APPENDIX A

Figures

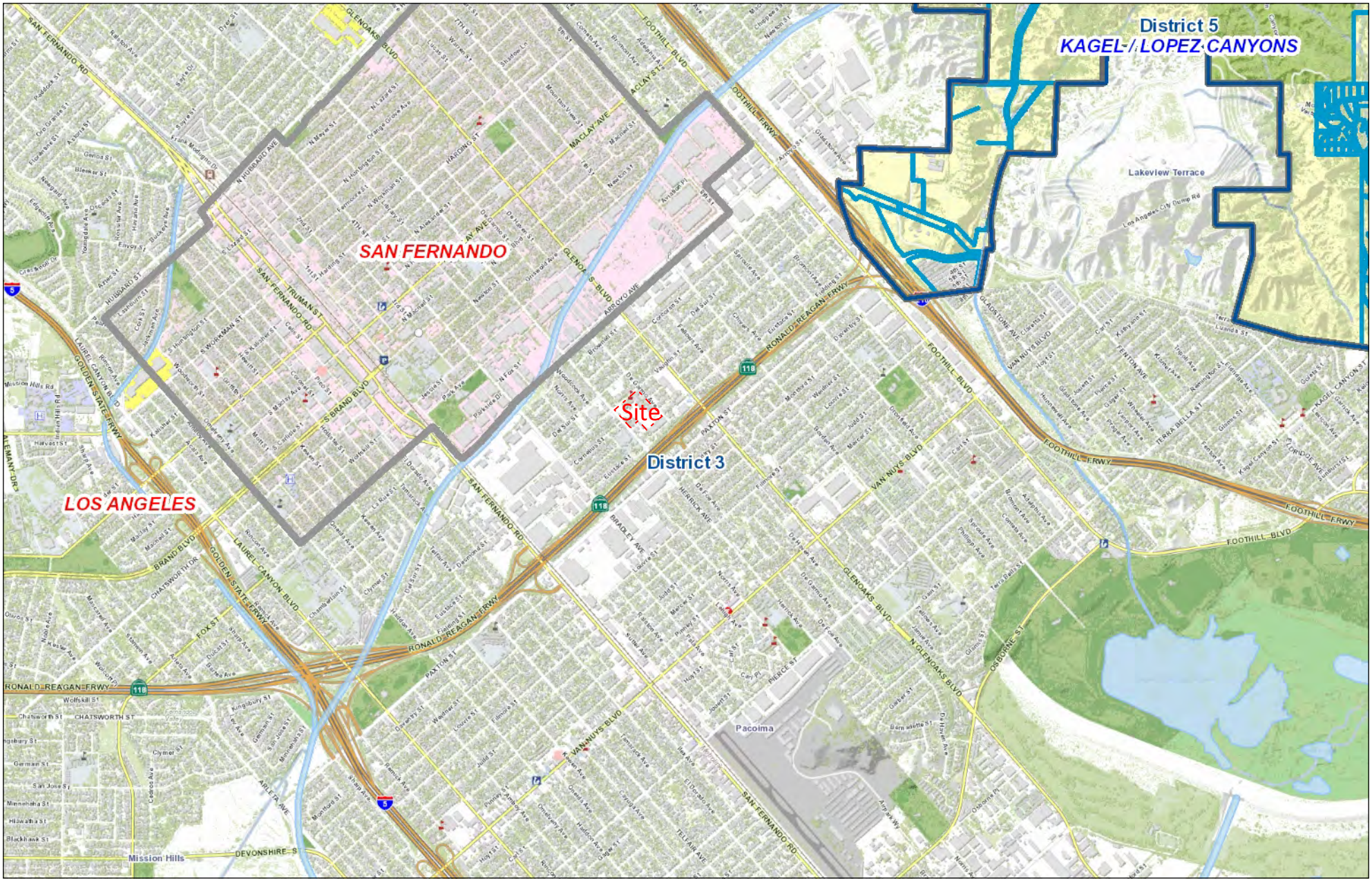

Figure 1-Regional Location

0 1,505 3,009 Feet

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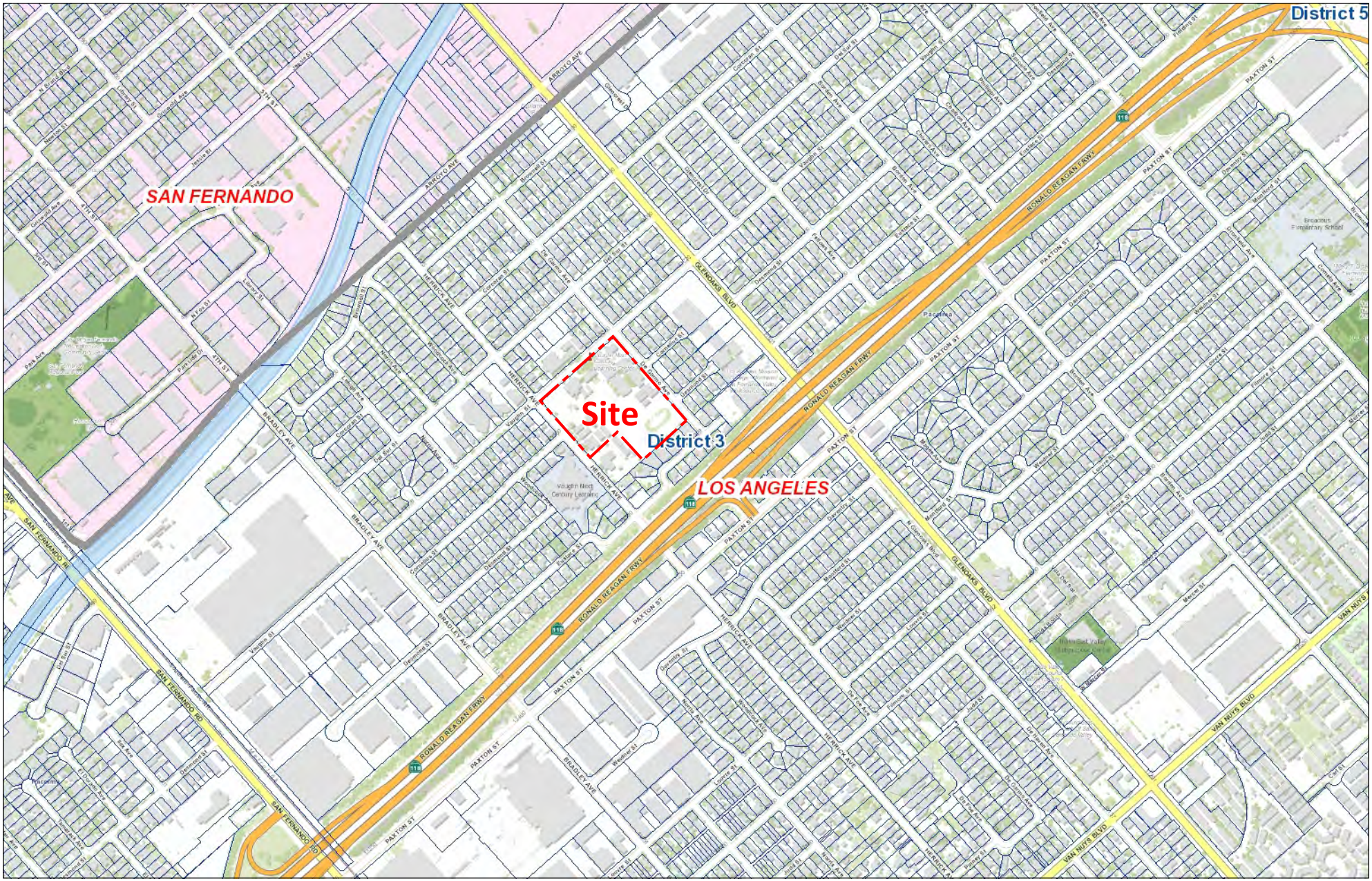

0 500 1,000 Feet

Figure 2-Local Vicinity

Printed: 1/5/20

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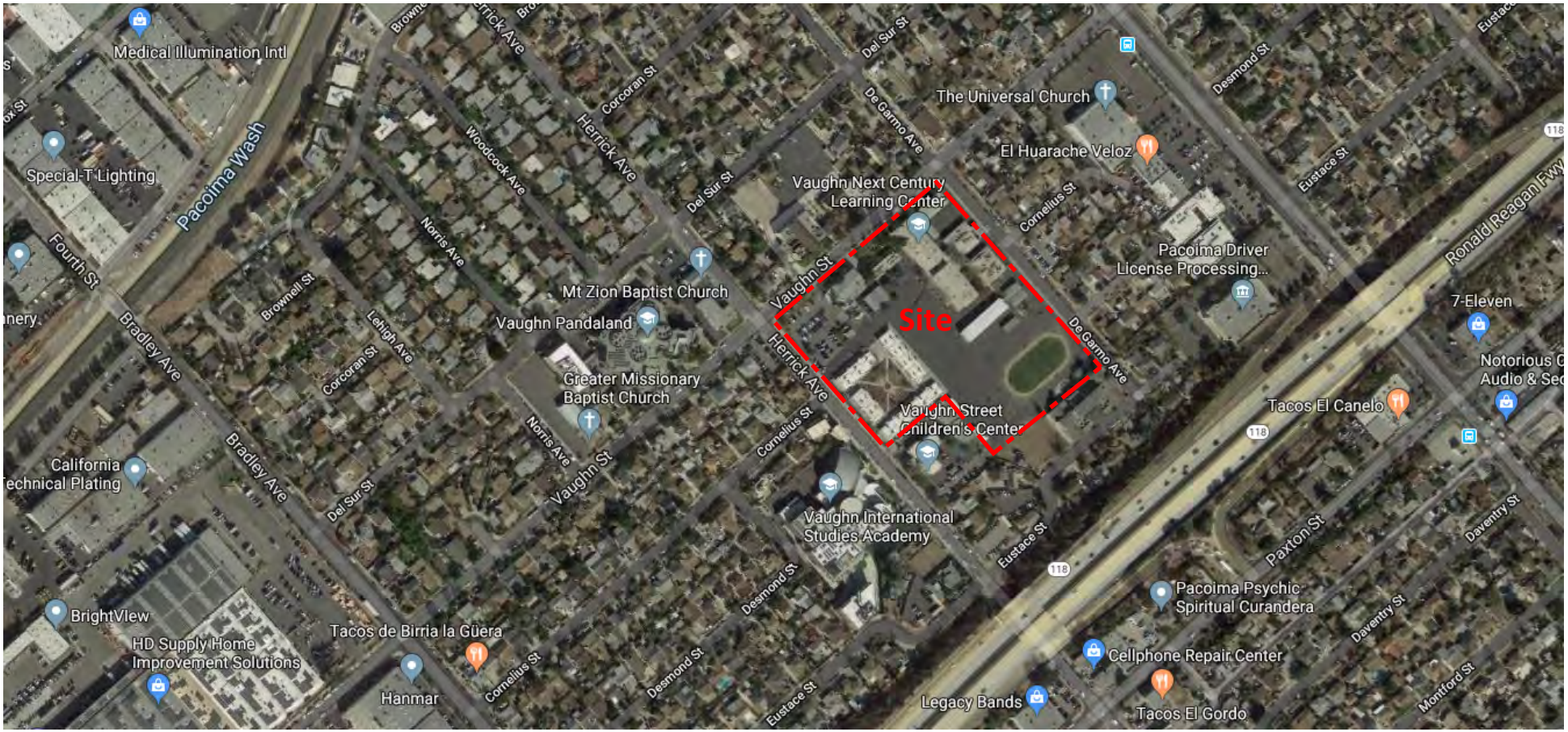
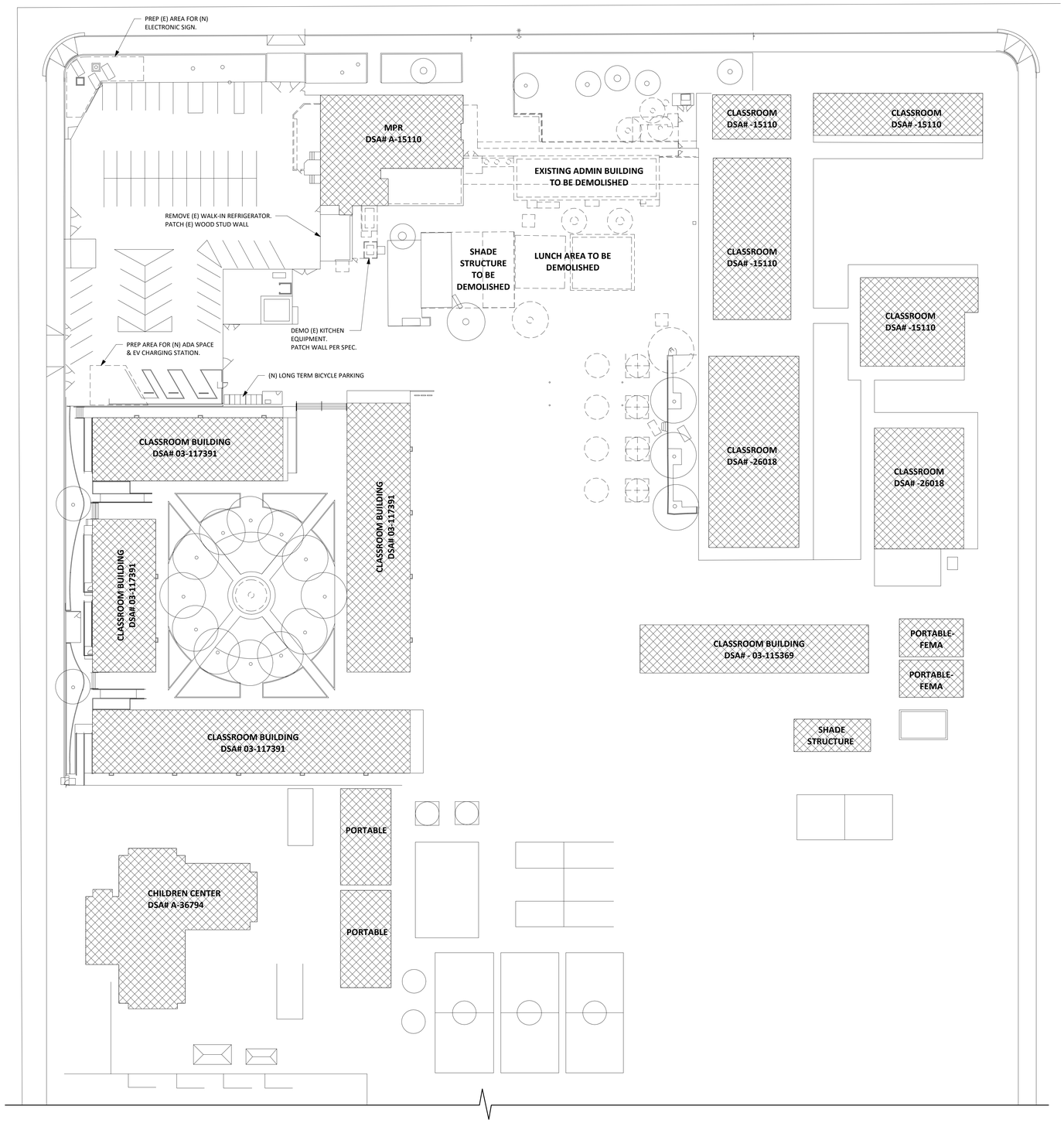


Figure 3-Aerial Photograph

Source: Google Maps



SITE PLAN - OVERALL - DEMO (1)

SCALE: 1" = 30'-0"

N

SHEET NOTES

1. CORRDINATE ALL DEMO WITH STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND CIVIL.

2. CONSTRUCTION WASTE SHALL BE REDUCED BY 65%; SHALL BE HANDLED BY CITY OF LOS ANGELES CERTIFIED HAULER AND SOURCE SEPARATED ON SITE.

3. ALL CALIFORNIA UNIVERSAL WASTE MATERIALS SHALL BE DISPOSED OF PROPERLY AND DIVERTED FROM LANDFILLS.

4. ALL TREE STUMPS, ROCKS AND ASSOCIATED VEGETATION AND SOILS RESULTING FROM LAND CLEARING SHALL BE REUSED OR RECYCLED. IF DISEASE OR PEST INFESTATION IS SUSPECTED, CONTACT THE COUNTY AGRICULTURE COMMISSIONER AND FOLLOW ITS DIRECTION FOR RECYCLING OR DISPOSAL OF THE MATERIAL.

5. PATCH & PAINT ALL SURFACES TO REMAIN, WHICH WERE ADJACENT TO DEMOLISHED ITEAMS.

6. PROTECT EXISTING TREES.

LEGEND

EXISTING BUILDINGS TO REMAIN

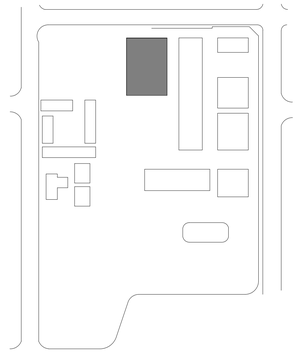
DEMO WALL

DEMO SLAB/STAIR

DEMO (E) TREE & TREE STUMP. GRIND STUMP & ROOT DOWN. PATCH ASPHALT TO MATCH (E) ASPHALT. COORDINATE W/ LAUSD & VAUGHN ARBORIST AS REQUIRED. TOTAL 9 TREES TO BE REMOVED.

KEYNOTES

KEY PLAN



AUTHORITY APPROVAL:

CSDA DESIGN GROUP
LISTEN COLLABORATE CREATE

889 N. DOUGLAS STREET, SUITE 100
EL SEGUNDO, CA 90245
[T]: 310.821.9200
www.csdadesigngroup.com

ARCHITECT STAMP

LICENSED ARCHITECT
MICHAEL ROBERT SCHOEN
No. C-35165
RENEWAL DATE
FEBRUARY 28, 2019
STATE OF CALIFORNIA

CONSULTANT

CONSULTANT STAMP

CLIENT:

LOS ANGELES UNIFIED SCHOOL DISTRICT · BOARD OF EDUCATION ·

VAUGHN NEXT CENTURY LEARNING CENTER

13330 VAUGHN ST.
SAN FERNANDO, CA 91340

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VAUGHN MAINLAND ADMIN, MEDIA/LITERACY & KITCHEN BLDG

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MARK	DATE	DESCRIPTION

PROJECT NO.: **1949.01**

12/20/19

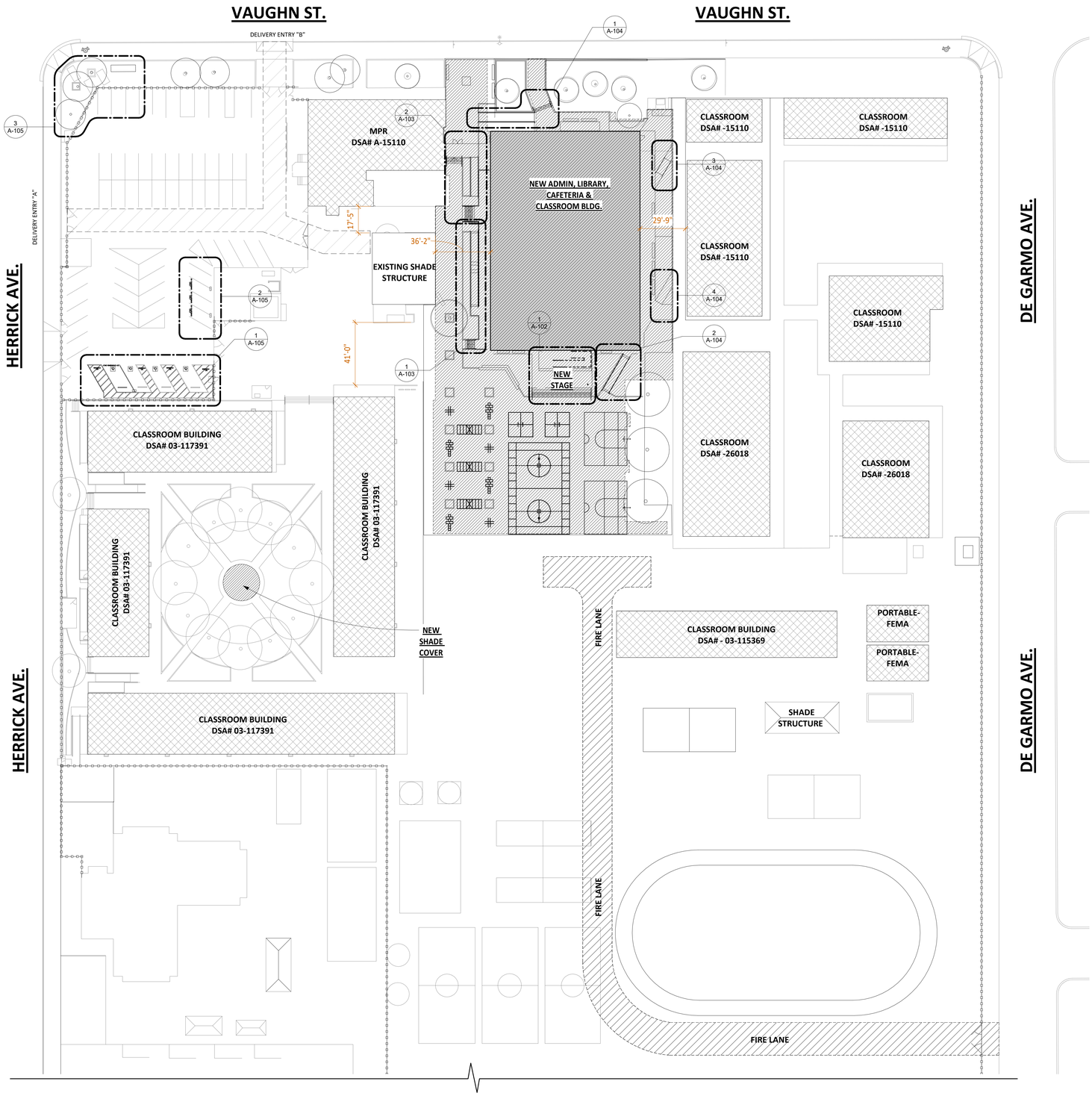
SHEET TITLE:

SITE PLAN - OVERALL - DEMO

SHEET NO.:

A-001

2/28/2020 11:26:46 AM



SITE PLAN 1
SCALE: 1" = 30'-0"

N

Figure 5-Site Plan

1/3/2020 4:36:25 PM

SHEET NOTES

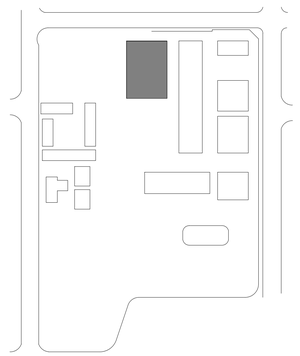
1. FINISH FLOOR ELEVATION SHALL BE 0'-0", U.O.N.
2. DIMENSIONS TO WALLS/ WALL OPENINGS ARE TO F.O.S., U.O.N.
3. SEE SECTIONS AND WALL SECTIONS FOR EXTERIOR WALL TYPES.
4. SEE G-002 FOR SYMBOL LEGEND/ IDENTIFICATION, TYP.

LEGEND

- NEW CONSTRUCTION
- EXISTING BUILDING
- EXISTING EMERGENCY VEHICLE ACCESS ROAD
- EXISTING CONCRETE WALKWAY
- NEW CONCRETE WALKWAY
- NEW ASPHALT CONCRETE PAVING
- DELIVERY ENTRY
- EXISTING ACCESSIBLE PATH OF TRAVEL
- NEW ACCESSIBLE PATH OF TRAVEL
- LIMIT OF WORK
- PROPERTY LINE
- (E) 4'- 0" CHAIN LINK FENCE
- FDC FIRE DEPARTMENT CONNECTION
- PIV POST INDICATOR VALVE

KEYNOTES

KEY PLAN



AUTHORITY APPROVAL:

CSDA DESIGN GROUP
LISTEN COLLABORATE CREATE

889 N. DOUGLAS STREET, SUITE 100
EL SEGUNDO, CA 90245
[T]: 310.821.9200
www.csdadesigngroup.com

ARCHITECT STAMP

LICENSED ARCHITECT
MICHAEL ROBERT SCHOEN
No. C-35165
RENEWAL DATE
FEBRUARY 28, 2019
STATE OF CALIFORNIA

CONSULTANT

CONSULTANT STAMP

CLIENT:

LOS ANGELES UNIFIED SCHOOL DISTRICT BOARD OF EDUCATION
VAUGHN NEXT CENTURY LEARNING CENTER

13330 VAUGHN ST.
SAN FERNANDO, CA 91340

PROJECT NAME:

VAUGHN MAINLAND ADMIN, MEDIA/LITERACY & KITCHEN BLDG

13330 VAUGHN ST. SAN FERNANDO, CA 91340

MARK	DATE	DESCRIPTION

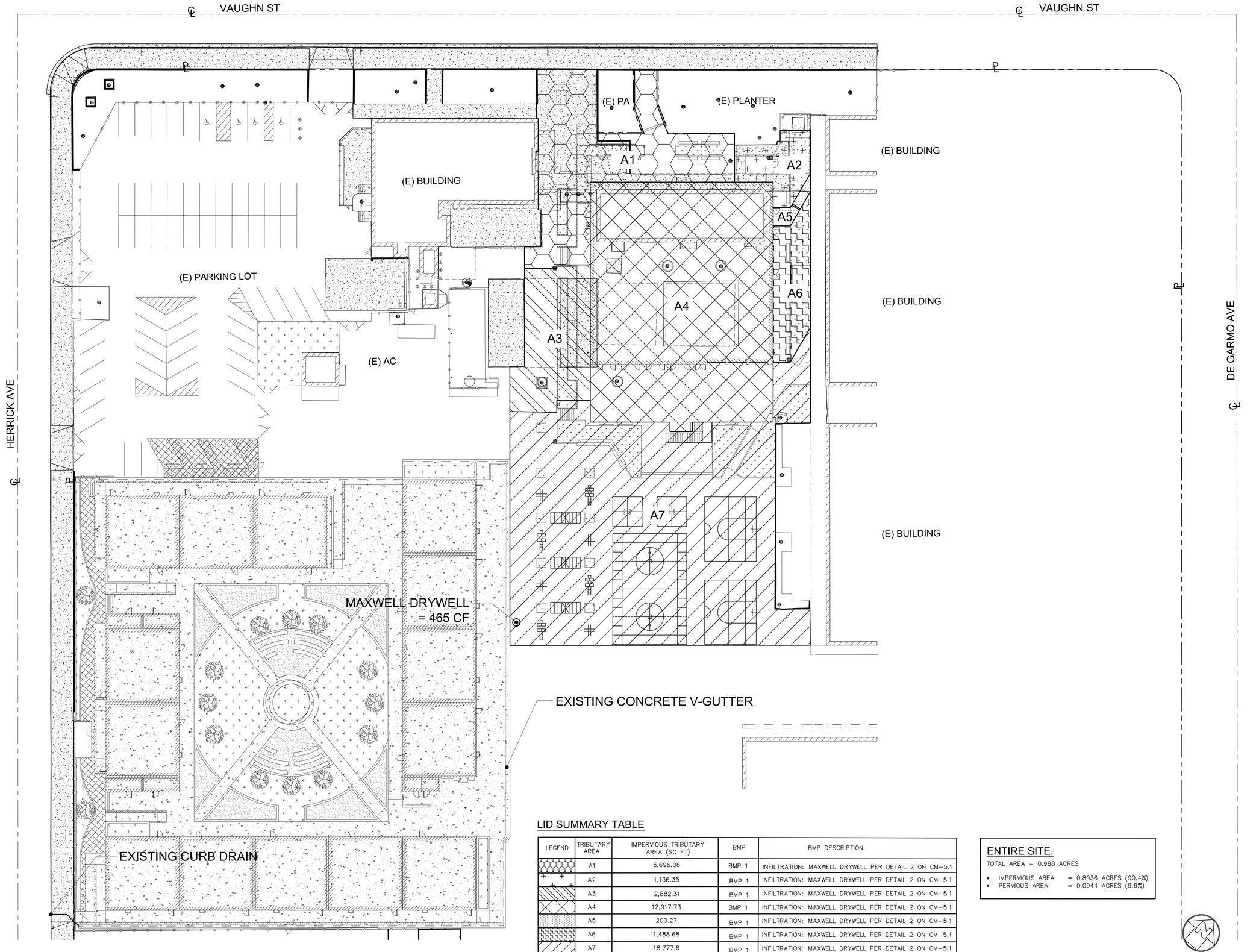
PROJECT NO.: **1949.01**
12/20/19

SHEET TITLE:

SITE PLAN - OVERALL

SHEET NO.:

A-101



LID SUMMARY TABLE

LEGEND	TRIBUTARY AREA	IMPERVIOUS TRIBUTARY AREA (SQ FT)	BMP	BMP DESCRIPTION
	A1	5,696.06	BMP 1	INFILTRATION: MAXWELL DRYWELL PER DETAIL 2 ON CM-5.1
	A2	1,136.35	BMP 1	INFILTRATION: MAXWELL DRYWELL PER DETAIL 2 ON CM-5.1
	A3	2,882.31	BMP 1	INFILTRATION: MAXWELL DRYWELL PER DETAIL 2 ON CM-5.1
	A4	12,917.73	BMP 1	INFILTRATION: MAXWELL DRYWELL PER DETAIL 2 ON CM-5.1
	A5	200.27	BMP 1	INFILTRATION: MAXWELL DRYWELL PER DETAIL 2 ON CM-5.1
	A6	1,488.68	BMP 1	INFILTRATION: MAXWELL DRYWELL PER DETAIL 2 ON CM-5.1
	A7	18,777.6	BMP 1	INFILTRATION: MAXWELL DRYWELL PER DETAIL 2 ON CM-5.1
	TOTAL	43,099.0		

ENTIRE SITE:

TOTAL AREA = 0.988 ACRES

- IMPERVIOUS AREA = 0.8936 ACRES (90.4%)
- PERVIOUS AREA = 0.0944 ACRES (9.6%)

LID PLAN

20 10 0 20 40

GRAPHIC SCALE
SCALE 1" – 20'

Figure 6-Low Impact Development Plan

12/6/2019 2:22:43 PM

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CSDA DESIGN GROUP
LISTEN COLLABORATE CREATE
889 N. DOUGLAS STREET, SUITE 100
EL SEGUNDO, CA 90245
[T]: 310.821.9200
www.csdadesigngroup.com

ARCHITECT STAMP

LICENSED ARCHITECT
MICHAEL ROBERT SCHOEN
No. C-35165
RENEWAL DATE
FEBRUARY 28, 2019
STATE OF CALIFORNIA

CONSULTANT

MCA ENGINEERS INC
CIVIL STRUCTURAL
1041 S. Garfield Avenue, Suite 210
Alhambra, CA 91801
Tel. 323.729.6098
Fax. 323.729.6043

CONSULTANT STAMP

REGISTERED PROFESSIONAL ENGINEER
ANTONIO C. ARMAN
No. C36079
Exp. 6/30/20
CIVIL
STATE OF CALIFORNIA

CLIENT:

LOS ANGELES UNIFIED SCHOOL DISTRICT BOARD OF EDUCATION
VAUGHN NEXT CENTURY LEARNING CENTER
13330 VAUGHN ST.
SAN FERNANDO, CA 91340

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13330 VAUGHN ST. SAN FERNANDO, CA 91340

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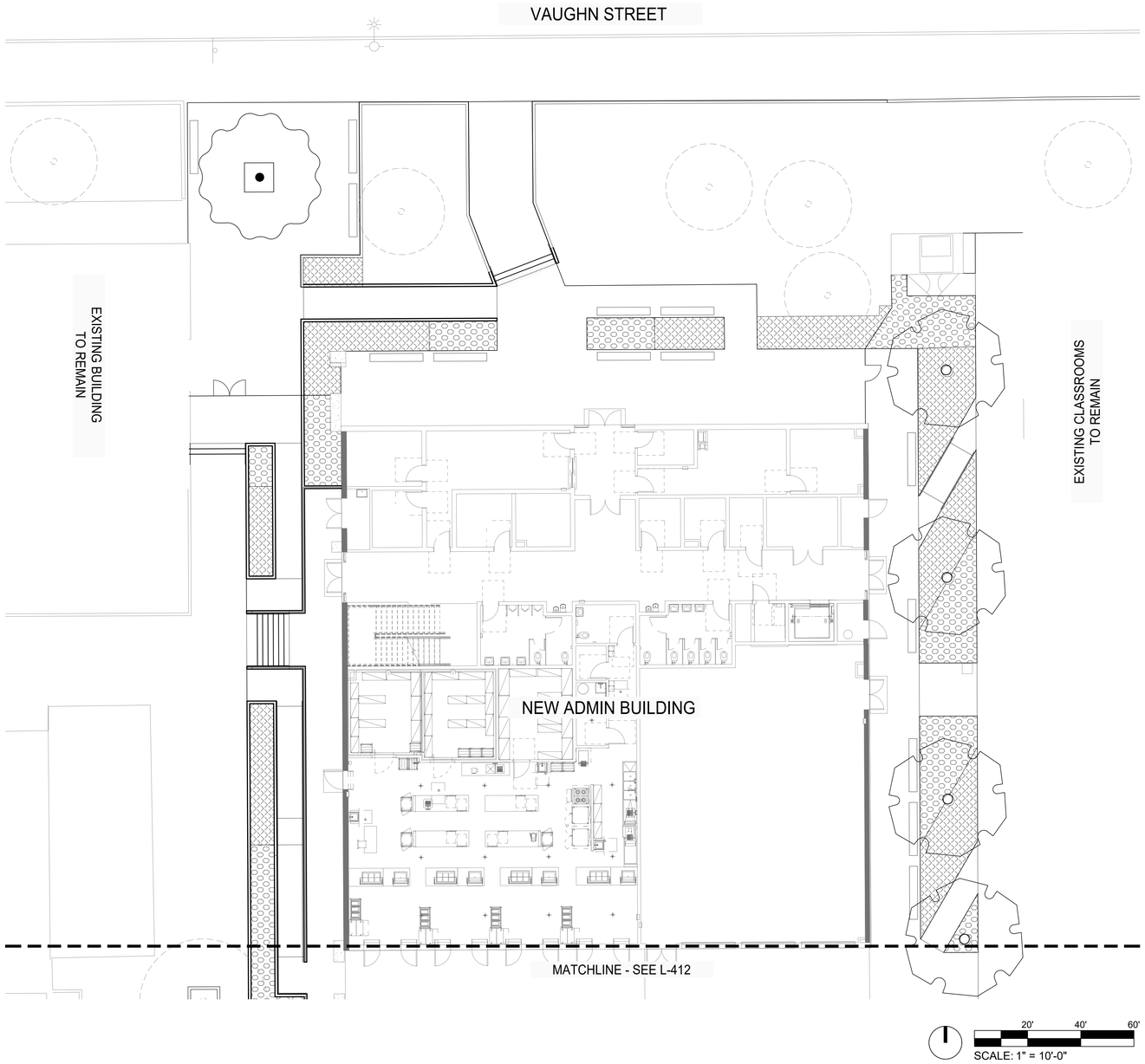
SHEET TITLE:

LID PLAN

SHEET NO.: C-700



PLANTING SCHEDULE
SHRUBS

SYMBOL	BOTANICAL NAME COMMON NAME	SIZE	SPACING	WUCOLS	COMMENTS
	BACCHARIS PILULARIS 'PIGEON POINT' DWARF COYOTE BUSH	5 GAL.	36" O.C.	L	-
	ENCELIA CALIFORNICA BUSH SUNFLOWER	5 GAL.	36" O.C.	L	-
DG	MUHLENBERGIA RIGENS DEER GRASS	1 GAL.	30" O.C.	L	-

PLANTING SCHEDULE
TREE

SYMBOL	BOTANICAL NAME COMMON NAME	SIZE	SPACING	WUCOLS	COMMENTS
	PROSOPIS CHILENSIS CHILEAN MESQUITE	24"BOX	PER PLAN	L	-
	QUERCUS AGRIFOLIA CALIFORNIA COAST LIVE OAK	48"BOX	PER PLAN	L	--
	UMBELLULARIA CALIFORNICA CALIFORNIA BAY LAUREL	24" BOX	PER PLAN	M	-

PLANTING NOTES:

1. ALL LANDSCAPE AREAS SHALL SHEET FLOW @ 2% MINIMUM OR DRAIN TO AREA DRAINS @ 1% MINIMUM
2. REFER TO THE LANDSCAPE CONSTRUCTION PLANS FOR ALL CONSTRUCTION FEATURES SHOWN HEREIN. FINAL SHRUB PLACEMENT TO BE APPROVED BY OWNER/LANDSCAPE ARCHITECT PRIOR TO PLANTING.
3. ALL SHRUB PLANTING AREAS TO BE MULCHED WITH A THREE (3") INCH LAYER OF MULCH. APPROVE MULCH WITH OWNER PRIOR TO PURCHASE.
4. ALL TREES THAT ARE CLOSER THAN FIVE FEET (5') TO HARDSCAPE ELEMENTS SHALL BE PLANTED WITH AN OWNER AND AGENCY APPROVED LINEAR ROOT BARRIER.
5. SHRUBS SHALL BE PLANTED AT 18" MIN. FROM BACK OF WALK. AREAS BETWEEN WALK AND SHRUBS TO BE MULCHED.

Know what's below. Call 811 before you dig.

Figure 7-Landscape Planting Plans (a)

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LISTEN COLLABORATE CREATE

889 N. DOUGLAS STREET, SUITE 100
EL SEGUNDO, CA 90245
[T]: 310.821.9200
www.csdadesigngroup.com

ARCHITECT STAMP

LICENSED ARCHITECT
MICHAEL ROBERT SCHORN
No. C-35165
RENEWAL DATE
FEBRUARY 29, 2020
STATE OF CALIFORNIA

CONSULTANT:

BrightView Design Group
1715 18th ST
SANTA MONICA, CA 90404
PH 310.829.4707
WWW.BRIGHTVIEW.COM

BV PROJECT #: 1730585

CONSULTANT STAMP

REGISTERED LANDSCAPE ARCHITECT
DANA B. GILLIS
1948
Signature
2019/05/09
Date
2020/04/30
Expires
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333 BEAUDRY AVE.
LOS ANGELES, CA 90017
(213) 241-1000

PROJECT NAME:

Vaughn Mainland DCAP

13330 Vaughn St. San Fernando, CA 91340

AUTHORITY APPROVAL:

MARK	DATE	DESCRIPTION

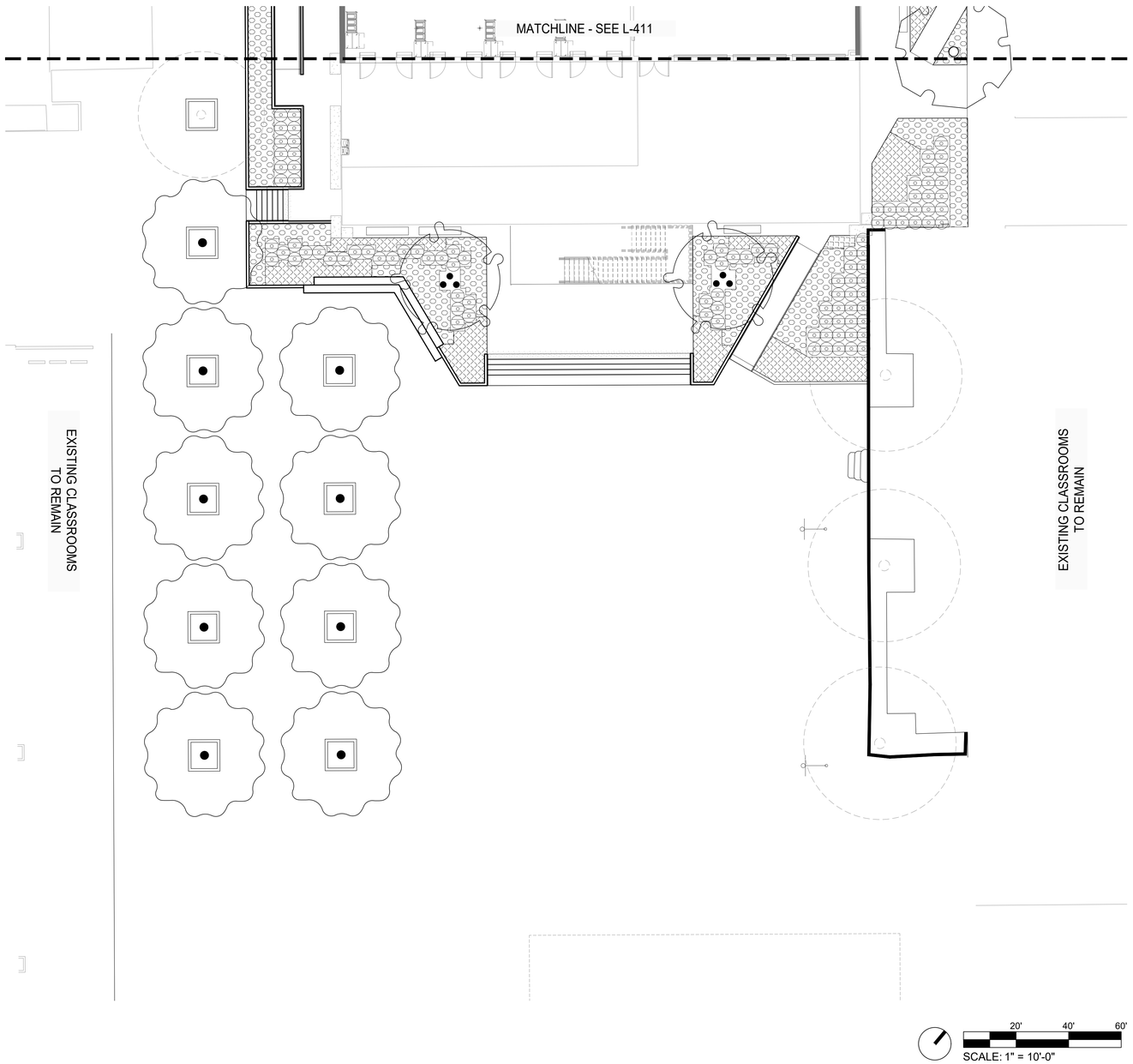
PROJECT NO.: **1949.01**
50% CONSTRUCTION DOCUMENTS 12/20/2019

SHEET TITLE:

PLANTING PLAN

SHEET NO.:

L-411



PLANTING SCHEDULE
SHRUBS

SYMBOL	BOTANICAL NAME COMMON NAME	SIZE	SPACING	WUCOLS	COMMENTS
	BACCHARIS PILULARIS 'PIGEON POINT' DWARF COYOTE BUSH	5 GAL.	36" O.C.	L	-
	ENCELIA CALIFORNICA BUSH SUNFLOWER	5 GAL.	36" O.C.	L	-
	MUHLENBERGIA RIGENS DEER GRASS	1 GAL.	30" O.C.	L	-

PLANTING SCHEDULE
TREE

SYMBOL	BOTANICAL NAME COMMON NAME	SIZE	SPACING	WUCOLS	COMMENTS
	PROSOPIS CHILENSIS CHILEAN MESQUITE	24"BOX	PER PLAN	L	-
	QUERCUS AGRIFOLIA CALIFORNIA COAST LIVE OAK	48"BOX	PER PLAN	L	--
	UMBELLULARIA CALIFORNICA CALIFORNIA BAY LAUREL	24" BOX	PER PLAN	M	-

PLANTING NOTES:

1. ALL LANDSCAPE AREAS SHALL SHEET FLOW @ 2% MINIMUM OR DRAIN TO AREA DRAINS @ 1% MINIMUM
2. REFER TO THE LANDSCAPE CONSTRUCTION PLANS FOR ALL CONSTRUCTION FEATURES SHOWN HEREIN. FINAL SHRUB PLACEMENT TO BE APPROVED BY OWNER/LANDSCAPE ARCHITECT PRIOR TO PLANTING.
3. ALL SHRUB PLANTING AREAS TO BE MULCHED WITH A THREE (3") INCH LAYER OF MULCH. APPROVE MULCH WITH OWNER PRIOR TO PURCHASE.
4. ALL TREES THAT ARE CLOSER THAN FIVE FEET (5') TO HARDSCAPE ELEMENTS SHALL BE PLANTED WITH AN OWNER AND AGENCY APPROVED LINEAR ROOT BARRIER.
5. SHRUBS SHALL BE PLANTED AT 18" MIN. FROM BACK OF WALK. AREAS BETWEEN WALK AND SHRUBS TO BE MULCHED.

Know what's below. Call 811 before you dig.

Figure 8 Landscape Planting Plan (b)

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LISTEN COLLABORATE CREATE

889 N. DOUGLAS STREET, SUITE 100
EL SEGUNDO, CA 90245
[T]: 310.821.9200
www.csdadesigngroup.com

ARCHITECT STAMP

LICENSED ARCHITECT
MICHAEL ROBERT SCHORN
No. C-35165
RENEWAL DATE
FEBRUARY 29, 2020
STATE OF CALIFORNIA

CONSULTANT:

BrightView Design Group
1715 18th ST
SANTA MONICA, CA 90404
PH 310.829.4707
WWW.BRIGHTVIEW.COM

BV PROJECT #: 1730585

CONSULTANT STAMP

REGISTERED LANDSCAPE ARCHITECT
DANA B. SELLS
1948
Signature
2019/05/09
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LOS ANGELES UNIFIED SCHOOL DISTRICT BOARD OF EDUCATION

333 BEAUDRY AVE.
LOS ANGELES, CA 90017
(213) 241-1000

PROJECT NAME:

Vaughn Mainland DCAP

13330 Vaughn St. San Fernando, CA 91340

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50% CONSTRUCTION DOCUMENTS 12/20/2019

SHEET TITLE:

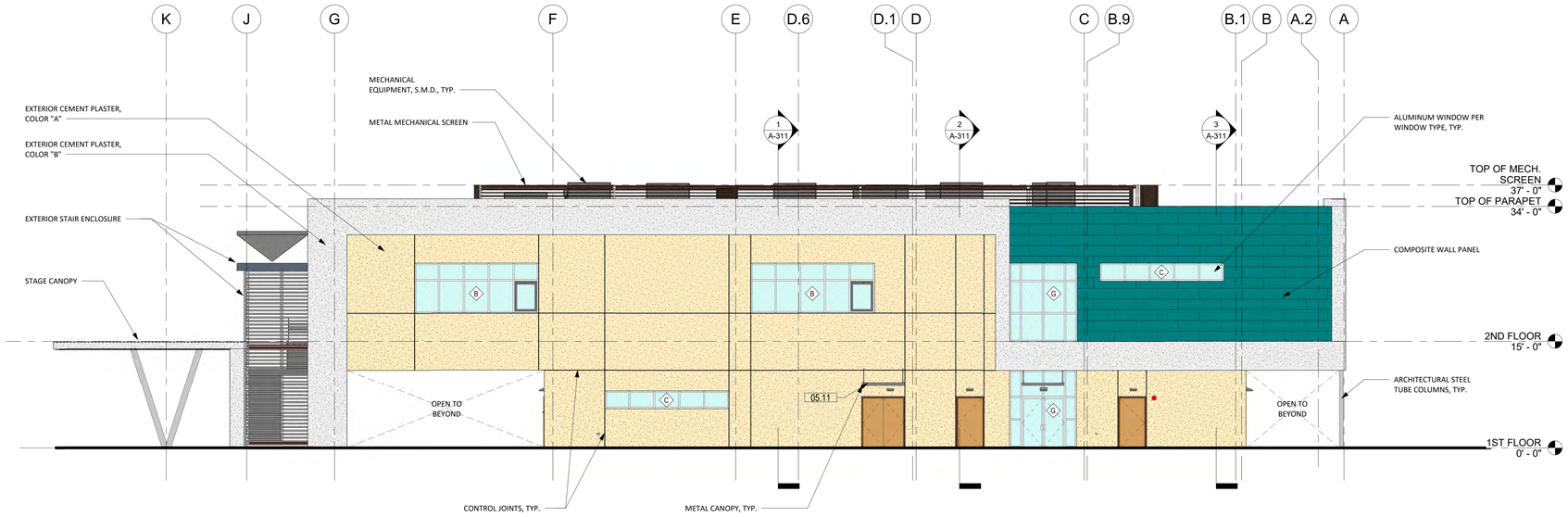
PLANTING PLAN

SHEET NO.:

L-412

NORTH ELEVATION 1

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



EAST ELEVATION 2

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

Figure 9—Elevation-North, East

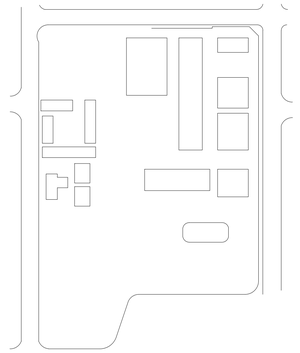
1/3/2020 4:37:08 PM

SHEET NOTES

LEGEND

KEYNOTES

KEY PLAN



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889 N. DOUGLAS STREET, SUITE 100
EL SEGUNDO, CA 90245
[T]: 310.821.9200
www.csdadesigngroup.com

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MICHAEL ROBERT SCHOEN
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CONSULTANT STAMP

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13330 VAUGHN ST.
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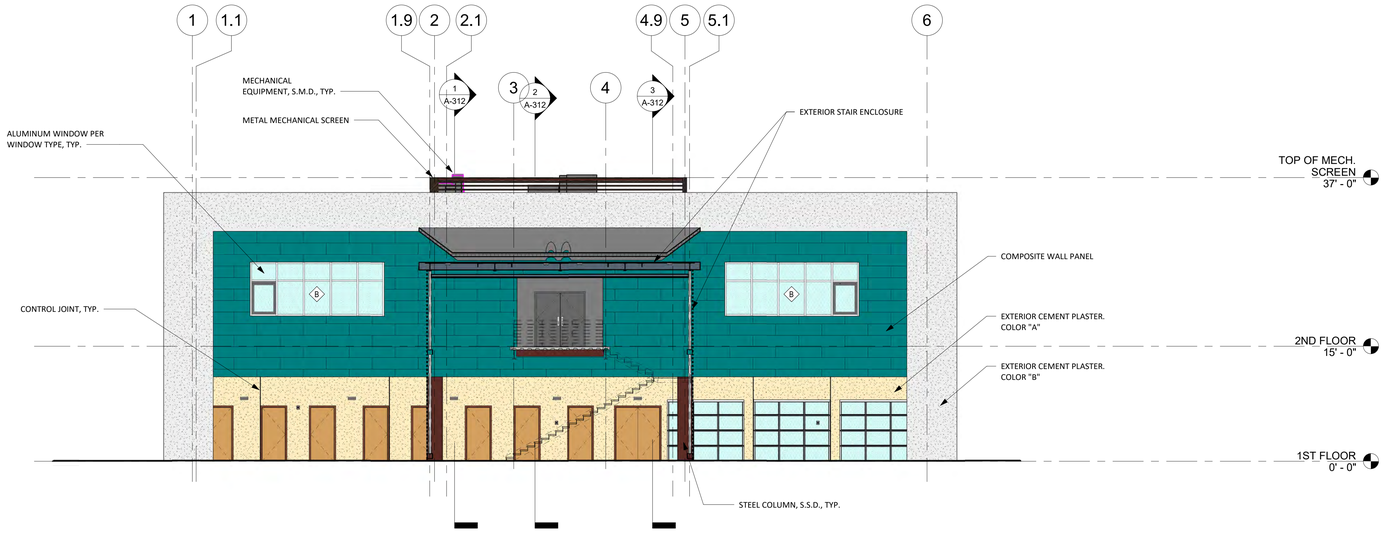
12/20/19

SHEET TITLE:

ELEVATIONS - EXTERIOR - N/E

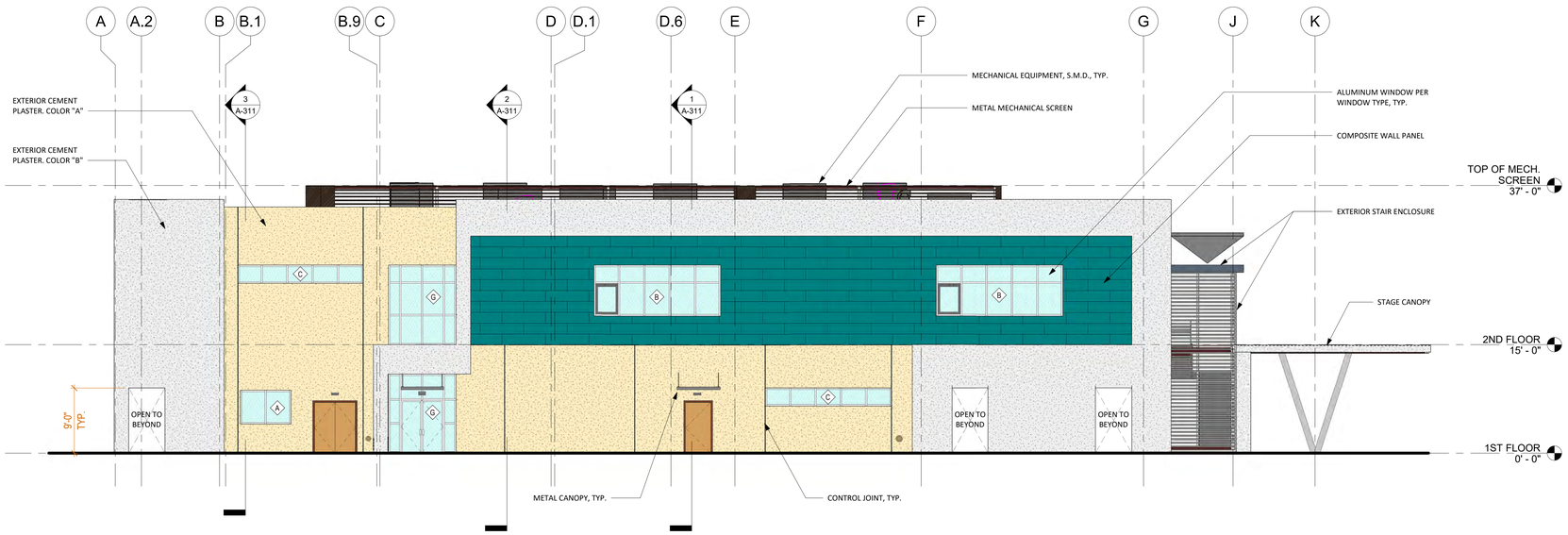
SHEET NO.:

A-211



SOUTH ELEVATION 1

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



WEST ELEVATION 2

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

Figure 9—Elevation-South, West

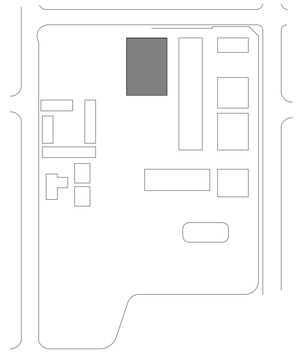
1/3/2020 4:37:18 PM

SHEET NOTES

LEGEND

KEYNOTES

KEY PLAN



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LISTEN COLLABORATE CREATE

889 N. DOUGLAS STREET, SUITE 100
EL SEGUNDO, CA 90245
[T]: 310.821.9200
www.csdadesigngroup.com

ARCHITECT STAMP

LICENSED ARCHITECT
MICHAEL ROBERT SCHOEN
No. C-35165
RENEWAL DATE
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13330 VAUGHN ST.
SAN FERNANDO, CA 91340

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PROJECT NO.: **1949.01**

12/20/19

SHEET TITLE:

ELEVATIONS - EXTERIOR - S/W

SHEET NO.:

A-212

3D Rendering - North View

Figure 11—3D Rendering-North View

3D Rendering - South View

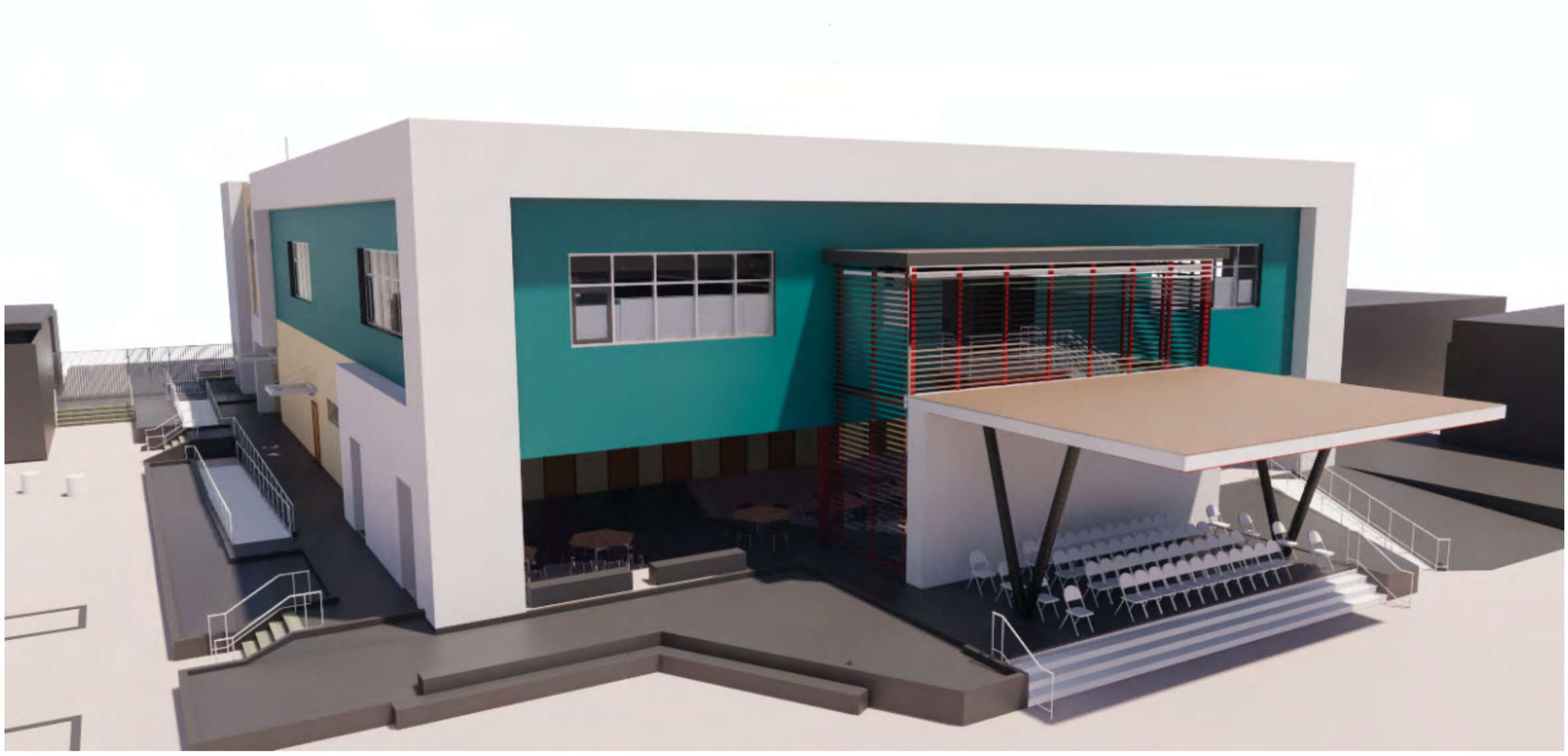

Figure 12—3D Rendering-South View

APPENDIX B

Air Quality/LST Analysis

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

July 30, 2019

Dennis Crable – Crable & Associates
765 West Altadena Drive
Altadena, CA 91001

RE: Vaughn Next Century Learning Center Project – South Coast Air Quality Management District Localized Significance Threshold (LST) Analysis Memorandum

Dear Mr. Crable:

On behalf of ECORP Consulting, Inc. (Seth Myers - Senior Air Quality Analyst) has conducted a Localized Significance Threshold (LST) analysis for the proposed Vaughn Next Century Learning Center Project (Project) owned by the Los Angeles Unified School District (LAUSD). The Project is located on 13330 Vaughn Street in the community of Pacoima, California.

Project Description

The Project site is bounded by Herrick Avenue to the southwest, Eustace Street to the southeast, DeGarmo Avenue to the northeast and Vaughn Street to the northwest. The surrounding neighborhood is made up of single family and multifamily residences within the City of San Fernando with Pacoima to the South, Sylmar to the North, and Angeles National Forest to the East and Granada Hills and Porter Ranch to the West.

The campus was originally built in 1954 with portable buildings. In 1957 the campus was reconfigured with permanent buildings. The elementary school currently has 12 existing buildings, which include an existing administration building, library building, multi-purpose room (MPR) building with a kitchen and storage facilities. The main entrance to the campus and the administrative building is accessed from Vaughn Street. The campus has a main play yard in the middle which has an asphalt finish. There is a multifunctional service road/fire lane accessed from Herrick Avenue that services the campus kitchen, but traverses through the campus playground to reach the kitchen. Programmatically, the campus operates as one campus in adjunct with the middle school (MIT), sharing the playground, cafeteria, lunch shelter and other resources.

Currently, the campus has a total of 63 parking spaces. There are three existing shade structures, which currently act as lunch shelters. The current ADA accessible path of travel includes the MPR, parking and the newest buildings which were built as part of the "Portables to Project-Based Pods" (P3) project. The existing administration building cannot be made accessible as most corridors and door openings are too narrow.

The proposed Project includes the removal of the existing administration building and replacement with a new building. The new two-story building will be approximately 26,000 square feet and include six

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learning pods (equivalent to 12 classrooms), health and administrative offices, media/literacy center, teacher work room and cooking cafeteria. The adjacent site will be upgraded to renovate the existing outdoor stage, provide more shade and more permeable surfaces. The new building will provide general administrative and student services at the ground floor (administration offices, student support offices, work room, media/literacy center and cooking cafeteria). The second floor will house the new pods and student toilet rooms. The existing outdoor stage will be upgraded to provide an assembly area for the entire school and the Vaughn community to use.

The proposed improvements are located along the front entrance of the campus at Vaughn Street. The Project proposes to demolish some existing landscape, paved walkways, approximately 4,000 square feet of building space, fencing, a gate, site walls, and aboveground site features. There is also the possibility that the Project will need to remove or relocate some underground utility lines.

Project Localized Construction Significance Analysis

The South Coast Air Quality Management District (SCAQMD) has established that impacts to air quality are significant if there is a potential to contribute to or cause localized exceedances of the federal and/or state ambient air quality standards. Localized Significance Thresholds (LSTs) were developed in response to SCAQMD Governing Boards' Environmental Justice Enhancement Initiative (I-4) and health concerns raised by the public regarding exposure of individuals to criteria pollutants in local communities. LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard at the nearest residence or sensitive receptor. LSTs that show whether a project would cause or contribute to localized air quality impacts and thereby cause or contribute to potential localized adverse health effects. The SCAQMD provided the *Final Localized Significance Threshold Methodology* (dated June 2003 [revised 2008]) for guidance. The LST methodology assists lead agencies in analyzing localized impacts associated with Project-specific level proposed projects. This analysis makes use of the methodology included in the SCAQMD *Final Localized Significance Threshold Methodology*.

The SCAQMD developed LSTs for emissions of nitrogen dioxide (NO_2), carbon monoxide (CO), coarse particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$) generated at new development sites (off-site mobile source emissions are not included in the LST analysis protocol). The significance of localized emissions impacts depends on whether ambient levels in the vicinity of the project are above or below state standards. In the case of CO and NO_2, if ambient levels are below the standards, a project is considered to have a significant impact if project emissions result in an exceedance of one or more of these standards. In the case of PM_{10} and $PM_{2.5}$, project emissions are considered significant if they increase ambient concentrations by a measurable amount.

LSTs are based on the ambient concentrations of pollutants within the Project source receptor area (SRA), as demarcated by the SCAQMD, and the distance to the nearest sensitive receptor. LST analysis for construction is applicable for all projects that disturb 5 acres or less on a single day. The Project site is located within SCAQMD SRA 7 (East San Fernando Valley). **Table 1** shows the LSTs for a 1-acre, 2-acre, and 5-acre project site in SRA 7 with sensitive receptors located within 25 meters of the Project site.

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Table 1. Local Significance Thresholds (Construction / Operations)				
Project Size	Pollutant (pounds per day)			
	NO_2 Construction/ Operations	CO Construction/ Operations	PM_{10} Construction/ Operations	$PM_{2.5}$ Construction/ Operations
1 Acre	80 / 80	498 / 498	4 / 1	3 / 1
2 Acres	114 / 114	786 / 786	7 / 2	4 / 1
5 Acres	172 / 172	1,484 / 1,484	14 / 4	8 / 2

Source: SCAQMD 2009

Project Construction

The SCAQMD has also issued guidance on applying the California Emissions Estimator Model version 2016.3.2 (CalEEMod) software to identify a project's rate of daily disturbance. (CalEEMod is a statewide land use emissions computer model designed to quantify pollutant emissions associated with construction and operations from a variety of land use projects.) Since CalEEMod calculates construction emissions based on the number of equipment hours and the maximum daily soil disturbance activity possible for each piece of equipment, **Table 2** is used to determine the maximum daily disturbed-acreage for comparison to LSTs.

Table 2. Equipment-Specific Grading Rates					
Construction Phase	Equipment Type	Acres Graded/Disturbed per 8-Hour Day	Equipment Quantity	Operating Hours per Day	Acres Graded per Day
Site Preparation	Rubber Tired Dozers	0.5	1	8	0.5
	Tractors/ Loaders/ Backhoes	0.5	2	8	1.0
				Demolition Total	1.5
Site Preparation	Graders	0.5	1	8	0.5
	Tractors/ Loaders/ Backhoes	0.5	1	8	0.5
				Site Preparation Total	1.0
Grading	Rubber Tired Dozers	0.5	1	8	0.5
	Tractors/ Loaders/ Backhoes	0.5	2	8	1.0
				Grading Total	1.5
				Maximum Total Acres Graded per Day	1.5

Source: California Emissions Estimator Model version 2016.3.2 (CalEEMod) software, User's Guide

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As shown in **Table 2**, Project implementation could potentially disturb up to 1.5 acres daily during demolition activities, 1 acre daily during the site preparation phase of construction, and 1.5 acres daily during the grading phase of construction. Thus, a LST threshold value for 1.5-acres of maximum daily disturbance was sourced from the SCAQMD LST lookup tables (SCAQMD 2009).

The nearest sensitive receptors to the Project site are the residences fronting Vaughn Street, directly across the street from the Project site. In the instance that construction activities occur while school is in session, on-site student would also be considered sensitive receptors. The SCAQMD has produced look-up tables for construction activities that disturb less than or equal to 5 acres daily. LST thresholds are provided for distances to sensitive receptors of 25, 50, 100, 200, and 500 meters. Notwithstanding, the SCAQMD Methodology explicitly states: "*It is possible that a project may have receptors closer than 25 meters. Projects with boundaries located closer than 25 meters to the nearest receptor should use the LSTs for receptors located at 25 meters.*" Therefore, LSTs for receptors located at 25 meters were utilized in this analysis. The SCAQMD's methodology also clearly states that "*off-site mobile emissions from a project should not be included in the emissions compared to LSTs*." Therefore, for purposes of the construction LST analysis, only emissions included in the CalEEMod "on-site" emissions outputs are considered.

Table 3 presents the results of localized emissions during the demolition, site preparation, and grading construction phases. The LSTs reflect a maximum disturbance of 1.5 acres daily for the proposed Project at 25 meters from the nearest sensitive receptors.

Table 3. Construction-Related Emissions (Localized Significance Analysis)

Activity	Pollutant (pounds per day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Project Demolition	7.87	7.62	2.21	0.71
Project Site Preparation	8.43	4.09	0.86	0.36
Project Site Grading	0.03	0.43	0.11	0.03
SCAQMD Localized Significance Threshold *Interpolated for 1.5 Acres of Daily Disturbance*	*97.00*	*642.00*	*5.50*	*3.50*
Exceed SCAQMD Localized Threshold?	No	No	No	No

Source: California Emissions Estimator Model version 2016.3.2 (CalEEMod) software. Refer to ***Attachment A*** *for Model Data Outputs.*

Notes: Emissions estimates account for the demolition of 4,000 square feet of building space and 60,200 square feet of hardscape, landscape, utilities, and above-ground site features.

Table 3 shows that the emissions of these pollutants on the peak day of construction would not result in significant concentrations of pollutants at nearby sensitive receptors. Therefore, significant impacts would not occur concerning LSTs during construction activities.

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Project Operations

According to the SCAQMD localized significance threshold methodology, LSTs would apply to the operational phase of a proposed project only if the project includes stationary sources or attracts mobile sources that may spend long periods queuing and idling at the site, such as commonly associated with heavy-duty trucks (e.g., warehouse or transfer facilities). The proposed Project does not include such uses. Therefore, in the case of the proposed Project, the operational phase LST protocol does not need to be applied.

Analysis Conclusion

Table 3 shows that air pollutant emissions on the peak day of construction would not surpass SCAQMD LSTs, and thereby would not result in significant concentrations of pollutants at nearby sensitive receptors. Significant LST impacts would not occur during construction activities. Similarly, Project operations would fall below SCAQMD LSTs since the operational phase of the Project does not include stationary sources of air pollutant emissions. Additionally, the Project would not attract mobile sources of air pollutant emissions that may spend long periods queuing and idling at the site.

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REFERENCES

SCAQMD (South Coast Air Quality Management District). 2008. *Final Localized Significance Threshold Methodology* (dated June 2003 [revised 2008]).

———. 2009. *Localized Significance Threshold Appendix C – Mass Rate LST Look-Up Tables*. Revised October 21, 2009. http://www.aqmd.gov/ceqa/handbook/LST/LST.html.

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ATTACHMENT A

CalEEMod Output Files

Vaughn Next Century Learning Center

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Elementary School	26.00	1000sqft	0.60	26,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	12			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Demolition estimated to remove 4,000 square feet of building space and 60,200 square feet of hardscape, landscape, utilities and above-ground site features.

Demolition -

Vaughn Next Century Learning Center - Los Angeles-South Coast County, Summer

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	100.00
tblConstructionPhase	NumDays	10.00	20.00
tblConstructionPhase	NumDays	5.00	100.00
tblConstructionPhase	PhaseEndDate	1/16/2020	8/19/2020
tblConstructionPhase	PhaseEndDate	1/2/2020	8/19/2020
tblConstructionPhase	PhaseEndDate	8/12/2019	3/27/2020
tblConstructionPhase	PhaseEndDate	8/15/2019	4/1/2020
tblConstructionPhase	PhaseEndDate	1/9/2020	8/19/2020
tblConstructionPhase	PhaseEndDate	8/13/2019	3/30/2020
tblConstructionPhase	PhaseStartDate	1/10/2020	4/2/2020
tblConstructionPhase	PhaseStartDate	8/16/2019	4/2/2020
tblConstructionPhase	PhaseStartDate	7/30/2019	3/1/2020
tblConstructionPhase	PhaseStartDate	8/14/2019	3/31/2020
tblConstructionPhase	PhaseStartDate	1/3/2020	4/2/2020
tblConstructionPhase	PhaseStartDate	8/13/2019	3/28/2020

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.4425	18.2897	17.8005	0.0303	1.9998	1.0333	2.4753	0.4434	0.9630	1.0622	0.0000	2,895.2236	2,895.2236	0.6984	0.0000	2,912.6826
Maximum	**4.4425**	**18.2897**	**17.8005**	**0.0303**	**1.9998**	**1.0333**	**2.4753**	**0.4434**	**0.9630**	**1.0622**	**0.0000**	**2,895.2236**	**2,895.2236**	**0.6984**	**0.0000**	**2,912.6826**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.4425	18.2897	17.8005	0.0303	1.9998	1.0333	2.4753	0.4434	0.9630	1.0622	0.0000	2,895.2236	2,895.2236	0.6984	0.0000	2,912.6826
Maximum	**4.4425**	**18.2897**	**17.8005**	**0.0303**	**1.9998**	**1.0333**	**2.4753**	**0.4434**	**0.9630**	**1.0622**	**0.0000**	**2,895.2236**	**2,895.2236**	**0.6984**	**0.0000**	**2,912.6826**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.5811	2.0000e-005	2.6600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		5.6900e-003	5.6900e-003	2.0000e-005		6.0700e-003
Energy	7.9900e-003	0.0726	0.0610	4.4000e-004		5.5200e-003	5.5200e-003		5.5200e-003	5.5200e-003		87.1555	87.1555	1.6700e-003	1.6000e-003	87.6734
Mobile	0.7813	3.6836	10.7624	0.0372	2.9400	0.0306	2.9706	0.7868	0.0286	0.8154		3,777.1703	3,777.1703	0.1960		3,782.0699
Total	**1.3704**	**3.7562**	**10.8261**	**0.0376**	**2.9400**	**0.0361**	**2.9762**	**0.7868**	**0.0341**	**0.8209**		**3,864.3315**	**3,864.3315**	**0.1977**	**1.6000e-003**	**3,869.7494**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.5811	2.0000e-005	2.6600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		5.6900e-003	5.6900e-003	2.0000e-005		6.0700e-003
Energy	7.9900e-003	0.0726	0.0610	4.4000e-004		5.5200e-003	5.5200e-003		5.5200e-003	5.5200e-003		87.1555	87.1555	1.6700e-003	1.6000e-003	87.6734
Mobile	0.7813	3.6836	10.7624	0.0372	2.9400	0.0306	2.9706	0.7868	0.0286	0.8154		3,777.1703	3,777.1703	0.1960		3,782.0699
Total	**1.3704**	**3.7562**	**10.8261**	**0.0376**	**2.9400**	**0.0361**	**2.9762**	**0.7868**	**0.0341**	**0.8209**		**3,864.3315**	**3,864.3315**	**0.1977**	**1.6000e-003**	**3,869.7494**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/1/2020	3/27/2020	5	20	
2	Site Preparation	Site Preparation	3/28/2020	3/30/2020	5	1	
3	Grading	Grading	3/31/2020	4/1/2020	5	2	
4	Building Construction	Building Construction	4/2/2020	8/19/2020	5	100	
5	Paving	Paving	4/2/2020	8/19/2020	5	100	
6	Architectural Coating	Architectural Coating	4/2/2020	8/19/2020	5	100	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 39,000; Non-Residential Outdoor: 13,000; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Vaughn Next Century Learning Center - Los Angeles-South Coast County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	161.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	11.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	2.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.7472	0.0000	1.7472	0.2646	0.0000	0.2646			0.0000			0.0000
Off-Road	0.8674	7.8729	7.6226	0.0120		0.4672	0.4672		0.4457	0.4457		1,147.2352	1,147.2352	0.2169		1,152.6578
Total	**0.8674**	**7.8729**	**7.6226**	**0.0120**	**1.7472**	**0.4672**	**2.2144**	**0.2646**	**0.4457**	**0.7102**		**1,147.2352**	**1,147.2352**	**0.2169**		**1,152.6578**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0703	2.3147	0.5129	6.3600e-003	0.1408	7.3900e-003	0.1481	0.0386	7.0700e-003	0.0457		688.9446	688.9446	0.0469		690.1170
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0460	0.0327	0.4378	1.1800e-003	0.1118	9.3000e-004	0.1127	0.0296	8.6000e-004	0.0305		117.6113	117.6113	3.7100e-003		117.7040
Total	**0.1163**	**2.3474**	**0.9508**	**7.5400e-003**	**0.2525**	**8.3200e-003**	**0.2609**	**0.0682**	**7.9300e-003**	**0.0762**		**806.5559**	**806.5559**	**0.0506**		**807.8210**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.7472	0.0000	1.7472	0.2646	0.0000	0.2646			0.0000			0.0000
Off-Road	0.8674	7.8729	7.6226	0.0120		0.4672	0.4672		0.4457	0.4457	0.0000	1,147.2352	1,147.2352	0.2169		1,152.6578
Total	**0.8674**	**7.8729**	**7.6226**	**0.0120**	**1.7472**	**0.4672**	**2.2144**	**0.2646**	**0.4457**	**0.7102**	**0.0000**	**1,147.2352**	**1,147.2352**	**0.2169**		**1,152.6578**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0703	2.3147	0.5129	6.3600e-003	0.1408	7.3900e-003	0.1481	0.0386	7.0700e-003	0.0457		688.9446	688.9446	0.0469		690.1170
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0460	0.0327	0.4378	1.1800e-003	0.1118	9.3000e-004	0.1127	0.0296	8.6000e-004	0.0305		117.6113	117.6113	3.7100e-003		117.7040
Total	**0.1163**	**2.3474**	**0.9508**	**7.5400e-003**	**0.2525**	**8.3200e-003**	**0.2609**	**0.0682**	**7.9300e-003**	**0.0762**		**806.5559**	**806.5559**	**0.0506**		**807.8210**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.6853	8.4307	4.0942	9.7400e-003		0.3353	0.3353		0.3085	0.3085		943.4872	943.4872	0.3051		951.1158
Total	**0.6853**	**8.4307**	**4.0942**	**9.7400e-003**	**0.5303**	**0.3353**	**0.8656**	**0.0573**	**0.3085**	**0.3658**		**943.4872**	**943.4872**	**0.3051**		**951.1158**

3.3 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0230	0.0164	0.2189	5.9000e-004	0.0559	4.7000e-004	0.0564	0.0148	4.3000e-004	0.0153		58.8056	58.8056	1.8500e-003		58.8520
Total	**0.0230**	**0.0164**	**0.2189**	**5.9000e-004**	**0.0559**	**4.7000e-004**	**0.0564**	**0.0148**	**4.3000e-004**	**0.0153**		**58.8056**	**58.8056**	**1.8500e-003**		**58.8520**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.6853	8.4307	4.0942	9.7400e-003		0.3353	0.3353		0.3085	0.3085	0.0000	943.4872	943.4872	0.3051		951.1158
Total	**0.6853**	**8.4307**	**4.0942**	**9.7400e-003**	**0.5303**	**0.3353**	**0.8656**	**0.0573**	**0.3085**	**0.3658**	**0.0000**	**943.4872**	**943.4872**	**0.3051**		**951.1158**

3.3 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0230	0.0164	0.2189	5.9000e-004	0.0559	4.7000e-004	0.0564	0.0148	4.3000e-004	0.0153		58.8056	58.8056	1.8500e-003		58.8520
Total	**0.0230**	**0.0164**	**0.2189**	**5.9000e-004**	**0.0559**	**4.7000e-004**	**0.0564**	**0.0148**	**4.3000e-004**	**0.0153**		**58.8056**	**58.8056**	**1.8500e-003**		**58.8520**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7528	0.0000	0.7528	0.4138	0.0000	0.4138			0.0000			0.0000
Off-Road	0.8674	7.8729	7.6226	0.0120		0.4672	0.4672		0.4457	0.4457		1,147.2352	1,147.2352	0.2169		1,152.6578
Total	**0.8674**	**7.8729**	**7.6226**	**0.0120**	**0.7528**	**0.4672**	**1.2200**	**0.4138**	**0.4457**	**0.8595**		**1,147.2352**	**1,147.2352**	**0.2169**		**1,152.6578**

3.4 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0460	0.0327	0.4378	1.1800e-003	0.1118	9.3000e-004	0.1127	0.0296	8.6000e-004	0.0305		117.6113	117.6113	3.7100e-003		117.7040
Total	**0.0460**	**0.0327**	**0.4378**	**1.1800e-003**	**0.1118**	**9.3000e-004**	**0.1127**	**0.0296**	**8.6000e-004**	**0.0305**		**117.6113**	**117.6113**	**3.7100e-003**		**117.7040**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7528	0.0000	0.7528	0.4138	0.0000	0.4138			0.0000			0.0000
Off-Road	0.8674	7.8729	7.6226	0.0120		0.4672	0.4672		0.4457	0.4457	0.0000	1,147.2352	1,147.2352	0.2169		1,152.6578
Total	**0.8674**	**7.8729**	**7.6226**	**0.0120**	**0.7528**	**0.4672**	**1.2200**	**0.4138**	**0.4457**	**0.8595**	**0.0000**	**1,147.2352**	**1,147.2352**	**0.2169**		**1,152.6578**

3.4 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0460	0.0327	0.4378	1.1800e-003	0.1118	9.3000e-004	0.1127	0.0296	8.6000e-004	0.0305		117.6113	117.6113	3.7100e-003		117.7040
Total	**0.0460**	**0.0327**	**0.4378**	**1.1800e-003**	**0.1118**	**9.3000e-004**	**0.1127**	**0.0296**	**8.6000e-004**	**0.0305**		**117.6113**	**117.6113**	**3.7100e-003**		**117.7040**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8617	8.8523	7.3875	0.0114		0.5224	0.5224		0.4806	0.4806		1,102.9781	1,102.9781	0.3567		1,111.8962
Total	**0.8617**	**8.8523**	**7.3875**	**0.0114**		**0.5224**	**0.5224**		**0.4806**	**0.4806**		**1,102.9781**	**1,102.9781**	**0.3567**		**1,111.8962**

3.5 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0142	0.4255	0.1115	1.0400e-003	0.0256	2.0000e-003	0.0276	7.3700e-003	1.9200e-003	9.2900e-003		110.8099	110.8099	6.7600e-003		110.9789
Worker	0.0506	0.0360	0.4816	1.3000e-003	0.1230	1.0300e-003	0.1240	0.0326	9.5000e-004	0.0336		129.3724	129.3724	4.0800e-003		129.4744
Total	**0.0649**	**0.4615**	**0.5931**	**2.3400e-003**	**0.1486**	**3.0300e-003**	**0.1516**	**0.0400**	**2.8700e-003**	**0.0428**		**240.1823**	**240.1823**	**0.0108**		**240.4533**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8617	8.8523	7.3875	0.0114		0.5224	0.5224		0.4806	0.4806	0.0000	1,102.9781	1,102.9781	0.3567		1,111.8962
Total	**0.8617**	**8.8523**	**7.3875**	**0.0114**		**0.5224**	**0.5224**		**0.4806**	**0.4806**	**0.0000**	**1,102.9781**	**1,102.9781**	**0.3567**		**1,111.8962**

3.5 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0142	0.4255	0.1115	1.0400e-003	0.0256	2.0000e-003	0.0276	7.3700e-003	1.9200e-003	9.2900e-003		110.8099	110.8099	6.7600e-003		110.9789
Worker	0.0506	0.0360	0.4816	1.3000e-003	0.1230	1.0300e-003	0.1240	0.0326	9.5000e-004	0.0336		129.3724	129.3724	4.0800e-003		129.4744
Total	**0.0649**	**0.4615**	**0.5931**	**2.3400e-003**	**0.1486**	**3.0300e-003**	**0.1516**	**0.0400**	**2.8700e-003**	**0.0428**		**240.1823**	**240.1823**	**0.0108**		**240.4533**

3.6 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7716	7.2266	7.1128	0.0113		0.3950	0.3950		0.3669	0.3669		1,035.3926	1,035.3926	0.3016		1,042.9323
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.7716**	**7.2266**	**7.1128**	**0.0113**		**0.3950**	**0.3950**		**0.3669**	**0.3669**		**1,035.3926**	**1,035.3926**	**0.3016**		**1,042.9323**

3.6 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0828	0.0589	0.7881	2.1300e-003	0.2012	1.6800e-003	0.2029	0.0534	1.5500e-003	0.0549		211.7003	211.7003	6.6700e-003		211.8672
Total	**0.0828**	**0.0589**	**0.7881**	**2.1300e-003**	**0.2012**	**1.6800e-003**	**0.2029**	**0.0534**	**1.5500e-003**	**0.0549**		**211.7003**	**211.7003**	**6.6700e-003**		**211.8672**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7716	7.2266	7.1128	0.0113		0.3950	0.3950		0.3669	0.3669	0.0000	1,035.3926	1,035.3926	0.3016		1,042.9323
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.7716**	**7.2266**	**7.1128**	**0.0113**		**0.3950**	**0.3950**		**0.3669**	**0.3669**	**0.0000**	**1,035.3926**	**1,035.3926**	**0.3016**		**1,042.9323**

3.6 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0828	0.0589	0.7881	2.1300e-003	0.2012	1.6800e-003	0.2029	0.0534	1.5500e-003	0.0549		211.7003	211.7003	6.6700e-003		211.8672
Total	**0.0828**	**0.0589**	**0.7881**	**2.1300e-003**	**0.2012**	**1.6800e-003**	**0.2029**	**0.0534**	**1.5500e-003**	**0.0549**		**211.7003**	**211.7003**	**6.6700e-003**		**211.8672**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	2.4102					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**2.6524**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.7 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.2000e-003	6.5500e-003	0.0876	2.4000e-004	0.0224	1.9000e-004	0.0225	5.9300e-003	1.7000e-004	6.1000e-003		23.5223	23.5223	7.4000e-004		23.5408
Total	**9.2000e-003**	**6.5500e-003**	**0.0876**	**2.4000e-004**	**0.0224**	**1.9000e-004**	**0.0225**	**5.9300e-003**	**1.7000e-004**	**6.1000e-003**		**23.5223**	**23.5223**	**7.4000e-004**		**23.5408**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	2.4102					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**2.6524**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.7 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	9.2000e-003	6.5500e-003	0.0876	2.4000e-004	0.0224	1.9000e-004	0.0225	5.9300e-003	1.7000e-004	6.1000e-003		23.5223	23.5223	7.4000e-004		23.5408
Total	**9.2000e-003**	**6.5500e-003**	**0.0876**	**2.4000e-004**	**0.0224**	**1.9000e-004**	**0.0225**	**5.9300e-003**	**1.7000e-004**	**6.1000e-003**		**23.5223**	**23.5223**	**7.4000e-004**		**23.5408**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.7813	3.6836	10.7624	0.0372	2.9400	0.0306	2.9706	0.7868	0.0286	0.8154		3,777.1703	3,777.1703	0.1960		3,782.0699
Unmitigated	0.7813	3.6836	10.7624	0.0372	2.9400	0.0306	2.9706	0.7868	0.0286	0.8154		3,777.1703	3,777.1703	0.1960		3,782.0699

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Elementary School	401.18	0.00	0.00	987,586	987,586
Total	401.18	0.00	0.00	987,586	987,586

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Elementary School	16.60	8.40	6.90	65.00	30.00	5.00	63	25	12

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Elementary School	0.547192	0.045177	0.202743	0.121510	0.016147	0.006143	0.019743	0.029945	0.002479	0.002270	0.005078	0.000682	0.000891

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	7.9900e-003	0.0726	0.0610	4.4000e-004		5.5200e-003	5.5200e-003		5.5200e-003	5.5200e-003		87.1555	87.1555	1.6700e-003	1.6000e-003	87.6734
NaturalGas Unmitigated	7.9900e-003	0.0726	0.0610	4.4000e-004		5.5200e-003	5.5200e-003		5.5200e-003	5.5200e-003		87.1555	87.1555	1.6700e-003	1.6000e-003	87.6734

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Elementary School	740.822	7.9900e-003	0.0726	0.0610	4.4000e-004		5.5200e-003	5.5200e-003		5.5200e-003	5.5200e-003		87.1555	87.1555	1.6700e-003	1.6000e-003	87.6734
Total		**7.9900e-003**	**0.0726**	**0.0610**	**4.4000e-004**		**5.5200e-003**	**5.5200e-003**		**5.5200e-003**	**5.5200e-003**		**87.1555**	**87.1555**	**1.6700e-003**	**1.6000e-003**	**87.6734**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Elementary School	0.740822	7.9900e-003	0.0726	0.0610	4.4000e-004		5.5200e-003	5.5200e-003		5.5200e-003	5.5200e-003		87.1555	87.1555	1.6700e-003	1.6000e-003	87.6734
Total		**7.9900e-003**	**0.0726**	**0.0610**	**4.4000e-004**		**5.5200e-003**	**5.5200e-003**		**5.5200e-003**	**5.5200e-003**		**87.1555**	**87.1555**	**1.6700e-003**	**1.6000e-003**	**87.6734**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.5811	2.0000e-005	2.6600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		5.6900e-003	5.6900e-003	2.0000e-005		6.0700e-003
Unmitigated	0.5811	2.0000e-005	2.6600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		5.6900e-003	5.6900e-003	2.0000e-005		6.0700e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0660					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.5148					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.5000e-004	2.0000e-005	2.6600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		5.6900e-003	5.6900e-003	2.0000e-005		6.0700e-003
Total	**0.5811**	**2.0000e-005**	**2.6600e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**5.6900e-003**	**5.6900e-003**	**2.0000e-005**		**6.0700e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0660					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.5148					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.5000e-004	2.0000e-005	2.6600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		5.6900e-003	5.6900e-003	2.0000e-005		6.0700e-003
Total	**0.5811**	**2.0000e-005**	**2.6600e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**5.6900e-003**	**5.6900e-003**	**2.0000e-005**		**6.0700e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX C

Cultural Resources Records Search and Literature Review

December 10, 2019

Mr. Dennis Crable
765 West Altadena Drive
Altadena, California 91001

Subject: ***Cultural Resources Literature Review and Records Search for the Vaughn Next Century Project, Los Angeles County, California***

Dear Mr. Crable:

At the request of Crable & Associates, ECORP Consulting, Inc. carried out a cultural resources study for the Vaughn Next Century Learning Center Project (Project). The Vaughn Next Century Learning Center Mainland campus is a public charter school located at 13330 Vaughn Street, San Fernando, California 91340. The Los Angeles Unified School District (District) proposes to remove and replace the existing main office of the Vaughn Next Century Learning Center Mainland campus with a new 26,000-square-foot facility to include six learning pods, health and administrative offices, a media/literacy center, a teacher work room, and a cafeteria. The proposed Project Area (Vaughn Next Century campus) is bounded by Vaughn Street to the northwest, De Garmo Street to the northeast, Eustace Street to the southeast, and Herrick Avenue to the southwest. The majority of the surrounding area is developed as residential housing, churches, and businesses. Maps showing the Project location are provided below in Figures 1 and 2.

ECORP conducted a background literature review for the Project Area consisting of a records search of the California Historical Resources Information System (CHRIS), a search of the Native American Heritage Commission (NAHC) Sacred Lands File, and the review of historic and geologic maps pertinent to the area. Because the Project Area is developed, no surface-level archaeological resources were likely to be present, and an archaeological pedestrian survey was not warranted for this Project. The District previously recorded and evaluated all historic-period buildings and structures within the Project Area for the California Register of Historical Resources (CRHR). This information is on file with the District.

At your direction, no additional documentation or evaluation work was carried out for the existing buildings and structures. ECORP's review used reasonably accessible records search and database information and included the examination of aerial photographs and maps to assist in the identification of archaeological resources within the area and to assess the potential for the Project Area to contain unanticipated subsurface resources.

REGULATORY CONTEXT

To meet the regulatory requirements of the Project, the cultural resources investigation was conducted pursuant to the provisions for the treatment of cultural resources contained within CEQA (Public Resources Code § 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 development project maps.

CEQA (Title 14, California Code of Regulations [CCR], Article 5, § 15064.5) applies to cultural resources of the historical and pre-contact 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 on the California Register of Historical Resources (CRHR) (Public Resources Code § 5024.1, Title 14 CCR, § 4852). Resources listed on or eligible for inclusion in the CRHR are considered Historical Resources under CEQA.

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. Under Exemption 3 of the federal Freedom of Information Act (5 U.S. Code 5 [USC]), because the disclosure of cultural resources location information is prohibited by the Archaeological Resources Protection Act of 1979 (16 USC 470hh) and Section 304 of the NHPA, it is also exempted from disclosure under the Freedom of Information Act. Likewise, the Information Centers of the CHRIS maintained by the OHP prohibit public dissemination of records search information. In compliance with these requirements, the results of this cultural resource investigation were prepared as a confidential document, which is not intended for public distribution in either paper or electronic format.

Tribal Cultural Resources are defined in Section 21074 of the California Public Resources Code as sites, features, places, cultural landscapes (geographically defined in terms of the size and scope), sacred places, and objects with cultural value to a California Native American tribe that are either included in or determined to be eligible for inclusion in the California Register of Historical Resources, or are included in a local register of historical resources as defined in subdivision (k) of Section 5020.1, or are 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 Section 5024.1. Section 1(b)(4) of Assembly Bill 52 established that only California Native American tribes, as defined in Section 21073 of the California Public Resources Code, are experts in the identification of Tribal Cultural Resources and impacts thereto. Because ECORP does not meet the definition of a California Native American tribe, this report only addresses information for which ECORP is qualified to identify and evaluate, and that which is needed to inform the cultural resources section of CEQA documents. This report, therefore, does not identify or evaluate Tribal Cultural Resources. Should California Native American tribes ascribe additional importance to, or interpretation of archaeological resources described herein, or provide information about non-archeological Tribal Cultural Resources, that information is documented separately in the AB 52 tribal consultation record between the tribe(s) and lead agency and summarized in the Tribal Cultural Resources section of the CEQA document, if applicable.

PERSONNEL QUALIFICATIONS

All phases of this cultural resources investigation were conducted under the supervision of Registered Professional Archaeologist (RPA) Wendy Blumel. The CHRIS records search was conducted by Mark Deering and Robert Cunningham. Analyses of results were conducted by Robert Cunningham, Wendy Blumel, Paige Liss, and John O'Connor, Ph.D., RPA. The letter report was prepared by Paige Liss and Dr. O'Connor, with senior review conducted by Lisa Westwood, RPA.

Wendy Blumel has 11 years of experience in cultural resources management and meets the Secretary of the Interior's Professional Qualifications Standards for prehistoric and historic archaeologist. She is experienced in the organization and execution of field projects in compliance with Section 106 of the NHPA and CEQA. She has contributed to and authored numerous cultural resources technical reports, research designs, and cultural resource management plans, and has contributed to a variety of environmental compliance documents.

Mark Deering has more than 15 years of experience in cultural resources management with an area of specialization in laboratory management, large database (over 100,000 records) management, and use of GIS in archaeological documentation and analysis. He is proficient in the use of sub-meter accuracy GPS units for collecting site locational data and using the collected data in GIS database for analysis and mapping. In the field, he has been a crew chief and field assistant on numerous surveys and test and data recovery programs.

Robert Cunningham has more than 10 years of experience in cultural resources management, primarily in southern California. He holds a B.A. in Anthropology and has participated in and supervised numerous surveys, testing, and data recovery excavations for both pre-contact and historical sites, and has cataloged, identified, and curated thousands of artifacts. He has conducted evaluations of cultural resources for eligibility for the National Register of Historic Places (NRHP) and CRHR.

Paige Liss is an Assistant Archaeologist for ECORP and has more than three years of experience in cultural resources management, primarily in southern California. She holds a B.S. in Anthropology and Geography with a concentration in human ecology. Ms. Liss has participated in and supervised numerous surveys and data recovery excavations for both pre-contact and historic sites on federal, state, and local projects, and has cataloged, identified, and curated hundreds of artifacts. She has conducted numerous evaluations of cultural resources for eligibility for the National Register of Historic Places (NRHP).

John O'Connor, Ph.D., RPA, is a Senior Archaeologist for ECORP with more than 10 years of archaeological experience in North America and the Pacific Islands. Dr. O'Connor meets the Secretary of the Interior's Professional Qualifications Standards for prehistoric and historic archaeology. Dr. O'Connor has expertise in all facets of archaeological practice, including cultural resources management, academic research, museum collections management, university teaching, and applied knowledge of inter-institutional coordination with American Indian and Native Hawaiian organizations.

Lisa Westwood is an RPA who meets the Secretary of the Interior's Professional Qualifications Standards for prehistoric and historic archaeology with 25 years of experience. She holds a B.A. in Anthropology and an M.A. in Anthropology (Archaeology). She has participated in or supervised numerous survey, testing,

and data recovery excavations, has recorded and mapped hundreds of pre-contact and historical sites, and has cataloged, identified, and curated hundreds of thousands of artifacts. She has conducted evaluations of cultural resources for eligibility to the NRHP and CRHR and is well versed in impact assessment and development of mitigation measures for CEQA and Section 106 (NHPA) projects. She is the Director of Cultural Resources for ECORP.

METHODS

Records Search Methods

On October 30, 2019, ECORP archaeologist Mark Deering conducted a cultural resources records search of the CHRIS at the South Central Coastal Information Center (SCCIC) located on the California State University, Fullerton campus. The purpose of the records search was to determine the extent of previous cultural resources investigations and the presence of previously recorded archaeological sites or historic-period (i.e., over 50 years in age) resources within a one-mile (1,600-meter) radius of the Project Area. The records search identified resources listed on or determined eligible for listing on the NRHP and/or the CRHR located within or near the Project Area. Materials reviewed included reports of previous cultural resources investigations, archaeological site records, historical maps, and listings of resources on the NRHP, CRHR, California Points of Historical Interest, California Landmarks, and National Historic Landmarks.

Historic maps reviewed include:

- 1900 USGS San Fernando Topographic Quadrangle Map (1:625,000 scale);
- 1901 USGS Southern California Sheet No 1 Topographic Quadrangle Map (1:250,000 scale);
- 1927 USGS Pacoima Topographic Quadrangle Map (1:24,000 scale);
- 1940 USGS San Fernando Topographic Quadrangle Map (1:625,000 scale);
- 1953 USGS San Fernando Topographic Quadrangle Map (1:24,000 scale);
- 1966 USGS San Fernando Topographic Quadrangle Map (1:24,000 scale);
- 1972 USGS San Fernando Topographic Quadrangle Map (1:24,000 scale);
- 1988 USGS San Fernando Topographic Quadrangle Map (1:24,000 scale); and
- 1995 USGS San Fernando Topographic Quadrangle Map (1:24,000 scale).

Historic aerial photos taken in 1947, 1952, 1953, 1964, 1969, 1972, 1977, 1980, 1994, 2002, 2003, 2009, 2014 and 2016 were also reviewed on November 5, 2019 by ECORP archaeologist Paige Liss for any indications of property usage and built environment.

Sacred Lands File Coordination Methods

In addition to the records search, ECORP contacted the California Native American Heritage Commission (NAHC) on October 22, 2019, to request a search of the Sacred Lands File for the Project Area (Attachment B). The search was requested to determine whether or not Sacred Lands have been recorded

by California Native American tribes within the Project Area, because the Sacred Lands File is populated by members of the Native American community who have knowledge about the locations of tribal resources. The NAHC also provided a list of Native American groups that have historic or traditional ties to the Project Area. It should be noted that the Sacred Lands File search will not constitute consultation in compliance with Assembly Bill (AB 52). AB 52 consultation is a separate process from cultural technical studies and is not included in this scope of work. ECORP assumes that the District as the CEQA Lead Agency will conduct all AB 52 consultation for the Project.

RESULTS

Previous Research

The records search consisted of a review of previous research and literature, records on file with the South Central Coastal Information Center (SCCIC) for previously recorded resources, historical aerial photographs, and maps of the vicinity. Within the Project Area, there have been no previous cultural resource investigations. However, 29 cultural resources investigations were conducted within the one-mile records search radius between 1992 and 2014. Details of all 29 investigations are presented below in Table 1.

Table 1. Previous Cultural Studies In or Within 1 Mile of the Project Area

Report Number	Author(s)	Report Title	Year	Includes Portion of the Project Area?
LA-02892	Stone, David and Robert Sheets	Phase I Archaeological Survey Report Pacific Pipeline Project Santa Barbara Coastal Reroutes Ethnohistoric Village Placement Locations	1993	No
LA-02950	Anonymous	Consolidated Report: Cultural Resource Studies for the Proposed Pacific Pipeline Project	1992	No
LA-03138	Maki, Mary K	A Phase 1 Cultural Resources Survey at 662 Griswold Avenue, San Fernando Los Angeles County, California	1995	No
LA-03565	Romani, John F.	Results of Phase I Archaeological Surveys Located at 12793 Mercer Street, Pacoima, and 7006 Alabama Avenue/21429 Hart Street, Canoga Park, Los Angeles County, California	1996	No
LA-03601	Maki, Mary K.	Negative Phase I Archaeological Survey North Maclay Alley Project San Fernando, Los Angeles County, California	1997	No
LA-04078	Romani, Gwendolyn R.	Results of Phase I Archaeological Survey Located at 12535- 12543 Pierce Street, and 11257-11265 Borden Avenue, Pacoima, Los Angeles County, California	1998	No
LA-04079	Wlodarski, Robert J.	A Phase I Archaeological Study for 12793 Mercer Street, Pacoima, Los Angeles County, California	1996	No

Table 1. Previous Cultural Studies In or Within 1 Mile of the Project Area

Report Number	Author(s)	Report Title	Year	Includes Portion of the Project Area?
LA-04360	Maki, Mary K.	Negative Phase 1 Archaeological Survey and Impact Assessment of 1.01 Acres for the San Fernando Library Plaza Project San Fernando, Los Angeles County, California	1999	No
LA-04583	Duke, Curt	Cultural Resource Assessment for Pacific Bell Mobile Services Facility La 681-02, County of Los Angeles, California	1999	No
LA-05175	Duke, Curt	Cultural Resource Assessment for Pacific Bell Wireless Facility La 352-12, County of Los Angeles, California	2000	No
LA-05544	Duke, Curt	Cultural Resource Assessment for AT&T Fixed Wireless Services Facility No. La_504_a County of Los Angeles, California	2001	No
LA-05930	Wlodarski, Robert J.	A Phase I Archaeological Study for the Proposed Vaughn Street Apartments Located At12860 Vaughn Street City of Pacoima, County of Los Angeles, California	2002	No
LA-05934	Duke, Curt	Review of AT&T Fixed Wireless Facility La 504a, County of Los Angeles, California	2001	No
LA-05935	Sylvia, Barbara	Negative Archaeological Survey Report: Class I Bike Path Within Mta, San Fernando Road From Wolfskill Street to Brandford Street in San Fernando Valley	2002	No
LA-07001	Maki, Mary K.	Phase I Archaeological Survey of Three Sites Covering Approximately Two Acres for the San Fernando Senior Housing Project City of San Fernando, Los Angeles County, California	2003	No
LA-07003	Maki, Mary K.	Negative Archaeological Survey Report of Approximately Three Acres for the San Fernando Regional Pool Facility Project 208 Park Avenue Drive City of San Fernando Los Angeles County, California	2003	No
LA-08255	Arrington, Cindy and Nancy Sikes	Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project State of California: Volumes I and II	2006	No
LA-09195	Bonner, Wayne H.	Cultural Resources Records Search and Site Visit Results for T-Mobile Candidate SV11582A (Pacoima Plaza), 12727 Van Nuys Boulevard, Pacoima, Los Angeles County, California	2007	No
LA-09196	Bonner, Wayne H.	Cultural Resources Records Search and Site Visit Results for T-Mobile Candidate SV01590E-R (Linzer), 675 Glenoaks Boulevard, San Fernando, Los Angeles County, California	2007	No

Table 1. Previous Cultural Studies In or Within 1 Mile of the Project Area

Report Number	Author(s)	Report Title	Year	Includes Portion of the Project Area?
LA-10288	Bonner, Wayne H. and Arabesque Said	Cultural Resource Records Search and Site Visit Results for T-Mobile USA Candidate SV12171A (Civic Center Maintenance Yard), 120 North Macneill Street, San Fernando, Los Angeles County, California	2010	No
LA-10289	Bonner, Wayne H.	Cultural Records Search and Site Visit Results for T-Mobile USA Candidate SV12084A (Whiteman Vacant Lot), 13177 Van Nuys Boulevard, Pacoima, Los Angeles County, California	2009	No
LA-10642	Tang, Bai "Tom"	Preliminary Historical/Archaeological Resources Study, Antelope Valley line Positive Train Control (PTC) Project Southern California Regional Rail Authority, Lancaster to Glendale, Los Angeles County, California	2010	No
LA-10719	Bonner, Wayne and Sarah Williams	Cultural Resources Records Search and Site Visit Results for T-Mobile USA Candidate SC12170A (Pioneer Park), 828 Harding Avenue, San Fernando, Los Angeles County, California	2010	No
LA-11687	Loftus, Shannon	Cultural Resource Records Search and Site Survey, AT&T Site LA0258 (36499) Paxton Bradley, 11155 3/4 Bradley, Pacoima, Los Angeles County, California 91331	2011	No
LA-12526	Ehringer, Candace, Katherine Ramirez, and Michael Vader	Santa Clarita Valley Sanitation District Chloride TMDL Facilities Plan Project, Phase I Cultural Resources Assessment	2013	No
LA-12733	Bonner, Diane, Carrie Wills, and Kathleen Crawford	Cultural Resources Records Search and Site Visit Results for Verizon Wireless Candidate VzT Hubbard, 510 Park Avenue, San Fernando, Los Angeles County, California, EBI Project No 611145263	2014	No
LA-12734	Bonner, Diane and Carrie Wills	Cultural Resources Records Search and Site Visit Results for Verizon Wireless Candidate Arroyo, 675 Glenoaks Boulevard, San Fernando, Los Angeles County, California, EBI Project No 61145223	2014	No
LA-12767	Vader, Michael and Madeline Bray	Los Angeles Department of Water and Power Foothill Trunk Line Project, Phase I Cultural Resources Study	2013	No
LA-12947	Brunzell, David	Cultural Resources Assessment of the Arroyo Project, San Fernando, Los Angeles County, California (BCR Consulting Project No. TRF1408)	2014	No

The records search also determined that nine previously recorded historic-era cultural resources are located within one mile of the Project Area (Table 2). Some of these are associated with architecturally historic buildings including the home of a great film pioneer, David Wark Griffith, while others are remnants of historical buildings including a foundation and a single concrete arch bridge. These historic sites date from the early nineteenth century up to being used today with modern additions. None of these resources are located within the Project Area. The District has indicated to you that the historic-period buildings and structures within the Project Area have already been recorded. These records did not show up in the CHRIS records search and are not included in the table below. The record(s) for these buildings are not currently available to ECORP and have not been reviewed for findings or completeness.

Table 2. Previously Recorded Cultural Resources Within One Mile of the Project Area

Site Number	Primary Number P-19-	Recorder and Year	Age/ Period	Site Description	Within Project Area?
CA-LAN-1124H	P-19-001124	Howell, Craig 1982; Updated in 1989 by M. Q. Sutton, Cultural Resource Facility, CA State University, Bakersfield	Historic	Southern Pacific engine house, turntable, and San Fernando station, built ca. 1874, the site is a barren vacant lot with foundation features visible	No
CA-LAN-4469H	P-19-004469	M. Bray, ESA, 626 Wilshire Boulevard, Suite 1100, Los Angeles, California 90017 in 2013	Historic	Rock and cement feature, possibly a wall foundation or reinforced basin wall segment	No
HRI #026566	P-19-172553	City of Los Angeles, Bureau of Engineering, 1983	Historic	Architecturally Historic Bungalow Building (built in 1915)	No
Griffith Ranch #716 Prop 090653	P-19-186559	California Historical Landmarks Plaque Request, requested by J. Arbuckle in 1980	Historic	The Griffith Ranch	No
Prop 100409	P-19-187258	Christy J. McAvoy, Historic Resources Group, 1728 N. Whitley Ave, Los Angeles CA, in 1995	Historic	Historic Building (built in 1941)	No
None	P-19-189972	Shannon L. Loftus MAHP/RPA For: ACE Environmental, LLC 9976 Peak Lookout Street Las Vegas, NV 89178 in 2011	Historic	1-3 Story Commercial Building (built circa 1952-1953)	No
None	P-19-190314	Candace Ehringer, ESA, 626 Wilshire Blvd, Ste 1100, Los Angeles, CA 90017 in 2012	Historic	Closed Spandrel Concrete Arch Bridge (Original Construction: 1925 & Renovation/Widening: 1940)	No
Prop 097856	P-19-190687	Christy J. McAvoy, Historic Resources Group, 1728 N. Whitley Ave, Los Angeles CA, in 1995	Historic	Concrete Classical Revival Style Auditorium (built in 1916 and designed by architect John C. Austin)	No

Table 2. Previously Recorded Cultural Resources Within One Mile of the Project Area					
Site Number	Primary Number P-19-	Recorder and Year	Age/ Period	Site Description	Within Project Area?
None	P-19-192766	K.A. Crawford, Crawford Historic Services, P.O. Box 634, La Mesa, CA in 2017	Historic	Industrial Building (built in 1966, with modern additions)	No

Records

The Office of Historic Preservation's (OHP) *Directory of Properties, Historic Property Data File* for Los Angeles County (dated April 5, 2012) included two resources within one mile of the Project Area (OHP 2019). The site records for these two resources (Griffith Ranch [P-19-186559] and the Auditorium [P-19-190687]) were reviewed in detail. Each record stated that the resource was significant to the history of the area. No resources were listed within the Project Area.

Map Review and Aerial Photographs

The review of historical aerial photographs (NETROnline 2019) and maps of the Project Area provided information on the past land uses of the property and the potential for the existence of historic-period or pre-contact archaeological sites. Following is a summary of the review of historical maps and photographs.

The earliest USGS San Fernando Topographic Quadrangle (scale 1:625,000) map shows a series of roads in the area as well as the railroad to the west, however, very few buildings, apart from a few past the Pacoima Wash to the north (USGS 1900). The 1901 USGS Southern California Sheet No. 1 map shows the same at the San Fernando from the year prior (USGS 1901). The USGS Pacoima Topographic Quadrangle (scale 1:24,000) shows the additions of more buildings to the north and east of the Project Area (USGS 1927). The USGS San Fernando Topographic Quadrangle (scale 1:625,000) from 1940 provides the first evidence of a structure at the location of the Project Area (USGS 1940). By 1953, the Project Area remained unchanged; however, the surrounding area had an increase in built structures (USGS 1953). The USGS San Fernando Topographic Quadrangle (scale 1:24,000) from both 1966 and 1972 are relatively the same; the 1966 map shows additional buildings within the Project Area (USGS 1966, 1972). On the USGS San Fernando Topographic Quadrangle (scale 1:24,000) from 1988, HWY 118 is visible to the south of the Project Area, and everything stays the same through to 1995 (the most recent map available) (USGS 1988, 1995). Historic aerial photographs show how the area went from being dirt open space in 1947, to the addition of a few buildings in the area in 1953, and an increase in structures from then until today. The Historic aerial photograph from 1964 shows the first evidence of a building on the plot of land that is now the Vaughn Next Century Learning Center. By 1972, the area looks very similar to today, highly built up and industrialized.

Sacred Lands File Results

The results of the Sacred Lands File by the NAHC were received on November 4, 2019, and the results were positive, indicating the presence of a Sacred Land within or within the near vicinity of the Project Area. The NAHC recommends contacting the Gabrieleño Band of Mission Indians – Kizh Nation for more information (see Attachment B). The NAHC also provided a list of 17 Native American tribes who may also have knowledge of cultural resources in the Project Area.

ECORP has not been delegated authority by the Lead Agency to conduct tribal consultation or to follow up with the tribe on the Agency's behalf. The District, as the CEQA Lead Agency, has the responsibility to conduct formal government to government consultation for the project under AB 52. If any additional comments are received after the submission of this report, they will be forwarded to the Lead Agency for further consideration and appropriate action. Correspondence between the NAHC and ECORP is included in Attachment B.

Potential for Subsurface Resources

In assessing potential for buried archaeological sites, ECORP reviewed reasonably available information on natural water and soils data. The presence of natural water sources is often an indicator for the potential presence of archaeological resources because pre-contact Native American communities and post-contact Euroamerican and Native American communities exploited natural water courses for a variety of subsistence and economic resources. The Pacoima Wash is located approximately 600 meters northwest of the Project Area.

Geological data from the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) and rockd.org (Macrostrat 2019) were reviewed to characterize the geology of the local area in reference to archaeological history. Certain geological characteristics and formations are more likely to be of concern for archaeological materials. Compiled information available from rockd.org lists the parcel as composed of Late Pleistocene to Holocene (0.126 to 0 Ma) young alluvial-fan deposits. This means that the parcel is predominantly covered in alluvial sediments deposited by ancient and recent water flow within the period of known human habitation in California. Holocene alluvial deposits have the potential to contain Native American archaeological sites. The Project Area has been entirely paved and developed. Thus, any near-surface pre-contact or historic-period archaeological sites that may have been present have likely been mixed, removed, or destroyed by development activities. Therefore, although sediments with the Project Area have the potential to contain cultural material, the likelihood for the presence of subsurface archaeological deposits is considered low.

Conclusions

No archaeological resources were identified within the Project Area as a result of this records search and literature review. The Project Area was entirely paved and developed during the mid- to late twentieth century. This development would have displaced or destroyed any archaeological resources that may have been present on the ground surface. An archaeological survey was not completed for the Project because no archaeological resources would be visible on the ground surface. Historic-period maps and photographs show that several of the buildings on the Vaughn Next Century campus are historic in age.

Based on information from you, all historic period buildings and structures have already been recorded and evaluated by the Lead Agency (District), and no further work is needed for these resources. ECORP is assuming that the historic-period buildings were evaluated as not eligible for the CRHR and, based on the available information no known Historical Resources are located within the Project Area. If this assumption is correct, then the proposed Project will not result in impacts to a Historical Resource, as defined by CEQA.

The Sacred Lands File search for the Project was positive, and the Project Area overlaps a resource that is considered significant to one or more Native American groups. The Sacred Lands File is populated by members of the Native American community who have knowledge about the locations of Tribal Cultural Resources. Sacred Lands may or may not correspond to archaeological resources, and archaeologists are not the experts in identifying Tribal Cultural Resources and Native American Sacred Lands. No indications of pre-contact Native American archaeological resources were identified within or near the Project Area as a result of this literature review. Based on the level of development present, no pre-contact archaeological sites would be visible on the ground surface and no archaeological resources are known to exist within the Project Area. However, ECORP is providing the results of the Sacred Lands File results to the District to aid in the identification of Tribal Cultural Resources through their consultation with Tribes under AB 52.

Under state law, the discovery of both archaeological materials and human remains triggers an automatic work stoppage at that location. However, work can continue in other parts of the Project Area while the District determines, in consultation with the Project archaeologist and other parties as appropriate, whether or not the find represents a historical resource under CEQA. For this reason, ECORP recommends that a contractor awareness training be conducted by a qualified archaeologist prior to the start of construction for all construction staff who may work on the Project. The contractor awareness training will cover the definition and examples of cultural resources, the kinds of archaeological resources that may be found within the Project Area, State and Federal regulations governing archaeological resources, and procedures to follow in the event that archaeological material or human remains are found.

In addition, ECORP recommends on-call monitoring by a qualified archaeologist working under the supervision of an RPA who meets the Secretary of the Interior's Professional Qualifications Standards for prehistoric and historic archaeology. The retention of a project archaeologist will provide reference and expertise for the District should archaeological materials be inadvertently discovered during Project construction.

In the event that the find includes human remains, or remains that are potentially human, the Los Angeles County Medical Examiner-Coroner must be notified to determine if the remains are the result of a crime scene or that of a prehistoric Native American. If the latter, the Medical Examiner-Coroner must notify the California Native American Heritage Commission (NAHC) to identify a Most Likely Descendent (MLD) of the remains. The MLD will make recommendations to the landowner about the appropriate treatment and disposition of the remains, which may or may not require mediation by the NAHC before construction activities may resume. The procedures are detailed in Section 7050.5 of the California Health and Safety Code and Section 5097.98 of the California Public Resources Code.

Summary

Following the records search and literature review, ECORP concluded the following:

- The Project Area has not been previously subjected to a cultural resources survey by a qualified archaeologist; however, an archaeological survey would not inform the Project, due to the lack of ground surface visibility.
- The District maintains that it recorded and evaluated all structures as not eligible for the CRHR. ECORP did not peer review these documents or findings, which were not filed with the CHRIS Information Center and are not available.
- The Gabrieleño Band of Mission Indians – Kizh Nation possesses additional information about tribal resources and should be contacted. Other California Native American Tribes may request consultation under AB 52, which may yield additional information.
- Given that the ground surface is not visible, subsurface archaeological deposits may be unearthed during construction. Ensuring the dissemination of a contractor awareness training and an on-call archaeological monitor is recommended so that procedures under state law are followed.

If you have any questions or would like to discuss these issues in further detail, please contact me at wblumel@ecorpconsulting.com or by phone at (909) 307-0046.

Sincerely,

Wendy Blumel, RPA
Senior Archaeologist

REFERENCES

Macrostrat. 2019. Geologic maps. https://rockd.org/ accessed November 5, 2019.

NETROnline. 2019. Historic Aerials. Electronic document. http://www.historicaerials.com/ accessed November 5, 2019.

OHP. 2019. *Office of Historic Preservation California Historical Landmarks Website*, Electronic document. http://ohp.parks.ca.gov/?page_id=21387, accessed November 5, 2019.

USGS. 1900 1:625,000 scale Quadrangle San Fernando Map. Denver, Colorado: Geological Survey.

_____. 1901 1:250,000 scale Quadrangle Southern California Sheet No 1 Map. Denver, Colorado: Geological Survey.

_____. 1927 1:24,000 scale Quadrangle Pacoima Map. Denver, Colorado: Geological Survey.

_____. 1940 1:625,000 scale Quadrangle San Fernando Map. Denver, Colorado: Geological Survey.

_____. 1953 1:24,000 scale Quadrangle San Fernando Map. Denver, Colorado: Geological Survey.

_____. 1966 1:24,000 scale Quadrangle San Fernando Map. Denver, Colorado: Geological Survey.

_____. 1972 1:24,000 scale Quadrangle San Fernando Map. Denver, Colorado: Geological Survey.

_____. 1988 1:24,000 scale Quadrangle San Fernando Map. Denver, Colorado: Geological Survey.

_____. 1995 1:24,000 scale Quadrangle San Fernando Map. Denver, Colorado: Geological Survey.

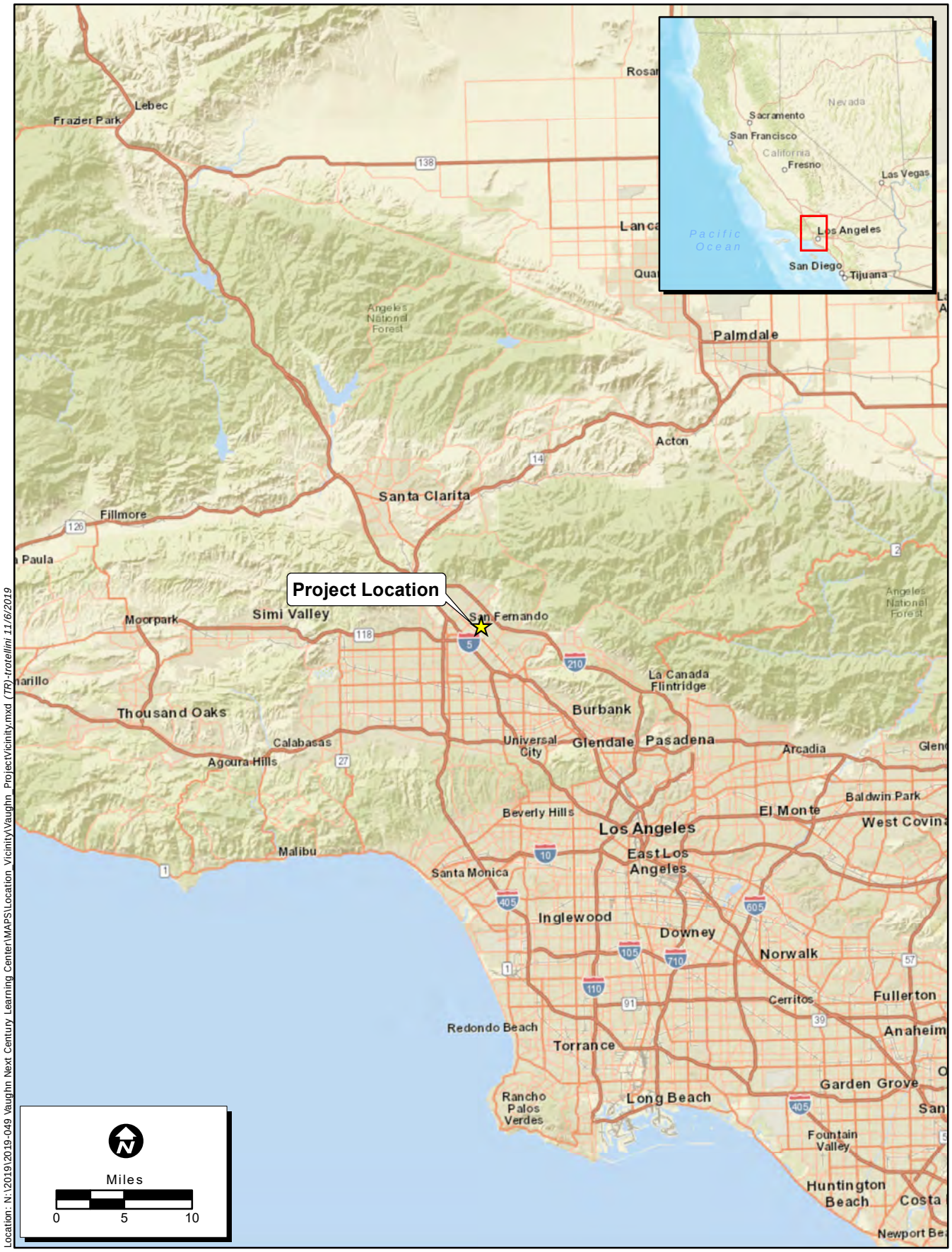
LIST OF ATTACHMENTS

Attachment A – Project Maps

Attachment B – Sacred Lands File Coordination

ATTACHMENT A

Project Maps



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Map Date: 11/6/2019

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

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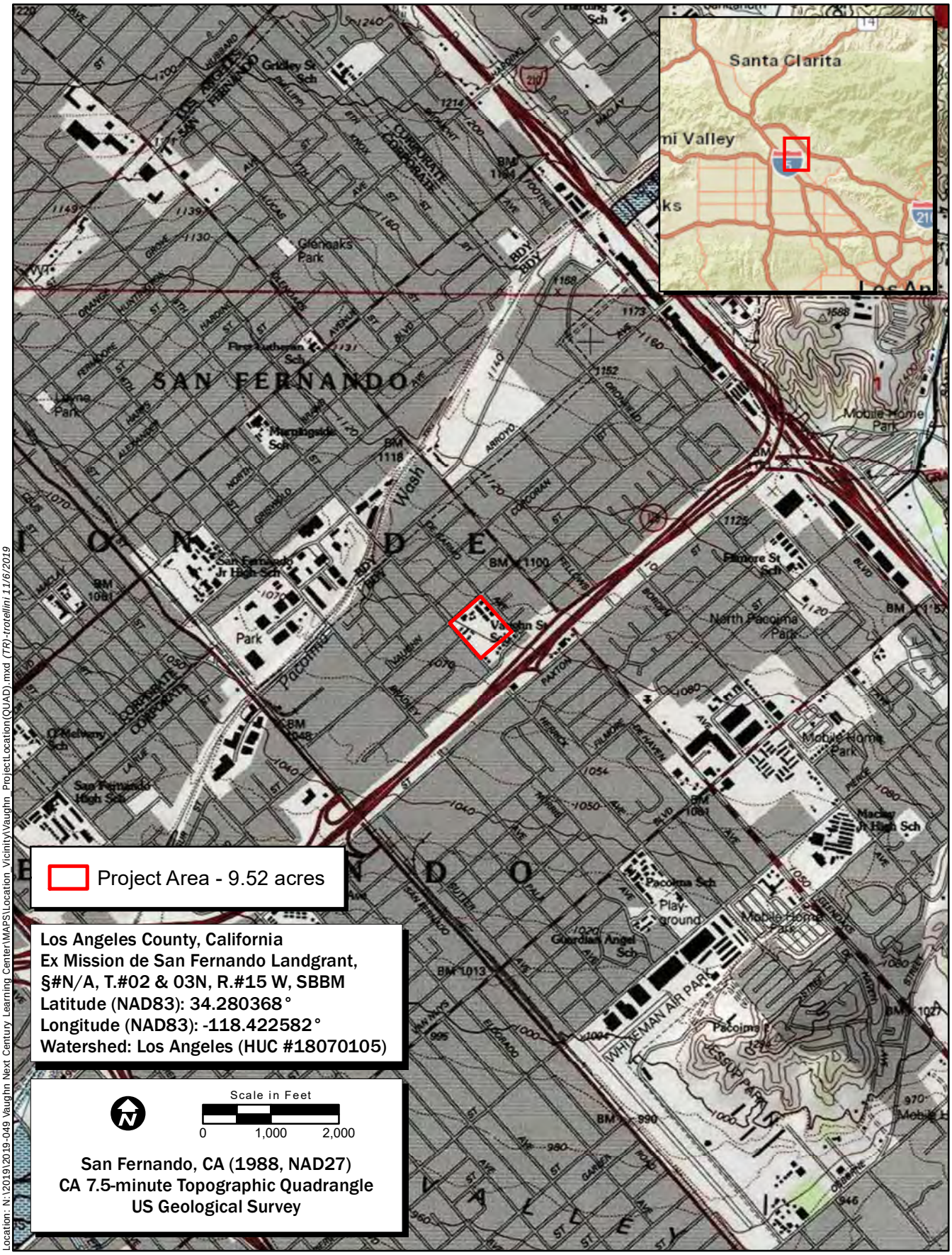
Figure 1. Project Vicinity

2019-049 Vaughn Next Century Learning Center



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Map Date: 11/6/2019

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 2. Project Location

2019-049 Vaughn Next Century Learning Center

ATTACHMENT B

Sacred Lands File Coordination

Sacred Lands File & Native American Contacts List Request

Native American Heritage Commission
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95691
916-373-3710
916-373-5471 – Fax
nahc@nahc.ca.gov

Information Below is Required for a Sacred Lands File Search

Project: Vaughn Next Century Learning Center

County: Los Angeles County

USGS Quadrangle Name: San Fernando, CA (1988, NAD 27)

Township: 02, 03N **Range:** 15W, SBBM **Section(s):** N/A (Ex Mission de San Fernando Landgrant)

Company/Firm/Agency: ECORP Consulting, Inc.

Street Address: 215 North Fifth Street

City: Redlands **Zip:** 92374

Phone: (909) 307-0046

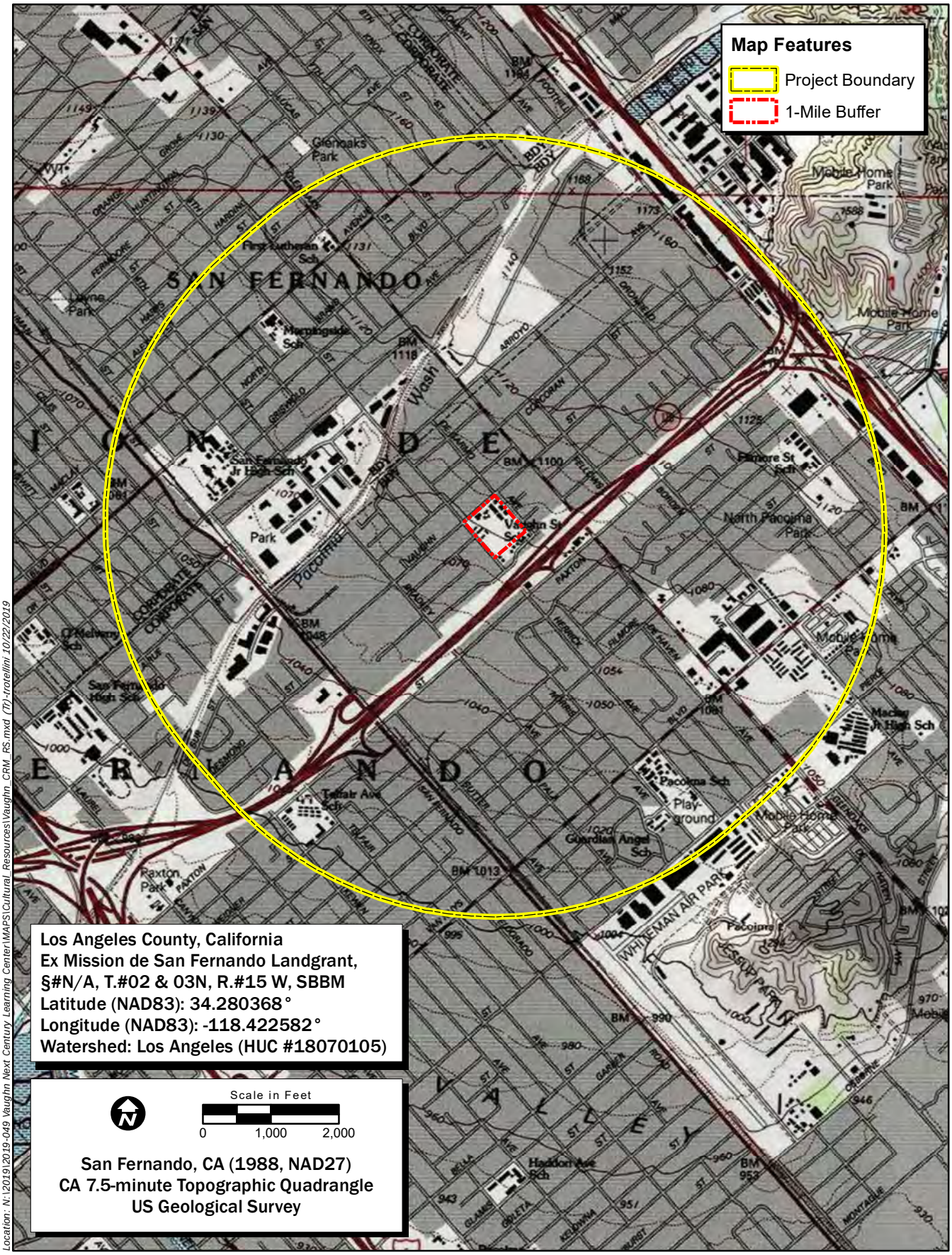
Fax: (909) 307-0056

Email: wblumel@ecorpconsulting.com

Project Description: ECORP is requesting a Sacred Lands File search for the proposed construction of a learning center in the community of Pacoima, California. I have attached a copy of the Sacred Lands File contact form above along with a map showing the project area. The results of this search can be sent to me at wblumel@ecorpconsulting.com. They can also be faxed to my attention at **(909) 307-0056**. Please reference the project number 2019-049 on all correspondence.

Please let me know if you have any questions or need any additional information.

Thanks,



Location: N:\2019\2019-049 Vaughn Next Century Learning Center\MAPS\Cultural Resources\Vaughn_CRM_RS.mxd (TT)-trotellini 10/22/2019

Map Date: 10/22/2019

iService Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Records Search Map

2019-049 Vaughn Next Century Learning Center

NATIVE AMERICAN HERITAGE COMMISSION
Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Phone: (916) 373-3710
Email: nahc@nahc.ca.gov
Website: http://www.nahc.ca.gov
Twitter: @CA_NAHC

November 4, 2019

Wendy Blumel
ECORP Consulting

VIA Email to: wblumel@ecorpconsulting.com

RE: Vaughn Next Century Learning Center Project, Los Angeles County

Dear Ms. Blumel:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were positive. Please contact the Gabrieleno Band of Mission Indians – Kizh Nation on the attached list for more information. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our lists contain current information. If you have any questions or need additional information, please contact me at my email address: steven.quinn@nahc.ca.gov.

Sincerely,

Steven Quinn
Associate Governmental Program Analyst

Attachment

Native American Heritage Commission
Native American Contact List
Los Angeles County
11/4/2019

Barbareno/ Ventureno Band of Mission Indians
Eleanor Arrellanes,
P. O. Box 5687 — Chumash
Ventura, CA, 93005
Phone: (805) 701 - 3246

Barbareno/ Ventureno Band of Mission Indians
Patrick Tumamait,
992 El Camino Corto — Chumash
Ojai, CA, 93023
Phone: (805) 216 - 1253

Barbareno/ Ventureno Band of Mission Indians
Raudel Banuelos,
331 Mira Flores — Chumash
Camarillo, CA, 93012
Phone: (805) 427 - 0015

Barbareno/Ventureno Band of Mission Indians
Julie Tumamait-Stenslie, Chairperson
365 North Poli Ave — Chumash
Ojai, CA, 93023
Phone: (805) 646 - 6214
jtumamait@hotmail.com

Chumash Council of Bakersfield
Julio Quair, Chairperson
729 Texas Street — Chumash
Bakersfield, CA, 93307
Phone: (661) 322 - 0121
chumashtribe@sbcglobal.net

Coastal Band of the Chumash Nation
Gino Altamirano, Chairperson
P. O. Box 4464 — Chumash
Santa Barbara, CA, 93140
cbcn.consultation@gmail.com

Fernandeno Tataviam Band of Mission Indians
Jairo Avila, Tribal Historic and Cultural Preservation Officer
1019 Second Street, Suite 1 — Tataviam
San Fernando, CA, 91340
Phone: (818) 837 - 0794
Fax: (818) 837-0796
jairo.avila@tataviam-nsn.us

Gabrieleno Band of Mission Indians - Kizh Nation
Andrew Salas, Chairperson
P.O. Box 393 — Gabrieleno
Covina, CA, 91723
Phone: (626) 926 - 4131
admin@gabrielenoindians.org

Gabrieleno/Tongva San Gabriel Band of Mission Indians
Anthony Morales, Chairperson
P.O. Box 693 — Gabrieleno
San Gabriel, CA, 91778
Phone: (626) 483 - 3564
Fax: (626) 286-1262
GTTribalcouncil@aol.com

Gabrielino /Tongva Nation
Sandonne Goad, Chairperson
106 1/2 Judge John Aiso St., #231 — Gabrielino
Los Angeles, CA, 90012
Phone: (951) 807 - 0479
sgoad@gabrielino-tongva.com

Gabrielino Tongva Indians of California Tribal Council
Robert Dorame, Chairperson
P.O. Box 490 — Gabrielino
Bellflower, CA, 90707
Phone: (562) 761 - 6417
Fax: (562) 761-6417
gtongva@gmail.com

Gabrielino-Tongva Tribe
Charles Alvarez,
23454 Vanowen Street — Gabrielino
West Hills, CA, 91307
Phone: (310) 403 - 6048
roadkingcharles@aol.com

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Vaughn Next Century Learning Center Project, Los Angeles County.

Northern Chumash Tribal Council
Fred Collins, Spokesperson
P.O. Box 6533 Chumash
Los Osos, CA, 93412
Phone: (805) 801 - 0347
fcollins@northernchumash.org

San Fernando Band of Mission Indians
Donna Yocum, Chairperson
P.O. Box 221838 Kitanemuk
Newhall, CA, 91322 Vanyume
Phone: (503) 539 - 0933 Tataviam
Fax: (503) 574-3308
ddyocum@comcast.net

San Luis Obispo County Chumash Council
Mark Vigil, Chief
1030 Ritchie Road Chumash
Grover Beach, CA, 93433
Phone: (805) 481 - 2461
Fax: (805) 474-4729

Santa Ynez Band of Chumash Indians
Kenneth Kahn, Chairperson
P.O. Box 517 Chumash
Santa Ynez, CA, 93460
Phone: (805) 688 - 7997
Fax: (805) 686-9578
kkahn@santaynezchumash.org

yak tityu tityu yak tiłhini – Northern Chumash Tribe
Mona Tucker, Chairperson
660 Camino Del Rey Chumash
Arroyo Grande, CA, 93420
Phone: (805) 748 - 2121
olivas.mona@gmail.com

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Vaughn Next Century Learning Center Project, Los Angeles County.

Natural History Museum
of Los Angeles County
900 Exposition Boulevard
Los Angeles, CA 90007

tel 213.763.DINO
www.nhm.org

NATURAL HISTORY MUSEUM
LOS ANGELES COUNTY

Vertebrate Paleontology Section
Telephone: (213) 763-3325

e-mail: smcleod@nhm.org

5 November 2019

ECORP Consulting, Inc.
215 North Fifth Street
Redlands, CA 92374

Attn: Wendy Blumel, Senior Archaeologist

re: Paleontological resources for the proposed Vaughn Next Century Learning Center Project, ECORP Project # 2019-049, in Pacoima, Los Angeles County, project area

Dear Wendy:

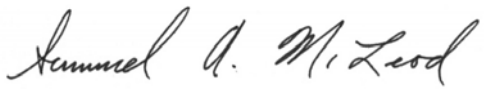
I have conducted a thorough search of our paleontology collection records for the locality and specimen data for the proposed Vaughn Next Century Learning Center Project, ECORP Project # 2019-049, in Pacoima, Los Angeles County, project area as outlined on the portion of the San Fernando USGS topographic quadrangle map that Julian Acuna sent to me via e-mail on 22 October 2019. We have no vertebrate fossil localities that lie directly within the boundaries of the proposed project area, but we do have localities nearby from sedimentary deposits similar to those that occur at depth in the proposed project area.

In the entire proposed project area the surface deposits consist of younger Quaternary Alluvium, derived as alluvial fan deposits from the San Gabriel Mountains to the northeast via Pacoima Wash that currently flows just to the northwest. These deposits typically do not contain significant vertebrate fossil remains, at least in the uppermost layers. At depth, however, older Quaternary sediments that contain significant fossil vertebrate materials are likely to be encountered. Our closest fossil vertebrate localities from similar deposits are just north of west of the proposed project area at or near the Van Norman Reservoir. These localities include LACM 3397 that produced fossil bison, *Bison*, at a seventy-five foot depth; LACM 5745 that contained fossil mastodon, *Mammut*, and horse, *Equus*, in fill dirt; and LACM 7152 that produced fossil mammoth, *Mammuthus*, and bison, *Bison*, in terrace deposits.

Shallow excavations in the younger Quaternary Alluvium exposed throughout the proposed project area are unlikely to produce significant fossil vertebrate remains. Deeper excavations in the proposed project area that extend down into older Quaternary deposits, however, may well encounter significant vertebrate fossils. Any substantial excavations in the proposed project area, therefore, should be monitored closely to quickly and professionally recover any fossil remains discovered while not impeding development. Sediment samples should also be collected and processed to determine the small fossil potential in the proposed project area. Any fossils recovered during mitigation should be deposited in an accredited and permanent scientific institution for the benefit of current and future generations.

This records search covers only the vertebrate paleontology records of the Natural History Museum of Los Angeles County. It is not intended to be a thorough paleontological survey of the proposed project area covering other institutional records, a literature survey, or any potential on-site survey.

Sincerely,



Samuel A. McLeod, Ph.D.
Vertebrate Paleontology

enclosure: invoice

APPENDIX D

Geotechnical Engineering Exploration

BYER GEOTECHNICAL, INC.

August 30, 2019
BG 23079

Vaughn Next Century Learning Center
13330 Vaughn Street
San Fernando, California 91340

Attention: Dr. Yvonne Chan

Subject

Transmittal of Geotechnical Engineering Exploration
Proposed Main Office Replacement Building
Assessor's Parcel No. 2524-027-900
Portion of Lot 1, Tract 14797
13330 Vaughn Street
Pacoima, Los Angeles County, California

Dear Dr. Chan:

Byer Geotechnical has completed our report dated August 30, 2019, which describes the geotechnical engineering conditions with respect to the proposed project. Copies of the report have been distributed as follows:

(1) Addressee (Email and Mail)
(4) CSDA Design Group, Attention: Sherif Makar (Email and Mail)
(1) CSDA Design Group, Attention: Diana Marquez (Email)

It is our understanding that you or your representative will file the report with the governmental agency. Please review the report carefully prior to submittal to the governmental agency. Any questions concerning the report should be directed to the undersigned. Byer Geotechnical appreciates the opportunity to offer our consultation and advice on this project.

Very truly yours,
BYER GEOTECHNICAL, INC.

Raffi S. Babayan
Senior Project Engineer

BYER GEOTECHNICAL, INC.

GEOTECHNICAL ENGINEERING EXPLORATION
PROPOSED MAIN OFFICE REPLACEMENT BUILDING
ASSESSOR'S PARCEL NO. 2524-027-900
PORTION OF LOT 1, TRACT 14797
13330 VAUGHN STREET
PACOIMA, LOS ANGELES COUNTY, CALIFORNIA
FOR VAUGHN NEXT CENTURY LEARNING CENTER
BYER GEOTECHNICAL, INC., PROJECT NUMBER BG 23079
AUGUST 30, 2019

1461 East Chevy Chase Drive, Suite 200 • Glendale, California 91206 • tel 818.549.9959 • fax 818.543.3747 • www.byergeo.com

August 30, 2019
BG 23079

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PROPOSED MAIN OFFICE REPLACEMENT BUILDING
ASSESSOR'S PARCEL NO. 2524-027-900
PORTION OF LOT 1, TRACT 14797
13330 VAUGHN STREET
PACOIMA, LOS ANGELES COUNTY, CALIFORNIA
FOR VAUGHN NEXT CENTURY LEARNING CENTER
BYER GEOTECHNICAL, INC., PROJECT NUMBER BG 23079
AUGUST 30, 2019

INTRODUCTION

This report has been prepared per our signed Agreement and summarizes findings of Byer Geotechnical, Inc., geotechnical engineering exploration performed on the subject property. The purpose of this study is to evaluate the nature, distribution, engineering properties, and geologic hazards of the earth materials underlying the site with respect to construction of the proposed project. This report is intended to assist in the design and completion of the proposed project and to reduce geotechnical risks that may affect the project. The professional opinions and advice presented in this report are based upon commonly accepted exploration standards and are subject to the AGREEMENT with TERMS AND CONDITIONS, and the GENERAL CONDITIONS AND NOTICE section of this report. No warranty is expressed or implied by the issuing of this report.

PROPOSED PROJECT

The scope of the proposed project was determined from consultation with Dr. Yvonne Chan of Vaughn Next Century Learning Center and the schematic plans provided by CSDA Design Group on August 13, 2019. Final plans have not been prepared and await the conclusions and recommendations of this report. The project consists of construction of a one-story main office building, which is planned to replace the existing one-story building. The footprint of the proposed building will be larger than the existing building and will also extend into the area of the shade structures behind, as shown on the enclosed Site Plan. The existing one-story main office building and shade structures are to be removed.

EXPLORATION

The scope of the field exploration was determined from our initial site visit and consultation with Dr. Yvonne Chan. The schematic plans provided by CSDA Design Group on August 13, 2019, were a guide to our work on this project. Exploration was conducted using techniques normally applied to this type of project in this setting. This report is limited to the area of the exploration and the proposed project as shown on the enclosed Site Plan. The scope of this exploration did not include an assessment of general site environmental conditions for the presence of contaminants in the earth materials and groundwater. Conditions affecting portions of the property outside the area explored are beyond the scope of this report.

Exploration was conducted on July 2, 2019, with the aid of hand labor. It included excavating four test pits to an approximate depth of five feet below existing grade. Samples of the earth materials were obtained and delivered to our soils engineering laboratory for testing and analysis. The test pits were visually logged by the project soils engineer. Following excavation, logging, and sampling, the test pits were backfilled and mechanically tamped. Test Pit 1 was patched with concrete.

Office tasks included laboratory testing of selected soil samples, review of published maps and photos for the area, review of our files, review of agency files, preparation of the Site Plan, engineering analysis, and preparation of this report. Earth materials exposed in the test pits are described on the enclosed Log of Test Pits. Appendix II contains a discussion of the laboratory testing procedures and results. The proposed project and the locations of the test pits are shown on the enclosed Site Plan.

PRIOR WORK

The J. Byer Group, Inc. (JBG), performed geotechnical engineering studies for Vaughn International Studies Academy, Vaughn School Readiness Center, and a classroom and library building located near the subject site, as shown on the enclosed Aerial Vicinity Map. The following reports by JBG were reviewed:

Reports by The J. Byer Group, Inc. (JB 17220-Z):

Geotechnical Engineering Exploration, Proposed Classroom and Library Structure, Lot 12, 13 and 14, Tract 13718, Northwest Corner of Eustace Street and Degarmo Avenue, Pacoima, California, dated March 21, 1997; and

Compaction Report, Proposed Classroom and Library Structure, Lots 12, 13, and 14, Tract 13718, Northwest Corner of Eustace Street and Degarmo Avenue, Pacoima, California, dated June 19, 1997.

Reports by The J. Byer Group, Inc. (JB 18550-T):

Geotechnical Engineering Exploration, Proposed Two-Story School Building, Lots 1-6, Tract 46225, Lot 11, Tract 11856, and Parcels A & B, Parcel Map 4650, 13411, 13421, 13427, 13431, 13439, Vaughn Street, and 13460 Del Sur Street, Pacoima, California, dated September 6, 2000;

Compaction Report, Proposed Two-Story School Building and Parking Lots, Lots 1-6, Tract 46225, Lot 11, Tract 11856, and Parcel A & B, Parcel Map 4650, 13456 Vaughn Street, Pacoima, California, dated October 18, 2001;

Geotechnical Engineering Recommendations, Temporary Excavations During Construction, Proposed Two-Story Building, Lots 1-6, Tract 46225, Lot 11, Tract 11856, and Parcels A & B, Parcel Map 4650, 13411, 13421, 13427, 13431, 13439 Vaughn Street, and 13460 Del Sur Street, Pacoima, California, dated November 28, 2001; and

Final Geotechnical Report, Two-Story Building, Lots 1-6, Tract 46225, Lot 11, Tract 11856, and Parcels A & B, Parcel Map 4650, 13456 Vaughn Street, Pacoima, California, dated October 17, 2003.

Reports by The J. Byer Group, Inc. (JB 19813-Z):

Geotechnical Engineering Exploration, Proposed High School Building, Lot 4, Tract 15356, Lot 80, Tract 15776, Lot 25, Tract 28854, and Portion of Lot 198, McClay Tract, 11461 and 11475 - 11525 Herrick Avenue, and 13327 Eustace Street, Pacoima, California, dated June 3, 2004;

Geotechnical Memorandum - Response Spectra, Proposed High School Building, Lot 4, Tract 15356, Lot 80, Tract 15776, Lot 25, Tract 28854, and Portion of Lot 198, McClay Tract, 11461 and 11475 - 11525 Herrick Avenue, and 13327 Eustace Street, Pacoima, California, dated June 30, 2004;

Interim Compaction Report, Proposed High School Building and Parking Facilities, Lot 4, Tract 15356, Portions of Lot 198, McClay Tract, Lot 25, Tract 28854, 11461, 11505, and 11525 Herrick Avenue, Pacoima, California, dated February 2, 2005;

Additional Geotechnical Testing, Proposed High School Building, Lot 4, Tract 15356, Lot 80, Tract 15776, Lot 25, Tract 28854, and Portions of Lot 198, Maclay Tract, 11505 Herrick Avenue, Pacoima, California, dated February 11, 2005;

Addendum Report, Proposed High School, Lot 4, Tract 15356, Lot 80, Tract 15776, Lot 25, Tract 28854, and Portion of Lot 198, McClay Tract, 11519 Herrick Avenue, Pacoima, California, dated February 18, 2005;

Addendum Report, Proposed High School, Lot 4, Tract 15356, Lot 80, Tract 15776, Lot 25, Tract 28854, and Portion of Lot 198, McClay Tract, 11519 Herrick Avenue, Pacoima, California, dated September 27, 2005;

Addendum Report - Additional Recommendations, Proposed High School, Lot 4, Tract 15356, Lot 80, Tract 15776, Lot 25, Tract 28854, and Portion of Lot 198, McClay Tract, 11519 Herrick Avenue, Pacoima, California, dated October 12, 2005; and

Geotechnical Engineering Update, Proposed Two Relocatable Buildings, Lot 25, Tract 28854, and Portion of Lot 198, Maclay Tract, 11519 and 11525 Herrick Avenue, Pacoima, California, dated January 30, 2009.

Byer Geotechnical, Inc. (BG), performed geotechnical engineering studies for the recently-constructed two, two-story education buildings, 14 modular buildings, and middle school building, also located near the subject site, as shown on the enclosed Aerial Vicinity Map. The following reports were reviewed:

Reports by Byer Geotechnical, Inc. (BG 21767):

Geotechnical Engineering Exploration, Proposed Two-Story Education Building, Assessor's Parcel No. 2523-013-026, Portion of Lot A, Parcel Map 4792, 13486 West Del Sur Street, Pacoima, Los Angeles County, California, dated August 22, 2013; and

Addendum Geotechnical Engineering Exploration, Response to CGS Engineering Geology and Seismology Review Sheet, Proposed Two-Story Building, Assessor's Parcel No. 2523-013-026, Portion of Lot A, Parcel Map 4792, 13486 West Del Sur Street, Pacoima, Los Angeles County, California, CGS Application No. 03-CGS1505, dated February 4, 2014.

Reports by Byer Geotechnical, Inc. (BG 21764):

Geotechnical Engineering Exploration, Proposed Two-Story Education Building, Assessor's Parcel Nos. 2523-016-026 and 2523-014-902, Lots 79 and 80, Tract 15776, 13331 and 13321 West Eustace Street, Pacoima, Los Angeles County, California, dated September 25, 2013; and

Addendum Geotechnical Engineering Exploration, Response to CGS Engineering Geology and Seismology Review Sheet, Proposed Two-Story Education Building, Assessor's Parcel Nos. 2523-016-026 and 2523-014-902, Lots 79 and 80, Tract 15776, 13331 and 13321 West Eustace Street, Pacoima, Los Angeles County, California, CGS Application No. 03-CGS1503, dated February 4, 2014.

Report by Byer Geotechnical, Inc. (BG 22400):

Geotechnical Engineering Exploration, Proposed Fourteen, One-Story Modular Buildings, Assessor's Parcel No. 2524-027-900, Portion of Lot 1, Tract 14797, 13330 Vaughn Street, Pacoima, Los Angeles County, California, dated April 27, 2016.

Report by Byer Geotechnical, Inc. (BG 22750):

Geotechnical Engineering Exploration, Proposed Two- to Three-Story Middle School Building, Assessor's Parcel Nos. 2524-028-019 and -020, Lots 10 and 11, Tract 13778, 13253 and 13261 West Eustace Street, Pacoima, Los Angeles County, California, dated April 24, 2018.

The field explorations by JBG and BG consisted of numerous hollow-stem-auger borings and hand labor test pits at the locations shown on the enclosed Aerial Vicinity Map. The field data and laboratory test results contained in the above-referenced reports by JBG and BG were reviewed as part of our work on this project.

SITE DESCRIPTION

The subject site comprises a small portion of the property of Vaughn Next Century Learning Center, which is located in the northeast portion of the San Fernando Valley, in the Pacoima section of the city of Los Angeles, Los Angeles County, California (34.2807° N Latitude, 118.4233° W Longitude). As depicted on the enclosed Aerial Vicinity Map, the project site is located within the northern portion of the campus, on the southeast side of Vaughn Street. The subject site is also located approximately 900 feet northwest of the Ronald Reagan (118) Freeway and one mile southwest of the Foothill (210) Freeway. A one-story school building currently occupies almost the entire site. The Vaughn International Studies Academy is present on the southwest side of Herrick Avenue, near the subject site. The surrounding area has been developed generally with single-family residences.

Past grading on the site has consisted of preparing a level pad for the existing main office building. Vegetation on the site consists of a lawn area within the north portion and a few trees around the existing main office building. Surface drainage is by sheetflow runoff down the contours of the land to the south-southeast.

GROUNDWATER

Groundwater was not encountered in the current test pits and previous borings drilled onsite, which extended to a maximum depth of 30½ feet below existing grade. In *Seismic Hazard Zone Report 015,* the California Geological Survey (CGS) has estimated the historically-highest groundwater level at the site was between 80 and 90 feet below ground surface (CGS, 1998), as shown on the enclosed Historic-High Groundwater Map. Seasonal fluctuations in groundwater levels occur due to variations in climate, irrigation, development, and other factors not evident at the time of the exploration. Groundwater levels may also differ across the site. Groundwater can saturate earth materials causing subsidence or instability of slopes.

REGIONAL GEOLOGIC SETTING

The subject site is located in the northwestern block of the Los Angeles Basin in the central portion of the Transverse Range geomorphic province of California. The northwestern block embraces the eastern Santa Monica Mountains and the San Fernando Valley. It is bounded by the San Gabriel Mountains (to the east and northeast), the Santa Susana Mountains (to the west and northwest), and the Santa Monica and Raymond Faults on the south and southeast (Norris and Webb, 1976). The subject site is bounded by the San Fernando Fault to the north, the Verdugo Fault to the south, the Sierra Madre Fault to the east/northeast, and the Northridge Fault on the west/northwest.

As shown on the enclosed Regional Geologic Map, the site and the surrounding vicinity are underlain by alluvial fan deposits (Dibblee, 1991) consisting of sand and gravel derived from the Santa Susana Mountains and San Gabriel Mountains to the north. The alluvial fans were created by southerly-flowing stream channels, such as the Pacoima Wash, which is now channelized 1,900 feet northwest of the subject property.

EARTH MATERIALS

Undocumented Fill (Afu)

Undocumented fill, associated with previous site grading, was encountered in the test pits and ranges from 1½ to 3 feet thick. The fill generally consists of silty sand that is brown to dark brown and olive-gray, slightly moist to moist, with varying amounts of fine- to coarse-grained gravel and trace amounts of cobbles and metal debris. The existing undocumented fill is not unsuitable for support of structures or additional fill.

Alluvium (Qa)

Natural alluvial fan deposits, termed alluvium for this study, underlie the subject site and consist of gravelly sand that is light gray, slightly moist to dry, and medium dense to dense. Varying amounts of cobbles are present in the alluvium. The alluvium becomes very dense in depth as evidenced by the high blow counts shown on the enclosed Log of Borings that were drilled within the site of the recently-constructed modular buildings near the subject site (see Appendix I).

GENERAL SEISMIC CONSIDERATIONS

Regional Faulting

The subject site is located in an active seismic region. Moderate to strong earthquakes can occur on numerous local faults. The United States Geological Survey, California Geological Survey (CGS), private consultants, and universities have been studying earthquakes in southern California for several decades. Early studies were directed toward earthquake prediction and estimation of the effects of strong ground shaking. Studies indicate that earthquake prediction is not practical and not sufficiently accurate to benefit the general public. Governmental agencies now require earthquake-

resistant structures. The purpose of the code seismic-design parameters is to prevent collapse during strong ground shaking. Cosmetic damage should be expected.

Southern California faults are classified as "active" or "potentially active." Faults from past geologic periods of mountain building that do not display evidence of recent offset are considered "potentially active." Faults that have historically produced earthquakes or show evidence of movement within the past 11,000 years are known as "active faults." No known active faults cross the subject site, and the site is not located within a currently-designated Alquist-Priolo Earthquake Fault Zone (CGS, 2000), as shown on the enclosed Earthquake Fault Zone Map. As depicted on the enclosed Earthquake Fault Zone Map, the subject site is located approximately 1.3 miles south of the south boundary of the Sierra Madre (San Fernando) Fault Zone, which was active in 1971. Furthermore, the *Geologic Map of the San Fernando and Van Nuys Quadrangles,* by Thomas Dibblee, # DF-33, 1991, shows the site is also about 4,000 feet north of the concealed trace of the Verdugo Fault, which is considered to be potentially active. Published geologic maps of the area by Kew (1924), CDMG Bulletin 172 (1958), CDMG Bulletin 196 (1975), and Hitchcock and Wills (2000) were also reviewed and the applicable portions are enclosed for reference. All these references do not show faulting in close proximity to the subject property. The potential for surface rupture onsite is considered to be nil.

The known regional local active and potentially active faults that could produce the most significant ground shaking on the site include the Verdugo, Sierra Madre - San Fernando Section, Northridge, Santa Susana, and San Gabriel Faults. Forty-eight faults were found within a 100-kilometer-radius search area from the site using EZ-FRISK V7.65 computer program. The results of seismic-source analysis are listed in Appendix III. The closest mapped "potentially active" fault that could affect the site is the Verdugo Fault, a Type B fault that is located 2 kilometers (1.2 miles) southeast of the site. The Verdugo Fault is capable of producing a maximum moment magnitude of 6.9 and an average slip rate of 0.5 ± 0.5 millimeters per year (Cao et al., 2003). The San Andreas Fault is a Type A fault and is located 39.1 kilometers (24.3 miles) northeast of the site. General locations of

regional active faults with respect to the subject site are shown on the enclosed Regional Fault Map (Appendix IV).

Regional Seismicity

Historic ground motions in the vicinity of the site from earthquakes are recorded and catalogued by the California Geological Survey as part of their California Strong Motion Instrumentation Program (CSMIP). Nearby peak ground accelerations recorded at CSMIP stations are tabulated below:

Earthquake Event	Station Name	Station #	North Lat.	West Long.	Station Elev. (feet)	Site Geology	Site Class	Site Acceleration (g)
Whittier 1987 (Mw) 6.1	Arleta	24087	34.2358	118.4398	262.0	Alluvium	D	0.090
	Pacoima	24088	34.2959	118.3756	451.0	Rock	C	0.160
	Sylmar	24763	34.3275	118.4453	448.0	Alluvium over Rock	C	0.060
Sierra Madre 1991 (Mw) 5.8	Arleta	24087	34.2358	118.4398	262.0	Alluvium	D	0.080
	Pacoima	24088	34.2959	118.3756	451.0	Rock	C	0.060
	Sylmar	24514	34.3259	118.4459	443.0	Alluvium over Rock	C	0.060
	Sylmar	24207	34.3348	118.3967	594.0	-	-	0.040
Landers 1992 (Mw) 7.5	Arleta	24087	34.2358	118.4398	262.0	Alluvium	D	0.030
	Pacoima	24088	34.2959	118.3756	451.0	Rock	C	0.030
	Sylmar	24514	34.3259	118.4459	443.0	Alluvium over Rock	C	0.060
Northridge 1994 (Mw) 6.8	Arleta	24087	34.2358	118.4398	262.0	Alluvium	D	0.350
	Pacoima	24088	34.2959	118.3756	451.0	Rock	C	0.434
	Sylmar	24763	34.3275	118.4453	448.0	Alluvium over Rock	C	0.910
	Sylmar	24907	34.3347	118.3985	544.0	Rock	A	0.446
	Sylmar	24407	34.3338	118.3971	626.0	Rock	C	1.530

Reference: California Geological Survey, **California Strong Motion Instrumentation Program**, http://www.conservation.ca.gov/cgs/smip

Deaggregated Seismic Source Parameters

Probabilistic seismic hazard deaggregation analysis was performed on the subject site. Seismic parameters were determined using currently available earthquake and fault information, utilizing data from the United States Geological Survey (USGS) National Seismic Hazard Mapping Project (USGS, 2008). An averaging of three Next Generation Attenuation relations (Chiou-Youngs, 2008; Boore-Atkinson, 2008; and Campbell-Bozorgnia, 2008) was incorporated in the analysis. A shear-wave velocity (Vs30) of 259 meters-per-second (Site Class D) was assumed in the analysis. Hazard deaggregation indicates a predominant earthquake magnitude of 6.69 (Mw) at a distance of 6.7 kilometers. The probabilistic Peak Horizontal Ground Acceleration (PHGA) with two-percent probability of exceedance in 50 years is estimated to be 0.89g on the subject site. These ground motions could occur at the site during the life of the project. Results of deaggregation analysis are shown on the enclosed Seismic Hazard Deaggregation Chart (Appendix III).

General Seismic Design Coefficients

The following table lists the applicable seismic coefficients for the project based on the California Building Code:

SEISMIC COEFFICIENTS (2019 California Building Code - Based on ASCE Standard 7-16)		
Latitude = 34.2793° N Longitude = 118.4219° W	Short Period (0.2s)	One-Second Period
Earth Materials and Site Class from Table 20.3.3, ASCE Standard 7-16	Alluvium - D	
Mapped Spectral Accelerations from Figures 22-1 and 22-2 and USGS	S_s = 2.533 (g)	S_1 = 0.859 (g)
Site Coefficients from Tables 11.4-1 and 11.4-2 and USGS	F_A = 1.0	F_V = 1.7
Maximum Considered Spectral Response Accelerations from Equations 11.4-1 and 11.4-2	S_{MS} = 2.533 (g)	S_{M1} = 1.460 (g)
Design Spectral Response Accelerations from Equations 11.4-3 and 11.4-4	S_{DS} = 1.689 (g)	S_{D1} = 0.974 (g)
Maximum Considered Earthquake Geometric Mean (MCE_G) Peak Ground Acceleration, adjusted for Site Class effects	PGA_M = 1.174 (g)	

Reference: U.S. Geological Survey, **Geologic Hazards Science Center, U. S. Seismic Design Maps,** http://earthquake.usgs.gov/hazards/designmaps.

The mapped spectral response acceleration parameter for the site for a 1-second period (S_1) is greater than 0.75g. Therefore, the project is considered to be in Seismic Design Category E.

The principal seismic hazard to the proposed project is strong ground shaking from earthquakes produced by local faults. Modern buildings are designed to resist ground shaking through the use of shear panels, moment frames, and reinforcement. Additional precautions may be taken, including strapping water heaters and securing furniture to walls and floors. It is likely that the subject property will be shaken by future earthquakes produced in southern California.

Site-Specific Ground Motion Analysis

Site-specific ground motion analysis was performed in accordance with Chapter 21 of the American Society of Civil Engineers (ASCE) Standard 7-16. The probabilistic and deterministic seismic response spectra, based on maximum rotated component of spectral response at five-percent damping, are enclosed. The analysis is also based on a probability of exceedance of two percent in 50 years (2,475-return period). A computerized program, EZ-FRISK V7.65, was used to generate the seismic response spectra. An averaging of three Next Generation Attenuation relations (Chiou-Youngs 2007 NGA USGS 2008 MRC; Boore-Atkinson 2008 NGA USGS 2008 MRC; and Campbell-Bozorgnia 2008 NGA USGS 2008 MRC) was incorporated in both the probabilistic and deterministic analyses to estimate ground motions at the subject site. The deterministic response spectrum was generated using the 84th percentile of the maximum rotated component of spectral response at five-percent damping. A shear-wave velocity (Vs30) of 259 meters-per-second (Site Class D) was used in the analysis.

The design response spectrum was generated by multiplying the lesser of the deterministic and probabilistic response spectra by two-thirds, according to Sections 21.2.3 and 21.3 of ASCE Standard 7-16. The deterministic lower-limit response spectrum was determined according to Section 21.2.2 of the ASCE Standard 7-16. Spectral response accelerations for selected periods are shown in the following table:

Spectral Response Accelerations (g)*									
	Fundamental Period (seconds)								
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Probabilistic MCE_R	2.2877	2.2968	2.2229	2.1123	1.9553	1.8367	1.6835	1.5185	1.3880
Probabilistic (ASCE 7-16)	1.6887	1.6887	1.6887	1.6887	1.6887	1.6887	1.6887	1.5907	1.4317
Deterministic MCE_R (84^{th} Percentile)	2.2140	2.3070	2.3400	2.2840	2.1260	2.0050	1.8610	1.7160	1.5940
Deterministic Lower Limit on MCE_R Response Spectrum	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
80% Design Response Spectrum	1.3510	1.3510	1.3510	1.3510	1.3510	1.3510	1.3510	1.2730	1.1450
Site-Specific Design Response Spectrum	**1.4760**	**1.5310**	**1.4820**	**1.4080**	**1.3510**	**1.3510**	**1.3510**	**1.2730**	**1.1450**

* Reference: *American Society of Civil Engineers (ASCE), Minimum Design Loads and Associated Criteria for Buildings and Other Structures, Standard ASCE/SEI 7-16, Chapter 21, 2016.*

The data included in the table above are plotted and presented in the enclosed Site-Specific Seismic Response Spectra figure (see Appendix III). Detailed calculations for fundamental periods up to eight seconds are also included in the "Site-Specific Ground Motion Analysis" table (see Appendix III).

As shown on the enclosed Site-Specific Seismic Response Spectra figure, the site-specific design response spectrum is greater than or equal to 80 percent of the probabilistic response spectrum. According to Section 21.3 of ASCE Standard 7-16, the design response spectrum shall not be less than 80 percent of the probabilistic response spectrum.

Based on Section 21.4 of the ASCE Standard 7-16, the design earthquake spectral response acceleration parameters at short period, $S_{DS,}$ and at one-second period, S_{D1}, derived from the site-specific ground motion analysis, are 1.378g and 1.145g, respectively.

Liquefaction

The California Geological Survey (CGS) has not mapped the site within an area where historic occurrence of liquefaction or geological, geotechnical, and groundwater conditions indicate a potential for permanent ground displacement such that mitigation as defined in Public Resources Code Section 2693 (c) would be required (CGS, 1999), as shown on the enclosed Seismic Hazard Zones Map (Appendix IV). The subject site is underlain by dense to very dense alluvium. Current and historic-high groundwater levels are deeper than 50 feet. Therefore, it is the opinion of Byer Geotechnical, Inc., that the earth materials underlying the subject site are not considered subject to liquefaction.

Earthquake-Induced Settlement

Earthquake-induced settlement of unsaturated soils (dry dynamic settlement) can occur for low-density soil layers that are above groundwater level. Based on the high blow count data obtained from borings previously explored on the subject campus (see Appendix I), the earth materials underlying the site are considered dense to very dense. Therefore, potential dry dynamic settlement at the site in the event of a strong local earthquake is considered negligible.

Seismically-Induced Landsliding

The CGS has not designated the subject site within a state zone requiring seismic landslide investigation per Public Resources Code, Section 2693 (c), as shown on the enclosed Seismic Hazard Zones Map (Appendix IV). The subject site is relatively level, so the potential for earthquake-induced landsliding at the site is nil.

Seiches and Tsunamis

Seiches are large waves generated in enclosed bodies of water, such as lakes and reservoirs, in response to ground shaking. Tsunamis are waves generated in large bodies of water by fault displacement or major ground movement. The site is located approximately 3.3 miles southeast of the Los Angeles Reservoir. However, due to the topography, the risk from seiches or tsunamis is considered nil at the subject site.

Flood Hazard

Based on the FEMA Flood Insurance Rate Map for this area of Los Angeles County (FEMA, 2008), the subject site is not located within either a 100-year or 500-year flood-hazard zone, as shown on the enclosed FEMA Flood Hazard Map (Appendix IV). The site is located approximately 1.6 miles northwest of Hansen Dam. However, due to the existing topography and the southerly direction of surface drainage, flooding of the subject site due to dam failure is considered nil.

The site is approximately four miles downstream from the Pacoima Dam. Failure of the Pacoima Dam could cause flooding around the site. Dams are regulated and monitored by the State of California and by the U.S. Army Corps of Engineers. The dams are also designed, or are to be retrofitted, to withstand the maximum considered earthquakes. Therefore, the potential for a catastrophic flood is remote. However, in the event of a catastrophic dam failure, flows will proceed down Pacoima Canyon to a flood-control dam, northeast of the Foothill (210) Freeway and Maclay Avenue. The Foothill Freeway will also act as a partial dam. Flows passing the basin will follow the channelized Pacoima Wash, which runs west of the site, and Maclay Avenue. An estimate of a 12-inch inundation, arriving 30 minutes after failure, is considered reasonable for evacuation planning purposes.

CONCLUSIONS AND RECOMMENDATIONS

General Findings

The conclusions and recommendations of this exploration are based upon review of the preliminary plans, review of published maps, three previous borings, four test pits, research of available records, laboratory testing, engineering analysis, and years of experience performing similar studies on similar sites. It is the finding of Byer Geotechnical, Inc., that development of the proposed project is feasible from a geotechnical engineering standpoint, provided the advice and recommendations contained in this report are included in the plans and are implemented during construction.

The recommended bearing material for the proposed main office building is future compacted fill. Conventional foundations may be used. Soils to be exposed at finished grade are expected to exhibit a very low expansion potential.

SITE PREPARATION - REMOVALS

Surficial materials consisting of existing fill are present on the site. Remedial grading is recommended to improve site conditions. The existing undocumented fill and upper alluvium should be removed to a minimum of three below the bottom of the footings and replaced as certified compacted fill. Removal depth is expected to be on the order of five feet below finish subgrade. The following general grading specifications may be used in preparation of the grading plan and job specifications. Byer Geotechnical would appreciate the opportunity of reviewing the plans to ensure that these recommendations are included. The grading contractor should be provided with a copy of this report.

A. The area to receive compacted fill should be prepared by removing all vegetation, demolition debris, existing fill, and alluvium. The exposed excavated area should be observed by the soils engineer/geologist prior to placing compacted fill. Removal depths can be found in the "Site Preparation - Removals" section above. The exposed grade should be scarified to a depth of six inches, moistened to optimum moisture content, and recompacted to 95 percent of the maximum dry density.

B. The areas of the proposed buildings shall be excavated to a minimum depth of three feet below the bottom of all footings. The excavation shall extend beyond the edge of the exterior footing a minimum of three feet or to the depth of fill below the footing. The excavated areas shall be observed by the soils engineer/geologist prior to placing compacted fill.

C. Fill, consisting of soil approved by the soils engineer, shall be placed in horizontal lifts, moistened as required, and compacted in six-inch layers with suitable compaction equipment. The excavated onsite materials are considered satisfactory for reuse in the controlled fills. Any imported fill shall be observed by the soils engineer prior to use in fill areas. Rocks larger than six inches in diameter shall not be used in the fill.

D. The moisture content of the fill should be near the optimum moisture content. When the moisture content of the fill is too wet or dry, the fill shall be moisture conditioned and mixed until the proper moisture is attained.

E. The fill shall be compacted to at least 95 percent of the maximum laboratory dry density for the material used. The maximum dry density shall be determined by ASTM D 1557-12 or equivalent.

F. Field observation and testing shall be performed by the soils engineer during grading to assist the contractor in obtaining the required degree of compaction and the proper moisture content. Where compaction is less than required, additional compactive effort shall be made with adjustment of the moisture content, as necessary, until 95 percent relative compaction is obtained. A minimum of one compaction test is required for each 500 cubic yards or two vertical feet of fill placed.

G. The change in volume of excavated and recompacted soil varies according to soil type and location. An estimated shrinkage of five to eight percent is expected during grading. The shrinkage factor includes the removal of oversized materials (rocks larger than six inches in greatest dimension). These estimates do not include shrinkage due to removal of vegetation, demolition debris, and oversized materials.

FOUNDATION DESIGN

Spread Footings

Continuous and/or pad footings may be used to support the proposed main office building, provided they are founded in future compacted fill. Continuous footings should be a minimum of 12 inches in width. Pad footings should be a minimum of 24-inches square. The following chart contains the recommended design parameters.

Bearing Material	Minimum Embedment Depth of Footing (Inches)	Vertical Bearing (psf)	Coefficient of Friction	Passive Earth Pressure (pcf)	Maximum Earth Pressure (psf)
Future Compacted Fill	24	2,000	0.40	220	4,000

Increases in the bearing value are allowable at a rate of 400 pounds-per-square-foot for each additional foot of footing width or depth to a maximum of 4,000 pounds-per-square-foot. For bearing calculations, the weight of the concrete in the footing may be neglected.

The bearing value shown above is for the total of dead and frequently applied live loads and may be increased by one-third for short duration loading, which includes the effects of wind or seismic forces. When combining passive and friction for lateral resistance, the passive component should be reduced by one-third.

All continuous footings should be reinforced with a minimum of four #4 steel bars: two placed near the top and two near the bottom of the footings. Footings should be cleaned of all loose soil, moistened, free of shrinkage cracks, and approved by the geologist/geotechnical engineer prior to placing forms, steel, or concrete.

Foundation Settlement

Settlement of the foundation system is expected to occur on initial application of loading. A total settlement of one-fourth to one-half of an inch may be anticipated. Differential settlement should not exceed one-fourth of an inch across the footprint of the proposed building.

TEMPORARY EXCAVATIONS

Temporary excavations will be required during grading to prepare a compacted-fill pad to support of the proposed main office building. The excavations are expected to be up to five feet in height and will expose fill over alluvium. The fill and alluvium are capable of maintaining vertical excavations up to five feet (see Calculation Sheet #1). Where vertical excavations exceed five feet in height, the upper portion should be trimmed to 1:1 (45 degrees).

Vertical excavations removing support from adjacent footings or adjacent to property boundaries will require the use of slot cutting (ABC method). The slot cutting method uses the earth as a buttress and allows the excavation to proceed in phases. The initial excavation is made at a slope of 1:1. Alternate slots of eight feet in width may be worked (see Calculation Sheet #2). The remaining earth buttresses should be sixteen feet in width. Removal and recompaction should be completed in the "A" slots before the "B" earth buttresses are excavated. The "C" earth buttresses may be excavated upon completion of the removal and recompaction in the "B" areas.

The geologist should be present during grading to see temporary slopes. All excavations should be stabilized within 30 days of initial excavation. Water should not be allowed to pond on top of the excavations nor to flow toward them. No vehicular surcharge should be allowed within three feet of the top of the cut.

FLOOR SLABS

Floor slabs should be cast over approved compacted fill and reinforced with a minimum of #4 bars on 16-inch centers, each way. Slabs that will be provided with a floor covering should be protected by a polyethylene plastic vapor barrier. The barrier should be sandwiched between the layers of sand, about two inches each, to prevent punctures and aid in the concrete cure. A low-slump concrete may be used to minimize possible curling of the slab. The concrete should be allowed to cure properly before placing vinyl or other moisture-sensitive floor covering.

It should be noted that cracking of concrete slabs is common. The cracking occurs because concrete shrinks as it cures. Control joints, which are commonly used in exterior decking to control such cracking, are normally not used in interior slabs. The reinforcement recommended above is intended to reduce cracking and its proper placement is critical to the performance of the slab. The minor shrinkage cracks, which often form in interior slabs, generally do not present a problem when carpeting, linoleum, or wood floor coverings are used. The slab cracks can, however, lead to surface cracks in brittle floor coverings such as ceramic tile.

EXTERIOR CONCRETE DECKS

Decking should be cast over approved compacted fill and reinforced with a minimum of #3 bars placed 18 inches on center, each way. The subgrade should be moistened prior to placing concrete.

UTILITY-TRENCH BACKFILL

Utility trenches on the subject site may be backfilled with the onsite soil, provided it is free of debris and oversized material. Prior to backfilling the trench, pipes should be bedded and shaded in a granular material that has a sand equivalent (SE) of 30 or greater. The sand should extend 12 inches above the top of the pipe. The bedding/shading sand should be densified in-place by jetting. Soil backfill above the bedding sand should be placed in thin, loose layers, moistened as required, and

compacted to at least 95 percent of the maximum dry density. The thickness of layers should be based on the type of equipment used for compaction in accordance with the recent edition of Standard Specifications for Public Works Construction (Greenbook).

CEMENT TYPE AND CORROSION PROTECTION

Based on the results of previous laboratory testing performed on a representative sample of the near-surface soil that was obtained from nearby the subject site (see Appendix I), concrete structures in contact with the soils onsite will have negligible exposure to water-soluble sulfates in the soil. According to Table 4.3.1 of Section 4.2 of the ACI 318 Code, Type II cement may be used for concrete construction.

The results of the laboratory testing also indicate that the near-surface soil onsite is considered moderately corrosive to ferrous metals. The corrosion information presented in Appendix I of this report should be provided to the underground utility subcontractor.

DRAINAGE

Control of site drainage is important for the performance of the proposed project. Pad and roof drainage should be collected and transferred to the street or approved location in non-erosive drainage devices. Drainage should not be allowed to pond on the pad or against any foundation. Drainage control devices require periodic cleaning, testing, and maintenance to remain effective.

Low-Impact Development (LID) Requirements

Based on the granular nature of the subsurface earth materials underlying the subject site, the alluvium is expected to exhibit high percolation characteristics for water infiltration. An infiltration rate ranging from 10 to 15 inches-per-hour is considered appropriate for design of an infiltration

system on the site in accordance with the City of Los Angeles Best Management Practices (City of Los Angeles, 2011).

The following recommendations shall be incorporated into the design and construction of the proposed infiltration system.

- The bottom of the infiltration system should be advanced beyond the compacted fill at least five feet below design finish grade, to allow water to percolate into the underlying natural alluvium.

- The sides of the infiltration system should be sealed for the entire depth of excavation, to prevent lateral water seepage.

- If a shallow infiltration system is planned on the site, such as a bio-retention basin, a geotextile fabric barrier should be placed in the bottom of the infiltration system to separate the upper permeable gravel layer and the subgrade soil.

- The distance between the edge of the infiltration system and any adjacent property line or public right-of-way should be at least five feet.

- The distance between the edge of the infiltration system and any adjacent structural foundations should be at least 10 feet.

- The infiltration system shall be designed to overflow to the street or approved location in case the drainage capacity is exceeded.

- If the infiltration system is to be planned in the parking area, vehicular surcharge should be considered in the design and construction of the system.

- The exposed excavated area for infiltration systems should be observed and approved by the soils engineer.

If construction of an infiltration system is not feasible due to the above-mentioned limitations, a biofiltration system may be installed on the site in accordance with the City of Los Angeles Best Management Practices (City of Los Angeles, 2011). A planter box may be used to capture and treat stormwater runoff through different soil layers before discharging water to the street storm drain. A planter box should be a rigid impermeable structure that is equipped with an underdrain to prevent water infiltration to the underlying subsurface earth materials. Planter boxes may be situated above

ground and placed adjacent to buildings. Planter boxes should be designed as freestanding, and for an inward equivalent fluid pressure of 43 pounds-per-cubic-foot. This fluid pressure includes possible vehicular surcharge. Byer Geotechnical, Inc., should be provided with the formal plans.

Irrigation

Control of irrigation water is a necessary part of site maintenance. Soggy ground and perched water may result if irrigation water is excessively applied. Irrigation systems should be adjusted to provide the minimum water needed. Adjustments should be made for changes in climate and rainfall.

PLAN REVIEW

Formal plans ready for submittal to the building department should be reviewed by Byer Geotechnical. Any change in scope of the project may require additional work.

SITE OBSERVATIONS DURING CONSTRUCTION

The building department requires that the geotechnical engineer provide site observations during grading and construction. Foundation excavations should be observed and approved by the geotechnical engineer or geologist prior to placing steel, forms, or concrete. The engineer/geologist should observe bottoms for fill, compaction of fill, temporary excavations, slot cut excavations, and subdrains. All fill that is placed should be approved by the geotechnical engineer and the building department prior to use for support of structural footings and floor slabs.

Please advise Byer Geotechnical, Inc., at least 24 hours prior to any required site visit. The building department stamped plans, the permits, and the geotechnical reports should be at the job site and available to our representative. The project consultant will perform the observation and post a notice at the job site with the findings. This notice should be given to the agency inspector.

FINAL REPORTS

The geotechnical engineer will prepare interim and final compaction reports upon request.

CONSTRUCTION SITE MAINTENANCE

It is the responsibility of the contractor to maintain a safe construction site. The area should be fenced and warning signs posted. All excavations must be covered and secured. Soil generated by foundation excavations should be either removed from the site or placed as compacted fill. Soil should not be spilled over any descending slope. Workers should not be allowed to enter any unshored trench excavations over five feet deep. Water shall not be allowed to saturate open footing trenches.

GENERAL CONDITIONS AND NOTICE

This report and the exploration are subject to the following conditions. Please read this section carefully; it limits our liability.

In the event of any changes in the design or location of any structure, as outlined in this report, the conclusions and recommendations contained herein may not be considered valid unless the changes are reviewed by Byer Geotechnical, Inc., and the conclusions and recommendations are modified or reaffirmed after such review.

The subsurface conditions, excavation characteristics, and geologic structure described herein have been projected from test excavations on the site and may not reflect any variations that occur between these test excavations or that may result from changes in subsurface conditions.

Fluctuations in the level of groundwater may occur due to variations in rainfall, temperature, irrigation, and other factors not evident at the time of the measurements reported herein. Fluctuations also may occur across the site. High groundwater levels can be extremely hazardous. Saturation of earth materials can cause subsidence or slippage of the site.

If conditions encountered during construction appear to differ from those disclosed herein, notify us immediately so we may consider the need for modifications. Compliance with the design concepts, specifications, and recommendations requires the review of the engineering geologist and geotechnical engineer during the course of construction.

THE EXPLORATION WAS PERFORMED ONLY ON A PORTION OF THE SITE, AND CANNOT BE CONSIDERED AS INDICATIVE OF THE PORTIONS OF THE SITE NOT EXPLORED.

This report, issued and made for the sole use and benefit of the client, is not transferable. Any liability in connection herewith shall not exceed the Phase I fee for the exploration and report or a negotiated fee per the Agreement. No warranty is expressed, implied, or intended in connection with the exploration performed or by the furnishing of this report.

THIS REPORT WAS PREPARED ON THE BASIS OF THE PRELIMINARY DEVELOPMENT PLAN FURNISHED. FINAL PLANS SHOULD BE REVIEWED BY THIS OFFICE AS ADDITIONAL GEOTECHNICAL WORK MAY BE REQUIRED.

Byer Geotechnical appreciates the opportunity to provide our service on this project. Any questions concerning the data or interpretation of this report should be directed to the undersigned.

Respectfully submitted,
BYER GEOTECHNICAL, INC.

Raffi S. Babayan
P. E. 72168

Robert I. Zweigler
E. G. 1210/G. E. 2120

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Historic-High Groundwater Map
FEMA Flood Hazard Map
Aerial Vicinity Map
Site Plan

xc: (1) Addressee (Email and Mail)
(4) CSDA Design Group, Attention: Sherif Makar (Email and Mail)
(1) CSDA Design Group, Attention: Diana Marquez (Email)

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Software

EZ-FRISK 7.65, Risk Engineering, Inc.

August 30, 2019
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APPENDIX I

Byer Geotechnical, Inc., excerpts from report dated April 27, 2016

LABORATORY TESTING

Undisturbed and bulk samples of the alluvium were obtained from the borings and transported to the laboratory for testing and analysis. The samples were obtained by driving a ring-lined, barrel sampler conforming to ASTM D 3550-01 with successive drops of the sampler. Experience has shown that sampling causes some disturbance of the sample. However, the test results remain within a reasonable range. The samples were retained in brass rings of 2.50 inches outside diameter and 1.00 inch in height. The samples were stored in close fitting, waterproof containers for transportation to the laboratory.

Moisture-Density

The dry density of the samples was determined using the procedures outlined in ASTM D 2937-10. The moisture content of the samples was determined using the procedures outlined in ASTM D 2216-10. The results are shown on the enclosed Log of Borings.

Maximum Density

The maximum dry density and optimum moisture content of the future compacted fill were determined using the procedures outlined in ASTM D 1557-12, a five-layer standard. Remolded samples were prepared at 95 percent of the maximum dry density. The remolded samples were tested for shear strength.

Boring	Depth (Feet)	Earth Material	Soil Type and Color	Maximum Density (pcf)	Optimum Moisture %	Expansion Index
1	0 - 5	Alluvium	Sand with Gravel Olive-Brown	132.0	9.0	8 - Very Low

Expansion Test

To find the expansiveness of the soil, a swell test was performed using the procedures outlined in ASTM D 4829-11. Based upon the testing, soils exposed at finished grade are expected to exhibit a very low expansion potential.

LABORATORY TESTING (Continued)

Shear Tests

Shear tests were performed on samples of the alluvium and future compacted fill using the procedures outlined in ASTM D 3080-11 and a strain controlled, direct-shear machine manufactured by Soil Test, Inc. The rate of deformation was 0.025 inch per minute. The samples were tested in an artificially saturated condition. Following the shear test, the moisture content of the samples was determined to verify saturation. The results are plotted on the enclosed Shear Test Diagrams.

Consolidation

Consolidation tests were performed on *in situ* samples of the alluvium using the procedures outlined in ASTM D 2435-11. Results are graphed on the enclosed Consolidation Curves.

Corrosion

A representative bulk sample of the near-surface soils was transported to Environmental Geotechnology Laboratory for chemical testing. The testing was performed in accordance with Caltrans Standards 643 (pH), 422 (Chloride Content), 417 (Sulfate Content), and 532 (Resistivity). The results of the testing are reported in the following table:

CHEMICAL TEST RESULTS TABLE

Sample	Depth (Feet)	pH	Chloride (PPM)	Sulfate (%)	Resistivity (Ohm-cm)
B1	0 - 5	7.85	85	0.006	4,300

The chloride and sulfate contents of the soil are negligible and not a factor in corrosion. The pH is near neutral and not a factor. The resistivity indicates that the near-surface soils are considered moderately corrosive to ferrous metals.

BYER GEOTECHNICAL, INC.

1461 E. CHEVY CHASE DR., SUITE 200
GLENDALE, CA 91206
818.549.9959 TEL
818.543.3747 FAX

LOG OF BORING B1

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CLIENT Vaughn Next Century Learning Center **REPORT DATE** 4/27/16 **DRILL DATE** 3/8/16
PROJECT LOCATION 13330 Vaughn Street, Pacoima, CA **LOGGED BY** JHP
CONTRACTOR Martini Drilling **DRILLING METHOD** Hollow-Stem Auger **HOLE SIZE** 8-inch diameter
DRIVE WEIGHT 140-Pound Automatic Hammer **HAMMER DROP** 30 Inches **ELEV. TOP OF HOLE**

ELEVATION (ft)	DEPTH (ft)	EARTH MATERIAL DESCRIPTION	GRAPHIC SYMBOL	USCS UNIT	SAMPLE TYPE & NUMBER	BLOW COUNT (Per 6 Inches)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	SATURATION (%)	TYPE OF TEST
	0	Surface: 2.5 inches asphalt over 3.5 inches base. Hand-auger for utilites to 2.5 feet.								
		(SP) **ALLUVIUM (Qa):** 0.5' - 2.5': SAND with gravel, olive-brown, dry to slightly moist, fine to medium sand, fine to coarse gravel up to 3 inches subrounded.		SP						
		(SW) 2.5': Gravelly SAND, black and gray, slightly moist, medium dense, fine to coarse sand, fine to coarse gravel up to 3 inches subrounded.		SW	Bag1 R1	10 22 26	1.2	125.3	10	MAX, EI, Remolded Shear (95%), Corrosion
	5	(SW) 5': Gravelly SAND, dark yellowish-brown, dry, medium dense, fine to coarse sand, fine to coarse gravel up to 3 inches subrounded.		SW	R2	12 21 26	3.5	127.6	32	Direct Shear, Consolidation
	10	(SW) 10': Gravelly SAND, dark yellowish-brown, dry, very dense, fine to coarse sand, fine to coarse gravel up to 3 inches subrounded.		SW	R3	14 50	3.7	132	39	
	15	(SW) 15': Gravelly SAND, dark yellowish-brown, dry to slightly moist, very dense, fine to coarse sand, fine to coarse gravel up to 3 inches subrounded.		SW	R4	50/3"	4			Disturbed
	20	(SW) 20': Gravelly SAND, dark yellowish-brown, dry to slightly moist, very dense, fine to coarse sand, fine to coarse gravel up to 3 inches subrounded.		SW	R5	21 48 50/3"	4.4	124	35	

End at 21.25 Feet; No Groundwater.

Bulk Sample Ring Sample

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1461 E. CHEVY CHASE DR., SUITE 200
GLENDALE, CA 91206
818.549.9959 TEL
818.543.3747 FAX

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CLIENT Vaughn Next Century Learning Center **REPORT DATE** 4/27/16 **DRILL DATE** 3/8/16
PROJECT LOCATION 13330 Vaughn Street, Pacoima, CA **LOGGED BY** JHP
CONTRACTOR Martini Drilling **DRILLING METHOD** Hollow-Stem Auger **HOLE SIZE** 8-inch diameter
DRIVE WEIGHT 140-Pound Automatic Hammer **HAMMER DROP** 30 Inches **ELEV. TOP OF HOLE**

ELEVATION (ft)	DEPTH (ft)	EARTH MATERIAL DESCRIPTION	GRAPHIC SYMBOL	USCS UNIT	SAMPLE TYPE & NUMBER	BLOW COUNT (Per 6 Inches)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	SATURATION (%)	TYPE OF TEST
	0	Surface: 2.5 inches asphalt over 5 inches base. Hand-auger for utilites to 2.5 feet.								
		(SP) **ALLUVIUM (Qa):** 0.5' - 2.5': SAND with gravel, olive-brown, slightly moist, fine to medium sand, fine to coarse gravel up to 3 inches subrounded, cobbles to 5 inches subrounded.		SP						
		(SW) 2.5': Gravelly SAND, dark gray, dry, dense, fine to coarse sand, fine to coarse gravel up to 3 inches subrounded.		SW	R1	18 25 32	2.5	129.3	23	
	5	(SP) 5': SAND with gravel, dark gray to dark olive-brown, dry, very dense, fine to medium sand, some coarse sand, fine to coarse gravel up to 3 inches subrounded.		SP	R2	21 42 50/5"	1.8	125.9	15	
		(SP) 8': cobbles to 4 inches.		SP						
	10	(SP) 10': SAND with gravel, dark yellowish-brown, slightly moist, very dense, fine to medium sand, trace coarse sand, trace fines, fine to coarse gravel up to 3 inches subrounded.		SP	R3	20 50/5"	4.2	132.4	45	Consolidation
	15	(SW) 15': Gravelly SAND, dark yellowish- to olive-brown, slightly moist, very dense, fine to coarse sand, fine to coarse gravel up to 3 inches subrounded.		SW	R4	31 50/4"	5	132.7	54	
	20	(SP) 20': SAND with gravel, dark yellowish-brown, dry, very dense, fine to medium sand, some coarse sand, fine to coarse gravel up to 3" inches subrounded.		SP	R5	39 40 42	3.6	129.2	34	

End at 21.5 Feet; No Groundwater.

Ring Sample

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GLENDALE, CA 91206
818.549.9959 TEL
818.543.3747 FAX

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CLIENT Vaughn Next Century Learning Center **REPORT DATE** 4/27/16 **DRILL DATE** 3/8/16
PROJECT LOCATION 13330 Vaughn Street, Pacoima, CA **LOGGED BY** JHP
CONTRACTOR Martini Drilling **DRILLING METHOD** Hollow-Stem Auger **HOLE SIZE** 8-inch diameter
DRIVE WEIGHT 140-Pound Automatic Hammer **HAMMER DROP** 30 Inches **ELEV. TOP OF HOLE**

ELEVATION (ft)	DEPTH (ft)	EARTH MATERIAL DESCRIPTION	GRAPHIC SYMBOL	USCS UNIT	SAMPLE TYPE & NUMBER	BLOW COUNT (Per 6 Inches)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	SATURATION (%)	TYPE OF TEST
	0	Surface: 2 inches asphalt over 4.5 inches base. Hand-auger for utilites to 1.5 feet.		SP						
		(SP) **ALLUVIUM (Qa):** 0.5' - 2.5': SAND with gravel, olive-brown, slightly moist, fine to medium sand, fine to coarse gravel up to 2.5 inches subrounded.		SP	S1	10 17 17	3.5			
	5	(SP) 2.5': SAND with gravel, dark gray, slightly moist, dense, fine to medium sand, fine to coarse gravel up to 2 inches subangular to subrounded.		SW	R1	18 35 48	3.6	140.5	54	
	10	(SW) 5': Gravelly SAND, gray to dark yellowish-brown, dry, very dense, fine to coarse sand, abundant fine to coarse gravel subangular to subrounded.		SP	S2	13 25 41	5.1			
	15	(SP) 10': SAND with gravel, olive-brown, dry to slightly moist, very dense, fine to medium sand, fine to coarse gravel up to 3 inches subrounded, trace fines.		SP	R2	28 50/5"	1.1	130.4	11	Consolidation
	20	(SP) 15': SAND with gravel, gray and olive-brown, dry, very dense, fine to medium sand, fine to coarse gravel up to 3 inches subangular.		SP	S3	10 23 33	2.8			
		(SP) 20': SAND with gravel, olive-brown, dry, dense, fine to medium sand, fine to coarse gravel up to 2 inches angular.								

End at 21.25 Feet; No Groundwater.

Standard Penetration Test Ring Sample

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1461 E. CHEVY CHASE DR., SUITE 200
GLENDALE, CA 91206
818.549.9959 TEL
818.543.3747 FAX

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CLIENT Vaughn Next Century Learning Center **REPORT DATE** 4/27/16 **DRILL DATE** 3/8/16
PROJECT LOCATION 13330 Vaughn Street, Pacoima, CA **LOGGED BY** JHP
CONTRACTOR Martini Drilling **DRILLING METHOD** Hollow-Stem Auger **HOLE SIZE** 8-inch diameter
DRIVE WEIGHT 140-Pound Automatic Hammer **HAMMER DROP** 30 Inches **ELEV. TOP OF HOLE**

ELEVATION (ft)	DEPTH (ft)	EARTH MATERIAL DESCRIPTION	GRAPHIC SYMBOL	USCS UNIT	SAMPLE TYPE & NUMBER	BLOW COUNT (Per 6 Inches)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	SATURATION (%)	TYPE OF TEST
	0	Surface: 2.5 inches asphalt over 7 inches base. Hand-auger for utilites to 1.5 feet.								
		(SP) **FILL:** 0.7' - 2': SAND, light olive-brown, slightly moist, fine sand.		SP						
		(SP) **ALLUVIUM (Qa):** 2': SAND with gravel, olive-brown, slightly moist, dense, fine to medium sand, fine to coarse gravel up to 3 inches subrounded.		SP						
	5	(SP) 5': SAND with gravel, dark yellowish-brown, dry, medium dense, fine to medium sand, fine to coarse gravel up to 3" subrounded.		SP	S1	8 12 13	3.6			
	10	(SP) 10': SAND with gravel, dark yellowish-brown, dry, very dense, fine to medium sand, fine to coarse gravel up to 2 inches subangular.		SP	R1	50	3.5	124.5	28	
		(SP) 11': abundant gravel and cobbles		SP						
	15	(SP) 15': SAND with gravel, gray to dark olive-brown, dry, very dense.		SP	S2	50/3"	1.2			
	20	(SP) 20': SAND with gravel, reddish-brown, dry, dense, fine to medium sand, fine to coarse gravel up to 3 inches subangular to subrounded, some fines.		SP	R2	15 26 25	2.4	125.3	20	Consolidation

End at 21.5 Feet; No Groundwater.

Standard Penetration Test Ring Sample

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1461 E. CHEVY CHASE DR., SUITE 200
GLENDALE, CA 91206
818.549.9959 TEL
818.543.3747 FAX

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CLIENT Vaughn Next Century Learning Center **REPORT DATE** 4/27/16 **DRILL DATE** 3/8/16
PROJECT LOCATION 13330 Vaughn Street, Pacoima, CA **LOGGED BY** JHP
CONTRACTOR Martini Drilling **DRILLING METHOD** Hollow-Stem Auger **HOLE SIZE** 8-inch diameter
DRIVE WEIGHT 140-Pound Automatic Hammer **HAMMER DROP** 30 Inches **ELEV. TOP OF HOLE**

ELEVATION (ft)	DEPTH (ft)	EARTH MATERIAL DESCRIPTION	GRAPHIC SYMBOL	USCS UNIT	SAMPLE TYPE & NUMBER	BLOW COUNT (Per 6 Inches)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	SATURATION (%)	TYPE OF TEST
	0	Surface: 2.5 inches asphalt over 3.5 inches base.								
		(SP) **ALLUVIUM (Qa):** 0.5' - 2.5': SAND with gravel, olive-brown, slightly moist, fine to medium sand, fine to coarse gravel up to 2 inches subrounded.		SP						
		(SP) 2.5': SAND with gravel, olive-brown, dry, medium dense, fine to medium sand, fine to coarse gravel up to 2.5 inches subrounded to subangular.		SP	S1	7 13 14	1.5			
	5	(SW) 5': Gravelly SAND, dark yellowish-brown, dry, dense, fine to coarse sand, fine to coarse gravel up to 3 inches subrounded, some fines.		SW	R1	10 20 36	1.8	143.1	30	
	10	(SP) 10': SAND with gravel, olive-brown, dry, very dense, fine to medium sand, fine to coarse gravel up to 2 inches subangular to subrounded.		SP	S2	50	3.1			
	15	(SM) 15': Silty SAND with gravel, dark yellowish-brown, dry, very dense, fine to medium sand, fine to coarse gravel up to 1.5 inches subrounded.		SM	R2	50/4"	2.8	124.1	23	
	20	(SP) 20': SAND, dark yellowish-brown, dry, medium dense, fine to medium sand, trace coarse sand, some fine gravel up to 1.5 inches subrounded.		SP	S3	17 18 24	3.6			

End at 21.5 Feet; No Groundwater.

Standard Penetration Test Ring Sample

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APPENDIX II

Laboratory Testing and Log of Test Pits (Current Study)

August 30, 2019
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LABORATORY TESTING

Undisturbed and bulk samples of the existing fill and alluvium were obtained from the test pits and transported to the laboratory for testing and analysis. The samples were obtained by driving a ring-lined, barrel sampler conforming to ASTM D 3550-01 with successive drops of the sampler. Experience has shown that sampling causes some disturbance of the sample. However, the test results remain within a reasonable range. The samples were retained in brass rings of 2.50 inches outside diameter and 1.00 inch in height. The samples were stored in close fitting, waterproof containers for transportation to the laboratory.

Moisture-Density

The dry density of the samples was determined using the procedures outlined in ASTM D 2937-10. The moisture content of the samples was determined using the procedures outlined in ASTM D 2216-10. The results are shown on the enclosed Log of Test Pits.

Maximum Density

The maximum dry density and optimum moisture content of the future compacted fill were determined using the procedures outlined in ASTM D 1557-12, a five-layer standard. Remolded samples were prepared at 95 percent of the maximum dry density. The remolded samples were tested for shear strength.

Test Pit	Depth (Feet)	Earth Material	Soil Type and Color	Maximum Density (pcf)	Optimum Moisture %	Expansion Index
1	0 - 2	Fill	Silty Sand with Gravel Brown	132.0	9.0	8 - Very Low

Expansion Test

To find the expansiveness of the soil, a swell test was performed using the procedures outlined in ASTM D 4829-11. Based upon the testing, soils exposed at finished grade are expected to exhibit a very low expansion potential.

Shear Tests

Shear tests were performed on samples of the alluvium and future compacted fill using the procedures outlined in ASTM D 3080-11 and a strain controlled, direct-shear machine manufactured by Soil Test, Inc. The rate of deformation was 0.025 inch per minute. The samples were tested in an artificially saturated condition. Following the shear test, the moisture content of the samples was determined to verify saturation. The results are plotted on the enclosed Shear Test Diagrams.

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tel 818.549.9959 fax 818.543.3747

SHEAR TEST DIAGRAM #1

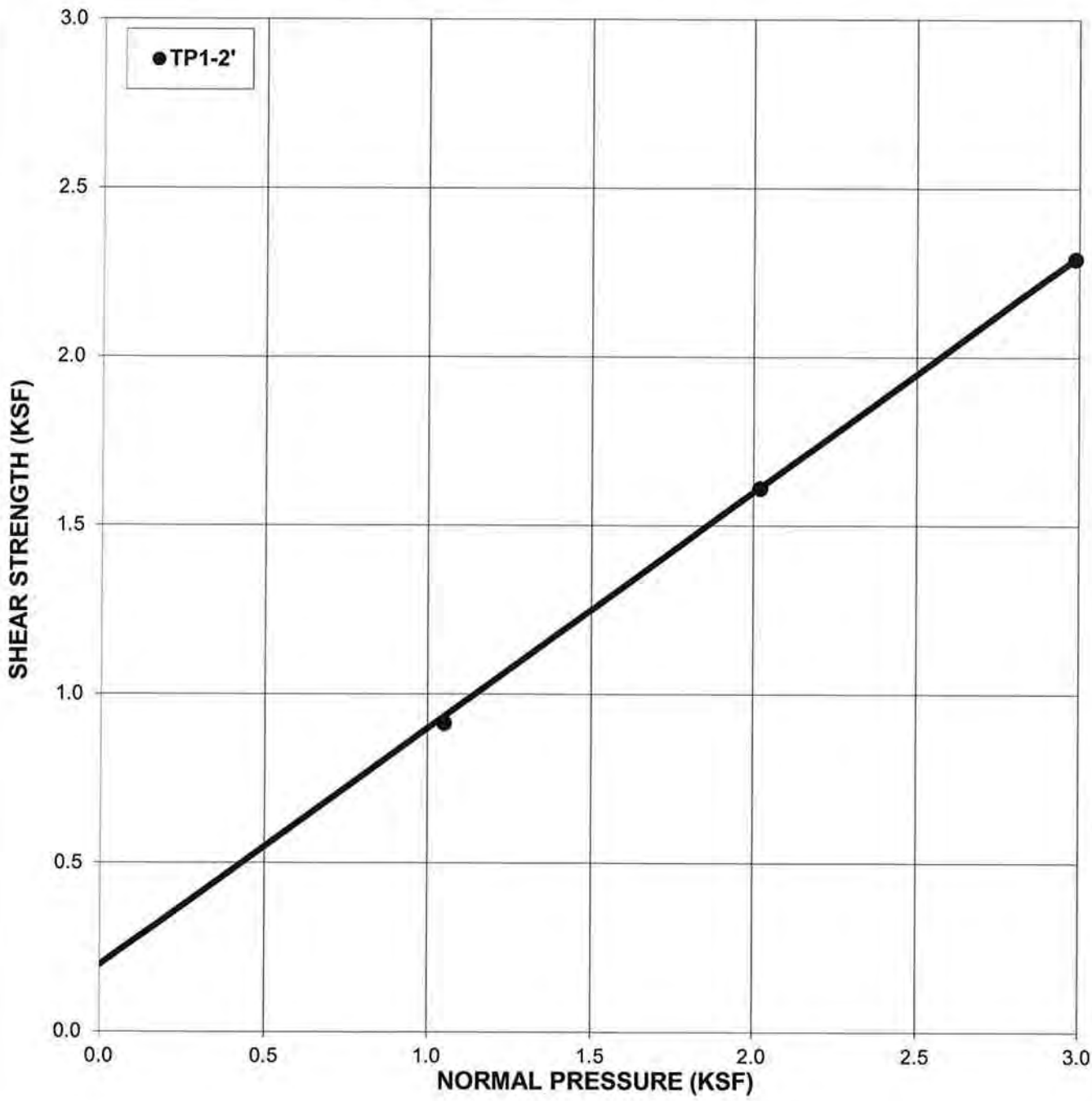
BG: **23079** ENGINEER: **RSB**
CLIENT: **Vaughn Next Century Learning Center**

EARTH MATERIAL: **Alluvium**

Phi Angle = 35.0 degrees
Cohesion = 200 psf

Average Moisture Content 9.8%
Average Dry Density (pcf) 131.5
Average Saturation 99%

DIRECT SHEAR TEST - ASTM D-3080 (ULTIMATE VALUES)



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SHEAR TEST DIAGRAM #2

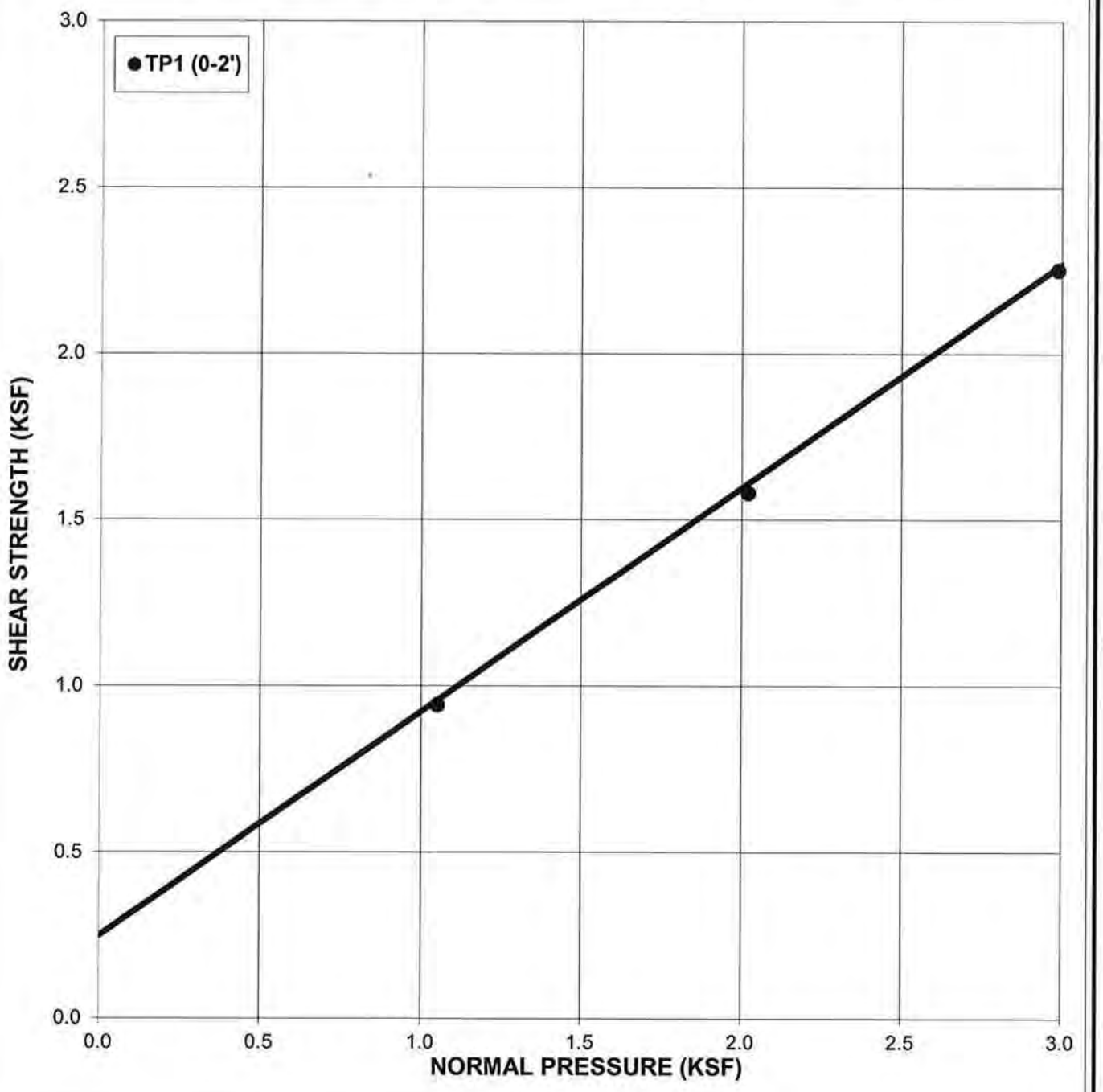
BG: **23079** ENGINEER: **RSB**
CLIENT: **Vaughn Next Century Learning Center**

EARTH MATERIAL: **Future Compacted Fill (Remolded at 95%)**

Phi Angle = 34.0 degrees
Cohesion = 250 psf

Moisture Content 12.7%
Dry Density (pcf) 124.5
Saturation 99%

DIRECT SHEAR TEST - ASTM D-3080 (ULTIMATE VALUES)



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tel 818.549.9959 fax 818.543.3747

LOG OF TEST PITS

CLIENT: VAUGHN NEXT CENTURY LEARNING CENTER

LOGGED BY: RSB BG: 23079

REPORT DATE: 8/30/19 DATE LOGGED: 7/2/19

SAMPLE DEPTH (feet)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	DEPTH INTERVAL (feet)	EARTH MATERIAL	LITHOLOGIC DESCRIPTION
TEST PIT #1			Surface Conditions and Location: 2.5" asphalt (playground area)		
			0 - 2	**FILL:**	Gravelly SAND (SW), olive-gray, slightly moist, medium dense, fine to medium sand, some coarse sand, fine to coarse gravel to 3" subrounded, trace cobbles to 4" rounded, trace metal debris
2	1.3	125.4	2 - 5	**ALLUVIUM:**	Gravelly SAND (SW), light gray, slightly moist to dry, dense, fine to coarse sand, fine to coarse gravel to 3" subangular, about 5% cobbles to 3" subangular to subrounded
End at 5 Feet; No Water; No Caving; Fill to 2 Feet.					
TEST PIT #2			Surface Conditions and Location: Exposed dirt (planter area)		
			0 - 5	**ALLUVIUM:**	Gravelly SAND (SW), light gray, slightly moist to dry, medium dense to dense, fine to coarse sand, fine to coarse gravel to 3" subangular to subrounded, 5 - 10% cobbles to 8" subrounded to subangular
End at 5 Feet; No Water; No Caving; No Fill.					

NOTE: The stratification depths shown on the Log of Test Pits are approximate and are based upon visual classification of samples and cuttings. The actual depths may vary. Variations between test pits may also occur.

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INC.

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tel 818.549.9959 fax 818.543.3747

LOG OF TEST PITS

CLIENT: VAUGH NEXT CENTURY LEARNING CENTER

LOGGED BY: RSB BG: 23079

REPORT DATE: 8/30/19 DATE LOGGED: 7/2/19

SAMPLE DEPTH (feet)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	DEPTH INTERVAL (feet)	EARTH MATERIAL	LITHOLOGIC DESCRIPTION
TEST PIT #3			Surface Conditions and Location: Mulch (front planter area)		
			0 - 3	**FILL:**	Silty SAND (SM) with gravel, dark brown, slightly moist to moist, medium dense, fine to medium sand, some fine to coarse gravel to 3" subrounded to subangular, rootlets
			3 - 5	**ALLUVIUM:**	Gravelly SAND (SW), light gray, slightly moist to dry, medium dense to dense, fine to coarse sand, fine to coarse gravel to 3" subangular to subrounded, about 5% cobbles to 8" subangular to subrounded
			End at 5 Feet; No Water; No Caving; Fill to 3 Feet.		
TEST PIT #4			Surface Conditions and Locations: Mulch (front planter area)		
			0 - 1.5	**FILL:**	Silty SAND (SM), brown, slightly moist, medium dense, fine to medium sand, some fine to coarse gravel to 3" subangular, rootlets
			1.5 - 5	**ALLUVIUM:**	Gravelly SAND (SW), light gray, slightly moist to dry, medium dense to dense, fine to coarse sand, fine to coarse gravel up 3" subangular to subrounded, about 5" cobbles to 9" subangular to subrounded
			End at 5 Feet; No Water; No Caving; Fill to 1.5 Feet.		

NOTE: The stratification depths shown on the Log of Test Pits are approximate and are based upon visual classification of samples and cuttings. The actual depths may vary. Variations between test pits may also occur.

August 30, 2019
BG 23079

APPENDIX III

Seismic Considerations (Current Study)

REGIONAL FAULTING (as Identified by EZ-FRISK 7.65)

Known regional active and potential active faults that could produce the most significant ground shaking at the site are described below. Locations of these and other faults within a 62-mile radius search area of the subject site are shown on the enclosed Regional Fault Map (Appendix IV).

Verdugo Fault

The Verdugo Fault, a type B fault, is approximately 29 kilometers in length (Cao et al., 2003, and UBC, 1997). It is located approximately 1.88 kilometers southeast of the site, and stretches between the city of Glendale to the east, and the Sun Valley section of Los Angeles to the west. The Verdugo Fault is a reverse fault with an estimated slip rate of 0.5 ± 0.5 mm/yr (Cao et al., 2003). The maximum earthquake magnitude along the Verdugo Fault is estimated to be 6.9.

Sierra Madre Fault Zone

The Sierra Madre Fault Zone, a type B fault, is approximately 57 kilometers in length (Cao et al., 2003, and UBC, 1997). It comprises a portion of the southern boundary of the San Gabriel Mountains. The Sierra Madre Fault Zone stretches east to west, between Glendora to the east, and the Sunland section of Los Angeles to the west, and is located approximately 2.4 kilometers east of the site. The Sierra Madre Fault Zone is a reverse fault with an estimated slip rate of 2.0 ± 1.0 mm/yr (Cao et al., 2003). The maximum earthquake magnitude along the Sierra Madre Fault Zone is estimated to be 6.7 to 7.3.

Santa Susana Fault

The Santa Susana Fault, a type B fault, is a north-dipping fault that separates the Santa Susana Mountains and San Gabriel Mountains. The Santa Susana Fault is approximately 27 kilometers in length (Cao et al., 2003, and UBC, 1997). It traverses east-west stretching between the cities of Sylmar and San Fernando. The Santa Susana Fault is located approximately 8.3 kilometers north-northwest of the site. This is a reverse fault with an estimated slip rate of 5.0 ± 2.0 mm/yr (Cao et al., 2003). The maximum earthquake magnitude along the Santa Susana Fault is estimated to be 6.9.

Northridge Fault

The Northridge Fault, a type B fault, is approximately 31 kilometers in length (Cao et al., 2003, and UBC, 1997). It traverses east-west through the Sepulveda, Northridge, and Chatsworth communities in the northwest portion of San Fernando Valley, terminating at the east end of the Santa Susana Mountains. The Northridge Fault is located approximately 8.8 kilometers west-northwest of the site. This fault is a reverse fault with an estimated slip rate of 1.5 ± 1.0 mm/yr (Cao et al., 2003). The maximum earthquake magnitude along the Northridge Fault is estimated to be 6.9.

REGIONAL FAULTING (Continued)

San Gabriel Fault

The San Gabriel Fault, a type B fault, is approximately 72 kilometers in length (Cao et al., 2003, and UBC, 1997). It traverses east-northwest throughout the south portion of the San Gabriel Mountains, stretching between Sunland and Castaic. The San Gabriel Fault is located approximately 9.3 kilometers northeast of the site. This fault is a right-lateral strike-slip fault with an estimated slip rate of 1.0 ± 0.5 mm/yr (Cao et al., 2003). The maximum earthquake magnitude along the San Gabriel Fault is estimated to be 7.3.

San Andreas Fault Zone

The San Andreas Fault Zone - Mojave segment, comprises a portion of the San Andreas Fault Zone that stretches southeast to northwest, with a total length of approximately 1,200 kilometers. The Mojave segment of the San Andreas Fault Zone forms the northern boundary of the San Gabriel Mountains, and is approximately 103 kilometers in length (Cao et al., 2003, and UBC, 1997). The San Andreas Fault Zone - Mojave segment is located approximately 39.3 kilometers northeast of the site. This is a right-lateral strike-slip fault with an estimated slip rate of 30 ± 7 mm/yr (Cao et al., 2003). The maximum earthquake magnitude along the San Andreas Fault Zone - Mojave segment is estimated to be 8.2. The San Andreas Fault Zone - Mojave segment is considered a type A fault (Cao et al., 2003, and UBC, 1997).

Forty-nine faults found within a 100-kilometer radius search from the subject site are listed in the following section, titled "Seismic Sources."

SEISMIC SOURCES
EZ-FRISK V7.65

DETERMINISTIC CALCULATION
OF PEAK GROUND ACCELERATION BASED ON DIGITIZED FAULT DATA

BG: 23079
CLIENT: Vaughn Next Century Learning Center ENGINEER: RSB
PROJECT DESCRIPTION: Proposed Main Office Replacement Building

SITE COORDINATES: LATITUDE: 34.2807
LONGITUDE: -118.4233

SEARCH RADIUS: 100 km

ATTENUATION RELATIONS: CHIOU-YOUNGS (2007) NGA USGS 2008 MRC
BOORE-ATKINSON (2008) NGA USGS 2008 MRC
CAMPBELL-BOZORGNIA (2008) NGA USGS 2008 MRC

SEISMIC SOURCE SUMMARY
DETERMINISTIC SITE PARAMETERS

FAULT NAME	APPROXIMATE DISTANCE		MAXIMUM EATHQUAKE MAGNITUDE	PEAK GROUND ACCELERATION
	(km)	(mi)	(Mw)	(g)
Verdugo	2.0	1.2	6.9	1.068
Sierra Madre (San Fernando)	2.4	1.5	6.7	0.941
Sierra Madre Connected	2.4	1.5	7.3	0.999
Santa Susana, alt 1	8.2	5.1	6.9	0.636
Northridge	8.8	5.5	6.9	1.041
San Gabriel	9.2	5.7	7.3	0.636
Sierra Madre	12.3	7.6	7.2	0.554
Santa Monica	16.2	10.1	7.4	0.619
Holser, alt 1	18.3	11.4	6.8	0.405
Hollywood	19.5	12.1	6.7	0.392
Elysian Park (Upper)	22.2	13.8	6.7	0.368
Puente Hills (LA)	24.4	15.1	7.0	0.389
Simi-Santa Rosa	25.2	15.7	6.9	0.308
Raymond	25.3	15.7	6.8	0.307
Puente Hills	26.4	16.4	7.1	0.392
Anacapa-Dume	26.4	16.4	7.2	0.393

FAULT NAME	APPROXIMATE DISTANCE		MAXIMUM EATHQUAKE MAGNITUDE	PEAK GROUND ACCELERATION
	(km)	(mi)	(Mw)	(g)
Newport-Inglewood	26.6	16.5	7.5	0.366
Malibu Coast	28.5	17.7	7.0	0.307
Oak Ridge Connected	29.8	18.6	7.4	0.361
Oak Ridge (Onshore)	30.2	18.8	7.2	0.345
Puente Hills (Santa Fe Springs)	33.6	20.9	6.7	0.277
Clamshell-Sawpit	35.3	21.9	6.7	0.228
San Cayetano	35.6	22.1	7.2	0.270
Palos Verdes	36.7	22.8	7.3	0.268
Palos Verdes Connected	36.7	22.8	7.7	0.317
Southern San Andreas	39.1	24.3	8.2	0.373
Elsinore	46.8	29.1	7.9	0.284
Puente Hills (Coyote Hills)	48.5	30.1	6.9	0.210
Santa Ynez (East)	53.2	33.1	7.2	0.192
Santa Ynez Connected	53.3	33.2	7.4	0.210
San Jose	55.2	34.3	6.7	0.144
Cucamonga	62.1	38.6	6.7	0.128
Chino	64.2	39.9	6.8	0.127
Ventura-Pitas Point	66.3	41.2	7.0	0.156
Pitas Point Connected	66.3	41.2	7.3	0.183
Mission Ridge-Arroyo Parida-Santa Ana	69.6	43.3	6.9	0.203
Garlock	73.0	45.4	7.7	0.187
Pleito	75.3	46.8	7.1	0.133
Imp Extensional Gridded, Char, Normal	59.9	37.2	7.0	0.134
Imp Extensional Gridded, Char, Strike Slip	59.9	37.2	7.0	0.164
Imp Extensional Gridded, GR, Normal	59.8	37.1	7.0	0.134
Imp Extensional Gridded, GR, Strike Slip	59.8	37.1	7.0	0.165
Oak Ridge (Offshore)	76.4	47.5	7.0	0.122
San Jacinto	78.9	49.0	7.9	0.189
San Joaquin Hills	79.3	49.3	7.1	0.139
Red Mountain	81.2	50.4	7.4	0.144
Channel Islands Thrust	82.4	51.2	7.3	0.157
Santa Cruz Island	83.8	52.1	7.2	0.121

48 Faults found within a 100 km Search Radius.
Closest Fault to the Site: Verdugo Distance = 1.98 km (1.23mi)
Largest Peak Ground Acceleration: 1.068 g
The San Andreas Fault is Located Aproximately 39.1 km (24.3 mi) from the Site.

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SEISMIC HAZARD DEAGGREGATION CHART
(Probability of Exceedance: 2% in 50 years)

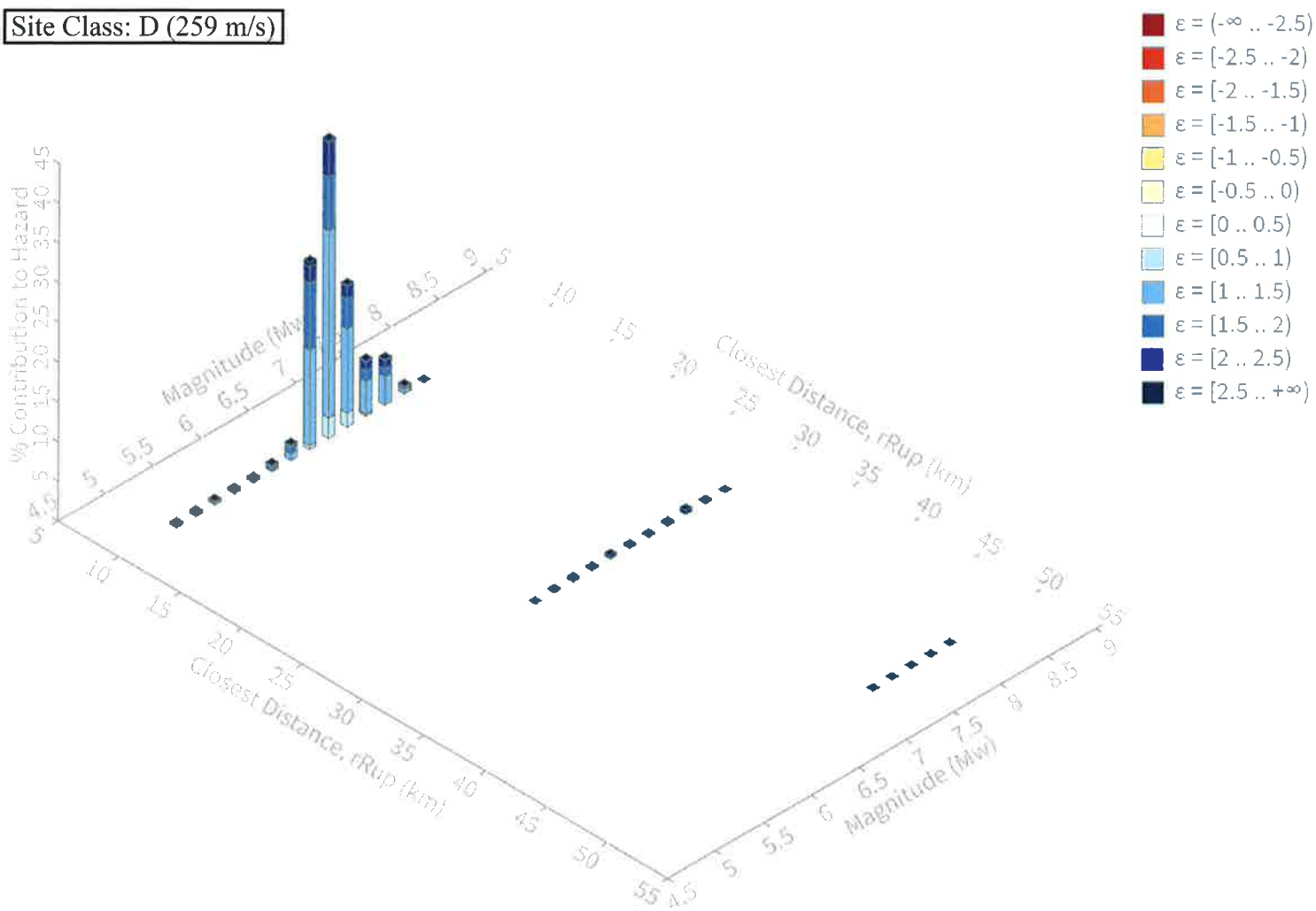
BG: 23079

CLIENT: VAUGHN NEXT CENTURY LEARNING CENTER

ENGINEER: RSB

REFERENCE: USGS, 2019, Earthquake Hazards Program, Beta - Unified Hazard Tool, Seismic Hazard Deaggregation, Conterminous U.S. 2008 (v3.3.0) Edition, https://earthquake.usgs.gov/hazards/interactive/index.php.

Site Class: D (259 m/s)



Summary statistics for, Deaggregation: Total

Deaggregation targets

Return period: 2475 yrs
Exceedance rate: 0.0004040404 yr^{-1}
PGA ground motion: 0.88602028 g

Recovered targets

Return period: 2863.9924 yrs
Exceedance rate: 0.00034916294 yr^{-1}

Totals

Binned: 100 %
Residual: 0 %
Trace: 0.02 %

Mode (largest m-r bin)

m: 6.69
r: 6.73 km
ε₀: 1.42 σ
Contribution: 37.53 %

Mode (largest m-r-ε₀ bin)

m: 6.69
r: 6.74 km
ε₀: 1.22 σ
Contribution: 23.56 %

Discretization

r: min = 0.0, max = 1000.0, Δ = 20.0 km
m: min = 4.4, max = 9.4, Δ = 0.2
ε: min = -3.0, max = 3.0, Δ = 0.5 σ

Site-Specific Ground Motion Analysis (Based on ASCE 7-16 Standard)

BG: 23079 Client: Vaughn Next Century Learning Center
Project Description: Proposed Main Office Replacement Buildi Engineer: RSB

Ss (0.2s) =	2.533	Latitude:	34.2807			Periods (seconds):		80% of Sections. 11.4.3 & 11.4.4 of ASCE 7-16	RESULTS Design Values ASCE 7-16 (Section 21.4)
S1 (1s) =	0.859	Longitude:	-118.4233			T_o =	0.170		
Fa =	1.00	Site Class:	D			T_s =	0.848		
Fv =	2.50					T_L =	8		
SMs =	2.533		Fig. 22-18A	S_{MS}=	2.067	>		2.026	2.067
SM1 =	2.148	C_{RS}:	0.906	S_{M1}=	1.718	=		1.718	1.718
SDs =	1.689		Fig. 22-19A	S_{DS}=	1.378	>		1.351	1.378
SD1 =	1.432	C_{R1}:	0.892	S_{D1}=	1.145	=		1.145	1.145

Fundamental Period	Risk Coefficient C_R (Method 1, Section 21.2.1.1, ASCE 7-16)	Probabilistic MCE_R Seismic Response Spectrum (EZ-Frisk & Section 21.2.1.1)	Probabilistic Seismic Response Spectrum (ASCE 7-16, Section 11.4.6)	84th Percentile of Deterministic MCE_R Seismic Response Spectrum (ASCE 7-16)	Deterministic Lower Limit on MCE_R Response Spectrum (ASCE 7-16, Section 21.2.2)	Site Specific MCE_R Spectral Response Acceleration (ASCE 7-16, Section 21.2.3)	80% of Probabilistic Response Spectrum (ASCE 7-16, Section 21.3)	Design Response Spectrum (ASCE 7-16, Section 21.3)
T (sec)		Sa (g)	Sa (g)	Sa (g)	Sa (g)	Sa (g)	Sa (g)	Sa (g)
0.0	0.906	1.0609	0.6755	1.0710	0.600	1.061	0.540	0.707
0.1	0.906	1.8347	1.2715	1.7440	1.050	1.744	1.017	1.163
0.2	0.906	2.2877	1.6887	2.2140	1.500	2.214	1.351	1.476
0.3	0.904	2.2968	1.6887	2.3070	1.500	2.297	1.351	1.531
0.4	0.903	2.2229	1.6887	2.3400	1.500	2.223	1.351	1.482
0.5	0.901	2.1123	1.6887	2.2840	1.500	2.112	1.351	1.408
0.6	0.899	1.9553	1.6887	2.1260	1.500	1.955	1.351	1.351
0.7	0.897	1.8367	1.6887	2.0050	1.500	1.837	1.351	1.351
0.8	0.896	1.6835	1.6887	1.8610	1.500	1.684	1.351	1.351
0.9	0.894	1.5185	1.5907	1.7160	1.500	1.518	1.273	1.273
1.0	0.892	1.3880	1.4317	1.5940	1.500	1.388	1.145	1.145
1.1	0.892	1.2542	1.3015	1.4610	1.364	1.254	1.041	1.041
1.2	0.892	1.1462	1.1931	1.3450	1.250	1.146	0.954	0.954
1.3	0.892	1.0561	1.1013	1.2430	1.154	1.056	0.881	0.881
1.4	0.892	0.9794	1.0226	1.1520	1.071	0.979	0.818	0.818
1.5	0.892	0.9143	0.9544	1.0710	1.000	0.914	0.764	0.764
1.6	0.892	0.8450	0.8948	0.9956	0.938	0.845	0.716	0.716
1.7	0.892	0.7817	0.8422	0.9286	0.882	0.782	0.674	0.674
1.8	0.892	0.7281	0.7954	0.8694	0.833	0.728	0.636	0.636
1.9	0.892	0.6826	0.7535	0.8170	0.789	0.683	0.603	0.603
2.0	0.892	0.6436	0.7158	0.7709	0.750	0.644	0.573	0.573
3.0	0.892	0.3993	0.4772	0.5007	0.500	0.399	0.382	0.382
4.0	0.892	0.2851	0.3579	0.3629	0.375	0.285	0.286	0.286
5.0	0.892	0.2259	0.2863	0.2934	0.300	0.226	0.229	0.229
6.0	0.892	0.1795	0.2386	0.2247	0.250	0.179	0.191	0.191
7.0	0.892	0.1452	0.2045	0.1778	0.214	0.145	0.164	0.164
8.0	0.892	0.1199	0.1790	0.1441	0.188	0.120	0.143	0.143

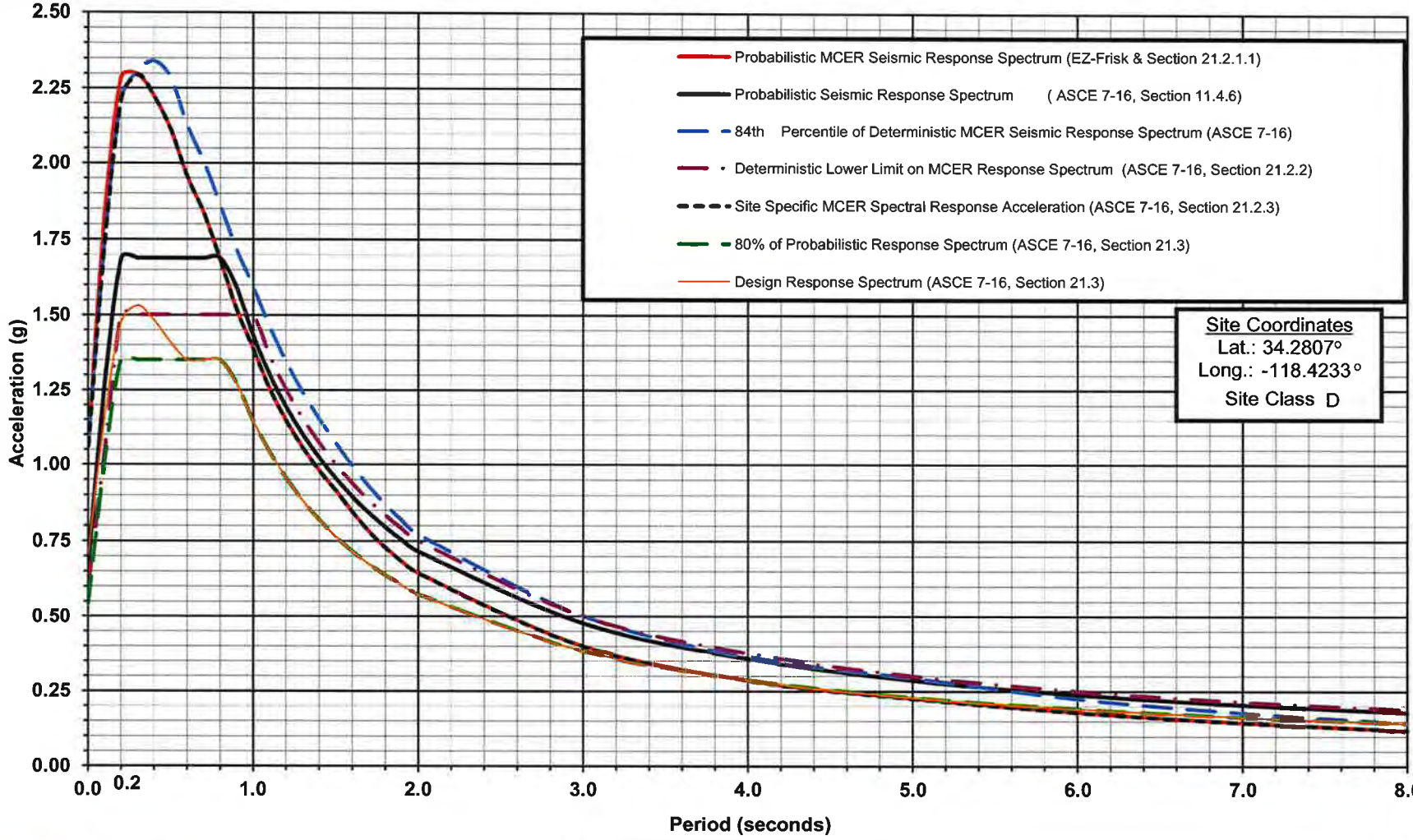
* The Probabilistic and Deterministic Seismic Response Spectra are Based on the Maximum Rotated Component (MRC) of Ground Motion.

References:

- American Society of Civil Engineers (ASCE), 2016, Minimum Design Loads and Associated Criteria for Buildings and Other Structures, Standard ASCE/SEI 7-16, Chapter 21.

- Division of the State Architect (DSA), 2009, Use of the Next Generation Attenuation (NGA) Relations, State of California, Department of General Services, DSA Bulletin 09-01, Effective March 1, 2009.

SEISMIC RESPONSE SPECTRA



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1461 E. CHEVY CHASE DRIVE, #200, GLENDALE, CA 91206
tel 818.549.9959 fax 818.543.3747

SITE-SPECIFIC SEISMIC RESPONSE SPECTRA

Proposed Main Office Replacement Building

BG: 23079	Client: Vaughn Next Century Learning Center
Engineer: RSB	Date: August 30, 2019

P:\23000 - 23999\23079 Vaughn_Main Office Building_Pacoima\Engineering\23079 Ground Motion Analysis 0.84 Percentile_ASCE 7-16

August 30, 2019
BG 23079

APPENDIX IV

Calculations and Figures (Current Study)

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GLENDALE, CA 91206
818.549.9959 TEL
818.543.3747 FAX

TEMPORARY EXCAVATION HEIGHT

BG: **23079** ENGINEER: **RSB**
CLIENT: **Vaughn Next Century Learning Center**
CALCULATION SHEET # **1**

CALCULATE THE HEIGHT TO WHICH TEMPORARY EXCAVATIONS ARE STABLE (NEGATIVE THRUST). THE EXCAVATION HEIGHT AND BACKSLOPE AND SURCHARGE CONDITIONS ARE LISTED BELOW. ASSUME THE EARTH MATERIAL IS SATURATED WITH NO EXCESS HYDROSTATIC PRESSURE.

CALCULATION PARAMETERS

EARTH MATERIAL:	Alluvium	WALL HEIGHT:	5 feet
SHEAR DIAGRAM:	1	BACKSLOPE ANGLE:	0 degrees
COHESION:	200 psf	SURCHARGE:	0 pounds
PHI ANGLE:	35 degrees	SURCHARGE TYPE:	u Uniform
DENSITY:	125 pcf	INITIAL FAILURE ANGLE:	20 degrees
SAFETY FACTOR:	1.25	FINAL FAILURE ANGLE:	70 degrees
WALL FRICTION:	0 degrees	INITIAL TENSION CRACK:	1 feet
CD (C/FS):	160.0 psf	FINAL TENSION CRACK:	10 feet
PHID = ATAN(TAN(PHI)/FS) =	29.3 degrees		

CALCULATED RESULTS

CRITICAL FAILURE ANGLE	56 degrees
AREA OF TRIAL FAILURE WEDGE	4.3 square feet
TOTAL EXTERNAL SURCHARGE	0.0 pounds
WEIGHT OF TRIAL FAILURE WEDGE	532.3 pounds
NUMBER OF TRIAL WEDGES ANALYZED	510 trials
LENGTH OF FAILURE PLANE	1.8 feet
DEPTH OF TENSION CRACK	3.5 feet
HORIZONTAL DISTANCE TO UPSLOPE TENSION CRACK	1.0 feet
CALCULATED HORIZONTAL THRUST	**-11.3 pounds**
CALCULATED EQUIVALENT FLUID PRESSURE	**-0.9 pcf**
MAXIMUM HEIGHT OF TEMPORARY EXCAVATION	**5.0 feet**

CONCLUSIONS:

THE CALCULATION INDICATES THAT THE TEMPORARY VERTICAL EXCAVATIONS UP TO 5 FEET HIGH WITH LEVEL BACKSLOPE HAVE A NEGATIVE THRUST AND ARE TEMPORARILY STABLE.

BYER GEOTECHNICAL, INC.
1461 E. CHEVY CHASE DR., SUITE 200
GLENDALE, CA 91206
818.549.9959 TEL
818.543.3747 FAX

SLOT CUT ANALYSIS

BG: **23079** ENGINEER: **RSB**
CLIENT: **Vaughn Next Century Learning Center**
CALCULATION SHEET # **2**

CALCULATE THE FACTOR OF SAFETY OF SLOT CUT EXCAVATIONS. ASSUME COHESIVE AND FRICTIONAL RESISTANCE ALONG THE SIDES OF SLOTS AS WELL AS THE FAILURE SURFACE. THE HORIZONTAL PRESSURE ON THE SIDES OF THE SLOTS IS THE AT-REST PRESSURE (1-SIN(phi)).

CALCULATION PARAMETERS

EARTH MATERIAL:	Alluvium	EXCAVATION HEIGHT:	5 feet
SHEAR DIAGRAM:	1	BACKSLOPE ANGLE:	0 degrees
COHESION:	200 psf	SURCHARGE:	0 pounds
PHI ANGLE:	35 degrees	SURCHARGE TYPE:	p Point
DENSITY:	125 pcf	INITIAL FAILURE ANGLE:	20 degrees
SLOT BOUNDARY CONDITIONS		FINAL FAILURE ANGLE:	70 degrees
SLOT CUT WIDTH:	8 feet	INITIAL TENSION CRACK:	1 feet
COHESION:	200 psf	FINAL TENSION CRACK:	10 feet
PHI ANGLE:	35 degrees		

CALCULATED RESULTS

CRITICAL FAILURE ANGLE	59 degrees
HORIZONTAL DISTANCE TO UPSLOPE TENSION CRACK	1.0 feet
DEPTH OF TENSION CRACK	3.3 feet
TOTAL EXTERNAL SURCHARGE	0.0 pounds
VOLUME OF FAILURE WEDGE	33.3 ft^3
WEIGHT OF FAILURE WEDGE	4167.9 pounds
LENGTH OF FAILURE PLANE	1.9 feet
SURFACE AREA OF FAILURE PLANE	16 ft^2
SURFACE AREA OF SIDES OF SLOTS	4.2 ft^2
NUMBER OF TRIAL WEDGES ANALYZED	7656 trials
TOTAL RESISTING FORCE ALONG WEDGE BASE (FrB)	1745.3 pounds
TOTAL RESISTING FORCE ALONG WEDGE SIDES (FrS)	1066.5 pounds
RESULTANT HORIZONTAL COMPONENT OF FORCE	**-98.2 pounds**
CALCULATED FACTOR OF SAFETY	**1.78**

CONCLUSIONS:

THE CALCULATION INDICATES THAT SLOTS CUTS UP TO 8 FEET WIDE AND 5 FEET HIGH IN EXISTING FILL AND ALLUVIUM HAVE A SAFETY FACTOR GREATER THAN 1.25 AND ARE TEMPORARILY STABLE.

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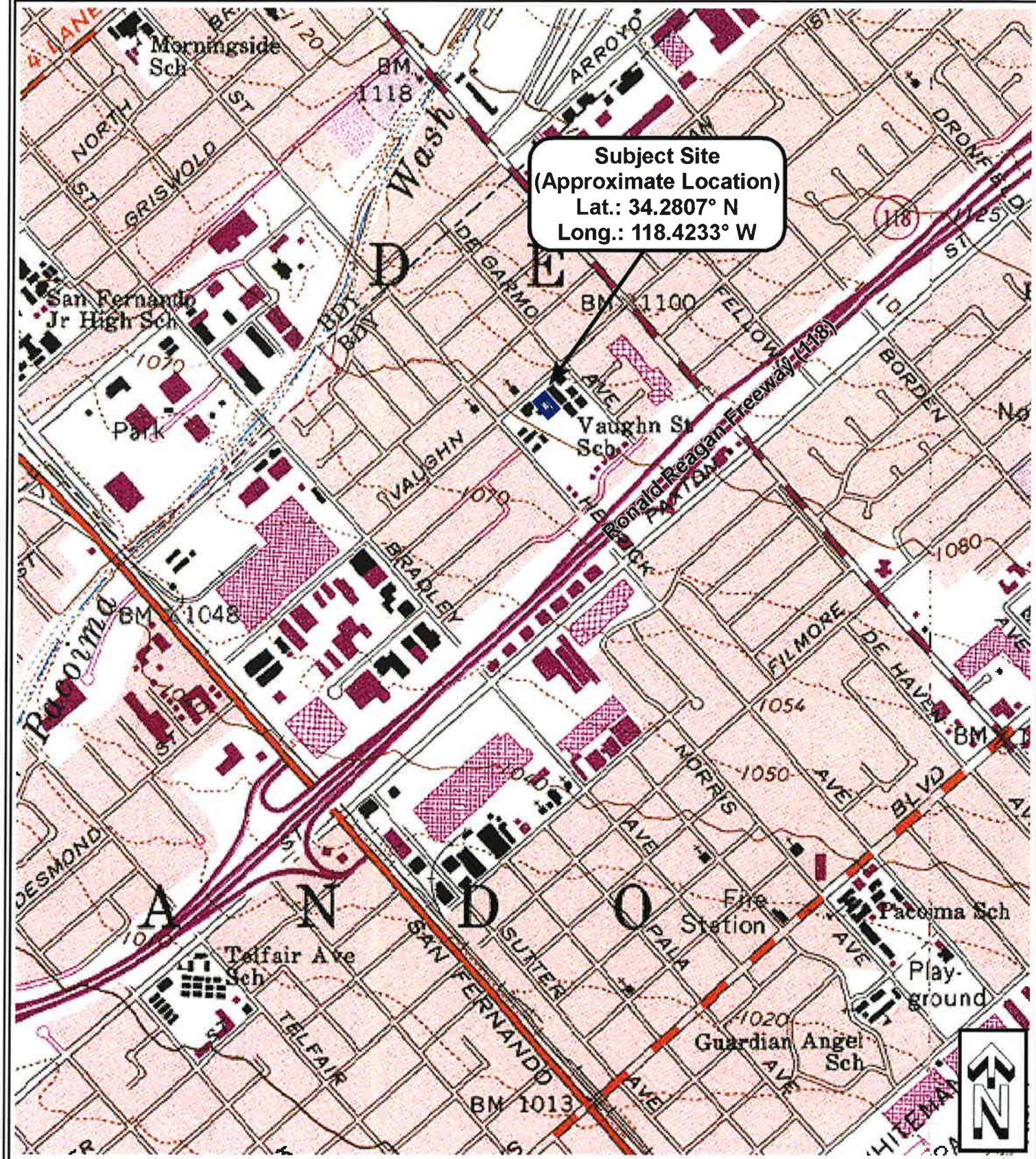
REGIONAL TOPOGRAPHIC MAP

BG: 23079 CLIENT: VAUGHN NEXT CENTURY LEARNING CENTER

ENGINEER: RSB SCALE: 1" = 1000'

BACKGROUND: USGS Topographic Map, San Fernando 7.5-Minute Series Quadrangle, Los Angeles County, California, 1988.



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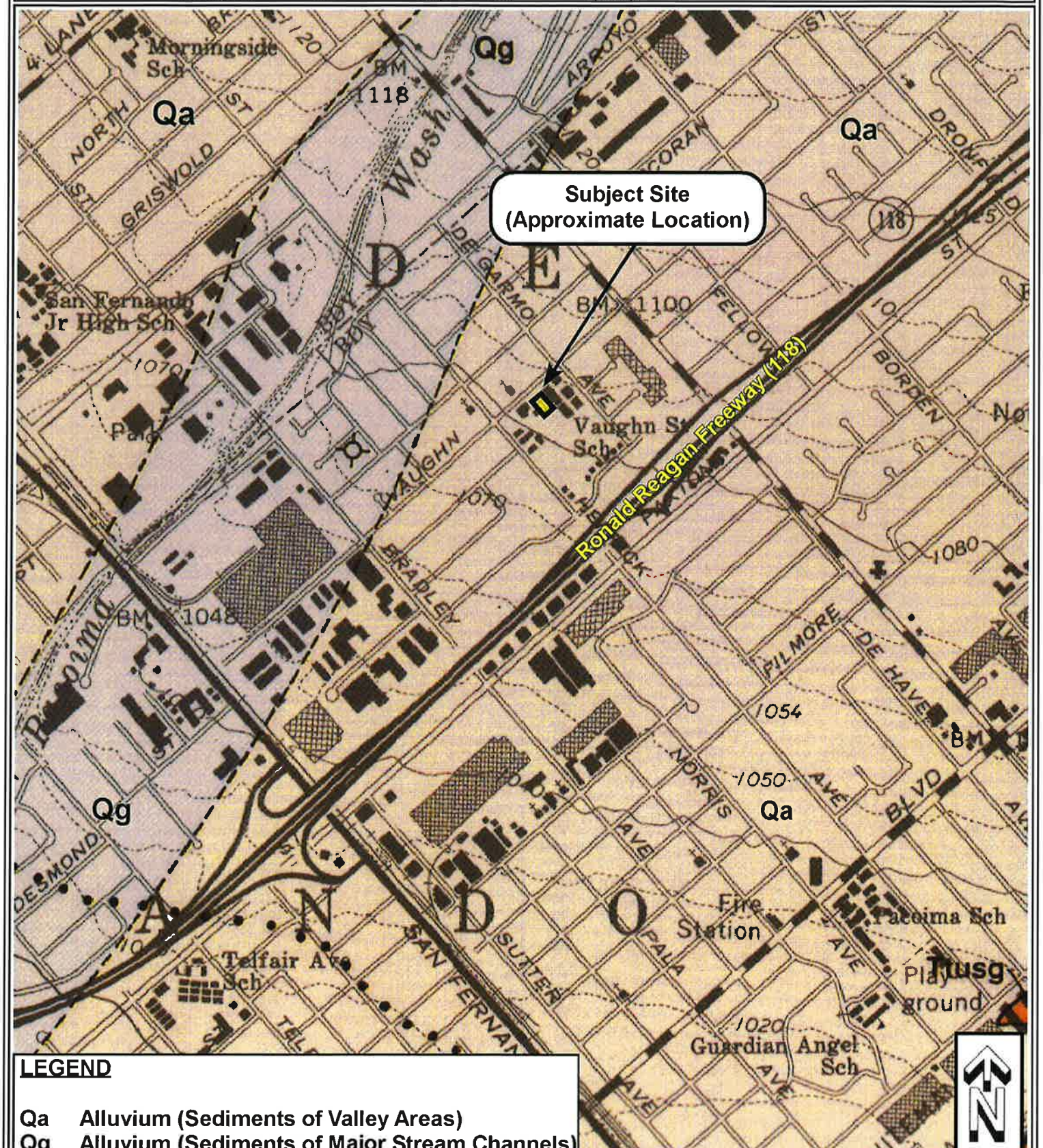
REGIONAL GEOLOGIC MAP #1

BG: 23079 CLIENT: VAUGHN NEXT CENTURY LEARNING CENTER

ENGINEER: RSB SCALE: 1" = 1000'

REFERENCE: Dibblee, T. W. (1991), Geologic Map of the San Fernando and Van Nuys (North 1/2) Quadrangles, Los Angeles County, California, Dibblee Geological Foundation, Foundation Map # DF-33, First Printing, May, 1991.



LEGEND

Qa	Alluvium (Sediments of Valley Areas)
Qg	Alluvium (Sediments of Major Stream Channels)

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REGIONAL GEOLOGIC MAP #2

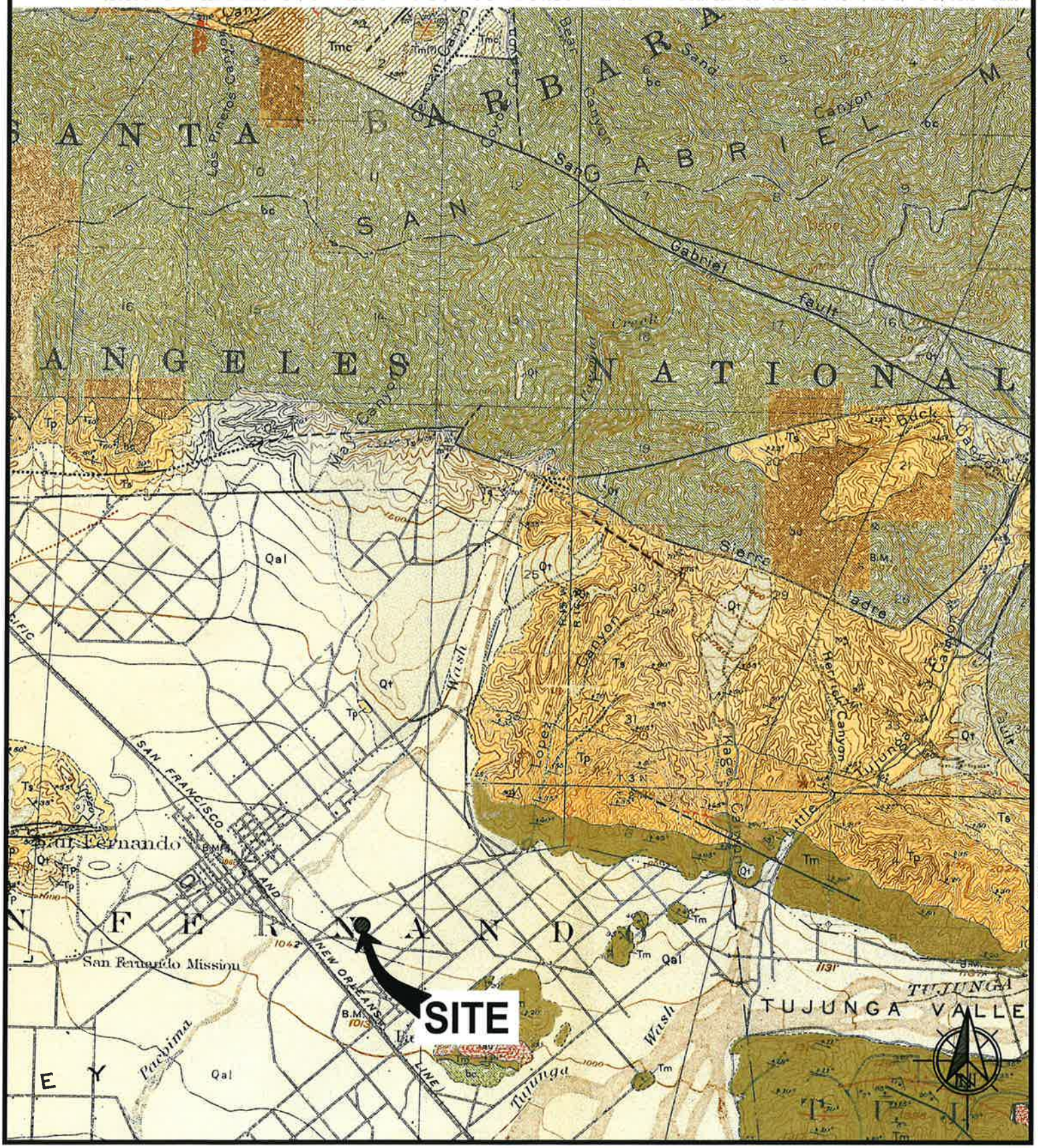
BG: 23079 VAUGHN NEXT CENTURY LEARNING CENTER

CONSULTANT : RSB

DRAWN BY : AS

SCALE: 1:62,500

REFERENCE: GEOLOGIC MAP OF THE PARTS OF LOS ANGELES AND VENTURA COUNTIES CALIFORNIA BULLETIN 753 PLATE 1.
GEOLOGY BY WILLIAM S.W. KEW, CARROLL M. WAGNER, WALTER A. ENGLISH AND JOHN P. BUWALDA SURVEYED IN 1917, 1918, 1919, AND 1922.



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REGIONAL GEOLOGIC MAP #3

BG: 23079 VAUGHN NEXT CENTURY LEARNING CENTER

CONSULTANT : RSB

DRAWN BY : AS

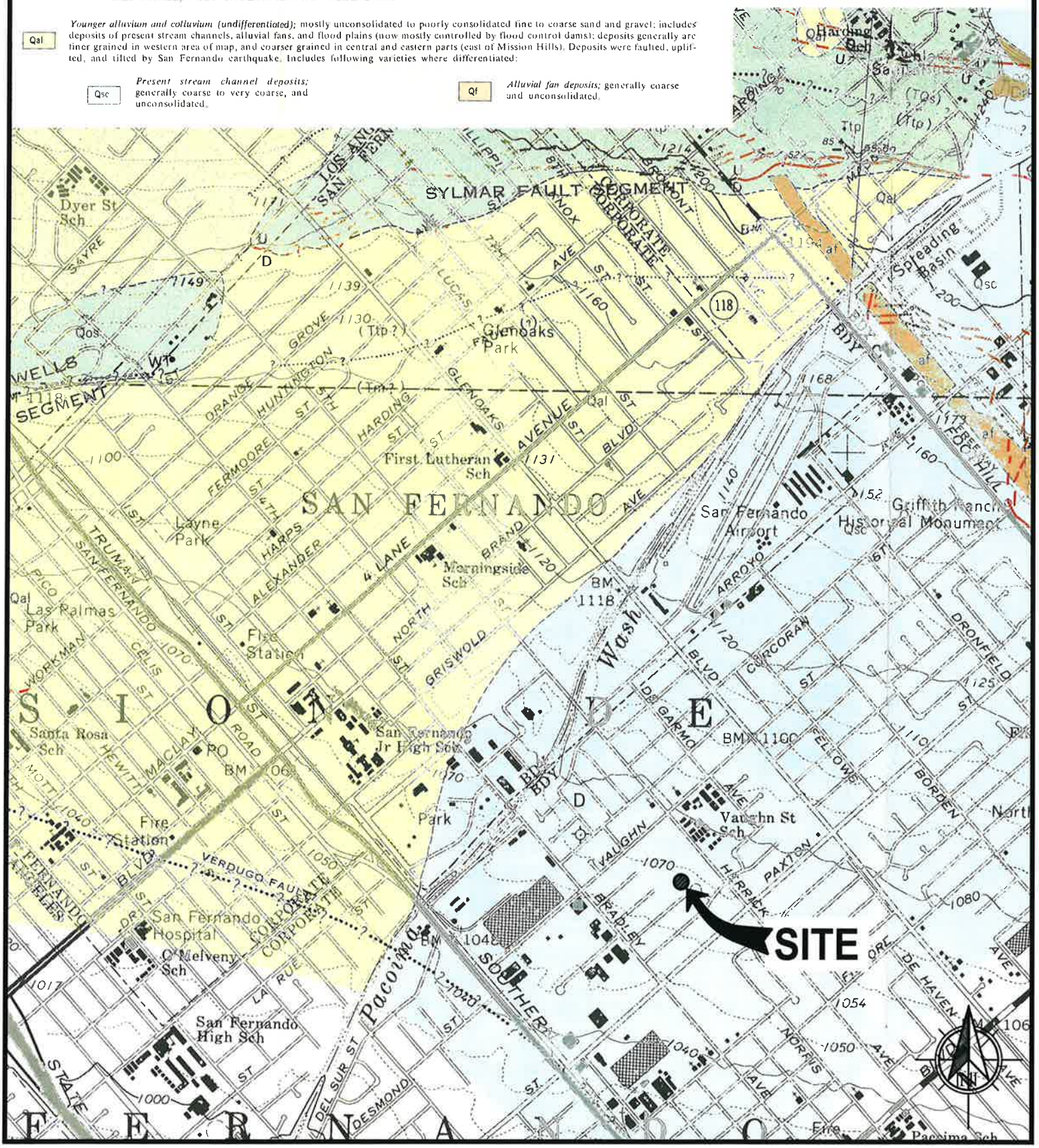
SCALE: 1:18,000

REFERENCE: GEOLOGIC MAP OF THE SAN FERNANDO EARTHQUAKE AREA C.D.M.G. BULLETIN 196 PLATE 2 DATED 1974 BY A.G. BARROWS, J.E. KAHLE, R.B. SAUL AND F.H. WEBER, JR.

Qal — *Younger alluvium and colluvium (undifferentiated);* mostly unconsolidated to poorly consolidated fine to coarse sand and gravel; includes deposits of present stream channels, alluvial fans, and flood plains (now mostly controlled by flood control dams); deposits generally are finer grained in western area of map, and coarser grained in central and eastern parts (east of Mission Hills). Deposits were faulted, uplifted, and tilted by San Fernando earthquake. Includes following varieties where differentiated:

Qsc — *Present stream channel deposits;* generally coarse to very coarse, and unconsolidated.

Qf — *Alluvial fan deposits;* generally coarse and unconsolidated.



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REGIONAL GEOLOGIC MAP #4

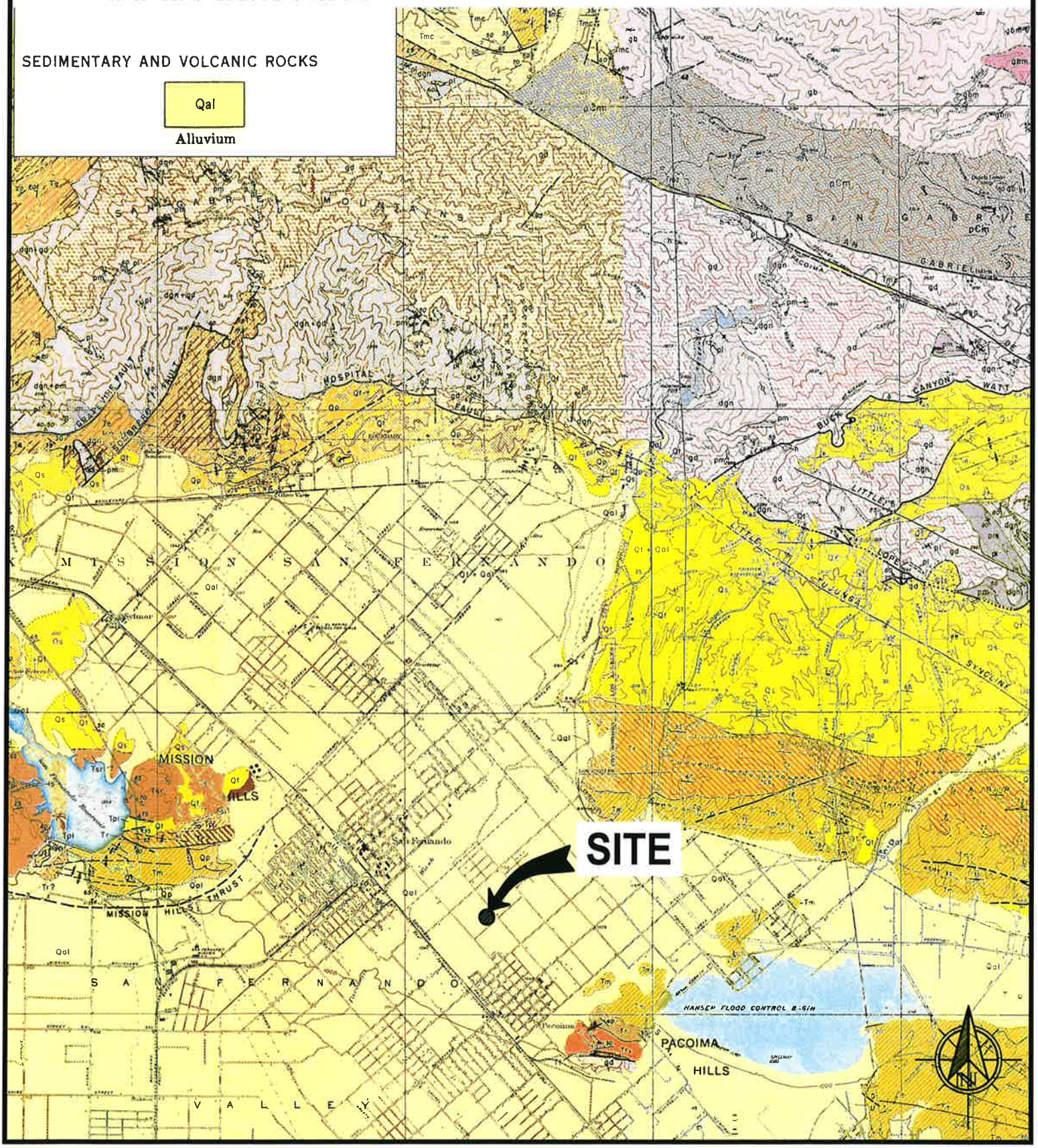
BG: 23079 VAUGHN NEXT CENTURY LEARNING CENTER

CONSULTANT : RSB

DRAWN BY : AS

SCALE: 1:62,500

REFERENCE: GEOLOGIC MAP AND MINERAL DEPOSITS OF THE SAN FERNANDO QUADRANGLE, LOS ANGELES COUNTY, CALIFORNIA BULLETIN 172 DATED 1958 BY GORDON B. OAKESHOTT.



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REGIONAL GEOLOGIC MAP #5

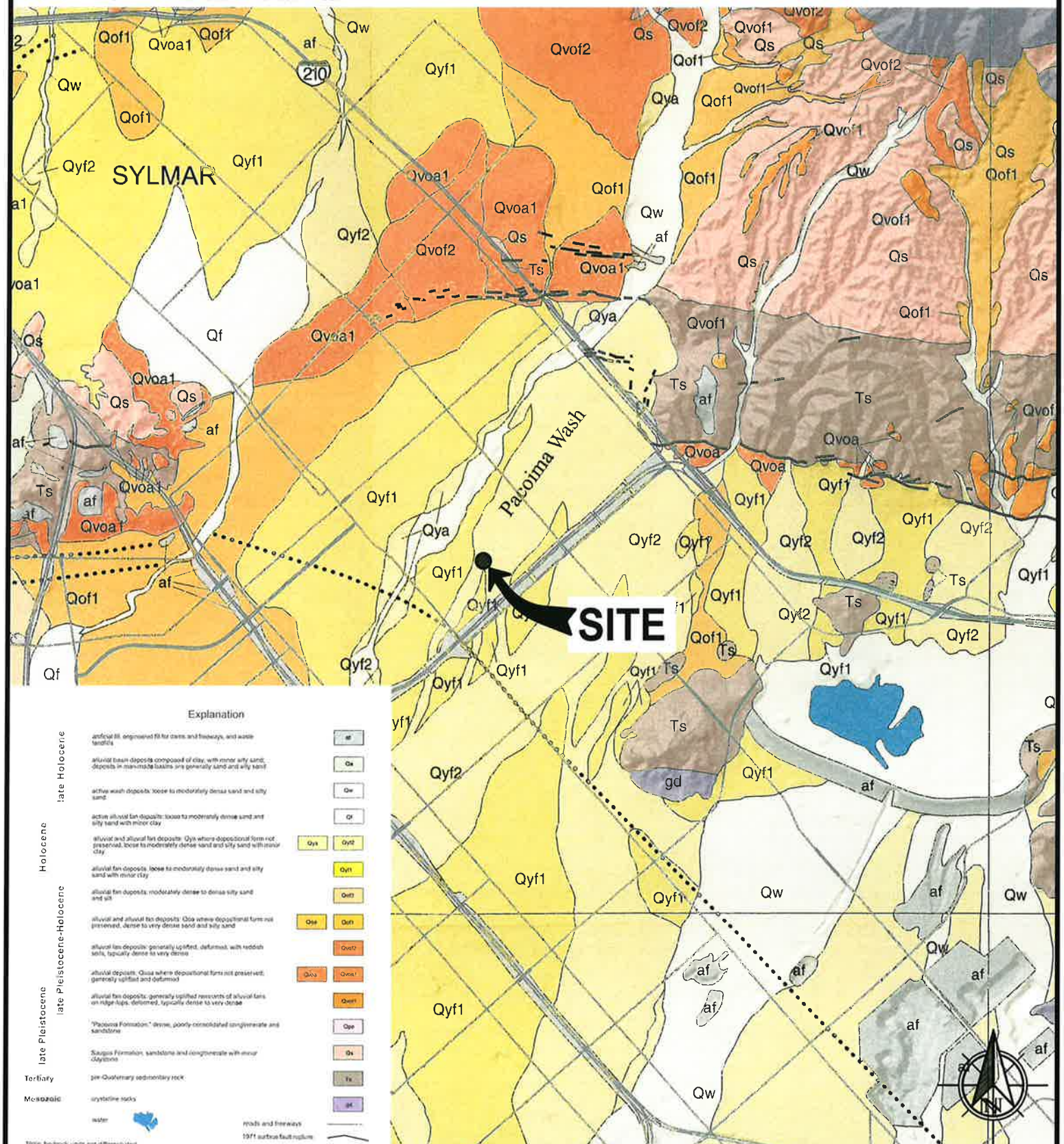
BG: 23079 VAUGHN NEXT CENTURY LEARNING CENTER

CONSULTANT : RSB

DRAWN BY : AS

SCALE: 1:48,000

REFERENCE: QUATERNARY GEOLOGY OF THE SAN FERNANDO VALLEY LOS ANGELES COUNTY, CALIFORNIA MAP SHEET 50 DATED 2000 BY C.S. HITCHCOCK AND C.J. WILLS



Explanation

late Holocene	artificial fill: engineered fill for dams and freeways, and waste landfills	af
	alluvial basin deposits composed of clay, with minor silty sand; deposits in main basins are generally sand and silty sand	Qa
	active wash deposits: loose to moderately dense sand and silty sand	Qw
	active alluvial fan deposits: loose to moderately dense sand and silty sand with minor clay	Qf
Holocene	alluvial and alluvial fan deposits: Qya where depositional form not preserved, loose to moderately dense sand and silty sand with minor clay	Qya / Qyf2
	alluvial fan deposits: loose to moderately dense sand and silty sand with minor clay	Qyf1
	alluvial fan deposits: moderately dense to dense silty sand and silt	Qof2
late Pleistocene-Holocene	alluvial and alluvial fan deposits: Qoa where depositional form not preserved, dense to very dense sand and silty sand	Qoa / Qof1
	alluvial fan deposits: generally uplifted, deformed, with reddish soils, typically dense to very dense	Qvof2
late Pleistocene	alluvial deposits: Qoa where depositional form not preserved, generally uplifted and deformed	Qvoa / Qvoa1
	alluvial fan deposits: generally uplifted remnants of alluvial fans on ridge tops, deformed, typically dense to very dense	Qvof1
	"Pacoima Formation," dense, poorly-consolidated conglomerate and sandstone	Qpc
	Saugus Formation, sandstone and conglomerate with minor claystone	Qs
Tertiary	pre-Quaternary sedimentary rock	Ts
Mesozoic	crystalline rocks	gd
	water	

roads and freeways

19?1 surface fault rupture

concealed fault

Note: bedrock units not differentiated, faults not shown in bedrock areas

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REGIONAL GEOLOGIC MAP #6

BG: 23079 VAUGHN NEXT CENTURY LEARNING CENTER

CONSULTANT : RSB

DRAWN BY : AS

SCALE: 1:42,500

FIGURE 3.—Northern San Fernando Valley showing 1971 ruptures and ancient fi

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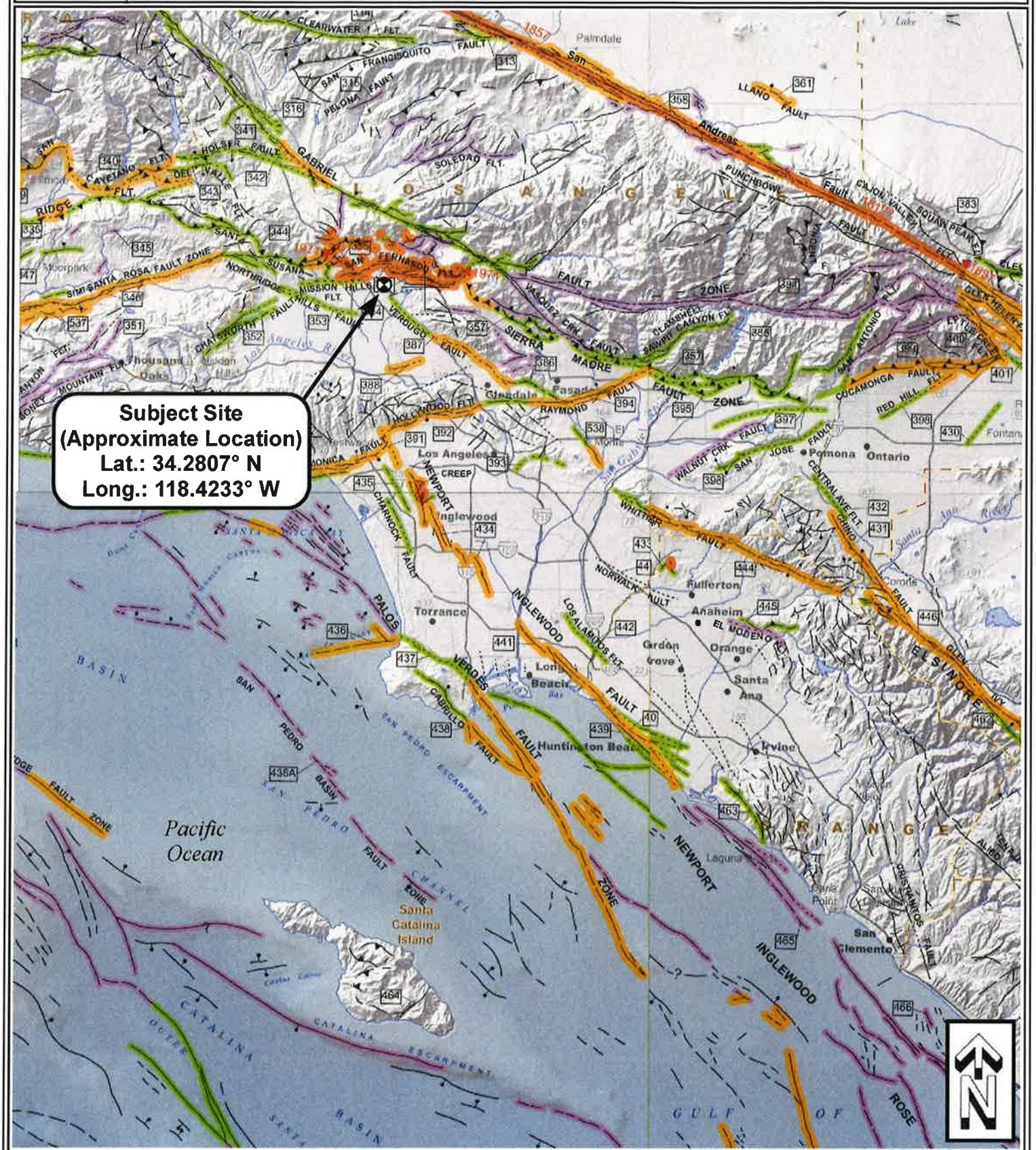
REGIONAL FAULT MAP

BG: 23079 CLIENT: VAUGHN NEXT CENTURY LEARNING CENTER

ENGINEER: RSB SCALE: 1 Inch = 12 Miles

Reference: Jennings, C. W., and Bryant, W. A., 2010, Fault Activity Map of California, California Geological Survey, 150th Anniversary, Map No. 6.



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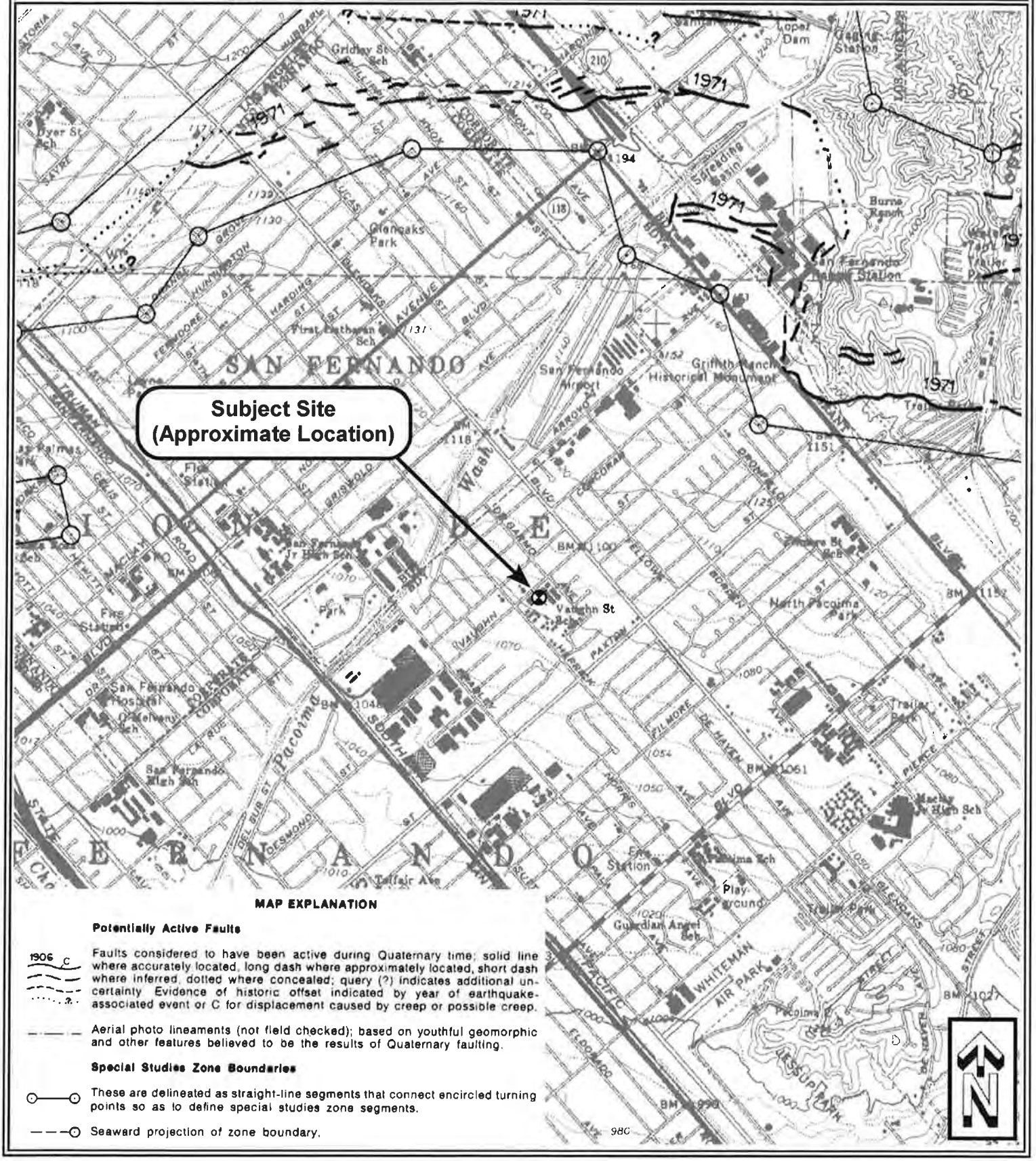
EARTHQUAKE FAULT ZONE MAP

BG: 23079 CLIENT: VAUGHN NEXT CENTURY LEARNING CENTER

ENGINEER: RSB SCALE: 1:24,000

REFERENCE: California Division of Mines and Geology (1979), State of California Special Studies Zones, San Fernando Quadrangle, Effective January 1, 1979.



MAP EXPLANATION

Potentially Active Faults

1906 C — Faults considered to have been active during Quaternary time; solid line where accurately located, long dash where approximately located, short dash where inferred, dotted where concealed; query (?) indicates additional uncertainty. Evidence of historic offset indicated by year of earthquake-associated event or C for displacement caused by creep or possible creep.

Aerial photo lineaments (not field checked); based on youthful geomorphic and other features believed to be the results of Quaternary faulting.

Special Studies Zone Boundaries

These are delineated as straight-line segments that connect encircled turning points so as to define special studies zone segments.

Seaward projection of zone boundary.

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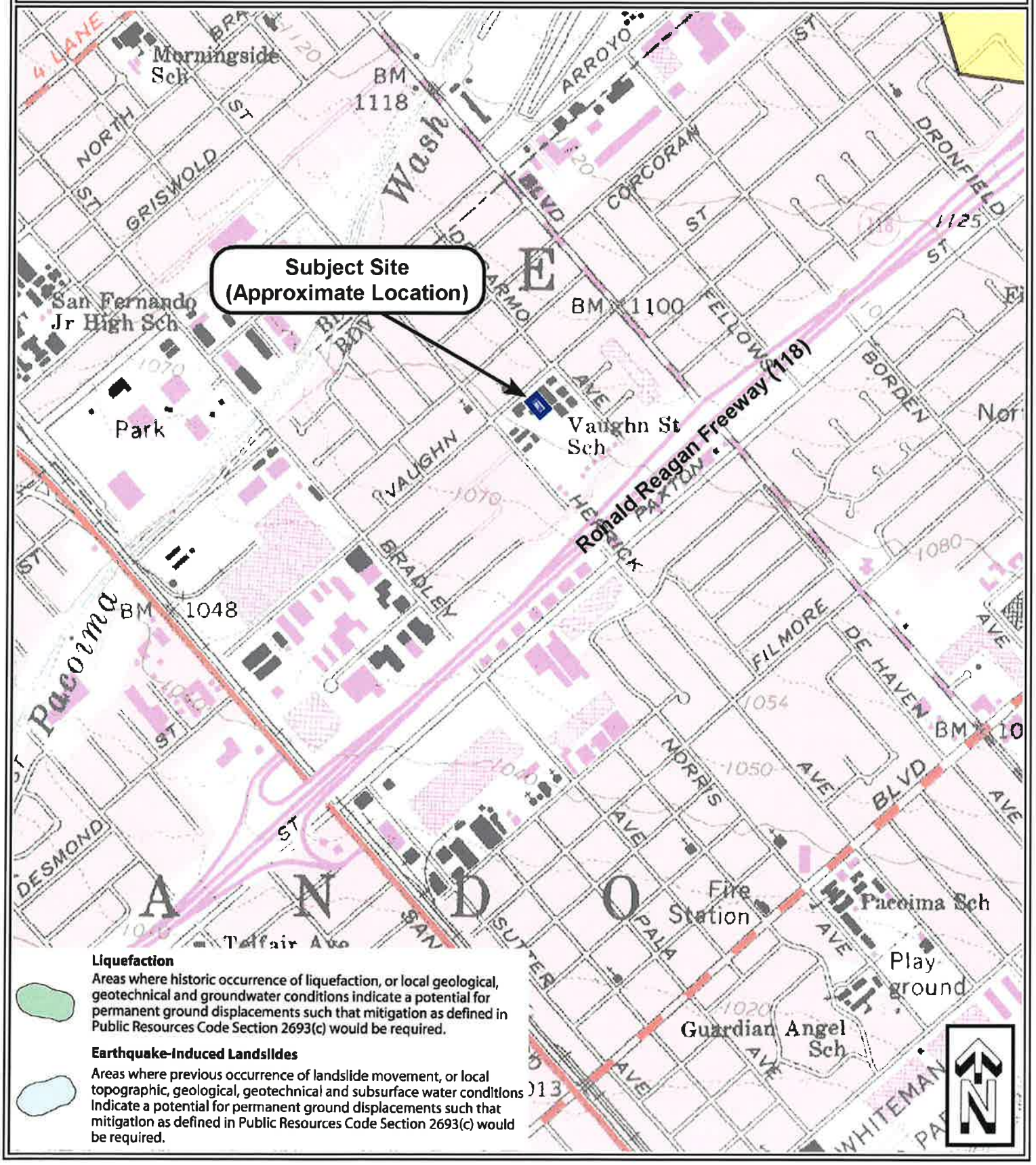
SEISMIC HAZARD ZONES MAP

BG: 23079 CLIENT: VAUGHN NEXT CENTURY LEARNING CENTER

ENGINEER: RSB SCALE: 1" = 1000'

REFERENCE: State of California Seismic Hazard Zones, San Fernando Quadrangle Official Map, California Geological Survey, Dated March 25, 1999.



Liquefaction
Areas where historic occurrence of liquefaction, or local geological, geotechnical and groundwater conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

Earthquake-Induced Landslides
Areas where previous occurrence of landslide movement, or local topographic, geological, geotechnical and subsurface water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

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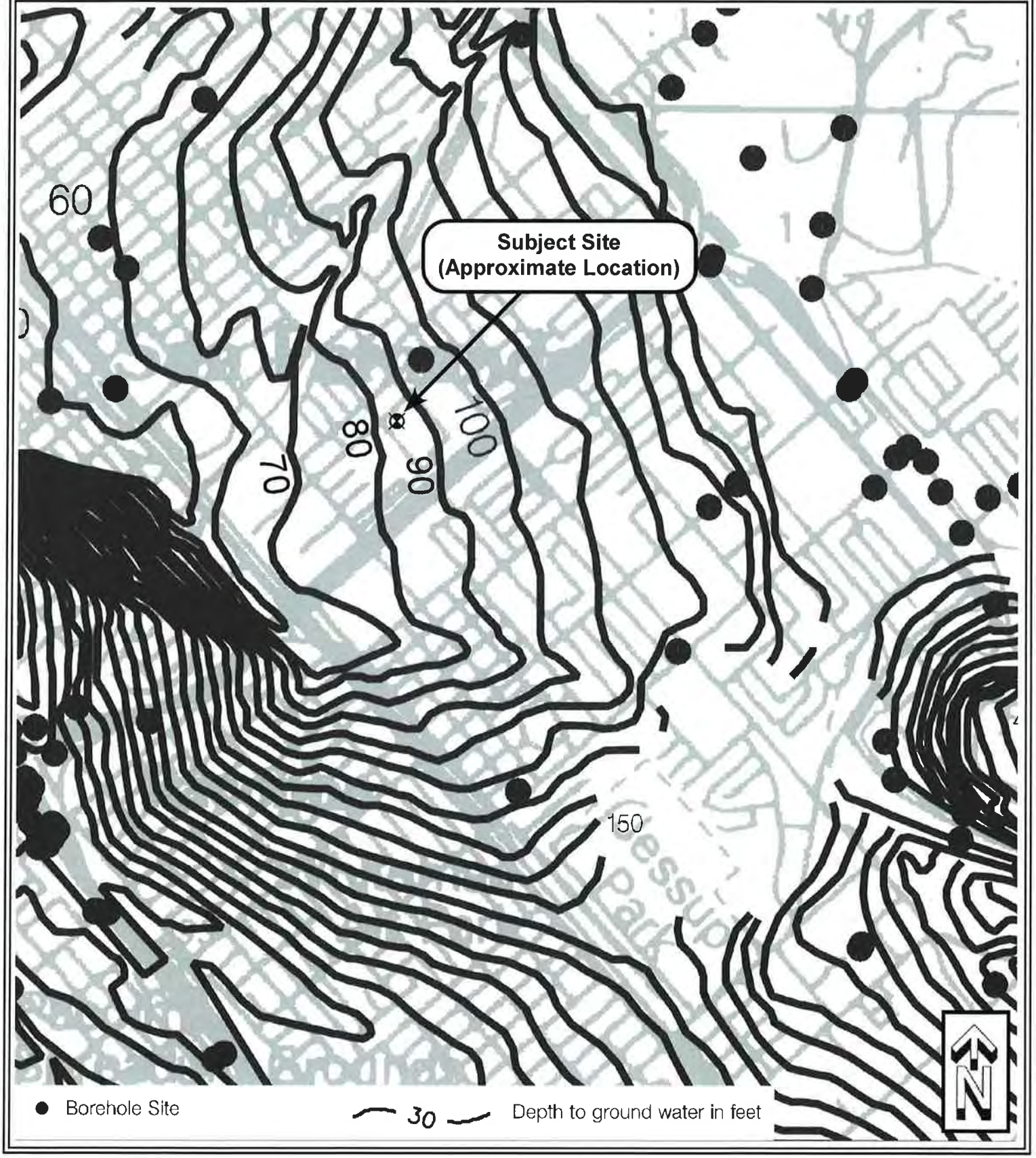
HISTORIC-HIGH GROUNDWATER MAP

BG: 23079 CLIENT: VAUGHN NEXT CENTURY LEARNING CENTER

ENGINEER: RSB SCALE: 1" = 2,000'

REFERENCE: CGS, 1998, Seismic Hazard Zone Report for the San Fernando 7.5-Minute Quadrangles, Los Angeles County, California, Plate 1.2, "Historically Highest Ground Water Contours and Borehole Log Data Locations, Updated 2001.



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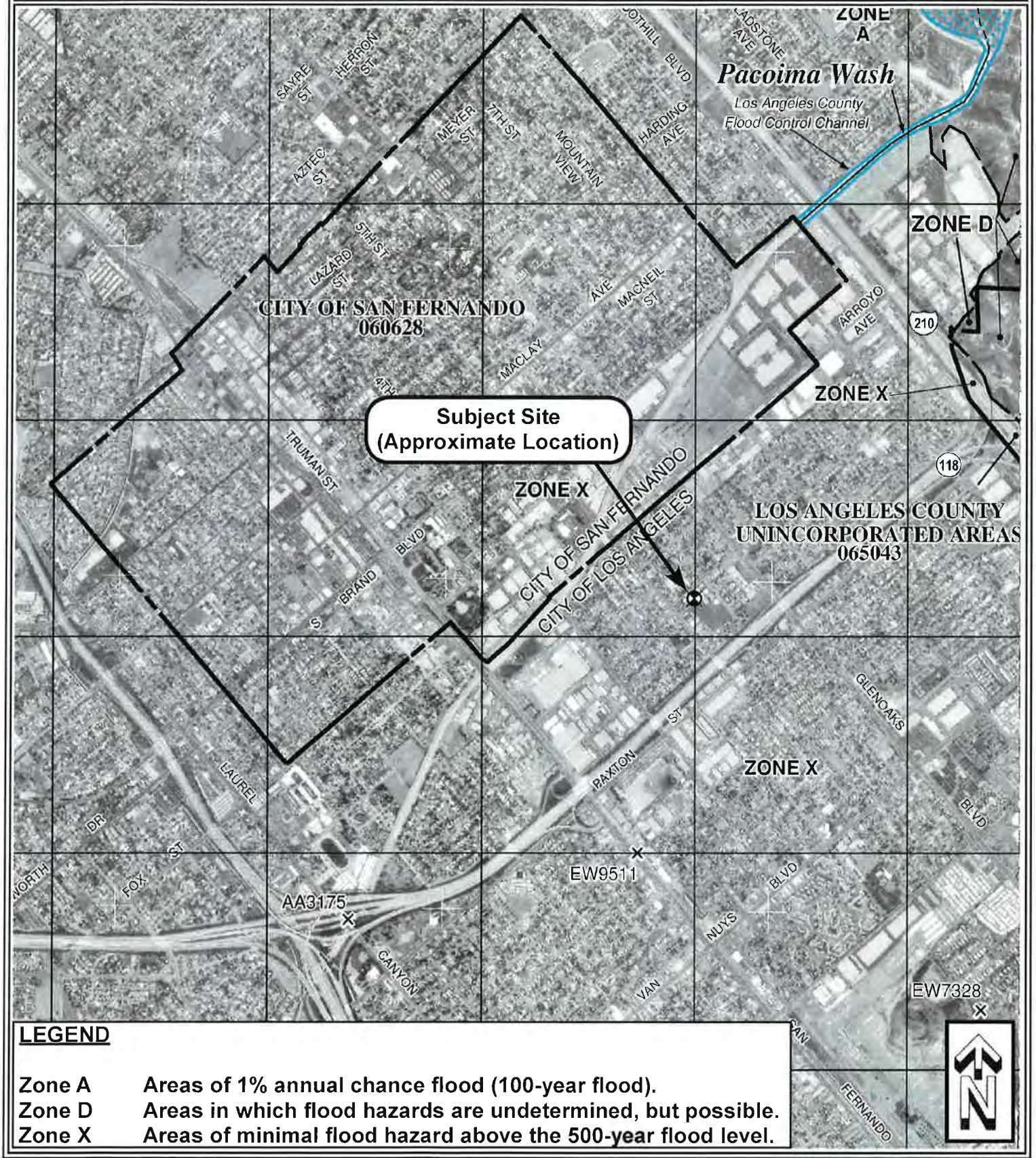
FEMA FLOOD HAZARD MAP

BG: 23079 CLIENT: VAUGHN NEXT CENTURY LEARNING CENTER

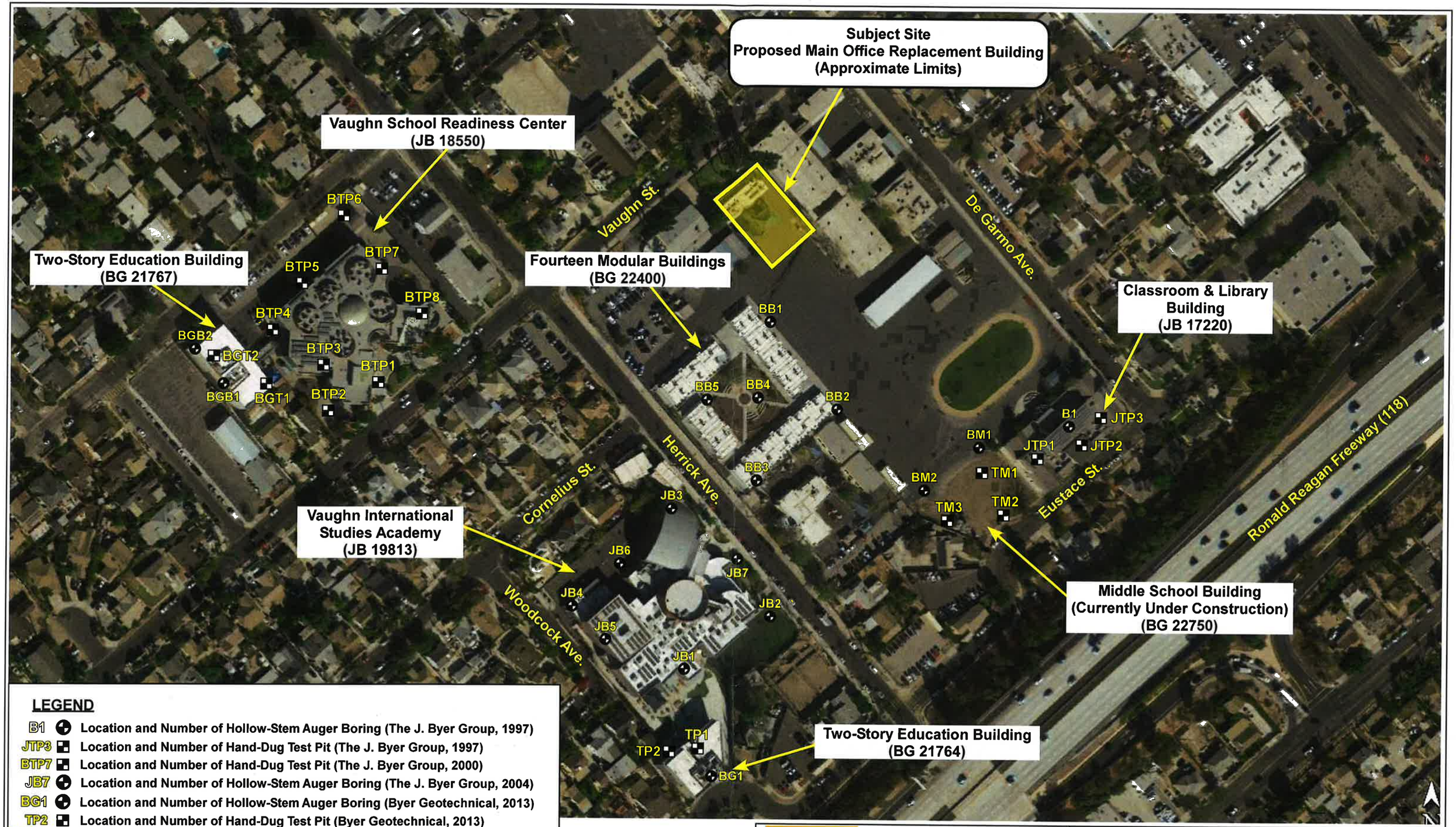
ENGINEER: RSB SCALE: 1:24,000

REFERENCE: Flood Insurance Rate Map (FIRM), Los Angeles County and Incorporated Areas, California, Federal Emergency Management Agency (FEMA), Map No. 06037C1075F, Panel 1075 of 2350, Effective 9/26/08.



LEGEND

Zone A	Areas of 1% annual chance flood (100-year flood).
Zone D	Areas in which flood hazards are undetermined, but possible.
Zone X	Areas of minimal flood hazard above the 500-year flood level.



LEGEND

B1	●	Location and Number of Hollow-Stem Auger Boring (The J. Byer Group, 1997)
JTP3	■	Location and Number of Hand-Dug Test Pit (The J. Byer Group, 1997)
BTP7	■	Location and Number of Hand-Dug Test Pit (The J. Byer Group, 2000)
JB7	●	Location and Number of Hollow-Stem Auger Boring (The J. Byer Group, 2004)
BG1	●	Location and Number of Hollow-Stem Auger Boring (Byer Geotechnical, 2013)
TP2	■	Location and Number of Hand-Dug Test Pit (Byer Geotechnical, 2013)
BGB1	●	Location and Number of Hollow-Stem Auger Boring (Byer Geotechnical, 2013)
BGT2	■	Location and Number of Hand-Dug Test Pit (Byer Geotechnical, 2013)
BB5	●	Location and Number of Hollow-Stem Auger Boring (Byer Geotechnical, 2016)
BM2	●	Location and Number of Hollow-Stem Auger Boring (Byer Geotechnical, 2018)
TM3	■	Location and Number of Hand-Dug Test Pit (Byer Geotechnical, 2018)

AUGUST 30, 2019

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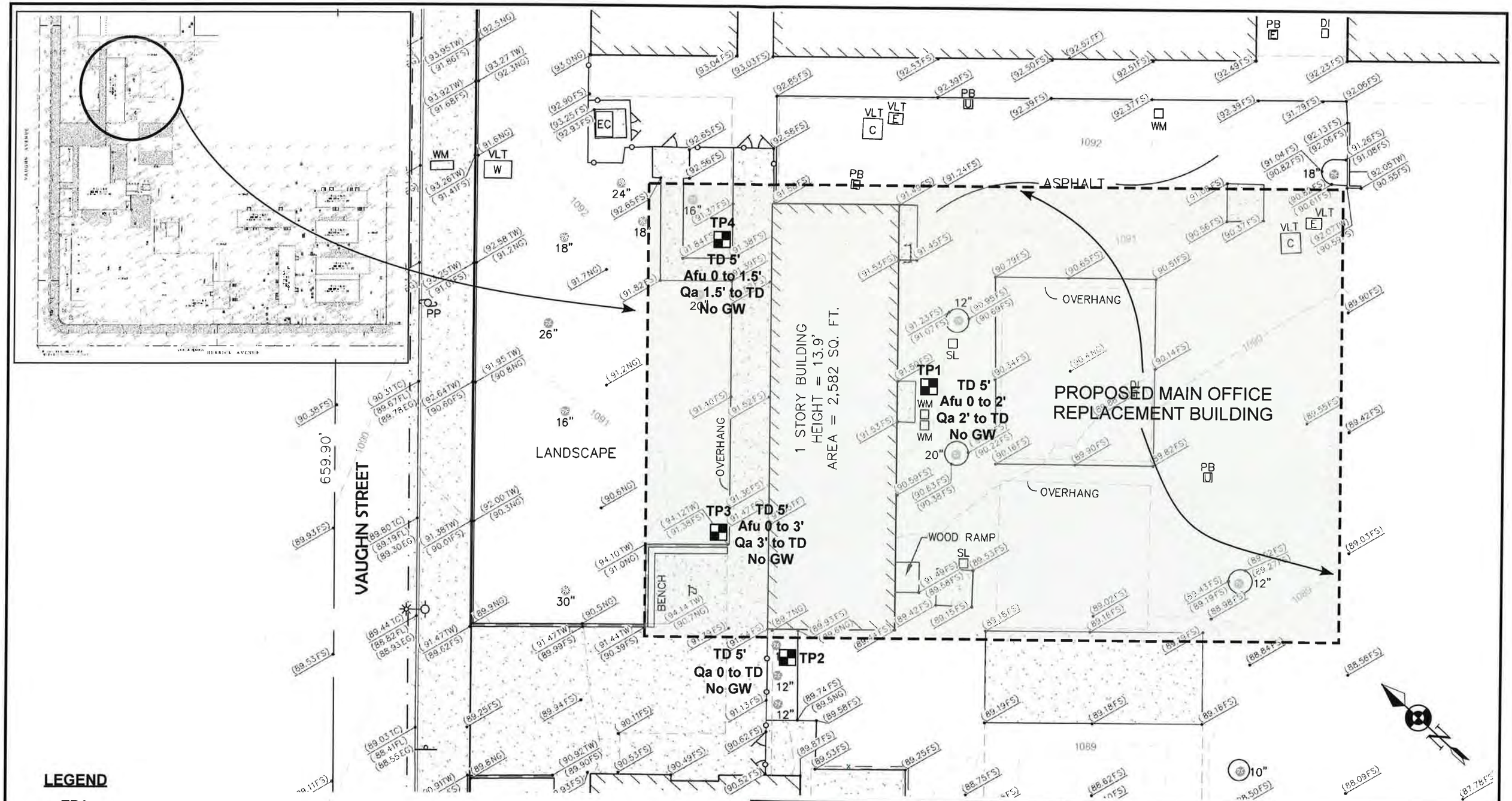
AERIAL VICINITY MAP

BG: 23079 CLIENT: VAUGHN NEXT CENTURY LEARNING CENTER

ENGINEER: RSB SCALE: 1"= 150'



LEGEND

TP4 ■	Location and Number of Hand-Dug Test Pit
TD 5'	Total Depth (feet)
Afu 0 to 1.5'	Depth of Undocumented Fill (feet)
Qa 1.5' to TD	Depth of Alluvium (feet)
No GW	No Groundwater Encountered

Reference Maps: - *Topography, Sheet 1 of 1, Prepared by Rosell Surveying and Mapping, Inc., Dated 4/5/2016.*
- *Site Plan - Overall, Sheet A-101, Prepared by CSDA Design Group, Dated 8/13/2019.*

AUGUST 30, 2019

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SITE PLAN

Proposed Main Office Replacement Building
13330 Vaughn Street, Pacoima, California

BG: 23079 CLIENT: Vaughn Next Century Learning Center

ENGINEER: RSB SCALE: 1" = 20'

APPENDIX E

Site Hydrology Study and Report

VCA ENGINEERS INC

CIVIL ▪ STRUCTURAL
MBE ▪ DBE ▪ SBE

SITE HYDROLOGY STUDY AND REPORT

Vaughn Mainland Admin, Media/Literacy & Kitchen Building

13330 Vaughn Street,
San Fernando, CA, 91340

December 10, 2019

Prepared For:

Los Angeles Unified School District

Prepared By:

VIRGIL C. AOANAN, P.E., S.E., QSD

Los Angeles
1041 S. Garfield Avenue, Alhambra CA 91801
Tel: 323-729-6098 ▪ **Fax:** 323-729-6043
e-mail: vca@vcaeng.com

Orange County
2151 Michelson Dr. # 242, Irvine, CA 92612
Tel: 949-679-0870(x102) ▪ **Fax:** 949-679-9370
www.vcaeng.com

Table of Contents

1 Introduction

1.1 Scope

This Hydrology Study and Report summarizes the stormwater management for the Vaughn Mainland Project.

The narrative report provides calculations of the stormwater runoff generated by the site, the conveyance and discharge system of the runoff, and the stormwater mitigation system using approved Best Management Practices.

1.2 Site Description

1.2.1 Introduction

The project site is located at 13330 Vaughn Street, San Fernando, CA, 91340 (Figure 1). The site consists of 0.988 acres and is bounded by Vaughn Street to the northwest, Herrick Avenue to the southwest, De Garmo Avenue to the northeast, and Eustace Street to the southeast. There are commercial buildings to the west side, residential houses to the north, east and south side. The approximate coordinates of the site obtained from Google Earth, are Longitude: 34°16' 50.13" N and Latitude: 118°25' 24.00" W. The impervious area of the pre-development site is 90.44% of the site.

1.2.2 Scope of Development

The scope of work is the entire property site (Figure 1). The proposed development will consist of a new administration building, concrete pavement, asphalt pavement, decomposed granite, and landscape area. The post-development imperviousness of the site is 90.44%.

Figure 1. Project site location

1.2.3 Existing and Proposed Drainage Description

The project site is located in the Los Angeles River Watershed per LA County Department of Public Works website. There is no storm drain line that runs along the surrounding street of the project. The existing stormwater runoff is collected by surface sheet-flow and flow out through the existing concrete v-gutter on the southwest side of the site – Portables to Project Based Pods (Vaughn P3 area) and being discharged to the curb and gutter on Herrick Avenue via curb drain. (Figure 2 and 3)

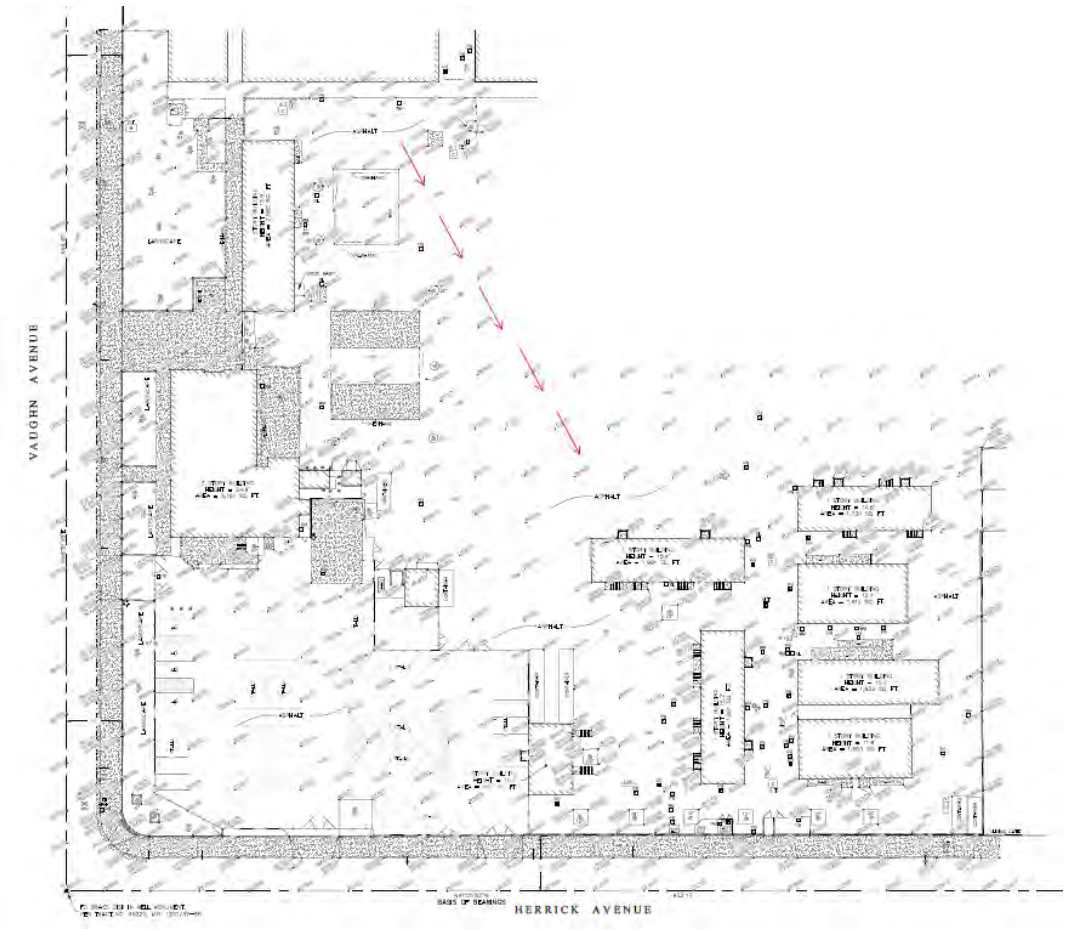


Figure 2. Project pre-development site drainage pattern

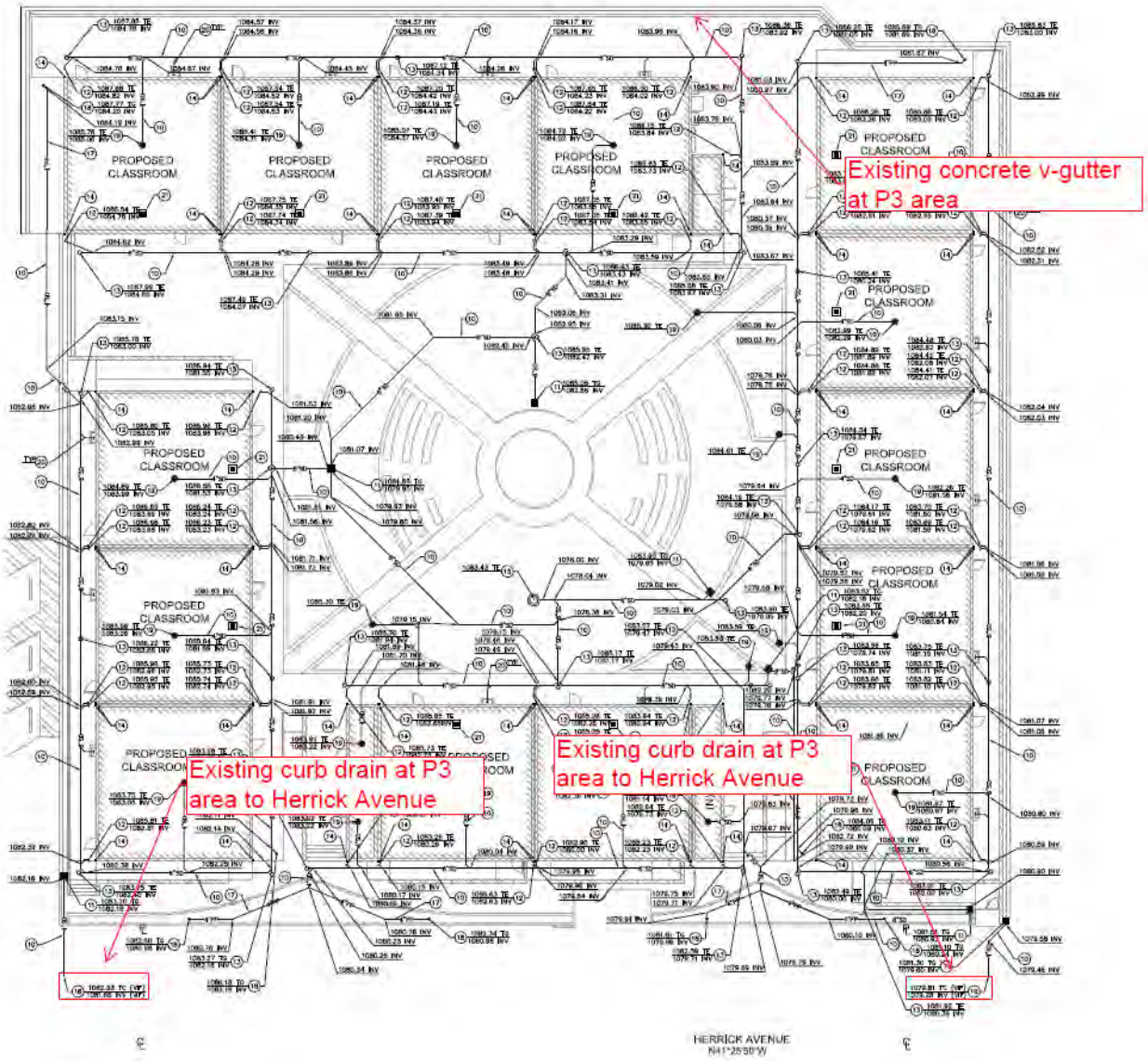


Figure 3: existing curb drain discharging to Herrick Avenue from the P3 area in campus

The proposed site will utilize the existing curb drain from the P3 area in campus to discharge the on-site stormwater runoff to the existing street gutter on Herrick Avenue. The entire site encompasses three major tributary areas: 1) the building stormwater from the roof will downspout directly into the onsite storm drain pipe and flow into the Maxwell-Drywell system to infiltrate into the underground soil. 2) The trench drain and catch basin will capture the stormwater runoff from the landscape area and concrete pavement area to the east and south side of proposed building and will be conveyed to the Maxwell drywell system via hard pipe. 3) The hardscape areas to the west side of the proposed building will be captured by catch basin and sheet flow towards the Maxwell drywell system. The overflow inside the Maxwell will rise up and discharge to the adjacent existing concrete v-gutter at the P3 area from the grate cover and to be curbed drained out to Herrick Avenue.

1.2.4 Project Area Soil Type

Soil information was provided by the Los Angeles County Hydrology GIS website (http://www.ladpw.org/wrd/hydrologygis/). The soil type is type 013 according to the GIS system, see Appendix I 6.1.

2 Site Hydrology and Design Criteria

The following hydrology data and design criteria are used in the calculations of the runoff. They follow the Hydrology Method of the Los Angeles County Department of Public Works Hydrology Manual, January 2006 and LAUSD Stormwater Technical Manual October 2019.

2.1 Rainfall Depth

The 50-year 24-hour rainfall Isohyetal for the project site falls between 6.4 and 6.6 inches as determined from the Hydrologic Map. Therefore, the rainfall at this specific project site is determined to be 6.5 for the 50-year, 24-hour rainfall depth. The final 85th percentile, 24-

hr rainfall was found to be 1.1inch per hour. The Hydrologic Map is included in Appendix I for reference.

2.2 Percentage of Imperviousness

The pre-development imperviousness at the disturbed work location is 96.03%. The percentage of imperviousness for post-development project site is approximately 90.44%.

2.3 HydroCalc

The peak mitigated volume and flow rate, for the entire site, was calculated using the 85th design storm and the LA County HydroCalc. Results provided a value of 3,222 cu.ft. and 0.2606 cfs respectively. Hydrograph results are in Appendix II.

2.4 Design Volume

An 85th percentile, 24-hour rainfall criteria is selected for the storm drain design for the project site. Index Isohyet map included in Appendix II was used as a guide in determining the location of the project site to identify the soil type characteristic and the rain fall depth. Calculation for Water Quality Design Volume (V_m) for the total drainage area was based on the formula found in the Low Impact Development Handbook and 85th percentile 24-hour rainfall data.

2.5 Groundwater Level

"Groundwater was not encountered in the current test pits and previous borings drilled onsite, which extended to a maximum depth of 30 ½ feet below existing grade. In *Seismic Hazard Zone Report 015*, the California Geological Survey (CGS) has estimated the historical-highest groundwater level at the site was between 80 and 90 feet below ground surface (CGS, 1998), as shown on the enclosed Historic-High Groundwater Map. Seasonal fluctuations in groundwater levels occur due to variations in climate, irrigation, development, and other factors not evident at the time of the exploration. Groundwater

levels may also differ across the site. Groundwater can saturate earth materials causing subsidence or instability of slopes". (Geotechnical Report, Byer Geotechnical, Inc., August 30, 2019)

3 Technical Feasibility Screening

3.1 LID Design Criteria

Infiltration, capture and reuse, and biofiltration strategies were considered following the County of Los Angeles LID Handbook, May 2016. Design criteria and sizing calculations follow the City of Los Angeles Low Impact Development Handbook, May 2016. Excerpts from the handbook are referenced and calculations are shown in the appendices.

3.1.1 Storm Water Infiltration

Infiltration was considered and is determined to be feasible per the percolation test results in the soil report, provided by Byer Geotechnical Inc. dated October 30, 2019. The infiltration rate is 10-15 in/hour. 10 in/hour was taken for the project onsite BMP design and calculation conservative purpose.

3.1.2 Capture and Reuse

It was determined that the entire water quality design volume could be infiltrated therefore capture and use was not a considerable option.

3.1.3 Biofiltration

It was determined that the entire water quality design volume could be infiltrated therefore biofiltration was not a considerable option.

4 Hydrology and Hydraulic Calculations

4.1 Low Impact Development

4.1.1 Basis of Design

The analysis of the hydraulic characteristic of the storm drain system was performed using the HydroCalc Method Version 1.0.2, Manning's Equation was used to determine the velocity and flow capacities, and the design of the stormwater management system was based on the LA County Hydrology manual.

4.1.2 BMP Surface Area

Calculation for the Design Capture Volume (V_m) required the dry well to be sized to mitigate 100% of the Design Capture Volume and was calculated using the Infiltrating Surface Area formula provided in the Low Impact Development Handbook. A Soil Infiltration Rate of 10 in/hr, was obtained from the geotechnical report, and a Factor of Safety of 3 was provided. Calculations for Drywell infiltration surface and Drywell design are included in Appendix III.

5 Conclusions

5.1 Proposed Best Management Practices (BMP)

The municipal stormwater program requires the preparation of LID (Low Impact Development) to address runoff pollution from post-development projects. The LID should identify Best Management Practices (BMPs) that are appropriate for the watershed pollutants of concern and especially the water constituents that would be generated from the designated project. The goal of the design is to capture and mitigate the volume of runoff produced from the 85th Percentile for 24-hr rainfall storm event. As demonstrated in this report VCA concludes and recommends that the dry well system is more than adequate to handle the volume required for treatment.

5.2 Unmitigated Area

There is an Unmitigated area respectively in the East and West side of the project site as shown on the LID Plan, which totals 1,644 SF. The Unmitigated area is equivalent to approximately 5% of the entire site, was unable to be treated through the Maxwell drywell system. However, the sizing of the drywell system and detention tank includes the Unmitigated area. This resulted in the total drywell and detention tank capacity provided exceeding what is required by LID.

5.3 Project Conclusion and recommendations

After reviewing the results of the hydrology study, VCA Engineers concludes and recommends that:

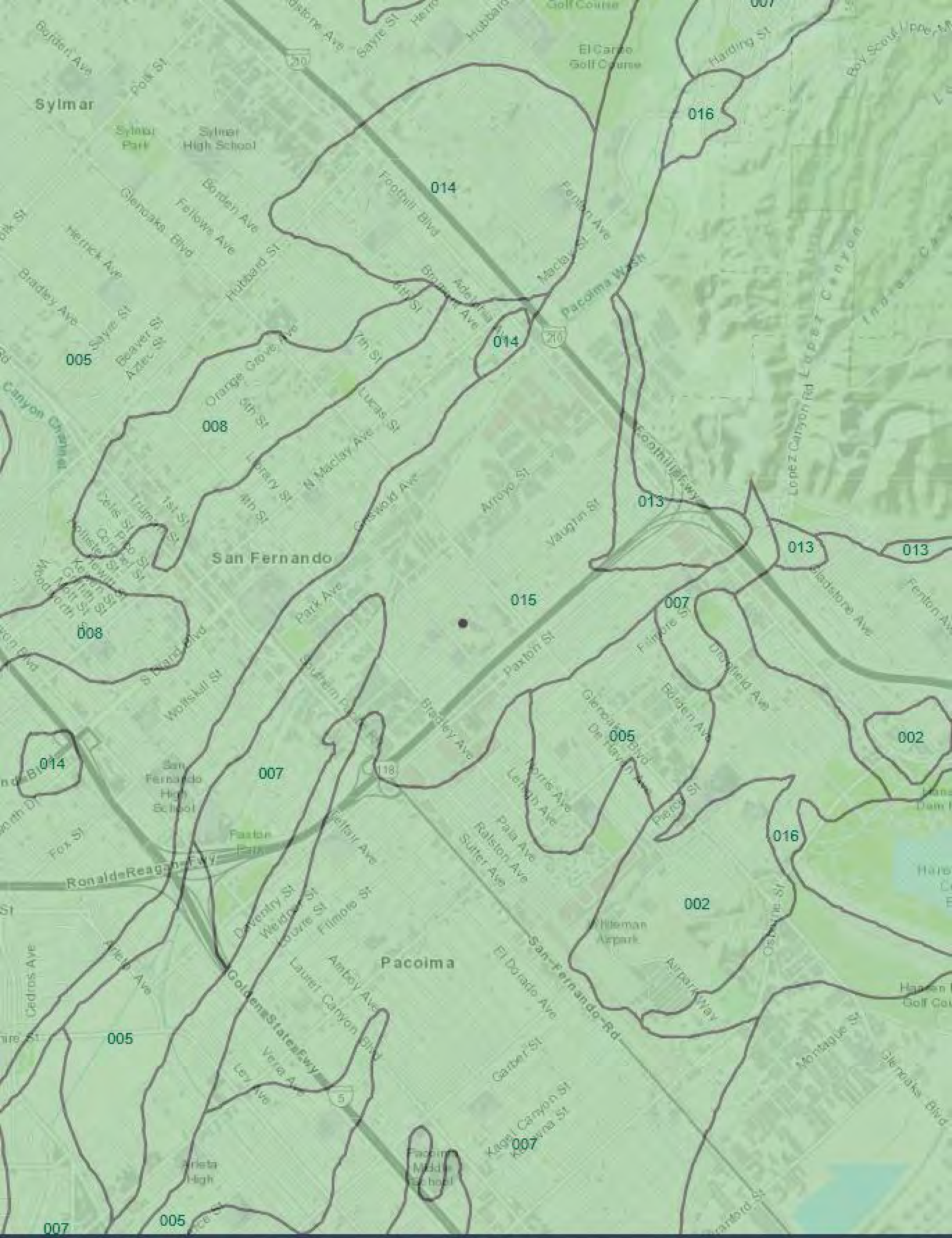
1. The proposed storm drain system will be adequate to convey the peak flow from a 25-year, 24- hour rainfall event.
2. LID approach is achieved by mitigation through one Maxwell drywell.
3. Overall, all surface runoff from the site will be treated through a BMP. This ensures that the site has mitigated stormwater runoff and pollutants to the best of its capabilities.

Appendix I

LADWP SOIL TYPE MAP

Los Angeles
1041 S. Garfield Avenue, Alhambra CA 91801
Tel: 323-729-6098 ▪ **Fax:** 323-729-6043
e-mail: vca@vcaeng.com

Orange County
2151 Michelson Dr. # 242, Irvine, CA 92612
Tel: 949-679-0870(x102) ▪ **Fax:** 949-679-9370
www.vcaeng.com



Sylmar
San Fernando
Pacoima
El Cariso Golf Course
Sylmar Park
Sylmar High School
San Fernando High School
Paxton Park
Arleta High
Pacoima Middle School
Whiteman Airpark
Foothill Fwy
Ronald Reagan Fwy
Golden State Fwy
San Fernando Rd
Lopez Canyon Rd
014
016
005
008
014
013
013
013
015
007
008
014
007
005
002
016
002
005
007
005
007

Appendix II

HYDROCALC RESULT FOR 85TH PERCENTILE DESIGN RAINFALL

Los Angeles
1041 S. Garfield Avenue, Alhambra CA 91801
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e-mail: vca@vcaeng.com

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2151 Michelson Dr. # 242, Irvine, CA 92612
Tel: 949-679-0870(x102) ▪ **Fax:** 949-679-9370
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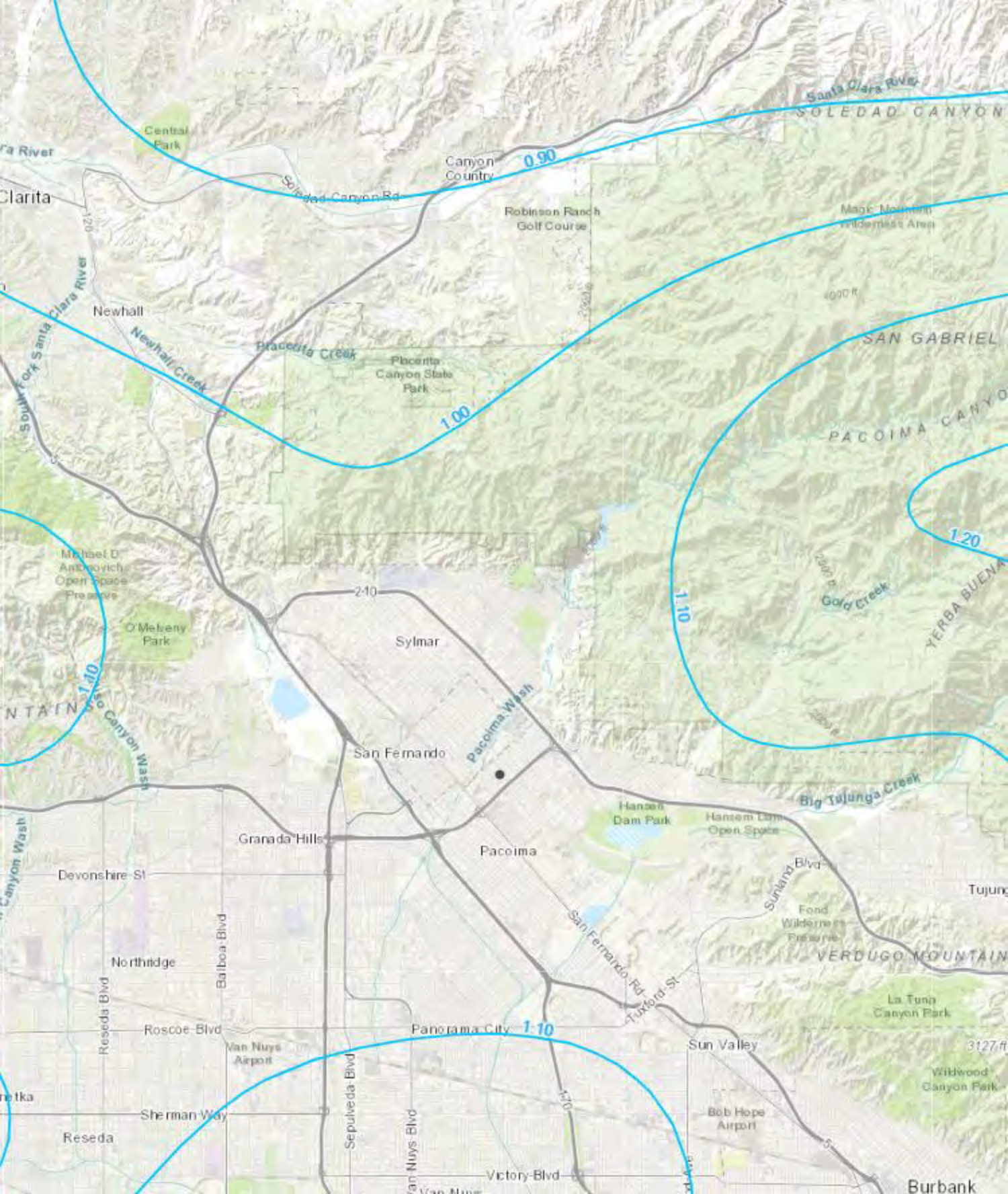
Santa Clara River
SOLEDAD CANYON
Central Park
Canyon Country
0.90
Soledad Canyon Rd
Clarita
Robinson Ranch Golf Course
Magic Mountain Wilderness Area
Newhall
South Fork Santa Clara River
Newhall Creek
Placerita Creek
Placerita Canyon State Park
1.00
SAN GABRIEL
PACOIMA CANYO
1.20
Michael D. Antonovich Open Space Preserve
O'Melveny Park
210
Sylmar
Gold Creek
YERBA BUENA
1.10
Pacoima Wash
San Fernando
Big Tujunga Creek
Hansen Dam Park
Hansen Dam Open Space
Granada Hills
Pacoima
Devonshire St
Sunland Blvd
Tujung
Fond Wilderness Preserve
VERDUGO MOUNTAIN
Balboa Blvd
Northridge
San Fernando Rd
Tuxford St
La Tuna Canyon Park
Reseda Blvd
Roscoe Blvd
Panorama City
1.10
Van Nuys Airport
Sun Valley
3127 ft
Wildwood Canyon Park
Sepulveda Blvd
Sherman Way
Bob Hope Airport
Reseda
Van Nuys Blvd
Victory Blvd
Burbank

Appendix III

TORRENT - MAXWELL DRYWELL:
DETAIL & SYSTEM SIZING CALCULATIONS

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e-mail: vca@vcaeng.com

Orange County
2151 Michelson Dr. # 242, Irvine, CA 92612
Tel: 949-679-0870(x102) ▪ **Fax:** 949-679-9370
www.vcaeng.com

November 26, 2019
VCA Engineers, Inc. - Alhambra
Attn: Wendy Hu

Re: Maxwell® IV Drainage System Calculations for **Vaughn Next Learning Center - San Fernando, CA**

Given:		
Measured Infiltration Rate	10.00	in/hr
Safety Factor	3.00	
Design Infiltration Rate	3.33	in/hr
Mitigated Volume	3,222	ft^3
Required Drawdown Time	96	hours
Min. Depth to Infiltration	10	ft
Groundwater Depth for Design	80	ft
Rock Porosity	40	%

Design:		
Actual Depth to Infiltration	11	ft
Actual Drywell Bottom Depth	70	ft

Apply Safety Factor to get Design Rate.

$10.00 \frac{in}{hr} \div 3 = 3.33 \frac{in}{hr}$

Convert Design Rate from in/hr to ft/sec.

$3.33 \frac{in}{hr} \times \frac{1\ ft}{12\ in} \times \frac{1\ hr}{3600\ sec} = 0.000077 \frac{ft}{sec}$

A 4 foot diameter drywell provides 12.57 SF of infiltration area per foot of depth, plus 12.57 SF at the bottom.

For a 70 foot deep drywell, infiltration occurs between 11 feet and 70 feet below grade. This provides 59 feet of infiltration depth in addition to the bottom area. Infiltration area per drywell is calculated below.

$59\ ft \times 12.57 \frac{ft^2}{ft} + 12.57\ ft^2 = 754\ ft^2$

Combine design rate with infiltration area to get flow (disposal) rate for each drywell.

$0.000077 \frac{ft}{sec} \times 754\ ft^2 = 0.05812 \frac{ft^3}{sec}$

Volume of disposal for each drywell based on various time frames are included below.

96 hrs: 0.0581 CFS x 96 hours x $\frac{3600\ sec}{1\ hr}$ = 20,086 cubic feet of retained water disposed of.

Chamber diameter = 4 feet. Drywell rock shaft diameter = 4 feet.
Volume provided in each drywell with chamber depth of 15 feet.

$15\ ft \times 12.57\ ft^2 + 55\ ft \times 12.57\ ft^2 \times 40\ \% = 465\ ft^3$

The MaxWell System is composed of 1 drywell(s) .
Total volume provided = 465 CF.
Total 96 hour infiltration volume = 20,086 CF.
Total infiltration flowrate = 0.05812 CFS.

Based on the total mitigated volume of 3222 CF, after subtracting the volume infiltrated as quickly as it enters the drywell of 2774 CF, the remaining volume is 448 CF. The storage provided in the drywell system is 465 CF.

Andrew Choe, EIT
Technical Marketing Engineer
Torrent Resources (CA), Inc.
909-580-0375

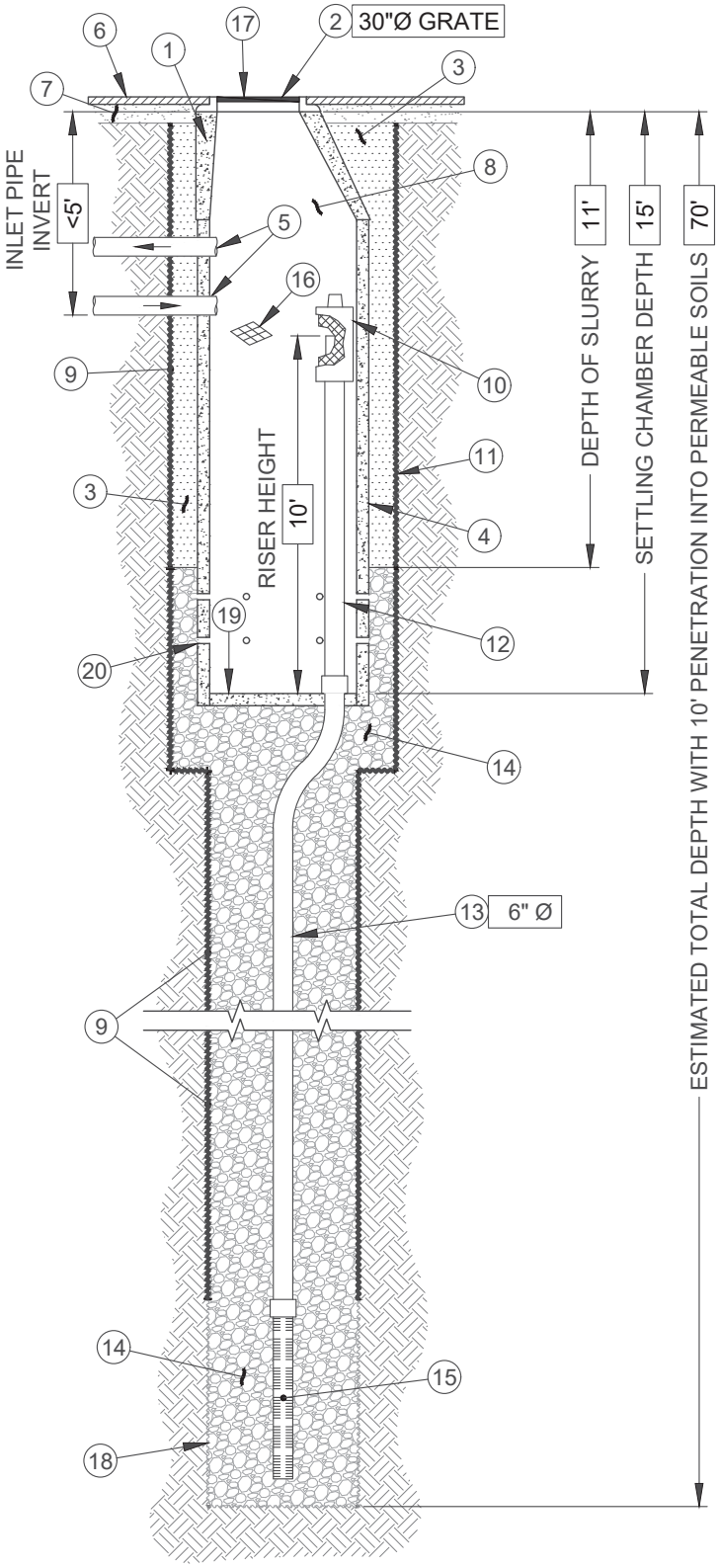
Torrent Resources (CA) Incorporated
9950 Alder Avenue
Bloomington, CA 92316
Phone 909-829-0740
CA Lic. 886759 A, C-42
An Evolution of McGuckin Drilling

The MaxWell® IV

DRAINAGE SYSTEM DETAILS AND SPECIFICATIONS

Vaughn Next Learning Center

San Fernando, CA



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CA Lic. 886759, C-42, C-57, HAZ.
Also licensed in the following states: MT, NM, NV, OR, TX, UT, and WA.

U.S. Patent No. 4,923,330 - ™ Trademark 1974, 1990, 2004

ITEM NUMBERS

1. **MANHOLE CONE** - MODIFIED FLAT BOTTOM.
2. **BOLTED RING & GRATE/COVER** - DIAMETER & TYPE AS SHOWN. CLEAN CAST IRON WITH WORDING **"STORM WATER ONLY"** IN RAISED LETTERS. **BOLTED IN 2 LOCATIONS** AND SECURED TO CONE WITH MORTAR. RIM ELEVATION ±0.02' OF PLANS.
3. **STABILIZED BACKFILL** - TWO-SACK SLURRY MIX.
4. **PRE-CAST LINER -** 4000 PSI CONCRETE 48" ID. X 54" OD. **CENTER IN HOLE** AND ALIGN SECTIONS **TO MAXIMIZE BEARING SURFACE.**
5. **INLET PIPE/OUTLET PIPE (BY OTHERS).** SEE SEPARATE PLAN FOR INVERT ELEVATIONS.
6. **GRADED BASIN OR PAVING** (BY OTHERS).
7. **COMPACTED BASE MATERIAL**, IF REQUIRED (BY OTHERS).
8. **FREEBOARD DEPTH VARIES** WITH INLET PIPE ELEVATION. INCREASE SETTLING CHAMBER DEPTH AS NEEDED TO MAINTAIN ALL INLET PIPE ELEVATIONS ABOVE RISER PIPE.
9. **NON-WOVEN GEOTEXTILE SLEEVE** - MIRAFI 140 NL. MIN. 6 FT Ø. HELD APPROX. 10 FEET OFF THE BOTTOM OF EXCAVATION.
10. **PUREFLO® DEBRIS SHIELD** - ROLLED 16 GA. STEEL X 24" LENGTH WITH VENTED ANTI-SIPHON AND INTERNAL 0.265" MAX. SWO FLATTENED EXPANDED STEEL SCREEN X 12" LENGTH. **FUSION BONDED EPOXY COATED**.
11. **MIN. 6' Ø DRILLED SHAFT.**
12. **RISER PIPE** - SCH. 40 PVC MATED TO DRAINAGE PIPE AT BASE SEAL.
13. **DRAINAGE PIPE** - ADS HIGHWAY GRADE OR SCH. 40 PVC WITH TRI-A COUPLER. SUSPEND PIPE DURING BACKFILL OPERATIONS. DIAMETER AS NOTED.
14. **ROCK** - WASHED, SIZED BETWEEN 3/8" AND 1-1/2".
15. **FLOFAST® DRAINAGE SCREEN** - SCH. 40 PVC 0.120" SLOTTED WELL SCREEN WITH 32 SLOTS PER ROW/FT. OVERALL LENGTH VARIES, UP TO 120" WITH TRI-B COUPLER.
16. **ABSORBENT** - HYDROPHOBIC PETROCHEMICAL SPONGE. MIN. 128 OZ. CAPACITY. TYPICAL, 2 PER CHAMBER.
17. **FABRIC SEAL** - U.V. RESISTANT GEOTEXTILE - **TO BE REMOVED BY CUSTOMER** AT PROJECT COMPLETION. GRATED ONLY.
18. **MIN 4' Ø DRILLED SHAFT.**
19. **BASE SEAL** - CONCRETE SLURRY.
20. **6 PERFORATIONS MINIMUM PER FOOT, 2 ROWS MINIMUM.**

DETAIL : IV-4-SS-CA	REVISED BY: RJA		
DRAWN ON: 05-14-19	REVISED DATE: 12-03-19	SCALE: N.T.S	

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ARIZONA 602-268-0785

APPENDIX F

Mainland DCAP Building Environmental Noise Study

VAUGHN NEXT CENTURY LEARNING CENTER
MAINLAND DCAP BUILDING
ENVIRONMENTAL NOISE STUDY
13330 VAUGHN STREET, SAN FERNANDO, CA 91340

PREPARED FOR: CSDA DESIGN GROUP

October 23, 2019

Prepared by: CSDA Design Group
Indi Savitala
889 N. Douglas Street
El Segundo, CA 90245

CSDA Project No. 1949.02

CSDA | DESIGN GROUP

Table of Contents

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1.0 Project Description

The Vaughn Next Century Learning Center school is located at 13330 Vaughn Street in Pacoima, California. The school is redeveloping their facilities and incorporating a new two-story admin/classroom building to be located at the northern portion of the campus along Vaughn Street. The new building will include 4 double-classroom pod rooms, a library, admin space, a kitchen space and a media room. Noise intrusion is the primary concern of this assessment, which will include our recommendation for noise reduction of the facades for the proposed design.

CSDA Design Group (CSDA) conducted an environmental noise study for the Vaughn Mainland DCAP building to address the intent of the exterior noise intrusion requirements in the LAUSD Building Acoustical Requirements, the California Collaborative for High Performance Schools (CHPS) 2014, and California Green Building Standards Code (CALGreen) Sections 5.507.4.1 & 5.507.4.2.

This report includes the following information:

a) Results of an acoustical survey, which demonstrates that the classroom building is exposed to a noise level up to $L_{eq(1hour)}$ 64 dBA.
b) An acoustical analysis of exterior building assemblies exposed to the noise source and predicted interior noise levels.
c) The acoustical performance of the proposed construction is expected to achieve the LAUSD, CHPS and CALGreen interior noise criteria.

2.0 Acoustical Criteria

Table 1 is a summary of the interior noise criteria due to exterior noise levels.

Table 1: Maximum Background Levels (dBA)

Room Type	CHPS EQ14.0 Prerequisite Background Noise Criterion	LAUSD Background Noise Criterion
Classroom Library	45 dBA	45 dBA (max.) 40 dBA target
Offices	No suggested criteria.	45 dBA (max.)
Cafeteria	No suggested criteria.	50 dBA (max.)

Public school districts are not subject to local plans, codes or ordinances. However, newly constructed schools are subject to California Building Code (CBC) requirements. CALGreen of the CBC stipulates the following:

> *For sites with noise levels above 65 dBA, interior noise levels must be no greater than 50 dBA during the noisiest hour of operation (Performance Method).*

The 45 dBA threshold of the CHPS and LAUSD criteria (as outlined in Table 1) are more stringent than the 50 dBA criterion stipulated by CALGreen; thus, the recommended target is to meet the 45 dBA CHPS and LAUSD criteria.

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3.0 Noise Measurement Results

CSDA visited the project site at 13330 Vaughn Street, Pacoima, CA on September 30, 2019 to conduct acoustical measurements at the exterior of the existing building. The purpose of our noise measurements was to document the existing acoustical conditions during a typical school day.

3.1 *Noise Measurement Procedure and Results*

To document the noise levels at the site and calculate the noise reduction provided by the proposed exterior constructions, two simultaneous long-term (i.e., 72 hour) noise measurements (indicated as LT-1 and LT-2 in Figure 1), were conducted at the project site. In addition, our analysis includes noise data measured in May 2018 along Eustace St (indicated as LT-3 in Figure 1), and was used to quantify the contribution of noise from California State Route 118. Sound level meter LT-1 was mounted 12 feet above grade to a utility pole near the north property line of the campus along Vaughn Street. Sound level meter LT-2 was mounted 12 feet above grade to a light pole near the west property line of the campus along Herrick Avenue. Measurements commenced at 6:00 AM on September 30 and ended at 6:30 AM on October 3. A short-term (i.e., 15 minute) measurement was conducted within the school yard along the approximate location of the south facade of the proposed building to quantify the noise level at this location. The 15 minute short-term measurement was correlated with the 72 hour long-term exterior measurement to calculate the hourly average ($L_{eq(1hour)}$) at the south facade and was used to calculate the noise level at project setbacks.

During the measurements, the average wind speed was 4 miles per hour (mph) and the maximum wind speed was 13 mph; wind noise did not affect the measurement. The temperature ranged from a low of 52°F to a high of 82°F, and the humidity level ranged from a low of 15% to a high of 72% with no precipitation.

The equipment was calibrated immediately before and after the measurements with no significant drift in response. Figure 1 shows the measurement locations and Table 2 shows the highest hourly equivalent sound levels at the measurement locations.

The noise environment is dominated by vehicular traffic on Vaughn St as well as Herrick Ave. Additionally, constant traffic noise can be heard from California State Route 118 to the south of the Vaughn Campus. Minor noise sources include residential activity, periodic aircraft flyovers, birds, and outdoor student activity.

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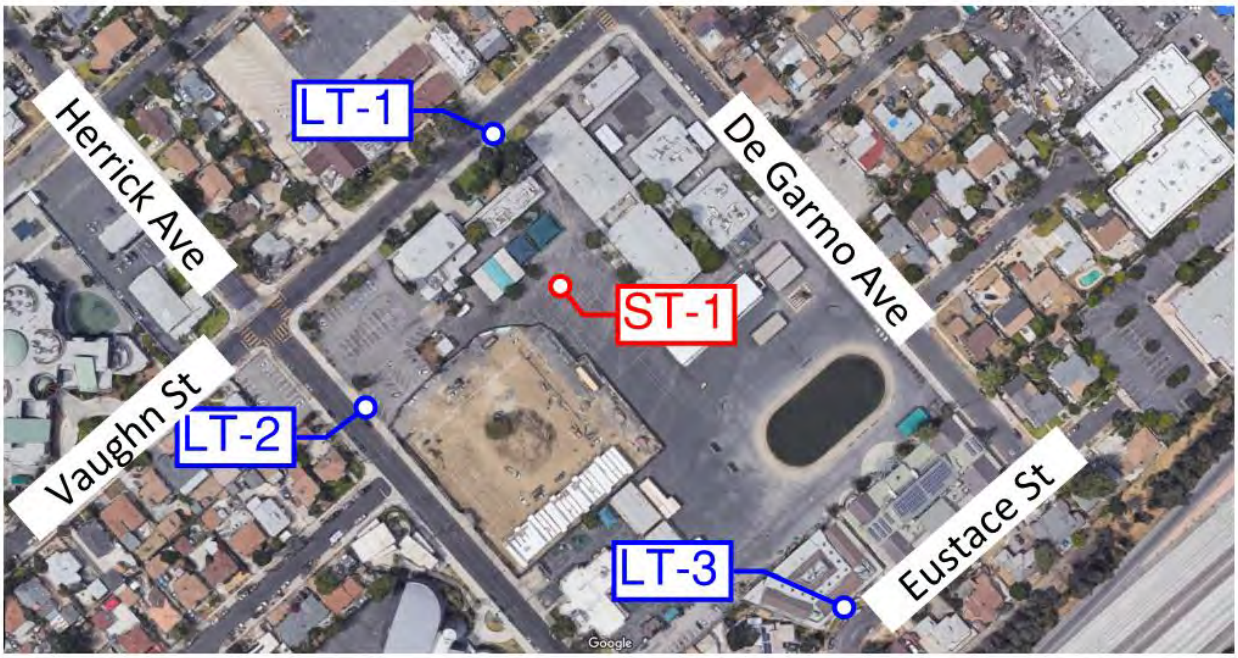

Figure 1: Acoustical Measurement Locations

Table 2: Measured Exterior Noise Levels During School Hours (7am to 5pm)

Location	Loudest Exterior Noise Level ($L_{eq(1hour)}$) at noise monitor
LT-1: along Vaughn St	67 dBA
LT-2: along Herrick Ave	67 dBA
LT-3: along Eustace St	68 dBA
ST-1: proposed building - south facade	63 dBA

Figure 2 and Figure 3 plot the processed measured A-weighted hourly equivalent exterior noise levels of LT-1 and LT-2 against the CALGreen threshold level of $L_{eq(1hour)}$ 65 dBA.

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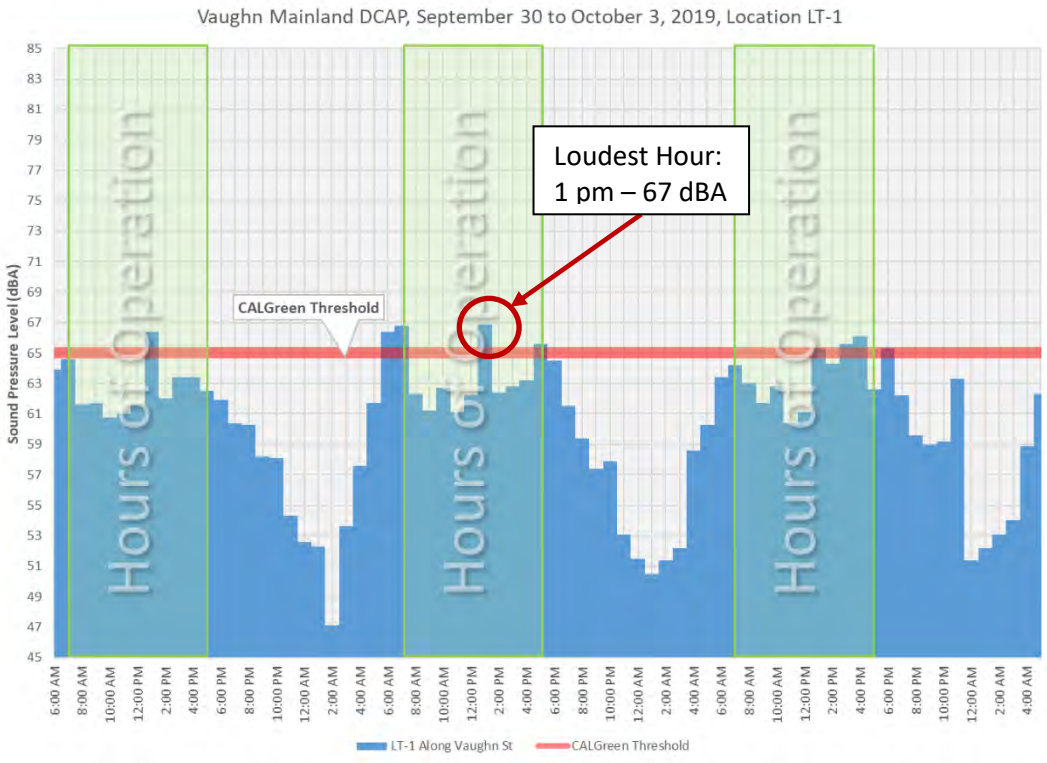

Figure 2: Hourly Exterior Noise Levels at LT-1

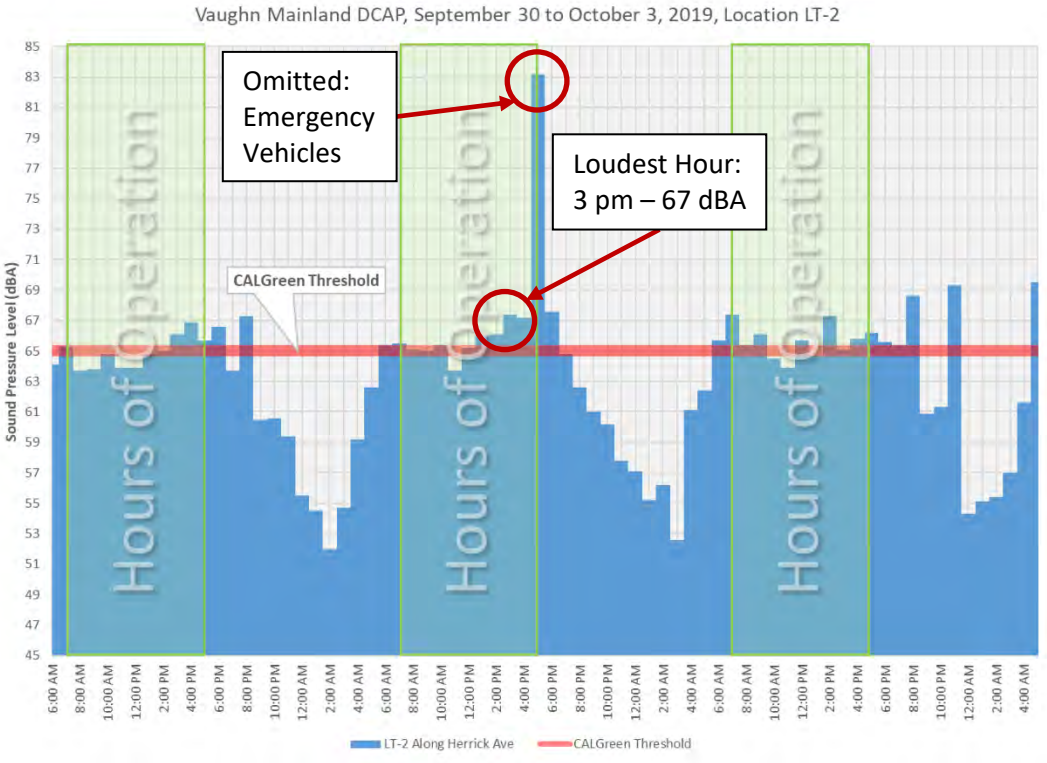

Figure 3: Hourly Exterior Noise Levels at LT-2

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Figure 2, Figure 3 and Table 2 indicate the hourly equivalent exterior noise levels measured onsite exceed the $L_{eq(1hour)}$ 65 dBA threshold set by CALGreen at those measurement locations. The data analysis indicates the following maximum measured noise levels:

- LT-1: $L_{eq(1hour)}$ 67 dBA occurred between 1:00 PM to 2:00 PM on Tuesday, October 1;
- LT-2: $L_{eq(1hour)}$ 67 dBA occurred between 3:00 PM to 4:00 PM on Tuesday, October 1;
- LT-3: $L_{eq(1hour)}$ 68 dBA occurred between 4:00 PM and 5:00 PM on Tuesday, May 15, 2018.

We performed further acoustical analysis on the measured data by calculating the distance from the sound meter to the building facade. Table 3 presents the calculated noise levels at the proposed building facades with the included sound reduction from the distance loss. The sound levels in Table 3 represent the expected noise exposure based on the measured data.

Table 3: Calculated Exterior Noise Level Results at New Building During School Hours (7am to 5pm)

Location	Loudest Exterior Noise Level ($L_{eq(1hour)}$) calculated to bldg. facade	CALGreen Threshold ($L_{eq(1hour)}$)	Meets CALGreen?
North Facade	64 dBA	65 dBA	Yes
East Facade	63 dBA	65 dBA	Yes
South Facade	63 dBA	65 dBA	Yes
West Facade	64 dBA	65 dBA	Yes

Based on our calculated sound levels to each facade, the noise exposure at the new building is below the CALGreen threshold level of $L_{eq(1hour)}$ 65 dBA.

4.0 Analysis and Results

The analysis of the resultant interior noise levels due to exterior noise intrusion was based on the architectural drawings dated October 1, 2019, our exterior noise study and the proposed construction. The exterior facade elements included in the analysis consists of the following construction:

- Exterior wall:
  - STC 39
    - Example: Siding, plywood, studs, 2 layers of 5/8-inch thick gypsum board
    - Example: Exterior concrete wall
- Exterior Windows:
  - STC 28
    - Example: 1/8 inch lite, 3/4-inch airspace, 1/8 inch lite
    - Example: 1/4-inch thick monolithic
- Exterior Door:
  - 1 3/4-inch hollow core metal door with perimeter seals and door sweep

We calculated interior noise levels at rooms with the highest exterior noise exposure: Pod 1-202, Pod 5-208, Library-203 and Media-132; which include a composite exterior facade consisting of the elements listed above and the planned interior architectural finishes. Based on our analysis, we expect

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the LAUSD and CHPS background noise criterion of 45 dBA and the CALGreen criterion of 50 dBA to be satisfied in the classrooms of the planned Vaughn Mainland DCAP building.

This concludes our environmental noise study for the proposed Vaughn Mainland DCAP at the Vaughn Next Century Learning Center. Please do not hesitate to contact us for further information and discussion of the recommendations presented in this report.

Sincerely,
CSDA Design Group

Indi Savitala
Director, Acoustics

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5.0 Appendix A

Acoustical Definitions, References, and Terminology

A-Weighted Decibels (dBA) - A standard frequency weighting that filters the microphone signal in a manner which compares relative loudness of various sounds. A-weighting is standardized by the American National Standards Institute (ANSI). A 10-dB increase in sound level is generally perceived to be approximately twice as loud. All noise data in this report are A-weighted.

CALGreen – California Green Building Standards Code, 2013, Section 5.507.

CHPS – Collaboration for High Performance Schools, California. www.chps.net. CA-CHPS Criteria 2014 rating system.

$\mathbf{L_{eq(t)}}$ – The equivalent continuous sound level which would contain the same sound energy as the time varying sound level over time t.

Sound Transmission Class (STC) – A single number used to rate how well a building partition (wall, floor/ceiling assembly, door) attenuates airborne sound.

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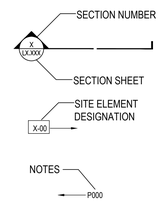
APPENDIX G

Landscape Design and Construction

REFERENCE



ABBREVIATIONS

ARCH	ARCHITECTURE	MISC	MISCELLANEOUS
CL	CENTERLINE	NTS	NOT TO SCALE
CLR	CLEAR	OC	ON CENTER
CONT	CONTINUED	PA	PLANTING AREA
DIA	DIAMETER	SIM	SIMILAR
DWGS	DRAWINGS	SPECS	SPECIFICATIONS
EA	EACH	TYP	TYPICAL
EQ	EQUAL	VAR	VARIES
FIN GRD	FINISHED GRADE	W/	WITH
GAL	GALLONS		
MAX	MAXIMUM		
MIN	MINIMUM		

SHEET INDEX

LAUSD | VAUGHN NEXT CENTURY LEARNING CENTER

PACKAGE 1 - NEW CONSTRUCTION
13330 VAUGHN STREET
SAN FERNANDO, CA, 91340

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MICHAEL ROBERT SCHOEN
No. C-35165
RENEWAL DATE
FEBRUARY 29, 2020
STATE OF CALIFORNIA

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BrightView Design Group

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Date
2021/04/30
Expires
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LOS ANGELES UNIFIED SCHOOL DISTRICT BOARD OF EDUCATION

333 BEAUDRY AVE.
LOS ANGELES, CA 90017
(213) 241-1000

PROJECT NAME:

Vaughn Mainland DCAP

13330 Vaughn St. San Fernando, CA 91340

AUTHORITY APPROVAL:

MARK	DATE	DESCRIPTION

PROJECT NO.: 1949.01

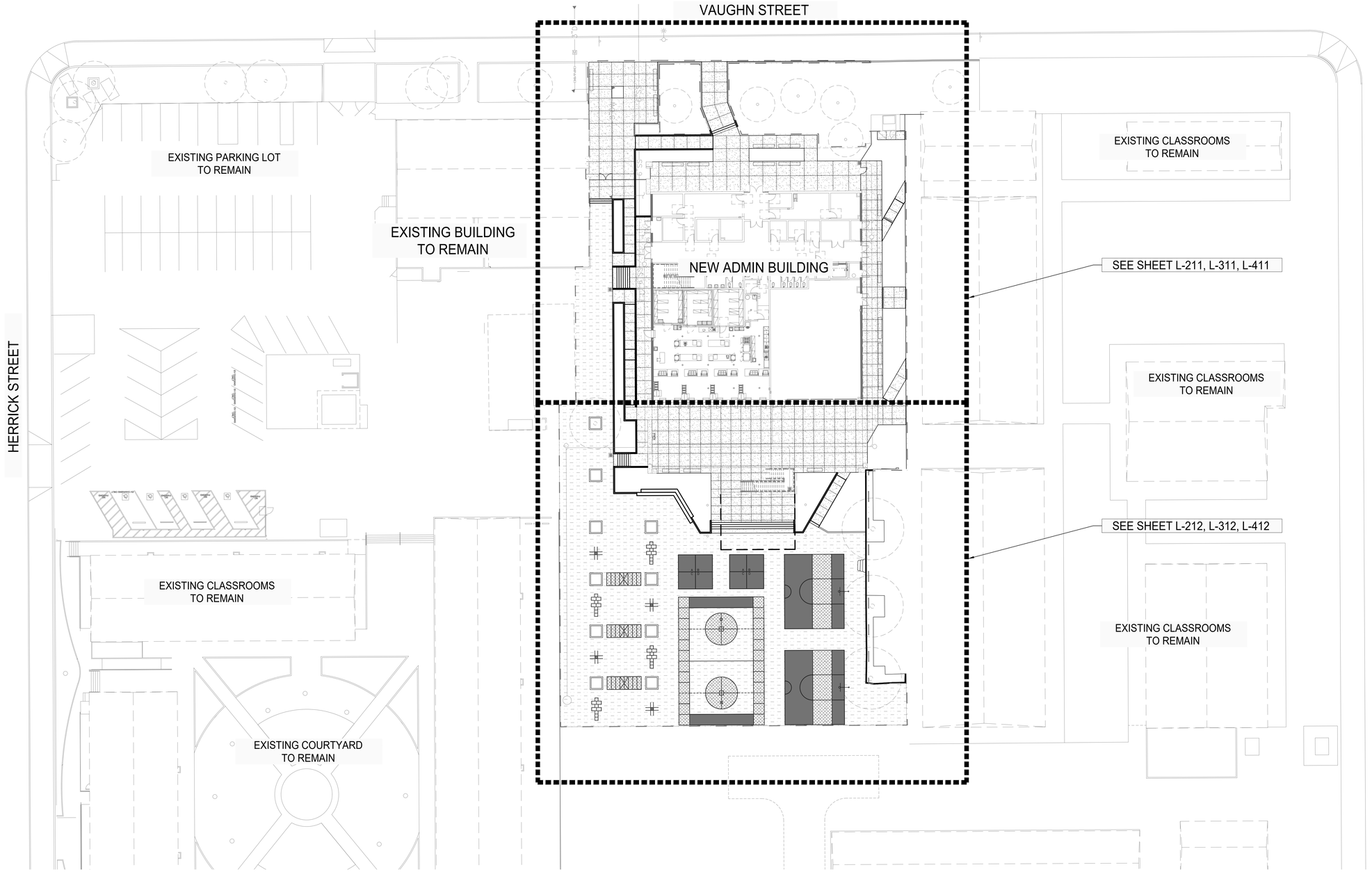
50% CONSTRUCTION DOCUMENTS 12/20/2019

SHEET TITLE:

TITLE SHEET

SHEET NO.:

L-000



20' 40' 60'

SCALE: 1" = 20'-0"

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CONSULTANT:

BrightView Design Group

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(213) 241-1000

PROJECT NAME:

Vaughn Mainland DCAP

13330 Vaughn St. San Fernando, CA 91340

AUTHORITY APPROVAL:

MARK	DATE	DESCRIPTION

PROJECT NO.: **1949.01**

50% CONSTRUCTION DOCUMENTS 12/20/2019

SHEET TITLE:

SITE KEY PLAN

SHEET NO.:

L-001

CONSTRUCTION SCHEDULE

FLATWORK FINISH SCHEDULE

CODE	MATERIAL	DETAIL	SHEET	MANUFACTURER	MODEL	COLOR	PATTERN / FINISH	COMMENTS
P01	CONCRETE PAVING	PER CIVIL		-	-	NATURAL GREY	TOPCAST FINISH	MAXIMUM CROSS SLOPE AT (N) HARDSCAPE NOT TO EXCEED 2%. CONTRACTOR TO VERIFY CROSS SLOPES WHERE (N) HARDSCAPE MEETS EXISTING CONDITIONS AND NOTIFY PROJECT TEAM IF EXISTING CROSS SLOPES EXCEED 2%.
P02	PAINTED ASPHALT	CNST PER CIVIL PAINT PER L-213		SOLAR REFLECTIVE COLOR: GAF STREETBOND, OR APPROVED EQUAL. WHITE STRIPING: SHERWIN WILLIAMS OR APPROVED EQUAL.	SOLAR REFLECTIVE PAINT COLOR: SR 120 WHITE STRIPING: SETFAST ACRYLIC TRAFFIC MARKING PAINT	SOLAR REFLECTIVE PAINT: REFER TO COLOR SCHEDULE BELOW WHITE: WHITE TM5626	SEE L-213 FOR PATTERN	SOLAR REFLECTIVE CONTACT: (951) 360-4200 WHITE STRIPING CONTACT: (310) 999-9396
P03	CONCRETE STAIR	2	L-242	-	-	NATURAL GREY	TOPCAST 05 FINISH	-
P04	CONCRETE RAMP	8	L-242	-	-	NATURAL GREY	TOPCAST 05 FINISH	-
P05	FLUSH CONCRETE CURB	3	L-241	-	-	NATURAL GREY	STEEL TROWEL FINISH	-
P06	6" HIGH CONCRETE CURB	7	L-241			NATURAL GREY	STEEL TROWEL FINISH	

WALL SCHEDULE

CODE	ITEM	DETAIL	SHEET	MANUFACTURER	MODEL	COLOR	PATTERN / FINISH	COMMENTS
W01	CONCRETE RETAINING WALL	6	L-241	-	-	NATURAL GREY	TOPCAST 05 FINISH	-
W02	CONCRETE BLEACHER SEATS	2	L-241	-	-	NATURAL GREY	TOPCAST 05 FINISH	-

RAIL SCHEDULE

CODE	ITEM	DETAIL	SHEET	MANUFACTURER	MODEL	COLOR	PATTERN / FINISH	COMMENTS
R01	HANDRAIL	LAUSD STANDARD		-	-			PROVIDE HANDRAILS WITH WHEELSTOPS / GUIDES PER ADA
R02	GUARDRAIL	LAUSD STANDARD		-	-			-
R03	GUARDRAIL WITH HANDRAIL EXTENSION	LAUSD STANDARD						-

SITE ELEMENT SCHEDULE

CODE	ITEM	DETAIL	SHEET	MANUFACTURER	MODEL	COLOR	PATTERN / FINISH	COMMENTS
S01A	RELOCATED CONCRETE BENCH (120")	-	-	-	-	-	-	14 TOTAL EXISTING BENCHES TO BE PRESERVED AND RELOCATED AS SPECIFIED PER PLAN
S01B	RELOCATED CONCRETE BENCH (96")	-	-	-	-	-	-	2 TOTAL EXISTING BENCHES TO BE PRESERVED AND RELOCATED AS SPECIFIED PER PLAN
S01C	RELOCATED CONCRETE BENCH (84")	-	-	-	-	-	-	1 TOTAL EXISTING BENCH TO BE PRESERVED AND RELOCATED AS SPECIFIED PER PLAN
S02	BASKETBALL HOOP	-	-	-	-	-	-	-

COLOR SCHEDULE

SOLAR REFLECTIVE PAINT

CODE	COLOR
P02A	WHITE TM5626 (ALL PLAY COURT STRIPING)
P02B	SR KHAKI
P02C	SR SAFETY BLUE
P02D	SR EVERGREEN

EXISTING SITE ELEMENTS TO REMAIN

CODE	ITEM	DETAIL	COMMENTS
1	EXISTING TREE TO REMAIN		
2	EXISTING CONCRETE TO REMAIN		
3	EXISTING UTILITY ENCLOSURE TO REMAIN		
4	EXISTING TURF TO REMAIN		
5	EXISTING STAIR TO REMAIN		

NEW WORK BY OTHERS

CODE	ITEM	DETAIL	COMMENTS
10	(N) FENCE	PER ARCH	
11	(N) GATE	PER ARCH	
12	(N) COLUMN	PER ARCH	
13	(N) WALK-OFF MAT	PER ARCH	
14	(N) WALL	PER ARCH	

I. CONTRACTOR'S CONSTRUCTION WORK RESPONSIBILITIES:

1. SCOPE OF WORK: THE CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, TRANSPORTATION AND SERVICES NECESSARY TO FURNISH AND INSTALL ALL CONSTRUCTION ELEMENTS AS SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN.
2. CONFORMANCE: ALL CONSTRUCTION WORK SHALL CONFORM TO APPLICABLE LOCAL, COUNTY AND/OR STATE CODES, REGULATIONS AND RULES.
3. LICENSE: ALL WORK SHALL BE PERFORMED BY A STATE LICENSED CONTRACTOR.
4. INSURANCE: THE CONTRACTOR SHALL CARRY ALL WORKMAN'S COMPENSATION, PUBLIC LIABILITY AND PROPERTY DAMAGE INSURANCE AS REQUIRED BY ALL APPLICABLE CODES, REGULATIONS AND THE OWNER (JOB SUPERINTENDENT).
5. SITE VERIFICATION: PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR AND ITS SUBCONTRACTORS SHALL VERIFY, AT THE JOB SITE, ALL CONDITIONS AND DIMENSIONS SHOWN ON THE PLANS AFFECTING THE INTENDED DESIGN OF THE LANDSCAPE WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE OWNER (JOB SUPERINTENDENT) IMMEDIATELY.
6. LIABLE FOR ENCROACHMENT: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ENCROACHMENT ONTO ADJACENT PROPERTY, RIGHT-OF-WAYS, EASEMENTS, SET-BACKS OR ANY OTHER LEGAL PROPERTY RESTRICTIONS EITHER MARKED OR UNMARKED.
7. COORDINATION OF ACTIVITIES: THE CONTRACTOR AND ITS SUBCONTRACTORS SHALL BE RESPONSIBLE FOR COORDINATION OF HIS ACTIVITIES WITH ALL OTHER TRADES THROUGH THE OWNER (JOB SUPERINTENDENT).
8. FIELD STAKING: PRIOR TO INSTALLATION, THE CONTRACTOR SHALL LOCATE BY STAKES, OR OTHER MEANS, ALL CONSTRUCTION ELEMENTS AS DELINEATED ON THE PLANS FOR APPROVAL BY THE OWNER (JOB SUPERINTENDENT) AND LANDSCAPE ARCHITECT.
9. NOTIFICATION OF DISCREPANCIES: ANY DISCREPANCIES BETWEEN THE FIELD CONDITIONS AND THE CONTRACT DOCUMENTS AND/OR THE DESIGN INTENT AFFECTING THE SUCCESSFUL COMPLETION AND COST OF THE PROJECT SHALL BE REPORTED TO THE OWNER (JOB SUPERINTENDENT) AND LANDSCAPE ARCHITECT IMMEDIATELY. ALL WORK RELATED TO THE PROBLEM AREA SHALL CEASE UNTIL THE DISCREPANCIES HAVE BEEN RESOLVED BY THE OWNER (JOB SUPERINTENDENT) OR LANDSCAPE ARCHITECT IN WRITING. ANY CONTINUATION OF WORK PRIOR TO THE RESOLUTION OF DISCREPANCIES IS AT THE CONTRACTOR'S RISK AND EXPENSE.
10. LIABLE FOR DAMAGE: THE CONTRACTOR SHALL BE LIABLE FOR DAMAGE TO ALL UTILITIES, CONSTRUCTION, IRRIGATION AND PLANTING ELEMENTS, EXISTING OR NEW, MARKED OR UNMARKED, AND SHALL REPAIR OR REPLACE ANY DAMAGED IMPROVEMENTS IN A MANNER ACCEPTABLE TO THE OWNER (JOB SUPERINTENDENT).
11. LIABLE FOR LOSS: THE CONTRACTOR SHALL BE RESPONSIBLE AND LIABLE FOR ANY LOSS TO HIS EQUIPMENT, PARTS AND MATERIALS ON THIS PROJECT UNTIL COMPLETION AND ACCEPTANCE OF THE JOB IN WRITING BY THE OWNER (JOB SUPERINTENDENT).
12. WRITTEN GUARANTEE: ALL WORK SHALL BE GUARANTEED BY THE CONTRACTOR AS TO THE MATERIAL AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FOLLOWING THE DATE OF FINAL ACCEPTANCE OF PROJECT. THE CONTRACTOR SHALL PROVIDE A WRITTEN GUARANTEE ON HIS LETTERHEAD AT THE TIME OF THE FINAL INSPECTION.
13. WRITTEN CERTIFICATION: THE CONTRACTOR SHALL PROVIDE A WRITTEN CERTIFICATION THAT THE CONSTRUCTION WORK IS INSTALLED IN FULL COMPLIANCE WITH THE CONTRACT DOCUMENTS. ANY APPROVED SUBSTITUTIONS OR DEVIATIONS FROM THE PLANS OR SPECIFICATIONS SHALL BE NOTED. THIS CERTIFICATION SHALL BE ON THE CONTRACTOR'S LETTERHEAD WITH HIS SIGNATURE AND STATE CONTRACTOR'S LICENSE NUMBER.
14. STATE CIVIL CODE TO THE EXTENT THAT THIS PROJECT IS GOVERNED BY THE STATE CIVIL CODE, THE CONTRACTOR SHALL CONFORM WITH THE FUNCTIONALITY REQUIREMENT OF THE CIVIL CODE.
15. METHODS OF CONSTRUCTION: THE CONTRACT DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. UNLESS OTHERWISE SHOWN, THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES.

II. OWNER'S CONSTRUCTION WORK RESPONSIBILITIES:

1. CONSTRUCTION RESPONSIBILITIES: THE OWNER WILL BE DIRECTLY RESPONSIBLE FOR ALL ASPECTS OF CONSTRUCTION INCLUDING ALL CONSTRUCTION INSPECTIONS. ALL FIELD MEETINGS SHALL BE INITIATED BY THE CONTRACTOR AND COORDINATED THROUGH THE OWNER (JOB SUPERINTENDENT) TO THE LANDSCAPE ARCHITECT. THE LANDSCAPE ARCHITECT SHALL BE IN A SUPPORT OBSERVATION ROLE TO THE OWNER (JOB SUPERINTENDENT) PROVIDING INTERPRETIVE ADVICE ONLY IN ACCORDANCE WITH THE OBSERVATION SCHEDULE AS NOTED.
2. DETERMINING LEGAL AND PHYSICAL ELEMENTS: OWNER (JOB SUPERINTENDENT) SHALL BE RESPONSIBLE FOR DETERMINING PROPERTY LINES, RIGHT-OF-WAYS, TRACT BOUNDARIES, GRADES, EASEMENTS, UTILITY LOCATIONS (ABOVE AND BELOW GRADE) ANY OTHER LEGAL OR PHYSICAL ELEMENTS AS REQUIRED, FOR THE SUCCESSFUL COMPLETION OF THE WORK. CONTRACTOR SHALL NOT BE PERMITTED TO PROCEED WITH ANY WORK WITHOUT DETERMINATION OF THE ABOVE INFORMATION.
3. ROUGH GRADE: OWNER (JOB SUPERINTENDENT) FROM SHALL PROVIDE ROUGH GRADE TO WITHIN 1/10TH OF ONE FOOT OF FINISH GRADE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FINISH GRADE AND DRAINAGE OF ALL CONSTRUCTION ELEMENTS AT SPECIFIED GRADIENT.
4. SITE DISCREPANCIES: ALL DISCREPANCIES IN SITE CONDITIONS, DRAWINGS OR SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER (JOB SUPERINTENDENT) AND LANDSCAPE ARCHITECT IMMEDIATELY. IT IS THE OWNER'S (JOB SUPERINTENDENT'S) RESPONSIBILITY TO CONSULT THE LANDSCAPE ARCHITECT PRIOR TO ANY FURTHER WORK IN THAT AREA. ANY UNREPORTED DISCREPANCY AND CONTINUED WORK WITHOUT WRITTEN AUTHORIZATION FROM THE OWNER (JOB SUPERINTENDENT) AND LANDSCAPE ARCHITECT SHALL BE AT THE CONTRACTOR'S RISK AND EXPENSE.
5. CONTRACT FULFILLMENT: ALL QUESTIONS RELATING TO INTERPRETATION OF THE DRAWINGS AND SPECIFICATIONS, QUALITY OF WORK AND ACCEPTABLE FULFILLMENT OF INTENT OF THE CONTRACT DOCUMENTS SHALL BE DECIDED BY THE OWNER (JOB SUPERINTENDENT) AND LANDSCAPE ARCHITECT CONCURRENTLY.
6. PERMITS AND INSPECTIONS: THE OWNER SHALL OBTAIN, COORDINATE AND PAY FOR ANY AND ALL PERMITS, FEES AND AGENCY INSPECTIONS AS REQUIRED.

III. REQUIRED FIELD OBSERVATION WORK:

1. REQUIRED FIELD OBSERVATION WORK: THESE PLANS WERE PREPARED WITH THE UNDERSTANDING THAT THE OWNER OF SAID PLANS WILL USE BRIGHTVIEW DESIGN GROUP TO PROVIDE 'FULL' CONTRACT SERVICES INCLUDING FIELD OBSERVATION SERVICES DURING CONSTRUCTION. FAILURE TO USE BRIGHTVIEW DESIGN GROUP TO PROVIDE AND COMPLETE THE FIELD OBSERVATION SERVICES SET FORTH HEREIN WILL SIGNIFICANTLY INCREASE THE RISK OF LOSS RESULTING, AMONG OTHER CAUSES, FROM MISINTERPRETATION OF THE INTENT OF THE DESIGN, UNAUTHORIZED MODIFICATIONS THERETO, AND FAILURE TO DETECT ERRORS AND OMISSIONS IN THE PLANS AND SPECIFICATIONS BEFORE THEY BECOME COSTLY MISTAKES BUILT INTO THE PROJECT. THEREFORE, IN THE EVENT THAT BRIGHTVIEW DESIGN GROUP IS OTHERWISE PRECLUDED FROM COMPLETING THE FIELD OBSERVATION SERVICES SET FORTH HEREIN, THE OWNER, OR SUBSEQUENT OWNER (INDIVIDUALS OR CORPORATIONS WHO HAVE PURCHASED THESE PLANS WITH THE PROJECT), AGREES TO HOLD HARMLESS, INDEMNIFY, AND DEFEND BRIGHTVIEW DESIGN GROUP AND THEIR CONSULTANTS FROM AND AGAINST ANY AND ALL CLAIMS.

IV. LANDSCAPE ARCHITECT'S CONSTRUCTION FIELD OBSERVATION SCHEDULE:

1. FIELD OBSERVATION COORDINATION: THE FOLLOWING OBSERVATIONS SHALL BE INITIATED BY THE CONTRACTOR AND COORDINATED THROUGH THE OWNER (JOB SUPERINTENDENT). THE CONTRACTOR SHALL NOTIFY THE OWNER (JOB SUPERINTENDENT) AND LANDSCAPE ARCHITECT NOT LESS THAN FORTY-EIGHT (48) HOURS IN ADVANCE OF ANY OBSERVATION. CONTINUED WORK WITHOUT OBSERVATION OF THESE PHASES OF WORK IS AT THE CONTRACTOR'S RISK, WITH ANY REQUIRED CHANGE OR MODIFICATIONS AT THE CONTRACTOR'S EXPENSE. THE OWNER (JOB SUPERINTENDENT) SHALL INFORM THE LANDSCAPE ARCHITECT AS TO THE PURPOSE AND TIME OF THE OBSERVATION FORTY-EIGHT (48) HOURS IN ADVANCE.
2. CONTRACTOR ORIENTATION/PRECONSTRUCTION MEETING: THIS MEETING SHALL BE CONDUCTED TO DISCUSS THE SPECIFICATIONS, POSSIBLE DISCREPANCIES, SITE CONDITIONS AND OTHER ASPECTS OF THE PROJECT CONSTRUCTION WORK SUCH AS PERSONNEL SCHEDULE AND REQUIREMENTS FOR STARTING WORK. PRIOR TO THE MEETING, CONTRACTOR SHALL THOROUGHLY ACQUAINT THEMSELVES WITH SITE CONDITIONS AND THE PLANS, DETAILS AND SPECIFICATIONS.
3. CONSTRUCTION STAKING AND LAYOUT OBSERVATION: THIS OBSERVATION SHALL BE PERFORMED AFTER ALL CONSTRUCTION ELEMENTS, FLOW LINES AND FINISH GRADES HAVE BEEN LOCATED IN THE FIELD, BUT PRIOR TO FORMING OR EXCAVATING.
4. ROUGH CONSTRUCTION PROGRESS OBSERVATION: THIS OBSERVATION SHALL BE PERFORMED AFTER ALL FORMING, EXCAVATION, REINFORCING STEEL AND STRUCTURAL STEEL WORK HAS BEEN COMPLETED, BUT PRIOR TO PLACEMENT OF ANY CONCRETE.
5. PROGRESS/INSTALLATION INSPECTIONS: PERIODIC INSPECTIONS SHALL BE PERFORMED BY THE OWNER (JOB SUPERINTENDENT) DURING CONSTRUCTION OPERATIONS TO INSURE CONFORMANCE WITH THE PLANS AND SPECIFICATIONS.
6. FINAL OBSERVATION/PROJECT CERTIFICATION: THIS OBSERVATION VISIT WILL BE PERFORMED TO REVIEW ALL ASPECTS OF THE CONTRACTED WORK PRIOR TO RELEASING THE PROJECT TO THE OWNER.

V. SCOPE OF LANDSCAPE CONSTRUCTION:

A. BASE SHEETS:

1. BASE SHEETS WERE DERIVED FROM PLANS:
   PREPARED BY: CSDA
   TITLED: SITE PLAN
   DATED: 9/23/2019 REVISED: 11/8/2019
   COPIES AVAILABLE FROM OWNER UPON REQUEST.

B. GEOTECHNICAL REPORT:

1. THE GEOTECHNICAL REPORT UTILIZED IN THE PREPARATION OF THE CONSTRUCTION PLANS AND DETAILS WERE PREPARED BY: [illegible] GEOTECHNICAL INC.
   TITLED: GEOTECHNICAL ENGINEERING EXPLORATION
   DATED: 8/30/2019
   COPIES AVAILABLE FROM OWNER UPON REQUEST.

C. CONCRETE AND MASONRY NOTES:

1. LICENSE: THE CONCRETE CONTRACTOR SHALL BE A STATE LICENSED CONCRETE CONTRACTOR. THE MASONRY CONTRACTOR SHALL BE A STATE LICENSED MASONRY CONTRACTOR.
2. GEOTECHNICAL REPORTS: ALL EXCAVATION, GRADING, COMPACTION, ETC. SHALL BE ACCOMPLISHED AND PERFORMED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT. THE GEOTECHNICAL REPORT IS HEREBY MADE A PART OF THESE DRAWINGS AND THE RECOMMENDATIONS CONTAINED THEREIN ARE TO BE FOLLOWED AND CONSIDERED AS MINIMUM UNLESS MORE STRINGENT REQUIREMENTS ARE NOTED OR DETAILED IN THE DRAWINGS OR SPECIFICATIONS.
3. SOILS COMPACTION: ALL EXISTING FILL SOIL AND DISTURBED NATURAL SOILS ARE TO BE EXCAVATED AND REPLACED WITH PROPERLY COMPACTED FILL PER THE GEOTECHNICAL REPORT. ALL FILLING, BACKFILLING, RECOMPACTION, ETC., IS TO BE ACCOMPLISHED ONLY UNDER THE SUPERVISION OF A SOILS ENGINEER.
4. INSPECTIONS: ALL EXCAVATIONS ARE TO BE INSPECTED AND APPROVED BY A SOILS ENGINEER PRIOR TO THE PLACEMENT OF ANY FILL OR REINFORCING STEEL.
5. SLEEVE COORDINATION: ALL PIPE SLEEVING FOR DRAINAGE, IRRIGATION AND ELECTRICAL SERVICE, BENEATH OR EMBEDDED IN CONCRETE OR MASONRY WALLS SHALL BE COORDINATED WITH THE APPROPRIATE SUBCONTRACTORS THROUGH THE OWNER (JOB SUPERINTENDENT) AND APPROVED BY THE OWNER.
6. FOOTINGS: FOOTINGS SHALL BE OF THE SIZE AND TYPE AS INDICATED ON THE CIVIL ENGINEER'S DRAWINGS.
7. BACKFILL: MASONRY CONTRACTOR SHALL BE RESPONSIBLE FOR BACKFILLING ALL WALLS TO GRADES PER PLAN, FINISH GRADING FOR RUNOFF SWALE BEHIND ALL WALLS, PERFORATED DRAIN LINES COMPLETE, WATERPROOFING ALL WALLS BELOW GRADE AND ALL EXCAVATION NECESSARY FOR THE EXECUTION OF MASONRY WORK. RELATIVELY NON-EXPANSIVE FILL SHALL BE USED IN BACKFILLING BEHIND WALLS. ALL RETAINING WALLS SHALL BE ADEQUATELY SHORED DURING THE BACKFILL OPERATION.
8. WATER SEAL: APPLY NON-YELLOWING WATER SEALER TO ALL CONCRETE SURFACES AS APPROVED BY THE OWNER (JOB SUPERINTENDENT). PROVIDE SAMPLE FOR REVIEW/ APPROVAL.
9. FINISH: CONCRETE COLORS AND FINISHES SHALL BE PER CONSTRUCTION PLANS / CONSTRUCTION SCHEDULE. COLORS AS SPECIFIED ON THE CONSTRUCTION PLAN SHALL BE OF THE INTEGRAL TYPE UNLESS NOTED OTHERWISE ON CONSTRUCTION SCHEDULE.
10. SAMPLES: PROVIDE THE OWNER (JOB SUPERINTENDENT) WITH A 2' X 2' SAMPLE (AT A MINIMUM) OF ALL CONCRETE FINISHES AS NOTED ON THESE PLANS. SAMPLES SHALL BE APPROVED BY THE OWNER (JOB SUPERINTENDENT) AND LANDSCAPE ARCHITECT AT THE SITE PRIOR TO POURING FLATWORK. ALL WORK SHALL CONFORM TO THE APPROVED SAMPLES.
11. SLOPE WALKS TO DRAIN: ALL CONCRETE FLATWORK SHALL SLOPE TO DRAIN AT A MINIMUM OF 1% IN THE DIRECTION OF SITE DRAINAGE AS INDICATED ON THE CONSTRUCTION PLAN.
12. CONCRETE CONSTRUCTED FROM THESE PLANS SHALL MEET ALL ENGINEER'S OR ARCHITECT'S WALKS, DRIVEWAYS, CONCRETE DECKS AND PADS, AND TOPS OF CURBS, ETC. FLUSH.
13. CONSTRUCTION JOINTS: CONSTRUCTION JOINT SPACING IN CONCRETE FLATWORK OCCURS, AT A MINIMUM, AT ALL CHANGES IN DIRECTION AND SHALL NOT EXCEED A MAXIMUM SPACING OF 20'-0" ON CENTER, OR AS NOTED ON THE PROJECT GEOTECHNICAL REPORT. CONSTRUCTION JOINT MATERIAL SHALL BE AS APPROVED BY THE OWNER (JOB SUPERINTENDENT).\

CSDA DESIGN GROUP
LISTEN COLLABORATE CREATE

889 N. DOUGLAS STREET, SUITE 100
EL SEGUNDO, CA 90245
[T]: 310.821.9200
www.csdadesigngroup.com

ARCHITECT STAMP
LICENSED ARCHITECT
MICHAEL ROBERT SCHOEN
No. C-35165
RENEWAL DATE
FEBRUARY 29, 2020
STATE OF CALIFORNIA

CONSULTANT:
BrightView Design Group
1715 18th ST
SANTA MONICA, CA 90404
PH 310.829.4707
WWW.BRIGHTVIEW.COM

BV PROJECT #: 1730585

CONSULTANT STAMP
REGISTERED LANDSCAPE ARCHITECT
DANA B. BECK
1648
Signature
2018/05/09
Date
2020/04/30
Expires
STATE OF CALIFORNIA

BRIGHTVIEW DESIGN GROUP EXPRESSLY RESERVES ITS COMMON LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE CHANGED OR COPIED IN ANY FORM OR MANNER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO ANY THIRD PARTY, WITHOUT FIRST OBTAINING THE EXPRESS WRITTEN PERMISSION AND CONSENT OF BRIGHTVIEW DESIGN GROUP.

CLIENT:
VAUGHN NEXT CENTURY LEARNING CENTER
LOS ANGELES UNIFIED SCHOOL DISTRICT BOARD OF EDUCATION
333 BEAUDRY AVE.
LOS ANGELES, CA 90017
(213) 241-1000

PROJECT NAME:
Vaughn Mainland DCAP
13330 Vaughn St. San Fernando, CA 91340

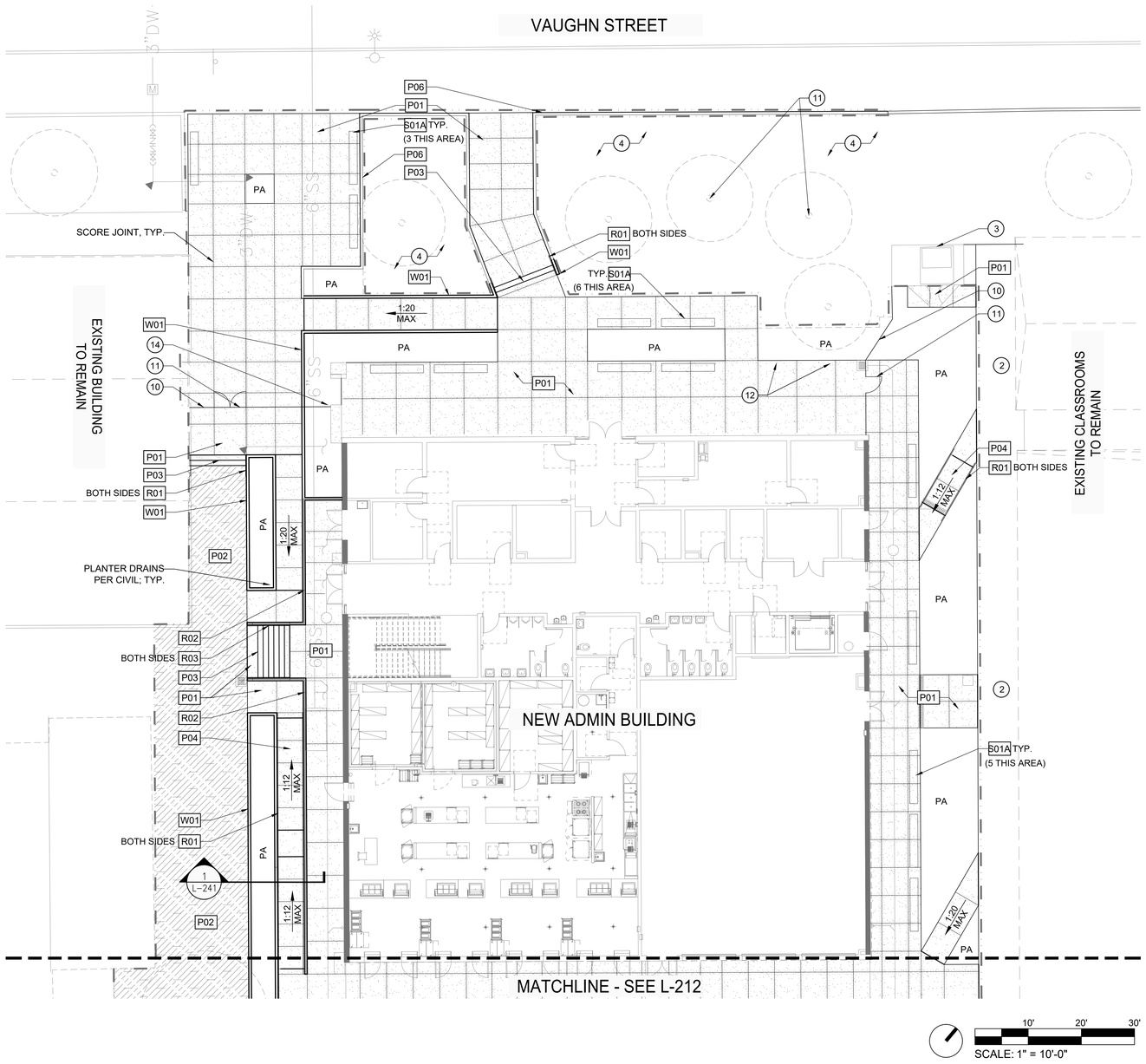
AUTHORITY APPROVAL:

MARK	DATE	DESCRIPTION

PROJECT NO.: 1949.01
50% CONSTRUCTION DOCUMENTS 12/20/2019

SHEET TITLE:
CONSTRUCTION NOTES & SCHEDULE

SHEET NO.:
L-201



CONSTRUCTION NOTES:

1. UTILITY LOCATIONS SHOWN FOR REFERENCE ONLY. REFER TO CIVIL ENGINEER'S PLAN FOR PRECISE LOCATIONS.
2. REFER TO PLANTING PLANS TO VERIFY ALL PLANTING AREAS (I.E. PLANTING AREA IN DRIVEWAYS)
3. ALL WALKWAY FORMS SHALL BE REVIEWED BY THE LANDSCAPE ARCHITECT PRIOR TO CONCRETE POUR. UNEVEN OR ABRUPT WALK ALIGNMENTS ARE UNACCEPTABLE. LAYOUT/FORMS TO BE REVIEWED IN THE FIELD BY THE OWNER (JOB SUPERINTENDENT) OR LANDSCAPE ARCHITECT.
4. **'PA'** INDICATES PLANTING AREA. PROVIDE DRAINS PER CIVIL ENGINEER'S PLANS.
5. MAXIMUM CROSS SLOPE AT (N) HARDSCAPE NOT TO EXCEED 2%. CONTRACTOR TO VERIFY CROSS SLOPES WHERE (N) HARDSCAPE MEETS EXISTING CONDITIONS AND NOTIFY PROJECT TEAM IF EXISTING CROSS SLOPES EXCEED 2%.

CONSTRUCTION SCHEDULE

FLATWORK FINISH SCHEDULE

CODE	MATERIAL
P01	CONCRETE PAVING
P02	PAINTED ASPHALT
P03	CONCRETE STAIR
P04	CONCRETE RAMP
P05	FLUSH CONCRETE CURB
P06	6" HIGH CONCRETE CURB

WALL SCHEDULE

CODE	ITEM
W01	CONCRETE RETAINING WALL
W02	CONCRETE BLEACHER SEATS

RAIL SCHEDULE

CODE	ITEM
R01	HANDRAIL
R02	GUARDRAIL
R03	GUARDRAIL WITH HANDRAIL EXTENSION

SITE ELEMENT SCHEDULE

CODE	ITEM
S01A	RELOCATED CONCRETE BENCH (120")
S01B	RELOCATED CONCRETE BENCH (96")
S01C	RELOCATED CONCRETE BENCH (84")
S02	BASKETBALL HOOP

EXISTING SITE ELEMENTS TO REMAIN

CODE	ITEM
1	EXISTING TREE TO REMAIN
2	EXISTING CONCRETE TO REMAIN
3	EXISTING UTILITY ENCLOSURE TO REMAIN
4	EXISTING TURF TO REMAIN
5	EXISTING STAIR TO REMAIN

NEW WORK BY OTHERS

CODE	ITEM
10	(N) FENCE
11	(N) GATE
12	(N) COLUMN
13	(N) WALK-OFF MAT
14	(N) WALL

NOTE: SEE SHEET L-213 FOR PLAYGROUND PAINTED ASPHALT PLAN

SEE CIVIL ENGINEER'S DRAWINGS FOR ALL DRAINAGE, GRADING AND T.O.W. ELEVATIONS

Know what's below. Call 811 before you dig.

CSDA DESIGN GROUP
LISTEN COLLABORATE CREATE
889 N. DOUGLAS STREET, SUITE 100
EL SEGUNDO, CA 90245
[T]: 310.821.9200
www.csdadesigngroup.com

ARCHITECT STAMP

LICENSED ARCHITECT
MICHAEL ROBERT SCHOEN
No. C-35165
RENEWAL DATE
FEBRUARY 29, 2020
STATE OF CALIFORNIA

CONSULTANT:

BrightView Design Group
1715 18th ST
SANTA MONICA, CA 90404
PH 310.829.4707
WWW.BRIGHTVIEW.COM

BV PROJECT #: 1730585

CONSULTANT STAMP

REGISTERED LANDSCAPE ARCHITECT
DANA B. BERLIN
1648
Signature
2019/05/09
Date
2020/04/30
Expires
STATE OF CALIFORNIA

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CLIENT:

VAUGHN NEXT CENTURY LEARNING CENTER

LOS ANGELES UNIFIED SCHOOL DISTRICT BOARD OF EDUCATION

333 BEAUDRY AVE.
LOS ANGELES, CA 90017
(213) 241-1000

PROJECT NAME:

Vaughn Mainland DCAP

13330 Vaughn St. San Fernando, CA 91340

AUTHORITY APPROVAL:

MARK	DATE	DESCRIPTION

PROJECT NO.: **1949.01**

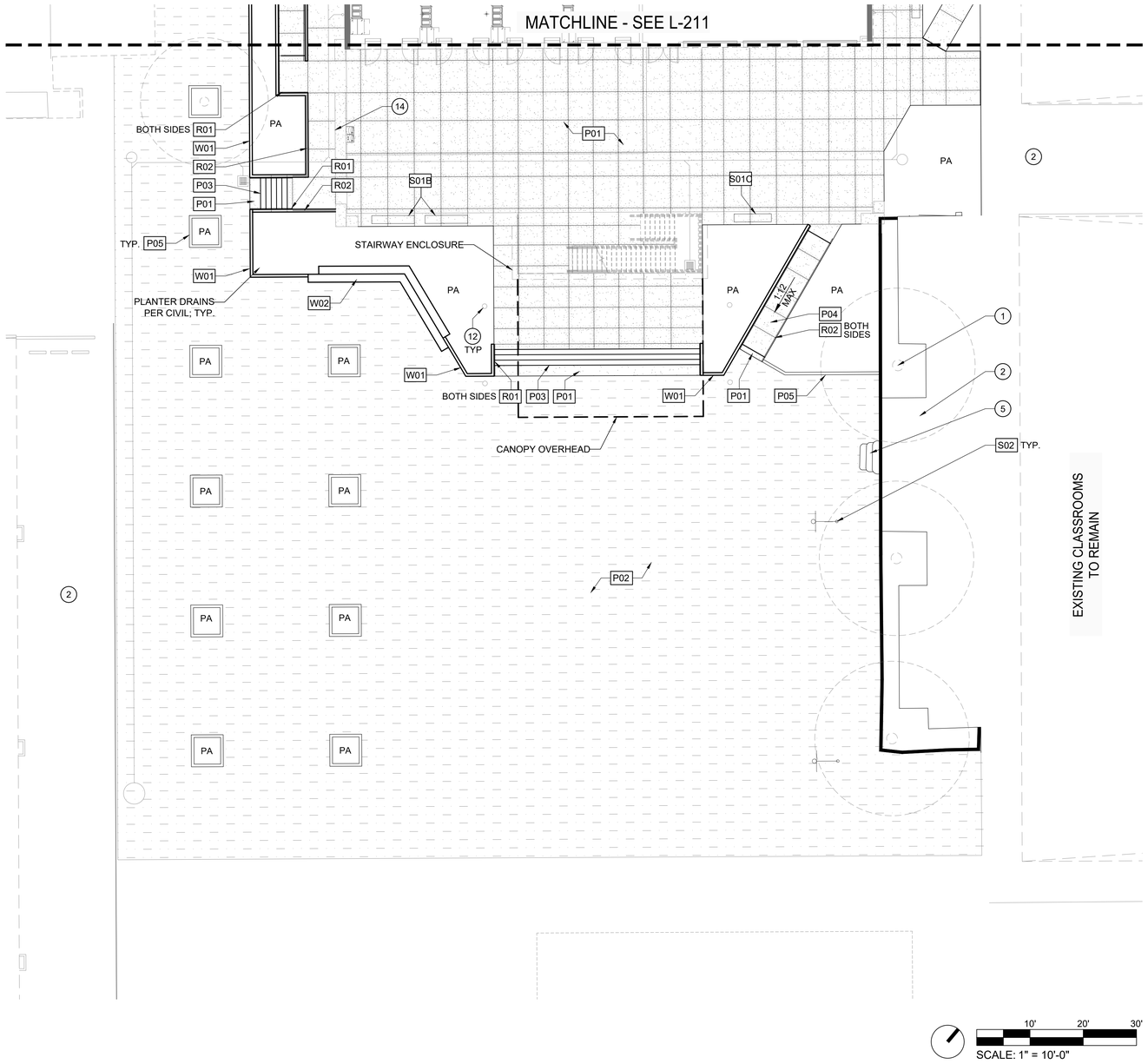
50% CONSTRUCTION DOCUMENTS 12/20/2019

SHEET TITLE:

CONSTRUCTION PLAN

SHEET NO.:

L-211



CONSTRUCTION NOTES:

1. UTILITY LOCATIONS SHOWN FOR REFERENCE ONLY. REFER TO CIVIL ENGINEER'S PLAN FOR PRECISE LOCATIONS.
2. REFER TO PLANTING PLANS TO VERIFY ALL PLANTING AREAS (I.E. PLANTING AREA IN DRIVEWAYS)
3. ALL WALKWAY FORMS SHALL BE REVIEWED BY THE LANDSCAPE ARCHITECT PRIOR TO CONCRETE POUR. UNEVEN OR ABRUPT WALK ALIGNMENTS ARE UNACCEPTABLE. LAYOUT/FORMS TO BE REVIEWED IN THE FIELD BY THE OWNER (JOB SUPERINTENDENT) OR LANDSCAPE ARCHITECT.
4. **'PA'** INDICATES PLANTING AREA. PROVIDE DRAINS PER CIVIL ENGINEER'S PLANS.
5. MAXIMUM CROSS SLOPE AT (N) HARDSCAPE NOT TO EXCEED 2%. CONTRACTOR TO VERIFY CROSS SLOPES WHERE (N) HARDSCAPE MEETS EXISTING CONDITIONS AND NOTIFY PROJECT TEAM IF EXISTING CROSS SLOPES EXCEED 2%.

CONSTRUCTION SCHEDULE

FLATWORK FINISH SCHEDULE

CODE	MATERIAL
P01	CONCRETE PAVING
P02	PAINTED ASPHALT
P03	CONCRETE STAIR
P04	CONCRETE RAMP
P05	FLUSH CONCRETE CURB
P06	6" HIGH CONCRETE CURB

WALL SCHEDULE

CODE	ITEM
W01	CONCRETE RETAINING WALL
W02	CONCRETE BLEACHER SEATS

RAIL SCHEDULE

CODE	ITEM
R01	HANDRAIL
R02	GUARDRAIL
R03	GUARDRAIL WITH HANDRAIL EXTENSION

SITE ELEMENT SCHEDULE

CODE	ITEM
S01A	RELOCATED CONCRETE BENCH (120")
S01B	RELOCATED CONCRETE BENCH (96")
S01C	RELOCATED CONCRETE BENCH (84")
S02	BASKETBALL HOOP

EXISTING SITE ELEMENTS TO REMAIN

CODE	ITEM
1	EXISTING TREE TO REMAIN
2	EXISTING CONCRETE TO REMAIN
3	EXISTING UTILITY ENCLOSURE TO REMAIN
4	EXISTING TURF TO REMAIN
5	EXISTING STAIR TO REMAIN

NEW WORK BY OTHERS

CODE	ITEM
10	(N) FENCE
11	(N) GATE
12	(N) COLUMN
13	(N) WALK-OFF MAT
14	(N) WALL

NOTE: SEE SHEET L-213 FOR PLAYGROUND PAINTED ASPHALT PLAN

SEE CIVIL ENGINEER'S DRAWINGS FOR ALL DRAINAGE, GRADING AND T.O.W. ELEVATIONS

Know what's below. Call 811 before you dig.

CSDA DESIGN GROUP
LISTEN COLLABORATE CREATE
889 N. DOUGLAS STREET, SUITE 100
EL SEGUNDO, CA 90245
[T]: 310.821.9200
www.csdadesigngroup.com

ARCHITECT STAMP

LICENSED ARCHITECT
MICHAEL ROBERT SCHOEN
No. C-35165
RENEWAL DATE
FEBRUARY 29, 2020
STATE OF CALIFORNIA

CONSULTANT:

BrightView Design Group
1715 18th ST
SANTA MONICA, CA 90404
PH 310.829.4707
WWW.BRIGHTVIEW.COM

BV PROJECT #: 1730585

CONSULTANT STAMP

REGISTERED LANDSCAPE ARCHITECT
DANA B. BECK
1648
Signature
2019/05/09
Date
2020/04/30
Expires
STATE OF CALIFORNIA

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VAUGHN NEXT CENTURY LEARNING CENTER

LOS ANGELES UNIFIED SCHOOL DISTRICT BOARD OF EDUCATION

333 BEAUDRY AVE.
LOS ANGELES, CA 90017
(213) 241-1000

PROJECT NAME:

Vaughn Mainland DCAP

13330 Vaughn St. San Fernando, CA 91340

AUTHORITY APPROVAL:

MARK	DATE	DESCRIPTION

PROJECT NO.: **1949.01**

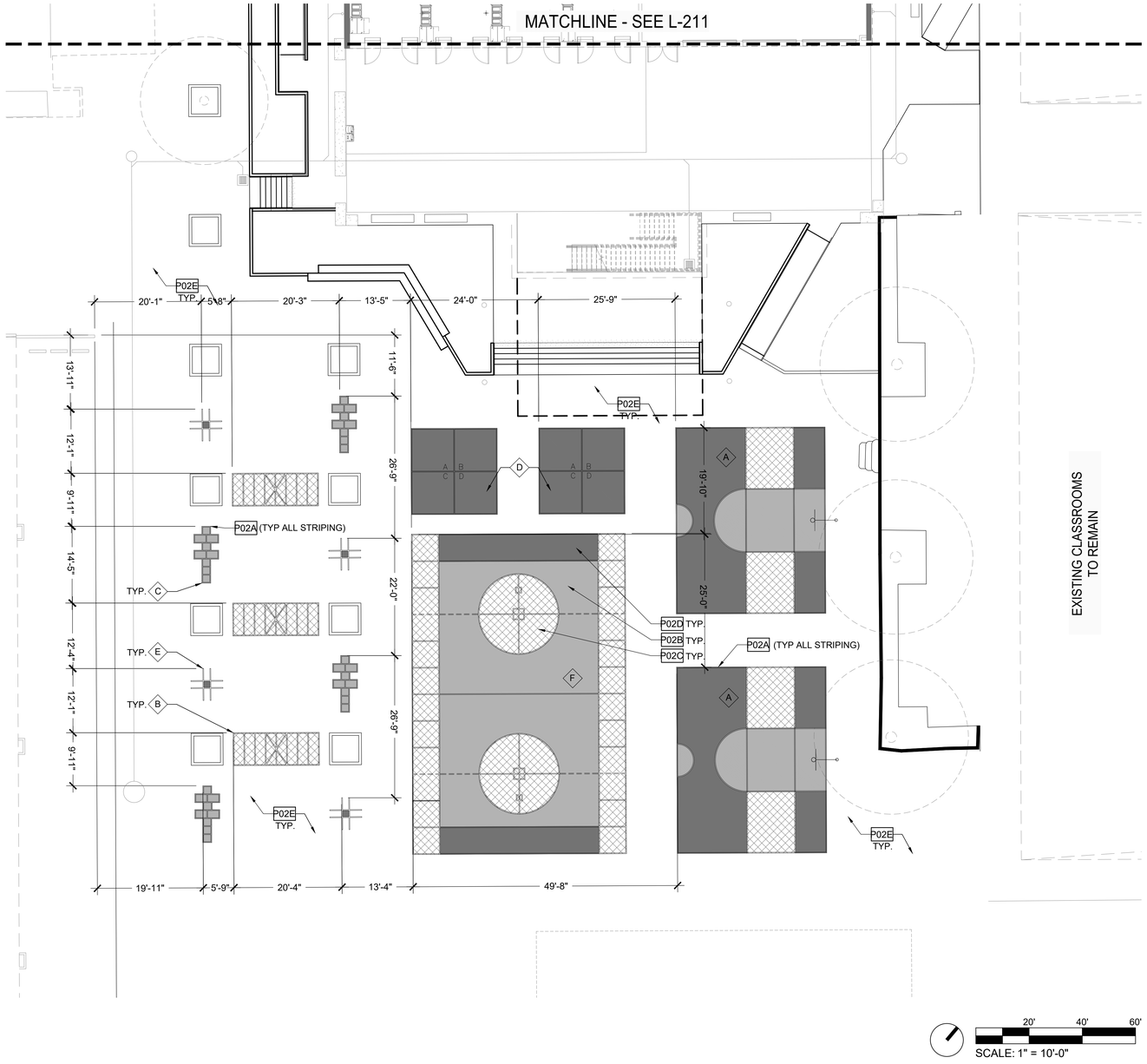
50% CONSTRUCTION DOCUMENTS 12/20/2019

SHEET TITLE:

CONSTRUCTION PLAN

SHEET NO.:

L-212



COLOR SCHEDULE	
SOLAR REFLECTIVE PAINT	
CODE	COLOR
P02A	WHITE TM5626 (ALL PLAY COURT STRIPING)
P02B	SR KHAKI
P02C	SR SAFETY BLUE
P02D	SR EVERGREEN
P02E	SR SLATE

LAUSD STANDARD DETAIL GAME STRIPING LEGEND

NOTE: ALL PLAYGROUND GAME STRIPING PER LAUSD STANDARD DETAILS. MOCK UP LAYOUT OF ALL PAINT STRIPING FOR REVIEW BY LANDSCAPE ARCHITECT

- A ES BASKETBALL COURT (HALF COURT)
- B LADDER COURT
- C AIRPLANE HOPSCOTCH
- D FOUR SQUARE
- E TINIKLING / TIC TACK TOE
- F MULTIPLE GAME COURT

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LISTEN COLLABORATE CREATE

889 N. DOUGLAS STREET, SUITE 100
EL SEGUNDO, CA 90245
[T]: 310.821.9200
www.csdadesigngroup.com

ARCHITECT STAMP
LICENSED ARCHITECT
MICHAEL ROBERT SCHDEN
No. C-35165
RENEWAL DATE
FEBRUARY 29, 2020
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BrightView Design Group
1715 18th ST
SANTA MONICA, CA 90404
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1949
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VAUGHN NEXT CENTURY LEARNING CENTER
LOS ANGELES UNIFIED SCHOOL DISTRICT BOARD OF EDUCATION
333 BEAUDRY AVE.
LOS ANGELES, CA 90017
(213) 241-1000

PROJECT NAME:
Vaughn Mainland DCAP

13330 Vaughn St. San Fernando, CA 91340

AUTHORITY APPROVAL:

MARK	DATE	DESCRIPTION

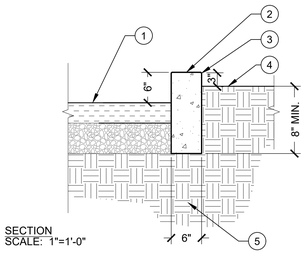
PROJECT NO.:	**1949.01**
50% CONSTRUCTION DOCUMENTS	12/20/2019

SHEET TITLE:

PAINT STRIPING & DIMENSION PLAN

SHEET NO.:

L-213



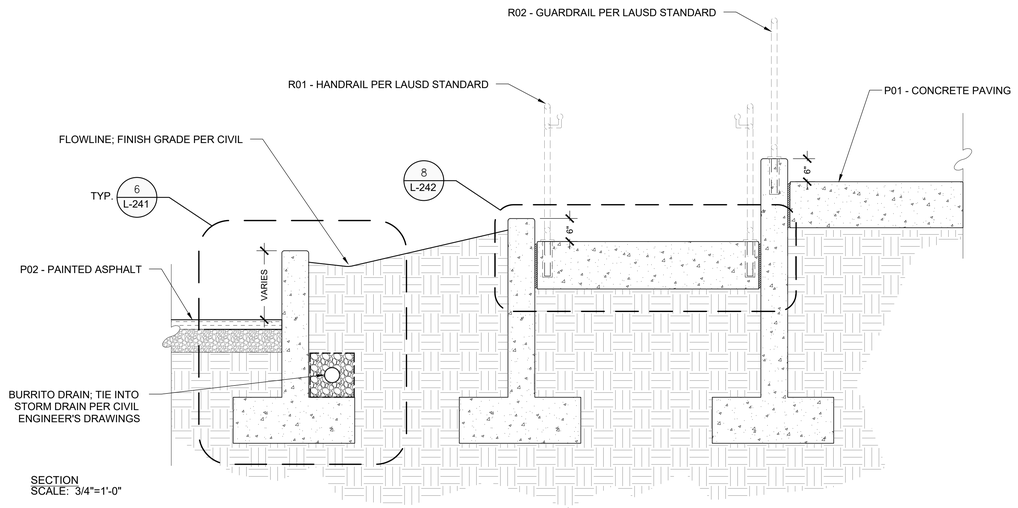
SECTION
SCALE: 1"=1'-0"

LEGEND

1. ADJACENT PAVING PER PLANS
2. CONCRETE CURB, SCORE AT 3' O.C., REINFORCEMENT PER CIVIL ENGINEER.
3. PROVIDE 1/4" RADIUS AT ALL EXPOSED EDGES
4. PLANTING AREA PER PLANTING PLAN
5. COMPACTED BASE / SUBGRADE PER GEOTECHNICAL REPORT

NOTES:	
A	POUR CONCRETE AGAINST FIRM UNDISTURBED SOIL OR PROPERLY COMPACTED FILL PER THE GEOTECHNICAL REPORT
B	SOIL PRE-SATURATION IS TO BE PER GEOTECHNICAL REPORT
C	CONCRETE STRENGTH PER GEOTECHNICAL REPORT.
D	REINFORCEMENT PER STRUCTURAL ENGINEER

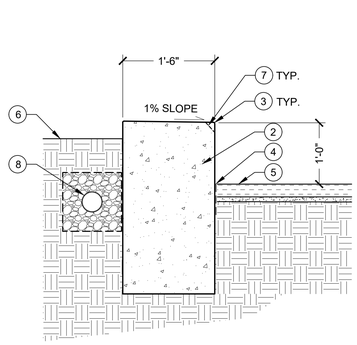
6" HIGH CONCRETE CURB | 7



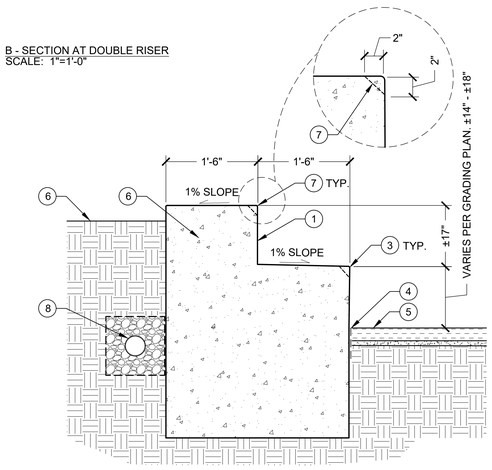
SECTION
SCALE: 3/4"=1'-0"

SECTION AT RAMP | 1

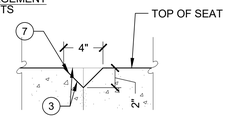
A - SECTION
SCALE: 1"=1'-0"



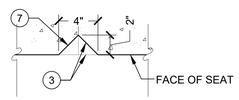
B - SECTION AT DOUBLE RISER
SCALE: 1"=1'-0"



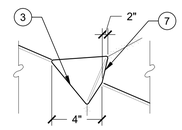
B - ENLARGEMENT
SCALE: NTS



C - SKATE STOP ELEVATION
SCALE: NTS



D - SKATE STOP PLAN
SCALE: NTS



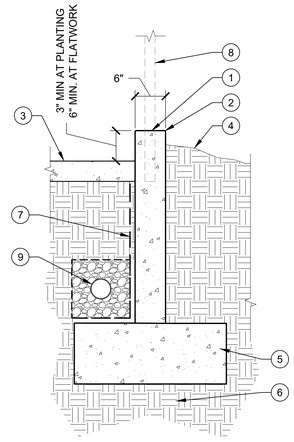
E - SKATE STOP AXON
SCALE: NTS

LEGEND

1. CONCRETE SEATWALL - NATURAL GREY CONCRETE; TOPCAST FINISH
2. REINFORCEMENT PER STRUCTURAL
3. PROVIDE 1/4" RADIUS AT ALL EXPOSED EDGES
4. 1/4" WIDE JOINT FILLER WITH SEALANT AND SAND, COLOR TO MATCH ADJACENT PAVING COLOR
5. ADJACENT PAVING PER CONSTRUCTION PLAN
6. PLANTING AREA WITH DRAINAGE PER CIVIL
7. PROVIDE SKATE-STOP NOTCHES AT 30" OC ALIGNED W/ JOINT PATTERN
8. SUBSURFACE DRAINAGE REQUIRED, REFER TO CIVIL ENGINEER'S PLANS

NOTES:	
A	POUR CONCRETE AGAINST FIRM UNDISTURBED SOIL OR PROPERLY COMPACTED FILL PER THE GEOTECHNICAL REPORT
B	SOIL PRE-SATURATION IS TO BE PER GEOTECHNICAL REPORT
C	CONCRETE STRENGTH PER GEOTECHNICAL REPORT.
D	REINFORCEMENT PER STRUCTURAL ENGINEER

CONCRETE BLEACHER SEATS | 2



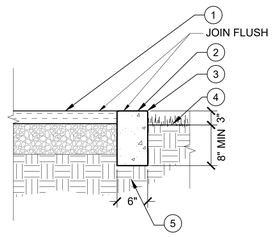
SECTION
SCALE: 1"=1'-0"

LEGEND

1. CONCRETE RETAINING WALL, SCORE AT EQUAL SPACING (3'-0" O.C.), SCORE TOP OF WALL AND DOWN FACE OF WALL.
2. PROVIDE 1/4" RADIUS AT ALL EXPOSED EDGES
3. ADJACENT FINISH GRADE / FINISH SURFACE (FLATWORK OR PLANTER AREA). REFER TO CONSTRUCTION PLAN AND CIVIL ENGINEER'S GRADING PLAN.
4. CONCRETE FOOTING PER CIVIL ENGINEER
5. COMPACTED BASE / SUBGRADE PER CIVIL ENGINEER
6. FLUID APPLIED WATERPROOFING
7. GUARDRAIL, WHERE OCCURS, PER LAUSD STANDARD
8. SUBSURFACE DRAINAGE REQUIRED, REFER TO CIVIL ENGINEER'S PLANS

NOTES:	
A	POUR CONCRETE AGAINST FIRM UNDISTURBED SOIL OR PROPERLY COMPACTED FILL PER THE GEOTECHNICAL REPORT
B	SOIL PRE-SATURATION IS TO BE PER GEOTECHNICAL REPORT
C	CONCRETE STRENGTH PER STRUCTURAL ENGINEER / GEOTECHNICAL REPORT.
D	REINFORCEMENT PER STRUCTURAL ENGINEER

CONCRETE RETAINING WALL | 6



SECTION
SCALE: 1"=1'-0"

LEGEND

1. ADJACENT PAVING PER CONSTRUCTION PLAN
2. CONCRETE CURB, SCORE AT 3' O.C., REINFORCEMENT PER CIVIL ENGINEER.
3. PROVIDE 1/4" RADIUS AT ALL EXPOSED EDGES
4. PLANTING AREA PER PLANTING PLAN
5. COMPACTED BASE / SUBGRADE PER GEOTECHNICAL REPORT

NOTES:	
A	POUR CONCRETE AGAINST FIRM UNDISTURBED SOIL OR PROPERLY COMPACTED FILL PER THE GEOTECHNICAL REPORT
B	SOIL PRE-SATURATION IS TO BE PER GEOTECHNICAL REPORT
C	CONCRETE STRENGTH PER GEOTECHNICAL REPORT.
D	REINFORCEMENT PER CIVIL ENGINEER

FLUSH CONCRETE CURB | 3

CSDA DESIGN GROUP
LISTEN COLLABORATE CREATE

889 N. DOUGLAS STREET, SUITE 100
EL SEGUNDO, CA 90245
[T]: 310.821.9200
www.csdadesigngroup.com

ARCHITECT STAMP

LICENSED ARCHITECT
MICHAEL ROBERT SCHOEN
No. C-35165
RENEWAL DATE
FEBRUARY 29, 2020
STATE OF CALIFORNIA

CONSULTANT:

BrightView Design Group
1715 18th ST
SANTA MONICA, CA 90404
PH 310.829.4707
WWW.BRIGHTVIEW.COM

BV PROJECT #: 1730585

CONSULTANT STAMP

REGISTERED LANDSCAPE ARCHITECT
DANA B. BEELER
1948
Signature
2019/05/06
Date
2020/04/06
Expires
STATE OF CALIFORNIA

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CLIENT:

VAUGHN NEXT CENTURY LEARNING CENTER

LOS ANGELES UNIFIED SCHOOL DISTRICT BOARD OF EDUCATION

333 BEAUDRY AVE.
LOS ANGELES, CA 90017
(213) 241-1000

PROJECT NAME:

Vaughn Mainland DCAP

13330 Vaughn St. San Fernando, CA 91340

AUTHORITY APPROVAL:

MARK	DATE	DESCRIPTION

PROJECT NO.: **1949.01**

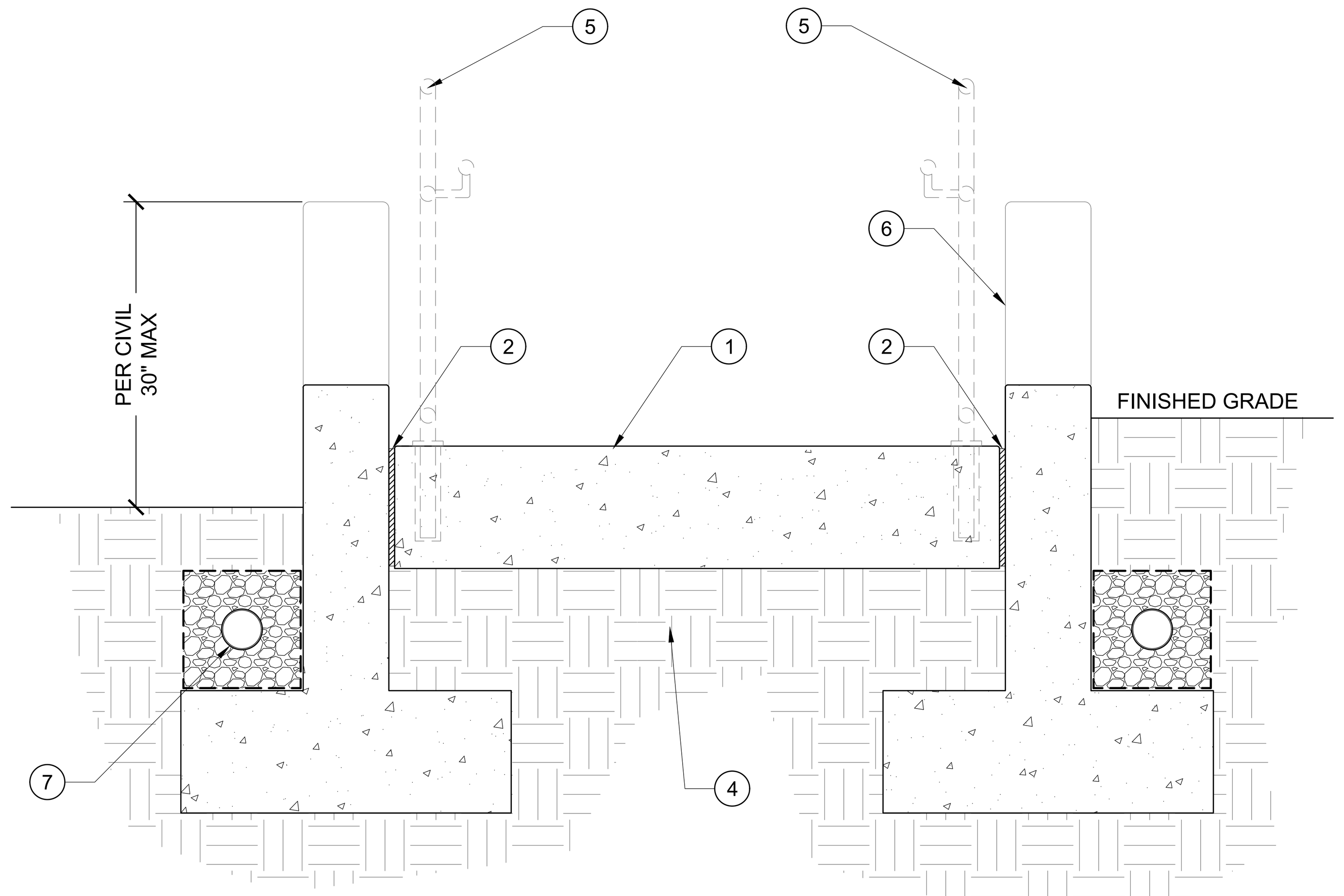
50% CONSTRUCTION DOCUMENTS 12/20/2019

SHEET TITLE:

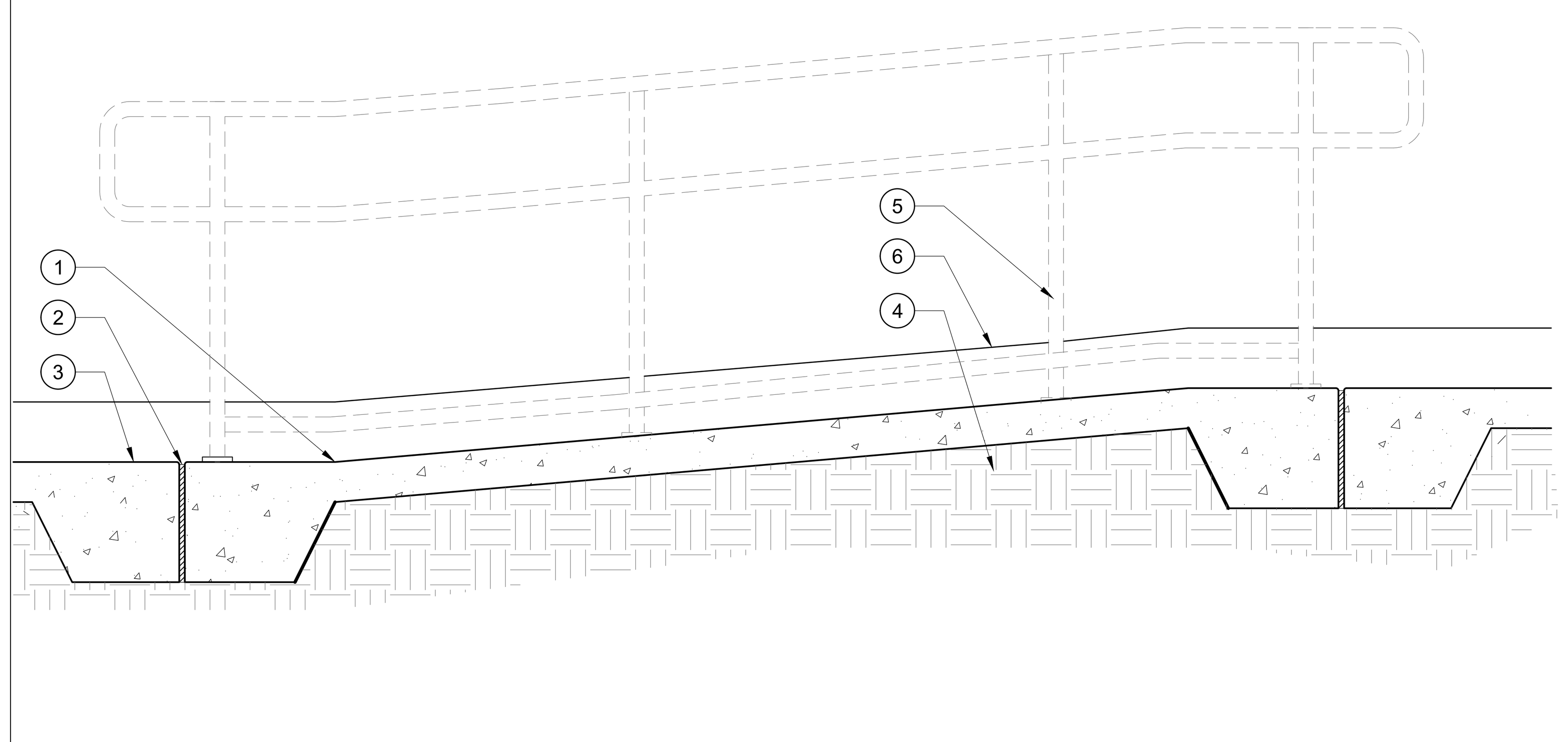
CONSTRUCTION SECTION & DETAILS

SHEET NO.:

L-241



FRONT SECTION
SCALE: 1"=1'-0"



SECTION
SCALE: 1"=1'-0"

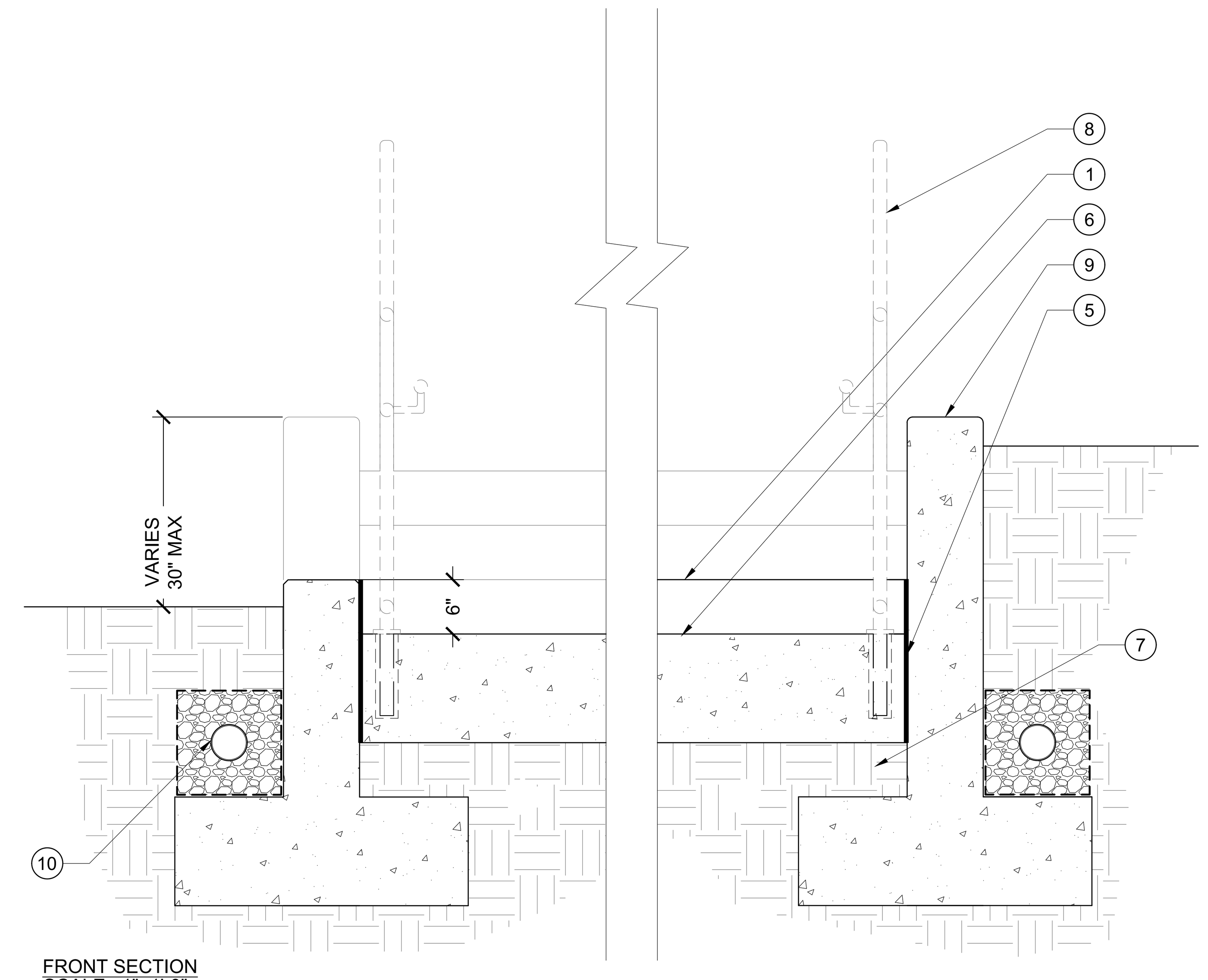
LEGEND

1. CONCRETE RAMP, COLOR AND FINISH PER CONSTRUCTION SCHEDULE. REFER TO CIVIL ENGINEER'S PLANS FOR FINISH GRADES AND CONCRETE FLATWORK CONSTRUCTION, STRENGTH, AND REINFORCEMENT. MAX SLOPE 7.5% PER CIVIL ENGINEER
2. CONCRETE JOINT PER CIVIL ENGINEER
3. ADJACENT PAVING PER SEPARATE DETAIL. REFER TO CONSTRUCTION PLAN FOR PAVING TYPE
4. COMPACTED BASE / SUBGRADE PER GEOTECHNICAL REPORT
5. HANDRAIL PER LAUSD STANDARD. COORDINATE ALL POST LOCATIONS TO PROVIDE CONCRETE FOOTING / SLEEVE.
6. CONCRETE CURB OR RETAINING WALL PER SEPARATE DETAIL - WHERE OCCURS PER CONSTRUCTION PLAN
7. SUBSURFACE DRAINAGE REQUIRED, REFER TO CIVIL ENGINEER'S PLANS

NOTES

A	POUR CONCRETE AGAINST FIRM UNDISTURBED SOIL OR PROPERLY COMPACTED FILL PER THE GEOTECHNICAL REPORT
B	SOIL PRE-SATURATION IS TO BE PER GEOTECHNICAL REPORT
C	REFER TO LAUSD STANDARD DETAILS FOR STEEL FABRICATION, FOOTINGS, ATTACHMENTS, AND REINFORCING.
D	DEEP SCORE ALL JOINTS WHERE NOTED PER PLAN & PER OWNER DIRECTION.
E	REINFORCEMENT PER CIVIL ENGINEER

CONCRETE RAMP | 8



FRONT SECTION
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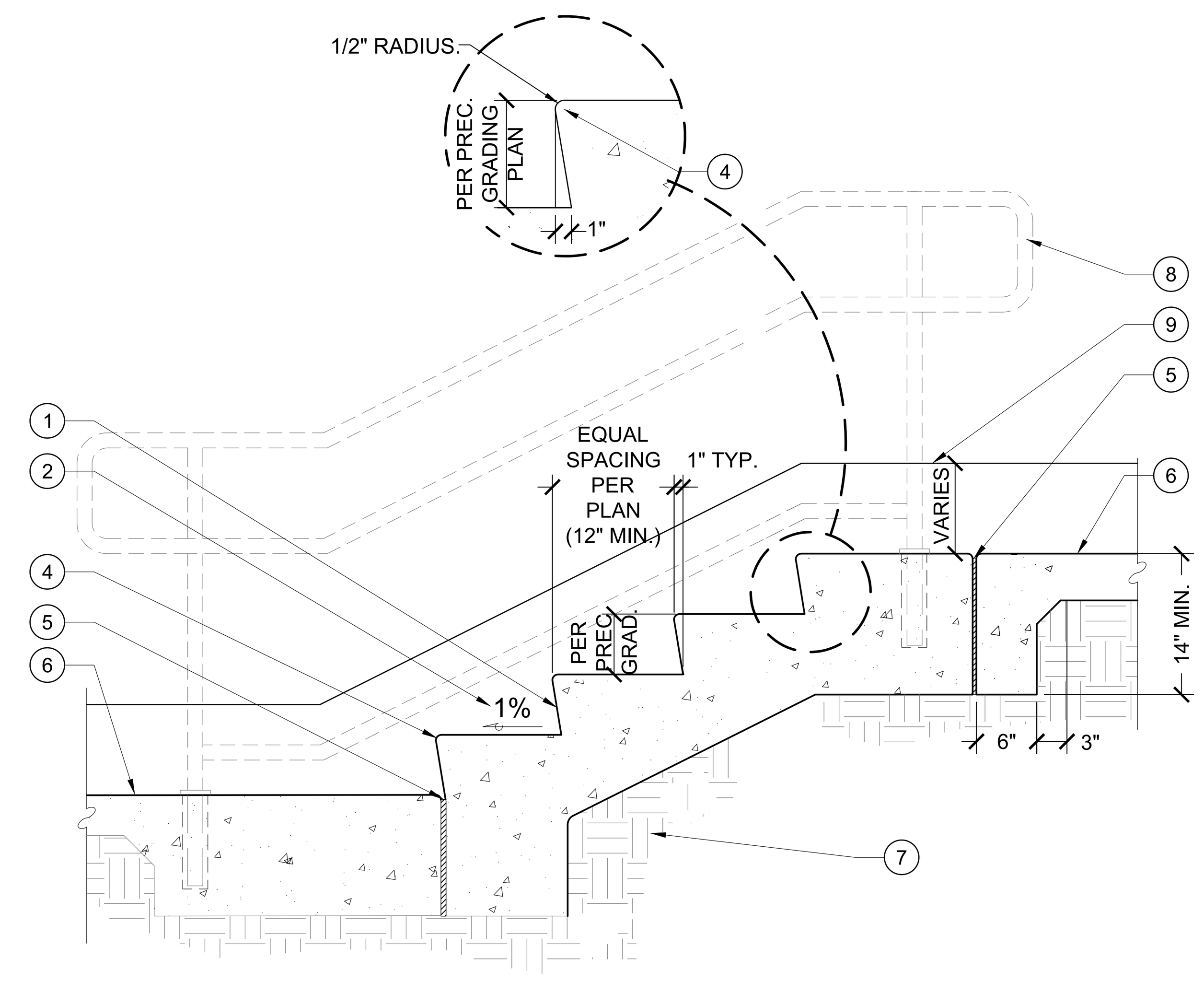

SECTION
SCALE: 1"=1'-0"

LEGEND

1. CONCRETE STEP, COLOR AND FINISH PER CONSTRUCTION SCHEDULE. REFER TO CIVIL ENGINEER'S PLANS FOR FINISH GRADES AND CONCRETE FLATWORK CONSTRUCTION, STRENGTH, AND REINFORCEMENT.
2. PITCH STEP TREAD AT 1% TO FRONT, TYP.
4. APPLY 1/2" RADIUS NOSE CONT. TYP. ALL STEP EDGES AND SIDES.
5. CONCRETE JOINTS PER CIVIL ENGINEER
6. ADJACENT PAVING PER SEPARATE DETAIL. PROVIDE THICKENED EDGE AS SHOWN. REFER TO CONSTRUCTION PLAN FOR PAVING TYPE
7. COMPACTED BASE / SUBGRADE PER GEOTECHNICAL REPORT
8. HANDRAIL PER LAUSD STANDARD. COORDINATE ALL POST LOCATIONS TO PROVIDE CONCRETE FOOTING / SLEEVE.
9. CONCRETE CURB OR RETAINING WALL PER SEPARATE DETAIL - WHERE OCCURS, PER CONSTRUCTION PLAN
10. SUBSURFACE DRAINAGE REQUIRED, REFER TO CIVIL ENGINEER'S PLAN

NOTES

A	POUR CONCRETE AGAINST FIRM UNDISTURBED SOIL OR PROPERLY COMPACTED FILL PER THE GEOTECHNICAL REPORT
B	SOIL PRE-SATURATION IS TO BE PER GEOTECHNICAL REPORT
C	REFER TO LAUSD STANDARD DETAILS FOR STEEL FABRICATION, FOOTINGS, ATTACHMENTS, AND REINFORCING.
D	DEEP SCORE ALL JOINTS WHERE NOTED PER PLAN & PER OWNER DIRECTION.
E	REINFORCEMENT PER CIVIL ENGINEER

VERIFY RISER QUANTITY / TREAD DEPTH / RISER HEIGHT PER CONSTRUCTION LAYOUT PLAN AND CIVIL ENGINEER'S PRECISE GRADING PLANS

CONCRETE STAIR | 2

CSDA DESIGN GROUP
LISTEN COLLABORATE CREATE

889 N. DOUGLAS STREET, SUITE 100
EL SEGUNDO, CA 90245
[T]: 310.821.9200
www.csdadesigngroup.com

ARCHITECT STAMP

LICENSED ARCHITECT MICHAEL ROBERT SCHOEN No. C-35165 RENEWAL DATE STATE OF CALIFORNIA

CONSULTANT:

BrightView Design Group
1715 18th ST
SANTA MONICA, CA 90404
PH 310.829.4707
WWW.BRIGHTVIEW.COM

BV PROJECT #: 1730585

CONSULTANT STAMP

REGISTERED LANDSCAPE ARCHITECT STATE OF CALIFORNIA

CLIENT:

VAUGHN NEXT CENTURY LEARNING CENTER

LOS ANGELES UNIFIED SCHOOL DISTRICT BOARD OF EDUCATION

333 BEAUDRY AVE.
LOS ANGELES, CA 90017
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PROJECT NAME:

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13330 Vaughn St. San Fernando, CA 91340

AUTHORITY APPROVAL:

MARK	DATE	DESCRIPTION

PROJECT NO.: 1949.01
50% CONSTRUCTION DOCUMENTS 12/20/2019

SHEET TITLE:

CONSTRUCTION SECTION & DETAILS

SHEET NO.:

L-242

I. CONTRACTOR'S IRRIGATION WORK RESPONSIBILITIES:

A. SCOPE OF WORK: THE CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, TRANSPORTATION, AND SERVICES NECESSARY TO FURNISH AND INSTALL A COMPLETE IRRIGATION SYSTEM AS SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN.

B. CONFORMANCE: ALL IRRIGATION WORK SHALL CONFORM TO APPLICABLE LOCAL, COUNTY AND/OR STATE CODES, REGULATIONS AND RULES.

C. LICENSE: ALL WORK SHALL BE PERFORMED BY A STATE LICENSED LANDSCAPE IRRIGATION CONTRACTOR.

D. SITE VERIFICATION: PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL VERIFY, AT THE SITE, ALL CONDITIONS AND DIMENSIONS SHOWN ON THE PLANS NECESSARY TO ACHIEVE THE INTENDED DESIGN OF THE IRRIGATION SYSTEM. ANY DISCREPANCIES SHALL BE REPORTED TO THE OWNER (JOB SUPERINTENDENT) IMMEDIATELY.

E. POINT OF CONNECTION VERIFICATION: THE CONTRACTOR SHALL VERIFY THE STATIC PRESSURE, METER SIZE AND SIZE OF SERVICE TO METER (P.O.C.) AT EACH POINT OF CONNECTION PRIOR TO THE COMMENCEMENT OF WORK.

F. FIELD STAKING: PRIOR TO INSTALLATION, THE CONTRACTOR SHALL LOCATE BY STAKES OR OTHER MEANS ALL PRESSURE SUPPLY LINES, CONTROL EQUIPMENT, SHRUB / TURF DELINEATIONS AND HEADS FOR APPROVAL BY THE OWNER (JOB SUPERINTENDENT) AND LANDSCAPE ARCHITECT.

G. COORDINATION OF ACTIVITIES: THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF HIS ACTIVITIES WITH ALL OTHER TRADES THROUGH THE OWNER (JOB SUPERINTENDENT).

H. INTENDED DESIGN COVERAGE: THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETION, MODIFICATION OR REVISIONS OF THE SYSTEMS AS NECESSARY TO MAINTAIN THE CONSISTENT COVERAGE DESIGN OF THE CONTRACT DOCUMENTS. ANY DEVIATION FROM THE CONTRACT DOCUMENTS SHALL HAVE THE PRIOR WRITTEN APPROVAL OF THE OWNER (JOB SUPERINTENDENT) AND LANDSCAPE ARCHITECT.

I. IRRIGATION PLANS: THE IRRIGATION PLANS, INCLUDING PIPING AND EQUIPMENT LOCATIONS, ARE DRAWN DIAGRAMMATICALLY. THE CONTRACTOR SHALL MAKE MINOR ADJUSTMENTS TO THE SYSTEM AS REQUIRED TO AVOID PHYSICAL ELEMENTS AND CONFORM TO THE SITE CONDITIONS. IN ALL CASES, THE CONTRACTOR SHALL INSURE THAT THERE ARE NO CONFLICTS BETWEEN THE IRRIGATION SYSTEM, PLANTING ELEMENTS, CONSTRUCTION ELEMENTS, AND EXISTING UTILITIES.

J. ALL SPRAY SYSTEMS REQUIRE 100% DOUBLE COVERAGE PER THE DEPARTMENT OF WATER RESOURCES AB 1881 REQUIREMENTS. NOTE ALL OVERHEAD SPRAY AREAS MAY BE SUBJECT TO A THIRD PARTY IRRIGATION AUDIT. IRRIGATION ADJUSTMENTS AND ADDITION OF HEADS TO ACHIEVE UNIFORM COVERAGE SHALL BE INCLUDED IN THE CONTRACTORS BID/CONTRACT

K. ELECTRICAL CONNECTION: THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FINAL ELECTRICAL CONNECTION FROM POWER SOURCE TO CONTROLLERS.

L. AS BUILTS: THE CONTRACTOR SHALL PROVIDE AND KEEP UP TO DATE A COMPLETE `AS BUILT' RECORD SET OF PRINTS WHICH SHALL BE CORRECTED DAILY AND SHOW EVERY CHANGE FROM THE ORIGINAL DRAWINGS. DRAWINGS SHALL SHOW APPROVED SUBSTITUTIONS AND FINAL CHANGES, IF ANY, OF MATERIAL INCLUDING MANUFACTURER'S NAME AND CATALOG NUMBER. BEFORE THE TIME OF THE FINAL INSPECTION, THE CONTRACTOR SHALL TRANSFER ALL INFORMATION FROM THE `AS BUILT' SET AND FIELD STAKING OF ALL EQUIPMENT LOCATED ON THE MAINLINE AND CONTROL WIRE LOCATION TO A REPRODUCIBLE PLAN, PROCURED FROM THE OWNER (JOB SUPERINTENDENT) AND LANDSCAPE ARCHITECT. ALL WORK SHALL BE NEAT AND LEGIBLE. THE CONTRACTOR SHALL CERTIFY REPRODUCIBLES AS TO ACCURACY AND COMPLETENESS. ALL WORK SHALL BE NEAT AND LEGIBLE AND SUBJECT TO THE REVIEW OF THE LANDSCAPE ARCHITECT AND APPROVED BY THE OWNER.

1. THE CONTRACTOR SHALL DIMENSION FROM 2 PERMANENT POINTS OF REFERENCE, (IE: BUILDING CORNERS, SIDEWALK OR ROAD INTERSECTIONS, ETC.) THE LOCATION OF THE FOLLOWING ITEMS:

a. POINT OF CONNECTION.
b. ELECTRICAL SERVICE CONNECTION.
c. GATE VALVE
d. ROUTING OF SPRINKLER PRESSURE LINES (DIMENSION AT EVERY CHANGE IN DIRECTION / FITTING LOCATION)
e. SPRINKLER CONTROL VALVES.
f. ROUTING OF CONTROL WIRING.
g. QUICK COUPLING VALVES.

M. CONTROLLER CHARTS: PROVIDE 2 CONTROLLER CHARTS FOR EACH CONTROLLER. THE CHART SHALL BE A REDUCED DRAWING OF THE APPROVED AS-BUILT AND SHALL SHOW THE AREA CONTROLLED BY THE CONTROLLER. THE CHART SHALL INDICATE WITH A DIFFERENT COLOR THE AREA OF COVERAGE FOR EACH STATION. WHEN COMPLETED AND APPROVED BY THE OWNER, THE CHART SHALL BE HERMETICALLY SEALED BETWEEN 2 PIECES OF 10 MIL PLASTIC AND TURNED OVER TO THE OWNER WHO WILL PLACE ONE COPY INSIDE THE CONTROLLER DOOR.

N. WRITTEN CERTIFICATION: THE CONTRACTOR SHALL PROVIDE A WRITTEN CERTIFICATION THAT THE IRRIGATION SYSTEM IS INSTALLED FREE FROM DEFECTS IN MATERIALS AND WORKMANSHIP AND IN FULL COMPLIANCE WITH THE DRAWINGS AND SPECIFICATIONS. THIS SHALL BE ON THE CONTRACTOR'S LETTERHEAD WITH HIS IRRIGATION AND STATE LICENSED CONTRACTOR'S LICENSE NUMBER.

O. TURNOVER ITEMS: THE CONTRACTOR SHALL SUPPLY TO THE OWNER (JOB SUPERINTENDENT), AS A PART OF THIS CONTRACT, THE FOLLOWING ITEMS PRIOR TO THE TIME OF THE FINAL SITE OBSERVATION:

1. A REPRODUCIBLE SET OF `AS BUILT' DRAWINGS.
2. THE ORIGINAL OF ANY GUARANTEE LETTERS.
3. THE ORIGINAL OF THE CERTIFICATION LETTER.
4. TWO (2) KEYS FOR EACH AUTOMATIC CONTROLLER.
5. TWO (2) SETS OF ANY SPECIAL EQUIPMENT REQUIRED FOR OPERATING, ADJUSTING, ASSEMBLING AND REMOVING EACH TYPE OF EQUIPMENT SUPPLIED ON THIS PROJECT AS REQUESTED BY THE OWNER.
6. TWO (2) QUICK COUPLER QUILLS AND HOSE SWIVEL.

P. OPERATION AND MAINTENANCE MANUALS: PRIOR TO COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL PREPARE ONE (1) DIGITAL ELECTRONIC COPY AND A HARD COVER BINDER WITH THREE (3) RINGS CONTAINING THE FOLLOWING INFORMATION:

1. INDEX SHEET STATING CONTRACTOR'S ADDRESS AND TELEPHONE NUMBER, LIST OF EQUIPMENT WITH NAME AND ADDRESSES OF LOCAL MANUFACTURER'S REPRESENTATIVES.
2. CATALOG AND PARTS SHEET ON EVERY TYPE OF MATERIAL AND EQUIPMENT BEING INSTALLED.
3. COMPLETE OPERATING AND MAINTENANCE INSTRUCTION ON ALL MAJOR EQUIPMENT.

II. REQUIRED FIELD OBSERVATION WORK:

A. REQUIRED FIELD OBSERVATION WORK: THESE PLANS WERE PREPARED WITH THE UNDERSTANDING THAT THE OWNER OF SAID PLANS WILL USE BRIGHTVIEW DESIGN GROUP TO PROVIDE `FULL' CONTRACT SERVICES INCLUDING FIELD OBSERVATION SERVICES DURING CONSTRUCTION. FAILURE TO USE BRIGHTVIEW DESIGN GROUP TO PROVIDE AND COMPLETE THE FIELD OBSERVATION SERVICES SET FORTH HEREIN WILL SIGNIFICANTLY INCREASE THE RISK OF LOSS RESULTING, AMONG OTHER CAUSES, FROM MISINTERPRETATION OF THE INTENT OF THE DESIGN, UNAUTHORIZED MODIFICATIONS THERETO, AND FAILURE TO DETECT ERRORS AND OMISSIONS IN THE PLANS AND SPECIFICATIONS BEFORE THEY BECOME COSTLY MISTAKES BUILT INTO THE PROJECT. THEREFORE, IN THE EVENT THAT BRIGHTVIEW DESIGN GROUP IS OTHERWISE PRECLUDED FROM COMPLETING THE FIELD OBSERVATION SERVICES SET FORTH HEREIN, THE OWNER, OR SUBSEQUENT OWNER (INDIVIDUALS OR CORPORATIONS WHO HAVE PURCHASED THESE PLANS WITH THE PROJECT), AGREES TO HOLD HARMLESS, INDEMNIFY, AND DEFEND BRIGHTVIEW DESIGN GROUP FROM AND AGAINST ANY AND ALL CLAIMS.

III. LANDSCAPE ARCHITECT'S IRRIGATION FIELD OBSERVATION SCHEDULE:

A. FIELD OBSERVATION COORDINATION: THE FOLLOWING OBSERVATIONS SHALL BE INITIATED BY THE CONTRACTOR AND COORDINATED THROUGH THE OWNER (JOB SUPERINTENDENT). THE CONTRACTOR SHALL NOTIFY THE OWNER (JOB SUPERINTENDENT) AND LANDSCAPE ARCHITECT NOT LESS THAN FORTY-EIGHT (48) HOURS IN ADVANCE OF ANY OBSERVATION. CONTINUED WORK WITHOUT OBSERVATION AT THESE PHASES OF WORK IS AT THE CONTRACTOR'S RISK, WITH ANY REQUIRED CHANGE OR MODIFICATION AT THE CONTRACTOR'S EXPENSE. THE OWNER (JOB SUPERINTENDENT) SHALL INFORM THE LANDSCAPE ARCHITECT AS TO THE PURPOSE AND TIME OF THE OBSERVATION FORTY-EIGHT (48) HOURS IN ADVANCE.

B. CONTRACTOR ORIENTATION/PRE-CONSTRUCTION MEETING: THIS MEETING SHALL BE CONDUCTED TO DISCUSS THE PLANS AND SPECIFICATIONS, POSSIBLE DISCREPANCIES, SITE CONDITIONS AND OTHER ASPECTS OF THE PROJECT IRRIGATION WORK SUCH AS PERSONNEL, SCHEDULE AND REQUIREMENTS FOR STARTING WORK. PRIOR TO THE MEETING, THE CONTRACTOR SHALL THOROUGHLY ACQUAINT HIMSELF WITH SITE CONDITIONS AND THE PLANS, DETAILS AND SPECIFICATIONS.

C. IRRIGATION MAINLINE AND EQUIPMENT LAYOUT: THIS OBSERVATION SHALL BE PERFORMED BY THE OWNER (JOB SUPERINTENDENT) FOLLOWING STAKING OF ALL PRESSURE MAINLINE AND CONTROL EQUIPMENT, VERIFICATION OF ALL SITE CONDITIONS AND PRIOR TO ANY TRENCHING. ANY DISCREPANCIES NOT PREVIOUSLY NOTED SHALL BE CORRECTED AT THIS TIME TO THE SATISFACTION OF THE OWNER (JOB SUPERINTENDENT) AND LANDSCAPE ARCHITECT AT THE CONTRACTOR'S EXPENSE.

D. IRRIGATION MAINLINE AND PRESSURE TEST: THIS OBSERVATION IS FOR THE PURPOSE OF REVIEWING ALL MAINLINE LAYOUT FOR CONFORMANCE TO SPECIFICATIONS AND VERIFYING THE WATER TIGHTNESS OF PRESSURE SYSTEMS PRIOR TO BACKFILLING TRENCHES. PRESSURE TESTS MUST CONFORM TO MANUFACTURER'S SPECIFICATIONS. ALL PRESSURE LINES SHALL BE TESTED UNDER A SUSTAINED HYDROSTATIC PRESSURE OF 150 POUNDS PER SQUARE INCH FOR A PERIOD OF NOT LESS THAN TWO (2) HOURS. THIS TEST SHALL BE PERFORMED IN THE PRESENCE OF THE OWNER (JOB SUPERINTENDENT) TO MANUFACTURER'S ACCEPTED TESTING PROCEDURES AND APPROVED IN WRITING BY THE OWNER (JOB SUPERINTENDENT), PRIOR TO BACKFILLING ANY TRENCHES. CONTRACTOR SHALL FURNISH NECESSARY FORCE PUMP AND ALL OTHER NECESSARY TESTING EQUIPMENT.

E. PROGRESS INSPECTIONS: PERIODIC INSPECTIONS SHALL BE PERFORMED BY OWNER (JOB SUPERINTENDENT) DURING THE LAYOUT OF ALL LATERAL LINE SYSTEMS, WITH TRENCHES OPEN TO VERIFY CONFORMANCE TO DETAILS, DEPTH OF PIPE AND EQUIPMENT ASSEMBLIES.

F. IRRIGATION COMPLETION/COVERAGE TEST: THIS OBSERVATION IS TO INSURE CONFORMANCE OF ALL IRRIGATION EQUIPMENT WITH IRRIGATION CONTRACT DOCUMENTS AND WILL CONSIST OF OPERATION OF EACH SYSTEM TO INSURE INTENDED COVERAGE. THE CONTRACTOR SHALL FLUSH AND ADJUST ALL HEADS FOR OPTIMUM PERFORMANCE AND TO PREVENT OVERSPRAY ONTO WALKS, ROADWAYS AND BUILDINGS, ETC. PRIOR TO THIS OBSERVATION. THIS MAY INCLUDE CHANGES IN NOZZLE SIZES AND DEGREE OF ARC TO OPTIMIZE OPERATION.

G. IRRIGATION AUDIT - AN IRRIGATION THIRD PARTY AUDIT SHALL BE PERFORMED IF REQUIRED BY THE APPROVING AGENCY. ALL AUDIT MATERIALS WILL BE PROVIDED BY OTHERS. THE CONTRACTOR SHALL ATTEND THE AUDIT AND PROVIDE SUPPORT TO THE AUDITOR. THE IRRIGATION CONTRACTOR SHALL INCLUDE IN HIS CONTRACT MATERIALS AND LABOR TO COMPLY WITH THE AUDITORS REQUIREMENTS TO PASS THE AUDIT REQUIREMENTS.

811 Know what's below. Call 811 before you dig.

IV. SCOPE OF LANDSCAPE CONSTRUCTION:

A. BASE SHEETS:

1. BASE SHEETS WERE DERIVED FROM PLANS:
PREPARED BY: CSDA
TITLED: ARCH-1949-01.DWG
DATED: 7-15-19 REVISED: 10-21-19
COPIES AVAILABLE FROM OWNER UPON REQUEST.

B. WATER INFORMATION:

1. WATER INFORMATION WAS DERIVED FROM:
MR/MS: NA
OF: LOS ANGELES DEPARTMENT OF WATER + POWER
PHONE: 213-367-0973 DATE: 12/6/19

C. GENERAL IRRIGATION NOTES:

1. SPECIFIED EQUIPMENT: ALL EQUIPMENT SHALL BE AS LISTED IN THE LEGEND AND INSTALLED AS PER DETAILS AND SPECIFICATIONS, OR MANUFACTURER'S RECOMMENDATION. ANY SUBSTITUTIONS SHALL BE APPROVED IN WRITING BY OWNER (JOB SUPERINTENDENT) AND LANDSCAPE ARCHITECT PRIOR TO ORDERING OR INSTALLATION.

2. ALTERNATE ITEMS: APPROVAL OF ANY ITEM OR ALTERNATE ITEM INDICATES ONLY THAT IT APPARENTLY MEETS THE REQUIREMENTS OF THE DRAWINGS ON THE BASIS OF THE INFORMATION SUBMITTED, AND DOES NOT RELIEVE THE CONTRACTOR OF ANY RESPONSIBILITY FOR THE EQUIPMENT'S SUCCESSFUL OPERATION.

3. MANUFACTURER'S WARRANTY: MANUFACTURER'S WARRANTIES SHALL NOT RELIEVE THE CONTRACTOR OF THIS LIABILITY UNDER THE GUARANTEE. SUCH WARRANTIES WILL ONLY SUPPLEMENT THE GUARANTEE.

4. SOLVENT WELD MAINLINE PIPE: PRESSURE MAINLINE PIPE SIZED 1-1/2" AND SMALLER SHALL BE IPS PRESSURE RATED PVC 1120 SCHEDULE 40 RATED PIPE. PRESSURE MAINLINE PIPE SIZED TWO INCHES (2") AND LARGER SHALL BE IPS PRESSURE RATED PVC 1120 SDR 13.5 315 PSI RATED PIPE PVC (CLASS 315) CONFORMING TO MATERIALS ASTM D1784 AND PRODUCT DESIGN ASTM D2214 FOR SDR 315 AND ASTM 1784 FOR SCHEDULE 40 PIPE, BURIED A MINIMUM OF TWENTY-FOUR INCHES (24") DEEP WITH SOLVENT WELD JOINTS MADE FROM NSF APPROVED, TYPE 1, GRADE 1 (PVC COMPOUND CONFORMING TO ASTM RESIN SPECIFICATION D1784).

5. LATERAL LINE PIPE: NON-PRESSURE BURIED LATERAL LINE PIPE SHALL BE PRESSURE RATED PVC 1120 SDR 21 200 PSI RATED PIPE CONFORMING TO MATERIALS ASTM D1784 AND PRODUCT DESIGN ASTM D2214 FOR SDR 21 PIPE 200 PSI RATED PIPE CONFORMING TO MATERIALS ASTM D1784 AND PRODUCTS DESIGN ASTM D2214 FOR SDR 21 PIPE 200, BURIED A MINIMUM OF 12" DEEP WITH SOLVENT WELD JOINTS MADE FROM NSF APPROVED, TYPE 1, GRADE II PVC COMPOUND CONFORMING TO ASTM RESIN SPECIFICATION D1784.

6. GASKET SEAL MAINLINE PIPE: PRESSURE MAINLINE PIPE SIZED TWO INCHES (4") AND LARGER SHALL BE IPS PRESSURE RATED PVC 1120 SDR 21 200 PSI RATED PIPE, CONFORMING TO MATERIALS ASTM D1784, PRODUCT DESIGN ASTM D2214, GASKET JOINT ASTM DB139, GASKET ASTM F477, CELL CLASS ASTM 1245A, BURIED A MINIMUM OF EIGHTEEN INCHES (24") BELOW FINISH GRADE WITH THRUST BLOCKS PER MANUFACTURER'S INSTRUCTIONS.

7. SOLVENT CEMENT: SOLVENT PRIMER SHALL CONFORM TO ASTM D-2564. SOLVENT CEMENT SHALL CONFORM TO ASTM D2564.

8. SOLVENT FITTINGS: SOLVENT FITTINGS SHALL BE SCHEDULE 40 PRODUCED FROM PVC TYPE 1 CELL CLASSIFICATION B2454-B.

9. THREADED FITTINGS: THREADED FITTINGS SHALL BE SCHEDULE 40 AND THREADED NIPPLES SHALL BE SCHEDULE 80, PRODUCED FROM PVC TYPE 1 CELL CLASSIFICATION 12454-B. USE PERMATEX #51/TEFLON TAPE OR APPROVED PIPE JOINT COMPOUND PER FITTINGS MANUFACTURER'S RECOMMENDATIONS.

10. STEEL PIPE: GALVANIZED STEEL PIPE SHALL BE ASA SCHEDULE 40 MILLED STEEL SCREWED PIPE WITH MEDIUM GALVANIZED SCREWED BEADED MALLEABLE IRON FITTINGS.

11. STEEL PIPE BELOW GRADE: ALL GALVANIZED PIPE AND FITTINGS INSTALLED BELOW GRADE SHALL BE COATED WITH TWO (2) COATS OF KOPPERS #50 BITUMASTIC.

12. BRASS PIPE AND FITTINGS: BRASS PIPE SHALL BE 85% RED BRASS, AMERICAN NATIONAL STANDARD INSTITUTE (ANSI), SCHEDULE 40 SCREWED PIPE. FITTINGS SHALL BE MEDIUM BRASS, SCREWED, 125 POUND CLASS.

13. COPPER PIPE AND FITTINGS: COPPER PIPE SHALL BE TYPE K, (HARD) ASTM B88 SOLDER FITTINGS IN ACCORDANCE WITH ANSI B16.22. OLDER JOINTS SHALL BE 45% SILVER, 15% COPPER, 16% ZINC, 24% CADMIUM AND SOLIDUS AS 1125oF AND LIQUIDS AT 1145oF., CONFORMING TO ASTM B206 AND FS QQ-B-655C.

14. METAL PIPE JOINTS: ALL CONNECTIONS TO BE SEALED WITH PIPE JOINT COMPOUND FOR METAL JOINTS.

15. CONTROL WIRE: CONNECTIONS BETWEEN THE AUTOMATIC CONTROLLERS AND THE ELECTRIC CONTROL VALVES SHALL BE MADE WITH DIRECT BURIAL COPPER WIRE AWG-U.F. 600 VOLT UL APPROVED. MINIMUM SIZE IS #14 AWG, BURIED EIGHTEEN (18") INCHES BELOW GRADE. USE DIFFERENT COLOR CONTROL WIRE FOR EACH CONTROLLER. COMMON WIRES SHALL BE WHITE OR A DIFFERENT COLOR FROM THE CONTROL WIRES FOR EACH OF AUTOMATIC CONTROLLER ON THE SITE.

OR

16. TWO (2) WIRE IRRIGATION CONTROLLERS UTILIZE A JACKETED 2 WIRE CABLE FOR IRRIGATION CONTROLLERS NOTED ON THE PLANS AS "2 WIRE CONTROLLERS. WHERE NOTED THE WIRE RUNS SHALL BE INSTALLED IN A PVC CONDUIT WITH PULL-BOXES EVERY 200' MAXIMUM, PROVIDE ADDITIONAL PULL-BOXES AT CHANGES IN DIRECTIONS AND STREET/MEDIAN CROSSINGS.

a. WIRE/CABLE WIRE/CABLE IS TYPICALLY 14 GAUGE. EACH CONTROLLER MANUFACTURER HAS SPECIFIC SPECIFICATIONS FOR THE APPROVED WIRE/CABLE FOR THEIR CONTROLLER. WIRE/CABLE SHALL DIFFERENT COLORS AND BE A SEPARATE RUN FOR EVERY 24 STATIONS (IN LINE/SERIES) ON THE MAINLINE. EXAMPLE: A 48 STATION CONTROLLER SHALL HAVE 2 DIFFERENT HOMERUN WIRE FROM THE IRRIGATION CONTROLLER TO THE REMOTE CONTROL VALVES.

b. WIRE/CABLE SPLICES/CONNECTORS: THE CONTRACTOR SHALL BE "CERTIFIED" BY THE CONTROLLER MANUFACTURER TO INSTALL THE 2 WIRE COMPONENTS. PROPRIETARY TOOLS, WATERPROOF WIRE CONNECTORS AND TECHNIQUES ARE UNIQUE TO EACH MANUFACTURER. THE CONTRACTOR IS EXPECTED TO BE KNOWLEDGEABLE AT INSTALLING THE 2 WIRE SYSTEM IN CONFORMANCE WITH THE MANUFACTURES REQUIREMENTS.

c. SURGE PROTECTORS/GROUND RODS: INSTALL SURGE PROTECTORS/GROUND RODS PER THE MANUFACTURES SPECIFICATIONS. NOTE: EACH CONTROLLER MANUFACTURER HAS DIFFERENT REQUIREMENTS.

d. DECODERS: EACH CONTROLLER MANUFACTURER HAS DIFFERENT DECODER CONFIGURATIONS AND SPACING REQUIREMENTS. REFER TO THE PLANS AND THE CONTROLLER MANUFACTURERS DECODER REQUIREMENTS.

e. REWORK: THE CONTRACTOR IS RESPONSIBLE FOR LABOR AND MATERIALS SHOULD REWORK OF THE INSTALLATION BE REQUIRED.

17. SPARE CONTROL WIRE: PROVIDE FOUR (4) UNUSED #14 AWG WIRES FROM EACH CONTROLLER TO THE LAST VALVE ON EACH SYSTEM. WHEN THE SYSTEM SPLITS INTO DIFFERENT DIRECTIONS WITHIN 100 FEET OF THE CONTROLLER PROVIDE FOUR (4) SPARE #14 AWG WIRES FROM THE CONTROLLER FOLLOWING EACH DIRECTION OF THE IRRIGATION MAINLINE. PROVIDE A THIRD (3RD) COLOR WIRE OR MARK THE WIRES "SPARE" IN THE CONTROLLER CABINET.

18. WIRE TRENCH: WIRING SHALL OCCUPY THE SAME TRENCH AND SHALL BE INSTALLED ALONG THE SAME ROUTE AS PRESSURE SUPPLY OR LATERAL LINES WHEREVER POSSIBLE. THE WIRES SHALL BE TAPED TOGETHER AT INTERVALS NOT EXCEEDING TEN (10) FEET.

19. EXPANSION CURL: A TWELVE INCH (12") EXPANSION CURL SHOULD BE PROVIDED WITHIN THREE (3) FEET OF EACH WIRE CONNECTION AND AT LEAST EVERY ONE HUNDRED (100) FEET OF WIRE LENGTH. AT STREET CROSSINGS AND GATE VALVE LOCATIONS THE CONTRACTOR SHALL BRING ALL THE WIRES TO GRADE AND PROVIDE A 12" EXPANSION CURL COVERED BY A RECTANGULAR VALVE BOX MARKED `IRRIGATION WIRE'.

20. WIRE SPLICES: ALL SPLICES SHALL BE MADE WITH SCOTCH-LOK #3577 CONNECTOR SEALING PACKS, PEN-TITE WIRE CONNECTOR, OR APPROVED EQUAL. USE ONE SPLICE PER CONNECTOR. ALL SPLICES SHALL BE MADE AT VALVES OR CONTROLLER. NO OTHER SPLICES WILL BE ALLOWED UNLESS APPROVED BY THE OWNER (JOB SUPERINTENDENT). ALL SPLICES NOT AT VALVES, SHALL BE MADE IN A RECTANGULAR VALVE BOX MARKED `IRRIGATION WIRE'.

21. TRENCHES: DIG TRENCHES STRAIGHT AND SUPPORT PIPE CONTINUOUSLY ON BOTTOM OF TRENCH. LAY PIPE TO AN EVEN GRADE.

22. BACKFILL: THE TRENCHES SHALL NOT BE BACKFILLED UNTIL ALL REQUIRED TESTS ARE PERFORMED. TRENCHES SHALL BE CAREFULLY BACKFILLED WITH APPROVED MATERIALS, FREE FROM CLODS OF EARTH OR STONES TWO INCHES (2") OR LARGER. BACKFILL SHALL BE MECHANICALLY COMPACTED TO A DRY DENSITY EQUAL TO ADJACENT UNDISTURBED SOIL AND SHALL CONFORM TO ADJACENT SURFACE GRADES WITHOUT IRREGULARITIES.

23. LINES UNDER PAVING: ALL IRRIGATION LINES, VALVES AND WIRING RUNS SHOWN ON PLANS IN THE STREET, PAVED AREAS AND UNDER HARDSCAPING ARE DIAGRAMMATIC. INSTALL THESE LINES, VALVES AND WIRING RUNS IN PLANTING AREAS EXCEPT WHERE IT IS OBVIOUS THAT THEY MUST CROSS THAT PAVED AREA TO GET FROM ONE PLANTING AREA TO ANOTHER OR UNLESS NOTED OTHERWISE.

24. STREETS: WHERE ANY CUTTING OR BREAKING OF CONCRETE OR OTHER PAVING SURFACE IS NECESSARY, IT SHALL BE DONE AND REPLACED TO MATCH THE EXISTING WORK TO THE OWNER'S (JOB SUPERINTENDENT'S) SATISFACTION, BY THE CONTRACTOR.

25. SLEEVES: SLEEVES SHALL BE INSTALLED UNDER ALL STREETS AND PAVEMENT WIDER THAN SEVEN FEET (7') PER THE IRRIGATION PLAN. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF SLEEVES WITH THE OWNER (JOB SUPERINTENDENT) PRIOR TO THE PAVING BEING INSTALLED.

26. SLEEVE/PIPE COVER: ALL WIRE, PRESSURE AND NON-PRESSURE PIPE INSTALLED UNDER ASPHALTIC CONCRETE PAVING SHALL BE INSTALLED IN CLASS 315 PVC SLEEVES BURIED A MINIMUM OF TWENTY-FOUR INCHES (24") BELOW THE ROAD BED OR AS REQUIRED BY THE GOVERNING AGENCY AND BACKFILLED PER GEOTECHNICAL REPORT SPECIFICATIONS.

27. PIPE CLEARANCE: ALL LINES SHALL HAVE A MINIMUM CLEARANCE OF SIX INCHES (6") FROM EACH OTHER. PARALLEL LINES SHALL NOT BE INSTALLED DIRECTLY OVER ONE ANOTHER.

28. CONTROL VALVES: INSTALL EACH CONTROL VALVE IN A SEPARATE LOCKING VALVE BOX WITH A MINIMUM OF TWELVE INCHES (12") BETWEEN VALVE BOXES, AND A MINIMUM OF SIX INCHES (6") BETWEEN VALVE BOXES AND ANY WALK OR STRUCTURE.

29.

30. HEAD INSTALLATION: IRRIGATION HEADS SHALL BE INSTALLED ONLY AFTER THE SYSTEM HAS BEEN FLUSHED TO THE COMPLETE SATISFACTION OF THE OWNER (JOB SUPERINTENDENT).

31. HEAD SPACING: SPACING OF HEADS SHALL NOT EXCEED THE MAXIMUM INDICATED ON THE DRAWINGS. IN NO CASE SHALL THE SPACING EXCEED THE MAXIMUM RECOMMENDED BY THE MANUFACTURER.

32. INSTALLATION ANGLE OF IRRIGATION HEAD: ALL SPRINKLER HEADS SHALL BE SET PERPENDICULAR TO FINISHED GRADES UNLESS OTHERWISE DESIGNATED ON THE PLANS.

33. PIPE ON GRADE: ALL PIPE ON GRADE SHALL BE SECURED TO SLOPE SURFACES AT 10' O.C. AND TO FLAT AREAS AT 20' O.C. MAXIMUM WITH #4 X 24" REBAR WITH `J' HOOKED RADIUS AT ONE END TO HOLD PIPE SECURELY IN PLACE.

34. IRRIGATION SYSTEM REQUIREMENTS PRIOR TO PLANTING: THE ENTIRE SPRINKLER IRRIGATION SYSTEM SHALL BE UNDER FULL AUTOMATIC OPERATION PRIOR TO THE START OF ANY PLANTING WORK AND AN IRRIGATION COVERAGE TEST SHALL ALSO BE PERFORMED BY THE LANDSCAPE ARCHITECT PRIOR TO THE START OF ANY PLANTING.

V. TRAINING:

A. PROVIDE A MINIMUM 4 HOURS ON-SITE INSTALLATION TRAINING PER SITE FROM EACH ET IRRIGATION CONTROLLER MANUFACTURER. TRAINING SHALL EXPLAIN FACETS NECESSARY TO SET UP A CENTRALLY MANAGED IRRIGATION SYSTEM. TRAINING IS TO INCLUDE DRAWINGS AND HANDOUTS FOR TRAINEE REFERENCE. TRAINING SHALL BE PROVIDED BY AN AUTHORIZED REPRESENTATIVE OF THE CONTROLLER MANUFACTURER.

B. PROVIDE A MINIMUM 2 HOURS OF ON-SITE OPERATION TRAINING PER SITE FROM EACH IRRIGATION CONTROLLER MANUFACTURER. TRAINING SHALL DEMONSTRATE ALL IRRIGATION CONTROL AND HAND HELD REMOTE CONTROL PROGRAMMING FEATURES. TRAINING SHALL BE PROVIDED BY AN AUTHORIZED REPRESENTATIVE OF THE CONTROLLER MANUFACTURER.

C. PROVIDE 8 HOURS OF CENTRAL MANAGEMENT SYSTEM TRAINING FROM EACH WEATHER BASED IRRIGATION CONTROL MANUFACTURER. TRAINING, FOR DESIGNATED OWNER PERSONNEL SHALL INCLUDE GENERATING REPORTS FROM THE CENTRAL MANAGEMENT CONTROL AREA TO SATISFY THE MODEL WATER LANDSCAPE EFFICIENCY ORDINANCE, REQUIREMENTS AS WELL AS OPERATING AND PROGRAMMING IRRIGATION CONTROLLERS USING A REMOTE PERSONAL COMPUTER. TRAINING SHALL BE PROVIDED BY AN AUTHORIZED REPRESENTATIVE OF THE CONTROLLER MANUFACTURER.

D. PROVIDE AN ATTENDANCE SHEET TO THE OWNER LISTING PERSONNEL TRAINED. THE ATTENDANCE SHEET SHALL LIST THE DATE AND TIME AND TYPE OF TRAINING AND SHALL HAVE SIGNATURES AND CONTACT INFORMATION OF ALL ATTENDEES INCLUDING INSTRUCTOR.

LANDSCAPE • IRRIGATION • AUDITOR — Certified

WATER EFFICIENT LANDSCAPE ORDINANCE
NOTIFICATION OF COMPLIANCE
REQUIRED OF IRRIGATION CONTRACTORS

THE IRRIGATION CONTRACTOR IS REQUIRED TO FULLY COMPLY WITH THE IRRIGATION PLANS DURING INSTALLATION OF THE IRRIGATION SYSTEM. ALL FIELD CHANGES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT/LANDSCAPE IRRIGATION AUDITOR. ANY WORK NOT INSTALLED IN STRICT CONFORMANCE WITH THE LANDSCAPE IRRIGATION AUDITORS REQUIREMENTS SHALL BE REMOVED AND REINSTALLED AT THE CONTRACTORS EXPENSE. THE CONTRACTOR AND OWNER SHALL REFER TO THE IRRIGATION NOTES SHEET FOR IRRIGATION CONTRACTOR'S WORK RESPONSIBILITIES AND THE LANDSCAPE ARCHITECT'S REQUIRED FIELD OBSERVATION SCHEDULE.

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IRRIGATION EQUIPMENT LEGEND

SYMBOL	MANUFACTURER AND MODEL	DETAIL	SHEET
NOT SHOWN	VERIFY ELECTRIC SERVICE AND LOCATION FOR IRRIGATION CONTROLLER IN FIELD-INSTALL SERVICE PER ELECTRICAL PLANS.	-	-
	EXISTING 2" ZURN WILKINS 975 XLS BACKFLOW PREVENTION DEVICE.	C,D	L-341
	RAINBIRD EFB-CP SERIES BRASS REMOTE CONTROL MASTER VALVE. SIZE PER PLAN. INSTALL W/ STATION I.D. TAG FOR ALL VALVES	J	L-341
	RAIN BIRD PESB SERIES REMOTE CONTROL VALVE W/ ID TAG; SIZE PER PLAN.	A	L-342
F	RAIN BIRD FS-XXX BRASS FLOW SENSOR, SIZE PER PLAN	4	L-341
	GATE VALVE - NIBCO T-113 FOR 2 1/2" AND SMALLER , NIBCO F-619-RW FOR 3" AND LARGER.	G	L-341
	RAINBIRD QUICK COUPLER 44-LRC 1"	F	L-341
	POINT OF CONNECTION, CONTRACTOR TO VERIFY IN FIELD	-	-
	WILKINS 510 SERIES PRESSURE REGULATOR, SIZE PER PLAN.	-	-
A	CONTROLLER 1 RAIN BIRD ESP-LXMEF IRRIGATION CONTROLLER (PER PLANS)IN PEDESTAL ENCLOSURE (RAINBIRD MODEL LXMMSS) ; WITH, FLOW SENSOR, RAIN SENSOR. SIZE PER PLAN. CONTRACTOR TO INSTALL IRRIGATION CONTROLLER AT LOCATION DESIGNATED BY THE OWNER / LANDSCAPE ARCHITECT. INSTALL WIRE CABLE FROM CONTROLLER TO VALVES.	A,B	L-341
	IRRIGATION SYSTEM-MAIN LINE (BURY 24" BELOW FINISH GRADE), SCH. 40 PVC-1 1/2" AND SMALLER, CLASS 315 PVC-2" AND LARGER. SIZE PER PLAN	E	L-341
	SCH 40 PVC LATERAL LINE (BURY 12" BELOW FINISH GRADE) SIZE PER PLAN	E	L-341
	CLASS 315 PVC (FOR 2" THROUGH 4"), CLASS 200 PVC (FOR 6" AND ABOVE) MAINLINE, LATERAL LINE AND WIRE SLEEVES-BURY 24" BELOW FINISH GRADE.	E	L-341
NOT SHOWN	#14 AWG-UF CONTROL AND COMMON WIRE (DIRECT BURIAL) SOLID COPPER WIRE (BURY WITH MAIN LINE) UL APPROVED	-	-
		-	-
NOT SHOWN	FITTINGS - ALL FITTINGS TO BE AS SPECIFIED PER LAUSD STANDARDS.	-	-
	TREE IRRIGATION - RAINBIRD RD04-S-P30-5Q-B TREE POP-UP - 2 PER TREE. USE PCS-025 (PINK) PCS SCREEN IN LANDSCAPE AREAS LESS THAN 5' WIDE TO REDUCE OVER SPRAY.	C	L-342

IRRIGATION HEAD LEGEND

SYMBOL	MANUFACTURER AND MODEL			P.S.I.	RADIUS MAX. FEET	PRECIP. INCH / HR.	PATTERN & GPM F	H	Q	V	REMARKS	DETAIL	SHEET	NOTES
	RAIN BIRD	RD12-S-P30-(5')	SHRUB POP-UP	30	5	1.58	.42	.20	.10	.88	5' MPR NOZZLES W/ 8' HE-VAN SERIES NOZZLES FOR VARIABLE ARC NEEDS	11	L-341	L-300
	RAIN BIRD	RD06-S-P30-SQ	TURF POP-UP	30	4	.61	.40	.20	.12	-	SQUARE PATTERN NOZZLES (XPCN) NOTE 1,2	18		I. THRU IV.
	RAIN BIRD	RD12-S-P30-SQ	SHRUB POP-UP	30	4	.61	.40	.20	.12	-	SQUARE PATTERN NOZZLES (XPCN) NOTE 1,2	19		I. THRU IV.
	RAIN BIRD	RD12-S-P30-NP-SQ	SHRUB POP-UP	30	2.5	1.57	.40	.20	.12	-	SQUARE PATTERN NOZZLES (XPCN) NOTE 1,2	19		I. THRU IV.

Water Efficient Landscape Worksheet

Reference Evapotranspiration (Eto) 47.50 POC #1 Non-Residential

Zone #	Planting descriptions	Plant Factor (PF)	Irrigation Method	Irrigation Efficency (IE)	ETAF (PF/IE)	Landscape Area (Sq.Ft.)	ETAF x Area	Estimated Total Water Use (ETWU)
	Regular Landscape Area							
1	TREES L	0.3	SPRAY	0.75	0.40	-	-	-
2	SHRUBS L	0.3	SPRAY	0.75	0.40	625	250	7,363
3	SHRUBS L	0.3	SPRAY	0.75	0.40	1,250	500	14,725
4	TREES L	0.3	SPRAY	0.75	0.40	-	-	-
5	SHRUBS L	0.3	SPRAY	0.75	0.40	1,150	460	13,547
6	SHRUBS L	0.3	SPRAY	0.75	0.40	550	220	6,479
7	SHRUBS L	0.3	SPRAY	0.75	0.40	600	240	7,068
8	TREES L	0.3	SPRAY	0.75	0.40	-	-	-
8	SHRUBS L	0.3	SPRAY	0.75	0.40	425	170	5,007
							-	-
						-	-	-
							-	-
				1	0.00		-	-
	Regular Landscape Area Totals:					4,600	1,840	54,188
	Special Landscape Area							
					1		-	-
					1		-	-
					1		-	-
	Special Landscape Area Totals:					0	0	
							ETWU Total:	54,188
	Maximum Allowed Water Allowance (MAWA)							
	Over All Landscape Area Totals:					4,600	MAWA Total:	60,962

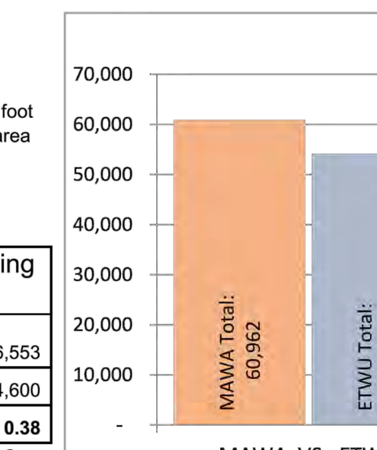
[a] ***Hydrozone #/ Planting Description***
E.g
1.) front lawn
2.) low water use plantings
3.) medium water use planting

[b] ***Irrigation Method***
overhead spray
or drip

[c] ***Irrigation Efficiency***
0.75 for spray
0.81 for drip

[d] ***ETWU* (Annual Gallons Required) =** *Eto x 0.62 x ETAF x Area*
where 0.62 is a conversion factor that acre-inches per acre per year to gallons per square foot per year.

[e] ***MAWA (Annual Gallons Allowed) = (** *Eto) (0.62) [(ETAF x LA) + ((1-ETAF) x SLA)]*
where 0.62 is a conversion factor that acre-inches per acre per year to gallons per square foot per year, LA is the total landscape area in square feet, SLA is the total special landscape area in square feet, and ETAF is .55 or residential areas and 0.45



ETAF Calculations

Regular Landscape Area		All Landscape Area (Including special landscape area)	
Total ETAF x Area		Total ETAF x Area	6,553
Total Area		Total Area	4,600
Average ETAF		**Sitewide ETAF**	**0.38**

Average ETAF for Regular Landscape Areas must be 0.55 or below for residential areas, and 0.45 or below for non-residential areas.

HYDRO_vn_2.xls VCDG Irrigation 12/17/19

CSDA DESIGN GROUP
LISTEN COLLABORATE CREATE
889 N. DOUGLAS STREET, SUITE 100
EL SEGUNDO, CA 90245
[T]: 310.821.9200
www.csdadesigngroup.com

ARCHITECT STAMP: LICENSED ARCHITECT — MICHAEL ROBERT SCHOEN — No. C-35165 — RENEWAL DATE FEBRUARY 28, 2019 — STATE OF CALIFORNIA

CONSULTANT:
BrightView Design Group
1715 18th ST
SANTA MONICA, CA 90404
PH 310.829.4707
WWW.BRIGHTVIEW.COM

BV PROJECT #: 1730585

CONSULTANT STAMP: REGISTERED LANDSCAPE ARCHITECT — DANA B.SEELIG — 1846 — Signature 2019/05/08 — Date 2021/04/30 — Expires — STATE OF CALIFORNIA

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CLIENT:
VAUGHN NEXT CENTURY LEARNING CENTER
LOS ANGELES UNIFIED SCHOOL DISTRICT • BOARD OF EDUCATION
333 BEAUDRY AVE.
LOS ANGELES, CA 90017
(213) 241-1000

PROJECT NAME:
Vaughn Mainland DCAP

13330 Vaughn St. San Fernando, CA 91340

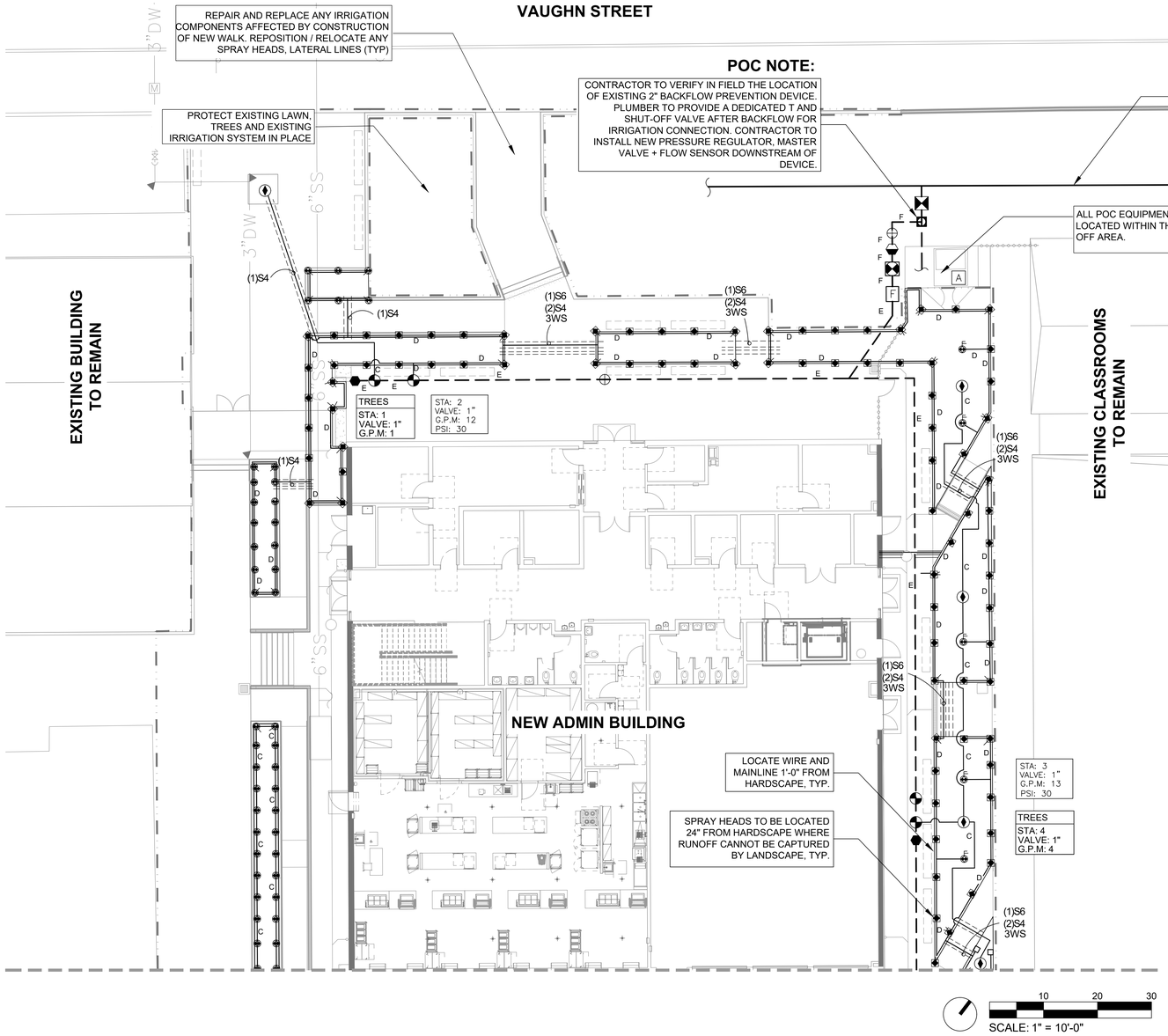
AUTHORITY APPROVAL:

MARK	DATE	DESCRIPTION

PROJECT NO.: 1949.01
50% CONSTRUCTION DOCUMENTS 12/20/2019

SHEET TITLE:
IRRIGATION SCHEDULE & NOTES

SHEET NO.:
L-301

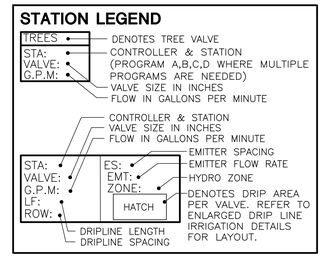


IRRIGATION SYSTEMS LAYOUT NOTE:

NOTIFY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.

1. VALVE LOCATIONS –
   A. VALVE BOXES SHALL BE LOCATED OUT OF PRIMARY VISUAL AREAS IN LOCATIONS AS APPROVED BY LANDSCAPE ARCHITECT.
   B. LOCATE ALL VALVE BOXES IN SHRUB AREAS, TYPICAL.
2. BUILDING/WALLS – LOCATE ALL HEADS 18 INCHES FROM BUILDINGS, WALLS AND FENCES TYPICAL.
3. SLEEVES IN THE STREET – THE CONTRACTORS SHALLS–BUILT THE STATION# FOR ALL SLEEVES IN THE STREET ON THE AS–BUILT RECORD PLANS.
4. PLANTERS 8' OR LESS WIDE – USE SUBSURFACE OR LOW VOLUME IRRIGATION SYSTEM.
5. SHRUB OFFSET – LOCATE ALL SHRUBS OVER 1'–0" TALL 4'–0" AWAY FROM ANY IRRIGATION HEAD.
6. OVER SPRAY – FIELD ADJUST ALL SPRINKLERS TO ELIMINATE OVER SPRAY ONTO SIDEWALKS, DRIVEWAY OR ANY HARDSCAPE.
7. GRADING – FOR ALL GRADING AND DRAINAGE, REFER CIVIL ENGINEER'S PRECISE GRADING PLANS.
8. PCS SCREENS – CONTRACTOR SHALL INSTALL PCS SCREENS ON BUBBLERS AND SPRAY HEADS AS AN AID IN PREVENTING OVER SPRAY. NO OVER SPRAY OR RUNOFF WILL BE ALLOWED ONTO ANY HARDSCAPE AND BUILDINGS, TYPICAL.
9. IRRIGATION HEAD AT UTILITIES – CONTRACTOR SHALL IRRIGATE AROUND ALL STREET LIGHTS, UTILITY BOXES, STORM DRAINS, ETC.
10. VALVE AND MAINLINE LOCATION – LOCATE VALVE AND MAINLINE 3'–0" BEHIND SIDEWALK, TYPICAL.

STATION LEGEND



PIPE SIZING NOTES

1. ALL PIPE SIZING CALLOUTS ARE IN INCHES, OR REFERENCE THE PIPE SIZING LEGEND.
2. PIPE SIZING CALLOUTS ARE SHOWN ONLY AT THE ENDS OF RUNS. ALL PIPE SIZED BETWEEN THESE CALLOUTS ARE SIZED THE SAME.
3. ALL LATERAL LINE PIPE DOWNSTREAM OF A 3/4" SIZED PIPE IS ALSO 3/4".
4. ALL UNSIZED RUNS OF LATERAL LINE PIPE SERVING THREE OR FEWER SPRAY HEADS SHALL BE SIZED 3/4"

SLEEVING NOTES / KEY

(2)S4 – (2) QUANTITY OF SLEEVES; S – SLEEVE SIZE IN INCHES; 4 – PIPE SIZING INDICATOR. SLEEVE SHALL BE PER LEGEND

1S2 – 1 QUANTITY OF SLEEVES; S – SLEEVE SIZE IN INCHES; 2 – PIPE SIZE IN INCHES; PIPE SIZING INDICATOR. SLEEVE PER LEGEND

2WS – 2 QUANTITY OF SLEEVES; WS – IRRIGATION WIRE SLEEVE. SLEEVE PER LEGEND; SLEEVE SIZE IN INCHES

SLEEVE SIZING LEGEND

PIPE SIZE	SLEEVE SIZE
3/4"	2" SCH. 80
1"	
1 1/4"	3" SCH. 80
1 1/2"	
2"	4" SCH. 80
2 1/2"	6" CLASS 315
3"	
4"	
WIRE	2" SCH. 80 4" SCH. 80

PIPE SIZING LEGEND

SCH 40 - PVC

B	3/4"	7 GPM
C	1"	10 GPM
D	1 1/4"	20 GPM
E	1 1/2"	30 GPM

CLASS 315 - PVC

F	2"	50 GPM
G	21/2"	65 GPM
H	3"	100 GPM
I	4"	180 GPM

P.O.C. SYSTEM #1 CONT. #A DOMESTIC WATER

WATER METER [W]

CIVIL STATION NUMBER ——— 00+00.00
WATER METER ADDRESS ——— XXX.X MERIT
STATIC WATER PRESSURE AT METER 131 PSI
WATER METER SERVICE SIZE ——— 2 INCH
WATER METER SIZE ——— 3 INCH
DESIGN WATER PRESSURE ——— 56 PSI
MAXIMUM DESIGN FLOW ——— 13 GPM
IRRIGATED AREA PER METER ——— 4600 SF

THE CONTRACTOR SHALL VERIFY THE METER SIZE, LOCATION, AND STATIC WATER PRESSURE PRIOR TO PERFORMING ANY IRRIGATION WORK UNDER THIS CONTRACT.

CONTROLLER [A] 12-48 STATION CONTROLLER

APPROXIMATE LOCATION OF **RAIN BIRD ESP-LXMEF CONTROLLER - (8) TOTAL VALVE STATION COUNT PER PLANS.** CONTROLLER ELECTRICAL SERVICE (BY OWNER). THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF THE ELECTRICAL P.O.C.(S) AND STAKE THE EXACT CONTROLLER LOCATION FOR APPROVAL IN THE FIELD BY THE OWNER. THE CONTRACTOR SHALL PROVIDE AND INSTALL CONTROLLER IN A STAINLESS STEEL CONTROLLER ENCLOSURE.

GATE VALVE ⊕

APPROXIMATE LOCATION OF **1** APOLLO **2"** 102T–K SERIES THREADED CROSS TOP GATE VALVES.

BACKFLOW DEVICE

APPROXIMATE LOCATION OF **1** EXISTING ZURN WILLIAMS 975XLS **2"** REDUCED PRESSURE TYPE BACKFLOW DEVICE PER THE IRRIGATION LEGEND.

PRESSURE REGULATOR

APPROXIMATE LOCATION OF **1** WILKINS 510XL SERIES **2"** PRESSURE REGULATOR. SET PRESSURE REGULATOR(S) IN THE FIELD AT 65 PSI. USE HARD PIPED COPPER BETWEEN WATER METER AND PRESSURE REGULATOR

MASTER VALVE

APPROXIMATE LOCATION OF RAIN BIRD **2"** EFB–CP NORMALLY CLOSED MASTER VALVE WITH A 24 VOLT IRRIGATION SOLENOID PER THE LEGEND.

FLOW SENSOR [F]

APPROXIMATE LOCATION OF ONE **1** RAIN BIRD **15"** FS–150 BRASS FLOW SENSOR, SIZE PER PLAN

CERTIFICATION NOTE:
GAIN INSTALLATION CERTIFICATION OF THE CONTROLLER, MASTER VALVE, AND FLOW METER FROM RAIN BIRD AND SITE ONE/GREEN TECH PRIOR TO START OF ESTABLISHING MAINTENANCE. PROVIDE BRIGHTVIEW DESIGN GROUP WITH A WRITTEN COPY OF INSTALLATION CERTIFICATION.

Client :	CSDA	**H.G.L :**	NA		
Project Name :	VAUGHN	**POC # :**	1		
Job # :	1730721	**Elevation :**	0 ft	**Static :**	131 psi
Date :	6-Dec-19	**GPM :**	12.5	**75% :**	98 psi

Valve #	3
G.P.M	12.5

Equipment	Size	PSI Loss
Service	3 in.	1.0
Water Meter	3 in.	0.0
Backflow	2 in.	12.0
Basket Strainer	0 in.	0.0
Master Valve	1 1/2 in.	0.0
Flow Sensor	1 1/2 in.	0.0
R.C.V	1 in.	3.5
Lateral Line	VARIES	4.0
Elev. of Highest Head	0 ft	0.0
Operating Pressure		30.0
Mainline (PVC - 2 1/2")	380 ft	0.1
Mainline (PVC - 3")	0 ft	0.0
Mainline (PVC - 4")	0 ft	0.0
Mainline (PVC - 6")	0 ft	0.0
Mainline (Galv. - 3")	0 ft	0.0
Miscellaneous	10%	4.6
Total Loss		55.2
% of Static		42%
Deficit		N/A
Pump		N/A

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CSDA DESIGN GROUP
LISTEN COLLABORATE CREATE
889 N. DOUGLAS STREET, SUITE 100
EL SEGUNDO, CA 90245
[T]: 310.821.9200
www.csdadesigngroup.com

ARCHITECT STAMP
REGISTERED ARCHITECT
MICHAEL ROBERT SCHORN
No. C-35165
RENEWAL DATE
FEBRUARY 29, 2020
STATE OF CALIFORNIA

CONSULTANT:
BrightView Design Group
1715 18th ST
SANTA MONICA, CA 90404
PH 310.829.4707
WWW.BRIGHTVIEW.COM
BV PROJECT #: 1730585

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DANA B. BEELD
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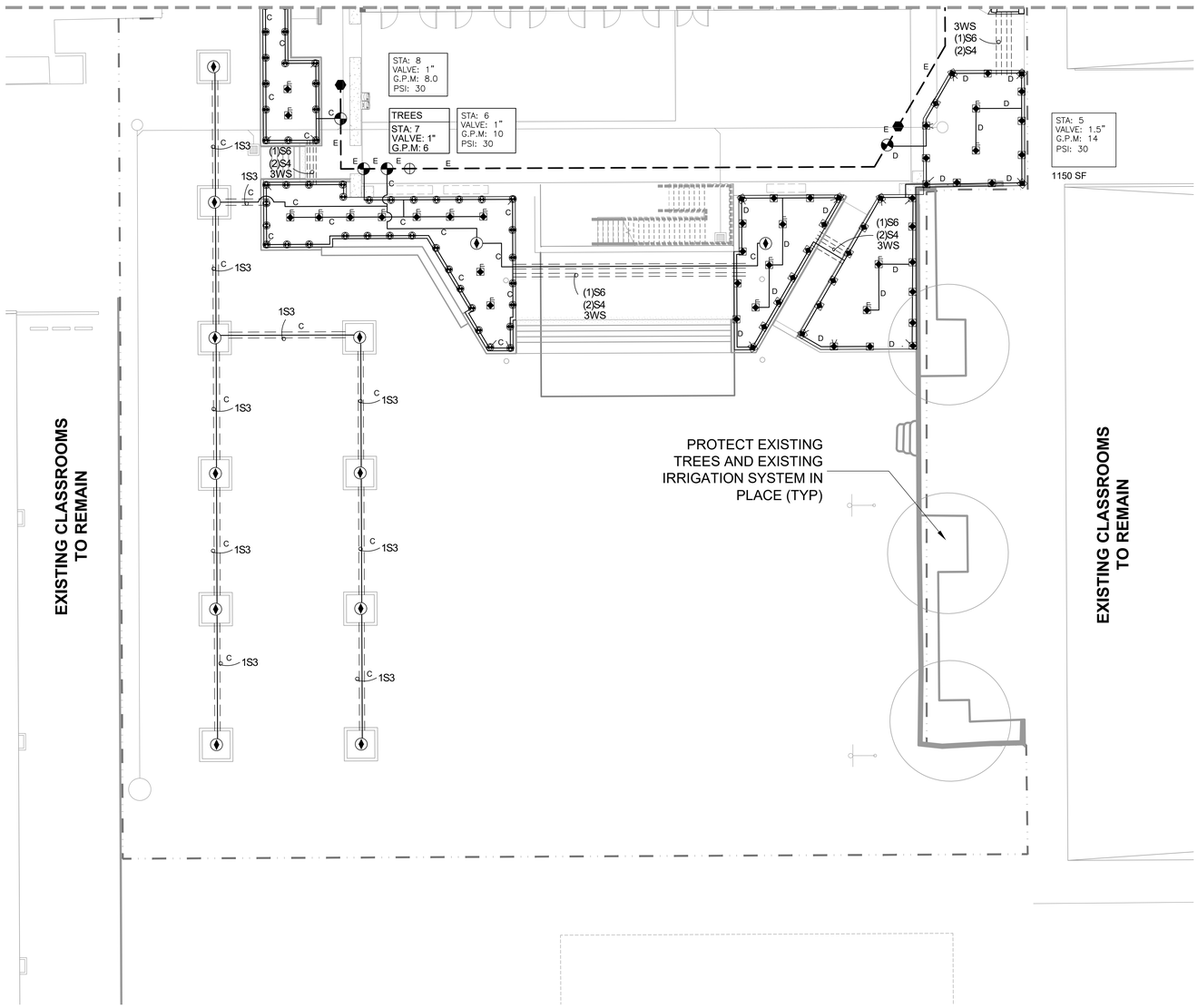
AUTHORITY APPROVAL:

MARK	DATE	DESCRIPTION

PROJECT NO.: 1949.01
50% CONSTRUCTION DOCUMENTS 12/20/2019

SHEET TITLE:
IRRIGATION PLAN

SHEET NO.:
L-311



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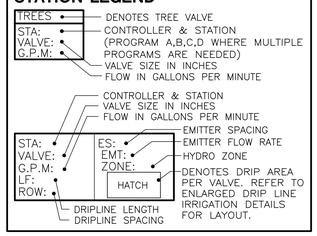
STATION LEGEND



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SLEEVING NOTES / KEY

(2)S4 – PIPE SIZING INDICATOR. SLEEVE SHALL BE PER LEGEND
- SLEEVE SIZE IN INCHES
- QUANTITY OF SLEEVES

1S2 – PIPE SIZING INDICATOR. SLEEVE PER LEGEND
- SLEEVE SIZE IN INCHES
- PIPE SIZE IN INCHES

2WS – IRRIGATION WIRE SLEEVE. SLEEVE PER LEGEND
- SLEEVE SIZE IN INCHES

SLEEVE SIZING LEGEND

PIPE SIZE	SLEEVE SIZE
3/4"	2" SCH. 80
1"	
1 1/4"	3" SCH. 80
1 1/2"	
2"	4" SCH. 80
2 1/2"	6" CLASS 315
3"	
4"	
WIRE	2" SCH. 80 4" SCH. 80

PIPE SIZING LEGEND

SCH 40 - PVC

B	3/4"	7 GPM
C	1"	10 GPM
D	1 1/4"	20 GPM
E	1 1/2"	30 GPM

CLASS 315 - PVC

F	2"	50 GPM
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PROJECT NO.: **1949.01**

50% CONSTRUCTION DOCUMENTS 12/20/2019

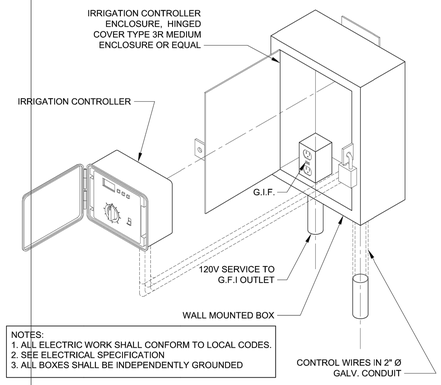
SHEET TITLE:

IRRIGATION PLAN

SHEET NO.:

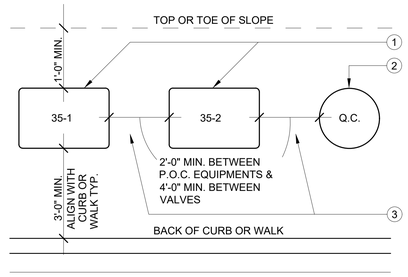
L-312

A IRRIGATION CONTROLLER



NOTES:
1. ALL ELECTRIC WORK SHALL CONFORM TO LOCAL CODES.
2. SEE ELECTRICAL SPECIFICATION
3. ALL BOXES SHALL BE INDEPENDENTLY GROUNDED

B TYP. VALVE BOX HORIZONTAL ALIGNMENT



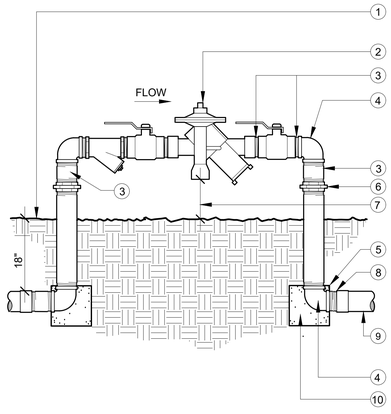
NOTE:
1. FOR CONDITIONS THAT DO (NOT) CONFORM TO THIS EXAMPLE, NOTIFY LANDSCAPE ARCHITECT.
2. ALL VALVE BOXES SHALL BE PER SPECIFICATIONS, NOTES AND LEGEND.

1. IRRIGATION VALVE BOX TYP.
2. IRRIGATION QUICK COUPLER TYP.
3. PLANT SHRUBS BETWEEN VALVE BOXES PER LANDSCAPE ARCHITECT.

PLAN VIEW
NOT TO SCALE

C BACKFLOW W/'Y' STRAINER

NOTES:
1. ALL METAL THREADS SHALL BE WRAPPED WITH TEFLON TAPE OR EQUAL
2. THE INSTALLING CONTRACTOR SHALL GAIN APPROVAL OF THE BACKFLOW ASSEMBLY DETAIL WITH THE BACKFLOW INSPECTOR PRIOR TO INSPECTION

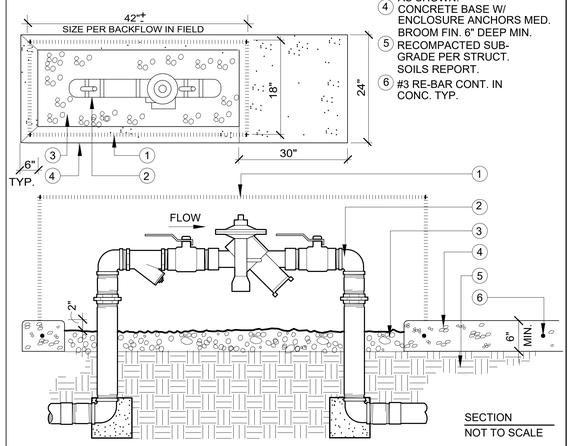


1. FINISH GRADE
2. REDUCED PRESSURE BACKFLOW ASSEMBLY WITH BALL VALVES AND WYE STRAINER PER LEGEND
3. BRASS NIPPLE (SEVEN REQUIRED).
4. BRASS 90 DEGREE ELL (TWO REQUIRED EACH SIDE) TYPICAL
5. REDUCE MAINLINE SIZE AFTER 90, IF NECESSARY
6. BRASS UNION (ONE REQUIRED EACH SIDE)
7. HEIGHT PER CODE
8. PVC MALE ADAPTER
9. PVC MAINLINE PER LEGEND
10. 12" CUBE MINIMUM CONCRETE THRUST BLK

SECTION
NOT TO SCALE

D BACKFLOW COVER

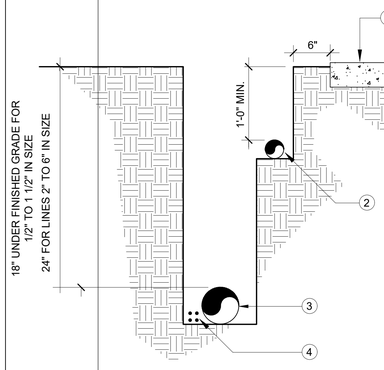
NOTE:
THE CONTRACTOR SHALL OFF-SET THE CONC. CURB TO CONFORM TO THE BACKFLOW DEVICE CONFIGURATION



1. LEMEUR BACKFLOW ENCLOSURE (OR EQUAL) PER LEGEND.
2. SEE BACKFLOW DETAIL 'C' THIS SHEET
3. 4" DEPTH OF PEA GRAVEL AS SHOWN.
4. CONCRETE BASE W/ ENCLOSURE ANCHORS MED. BROOM FIN. 6" DEEP MIN.
5. RECOMPACTED SUB-GRADE PER STRUCT. SOILS REPORT.
6. #3 RE-BAR CONT. IN CONC. TYP.

SECTION
NOT TO SCALE

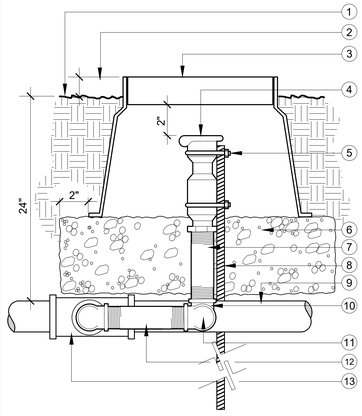
E TRENCHING DETAIL



1. WALK, PAVEMENT OR OTHER STRUCTURE
2. NON-PRESSURE LINE(LATERAL)
3. PRESSURE LINE (MAIN OR LATERAL)
4. DIRECT BURIAL LOW VOLTAGE CONTROL WIRES

NOTES:
1. TRENCHING & BACKFILLING SHALL BE PER 'STANDARD SPECIFICATIONS'
2. MINIMUM BACKFILL RELATIVE COMPACTION SHALL BE 95 % WITHIN 24" OF BLDG
3. BUNDLE CONTROL WIRES TOGETHER & TAPE TO PIPE AT 10' INTERVALS

F QUICK COUPLER

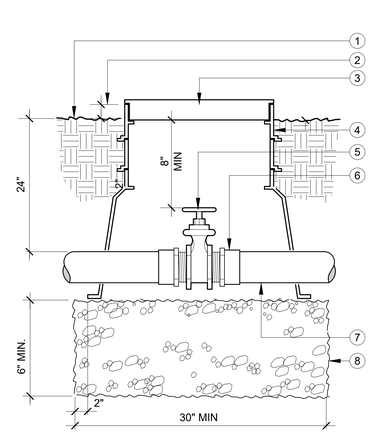


1. FINISH GRADE
2. 1" IN TURF AREAS AND 3" IN GROUND COVER AREAS.
3. ROUND PLASTIC VALVE BOX WITH LOCKING COVER MARKED BY HEAT BRANDING 2" HIGH LETTERING - "QC"
4. QUICK COUPLER PER LEGEND. INSTALL IN GROUND COVER AREA AS FIRST CHOICE LOCATION WHEN EVER POSSIBLE.
5. V.I.T. SPRINKLER TIE BANDS (TYP), 2 REQ. (TOP FASTENER SHALL SECURE HEAD)
6. 6" MIN. 3/8" CRUSHED GRAVEL.
7. PVC SCH. 80 NIPPLE LENGTH AS REQUIRED
8. #4 x 48" REBAR (TYP.)
9. MAINLINE PER PLAN AND LEGEND.
10. PVC SCH. 40 ELL (TXT)
11. STREET ELLS (MTxFT) - TWO (2) REQUIRED
12. PVC SCH. 80, 10" NIPPLE
13. MAINLINE "TEE" FITTING PER PLAN AND AND SCHEDULE

NOTES:
1. ALL THREADED CONNECTIONS SHALL BE WRAPPED WITH TEFLON TAPE OR EQUAL

SECTION
NOT TO SCALE

G GATE VALVE

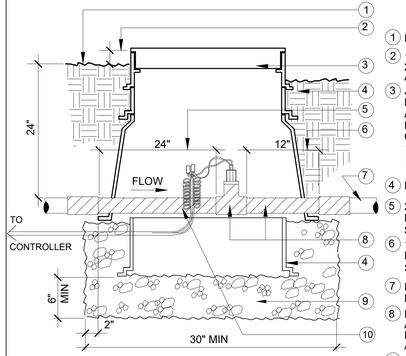


1. FINISH GRADE
2. 3" IN GROUND COVER AREAS
3. ROUND PLASTIC VALVE BOX WITH LOCKING COVER, MARKED BY HEAT BRANDING 2" LETTERS MARKED "G.V."
4. EXTENSION BOX
5. GATE VALVE PER LEGEND AND PLANS.
6. MALE ADAPTER TWO (2) REQUIRED
7. MAINLINE PER LEGEND AND PLANS.
8. 6" MIN. PEA GRAVEL

NOTES:
1. ALL THREADS TO BE WRAPPED WITH TEFLON TAPE OR EQUAL.

SECTION
NOT TO SCALE

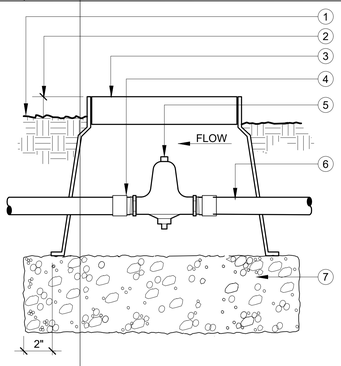
H FLOW SENSOR



1. FINISH GRADE
2. 1" IN TURF AREAS 2" IN GROUND COVER AREAS
3. JUMBO PLASTIC VALVE BOX W/ 2'-6" EXTENSION AND LOCKING COVER. BY BROOKS, CARSON OR EQUAL. W/ HEAT BRANDED 2" LETTERS - "FS"
4. EXTENSION
5. 24 INCH UPSTREAM MIN. LENGTH (10 X SENSOR SIZE PIPE DIAMETER)
6. 12 INCH DOWNSTREAM MIN. LENGTH (5 X SENSOR SIZE PIPE DIAMETER)
7. PVC MAINLINE PER LEGEND (SIZE PER PLAN)
8. FLOW SENSOR ASSEMBLY PER LEGEND PIPE SAME SIZE AS FLOW SENSOR
9. 6" MIN. PEA GRAVEL DRAIN SUMP
10. WIRES FROM FLOW SENSOR TO CONTROLLER PER MANUFACTURER'S SPEC. WIRE CONNECTIONS PER NOTES

SECTION
SCALE: 1" = 1'-0"

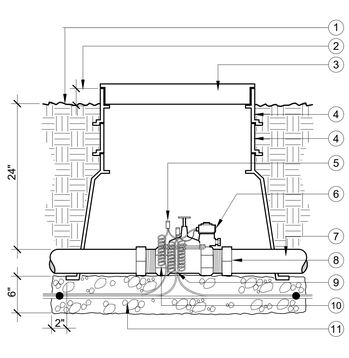
I PRESSURE REGULATOR



1. FINISH GRADE
2. 3" IN GROUND COVER, 1" IN TURF AREAS.
3. INSTALL PRESSURE REGULATOR IN A RECTANGULAR VALVE BOX WITH LOCKING COVER MARKED BY HEAT BRANDING 2" HIGH LETTERING - "PR"
4. MALE ADAPTER PER LEGEND, MAINLINE TYPE AND SPECIFICATIONS. (2) REQUIRED.
5. PRESSURE REGULATOR PER LEGEND, PLAN AND SPECIFICATIONS.
6. MAINLINE PER LEGEND, NOTES AND PLAN.
7. 6" MIN. 3/8" CRUSHED GRAVEL.

NOTES:
1. ALL THREADED CONNECTIONS TO BE WRAPPED WITH TEFLON TAPE OR EQUAL
2. PROVIDE GREEN VALVE BOX LIDS FOR RECLAIMED WATER SYSTEMS

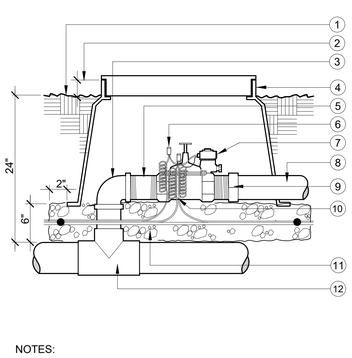
J MASTER CONTROL VALVE



1. FINISH GRADE
2. 1" IN TURF AREAS 2" IN GROUNDCOVER AREAS
3. RECTANGULAR PLASTIC VALVE BOX WITH 9 1/2" X 15 1/2" LOCKING COVER W/ HEAT BRANDED 2" LETTERS - "MV"
4. EXTENSION
5. WIRE CONNECTORS PER NOTES (SEE SHEET L3.303 DETAIL 'C')
6. ELECTRIC VALVE PER LEGEND
7. PVC MAINLINE PER LEGEND
8. PVC MALE ADAPTOR
9. COMMON WIRE EXPANSION CURL
10. CONTROL WIRE EXPANSION CURL
11. 6" MIN. PEA GRAVEL

NOTES:
1. ALL THREADS TO BE WRAPPED WITH TEFLON TAPE OR EQUAL.
2. EXPANSION CURL WRAP WIRE AROUND 1/2" DIA. PIPE 15 TIMES.
3. BUNDLE AND TAPE WIRE PER NOTES

K REMOTE CONTROL VALVE

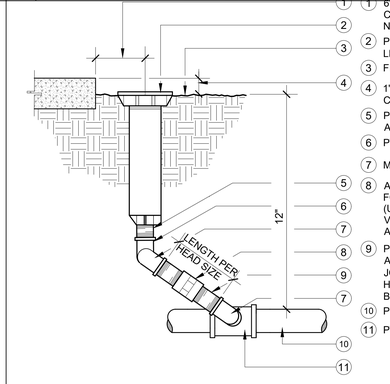


1. FINISH GRADE
2. 1" IN TURF AREAS 3" IN GROUNDCOVER AREAS
3. PVC 90 DEG. ELL
4. RECTANGULAR PLASTIC VALVE BOX - BROOKS, CARSON OR EQUAL W/ LOCKING COVER MARKED BY HEAT BRANDING 2" HIGH LETTERING W/ CONTROLLER STA. NUMBER
5. PVC SCH.80 3" NIPPLE
6. WIRE CONNECTORS PER NOTES
7. ELECTRIC VALVE PER LEGEND
8. PVC LATERAL LINE PER LEGEND
9. PVC MALE ADAPTOR
10. COMMON WIRE AND CONTROL WIRE W/ EXPANSION CURL BUNDLE AND TAPE PER NOTES (INSTALL WIRE PER LOCAL CODE)
11. 6" MIN. PEA GRAVEL
12. PVC MAINLINE AND FITTINGS (PER LEGEND)

NOTES:
1. ALL THREADED CONNECTIONS TO BE WRAPPED WITH TEFLON TAPE OR EQUAL.
2. EXPANSION CURL WRAP WIRE AROUND 1/2" DIA. PIPE 15 TIMES.

SECTION
SCALE: 1" = 1'-0"

L POP-UP SPRAY HEAD



1. 6" FROM EDGE OF PAVING TO CENTER OF SPRAY HEAD / NOZZLE.
2. POP-UP SPRAY HEAD PER LEGEND.
3. FINISH GRADE
4. 1" IN TURF AREAS, 3" IN GROUND COVER.
5. PVC SCH. 80 NIPPLE(S) LENGTH AS REQUIRED.
6. PVC ELL (TXT)
7. MARLEX STREET ELL (3 REQ.)
8. ANTI-DRAIN VALVE PER LEGEND FOR ROTOR HEADS. (USE IN HEAD ANTI-DRAIN VALVE FOR SPRAY HEAD WHEN AVAILABLE)
9. PVC SCH. 80 NIPPLE(S) LENGTH AS REQUIRED. OVERALL SWING JOINT SHOULD MATCH THE HEIGHT OF ROTOR HEAD AND BE NO LESS THAN 6" MIN.
10. PVC LATERAL LINE PER LEGEND.
11. PVC LATERAL LINE FITTING.

NOTES:
1. ALL THREADS TO BE WRAPPED WITH TEFLON TAPE OR EQUAL.

SECTION
NOT TO SCALE

CSDA DESIGN GROUP
LISTEN COLLABORATE CREATE

889 N. DOUGLAS STREET, SUITE 100
EL SEGUNDO, CA 90245
[T]: 310.821.9200
www.csdadesigngroup.com

ARCHITECT STAMP
LICENSED ARCHITECT
MICHAEL ROBERT SCHOEN
No. C-35165
RENEWAL DATE
FEBRUARY 28, 2019
STATE OF CALIFORNIA

CONSULTANT:
BrightView Design Group
1715 18th ST
SANTA MONICA, CA 90404
PH 310.829.4707
WWW.BRIGHTVIEW.COM

BV PROJECT #: 1730585

CONSULTANT STAMP
REGISTERED LANDSCAPE ARCHITECT
DANA B. BEELER
1948
Signature
2019/05/06
Date
2020/04/30
Expires
STATE OF CALIFORNIA

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CLIENT:
VAUGHN NEXT CENTURY LEARNING CENTER
LOS ANGELES UNIFIED SCHOOL DISTRICT BOARD OF EDUCATION
333 BEAUDRY AVE.
LOS ANGELES, CA 90017
(213) 241-1000

PROJECT NAME:
Vaughn Mainland DCAP
13330 Vaughn St. San Fernando, CA 91340

AUTHORITY APPROVAL:

MARK	DATE	DESCRIPTION

PROJECT NO.: 1949.01
50% CONSTRUCTION DOCUMENTS 12/20/2019

SHEET TITLE:
IRRIGATION DETAILS

SHEET NO.:
L-341

I. CONTRACTOR'S LANDSCAPE WORK RESPONSIBILITIES:

A. SCOPE OF WORK: THE CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, TRANSPORTATION AND SERVICES NECESSARY TO FURNISH AND INSTALL ALL PLANTING ELEMENTS AS SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN.

B. CONFORMANCE: ALL PLANTING WORK SHALL CONFORM TO APPLICABLE LOCAL, COUNTY AND/OR STATE CODES, REGULATIONS AND RULES.

C. LICENSE: ALL WORK SHALL BE PERFORMED BY A C-27 CALIFORNIA LICENSED CONTRACTOR.

D. PERMITS AND INSPECTIONS: THE CONTRACTOR SHALL OBTAIN, COORDINATE AND PAY FOR ANY AND ALL PERMITS, AND AGENCY INSPECTIONS AS REQUIRED.

E. INSURANCE: THE CONTRACTOR SHALL CARRY ALL WORKMEN'S COMPENSATION, PUBLIC LIABILITY AND PROPERTY DAMAGE INSURANCE AS REQUIRED BY ALL APPLICABLE CODES, REGULATIONS AND BY THE OWNER (JOB SUPERINTENDENT).

F. SITE VERIFICATION: PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL VERIFY, AT THE SITE, ALL CONDITIONS AND DIMENSIONS SHOWN ON THE PLANS AFFECTING THE INTENDED DESIGN OF THE LANDSCAPE WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE OWNER (JOB SUPERINTENDENT) IMMEDIATELY.

G. LIABLE FOR ENCROACHMENT: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ENCROACHMENT ONTO ADJACENT PROPERTY, RIGHT -OF-WAYS, EASEMENTS, SETBACKS OR ANY OTHER LEGAL PROPERTY RESTRICTION EITHER MARKED OR UNMARKED.

H. COORDINATION OF ACTIVITIES: THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF REQUIRED ACTIVITIES WITH ALL OTHER TRADES THROUGH THE OWNER (JOB SUPERINTENDENT).

I. FIELD STAKING: PRIOR TO INSTALLATION, THE CONTRACTOR SHALL LOCATE BY STAKES, OR OTHER MEANS, ALL CONTAINER TREES, SHRUBS AND VINE LOCATIONS AND HEADER BOARD/MOW CURB LAYOUT FOR APPROVAL BY THE OWNER (JOB SUPERINTENDENT) AND LANDSCAPE ARCHITECT.

J. NOTIFICATION OF DISCREPANCIES: ANY DISCREPANCIES BETWEEN THE FIELD CONDITIONS AND THE CONTRACT DOCUMENTS AND/OR THE DESIGN INTENT AFFECTING THE SUCCESSFUL COMPLETION AND COST OF THE PROJECT SHALL BE REPORTED TO THE OWNER (JOB SUPERINTENDENT) AND LANDSCAPE ARCHITECT IMMEDIATELY. ALL WORK RELATED TO THE PROBLEM AREA SHALL CEASE UNTIL THE DISCREPANCIES HAVE BEEN RESOLVED BY THE OWNER (JOB SUPERINTENDENT) OR LANDSCAPE ARCHITECT IN WRITING. ANY CONTINUATION OF WORK IS AT THE CONTRACTOR'S RISK AND EXPENSE.

K. LIABLE FOR DAMAGE: THE CONTRACTOR SHALL BE LIABLE FOR DAMAGE TO ALL UTILITIES, CONSTRUCTION, IRRIGATION AND PLANTING ELEMENTS, EXISTING OR NEW, MARKED OR UNMARKED, AND SHALL REPAIR OR REPLACE ANY DAMAGED IMPROVEMENTS IN MANNER ACCEPTABLE TO THE OWNER (JOB SUPERINTENDENT).

L. LIABLE FOR LOSS: THE CONTRACTOR SHALL BE RESPONSIBLE AND LIABLE FOR ANY LOSS TO EQUIPMENT, PARTS AND MATERIALS ON THIS PROJECT UNTIL COMPLETION AND ACCEPTANCE OF THE JOB IN WRITING FROM THE OWNER (JOB SUPERINTENDENT).

M. WRITTEN GUARANTEE: ALL WORK SHALL BE GUARANTEED BY THE CONTRACTOR AS TO MATERIAL AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FOLLOWING THE DATE OF FINAL ACCEPTANCE OF PROJECT. THE CONTRACTOR SHALL PROVIDE A WRITTEN GUARANTEE ON HIS LETTERHEAD AT THE TIME OF THE FINAL INSPECTION.

N. WRITTEN CERTIFICATION: THE CONTRACTOR SHALL PROVIDE A WRITTEN CERTIFICATION THAT THE PLANTING WORK IS INSTALLED IN FULL COMPLIANCE WITH THE CONTRACT DOCUMENTS. ANY APPROVED SUBSTITUTIONS OR DEVIATIONS FROM THE PLANS OR SPECIFICATIONS SHALL BE NOTED. THIS CERTIFICATION SHALL BE ON THE CONTRACTOR'S LETTERHEAD WITH HIS SIGNATURE AND **CALIFORNIA C-27** CONTRACTOR'S LICENSE NUMBER.

O. PLANT MATERIALS APPROVAL: THE CONTRACTOR SHALL, WITHIN FIFTEEN (15) WORKING DAYS FOLLOWING AWARD OF CONTRACT, SUBMIT TO THE OWNER AND LANDSCAPE ARCHITECT A COMPLETE LIST OF REQUIRED CONTAINER AND FLATTED GROUNDCOVER MATERIAL. THE LIST SHALL INCLUDE EACH TREE, SHRUB AND GROUNDCOVER; THEIR BOTANICAL AND COMMON NAME; EACH REQUIRED QUANTITY AND SIZE; THEIR NURSERY SOURCE LOCATIONS AND NURSERY SALES PERSON TO CONTACT; THEIR SPECIFICATIONS AS TO HEIGHT, SPREAD AND TRUNK CALIPER AT ONE FOOT (1') ABOVE GRADE (FOR TREES). A REPRESENTATIVE PHOTO OF EACH REQUIRED TREE SHALL ACCOMPANY THE SUBMITTAL.

P. STATE CIVIL CODE TITLE 7: TO THE EXTENT THAT THIS PROJECT IS GOVERNED BY TITLE 7 OF THE STATE CIVIL CODE, THE CONTRACTOR SHALL CONFORM WITH THE FUNCTIONALITY REQUIREMENT OF TITLE 7 OF THE CIVIL CODE.

II. OWNER'S CONSTRUCTION WORK RESPONSIBILITIES:

A. CONSTRUCTION RESPONSIBILITIES: THE OWNER WILL BE DIRECTLY RESPONSIBLE FOR ALL ASPECTS OF CONSTRUCTION INCLUDING ALL LANDSCAPE INSPECTIONS. ALL FIELD MEETINGS SHALL BE INITIATED BY THE CONTRACTOR AND COORDINATED THROUGH THE OWNER (JOB SUPERINTENDENT) TO THE LANDSCAPE ARCHITECT. THE LANDSCAPE ARCHITECT SHALL BE IN A SUPPORT OBSERVATION ROLE TO THE OWNER (JOB SUPERINTENDENT) PROVIDING INTERPRETIVE ADVICE ONLY IN ACCORDANCE WITH THE OBSERVATION SCHEDULE AS NOTED.

B. DETERMINING LEGAL AND PHYSICAL ELEMENTS: OWNER (JOB SUPERINTENDENT) SHALL BE RESPONSIBLE FOR DETERMINING PROPERTY LINES, RIGHT-OF-WAYS, TRACT BOUNDARIES, GRADES, EASEMENTS, UTILITY LOCATIONS (ABOVE AND BELOW GRADE) AND ANY OTHER LEGAL OR PHYSICAL ELEMENTS AS REQUIRED FOR THE SUCCESSFUL COMPLETION OF THE WORK. CONTRACTOR SHALL NOT BE PERMITTED TO PROCEED WITH ANY WORK WITHOUT DETERMINATION OF THE ABOVE INFORMATION.

C. ROUGH GRADE: OWNER (JOB SUPERINTENDENT) SHALL PROVIDE ROUGH GRADE TO WITHIN 1/10TH OF ONE FOOT FROM FINISH GRADE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FINISH GRADE AND DRAINAGE OF ALL CONSTRUCTION ELEMENTS AT SPECIFIED GRADIENT.

D. SITE DISCREPANCIES: ALL DISCREPANCIES IN SITE CONDITIONS, DRAWINGS OR SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER (JOB SUPERINTENDENT) AND LANDSCAPE ARCHITECT IMMEDIATELY. IT IS THE OWNER'S (JOB SUPERINTENDENT'S) RESPONSIBILITY TO CONSULT THE LANDSCAPE ARCHITECT PRIOR TO ANY FURTHER WORK IN THE DISCREPANCY AREA. ANY UNREPORTED DISCREPANCY AND CONTINUED WORK WITHOUT WRITTEN AUTHORIZATION FROM THE OWNER AND LANDSCAPE ARCHITECT SHALL BE AT THE CONTRACTOR'S RISK AND EXPENSE.

E. CONTRACT FULFILLMENT: ALL QUESTIONS RELATING TO INTERPRETATION OF THE DRAWINGS AND SPECIFICATIONS, QUALITY OF WORK AND ACCEPTABLE FULFILLMENT OF INTENT OF THE CONTRACT DOCUMENTS SHALL BE DECIDED BY THE OWNER (JOB SUPERINTENDENT) AND LANDSCAPE ARCHITECT CONCURRENTLY.

III. REQUIRED FIELD OBSERVATION WORK:

A. REQUIRED FIELD OBSERVATION WORK: THESE PLANS WERE PREPARED WITH THE UNDERSTANDING THAT THE OWNER OF SAID PLANS WILL USE BRIGHTVIEW DESIGN GROUP TO PROVIDE "FULL" CONTRACT SERVICES INCLUDING FIELD OBSERVATION SERVICES DURING CONSTRUCTION. FAILURE TO USE BRIGHTVIEW DESIGN GROUP TO PROVIDE AND COMPLETE THE FIELD OBSERVATION SERVICES SET FORTH HEREIN WILL SIGNIFICANTLY INCREASE THE RISK OF LOSS RESULTING, AMONG OTHER CAUSES, FROM MISINTERPRETATION OF THE INTENT OF THE DESIGN, UNAUTHORIZED MODIFICATIONS THERETO, AND FAILURE TO DETECT ERRORS AND OMISSIONS IN THE PLANS AND SPECIFICATIONS BEFORE THEY BECOME COSTLY MISTAKES BUILT INTO THE PROJECT. THEREFORE, IN THE EVENT THAT BRIGHTVIEW DESIGN GROUP IS OTHERWISE PRECLUDED FROM COMPLETING THE FIELD OBSERVATION SERVICES SET FORTH HEREIN, THE OWNER, OR SUBSEQUENT OWNER (INDIVIDUALS OR CORPORATIONS WHO HAVE PURCHASED THESE PLANS WITH THE PROJECT), AGREES TO HOLD HARMLESS, INDEMNIFY, AND DEFEND BRIGHTVIEW DESIGN GROUP FROM AND AGAINST ANY AND ALL CLAIMS.

IV. LANDSCAPE ARCHITECT'S LANDSCAPE FIELD OBSERVATION SCHEDULE:

A. FIELD OBSERVATION COORDINATION: THE FOLLOWING OBSERVATIONS SHALL BE INITIATED BY THE CONTRACTOR AND COORDINATED THROUGH THE OWNER (JOB SUPERINTENDENT). THE CONTRACTOR SHALL NOTIFY THE OWNER (JOB SUPERINTENDENT) AND LANDSCAPE ARCHITECT NOT LESS THAN FORTY-EIGHT (48) HOURS IN ADVANCE OF ANY OBSERVATION. CONTINUED WORK WITHOUT OBSERVATION OF THESE PHASES OF WORK IS AT THE CONTRACTOR'S RISK, WITH ANY REQUIRED CHANGE OR MODIFICATIONS AT THE CONTRACTOR'S EXPENSE. THE OWNER (JOB SUPERINTENDENT) SHALL INFORM THE LANDSCAPE ARCHITECT AS TO THE PURPOSE AND TIME OF THE OBSERVATION FORTY-EIGHT (48) HOURS IN ADVANCE.

B. CONTRACTOR ORIENTATION/PRE-CONSTRUCTION MEETING: THIS MEETING SHALL BE CONDUCTED TO DISCUSS THE SPECIFICATIONS, POSSIBLE DISCREPANCIES, SITE CONDITIONS AND OTHER ASPECTS OF THE PROJECT LANDSCAPE WORK SUCH AS PERSONNEL, SCHEDULE AND REQUIREMENTS FOR STARTING WORK. PRIOR TO THE MEETING, CONTRACTOR SHALL THOROUGHLY ACQUAINT HIMSELF WITH SITE CONDITIONS AND THE PLANS, DETAILS AND SPECIFICATIONS.

C. WEED ABATEMENT: THIS OBSERVATION SHALL BE PERFORMED AFTER THE WEED ABATEMENT CYCLE HAS BEEN COMPLETED TO REVIEW THE DEGREE OF WEED KILL.

D. PLANT MATERIAL APPROVAL, LAYOUT AND FINE GRADE OBSERVATION: THIS OBSERVATION VISIT SHALL BE PERFORMED AFTER PLACEMENT OR STAKING IN THE FIELD OF ALL PLANT MATERIALS PER THE PLANS. CONTAINER PLANTS SHALL BE PLACED ON SITE. BOXED SPECIMENS SHALL BE STAKED AS TO LOCATION. OWNER (JOB SUPERINTENDENT) AND LANDSCAPE ARCHITECT SHALL APPROVE PLANT MATERIAL TYPE AND QUALITY; LOCATIONS OF ALL PLANT MATERIAL; BACKFILL MIX AND FINE GRADE PRIOR TO ANY PLANTING WORK.

E. PROGRESS/INSTALLATION INSPECTIONS: PERIODIC INSPECTIONS SHALL BE PERFORMED BY THE OWNER (JOB SUPERINTENDENT) DURING CONSTRUCTION OPERATIONS TO ENSURE CONFORMANCE TO PLANS AND SPECIFICATIONS.

F. PLANT MATERIAL/HYDROSEED/PRE-MAINTENANCE OBSERVATION: THIS OBSERVATION WILL BE PERFORMED TO REVIEW ALL WORK UNDER THE CONTRACT FOR COMPLETENESS. SCHEDULING SHALL COINCIDE WITH ANY HYDROSEEDING WORK TO BE PERFORMED UNDER THIS CONTRACT. THE OWNER (JOB SUPERINTENDENT) AND LANDSCAPE ARCHITECT SHALL VERIFY CONFORMANCE OF HYDROSEED MATERIALS AND SEED PRIOR TO APPLICATION, AND PRIOR TO STARTING THE MAINTENANCE PERIOD.

G. MAINTENANCE OBSERVATIONS: THESE OBSERVATION VISITS SHALL BE PERFORMED AT THE END OF EACH THIRTY (30) DAY INTERVAL OF THE MAINTENANCE PERIOD WITH THE OWNER (JOB SUPERINTENDENT) AND LANDSCAPE ARCHITECT TO ENSURE CONFORMANCE WITH THE MAINTENANCE SPECIFICATIONS. REFER TO SECTION VI, THIS SHEET FOR ADDITIONAL INFORMATION.

H. FINAL OBSERVATION/PROJECT SUBSTANTIAL CONFORMANCE: THIS OBSERVATION VISIT WILL BE PERFORMED TO REVIEW ALL ASPECTS OF THE CONTRACTED WORK PRIOR TO RELEASING THE PROJECT TO THE OWNER.

V. SCOPE OF LANDSCAPE CONSTRUCTION:

A. BASE SHEETS:

1. BASE SHEETS WERE DERIVED FROM PLANS:
PREPARED BY: CSDA
TITLED: SITE PLAN
DATED: X/XX/2019 REVISED: XXXXX
COPIES AVAILABLE FROM OWNER UPON REQUEST.

B. GENERAL PLANTING NOTES:

1. SITE PREPARATION: PRIOR TO PROCEEDING WITH ANY WORK UNDER THIS CONTRACT, THE CONTRACTOR SHALL REMOVE ALL ROCKS, WEEDS, DEBRIS, AND OTHER EXTRANEOUS MATERIAL FROM THE JOB SITE AND DISPOSE OF IT OFF-SITE IN A SUITABLE AND LAWFUL MANNER.

2. PLANTING AREAS: UPON COMPLETION OF ALL IRRIGATION WORK, ALL PLANTING AREAS SHALL BE SPRAYED WITH A SYSTEMIC HERBICIDE; CLEARED AND GRUBBED OF SURFACE WEED GROWTH; AND SHALL BE WEED FREE PRIOR TO PROCEEDING WITH ANY PLANTING WORK.

3. FINISH GRADE: THE CONTRACTOR SHALL ESTABLISH FINISH GRADE A MINIMUM OF SIX INCHES (6") BELOW THE FINISH FLOOR OF BUILDINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SMOOTH EVEN FINISH GRADES AT BUILDINGS, WALKS, OTHER PERMANENT OBJECTS AND LIMITS OF WORK. ALL CHANGES IN GRADE SHALL BE BLENDED UNIFORM VERTICAL CURVES. ALL AREAS TO BE PLANTED IN TURF SHALL BE SMOOTHED WITH RAKES AND FLOATS TO THE OWNER'S (JOB SUPERINTENDENT) SATISFACTION. OBJECTS SUCH AS ROCKS, DEBRIS, CLODS OR OTHER EXTRANEOUS MATERIAL SHALL BE STOCK-PILED AND REMOVED.

4. DRAINAGE: THE CONTRACTOR SHALL BE RESPONSIBLE FOR DRAINAGE IN ALL PLANTING AREAS IN ACCORDANCE WITH THE PLANS, DETAILS, AND SPECIFICATIONS AT A MINIMUM 2% GRADIENT.

5. IMPORT SOIL: ON-SITE SOIL SHALL BE USED FOR ALL LANDSCAPE BERMS AND MOUNDING. WHEN ON-SITE SOIL IS NOT AVAILABLE, IMPORT SOIL SHALL MEET THE FOLLOWING SPECIFICATIONS:

   SILT PLUS CLAY CONTENT OF THE IMPORT SOIL SHALL NOT EXCEED 20% BY WEIGHT WITH A MINIMUM 95% PASSING THE 2.0 MM SIEVE. THE SODIUM ABSORPTION RATIO (SAR) SHALL NOT EXCEED 6.0 MM. AND THE ELECTRICAL CONDUCTIVITY (ECE) OF THE SATURATION EXTRACT OF THIS SOIL SHALL NOT EXCEED 3.0 MMHOS /CM AT 250C. THE BORON CONTENT OF THIS SOIL SHALL BE NO GREATER THAN 1 PPM AS MEASURED ON THE SATURATION EXTRACT. IN ORDER TO INSURE CONFORMANCE, SAMPLES OF THE IMPORT SOIL SHALL BE SUBMITTED TO THE SOIL LABORATORY FOR ANALYSIS PRIOR TO IMPORT ON SITE.

   IMPORTED SOIL FOR LID PLANTERS AND BIOSWALES TO MEET ALL INFILTRATION AND OTHER REQUIREMENTS AS SPECIFICED ON CIVIL ENGINEER'S PLANS.

6. PLANT MATERIAL: ALL PLANT MATERIAL SHALL BE OF A SIZE, CHARACTER AND QUALITY WHICH MEETS THE ACCEPTED INDUSTRY STANDARDS FOR THAT PLANT AND BE FREE FROM INSECTS, THEIR EGGS, DISEASE, WEEDS, OR OTHER DETRIMENTAL CHARACTERISTICS.

7. HANDLING/STORAGE: ALL PLANTS SHALL BE HANDLED AND STORED SO THEY ARE ADEQUATELY PROTECTED FROM DRYING OUT, SUN, WINDBURN, VANDALISM OR ANY OTHER INJURY. UPON REJECTION OF PLANT MATERIAL, THE OWNER (JOB SUPERINTENDENT) AND LANDSCAPE ARCHITECT MAY REJECT ANY AND ALL PLANT MATERIAL REGARDED AS UNSUITABLE AT ANY TIME. SUCH PLANTS SHALL BE REMOVED FROM THE JOB SITE IMMEDIATELY AND BE REPLACED AT NO ADDITIONAL COST TO THE OWNER.

9. PLANTING: ALL PLANT MATERIAL SHALL BE AS SPECIFIED AND PLANTED AS DETAILED AND NOTED HEREIN.

10. GROUNDCOVER PLANTING: ALL GROUNDCOVER AREAS NOTED ON THE PLANS SHALL BE PLANTED WITH ROOTED CUTTINGS FROM FLATS IN STAGGERED ROWS CONTINUOUSLY UNDER TREES AND SHRUBS AT THE SPACING INDICATED ON THE PLANS.

11. SOIL PREPARATION: ALL PLANTING AREAS TO RECEIVE GROUNDCOVER FROM FLATS AND/OR TURF (EXCEPT GROUNDCOVER AREAS ON SLOPES 3:1 OR GREATER) SHALL RECEIVE AMENDMENTS PER HORTICULTURAL SOILS REPORT AND SHALL BE UNIFORMLY BLENDED INTO THE UPPER SURFACE SOIL TO A DEPTH AS REQUIRED IN THE HORTICULTURAL SOILS REPORT. FOR AMENDMENT AMT./PER 1000 SQ. FT. REFER TO HORTICULTURAL SOILS REPORT

12. BACKFILL MIX: BACKFILL MIX AROUND ALL CONTAINER PLANT MATERIALS SHALL CONSIST OF THE FOLLOWING UNIFORMLY BLENDED MATERIALS:

    REFER TO HORTICULTURAL SOILS REPORT

13. PLANTING TABLETS: AS INDICATED ON THE DETAILS, PLANT TABLETS SHALL BE 'GRO-POWER' PLANTING TABLETS 12-8-8 (7 GRAM OR EQUAL) AND SHALL BE FURNISHED IN THE FOLLOWING RATES. PLANT TABLETS SHALL BE PLACED AT THE TOP OF THE ROOTBALL, APPROXIMATELY TWO INCHES (2") FROM ROOT TIP AT EVEN SPACING AROUND THE PLANT.

    A. THREE (3) TABLETS PER ONE (1) GALLON CONTAINER
    B. NINE (9) TABLETS PER FIVE (5) GALLON CONTAINER
    C. FIFTEEN (15) TABLETS PER FIFTEEN (15) GALLON CONTAINER
    D. SIXTEEN (16) TABLETS PER TWENTY INCH (20") BOX AND TWENTY-FOUR INCH (24") BOX
    E. TWENTY (20) TABLETS PER THIRTY INCH (30") BOX AND THIRTY-SIX INCH (36") BOX
    F. TWENTY-TWO (22) TABLETS PER FORTY-TWO INCH (42") BOX AND FORTY-EIGHT INCH (48") BOX
    G. THIRTY-SIX (36) TABLETS PER SIXTY INCH (60") BOX
    H. FORTY-FIVE (45) TABLETS PER SEVENTY-TWO INCH (72") BOX
    I. FORTY-EIGHT (48) TABLETS PER EIGHTY-FOUR INCH (84") BOX

14. VINES: ALL VINES SHALL BE PLANTED AS HAVE PER THE SHRUB/VINE PLANTING DETAIL AND SHALL THE WOOD SUPPORT STAKE CAREFULLY REMOVED WITHOUT DAMAGE TO THE PLANT OR ROOTBALL.

    A. MASONRY WALLS: ON MASONRY WALLS, USE ADHESIVE TYPE VINE SUPPORTS WITH SILICONE ADHESIVE AND HEAVY DUTY VINE TIES. ON MASONRY WALLS, INSTALL A MINIMUM OF FIVE (5) LOCATIONS PER EACH FIVE (5) GALLON VINE AND TEN (10) LOCATIONS PER EACH FIFTEEN (15) GALLON VINE.

1. REFER TO THE PROJECT CERTIFIED ARBORIST'S REPORT FOR ALL PROJECT TREE RECOMMENDATIONS PRIOR TO ANY WORK ON EXISTING TREE PROTECTION MEASURES AND ADHERE TO ALL PROJECT AND GOVERNING AGENCY REQUIREMENTS.

2. THE TREE PROTECTION ZONE (TPZ) SHOWN ON PLAN SHALL ENCOMPASS THE TREE CANOPY DRIP LINE PLUS AN ADDITIONAL RADIAL WIDTH OF 10'-0" OR AS RECOMMENDED BY THE PROJECT ARBORIST.

3. PROVIDE APPROVED MULCH TO THE ENTIRE AREA WITHIN THE TPZ. DURING CONSTRUCTION, MAINTAIN A 4"-6" LAYER OF MULCH OVER THE SOIL SURFACE TO HELP REDUCE SOIL COMPACTION, IMPROVE AERATION, ENHANCE MOISTURE RETENTION AND REDUCE TEMPERATURE EXTREMES.

4. PROVIDE TEMPORARY FENCING ALONG THE TPZ WITH A 6'-0" HIGH CHAIN LINK FENCE WITH GREEN SCREEN FABRIC. PROVIDE SIGNAGE ON FENCE STATING: "TREE PROTECTION ZONE - KEEP OUT".

5. IF TRENCHING BECOMES NECESSARY WITHIN THE TPZ, ALL TRENCHES SHALL BE HAND DUG TO NOT DAMAGE ROOT ZONE. NO ROOTS LARGER THAN 2" IN DIAMETER SHALL BE CUT UNLESS NO OTHER ALTERNATIVE IS FEASIBLE. ALL SMALLER ROOTS THAT REQUIRE CUTTING SHALL BE CUT WITH PRUNING SAWS AND CUTS SHALL BE MADE FLUSH WITH THE SIDE OF THE TRENCH. IF AT ANY TIME 25% OF THE AREA WITHIN THE TPZ IS BEING SEPARATED FROM THE TREE BY THE LARGER TRENCH, THEN THE LINE SHALL BE DETERMINED TO EITHER RELOCATE IT OR FOR IT TO BE INSTALLED BY BORING AS RECOMMENDED BY THE PROJECT ARBORIST.

6. REMOVAL OF HARDSCAPE AND/OR EXCAVATION WITHIN THE TPZ SHALL BE DONE MANUALLY. NO EXCAVATION TYPE EQUIPMENT SHALL BE ALLOWED FOR THIS WORK.

7. THE MINIMUM DISTANCE BETWEEN AN OPEN TRENCH AND ANY TREE SHALL BE BETWEEN 6" TO 1'-0" FOR EVERY INCH OF TRUNK DIAMETER MEASURED AT 4'-6" ABOVE EXISTING GRADE AND IS DEPENDING ON THE SPECIES OF TREE. REFER TO ARBORIST RECOMMENDATIONS. MINIMUM CLEARANCE SHALL BE 10'-0" FROM THE TRUNK OF THE TREE.

8. IN THE EVENT ROOT PRUNING IS REQUIRED TO ACCOMMODATE GRADE CHANGES OR INSTALLATION OF HARDSCAPE FEATURES, THE ROOT PRUNING PROCEDURES SHALL BE DIRECTED BY THE PROJECT ARBORIST AS MENTIONED ABOVE.

9. AT NO TIME SHALL ANY EQUIPMENT, MATERIALS, SUPPLIES OR FILL SOIL BE ALLOWED TO BE STAGED WITHIN THE TPZ UNLESS DIRECTED BY THE OWNER.

10. AS RECOMMENDED, PRUNE AND FERTILIZE THE EXISTING TREES AFTER THE COMPLETION OF ALL EXTERIOR SITE WORK ON BUILDING/ STRUCTURES PRIOR TO THE BEGINNING OF ANY PROPOSED LANDSCAPE IMPROVEMENTS.

VIII. SPECIAL PLANTING NOTES:

1. ALL LANDSCAPE AREAS SHALL DRAIN TO THE AREA DRAIN AT MIN. 2% PER CIVIL ENGINEERS GRADING PLAN. FINAL TREE AND SHRUB PLACEMENT TO BE APPROVED BY OWNER/LANDSCAPE ARCHITECT PRIOR TO PLANTING.

2. THE CONTRACTOR SHALL OBSERVE THE FOLLOWING PLANTING REQUIREMENTS FOR ALL TREES:

   A. TREES SHALL BE A MINIMUM OF 5'-0" FROM ALL HARDSCAPE, CENTERED IN A 10' -0" WIDE PLANTING AREA WITHOUT A ROOT BARRIER.
   B. ALL TREES THAT ARE WITHIN 5'-0" OF HARDSCAPE ELEMENTS SHALL HAVE A ROOT BARRIER. TREES SHALL NOT BE PLANTED IN AREAS LESS THAN THE MINIMUM PLANTING AREA SPECIFIED IN THE LEGEND
   C. THE CONTRACTOR SHALL VERIFY ALL MINIMUM TREE SPACING REQUIREMENTS PRIOR TO PLANTING. TREES NOT MEETING THE REQUIREMENTS SHALL NOT BE PLANTED AND SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER/ LANDSCAPE ARCHITECT.

3. ALL LANDSCAPING SHALL BE INSTALLED BEFORE FINAL INSPECTION.

4. MULCH: ALL APPROVED MULCH SHALL BE COMPOSTED RECYCLED LANDSCAPE GREEN WASTE MULCH WITHOUT MANURE/ANIMAL BYPRODUCTS.

HORTICULTURAL SOILS TESTING/AMENDMENTS:

IF A REPORT IS NOT AVAILABLE BY PROJECT OWNER, CONTRACTOR SHALL PROVIDE A SITE SPECIFIC HORTICULTURAL SOILS REPORT. THIS REPORT IS TO BE PREPARED BY AN OWNER APPROVED AGRONOMIST. THIS REPORT CAN BE PREPARED AND AVAILABLE FROM:
WAYPOINT ANALYTICAL
4741 E. HUNTER AVE, UNIT "A"
ANAHEIM, CA 92807
CONTACT: JOE KIEFER
PHONE: 714-282-8777

CONTRACTOR TO SUBMIT THIS SITE SPECIFIC HORTICULTURAL SOILS REPORT TO THE OWNER AND LANDSCAPE ARCHITECT 30 DAYS PRIOR TO LANDSCAPE INSTALLATION.

1. SOIL PREPARATION AMENDMENTS
2. TREE AND SHRUB BACKFILL AMENDMENTS
3. POST PLANTING MAINTENANCE FERTILIZER APPLICATIONS
4. INFILTRATION RATE/PERCOLATION RATE

AGRONOMIST OR COMPETENT INDIVIDUAL TO EVALUATE VARIOUS SOIL TYPES, TEXTURES, COLORS, ETC. AND SAMPLE THE SITE ACCORDINGLY. CONTRACTOR TO SAMPLES THE LOCATION AS SHOWN ON THE ISSUED PROJECT LOCATION EXHIBIT PROVIDED BY THE OWNER/LANDSCAPE ARCHITECT. IDENTIFY/MARK SAMPLE LOCATIONS ON A REDUCED SITE PLAN TO BE ATTACHED TO THE REPORT AND AT A MINIMUM THE FOLLOWING SAMPLES ARE RECOMMENDED:

1. PROJECT ENTRY LOCATION - 1 SAMPLE EACH
2. PARK PROJECTS - 2 SAMPLES EACH
3. CUT SLOPES - SAMPLES VARY PER SITE BUT WILL INCLUDE VARIOUS SOIL TYPES/ELEVATIONS THROUGHOUT THE SITE (SEPARATE SAMPLES FOR EACH SOIL TYPE AND CLASSIFICATION)
4. FILL SLOPES - SAMPLES VARY PER SITE BUT WILL INCLUDE INCLUDE VARIOUS SOIL TYPES/ELEVATIONS THROUGHOUT THE SITE
5. MODEL HOMES - 2 SAMPLES EACH

BACK FILL SPECIFICATIONS FOR ALL PLANT MATERIAL INCLUDING ORCHARD AND VINEYARDS (RATE PER CUBIC YARD OF MIX):

1. 20% PER CUBIC YARD OF ORGANIC AMENDMENT COMPRISED OF RECYCLED/LANDSCAPE WASTE (NO ANIMAL WASTE)
2. SLOW RELEASE FERTILIZER TABLETS IN THE UPPER 12 INCHES OF BACK FILL.

IF A SITE SPECIFIC REPORT IS NOT AVAILABLE THEN SOIL PREPARATION SPECIFICATIONS (AREAS 3:1 AND LESS) ARE TO BE USED FOR BIDDING PRIOR TO THE ACTUAL HORTICULTURAL SOILS TEST RESULTS AND REPORT (RATE PER 1,000 SF) - AS FOLLOWS:

1. 4 YARDS PER THOUSAND ORGANIC AMENDMENT COMPRISED OF RECYCLED/LANDSCAPE WASTE
2. 20 LBS SOIL SULPHUR
3. 10 LBS GYPSUM
4. 20 LBS 16-16-16 COMMERCIAL FERTILIZER

PLANTING SCHEDULE
SHRUBS

SYMBOL	BOTANICAL NAME COMMON NAME	SIZE	SPACING	WUCOLS	COMMENTS
	BACCHARIS PILULARIS 'PIGEON POINT' DWARF COYOTE BUSH	5 GAL.	36" O.C.	L	-
	ENCELIA CALIFORNICA BUSH SUNFLOWER	5 GAL.	36" O.C.	L	-
	MUHLENBERGIA RIGENS DEER GRASS	1 GAL.	30" O.C.	L	-

PLANTING SCHEDULE
TREE

SYMBOL	BOTANICAL NAME COMMON NAME	SIZE	SPACING	WUCOLS	COMMENTS
	PROSOPIS CHILENSIS CHILEAN MESQUITE	24"BOX	PER PLAN	L	-
	QUERCUS AGRIFOLIA CALIFORNIA COAST LIVE OAK	48"BOX	PER PLAN	L	--
	UMBELLULARIA CALIFORNICA CALIFORNIA BAY LAUREL	24" BOX	PER PLAN	M	-

CSDA DESIGN GROUP
LISTEN COLLABORATE CREATE
889 N. DOUGLAS STREET, SUITE 100
EL SEGUNDO, CA 90245
[T]: 310.821.9200
www.csdadesigngroup.com

ARCHITECT STAMP
LICENSED ARCHITECT
MICHAEL ROBERT SCHOEN
No. C-35165
RENEWAL DATE
FEBRUARY 29, 2020
STATE OF CALIFORNIA

CONSULTANT:
BrightView Design Group
1715 18th ST
SANTA MONICA, CA 90404
PH 310.829.4707
WWW.BRIGHTVIEW.COM

BV PROJECT #: 1730585

CONSULTANT STAMP
REGISTERED LANDSCAPE ARCHITECT
DANA B. BERLO
1946
Signature
2019/05/09
Date
2020/04/30
Expires
STATE OF CALIFORNIA

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CLIENT:
VAUGHN NEXT CENTURY LEARNING CENTER
LOS ANGELES UNIFIED SCHOOL DISTRICT BOARD OF EDUCATION
333 BEAUDRY AVE.
LOS ANGELES, CA 90017
(213) 241-1000

PROJECT NAME:
Vaughn Mainland DCAP
13330 Vaughn St. San Fernando, CA 91340

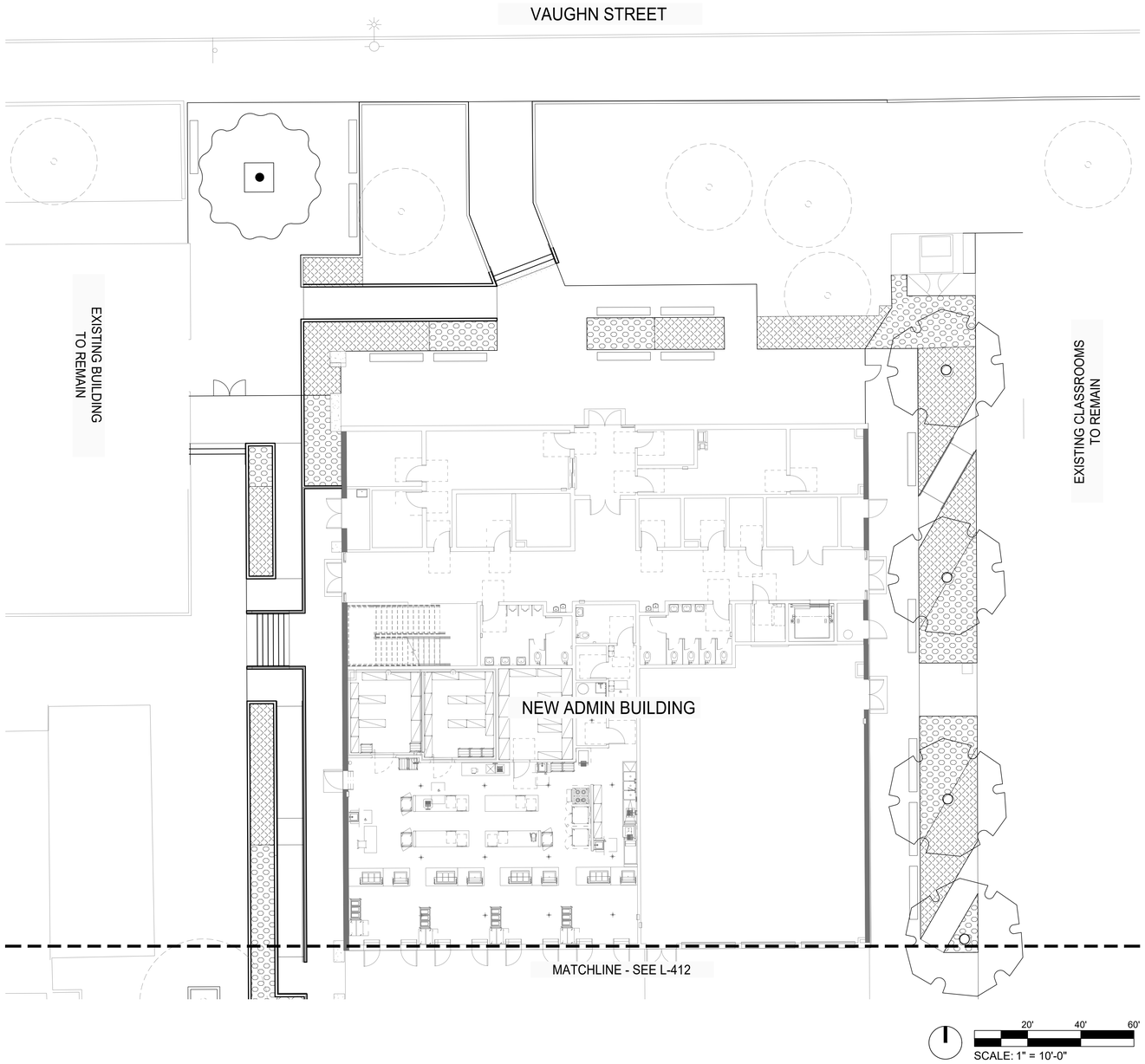
AUTHORITY APPROVAL:

MARK	DATE	DESCRIPTION

PROJECT NO.: **1949.01**
50% CONSTRUCTION DOCUMENTS 12/20/2019

SHEET TITLE:
PLANTING NOTES & SCHEDULE

SHEET NO.:
L-401



PLANTING SCHEDULE
SHRUBS

SYMBOL	BOTANICAL NAME COMMON NAME	SIZE	SPACING	WUCOLS	COMMENTS
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	ENCELIA CALIFORNICA BUSH SUNFLOWER	5 GAL.	36" O.C.	L	-
DG	MUHLENBERGIA RIGENS DEER GRASS	1 GAL.	30" O.C.	L	-

PLANTING SCHEDULE
TREE

SYMBOL	BOTANICAL NAME COMMON NAME	SIZE	SPACING	WUCOLS	COMMENTS
	PROSOPIS CHILENSIS CHILEAN MESQUITE	24"BOX	PER PLAN	L	-
	QUERCUS AGRIFOLIA CALIFORNIA COAST LIVE OAK	48"BOX	PER PLAN	L	--
	UMBELLULARIA CALIFORNICA CALIFORNIA BAY LAUREL	24" BOX	PER PLAN	M	-

PLANTING NOTES:

1. ALL LANDSCAPE AREAS SHALL SHEET FLOW @ 2% MINIMUM OR DRAIN TO AREA DRAINS @ 1% MINIMUM
2. REFER TO THE LANDSCAPE CONSTRUCTION PLANS FOR ALL CONSTRUCTION FEATURES SHOWN HEREIN. FINAL SHRUB PLACEMENT TO BE APPROVED BY OWNER/LANDSCAPE ARCHITECT PRIOR TO PLANTING.
3. ALL SHRUB PLANTING AREAS TO BE MULCHED WITH A THREE (3") INCH LAYER OF MULCH. APPROVE MULCH WITH OWNER PRIOR TO PURCHASE.
4. ALL TREES THAT ARE CLOSER THAN FIVE FEET (5') TO HARDSCAPE ELEMENTS SHALL BE PLANTED WITH AN OWNER AND AGENCY APPROVED LINEAR ROOT BARRIER.
5. SHRUBS SHALL BE PLANTED AT 18" MIN. FROM BACK OF WALK. AREAS BETWEEN WALK AND SHRUBS TO BE MULCHED.

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CSDA DESIGN GROUP
LISTEN COLLABORATE CREATE

889 N. DOUGLAS STREET, SUITE 100
EL SEGUNDO, CA 90245
[T]: 310.821.9200
www.csdadesigngroup.com

ARCHITECT STAMP

LICENSED ARCHITECT
MICHAEL ROBERT SCHORN
No. C-35165
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CONSULTANT:

BrightView Design Group
1715 18th ST
SANTA MONICA, CA 90404
PH 310.829.4707
WWW.BRIGHTVIEW.COM

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333 BEAUDRY AVE.
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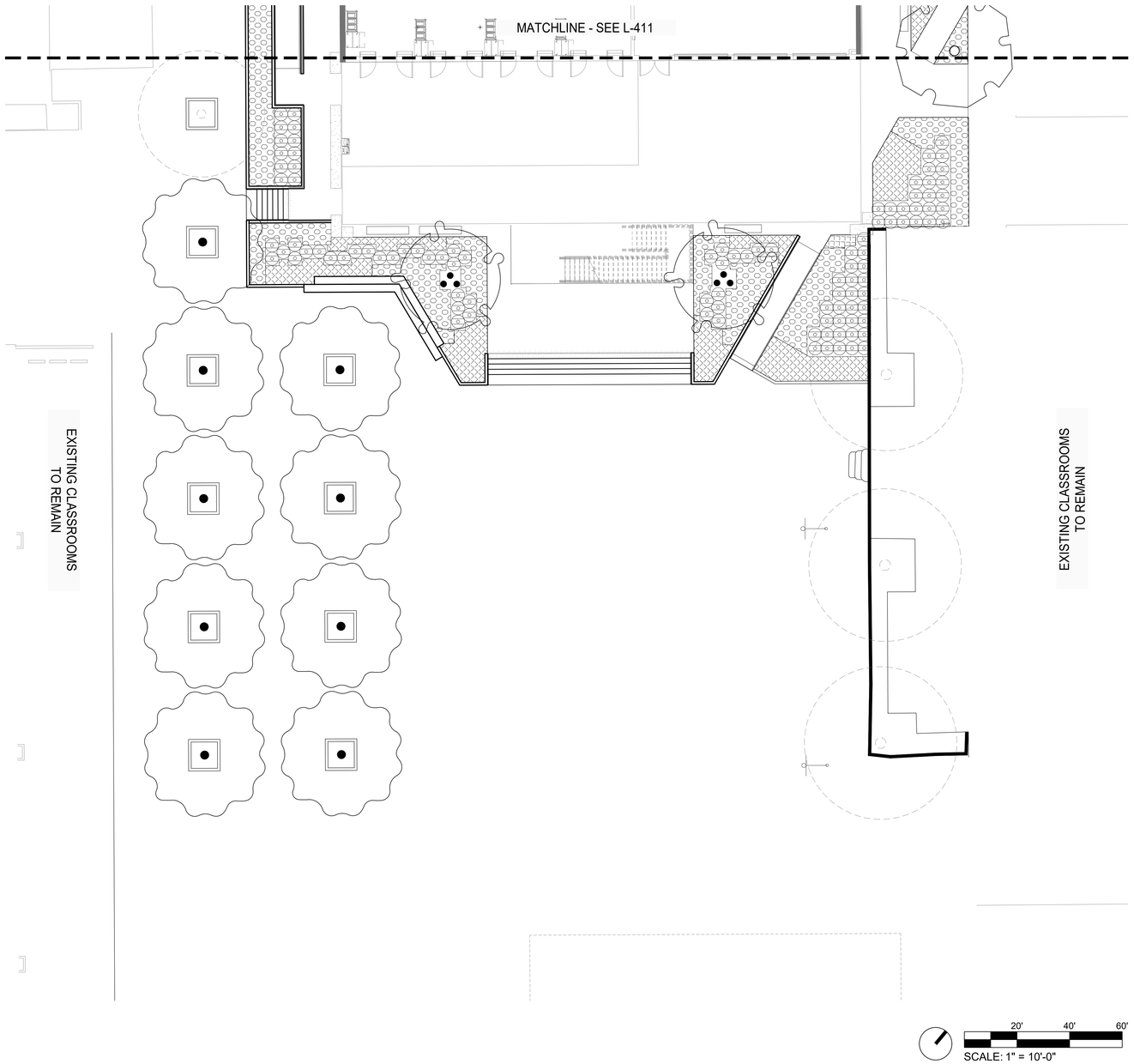
PROJECT NO.: **1949.01**
50% CONSTRUCTION DOCUMENTS 12/20/2019

SHEET TITLE:

PLANTING PLAN

SHEET NO.:

L-411



PLANTING SCHEDULE
SHRUBS

SYMBOL	BOTANICAL NAME COMMON NAME	SIZE	SPACING	WUCOLS	COMMENTS
	BACCHARIS PILULARIS 'PIGEON POINT' DWARF COYOTE BUSH	5 GAL.	36" O.C.	L	-
	ENCELIA CALIFORNICA BUSH SUNFLOWER	5 GAL.	36" O.C.	L	-
30"	MUHLENBERGIA RIGENS DEER GRASS	1 GAL.	30" O.C.	L	-

PLANTING SCHEDULE
TREE

SYMBOL	BOTANICAL NAME COMMON NAME	SIZE	SPACING	WUCOLS	COMMENTS
	PROSOPIS CHILENSIS CHILEAN MESQUITE	24"BOX	PER PLAN	L	-
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3. ALL SHRUB PLANTING AREAS TO BE MULCHED WITH A THREE (3") INCH LAYER OF MULCH. APPROVE MULCH WITH OWNER PRIOR TO PURCHASE.
4. ALL TREES THAT ARE CLOSER THAN FIVE FEET (5') TO HARDSCAPE ELEMENTS SHALL BE PLANTED WITH AN OWNER AND AGENCY APPROVED LINEAR ROOT BARRIER.
5. SHRUBS SHALL BE PLANTED AT 18" MIN. FROM BACK OF WALK. AREAS BETWEEN WALK AND SHRUBS TO BE MULCHED.

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LISTEN COLLABORATE CREATE

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EL SEGUNDO, CA 90245
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ARCHITECT STAMP

LICENSED ARCHITECT
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CONSULTANT:

BrightView Design Group
1715 18th ST
SANTA MONICA, CA 90404
PH 310.829.4707
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BV PROJECT #: 1730585

CONSULTANT STAMP

REGISTERED LANDSCAPE ARCHITECT
DANA B. GILLIS
1948
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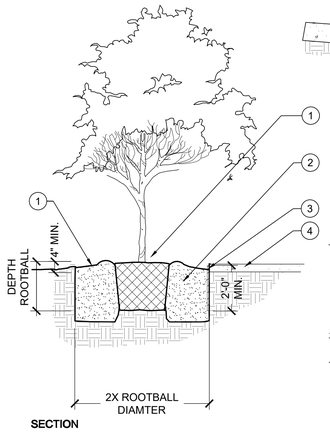
SHEET TITLE:

PLANTING PLAN

SHEET NO.:

L-412

PROVIDE LINEAR ROOT BARRIERS FOR ALL TREES WHICH ARE WITHIN 5 FT OF HARDSCAPE INCLUDING CURB AND GUTTER. PROVIDE ROOT BARRIERS AROUND ALL UTILITIES WHEN TREES ARE WITHIN FIVE (5') FEET OF UTILITIES.



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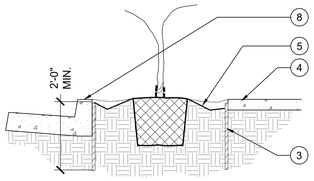
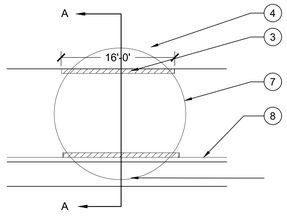


SECTION A-A

N.T.S.



PLAN

LEGEND

1. TREE ROOTBALL: 5 & 15 GAL. 1" ABOVE GRADE, 24" BOX & LARGER 3" ABOVE GRADE, TAPER ROOTBALL TO GRADE
2. PREPARED BACKFILL PER PLANTING NOTES.
3. DEEP ROOT RB-18-2 CONTROL BARRIER, PER LAUSD STANDARD. INSTALL AT HARDSCAPE, DO NOT ENCIRCLE ROOTBALL
4. CONCRETE FLATWORK.
5. FINISHED GRADE
6. SEE DETAIL FOR TREE ROOTBALL DRAINAGE AND AERATION FOR 24" BOX OR LARGER UNLESS NOTED OTHERWISE.
7. DRIP LINE OF TREE
8. CONCRETE CURB.

NOTES:

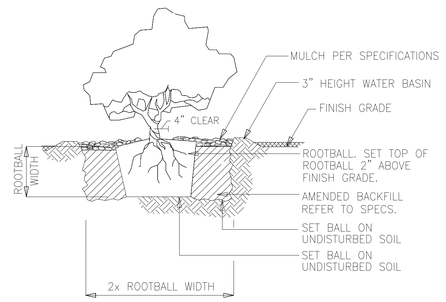
1 POSITION BARRIER AS CLOSE TO CURB OR SIDEWALK AS POSSIBLE. RAISED ROOT PROTECTORS SHALL BE FACING TOWARDS THE TREE.

2 TOP OF BARRIER SHALL BE 1" BELOW ADJACENT HARDSCAPE.

3 LENGTH OF ROOT BARRIER SHALL BE 16 FT MIN IN LENGTH, CENTERED ON THE TREE.

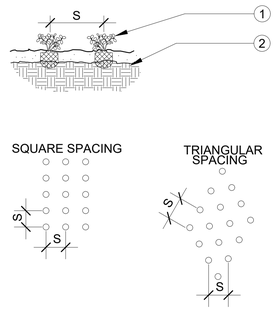
4 APPLY A MASTIC SEALER TO JOINT BETWEEN CONCRETE SURFACES AND ROOT CONTROL BARRIER

ROOT BARRIER | 7



NOTES:
1. LAUSD STANDARD DETAIL

SHRUB PLANTING | 4



SECTION

NOT TO SCALE

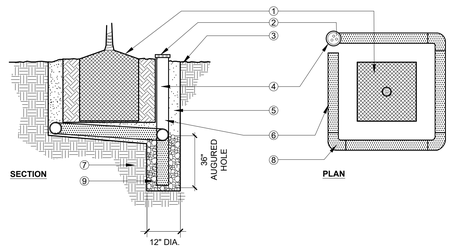
XGC

LEGEND

1. GROUND COVER TO BE PLANTED IN FLATS. CUTTINGS, LINERS OR 1 GAL. CONTAINERS PER PLANS.
2. ALL PLANT MATERIAL SHALL HAVE A 3" LAYER OF WOOD MULCH, TYP.

REFER TO PLANTING NOTES FOR ADDITIONAL SPECIFICATIONS.

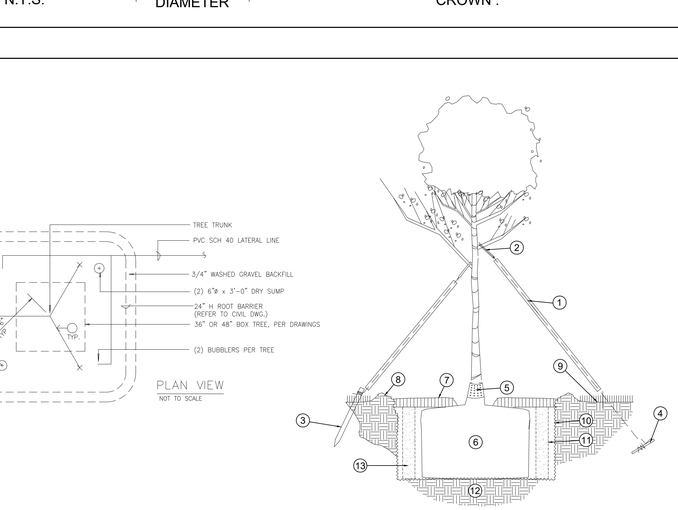
GROUNDCOVER SPACING DIAGRAM | 1



LEGEND

1. TREE ROOTBALL, CROWN SHALL BE 4" ABOVE FINISH GRADE. SHAVE TO GRADE AS REQUIRED
2. 3" DIA. ABS PERFORATED DRAIN PIPE WITH FILTER SOCK
3. FINISH GRADE
4. 3" DIA. ABS VERT DRAIN LINE
5. 3" MIN. COVER CONT. BACKFILL PER SOILS REPORT
6. 3" DIA. PERFORATED ABS DRAINLINE W/ CONT. FILTER FABRIC WRAP - LOCATE ALONG EDGE OF PLANTING PIT
7. UNDISTURBED SUB-GRADE OR PROPERLY RECOMPACTED FILL
8. 3 IN. DIA. PERFORATED CORRUGATED POLYETHYLENE TUBING W/ SAND FILTER SOCK TIED AROUND BOTTOM END. WRAP TUBING AROUND ENTIRE BOTTOM OF ROOTBALL. EXTEND TUBING INTO AUGERED HOLE AND VERTICALLY ABOVE FINISH GRADE CUT 2" ABOVE FINISH GRADE AND TERMINATE W/ 3" DIA. SNAP END CAP
9. 3/8 PEA GRAVEL BACKFILL AROUND PERFORATED PIPE

TREE DRAINAGE & AERATION (TREE SIZE 48" & ABOVE) | 8



LEGEND

1. ROOTBALL CROWN SHALL BE 1" ABOVE FINISH GRADE AVOID PLANTING SHRUBS DIRECTLY IN FRONT OF IRRIGATION SPRAY HEADS PROVIDE CLEARANCE WHEN POSSIBLE.
2. 3" HIGH WATER RETENTION BASIN. FORM FROM PLANT PIT EXCAVATION. MAY BE RAKED OUT PRIOR TO OTHER WORK AS DIRECTED BY LANDSCAPE ARCHITECT.
3. FINISH GRADE.
4. FILL REMAINING PORTION SURROUNDING THE TOP OF THE ROOT BALL WITH BACKFILL.

NOTES:

1 ALL PLANT MATERIAL SHALL HAVE 3" LAYER OF WOOD MULCH, TYP. PLACED IN WATER RETENTION BASIN. HOLD 6" CLEAR FROM CROWN .

SOIL AMENDMENT:

1 WHERE CUT OR NATIVE TOP SOIL IS PRESENT IN PLANTING AREAS, NO SOIL AMENDMENT SHALL BE USED. THE NATIVE TOP SOIL SHOULD BE SOFT AND FRIABLE. ELIMINATE LARGE ROCKS AND CLODS.

2 BACKFILL MIX WHERE SOIL HAS BEEN IMPORTED: BLEND ⅓ COMPOSTED OR NITROLIZED FOREST HUMUS TO ⅔ SITE SOIL.

3 FERTILIZER:
A. SLOW RELEASE FERTILIZER TABS BE INCORPORATED WITH THE BACKFILL. TABS SHOULD NOT TOUCH THE ROOTBALL.
B. A POST PLANT FERTILIZER, APPLICATION RATE SHOULD BE LOWER THAN THOSE USED FOR GENERAL LANDSCAPE ORNAMENTALS.

NATIVE SHRUB PLANTING | 2

LEGEND

1. THREE GALVANIZED WIRES OR CABLES RUN WITHIN 1/2" DIAMTER PVC CONDUIT. SPACED EVENLY AROUND TREE. WIRE OR CABLE SIZES:
-TREES UP TO 2-1/2": 14 GAGE
-TREES UP TO 3": 12 GAGE
2. FERTILIZER TABLETS PER PLANTING NOTES
3. 30" LONG STAKE, DRIVEN OUTISDE EDGE OF ROOT BALL
4. OPTION TO STAKEs: METAL DRIVEN ANCHORS. INSTALLED PER MANUFACTURER'S DIRECTIONS.
5. TREE TRUNK PROTECTOR IN TURF AREA
6. INSTALL TOP OF ROOT BALL 1-1/2" ABOVE FINISH GRADE
7. MULCH PER SPECS. KEEP 4'-6" CLEAR OF TRUNK
8. 4" HEIGHT. TEMPORARY WATER BASIN. REMOVE AT END OF MAINTENANCE PERIOD
9. FINISH GRADE
10. SCARIFY PIT SIDES & BOTTOM
11. AMEND BACKFILL PER SPECIFICATIONS.
12. SET BALL ON UNDISTRUBED SOIL.
13. FILL EACH EXCAVATED PIT TO HALF PIT DEPTH WITH WATER AND ALLOW TO LEACH OUT. IF WATER DOES NTO LEACH OUT WIHTIN A REASONABLE TIME AUGER OUT TWO 6" IN DIA. X 3'-0" DEEP SUMP HOLES AND FILL WITH WASHED COURSE SAND IN PIT BOTTOM

TREE PLANTING AND STAKING (TREE SIZE 48" & UNDER) | 3

CSDA DESIGN GROUP

LISTEN COLLABORATE CREATE

889 N. DOUGLAS STREET, SUITE 100
EL SEGUNDO, CA 90245
[T]: 310.821.9200
www.csdadesigngroup.com

ARCHITECT STAMP

LICENSED ARCHITECT
MICHAEL ROBERT SCHOEN
No. C-35165
RENEWAL DATE
FEBRUARY 28, 2019
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CONSULTANT:

BrightView Design Group

1715 18th ST.
SANTA MONICA, CA 90404
PH 310.829.4707
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DANA B. BEELS
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SHEET TITLE:

PLANTING DETAILS

SHEET NO.:

L-441