	0.25	3.34	4.87	**1.2**	
Area A & B Routed									**3.8**
SM-1	5	0.5	1.25	0.63	0.63	3.34	8.80	**5.5**	
Total Onsite Flow	12.5		3.48		1.74	3.34	4.87	**8.5**	**9.3**
Offsite O	7.5	0.8	0.66	0.53	0.53	3.34	6.77	**3.6**	

Pre-Development

REACH	TC	C	A	CA	∑CA	P_6	I	**Q cfs**
Total Onsite Flow	5.6	0.45	3.48	1.57	1.57	3.34	8.18	**12.8**
Offsite O	7.5	0.8	0.66	0.53	0.53	3.34	6.77	**3.6**



Directions for Application:

(1) From precipitation maps determine 6 hr and 24 hr amounts for the selected frequency. These maps are included in the County Hydrology Manual (10, 50, and 100 yr maps included in the Design and Procedure Manual).

(2) Adjust 6 hr precipitation (if necessary) so that it is within the range of 45% to 65% of the 24 hr precipitation (not applicable to Desert).

(3) Plot 6 hr precipitation on the right side of the chart.

(4) Draw a line through the point parallel to the plotted lines.

(5) This line is the intensity-duration curve for the location being analyzed.

Application Form:

(a) Selected frequency 100 year

(b) P_6 = 3.34 in., P_{24} = 5.68, $\frac{P_6}{P_{24}}$ = 59 %(2)

(c) Adjusted $P_6^{(2)}$ = ______ in.

(d) t_x = ______ min.

(e) I = ______ in./hr.

Note: This chart replaces the Intensity-Duration-Frequency curves used since 1965.

P6	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6
Duration	I	I	I	I	I	I	I	I	I	I	I
5	2.63	3.95	5.27	6.59	7.90	9.22	10.54	11.86	13.17	14.49	15.81
7	2.12	3.18	4.24	5.30	6.36	7.42	8.48	9.54	10.60	11.66	12.72
10	1.68	2.53	3.37	4.21	5.05	5.90	6.74	7.58	8.42	9.27	10.11
15	1.30	1.95	2.59	3.24	3.89	4.54	5.19	5.84	6.49	7.13	7.78
20	1.08	1.62	2.15	2.69	3.23	3.77	4.31	4.85	5.39	5.93	6.46
25	0.93	1.40	1.87	2.33	2.80	3.27	3.73	4.20	4.67	5.13	5.60
30	0.83	1.24	1.66	2.07	2.49	2.90	3.32	3.73	4.15	4.56	4.98
40	0.69	1.03	1.38	1.72	2.07	2.41	2.76	3.10	3.45	3.79	4.13
50	0.60	0.90	1.19	1.49	1.79	2.09	2.39	2.69	2.98	3.28	3.58
60	0.53	0.80	1.06	1.33	1.59	1.86	2.12	2.39	2.65	2.92	3.18
90	0.41	0.61	0.82	1.02	1.23	1.43	1.63	1.84	2.04	2.25	2.45
120	0.34	0.51	0.68	0.85	1.02	1.19	1.36	1.53	1.70	1.87	2.04
150	0.29	0.44	0.59	0.73	0.88	1.03	1.18	1.32	1.47	1.62	1.76
180	0.26	0.39	0.52	0.65	0.78	0.91	1.04	1.18	1.31	1.44	1.57
240	0.22	0.33	0.43	0.54	0.65	0.76	0.87	0.98	1.08	1.19	1.30
300	0.19	0.28	0.38	0.47	0.56	0.66	0.75	0.85	0.94	1.03	1.13
360	0.17	0.25	0.33	0.42	0.50	0.58	0.67	0.75	0.84	0.92	1.00

Intensity-Duration Design Chart - Template

FIGURE 3-1

NOAA Atlas 14, Volume 6, Version 2
Location name: Escondido, California, USA*
Latitude: 33.1506°, Longitude: -117.0946°
Elevation: 708.08 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.119 (0.100–0.143)	0.150 (0.127–0.181)	0.192 (0.161–0.231)	0.227 (0.189–0.276)	0.275 (0.221–0.346)	0.312 (0.245–0.402)	0.351 (0.268–0.464)	0.392 (0.290–0.534)	0.448 (0.318–0.638)	0.492 (0.336–0.727)
10-min	0.171 (0.144–0.204)	0.216 (0.181–0.259)	0.276 (0.231–0.332)	0.325 (0.271–0.395)	0.394 (0.316–0.496)	0.448 (0.351–0.577)	0.503 (0.385–0.665)	0.561 (0.416–0.765)	0.642 (0.455–0.914)	0.705 (0.482–1.04)
15-min	0.206 (0.174–0.247)	0.261 (0.219–0.313)	0.333 (0.280–0.401)	0.393 (0.327–0.478)	0.476 (0.382–0.600)	0.542 (0.425–0.697)	0.609 (0.465–0.805)	0.679 (0.503–0.925)	0.776 (0.550–1.11)	0.853 (0.583–1.26)
30-min	0.289 (0.243–0.346)	0.365 (0.307–0.438)	0.466 (0.391–0.562)	0.551 (0.458–0.669)	0.667 (0.535–0.840)	0.758 (0.594–0.976)	0.852 (0.651–1.13)	0.950 (0.705–1.30)	1.09 (0.770–1.55)	1.19 (0.816–1.76)
60-min	0.452 (0.381–0.542)	0.571 (0.480–0.685)	0.730 (0.612–0.878)	0.861 (0.716–1.05)	1.04 (0.837–1.31)	1.19 (0.930–1.53)	1.33 (1.02–1.76)	1.49 (1.10–2.03)	1.70 (1.21–2.42)	1.87 (1.28–2.76)
2-hr	0.650 (0.548–0.779)	0.813 (0.684–0.975)	1.04 (0.869–1.25)	1.23 (1.02–1.49)	1.50 (1.20–1.89)	1.72 (1.35–2.21)	1.95 (1.49–2.58)	2.20 (1.63–3.00)	2.56 (1.81–3.64)	2.85 (1.95–4.21)
3-hr	0.791 (0.667–0.949)	0.985 (0.829–1.18)	1.25 (1.05–1.51)	1.49 (1.24–1.81)	1.83 (1.46–2.30)	2.10 (1.65–2.71)	2.40 (1.83–3.17)	2.72 (2.02–3.70)	3.18 (2.26–4.53)	3.57 (2.44–5.27)
6-hr	1.09 (0.922–1.31)	1.36 (1.15–1.64)	1.74 (1.46–2.09)	2.06 (1.71–2.50)	2.53 (2.03–3.19)	2.92 (2.29–3.76)	3.34 (2.55–4.41)	3.79 (2.81–5.17)	4.46 (3.16–6.35)	5.01 (3.42–7.40)
12-hr	1.50 (1.27–1.80)	1.88 (1.59–2.26)	2.41 (2.02–2.90)	2.85 (2.37–3.47)	3.49 (2.80–4.39)	4.01 (3.14–5.16)	4.55 (3.48–6.02)	5.14 (3.81–7.00)	5.97 (4.23–8.50)	6.65 (4.54–9.82)
24-hr	1.87 (1.65–2.15)	2.36 (2.08–2.73)	3.03 (2.67–3.52)	3.60 (3.14–4.21)	4.39 (3.71–5.30)	5.02 (4.16–6.18)	5.68 (4.60–7.15)	6.37 (5.03–8.24)	7.34 (5.57–9.88)	8.13 (5.97–11.3)
2-day	2.30 (2.03–2.65)	2.94 (2.59–3.40)	3.82 (3.36–4.43)	4.56 (3.98–5.33)	5.60 (4.74–6.75)	6.43 (5.33–7.91)	7.30 (5.92–9.19)	8.23 (6.50–10.6)	9.53 (7.24–12.8)	10.6 (7.78–14.7)
3-day	2.57 (2.27–2.97)	3.33 (2.93–3.85)	4.35 (3.83–5.05)	5.23 (4.56–6.11)	6.47 (5.47–7.80)	7.46 (6.19–9.18)	8.51 (6.90–10.7)	9.63 (7.60–12.4)	11.2 (8.51–15.1)	12.5 (9.18–17.4)
4-day	2.81 (2.48–3.25)	3.66 (3.22–4.23)	4.81 (4.23–5.58)	5.79 (5.06–6.77)	7.19 (6.08–8.67)	8.31 (6.89–10.2)	9.50 (7.70–12.0)	10.8 (8.50–13.9)	12.6 (9.54–16.9)	14.0 (10.3–19.5)
7-day	3.28 (2.90–3.80)	4.29 (3.78–4.97)	5.66 (4.98–6.57)	6.83 (5.96–7.98)	8.48 (7.17–10.2)	9.80 (8.13–12.1)	11.2 (9.08–14.1)	12.7 (10.0–16.4)	14.8 (11.2–19.9)	16.5 (12.1–22.9)
10-day	3.61 (3.19–4.17)	4.74 (4.18–5.48)	6.27 (5.52–7.28)	7.57 (6.61–8.85)	9.41 (7.96–11.4)	10.9 (9.03–13.4)	12.4 (10.1–15.7)	14.1 (11.1–18.2)	16.4 (12.5–22.1)	18.3 (13.4–25.4)
20-day	4.43 (3.91–5.13)	5.88 (5.18–6.80)	7.85 (6.91–9.11)	9.53 (8.31–11.1)	11.9 (10.1–14.4)	13.8 (11.4–17.0)	15.8 (12.8–19.9)	18.0 (14.2–23.2)	21.0 (15.9–28.2)	23.5 (17.2–32.6)
30-day	5.29 (4.67–6.12)	7.05 (6.22–8.16)	9.46 (8.32–11.0)	11.5 (10.1–13.5)	14.4 (12.2–17.4)	16.8 (13.9–20.7)	19.3 (15.6–24.3)	22.0 (17.4–28.4)	25.8 (19.6–34.7)	28.9 (21.2–40.2)
45-day	6.24 (5.51–7.21)	8.32 (7.34–9.63)	11.2 (9.86–13.0)	13.7 (11.9–16.0)	17.2 (14.6–20.8)	20.1 (16.7–24.8)	23.2 (18.8–29.2)	26.5 (20.9–34.3)	31.3 (23.8–42.1)	35.3 (25.9–49.0)
60-day	7.23 (6.38–8.36)	9.63 (8.49–11.1)	13.0 (11.4–15.1)	15.9 (13.8–18.6)	20.1 (17.0–24.2)	23.5 (19.5–28.9)	27.2 (22.0–34.2)	31.2 (24.6–40.3)	37.0 (28.1–49.8)	41.9 (30.7–58.1)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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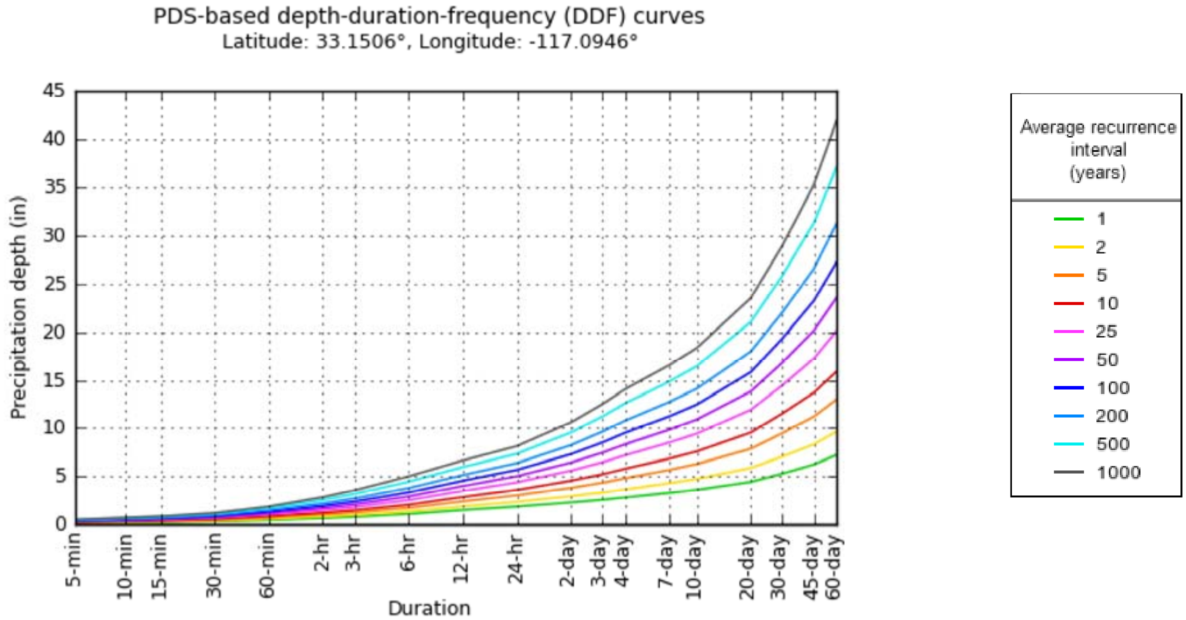
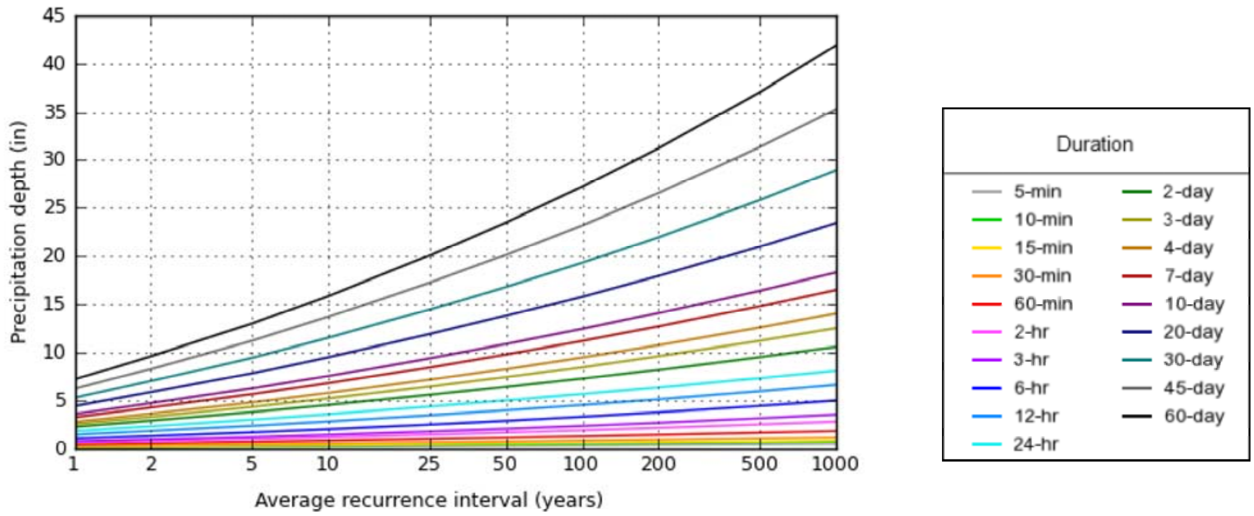
PF graphical





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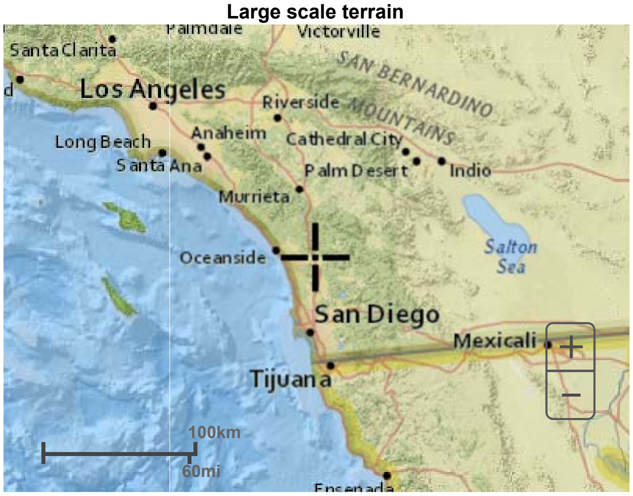
Maps & aerials

Small scale terrain

Large scale terrain



Large scale map

Large scale aerial

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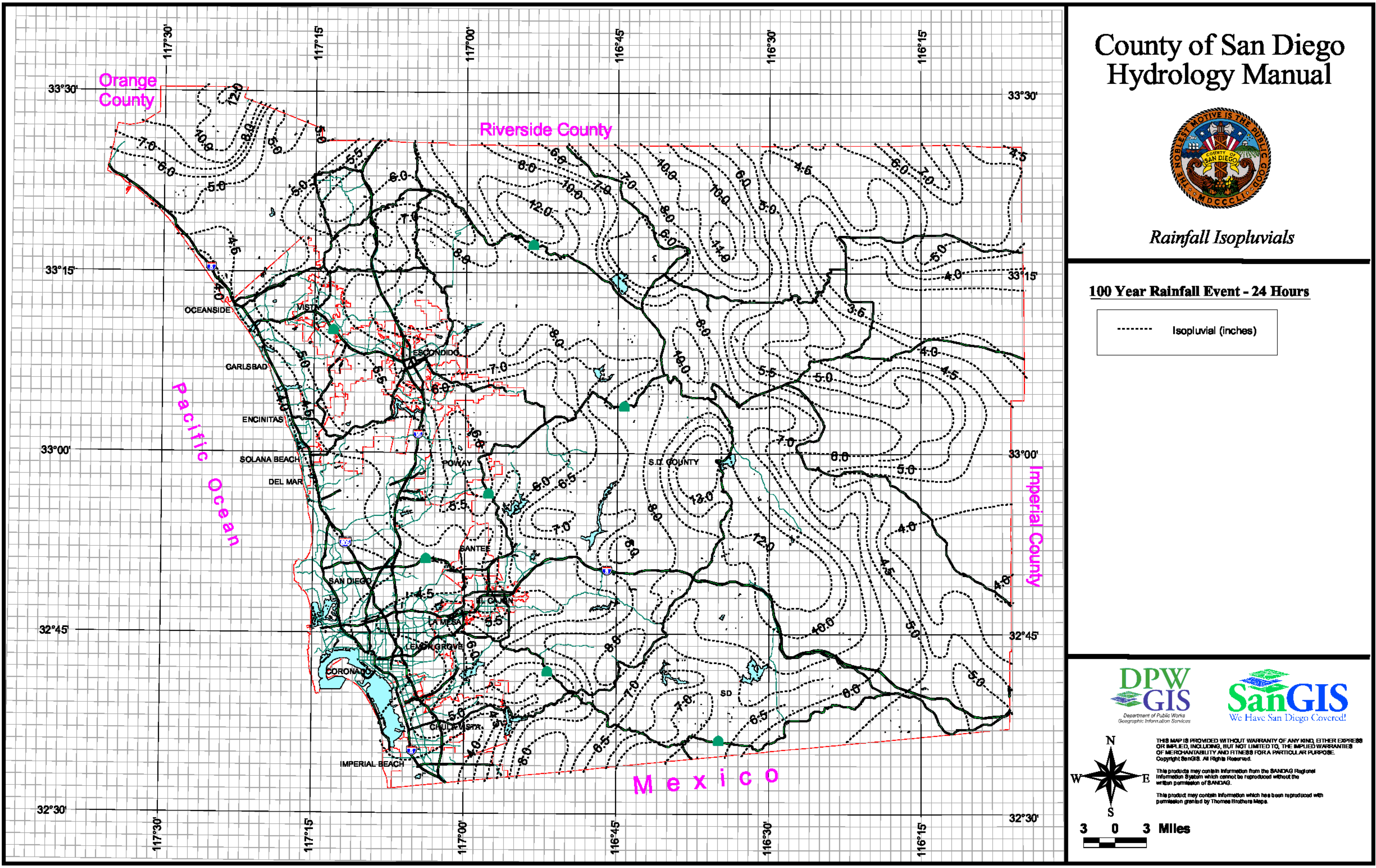
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov



County of San Diego
Hydrology Manual
Rainfall Isopluvials
100 Year Rainfall Event - 24 Hours
Isopluvial (inches)
Orange County
Riverside County
Imperial County
Pacific Ocean
Mexico
OCEANSIDE
VISTA
CARLSBAD
ESCONDIDO
ENCINITAS
SOLANA BEACH
DEL MAR
POWAY
SANTEE
SAN DIEGO
EL CAJON
LA MESA
LEMON GROVE
CORONADO
CHULA VISTA
IMPERIAL BEACH
S.D. COUNTY
SD
33°30'
33°15'
33°00'
32°45'
32°30'
117°30'
117°15'
117°00'
116°45'
116°30'
116°15'
Department of Public Works
Geographic Information Services
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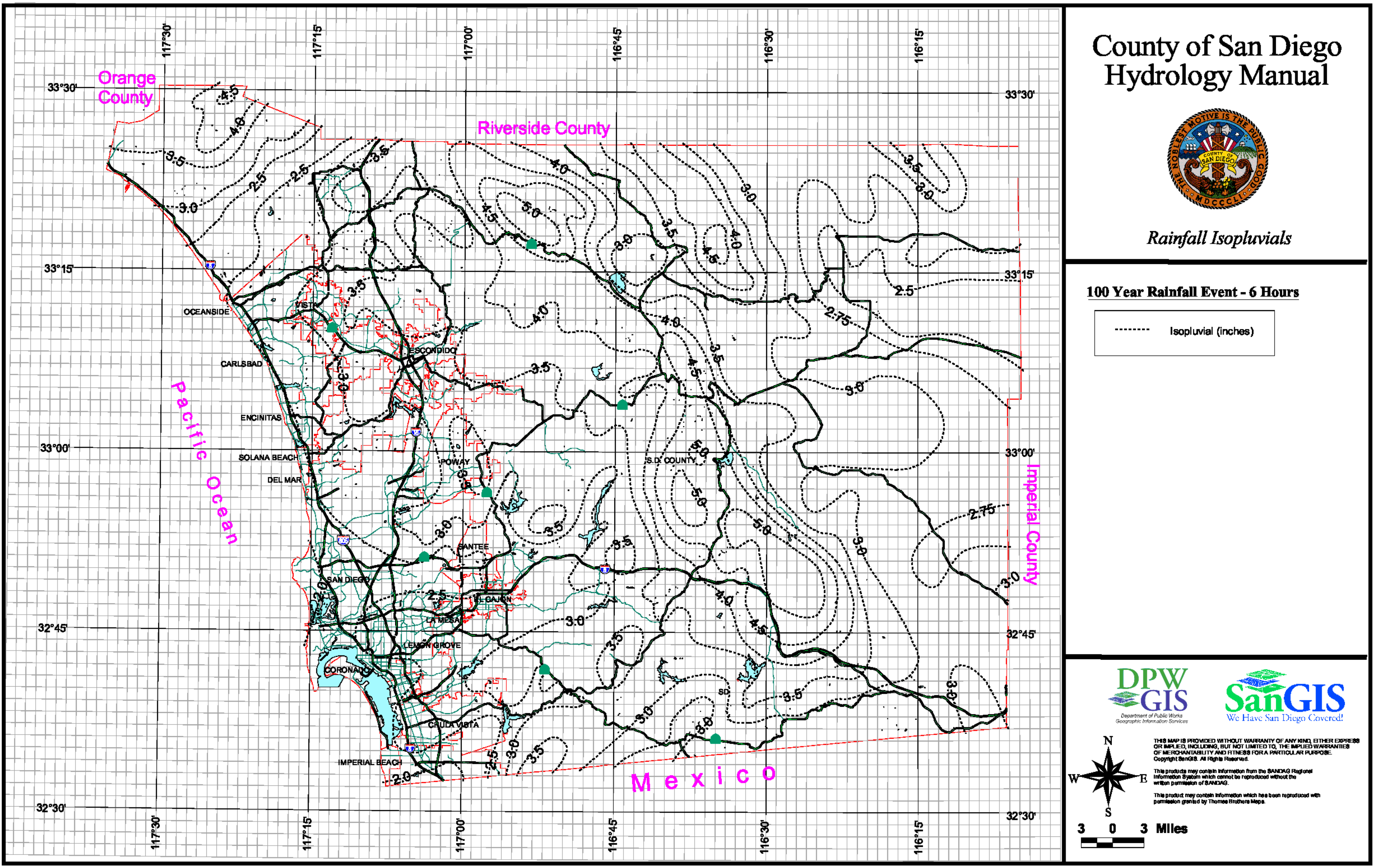
County of San Diego
Hydrology Manual
Rainfall Isopluvials
100 Year Rainfall Event - 6 Hours
Isopluvial (inches)
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3 0 3 Miles
N
S
E
W
Orange County
Riverside County
Imperial County
Pacific Ocean
Mexico
OCEANSIDE
VISTA
CARLSBAD
ESCONDIDO
ENCINITAS
SOLANA BEACH
DEL MAR
POWAY
S.D. COUNTY
SANTEE
SAN DIEGO
EL CAJON
LA MESA
LEMON GROVE
CORONADO
CHULA VISTA
IMPERIAL BEACH
33°30'
33°15'
33°00'
32°45'
32°30'
117°30'
117°15'
117°00'
116°45'
116°30'
116°15'

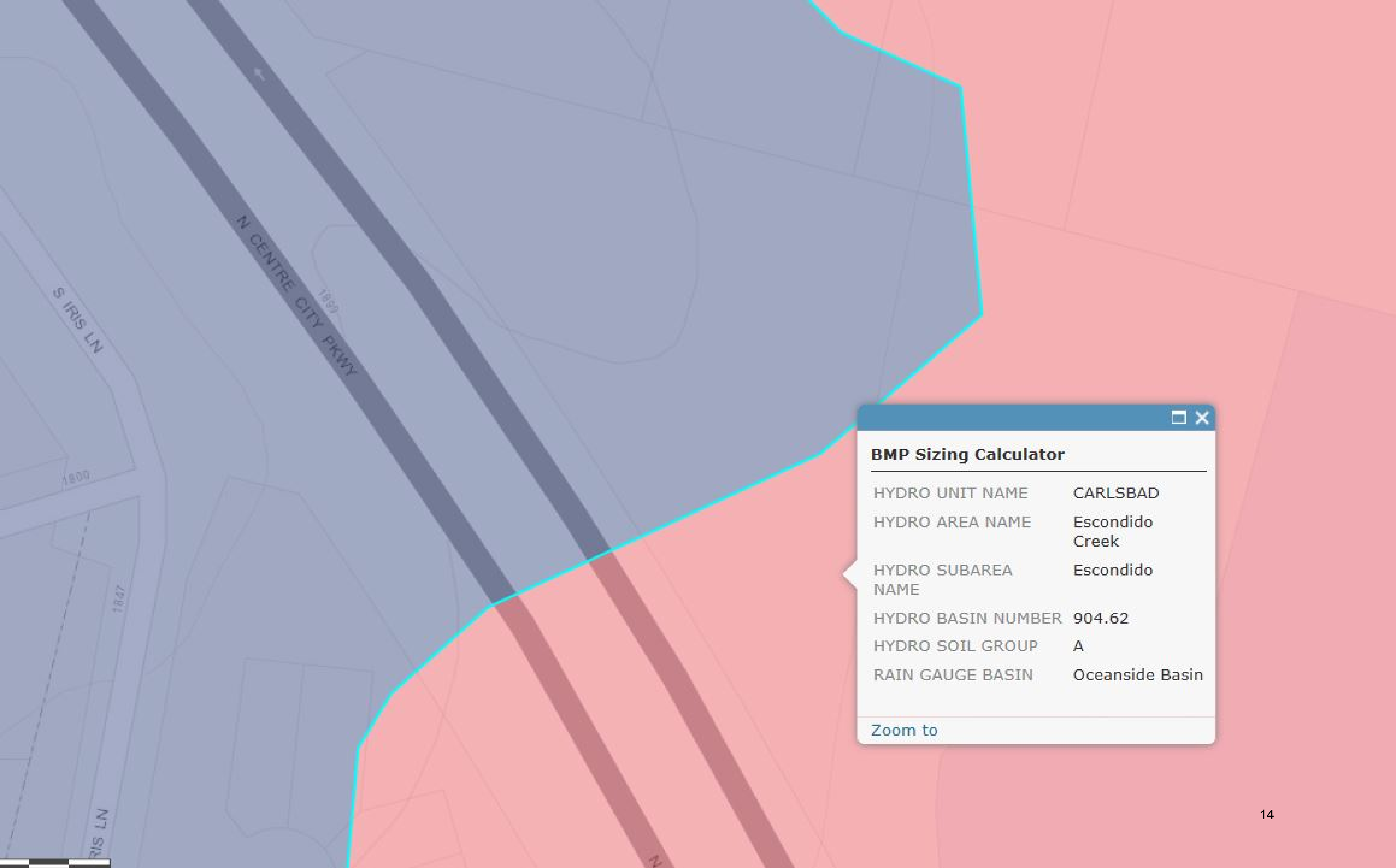
Table 3-1
RUNOFF COEFFICIENTS FOR URBAN AREAS

Land Use		Runoff Coefficient "C"				
			Soil Type			
NRCS Elements	County Elements	% IMPER.	A	B	C	D
Undisturbed Natural Terrain (Natural)	Permanent Open Space	0*	0.20	0.25	0.30	0.35
Low Density Residential (LDR)	Residential, 1.0 DU/A or less	10	0.27	0.32	0.36	0.41
Low Density Residential (LDR)	Residential, 2.0 DU/A or less	20	0.34	0.38	0.42	0.46
Low Density Residential (LDR)	Residential, 2.9 DU/A or less	25	0.38	0.41	0.45	0.49
Medium Density Residential (MDR)	Residential, 4.3 DU/A or less	30	0.41	0.45	0.48	0.52
Medium Density Residential (MDR)	Residential, 7.3 DU/A or less	40	0.48	0.51	0.54	0.57
Medium Density Residential (MDR)	Residential, 10.9 DU/A or less	45	0.52	0.54	0.57	0.60
Medium Density Residential (MDR)	Residential, 14.5 DU/A or less	50	0.55	0.58	0.60	0.63
High Density Residential (HDR)	Residential, 24.0 DU/A or less	65	0.66	0.67	0.69	0.71
High Density Residential (HDR)	Residential, 43.0 DU/A or less	80	0.76	0.77	0.78	0.79
Commercial/Industrial (N. Com)	Neighborhood Commercial	80	0.76	0.77	0.78	0.79
Commercial/Industrial (G. Com)	General Commercial	85	0.80	0.80	0.81	0.82
Commercial/Industrial (O.P. Com)	Office Professional/Commercial	90	0.83	0.84	0.84	0.85
Commercial/Industrial (Limited I.)	Limited Industrial	90	0.83	0.84	0.84	0.85
Commercial/Industrial (General I.)	General Industrial	95	0.87	0.87	0.87	0.87

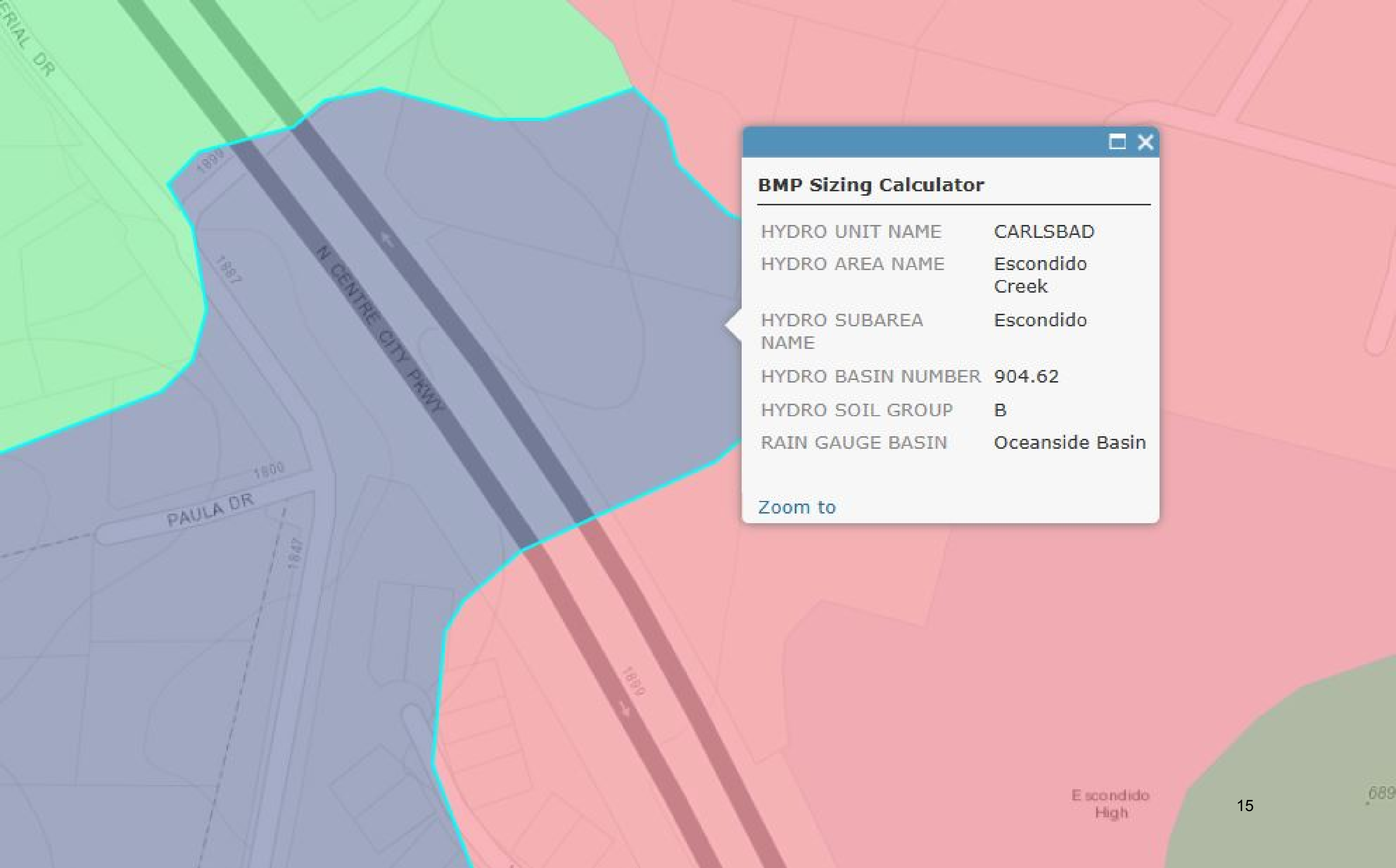
*The values associated with 0% impervious may be used for direct calculation of the runoff coefficient as described in Section 3.1.2 (representing the pervious runoff coefficient, Cp, for the soil type), or for areas that will remain undisturbed in perpetuity. Justification must be given that the area will remain natural forever (e.g., the area is located in Cleveland National Forest).

DU/A = dwelling units per acre

NRCS = National Resources Conservation Service



N CENTRE CITY PKWY
S IRIS LN
IRIS LN
1800
1847
BMP Sizing Calculator
HYDRO UNIT NAME CARLSBAD
HYDRO AREA NAME Escondido Creek
HYDRO SUBAREA NAME Escondido
HYDRO BASIN NUMBER 904.62
HYDRO SOIL GROUP A
RAIN GAUGE BASIN Oceanside Basin
Zoom to



BMP Sizing Calculator
HYDRO UNIT NAME
CARLSBAD
HYDRO AREA NAME
Escondido Creek
HYDRO SUBAREA NAME
Escondido
HYDRO BASIN NUMBER
904.62
HYDRO SOIL GROUP
B
RAIN GAUGE BASIN
Oceanside Basin
Zoom to
N CENTRE CITY PKWY
PAULA DR
Escondido High

Runoff Coefficient Adjustment

The northern 2/3 of the site has type B soil and
the southern 1/3 has type A soil

Post Development Area

Development Area	3.48	acres	
Prop. Imperv.	1.4	acres	40%

C = 0.90 × (% Impervious) + Cp × (1 - % Impervious)

% impervious = 40%

Weighted Average Cp = 0.23 (Table 3.1, 2/3 soil type B & 1/3 soil type A, 0% impervious, County Hydrology Manual)

C = 0.50

Figure 819.2A

Runoff Coefficients for Undeveloped Areas
Watershed Types

	Extreme	High	Normal	Low
Relief	**.28 -.35** Steep, rugged terrain with average slopes above 30%	**.20 -.28** Hilly, with average slopes of 10 to 30%	**.14 -.20** Rolling, with average slopes of 5 to 10%	**.08 -.14** Relatively flat land, with average slopes of 0 to 5%
Soil Infiltration	**.12 -.16** No effective soil cover, either rock or thin soil mantle of negligible infiltration capacity	**.08 -.12** Slow to take up water, clay or shallow loam soils of low infiltration capacity, imperfectly or poorly drained	**.06 -.08** Normal; well drained light or medium textured soils, sandy loams, silt and silt loams	**.04 -.06** High; deep sand or other soil that takes up water readily, very light well drained soils
Vegetal Cover	**.12 -.16** No effective plant cover, bare or very sparse cover	**.08 -.12** Poor to fair; clean cultivation crops, or poor natural cover, less than 20% of drainage area over good cover	**.06 -.08** Fair to good; about 50% of area in good grassland or wood-land, not more than 50% of area in cultivated crops	**.04 -.06** Good to excellent; about 90% of drainage area in good grassland, woodland or equivalent cover.
Surface Storage	**.10 -.12** Negligible surface depression few and shallow; drainageways steep and small, no marshes	**.08 -.10** Low; well defined system of small drainageways; no ponds or marshes	**.06 -.08** Normal; considerable surface depression storage; lakes and pond marshes	**.04 -.06** High; surface stor-age, high; drainage system not sharply defined; large flood plain storage or large number of ponds or marshes.

Given An undeveloped watershed consisting of;
1) rolling terrain with average slopes of 5%,
2) clay type soils,
3) good grassland area, and
4) normal surface depressions.

Find The runoff coefficient, C, for the above watershed.

Solution:

Relief	0.14
Soil Infiltration	0.08
Vegetal Cover	0.04
Surface Storage	0.06
C=	0.32

Pre-Developed Project Conditions: (Site Previously Graded & Mostly Bare)

Relief (Average 9%) = 0.18
Soil Infiltration (type A & B) = 0.07
Vegetal Cover (mostly bare) = 0.10
Surface Storage (negligible) = 0.10

Pre-Development Runoff C = 0.45

Time of Concentration

Location	Initial Average slope %	Initial L (ft)	**Initial TC** **Initial T (min)**	Add'l L (ft)	Average slope %	area (ac)	Q (cfs)	Mannings V (ft/s)	**Additional TC (travel time)** **Inc. T (min)**	**total T (min)**
										(5 minutes min)
							* Est.			
							Average Q			
Offsite O	2.9	50	2.68	770	2.9			2.9	4.8	7.5
Pre Dev.										
Onsite	13	60	3.85	320	8	Kirpich			1.8	5.6
Post Dev.										
Area A	2	50	6.06	400	2			1.67	4.0	10.1
Area B	1	50	7.64	235	1			0.8	4.9	12.5
SM	50	50								5.0

Initial TC
(Figure 3-3)

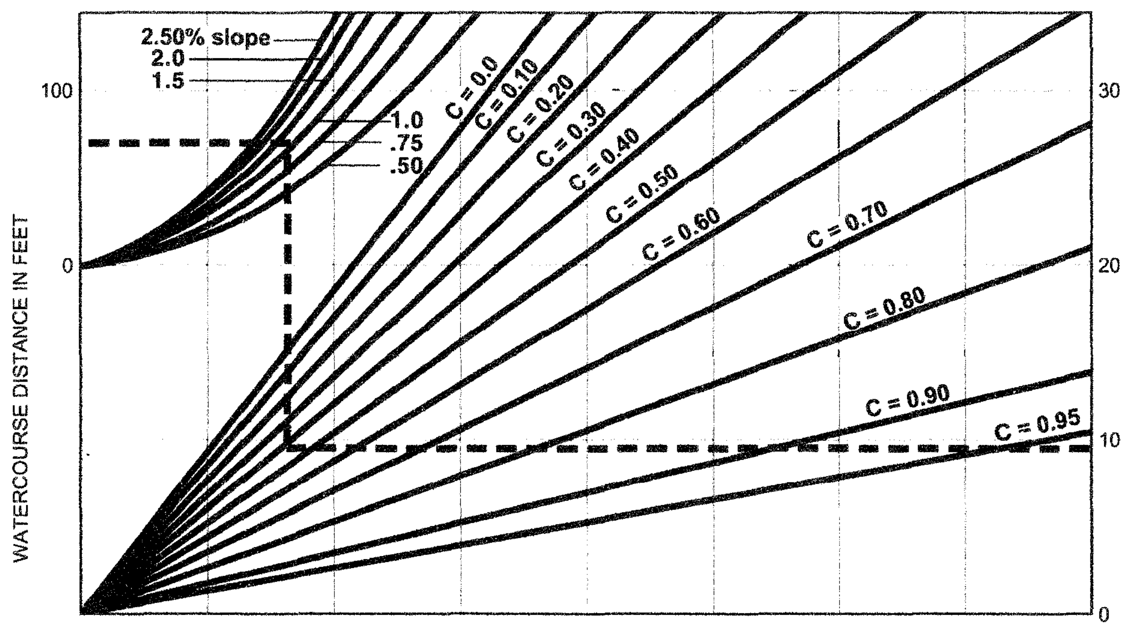
$$T\ min= \frac{1.8(1.1-C)D^{1/2}}{S^{1/3}}$$

Initial TC	Pre-Dev Onsite	Post-Dev Area A	Area B	Offsite O
C =	0.45	0.5	0.5	0.8
D ft =	60	50	50	50
S % =	13	2	1	2.9
T =	**3.85**	**6.06**	**7.64**	**2.68**

Overland Flow (Pre-Development)
Kirpich Formula

Tc min= $(11.9L^3/\Delta E)^{0.385}$

	Pre-Dev
ΔE ft =	25
L Feet =	320
L miles =	0.060606
T hours =	0.029491
T min =	1.77



EXAMPLE:

Given: Watercourse Distance (D) = 70 Feet
Slope (s) = 1.3%
Runoff Coefficient (C) = 0.41
Overland Flow Time (T) = 9.5 Minutes

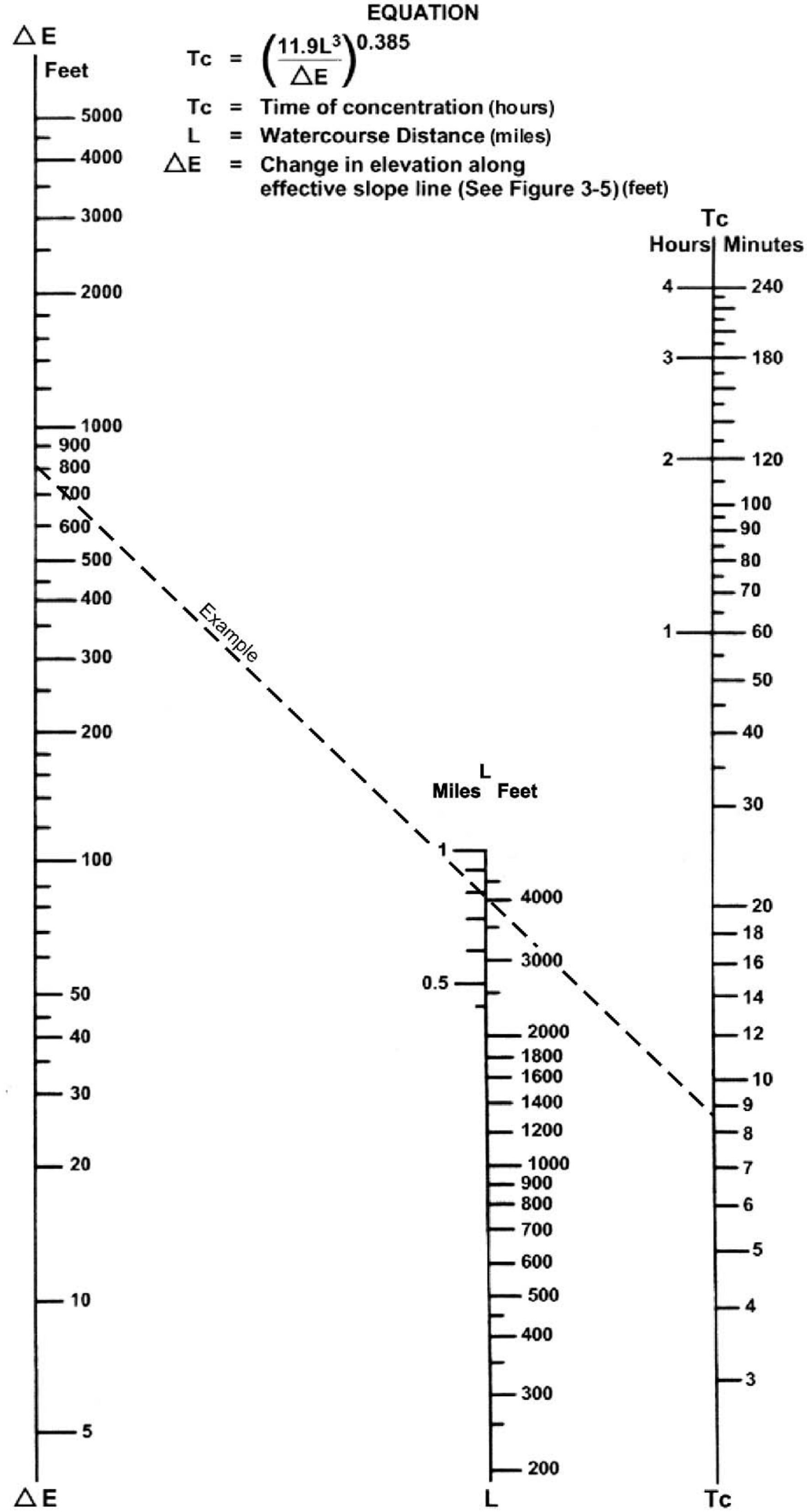
$$T = \frac{1.8\,(1.1-C)\sqrt{D}}{\sqrt[3]{s}}$$

SOURCE: Airport Drainage, Federal Aviation Administration, 1965

Rational Formula - Overland Time of Flow Nomograph

FIGURE

3-3



SOURCE: California Division of Highways (1941) and Kirpich (1940)

Nomograph for Determination of
Time of Concentration (Tc) or Travel Time (Tt) for Natural Watersheds

FIGURE

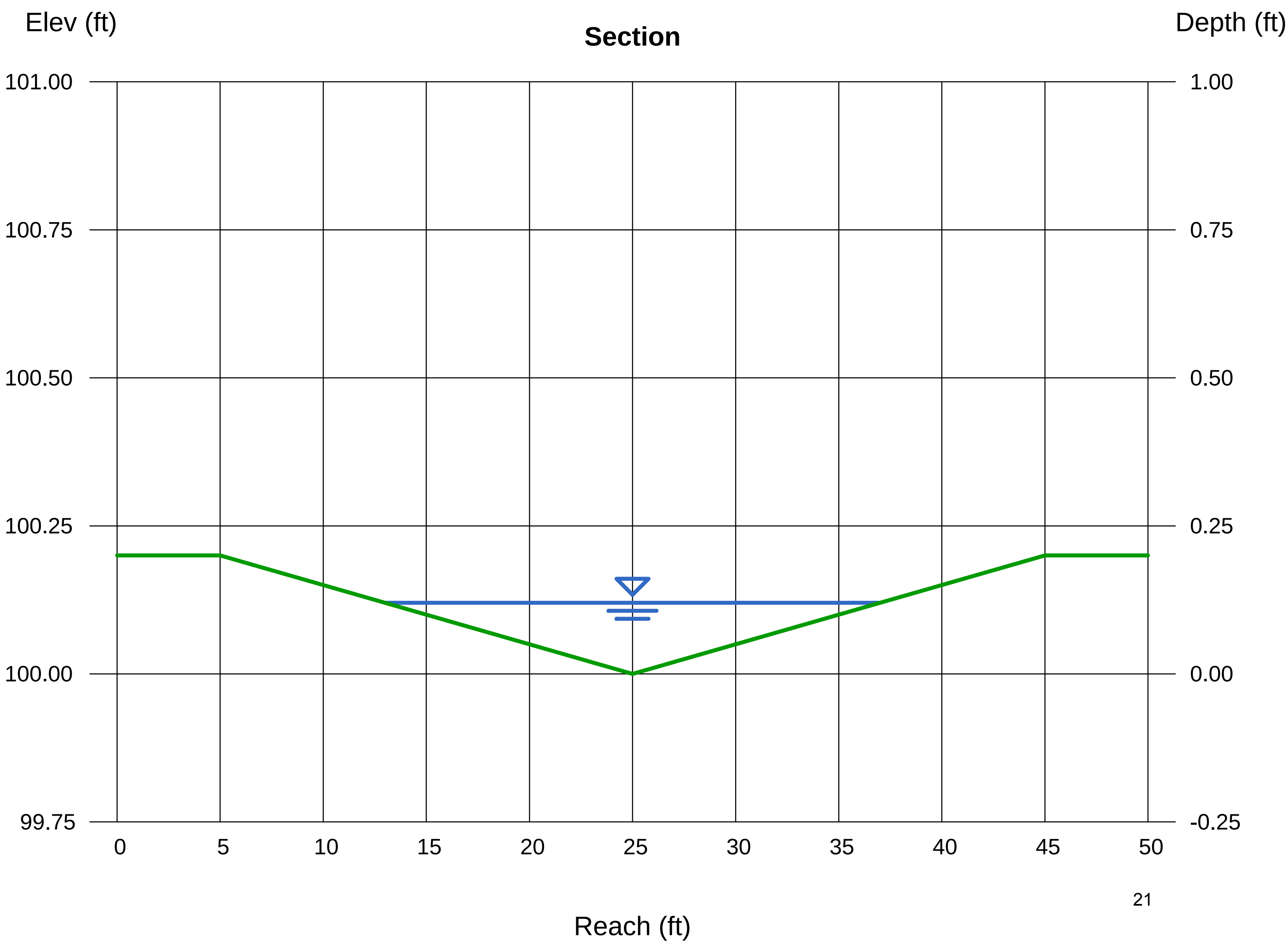
3-4

Channel Report

Pot-Dev. Area A TC Flow Path, Average Q

Triangular	
Side Slopes (z:1)	= 100.00, 100.00
Total Depth (ft)	= 0.20
Invert Elev (ft)	= 100.00
Slope (%)	= 2.00
N-Value	= 0.018
Calculations	
Compute by:	Known Q
Known Q (cfs)	= 2.40

Highlighted	
Depth (ft)	= 0.12
Q (cfs)	= 2.400
Area (sqft)	= 1.44
Velocity (ft/s)	= 1.67
Wetted Perim (ft)	= 24.00
Crit Depth, Yc (ft)	= 0.13
Top Width (ft)	= 24.00
EGL (ft)	= 0.16



Channel Report

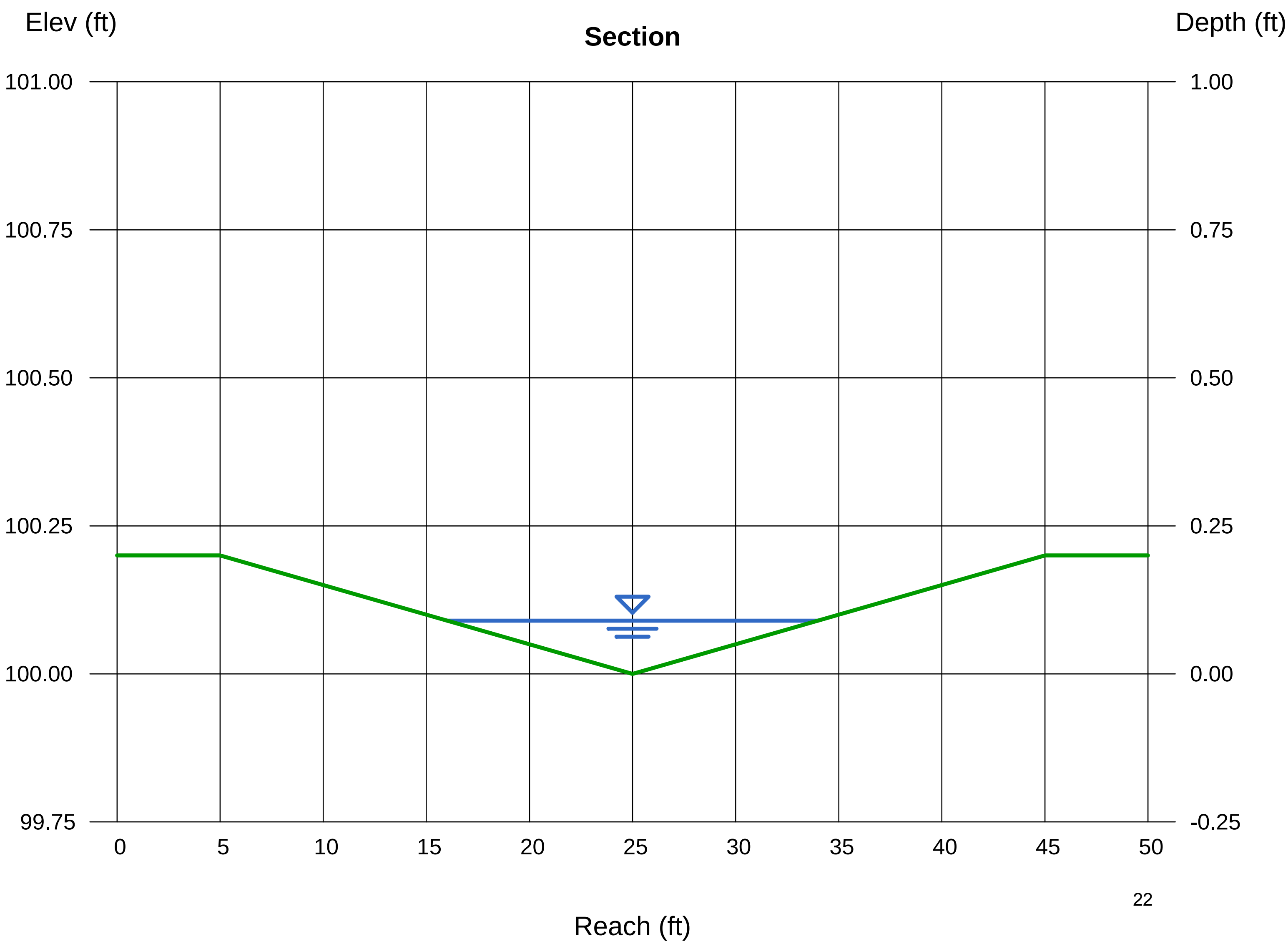
Pot-Dev. Area B TC Flow Path, Average Q

Triangular
Side Slopes (z:1) = 100.00, 100.00
Total Depth (ft) = 0.20

Invert Elev (ft) = 100.00
Slope (%) = 1.00
N-Value = 0.018

Calculations
Compute by: Known Q
Known Q (cfs) = 0.65

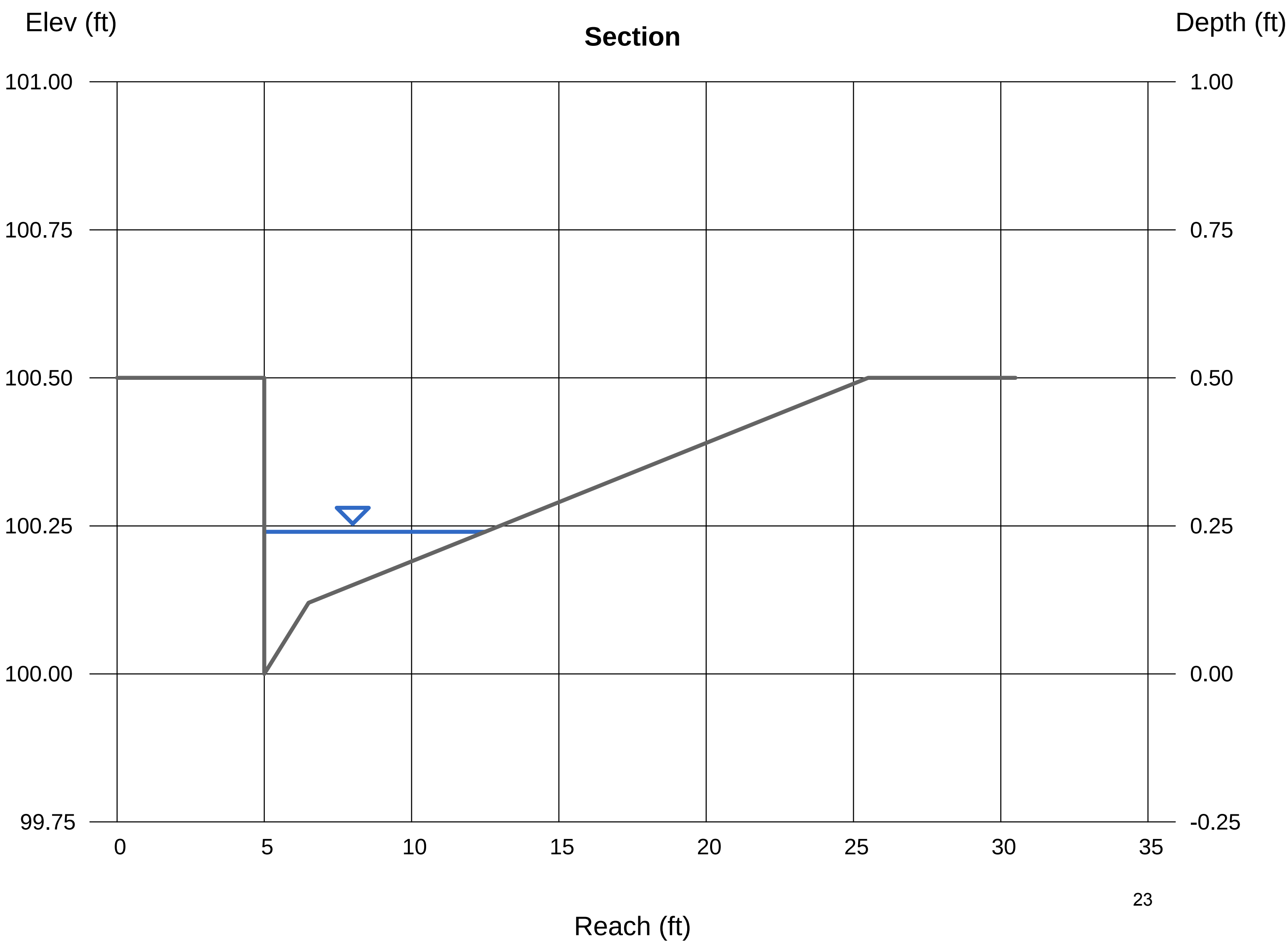
Highlighted
Depth (ft) = 0.09
Q (cfs) = 0.650
Area (sqft) = 0.81
Velocity (ft/s) = 0.80
Wetted Perim (ft) = 18.00
Crit Depth, Yc (ft) = 0.08
Top Width (ft) = 18.00
EGL (ft) = 0.10



Channel Report

Offsite O TC Average Q

Gutter		Highlighted	
Cross Sl, Sx (ft/ft)	= 0.02	Depth (ft)	= 0.24
Cross Sl, Sw (ft/ft)	= 0.08	Q (cfs)	= 1.800
Gutter Width (ft)	= 1.50	Area (sqft)	= 0.63
Invert Elev (ft)	= 100.00	Velocity (ft/s)	= 2.86
Slope (%)	= 2.90	Wetted Perim (ft)	= 7.75
N-Value	= 0.016	Crit Depth, Yc (ft)	= 0.29
		Spread Width (ft)	= 7.50
Calculations		EGL (ft)	= 0.37
Compute by:	Known Q		
Known Q (cfs)	= 1.80		



ATTACHMENT C

RATIONAL METHOD HYDROGRAPH PROGRAM

RUN DATE 4/24/2018
HYDROGRAPH FILE NAME Text1
TIME OF CONCENTRATION 10 MIN.
6 HOUR RAINFALL 3.34 INCHES
BASIN AREA 1.74 ACRES
RUNOFF COEFFICIENT 0.5
PEAK DISCHARGE 4.9 CFS

Area A Q100

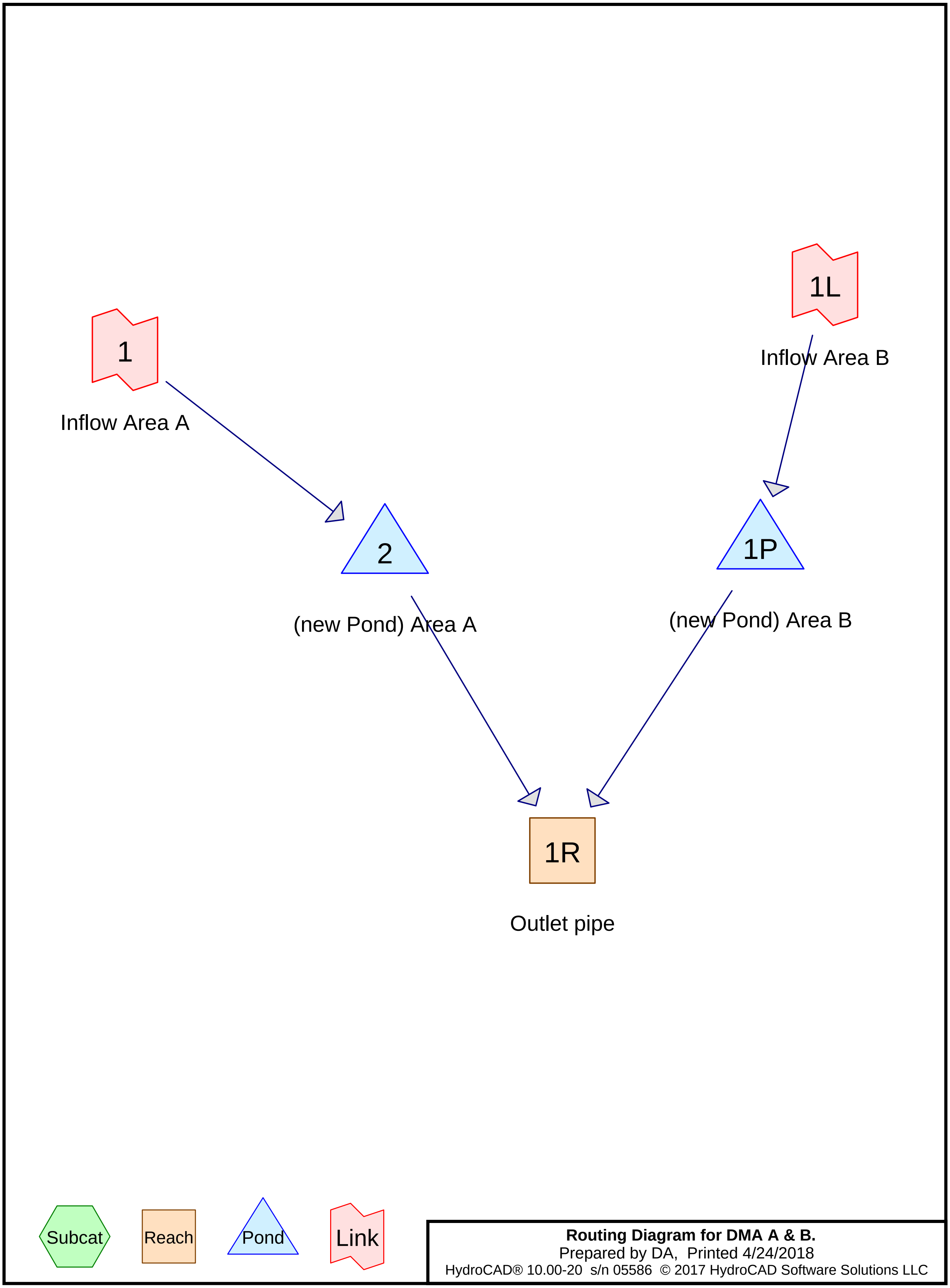
TIME (MIN) = 0	DISCHARGE (CFS) = 0
TIME (MIN) = 10	DISCHARGE (CFS) = 0.2
TIME (MIN) = 20	DISCHARGE (CFS) = 0.2
TIME (MIN) = 30	DISCHARGE (CFS) = 0.2
TIME (MIN) = 40	DISCHARGE (CFS) = 0.2
TIME (MIN) = 50	DISCHARGE (CFS) = 0.2
TIME (MIN) = 60	DISCHARGE (CFS) = 0.2
TIME (MIN) = 70	DISCHARGE (CFS) = 0.2
TIME (MIN) = 80	DISCHARGE (CFS) = 0.2
TIME (MIN) = 90	DISCHARGE (CFS) = 0.2
TIME (MIN) = 100	DISCHARGE (CFS) = 0.2
TIME (MIN) = 110	DISCHARGE (CFS) = 0.2
TIME (MIN) = 120	DISCHARGE (CFS) = 0.3
TIME (MIN) = 130	DISCHARGE (CFS) = 0.3
TIME (MIN) = 140	DISCHARGE (CFS) = 0.3
TIME (MIN) = 150	DISCHARGE (CFS) = 0.3
TIME (MIN) = 160	DISCHARGE (CFS) = 0.3
TIME (MIN) = 170	DISCHARGE (CFS) = 0.4
TIME (MIN) = 180	DISCHARGE (CFS) = 0.4
TIME (MIN) = 190	DISCHARGE (CFS) = 0.4
TIME (MIN) = 200	DISCHARGE (CFS) = 0.5
TIME (MIN) = 210	DISCHARGE (CFS) = 0.6
TIME (MIN) = 220	DISCHARGE (CFS) = 0.7
TIME (MIN) = 230	DISCHARGE (CFS) = 1
TIME (MIN) = 240	DISCHARGE (CFS) = 1.4
TIME (MIN) = 250	DISCHARGE (CFS) = 4.9
TIME (MIN) = 260	DISCHARGE (CFS) = 0.8
TIME (MIN) = 270	DISCHARGE (CFS) = 0.5
TIME (MIN) = 280	DISCHARGE (CFS) = 0.4
TIME (MIN) = 290	DISCHARGE (CFS) = 0.3
TIME (MIN) = 300	DISCHARGE (CFS) = 0.3
TIME (MIN) = 310	DISCHARGE (CFS) = 0.3
TIME (MIN) = 320	DISCHARGE (CFS) = 0.2
TIME (MIN) = 330	DISCHARGE (CFS) = 0.2
TIME (MIN) = 340	DISCHARGE (CFS) = 0.2
TIME (MIN) = 350	DISCHARGE (CFS) = 0.2
TIME (MIN) = 360	DISCHARGE (CFS) = 0.2
TIME (MIN) = 370	DISCHARGE (CFS) = 0

RATIONAL METHOD HYDROGRAPH PROGRAM

RUN DATE 4/24/2018
HYDROGRAPH FILE NAME Text1
TIME OF CONCENTRATION 13 MIN.
6 HOUR RAINFALL 3.34 INCHES
BASIN AREA 0.49 ACRES
RUNOFF COEFFICIENT 0.5
PEAK DISCHARGE 1.2 CFS

Area B Q100

TIME (MIN) = 0	DISCHARGE (CFS) = 0
TIME (MIN) = 13	DISCHARGE (CFS) = 0.2
TIME (MIN) = 26	DISCHARGE (CFS) = 0
TIME (MIN) = 39	DISCHARGE (CFS) = 0.1
TIME (MIN) = 52	DISCHARGE (CFS) = 0.1
TIME (MIN) = 65	DISCHARGE (CFS) = 0.1
TIME (MIN) = 78	DISCHARGE (CFS) = 0.1
TIME (MIN) = 91	DISCHARGE (CFS) = 0.1
TIME (MIN) = 104	DISCHARGE (CFS) = 0.1
TIME (MIN) = 117	DISCHARGE (CFS) = 0.1
TIME (MIN) = 130	DISCHARGE (CFS) = 0.1
TIME (MIN) = 143	DISCHARGE (CFS) = 0.1
TIME (MIN) = 156	DISCHARGE (CFS) = 0.1
TIME (MIN) = 169	DISCHARGE (CFS) = 0.1
TIME (MIN) = 182	DISCHARGE (CFS) = 0.1
TIME (MIN) = 195	DISCHARGE (CFS) = 0.1
TIME (MIN) = 208	DISCHARGE (CFS) = 0.1
TIME (MIN) = 221	DISCHARGE (CFS) = 0.2
TIME (MIN) = 234	DISCHARGE (CFS) = 0.2
TIME (MIN) = 247	DISCHARGE (CFS) = 0.3
TIME (MIN) = 260	DISCHARGE (CFS) = 1.2
TIME (MIN) = 273	DISCHARGE (CFS) = 0.2
TIME (MIN) = 286	DISCHARGE (CFS) = 0.1
TIME (MIN) = 299	DISCHARGE (CFS) = 0.1
TIME (MIN) = 312	DISCHARGE (CFS) = 0.1
TIME (MIN) = 325	DISCHARGE (CFS) = 0.1
TIME (MIN) = 338	DISCHARGE (CFS) = 0.1
TIME (MIN) = 351	DISCHARGE (CFS) = 0.1
TIME (MIN) = 364	DISCHARGE (CFS) = 0.1
TIME (MIN) = 377	DISCHARGE (CFS) = 0



Routing Diagram for DMA A & B.
Prepared by DA, Printed 4/24/2018
HydroCAD® 10.00-20 s/n 05586 © 2017 HydroCAD Software Solutions LLC

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	1R	0.00	-0.05	10.0	0.0050	0.009	18.0	0.0	0.0

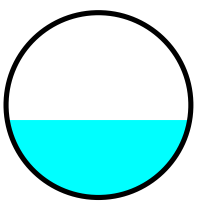
Summary for Reach 1R: Outlet pipe

Inflow	=	3.76 cfs @	4.35 hrs, Volume=	0.120 af
Outflow	=	3.77 cfs @	4.35 hrs, Volume=	0.120 af, Atten= 0%, Lag= 0.1 min

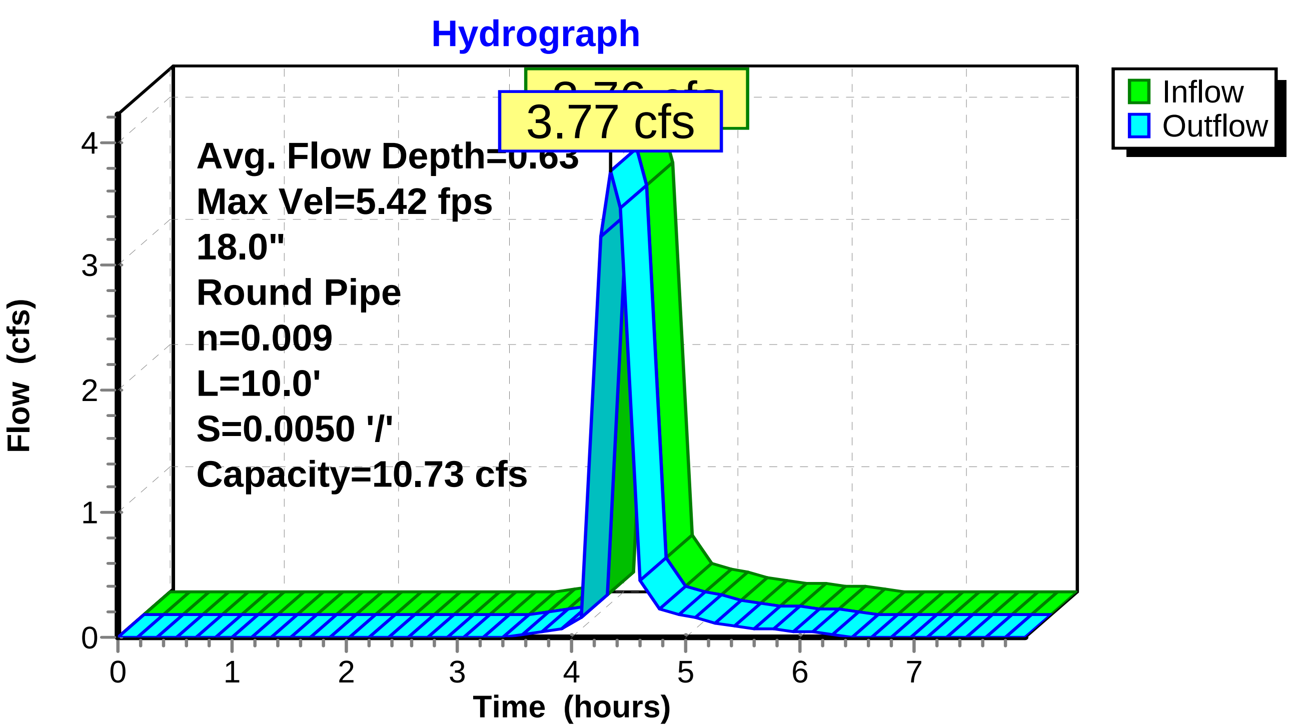
Routing by Stor-Ind+Trans method, Time Span= 0.00-7.99 hrs, dt= 0.17 hrs
Max. Velocity= 5.42 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 2.06 fps, Avg. Travel Time= 0.1 min

Peak Storage= 7 cf @ 4.34 hrs
Average Depth at Peak Storage= 0.63'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 10.73 cfs

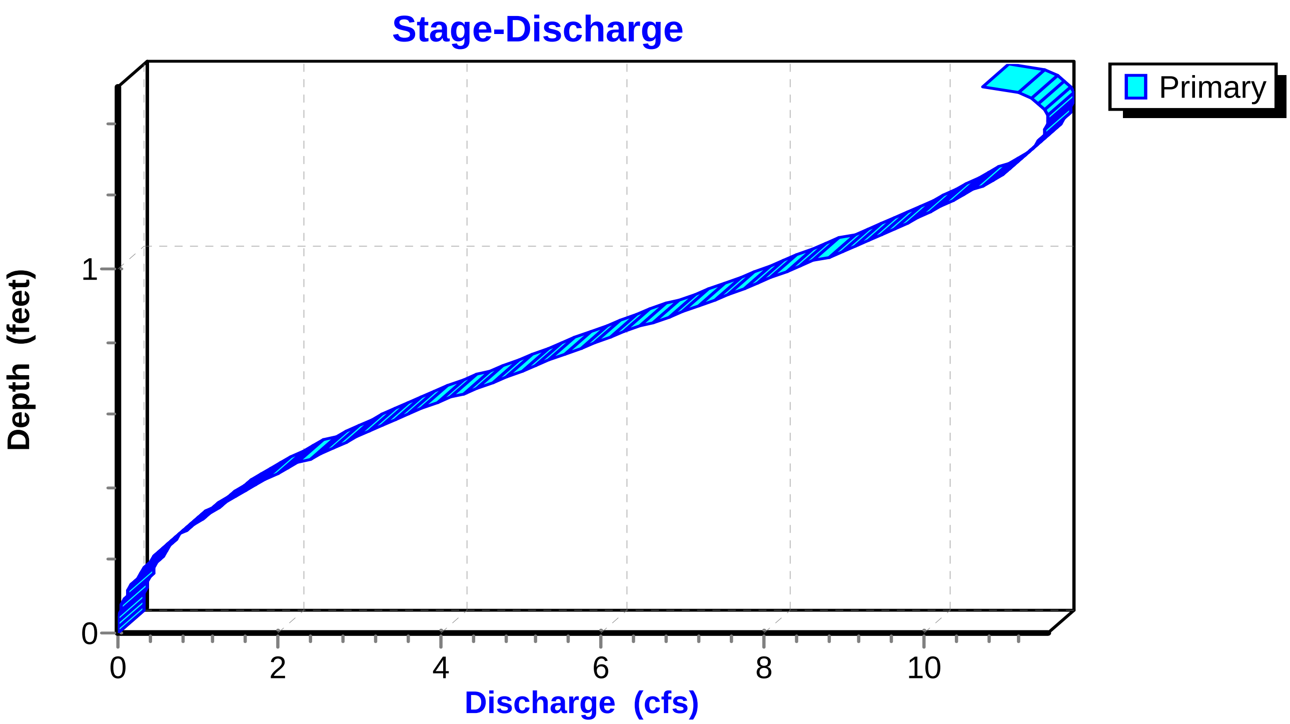
18.0" Round Pipe
n= 0.009
Length= 10.0' Slope= 0.0050 '/'
Inlet Invert= 0.00', Outlet Invert= -0.05'



Reach 1R: Outlet pipe



Reach 1R: Outlet pipe



Hydrograph for Reach 1R: Outlet pipe

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)
0.00	0.00	0	0.00	0.00
0.17	0.00	0	0.00	0.00
0.34	0.00	0	0.00	0.00
0.51	0.00	0	0.00	0.00
0.68	0.00	0	0.00	0.00
0.85	0.00	0	0.00	0.00
1.02	0.00	0	0.00	0.00
1.19	0.00	0	0.00	0.00
1.36	0.00	0	0.00	0.00
1.53	0.00	0	0.00	0.00
1.70	0.00	0	0.00	0.00
1.87	0.00	0	0.00	0.00
2.04	0.00	0	0.00	0.00
2.21	0.00	0	0.00	0.00
2.38	0.00	0	0.00	0.00
2.55	0.00	0	0.00	0.00
2.72	0.00	0	0.00	0.00
2.89	0.00	0	0.00	0.00
3.06	0.00	0	0.00	0.00
3.23	0.00	0	0.02	0.00
3.40	0.01	0	0.03	0.01
3.57	0.02	0	0.04	0.02
3.74	0.04	0	0.07	0.04
3.91	0.08	0	0.09	0.08
4.08	0.16	1	0.13	0.15
4.25	3.26	6	0.57	3.24
4.42	**3.45**	**6**	**0.59**	**3.47**
4.59	0.45	1	0.21	0.46
4.76	0.23	1	0.15	0.23
4.93	0.19	1	0.14	0.19
5.10	0.15	1	0.12	0.15
5.27	0.12	1	0.11	0.12
5.44	0.10	1	0.10	0.10
5.61	0.08	0	0.09	0.08
5.78	0.06	0	0.08	0.06
5.95	0.05	0	0.07	0.05
6.12	0.04	0	0.07	0.04
6.29	0.02	0	0.05	0.02
6.46	0.00	0	0.03	0.01
6.63	0.00	0	0.00	0.00
6.80	0.00	0	0.00	0.00
6.97	0.00	0	0.00	0.00
7.14	0.00	0	0.00	0.00
7.31	0.00	0	0.00	0.00
7.48	0.00	0	0.00	0.00
7.65	0.00	0	0.00	0.00
7.82	0.00	0	0.00	0.00
7.99	0.00	0	0.00	0.00

Summary for Pond 1P: (new Pond) Area B

Inflow	=	1.12 cfs @	4.40 hrs, Volume=	0.081 af
Outflow	=	1.13 cfs @	4.42 hrs, Volume=	0.081 af, Atten= 0%, Lag= 0.8 min
Discarded	=	0.07 cfs @	0.17 hrs, Volume=	0.044 af
Primary	=	1.06 cfs @	4.42 hrs, Volume=	0.037 af

Routing by Stor-Ind method, Time Span= 0.00-7.99 hrs, dt= 0.17 hrs
Peak Elev= 0.91' @ 4.42 hrs Surf.Area= 0 sf Storage= 564 cf

Plug-Flow detention time= 34.6 min calculated for 0.079 af (98% of inflow)
Center-of-Mass det. time= 35.7 min (252.4 - 216.7)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	993 cf	**Custom Stage Data** Listed below

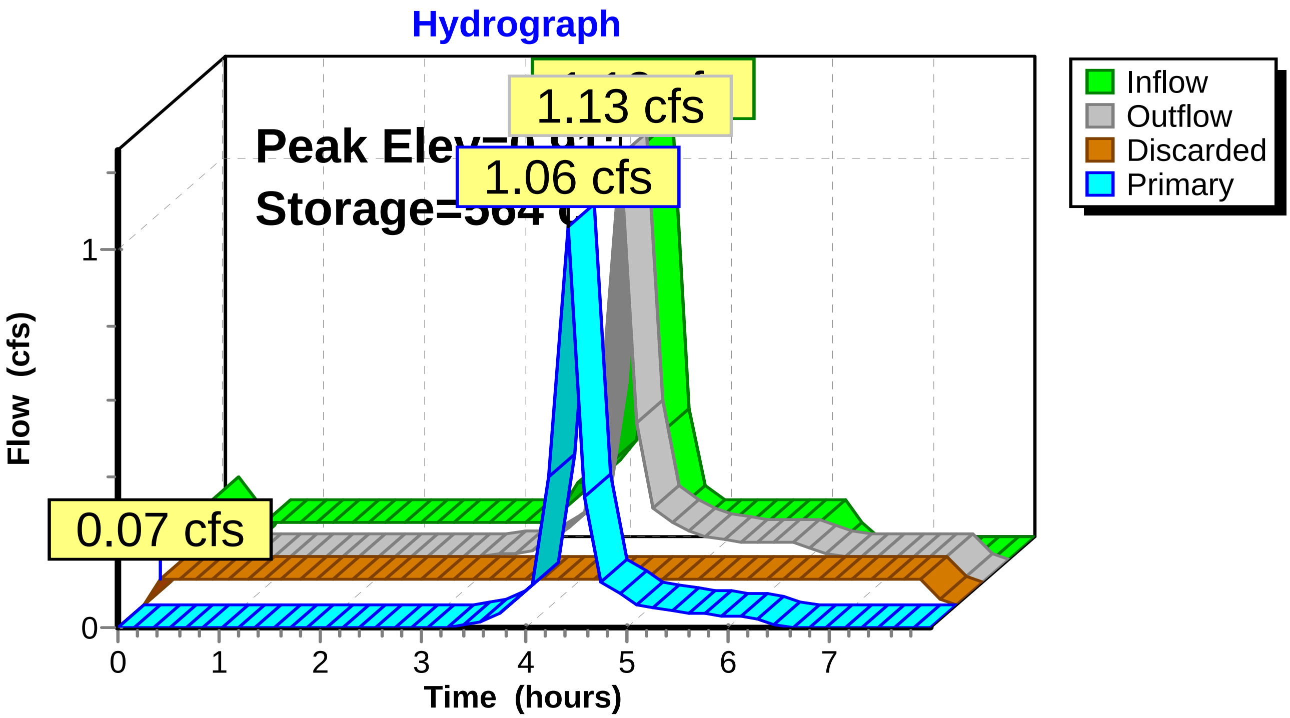
Elevation (feet)	Cum.Store (cubic-feet)
0.00	0
0.20	124
0.40	248
0.60	373
0.80	497
1.00	621
1.20	745
1.40	869
1.60	993

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**0.07 cfs Exfiltration at all elevations**
#2	Primary	0.50'	**3.0" W x 4.0" H Vert. Orifice/Grate** C= 0.600
#3	Primary	0.83'	**36.0" x 36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

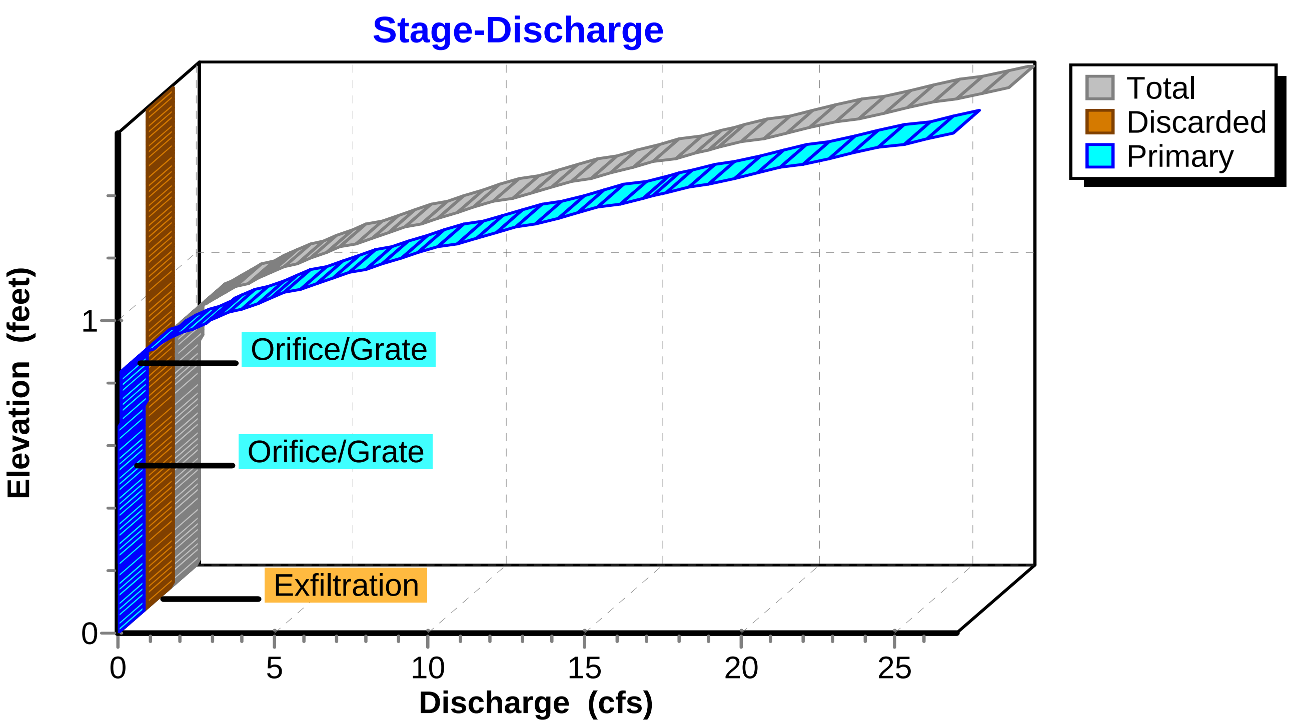
Discarded OutFlow Max=0.07 cfs @ 0.17 hrs HW=0.04' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.07 cfs)

Primary OutFlow Max=1.04 cfs @ 4.42 hrs HW=0.91' (Free Discharge)
├─**2=Orifice/Grate** (Orifice Controls 0.19 cfs @ 2.31 fps)
└─**3=Orifice/Grate** (Weir Controls 0.85 cfs @ 0.91 fps)

Pond 1P: (new Pond) Area B



Pond 1P: (new Pond) Area B



Hydrograph for Pond 1P: (new Pond) Area B

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	0.00	0.00	0.00	0.00
0.17	0.15	26	0.04	0.07	**0.07**	0.00
0.34	0.09	58	0.09	0.07	0.07	0.00
0.51	0.03	53	0.09	0.07	0.07	0.00
0.68	0.10	50	0.08	0.07	0.07	0.00
0.85	0.10	69	0.11	0.07	0.07	0.00
1.02	0.10	87	0.14	0.07	0.07	0.00
1.19	0.10	105	0.17	0.07	0.07	0.00
1.36	0.10	124	0.20	0.07	0.07	0.00
1.53	0.10	142	0.23	0.07	0.07	0.00
1.70	0.10	161	0.26	0.07	0.07	0.00
1.87	0.10	179	0.29	0.07	0.07	0.00
2.04	0.10	197	0.32	0.07	0.07	0.00
2.21	0.10	216	0.35	0.07	0.07	0.00
2.38	0.10	234	0.38	0.07	0.07	0.00
2.55	0.10	252	0.41	0.07	0.07	0.00
2.72	0.10	271	0.44	0.07	0.07	0.00
2.89	0.10	289	0.47	0.07	0.07	0.00
3.06	0.10	307	0.50	0.07	0.07	0.00
3.23	0.10	325	0.52	0.07	0.07	0.00
3.40	0.10	340	0.55	0.08	0.07	0.01
3.57	0.12	358	0.58	0.09	0.07	0.02
3.74	0.20	396	0.64	0.11	0.07	0.04
3.91	0.20	440	0.71	0.15	0.07	0.08
4.08	0.25	478	0.77	0.18	0.07	0.11
4.25	0.59	536	0.86	0.47	0.07	0.40
4.42	**1.11**	**564**	**0.91**	**1.13**	0.07	**1.06**
4.59	0.34	532	0.86	0.42	0.07	0.35
4.76	0.14	489	0.79	0.19	0.07	0.12
4.93	0.10	454	0.73	0.16	0.07	0.09
5.10	0.10	426	0.68	0.13	0.07	0.06
5.27	0.10	409	0.66	0.12	0.07	0.05
5.44	0.10	399	0.64	0.11	0.07	0.04
5.61	0.10	392	0.63	0.11	0.07	0.04
5.78	0.10	388	0.62	0.11	0.07	0.04
5.95	0.10	386	0.62	0.10	0.07	0.03
6.12	0.10	384	0.62	0.10	0.07	0.03
6.29	0.04	367	0.59	0.09	0.07	0.02
6.46	0.00	329	0.53	0.07	0.07	0.00
6.63	0.00	285	0.46	0.07	0.07	0.00
6.80	0.00	242	0.39	0.07	0.07	0.00
6.97	0.00	199	0.32	0.07	0.07	0.00
7.14	0.00	156	0.25	0.07	0.07	0.00
7.31	0.00	114	0.18	0.07	0.07	0.00
7.48	0.00	71	0.11	0.07	0.07	0.00
7.65	0.00	28	0.05	0.07	0.07	0.00
7.82	0.00	2	0.00	0.01	0.01	0.00
7.99	0.00	0	0.00	0.00	0.00	0.00

Summary for Pond 2: (new Pond) Area A

Inflow	=	4.91 cfs @	4.24 hrs,	Volume=	0.247 af
Outflow	=	3.37 cfs @	4.31 hrs,	Volume=	0.248 af, Atten= 31%, Lag= 4.0 min
Discarded	=	0.30 cfs @	2.21 hrs,	Volume=	0.165 af
Primary	=	3.07 cfs @	4.31 hrs,	Volume=	0.083 af

Routing by Stor-Ind method, Time Span= 0.00-7.99 hrs, dt= 0.17 hrs
Peak Elev= 1.03' @ 4.33 hrs Surf.Area= 0 sf Storage= 2,475 cf

Plug-Flow detention time= 27.4 min calculated for 0.243 af (98% of inflow)
Center-of-Mass det. time= 28.7 min (248.6 - 219.9)

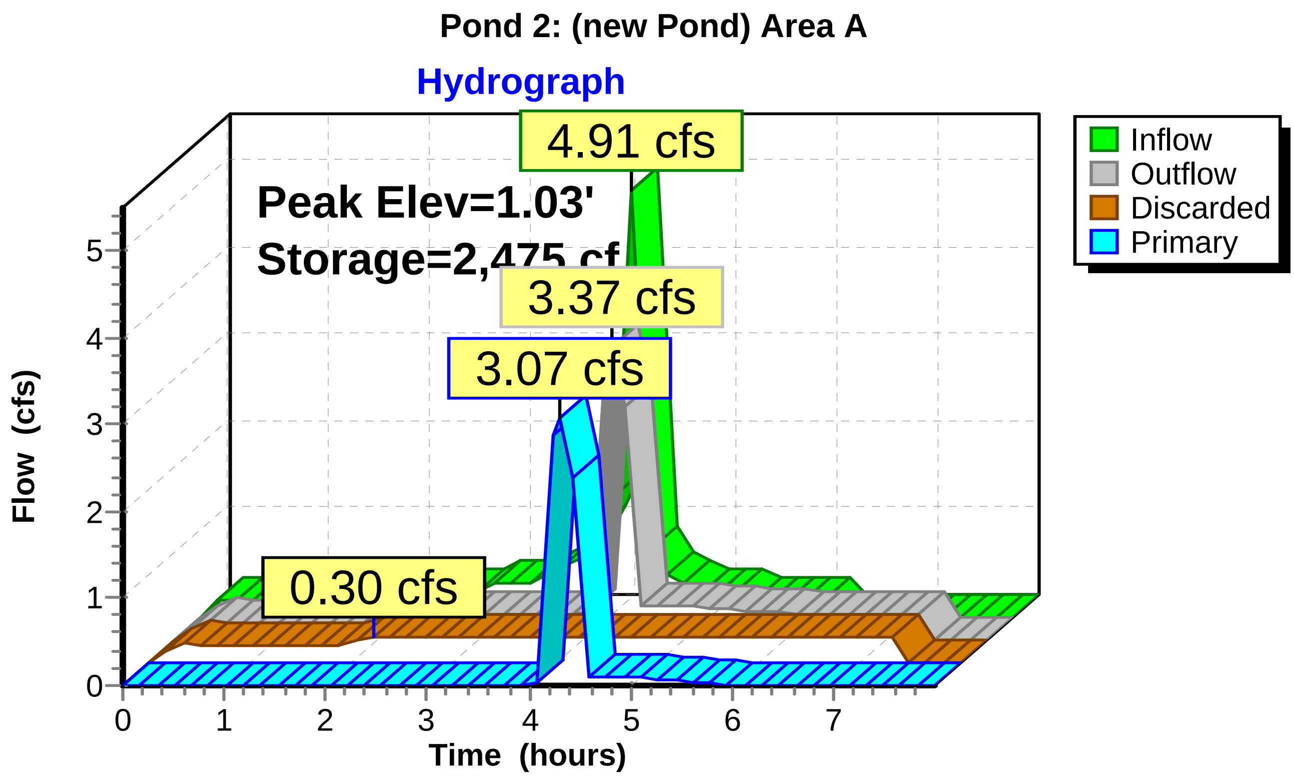
Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	3,835 cf	**Custom Stage Data** Listed below

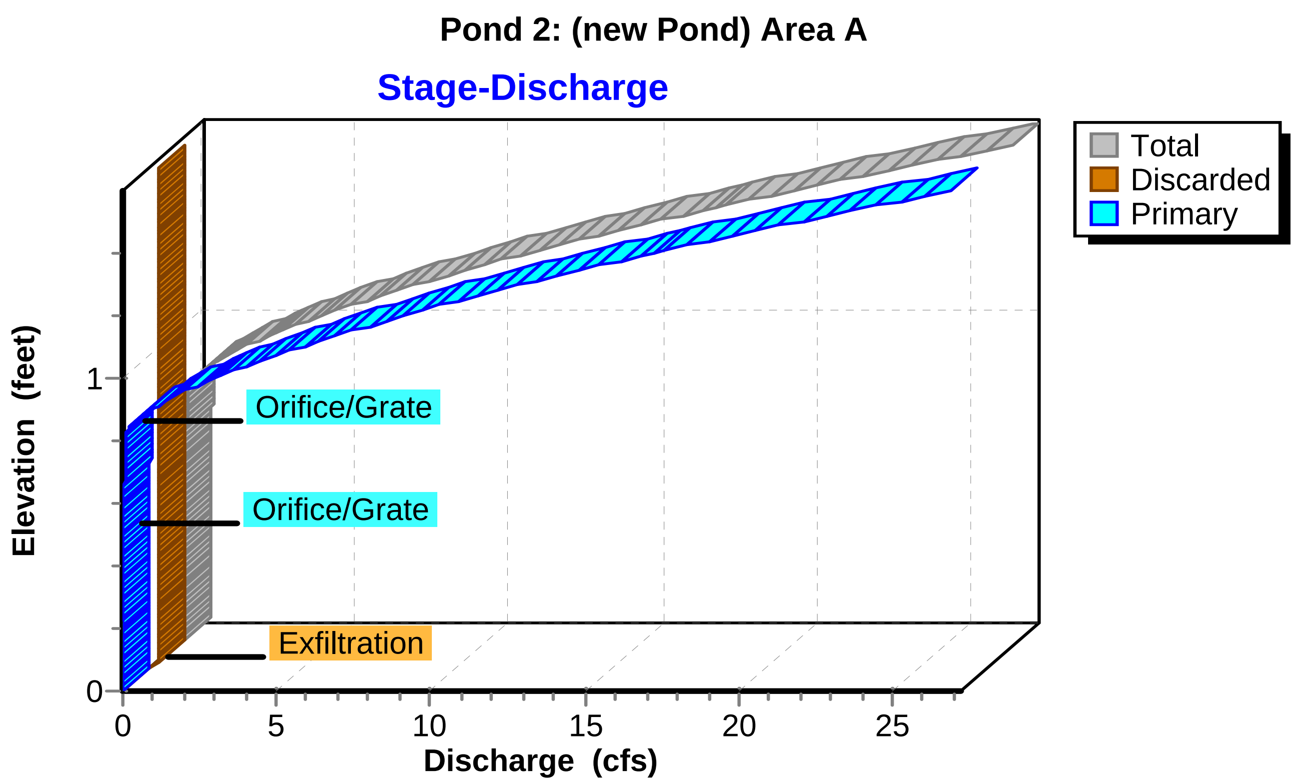
Elevation (feet)	Cum.Store (cubic-feet)
0.00	0
0.20	479
0.40	959
0.60	1,438
0.80	1,917
1.00	2,397
1.20	2,876
1.40	3,355
1.60	3,835

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**0.30 cfs Exfiltration at all elevations**
#2	Primary	0.50'	**3.0" W x 4.0" H Vert. Orifice/Grate** C= 0.620
#3	Primary	0.83'	**36.0" x 36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.30 cfs @ 2.21 hrs HW=0.02' (Free Discharge)
└─**1=Exfiltration** (Exfiltration Controls 0.30 cfs)

Primary OutFlow Max=2.69 cfs @ 4.31 hrs HW=0.99' (Free Discharge)
├─**2=Orifice/Grate** (Orifice Controls 0.23 cfs @ 2.79 fps)
└─**3=Orifice/Grate** (Weir Controls 2.46 cfs @ 1.30 fps)

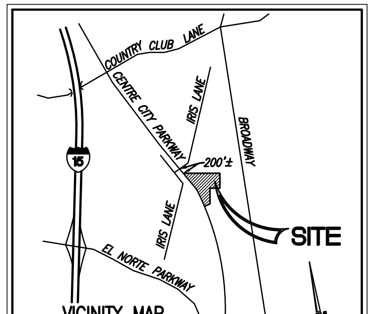

Pond 2: (new Pond) Area A
Hydrograph
4.91 cfs
Peak Elev=1.03'
Storage=2,475 cf
3.37 cfs
3.07 cfs
0.30 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0
1
2
3
4
5
6
7
Time (hours)


Pond 2: (new Pond) Area A
Stage-Discharge
Total
Discarded
Primary
Orifice/Grate
Orifice/Grate
Exfiltration
Elevation (feet)
0
1
5
10
15
20
25
Discharge (cfs)

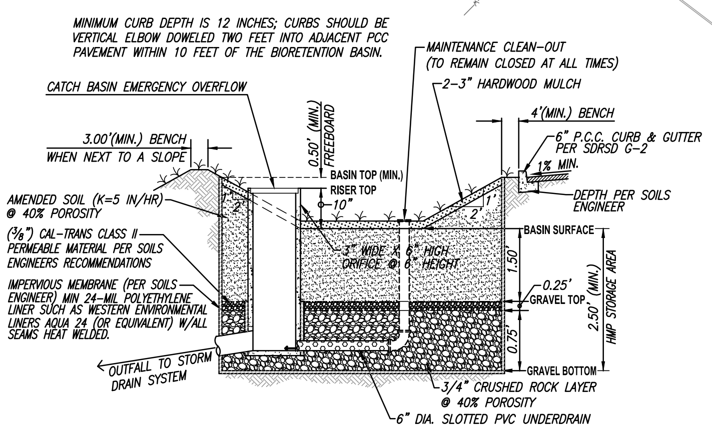
Hydrograph for Pond 2: (new Pond) Area A

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	0.00	0.00	0.00	0.00
0.17	0.20	18	0.01	0.14	0.14	0.00
0.34	0.20	29	0.01	0.22	0.22	0.00
0.51	0.20	24	0.01	0.19	0.19	0.00
0.68	0.20	26	0.01	0.20	0.20	0.00
0.85	0.20	25	0.01	0.20	0.20	0.00
1.02	0.20	26	0.01	0.20	0.20	0.00
1.19	0.20	26	0.01	0.20	0.20	0.00
1.36	0.20	26	0.01	0.20	0.20	0.00
1.53	0.20	26	0.01	0.20	0.20	0.00
1.70	0.20	26	0.01	0.20	0.20	0.00
1.87	0.20	26	0.01	0.20	0.20	0.00
2.04	0.30	35	0.01	0.27	0.27	0.00
2.21	0.30	44	0.02	0.30	**0.30**	0.00
2.38	0.30	44	0.02	0.30	0.30	0.00
2.55	0.30	44	0.02	0.30	0.30	0.00
2.72	0.30	44	0.02	0.30	0.30	0.00
2.89	0.40	74	0.03	0.30	0.30	0.00
3.06	0.40	135	0.06	0.30	0.30	0.00
3.23	0.40	197	0.08	0.30	0.30	0.00
3.40	0.50	288	0.12	0.30	0.30	0.00
3.57	0.60	441	0.18	0.30	0.30	0.00
3.74	0.70	656	0.27	0.30	0.30	0.00
3.91	1.00	992	0.41	0.30	0.30	0.00
4.08	1.40	1,530	0.64	0.34	0.30	0.04
4.25	**4.90**	**2,385**	**0.99**	**3.16**	0.30	**2.86**
4.42	0.80	2,337	0.97	2.69	0.30	2.39
4.59	0.50	1,788	0.75	0.40	0.30	0.10
4.76	0.40	1,815	0.76	0.41	0.30	0.11
4.93	0.30	1,782	0.74	0.40	0.30	0.10
5.10	0.30	1,726	0.72	0.39	0.30	0.09
5.27	0.30	1,677	0.70	0.37	0.30	0.07
5.44	0.20	1,606	0.67	0.36	0.30	0.06
5.61	0.20	1,514	0.63	0.34	0.30	0.04
5.78	0.20	1,433	0.60	0.33	0.30	0.03
5.95	0.20	1,360	0.57	0.31	0.30	0.01
6.12	0.20	1,292	0.54	0.31	0.30	0.01
6.29	0.00	1,168	0.49	0.30	0.30	0.00
6.46	0.00	984	0.41	0.30	0.30	0.00
6.63	0.00	801	0.33	0.30	0.30	0.00
6.80	0.00	617	0.26	0.30	0.30	0.00
6.97	0.00	433	0.18	0.30	0.30	0.00
7.14	0.00	250	0.10	0.30	0.30	0.00
7.31	0.00	66	0.03	0.30	0.30	0.00
7.48	0.00	0	0.00	0.00	0.00	0.00
7.65	0.00	0	0.00	0.00	0.00	0.00
7.82	0.00	0	0.00	0.00	0.00	0.00
7.99	0.00	0	0.00	0.00	0.00	0.00

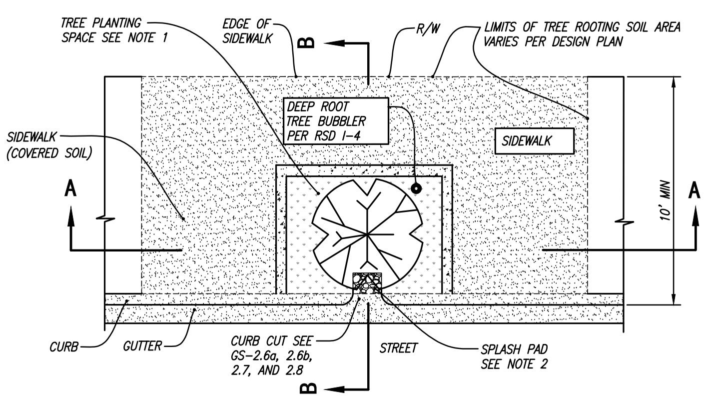
ATTACHMENT D



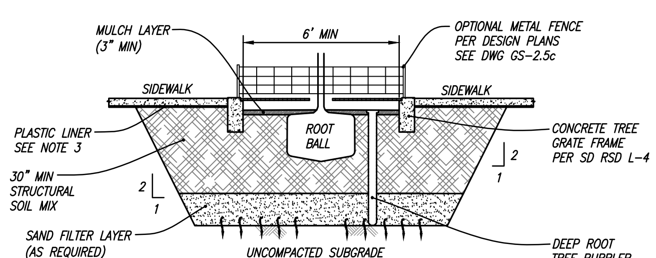
VICINITY MAP
NOT TO SCALE
T.B.M. PG. 1109, G-5



BIORETENTION (INF-2) BASIN TYPICAL SECTION
TYPICAL DETAIL & OUTLET CONNECTION
INSTALLED BMP SHALL COMPLY WITH BF-1 BMP DESIGN FACT SHEET
NOT-TO-SCALE



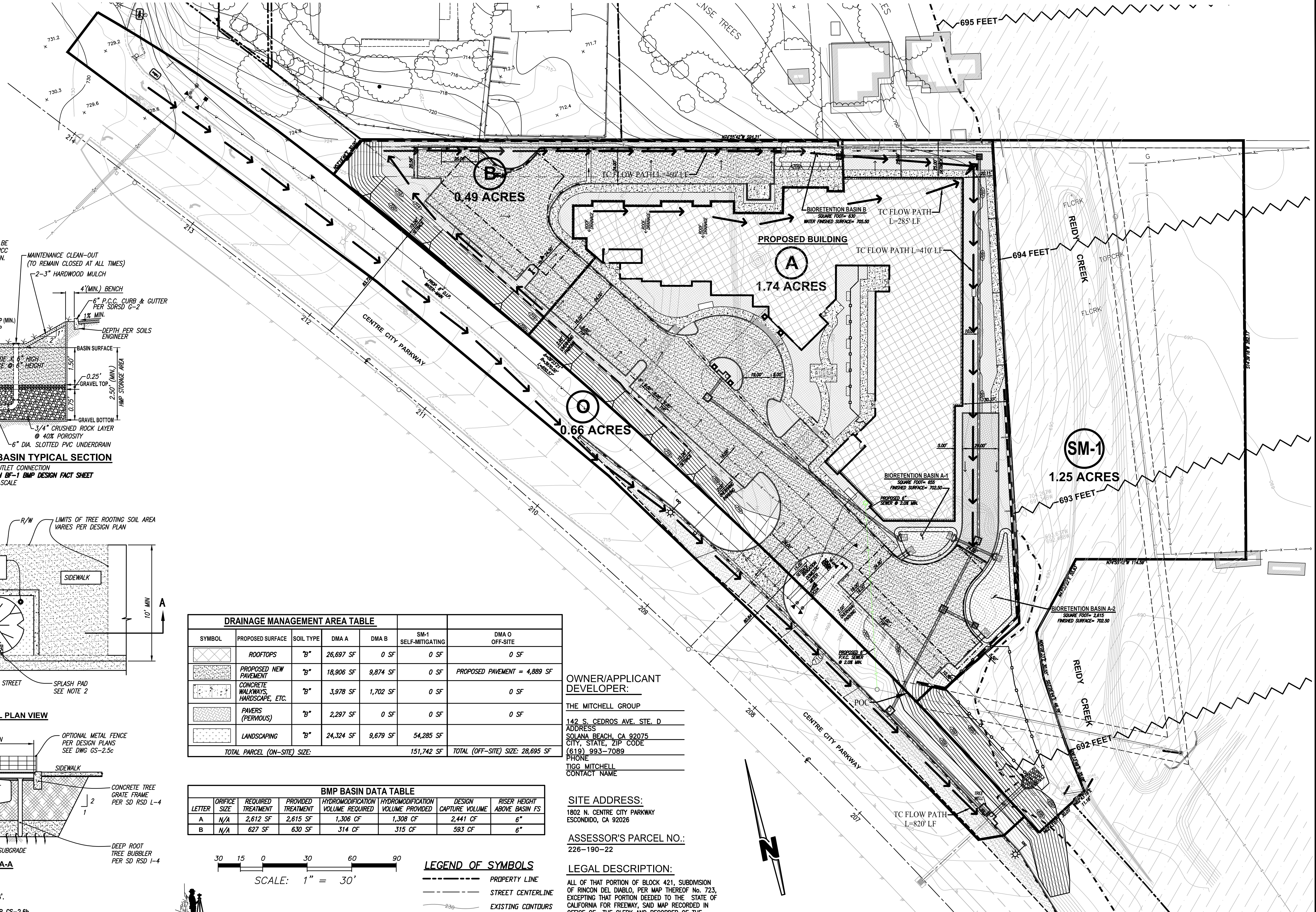
TREE-WELL PLAN VIEW



SECTION A-A

NOTES:

1. MINIMUM OPEN TREE PLANTING SPACE DIMENSION 4'x6'.
2. PROVIDE SPLASH PAD FOR TREE PLANTING SPACE PER GS-2.6b.
3. PROVIDE PLASTIC LINER WHERE CONCRETE WILL BE POURED ON TOP OF STRUCTURAL SOIL PER GREEN BOOK STANDARD SPECIFICATIONS SECTION 210-2.
4. MINIMUM VOLUME REQUIRED = 122 C.F. 10' WIDE x 6' LONG x 5' DEEP (30" MEDIA, 30" SAND FILTER LAYER)



DRAINAGE MANAGEMENT AREA TABLE						
SYMBOL	PROPOSED SURFACE	SOIL TYPE	DMA A	DMA B	SM-1 SELF-MITIGATING	DMA O OFF-SITE
	ROOFTOPS	"B"	26,697 SF	0 SF	0 SF	0 SF
	PROPOSED NEW PAVEMENT	"B"	18,906 SF	9,874 SF	0 SF	PROPOSED PAVEMENT = 4,889 SF
	CONCRETE WALKWAYS, HARDSCAPE, ETC.	"B"	3,978 SF	1,702 SF	0 SF	0 SF
	PAVERS (PERVIOUS)	"B"	2,297 SF	0 SF	0 SF	0 SF
	LANDSCAPING	"B"	24,324 SF	9,679 SF	54,285 SF	
TOTAL PARCEL (ON-SITE) SIZE:					151,742 SF	TOTAL (OFF-SITE) SIZE: 28,695 SF

BMP BASIN DATA TABLE							
LETTER	ORIFICE SIZE	REQUIRED TREATMENT	PROVIDED TREATMENT	HYDROMODIFICATION VOLUME REQUIRED	HYDROMODIFICATION VOLUME PROVIDED	DESIGN CAPTURE VOLUME	RISER HEIGHT ABOVE BASIN FS
A	N/A	2,612 SF	2,615 SF	1,306 CF	1,308 CF	2,441 CF	6"
B	N/A	627 SF	630 SF	314 CF	315 CF	593 CF	6"

30 15 0 30 60 90
SCALE: 1" = 30'

LEGEND OF SYMBOLS

- PROPERTY LINE
- STREET CENTERLINE
- 230 EXISTING CONTOURS
- LONGEST FLOW PATH
- DRAINAGE AREA

NOTE:
INTERIOR FLOOR DRAINS AND ELEVATOR SHAFT SUMP WILL DRAIN TO THE SANITARY SEWER SYSTEM.

OWNER/APPLICANT DEVELOPER:

THE MITCHELL GROUP

142 S. CEDROS AVE. STE. D
ADDRESS
SOLANA BEACH, CA 92075
CITY, STATE, ZIP CODE
(619) 993-7089
PHONE
TIGG MITCHELL
CONTACT NAME

SITE ADDRESS:
1802 N. CENTRE CITY PARKWAY
ESCONDIDO, CA 92026

ASSESSOR'S PARCEL NO.:
226-190-22

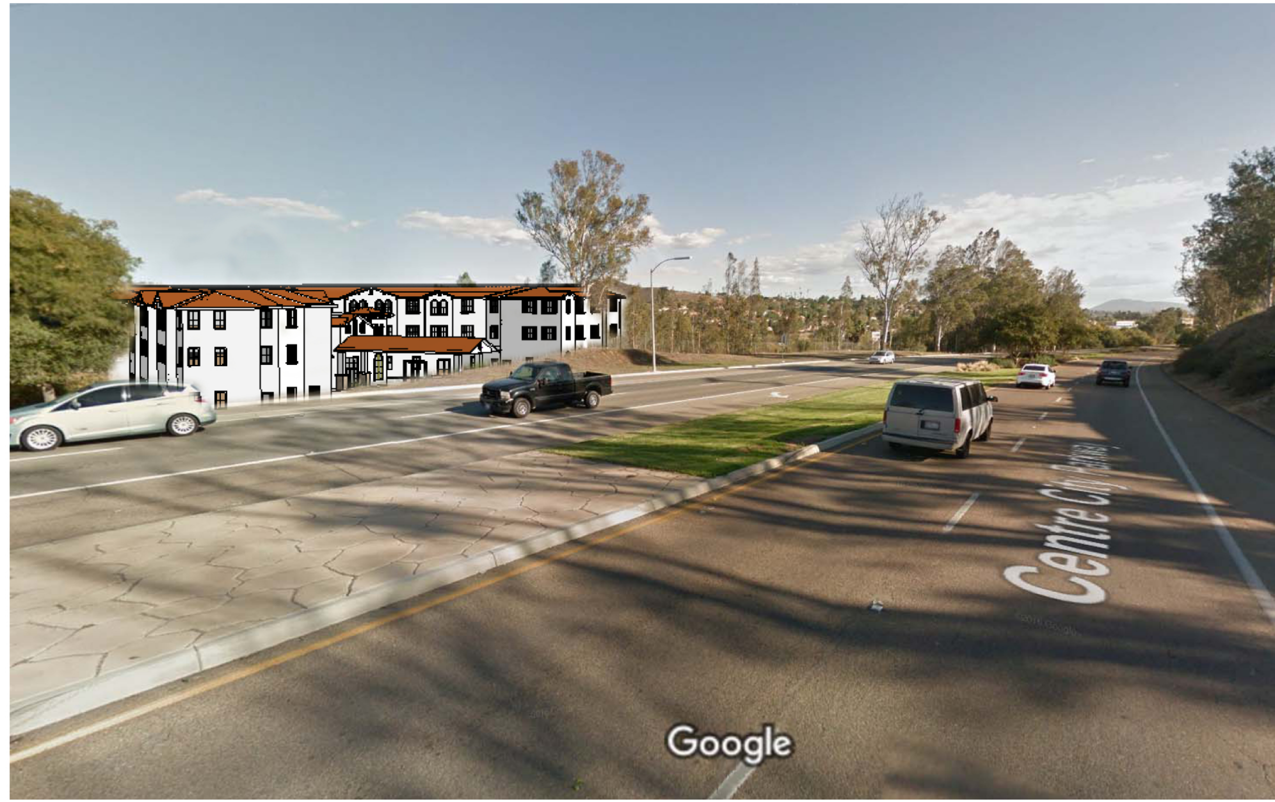
LEGAL DESCRIPTION:
ALL OF THAT PORTION OF BLOCK 421, SUBDIVISION OF RINCON DEL DIABLO, PER MAP THEREOF No. 723, EXCEPTING THAT PORTION DEEDED TO THE STATE OF CALIFORNIA FOR FREEWAY, SAID MAP RECORDED IN OFFICE OF THE CLERK AND RECORDER OF THE COUNTY OF SAN DIEGO, CALIFORNIA.

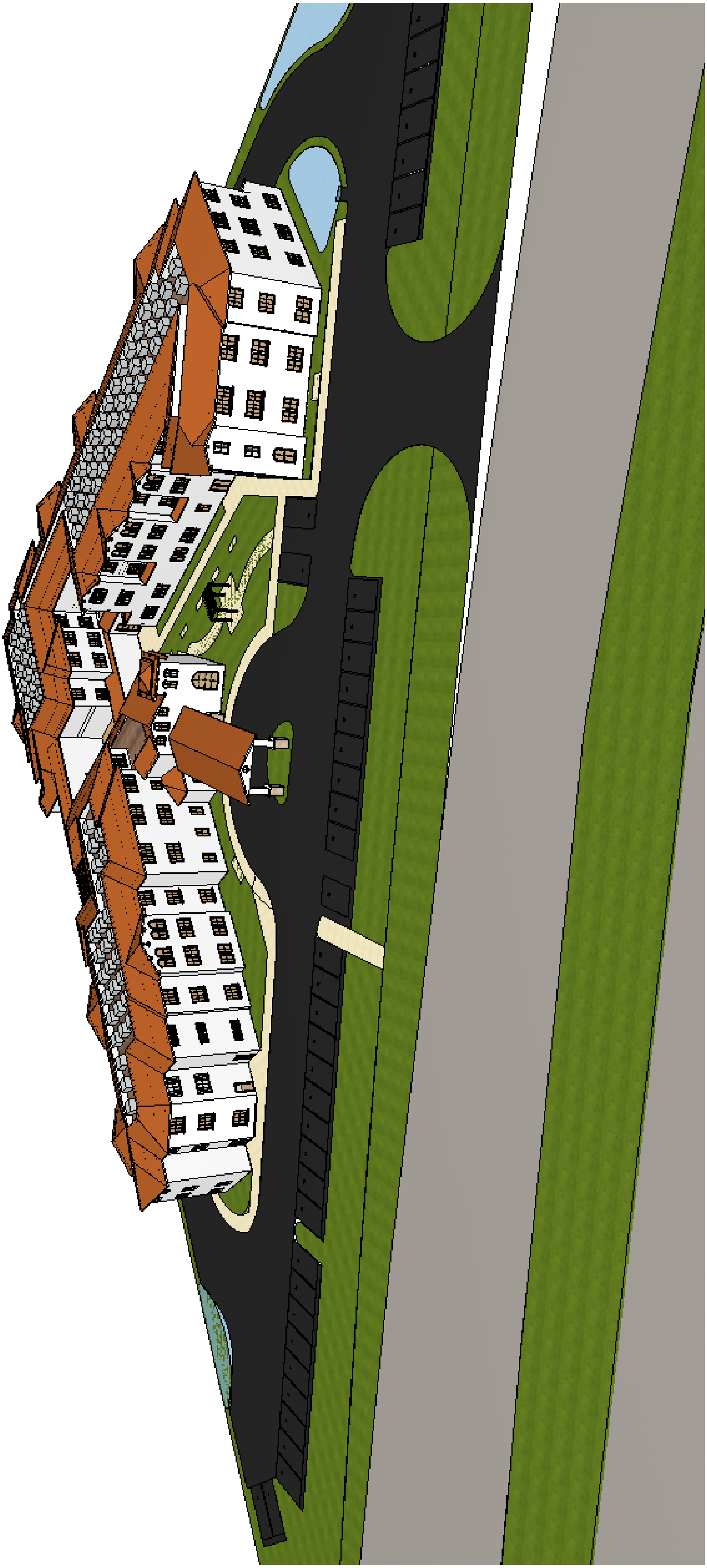
PLANS PREPARED BY:
SPEAR & ASSOCIATES, INC.
475 PRODUCTION STREET, SAN MARCOS, CA. 92078
PHONE (760) 736-2040 FAX (760) 736-4866

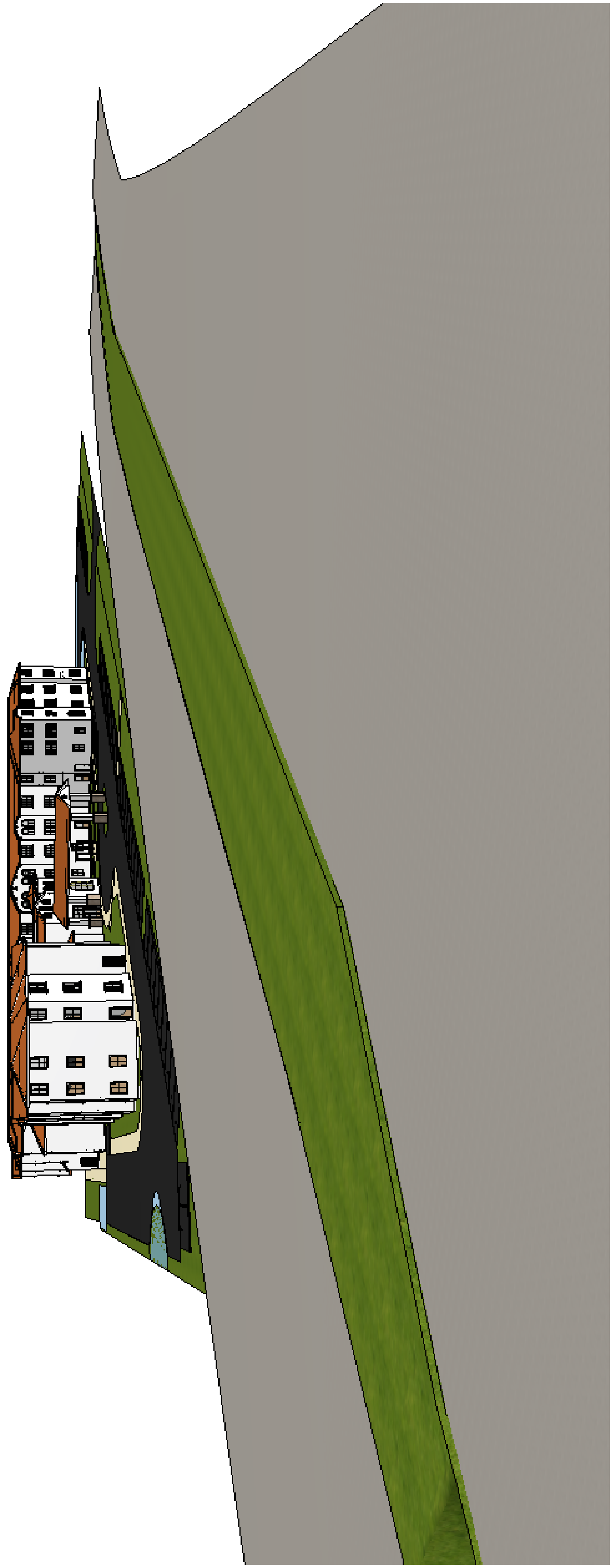
ESCONDIDO ASSISTED LIVING
POST-DEVELOPMENT DRAINAGE AREA MAP

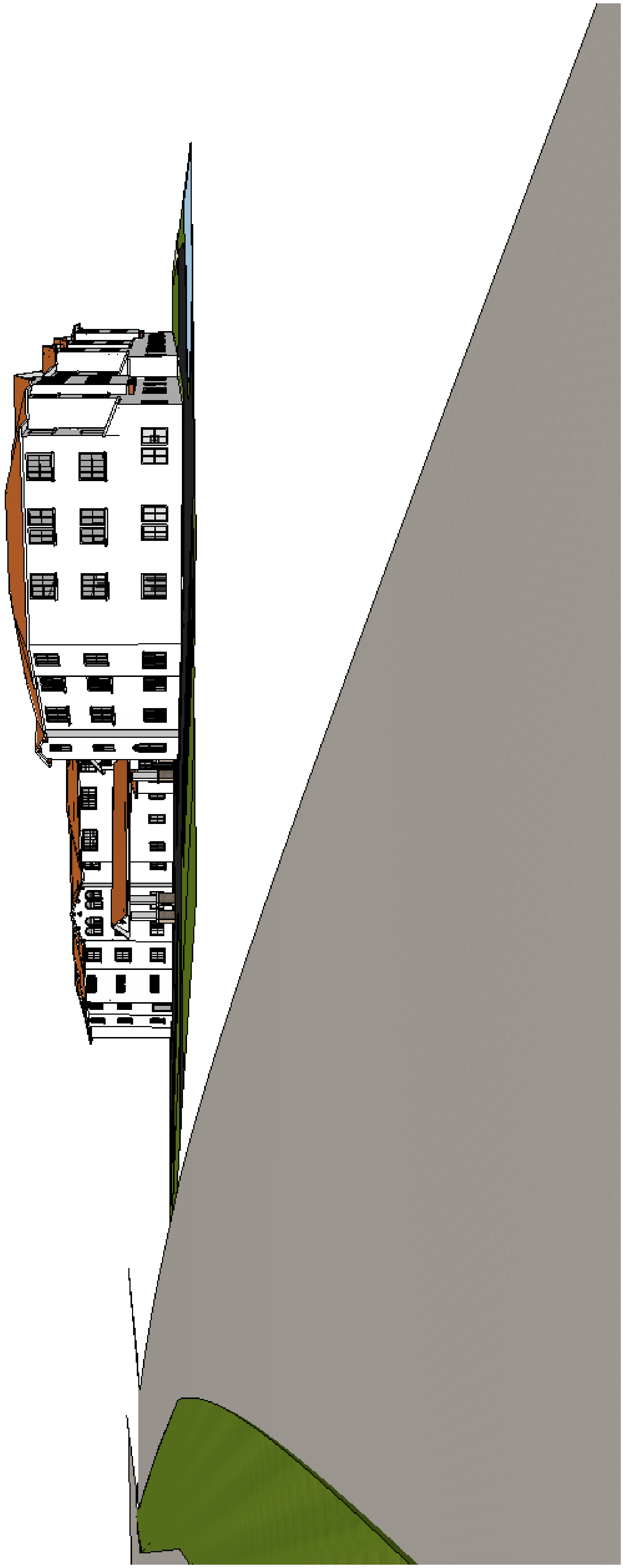
SPEAR & ASSOCIATES, INC. JOB NO: 17-174 JRZ

23. Spear and Associated; HVAC screening graphics, October 2018


Centre City
Google







24. Spindrift Archaeological. 1802 N Centre City Parkway Survey; June 2018

28. Spindrift Archaeological. 1802 N Centre City Parkway Survey; June 2018

DRAFT
1802 N CENTRE CITY PARKWAY SURVEY, CITY OF ESCONDIDO, COUNTY OF SAN DIEGO, CALIFORNIA

Prepared for / Submitted to:

The Mitchell Group
142 South Cedros Ave, Suite D
Solana Beach, CA 92075

Spindrift Project No. 2018-009

Prepared by Paul Howard and Arleen Garcia-Herbst

June 2018

SPINDRIFT ARCHAEOLOGICAL CONSULTING, LLC

8895 Towne Centre Drive #105-248
San Diego, California 92122
Phone: 858-333-7202   Fax: 855-364-3170

TABLE OF CONTENTS

Figures

Appendices

AD	Anno Domini
APE	Area of Potential Effects
BC	Before Christ
BP	Before Present
BOR	Bureau of Reclamation
Caltrans	California Department of Transportation
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CHL	California Historical Landmarks
CHRIS	California Historical Resources Information System
cmbs	centimeters below the ground surface
County	County of San Diego
CRHR	California Register of Historical Resources
CRM	Cultural Resource Management
EIR	Environmental Impact Report
HRG	Historical Resources Guidelines
LDC	Land Development Code
LF	Linear Feet
NAHC	Native American Heritage Commission
NEPA	National Environmental Protection Act
NFHL	National Flood Hazard Layer
NHPA	National Historic Preservation Act
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
MLD	Most Likely Descendant
Project	1802 North Centre City Parkway Inventory Survey
PI	Principal Investigator
PRC	Public Resources Code
SCIC	South Coastal Information Center
SDUPD	San Diego Unified Port District
SFHA	Special Flood Hazard Area
SSURGO	Soil Survey Geographic
Spindrift	Spindrift Archaeological Consulting, LLC
UCSB	University of California Santa Barbara
USGS	United States Geological Survey

National Archaeological Database

Author:	Paul Howard and Arleen Garcia-Herbst
Consulting Firm:	Spindrift Archaeological Consulting
Report Date:	June 2018
Report Title:	1802 N Centre City Parkway survey, City of Escondido, County of San Diego, California
Prepared by:	Spindrift Archaeological Consulting, 8895 Towne Centre Drive #105-248, San Diego, California 92122
Submitted to:	The Mitchell Group
Project No.	2018-009
Acreage	approximately 3.03 acres
Keywords:	1802 N Centre City Parkway Survey, negative

EXECUTIVE SUMMARY

In 2018, The Mitchell Group (TMG) retained Spindrift Archaeological Consulting, LLC (Spindrift) to conduct a cultural resources inventory of the N Centre City Parkway (hereafter known as Project) in the County of San Diego. The entire Project Area of Potential Effects (APE) is composed of approximately 3.03 acres.

The records search results indicated that fifty-five (55) previous cultural resources studies were conducted within a half-mile radius of the Project APE, and twenty-two (22) cultural resources have previously been recorded within a half-mile radius of the Project APE. Zero (0) cultural resources have been previously documented within the Project APE.

A field site visit was conducted as part of this study. No (0) new archaeological sites were identified during the field site survey. Recommendations for the management of unanticipated discoveries are provided in this report.

SECTION 1 INTRODUCTION

In 2018, Spindrift was retained by The Mitchell Group (TMG) to conduct a cultural resource inventory of the 18002 North Centre City Parkway (Project), located in San Diego County (County), California. A records search, literature review and field site visit of the approximately 3.03-acre Project was required to identify potentially significant cultural resources that could be affected by the Project.

1.1 PROJECT LOCATION

The 3.03-acre site is located at 1802 N Centre City Parkway. The Project APE is shown on the United States Geological Survey (USGS) 7.5-minute Valley Center topographic quadrangle (1967; photorevised 1975) (Figure 3).

1.2 PROJECT DESCRIPTION

TMG is planning for an assisted living facility at the site, with 35 parking spaces and underground utilities. The Site is an undeveloped lot, with minor landscaping, fencing and with a large wall to the north. The APE will be approximately 3.03 acres in size.

1.3 REGULATORY CONTEXT SUMMARY

To meet the regulatory requirements of this project, this cultural resources investigation was conducted pursuant to the provisions for the treatment of cultural resources in CEQA (Public Resources Code (PRC) § 21000 et seq.). The goal of CEQA is to develop and maintain a high-quality environment that serves to identify the significant environmental effects of the actions of a proposed project and to either avoid or mitigate those significant effects where feasible. CEQA pertains to all proposed projects that require state or local government agency approval, including the enactment of zoning ordinances, the issuance of conditional use permits, and the approval of project development maps.

CEQA (Title 14, California Code of Regulations (CCR), Article 5, Section 15064.5) applies to cultural resources of the historic and prehistoric periods. Any project with an effect that may cause a substantial adverse change in the significance of a cultural resource, either directly or indirectly, is a project that may have a significant effect on the environment. As a result, such a project would require avoidance or mitigation of impacts to those affected resources. Significant cultural resources must meet at least one of four criteria that define eligibility for listing in the California Register of Historical Resources (CRHR) (PRC § 5024.1, Title 14 CCR, Section 4852). Resources listed on or eligible for inclusion in the CRHR are considered Historical Resources under CEQA.

The goal of the NHPA is to develop and maintain a high-quality environment that serves to identify the significant environmental effects of the actions of the proposed Project and to either avoid or mitigate those significant effects where feasible. NHPA applies to cultural resources of the historical and prehistoric periods. Any project that may cause an adverse change in the significance of a cultural resource, either directly or indirectly, would require avoidance or mitigation of impacts to those affected resources. Significant cultural resources must meet at least one of four criteria that define eligibility for listing on the NRHP (36 CFR 60.4). Cultural resources eligible for listing on the NRHP are considered

Historic Properties under 36 CFR Part 800, and are automatically eligible for inclusion in the CRHR (Historical Resources under CEQA).

1.4 AREA OF POTENTIAL EFFECTS (APE)

The Project APE consists of the horizontal (surficial) and vertical (subterranean) limits of the project, and includes the area within which significant impacts or adverse effects to Archaeological Resources (California Environmental Quality Act (CEQA)) could occur as a result of the project. The Project APE, subject to environmental review under CEQA, consists of all areas where activities associated with the Project are proposed. This includes areas proposed for construction, vegetation removal, grading, trenching, stockpiling, staging, paving, and other elements described in the 3.03 acres in size.

The Project APE also includes the maximum depth below the surface to which excavations for the project will extend. Thus, it includes all subsurface areas where archaeological deposits could be affected and varies across the project, depending on the type of infrastructure. Ground disturbance of up to 8 feet below the surface is assumed for utilities.

The vertical APE also is described as the maximum height of project features, which could impact the physical integrity and integrity of setting of cultural resources, including districts and traditional cultural properties. For the current project, the vertical APE is assumed to be up to 35 feet for a three-story above ground building.

1.5 REPORT ORGANIZATION

The following report documents the study and its findings and was prepared in conformance with the California Office of Historic Preservation's *Archaeological Resource Management Reports: Recommended Contents and Format.* Attachment A includes a confirmation of the records search with the California Historical Resources Information System (CHRIS) and San Diego Museum of Man (SDMOM). Appendix B contains documentation of Native American outreach efforts. Appendix C contains photos of the project area and a photo log. Appendix D includes a confidential map showing the results of the records search requests and copies of the confidential Department of Parks and Recreation (DPR) 523 series forms.

Sections 6253, 6254, and 6254.10 of the California Code authorize state agencies to exclude archaeological site information from public disclosure under the Public Records Act. In addition, the California Public Records Act (Government Code §6250 *et seq*.) and California's open meeting laws (The Brown Act, Government Code §54950 *et seq*.) protect the confidentiality of Native American cultural place information. Likewise, the Information Centers of the CHRIS maintained by the Office of Historic Preservation prohibit public dissemination of records search information. Appendix D was prepared as a confidential document, which is not intended for public distribution in either paper or electronic format.

SECTION 2 SETTING

The Project APE is located in the County of San Diego (Figures 1 and 2).

2.1 Existing Conditions

Chapter 2 establishes the context for the evaluation of cultural resources through an overview of the environmental setting, the prehistory, and the ethnographic identity of the Project APE, as well as the regulatory setting.

2.1.1 Natural Setting

The Project area is severely disturbed due to large amounts of soil being stockpiled on the property. Soil has been built up in multiple areas and a wall has been built with a fence on top to stabilize the soil within the APE. Off road vehicles have also impacted the property and have created tracks throughout the north eastern section of the APE.

2.1.2 Soils and Geology

Two (2) soil units, or types, have been mapped within the Project APE from west to east: Vista coarse sandy loam, 15 to 30 percent slopes, eroded (VsE2) and Visalia sandy loam, 0 to 2 percent slopes (VaA; NRCS 2018). The Vista series consists of moderately deep, well drained soils that formed in material weathered from decomposed granitic rocks. Vista soils are on hills and mountainous uplands and have slopes of 2 to 85 percent. The Visalia series consists of moderately well drained, very deep sandy loams derived from granitic alluvium. These soils are on alluvial fans and flood plains and have slopes of 0 to 15 percent.

There is one (1) geologic deposit within the Project APE: Jurassic marine rocks, which contains deposits of shale, sandstone, minor conglomerate, chert, slate, limestone, minor pyroclastic rocks. Jurassic soils generally have a very low sensitivity for buried cultural resources.

The Project APE is partly located within a Regulatory Floodway in the eastern section of the APE, with a small portion of the APE being in a moderate flood hazard area (0.2% Annual Chance of Flood Hazard) in the northern section of the APE, as mapped on the National Flood Hazard Layer determined by the Federal Emergency Management Agency (FEMA 2018). Flood hazard areas identified on the Flood Insurance Rate Map (FIRM) are identified as a Special Flood Hazard Area (SFHA). The land area covered by the floodwaters of the base flood is the Special Flood Hazard Area (SFHA) on NFIP maps ("Regulatory Floodway" and "1% Annual Chance Flood Hazard"). A Regulatory Floodway means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height, and has high to moderate sensitivity for buried cultural deposits. The 1-percent annual chance flood is also referred to as the base flood or 100-year flood. SFHAs are labeled as Zone A, Zone AO, Zone AH, Zones A1-A30, Zone AE, Zone A99, Zone AR, Zone AR/AE, Zone AR/AO, Zone AR/A1-A30, Zone AR/A, Zone V, Zone VE, and Zones V1-V30, and has moderate sensitivity for buried cultural deposits. Moderate flood hazard areas, labeled Zone B or Zone X (shaded) are also shown on the FIRM, and are the areas between the limits of the base flood and the 0.2-percent-annual-chance (or 500-year) flood, and has moderate to low sensitivity for buried cultural deposits. The areas of minimal flood hazard, which are the areas outside the SFHA and higher than the elevation of the 0.2-percent-annual-chance flood, are labeled Zone C or Zone X (un-shaded), and has low sensitivity for buried cultural deposits.

2.1.3 Cultural Setting

The following sections have been excerpted from the City of San Diego Historical Resources Guide (HRG, 2001) and serves to provide a comparative framework for the prehistory of the region and context for this testing and evaluation report. The history of San Diego can be divided into four prehistoric periods, one ethnohistoric period and three historic periods. The references cited in this section can be found in HRG (2001:Appendix A).

EARLY MAN PERIOD (BEFORE 8500 Before Christ (BC))

No firm archaeological evidence for the occupation of San Diego County before 10,500 years ago has been discovered. The myths and history that is repeated by the local Native American groups now and at the time of earlier ethnographic research indicate both their presence here since the time of creation and, in some cases, migration from other areas. There are some researchers who advocate an occupation of southern California prior to the Wisconsin Glaciation, around 80,000 to 100,000 years ago (Carter 1957, 1980; Minshall 1976). Local proposed Early Man sites include the Texas Street, Buchanan Canyon and Brown sites, as well as Mission Valley (San Diego River Valley), Del Mar and La Jolla (Bada et al. 1974; Carter 1957, 1980; Minshall 1976, 1983, 1989; Moriarty and Minshall 1972; Reeves 1985; Reeves et al. 1986). However, two problems have precluded general acceptance of these claims. First, artifacts recovered from several of the localities have been rejected by many archaeologists as natural products rather than cultural artifacts. Second, the techniques used for assigning early dates to the sites have been considered unsatisfactory (Moratto 1984; Taylor et al. 1985).

Careful scientific investigation of any possible Early Man archaeological remains in this region would be assigned a high research priority. Such a priority would reflect both the substantial popular interest in the issue and the general anthropological importance which any confirmation of a very early human presence in the western hemisphere would have. Anecdotal reports have surfaced over the years that Early Man deposits have been found in the lower levels of later sites in Mission Valley. However, no reports or analyses have been produced supporting these claims.

PALEO-INDIAN PERIOD (8500-6000 BC)

The earliest generally-accepted archaeological culture of present-day San Diego County is the Paleo-Indian culture of the San Dieguito Complex. This complex is usually assigned to the Paleo-Indian Stage and dates back to about 10,500 years ago. It would therefore appear to be contemporary with the better-known Fluted Point Tradition of the High Plains, and elsewhere, and the Western Pluvial Lakes Tradition of the Desert West. The San Dieguito Complex, is believed to represent a nomadic hunting culture by some investigators of the complex (Davis et al. 1969; Moriarty 1969; Rogers 1929, 1966; Warren 1966, 1967), characterized by the use of a variety of scrapers, choppers, bifaces, large projectile points and crescentics, a scarcity or absence of milling implements, and a preference for fine-grained volcanic rock over metaquartzite.

Careful scientific investigation of San Dieguito Complex sites in the region would also be assigned a high research priority. Major research questions relating to the Paleo-Indian Period include confirmation of the presence of the Fluted Point Tradition in San Diego County (Davis and Shutler 1969); better chronological definition of the San Dieguito Complex; determination of whether the San Dieguito assemblages do in fact reflect an early occupation, rather than the remains from a specialized activity set belonging to an Early Archaic Period culture; clarification of the relationship of the San Dieguito Complex, if it represents a separate culture, to the subsequent Early Archaic Period cultures; determination of the subsistence and settlement systems which were associated with the San Dieguito Complex; and clarification of the relationship of the San Dieguito Complex to similar remains in the Mojave Desert, in northwestern and central California, in southern Arizona and in Baja California. The San Dieguito Complex was originally defined in an area centering on the San Dieguito River valley, north of San Diego (Rogers 1929).

EARLY ARCHAIC PERIOD (6000 BC-Anno Domini (AD) 0)

As a result of climatic shifts and a major change in subsistence strategies, a new cultural pattern assignable to the Archaic Stage is thought by many archaeologists to have replaced the San Dieguito culture before 6000 BC. This new pattern, the Encinitas Tradition, is represented in San Diego County by the La Jolla and Pauma complexes. The coastal La Jolla Complex is characterized as a gathering culture which subsisted largely on shellfish and plant foods from the abundant littoral resources of the area. The La Jolla Complex is best known for its stone-on-stone grinding tools (mano and metate), relatively crude cobble-based flaked lithic technology and flexed human burials. Inland Pauma Complex sites have been assigned to this period on the basis of extensive stone-on-stone grinding tools, Elko Series projectile points and the absence of remains diagnostic of later cultures.

Among the research questions focusing on this period are the delineation of change or the demonstration of extreme continuity within the La Jolla and Pauma complexes; determination of whether coastal La Jolla sites represent permanent occupation areas or brief seasonal camps; the relationship of coastal and inland Archaic cultures; the scope and character of Archaic Period long-range exchange systems; the role of natural changes or culturally-induced stresses in altering subsistence strategies; and the termination of the Archaic Period in a cultural transformation, in an ethnic replacement or in an occupational hiatus in western San Diego County.

LATE PREHISTORIC PERIOD (AD 0-1769)

The Late Prehistoric Period in San Diego County is represented by two distinct cultural patterns, the Yuman Tradition from the Colorado Desert region and the Shoshonean Tradition from the north. These cultural patterns are represented locally by the Cuyamaca Complex from the mountains of southern San Diego County and the San Luis Rey Complex of northern San Diego County. The people of the Cuyamaca and San Luis Rey complexes are ancestral to the ethnohistoric Kumeyaay (Diegueño) and Luiseño, respectively. Prehistorically, the Kumeyaay were a hunting and gathering culture that adapted to a wide range of ecological zones from the coast to the Peninsular Range. A shift in grinding technology reflected by the addition of the pestle and mortar to the mano and metate, signifying an increased emphasis on acorns as a primary food staple, as well as the introduction of the bow and arrow (i.e., small Cottonwood Triangular and Desert Side-notched projectile points), obsidian from the Obsidian Butte source in Imperial County and human cremation serve to differentiate Late Prehistoric populations from earlier peoples. Pottery is also characteristic of the Cuyamaca Complex, but is absent from the San Luis Rey Complex until relatively late (post AD 1500).

Explanatory models applied to Late Prehistoric sites have drawn most heavily on the ethnographic record. Notable research opportunities for archaeological sites belonging to the Late Prehistoric period include refining chronology, examining the repercussions from environmental changes which were occurring in the deserts to the east, clarifying patterns of inter- and intra- regional exchange, testing the hypothesis of pre-contact horticultural/agricultural practices west of the desert, and testing ethnographic models for the Late Prehistoric settlement system. Hector (1984) focused on the Late Prehistoric Period to examine the use of special activity areas within large sites typical of this period. At issue was whether activities such as tool making, pottery manufacturing, and dining were conducted in specific areas within the site, or whether each family unit re-created these activity areas throughout the site. Her findings indicated that no specialized areas existed within Late Prehistoric sites, and furthermore that tools made during this period served a variety of functions.

Late Prehistoric sites appear to be proportionately much less common than Archaic sites in the coastal plains subregion of southwestern San Diego County (Christenson 1990:134-135; Robbins-Wade 1990). These sites tend to be located on low alluvial terraces or at the mouths of coastal lagoons and drainages. Of particular interest is the observation that sites located in the mountains appear to be associated with the Late Prehistoric Period. This suggests that resource exploitation broadened during that time, as populations grew and became more sedentary.

ETHNOHISTORIC PERIOD

The founding of Mission San Diego de Alcalá in 1769 by Father Junípero Serra and Mission San Luis Rey de Francia in 1798 by Father Lasuén brought about profound changes in the lives of the Yuman-speaking Kumeyaay (Diegueño) and Shoshonean-speaking Luiseño of San Diego County. The coastal Kumeyaay and Luiseño were quickly brought into their respective missions or died from introduced diseases. Ethnographic work, therefore, has concentrated on the mountain and desert peoples who were able to retain some of their aboriginal culture. As a result, ethnographic accounts of the coastal Kumeyaay and Luiseño are few. Today, the descendants of the Kumeyaay bands are divided among 12 reservations in the South County; the descendants of the Luiseño bands among five reservations in the North County.

The Kumeyaay are generally considered to be a hunting-gathering society characterized by central-based nomadism. While a large variety of terrestrial and marine food sources were exploited, emphasis was placed on acorn procurement and processing as well as the capture of rabbit and deer. Shipek (1963, 1989b) has strongly suggested that the Kumeyaay, or at least some bands of the Kumeyaay, were practicing proto-agriculture at the time of Spanish contact. While the evidence is problematic, the Kumeyaay were certainly adept land and resource managers with a history of intensive plant husbandry.

Kumeyaay houses varied greatly according to locality, need, choice and raw materials. Formal homes were built only in the winter as they took some time to build and were not really necessary in the summer. Summer camps needed only a windbreak and were usually located under convenient trees, a cave fronted with rocks or an arbor built for protection from the sun. During the summer, the Kumeyaay moved from place to place, camping where ever they were. In the winter they constructed small elliptically shaped huts of poles covered with brush or bark. The floor of the house was usually sunk about two feet into the earth. In the foothills and mountains *hiwat* brush or deer broom was applied in bundles tied on with strands of yucca. In cold weather the brush was covered with earth to help keep the heat inside. Bundles of brush were tied together to make a door just large enough to crawl through.

Most activities, such as cooking and eating, took place outside the house. The cooking arbor was a lean-to type structure (or four posts with a brush over the top). Village owned structures were ceremonial and were considered to be the center of many activities. Sweathouses were built and used by the Kumeyaay men. They were built around four posts set in a square near a river or stream and usually had a dug-out floor. The sweathouses were also used sometimes as a place for treating illnesses.

As with most hunting-gathering societies, Kumeyaay social organization was formed in terms of kinship. The Kumeyaay had a patrilineal type of band organization (descent through the male line) with band exogamy (marriage outside of one's band) and patrilocal marital residence (married couple integrates into the male's band). The band is often considered as synonymous with a village or rancheria, which is a political entity.

Almstedt (1980:45) has suggested that the term *rancheria* should be applied to both a social and geographical unit, as well as to the particular population and territory held in common by a native group or band. She also stressed that the territory for a rancheria might comprise a 30 square mile area. Many households would constitute a village or rancheria and several villages were part of a larger social system usually referred to as a consanguineal kin group called a *cimuL*. The members of the *cimuL* did not intermarry because of their presumed common ancestry, but they maintained close relations and often shared territory and resources (Luomala 1963:287-289).

Territorial divisions among Kumeyaay residential communities were normally set by the circuit of moves between villages by *cimuLs* in search of food. As Spier (1923:307) noted, the entire territory was not occupied at one time, but rather the communities moved between resources in such a manner that in the course of a year all of the recognized settlements may have been occupied. While a *cimuL* could own, or more correctly control, a tract of land with proscribed rights, no one from another *cimuL* was denied access to the resources of nature (Luomala 1963:285; Spier 1923:306); since no individual owned the resources, they were to be shared.

The Kumeyaay practiced many forms of spiritualism with the assistance of shamans and *cimuL* leaders. Spiritual leaders were neither elected to, nor inherited their position, but achieved status because they knew all the songs involved in ceremonies (Shipek 1991), and had an inclination toward the supernatural. This could include visions, unusual powers, or other signs of communication with the worlds beyond. Important Kumeyaay ceremonies included male and female puberty rites, the fire ceremony, the whirling dance, the eclipse ceremony, the eagle dance, the cremation ceremony, and the yearly mourning ceremony (Spier 1923:311-326).

Important areas of research for the Ethnohistoric Period include identifying the location of Kumeyaay settlements at the time of historic contact and during the following 50 years of the Spanish Period; delineating the effects of contact on Kumeyaay settlement/subsistence patterns; investigating the extent to which the Kumeyaay accepted or adopted new technologies or material goods from the intrusive Spanish culture; and examining the changes to Kumeyaay religious practices as a result of contact.

HISTORIC PERIODS

San Diego's history can be divided into three periods: the Spanish, Mexican and American periods.

SPANISH PERIOD (AD 1769-1822)

In spite of Juan Cabrillo's earlier landfall on Point Loma in 1542, the Spanish colonization of Alta California did not begin until 1769. Concerns over Russian and English interests in California motivated the Spanish government to send an expedition of soldiers, settlers and missionaries to occupy and secure the northwestern borderlands of New Spain. This was to be accomplished through the establishment and cooperative inter-relationship of three institutions: the Presidio, Mission and Pueblo. In 1769 a land expedition led by Gaspár de Portola reached San Diego Bay, where they met those who had survived the trip by sea on the San Antonio and the San Carlos. Initially camp was made on the shore of the bay in the area that is now downtown San Diego. Lack of water at this location, however, led to moving the camp on May 14, 1769 to a small hill closer to the San Diego River and near the Kumeyaay village of Cosoy. Father Junípero Serra arrived in July of the same year to find the Presidio serving mostly as a hospital. The Spanish built a primitive mission and presidio structure on the hill near the river. The first chapel was built of wooden stakes and had a roof made of tule reeds. Brush huts and temporary shelters were also built.

Bad feelings soon developed between the native Kumeyaay and the soldiers, resulting in construction of a stockade whose wall was made from sticks and reeds. By 1772 the stockade included barracks for the soldiers, a storehouse for supplies, a house for the missionaries and the chapel, which had been improved. The log and brush huts were gradually replaced with buildings made of adobe bricks. Flat earthen roofs were eventually replaced by pitched roofs with rounded roof tiles and clay floors were eventually lined with fired-brick.

In August 1774, the Spanish missionaries moved the Mission San Diego de Alcalá to its present location six miles up the San Diego River valley (modern Mission Valley), near the Kumeyaay village of Nipaguay. What started as a thatched jacal chapel and compound built of willow poles, logs and tules, the new Mission was sacked and burned in the Kumeyaay uprising of November 5, 1775. The first adobe chapel was completed in October 1776, and the present church was built the following year. A succession of building programs through 1813 resulted in the final rectilinear plan that included the church, bell tower, sacristy, courtyard, residential complex, workshops, corrals, gardens and cemetery (Neuerburg 1986). Orchards, reservoirs, and other agricultural installations were built to the south on the lower San Diego River alluvial terrace and were irrigated by a dam and aqueduct system.

In 1798, the Spanish constructed the Mission San Luis Rey de Francia in northern San Diego County. They also established three smaller mission outposts (asistencias) at Santa Ysabel, Pala and Las Flores

(Smythe 1908; Englehardt 1920; Pourade 1961). The mission system had a great effect on all Native American groups from the coast to the inland areas and was a dominant force in San Diego County.

Life for the new settlers at the San Diego Presidio was isolated and difficult. The arid desert climate and aggressive Native American population made life hard for the Spanish settlers. They raised cattle and sheep, gathered fish and seafood and did some subsistence farming in the San Diego River valley to generate enough food to keep the fledgling community of a few hundred Spaniards and hundreds of Native American neophytes alive. The situation for Spanish Period San Diegans' was complicated by the Spanish government's insistence on making trade with foreign ships illegal. Although some smuggling of goods into San Diego was done, the amounts were likely small (Smythe 1908:81-99; Williams 1994).

Significant research topics for the Spanish Period involve the chronology and ecological impact caused by the introduction of Old World plants and the spread of New World domesticates in southern California; the differences and similarities in the lifestyles, access to resources, and responses to change between different Spanish institutions; the effect of Spanish colonization on the Kumeyaay population; and the effect of changing colonial economic policies and the frontier economic system on patterns of purchase, consumption and discard.

MEXICAN PERIOD (AD 1822-1846)

In 1822 the political situation changed. Mexico won its independence from Spain and San Diego became part of the Mexican Republic. The Mexican government opened California to foreign ships, and a healthy trade soon developed, exchanging the fine California cattle hides for the manufactured goods of Europe and the eastern United States. Several of these American trading companies erected rough sawn wood-plank sheds at La Playa on the bay side of Point Loma. The merchants used these "hide-houses" for storing the hides before transport to the east coast (Robinson 1846:12; Smythe 1908:102). As the hide trade grew, so did the need for more grazing lands. Thus the Mexican government began issuing private land grants in the early 1820s, creating the rancho system of large agricultural estates. Much of the land came from the Spanish missions, which the Mexican government secularized in 1833. The mission system, however, had begun to decline when the Mission Indians became eligible for Mexican citizenship, and refused to work in the mission fields. The ranchos dominated California life until the American takeover in 1846 (Smythe 1908:101-106; Robinson 1948; Killea 1966; Pourade 1963). The Mexican Period brought about the continued displacement and acculturation of the native populations.

Another change in Mexican San Diego was the decline of the presidio and the rise of the civilian Pueblo. The establishment of Pueblos in California under the Spanish government met with only moderate success and none of the missions obtained their ultimate goal, which was to convert to a Pueblo. Pueblos did, however, begin to form somewhat spontaneously, near the California Presidios. As early as 1791, presidio commandants in California were given the authority to grant small house lots and garden plots to soldiers and their families (Richman 1911:346). Sometime after 1800, soldiers from the San Diego Presidio began to move themselves and their families from the presidio buildings to the tableland down the hill near the San Diego River. Historian William Smythe noted that Don Blas Aguilar, who was born in 1811, remembered at least 15 such grants below Presidio Hill by 1821 (Smythe 1908:99). Of these 15 grants only five within the boundaries of what would become Old Town had houses in 1821. These included the retired commandant Francisco Ruiz adobe (now known as the Carrillo Adobe), another building later owned by Henry Fitch on Calhoun Street, the Ybanes and Serrano houses on Juan Street near Washington Street, and a small adobe house on the main plaza owned by Juan Jose Maria Marron (San Diego Union 6-15-1873:3). By 1827, as many as 30 homes existed around the central plaza and in 1835, Mexico granted San Diego official pueblo (town) status. At this time the town had a population of nearly 500 residents, later reaching a peak of roughly 600 (Killea 1966:9-35). By 1835 the presidio, once the center of life in Spanish San Diego, had been abandoned and lay in ruins. Mission San Diego de Alcalá fared little better. In 1842, 100 Indians lived under the care of the friars and only a few main buildings were habitable (Pourade 1963:11-12, 17-18). The town and the ship landing area (La Playa) were now the centers of activity in Mexican San Diego.

Adobe bricks were used as the primary building material of houses during the Mexican Period, because wood was scarce and dirt and labor were plentiful. The technique had been brought to the New World from Spain, where it was introduced by the Moors in the Eighth Century. Adobe bricks were made of a mixture of clay, water sticks, weeds, small rocks and sand. The sticks, weeds, and small rocks held the bricks together and the sand gave the clay something to stick to. The mixture was poured into a wooden form (measuring about 4 inches by 11 inches by 22 inches) and was allowed to dry. A one-room, single-story adobe required between 2,500 and 5,000 bricks. Walls were laid on the ground or built over foundations of cobblestone from the riverbed. To make the walls, the adobe bricks were stacked and held together with a thick layer of mortar (mud mixed with sand). Walls were usually three feet thick and provided excellent insulation from the winter cold and summer heat. To protect the adobe bricks from washing away in the rain, a white lime plaster or mud slurry was applied to the walls by hand and smoothed with a rock plaster smoother (the lime for the lime plaster was made by burning seashells in a fire). The lime was then mixed with sand and water. Once the plaster dried, it formed a hard shell that protected the adobe bricks. The roof was usually made of carrizo cane bound with rawhide strips and floors were usually made of hard packed dirt, although tile was also used.

The new Pueblo of San Diego did not prosper as some other California towns did during the Mexican Period. In 1834 the Mexican government secularized the San Diego and San Luis Rey missions. The secularization in San Diego County had the adverse effect of triggering increased Native American hostilities against the Californios during the late 1830s. The attacks on outlying ranchos, along with unstable political and economic factors helped San Diego's population decline to around 150 permanent residents by 1840. San Diego's official Pueblo status was removed by 1838 and it was made a sub prefecture of the Los Angeles Pueblo. When the Americans took over after 1846, the situation had stabilized somewhat, and the population increased to roughly 350 non-Native American residents (Killea 1966:24-32; Hughes 1975:6-7).

Two important areas of research for the Mexican Period are the effect of the Mexican rancho system on the Kumeyaay population and the effect of changing colonial economic policies and the frontier economic system on patterns of purchase, consumption and discard.

AMERICAN PERIOD (AD 1846-PRESENT)

When United States military forces occupied San Diego in July 1846, the town's residents split on their course of action. Many of the town's leaders sided with the Americans, while other prominent families opposed the United States invasion. A group of Californios under Andres Pico, the brother of the

Governor Pio Pico, harassed the occupying forces in Los Angeles and San Diego during 1846. In December 1846, Pico's Californios engaged U.S. Army forces under General Stephen Kearney at the Battle of San Pasqual and inflicted many casualties. However, the Californios resistance was defeated in two small battles near Los Angeles and effectively ended by January 1847 (Harlow 1982; Pourade 1963).

The Americans raised the United States flag in San Diego in 1846, and assumed formal control with the Treaty of Guadalupe-Hidalgo in 1848. In the quarter of a century following 1848, they transformed the Hispanic community into a thoroughly Anglo-American one. They introduced Anglo culture and society, American political institutions and especially American entrepreneurial commerce. By 1872, they even relocated the center of the city and community to a new location that was more accessible to the bay and to commerce (Newland 1992:8). Expansion of trade brought an increase in the availability of building materials. Wood buildings gradually replaced adobe structures. Some of the earliest buildings to be erected in the American Period were "Pre-fab" houses, which were built on the east coast of the United States and shipped in sections around Cape Horn and reassembled in San Diego.

In 1850, the Americanization of San Diego began to develop rapidly. On February 18, 1850, the California State Legislature formally organized San Diego County. The first elections were held at San Diego and La Playa on April 1, 1850 for county officers. San Diego grew slowly during the next decade. San Diegans attempted to develop the town's interests through a transcontinental railroad plan and the development of a new town closer to the bay. The failure of these plans, added to a severe drought, which crippled ranching and led to the onset of the Civil War, that left San Diego as a remote frontier town. The troubles led to an actual drop in the town's population from 650 in 1850 to 539 in 1860 (Garcia 1975:77). Not until land speculator and developer Alonzo Horton arrived in 1867 did San Diego begin to develop fully into an active American town (MacPhail 1979).

Alonzo Horton's development of a New San Diego (modern downtown) in 1867 began to swing the community focus away from Old Town. After the county seat was moved in 1871 and a fire destroyed a major portion of the business block in April 1872, Old Town rapidly declined in importance.

American Period resources can be categorized into remains of the frontier era, rural farmsteads and urban environments, with different research questions applicable to each category. Important research topics for the frontier era, include studying the changing function of former Mexican ranchos between 1850 and 1940, and investigating the effect on lifestyles of the change from Hispanic to Anglo-American domination of the pueblo of San Diego. Research domains for rural farmsteads include the definition of a common rural culture, comparing the definition of wealth and consumer preferences of successful rural farm families versus middle and upper-middle class urban dwellers, definition of the evolution and adaptation of rural vernacular architecture, and identification of the functions of external areas on farmsteads. Research questions for urban environments include definition of an urban subsistence pattern; definition of ethnic group maintenance and patterns of assimilation for identifiable ethnic groups; identification of specific adaptations to boom and bust cycles; definition of a common culture for working, middle and upper-middle class urban residents; identification of adaptations to building techniques, architectural styles, technological change and market fluctuations through analysis of industrial sites; and investigation of military sites to relate changes in armament technology and fortification expansion or reduction to changing priorities of national defense.

ARCHITECTURE

The built environment, including structures and landscapes, is a vital source of historical evidence on past lifestyles, work, ideas, cultural values, and adaptations. The built environment is neither a product of random events, nor a static phenomenon. The rearrangement of structural features and land use are part of the way in which people organize their lives. Landscapes are lands that have been shaped and modified by human actions and conscious designs to provide housing, accommodate production systems, develop communication and transportation networks, designate social inequalities and express aesthetics (Rubertone 1989).

Vernacular architectural studies have demonstrated that pioneer farmers and urban dwellers used folk styles to meet specific needs. Analysis of these house types illustrates adaptation by households as a result of changing needs, lifestyle and economic status. Studies of structural forms at military complexes have documented changes in technology and national defense priorities, and industrial site studies have documented technological innovation and adaptation. The spatial relationships of buildings and spaces, and changes in those relationships through time, also reflect cultural values and adaptive strategies (Carlson 1990; Stewart-Abernathy 1986).

San Diego's built environment spans more than 200 years of architectural history. The real urbanization of the City as it is today, began in 1869, when Alonzo Horton moved the center of commerce and government from Old Town (Old San Diego) to New Town (downtown). Development spread from downtown based on a variety of factors, including the availability of potable water and transportation corridors. Factors such as views, and access to public facilities affected land values, which in turn affected the character of neighborhoods that developed.

During the Victorian Era of the late 1800s and early 1900s, the areas of Golden Hill, Uptown, Banker's Hill, and Sherman Heights were developed. Examples of the Victorian Era architectural styles remain in those communities, as well as in Little Italy.

Little Italy developed in the same time period. The earliest development of the Little Italy area was by Chinese and Japanese fishermen, who occupied stilt homes along the bay. After the 1905 earthquake in San Francisco, many Portuguese and Italian fishermen moved from San Francisco into the area; it was close to the water and the distance from downtown made land more affordable.

Barrio Logan began as a residential area, but because of proximity to rail freight and shipping freight docks, the area became more mixed with conversion to industrial uses. This area was more suitable to the industrial uses because land values were not as high: topographically the area is more level, and not as interesting in terms of views as the areas north of downtown. Various ethnic groups settled in the area because there land ownership was available to them.

San Ysidro began to be developed at about the same time (the turn of the century). The early settlers were followers of the Littlelanders movement. There, the pattern of development included lots designed to accommodate small plots of land for each homeowner to farm, as part of a farming-residential cooperative community. Nearby Otay Mesa-Nestor began to be developed by farmers of Germanic and Swiss background. Some of the prime citrus groves in California were in the Otay Mesa-Nestor area; in addition, there were grape growers of Italian heritage who settled in the Otay River Valley and tributary canyons, and produced wine for commercial purposes.

At the time downtown was being built, there began to be summer cottage/retreat development in what are now the Beach communities and La Jolla area. The early structures in these areas were not of substantial construction; it was primarily temporary vacation housing.

Development spread to the Greater North Park and Mission Hills areas during the early 1900s. The neighborhoods were built as small lots, a single lot at a time instead of large tract housing development of those neighborhoods. It provided affordable housing away from the downtown area, and development expanded as transportation improved.

There was farming and ranching in Mission Valley until the middle portion of the Twentieth Century, when the land uses were converted to commercial and residential. There were dairy farms and chicken ranches adjacent to the San Diego River where now there are motels, restaurants, office complexes and regional shopping malls.

There was little development north of the San Diego River until Linda Vista was developed as military housing in the 1940s. The federal government improved public facilities and extended water and sewer pipelines to the area. From Linda Vista, development spread north of Mission Valley to the Clairemont Mesa and Kearny Mesa areas. Development in these communities was mixed use and residential on moderate-sized lots.

San Diego State University was established in the 1920s; development of the state college area began then and the development of the Navajo community was outgrowth from the college area as well as from the west.

Tierrasanta, previously owned by the U.S. Navy, was developed in the 1970s. It was one of the first planned unit developments with segregation of uses. Tierrasanta and many of the communities that have developed since, such as Rancho Peñasquitos and Rancho Bernardo, represent the typical development pattern in San Diego in the last 25 to 30 years: uses are well segregated with commercial uses located along the main thoroughfares, and the residential uses are located in between. Industrial uses are located in planned industrial parks.

Examples of every major period and style remain, although few areas retain neighborhood-level architectural integrity due to several major building booms when older structures were demolished prior to preservation movements and stricter regulations regarding historic structures. Among the recognized styles in San Diego are Spanish Colonial, Pre-Railroad New England, National Vernacular, Victorian Italianate, Stick, Queen Anne, Colonial Revival, Neoclassical, Shingle, Folk Victorian, Mission, Craftsman, Monterey Revival, Italian Renaissance, Spanish Eclectic, Egyptian Revival, Tudor Revival, Modernistic and International (McAlester and McAlester 1990).

Research interests related to the built environment include San Diego's railroad and maritime history, development in relationship to the automobile, the role of recreation in the development of specific industries, as well as the design and implementation of major regional planning and landscaping projects, the role of international fairs on architecture, landscape architecture and city building; the development of industrial and military technologies between the two world wars; the relationship between climate, terrain, native plant material and local gardening and horticultural practices, planning and subdivision practices from the turn of the century to the present day and the post-war period of suburbanization.

2.1 Regulatory Setting

The public stewardship and management of historical resources are provided for in the local, state and federal policies and regulations that form the basis for the City of San Diego's development review process. This project has been completed in accordance with all applicable regulations, provided in the City of San Diego Municipal Code – Land Development Code (LDC; Chap 11 Art 1 Div 02; Chap 12 Art 03 Div 06; Chap 12 Art 06 Div 05; Chap 14 Art 03 Div 02), and per the cultural resources provisions of CEQA of 1970 (Public Resources Code §§ 21000–21177). Per these applicable regulations impacts to cultural resources associated with this project must be taken into consideration. These regulations are described in detail below.

2.1.1 National Historic Preservation Act (NHPA)

The NHPA establishes the federal government policy on historic preservation and the programs – including the NRHP – through which this policy is implemented. Under the NHPA, significant cultural resources, referred to as historic properties, include any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the NRHP. Historic properties also include resources determined to be National Historic Landmarks (NHL). National Historic Landmarks are nationally significant historic places designated by the Secretary of the Interior (SOI) because they possess exceptional value or quality in illustrating or interpreting United States heritage. A property is considered historically significant if it meets one of the NRHP criteria and retains sufficient historic integrity to convey its significance. This act also established the Advisory Council on Historic Preservation (ACHP), an independent agency responsible for implementing Section 106 of NHPA by developing procedures to protect cultural resources included in, or eligible for inclusion in, the NRHP. Regulations are published in 36 CFR Part 60 and 63, and 36 CFR Part 800.

2.1.1.1.1 36 CFR Part 800, Implementing Regulations, Section 106 National Historic Preservation Act

Section 106 requires that effects on historic properties be taken into consideration in any federal undertaking. The process contains five steps: (1) initiating Section 106 process; (2) identifying historic properties; (3) assessing adverse effects; (4) resolving adverse effects, and (5) implementing stipulations in an agreement document.

Section 106 affords the ACHP and the State Historic Preservation Officer (SHPO) a reasonable opportunity to comment on any undertaking that would adversely affect historic properties eligible for NRHP listing. State Historic Preservation Officers administer the national historic preservation program at the State level, review National Register of Historic Places nominations, maintain data on historic properties that have been identified but not yet nominated, and consult with federal agencies during Section 106 review. Section 101(d)(6)(A) of the NHPA allows properties of traditional religious and cultural importance to a Native American tribe to be determined eligible for NRHP inclusion.

Historic properties are defined as prehistoric and historic sites, buildings, structures, districts, and objects included in, or eligible for inclusion in the NRHP, as well as artifacts, records, and remains related to such properties (NHPA Section 301[5]). Under 36 CFR Section Part 800.3, Section 106 of the NHPA requires federal agencies to consult with the SHPO in a manner appropriate to the agency planning process for the undertaking and to the nature of the undertaking and its effects to historic properties. As part of the Section 106 process, agency officials apply the NRHP eligibility criterion to a potential historic property. Under 36 CFR Section Part 60.4, historic properties may be eligible for nomination to the NRHP if they "... possess integrity of location, design, setting, materials, workmanship, feeling and association..." and if they meet at least one of the following criteria:

- Are associated with events that have made a significant contribution to the broad patterns of our history;
- Are associated with the lives of persons significant in our past;
- Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- Have yielded, or may be likely to yield, information important in prehistory or history

An undertaking is considered to have an adverse effect to a historic property if the undertaking may alter, directly or indirectly, characteristics of a historic property that may qualify the property for inclusion in the NRHP in a manner that would diminish its aspects of historic integrity (36 CFR Section Part 800.5).

2.1.2 Public Resources Code and CEQA

CEQA states that:

> The Legislature further finds and declares that it is the policy of the state to... Preserve for future generations... Examples of the major periods of California history (Section 21001).

CEQA requires that before approving discretionary projects the Lead Agency must identify and examine the significant adverse environmental effects, which may result from that project. A project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment (Sections 15064.5(b) and 21084).

As it pertains to cultural resources, CEQA defines the term "historical resource" as the following:

(1) A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR (Pub. Res. Code §5024.1, Title 14 CCR. Section 4850 et seq.).

(2) A resource included in a local register of historical resources, as defined in section 5020.1(k) of the Public Resources Code or identified as significant in an historical resource survey meeting the requirements of section 5024.1(g) of the Public Resources Code, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.

(3) Any object, building, structure, site, area, place, record, or manuscript which a lead 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 to be an historical resource, provided the lead agency's 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 CRHR (PRC §5024.1, Title 14, Section 4852) including the following:

1) It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;

2) It is associated with the lives of persons important to local, California, or national history;

3) It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or

4) It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

The fact that a resource is not listed in, or determined eligible for listing in the CRHR, not included in a local register of historical resources (pursuant to section 5020.1(k) of the Public Resources Code), or identified in an historical resources survey (meeting the criteria in section 5024.1(g) of the Public Resource Code) does not preclude a lead agency from determining that the resource may be a historical resource as defined in Public Resources Code section 5020.1(j) or 5024.1.

According to CEQA (§15064.5b), a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. CEQA defines a substantial adverse change as:

(1) Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.

(2) The significance of an historical resource is materially impaired when a project:

(A) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the CRHR; or

(B) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

(C) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its eligibility for inclusion in the CRHR as determined by a lead agency for purposes of CEQA.

Section 15064.5(c) of CEQA applies to effects on archaeological sites and contains the following additional provisions regarding archaeological sites:

(1) When a project will impact an archaeological site, a lead agency shall first determine whether the site is an historical resource, as defined in subsection (a).

(2) If a lead agency determines that the archaeological site is an historical resource, it shall refer to the provisions of Section 21084.1 of the Public Resources Code, and this section, Section 15126.4 of the Guidelines, and the limits contained in Section 21083.2 of the Public Resources Code do not apply.

(3) If an archaeological site does not meet the criteria defined in subsection (a), but does meet the definition of a unique archaeological resource in Section 21083.2 of the Public Resources Code, the site shall be treated in accordance with the provisions of section 21083.2. The time and cost limitations described in Public Resources Code Section 21083.2 (c-f) do not apply to surveys and site evaluation activities intended to determine whether the project location contains unique archaeological resources.

(4) If an archaeological resource is neither a unique archaeological nor an historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment. It shall be sufficient that both the resource and the effect on it are noted in the Initial Study or Environmental Impact Report (EIR), if one is prepared to address impacts on other resources, but they need not be considered further in the CEQA process.

Section 15064.5 (d) & (e) contain additional provisions regarding human remains. Regarding Native American human remains, paragraph (d) provides: (d) When an initial study identifies the existence of, or the probable likelihood, of Native American human remains within the project, a lead agency shall work with the appropriate Native Americans as identified by the Native American Heritage Commission (NAHC), as provided in Public Resources Code §5097.98. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains and any items associated with Native American burials with the appropriate Native Americans as identified by the NAHC. Action implementing such an agreement is exempt from:

(1) The general prohibition on disinterring, disturbing, or removing human remains from any location other than a dedicated cemetery (Health and Safety Code Section 7050.5).

(2) The requirement of CEQA and the Coastal Act.

SECTION 3 METHODS

Chapter 3 discusses the methods utilized during the cultural resources inventory survey of the Project APE.

3.1 PERSONNEL QUALIFICATIONS

All phases of the archaeological resources investigation were conducted by Ms. Arleen Garcia-Herbst, C.Phil., RPA and Mr. Paul Howard, RPA. Mr. George Herbst, C.Phil., RPA, provided technical report review and quality assurance. Resumes are available upon request.

Ms. Garcia-Herbst is a Secretary of the Interior-qualified Archaeologist and has been professionally involved with cultural resources management in California and Hawaii since 2006. She has extensive experience with the cultural and paleontological resources requirements of the City and County of San Diego, CEQA, Hawaii Revised Statutes and Administrative Rules, the National Environmental Policy Act (NEPA), and Section 106 of the National Historic Preservation Act (NHPA). She is a City of San Diego, County of San Diego, and County of Riverside Qualified Archaeologist. While Ms. Garcia-Herbst's professional focus is in California and Hawaii, she also has project experience in Arizona, Nevada, Germany, Peru, and Argentina. She received her B.A. in Anthropology with a minor in Geosciences from the University of Arizona (1996), and completed her M.A. in Anthropology at the University of California, Santa Barbara (UCSB, 2000), is advanced to candidacy (C.Phil., 2006) and working on completing her Ph.D. thesis at the University of California, Santa Barbara.

Mr. Howard has over eight years of experience in cultural resources management in both San Diego County and Australia. He joined Spindrift in 2017 as Project Archaeologist/Paleoanthropologist. During this time as a cultural heritage professional and archaeologist, he has worked with many clients within the mining, electricity, telecommunications, government, defense, transportation and infrastructure industries. His skills include: research, leading crews, report writing, editing, construction monitoring, scar tree analysis, rock art analysis, stake holder and client liaison, paleoanthropology, osteology, shell midden analysis, understanding regulatory requirements, survey, excavation, stone tool and historical artifact identification and analysis, GIS mapping, cultural resources management, leadership, teamwork, data entry, off-road driving, experimental archaeology, and workplace health and safety (including job safety analysis).

Mr. Herbst is currently the Air Force Civil Engineer Center (AFCEC) Pacific Command Regional Archaeologist and Environmental Inspection Program Manager. He joined Spindrift in 2015 as a Cultural Resources Technical Expert and QA/QC Officer after the retirement of Mr. Martin Rosen. As a regional archaeologist and environmental program manager, he provides AFCEC cultural resources and environmental compliance support to the installations within the region. Additionally, he provides consultation and advisory services in support of archaeological and other cultural resources. Lastly, he communicates critical issues related to cultural resources and environmental compliance to other members of the Regional Support Teams, serviced installations, superiors, and Subject Matter Experts. Previously, he served as the Federal Preservation Officer for the Bureau of Reclamation (BOR); an Archaeologist for the U.S. Navy; Cultural Resources Manager for the Office of the Secretary of

Defense, Task Force for Business and Stability Operations (TFBSO); and as a Zone Archaeologist for the U.S. Forest Service.

3.2 RECORD SEARCH METHODS

A records search for the Project APE was completed by Spindrift Archaeologist/Paleoanthropologist, Paul Howard, at the South Coastal Information Center (SCIC) of the CHRIS at San Diego State University on 2 May 2018 (Appendix A; see records search request map in Figure 3). The purpose of the records search was to determine the extent of previous surveys within a 0.5-mile (805-meter) radius of the proposed project location, and whether previously documented prehistoric or historic archaeological sites, architectural resources, or traditional cultural properties exist within the Project APE area.

In addition to the official records and maps for archaeological sites and surveys in San Diego County, the following historic references were also reviewed: Historic Property Data File for San Diego County (Office of Historic Preservation 2013a); The National Register Information System website (National Park Service 2013); Office of Historic Preservation, California Historical Landmarks website (Office Historic Preservation 2013b); California Historical Landmarks (Office of Historic Preservation 1996 and updates); and California Points of Historical Interest (Office of Historic Preservation 1992 and updates).

3.3 NATIVE AMERICAN COORDINATION METHODS

The City contacted all persons and organizations on their AB 52 consultation contact list by certified letter on 7 November 2017 and email on 8 November 2017, to provide notification and initiate consultation regarding the Project. Additionally, the City contacted all persons and organizations on their SB 18 consultation contact list by certified letter on 28 March 2018.

Furthermore, Spindrift contacted the California Native American Heritage Commission (NAHC) on 15 May 2018 to request a search of the Sacred Lands File for the Project APE. In a letter dated 17 May 2018, the NAHC said the search indicated a search of the Sacred Lands File was completed for the Project APE with negative results. The NAHC also provided a list of individuals and organizations in the Native American community that may be able to provide information about unrecorded sites in the project vicinity (Attachment B).

Spindrift contacted all persons and organizations on the NAHC contact list by email or fax on 18 June 2018 or certified mail on 19 June 2018, to request information on unrecorded cultural resources that may exist within the current Project APE, or to inquire about any concerns regarding sacred sites or traditional cultural properties in the vicinity that might be affected by the proposed action. A complete record is provided in Appendix B.

3.4 FIELD METHODS

Field work was conducted by Spindrift Archaeologist/Paleoanthropologist, Paul Howard, on 11 May 2018 during which the 3.03 acres of the Project APE were subjected to an intensive systematic pedestrian survey under the guidance of the Secretary of the Interior's Standards for the Identification of Historic Properties (National Park Service 1983) using transects spaced 5 to 10 meters apart (see survey coverage map in Figure 4). Notes were taken on the environmental setting and disturbances within the Project APE. The Project APE was mapped into a handheld Etrex Legend C Garmin GPS unit which has 5 m accuracy.

The general morphological characteristics of the ground surface were inspected for indications of subsurface deposits that may be manifested on the surface, such as circular depressions or ditches. Whenever possible, the locations of subsurface exposures caused by such factors as rodent activity, water or soil erosion, or vegetation disturbances were examined for artifacts or for indications of buried deposits. No subsurface investigations or artifact collections were undertaken during the pedestrian survey.

SECTION 4 RESULTS AND MANAGEMENT RECOMMENDATIONS

Chapter 4 analyses information about cultural resources in and around the Project APE, as a result of the records search and literature review. Management recommendations are also provided.

4.1 RECORDS SEARCH

The records search results indicated that fifty-five (55) previous cultural resources studies (Table A-1 in Appendix A) were conducted within a half mile radius of the Project APE, and twenty-two (22) cultural resources have previously been recorded within a half mile radius of the Project APE (Table A-2 in Appendix A).

4.2 LITERATURE REVIEW

A review of California Inventory of Historic Resources (March 1976) and National Register of Historic Places (National Park Service 2013), indicated that there are no inventoried historic properties within the Project APE and a one-mile radius. Resources listed as California Historical Landmarks (CHL; Office of Historic Preservation 1996) and on the Office of Historic Preservation website (Office of Historic Preservation 2015) were reviewed. There are no inventoried CHL within the Project APE and a one-mile radius.

The Caltrans Historic Bridge Local Inventory (Caltrans 2013a) listed zero (0) historic bridges within the Project APE and a one-mile radius. Additionally, the Caltrans State Historic Bridge Inventory (Caltrans 2013b) listed zero (0) historic bridges within the Project APE and a one-mile radius.

4.3 NATIVE AMERICAN COORDINATION RESULTS

A search of the Sacred Lands File by the NAHC indicated the absence of traditional cultural places or Native American cultural resources within the Project APE.

The Rincon Band of Luiseno Indians responded to the City on 11 December 2017 requesting AB 52 consultation. They also requested the CAD/shape files of the project area and/or plans to determine the extent of ground disturbances. The Tribe also requested that a Cultural Assessment be conducted and that a copy of the report be provided, to include the records and reports from the records search results. During a follow up conference call on 21 December 2017, the Tribe informed the City that they completed an internal records search and did not find any resources in close proximity to the project site. The Tribe would like to review the updated cultural analysis and let the City know that the project may require monitoring, measures for inadvertent discoveries, and procedures for any resources that may be discovered. They expressed that the Tribe preferred resources be left in situ rather than collection. An email from the City to the Tribe on 22 December 2017 documented the conference call.

The City held an AB 52 consultation conference call on 22 December 2017 with the San Luis Rey Band of Luiseno Indians to discuss several project including this one. The City noted that the Tribe did not respond to the City's letter and email. The City indicated that they had consulted with the Rincon Tribe regarding the project; indicated that an updated cultural analysis would be prepared as part of the proposed Mitigated Negative Declaration; and that the standard 10 mitigation measures would be included in the environmental review.

On 9 April 2018, the Viejas Tribe of Kumeyaay Indians replied to the SB 18 consultation request by letter and stated that the Tribe had reviewed the proposed Project and determined that the Project site has cultural significance or ties to the Kumeyaay Nation. The Tribe recommended that the San Pascual Band of Mission Indians be contacted. They also requested that all NEPA/CEQA/NAGPRA laws be followed and that San Pascual be immediately contacted regarding any changes or inadvertent discoveries.

If any further comments are received after the submission of this report, they will be forwarded to the lead agencies for further consideration and appropriate action. A complete record is provided in Appendix B.

4.4 FIELD SURVEY RESULTS

Zero (0) cultural resources have been previously documented within the Project APE. An archaeological survey was conducted as part of this study.

Field work was conducted by Spindrift Archaeologist/Paleoanthropologist, Paul Howard, on 11 May 2018 during which the 3.03 acres of the Project APE were subjected to an intensive systematic pedestrian survey. Survey began at the center middle west side of the APE, using north-south oriented transects. The survey transects were later re-oriented to east-west due to the terrain. The ground visibility was low at 20%. Grass, and soil that had been stockpiled within the APE, inhibited the ground visibility significantly. Vegetation was occasionally dense throughout the survey, with Eucalypts dominating the APE with new shoots, mature gums and juveniles present; pepper trees, thistles, grasses, Jasmine tree, and mustard were also observed within the Project area. The APE has sandy clay, with some sandy loam areas in the southern part of the Project area. Project area is severely disturbed due to large amounts of soil being dumped in area. Soil has been stockpiled in multiple areas and a wall has been built with a fence on top to stabilize the soil within the APE. Off road vehicles have also impacted the property and have created tracks throughout the north eastern section of the APE.

There was no cultural material observed on the ground surface during the survey. Only modern refuse and cattle bones including fragments of ribs, femurs, and tibias were seen throughout the survey.

4.5 MANAGEMENT CONSIDERATIONS

4.5.1 Recommendations

Zero (0) cultural resources have been previously documented within the Project APE. An archaeological survey was conducted as part of this study. Zero (0) new cultural resources were identified within the Project APE. Therefore, no further work is recommended for the Project.

4.5.2 Monitoring

Due to the low sensitivity of the Project APE for buried prehistoric and historic-period resources in the APE, as well as the absence of cultural materials across the APE on the ground surface, Spindrift does not recommend monitoring for the Project.

In the event of any unanticipated discoveries during construction, a less than significant impact to buried resources, if present, would occur with implementation of Mitigation Measures C-1 and C-2.

Mitigation Measures

C-1. If subsurface deposits believed to be cultural or human in origin are discovered during construction, then all work must halt within a 50-foot radius of the discovery. An on-site archaeological monitor or Principal Investigator, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology, shall be retained and afforded a reasonable amount of time to evaluate the significance of the find. Work cannot continue at the discovery site until the archaeologist conducts sufficient research and data collection to make a determination that the resource is either 1) not cultural in origin; or 2) not potentially significant or eligible for listing on the NRHP or CRHR. If a *potentially*- eligible resource is encountered, then the archaeologist, lead agency, and project proponent shall arrange for either 1) total avoidance of the resource, if possible; or 2) test excavations to evaluate eligibility and, if eligible, total data recovery as mitigation. The determination shall be formally documented in writing and submitted to the lead agency as verification that the provisions in CEQA/NEPA for managing unanticipated discoveries have been met.

C-2. In the event that evidence of human remains is discovered, construction activities within 50 feet of the discovery will be halted or diverted, and the requirements above will be implemented. Depending on the occurrence, a larger radius may be necessary and will be required at the discretion of the on-site archaeologist. In addition, the provisions of Section 7050.5 of the California Health and Safety Code, Section 5097.98 of the California Public Resources Code, and Assembly Bill 2641 will be implemented. When human remains are discovered, state law requires that the discovery be reported to the County Coroner (Section 7050.5 of the Health and Safety Code) and that reasonable protection measures be taken during construction to protect the discovery from disturbance (AB 2641). If the Coroner determines the remains are Native American, the Coroner notifies the Native American Heritage Commission, which then designates a Native American Most Likely Descendant (MLD) for the project (Section 5097.98 of the Public Resources Code). The MLD may not be the same person as the tribal monitor. The designated MLD then has 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains (AB 2641). If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (Section 5097.94 of the Public Resources Code). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (Section 5097.98 of the Public Resources Code). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a document with the county in which the property is located (AB 2641).

Implementation of the above mitigation measures will reduce impacts to buried cultural resources to a less than significant level.

The Lead Agency, the City of Escondido, is responsible for ensuring compliance with these mitigation measures because damage to significant cultural resources is in violation of CEQA and Section 106. Section 15097 of Title 14, Chapter 3, Article 7 of CEQA, *Mitigation Monitoring or Reporting*, "the public agency shall adopt a program for monitoring or reporting on the revisions which it has required in the project and the measures it has imposed to mitigate or avoid significant environmental effects. A public agency may delegate reporting or monitoring responsibilities to another public agency or to a private entity which accepts the delegation; however, until mitigation measures have been completed the lead agency remains responsible for ensuring that implementation of the mitigation measures occurs in accordance with the program."

SECTION 5 REFERENCES

California Department of Transportation (Caltrans)

2013a Caltrans Local Bridge Survey, Structure Maintenance & Investigations website. Electronic Document, http://www.dot.ca.gov/hq/structur/strmaint/hs_local.pdf, Viewed 14 June 2018 online and using Google Earth.

2013b Caltrans State Bridge Survey, Structure Maintenance & Investigations website. Electronic Document, http://www.dot.ca.gov/hq/structur/strmaint/hs_state.pdf, Viewed 14 June 2018 online and using Google Earth.

City of San Diego

2016 Natural Environment and Open Space. In *Map Atlas*. Electronic Document, https://www.sandiego.gov/sites/default/files/6._natural_environment_and_open_space.pdf, Viewed 14 June 2018.

Federal Emergency Management Agency (FEMA)

2018 National Flood Hazard Layer (NFHL). Electronic Document, https://fema.maps.arcgis.com/home/item.html?id=cbe088e7c8704464aa0fc34eb99e7f30, Viewed 14 June 2018 using Google Earth.

Historical Resources Guidelines (HRG)

2001 *City of San Diego Historical Resources Guidelines – Appendix A: San Diego History*. Amended April 2001. Available online at: http://www.sandiego.gov/development-services/industry/pdf/ldmhistorical.pdf.

Kennedy, Michael P., and Siang S. Tan

2008 *Geologic Map of the San Diego 30' x 60' Quadrangle, California*. California Geological Survey, Map No. 3, Scale 1:100,000. Electronic Document, http://www.quake.ca.gov/gmaps/RGM/sandiego/sandiego.html, Viewed 14 June 2018 using Google Earth.

National Park Service (NPS)

1983 Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines. 48 FR (Federal Register) 44716-68.

2013 *National Register Information System Website*. Electronic document. http://www.nr.nps.gov/nrloc1.htm, Viewed 14 June 2018 using Google Earth.

Office of Historic Preservation.

1992 *California Points of Historical Interest*. California Department of Parks and Recreation, Sacramento, California.

1996 *California Historical Landmarks*. California Department of Parks and Recreation, Sacramento, California.

2017 *Office of Historic Preservation California Historical Landmarks Website*, Electronic document. http://ohp.parks.ca.gov/?page_id=21387, Viewed 14 June 2018.

United States Department of Agriculture, Natural Resources Conservation Service (NRCS)
2017 SoilWeb: An Online Soil Survey Browser, Soil Survey Geographic (SSURGO) Database for the United States. Available online: http://casoilresource.lawr.ucdavis.edu/soilweb/, Viewed 14 June 2018 using Google Earth.

FIGURES

Figure 1. Project Location Map

Figure 2. Project Area Map

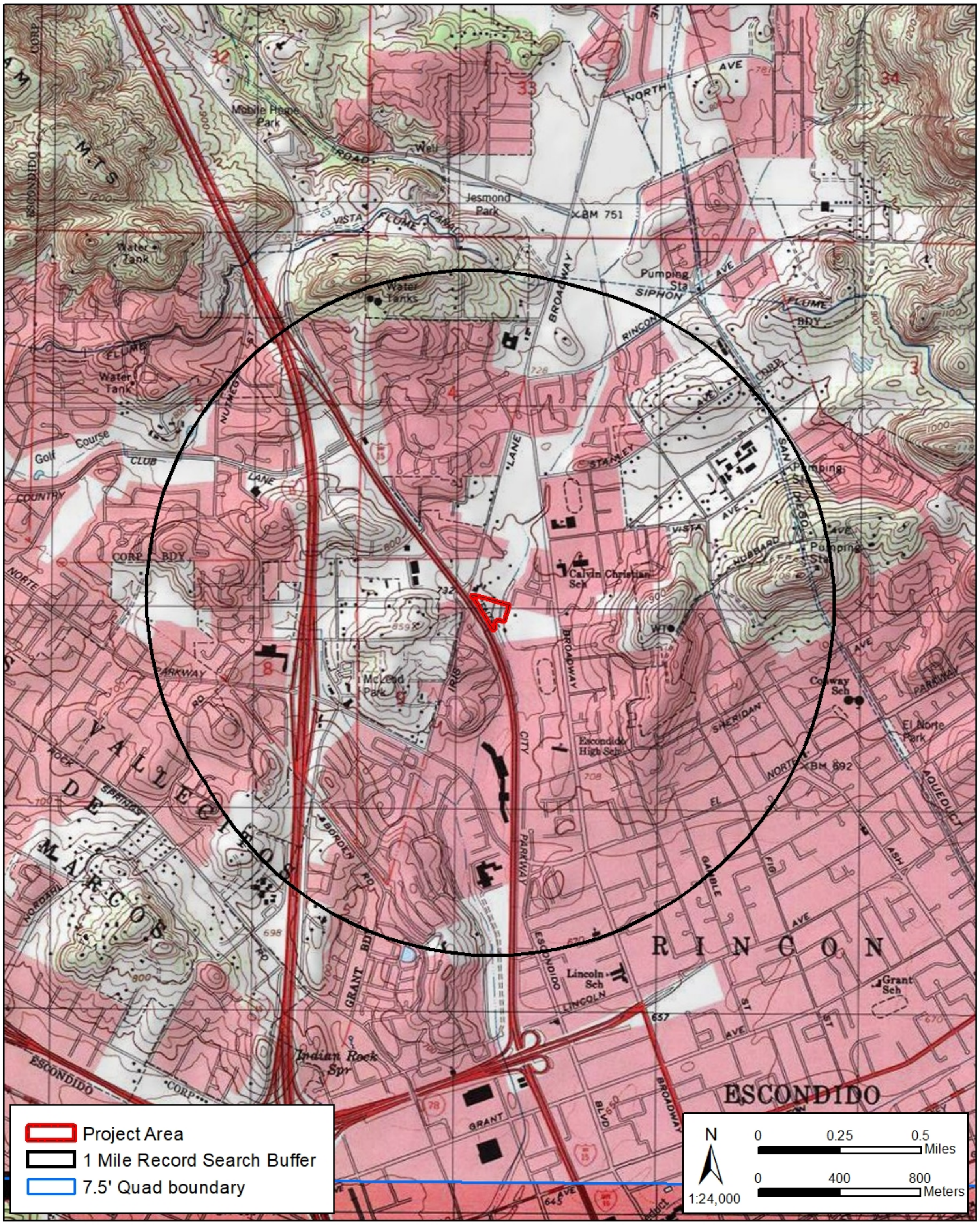


Figure 3. Records Search Boundary Map

Figure 4. Survey Coverage Map

APPENDIX A

South Coastal Information Center
San Diego State University
5500 Campanile Drive
San Diego, CA 92182-5320
Office: (619) 594-5682
www.scic.org
scic@mail.sdsu.edu

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM
CLIENT IN-HOUSE RECORDS SEARCH

Company: Spindrift

Company Representative: Paul Howard

Date: 5/2/2018

Project Identification: Center City Parkway

Search Radius: 1/2 mile

Historical Resources: SELF

Trinomial and Primary site maps have been reviewed. All sites within the project boundaries and the specified radius of the project area have been plotted. Copies of the site record forms have been included for all recorded sites.

Previous Survey Report Boundaries: SELF

Project boundary maps have been reviewed. National Archaeological Database (NADB) citations for reports within the project boundaries and within the specified radius of the project area have been included.

Historic Addresses: SELF

A map and database of historic properties (formerly Geofinder) has been included.

Historic Maps: SELF

The historic maps on file at the South Coastal Information Center have been reviewed, and copies have been included.

Copies: 105

Hours: 3

Digital Database Record fee (Excel Lines)

= Lines
78

This is not an invoice. Please pay from the monthly billing statement

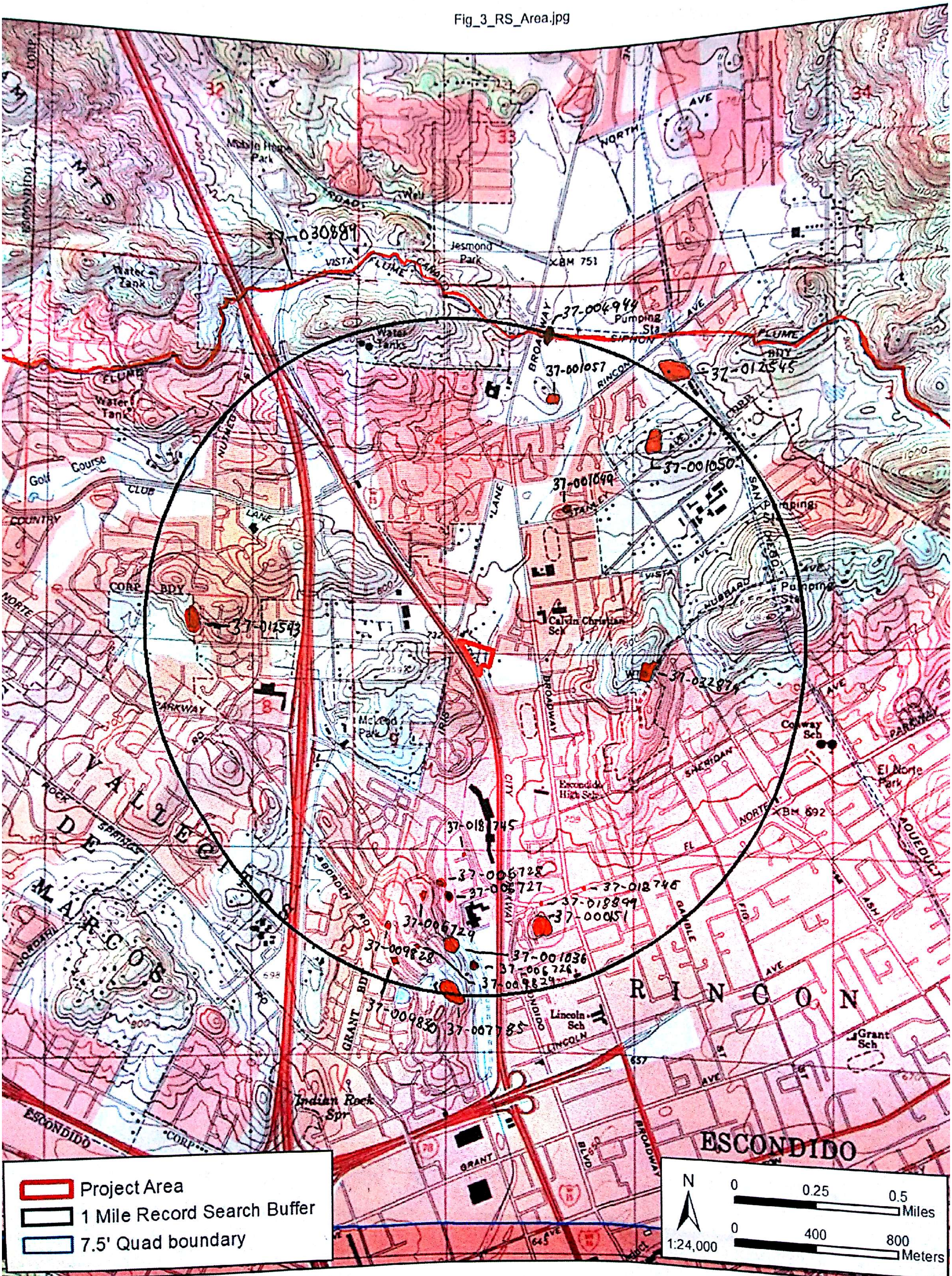

Project Area
1 Mile Record Search Buffer
7.5' Quad boundary
N
1:24,000
0 0.25 0.5 Miles
0 400 800 Meters
37-030889
37-004944
37-001057
37-012545
37-001050
37-001049
37-012543
37-032874
37-018745
37-006728
37-006727
37-018746
37-018899
37-000151
37-006729
37-009828
37-001836
37-006726
37-009829
37-000830
37-007785
Calvin Christian Sch
Escondido High Sch
McLeod Park
El Norte Park
Lincoln Sch
Grant Sch
Conway Sch
Jesmond Park
Indian Rock Spr
ESCONDIDO
RINCON
VALLECITOS DE MARCOS
Pumping Sta
Mobile Home Park
Golf Course

TABLE 1. PREVIOUS INVESTIGATIONS WITHIN A HALF-MILE RADIUS OF THE PROJECT APE

REPORT NUMBER	AUTHOR	YEAR	REPORT TITLE	TYPE OF STUDY
SD-00073	AMERICAN PACIFIC ENVIRONMENTAL CONSULTANTS, INC.	1980	AN ARCHAEOLOGICAL TEST EXCAVATION AT OAK CREEK.	ARCHAEOLOGICAL, EXCAVATION
SD-00215	CARDENAS, SEAN D. AND MARY ROBBINS WADE	1985	CULTURAL RESOURCES INVENTORY AND SIGNIFICANCE ASSESSMENT: EAGLES BLUFF, OCEANSIDE	ARCHAEOLOGICAL, EVALUATION
SD-00429	CHACE, PAUL G.	1977	AN ARCHAEOLOGICAL AND HISTORICAL SURVEY OF THE LINCON ASH INTERIM FACILITY, IN THE CITY OF ESCONDIDO, CALIFORNIA	ARCHAEOLOGICAL, FIELD STUDY
SD-00434	CHACE, PAUL G.	1977	AN ARCHAEOLOGICAL SURVEY OF THE FIG & SHERIDAN TRACT, ESCONDIDO, CALIFORNIA	ARCHAEOLOGICAL, FIELD STUDY
SD-00438	CHACE, PAUL G.	1977	AN ARCHAEOLOGICAL SURVEY, SHERIDAN MANOR.	ARCHAEOLOGICAL, FIELD STUDY
SD-00480	CHACE, PAUL G.	1980	AN ARCHAEOLOGICAL ASSESSMENT OF THE MCKELLAR DEVELOPMENT, CITY OF ESCONDIDO.	ARCHAEOLOGICAL, FIELD STUDY
SD-00632	CHACE, PAUL G.	1983	AN ARCHAEOLOGICAL SURVEY OF ESCONDIDO TRACT NO. 562, CITY OF ESCONDIDO	ARCHAEOLOGICAL, FIELD STUDY

TABLE 1. PREVIOUS INVESTIGATIONS WITHIN A HALF-MILE RADIUS OF THE PROJECT APE

REPORT NUMBER	AUTHOR	YEAR	REPORT TITLE	TYPE OF STUDY
SD-00691	FINK, GARY R.	1974	ARCHAEOLOGICAL SURVEY FOR THE PROPOSED REALIGNMENT OF VALLEY CENTER ROAD, VALLEY CENTER, CALIFORNIA	ARCHAEOLOGICAL, FIELD STUDY
SD-00792	CHACE, PAUL G.	1988	AN ARCHAEOLOGICAL SURVEY FOR THE NORTH REIDY CREEK CHANNEL IMPROVEMENT (E.R. 86-41)	ARCHAEOLOGICAL, FIELD STUDY
SD-00842	LAYLANDER, DON	1980	AN ARCHAEOLOGICAL SURVEY OF THE THEBERGE PROPERTIES, CITY OF ESCONDIDO	ARCHAEOLOGICAL, FIELD STUDY
SD-00844	LAYLANDER, DON AND PAUL G. CHACE	1980	AN ARCHAEOLOGICAL ASSESSMENT OF THE CONCORDIA DEVELOPMENT, CITY OF ESCONDIDO	ARCHAEOLOGICAL, FIELD STUDY
SD-00899	COTTRELL, MARIE S.	1977	PARCEL OF LAND NORTH OF GARY LANE, SOUTH OF SLEEPY HOLLOW IN ESCONDIDO, SAN DIEGO COUNTY, CALIFORNIA	ARCHAEOLOGICAL, FIELD STUDY
SD-01213	CORUM, JOYCE M.	1987	NEGATIVE ARCHAEOLOGICAL SURVEY REPORT: PARK AND RIDE LOT 11-SD-15 P.M. R32.9 11823-90-8067.	ARCHAEOLOGICAL, FIELD STUDY
SD-01275	OLMO, RICHARD KEITH	1981	OAK CREEK (ESCONDIDO TRACT 391) ARCHAEOLOGICAL MITIGATION REPORT CITY OF ESCONDIDO.	ARCHAEOLOGICAL, EXCAVATION

TABLE 1. PREVIOUS INVESTIGATIONS WITHIN A HALF-MILE RADIUS OF THE PROJECT APE

REPORT NUMBER	AUTHOR	YEAR	REPORT TITLE	TYPE OF STUDY
SD-01327	PIGNIOLO, ANDREW	1990	CULTURAL RESOURCE SURVEY OF THE ROCK SPRINGS TM PARCEL SAN DIEGO COUNTY, CALIFORNIA.	ARCHAEOLOGICAL, FIELD STUDY
SD-01404	ECKHARDT, WILLIAM T.	1977	ARCHAEOLOGICAL INVESTIGATIONS OF THE VON SEEGERN ANNEXATION PROJECT ESCONDIDO, CALIFORNIA.	ARCHAEOLOGICAL, FIELD STUDY
SD-01406	CHACE, PAUL G.	1982	AN ARCHAEOLOGICAL SURVEY OF MEADOWVIEW ESTATES, ESCONDIDO, CALIFORNIA.	ARCHAEOLOGICAL, EVALUATION, FIELD STUDY
SD-01586	SUTTON, MARK Q.	1978	THE ARCHAEOLOGY OF ESCONDIDO WOODS SDI-4942 AND SDI-4943	ARCHAEOLOGICAL, FIELD STUDY
SD-01623	WESTEC SERVICES, INC.	1980	ARCHAEOLOGICAL SURVEY OF THE UNITAI 84 UNIT CONDOMINIUM PROJECT ESCONDIDO, CALIFORNIA	ARCHAEOLOGICAL, FIELD STUDY
SD-01689	WALKER, CAROL J. AND CHARLES S. BULE	1979	A CULTURAL RESOURCE STUDY OF PROPOSED ACCESS ROADS BETWEEN THE ESCONDIDO SUBSTATION AND THE PROPOSED SUBSTATION SITE AT RAINBOW	ARCHAEOLOGICAL, FIELD STUDY
SD-02648	SMITH, BRIAN F.	1990	AN ARCHAEOLOGICAL SURVEY OF THE MALONE LOT SPLIT PROJECT ESCONDIDO, COUNTY OF SAN DIEGO	ARCHAEOLOGICAL, EVALUATION, FIELD STUDY, MANAGEMENT/PLANNING

TABLE 1. PREVIOUS INVESTIGATIONS WITHIN A HALF-MILE RADIUS OF THE PROJECT APE

REPORT NUMBER	AUTHOR	YEAR	REPORT TITLE	TYPE OF STUDY
SD-03621	HUNT, KEVIN P. AND BRIAN F. SMITH	1998	AN ARCHAEOLOGICAL SURVEY AND EVALUATION OF CULTURAL RESOURCES AT THE ALTA VISTA APARTMENTS PROJECT	ARCHAEOLOGICAL, EVALUATION
SD-03628	PADON, BETH	1999	PREHISTORIC SURVEY OF THE EL NORTE PROPERTY, 32.6 ACRES IN SAN DIEGO COUNTY, CALIFORNIA VALLEY CENTER USGS 7.5 QUADRANGLE	MANAGEMENT/PLANNING
SD-04119	RECON	1976	DRAFT ENVIRONMENTAL IMPACT REPORT FOR SAN MARCOS ASSEMBLY HALL	OTHER RESEARCH
SD-04172	GALLEGOS, DENNIS R. AND NINA HARRIS	1999	CULTURAL RESOURCE SURVEY FOR ISKCON CULTURAL CENTER ESCONDIDO, CALIFORNIA	ARCHAEOLOGICAL, FIELD STUDY
SD-04196	DUKE, CURT	2001	CULTURAL RESOURCE ASSESSMENT FRO PACIFIC BELL WIRELESS FACILITY, SD 108-03, COUNTY OF SD, CA.	ARCHITECTURAL/HISTORICAL
SD-04757	WESTEC	1980	ARCHAEOLOGICAL SURVEY OF THE UNITAI 84 UNIT CONDOMINIUM PROJECT ESCONDIDO, CALIFORNIA	ARCHAEOLOGICAL, EVALUATION, MANAGEMENT/PLANNING
SD-05519	MCLEAN, DEBORAH	2000	LETTER REPORT: RESULTS OF ARCHAEOLOGICAL MONITORING AT THE SUNSET HEIGHTS (EL NORTE) PROJECT IN THE CITY OF ESCONDIDO, SAN DIEGO COUNTY, CALIFORNIA	OTHER RESEARCH

TABLE 1. PREVIOUS INVESTIGATIONS WITHIN A HALF-MILE RADIUS OF THE PROJECT APE

REPORT NUMBER	AUTHOR	YEAR	REPORT TITLE	TYPE OF STUDY
SD-05712	ANDERSON, SHANNA	1993	ARCHAEOLOGICAL SURVEY FOR ESCONDIDO MASTER PLAN CORRECTION OF DISCREPANCY FOR PARCEL P11, SITE EPS-30H/CA-SDI-12547H	ARCHAEOLOGICAL, FIELD STUDY
SD-05776	CORUM, JOYCE	1987	NEGATIVE ARCHAEOLOGICAL SURVEY REPORT 11-SD-15 P.M. R32.9	ARCHAEOLOGICAL, FIELD STUDY
SD-06172	HARRIS, NINA	1999	CULTURAL RESOURCE SURVEY REPORT FOR THE HIGHPOINTE PROPOERTY SAN MARCOS, CALIF.	MANAGEMENT/PLANNING
SD-06747	SHEPARD, RICHARD S. AND GLENNDA G. LUHNOW	2002	ARCHAEOLOGICAL & PALEONTOLOGICAL MONITORING REPORT INCLUDING ANALYSIS OF RECOVERED MATERIALS FOR THE W HOTEL DEVELOPMENT SITE IN DOWNTOWN SAN DIEGO, SAN DIEGO COUNTY, CA	ARCHAEOLOGICAL, EVALUATION, OTHER RESEARCH
SD-06996	CITY OF SAN DIEGO	1997	PUBLIC NOTICE OF PROPOSED MITIGATED NEGATIVE DECLARATION HOME DEPOT FAIRMONT AVENUE	OTHER RESEARCH
SD-08309	CLIFFORD, JAMES AND BRIAN F. SMITH	2003	AN ARCHAEOLOGICAL SURVEY FOR THE GLENBROOK VILLAGE PROJECT, ESCONDIDO, CALIFORNIA	ARCHAEOLOGICAL, EVALUATION
SD-08588	CITY OF ESCONDIDO	1980	DRAFT ENVIRONMENTAL IMPACT REPORT FOR EXPANSION OF WASTEWATER TREATMENT FACILITY	OTHER RESEARCH

TABLE 1. PREVIOUS INVESTIGATIONS WITHIN A HALF-MILE RADIUS OF THE PROJECT APE

REPORT NUMBER	AUTHOR	YEAR	REPORT TITLE	TYPE OF STUDY
SD-08596	KELLER ENVIRONMENTAL ASSOCIATES, INC	1992	APPENDICES-RECLAIMED WATER DISTRIBUTION SYSTEM PROJECT: DRAFT ENVIRONMENTAL IMPACT REPORT	OTHER RESEARCH
SD-08868	WRIGHT, GAIL	2003	NEGATIVE CULTURAL RESOURCES SURVEY REPORT FOR TPM 20761, LOG NO. 03-08-043, EATON/GROENENBERG APN 227-010-56	ARCHAEOLOGICAL, EVALUATION
SD-08874	ECKHARDT, WILLIAM T.	1977	ARCHAEOLOGICAL INVESTIGATIONS OF THE VON SEGGERN ANNEXATION PROJECT, ESCONDIDO, CALIFORNIA	ARCHAEOLOGICAL, EVALUATION
SD-08909	BREECE, WILLIAM H.	1978	ARCHAEOLOGICAL SURVEY FOR ESCONDIDO WOODS ESCONDIDO, CALIFORNIA	ARCHAEOLOGICAL, EVALUATION
SD-08951	ARCHAEOLOGIC AL ASSOCIATES	1978	ARCHAEOLOGICAL SURVEY REPORT FOR THE E.I.R. OF THE PROPOSED ESCONDIDO REGIONAL SHOPPING CENTER NORTH WEST OF RTS. 78 AND 395, ESCONDIDO, CA	ARCHAEOLOGICAL, EVALUATION
SD-08987	KYLE, CAROLYN	2004	CULTURAL RESOURCE SURVEY FOR A NINE ACRE PARCEL LOCATED ON SEVEN OAKS DRIVE CITY OF ESCONDIDO, CALIFORNIA	OTHER RESEARCH
SD-09205	KYLE, CAROLYN	2004	CULTURAL RESOURCE SURVEY FOR A PARCEL LOCATED ON LEHNER AVENUE, CITY OF ESCONDIDO, CALIFORNIA	OTHER RESEARCH

TABLE 1. PREVIOUS INVESTIGATIONS WITHIN A HALF-MILE RADIUS OF THE PROJECT APE

REPORT NUMBER	AUTHOR	YEAR	REPORT TITLE	TYPE OF STUDY
SD-09670	WRIGHT, GAIL	2005	CULTURAL RESOURCES SURVEY REPORT FOR TPM 20960, LOG NO. 05-08-025 - HOOPER PROJECT APN 224-290-73-00-00, NEGATIVE FINDINGS	ARCHAEOLOGICAL, EVALUATION
SD-10308	KYLE, CAROLYN	2006	CULTURAL RESOURCE SURVEY FOR APPROXIMATELY 13 ACRES LOCATED IN THE CITY OF ESCONDIDO, CALIFORNIA	ARCHAEOLOGICAL, EVALUATION, OTHER RESEARCH
SD-10426	ROBBINS-WADE, MARY	2006	ARCHAEOLOGICAL RESOURCES SURVEY, BOOKER ESCONDIDO PROPERTY, ESCONDIDO, SAN DIEGO COUNTY, CALIFORNIA	ARCHAEOLOGICAL, EVALUATION, OTHER RESEARCH
SD-10432	HECTOR, SUSAN M.	2006	CULTURAL RESOURCES SENSITIVITY ANALYSIS FOR THE CARRYOVER STORAGE AND SAN VICENTE DAM RAISE PROJECT (CSP) ALTERNATIVES ANALYSIS	ARCHAEOLOGICAL, EVALUATION, OTHER RESEARCH
SD-10435	SMITH, BRIAN F. AND KARL JAMES LORENZEN	2006	AN ARCHAEOLOGICAL ASSESSMENT OF THE NUTMEG PARCEL CITY OF ESCONDIDO, CALIFORNIA 2401 NUTMEG STREET (APNS 224-260-23, 46, AND 47) 2006-03-VRP	ARCHAEOLOGICAL, EVALUATION, OTHER RESEARCH
SD-12054	KWIATKOWSKI, HEATHER	2009	NEGATIVE CULTURAL RESOURCES SURVEY REPORT FOR TPM 20879: KNOX LOT SPLIT, APN 224-272-51	ARCHAEOLOGICAL, EVALUATION, OTHER RESEARCH
SD-12655	ROBBINS-WADE, MARY, ANDREW GILETTI, AND STEPHEN VAN WORMER	2009	HISTORIC AND ARCHAEOLOGICAL RESOURCES SURVEY, VISTA FLUME STUDY, VISTA, SAN MARCOS, AND ESCONDIDO SAN DIEGO COUNTY, CALIFORNIA	ARCHAEOLOGICAL, EVALUATION, OTHER RESEARCH

TABLE 1. PREVIOUS INVESTIGATIONS WITHIN A HALF-MILE RADIUS OF THE PROJECT APE

REPORT NUMBER	AUTHOR	YEAR	REPORT TITLE	TYPE OF STUDY
SD-12987	ROBBINS-WADE, MARY	2011	EL NORTE PROPERTY AFFORDABLE HOUSING PROJECT-CULTURAL RESOURCES	ARCHAEOLOGICAL, EVALUATION, OTHER RESEARCH
SD-13025	WILLIAMS, SARAH AND WAYNE H. BONNER	2011	CULTURAL RESOURCE RECORDS SEARCH AND SITE VISIT RESULTS FOR T-MOBILE USA CANDIDATE SD07212-D (NOTH SENTRE CITY SUMMIT), 25005 NORTH CENTRE CITY PARKWAY, ESCONDIDO, SAN DIEGO COUNTY, CALIFORNIA	ARCHAEOLOGICAL, EVALUATION, OTHER RESEARCH
SD-13239	BONNER, WAYNE AND SARAH A. WILLIAMS	2011	CULTURAL RESOURCES RECORDS SEARCH AND SITE VISIT RESULTS FOR T-MOBILE USA CANDIDATE SD07212-D (NORTH CENTRE CITY SUMMIT), 25005 NORTH CENTRE CITY PARKWAY, ESCONDIDO, SAN DIEGO COUNTY, CALIFORNIA	ARCHAEOLOGICAL, EVALUATION, OTHER RESEARCH
SD-13464	ROBBINS-WADE, MARY	2012	EL NORTE APARTMENTS ARCHAEOLOGICAL MONITORING	ARCHAEOLOGICAL, EVALUATION, OTHER RESEARCH
SD-13541	ROSENBERG, SETH A.	2009	ETS #8021; TL 688 AND TL 6932 RELOCATION AND UNDERGROUND CONVERSION PROJECT	ARCHAEOLOGICAL, EVALUATION, OTHER RESEARCH
SD-14140	ROBBINS-WADE, MARY	2003	ARCHAEOLOGICAL RECORDS SEARCH AND LITERATURE REVIEW, VALLECITOS WATER DISTRICT MASTER PLAN UPDATE SAN DIEGO COUNTY, CALIFORNIA	ARCHAEOLOGICAL, EVALUATION, OTHER RESEARCH

TABLE 2. PREVIOUSLY RECORDED SITES WITHIN A HALF-MILE RADIUS OF THE PROJECT APE

SITE IDENTIFIER	PREHISTORIC OR HISTORIC	REPORT REFERENCE	WITHIN PROJECT APE
P-37-000151	UNKNOWN	N/A	NO
P-37-001036	PREHISTORIC LITHIC SCATTER/MILLING	SD-08951	NO
P-37-001049	PREHISTORIC CERAMIC SCATTER	SD-00215, SD-01584, SD-08951	NO
P-37-001050	PREHISTORIC LITHIC SCATTER	SD-08874	NO
P-37-001057	PREHISTORIC LITHIC SCATTER/GROUND STONE	SD-00073, SD-01275, SD-01404, SD-08874	NO
P-37-004944	PREHISTORIC LITHIC SCATTER	SD-00073, SD-01404, SD-08874	NO
P-37-006726	PREHISTORIC MILLING	SD-00844, SD-03621, SD-10352	NO

TABLE 2. PREVIOUSLY RECORDED SITES WITHIN A HALF-MILE RADIUS OF THE PROJECT APE

SITE IDENTIFIER	PREHISTORIC OR HISTORIC	REPORT REFERENCE	WITHIN PROJECT APE
P-37-006727	PREHISTORIC LITHIC SCATTER	SD-00480, SD-10352	NO
P-37-006728	PREHISTORIC MILLING	SD-00480, SD-10352	NO
P-37-006729	PREHISTORIC LITHIC SCATTER/MILLING	SD-00480, SD-10352	NO
P-37-007785	PREHISTORIC HEARTHS	SD-00844, SD-03621, SD-10352	NO
P-37-009828	PREHISTORIC MILLING	SD-00632	NO
P-37-009829	PREHISTORIC MILLING	SD-00632	NO
P-37-009830	PREHISTORIC MILLING	SD-00632	NO
P-37-012543	HISTORIC HOME/HISTORIC TRASH	SD-05519, SD-08584	NO

TABLE 2. PREVIOUSLY RECORDED SITES WITHIN A HALF-MILE RADIUS OF THE PROJECT APE

SITE IDENTIFIER	PREHISTORIC OR HISTORIC	REPORT REFERENCE	WITHIN PROJECT APE
P-37-018745	HISTORIC HOME	N/A	NO
P-37-018746	HISTORIC HOME	N/A	NO
P-37-018899	HISTORIC HOME	N/A	NO
P-37-030889	HISTORIC IRRIGATION FLUMES	SD-12655, SD-13025, SD-13239, SD-13530	NO
P-37-032874	HISTORIC RESERVOIR WATER TANK	N/A	NO
P-37-035640	PREHISTORIC MILLING	N/A	NO
P-37-035641	HISTORIC HOME	N/A	NO

TABLE 3. CALTRANS BRIDGES WITHIN A HALF-MILE RADIUS OF THE PROJECT APE

BRIDGE NAME AND NUMBER	LOCATION	DATE BUILT/WIDENED	CALTRANS ELIGIBILITY EVALUATION
N/A	N/A	N/A	N/A

APPENDIX B

ESCONDIDO
City of Choice

Bill Martin, AICP
Director of Community Development
Planning Division
201 North Broadway, Escondido, CA 92025
Phone: 760-839-4671 Fax: 760-839-4313

Ms. Cami Mojado
San Luis Rey Band of Mission Indians
1889 Sunset Drive
Vista, CA 92081

Sent by U.S. Mail and Email

November 7, 2017

RE: ASSEMBLY BILL 52 CONSULTATION
Mitchell Group, Escondido Assisted Living Facility
City Case Number: PHG17-0025 and ENV17-0007

Dear Ms. Mojado:

In accordance with the provisions of California Assembly Bill 52, the purpose of this letter is to provide notification and to initiate consultation regarding a Conditional Use Permit application to facilitate the development of a proposed residential-care facility described below. The City of Escondido will serve as the lead agency under the California Environmental Quality Act (CEQA) for the project.

Project Description:

The project involves a Conditional Use Permit (CUP) to develop a three-story, 71,316 SF residential–care facility with 90 rooms/units to accommodate up to 98 residents. A CUP previously was approved to develop a two- and three-story residential-care facility on the subject site. The site was graded (combination of cut and fill) and a retaining wall up to 14 feet in height installed along western side of the Reidy Creek drainage course. However, the building never was constructed and the CUP subsequently expired.

Location and Environmental Setting:

The approximately 3.03-acre site is located in the City of Escondido, County of San Diego, on the eastern side of North Centre City Parkway, south of Iris Lane, addressed as 1802 N. Centre City Parkway (APN 226-190-22). The parcel fronts onto and takes access from Centre City Parkway, which is classified as a Major Road (102' ultimate R-O-W). The western portion of the site (proposed development area) previously was graded. The eastern area of the property includes the Reidy Creek drainage course, which bisects the property and drains from north to south. A stand of mature eucalyptus trees is located within the southern corner of the parcel, along with some smaller eucalyptus trees towards the northwestern area of the site and along the project frontage. The previously graded portion of the site generally is covered by a variety of weeds, shrubs and grasses. Street improvements have been installed along the northern section of the project frontage (curbs and gutters) but not further south of the project site.

Pursuant to Government Code section 21080.3.1, subdivision (d), please respond within 30 days of the date of this notice if your tribe wishes to consult with the City regarding this matter. Please contact:

Jay Paul
Senior Planner
CITY OF ESCONDIDO
210 North Broadway
Escondido, CA 92025-4313
Phone: (760) 839-4537
Email: jpaul@escondido.org

Sincerely,

Jay Paul
Senior Planner

Attachments

Bill Martin, AICP
Director of Community Development
Planning Division
201 North Broadway, Escondido, CA 92025
Phone: 760-839-4671 Fax: 760-839-4313

Mr. Joseph Ontiveros
Soboba Band of Luiseno Indians
P.O. Box 487
San Jacinto, CA 92581

Sent by U.S. Mail and Email

November 7, 2017

RE: ASSEMBLY BILL 52 CONSULTATION
Mitchell Group, Escondido Assisted Living Facility
City Case Number: PHG17-0025 and ENV17-0007

Dear Mr. Ontiveros:

In accordance with the provisions of California Assembly Bill 52, the purpose of this letter is to provide notification and to initiate consultation regarding a Conditional Use Permit application to facilitate the development of a proposed residential-care facility described below. The City of Escondido will serve as the lead agency under the California Environmental Quality Act (CEQA) for the project.

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Jay Paul
Senior Planner
CITY OF ESCONDIDO
210 North Broadway
Escondido, CA 92025-4313
Phone: (760) 839-4537
Email: jpaul@escondido.org

Sincerely,

Jay Paul
Senior Planner

Attachments

Bill Martin, AICP
Director of Community Development
Planning Division
201 North Broadway, Escondido, CA 92025
Phone: 760-839-4671 Fax: 760-839-4313

Ms. Destiny Colocho
Rincon Band of Luiseno Indians
1 West Tribal Road
Valley Center, CA 92082

Sent by U.S. Mail and Email

November 7, 2017

RE: ASSEMBLY BILL 52 CONSULTATION
Mitchell Group, Escondido Assisted Living Facility
City Case Number: PHG17-0025 and ENV17-0007

Dear Ms. Colocho:

In accordance with the provisions of California Assembly Bill 52, the purpose of this letter is to provide notification and to initiate consultation regarding a Conditional Use Permit application to facilitate the development of a proposed residential-care facility described below. The City of Escondido will serve as the lead agency under the California Environmental Quality Act (CEQA) for the project.

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210 North Broadway
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Phone: (760) 839-4537
Email: jpaul@escondido.org

Sincerely,

Jay Paul
Senior Planner

Attachments

ESCONDIDO
City of Choice

Bill Martin, AICP
Director of Community Development
Planning Division
201 North Broadway, Escondido, CA 92025
Phone: 760-839-4671 Fax: 760-839-4313

Mr. Mario Morales
Mesa Grande Band of Mission Indians
PMB 366
35008 Pala Temecula Rd.
Pala, CA, 92059

Sent by U.S. Mail

November 7, 2017

RE: ASSEMBLY BILL 52 CONSULTATION
Mitchell Group, Escondido Assisted Living Facility
City Case Number: PHG17-0025 and ENV17-0007

Dear Mr. Morales:

In accordance with the provisions of California Assembly Bill 52, the purpose of this letter is to provide notification and to initiate consultation regarding a Conditional Use Permit application to facilitate the development of a proposed residential-care facility described below. The City of Escondido will serve as the lead agency under the California Environmental Quality Act (CEQA) for the project.

<u>Project Description</u>:

The project involves a Conditional Use Permit (CUP) to develop a three-story, 71,316 SF residential–care facility with 90 rooms/units to accommodate up to 98 residents. A CUP previously was approved to develop a two- and three-story residential-care facility on the subject site. The site was graded (combination of cut and fill) and includes a retaining wall up to 14 feet in height installed along the western side of the Reidy Creek drainage course. However, the care-facility building never was constructed and the CUP subsequently expired.

<u>Location and Environmental Setting</u>:

The approximately 3.03-acre site is located in the City of Escondido, County of San Diego, on the eastern side of North Centre City Parkway, south of Iris Lane, addressed as 1802 N. Centre City Parkway (APN 226-190-22). The parcel fronts onto and takes access from Centre City Parkway, which is classified as a Major Road (102' ultimate R-O-W). The western portion of the site (proposed development area) previously was graded. The eastern area of the property includes the Reidy Creek drainage course, which bisects the property and drains from north to south. A stand of mature eucalyptus trees is located within the southern corner of the parcel, along with some smaller eucalyptus trees towards the northwestern area of the site and along the project frontage. The previously graded portion of the site generally is covered by a variety of weeds, shrubs and grasses. Street improvements have been installed along the northern section of the project frontage (curbs and gutters) but not further south of the project site.

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Jay Paul
Senior Planner
CITY OF ESCONDIDO
210 North Broadway
Escondido, CA 92025-4313
Phone: (760) 839-4537
Email: jpaul@escondido.org

Sincerely,

Jay Paul
Senior Planner

Attachments

Jay Paul

From:	Jay Paul
Sent:	Wednesday, November 08, 2017 4:07 PM
To:	'Carmen Mojado'
Cc:	Jay Paul
Subject:	AB52 Consultation
Attachments:	San Luis Rey attachments.pdf

Cami:

Pursuant to Assembly Bill 52, I have attached information regarding a request for a Conditional Use Permit to develop a residential-care facility in the City of Escondido for your review and comment. The original letter providing notification of the project and project plans also will be sent by mail.

Jay Paul, Senior Planner
City of Escondido
(760) 839-4537
jpaul@escondido.org

Jay Paul

From:	Jay Paul
Sent:	Wednesday, November 08, 2017 4:09 PM
To:	'jontiveros@soboba-nsn.gov'
Cc:	Jay Paul
Subject:	AB52 Consultation
Attachments:	Soboba attachments.pdf

Mr. Ontiveros:

Pursuant to Assembly Bill 52, I have attached information regarding a request for a Conditional Use Permit to develop a residential-care facility in the City of Escondido for your review and comment. The original letter providing notification of the project and project plans also will be sent by mail.

Jay Paul, Senior Planner
City of Escondido
(760) 839-4537
jpaul@escondido.org

Jay Paul

From: Jay Paul
Sent: Wednesday, November 08, 2017 4:11 PM
To: 'dcolocho@rincontribe.org'
Cc: Jay Paul
Subject: AB52 Consultation
Attachments: Rincon Attachment.pdf

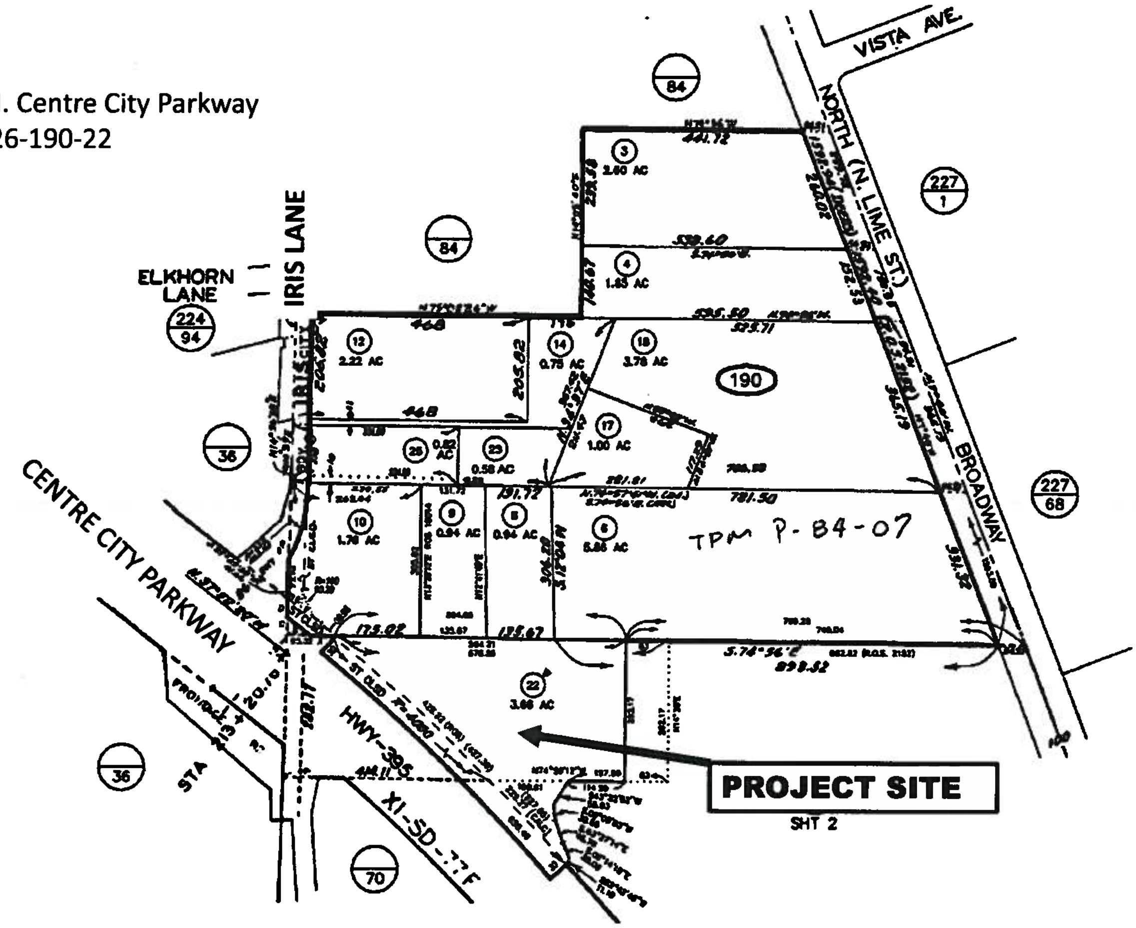
Ms. Colocho:

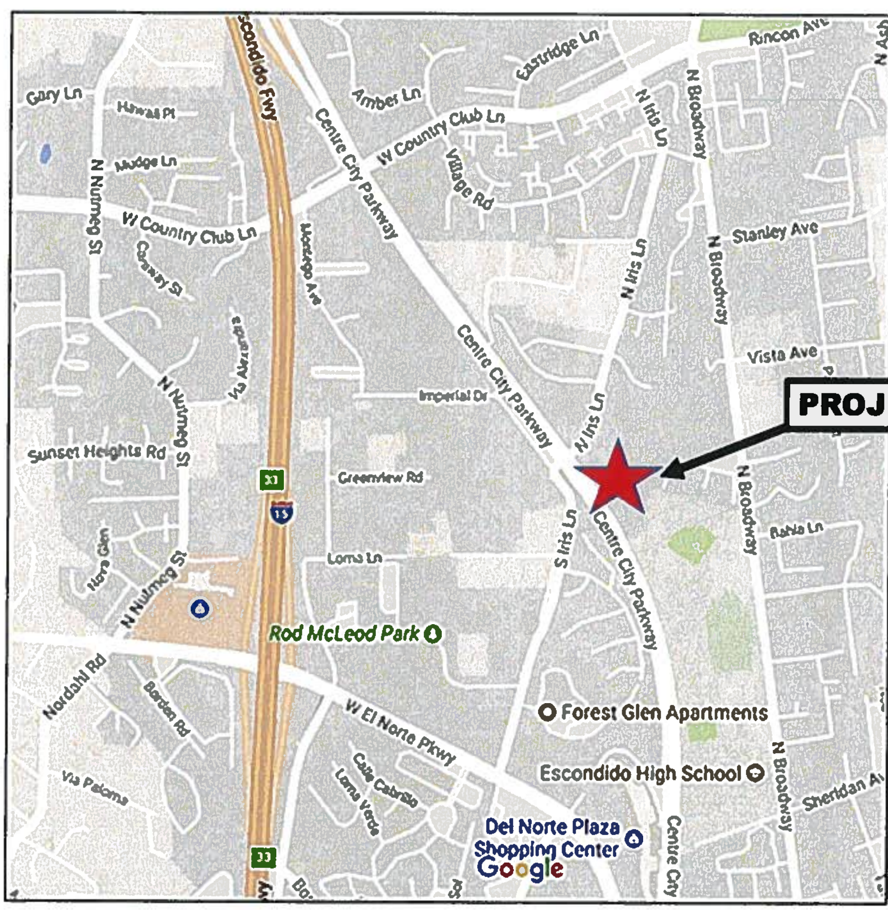
Pursuant to Assembly Bill 52, I have attached information regarding a request for a Conditional Use Permit to develop a residential-care facility in the City of Escondido for your review and comment. The original letter providing notification of the project and project plans also will be sent by mail.

Jay Paul, Senior Planner
City of Escondido
(760) 839-4537
jpaul@escondido.org

Location Map

1802 N. Centre City Parkway
APN 226-190-22





Escondido Assisted Living

Mitchell Group

PROJECT DATA

PROJECT DESCRIPTION
PROPOSED NEW 3-STORY SENIOR CARE FACILITY TO INCLUDE 22 MEMORY CARE AND 68 ASSISTED LIVING UNITS. THE BUILDING WILL CONSIST OF THREE STORIES AND SHALL BE TYPE V CONSTRUCTION WITH AN AUTOMATIC FIRE SPRINKLER SYSTEM. THERE WILL BE A 22 BED SKILLED NURSING UNIT AND A 76 BED ASSISTED LIVING UNIT.

PROJECT ADDRESS
1802 N. CENTRE CITY PARKWAY ESCONDIDO CA 92026 UNITED STATES

LEGAL DESCRIPTION
PARCEL 1:
THAT PORTION OF BLOCK 421 OF RANCHO RINCON DEL DIABLO, IN THE CITY OF ESCONDIDO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO.723, MADE BY J.M. GRAHAM, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, AUGUST 13, 1892, DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST CORNER OF SAID BLOCK 421, AS SHOWN ON RECORD OF SURVEY MAP NO. 10306; THENCE ALONG THE NORTH-EASTERLY LINE THEREOF SOUTH 7°41'19" EAST, A DISTANCE OF 1593.59 FEET TO A POINT ON SAID NORTHEASTERLY LINE: SAID POINT BEING ALSO THE NORTHEASTERLY CORNER OF LAND DESCRIBED IN DEED TO B.G. CARROL, ET UX, RECORDED JUNE 22, 1943 IN BOOK 1520, PAGE 99 AS FILE NO. 36843, OFFICIAL RECORDS; THENCE ALONG THE NORTHEASTERLY BOUNDARY OF SAID CARROL'S LAND, NORTH 74°56'12" WEST, A DISTANCE OF 745.04 FEET TO THE TRUE POINT OF BEGINNING; THENCE SOUTH 14°38'48" WEST, A DISTANCE OF 282.17 FEET; THENCE NORTH 74°56'12" WEST, A DISTANCE OF 114.59 FEET; THENCE SOUTH 43°22'52" WEST, A DISTANCE OF 55.93 FEET; THENCE SOUTH 06°9'03" WEST, A DISTANCE OF 30.55 FEET; THENCE SOUTH 3°27'14" EAST, A DISTANCE OF 35.06 FEET; THENCE SOUTH 62°42'48" WEST, A DISTANCE OF 11.10 FEET TO A POINT ON THE NORTHEASTERLY LINE OF CENTRE CITY PARKWAY, BEING ALSO KNOWN AS STATE ROUTE XI-SD-77F AS SHOWN ON M.S. 606; SAID POINT BEING ON A CURVE CONCAVE SOUTHWESTERLY HAVING A RADIUS OF 4000.00 FEET; A RADIAL BEARING TO SAID POINT NORTH 62°42'48" EAST; THENCE NORTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 9°23'15", A DISTANCE OF 655.37 FEET TO A POINT ON THE SOUTHWESTERLY LINE OF THAT LAND DEEDED TO THE RINCON DEL DIABLO MUNICIPAL WATER DISTRICT AS SHOWN ON RECORD OF SURVEY MAP NO. 10306; THENCE ALONG SAID SOUTHWESTERLY LINE AND THE SOUTHEASTERLY PROLONGATION THEREOF, SOUTH 74°56'12" EAST, A DISTANCE OF 594.06 FEET TO THE POINT OF BEGINNING:

PARCEL 2:
THAT PORTION OF BLOCK 421 OF RANCHO RINCON DEL DIABLO, IN THE CITY OF ESCONDIDO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 723, MADE BY J.M. GRAHAM, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, AUGUST 13, 1892, LYING WITHIN CENTRE CITY PARKWAY, A PUBLIC HIGHWAY ALSO KNOWN AS STATE ROUTE XI-SD-77F AS SHOWN ON M.S. 606, BEING A STRIP OF LAND 30.00 FEET IN WIDTH LYING IMMEDIATELY ADJACENT TO AND SOUTHWESTERLY OF THE SOUTHWESTERLY LINE OF PARCEL "A" OF CERTIFICATE OF COMPLIANCE RECORDED SEPTEMBER 3, 1998 AS DOCUMENT NO. 1998-0565667 OF OFFICIAL RECORDS, SAID SOUTHWESTERLY LINE BEING THE NORTHEASTERLY RIGHT-OF-WAY LINE OF SAID CENTRE CITY PARKWAY, SAID SOUTHWESTERLY LINE AND SAID NORTHEASTERLY RIGHT-OF-WAY LINE BEING A CURCE CONCAVE SOUWESTERLY HAVING A RADIUS OF 4000.00 FEET.

SAID 30.00 FOOT STRIP OF LAND TO TERMINATE NORTHERLY AT A LINE RADIAL TO SAID CURVE AT THE NORTHWEST CORNER OF SAID PARCEL "A" AND TERMINATE SOUTHERLY AT A LINE RADIAL TO SAID CURVE AT THE MOST SOUTHERLY SOUTHWEST CORNER OF SAID PARCEL "A"

ASSESSORS PARCEL NUMBER
226-190-2200

REQUIRED PERMITS:

ZONING - R-1-10

GENERAL PLAN - S

PROPOSED LAND USE - USE TITLE 6516 -LICENSED RESIDENTIAL CARE FACILITY

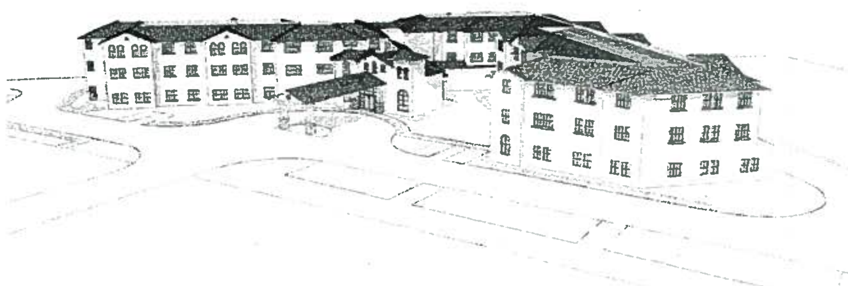
SITE DATA

SITE AREA	151,588.8 SF (3.03 ACRES)
BUILDING FOOTPRINT	27,259 SF
LOT COVERAGE	27,259/151,588.8 = .18
COVERAGE FACTOR	18%
PAVEMENT AREA	40,885 SF (FRONTAGE AREA INCLUDED)
TOTAL LANDSCAPE AREA	45,868 SF
TOTAL DETENTION AREA	2435 SF
TOTAL BUILDING AREA	71,316 SF
TOTAL PROPOSED DWELLING UNITS	90 UNITS/44,806 SF
PROPOSED DENSITY (UNITS/NET ACRE)	90/3.48 = 25.86
FAR	71,316/151,588.8 = .47 PERMITTED PER SEC 33-173 (e) 47%

PARKING
SPACES REQUIRED SEC. 33-765 EMC) 33 (1 SPACE/ 3 BEDS FOR A PROFESSIONAL CARE FACILITY,
98 BEDS /3 = 32.67

ACCESSIBLE SPACES REQUIRED PER CBC TABLE 11B-208.2 = 2 SPACES (1 VAN & 1 ACCESSIBLE)

SPACES PROVIDED 35 INCLUDING 1 VAN & 2 ACCESSIBLE SPACES



UNIT MIX

Unit Name	Unit Type	Beds	Qty	Area (SF)	Total (SF)
AL-0a	ASSISTED LIVING - STUDIO	1	11	405	4,455
AL-0b	ASSISTED LIVING - STUDIO	1	4	381	1,524
AL-0c	ASSISTED LIVING - STUDIO	1	4	386	1,544
AL-1a	ASSISTED LIVING - 1 BED	1	26	528	13,878
AL-1b	ASSISTED LIVING - 1 BED	1	2	650	1,300
AL-1c	ASSISTED LIVING - 1 BED	1	11	548	6,028
AL-1d	ASSISTED LIVING - 1 BED	1	2	593	1,186
AL-2a	ASSISTED LIVING - 2 BED	2	4	823	3,292
AL-2b	ASSISTED LIVING - 2 BED	2	4	779	3,116
MC-1a	MEMORY CARE - 1 BED	1	11	375	4,125
MC-1b	MEMORY CARE - 1 BED	1	10	406	4,060
MC-1c	MEMORY CARE - 1 BED	1	1	500	500
		[illegible]	[illegible]		44,806 sq ft

CODE REQUIREMENTS

APPLICABLE CODES

ALL WORK SHALL BE IN CONFORMANCE WITH ALL THE CODES AND REGULATIONS AS ADOPTED AND AMENDED BY THE CITY OF ESCONDIDO.

2016 California Building Code (CBC)
2016 California Electrical Code (CEC)
2016 California Mechanical Code (CMC)
2016 California Plumbing Code (CPC)
2016 California Fire Code (CFC)
2016 California Green Building Standards Code - CALGREEN
ESCONDIDO MUNICIPAL CODE (EMC)

BUILDING CONSTRUCTION

OCCUPANCY TYPES:
R2.1 24 HOUR RESIDENTIAL CARE FACILITY FOR THE ELDERLY (RCFE)
A-2 DINING ROOM, KITCHEN, LIVING ROOM, ACTIVITIES ROOM
B ADMINISTRATION

CONSTRUCTION TYPE:
TYPE V-A, FULLY SPRINKLERED

SPRINKLERS:
NFPA 13

ALLOWABLE BUILDING HEIGHT
35'-0" TO POINT AVERAGED BETWEEN HIGHEST AND LOWEST ROOF POINTS PER SEC. 33-252 OF EMC

ACTUAL BUILDING HEIGHT
34'-5" TO MEDIAN ROOF POINT

ACTUAL BUILDING AREA
71,316 SF

PROJECT NOTES

1. THE WORK SHALL COMPLY WITH ALL LAWS AND REGULATIONS AS REQUIRED BY THE STATE, THE COUNTY, THE CITY OF COSTA MESA AND ALL OTHER AGENCIES HAVING JURISDICTION OVER THE WORK.
2. ALL WORK ON PUBLIC PROPERTY REQUIRES SEPARATE PERMITS ISSUED BY THE CITY.
3. THE GENERAL CONTRACTOR AND SUBCONTRACTORS SHALL FULLY REVIEW THE ENTIRE SET OF CONTRUCTION DOCUMENTS PRIOR TO COMMENCING CONSTRUCTION OF THE WORK.
4. ONLY COMPLETE BUILDING SYSTEMS AND SUBSYSYTEMS THAT HAVE BEEN COORDINATED WITH THE WORK OF ALL DESIGN DISCIPLINES SHALL BE CONSTRUCTED OR INSTALLED.
5. WHERE CONFLICT OCCURS BETWEEN BETWEEN THE DRAWINGS OF ANY DESIGN DISCIPLINE, THE MOST RESTRICTIVE INTERPRETATION OF THE OVERALL DESIGN SHALL GOVERN THE WORK. THE ARCHITECT SHALL RESOLVE DESIGN CONFLICTS BASED ON THE DESIGN INTENT.
6. THE GENERAL CONTRACTOR SHALL COORDINATE ALL CHANGES AND ADJUSTMENTS TO THE WORK THAT VARIES FROM THE CONSTRUCTION DOCUMENTS WITH THE ARCHITECT PRIOR TO FABRICATION, INSTALLATION OR CONSTRUCTION OF THE WORK.
7. DETAIL REFERENCES ARE TYPICAL AND APPLY EQUALLY TO SIMILAR CONDITIONS, UNLESS OTHERWISE NOTED OR OTHERWISE REFERENCED IN THE ARCHITECTURAL DRAWINGS.
8. DO NOT SCALE THE DRAWINGS.
9. DIMENSIONS SHALL BE FIELD VERIFIED. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO FABRICATION, INSTALLATION OR CONSTRUCTION OF THE AFFECTED WORK.
10. SEE THE FLOOR PLANS FOR INFORMATION REGARDING HORIZONTAL DRAWING DIMENSIONS.
11. SEE THE EXTERIOR ELEVATIONS AND BUILDING SECTIONS FOR INFORMATION REGARDING VERTICAL DRAWING DIMENSIONS.
12. THE PUBLIC AREAS AND COMMON AREAS OF THE BUILDING AND SITE ARE REQUIRED TO BE ACCESSIBLE TO PERSONS WITH DISABILITIES AND SHALL BE ON AN ACCESSIBLE ROUTE OF TRAVEL.

DEFERRED SUBMITTALS

DEFERRED SUBMITTAL ITEMS:

SUBJECT TO REVIEW AND APPROVAL OF FIRE AUTHORITY.
FIRE SPRINKLERS NFPA 13 REQUIREMENTS
FIRE ALARM MODIFICATIONS ONLY.

SUBMITTAL DOCUMENTS FOR DEFERRED SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE ARCHITECT OR ENGINEER OF RECORD, WHO SHALL REVIEW THEM AND FORWARD THEM TO THE BUILDING OFFICIAL WITH A NOTATION INDICATING THAT THE DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN REVIEWED AND THAT THEY HAVE BEEN FOUND TO BE IN GENERAL CONFORMANCE WITH THE DESIGN OF THE BUILDING. THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THEIR DESIGN AND SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL.

PLANS FOR THE DEFERRED SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE BUILDING OFFICIAL IN A TIMELY MANNER THAT ALLOWS A MINIMUM OF 30 WORKING DAYS FOR INITIAL PLAN REVIEW. ALL COMMENTS RELATED TO THE DEFERRED SUBMITTAL MUST BE ADDRESSED TO THE SATISFACTION OF THE BUILDING OFFICIAL PRIOR TO APPROVAL OF THE SUBMITTAL ITEMS.

PROJECT TEAM

OWNER
The Mitchell Group
142 South Cedros Ave
Suite D
Solana Beach, CA 92075
T: 619-993-7089
F: 619-272-2670
http://www.themitchellgroup.us
Tigg Mitchell

ARCHITECT
Irwin Partners Architects
245 Fischer Avenue, Suite B2
Costa Mesa, CA 92626
T: 714 557 2448
F: 714 556 1572
www.ipaoc.com
Greg Irwin

CIVIL ENGINEER
Spear & Associates, Inc.
475 Production Street
San Marcos, CA 92708
T: 760-736-2040
F: 760-736-4866
http://spearinc.net
Josh Ziegler

LANDSCAPE ARCHITECT
Materia LLC
La Jolla, CA 92037
T: 310-903-2635
E: twilson@Materia-LLC.com
http://materia-llc.com
Trace Wilson

SHEET INDEX

CIVIL

C1 Conceptual Grading Plan
C2 Conceptual Grading Plan

ARCHITECTURAL

T Title
A0 Site Plan
A1 First Floor Plan
A2 Second Floor Plan
A3 Third Floor Plan
A4 Roof Plan
A5 Exterior Elevations
A6 Enlarged Unit Plans
A7 Enlarged Unit Plans

LANDSCAPE

AS-101 Landscape Plan

ABBREVIATIONS

AL Assisted Living
AL S Assisted Living Studio Unit
AL 1 Assisted Living 1 Bedroom Unit
AL 2 Assisted Living 2 Bedroom Unit
MC Memory Care
HK House Keeping
AL-0 Assisted Living Studio Unit
AL-1 Assisted Living 1 Bedroom Unit
AL-2 Assisted Living 2 Bedroom Unit
RR Restroom
COR Corridor

VICINITY MAP

RECEIVED
OCT 31 2017
PLANNING DIVISION

IPA IRWIN PARTNERS ARCHITECTS
245 Fischer Avenue, Suite B-2 Costa Mesa CA 92626
(714) 557 2448 www.ipaoc.com
ARCHITECTURE PLANNING CONSULTING

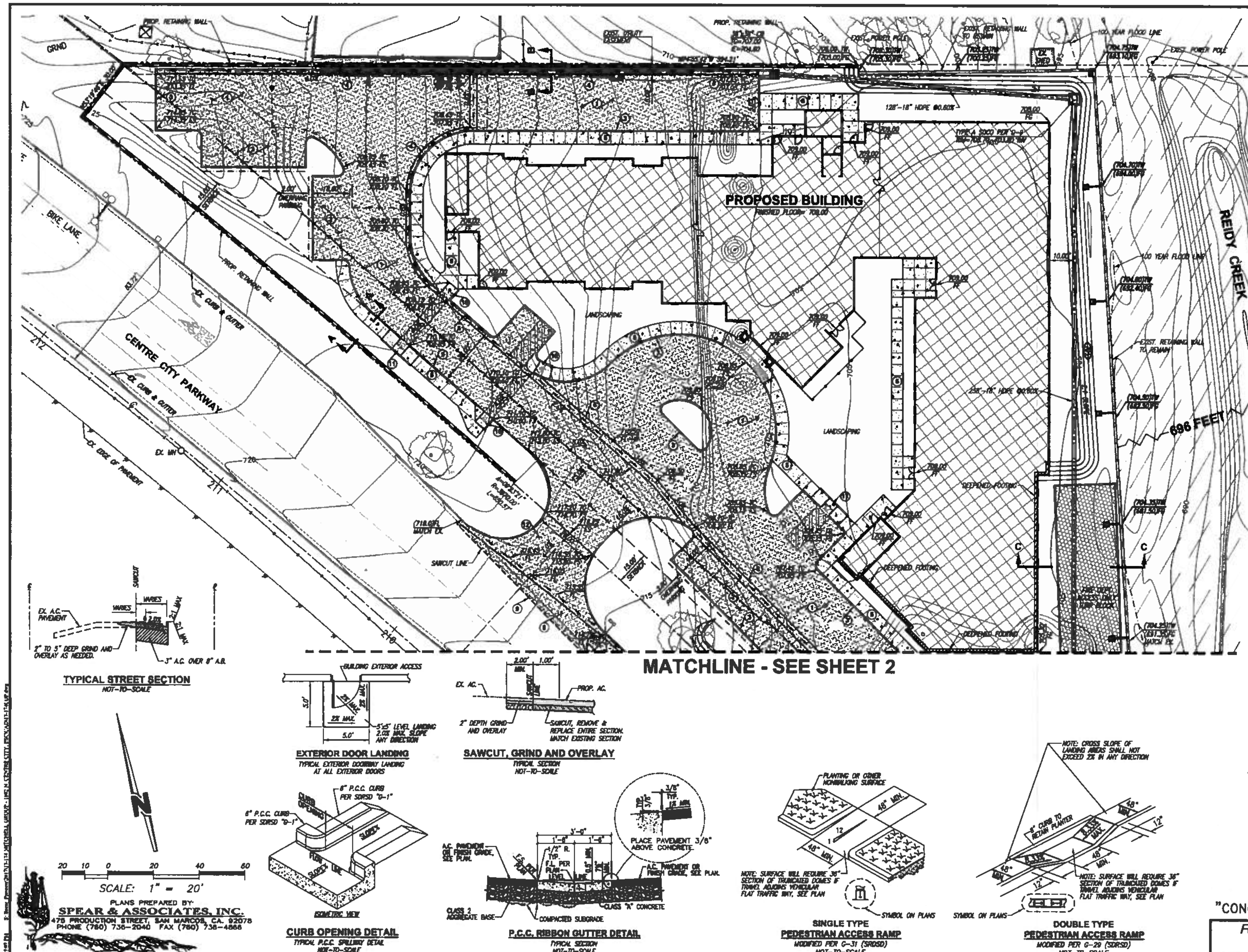
Escondido Assisted Living
Mitchell Group
1802 N. CENTRE CITY PARKWAY ESCONDIDO CA 92026 UNITED STATES

Title
T

PROJECT NO: 17011
PLOT DATE: 10/30/2017
ESCONDIDO SD.pln

PHG 17-0025
ENV 17-0007

PHG 17-0025



PLANS PREPARED BY:
SPEAR & ASSOCIATES, INC.
475 PRODUCTION STREET, SAN MARCOS, CA. 92078
PHONE (760) 736-2040 FAX (760) 736-4866

UTILITY NOTE:

1. CONTRACTOR TO VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF EXISTING UTILITIES PRIOR TO THE START OF CONSTRUCTION. ENGINEER IS NOT RESPONSIBLE FOR PRECISE LOCATION OF EXISTING UNDERGROUND UTILITIES.

2. CONTRACTOR TO ADJUST EXISTING UTILITIES TO GRADE AS REQUIRED.

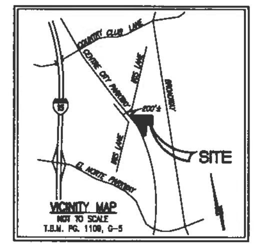
CONSTRUCTION NOTES:

1. *CONSTRUCT 3" AC PAVEMENT OVER 9" A.B. AND 95% COMPACTED SUBGRADE SOIL (HEAVY DRIVE AISLES).
2. *CONSTRUCT 3" AC PAVEMENT OVER 7" A.B. AND 95% COMPACTED SUBGRADE SOIL (PARKING STALLS).
3. CONSTRUCT 6" P.C.C. CURB PER SDRSD G-1 (SDRSD).
4. CONSTRUCT 6" P.C.C. CURB & GUTTER TYPE-G PER SDRSD G-2 (SDRSD).
5. CONSTRUCT 4.0' MIN. WIDE P.C.C. SIDEWALK PER G-7 (SDRSD).
6. CONSTRUCT 3.0' WIDE P.C.C. RIBBON GUTTER PER DETAIL SHEET 1
7. CONSTRUCT 3.0' CURB OPENING W/SPLASH PAD PER DETAIL SHEET 1.
8. CONSTRUCT AC PAVEMENT OVER APPROVED CL-II AGGREGATE BASE (MATCH EX.)
9. SAWCUT & REMOVE AC. BERM, CURB & GUTTER PER DETAIL SHEET 1.
10. CONSTRUCT SINGLE TYPE PEDESTRIAN ACCESS RAMP W/TRUNCATED DOMES PER DETAIL SHEET 1.
11. CONSTRUCT DOUBLE TYPE PEDESTRIAN ACCESS RAMP W/TRUNCATED DOMES PER DETAIL SHEET 1.
12. CONSTRUCT 26' WIDE ALLEY TYPE DRIVEWAY (MODIFIED) PER COE G-5-E.

* FINAL PAVEMENT SECTION BASED ON R-VALUE APPROVED BY THE CITY ENGINEER.

LEGEND OF SYMBOLS

- PROPERTY LINE
- STREET CENTERLINE
- EXISTING WATER LINE
- EXISTING SEWER LINE
- EXISTING CONTOURS
- DIRECTION OF DRAINAGE FLOW
- EXISTING SPOT ELEVATIONS
- PROPOSED SPOT ELEVATIONS
- AC PAVEMENT OVER CL-II AB (PER SOILS REPORT)



VICINITY MAP
NOT TO SCALE
T.B.M. PG. 1109, G-5

SITE ADDRESS:
1802 N. CENTRE CITY PARKWAY
ESCONDIDO, CA 92026

ASSESSOR'S PARCEL NO.:
226-190-22

LEGAL DESCRIPTION:
ALL OF THAT PORTION OF BLOCK 421, SUBDIVISION OF RINCON DEL DIABLO, PER MAP THEREOF No. 723, EXCEPTING THAT PORTION DEEDED TO THE STATE OF CALIFORNIA FOR FREEWAY, SAID MAP RECORDED IN OFFICE OF THE CLERK AND RECORDER OF THE COUNTY OF SAN DIEGO, CALIFORNIA.

OWNER/APPLICANT DEVELOPER:
THE MITCHELL GROUP
142 S. CEDROS AVE. STE. D
ADDRESS
SOLANA BEACH, CA 92075
CITY STATE, ZIP CODE
PHONE
TIGG MITCHELL
CONTACT NAME

ESCONDIDO City of Choice

CITY OF ESCONDIDO ENGINEERING DEPARTMENT
APPROVED
By ____ Date ____
(for City Engineer)
Comments ____

"CONCEPTUAL"

RECORD DRAWING
JOSHUA R. ZEIGLER R.C.E. 85413 DATE

OBTAIN GRADING PERMIT AT FIELD ENGINEERING OFFICE PRIOR TO GRADING

CITY PROJECT NO. ENG

CONSTRUCTION RECORD	REFERENCES	Date	By	REVISIONS	App'd	Date	BENCH MARK	EARTHWORK QUANTITIES**	SCALE
Contractor	–						DESCRIPTION: CHISELED SQUARE ON TOP OF CURB INLET AT NW CORNER OF INTERSECTION OF CENTRE CITY PKWY. & IRIS LN. E/S FRONTAGE RD. APPROX. 30FT N. CENTER LINE IRIS LN. AT SW CORNER OF INLET.	CUT: 0 C.Y.	Horizontal As Shown
Inspector	–						STATION 2549 / 724.39	FILL: 0 C.Y.	Vertical As Shown
Date Completed							Bench Mark No. / Elevation	EXPORT: 0 C.Y.	

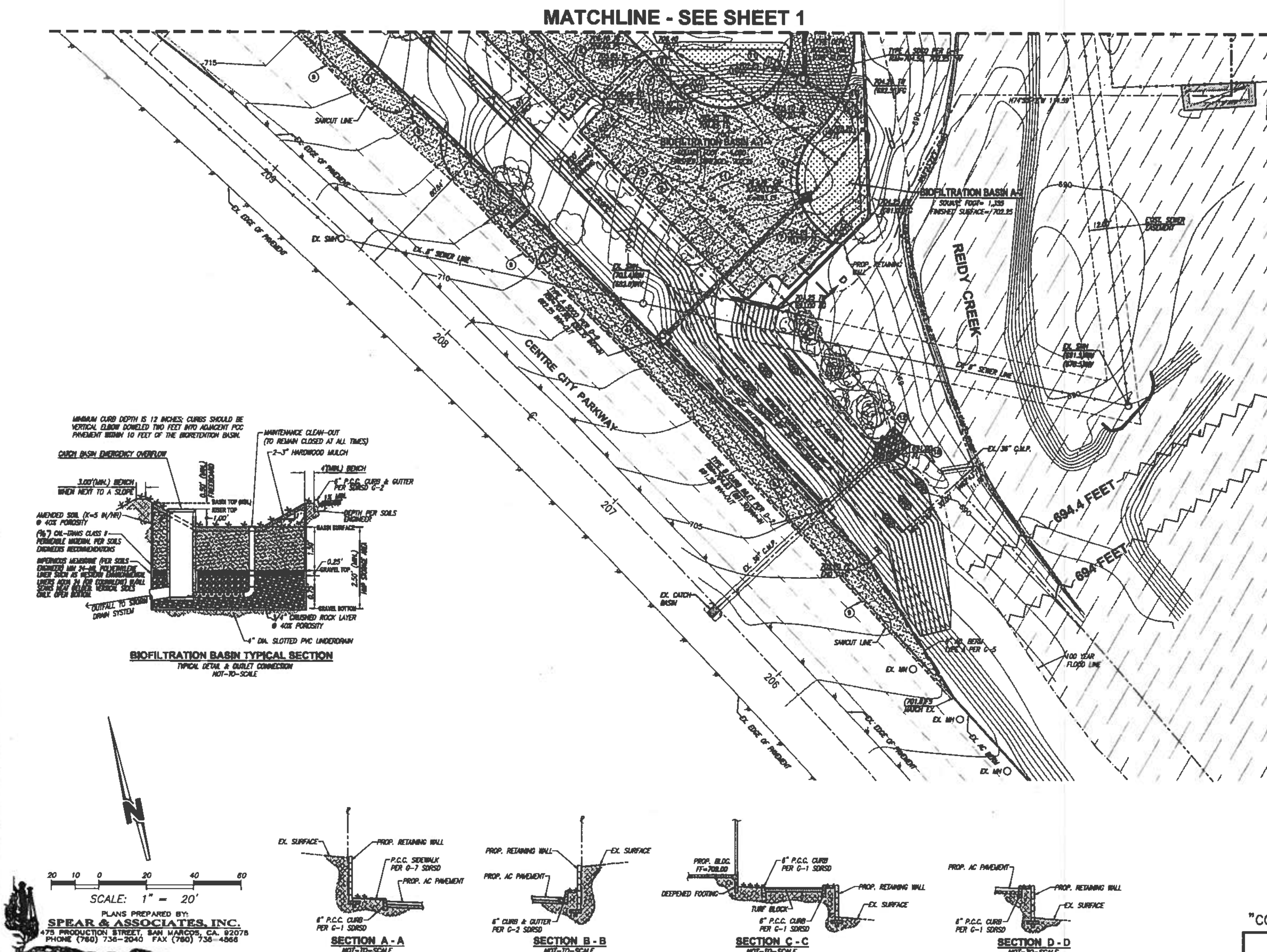
Office	Designed By J.R.Z.	Drawn By A.J.V.	Checked By J.R.Z.
Filmed	Plans Prepared Under Supervision Of		
Traffic	Date	R.C.E. No. 85413	

DEPARTMENT OF PUBLIC WORKS - ENGINEERING DIVISION

CONCEPTUAL GRADING PLAN FOR,
ESCONDIDO ASSISTED LIVING

Drawing No. –
Sheet 1 of 2

SPEAR & ASSOCIATES, INC. JOB NO. 17-174 JRZ



UTILITY NOTE:

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2. CONTRACTOR TO ADJUST EXISTING UTILITIES TO GRADE AS REQUIRED.

CONSTRUCTION NOTES:

1. *CONSTRUCT 3" AC PAVEMENT OVER 9" A.B. AND 95% COMPACTED SUBGRADE SOIL (HEAVY DRIVE AISLES).
2. *CONSTRUCT 3" AC PAVEMENT OVER 7" A.B. AND 95% COMPACTED SUBGRADE SOIL (PARKING STALLS).
3. CONSTRUCT 6" P.C.C. CURB PER SDRSD G-1 (SDRSD).
4. CONSTRUCT 6" P.C.C. CURB & GUTTER TYPE-G PER SDRSD G-2 (SDRSD).
5. CONSTRUCT 4.0' MIN. WIDE P.C.C. SIDEWALK PER G-7 (SDRSD).
6. CONSTRUCT 3.0' WIDE P.C.C. RIBBON GUTTER PER DETAIL SHEET 1.
7. CONSTRUCT 3.0' CURB OPENING W/SPLASH PAD PER DETAIL SHEET 1.
8. CONSTRUCT 5" AC PAVEMENT OVER APPROVED CL-II AGGREGATE BASE (MATCH EX.)
9. SAWCUT & REMOVE AC. BERM, CURB & GUTTER PER DETAIL SHEET 1.
10. CONSTRUCT WING TYPE HEADWALL PER D-34 (SDRSD).
11. RIP-RAP ENERGY DISSIPATOR PER D-40 (SDRSD). L=5.0'xW=5.0', TYPE 2 ROCK CLASS, 1' THICK OVER FILTER BLANKET.
12. RIP-RAP ENERGY DISSIPATOR PER D-40 (SDRSD). 100 SF TYPE 2 ROCK CLASS, 1' THICK OVER FILTER BLANKET.

* FINAL PAVEMENT SECTION BASED ON R-VALUE APPROVED BY THE CITY ENGINEER.

PLANS PREPARED BY:
SPEAR & ASSOCIATES, INC.
475 PRODUCTION STREET, SAN MARCOS, CA. 92078
PHONE (760) 736-2040 FAX (760) 736-4866

"CONCEPTUAL"

RECORD DRAWING

JOSHUA R. ZEIGLER R.C.E. 85413 DATE

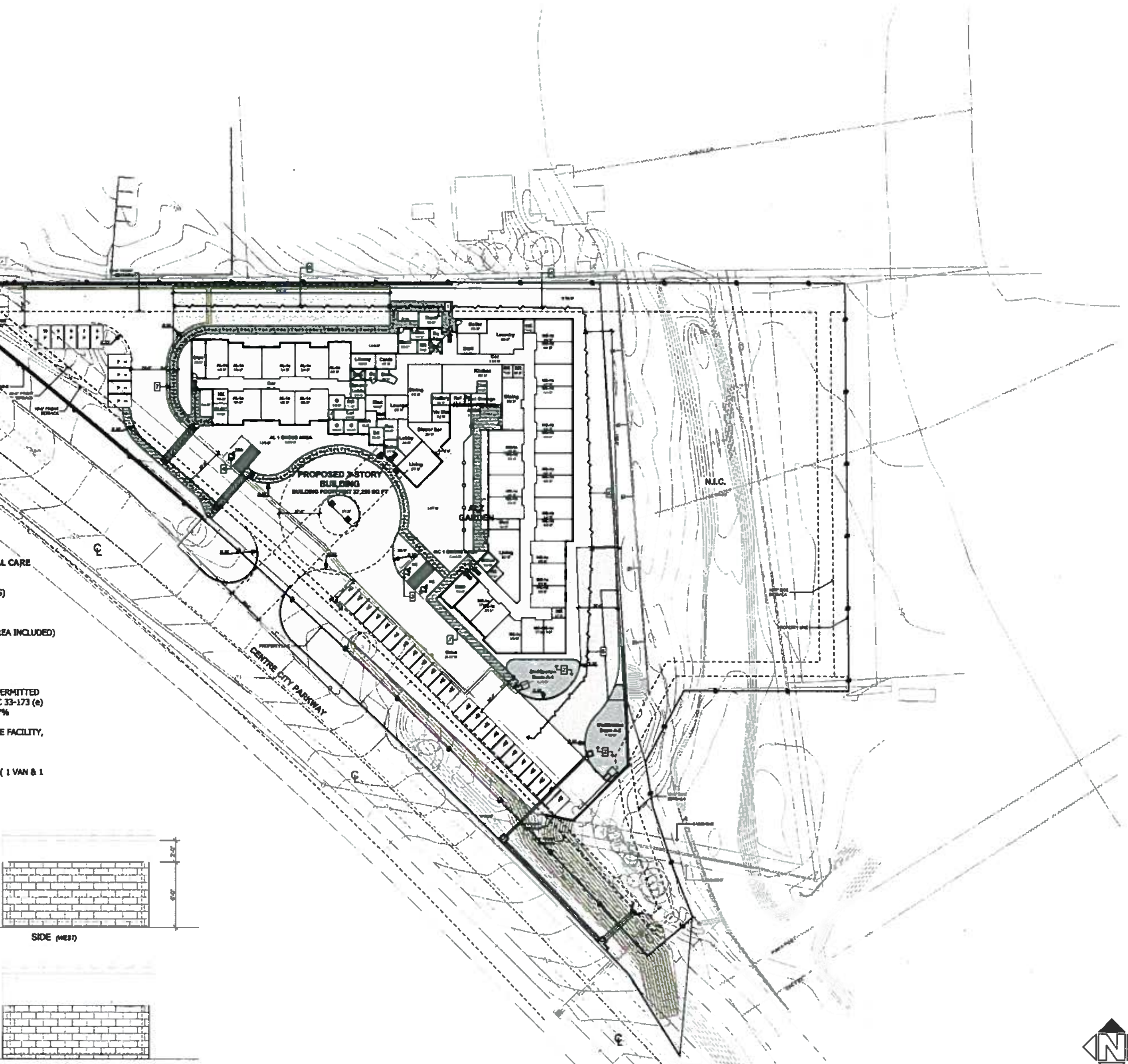
ESCONDIDO City of Choice

CITY OF ESCONDIDO ENGINEERING DEPARTMENT
APPROVED
By ______ Date ______ (for City Engineer)
Comments ______
OBTAIN GRADING PERMIT AT FIELD ENGINEERING OFFICE PRIOR TO GRADING
CITY PROJECT NO. ENG

CONSTRUCTION RECORD	REFERENCES	Date	By	REVISIONS	App'd	Date	BENCH MARK	EARTHWORK QUANTITIES **	SCALE
Contractor ______	–						DESCRIPTION: CHISELED SQUARE ON TOP OF CURB INLET AT NW CORNER OF INTERSECTION OF CENTRE CITY PKWY. & IRIS LN. E/S FRONTAGE RD. APPROX. 50FT N. CENTER LINE IRIS LN. AT SW CORNER OF INLET.	CUT: 0 C.Y.	Horizontal As Shown
Inspector ______	–						STATION F549 — Bench Mark No.	FILL: 0 C.Y.	Vertical As Shown
Date Completed ______							734.70 — Elevation	EXPORT: 0 C.Y.	

Office ______	Designed By J.R.Z.	Drawn By A.J.V.	Checked By J.R.Z.	DEPARTMENT OF PUBLIC WORKS - ENGINEERING DIVISION	Drawing No.
Filmed ______	Plans Prepared Under Supervision Of			CONCEPTUAL GRADING PLAN FOR, ESCONDIDO ASSISTED LIVING	–
Traffic ______	Date ______ R.C.E. No. 85413				Sheet 2 of 2

SPEAR & ASSOCIATES, INC. JOB NO: 17-174 JRZ



ASSESSORS PARCEL NUMBER
226-190-2200

REQUIRED PERMITS:

ZONING - R-1-10

GENERAL PLAN - S

PROPOSED LAND USE - USE TITLE 6516 -LICENSED RESIDENTIAL CARE FACILITY

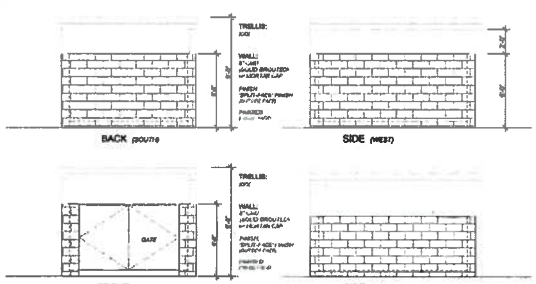
SITE DATA

SITE AREA	151,588.8 SF (3.03 ACRES)
BUILDING FOOTPRINT	27,259 SF
LOT COVERAGE	27,259/151,588.8 = .18
COVERAGE FACTOR	18%
PAVEMENT AREA	40,885 SF (FRONTAGE AREA INCLUDED)
TOTAL LANDSCAPE AREA	45,868 SF
TOTAL DETENTION AREA	2435 SF
TOTAL BUILDING AREA	71,316 SF
TOTAL PROPOSED DWELLING UNITS	90 UNITS/44,806 SF
PROPOSED DENSITY (UNITS/NET ACRE)	90/3.48 = 25.86
FAR	71,316/151,588.8 = .47 PERMITTED PER SEC 33-173 (e) 47%

PARKING
SPACES REQUIRED SEC, 33-765 EMC) 33 (1 SPACE/ 3 BEDS FOR A PROFESSIONAL CARE FACILITY,
98 BEDS /3 = 32.67

ACCESSIBLE SPACES REQUIRED PER CBC TABLE 11B-208.2 = 2 SPACES (1 VAN & 1 ACCESSIBLE)

SPACES PROVIDED 35 INCLUDING 1 VAN & 2 ACCESSIBLE SPACES



07 TRASH ENCLOSURE DETAIL
SCALE: 1/4" = 1'-0"

01 Site Plan
SCALE: 1" = 30'

SITE PLAN LEGEND

- NEW CONCRETE WALKWAY OR PAVING
- FIRE ACCESS ROAD
- WATER DETENTION
- NOT INCORPORATED, UNDEVELOPED (N.I.C.)
- ACCESSIBLE ROUTE OF TRAVEL - (5% MAX - 2% MAX CROSS SLOPE)
- MEANS OF EGRESS
- FIRE HYDRANT
- PROPERTY LINE
- WOOD FENCE
- 150'-0" FIRE ACCESS SPACE
- KEYNOTE NUMBER

FOR FURTHER SITE INFORMATION, SEE CIVIL AND LANDSCAPE PLANS

SITE PLAN KEYNOTES

1. TRASH ENCLOSURE AREA
2. BIOFILTRATION BASIN
3. ACCESSIBLE PARKING STALL TYP.
4. VAN ACCESSIBLE PARKING STALL
5. PARKING STALL TYP.
6. FIRE ACCESS REQ'D LENGTH 150'-0"
7. HARDSCAPE TYP.

Gross Area Calcs

	Area (SF)
AL 1 GROSS AREA	8,474
AL 2 GROSS AREA	8,823
AL 2 GROSS AREA	13,817
AL 3 GROSS AREA	21,900
COMMON 1 GROSS AREA	8,329
COMMON 2 GROSS AREA	2,817
MC 1 GROSS AREA	12,458
	71,316 sq ft

Parking Count

	Qty
HC	2
P	32
VAN	1
	35

Building Area Calculations

Area Type	Qty.	Area (SF)
ADMINISTRATION	9	1,243
ASSISTED LIVING - 1 BED	41	22,180
ASSISTED LIVING - 2 BED	8	6,408
ASSISTED LIVING - STUDIO	19	7,523
CIRCULATION	5	12,688
CIRCULATION - VERTICAL	6	817
CTRY KITCHEN	7	1,251
DINING	9	3,827
LOBBY	3	587
MECHANICAL	8	738
MEMORY CARE - 1 BED	22	8,885
RESIDENT ACTIVITY	4	1,513
RESTROOMS	5	358
SERVICE	19	3,128
TERRACE	3	949
	167	71,865 sq ft

Building Area Calculations by Floor

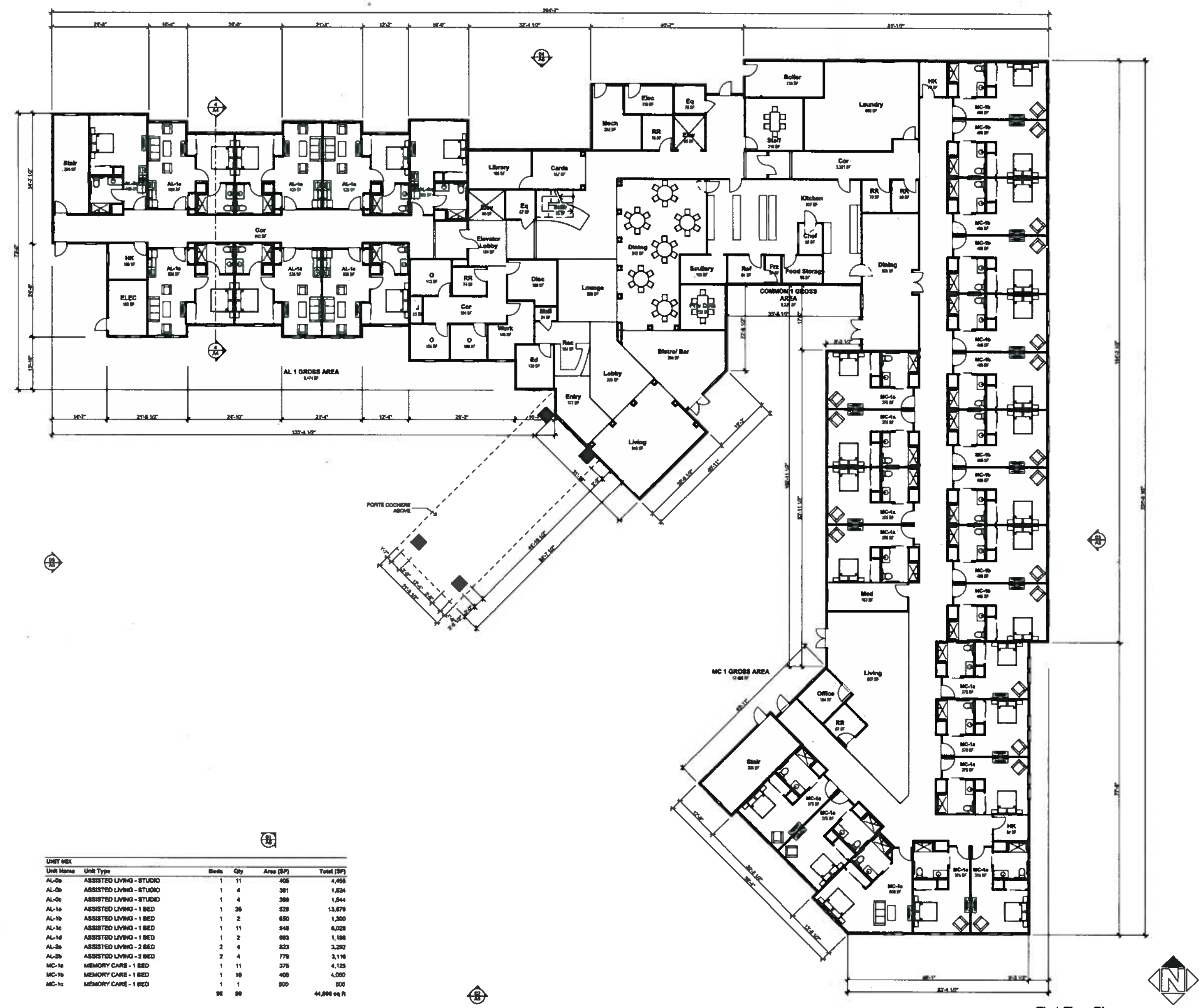
Area Type	Qty.	Area (SF)
First Floor		
ADMINISTRATION	9	1,243
ASSISTED LIVING - 1 BED	6	3,156
ASSISTED LIVING - STUDIO	2	810
CIRCULATION	3	4,457
CIRCULATION - VERTICAL	6	817
CTRY KITCHEN	7	1,251
DINING	9	3,827
LOBBY	3	587
MECHANICAL	4	454
MEMORY CARE - 1 BED	22	8,885
RESTROOMS	5	358
SERVICE	8	1,476
	83	27,101 sq ft
Second Floor		
ASSISTED LIVING - 1 BED	17	9,243
ASSISTED LIVING - 2 BED	4	3,204
ASSISTED LIVING - STUDIO	8	3,154
CIRCULATION	1	4,126
MECHANICAL	2	142
RESIDENT ACTIVITY	3	1,264
SERVICE	6	895
TERRACE	1	377
	42	22,405 sq ft
Third Floor		
ASSISTED LIVING - 1 BED	18	9,781
ASSISTED LIVING - 2 BED	4	3,204
ASSISTED LIVING - STUDIO	8	3,559
CIRCULATION	1	4,085
MECHANICAL	2	142
RESIDENT ACTIVITY	1	249
SERVICE	5	757
TERRACE	2	572
	42	22,359 sq ft
	167	71,865 sq ft

IPA IRWIN PARTNERS ARCHITECTS
245 Fischer Avenue, Suite B-2 Costa Mesa CA 92626
(714) 557 2448 www.ipaoc.com
ARCHITECTURE PLANNING CONSULTING

Escondido Assisted Living
Mitchell Group
1802 N. CENTRE CITY PARKWAY ESCONDIDO CA 92026 UNITED STATES

Site Plan
A0

PROJECT NO: 17011
PLOT DATE: 10/30/2017
ESCONDIDO SD.pln



UNIT MIX					
Unit Name	Unit Type	Beds	Qty	Area (SF)	Total (SF)
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AL-1a	ASSISTED LIVING - 1 BED	1	26	526	13,676
AL-1b	ASSISTED LIVING - 1 BED	1	2	650	1,300
AL-1c	ASSISTED LIVING - 1 BED	1	11	548	6,028
AL-1d	ASSISTED LIVING - 1 BED	1	2	593	1,186
AL-2a	ASSISTED LIVING - 2 BED	2	4	823	3,292
AL-2b	ASSISTED LIVING - 2 BED	2	4	779	3,116
MC-1a	MEMORY CARE - 1 BED	1	11	375	4,125
MC-1b	MEMORY CARE - 1 BED	1	10	408	4,080
MC-1c	MEMORY CARE - 1 BED	1	1	500	500
		98	90		[illegible] sq ft

01 First Floor Plan
SCALE: 1" = 10'

IRWIN PARTNERS ARCHITECTS
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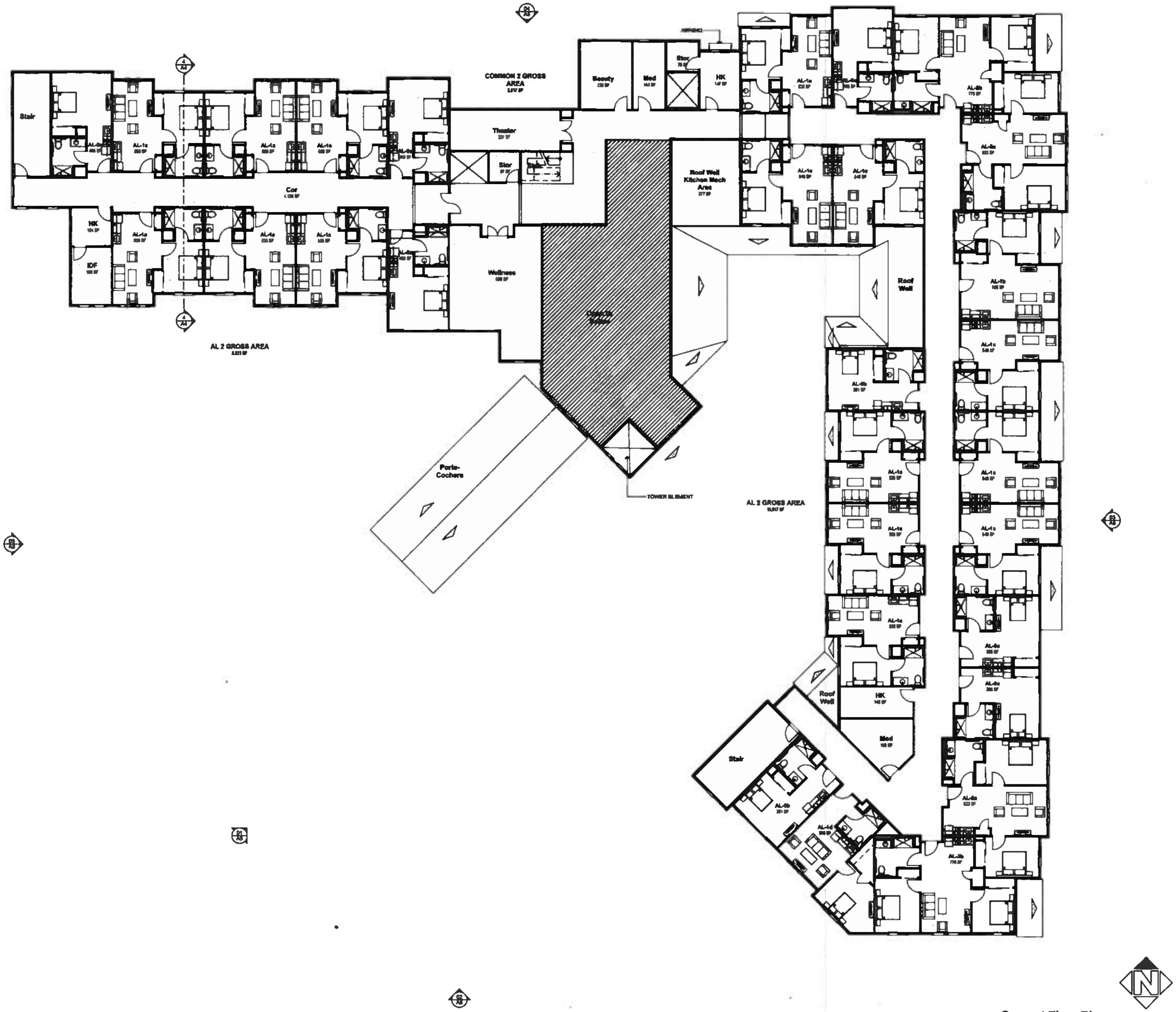
ARCHITECTURE PLANNING CONSULTING

Escondido Assisted Living
Mitchell Group
1802 N. CENTRE CITY PARKWAY ESCONDIDO CA 92026 UNITED STATES

First Floor Plan
A1
PROJECT NO: 17011
PLOT DATE: 10/30/2017
ESCONDIDO SD.pln



01 Second Floor Plan
SCALE: 1" = 10'

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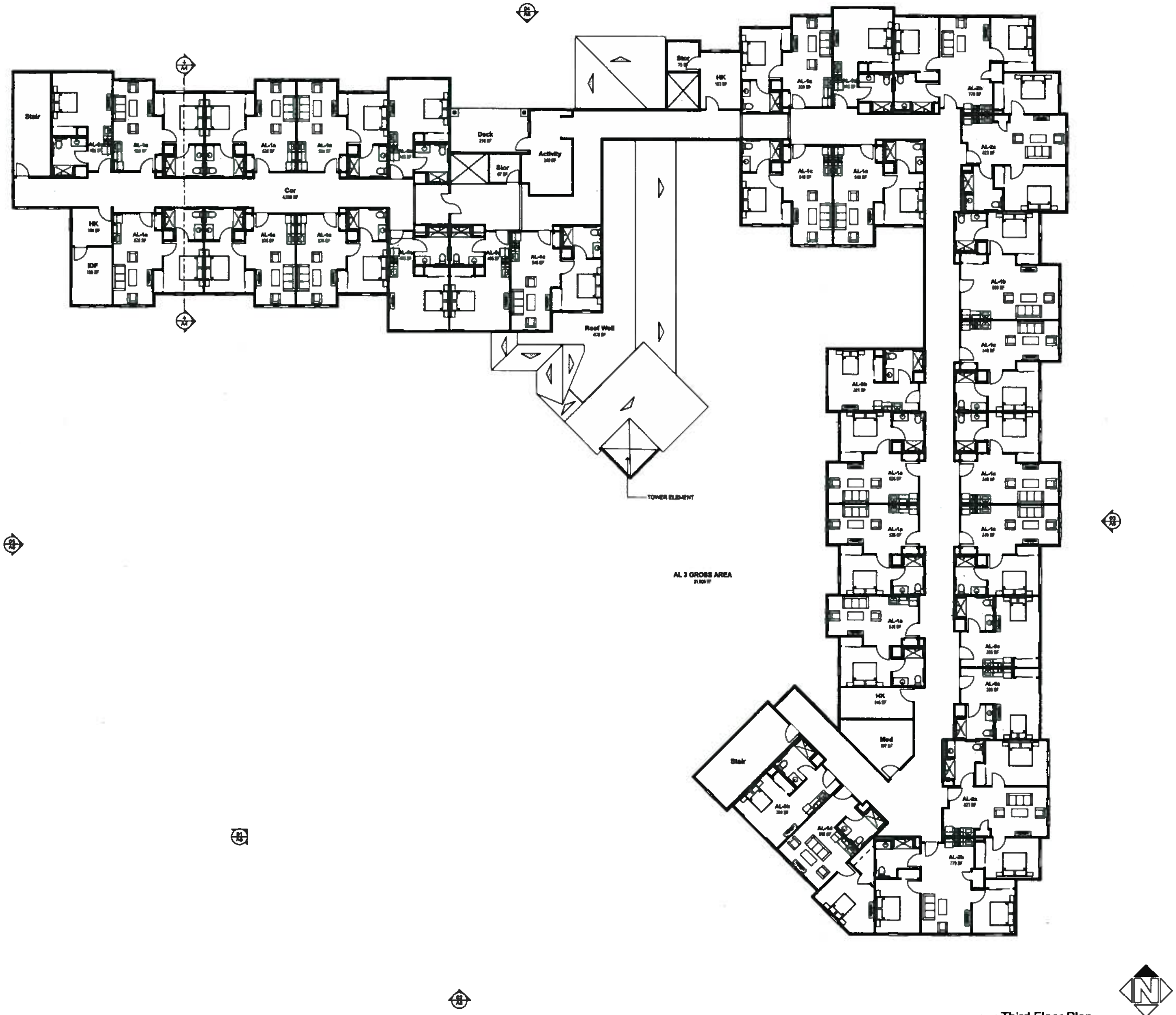
Second Floor Plan
A2

PROJECT NO: 17011
PLOT DATE: 10/30/2017
ESCONDIDO SD.pln



01 Third Floor Plan
SCALE: 1" = 10'

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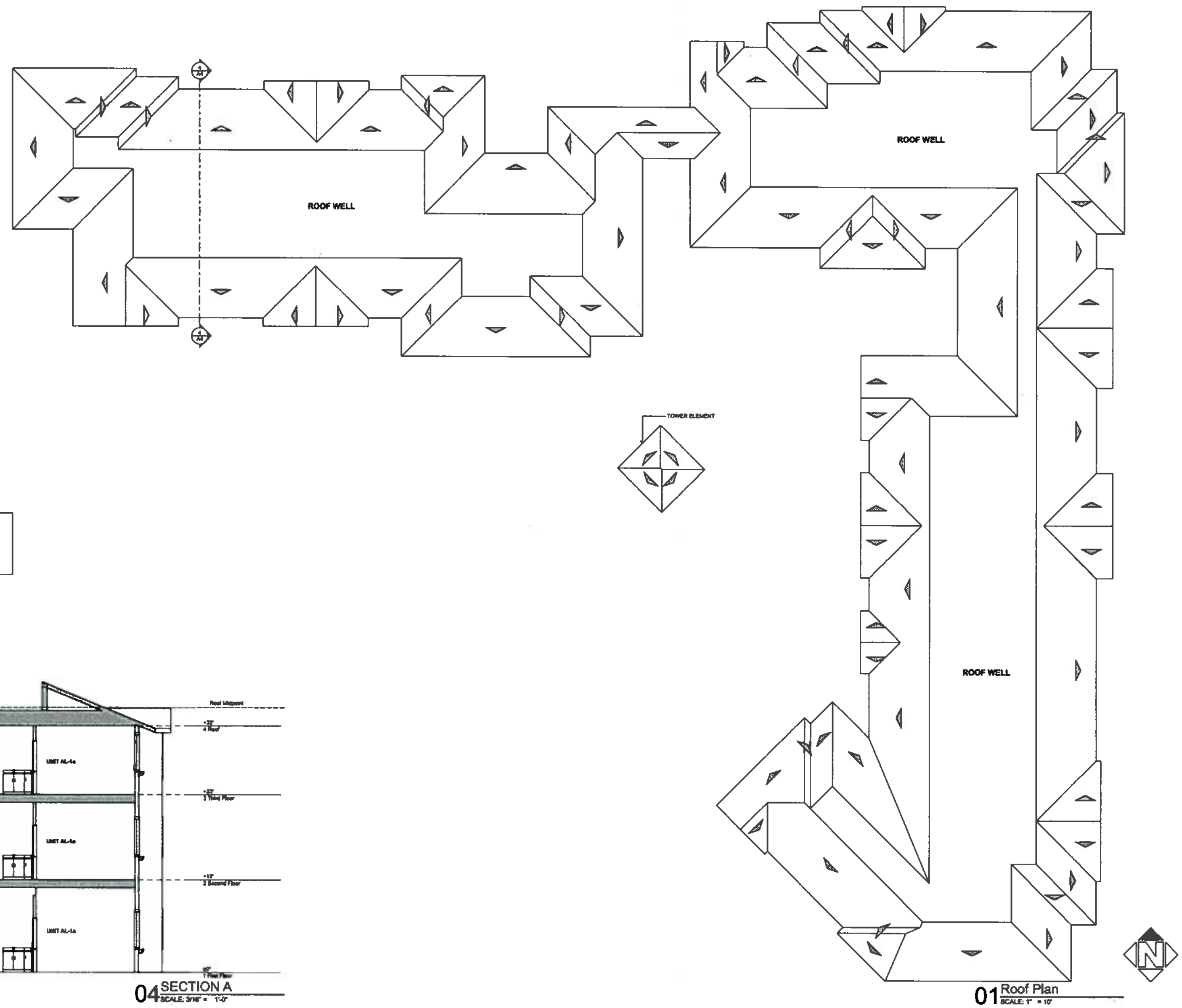
Mitchell Group
1802 N. CENTRE CITY PARKWAY ESCONDIDO CA 92026 UNITED STATES

Third Floor Plan
A3

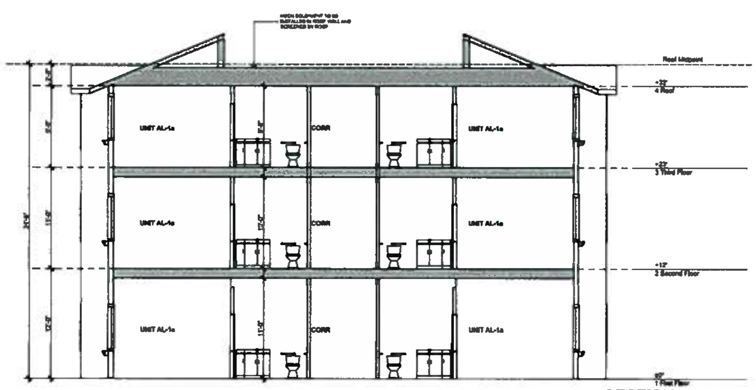
PROJECT NO: 17011
PLOT DATE: 10/30/2017
ESCONDIDO SD.pln



01 Roof Plan
SCALE: 1" = 10'

NOTE:

MECHANICAL EQUIPMENT TO BE PLACED IN ROOF WELL AND SCREENED BY ROOF.



04 SECTION A
SCALE: 3/16" = 1'-0"

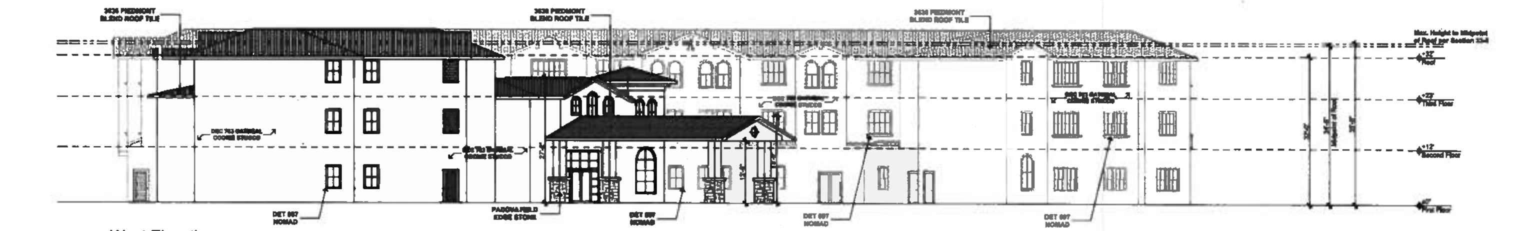
IPA IRWIN PARTNERS ARCHITECTS
245 Fischer Avenue, Suite B-2 Costa Mesa CA 92626
(714) 557 2448 www.ipaoc.com
ARCHITECTURE PLANNING CONSULTING

Escondido Assisted Living
Mitchell Group

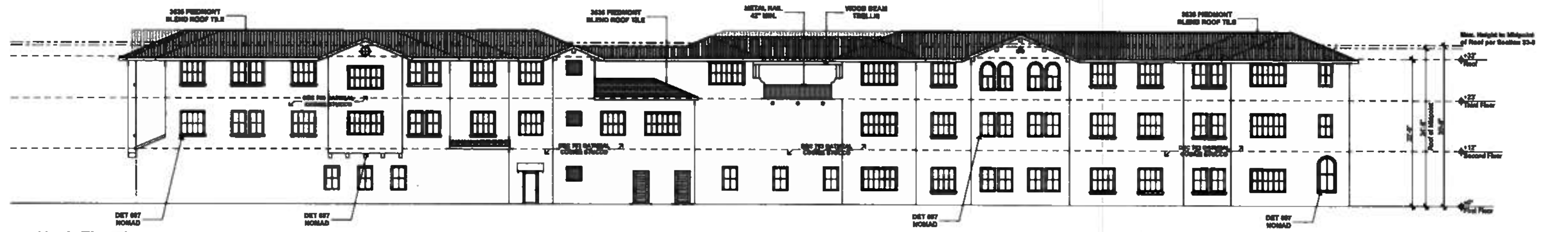
1802 N. CENTRE CITY PARKWAY ESCONDIDO CA 92026 UNITED STATES

Roof Plan
A4

PROJECT NO: 17011
PLOT DATE: 10/30/2017
ESCONDIDO SD.pln

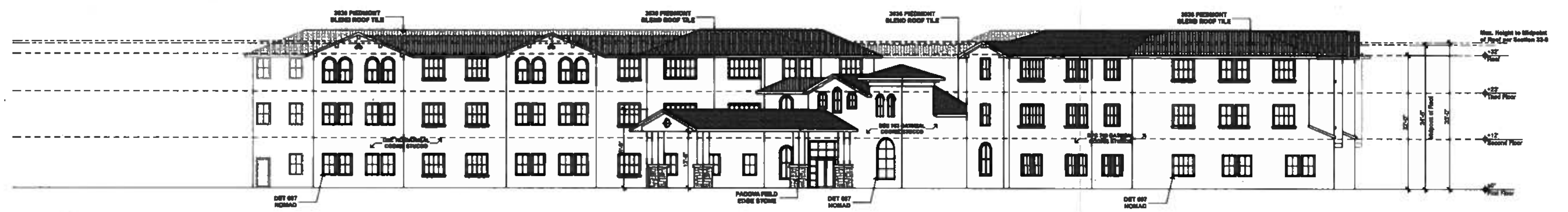


05 West Elevation
SCALE: 3/32" = 1'-0"

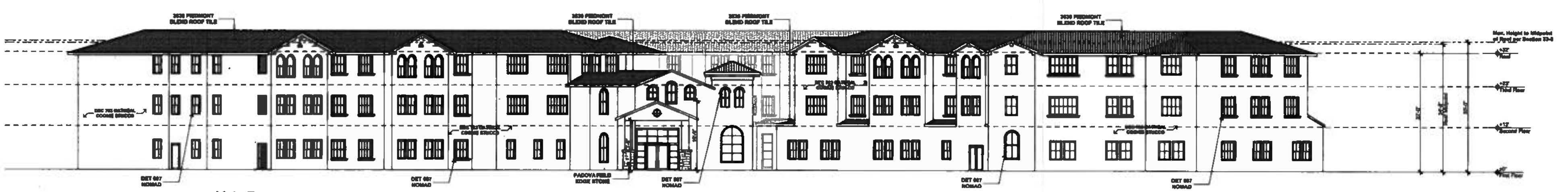


04 North Elevation
SCALE: 3/32" = 1'-0"

03 East Elevation
SCALE: 3/32" = 1'-0"



02 South Elevation
SCALE: 3/32" = 1'-0"



01 Main Entrance
SCALE: 3/32" = 1'-0"

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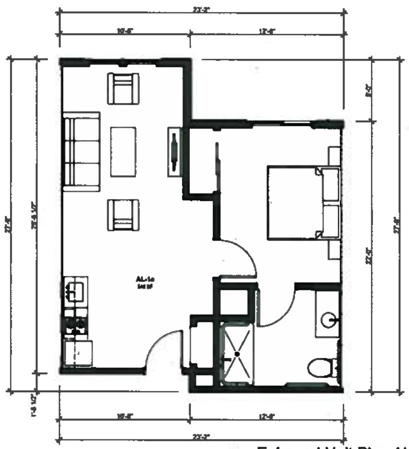
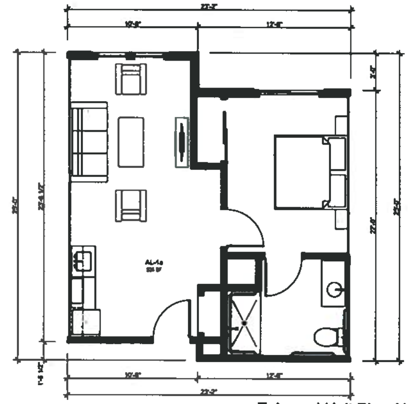
Exterior Elevations
A5

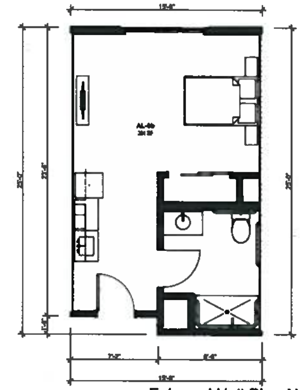
PROJECT NO: 17011
PLOT DATE: 10/30/2017
ESCONDIDO SD.pln



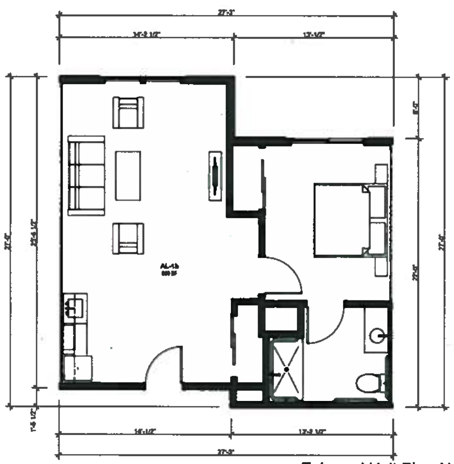
08 Enlarged Unit Plan AL-1c
SCALE: 1/4" = 1'-0"



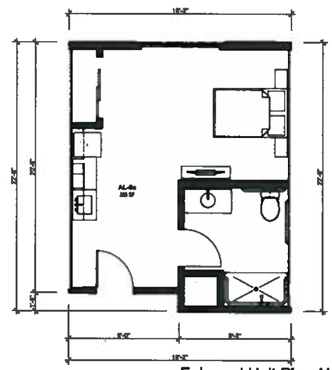
05 Enlarged Unit Plan AL-1a
SCALE: 1/4" = 1'-0"



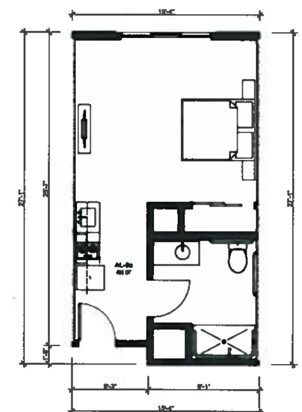
02 Enlarged Unit Plan AL-0b
SCALE: 1/4" = 1'-0"



07 Enlarged Unit Plan AL-1b
SCALE: 1/4" = 1'-0"



04 Enlarged Unit Plan AL-0c
SCALE: 1/4" = 1'-0"



01 Enlarged Unit Plan AL-0a
SCALE: 1/4" = 1'-0"

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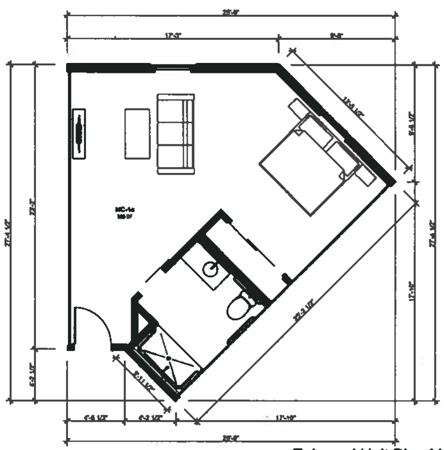
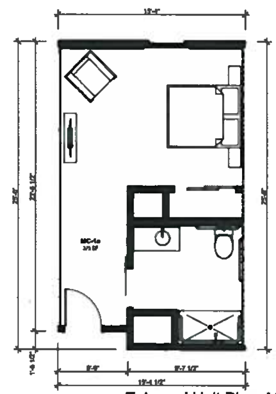
Escondido Assisted Living
Mitchell Group
1802 N. CENTRE CITY PARKWAY ESCONDIDO CA 92026 UNITED STATES

Enlarged Unit Plans
A6

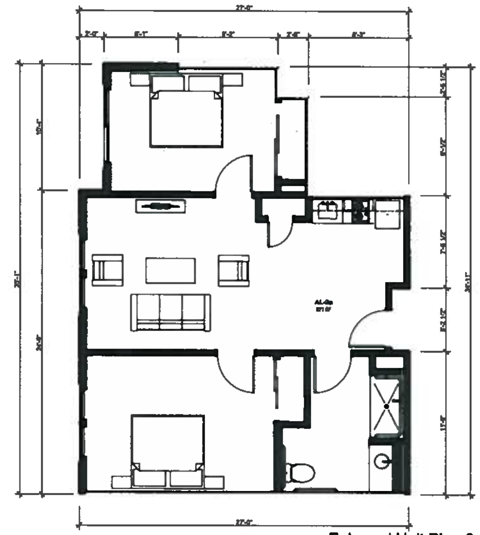
PROJECT NO: 17011
PLOT DATE: 10/30/2017
ESCONDIDO SD.pln



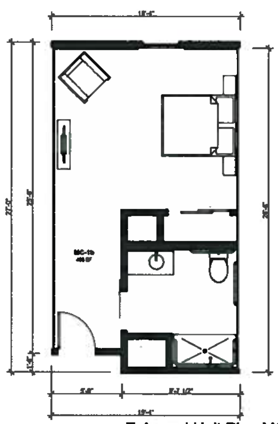
08 Enlarged Unit Plan MC-1c
SCALE: 1/4" = 1'-0"



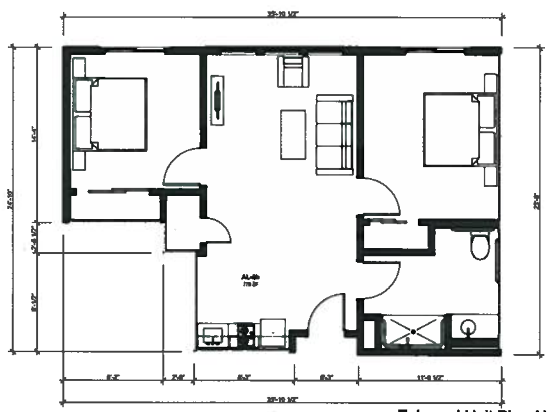
05 Enlarged Unit PLan MC-1a
SCALE: 1/4" = 1'-0"



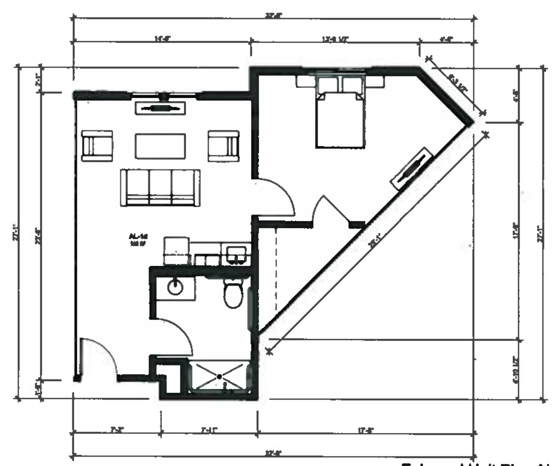
02 Enlarged Unit PLan-2a
SCALE: 1/4" = 1'-0"



07 Enlarged Unit Plan MC-1b
SCALE: 1/4" = 1'-0"



04 Enlarged Unit Plan AL-2b
SCALE: 1/4" = 1'-0"



01 Enlarged Unit Plan AL-1d
SCALE: 1/4" = 1'-0"

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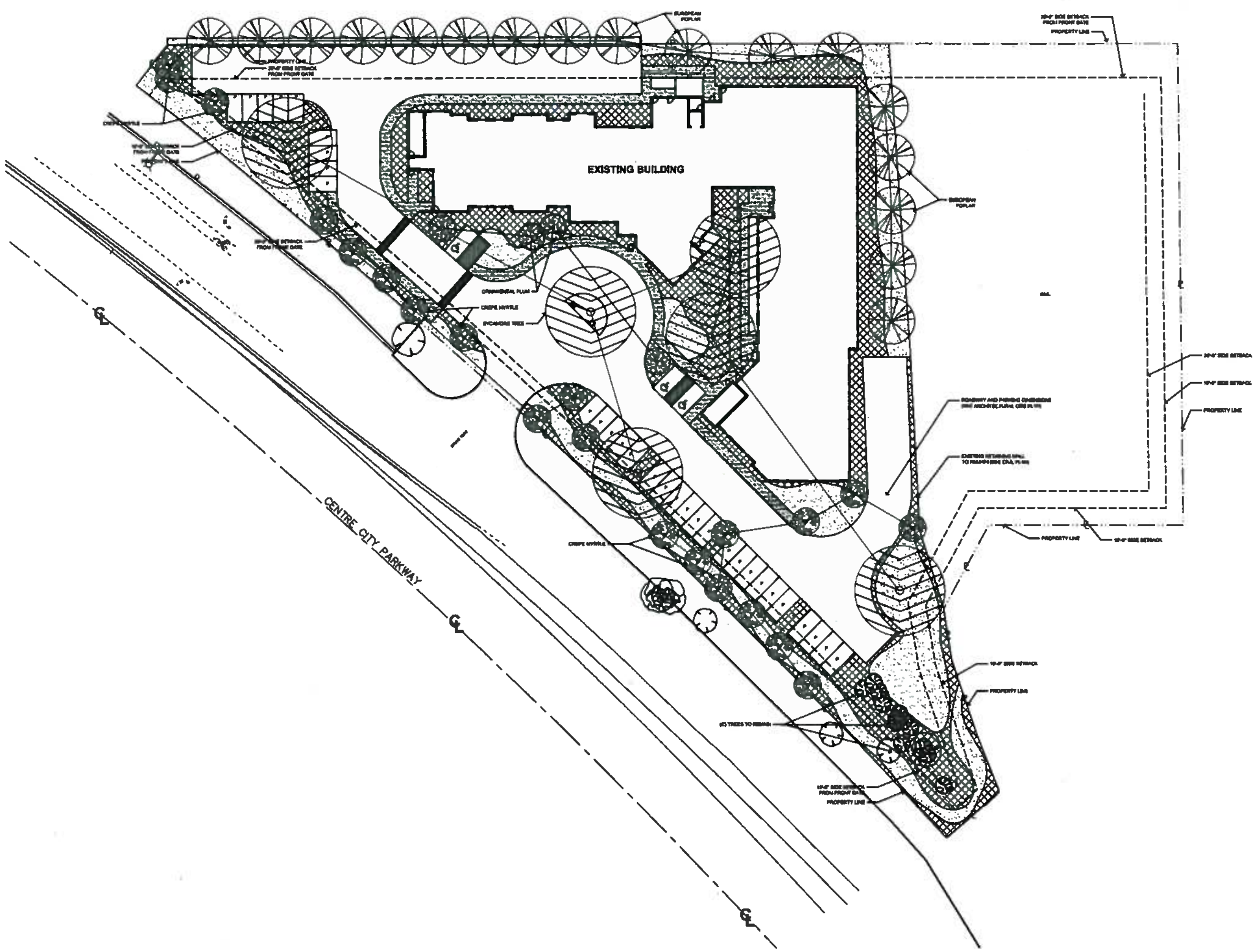
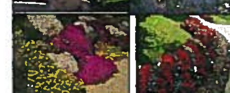
Escondido Assisted Living
Mitchell Group
1802 N. CENTRE CITY PARKWAY ESCONDIDO CA 92026 UNITED STATES

Enlarged Unit Plans
A7
PROJECT NO: 17011
PLOT DATE: 10/30/2017
ESCONDIDO SD.pln



LEGEND		SIZE	SPACING
	LAYERED LANDSCAPE AREA/ DROUGHT TOLERANT PLANT MATERIAL D.G & COBBLE AREA, DRY "RIVERBED" AND BASIN AREA	T.B.D.	
	Platanus racemosa "California Sycamore"	36" BOX	PER PLAN
	Lagerstroemia "Crepe Myrtle"	36" BOX	PER PLAN
	Populus "European poplar"	36" BOX	PER PLAN
	Prunus cerasifera "Ornamental Plum Tree"	36" BOX	PER PLAN

PICTURE	NAME
	LANTANA
	KANGAROO PAW
	CEANOTHUS
	ICEBERG ROSE
	GAZANIA MULTI-COLOR
	RIVER BED

ESCONDIDO ASSISTED LIVING: Escondido Landscape Plan

SCALE: 1/32"
10/26/2017
NORTH

Materia
Architecture · Urbanism · Landscape

A PROJECT FOR: MITCHELL GROUP

ESCONDIDO ASSISTED LIVING
Escondido Landscape Plan
1802 N. CENTRE CITY PARKWAY
ESCONDIDO CA 92026

NO.	DESCRIPTION	DATE
.		10.26.2017

PA/PM: T. WILSON
DRAWN BY: D. CALDERON
JOB NO.:

SHEET
AS-101

Jay Paul

From:	Erica Martinez <emartinez@RinconTribe.org>
Sent:	Monday, December 11, 2017 8:54 AM
To:	Jay Paul
Cc:	Destiny Colocho
Subject:	Escondido Assisted Living Facility

Dear Mr. Paul:

This letter is written on behalf of the Rincon Band of Luiseno Indians. We have received your notification regarding the Escondido Assisted Living Facility and we thank you for the opportunity to consult on this project. The location you have identified is within the Territory of the Luiseño people, and is also within Rincon's specific are of Historic interest.

Embedded in the Luiseño Territory are Rincon's history, culture and identity. The project is within the Luiseño Aboriginal Territory of the Luiseño people. Thank you for the notification regarding the above referenced project. The Rincon Band would like to request AB 52 consultation at this time. In addition, we would like to request CAD/shape files of the project area and or plans to determine the extent of ground disturbances. We would also like to request a Cultural Assessment be conducted and that a copy of the report be provided, to include the records and reports from the records search results.

We look forward to hearing from you. If there are any questions or concerns please do not hesitate to contact our office at your convenience.

Thank you for the opportunity to protect and preserve our cultural assets.

Erica A. Ortiz-Martinez
Administrative Assistant

For Destiny Colocho, Manager

Cultural Resources Department
Rincon Band of Luiseño Indians
1 West Tribal Road | Valley Center, CA 92082
Office:760-297-2635
Fax: 760-692-1498
Email: emartinez@rincontribe.org

Rincon Band of Luiseño Indians
www.rincontribe.org

NATIVE AMERICAN CONSULTATION

DATE: **12-21-2017 (3:00 p.m.) Conference Call**

TRIBE: **Rincon Band of Luiseno Indians**

ATTENDANCE: **Adam Finestone, Jay Paul, Density Colocho (by phone)**

Projects:

1. PHG17-0028 Escondido Senior Living – 220 N. Quince Street

   - Has a records search and cultural study been done? Staff currently reviewing study. When records searches are done, like to review the appendices also.
   - Don't need cad/shape files if provide detailed project location/address, cross street. etc. The cad/shape files help their GIS tech to do a records search.
   - Destiny Comments – did a quick records search and did not see any specific concerns with this site. No know sites within close proximity to the project. Project site appears to be within a disturbed area in urban core of city and surrounded by development/streets. Want to review the cultural analysis for the site and will provide fil response and then will conclude consultation. Recommends conditions to address any inadvertent discoveries.

2. PHG17-0014 Starbucks – 350 W. Valley Parkway

   - Discussed project location and project site previously disturbed with commercial development and site fully developed. Project to be constructed within existing parking lot of the Signature Theatre commercial center.
   - Destiny indicated there were no identified resources within ½ of the site. Did not see any concern with the project and would concluded consultation.

3. PHG17-0025 Residential Care Facility – 1802 N. Centre City Parkway

   - Discussion of project environmental setting, previous grading and location adjacent to creek. Additional grading would include extension of retaining wall and fill towards southern area of site. Applicant trying to stay out of creek to avoid potential impacts. Would require an update cultural analysis.
   - Destiny indicated she did a quick records search and did not see any resources within close proximity to the site. Wants to review the updated cultural analysis and project may require monitoring and measures for inadvertent discoveries and procedures for any resources that may be discovered. Preferred resources be left in situ rather than collection.

4. ENV17-0010 MND for Single-Family Residence – 24820 Lake Wohlford Court.

   - Discussed the project setting and that no grading was proposed due to the previous site grading that created the access, pad and utilities to the site. However, trenching was proposed for new septic system/leach lines in the undisturbed area. Discussed the cultural analysis and Tribal Cultural Analysis sections of the draft Initial Study document (pages 20 – 22) indicating low potential impact due to previous site disturbance. Indicated the project description should include more details regarding the environmental setting and previous site disturbance and grading to support cultural findings.

- Destiny did a quick records search and did not see any known resource in close proximity. However, to be cautious due to nature of the area, recommended a detailed records search for the site and preliminary cultural assessment. They would then review the cultural assessment and provide additional comments and determine whether any monitoring would be recommended.

NATIVE AMERICAN CONSULTATION
AB 52

DATE: **2-22-2018 (10:30 p.m.) Meeting Planning Conf. Room**

TRIBE: **San Luis Rey Band- Luiseno**

ATTENDANCE: **Mike Strong, Peggy Gentry, PJ Stoneburner, Cami Mojado, Banning Taylor**

Projects:

1. Discussion of Peggy's projects related to the two downtown Touchstone projects.

2. Discussion of Darren's project on Lake Wohlford Rd (single-family home). Noted consultation with Rincon tribe and potential mitigation measures that would be applied to project for monitoring.

3. PHG17-0025 Residential Care Facility – 1802 N. Centre City Parkway

   - Discussion of project environmental setting, previous grading and location adjacent to creek. Additional grading would include extension of retaining wall, with combination cut and fill.
   - Noted San Luis Rey did not respond to the letter and email sent on November 7, 2017.
   - Indicated had consulted with Rincon Tribe regarding the project, and indicated updated cultural analysis would be prepared as part of the proposed Mit. Neg. Dec. and that the standard 10 mitigation measures would be included in the environmental review.

4. Discussed the ongoing cultural monitoring and on-site resources for the Exeter industrial development. Discussed potential conservation easement of who to enter into with. This would be a private agreement between the tribe and the owner/developer. Need to be done prior to occupancy and protect the cultural feature. Also discuss the need to only have one representative from each nation for a project. Questioned what steps need to be taken in any necessary letter from consultant? Cami will work with their tribal attorney Merri on the language.

2-22-18 10:30 (THURS)

MIKE STRONG
PJ STONEBURNER
CAMI MOJADO
BANNING TAYLOR

PEGGY GENTRY

AB 52 CONSULTATION

EXETER- CONSERVATION EASEMENT? PRIVATE
WHO TO ENTER INTO THIS WITH?
(prior to occupancy) protection of features in perpetuity!

Keep City in loop

— Scott Macy —

ONE REP from each NATION? L & K

(*) WHAT STEPS NEED TO BE TAKEN IN LTR FROM CONSULTANT

○ will work with Macy on Language

(1802 N.CCP)

SCIC - project have been going on?

DISCUSSED project description & mitigation measures & Rincon consult

---

Darren

○ DISCUSSED - Rincon consult & potential mitigation measures
worst records search - update cultural analysis

File No. PHG 17-0025

DECLARATION OF SERVICE BY MAIL

(C.C.P. 1013a and 2015.5)

I Joanne Tasher ____________ declare: that I am, and was at the time of service of the papers referred to, over the age of eighteen years; and I am employed in the County of San Diego, California, in which the mailing occurred. My business address is 201 North Broadway, Escondido, California. I served the following documents:

Senate Bill 18 Native American Consultation letter for Case No. PHG 17-0025 for a GPA associated with a CUP to develop a 3-story residential care facility,________________

The original, or true and correct copy, is attached by:

__XX__ placing a copy in a separate envelope

______ making a copy in the form of a postcard

______ folding a copy

for each person on the attached list, addressed as indicated on it, and depositing the same, with postage fully prepaid, in the United States mail at Escondido, California March 28, 2018.

I certify (or declare) under penalty of perjury that the foregoing is true and correct.
Executed these dates listed above, at Escondido, California.

J. Tasher

(Signature)

PROOF OF SERVICE BY MAIL

Bill Martin, AICP
Director of Community Development
Planning Division
201 North Broadway, Escondido, CA 92025
Phone: 760-839-4671 Fax: 760-839-4313

Sent by U.S. Mail

March 28, 2018

Robert Welch, Chairperson
Viejas Band of Kumeyaay Indians
1 Viejas Grade Rd
Alpine, CA 91901

RE: **SENATE BILL 18 CONSULTATION**
GENERAL PLAN TEXT AMENDMENT
City Case Number: PHG 17-0025

Dear Mr. Welch:

Please consider this letter as notification in accordance with the provisions of California Senate Bill 18 (SB18). The purpose of this letter is to provide notification and to initiate tribal consultation regarding a proposed text amendment to the Escondido General Plan. The City of Escondido will serve as the lead agency under the California Environmental Quality Act (CEQA) for the project.

Your name has been identified in the Native American Tribal Consultation List received from the Native American Heritage Commission in response to Senate Bill 18 routing of the proposed request for an Amendment to the General Plan.

Project Description:

The purpose of the amendment is to allow non-residential structures up to three stories in height within the residential Suburban land-use designation, where the Suburban designation only allows residential and non-residential structures up to two stories in height. The request for the Amendment to the General Plan is associated with a proposed Conditional Use Permit (CUP) to develop a three-story, 71,316 SF residential-care facility to accommodate up to 98 residents on approximately 3.03 acres of land. A Conditional Use Permit previously was approved for the development of an approximately 74,000 SF residential-care facility on the subject site. The site was graded in accordance with the previously approved development plan (to include cut and fill) and a retaining wall up to 14 feet in height along the eastern side of the Reidy Creek drainage course. However, the building never was constructed and the CUP subsequently expired.

A Negative Declaration/Mitigated Negative Declaration is proposed to be prepared for the project and will be issued for 30-day public review and comment once initial consultation has been concluded. Comments received during the consultation period will be incorporated into the draft document.

Location and Environmental Setting:

The proposed General Plan text amendment would apply Citywide to any parcels within the Suburban land-use designation. However, the proposed amendment would be limited to non-residential development that met specific location and design criteria.

The approximately 3.03-acre project site is located in the City of Escondido, County of San Diego, on the eastern side of North Centre City Parkway, south of Iris Lane, addressed as 1802 N. Centre City Parkway (APN 226-190-22). The parcel fronts onto and takes access from Centre City Parkway, which is classified as a Major Circulation Element Road (102' ultimate right-of-way). The western portion of the site (proposed development area) previously was graded. The eastern area of the property includes the Reidy Creek drainage course, which bisects the site from north to south. The creek will be retained as part of the project.

Your Tribe's input is important to the City's planning process. We are requesting that you advise us at the earliest possible time of your interest in consulting on the subject action. Pursuant to Government Code Section 65352.3(a)(2), please respond within 90 days of the date of this notice if your tribe wishes to consult with the City regarding this matter. Requests for consultation can be sent to me at the address below email at jpaul@escondido.org.

Sincerely,

JPaul

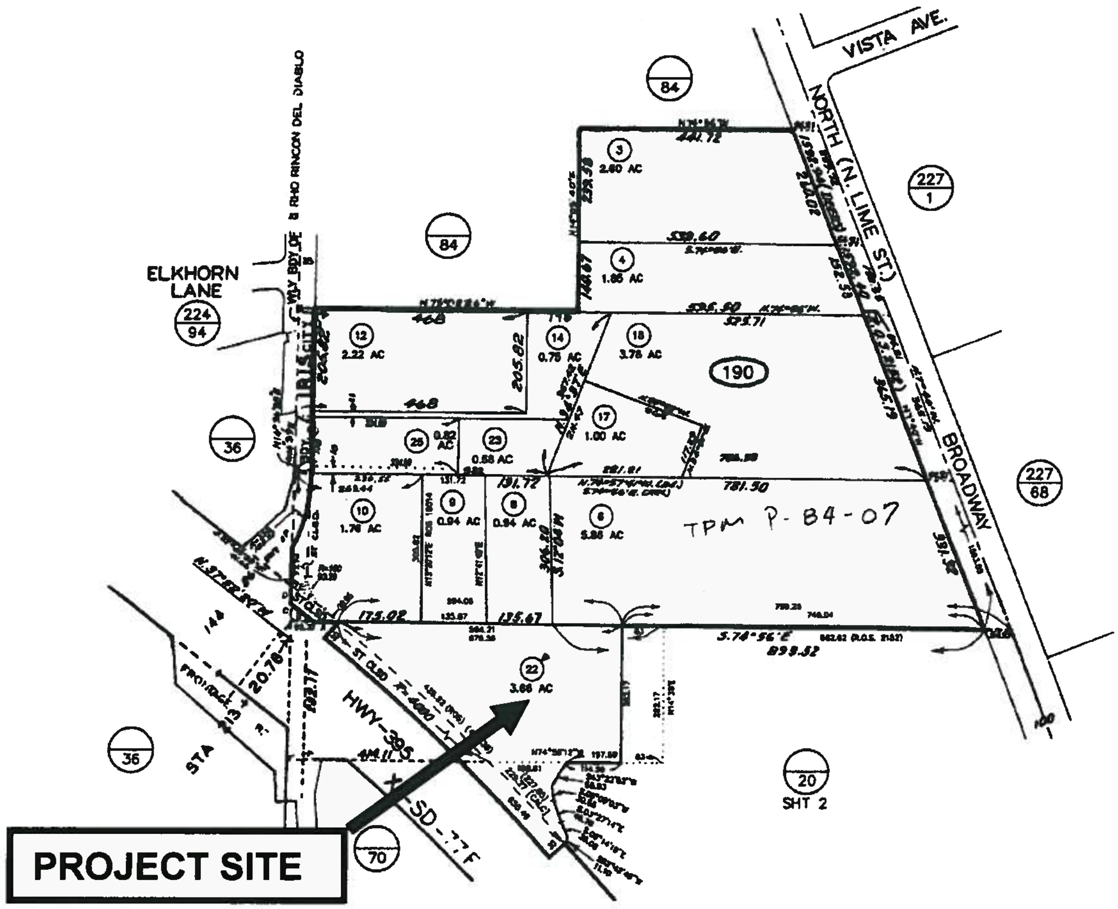
Jay Paul
Senior Planner
City of Escondido
201 North Broadway
Escondido, CA 92025

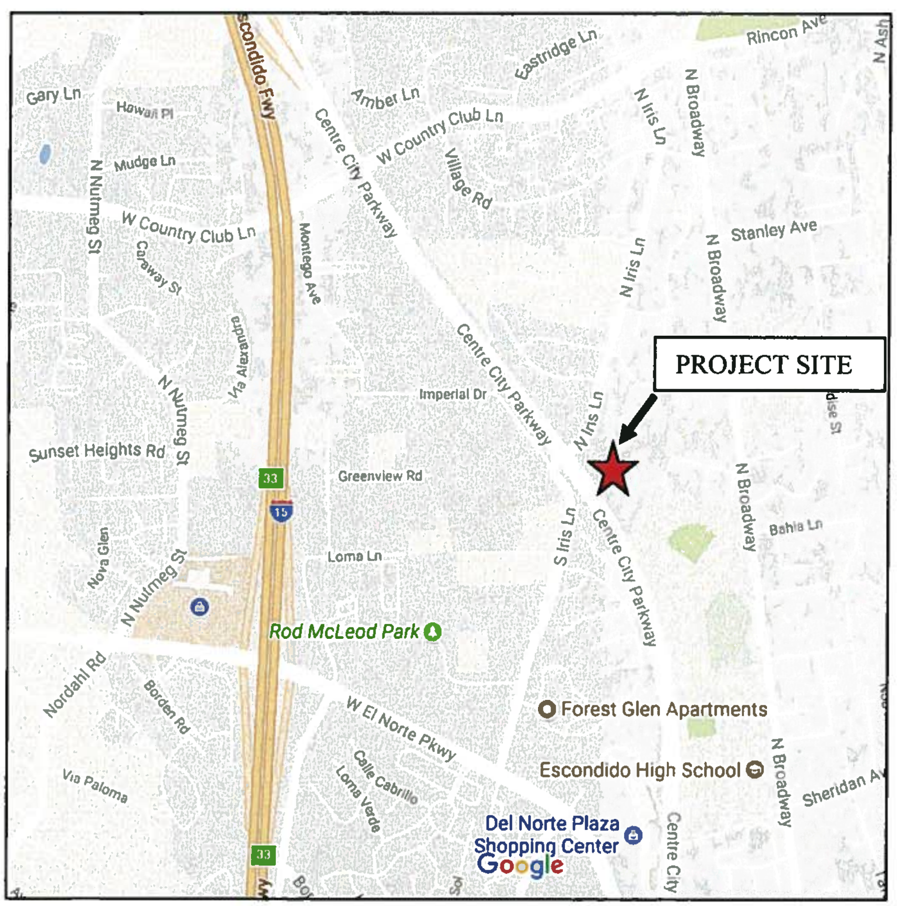
Phone: (760) 839-4537
Email: jpaul@escondido.org

Attachments: Location map and site plan

Location Map

1802 N. Centre City Parkway (HWY 395)
APN 226-190-22





ASSESSORS PARCEL NUMBER
226-190-2200

REQUIRED PERMITS:

ZONING - R-1-10

GENERAL PLAN - 5

PROPOSED LAND USE - USE TITLE 6516 -LICENSED RESIDENTIAL CARE FACILITY

SITE DATA	
SITE AREA	151,588.8 SF (3.03 ACRES)
BUILDING FOOTPRINT	27,259 SF
LOT COVERAGE	27,259/151,588.8 = .18
COVERAGE FACTOR	18%
PAVEMENT AREA	40,885 SF (FRONTAGE AREA INCLUDED)
TOTAL LANDSCAPE AREA	45,868 SF
TOTAL DETENTION AREA	2435 SF
TOTAL BUILDING AREA	71,316 SF
TOTAL PROPOSED DWELLING UNITS	90 UNITS/44,806 SF
PROPOSED DENSITY (UNITS/NET ACRE)	90/3.48 = 25.86
FAR	71,316/151,588.8 = .47 PERMITTED PER SEC 33-173 (e) 47%

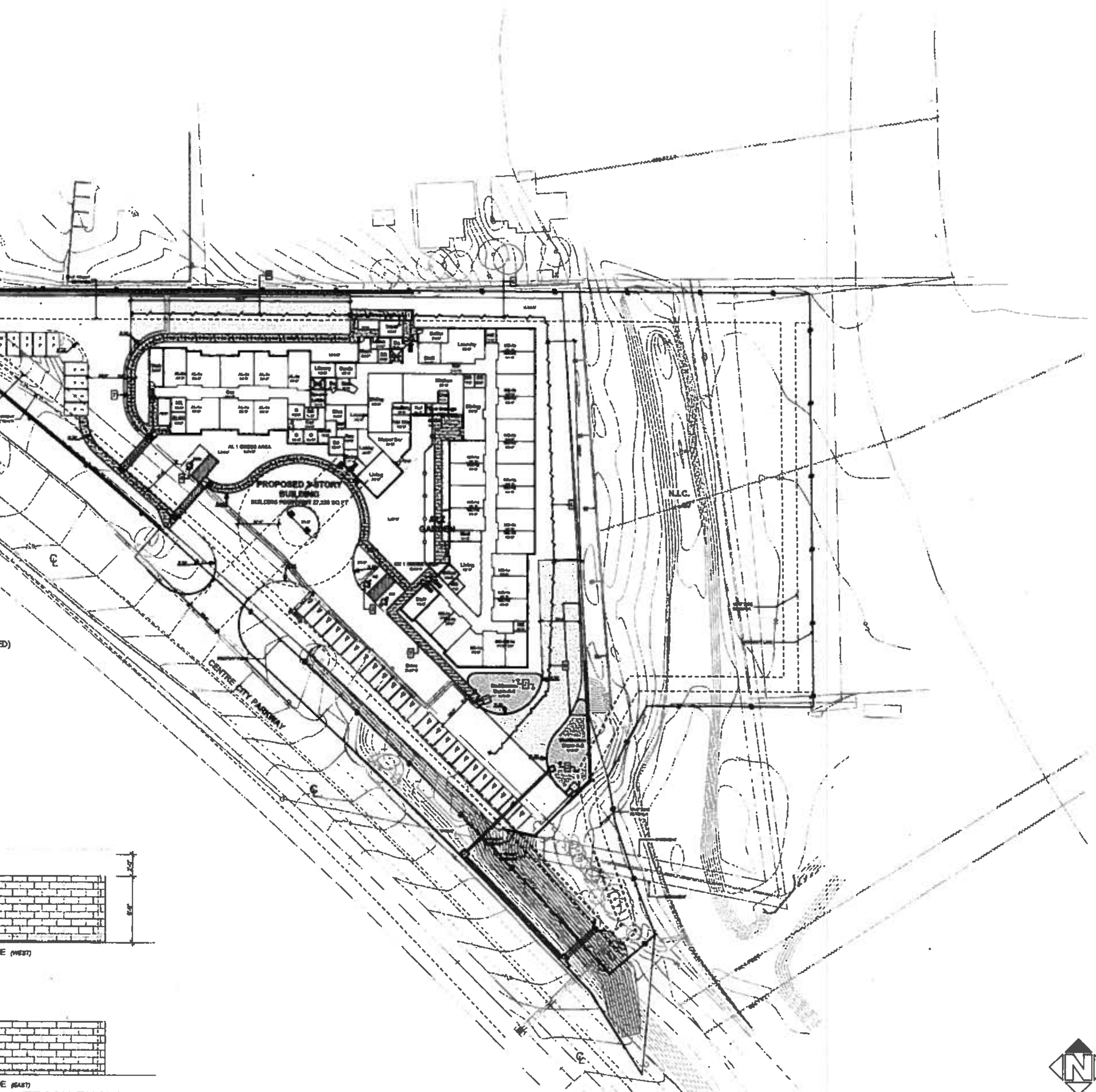
PARKING

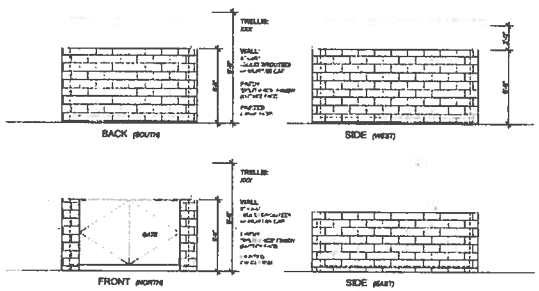
SPACES REQUIRED SEC. 33-765 EMC) — 33 (1 SPACE/ 3 BEDS FOR A PROFESSIONAL CARE FACILITY,

98 BEDS /3 = 32.67

ACCESSIBLE SPACES REQUIRED PER CBC TABLE 11B-208.2 = 2 SPACES (1 VAN & 1 ACCESSIBLE)

SPACES PROVIDED — 35 INCLUDING 1 VAN & 2 ACCESSIBLE SPACES





07 TRASH ENCLOSURE DETAIL
SCALE: 1/4" = 1'-0"

01 Site Plan
SCALE: 1" = 30'

SITE PLAN LEGEND

- NEW CONCRETE WALKWAY OR PAVING
- FIRE ACCESS ROAD
- WATER DETENTION
- NOT INCORPORATED, UNDEVELOPED (N.I.C.)
- ACCESSIBLE ROUTE OF TRAVEL - (5% MAX - 2% MAX CROSS SLOPE)
- MEANS OF EGRESS
- FIRE HYDRANT
- PROPERTY LINE
- WOOD FENCE
- 150'-0" FIRE ACCESS SPACE
- KEYNOTE NUMBER

FOR FURTHER SITE INFORMATION, SEE CIVIL AND LANDSCAPE PLANS

SITE PLAN KEYNOTES

1. TRASH ENCLOSURE AREA
2. BIOFILTRATION BASIN
3. ACCESSIBLE PARKING STALL TYP.
4. VAN ACCESSIBLE PARKING STALL
5. PARKING STALL TYP.
6. FIRE ACCESS REQ'D LENGTH 150'-0"
7. HARDSCAPE TYP.

Gross Area Calcs

	Area (SF)
AL 1 GROSS AREA	8,474
AL 2 GROSS AREA	6,623
AL 2 GROSS AREA	13,817
AL 3 GROSS AREA	21,800
COMMON 1 GROSS AREA	8,329
COMMON 2 GROSS AREA	2,817
MC 1 GROSS AREA	12,458
	71,316 sq ft

Parking Count

	Qty
HC	2
P	32
VAN	1
	35

Building Area Calculations

Area Type	Qty.	Area (SF)
. ADMINISTRATION	9	1,243
. ASSISTED LIVING - 1 BED	41	22,190
. ASSISTED LIVING - 2 BED	8	6,408
. ASSISTED LIVING - STUDIO	19	7,623
. CIRCULATION	5	12,669
. CIRCULATION - VERTICAL	5	817
. CTRY KITCHEN	7	1,251
. DINING	9	3,827
. LOBBY	3	567
. MECHANICAL	8	739
. MEMORY CARE - 1 BED	22	8,685
. RESIDENT ACTIVITY	4	1,613
. RESTROOMS	6	369
. SERVICE	19	3,128
. TERRACE	3	949
	167	71,865 sq ft

Building Area Calculations by Floor

Area Type	Qty.	Area (SF)
First Floor		
ADMINISTRATION	9	1,243
ASSISTED LIVING - 1 BED	6	3,156
ASSISTED LIVING - STUDIO	2	810
CIRCULATION	3	4,457
CIRCULATION - VERTICAL	5	817
CTRY KITCHEN	7	1,251
DINING	9	3,827
LOBBY	3	567
MECHANICAL	4	454
MEMORY CARE - 1 BED	22	8,685
RESTROOMS	6	369
SERVICE	8	1,478
	83	27,101 sq ft
Second Floor		
ASSISTED LIVING - 1 BED	17	9,243
ASSISTED LIVING - 2 BED	4	3,204
ASSISTED LIVING - STUDIO	8	3,154
CIRCULATION	1	4,128
MECHANICAL	2	142
RESIDENT ACTIVITY	3	1,264
SERVICE	6	695
TERRACE	1	377
	42	22,405 sq ft
Third Floor		
ASSISTED LIVING - 1 BED	18	9,791
ASSISTED LIVING - 2 BED	4	3,204
ASSISTED LIVING - STUDIO	9	3,638
CIRCULATION	1	4,085
MECHANICAL	2	142
RESIDENT ACTIVITY	1	348
SERVICE	5	757
TERRACE	2	572
	42	22,359 sq ft
	167	71,865 sq ft

IPA IRWIN PARTNERS ARCHITECTS
245 Fischer Avenue, Suite B-2 Costa Mesa CA 92626
(714) 557 2448 www.ipaoc.com
ARCHITECTURE PLANNING CONSULTING

Escondido Assisted Living
Mitchell Group

1802 N. CENTRE CITY PARKWAY ESCONDIDO CA 92026 UNITED STATES

Site Plan
A0

PROJECT NO: 17011
PLOT DATE: 10/30/2017
ESCONDIDO SD.pln

Jeff Grubbe, Chairperson
Agua Caliente Band of Cahuilla Indians
5401 Dinah Shore Drive
Palm Springs, CA 92264

Edwin Romero, Chairperson
Barona Group of the Capitan Grande
1095 Barona Rd
Lakeside, CA 92040

Ralph Goff, Chairperson
Campo Band of Mission Indians
36190 Church Road, Suite 1
Campo, CA 91906

Robert Pinto, Chairperson
Ewiiaapaayp Tribal Office
4054 Willows Road
Alpine, CA 91901

Michael Garcia, Vice Chair
Ewiiaapaayp Tribal Office
4054 Willows Road
Alpine, CA 91901

Virgil Perez, Chairperson
Iipay Nation of Santa Ysabel
PO Box 130
Santa Ysabel, CA 92070

Rebecca Osuna, Chairperson
Inaja-Cosmit Band of Mission Indians
2005 S. Escondido Blvd
Escondido, CA 92025-3207

Erica Pinto, Chairperson
Jamul Indian Village
PO Box 612
Jamul, CA 91935

Carmen Lucas
Kwaaymii Laguna Band of Mission Indians
PO Box 775
Pine Valley, CA 91962

Thomas Rodriguez, Chairperson
La Jolla Band of Mission Indians
22000 Highway 76
Pauma Valley, CA 92061

Gwendolyn Parada, Chairperson
La Posta Band of Mission Indians
8 Crestwood Rd
Boulevard, CA 91905

Javaughn Miller, Tribal Administrator
La Posta Band of Mission Indians
8 Crestwood Rd
Boulevard, CA 91905

Angela Elliott Santos
Manzanita Band of Kumeyaay Nation
PO Box 1302
Boulevard, CA 91905

Virgil Oyos, Chairperson
Mesa Grande Band of Mission Indians
PO Box 270
Santa Ysabel, CA 92070

Mario Morales, Cultural Resources Rep
Mesa Grande Band of Mission Indians
PMB 366
35008 Pala Temecula Road
Pala, CA 92059

Robert Smith
Pala Band of Mission Indians Tribal
Historic Preservation Office
12196 Pala Mission Rd
Pala, CA 92059

Temet Aguilar, Chairperson
Pauma & Yuima
PO Box 369
Pauma Valley, CA 92061

Mark Macarro, Chairperson
Pechanga Band of Mission Indians
PO Box 1477
Temecula, CA 92593

Destiny Colocho
Rincon Band of Mission Indians
Cultural Resource Dept.
1 West Tribal Rd.
Valley Center, CA 92082

Bo Mazzetti, Chairperson
Rincon Band of Mission Indians
1 West Tribal Rd.
Valley Center, CA 92082

Carmen Mojado, Manager
Cultural Resources
San Luis Rey Band of Mission Indians
1889 Sunset Dr.
Vista, CA 92081

Allen Lawson, Chairperson
San Pasqual Band of Mission Indians
PO Box 365
Valley Center, CA 92082

Scott Cozart, Chairperson
Soboba Band of Luiseno Indians
PO Box 487
San Jacinto, CA 92583

Cody J. Martinez, Chairperson
Sycuan Band of Mission Indians
1 Kwaaypaay Court
El Cajon, CA 92019

Robert Welch, Chairperson
Viejas Band of Kumeyaay Indians
1 Viejas Grade Road
Alpine, CA 91901

PHG 17-0025 SB 18 letters
1802 N. CCP for a CUP & GPA for a 3
story residential care facility
Letters sent 3/28/18

Native American Heritage Commission
Tribal Consultation List
San Diego County
3/23/2018

Agua Caliente Band of Cahuilla Indians
Jeff Grubbe, Chairperson
5401 Dinah Shore Drive
Palm Springs, CA, 92264
Phone: (760) 699 - 6800
Fax: (760) 699-6919
Cahuilla
Luiseno

Barona Group of the Capitan Grande
Edwin Romero, Chairperson
1095 Barona Road
Lakeside, CA, 92040
Phone: (619) 443 - 6612
Fax: (619) 443-0681
cloyd@barona-nsn.gov
Kumeyaay

Campo Band of Mission Indians
Ralph Goff, Chairperson
36190 Church Road, Suite 1
Campo, CA, 91906
Phone: (619) 478 - 9046
Fax: (619) 478-5818
rgoff@campo-nsn.gov
Kumeyaay

Ewiiaapaayp Tribe
Robert Pinto, Chairperson
4054 Willows Road
Alpine, CA, 91901
Phone: (619) 445 - 6315
Fax: (619) 445-9126
wmicklin@leaningrock.net
Kumeyaay

Ewiiaapaayp Tribe
Michael Garcia, Vice Chairperson
4054 Willows Road
Alpine, CA, 91901
Phone: (619) 445 - 6315
Fax: (619) 445-9126
michaelg@leaningrock.net
Kumeyaay

Iipay Nation of Santa Ysabel
Virgil Perez, Chairperson
P.O. Box 130
Santa Ysabel, CA, 92070
Phone: (760) 765 - 0845
Fax: (760) 765-0320
Kumeyaay

Inaja Band of Mission Indians
Rebecca Osuna, Chairperson
2005 S. Escondido Blvd.
Escondido, CA, 92025
Phone: (760) 737 - 7628
Fax: (760) 747-8568
Kumeyaay

Jamul Indian Village
Erica Pinto, Chairperson
P.O. Box 612
Jamul, CA, 91935
Phone: (619) 669 - 4785
Fax: (619) 669-4817
mohusky@jiv-nsn.gov
Kumeyaay

Kwaaymii Laguna Band of Mission Indians
Carmen Lucas,
P.O. Box 775
Pine Valley, CA, 91962
Phone: (619) 709 - 4207
Kumeyaay
Kumeyaay

La Jolla Band of Luiseno Indians
Thomas Rodriguez, Chairperson
22000 Highway 76
Pauma Valley, CA, 92061
Phone: (760) 742 - 3771
Luiseno

La Posta Band of Mission Indians
Javaughn Miller, Tribal Administrator
8 Crestwood Road
Boulevard, CA, 91905
Phone: (619) 478 - 2113
Fax: (619) 478-2125
jmiller@LPtribe.net
Kumeyaay

La Posta Band of Mission Indians
Gwendolyn Parada, Chairperson
8 Crestwood Road
Boulevard, CA, 91905
Phone: (619) 478 - 2113
Fax: (619) 478-2125
LP13boots@aol.com
Kumeyaay

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This list is only applicable for consultation with Native American tribes under Government Code Sections 65352.3 and 65362.4 et seq for the proposed Escondido Assisted Living - The Mitchell Group Project, San Diego County.

Native American Heritage Commission
Tribal Consultation List
San Diego County
3/23/2018

Manzanita Band of Kumeyaay Nation
Angela Elliott Santos, Chairperson
P.O. Box 1302 — Kumeyaay
Boulevard, CA, 91905
Phone: (619) 766 - 4930
Fax: (619) 766-4957

Mesa Grande Band of Mission Indians
Virgil Oyos, Chairperson
P.O Box 270 — Kumeyaay
Santa Ysabel, CA, 92070
Phone: (760) 782 - 3818
Fax: (760) 782-9092
mesagrandeband@msn.com

Mesa Grande Band of Mission Indians
Mario Morales, Cultural Resources Representative
PMB 366 35008 Pala Temecula Rd. — Kumeyaay
Pala, CA, 92059
Phone: (760) 622 - 1336

Pala Band of Mission Indians
Robert Smith, Chairperson
12196 Pala Mission Road — Cupeno, Luiseno
Pala, CA, 92059
Phone: (760) 891 - 3500
Fax: (760) 742-3189
rsmith@palatribe.com

Pauma Band of Luiseno Indians - Pauma & Yuima Reservation
Temet Aguilar, Chairperson
P.O. Box 369 — Luiseno
Pauma Valley, CA, 92061
Phone: (760) 742 - 1289
Fax: (760) 742-3422
bennaecalac@aol.com

Pechanga Band of Mission Indians
Mark Macarro, Chairperson
P.O. Box 1477 — Luiseno
Temecula, CA, 92593
Phone: (951) 770 - 6000
Fax: (951) 695-1778
epreston@pechanga-nsn.gov

Rincon Band of Mission Indians
~~Jim McPherson~~, ~~Tribal Historic~~ Preservation Officer
1 West Tribal Road — Luiseno
Valley Center, CA, 92082
Phone: (760) 749 - 1051
Fax: (760) 749-5144
vwhipple@rincontribe.org

Rincon Band of Mission Indians
Bo Mazzetti, Chairperson
1 West Tribal Road — Luiseno
Valley Center, CA, 92082
Phone: (760) 749 - 1051
Fax: (760) 749-5144
bomazzetti@aol.com

San Luis Rey Band of Mission Indians
San Luis Rey, Tribal Council
1889 Sunset Drive — Luiseno
Vista, CA, 92081
Phone: (760) 724 - 8505
Fax: (760) 724-2172
cjmojado@slrmissionindians.org

San Pasqual Band of Mission Indians
Allen E. Lawson, Chairperson
P.O. Box 365 — Kumeyaay
Valley Center, CA, 92082
Phone: (760) 749 - 3200
Fax: (760) 749-3876
allenl@sanpasqualtribe.org

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Soboba Band of Luiseno Indians
Scott Cozart, Chairperson
P. O. Box 487 — Cahuilla, Luiseno
San Jacinto, CA, 92583
Phone: (951) 654 - 2765
Fax: (951) 654-4198
jontiveros@soboba-nsn.gov

Sycuan Band of the Kumeyaay Nation
Cody J. Martinez, Chairperson
1 Kwaaypaay Court — Kumeyaay
El Cajon, CA, 92019
Phone: (619) 445 - 2613
Fax: (619) 445-1927
ssilva@sycuan-nsn.gov

Viejas Band of Kumeyaay Indians
Robert Welch, Chairperson
1 Viejas Grade Road — Kumeyaay
Alpine, CA, 91901
Phone: (619) 445 - 3810
Fax: (619) 445-5337
jhagen@viejas-nsn.gov

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RECEIVED
APR 16 2018
PLANNING DIVISION

VIEJAS
TRIBAL GOVERNMENT

P.O. Box 908
Alpine, CA 91903
#1 Viejas Grade Road
Alpine, CA 91901

Phone: 6194453810
Fax: 6194455337
viejas.com

April 9, 2018

Jay Paul
Senior Planner
City of Escondido
201 North Broadway
Escondido, CA 92025

RE: City Case Number: PHG 17-0025

Dear Ms. Madamba,

The Viejas Band of Kumeyaay Indians ("Viejas") has reviewed the proposed project and at this time we have determined that the project site has cultural significance or ties to the Kumeyaay Nation. We recommend that you notify the:

San Pasqual Band of Mission Indians
P.O. Box 365
Valley Center, Ca 92082

Additionally, we request, as appropriate, the following:

- All NEPA/CEQA/NAGPRA laws be followed
- Immediately contact San Pasqual on any changes or inadvertent discoveries.

Thank you for your collaboration and support in preserving our Tribal cultural resources. I look forward to hearing from you. Please call me at 619-659-2312 or Ernest Pingleton at 619-659-2314, or email, rteran@viejas-nsn.gov or epingleton@viejas-nsn.gov, for scheduling. Thank you.

Sincerely,

Ray Teran, Resource Management
VIEJAS BAND OF KUMEYAAY INDIANS

Cc: San Pasqual

NATIVE AMERICAN HERITAGE COMMISSION
Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710

May 17, 2018

Arleen Garcia-Herbst
Spindrift Archaeological Consulting

Sent by E-mail: arleen@spindriftarchaeology.com

RE: Proposed 1802 N. Centre City Parkway Project, City of Escondido; Valley Center USGS Quadrangle, San Diego County, California

Dear Ms. Garcia-Herbst:

A record search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed for the area of potential project effect (APE) referenced above with negative results. Please note that the absence of specific site information in the *Sacred Lands File* does not indicate the absence of Native American cultural resources in any APE.

Attached is a list of tribes culturally affiliated to the project area. I suggest you contact all of the listed Tribes. If they cannot supply information, they might recommend others with specific knowledge. The list should provide a starting place to locate areas of potential adverse impact within the APE. By contacting all those on the list, your organization will be better able to respond to claims of failure to consult. If a response has not been received within two weeks of notification, the NAHC requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact via email: gayle.totton@nahc.ca.gov.

Sincerely,

Gayle Totton

Gayle Totton, M.A., PhD.
Associate Governmental Program Analyst
(916) 373-3714

Native American Heritage Commission
Native American Contact List
San Diego County
5/17/2018

Agua Caliente Band of Cahuilla Indians
Patricia Garcia-Plotkin, Director
5401 Dinah Shore Drive — Cahuilla
Palm Springs, CA, 92264 — Luiseno
Phone: (760) 699 - 6907
Fax: (760) 699-6924
ACBCI-THPO@aguacaliente.net

Agua Caliente Band of Cahuilla Indians
Jeff Grubbe, Chairperson
5401 Dinah Shore Drive — Cahuilla
Palm Springs, CA, 92264 — Luiseno
Phone: (760) 699 - 6800
Fax: (760) 699-6919

Barona Group of the Capitan Grande
Edwin Romero, Chairperson
1095 Barona Road — Kumeyaay
Lakeside, CA, 92040
Phone: (619) 443 - 6612
Fax: (619) 443-0681
cloyd@barona-nsn.gov

Campo Band of Mission Indians
Ralph Goff, Chairperson
36190 Church Road, Suite 1 — Kumeyaay
Campo, CA, 91906
Phone: (619) 478 - 9046
Fax: (619) 478-5818
rgoff@campo-nsn.gov

Ewiiaapaayp Tribal Office
Robert Pinto, Chairperson
4054 Willows Road — Kumeyaay
Alpine, CA, 91901
Phone: (619) 445 - 6315
Fax: (619) 445-9126
wmicklin@leaningrock.net

Ewiiaapaayp Tribal Office
Michael Garcia, Vice Chairperson
4054 Willows Road — Kumeyaay
Alpine, CA, 91901
Phone: (619) 445 - 6315
Fax: (619) 445-9126
michaelg@leaningrock.net

Iipay Nation of Santa Ysabel
Virgil Perez, Chairperson
P.O. Box 130 — Kumeyaay
Santa Ysabel, CA, 92070
Phone: (760) 765 - 0845
Fax: (760) 765-0320

Iipay Nation of Santa Ysabel
Clint Linton, Director of Cultural Resources
P.O. Box 507 — Kumeyaay
Santa Ysabel, CA, 92070
Phone: (760) 803 - 5694
cjlinton73@aol.com

Inaja Band of Mission Indians
Rebecca Osuna, Chairperson
2005 S. Escondido Blvd. — Kumeyaay
Escondido, CA, 92025
Phone: (760) 737 - 7628
Fax: (760) 747-8568

Jamul Indian Village
Erica Pinto, Chairperson
P.O. Box 612 — Kumeyaay
Jamul, CA, 91935
Phone: (619) 669 - 4785
Fax: (619) 669-4817
mohusky@jiv-nsn.gov

Kwaaymii Laguna Band of Mission Indians
Carmen Lucas,
P.O. Box 775 — Kumeyaay
Pine Valley, CA, 91962
Phone: (619) 709 - 4207

La Jolla Band of Luiseno Indians
Thomas Rodriguez, Chairperson
22000 Highway 76 — Luiseno
Pauma Valley, CA, 92061
Phone: (760) 742 - 3771

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This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed 1802 N. Centre City Parkway Project, San Diego County.

La Posta Band of Mission Indians
Javaughn Miller, Tribal Administrator
8 Crestwood Road — Kumeyaay
Boulevard, CA, 91905
Phone: (619) 478 - 2113
Fax: (619) 478-2125
jmiller@LPtribe.net

La Posta Band of Mission Indians
Gwendolyn Parada, Chairperson
8 Crestwood Road — Kumeyaay
Boulevard, CA, 91905
Phone: (619) 478 - 2113
Fax: (619) 478-2125
LP13boots@aol.com

Manzanita Band of Kumeyaay Nation
Angela Elliott Santos, Chairperson
P.O. Box 1302 — Kumeyaay
Boulevard, CA, 91905
Phone: (619) 766 - 4930
Fax: (619) 766-4957

Mesa Grande Band of Mission Indians
Virgil Oyos, Chairperson
P.O Box 270 — Kumeyaay
Santa Ysabel, CA, 92070
Phone: (760) 782 - 3818
Fax: (760) 782-9092
mesagrandeband@msn.com

Mesa Grande Band of Mission Indians
Mario Morales, Cultural Resources Representative
PMB 366 35008 Pala Temecula Rd. — Kumeyaay
Pala, CA, 92059
Phone: (760) 622 - 1336

Pala Band of Mission Indians
Shasta Gaughen, Tribal Historic Preservation Officer
PMB 50, 35008 Pala Temecula Rd. — Cupeno, Luiseno
Pala, CA, 92059
Phone: (760) 891 - 3515
Fax: (760) 742-3189
sgaughen@palatribe.com

Pauma Band of Luiseno Indians - Pauma & Yuima Reservation
Temet Aguilar, Chairperson
P.O. Box 369 — Luiseno
Pauma Valley, CA, 92061
Phone: (760) 742 - 1289
Fax: (760) 742-3422
bennaecalac@aol.com

Pechanga Band of Mission Indians
Mark Macarro, Chairperson
P.O. Box 1477 — Luiseno
Temecula, CA, 92593
Phone: (951) 770 - 6000
Fax: (951) 695-1778
epreston@pechanga-nsn.gov

Pechanga Band of Mission Indians
Paul Macarro, Cultural Resources Coordinator
P.O. Box 1477 — Luiseno
Temecula, CA, 92593
Phone: (951) 770 - 6306
Fax: (951) 506-9491
pmacarro@pechanga-nsn.gov

Rincon Band of Mission Indians
Bo Mazzetti, Chairperson
1 West Tribal Road — Luiseno
Valley Center, CA, 92082
Phone: (760) 749 - 1051
Fax: (760) 749-5144
bomazzetti@aol.com

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Native American Heritage Commission
Native American Contact List
San Diego County
5/17/2018

Rincon Band of Mission Indians Jim McPherson, Tribal Historic Preservation Officer 1 West Tribal Road Valley Center, CA, 92082 Phone: (760) 749 - 1051 Fax: (760) 749-5144 vwhipple@rincontribe.org	Luiseno
San Luis Rey Band of Mission Indians San Luis Rey, Tribal Council 1889 Sunset Drive Vista, CA, 92081 Phone: (760) 724 - 8505 Fax: (760) 724-2172 cjmojado@slrmissionindians.org	Luiseno
San Luis Rey Band of Mission Indians 1889 Sunset Drive Vista, CA, 92081 Phone: (760) 724 - 8505 Fax: (760) 724-2172 cjmojado@slrmissionindians.org	Luiseno
San Pasqual Band of Mission Indians John Flores, Environmental Coordinator P. O. Box 365 Valley Center, CA, 92082 Phone: (760) 749 - 3200 Fax: (760) 749-3876 johnf@sanpasqualtribe.org	Kumeyaay
San Pasqual Band of Mission Indians Allen E. Lawson, Chairperson P.O. Box 365 Valley Center, CA, 92082 Phone: (760) 749 - 3200 Fax: (760) 749-3876 allenl@sanpasqualtribe.org	Kumeyaay
Soboba Band of Luiseno Indians Scott Cozart, Chairperson P. O. Box 487 San Jacinto, CA, 92583 Phone: (951) 654 - 2765 Fax: (951) 654-4198 jontiveros@soboba-nsn.gov	Cahuilla Luiseno
Soboba Band of Luiseno Indians Joseph Ontiveros, Cultural Resource Department P.O. BOX 487 San Jacinto, CA, 92581 Phone: (951) 663 - 5279 Fax: (951) 654-4198 jontiveros@soboba-nsn.gov	Cahuilla Luiseno
Soboba Band of Luiseno Indians Carrie Garcia, Cultural Resources Manager P. O. Box 487 San Jacinto, CA, 92583 Phone: (951) 654 - 2765 Fax: (951) 654-4198 carrieg@soboba-nsn.gov	Cahuilla Luiseno
Sycuan Band of the Kumeyaay Nation Cody J. Martinez, Chairperson 1 Kwaaypaay Court El Cajon, CA, 92019 Phone: (619) 445 - 2613 Fax: (619) 445-1927 ssilva@sycuan-nsn.gov	Kumeyaay
Sycuan Band of the Kumeyaay Nation Lisa Haws, Cultural Resources Manager 1 Kwaaypaay Court El Cajon, CA, 92019 Phone: (619) 312 - 1935 lhaws@sycuan-nsn.gov	Kumeyaay

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Viejas Band of Kumeyaay Indians
Robert Welch, Chairperson
1 Viejas Grade Road — Kumeyaay
Alpine, CA, 91901
Phone: (619) 445 - 3810
Fax: (619) 445-5337
jhagen@viejas-nsn.gov

Viejas Band of Kumeyaay Indians
Julie Hagen,
1 Viejas Grade Road — Kumeyaay
Alpine, CA, 91901
Phone: (619) 445 - 3810
Fax: (619) 445-5337
jhagen@viejas-nsn.gov

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This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed 1802 N. Centre City Parkway Project, San Diego County.

Native American Contacts
1802 N Centre City Pkwy Project 2018-009, San Diego County

Name	Affiliation	Date Contacted			Response Received?	Comments
		1. Letter	2. Phone	3. Phone		
Native American Heritage Commission 1550 Harbor Blvd Sacramento, CA 95814	N/A	05/15/2018 Email	N/A	N/A	Yes	05/17/2018 Rec'd response letter from NAHC, No Tribal Cultural Resources have been recorded in Project Area
Agua Caliente Band of Cahuilla Indians Jeff Grubba, Chairperson 5401 Dinah Shore Drive Palm Springs, CA, 92264 Phone: (760) 699 - 6800 Fax: (760) 699-6919	Cahuilla Luiseno	05/18/2018 Fax	N/A	N/A	No	10/18/2016: AGH received message that fax was successfully received.
Agua Caliente Band of Cahuilla Indians Patricia Garcia-Plotkin, Director 5401 Dinah Shore Drive Palm Springs, CA, 92264 Phone: (760) 699 – 6907 Fax: (760) 699-6924 ACBCI-THPO@aguacaliente.net	Cahuilla Luiseno	05/18/2018 Email 05/18/2018 Fax	N/A	N/A	Yes	05/18/2018: AGH received message "Delivery to the following recipient failed permanently: ACBCI-THPO@aguacaliente.net. Technical details of permanent failure: Google tried to deliver your message, but it was rejected by the server for the recipient domain aguacaliente.net by mail.aguacaliente.net. [74.62.3.24]. The error that the other server returned was: 554 Unknown Recipient (#5.1.1)" 05/18/2018: AGH received message that fax was successfully received.
Barona Group of the Capitan Grande Edwin Romero, Chairperson 1095 Barona Road Lakeside, CA, 92040 Phone: (619)443-6612 Fax: (619)443-0681 cloyd@barona-nsn.gov	Kumeyaay	05/18/2018 Email	N/A	N/A	No	
Campo Band of Mission Indians Ralph Goff, Chairperson 36190 Church Road, Suite 1 Campo, CA, 91906 Phone: (619)478-9046 Fax: (619)478-5818 rgoff@campo-nsn.gov	Kumeyaay	05/18/2018 Email	N/A	N/A	No	

Native American Contacts
1802 N Centre City Pkwy Project 2018-009, San Diego County

Name	Affiliation	Date Contacted			Response Received?	Comments
		1. Letter	2. Phone	3. Phone		
Ewiiaapaayp Tribal Office Robert Pinto, Chairperson 4054 Willows Road Alpine, CA, 91901 Phone: (619)445-6315 Fax: (619)445-9126	Kumeyaay	05/18/2018 Fax	N/A	N/A	No	05/18/2018: AGH received message that fax was successfully received.
Ewiiaapaayp Tribal Office Michael Garcia, Vice Chairperson 4054 Willows Road Alpine, CA, 91901 Phone: (619)445-6315 Fax: (619)445-9126 michaelg@leaningrock.net	Kumeyaay	05/18/2018 Email	N/A	N/A	No	
Iipay Nation of Santa Ysabel Virgil Perez, Chairperson P.O. Box 130 Santa Ysabel, CA 92070 Phone: (760)765-0845 Fax: (760)765-0320	Kumeyaay	05/18/2018 Fax 05/19/2018 Certified Mail	N/A	N/A	No	05/18/2018: AGH received message that fax was not successfully received. Reason: No Answer.
Iipay Nation of Santa Ysabel Clint Linton, Director of Cultural Resources P.O. Box 507 Santa Ysabel, CA 92070 Phone: (760)803-5964 cjlinton73@aol.com	Kumeyaay	05/18/2018 Email	N/A	N/A	No	05/18/2018: AGH received message that fax was not successfully received. Reason: No Answer.
Inaja Band of Mission Indians Rebecca Osuna, Chairperson 2005 S. Escondido Blvd. Escondido, CA, 92025 Phone: (760)737-7628 Fax: (760)747-8568	Kumeyaay	05/18/2018 Fax	N/A	N/A	No	05/18/2018: AGH received message that fax was successfully received.

Native American Contacts
1802 N Centre City Pkwy Project 2018-009, San Diego County

Name	Affiliation	Date Contacted			Response Received?	Comments
		1. Letter	2. Phone	3. Phone		
Jamul Indian Village Erica Pinto, Chairperson P.O. Box812 Jamul, CA, 91935 Phone: (619)669-4785 Fax: (619)669-4817	Kumeyaay	05/18/2018 Fax	N/A	N/A	No	05/18/2018: AGH received message that fax was successfully received.
Kwaaymii Laguna Band of Mission Indians Carmen Lucas P.O. Box775 Pine Valley, CA, 91962 Phone: (619)709-4207	Kumeyaay	05/19/2018 Certified mail	N/A	N/A	No	
La Jolla Band of Luiseno Indians Thomas Rodriguez, Chairperson 22000 Highway 76 Pauma Valley, CA, 92061 Phone: (760)742-3771	Luiseno	05/19/2018 Certified mail	N/A	N/A	No	
La Posta Band of Mission Indians Gwendolyn Parada, Chairperson 8 Crestwood Road Boulevard, CA, 91905 Phone: (619)478-2113 Fax: (619)478-2125 LP13boots@aol.com	Kumeyaay	05/18/2018 Email	N/A	N/A	No	
La Posta Band of Mission Indians Javaughn Miller, Tribal Administrator 8 Crestwood Road Boulevard, CA, 91905 Phone: (619)478-2113 Fax: (619)478-2125 jmiller@Lapostatribe.net	Kumeyaay	05/18/2018 Email 05/18/2018 Fax	N/A	N/A	No	05/18/2018: AGH received message "Delivery to the following recipient failed permanently: jmiller@lapostatribe.net. Technical details of permanent failure:DNS Error: 7279536 DNS type 'mx' lookup of lapostatribe.net responded with code NXDOMAIN. Domain name not found: lapostatribe.net". Sent by fax instead. 05/18/2018: AGH received message that fax was successfully received.

Native American Contacts
1802 N Centre City Pkwy Project 2018-009, San Diego County

Name	Affiliation	Date Contacted			Response Received?	Comments
		1. Letter	2. Phone	3. Phone		
Manzanita Band of Kumeyaay Nation Angela Elliott Santos, Chairperson P.O. Box 1302 Boulevard, CA, 91905 Phone: (619) 766-4930 Fax: (619) 766-4957	Kumeyaay	05/18/2018 Fax	N/A	N/A	No	05/18/2018: AGH received message that fax was successfully received.
Manzanita Band of Kumeyaay Nation Nick Elliott, Cultural Resources Coordinator P. 0. Box 1302 Boulevard, CA, 91905 Phone: (619) 766 - 4930 Fax: (619) 766-4957 nickmepa@yahoo.com	Kumeyaay	05/18/2018 Email	N/A	N/A	No	
Mesa Grande Band of Mission Indians Virgil Oyos, Chairperson P.O Box 270 Santa Ysabel, CA, 92070 Phone: (760)782-3818 Fax: (760)782-9092 mesagrandeband@msn.com	Kumeyaay	05/18/2018 Email	N/A	N/A	No	
Mesa Grande Band of Mission Indians Mario Morales, Cultural Resources Representative 35008 Pala temecula Rd. PMB 366 Pala, CA, 92059 Phone: (760)622-1336	Kumeyaay	05/18/2018 Certified Mail	N/A	N/A	No	
Pala Band of Mission Indians Shasta Gaughan, Tribal Historic Preservation Officer PMB 50, 35008 Pala Temecula Rd. Pala, CA, 92059 Phone: (760) 891 - 3515 Fax: (760) 742-3189 sgaughen@palatribe.com	Cupeno Luiseno	05/18/2018 Email	N/A	N/A	Yes	

Native American Contacts
1802 N Centre City Pkwy Project 2018-009, San Diego County

Name	Affiliation	Date Contacted			Response Received?	Comments
		1. Letter	2. Phone	3. Phone		
Pauma Band of Luiseno Indians - Pauma & Yuima Reservation Temet Aguilar, Chairperson P.O. Box 369, Ext. 303 Pauma Valley, CA, 92061 Phone: (760)742-1289 Fax: (760)742-3422	Luiseno	05/18/2018 Fax	N/A	N/A	No	05/18/2018: AGH received message that fax was successfully received.
Pechanga Band of Mission Indians Mark Macarro, Chairperson P.O. Box 1477 Temecula, CA, 92593 Phone: (951) 770 - 6000 Fax: (951) 695-1778 striplett@pechanga-nsn.gov	Luiseno	05/18/2018 Email	N/A	N/A	No	
Pechanga Band of Mission Indians Paul Macarro, Cultural Resources Manager P.O. Box 1477 Temecula, CA, 92593 Phone: (951) 770-8100 Fax: (951) 506-9491 pmacarro@pechanga-nsn.gov	Luiseno	05/18/2018 Email	N/A	N/A	No	
Rincon Band of Mission Indians Bo Mazzetti, Chairperson 1 West Tribal Road Valley Center, CA, 92082 Phone: (760)749-1051 Fax: (760)749-5144 bomazzetti@aol.com	Luiseno	05/18/2018 Email	N/A	N/A	No	
Rincon Band of Mission Indians Jim McPherson, Tribal Historic Preservation Officer 1 West Tribal Road Valley Center, CA, 92082 Phone: (760)749-1051 Fax: (760)749-5144 vwhipple@rincontribe.org	Luiseno	05/18/2018 Email	N/A	N/A	No	

Native American Contacts
1802 N Centre City Pkwy Project 2018-009, San Diego County

Name	Affiliation	Date Contacted			Response Received?	Comments
		1. Letter	2. Phone	3. Phone		
San Luis Rey Band of Mission Indians San Luis Rey, Tribal Council 1889 Sunset Drive Vista, CA, 92081 Phone: (760)724-8505 Fax: (760)724-2172 cjmojado@slrmissionindians.org	Luiseno	05/18/2018 Email	N/A	N/A	No	
San Luis Rey Band of Mission Indians 1889 Sunset Drive Vista, CA, 92081 Phone: (760) 724 - 8505 Fax: (760) 724-2172 cjmojado@slrmissionindians.org	Luiseno	05/18/2018 Email	N/A	N/A	No	10/18/2016: AGH notes that this is a duplicate entry from the previous page but included it to match the NAHC tribal contact list as provided.
San Pasqual Band of Mission Indians Allen E. Lawson, Chairperson P.O. Box 365 Valley Center, CA, 92082 Phone: (760)749-3200 Fax: (760)749-3876 allenl@sanpasqualtribe.org	Kumeyaay	05/18/2018 Email	N/A	N/A	No	
San Pasqual Band of Mission Indians John Flores, Environmental Coordinator P. 0. Box 365 Valley Center, CA, 92082 Phone: (760) 749 - 3200 Fax: (760) 749-3876 johnf@sanpasqualtribe.org	Kumeyaay	05/18/2018 Email	N/A	N/A	No	
Soboba Band of Luiseno Indians Scott Cozart, Chairperson P. 0. Box 487 San Jacinto, CA, 92583 Phone: (951) 654- 2765 Fax: (951) 654-4198 jontiveros@soboba-nsn.gov	Cahuilla Luiseno	05/18/2018 Email	N/A	N/A	No	

Native American Contacts
1802 N Centre City Pkwy Project 2018-009, San Diego County

Name	Affiliation	Date Contacted			Response Received?	Comments
		1. Letter	2. Phone	3. Phone		
Soboba Band of Luiseno Indians Joseph Ontiveros, Cultural Resource Department P.O. BOX487 San Jacinto, CA, 92581 Phone: (951)663-5279 Fax: (951)654-4198 jontiveros@soboba-nsn.gov	Cahuilla Luiseno	05/18/2018 Email	N/A	N/A	No	
Soboba Band of Luiseno Indians Carrie Garcia, Cultural Resources Manager P. 0. Box 487 San Jacinto, CA, 92583 Phone: (951)654-2765 Fax: (951)654-4198 carrieg@soboba-nsn.gov	Cahuilla Luiseno	05/18/2018 Email	N/A	N/A	No	
Sycuan Band of the Kumeyaay Nation Cody J. Martinez, Chairperson 1 Kwaaypaay Court El Cajon, CA, 92019 Phone: (619)445-2613 Fax: (619)445-1927 ssilva@sycuan-nsn.gov	Kumeyaay	05/18/2018 Email	N/A	N/A	No	
Sycuan Band of the Kumeyaay Nation Lisa Haws, Cultural Resources Manager 1 Kwaaypaay Court Kumeyaay El Cajon, CA, 92019 Phone: (619) 445 – 4564 lhaws@sycuan-nsn.gov	Kumeyaay	05/18/2018 Email 05/19/2018 Certified Mail	N/A	N/A	No	
Viejas Band of Kumeyaay Indians Robert J. Welch, Chairperson 1 Viejas Grade Road Alpine, CA, 91901 Phone: (619)445-381 O Fax: (619)445-5337 jhagen@viejas-nsn.gov	Kumeyaay	05/18/2018 Email	N/A	N/A	No	

Native American Contacts
1802 N Centre City Pkwy Project 2018-009, San Diego County

Name	Affiliation	Date Contacted			Response Received?	Comments
		1. Letter	2. Phone	3. Phone		
Viejas Band of Kumeyaay Indians Julie Hagen, 1 Viejas Grade Road Alpine, CA, 91901 Phone: (619) 445 - 3810 Fax: (619) 445-5337 jhagen@viejas-nsn.gov	Kumeyaay	05/18/2018 Email	N/A	N/A	No	

APPENDIX C

Photo Log, Spindrift Archaeological Consulting

Project Name: Centre City Parkway				**Photographer:** Paul Howard
Number	**Date**	**Direction**	**Location/Subject**	**Description**
P1220629	05/08/2018	North	Centre City Prkwy	Modern modified slope
P1220630	05/08/2018	East	Centre City Prkwy	Survey area, off road vehicle activity
P1220631	05/08/2018	South	Centre City Prkwy	Pepper tree and Eucalypts
P1220632	05/08/2018	North	Centre City Prkwy	Wooden feature with railway nails. Not historic.
P1220633	05/08/2018	West	Centre City Prkwy	Soil dumps, with drain pipe
P1220634	05/08/2018	North	Centre City Prkwy	Wooden fence post
P1220635	05/08/2018	East	Centre City Prkwy	Modern trash
P1220636	05/08/2018	South	Centre City Prkwy	Asbestos pipe
P1220637	05/08/2018	East	Centre City Prkwy	Track
P1220638	05/08/2018	North East	Centre City Prkwy	Wall bordering the project area, APE inline with top of wall
P1220639	05/08/2018	North	Centre City Prkwy	Cut
P1220640	05/08/2018	South West	Centre City Prkwy	Eucalypts
P1220641	05/08/2018	South	Centre City Prkwy	Jasmine tree
P1220642	05/08/2018	North	Centre City Prkwy	Edge of survey area fence on top of wall
P1220643	05/08/2018	West	Centre City Prkwy	Soil dumps
P1220644	05/08/2018	South	Centre City Prkwy	Edge of survey area
P1220645	05/08/2018	North West	Centre City Prkwy	Vegetation
P1220646	05/08/2018	South	Centre City Prkwy	Livestock bone fragment
P1220647	05/08/2018	West	Centre City Prkwy	Survey transect
P1220648	05/08/2018	North East	Centre City Prkwy	Cut livestock bones
P1220649	05/08/2018	North East	Centre City Prkwy	Looking below the APE
P1220650	05/08/2018	South East	Centre City Prkwy	Looking below the APE
P1220651	05/08/2018	North	Centre City Prkwy	Neighboring property borders APE
P1220652	05/08/2018	North	Centre City Prkwy	Tracks


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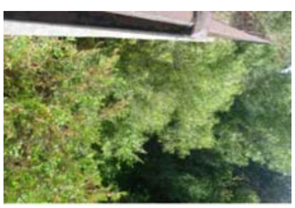
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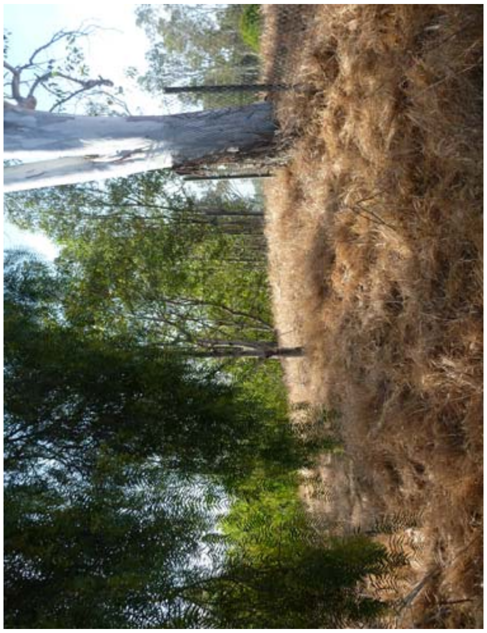
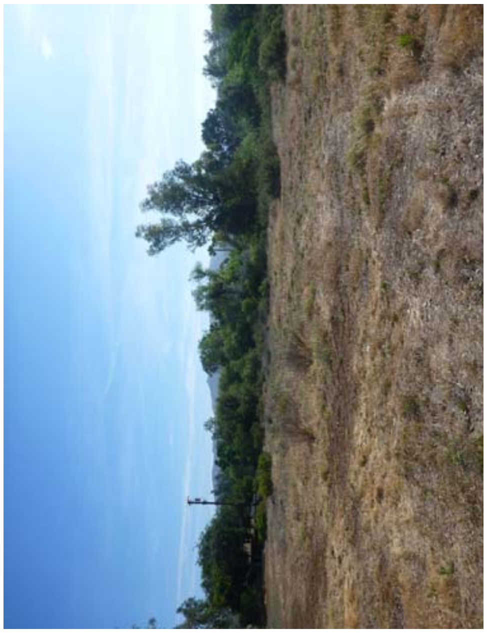


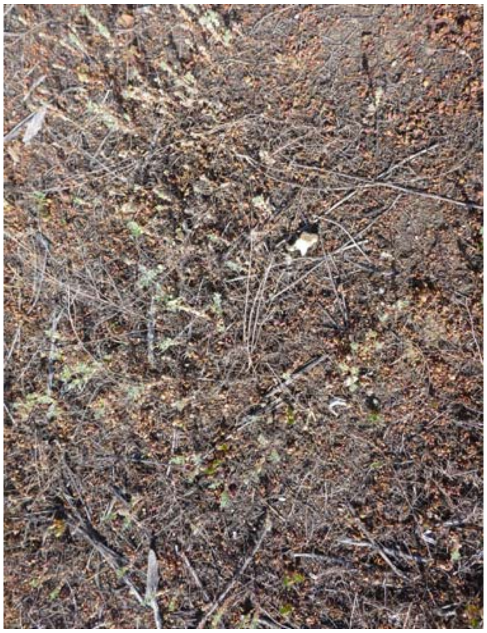



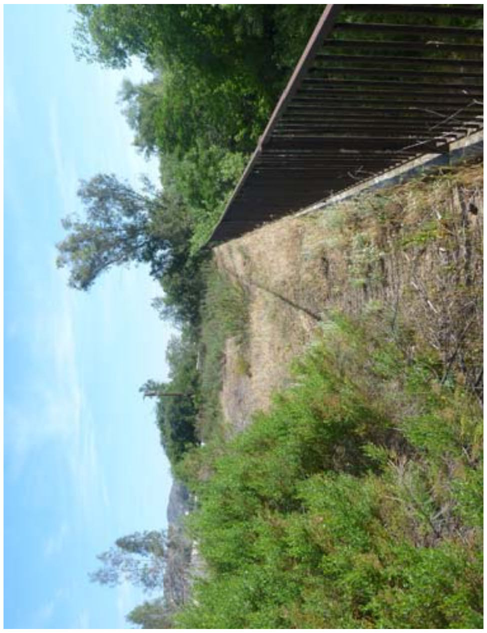








25. U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG). Prior Project (Nightingale Health Services)/John Lovio (prior Project biologist) correspondence; October 23, 2003 and June 21, 2004

Nightingale
Health Services, Inc.

Communication with the Wild Life Agency

By

John Lovio

(619) 795-1189

Project Location:

1802 North Centre City Parkway

Escondido, Ca 92025

APN: 226-190-07

OCT 27

2003-26-CUP

John C. Lovio
Wildlife Biologist-Ecologist
4502 Maryland Street
San Diego, CA 92116
Telephone/Facsimile (619) 795-1189
E-mail jlovio@cox.net

23 October, 2003

Ms. Janet Stuckrath
U.S. Fish and Wildlife Service
6010 Hidden Valley Road
Carlsbad, CA 92008

Dear Ms. Stuckrath:

This letter presents detailed information intended to address the remaining questions of surface water drainage and lighting posed by the US Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG) with regard to the proposed development of an assisted living facility at 1802 Centre City Parkway, Escondido, by Nightingale Health Services, Inc. (see attached location map).

You will recall that our correspondence on these matters began with my letter of 13 November, 2002 describing the project history and general biological conditions of the site. On behalf of Nightingale, I requested a letter of concurrence on my contention that the proposed project is "not likely to adversely affect" the least Bell's vireo (*Vireo bellii pusillus*) (vireo) and southwest willow flycatcher (*Empidonax trailii extimus*) (flycatcher), given the lack of encroachment of the project into the undeveloped riparian portion of the site. My subsequent conversations by telephone and e-mail with you and Ms. Nancy Frost of CDFG led to a mutual conclusion that the proposed action would not likely result in take of either listed species. However, concurrence could not be issued until the project applicants provided assurance that surface water drainage and artificial lighting resulting from the development would not adversely affect wildlife in the riparian zone in an indirect fashion.

Based on preliminary site plan information, I issued another letter, dated 5 February, 2003, presenting general measures that will be incorporated to ensure water quality and to contain fugitive lighting. At that time, however, plans for storm water management and lighting were merely in their conceptual stages. Later in February 2003, you and representatives of the CDFG responded with a request for more detail on these measures.

During the ensuing months, Nightingale commissioned detailed studies to address these and other regulatory issues. A lighting study was completed in early 2003 by Pacific Lighting and Standard of Lynwood, California. Two documents, *Hydrology and*

Hydraulics Report and *Water Quality Technical Report*, were completed for the project site in August 2003 by Spear and Associates, civil engineers, of Escondido. These studies provide the basis for information presented in this letter. Copies of these reports are available upon request.

Of further relevance is the focused survey that I conducted between June and August 2003 for the vireo and flycatcher along the 280-foot section of Reidy Creek within the Nightingale property. Neither species was detected in riparian habitat within or adjacent to the project site. Official results of this survey are in preparation for submission to the USFWS.

SURFACE WATER DRAINAGE

Site Characteristics

The location, dimensions, and biological features of the Nightingale site were described in detail in my 13 November, 2002 letter. As indicated on the attached site plan map, the total Nightingale property (3.13 acres) includes land on the west and east sides of Reidy Creek, but only the triangular area west of the retaining wall (2.3 acres) is proposed for development. The building, also triangular, will occupy 54% of the development area and the remaining 46% will comprise areas of paved parking and landscaping around the perimeter. The three sides of the drainage perimeter are discussed separately below in terms of drainage pattern and measures that will be implemented to control increased flow volume and pollutants.

Hydrology

The entire Nightingale site is located within the watershed of Reidy Creek, which is part of the Escondido Creek Hydrological Unit, as defined by the San Diego Regional Water Quality Control Board (RWQCB). Development of the site will not significantly alter the current drainage pattern into the creek. Despite channelization of certain sections of Reidy Creek below the project site, it is regarded as part of the natural filtration system for San Elijo Lagoon, approximately 16 miles downstream via Escondido Creek. Water quality control measures discussed below for the Nightingale development will prevent any decrease in the ability of Reidy Creek to perform this function.

The anticipated hydrology of the Nightingale site after development is based on the Conceptual Grading Plan produced by Spear & Associates (see attached plan map). Although the ultimate site drainage pattern is, by association, also conceptual, several structural elements of the drainage system have already been installed in conjunction with the previous rough-grading and retaining wall construction, as described in my 5 February, 2003 letter.

The *Hydrology and Hydraulics Report* calculates surface flow rates on the site before and after development by incorporating information on the grading plan, soil runoff potential maps, overland flow rates, and modeled 2, 10, and 50-year return frequency storm events based on regional rainfall isopluvials. Given the anticipated increase in impermeable surface on the site from 0% to 80%, flow rates on Reidy Creek are expected to increase by an average of 155% of current levels for the three modeled return frequencies.

Water Quality Measures
The Storm Water Management Plan for the Nightingale site will incorporate measures to counter-act increased surface flows resulting from development and maintain them at pre-development levels. These measures will incorporate a series of standard Best Management Practices (BMP's) commonly used during and after development projects. Water quality and storm water control measures are designed in compliance with the City of Escondido Standard Urban Stormwater Mitigation Plan (SUSMP), which incorporates water quality standards set by the San Diego Regional Water Quality Control Board. Two basic aspects of storm water management are considered here: controlling the volume of flow and controlling potential pollutants.

Volume
Runoff collection structures such as catch basins, grates, and filters on the Nightingale site are designed to accommodate a 50-year rainfall season or a single storm event with intensity of 0.2 inches per hour. Catch basins in landscaped areas will be in the form of low-gradient, vegetated swales with drain grates designed to accept runoff from the ground surface and roof drains. The vegetated areas will allow water percolation into the soil, thus reducing runoff into Reidy Creek. This movement of water, in conjunction with landscaping, will also serve to minimize or eliminate erosion from the site. Post-development erosion is expected to be less than pre-development erosion.

Temporary BMP's for the construction phase will be selected in conjunction with the development of a detailed grading plan and will be somewhat dependent on season relative to rainfall. These measures will be primarily concerned with preventing on-site erosion and may include such measures as silt fences, fiber rolls, and/or de-silting basins.

Catch basins in paved areas will have sufficient capacity to accommodate a 50-year rainfall event, providing for collection and controlled release into the creek at pre-development levels.

Pollutants
No data exist for current pollutant levels in the reach of Reidy Creek adjacent to the Nightingale site. However, the development of the site is not anticipated to generate significant amounts of non-visible pollutants, due to its passive function and to pollution control measures. Potential pollutants generally associated with such developments could include sediment, nutrients from fertilizers, trash/debris, oil/grease, pesticides, heavy metals, organic compounds, and oxygen-demanding substances.

Pollutants of primary concern, as defined by the RWQCB, are those that would augment levels of pollutants already impairing receiving waters. San Elijo Lagoon, which ultimately receives water flowing through Reidy Creek, is currently recognized as being impaired by high coliform bacteria, sediment, and compounds contributing to eutrophic conditions.

No increase in pollutant input to Reidy Creek will be allowed as a result of the assisted living facility development. All water drains in vegetated swales and parking areas will be equipped with either sand filtration traps or "fossil filters" designed to remove hydrocarbons and other constituents of fossil fuels. The fossil filters include removable filter inserts, as shown in the attached diagram. These filter inserts must be inspected and replaced annually.

In addition to allowing water percolation, the vegetated areas receiving surface flow will provide biological filtering of pollutants from runoff. Post-construction BMP's will include pollution source elimination measures such as weeding and placement of physical barriers to weed invasion, in lieu of herbicide use. Selection of native and/or drought-tolerant plans for landscaping will also contribute to reduced irrigation. Furthermore, the irrigation system will be monitored to prevent over-watering of landscaped areas and devices will be installed to shut off irrigation after natural precipitation events. Incorporation of as many applicable Integrated Pest Management methods as possible will reduce or eliminate the need for pesticides.

<u>Implementation</u>
All BMP's adopted for the Nightingale construction and post-construction phases must be approved by the Escondido City Engineer. Nightingale Health Services must ensure compliance with the City SUSMP, which requires implementation of regular drainage system maintenance, as a part of the permit approval process of the City. Conditions of the SUSMP include an annual system inspection prior to the winter rainfall season and development of an Operations and Maintenance (O&M) Plan. O&M will include such practices as removal of sediment from drains, management of organic matter, prevention and removal of standing water, equipment maintenance, and erosion protection through immediate slope repair and elimination of animal burrows. O&M inspections will occur monthly throughout the year or more frequently during extended rainy periods.

Specific Drainage Pattern

<u>Southwest Edge</u>
The wide buffer between the front of the proposed assisted living facility building and Centre City Parkway (southwest property edge) will be primarily paved parking. Aside from a few small drains in front of the building, this area will drain to the southeastern corner of the site, which is the lowest point of the 2.3-acre development area and the focal point of site drainage into Reidy Creek. Water in this corner will be directed to a 1 X 1 foot catch basin, which will feed a 15-foot long, 18-inch diameter drainage line leading eastward to the outfall at the edge of the creek. Outflow will run through a rock dissipater to the creek. In the event of unusually high flows (50-year event) or in the unlikely event that the first grate becomes obstructed, the system is designed to allow the excess flow to be diverted 30 feet west to a 3 X 6 foot, Triple "G" type catch basin. The grates for both of these catch basins will be equipped with fossil filters, as described above and in the attached diagram. This overflow system is designed to maintain off-site flow at pre-development levels.

portions of the riparian canopy. Similarly, the two outdoor lighting structures closest to the riparian zone will be on lower ground in the southeastern corner of the development area. Therefore, the majority of the riparian forest on the site (northeast of these structures) will be partially shielded by higher ground and by the building.

On behalf of the Nightingale Health Services team, I propose that the current Nightingale development plan will result in no direct or indirect adverse effects to potentially occurring listed species. This contention is based on the avoidance of sensitive habitat by the development plan, protective measures concerning surface water drainage and artificial lighting, and the observed absence of listed or otherwise sensitive plant or animal species.

Based on the information provided above and in previous correspondence, we renew our request for a letter of concurrence to the affect that adverse effects to listed species will be avoided by the Nightingale development plan and that no mitigation will be required. In consideration of the history of communication on this proposal with staff of the USFWS and CDFG, we kindly request a letter within two weeks of receipt this letter. I remain willing to provide a site visit upon request. Please contact me at the letterhead address or phone number with any questions you may have. We thank you for your consideration and look forward to your response.

Sincerely,

John C. Lovio

John C. Lovio
Wildlife Biologist-Ecologist

cc: N. Frost, CDFG
A. Tangonan, Nightingale Health Services
E. Mandel, EMM Architects
D. Ferguson, Attorney at Law
D. Fluke, Spear & Associates Engineers

Attachments: Site location map
Site Conceptual Grading Plan map
Fossil Filter diagram
Lighting structure diagram

U.S. Fish and Wildlife Service
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road
Carlsbad, California 92009
(760) 431-9440
FAX (760) 431-5902 + 9618

California Department of Fish & Game
South Coast Regional Office
4949 Viewridge Avenue
San Diego, California 92123
(858) 467-4201
FAX (858) 467-4299

In Reply Refer To:
FWS-SDG-3238.2

Clear 6-21-04 e

RECEIVED
JUN 21 2004
STATE CLEARING HOUSE

JUN 21 2004

Mr. Jay Paul
City of Escondido, Planning Division
201 North Broadway
Escondido, California 92025-2798

Re: Draft Mitigated Negative Declaration for the Nightingale Health Services Project, City of Escondido, San Diego County, California (SCH # 2004051126)

Dear Mr. Paul:

The California Department of Fish and Game (Department) and the U.S. Fish and Wildlife Service (Service) (collectively, "Wildlife Agencies") have reviewed the above-referenced draft Mitigated Negative Declaration (MND), received by the Wildlife Agencies on May 25, 2004. The Wildlife Agencies have some concerns regarding the potential effects of this project on biological resources. The comments provided herein are based on the information provided in the draft MND; the Wildlife Agencies' knowledge of sensitive and declining vegetation communities in San Diego County; and our participation in regional conservation planning efforts. We offer our recommendations and comments to assist the City of Escondido (City) in minimizing and mitigating future project impacts to biological resources on the Nightingale Health Services project site.

The primary concern and mandate of the Service is the protection of public fish and wildlife resources and their habitats. The Service has legal responsibility for the welfare of migratory birds, anadromous fish, and endangered animals and plants occurring in the United States. The Service is also responsible for administering the Endangered Species Act of 1973, as amended (Act) (16 U.S.C. 1531 *et seq.*). The Department is a Trustee Agency and a Responsible Agency pursuant to the California Environmental Quality Act (CEQA), Sections 15386 and 15381, respectively. The Department is responsible for the conservation, protection, and management of the state's biological resources, including rare, threatened, and endangered plant and animal species, pursuant to the California Endangered Species Act (CESA), and administers the NCCP program. The City of Escondido (City) is participating in the NCCP program by preparing a Multiple Habitat Conservation Program Subarea Plan that is currently in draft form.

The proposed project is the construction of a two and three story, 110 room residential-care facility on approximately 3.03 acres within the City. Access to the project would be provided by a single driveway fronting onto Centre City Parkway. Centre City Parkway is proposed to be widened across the project frontage to provide a transition lane for access to the facility.

The proposed project site is comprised of two distinct areas. The eastern area is bisected by the Reidy Creek drainage, a tributary of Escondido Creek. Reidy Creek is separated from the disturbed western portion of the property by a 14-foot high retaining wall that was constructed at the western edge of the 100-year floodplain in conformance with Conditional Use Permit 97-07. This wall corresponds to the top of the earthen fill material to the west which was added during the rough grading of the site in 1997. The creek vegetation consists primarily of southern willow riparian forest, which is composed of native willows, a few small coast live oak trees, and a mixture of non-native trees, shrubs, and herbaceous plant species. The portion of the property west of the retaining wall supports disturbed upland vegetation and the southwestern area supports a stand of eucalyptus trees. A large, shallow, ephemeral pond forms on the lower pad during the rainy season. Protocol-level surveys conducted for the least Bell's vireo (*Vireo bellii pusillus*) and the southwestern willow flycatcher (*Empidonax traillii extimus*) in June through August 2003, were negative.

All proposed development would be located on approximately 2.30 acres west and southwest of the existing 14-foot high retaining wall. No impacts are proposed to occur in the creek or riparian vegetation.

The Wildlife Agencies offer recommendations and comments in Enclosure 1 to assist the City in minimizing and mitigating project impacts to biological resources and to assure that the project is consistent with ongoing regional habitat conservation. Our concerns are summarized as follows: (1) clarify whether an ephemeral pond on the lower pad is a vernal pool with the potential to support listed species; (2) the final MND should be conditioned to provide preservation in perpetuity for the floodplain and riparian vegetation east of the existing retaining wall; (3) clarify what habitats occurred on site prior to the 1997 grading; (4) clarify whether areas that support "disturbed upland vegetation" should be reclassified as annual grassland; (5) construction activities should occur outside of the bird breeding season (approximately February 15 through August 31); (6) the use of pervious or semi-pervious surfaces are recommended to reduce the increase in velocity of peak flows into Reidy Creek; (7) mature eucalyptus trees that are removed should be replaced with native trees (i.e., oaks); and (8) native or non-invasive, non-native species should be used in landscaping adjacent to the biological open space.

If you have any questions concerning the contents of this email, please contact Nancy Frost (Department) at 858-637-5511, or Janet Stuckrath (Service) at 760-431-9440.

Sincerely,

Susan Ewy

FOR Therese O'Rourke
Assistant Field Supervisor
U.S. Fish and Wildlife Service

Donald R Chadwick

Donald R. Chadwick
Senior Environmental Scientist
California Department of Fish and Game

cc: State Clearing House

WILDLIFE AGENCY COMMENTS AND RECOMMENDATIONS ON THE DRAFT MITIGATED NEGATIVE DECLARATION (MND) FOR THE NIGHTINGALE HEALTH SERVICES PROJECT

1. The biology letter report, dated September 15, 2003, states that "a large, shallow, ephemeral pond forms on the lower pad during the rainy season." Please clarify whether surveys have been conducted for vernal pool-associated species, including San Diego fairy shrimp (*Branchinecta sandiegonensis*) and western spadefoot toad (*Spea hammondii*). Any direct or indirect impacts to vernal pools occupied by San Diego fairy shrimp, or other listed vernal pool species, would require consultation pursuant to either section 7 or section 10 of the Endangered Species Act.

2. A November 13, 2002, letter to the Service from John Lovio, project consultant, stated that Nightingale Health Services, Inc. intends to deed the portion of the property east of the retaining wall to the City. We recommend that the final MND be conditioned such that the floodplain and riparian vegetation is preserved in perpetuity through a conservation easement or another method approved by the Wildlife Agencies and the City.

3. Please clarify what habitats occurred on site prior to the 1997 grading, and what measures in the 1993 MND were required and/or implemented to mitigate these impacts.

4. Appendix F of the draft MHCP defines annual grassland as follows: "Annual grassland is a mixture of annual grasses and broad-leaved herbaceous species. Annual species comprise from 50 percent to more than 90 percent of the vegetative cover, and most annuals are non-native species. Non-native grasses typically comprise at least 30 percent of the vegetation, although this number can be higher in some years and lower in others, depending on land use and climatic conditions. Usually, the annual grasses are less than 1 m (3 feet) in height, and form a continuous or open cover. Emergent shrubs and trees may be present, but do not comprise more than 15 percent of the total vegetative cover. Characteristic annual grassland species include foxtail chess (*Bromus madritensis* ssp. *rubens*), ripgut grass (*Bromus diandrus*), wild oats (*Avena* spp.), fescues (*Vulpia* spp.), red-stemmed filaree (*Erodium cicutarium*), mustards (*Brassica* spp.), lupines (*Lupinus* spp.) and goldfields (*Lasthenia* spp.), among others." Please clarify if any of the areas proposed for impact meet these criteria. We recommend that impacts to annual grassland be mitigated at a 0.5:1 ratio in a Wildlife Agency-approved mitigation bank.

5. If any mature eucalyptus trees are removed, we recommend that they be replaced with native trees (i.e., oaks).

6. The breeding season for nesting birds occurs approximately February 15 through August 31; however, raptors may begin breeding as early as January. Several bird species, including raptors, may nest in the trees (e.g., coast live oak, riparian forest, and

eucalyptus) and habitat on site. If construction is planned during the bird breeding season, we recommend that the vegetation be cleared prior to the breeding season. Additionally, if construction occurs during raptor breeding season (approximately February 1 to August 30, or July 31 for *Buteo* spp.), a qualified biologist should conduct a pre-construction survey of the project site and surrounding habitat to determine whether there are active raptor nests within that area. If an active nest is observed, we recommend that a buffer be established between the construction activities and the nest so that nesting activities are not interrupted. The buffer should be a minimum of 500 feet and should be in effect as long as construction is occurring and until the nest is no longer active.

7. The Wildlife Agencies recommend the use of native plants to the greatest extent feasible in the landscape areas adjacent to and/or near mitigation/open space areas and/or wetland/riparian areas. The applicant should not plant, seed or otherwise introduce invasive exotic plant species to the landscaped areas adjacent and/or near the mitigation/open space area and/or wetland/riparian areas. Exotic plant species not to be used include those species listed on Lists A & B of the California Invasive Plant Council's list of "Exotic Pest Plants of Greatest Ecological Concern in California as of October 1999." This list includes such species as: pepper trees, pampas grass, fountain grass, ice plant, myoporum, black locust, capeweed, tree of heaven, periwinkle, sweet alyssum, English ivy, French broom, Scotch broom, and Spanish broom. A copy of the complete list can be obtained by contacting the California Invasive Plant Council at 1442-A Walnut Street, #462, Berkeley, California 94709, or by accessing their web site at http://www.caleppc.org.

8. We are concerned that post-project surface water flow into Reidy Creek will be 150% over pre-construction flows. We recommend the retention of natural drainage (i.e., pre-development hydrology) and use of pervious or semi-pervious surfaces (i.e., parking lots, hardcourts, and walkways) where possible to reduce the increase in the velocity of peak flows. Increases in flows from impervious surfaces associated with urbanization can result in: 1) stream bed scouring and habitat degradation; 2) shoreline erosion and stream bank widening; 3) loss of aquatic species; and 4) decreased baseflow (USEPA 1999).

Literature Cited

U.S. Environmental Protection Agency. 1999. Preliminary Data Summary of Urban Storm Water Best Management Practices. EPA-821-R-99-012. Pp. 4-24.