LAND DEVELOPMENT DIVISION
STORM DRAIN & HYDROLOGY UNIT

TO: Tritech Engineering Associates, Inc.
135 N San Gabriel Boulevard
San Gabriel, CA 91775
ATTN: Linda Trieu

DATE 02/13/24

REVIEW OF HYDROLOGY STUDY AND LOW IMPACT DEVELOPMENT PLAN

CUP NO. **RPPL2022013731**

DATE OF REPORT **02/08/24**
PLAN CHECK NO. **3**
PLAN CASE NO. **ESTU2023000646**

We have reviewed your Hydrology Study and Low Impact Development Plan.

[X] The Hydrology Study has been approved.

[X] The Low Impact Development Plan has been approved.

REVIEWED BY AYM _____
Isaac Carrera - (626) 458-4947

APPROVED BY: Thong Ngov _____

HYDROLOGY & HYDRAULIC AND LOW IMPACT DEVELOPMENT CALCULATION

FOR

ESTU2023000646
CUP NO. RPPL2022013731

1059 S. GAGE AVE.,
LOS ANGELES, CA 90023

02/08/2024

HYDROLOGY STUDY APPROVED

REVIEWED BY: AYM DATE 02/13/24

APPROVED BY: Thong Ngov DATE 2/15/24

COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
LAND DEVELOPMENT DIVISION

TRITECH
ENGINEERING
GROUP

SUBDIVISION
LAND SURVEY
CIVIL ENGINEERING
& DESIGN

135 N. SAN GABRIEL BLVD.
SAN GABRIEL, CA 91775
TEL: (626) 570-1918
EMAIL: info@tritechengineer.com

JOB. NO. 220918

Table of Content

PROJECT DESCRIPTION

This project is located on east of S Eastman Ave and west of S Gage Ave, between Whittier Blvd and Dennison St in Unincorporated Los Angeles County, State of California. The total area is approximately 50,994 SF (1.171 Acres). All area will be disturbed.

In pre-development period, the project site is commercial building with parking lots. All structures and pavement will be demolished. The existing impervious surface is approximately 49,741 SF (98%). The drainage area is divided in 2 part: east and west. In the west part, the runoff flows from east to west and drain into S Eastman Ave. In the east part, the runoff flows from west to east and drain into S Gage Ave by gravity. The runoff from project site both street flow south approximately 200 feet and be captured by open-curb catch basin at Dennison St. There is no offsite runoff drains into this project both pre- and post-development period.

The development will construct a School building with parking lots. More landscaping (pervious area) will be provided than in the existing condition. Total landscape area is 5,558 SF. The impervious surface is about 89%. The runoff will be collected by roof system, area drains, trench drains and catch basins. All stormwater will discharge to proposed infiltration trench located at northeast corner of project under parking and driveway area. The overflow from infiltration trench will directly drain to S Eastman Ave by gravity.

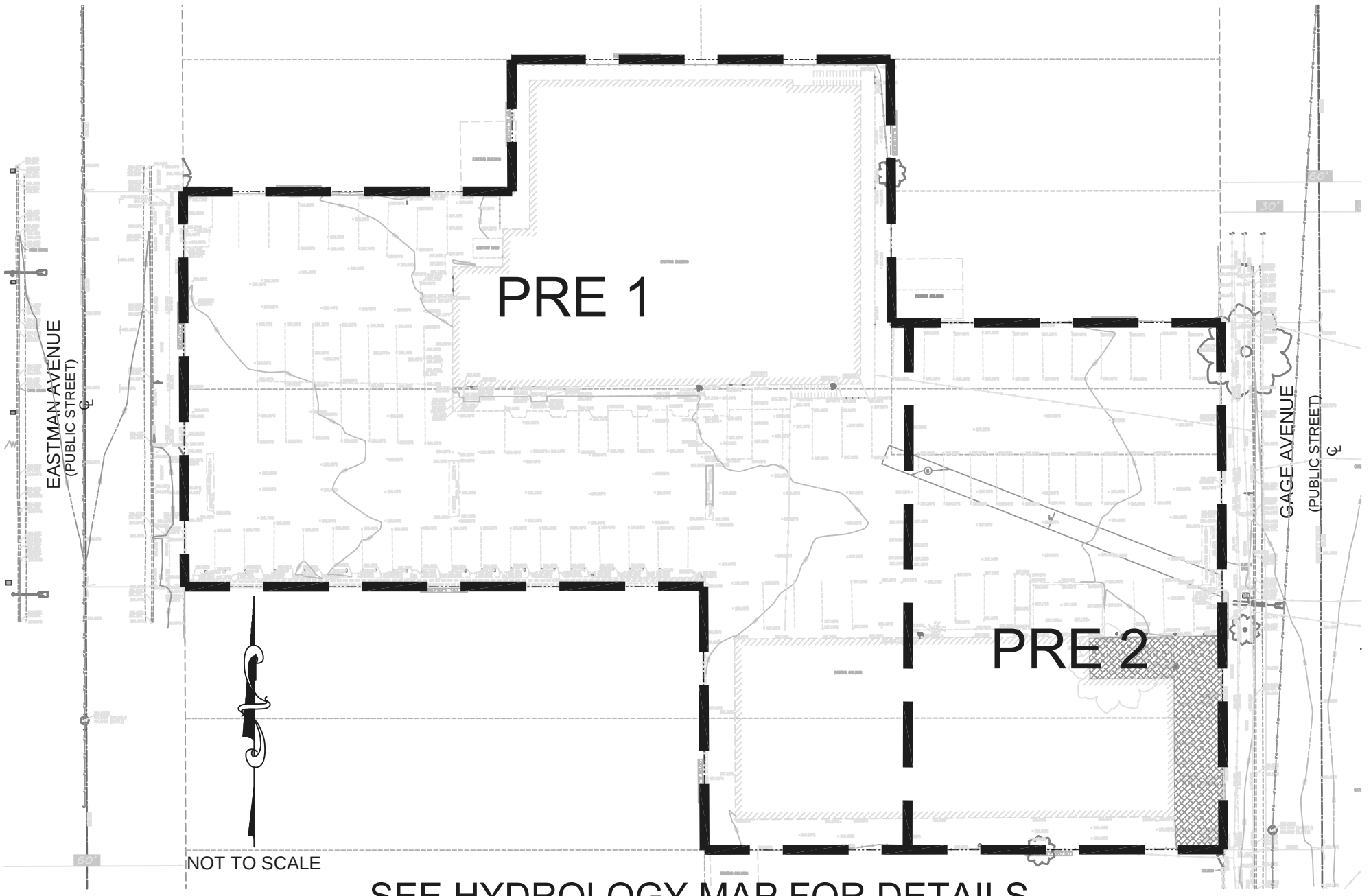
From http://www.dpw.lacounty.gov/wrd/hydrologygis, the Final 85th Percentile, 24-hr Rainfall Isohyet is 0.92" that is more than 0.75" isohyet. Therefore this analysis will use 0.92" for determine the peak mitigated runoff and SWQDv.

From Soil Report by Geotechnologies, Inc date September 23, 2022, File No.22311, the infiltration rate of 0.72 inch per hour may be utilized for the design of an infiltration system.

Since the runoff from the project site discharges to public stormdrain system and the post-developed runoff is less than pre-developed runoff, this project is exempted from hydromodification. This development is not adversely impacted to the downstream properties.

TRIBUTARY AREA

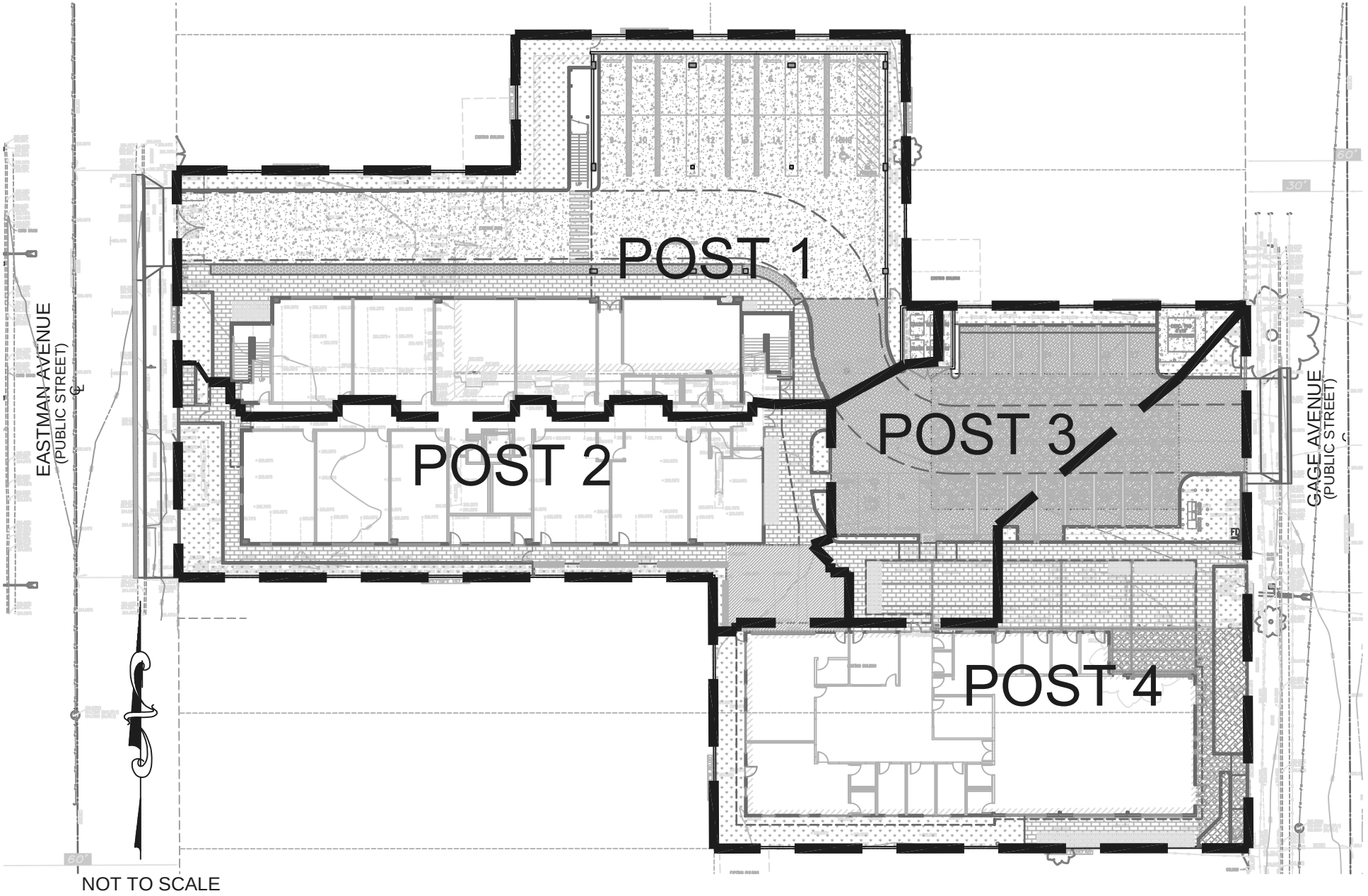
PRE-DEVELOPMENT



SEE HYDROLOGY MAP FOR DETAILS

TRIBUTARY AREA

POST-DEVELOPMENT



NOT TO SCALE

SEE HYDROLOGY MAP FOR DETAILS

HYDROLOGY ANALYSIS

FROM L.A. HYDROLOGY MANUAL FIG. H1.19
AND http://dpw.lacounty.gov/wrd/hydrologygis/
(SEE ATTACH SHEETS)
SOIL CLASSIFICATION: 016
50 YEAR 24 HOUR ISOHYET = 5.8"
85TH PERCENTILE ISOHYET = 0.92"

PRE-DEVELOPMENT

	AREA (SF)	AREA (ACRE)	LENGTH (FT)	IMPERVIOUS(SF)	SLOPE	%IMP
PRE-1	35,752.00	0.821	219	35,752.00	0.009	1.00
PRE-2	15,242.00	0.350	94	13,990.00	0.008	0.92
TOTAL	50,994.00	1.171		49,742.00		0.98

POST-DEVELOPMENT

	AREA (SF)	AREA (ACRE)	LENGTH (FT)	IMPERVIOUS(SF)	SLOPE	%IMP
POST-1	19,414.00	0.446	40	17,689.00	0.020	0.91
POST-2	10,397.00	0.239	42	9,403.00	0.020	0.90
POST-3	5,468.00	0.126	68	4,994.00	0.010	0.91
POST-4	15,715.00	0.361	42	13,350.00	0.010	0.85
TOTAL	50,994.00	1.171		45,436.00		0.89

USE HydroCalc Calculator
(SEE ATTACHED SHEETS FOR DETAILS)

PRE-DEVELOPMENT

25 YEAR-RETURN PERIOD

	Q (CFS)	VOLUME (CU-FT)
PRE-1	2.2450	13,545.99
PRE-2	0.9529	5,406.32
TOTAL	3.1979	18,952.31

POST-DEVELOPMENT

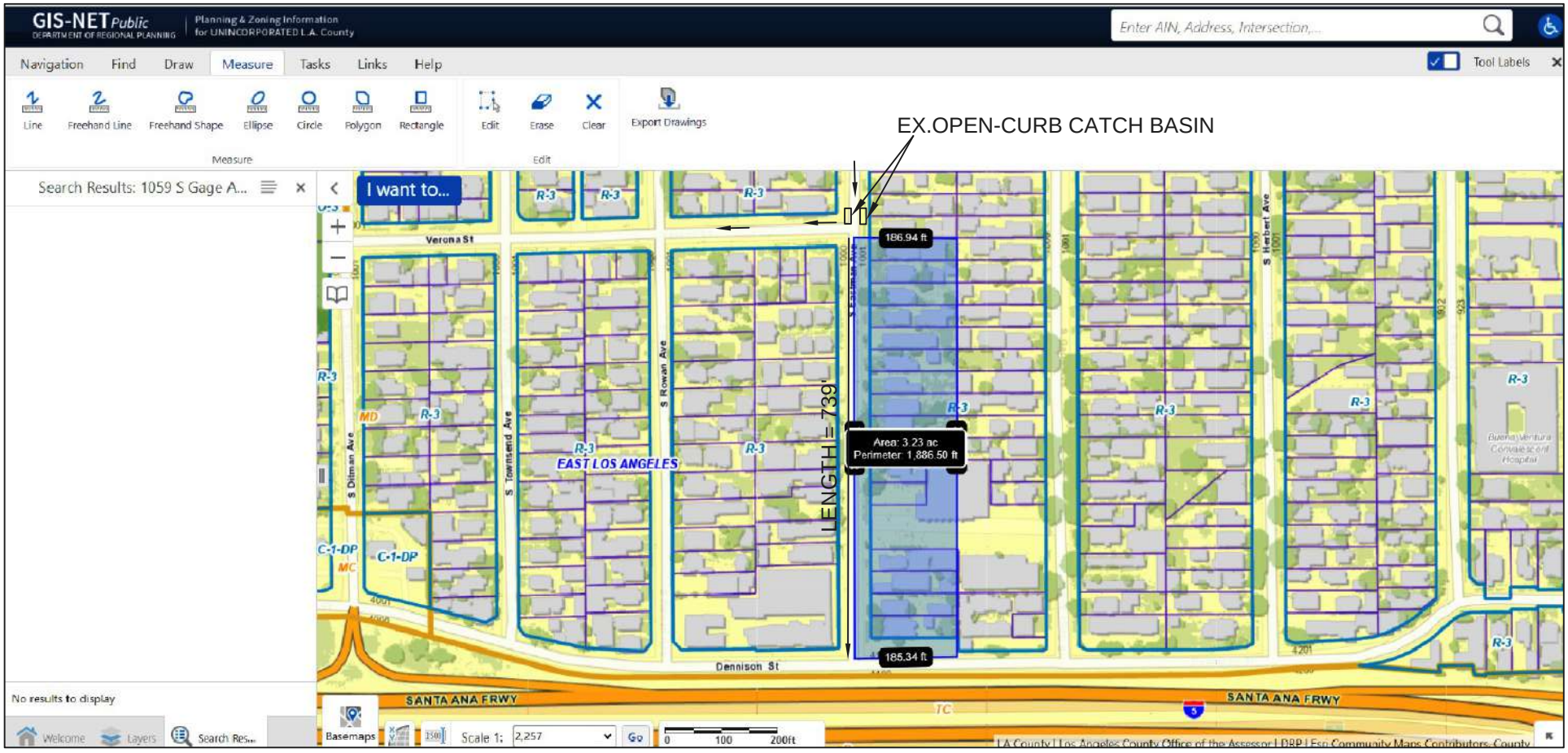
25 YEAR-RETURN PERIOD

	Q (CFS)	VOLUME (CU-FT)
POST-1	1.2136	6,830.50
POST-2	0.6500	3,628.84
POST-3	0.3429	1,929.69
POST-4	0.9791	5,243.69
TOTAL	3.1856	17,632.72

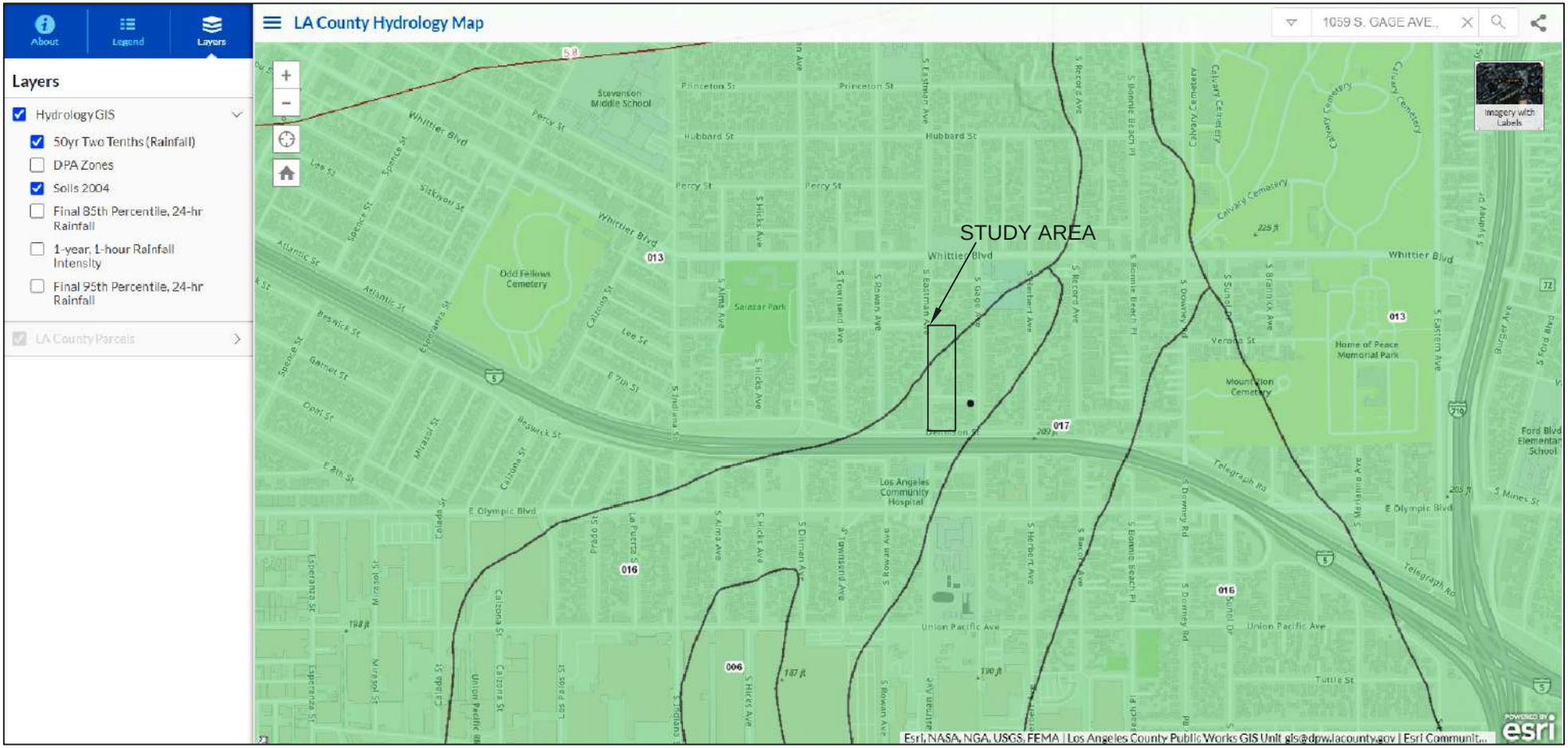
85TH PERCENTILE (FOR LID)

	Q (CFS)	VOLUME (CU-FT)
POST-1	0.2057	1,223.65
POST-2	0.1093	649.42
POST-3	0.0492	345.60
POST-4	0.1444	933.13
TOTAL	0.5086	3,151.80

STREET CAPACITY



SOURCE: http://rpgis.isd.lacounty.gov/GIS-NET3_Public/Viewer.html

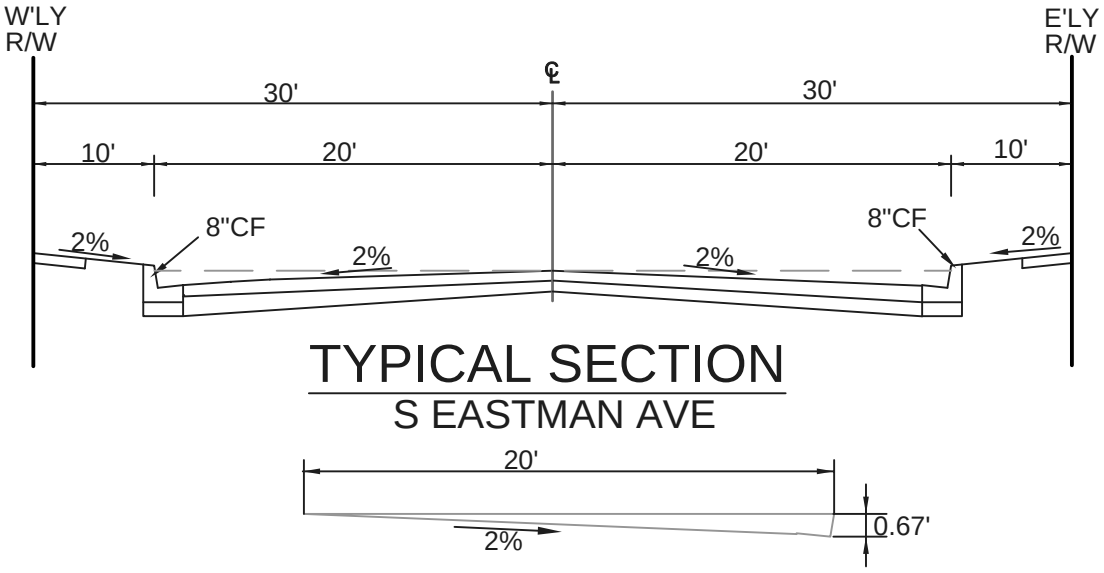


SOURCE: http://www.dpw.lacounty.gov/wrd/hydrologygis/

FOR S EASTMAN AVE

FROM http://rpgis.isd.lacounty.gov/GIS-NET3_Public/Viewer.html
AND http://www.dpw.lacounty.gov/wrd/hydrologygis/
SOIL CLASSIFICATION: 013 (42%) AND 016 (58%)
50 YEAR FREQUENCY RAINFALL = 5.8"
THE EXISTING CONDITION: AVERAGE STREET SLOPE = 1.3%
TOTAL AREA = 3.23 AC, LENGTH = 739 FT, IMP = 1

USE HYDROCALC PROGRAM:
FOR AREA IN 013 SOIL: AREA = 0.87 AC, Q_{25Y}= 1.8047 CFS
FOR AREA IN 016 SOIL: AREA = 2.36 AC, Q_{25Y}= 4.8956 CFS
TOTAL Q_{25Y}= 6.7003 CFS



TYPICAL SECTION
S EASTMAN AVE

CHECK STREET CAPACITY ONLY HALF WIDTH:

$Q = \frac{1.486}{n} (R)^{2/3} (S)^{1/2} A$

n = 0.013 A = 6.7 SF S=0.013 =1.3% (AVG SLOPE OF STREET)

P = 20 FT R = A/P = 0.335

$Q = (114.31)\ (0.335)^{2/3} (0.013)^{1/2} (6.7)$

$Q_{CAPACITY}$= 42.12 CFS

THE QUANTITY AFTER DEVELOPMENT AT 9.8859 CFS (3.1856 CFS FROM PROJECT SITE PLUS EXISTING QUANTITY AT 6.7003 CFS) IS LESS THAN STREET CAPACITY. THEREFORE THE RUNOFF FROM PROJECT SITE DOES NOT ADVERSELY IMPACT TO DOWNSTREAM PROPERTIES.

LOW IMPACT DEVELOPMENT DESIGN

PROJECT CATEGORY

This project is a designated project.

Category	YES	NO
1. Development [a] of a new project equal to 1 acre or greater of disturbed area and adding more than 10,000 square feet of impervious area [b]	☐	☐
2. Development [a] of a new industrial park with 10,000 square feet or more of surface area [c]	☐	☐
3. Development [a] of a new commercial mall with 10,000 square feet or more surface area [c]	☐	☐
4. Development [a] of a new retail gasoline outlet with 5,000 square feet or more of surface area [c]	☐	☐
5. Development [a] of a new restaurant (SIC 5812) with 5,000 square feet or more of surface area [c]	☐	☐
6. Development [a] of a new parking lot with either 5,000 ft^2 or more of impervious area [b] or with 25 or more parking spaces	☐	☐
7. Development [a] of a new automotive service facility (SIC 5013, 5014, 5511, 5541, 7532-7534 and 7536-7539) with 5,000 square feet or more of surface area [c]	☐	☐
8. Projects located in or directly adjacent to, or discharging directly to a Significant Ecological Area (SEA),[d] where the development will: a. Discharge stormwater runoff that is likely to impact a sensitive biological species or habitat; and b. Create 2,500 square feet or more of impervious area [b]	☐	☐
9. Redevelopment [e] of 5,000 square feet or more in one of the categories listed above **If yes, list redevelopment category here:** 1 and 6	☒	☐
10. Redevelopment [e] of 10,000 square feet or more to a Single Family Home, without a change in landuse.	☐	☐

a Development includes any construction or demolition activity, clearing, grading, grubbing, or excavation or any other activity that results in land disturbance.

b Surfaces that do not allow stormwater runoff to percolate into the ground. Typical impervious surfaces include: concrete, asphalt, roofing materials, etc.

c The surface area is the total footprint of an area. Not to include the cumulative area above or below the ground surface.

d An area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and would be disturbed or degraded by human activities and developments. Also, an area designated by the City as approved by the Regional Water Quality Control Board.

e Land-disturbing activities that result in the creation, addition, or replacement of a certain amount of impervious surface area on an already developed site. Redevelopment does not include routine maintenance activities that are conducted to maintain the original line and grade, hydraulic capacity, or original purpose of facility, nor does it include modifications to existing single family structures, or emergency construction activities required to immediately protect public health and safety.

PROJECT DESCRIPTION

Total Project Area (ft^2): 50,994

Total Project Area (Ac): 1.171

EXISTING CONDITIONS

Condition	Area (ft^2)	Percentage (%)
Pervious Area:	1,252	2
Impervious Area:	49,742	98

PROPOSED CONDITIONS

Condition	Area (ft^2)	Percentage (%)
Pervious Area:	5,558	11
Impervious Area:	45,436	89

SITE CHARACTERISTICS

DRAINAGE PATTERNS/CONNECTIONS	Existing: The drainage area is divided in 2 part: east and west. In the west part, the runoff flows from east to west and drain into S Eastman Ave. In the east part, the runoff flows from west to east and drain into S Gage Ave by gravity. The runoff from project both street flow south approximately 200 feet and be captured by open-curb catch basin at Dennison St. There is no offsite runoff drains into this project both pre- and post-development period.
	Proposed: The runoff will be collected by roof system, area drains, trench drains and catch basins. All stormwater will discharge to proposed infiltration trench located at northeast corner of project under parking and driveway area. The overflow from infiltration trench will directly drain to S Eastman Ave by gravity.

NARRATIVE PROJECT DESCRIPTION:	This project is located on east of S Eastman Ave and west of S Gage Ave, between Whittier Blvd and Dennison St in Unincorporated Los Angeles County, State of California. The total area is approximately 50,994 SF (1.171 Acres). All area will be disturbed. The development will construct a School building with parking lots. More landscaping (pervious area) will be provided than in the existing condition. Total landscape area is 5,558 SF. The impervious surface is about 89%. In pre-development period, the project site is commercial building with parking lots. All structures and pavement will be demolished. The existing impervious surface is approximately 49,741 SF (98%).
OFFSITE RUNON	There is no offsite runoff flows to project site both pre- and post-development.
SIGNIFICANT ECOLOGICAL AREAS (SEAS)	N/A

BMP SELECTION

INFILTRATION BMPS

NAME	INCLUDED [Check all that apply.]
Bioretention without underdrains	☐
Infiltration Trench	☒
Infiltration Basin	☐
Drywell	☐
Proprietary Subsurface Infiltration Gallery	☐
Permeable Pavement (concrete, asphalt, pavers)	☐
Other:	☐
Other:	☐

FEASIBILITY OF INFILTRATION	From Soil Report by Geotechnologies, Inc date September 23, 2022, File No.22311, the infiltration rate of 0.72 inch per hour may be utilized for the design of an infiltration system.

CALCULATION

INFILTRATION TRENCH: FOR ALL AREA
SWQDv = 3,151.80 CF (85TH PERCENTILE RUNOFF)
GRAVEL VOID RATIO = 40%
THE MEASURE INFILTRATION RATE $K_{MEA, SAT}$ = 0.72 INCH/HOUR (PER SOIL REPORT)
SAFETY FACTOR = 3
THE DESIGN INFILTRATION RATE $K_{DESIGN\ SAT}$ = 0.72/3 = 0.24 INCH/HOUR (PER SOIL REPORT)
INFILTRATION DRAINS IN 96 HOURS, T = 96

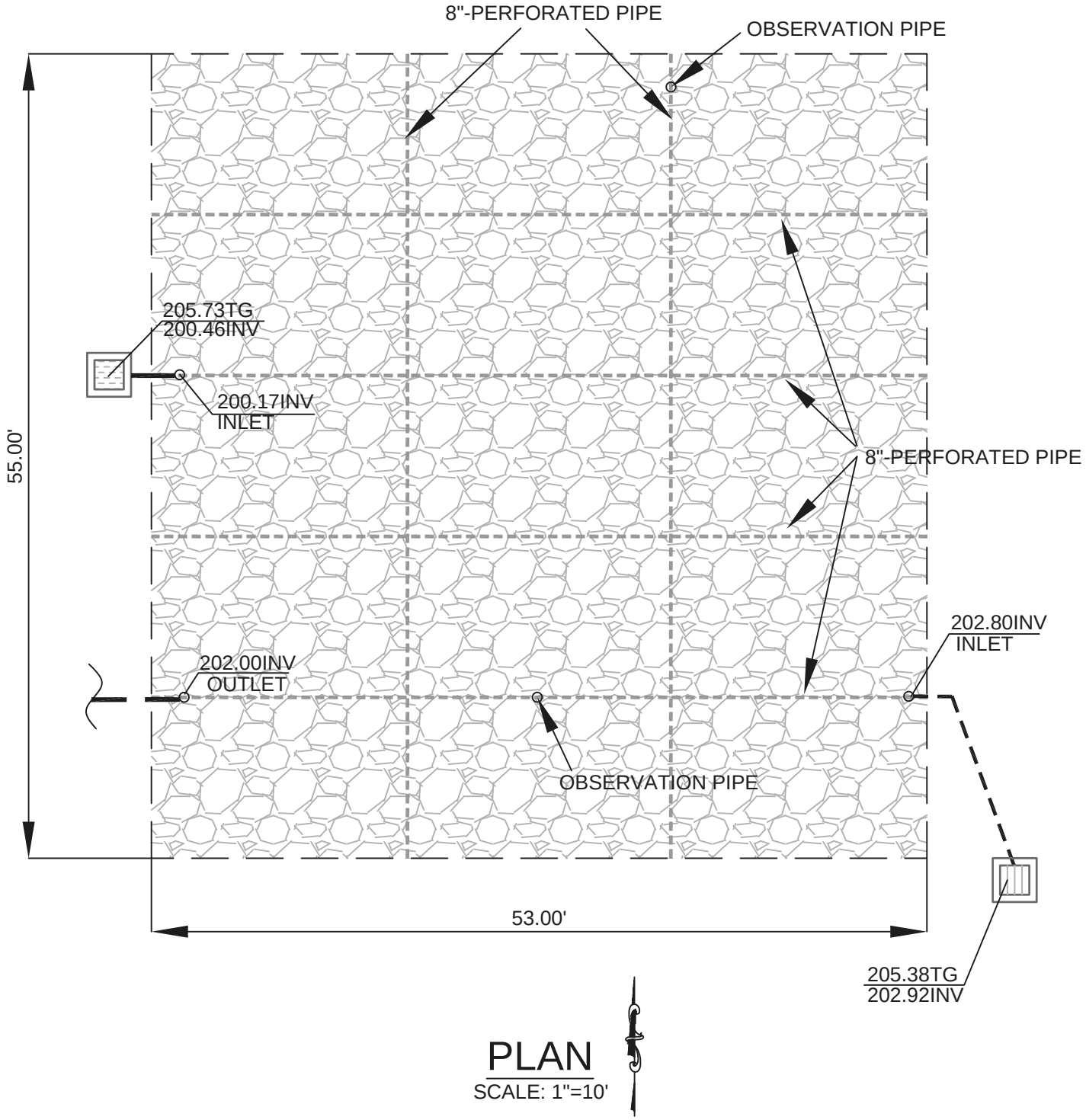
$$d_{MAX} = \frac{f_{DESIGN}}{12} \times TIME = \frac{0.24}{12}(96) = 1.92\ FT$$

$$d_T = \frac{d_{MAX}}{0.4} = \frac{1.92}{0.4} = 4.8\ FT$$

USE DEPTH OF INFILTRATION TRENCH = 3'

THEREFORE THE MINIMUM SURFACE AREA = $A_{MIN} = \frac{3,151.80}{3.0 \times 0.4} = 2,626.50\ SF$

PROVIDE 53'-WIDE, 55'-LONG, 3'-DEEP INFILTRATION TRENCH
THE BOTTOM AREA = 53 x 55 = 2,915 SF > 2,626.50 SF OK
THE VOLUME OF TRENCH = 53' x 55' x 3' x 0.4 = 3,498 CF > 3,151.80 CF OK



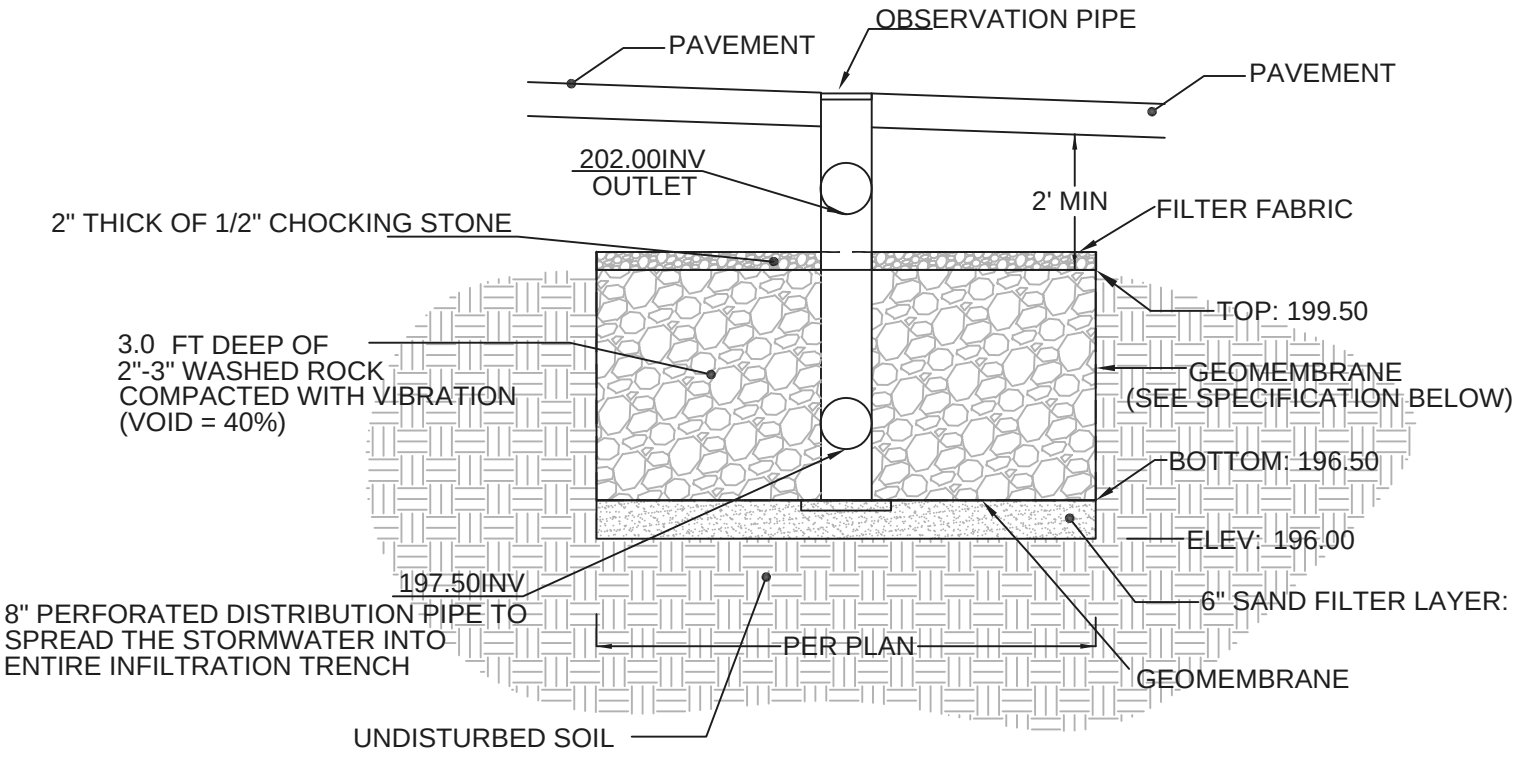
PLAN

SCALE: 1"=10'

INFILTRATION TRENCH
THE BOTTOM AREA = 2,915 SF , DEPTH OF INFILTRATION TRENCH = 3'
VOID = 0.4, THE VOLUME OF TRENCH = 3,498 CF
TOP OF TRENCH ELEV: 199.50, BOTTOM OF TRENCH ELEV: 196.50
INVERT ELEVATION OF DISTRIBUTION PIPE INSIDE TRENCH: 197.50
GPS: 34.021130, -118.185333

INFILTRATION TRENCH

GPS: 34.021130, -118.185333

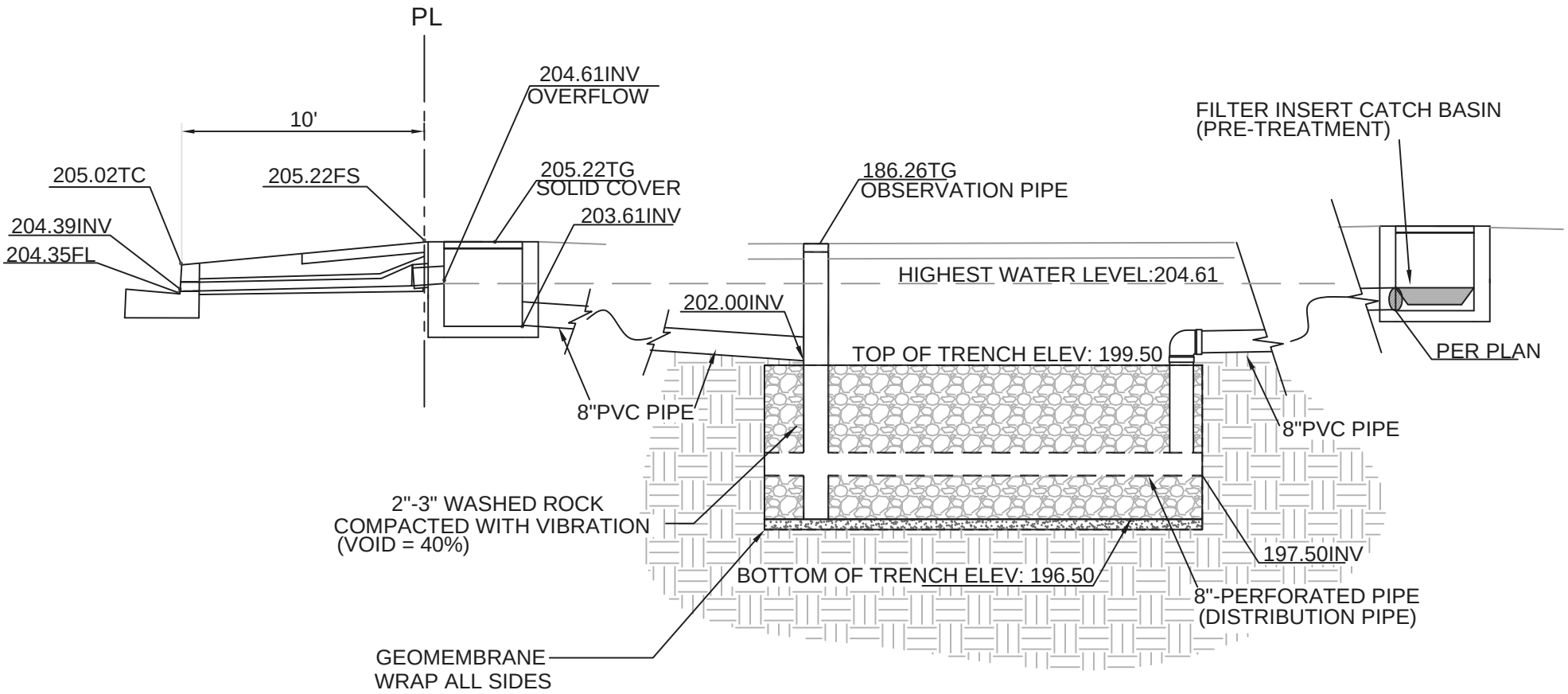


SECTION (TYP.)

NOT TO SCALE

GEOMEMBRANE SPECIFICATION

PARAMETER	TEST METHOD	SPECIFICATIONS
MATERIAL		NONWOVEN GEOMEMBRANE LINER
UNIT WEIGHT		8 oz/yd^3 (minimum)
FILTRATION RATE		0.08 in/sec (minimum)
PUNCTURE STRENGTH	ASTM D-751 (MODIFIED)	125 lbs (minimum)
MULLEN BURST STRENGTH	ASTM D-751	400 lb/in^2 (minimum)
TENSILE STRENGTH	AST D-1682	300 lbs (minimum)
EQUIV.OPENING SIZE	US STANDARD SIEVE	NO.80 (minimum)



CONNECTION DETAILS

NOT TO SCALE

RAINWATER HARVEST AND USE BMPS

NAME	INCLUDED [Check all that apply.]
Above-ground cisterns and basins	☐
Underground detention	☐
Other:	☐
Other:	☐
Other:	☐

DESCRIPTION	Since the infiltration trench retain stormwater to meet the LID requirements, the harvest and use is N/A for this project.
CALCULATIONS	N/A

TREATMENT CONTROL BMPS

Treatment control BMPs can only be used as pre-treatment to LID BMPs.

NAME	INCLUDED [Check all that apply.]
Media Filter	☐
Filter Insert	☐
CDS Unit	☐
Other: FILTER INSERT CATCH BASIN	☒
Other: FILTER INSERT TRENCH DRAIN	☒

DESCRIPTION	FLOGARD LOPRO FILTER INSERT CATCH BASIN MODEL FG-M2424 PER KRISTAR ENTERPRISES, INC OR EQUAL SIZE 24”X24” WITH TREAT FLOW RATE = 0.30 CFS TOTAL INSTALLED FILTER = 2 TOTAL TREATMENT FLOW RATE = 0.6 CFS THE 85TH PERCENTILE RUNOFF = 0.5086 CFS < TREATMENT FLOWRATE OK

PRE-TREATMENT DESIGN:

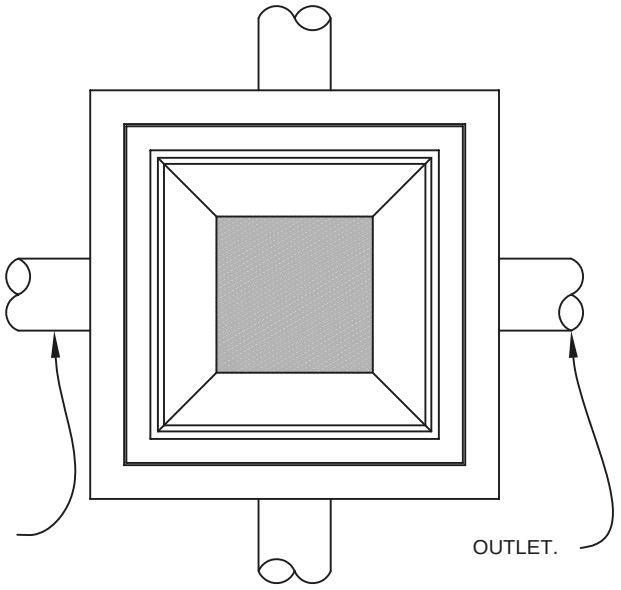
FROM FLOGARD LO-PRO FILTER INSERTED CATCH BASIN SPECIFICATION

SPECIFIER CHART				
MODEL	CATCH BASIN ID	SOLIDS STORAGE CAPACITY CUBIC FEET	FILTERED FLOW CUBIC FEET / SECOND	TOTAL BYPASS CAPACITY CUBIC FEET /SECOND
FG-M1212	12" X 12"	0.05	0.05	0.50
FG-M1818	18" X 18"	0.10	0.10	1.00
FG-M2424	24" X 24"	0.30	0.30	1.70

FOR AREA POST 1+ POST 2 + POST 3 + POST 4
THE Q_{85TH}= 0.2057 + 0.1093 + 0.0492 + 0.1444 = 0.5086 CFS
INSTALL TWO FILTER INSERTS MODEL FG-M2424 AT 24"x24" CATCH BASIN
THE FILTERED FLOW CAPACITY = 0.60 CFS > Q_{REQ} OK

FG-LP-0001

SPECIFIER CHART				
MODEL	CATCH BASIN ID	SOLIDS STORAGE CAPACITY CUBIC FEET	FILTERED FLOW CUBIC FEET / SECOND	TOTAL BYPASS CAPACITY CUBIC FEET /SECOND
FG-M1212	12" X 12"	0.05	0.05	0.50
FG-M1818	18" X 18"	0.10	0.10	1.00
FG-M2424	24" X 24"	0.30	0.30	1.70
FG-M2436	24" X 36"	0.40	0.50	2.30
FG-M3030	30" X 30"	0.60	0.60	2.60
FG-M3636	36" X 36"	0.80	0.90	4.10
FG-M3648	36" X 48"	1.10	1.30	4.60
FG-M4848	48" X 48"	1.60	1.80	6.60



DETAIL A

ADDITIONAL INLETS
NOT TO SCALE

NOTES:

1. Inlet flume & bypass weir frame shall be constructed from stainless steel Type 304.

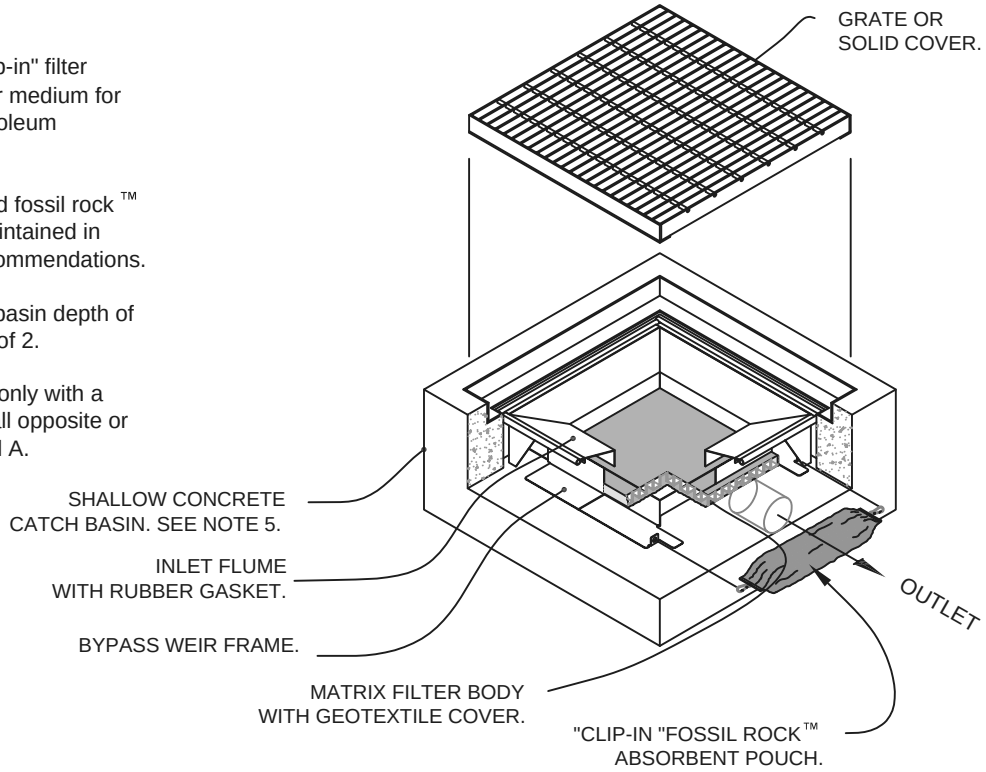
2. Matrix filter element is constructed from durable polypropylene woven monofilament geotextile surrounding a polypropylene matrix skeleton. Filter element shall not allow the retention of water between storm events.

3. Filter inserts are supplied with "clip-in" filter pouches utilizing fossil rock ™ filter medium for the collection and retention of petroleum hydrocarbons (oils & greases).

4. FloGard® LoPro™ filter inserts and fossil rock ™ filter medium pouches must be maintained in accordance with manufacturer recommendations.

5. Device requires a minimum catch basin depth of 6.50" beneath grate. See sheet 2 of 2.

6. Additional inlets are limited to one only with a 6" diameter maximum, and to a wall opposite or at a right angle to outlet. See detail A.



TITLE

FloGard® LoPro™

SHALLOW CATCH BASIN

FILTER INSERT

KriStar Enterprises, Inc

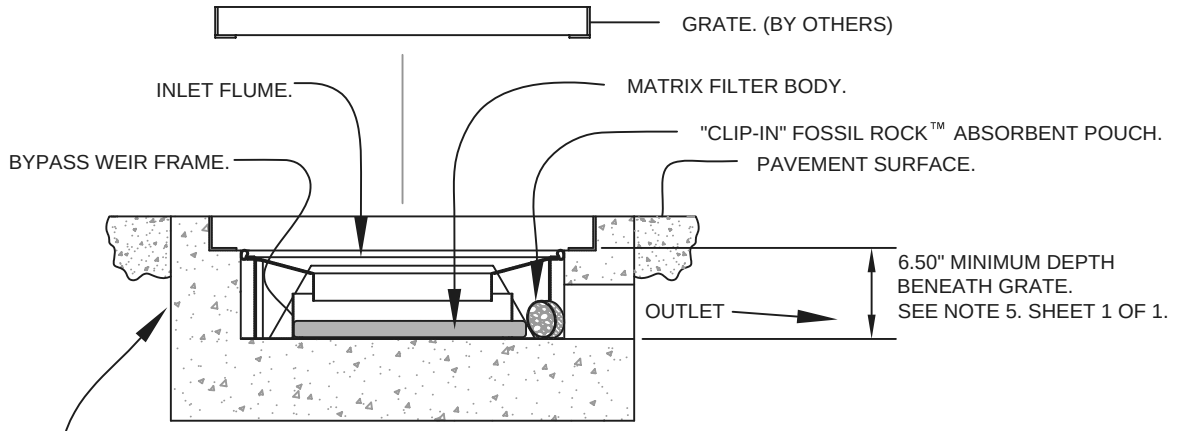
360 Sutton Place, Santa Rosa, CA 95407

Ph: 800.579.8819, Fax: 707.524.8186, www.kristar.com

DRAWING NO.	REV	ECO	DATE	SHEET
FG-LP-0001	D	0104 JRR 6/6/12	JRR 12/18/06	SHEET 1 OF 2

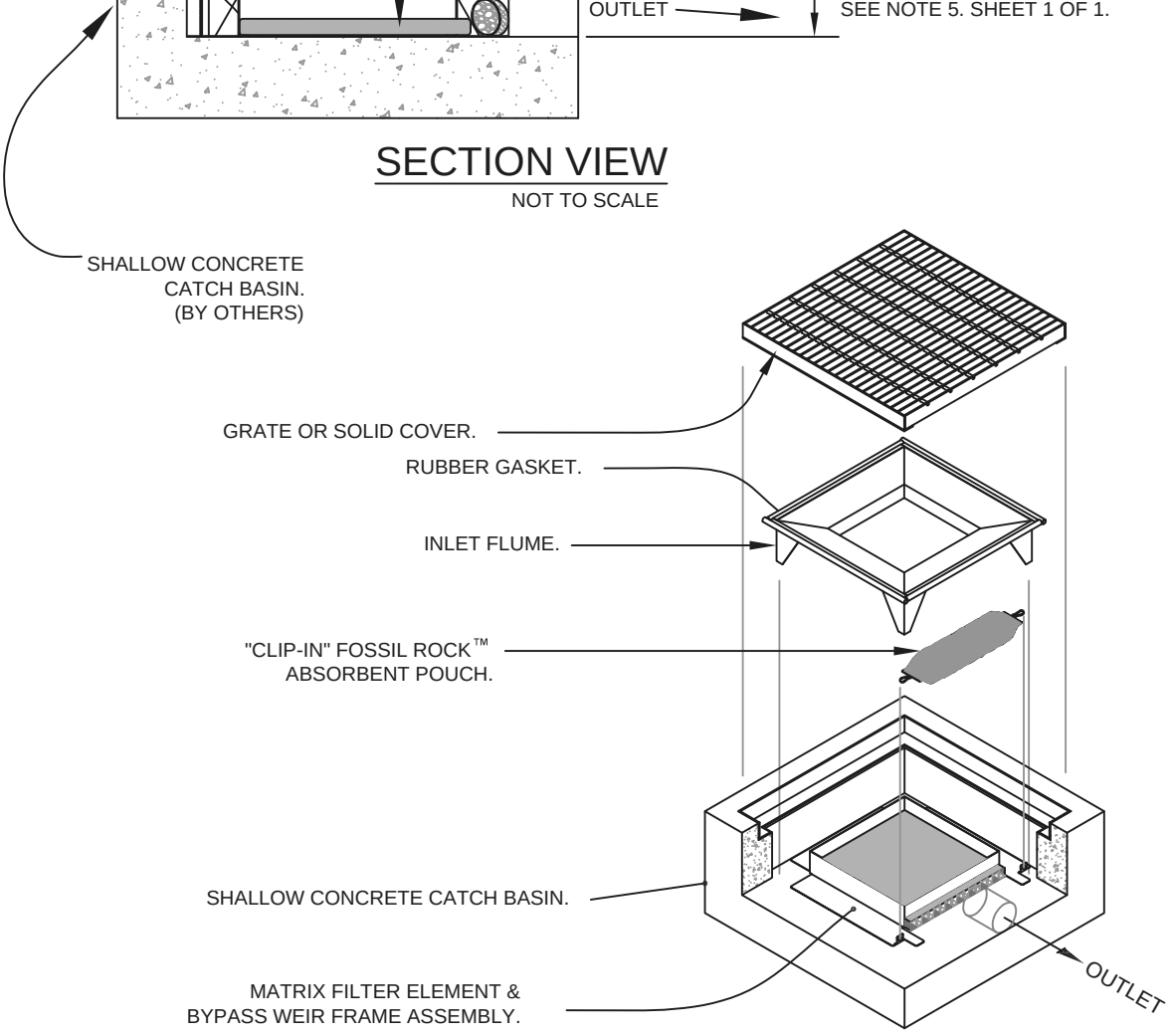
FILTER INSERT

FG-LP-0001



SECTION VIEW

NOT TO SCALE



TITLE

FloGard® LoPro™

SHALLOW CATCH BASIN

FILTER INSERT

KriStar Enterprises, Inc
360 Sutton Place, Santa Rosa, CA 95407
Ph: 800.579.8819, Fax: 707.524.8186, www.kristar.com

DRAWING NO.	REV	ECO	DATE	SHEET
FG-LP-0001	D	0104 JRR 6/6/12	JRR 12/18/06	SHEET 2 OF 2

NON-STRUCTURAL SOURCE CONTROL BMPS

NAME	CHECK ONE	
	Included	**Not Applicable**
Education for Property Owners, Tenants and Occupants	☒	☐
Activity Restrictions	☐	☒
Common Area Landscape Management	☒	☐
Common Area Litter Control	☒	☐
Housekeeping of Loading Docks	☐	☒
Common Area Catch Basin Inspection	☒	☐
Street Sweeping Private Streets and Parking Lots	☒	☐

EDUCATION FOR PROPERTY OWNERS, TENANTS AND OCCUPANTS

- Owner shall continue to familiar himself about the impacts that stormwater runoff can have on water quality
- Owner shall be aware of proper disposal of used materials or hazardous wastes
- Owner shall implement all BMP maintenance schedule as indicated in the LID Covenant

COMMON AREA LANDSCAPE MANAGEMENT

- Owner shall place the plant debris and street litter immediately into trash containers to prevent the pollutants from entering the storm drains
- Employees or Staffs that will be in-charge of landscaping maintenance must be given training by the Owner to properly place the leaves and lawn-clippings into trash after doing the maintenance.

Common Area Litter Control

- Owner shall implement trash management and litter control procedures aimed at reducing off site migration of trash.
- Owner shall inspect the site to ensure that all litter is removed and proper disposal.
- Owner shall post “No Littering” signs & enforce anti-litter laws in the site from the completion of the project
- Owner shall maintain the signage “No Littering” to be visible

COMMON AREA CATCH BASIN INSPECTION

- Owner shall inspect drainage facilities to ensure immediate repair of any deterioration threatening structural integrity
- Owner shall inspect & clean the catch basin before rainy season, the time period between October 1 and April 15 of each year, and re-cleaned as needed before they are 40%full

STREET SWEEPING PRIVATE STREETS AND PARKING LOTS

- Owner shall keep the driveway aisles, private driveway and parking lot area clean & orderly.
- Owner shall implement sweeping of driveway aisle, private street and parking lot area by a vacuum type cleaner/sweeper.
- A contractor shall be hired by the Owner to sweep the site at a regular basis.
- Owner shall ensure that driveway aisles and parking area is properly maintain and shall be responsible for the ongoing maintenance that is consistent with Los Angeles County Guidelines.

STRUCTURAL SOURCE CONTROL BMPS

NAME	CHECK ONE	
	Included	**Not Applicable**
Provide storm drain system stenciling and signage	☒	☐
Design and construct outdoor material storage areas to reduce pollution introduction	☐	☒
Design and construct trash and waste storage areas to reduce pollution introduction	☒	☐
Use efficient irrigation systems & landscape design, water conservation, smart controllers, and source control	☒	☐
Protect slopes and channels and provide energy dissipation	☐	☒
Loading docks	☐	☒
Maintenance bays	☐	☒
Vehicle wash areas	☐	☒
Outdoor processing areas	☐	☒
Equipment wash areas/racks	☐	☒
Fueling areas	☐	☒
Hillside landscaping	☐	☒

Provide Storm Drain System Stenciling and Signage

- Owner shall maintain the prohibitive language marking, such as “No Dumping-Drains to Ocean” or equally effective phrase on each catch basin on-site

Design and Construct Trash and Waste Storage Areas to Reduce Pollutant Introduction

- Owner shall implement trash management and litter control procedures aimed at reducing off site migration of trash
- Owner/tenants/employees shall inspect the site to ensure that all litter is removed and proper disposal
- Owner shall post and maintain the signage “No Littering” to be visible and enforce anti-litter laws in the site from completion of the project.

Use Efficient Irrigation Systems & Landscape Design

- Owner shall hire a licensed landscape to design the irrigation system
- Owner shall inspect the plants, shrubs, and trees are properly irrigated.
- Employees or Staffs shall report the deviated sprinkle heads to owner immediately direct the sprinkler heads onto the plants.

Operations and Maintenance (O&M) Plan

RESPONSIBLE PARTY

The owner is aware of the maintenance responsibilities of the proposed BMPs. A funding mechanism is in place to maintain the BMPs at the frequency stated in the LID Plan. The contact information for the entity responsible is below:

Name:	EDUCATIONAL FACILITIES GROUP
Company:	
Title:	OWNER
Address 1:	3700 LATROBE ST
Address 2:	LOS ANGELES, CA 90031
Phone Number:	323-505-7536
Email:	

BMP Name	BMP Implementation, Maintenance, and Inspection Procedures	Implementation, Maintenance, and Inspection Frequency and Schedule	Person or Entity with Operation & Maintenance Responsibility
Education for Property Owners, Tenants and Occupants	▪ Owner shall continue to familiar himself about the impacts that stormwater runoff can have on water quality. ▪ Owner shall be aware of proper disposal of used materials or hazardous wastes. ▪ Owner shall implement all BMP maintenance schedule	▪ Annually ▪ Daily ▪ Weekly	**OWNER**
Common Area Landscape Management	▪ Owner and/or employees shall place the plant debris and street litter immediately into trash containers to prevent the pollutants from entering the storm drains. ▪ Employees/staffs that will be in-charge of landscaping maintenance must be given training by the Owner to properly place the leaves and lawn-clippings into trash after doing the maintenance.	▪ Weekly ▪ Annually	**OWNER**
Common Area Litter Control	▪ Owner shall implement trash management and litter control procedures aimed at reducing off site migration of trash ▪ Owner/tenants and/or employees shall inspect the site to ensure that all litter is removed and proper disposal. ▪ Owner shall post “No Littering” signs & enforce anti-litter laws in the site from the completion of the project. ▪ Owner and/or tenants shall maintain the signage “No Littering” to be visible.	▪ Regular ▪ Regular ▪ At all times ▪ At all times	**OWNER**

BMP Name	BMP Implementation, Maintenance, and Inspection Procedures	Implementation, Maintenance, and Inspection Frequency and Schedule	Person or Entity with Operation & Maintenance Responsibility
Common Area Catch Basin Inspection	▪ Owner shall inspect drainage facilities to ensure immediate repair of any Deterioration threatening structural integrity. ▪ Owner shall inspect & clean the catch basin before rainy season, the time period between October 1 and April 15 of each year, and re-cleaned as needed before they are 40% full.	▪ Regular ▪ Before Rainy Season	**OWNER**
Street Sweeping Private Streets and Parking Lots	▪ Owner shall keep the driveway aisles, private street and parking lot area clean & orderly. ▪ Owner shall implement sweeping of driveway aisle, private street and parking lot area by a vacuum type cleaner/sweeper. ▪ A contractor shall be hired by the Owner to sweep the site at a regular basis. ▪ Owner shall ensure that private street, driveway aisles and parking area is properly maintain and shall be responsible for the ongoing maintenance that is consistent with the County of Los Angeles guidelines.	▪ At all times ▪ Monthly ▪ Monthly ▪ Annually	**OWNER**
Provide Storm Drain System Stenciling and Signage	▪ Owner shall maintain the prohibitive language marking, such as "NO DUMPING – DRAINS TO OCEAN" or equally effective phrase on each catch basin on-site.	▪ Annually	**OWNER**

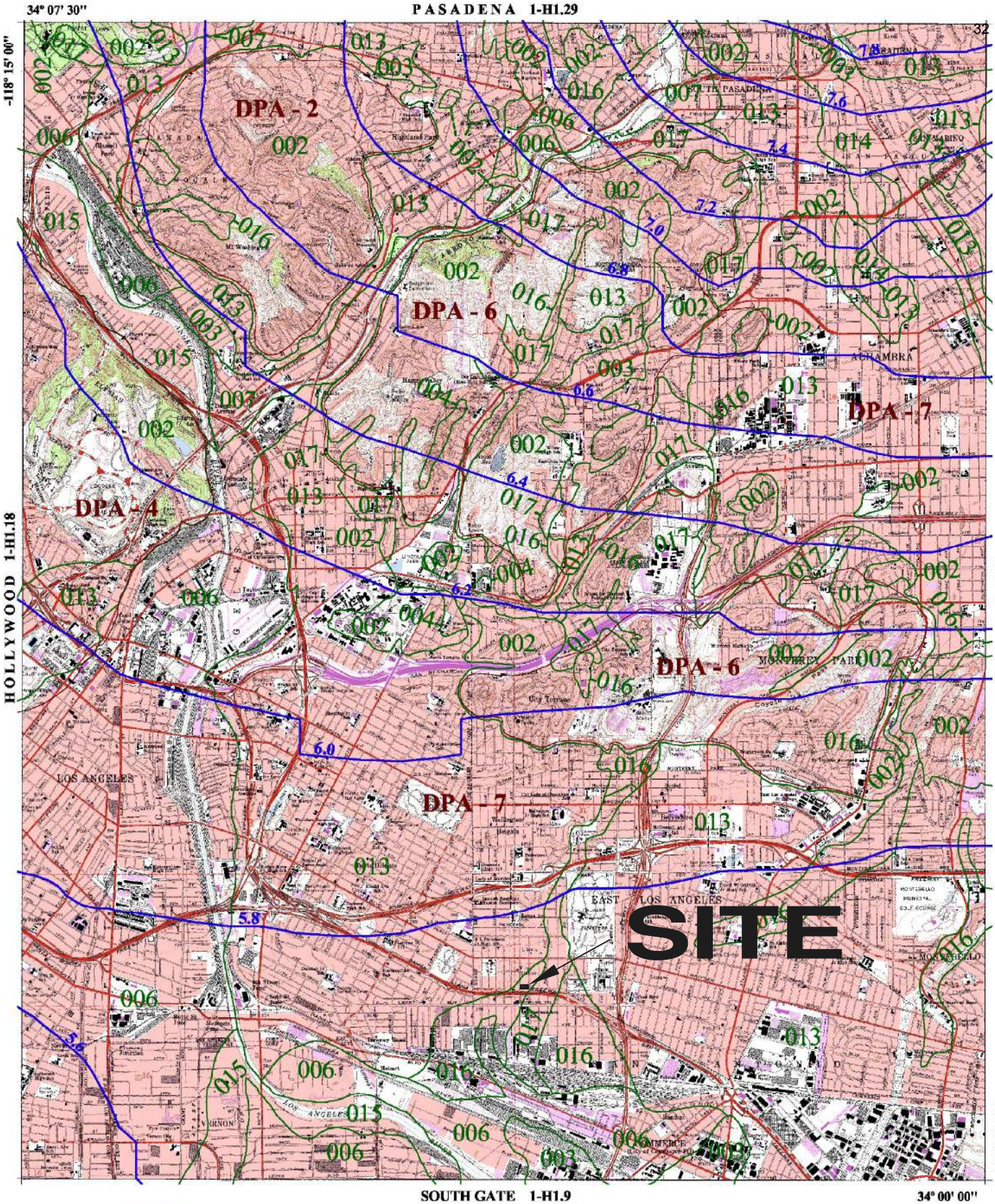
BMP Name	BMP Implementation, Maintenance, and Inspection Procedures	Implementation, Maintenance, and Inspection Frequency and Schedule	Person or Entity with Operation & Maintenance Responsibility
Use Efficient Irrigation Systems & Landscape Design	▪ Owner shall inspect irrigation system. The system shall be conducted and serviceable in accordance with the manufacturer's specification.	▪ Annually	**OWNER**

BMP Name	BMP Implementation, Maintenance, and Inspection Procedures	Implementation, Maintenance, and Inspection Frequency and Schedule	Person or Entity with Operation & Maintenance Responsibility
The storm water <u>Pre-treatment</u> System, "Flogard LoPro" Filter Insert Catch Basin per Kristar Enterprises, Inc MODEL FG-M1212, FG-M2424, FG-M3636	▪ Owner shall inspect on a regular basis. Owner shall contact the vender to perform using an industrial vacuum; the collected materials shall be removed from the screen and interior of catch basin. ▪ Owner shall inspect and replace the filter liner and filter medium pouches if necessary ▪ When all of collected materials have been removed, the filter assembly shall be removed from the drainage inlet. The outer filter liner shall be removed from the filter assembly and filter medium pouches shall be removed by unsnapping the tether from the stainless steel hooded outlet cover and set to one side. The filter liner, PVC body, and fittings shall be inspected for continued serviceability. minor	▪ The frequency of inspection will be based on pollutant loading, amount of debris, leaves, etc. and amount of runoff with minimum 3 inspections per year. ▪ Prior to rain event	**OWNER**

BMP Name	BMP Implementation, Maintenance, and Inspection Procedures	Implementation, Maintenance, and Inspection Frequency and Schedule	Person or Entity with Operation & Maintenance Responsibility
Detention/Infiltration Trench	▪ Owner shall inspect after every major storm for the first few months to ensure proper functioning. Drain times should be observed to confirm that designed drain times has been achieved. ▪ Owner shall inspect facility for signs of wetness or damage to structures, signs of petroleum hydrocarbon contamination, standing water, trash and debris, sediment accumulation, slope stability, standing water, and material buildup. ▪ Owner shall check for standing water or, if available, check observation wells following 3 days of dry weather to ensure proper drain time. ▪ Owner shall inspect pretreatment devices and diversion structures for damage, sediment buildup, and structural damage. ▪ Owner shall inspect trenches with filter fabric and trench should be inspected for sediment deposits by removing a small section of the top layer. If inspection indicates that the trench is partially or completely clogged, it should be restored to its design condition. ▪ Owner shall repair undercut and eroded areas at inflow and outflow structures. ▪ Owner shall remove sediment, debris, and oil/grease from pretreatment devices and overflow structures. ▪ Owner shall remove trash, debris, grass clippings, trees, and other large vegetation from the trench perimeter and dispose of properly.	▪ After construction ▪ Semi-annual and after extreme events ▪ Semi-annual and after extreme events ▪ Semi-annual and after extreme events ▪ Annual ▪ Standard maintenance (as needed) ▪ Standard maintenance (as needed) ▪ Semi-annual, more often as needed	**OWNER**

BMP Name	BMP Implementation, Maintenance, and Inspection Procedures	Implementation, Maintenance, and Inspection Frequency and Schedule	Person or Entity with Operation & Maintenance Responsibility
	■ Owner shall clean out sediment traps, forebays, inlet/outlet structures, overflow spillway, and trenches if necessary. ■ Owner shall remove grass clippings, leaves, and accumulated sediment from the surface of the trench. ■ Owner shall replace first layer of aggregate and filter fabric if clogging appears only to be at the surface. ■ Owner shall clean trench when loss of infiltrative capacity is observed. If drawdown time is observed to have increased significantly over the design drawdown time, removal of sediment may be necessary. This is an expensive maintenance activity and the need for it can be minimized through prevention of upstream erosion. ■ Owner shall be responsible to the total rehabilitation of the trench should be conducted to maintain storage capacity within 2/3 of the design treatment volume and 96-hour exfiltration rate limit. ■ Owner shall be responsible to the trench walls should be excavated to expose clean soil. ■ Owner shall be responsible to all of the stone aggregate and filter fabric or media must be removed. Accumulated sediment should be stripped from the trench bottom. At this point the bottom may be scarified or tilled to help induce infiltration. New fabric and clean stone aggregate should be refilled.	■ Annual ■ Annual ■ Annual ■ Annual ■ Upon failure ■ Upon failure ■ Upon failure	

APPENDIX A: HYDROCALC CALCULATOR



016 SOIL CLASSIFICATION AREA

7.2 INCHES OF RAINFALL

DPA - 6 DEBRIS POTENTIAL AREA

N W E S

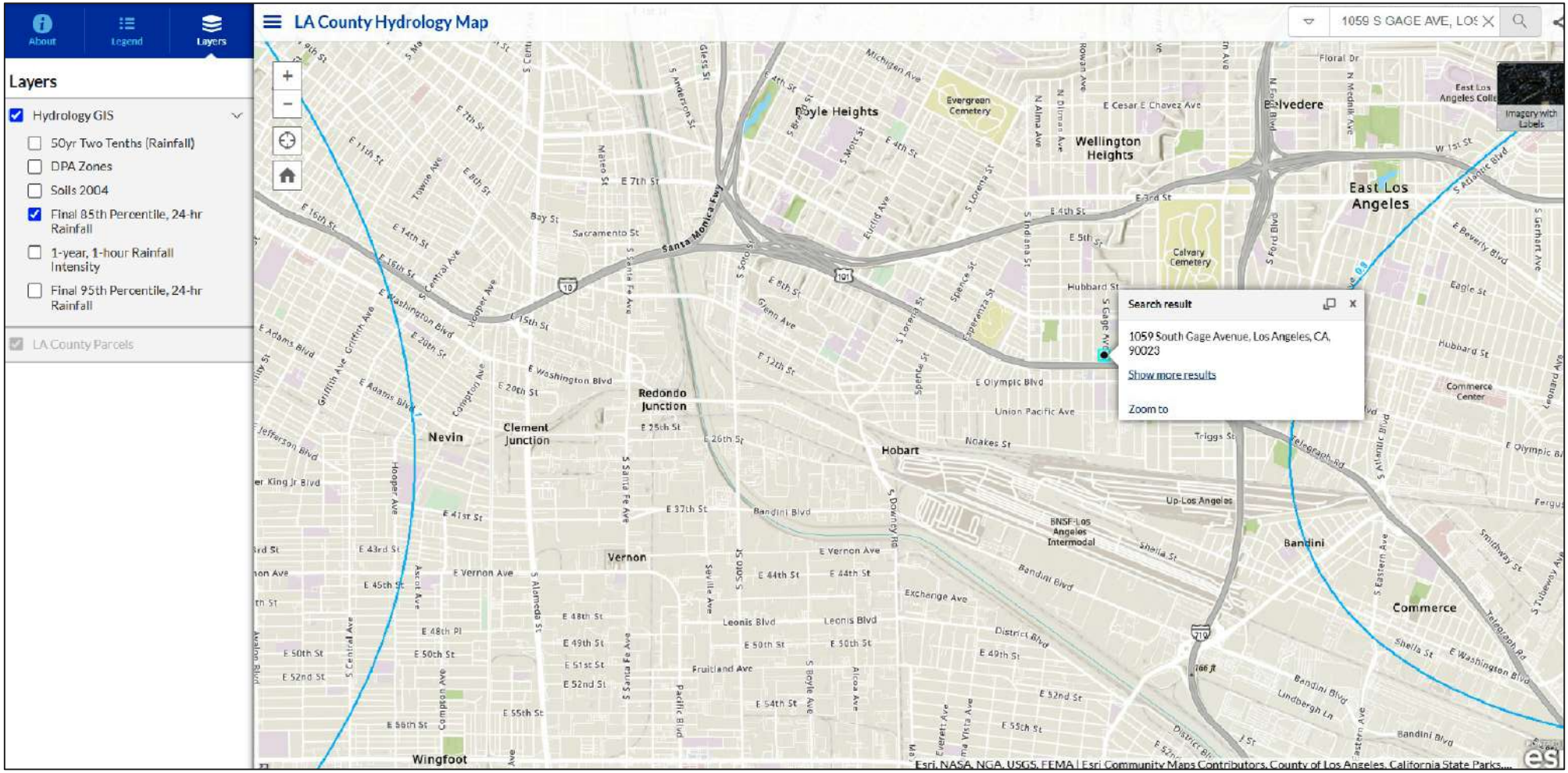
1 0 1 2 Miles

25-YEAR 24-HOUR ISOHYET REDUCTION FACTOR: 0.878
10-YEAR 24-HOUR ISOHYET REDUCTION FACTOR: 0.714

LOS ANGELES 50-YEAR 24-HOUR ISOHYET

1-H1.19

LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works


About
Legend
Layers
LA County Hydrology Map
1059 S GAGE AVE, LOS
Layers
Hydrology GIS
50yr Two Tenths (Rainfall)
DPA Zones
Soils 2004
Final 85th Percentile, 24-hr Rainfall
1-year, 1-hour Rainfall Intensity
Final 95th Percentile, 24-hr Rainfall
LA County Parcels
Search result
1059 South Gage Avenue, Los Angeles, CA, 90023
Show more results
Zoom to
Boyle Heights
Wellington Heights
East Los Angeles
Belvedere
Redondo Junction
Clement Junction
Nevin
Hobart
Vernon
Bandini
Commerce
Wingfoot
Evergreen Cemetery
Calvary Cemetery
Commerce Center
Santa Monica Fwy
Esri, NASA, NGA, USGS, FEMA | Esri Community Maps Contributors, County of Los Angeles, California State Parks,...

Peak Flow Hydrologic Analysis

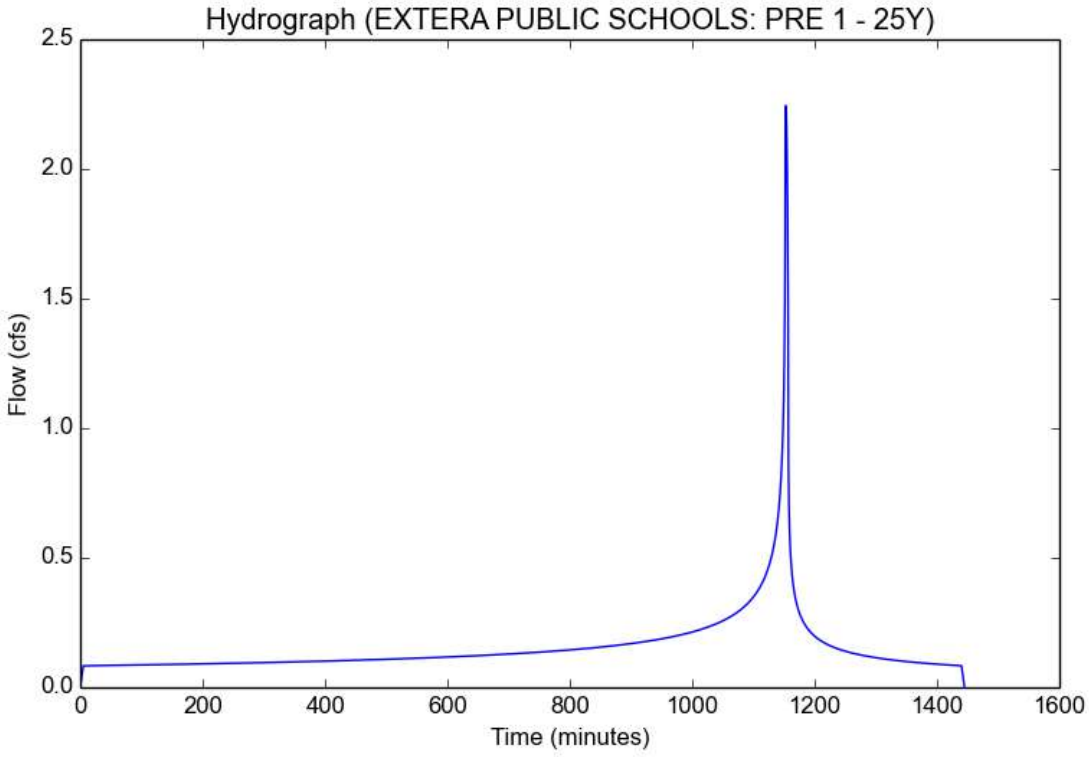
File location: C:/Users/Tritech/Desktop/SMITH/220918(1059 S Gage Ave., Los Angeles, CA 90023)-06-08-23++++++++++++++++++++/GRADING/HYD
Version: HydroCalc 1.0.3

Input Parameters

Project Name	EXTERA PUBLIC SCHOOLS
Subarea ID	PRE 1 - 25Y
Area (ac)	0.821
Flow Path Length (ft)	219.0
Flow Path Slope (vft/hft)	0.009
50-yr Rainfall Depth (in)	5.8
Percent Impervious	1.0
Soil Type	16
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.0924
Peak Intensity (in/hr)	3.0383
Undeveloped Runoff Coefficient (Cu)	0.8514
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	2.245
Burned Peak Flow Rate (cfs)	2.245
24-Hr Clear Runoff Volume (ac-ft)	0.311
24-Hr Clear Runoff Volume (cu-ft)	13545.9919



Peak Flow Hydrologic Analysis

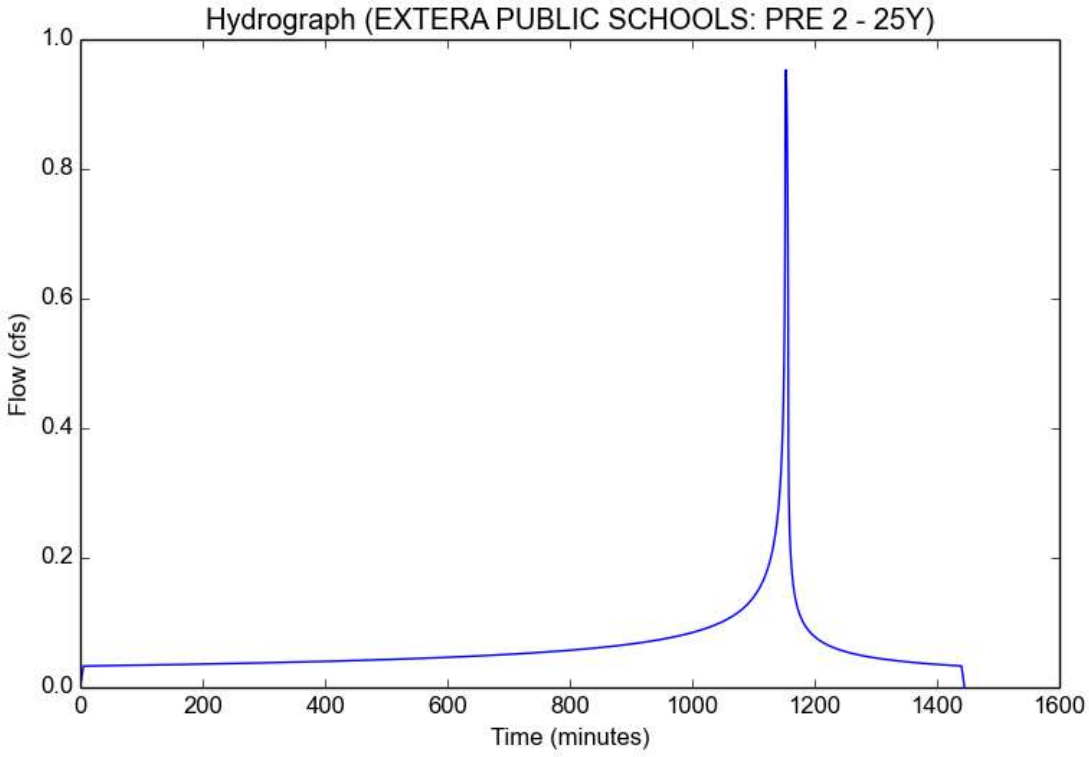
File location: C:/Users/Tritech/Desktop/SMITH/220918(1059 S Gage Ave., Los Angeles, CA 90023)-06-08-23++++++++++++++++++++/GRADING/HYD
Version: HydroCalc 1.0.3

Input Parameters

Project Name	EXTERA PUBLIC SCHOOLS
Subarea ID	PRE 2 - 25Y
Area (ac)	0.35
Flow Path Length (ft)	94.0
Flow Path Slope (vft/hft)	0.008
50-yr Rainfall Depth (in)	5.8
Percent Impervious	0.92
Soil Type	16
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.0924
Peak Intensity (in/hr)	3.0383
Undeveloped Runoff Coefficient (Cu)	0.8514
Developed Runoff Coefficient (Cd)	0.8961
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.9529
Burned Peak Flow Rate (cfs)	0.9529
24-Hr Clear Runoff Volume (ac-ft)	0.1241
24-Hr Clear Runoff Volume (cu-ft)	5406.3172



Peak Flow Hydrologic Analysis

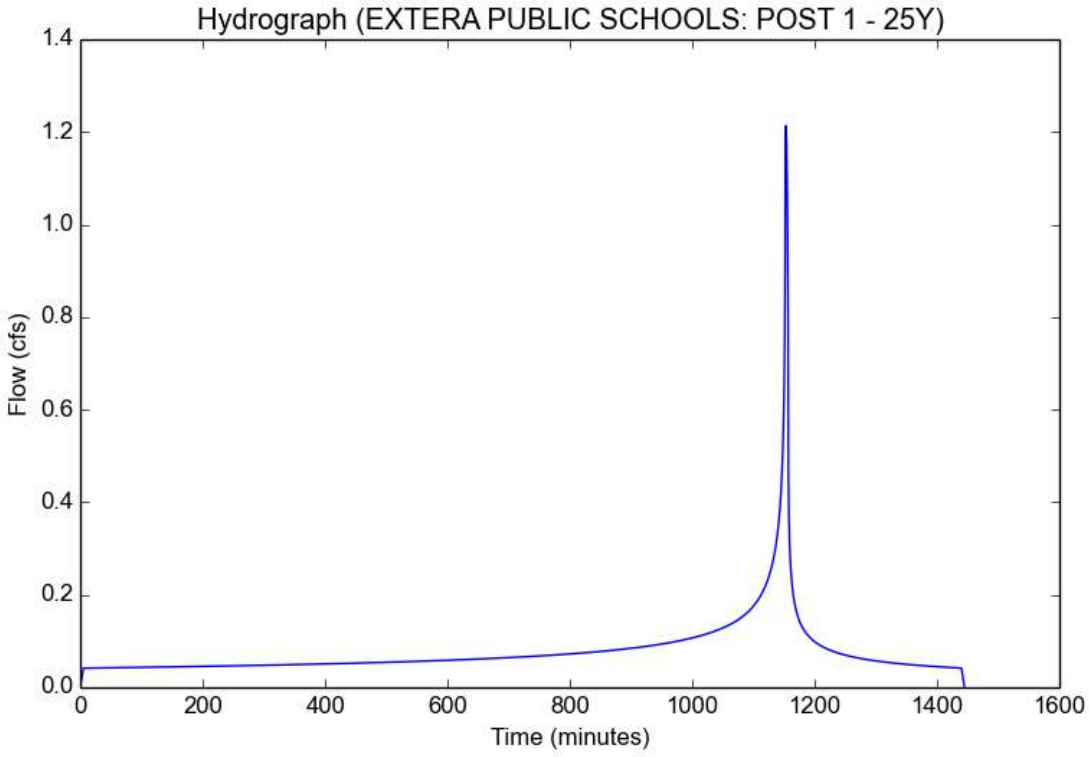
File location: C:/Users/Tritech/Desktop/SMITH/220918(1059 S Gage Ave., Los Angeles, CA 90023)-02-01-24++++++++++++++++++/GRADING/H&HC - L
Version: HydroCalc 1.0.3

Input Parameters

Project Name	EXTERA PUBLIC SCHOOLS
Subarea ID	POST 1 - 25Y
Area (ac)	0.446
Flow Path Length (ft)	40.0
Flow Path Slope (vft/hft)	0.02
50-yr Rainfall Depth (in)	5.8
Percent Impervious	0.91
Soil Type	16
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.0924
Peak Intensity (in/hr)	3.0383
Undeveloped Runoff Coefficient (Cu)	0.8514
Developed Runoff Coefficient (Cd)	0.8956
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.2136
Burned Peak Flow Rate (cfs)	1.2136
24-Hr Clear Runoff Volume (ac-ft)	0.1568
24-Hr Clear Runoff Volume (cu-ft)	6830.5014



Peak Flow Hydrologic Analysis

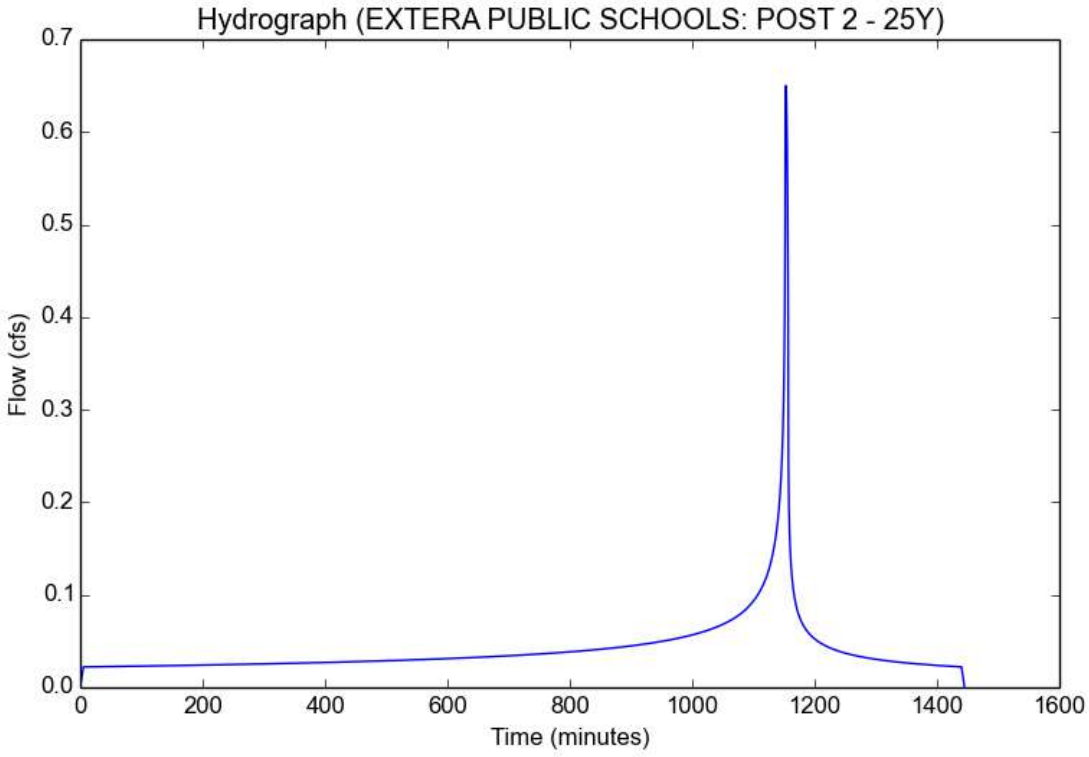
File location: C:/Users/Tritech/Desktop/SMITH/220918(1059 S Gage Ave., Los Angeles, CA 90023)-02-01-24++++++++++++++++++/GRADING/H&HC - L
Version: HydroCalc 1.0.3

Input Parameters

Project Name	EXTERA PUBLIC SCHOOLS
Subarea ID	POST 2 - 25Y
Area (ac)	0.239
Flow Path Length (ft)	42.0
Flow Path Slope (vft/hft)	0.02
50-yr Rainfall Depth (in)	5.8
Percent Impervious	0.9
Soil Type	16
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.0924
Peak Intensity (in/hr)	3.0383
Undeveloped Runoff Coefficient (Cu)	0.8514
Developed Runoff Coefficient (Cd)	0.8951
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.65
Burned Peak Flow Rate (cfs)	0.65
24-Hr Clear Runoff Volume (ac-ft)	0.0833
24-Hr Clear Runoff Volume (cu-ft)	3628.8399



Peak Flow Hydrologic Analysis

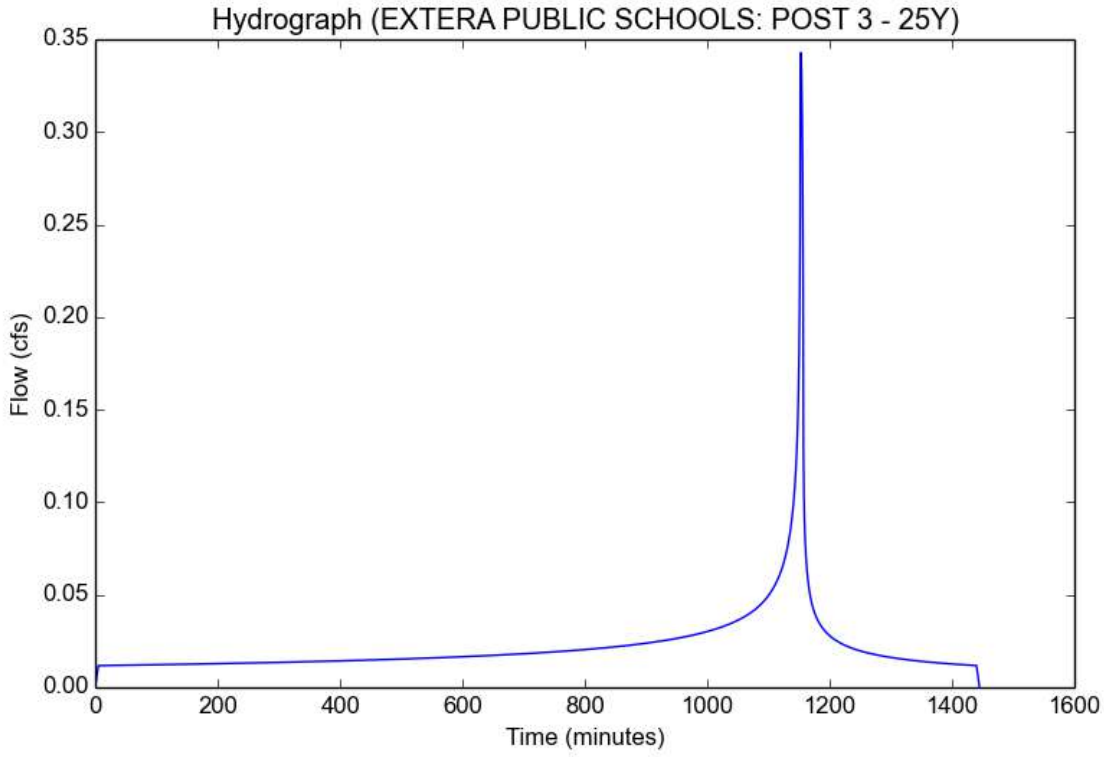
File location: C:/Users/Tritech/Desktop/SMITH/220918(1059 S Gage Ave., Los Angeles, CA 90023)-02-01-24++++++++++++++++++/GRADING/H&HC - L
Version: HydroCalc 1.0.3

Input Parameters

Project Name	EXTERA PUBLIC SCHOOLS
Subarea ID	POST 3 - 25Y
Area (ac)	0.126
Flow Path Length (ft)	68.0
Flow Path Slope (vft/hft)	0.01
50-yr Rainfall Depth (in)	5.8
Percent Impervious	0.91
Soil Type	16
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.0924
Peak Intensity (in/hr)	3.0383
Undeveloped Runoff Coefficient (Cu)	0.8514
Developed Runoff Coefficient (Cd)	0.8956
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.3429
Burned Peak Flow Rate (cfs)	0.3429
24-Hr Clear Runoff Volume (ac-ft)	0.0443
24-Hr Clear Runoff Volume (cu-ft)	1929.6932



Peak Flow Hydrologic Analysis

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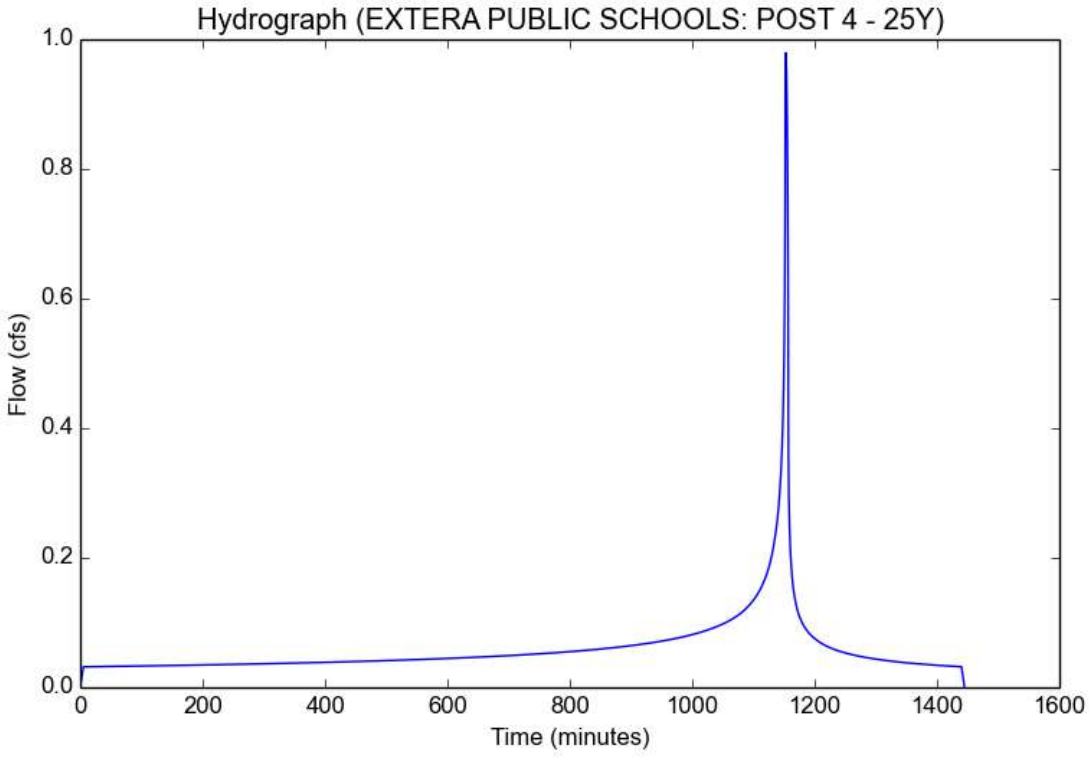
Version: HydroCalc 1.0.3

Input Parameters

Project Name	EXTERA PUBLIC SCHOOLS
Subarea ID	POST 4 - 25Y
Area (ac)	0.361
Flow Path Length (ft)	42.0
Flow Path Slope (vft/hft)	0.01
50-yr Rainfall Depth (in)	5.8
Percent Impervious	0.85
Soil Type	16
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.0924
Peak Intensity (in/hr)	3.0383
Undeveloped Runoff Coefficient (Cu)	0.8514
Developed Runoff Coefficient (Cd)	0.8927
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.9791
Burned Peak Flow Rate (cfs)	0.9791
24-Hr Clear Runoff Volume (ac-ft)	0.1204
24-Hr Clear Runoff Volume (cu-ft)	5243.6893



Peak Flow Hydrologic Analysis

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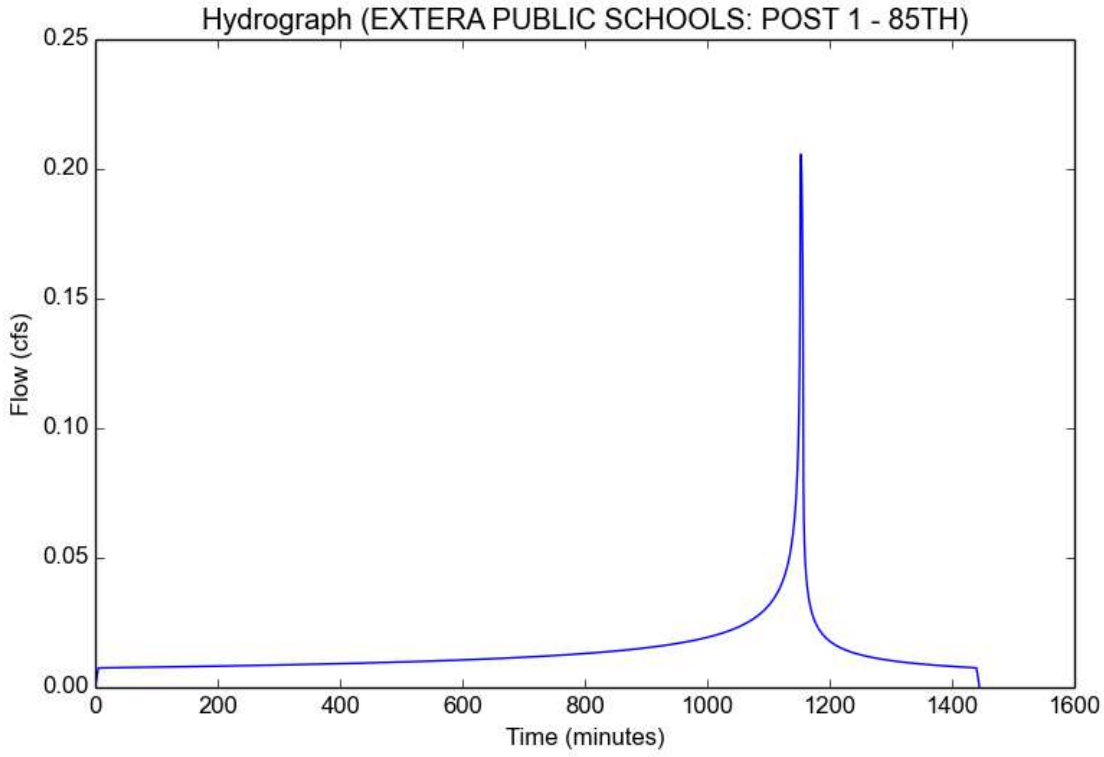
Version: HydroCalc 1.0.3

Input Parameters

Project Name	EXTERA PUBLIC SCHOOLS
Subarea ID	POST 1 - 85TH
Area (ac)	0.446
Flow Path Length (ft)	40.0
Flow Path Slope (vft/hft)	0.02
85th Percentile Rainfall Depth (in)	0.92
Percent Impervious	0.91
Soil Type	16
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	0.92
Peak Intensity (in/hr)	0.5489
Undeveloped Runoff Coefficient (Cu)	0.2354
Developed Runoff Coefficient (Cd)	0.8402
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.2057
Burned Peak Flow Rate (cfs)	0.2057
24-Hr Clear Runoff Volume (ac-ft)	0.0281
24-Hr Clear Runoff Volume (cu-ft)	1223.6499



Peak Flow Hydrologic Analysis

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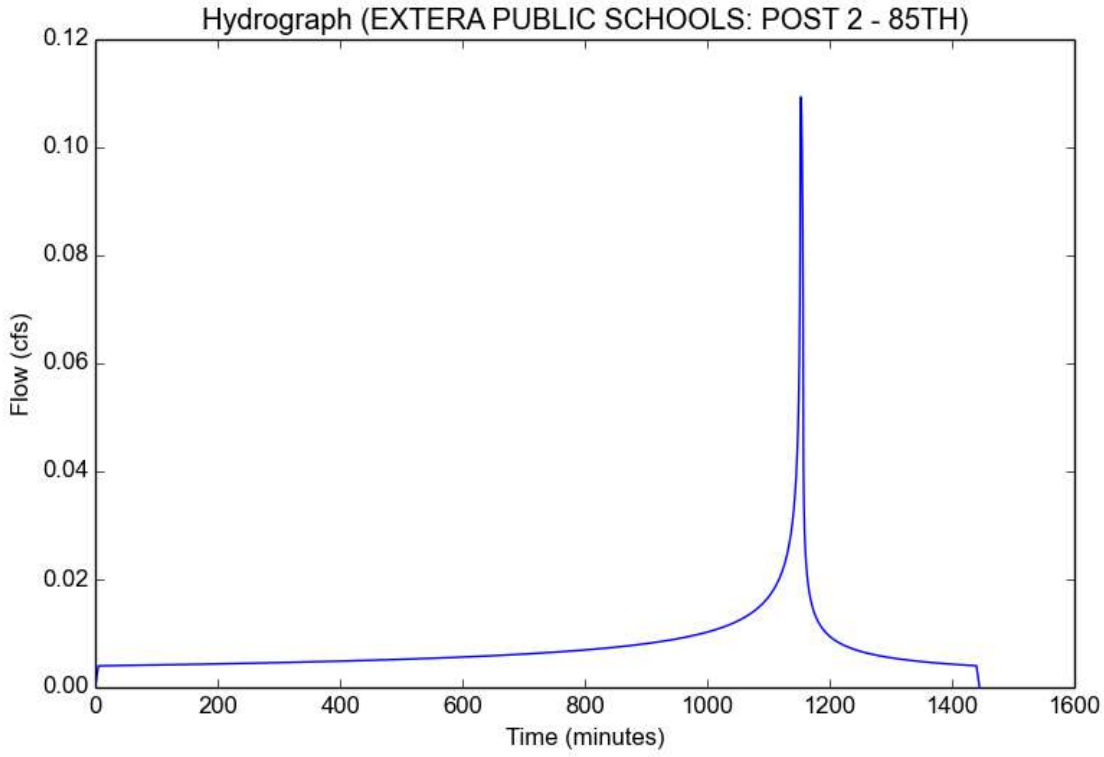
Version: HydroCalc 1.0.3

Input Parameters

Project Name	EXTERA PUBLIC SCHOOLS
Subarea ID	POST 2 - 85TH
Area (ac)	0.239
Flow Path Length (ft)	42.0
Flow Path Slope (vft/hft)	0.02
85th Percentile Rainfall Depth (in)	0.92
Percent Impervious	0.9
Soil Type	16
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	0.92
Peak Intensity (in/hr)	0.5489
Undeveloped Runoff Coefficient (Cu)	0.2354
Developed Runoff Coefficient (Cd)	0.8335
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.1093
Burned Peak Flow Rate (cfs)	0.1093
24-Hr Clear Runoff Volume (ac-ft)	0.0149
24-Hr Clear Runoff Volume (cu-ft)	649.424



Peak Flow Hydrologic Analysis

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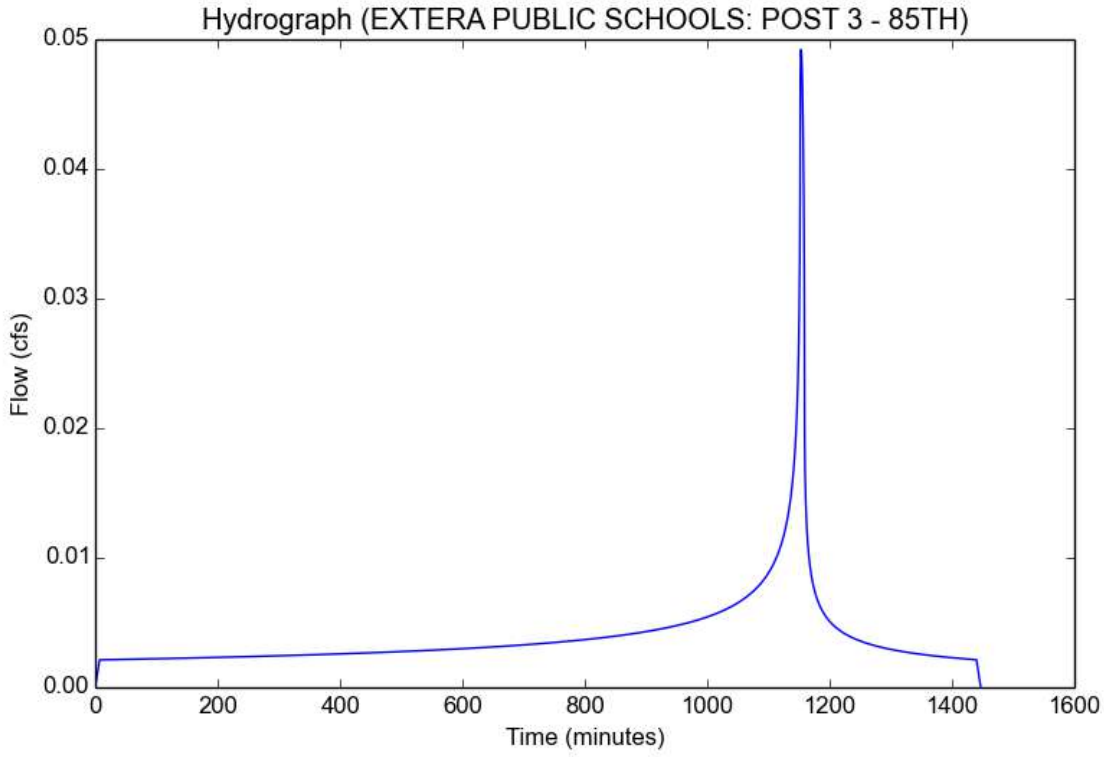
Version: HydroCalc 1.0.3

Input Parameters

Project Name	EXTERA PUBLIC SCHOOLS
Subarea ID	POST 3 - 85TH
Area (ac)	0.126
Flow Path Length (ft)	68.0
Flow Path Slope (vft/hft)	0.01
85th Percentile Rainfall Depth (in)	0.92
Percent Impervious	0.91
Soil Type	16
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	0.92
Peak Intensity (in/hr)	0.4686
Undeveloped Runoff Coefficient (Cu)	0.1624
Developed Runoff Coefficient (Cd)	0.8336
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	0.0492
Burned Peak Flow Rate (cfs)	0.0492
24-Hr Clear Runoff Volume (ac-ft)	0.0079
24-Hr Clear Runoff Volume (cu-ft)	345.6048



Peak Flow Hydrologic Analysis

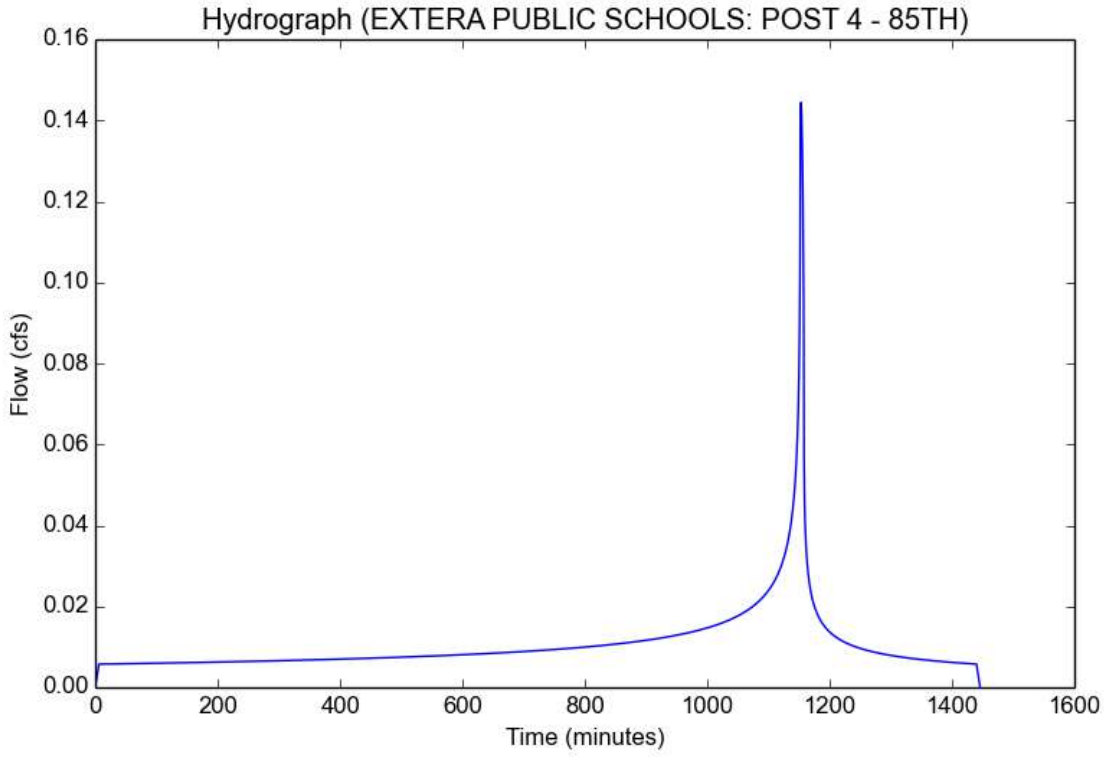
File location: C:/Users/Tritech/Desktop/SMITH/220918(1059 S Gage Ave., Los Angeles, CA 90023)-02-01-24++++++++++++++++++/GRADING/H&HC - L
Version: HydroCalc 1.0.3

Input Parameters

Project Name	EXTERA PUBLIC SCHOOLS
Subarea ID	POST 4 - 85TH
Area (ac)	0.361
Flow Path Length (ft)	42.0
Flow Path Slope (vft/hft)	0.01
85th Percentile Rainfall Depth (in)	0.92
Percent Impervious	0.85
Soil Type	16
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	0.92
Peak Intensity (in/hr)	0.5038
Undeveloped Runoff Coefficient (Cu)	0.1944
Developed Runoff Coefficient (Cd)	0.7942
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	0.1444
Burned Peak Flow Rate (cfs)	0.1444
24-Hr Clear Runoff Volume (ac-ft)	0.0214
24-Hr Clear Runoff Volume (cu-ft)	933.1256



APPENDIX B: SOIL REPORT

Geotechnologies, Inc.
Consulting Geotechnical Engineers
439 Western Avenue
Glendale, California 91201-2837
818.240.9600 • Fax 818.240.9675

Celebrating 50 YEARS OF SERVICE 1971-2021

September 23, 2022
File Number 22311

Extera Public Schools
3626 East Fifth Street
Los Angeles, CA 90063

Attention: Kathy Dominguez

Subject: Geotechnical Engineering Investigation
Proposed Charter School
1059 South Gage Avenue
Los Angeles, California

Ladies and Gentlemen:

This letter transmits the Geotechnical Engineering Investigation for the subject property prepared by Geotechnologies, Inc. This report provides geotechnical recommendations for the development of the site, including earthwork, seismic design, retaining walls, excavations, and foundation design. Engineering for the proposed project should not begin until approval of the geotechnical investigation is granted by the local building official. Significant changes in the geotechnical recommendations may result due to the building department review process.

The validity of the recommendations presented herein is dependent upon review of the geotechnical aspects of the project during construction by this firm. The subsurface conditions described herein have been projected from limited subsurface exploration and laboratory testing. The exploration and testing presented in this report should in no way be construed to reflect any variations which may occur between the exploration locations, or which may result from changes in subsurface conditions.

Should you have any questions please contact this office.

Respectfully submitted,
GEOTECHNOLOGIES, INC.

REGISTERED PROFESSIONAL ENGINEER ... STATE OF CALIFORNIA

EDWARD F. HILL
G.E.

EFH:ln

Email to: [kathy@edfacgroup.org]

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SECTION **PAGE**

GEOTECHNICAL ENGINEERING INVESTIGATION
PROPOSED CHARTER SCHOOL
1059 SOUTH GAGE AVENUE
LOS ANGELES, CALIFORNIA

INTRODUCTION

This report presents the results of the geotechnical engineering investigation performed on the subject property. The purpose of this investigation was to identify the distribution and engineering properties of the earth materials underlying the site, and to provide geotechnical recommendations for the design of the proposed development.

This investigation included six exploratory excavations, collection of representative samples, laboratory testing, engineering analysis, review of published geologic data, review of available geotechnical engineering information and the preparation of this report. The exploratory excavation locations are shown on the enclosed Plot Plan. The results of the exploration and the laboratory testing are presented in the Appendix of this report.

PROPOSED DEVELOPMENT

Information concerning the proposed development was furnished by the design team. The proposed project consists of a charter school. The site is currently occupied by several structures. The larger structure on the north side of the site will be demolished and a new structure will be built. The structure is proposed to be two stories built at existing site grades. Structural loading is expected to be light. Grading will consist of removal and recompaction of existing unsuitable soils. It is the understanding of this office that the structures on the south side of the site are to remain and be remodeled.

Any changes in the design of the project or location of any structure, as outlined in this report, should be reviewed by this office. The recommendations contained in this report should not be considered valid until reviewed and modified or reaffirmed, in writing, subsequent to such review.

SITE CONDITIONS

The property is located at 1059 South Gage Avenue in the City Terrace area of the County of Los Angeles, California. The site is relatively level with very little elevation change. The ALTA survey shows about 1-1/2 feet of elevation change falling generally to the west. Drainage across the site is by sheetflow to the improved streets.

The site is currently developed with several building associated with a church. The buildings on the north side of the property will be demolished and replaced with a new structure. The building on the south side of the property will remain and be remodeled. Vegetation on the site consists of small trees and shrubs in planters generally on the periphery of the property.

The neighboring development consists of a mixture of single-story single-family homes as well as one to two story commercial structures.

GEOTECHNICAL EXPLORATION

FIELD EXPLORATION

The site was explored on August 23 and 24, 2022 by excavating six exploratory excavations. The exploratory excavations varied in depth from 20 to 50 feet. The exploration was prosecuted with the aid of a truck-mounted drilling machine using 8-inch diameter hollowstem augers. The exploration locations are shown on the Plot Plan and the geologic materials encountered are logged on Plates A-1 through A-6.

The location of exploratory excavations was determined by information furnished by the client. Elevations of the exploratory excavations were determined by hand level or interpolation from data provided. The location and elevation of the exploratory excavations should be considered accurate only to the degree implied by the method used.

Geologic Materials

Fill earth materials were encountered in each of the exploratory excavations. The fill was found to be three to eight feet in depth and consists of silty sands to sandy silts which are dark brown and yellowish brown, moist, medium dense, fine grained and stiff. Debris was observed in the fill materials. The native soils underlying the site consist of silty sands ands and sandy silts. The soils are dark and yellowish brown, moist, medium dense to very dense and fine grained. With depth occasional clay and silt layers were observed which are dark brown, moist and stiff to very stiff.

The geologic materials consist of detrital sediments deposited by river and stream action typical to this area of Los Angeles County. More detailed descriptions of the earth materials encountered may be obtained from individual logs of the subsurface excavations.

Groundwater

Groundwater was not encountered during exploration to 50 feet in depth. The historic high groundwater level was established by review of California Geological Survey Seismic Hazard Evaluation Report 029 Plate 1.2 entitled "Historically Highest Ground Water Contours". Review of this plate indicates that the historically highest groundwater level is on the order of 85 feet below site grade.

Fluctuations in the level of groundwater may occur due to variations in rainfall, temperature, and other factors not evident at the time of the measurements reported herein. Fluctuations also may occur across the site. High groundwater levels can result in changed conditions.

Caving

Caving could not be directly observed during exploration due to the type of excavation equipment utilized. Based on the experience of this firm, large diameter excavations, excavations that encounter granular, cohesionless soils and excavations below the groundwater table will most likely experience caving.

SEISMIC EVALUATION

REGIONAL GEOLOGIC SETTING

The subject property is located in the northern portion of the Peninsular Ranges Geomorphic Province. The Peninsular Ranges are characterized by northwest-trending blocks of mountain ridges and sediment-floored valleys. The dominant geologic structural features are northwest trending fault zones that either die out to the northwest or terminate at east-trending reverse faults that form the southern margin of the Transverse Ranges.

The Los Angeles Basin is located at the northern end of the Peninsular Ranges Geomorphic Province. The basin is bounded by the east and southeast by the Santa Ana Mountains and San Joaquin Hills, to the northwest by the Santa Monica Mountains. Over 22 million years ago the Los Angeles basin was a deep marine basin formed by tectonic forces between the North American and Pacific plates. Since that time, over 5 miles of marine and non-marine sedimentary rock as well as intrusive and extrusive igneous rocks have filled the basin. During the last 2 million years, defined by the Pleistocene and Holocene epochs, the Los Angeles basin and surrounding mountain ranges have been uplifted to form the present-day landscape. Erosion of

the surrounding mountains has resulted in deposition of unconsolidated sediments in low-lying areas by rivers such as the Los Angeles River. Areas that have experienced subtle uplift have been eroded with gullies.

The site is underlain by unconsolidated alluvial sediments deposited by river and stream action that are deeper than 200 feet.

REGIONAL FAULTING

Based on criteria established by the California Division of Mines and Geology (CDMG) now called California Geologic Survey (CGS), Faults may be categorized as Holocene-active, Pre-Holocene faults, and Age-undetermined faults. Holocene-active faults are those which show evidence of surface displacement within the last 11,700 years. Pre-Holocene faults are those that have not moved in the past 11,700 years. Age-undetermined faults are faults where the recency of fault movement has not been determined.

Buried thrust faults are faults without a surface expression but are a significant source of seismic activity. They are typically broadly defined based on the analysis of seismic wave recordings of hundreds of small and large earthquakes in the southern California area. Due to the buried nature of these thrust faults, their existence is usually not known until they produce an earthquake. The risk for surface rupture potential of these buried thrust faults is inferred to be low (Leighton, 1990). However, the seismic risk of these buried structures in terms of recurrence and maximum potential magnitude is not well established. Therefore, the potential for surface rupture on these surface-verging splays at magnitudes higher than 6.0 cannot be precluded.

SEISMIC HAZARDS AND DESIGN CONSIDERATIONS

The primary geologic hazard at the site is moderate to strong ground motion (acceleration) caused by an earthquake on any of the local or regional faults. The potential for other earthquake-induced hazards was also evaluated including surface rupture, liquefaction, dynamic settlement, inundation and landsliding.

Surface Rupture

In 1972, the Alquist-Priolo Special Studies Zones Act (now known as the Alquist-Priolo Earthquake Fault Zoning Act) was passed into law. As revised in 2018, The Act defines "Holocene-active" Faults utilizing the same aging criteria as that used by California Geological Survey (CGS). However, established state policy has been to zone only those faults which have direct evidence of movement within the last 11,700 years. It is this recency of fault movement that the CGS considers as a characteristic for faults that have a relatively high potential for ground rupture in the future.

CGS policy is to delineate a boundary from 200 to 500 feet wide on each side of the Holocene-Active fault trace based on the location precision, the complexity, or the regional significance of the fault. If a site lies within an Earthquake Fault Zone, a geologic fault rupture investigation must be performed that demonstrates that the proposed building site is not threatened by surface displacement from the fault before development permits may be issued.

Ground rupture is defined as surface displacement which occurs along the surface trace of the causative fault during an earthquake. Based on research of available literature and results of site reconnaissance, no known Holocene-active or Pre-Holocene faults underlie the subject site. In addition, the subject site is not located within an Alquist-Priolo Earthquake Fault Zone. Based on these considerations, the potential for surface ground rupture at the subject site is considered low.

Liquefaction

Liquefaction is a phenomenon in which saturated silty to cohesionless soils below the groundwater table are subject to a temporary loss of strength due to the buildup of excess pore pressure during cyclic loading conditions such as those induced by an earthquake. Liquefaction-related effects include loss of bearing strength, amplified ground oscillations, lateral spreading, and flow failures.

The Seismic Hazards Maps of the State of California (CDMG, 1999), does not classify the site as part of the potentially "Liquefiable" area. This determination is based on groundwater depth records, soil type and distance to a fault capable of producing a substantial earthquake.

Based on the dense nature of the underlying soils, the lack of groundwater to 50 feet, and the depth to historic highest groundwater level, the potential for liquefaction occurring at the site is considered to be remote.

Dynamic Dry Settlement

Seismically-induced settlement or compaction of dry or moist, cohesionless soils can be an effect related to earthquake ground motion. Such settlements are typically most damaging when the settlements are differential in nature across the length of structures.

Calculations indicate that the seismically induced dry sands settlement could be on the order of 0.23 inches. This is considered to be within the tolerance of a well-designed structure.

Tsunamis, Seiches and Flooding

Tsunamis are large ocean waves generated by sudden water displacement caused by a submarine earthquake, landslide, or volcanic eruption. Review of the City of Los Angeles Inundation and Tsunami Hazard Areas map indicates the site does not lie within the mapped tsunami inundation boundaries.

Seiches are oscillations generated in enclosed bodies of water which can be caused by ground shaking associated with an earthquake. Review of the County of Los Angeles Flood and Inundation Hazards Map, Leighton (1990) indicates the site does not appear to not lie within mapped inundation boundaries due to a seiche or a breached upgradient reservoir.

Landsliding

The probability of seismically-induced landslides occurring on the site is considered to be low due to the general lack of elevation difference slope geometry across or adjacent to the site.

CONCLUSIONS AND RECOMMENDATIONS

Based upon the exploration, laboratory testing, and research, it is the finding of Geotechnologies, Inc. that construction of the proposed charter school is considered feasible from a geotechnical engineering standpoint provided the advice and recommendations presented herein are followed and implemented during construction.

The existing fill materials are not suitable for support of the proposed foundations, floor slabs or additional fill. Existing fill materials should be completely removed within the building area and recompacted. In addition, earth materials should be removed to a minimum depth of three feet below proposed foundations and recompacted as controlled fill prior to foundation excavation. Conventional foundations bearing in newly placed controlled fill are recommended for foundation support. For the structures which are to be remodeled, any new foundations which are necessary should penetrate existing fill materials to bear in competent native soils.

The following statement is made in regard to Los Angeles County Code Sections 110 and 111: It is the opinion of the undersigned based on the findings of this investigation that provided the recommendations presented in this report are followed, the proposed development will be safe

for its intended use against hazard from landsliding, settlement or slippage. The proposed development will have no adverse effect on the stability of the site of adjoining properties.

Foundations for small outlying structures, such as property line walls, which will not be tied-in to the proposed school building may be supported on conventional foundations bearing in native geologic materials.

SEISMIC DESIGN CONSIDERATIONS

California Building Code Seismic Parameters

Based on information derived from the subsurface investigation, the subject site is classified as Site Class D, which corresponds to a "Stiff Soil" Profile, according to Table 20.3-1 of ASCE 7-16. This information and the site coordinates were input into the OSHPD seismic utility program in order to calculate ground motion parameters for the site.

CALIFORNIA BUILDING CODE SEISMIC PARAMETERS	
California Building Code	2019
ASCE Design Standard	7-16
Risk Category	II
Site Class	D
Mapped Spectral Acceleration at Short Periods (S_S)	1.884g
Site Coefficient (F_a)	1.0
Maximum Considered Earthquake Spectral Response for Short Periods (S_{MS})	1.884g
Five-Percent Damped Design Spectral Response Acceleration at Short Periods (S_{DS})	1.256g
Mapped Spectral Acceleration at One-Second Period (S_1)	0.673g
Site Coefficient (F_v)	1.7*
Maximum Considered Earthquake Spectral Response for One-Second Period (S_{M1})	1.144g*
Five-Percent Damped Design Spectral Response Acceleration for One-Second Period (S_{D1})	0.767g*

** According to ASCE 7-16, a Long Period Site Coefficient (F_v) of 1.7 may be utilized provided that the value of the Seismic Response Coefficient (C_s) is determined by Equation 12.8-2 for values of $T \leq 1.5T_s$ and taken as equal to 1.5 times the value computed in accordance with either Equation 12.8-3 for $T_L \geq T > 1.5T_s$ or equation 12.8-4 for $T > T_L$. Alternatively, a site-specific ground motion hazard analysis may be performed in accordance with ASCE 7-16 Section 21.1 and/or a ground motion hazard analysis in accordance with ASCE 7-16 Section 21.2 to determine ground motions for any structure.*

FILL SOILS

The maximum depth of fill encountered on the site was eight feet. This material and any fill generated during demolition should be removed and recompacted as controlled fill prior to foundation excavation.

EXPANSIVE SOILS

The onsite geologic materials are in the very low to moderate expansion range. The Expansion Index was found to be between 20 and 58 for bulk samples remolded to 90 percent of the laboratory maximum density. Additional reinforcing is required as noted in the "Foundation Design" and "Slabs-On-Grade" sections of this report.

WATER-SOLUBLE SULFATES

The Portland cement portion of concrete is subject to attack when exposed to water-soluble sulfates. Usually the two most common sources of exposure are from soil and marine environments.

The sources of natural sulfate minerals in soils include the sulfates of calcium, magnesium, sodium, and potassium. When these minerals interact and dissolve in subsurface water, a sulfate concentration is created, which will react with exposed concrete. Over time sulfate attack will destroy improperly proportioned concrete well before the end of its intended service life.

The water-soluble sulfate content of the onsite geologic materials was tested by California Test 417. The water-soluble sulfate content was determined to be less than 0.1% percentage by weight for the soils tested. Based on the most recent revision to American Concrete Institute (ACI) Standard 318, the sulfate exposure is considered to be negligible for geologic materials with less than 0.1% and Type I cement may be utilized for concrete foundations in contact with the site soils.

GRADING GUIDELINES

Site Preparation

- A thorough search should be made for possible underground utilities and/or structures. Any existing or abandoned utilities or structures located within the footprint of the proposed grading should be removed or relocated as appropriate.

- All vegetation, existing fill, and soft or disturbed geologic materials should be removed from the areas to receive controlled fill. All existing fill materials and any disturbed geologic materials resulting from grading operations shall be completely removed and properly recompacted prior to foundation excavation.

- Any vegetation or associated root system located within the footprint of the proposed structures should be removed during grading.

- Subsequent to the indicated removals, the exposed grade shall be scarified to a depth of six inches, moistened to optimum moisture content, and recompacted in excess of the minimum required comparative density.

- The excavated areas shall be observed by the geotechnical engineer prior to placing compacted fill.

Recommended Overexcavation

The proposed building area shall be excavated to a minimum depth of three feet below the bottom of all foundations. The excavation shall extend at least three feet beyond the edge of foundations or for a distance equal to the depth of fill below the foundations, whichever is greater. It is very important that the position of the proposed structure is accurately located so that the limits of the graded area are accurate and the grading operation proceeds efficiently.

Compaction

Comparative compaction is defined, for purposes of these guidelines, as the ratio of the in-place density to the maximum density as determined by applicable ASTM testing.

All fill should be mechanically compacted in layers not more than 8 inches thick. The materials placed should be moisture conditions to within 3 percent of the optimum moisture content of the particular material placed. All fill shall be compacted to at least 90 percent of the maximum laboratory density for the materials used. The maximum density shall be determined by the laboratory operated by Geotechnologies, Inc. in general accordance with the most recent revision of ASTM D 1557.

Field observation and testing shall be performed by a representative of the geotechnical 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 a minimum of 90 percent compaction is obtained.

Acceptable Materials

The excavated onsite materials are considered satisfactory for reuse in the controlled fills as long as any debris and/or organic matter is removed.

Any imported materials shall be observed and tested by the representative of the geotechnical engineer prior to use in fill areas. Imported materials should contain sufficient fines so as to be relatively impermeable and result in a stable subgrade when compacted. Any required import materials should consist of geologic materials with an expansion index of less than 20. The water-soluble sulfate content of the import materials should be less than 0.1% percentage by weight.

Imported materials should be free from chemical or organic substances which could affect the proposed development. A competent professional should be retained in order to test imported materials and address environmental issues and organic substances which might affect the proposed development.

Utility Trench Backfill

Utility trenches should be backfilled with controlled fill. The utility should be bedded with clean sands at least one foot over the crown. The remainder of the backfill may be onsite soil compacted to 90 percent of the laboratory maximum density. Utility trench backfill should be tested by representatives of this firm in general accordance with the most recent revision of ASTM D 1557.

Wet Soils

At the time of exploration the soils which will be exposed during grading were above optimum moisture content. It is anticipated that the excavated material to be placed as compacted fill, and the materials exposed at the bottom of excavated plane may require significant drying and aeration prior to recompaction.

Pumping (yielding or vertical deflection) of the high-moisture content soils at the bottom of the excavation may occur during operation of heavy equipment. Where pumping is encountered, angular minimum ¾-inch gravel and/or crushed concrete should be placed and worked into the subgrade. The exact thickness of the gravel would be a trial and error procedure, and would be determined in the field. It would likely be on the order of 1 to 2 feet thick.

The gravel will help to densify the subgrade as well as function as a stabilization material upon which heavy equipment may operate. It is not recommended that rubber tire construction equipment attempt to operate directly on the pumping subgrade soils prior to placing the gravel.

Direct operation of rubber tire equipment on the soft subgrade soils will likely result in excessive disturbance to the soils, which in turn will result in a delay to the construction schedule since those disturbed soils would then have to be removed and properly recompacted. Extreme care should be utilized to place gravel as the subgrade becomes exposed.

Shrinkage

Shrinkage results when a volume of soil removed at one density is compacted to a higher density. A shrinkage factor between 5 and 15 percent should be anticipated when excavating and recompacting the existing fill and underlying native geologic materials on the site to an average comparative compaction of 92 percent.

Weather Related Grading Considerations

When rain is forecast all fill that has been spread and awaits compaction shall be properly compacted prior to stopping work for the day or prior to stopping due to inclement weather. These fills, once compacted, shall have the surface sloped to drain to an area where water can be removed.

Temporary drainage devices should be installed to collect and transfer excess water to the street in non-erosive drainage devices. Drainage should not be allowed to pond anywhere on the site, and especially not against any foundation or retaining wall. Drainage should not be allowed to flow uncontrolled over any descending slope.

Work may start again, after a period of rainfall, once the site has been reviewed by a representative of this office. Any soils saturated by the rain shall be removed and aerated so that the moisture content will fall within three percent of the optimum moisture content.

Surface materials previously compacted before the rain shall be scarified, brought to the proper moisture content and recompacted prior to placing additional fill, if considered necessary by a representative of this firm.

Abandoned Seepage Pits

No abandoned seepage pits were encountered during exploration and none are known to exist on the site. However, should such a structure be encountered during grading, options to permanently abandon seepage pits include complete removal and backfill of the excavation with compacted fill, or drilling out the loose materials and backfilling to within a few feet of grade with slurry, followed by a compacted fill cap.

If the subsurface structures are to be removed by grading, the entire structure should be demolished. The resulting void may be refilled with compacted soil. Concrete and brick generated during the seepage pit removal may be reused in the fill as long as all fragments are less than 6 inches in longest dimension and the debris comprise less than 15 percent of the fill by volume. All grading should comply with the recommendations of this report.

Where the seepage pit structure is to be left in place, the seepage pits should cleaned of all soil and debris. This may be accomplished by drilling. The pits should be filled with minimum 1-1/2 sack concrete slurry to within 5 feet of the bottom of the proposed foundations. In order to provide a more uniform foundation condition, the remainder of the void should be filled with controlled fill.

Geotechnical Observations and Testing During Grading

Geotechnical observations and testing during grading are considered to be a continuation of the geotechnical investigation. It is critical that the geotechnical aspects of the project be reviewed by representatives of Geotechnologies, Inc. during the construction process. Compliance with the

design concepts, specifications or recommendations during construction requires review by this firm during the course of construction. Any fill which is placed should be observed, tested, and verified if used for engineered purposes. Please advise this office at least twenty-four hours prior to any required site visit.

Proper compaction is necessary to reduce settlement of overlying improvements. Some settlement of compacted fill should be anticipated. Any utilities supported therein should be designed to accept differential settlement. Differential settlement should also be considered at the points of entry to the structure.

LEED Considerations

The Leadership in Energy and Environmental Design (LEED) Green Building Rating System encourages adoption of sustainable green building and development practices. Credit for LEED Certification can be assigned for reuse of construction waste and diversion of materials from landfills in new construction.

In an effort to provide the design team with a viable option in this regard, demolition debris could be crushed onsite in order to use it in the ongoing grading operations. The environmental ramifications of this option, if any, should be considered by the team.

The demolition debris should be limited to concrete, asphalt and other non-deleterious materials. All deleterious materials should be removed including, but not limited to, paper, garbage, ceramic materials and wood.

For structural fill applications, the materials should be crushed to 2 inches in maximum dimension or smaller. The crushed materials should be thoroughly blended and mixed with onsite soils prior to placement as compacted fill. The amount of crushed material should not exceed 20 percent. The blended and mixed materials should be tested by this office prior to

placement to ensure it is suitable for compaction purposes. The blended and mixed materials should be tested by Geotechnologies, Inc. during placement to ensure that it has been compacted in a suitable manner.

FOUNDATION DESIGN

Conventional

Conventional foundations for the new structures may bear in newly placed controlled fill. Where additional foundations are necessary for the proposed structures which are to be remodeled, conventional foundations should be deepened to penetrate any existing fill and bear in competent native soils. All conventional foundations for a structure should bear in the same material.

Continuous foundations may be designed for a bearing capacity of 2,500 pounds per square foot, and should be a minimum of 12 inches in width, 18 inches in depth below the lowest adjacent grade and 18 inches into the recommended bearing material.

Column foundations may be designed for a bearing capacity of 3,000 pounds per square foot, and should be a minimum of 24 inches in width, 18 inches in depth below the lowest adjacent grade and 18 inches into the recommended bearing material.

The bearing capacity increase for each additional foot of width is 200 pounds per square foot. The bearing capacity increase for each additional foot of depth is 600 pounds per square foot. The maximum recommended bearing capacity is 5,000 pounds per square foot.

The bearing capacities indicated above are 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.

Miscellaneous Foundations

Conventional foundations for structures such as privacy walls or trash enclosures which will not be rigidly connected to the proposed school structures may bear in native soils. Continuous footings may be designed for a bearing capacity of 2,000 pounds per square foot, and should be a minimum of 12 inches in width, 18 inches in depth below the lowest adjacent grade and 18 inches into the recommended bearing material. No bearing capacity increases are recommended.

Since the recommended bearing capacity is a net value, the weight of concrete in the foundations may be taken as 50 pounds per cubic foot and the weight of the soil backfill may be neglected when determining the downward load on the foundations.

Foundation Reinforcement

All continuous foundations should be reinforced with a minimum of four #4 steel bars. Two should be placed near the top of the foundation, and two should be placed near the bottom.

Lateral Design

Resistance to lateral loading may be provided by friction acting at the base of foundations and by passive earth pressure. An allowable coefficient of friction of 0.37 may be used with the dead load forces.

Passive geologic pressure for the sides of foundations poured against undisturbed or recompacted soil may be computed as an equivalent fluid having a density of 300 pounds per cubic foot with a maximum earth pressure of 3,000 pounds per square foot.

The passive and friction components may be combined for lateral resistance without reduction. A one-third increase in the passive value may be used for short duration loading such as wind or seismic forces.

Foundation Settlement

Settlement of the foundation system is expected to occur on initial application of loading. The maximum settlement is expected to be 1/2 inch and occur below the heaviest loaded columns. Differential settlement is not expected to exceed 1/4 inch.

Modulus of Subgrade Reaction

A unit modulus of subgrade reaction of 300 pounds per cubic inch (518 kcf) may be utilized for design of foundations. This value is a unit value for use with a one-foot square footing. The modulus should be reduced in accordance with the following equation when used with the larger footings:

$$K = K_1 * [(B+1)/(2*B)]^2$$

Where:
K = Reduced Subgrade Modulus
K_1 = Unit Subgrade Modulus
B = Foundation Width (feet)

Foundation Observations

It is critical that all foundation excavations are observed by a representative of this firm to verify penetration into the recommended bearing materials. The observation should be performed prior to the placement of reinforcement. Foundations should be deepened to extend into satisfactory geologic materials, if necessary.

Foundation excavations should be cleaned of all loose soils prior to placing steel and concrete. Any required foundation backfill should be mechanically compacted, flooding is not permitted.

RETAINING WALL DESIGN

Cantilever Retaining Walls

Retaining walls supporting a level backslope may be designed utilizing a triangular distribution of pressure. Cantilever retaining walls may be designed for 30 pounds per cubic foot for walls retaining up to 6 feet of earth.

For this equivalent fluid pressure to be valid, walls which are to be restrained at the top should be backfilled prior to the upper connection being made. Additional active pressure should be added for a surcharge condition due to sloping ground, vehicular traffic or adjacent structures.

Retaining Wall Drainage

Subdrains may consist of 4-inch diameter perforated pipes, placed with perforations facing down. The pipe shall be encased in at least one foot of gravel around the pipe. The gravel shall be wrapped in filter fabric. The gravel may consist of three-quarter inch to one-inch crushed rock. As an alternative, the use of gravel pockets and weepholes is an acceptable drainage method. Weepholes shall be a minimum of 2 inches in diameter, placed at 8 feet on center along the base of the wall. Gravel pockets shall be a minimum of 1 cubic foot in dimension and may consist of three-quarter inch to once inch crushed rock, wrapped in filter fabric.

Certain types of subdrain pipe are not acceptable to the various municipal agencies, it is recommended that prior to purchasing subdrainage pipe, the type and brand is cleared with the proper municipal agencies. Subdrainage pipes should outlet to an acceptable location.

Where retaining walls are to be constructed adjacent to property lines there is usually not enough space for emplacement of a standard pipe and gravel drainage system. Under these circumstances, the use of a flat drainage product is acceptable. Some municipalities do not allow the use of flat-drainage products. The use of such a product should be researched with the building official.

Dynamic (Seismic) Earth Pressure

The maximum dynamic active pressure is equal to the sum of the initial static pressure and the dynamic (seismic) pressure increment. Under the most recent building code, as interpreted by most building departments, seismic earth pressure is required in the design of restraining walls which support over 6 feet of earth. The proposed walls are less than 6 feet in height therefore the dynamic earth pressure may be omitted.

Waterproofing

Moisture effecting retaining walls is one of the most common post construction complaints. Poorly applied or omitted waterproofing can lead to efflorescence or standing water inside the building. Efflorescence is a process in which a powdery substance is produced on the surface of the concrete by the evaporation of water. The white powder usually consists of soluble salts such as gypsum, calcite, or common salt. Efflorescence is common to retaining walls and does not affect their strength or integrity.

Waterproofing is recommended for retaining walls. Waterproofing design and inspection of its installation is not the responsibility of the geotechnical engineer. A qualified waterproofing consultant should be retained in order to recommend a product or method which would provide protection to below grade walls.

Retaining Wall Backfill

Any required backfill should be mechanically compacted in layers not more than 8 inches thick, to at least 90 percent of the maximum density in general accordance with the most recent revision of ASTM D 1557 method of compaction. Flooding should not be permitted. Compaction within 5 feet, measured horizontally, behind a retaining structure should be achieved by use of light weight, hand operated compaction equipment.

Proper compaction of the backfill will be necessary to reduce settlement of overlying walks and paving. Some settlement of required backfill should be anticipated, and any utilities supported therein should be designed to accept differential settlement, particularly at the points of entry to the structure.

TEMPORARY EXCAVATIONS

Excavations on the order of 3 to 8 feet in vertical height will be required for the recommended recompaction. The excavations are expected to expose fill and dense native soils, which are suitable for vertical excavations up to 5 feet where not surcharged by adjacent traffic or structures. Excavations which will be surcharged by adjacent traffic or structures should be shored.

Where sufficient space is available, temporary unsurcharged embankments could be cut at a uniform 1:1 slope gradient. A uniform sloped excavation is sloped from bottom to top and does not have a vertical component.

Where sloped embankments are utilized, the tops of the slopes should be barricaded to prevent vehicles and storage loads near the top of slope within a horizontal distance equal to the depth of the excavation. If the temporary construction embankments are to be maintained during the rainy season, berms are strongly recommended along the tops of the slopes to prevent runoff water from entering the excavation and eroding the slope faces. Water should not be allowed to pond on top of the excavation or to flow towards it.

Excavations Adjacent to Buildings or Property Lines

Where excavations necessary for the recommended grading will leave an adjacent foundation unsupported the foundation excavation should be slot cut. The slot cutting method employs the earth as a buttress and allows the earth excavation to proceed in phases. The initial excavation is made at a uniform 1:1 slope. Alternate "A" slots of 8 feet may be worked. The wall, foundation or backfill should proceed to a point where support for any offsite property and/or existing structure is restored before the "B" slots are excavated. The remaining earth buttresses ("B" and "C" slots) should each be 8 feet in width for a combined intervening length of 16 feet. The grading should be prosecuted in the "A" slots before the "B" slots are excavated. After completing the grading in the "B" slots, finally the "C" slots may be excavated.

Excavation Observations

It is critical that the soils exposed in the cut slopes are observed by a representative of Geotechnologies, Inc. during excavation so that modifications of the slopes can be made if variations in the geologic material conditions occur. Many building officials require that temporary excavations should be made during the continuous observations of the geotechnical engineer. All excavations should be stabilized within 30 days of initial excavation.

SLABS ON GRADE

Concrete Slabs-on Grade

Concrete floor slabs should be a minimum of 4 inches in thickness. Slabs-on-grade should be cast over undisturbed natural geologic materials or properly controlled fill materials. Any geologic materials loosened or over-excavated should be wasted from the site or properly compacted to 90 percent of the maximum dry density.

Outdoor concrete flatwork should be a minimum of 4 inches in thickness. Outdoor concrete flatwork should be cast over undisturbed natural geologic materials or properly controlled fill materials. Any geologic materials loosened or over-excavated should be wasted from the site or properly compacted to 90 percent of the maximum dry density.

Design of Slabs That Receive Moisture-Sensitive Floor Coverings

Geotechnologies, Inc. does not practice in the field of moisture vapor transmission evaluation and mitigation. Therefore, where necessary, it is recommended that a qualified consultant should be engaged to evaluate the general and specific moisture vapor transmission paths and any impact on the proposed construction. The qualified consultant should provide recommendations for mitigation of potential adverse impacts of moisture vapor on various components of the structure.

Where any dampness would be objectionable or where the slab will be cast below the historic high groundwater level, it is recommended that floor slabs should be waterproofed. A qualified waterproofing consultant should be engaged in order to recommend a product and/or method which would provide protection from unwanted moisture.

Based on ACI 302.2R-30, Chapter 7, for projects which do not have vapor sensitive coverings or humidity-controlled areas, a vapor retarder/barrier is not necessary. Where a vapor retarder/barrier is considered necessary, the design of the slab and the installation of the vapor retarde/barrier should comply with the most recent revisions of ASTM E 1643 and ASTM E 1745. The vapor retarder/barrier should comply with ASTM E 1745 Class A requirements. The necessity of a vapor retarder/barrier is not a geotechnical issue and should be confirmed by qualified members of the design team.

Based on ACI 302.2R-30, Chapter 7, for projects with vapor sensitive coverings, a vapor retarder/ barrier should be provided. Figure 7.1 shows that the slab should be poured on the vapor retarder/barrier. The ACI guide notes in 5.2.3.2 that the decision to locate the vapor retarder/barrier in direct contact with the slab's underside had long been debated. Experience has shown, however, that the greatest level of protection for floor coverings, coating, or building environments is provided when the vapor retarder/barrier is placed in direct contact with the slab. The necessity of a vapor retarder as well as the use of dry granular material, as discussed above are not a geotechnical issue and should be confirmed by qualified members of the design team.

Where a vapor retarder/barrier is used, it should be placed on a level and compact subgrade. Precautions should be taken to protect the vapor retarder/barrier from damage during installation of reinforcing, utilities and concrete. The use of stakes driven thought the vapor retarder/barrier should be avoided. Repair any damaged areas of the vapor retarder/barrier prior to concrete placement.

Groundwater was not encountered on the subject site at to a depth of 50 feet. Proposed concrete slabs-on-grade do not need to be supported on a layer of compacted aggregate to provide a capillary break.

Concrete Crack Control

The recommendations presented in this report are intended to reduce the potential for cracking of concrete slabs-on-grade due to settlement. However even where these recommendations have been implemented, foundations, stucco walls and concrete slabs-on-grade may display some cracking due to minor soil movement and/or concrete shrinkage. The occurrence of concrete cracking may be reduced and/or controlled by limiting the slump of the concrete used, proper concrete placement and curing, and by placement of crack control joints at reasonable intervals, in particular, where re-entrant slab corners occur.

For standard control of concrete cracking, a maximum crack control joint spacing of 12 feet should not be exceeded. Lesser spacings would provide greater crack control. Joints at curves and angle points are recommended. The crack control joints should be installed as soon as practical following concrete placement. Crack control joints should extend a minimum depth of one-fourth the slab thickness. Construction joints should be designed by a structural engineer.

Complete removal of the existing fill soils beneath outdoor flatwork such as walkways or patio areas, is not required, however, due to the rigid nature of concrete, some cracking, a shorter design life and increased maintenance costs should be anticipated. In order to provide uniform support beneath the flatwork it is recommended that a minimum of 12 inches of the exposed subgrade beneath the flatwork be scarified and recompacted to 90 percent relative compaction.

Slab Reinforcing

Concrete slabs-on-grade should be reinforced with a minimum of #3 steel bars on 18-inch centers each way.

Outdoor flatwork should be reinforced with a minimum of #3 steel bars on 18-inch centers each way.

PAVEMENTS

Prior to placing paving, the existing grade should be scarified to a depth of 12 inches, moistened as required to obtain optimum moisture content, and recompacted to 90 percent of the maximum density as determined by the most recent revision of ASTM D 1557. The design team should be aware that removal of all existing fill in the area of new paving is not required, however, pavement constructed in this manner will most likely have a shorter design life and increased maintenance costs. The following pavement sections are recommended:

Service	Asphalt Pavement Thickness Inches	Base Course Inches
Passenger Cars	3	4
Moderate Truck	4	6

Aggregate base should be compacted to a minimum of 95 percent of the most recent revision of ASTM D 1557 laboratory maximum dry density. Base materials should consist of Crushed Aggregate Base which conforms with Section 200-2.2 of the most recent edition of "Standard Specifications for Public Works Construction", (Green Book).

The performance of pavement is highly dependent upon providing positive surface drainage away from the edges. Ponding of water on or adjacent to pavement can result in saturation of the subgrade materials and subsequent pavement distress. If planter islands are planned, the perimeter curb should extend a minimum of 12 inches below the bottom of the aggregate base. In addition where landscaping is planned adjacent to pavement, it is recommended that a cutoff wall should be provided along the edge of the pavement. The cutoff wall should extend at least 12 inches below the depth of the base course.

The management of pavement wear primarily is focused on the distress caused by vertical loads. The reduction of vertical loading from large vehicles is assisted by increasing the number of axles. Multi-axle groups reduce the peak vertical loading and, when closely spaced, reduce the magnitude of the strain cycles to which the pavement is subjected. However, where tight low-speed turns are executed, non-steering axle groups lead to transverse shear forces (scuffing) at the pavement-tire interface.

With asphaltic concrete pavements, tensile shear stresses from tires can cause surface cracking and raveling, thus, the increased use of non-steering axle groups results in increased pavement wear in the vicinity of intersections and turnarounds where tight low speed turns are executed.

When designing intersections and turnarounds the turn radius should be as large as possible. This will lead to reduced "scuffing" forces. Where tight radius turns are unavoidable, the pavement surface design should take into account the high level of "scuffing" forces that will occur and thickened pavement and subgrade and base course keyways should be considered to assist in the reduction of lateral deflection.

SITE DRAINAGE

Proper surface drainage is critical to the future performance of the project. Saturation of a soil can cause it to lose internal shear strength and increase its compressibility, resulting in a change in the designed engineering properties. Proper site drainage should be maintained at all times.

All site drainage, with the exception of any required to disposed of onsite by stormwater regulations, should be collected and transferred to the street in non-erosive drainage devices. The proposed structure should be provided with roof drainage. Discharge from downspouts, roof drains and scuppers should not be permitted on unprotected soils within five feet of the building perimeter. Drainage should not be allowed to pond anywhere on the site, and especially not against any foundation or retaining wall. Drainage should not be allowed to flow uncontrolled over any descending slope. Planters which are located within a distance equal to the depth of a retaining wall should be sealed to prevent moisture adversely affecting the wall. Planters which are located within five feet of a foundation should be sealed to prevent moisture affecting the earth materials supporting the foundation.

STORMWATER DISPOSAL

Introduction

Recently regulatory agencies have been requiring the disposal of a certain amount of stormwater generated on a site by infiltration into the site soils. Increasing the moisture content of a soil can cause it to lose internal shear strength and increase its compressibility, resulting in a change in the designed engineering properties. This means that any overlying structure, including

buildings, pavements and concrete flatwork, could sustain damage due to saturation of the subgrade soils. Structures serviced by subterranean levels could be adversely impacted by stormwater disposal by increasing the design fluid pressures on retaining walls and causing leaks in the walls. Proper site drainage is critical to the performance of any structure in the built environment.

Percolation Testing

Percolation testing was conducted following the excavation percolation test procedure provided in the Guidelines for Design, Investigation and Reporting Low Impact Development Stormwater Infiltration (GS200.1), dated June 30, 2017, presented in the Administrative Manual for the County of Los Angeles, Department of Public Works, Geotechnical and Material Engineering Division.

Boring 3 was drilled to a depth of 20 feet below the existing site grade with the aid of a truck-mounted drilling machine, equipped with 8-inch diameter hollowstem augers. The geologic materials encountered during excavation are presented on Plate A-3.

At the completion of drilling, a 2-inch diameter casing was placed within the center of the boreholes for the purpose of conducting percolation testing. The casing consisted of solid PVC pipes from the ground surface to a depth of 10 feet, and perforated PVC pipes between depths of 10 and 20 feet. A sand pack consisting of #3 Monterey Sand was poured into the annular space around the perforated portion of the casing. A 1-foot thick hydrated bentonite seal was placed over the sand.

After the casing was installed, the borehole was filled with water for the purpose of pre-soaking for a minimum of 3 hours. After presoaking, the borehole was refilled with water, and the rate of drop in the water level was measured. The percolation test readings were recorded a minimum of

8 times or until a stabilized rate of drop was obtained, whichever occurred first. The percolation testing was performed within the native alluvial soils.

After a representative percolation rate was obtained from the testing, the Reduction Factor (Rf) required by the County of Los Angeles procedure to account for non-vertical flow was applied to obtain an infiltration rate. Based on the enclosed analyses, an infiltration rate of 0.72 inches per hour may be utilized for the design of an infiltration system. No other factors of safety or correction factors have been applied to this rate. The Civil Engineer must determine and apply any additional factors of safety, or correction factors, required for the design.

The Proposed System

The location(s) for potential stormwater disposal have not been specifically addressed on this site. It is the opinion of this office that stormwater infiltration is possible on this site, however until the plan achieves more definition, and this office can address the impacts, stormwater infiltration is not recommended.

Recommendations

The design and construction of stormwater infiltration facilities is not the responsibility of the geotechnical engineer. However, based on the experience of this firm, it is recommended that several aspects of the use of such facilities should be considered by the design and construction team:

- Open infiltration basins have many negative associated issues. Such a design must consider attractive nuisance, impacts to growing vegetation, impacts to air quality and vector control.
- All infiltration devices should be provided with overflow protection. Once the device is full of water, additional water flowing to the device should be diverted to another acceptable disposal area, or disposed offsite in an acceptable manner.

- All connections associated with stormwater infiltration devices should be sealed and water-tight. Water leaking into the subgrade soils can lead to loss of strength, piping, erosion, settlement and/or expansion of the effected earth materials.

- Excavations proposed for the installation of stormwater facilities should comply with the "Temporary Excavations" sections of this (the referenced) reports well as CalOSHA Regulations where applicable.

DESIGN REVIEW

Engineering of the proposed project should not begin until approval of the geotechnical report by the Building Official is obtained in writing. Significant changes in the geotechnical recommendations may result during the building department review process.

It is recommended that the geotechnical aspects of the project be reviewed by this firm during the design process. This review provides assistance to the design team by providing specific recommendations for particular cases, as well as review of the proposed construction to evaluate whether the intent of the recommendations presented herein are satisfied.

CONSTRUCTION MONITORING

Geotechnical observations and testing during construction are considered to be a continuation of the geotechnical investigation. It is critical that this firm review the geotechnical aspects of the project during the construction process. Compliance with the design concepts, specifications or recommendations during construction requires review by this firm during the course of construction. All foundations should be observed by a representative of this firm prior to placing concrete or steel. Any fill which is placed should be observed, tested, and verified if used for engineered purposes. Please advise Geotechnologies, Inc. at least twenty-four hours prior to any required site visit.

If conditions encountered during construction appear to differ from those disclosed herein, notify Geotechnologies, Inc. immediately so the need for modifications may be considered in a timely manner.

It is the responsibility of the contractor to ensure that all excavations and trenches are properly sloped or shored. All temporary excavations should be cut and maintained in accordance with applicable OSHA rules and regulations.

EXCAVATION CHARACTERISTICS

The exploration performed for this investigation is limited to the geotechnical excavations described. Direct exploration of the entire site would not be economically feasible. The owner, design team and contractor must understand that differing excavation and drilling conditions may be encountered based on boulders, gravel, oversize materials, groundwater and many other conditions. Fill materials, especially when they were placed without benefit of modern grading codes, regularly contain materials which could impede efficient grading and drilling. Southern California sedimentary bedrock is known to contain variable layers which reflect differences in depositional environment. Such layers may include abundant gravel, cobbles and boulders. Similarly bedrock can contain concretions. Concretions are typically lenticular and follow the bedding. They are formed by mineral deposits. Concretions can be very hard. Excavation and drilling in these areas may require full size equipment and coring capability. The contractor should be familiar with the site and the geologic materials in the vicinity.

CLOSURE AND LIMITATIONS

The purpose of this report is to aid in the design and completion of the described project. Implementation of the advice presented in this report is intended to reduce certain risks associated with construction projects. The professional opinions and geotechnical advice contained in this report are sought because of special skill in engineering and geology and were prepared in accordance with generally accepted geotechnical engineering practice.

Geotechnologies, Inc. has a duty to exercise the ordinary skill and competence of members of the engineering profession. Those who hire Geotechnologies, Inc. are not justified in expecting infallibility, but can expect reasonable professional care and competence.

The recommendations of this report pertain only to the site investigated and are based upon the assumption that the geologic conditions do not deviate from those disclosed in the investigation. If any variations are encountered during construction, or if the proposed construction will differ from that anticipated herein, Geotechnologies, Inc. should be notified so that supplemental recommendations can be prepared.

This report is issued with the understanding that it is the responsibility of the owner, or the owner's representatives, to ensure that the information and recommendations contained herein are brought to the attention of the project architect and engineer and are incorporated into the plans. The owner is also responsible to see that the contractor and subcontractors carry out the geotechnical recommendations during construction.

The findings of this report are valid as of the date of this report. However, changes in the conditions of a property can occur with the passage of time, whether they are due to natural processes or the works of man on this or adjacent properties. In addition, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated wholly or partially by changes outside control of this firm. Therefore, this report is subject to review and should not be relied upon after a period of three years.

Geotechnical observations and testing during construction is considered to be a continuation of the geotechnical investigation. It is, therefore, most prudent to employ the consultant performing the initial investigative work to provide observation and testing services during construction. This practice enables the project to flow smoothly from the planning stages through to completion.

Should another geotechnical firm be selected to provide the testing and observation services during construction, that firm should prepare a letter indicating their assumption of the responsibilities of geotechnical engineer of record. A copy of the letter should be provided to the regulatory agency for review. The letter should acknowledge the concurrence of the new geotechnical engineer with the recommendations presented in this report.

EXCLUSIONS

Geotechnologies, Inc. does not practice in the fields of methane gas, radon gas, environmental engineering, waterproofing, dewatering organic substances or the presence of corrosive soils or wetlands which could affect the proposed development including mold and toxic mold. Nothing in this report is intended to address these issues and/or their potential effect on the proposed development. A competent professional consultant should be retained in order to address environmental issues, waterproofing, organic substances and wetlands which might affect the proposed development.

GEOTECHNICAL TESTING

Classification and Sampling

The soil is continuously logged by a representative of this firm and classified by visual examination in accordance with the Unified Soil Classification system. The field classification is verified in the laboratory, also in accordance with the Unified Soil Classification System. Laboratory classification may include visual examination, Atterberg Limit Tests and grain size distribution. The final classification is shown on the excavation logs.

Samples of the geologic materials encountered in the exploratory excavations were collected and transported to the laboratory. Undisturbed samples of soil are obtained at frequent intervals. Unless noted on the excavation logs as an SPT sample, samples acquired while utilizing a hollow-stem auger drill rig are obtained by driving a thin-walled, California Modified Sampler

with successive 30-inch drops of a 140-pound hammer. Samples from bucket-auger drilling are obtained utilizing a California Modified Sampler with successive 12-inch drops of a kelly bar, whose weight is noted on the excavation logs. The soil is retained in brass rings of 2.50 inches outside diameter and 1.00 inch in height. The central portion of the samples are stored in close fitting, waterproof containers for transportation to the laboratory. Samples noted on the excavation logs as SPT samples are obtained in general accordance with the most recent revision of ASTM D 1586. Samples are retained for 30 days after the date of the geotechnical report.

Grain Size Distribution

These tests cover the quantitative determination of the distribution of particle sizes in soils. Sieve analysis is used to determine the grain size distribution of the soil larger than the Number 200 sieve.

General accordance with the most recent revision of ASTM D 422 is used to determine particle sizes smaller than the Number 200 sieve. A hydrometer is used to determine the distribution of particle sizes by a sedimentation process.

The grain size distributions are plotted on the E-Plates presented in the Appendix of this report.

Moisture and Density Relationships

The field moisture content and dry unit weight are determined for each of the undisturbed soil samples, and the moisture content is determined for SPT samples in general accordance with the most recent revision of ASTM D 4959 or ASTM D 4643. This information is useful in providing a gross picture of the soil consistency between exploration locations and any local variations. The dry unit weight is determined in pounds per cubic foot and shown on the "Excavation Logs", A-Plates. The field moisture content is determined as a percentage of the dry unit weight.

Direct Shear Testing

Shear tests are performed in general accordance with the most recent revision of ASTM D 3080 with a strain controlled, direct shear machine manufactured by Soil Test, Inc. or a Direct Shear Apparatus manufactured by GeoMatic, Inc. The rate of deformation is approximately 0.025 inches per minute. Each sample is sheared under varying confining pressures in order to determine the Mohr-Coulomb shear strength parameters of the cohesion intercept and the angle of internal friction. Samples are generally tested in an artificially saturated condition. Depending upon the sample location and future site conditions, samples may be tested at field moisture content. The results are plotted on the "Shear Test Diagram," B-Plates.

The most recent revision of ASTM 3080 limits the particle size to 10 percent of the diameter of the direct shear test specimen. The sheared sample is inspected by the laboratory technician running the test. The inspection is performed by splitting the sample along the sheared plane and observing the soils exposed on both sides. Where oversize particles are observed in the shear plane, the results are discarded and the test run again with a fresh sample.

Consolidation Testing

Settlement predictions of the soil's behavior under load are made on the basis of the consolidation tests in general accordance with the most recent revision of ASTM D 2435. The consolidation apparatus is designed to receive a single one-inch high ring. Loads are applied in several increments in a geometric progression, and the resulting deformations are recorded at selected time intervals. Porous stones are placed in contact with the top and bottom of each specimen to permit addition and release of pore fluid. Samples are generally tested at increased moisture content to determine the effects of water on the bearing soil. The normal pressure at which the water is added is noted on the drawing. Results are plotted on the "Consolidation Test," C-Plates.

Expansion Index Testing

The expansion tests performed on the remolded samples are in accordance with the Expansion Index testing procedures, as described in the most recent revision of ASTM D 4829. The soil sample is compacted into a metal ring at a saturation degree of 50 percent. The ring sample is then placed in a consolidometer, under a vertical confining pressure of 1 lbf/square inch and inundated with distilled water. The deformation of the specimen is recorded for a period of 24 hour or until the rate of deformation becomes less than 0.0002 inches/hour, whichever occurs first. The expansion index, EI, is determined by dividing the difference between final and initial height of the ring sample by the initial height, and multiplied by 1,000.

Laboratory Compaction Characteristics

The maximum dry unit weight and optimum moisture content of a soil are determined in general accordance with the most recent revision of ASTM D 1557. A soil at a selected moisture content is placed in five layers into a mold of given dimensions, with each layer compacted by 25 blows of a 10 pound hammer dropped from a distance of 18 inches subjecting the soil to a total compactive effort of about 56,000 pounds per cubic foot. The resulting dry unit weight is determined. The procedure is repeated for a sufficient number of moisture contents to establish a relationship between the dry unit weight and the water content of the soil. The data when plotted represent a curvilinear relationship known as the compaction curve. The values of optimum moisture content and modified maximum dry unit weight are determined from the compaction curve.

REFERENCES

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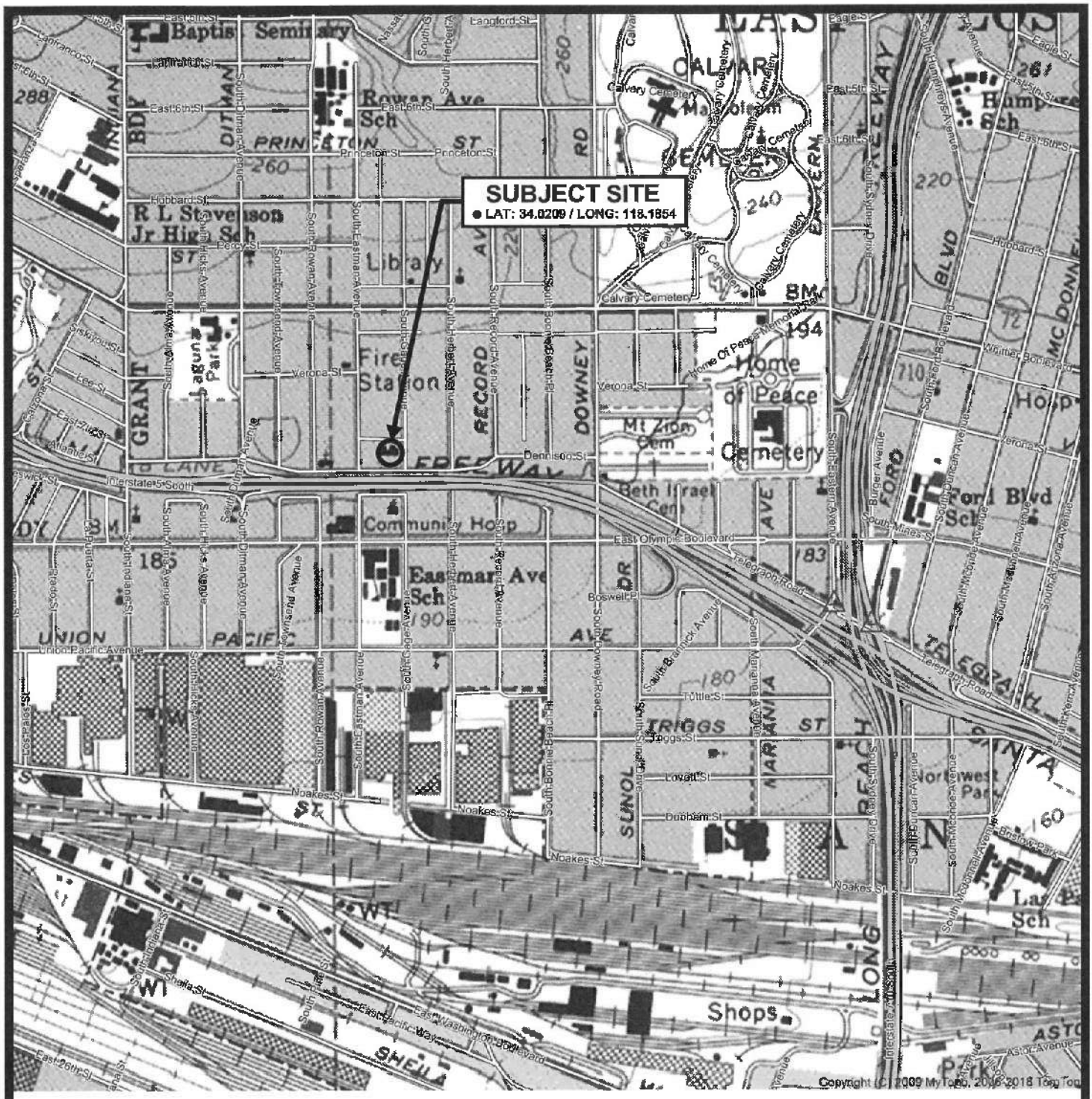

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FEET

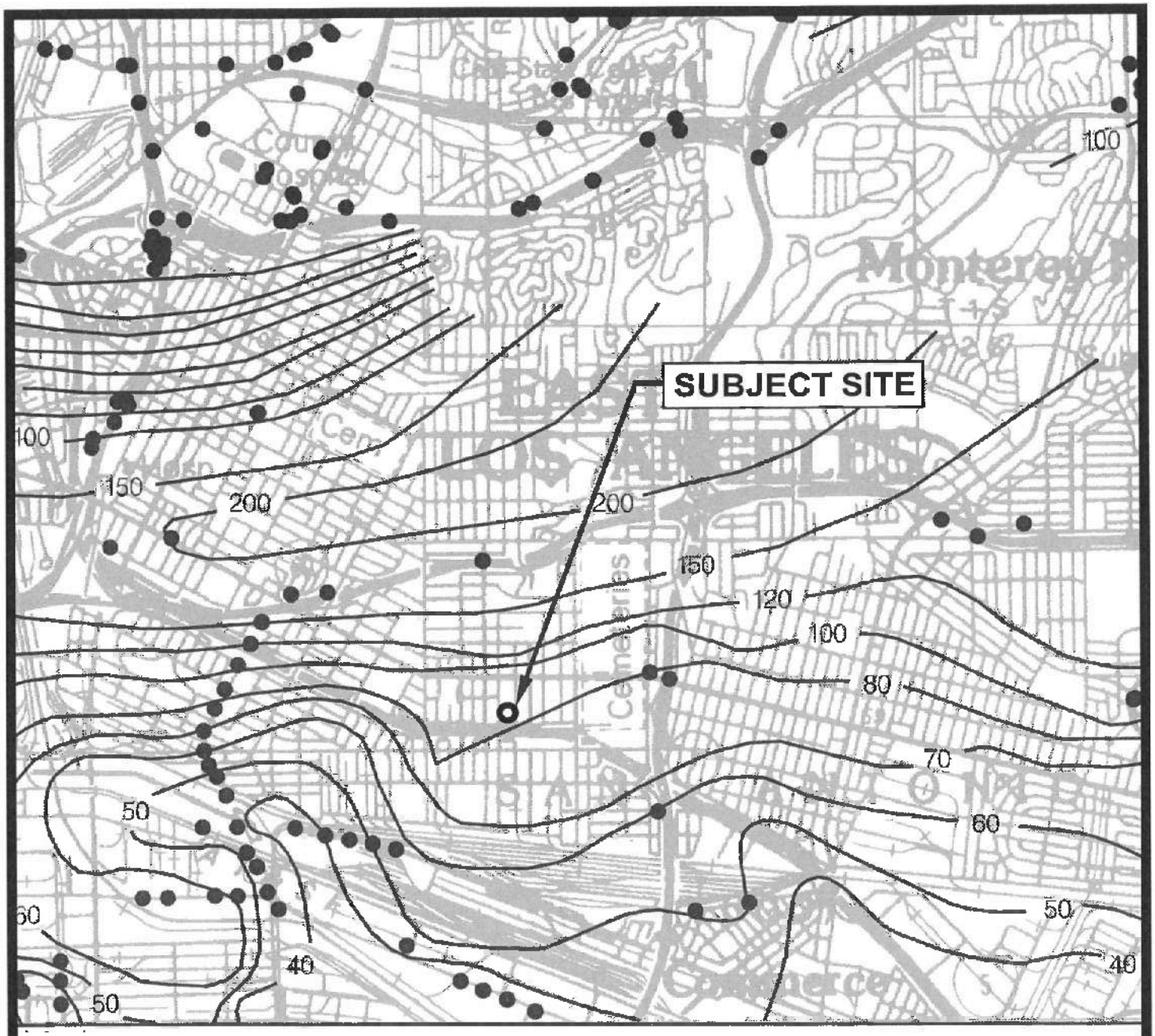
REFERENCE: U.S.G.S. TOPOGRAPHIC MAPS, 7.5 MINUTE SERIES, LOS ANGELES, CA QUADRANGLE

VICINITY MAP

Geotechnologies, Inc.
Consulting Geotechnical Engineers

EXTERA PUBLIC SCHOOLS
1059 SOUTH GAGE AVENUE, LOS ANGELES

FILE NO. 22311



REFERENCE: CDMG, SEISMIC HAZARD ZONE REPORT, 029
LOS ANGELES 7.5 - MINUTE QUADRANGLE, LOS ANGELES COUNTY, CALIFORNIA (1998, REVISED 2006)

HISTORICALLY HIGHEST GROUNDWATER LEVELS

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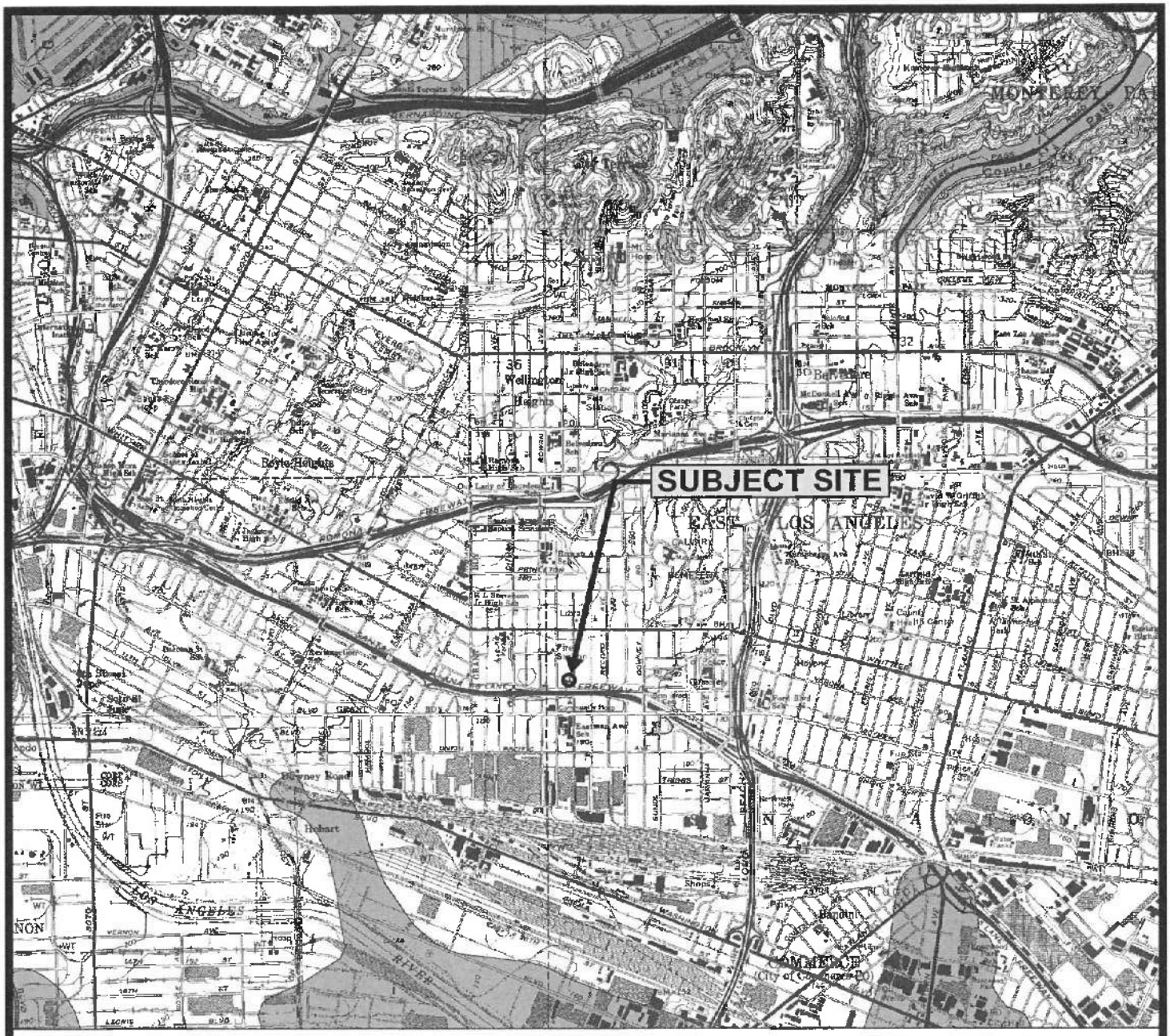
EXTERA PUBLIC SCHOOLS
1059 SOUTH GAGE AVENUE, LOS ANGELES

FILE NO. 22311



LIQUEFACTION AREA

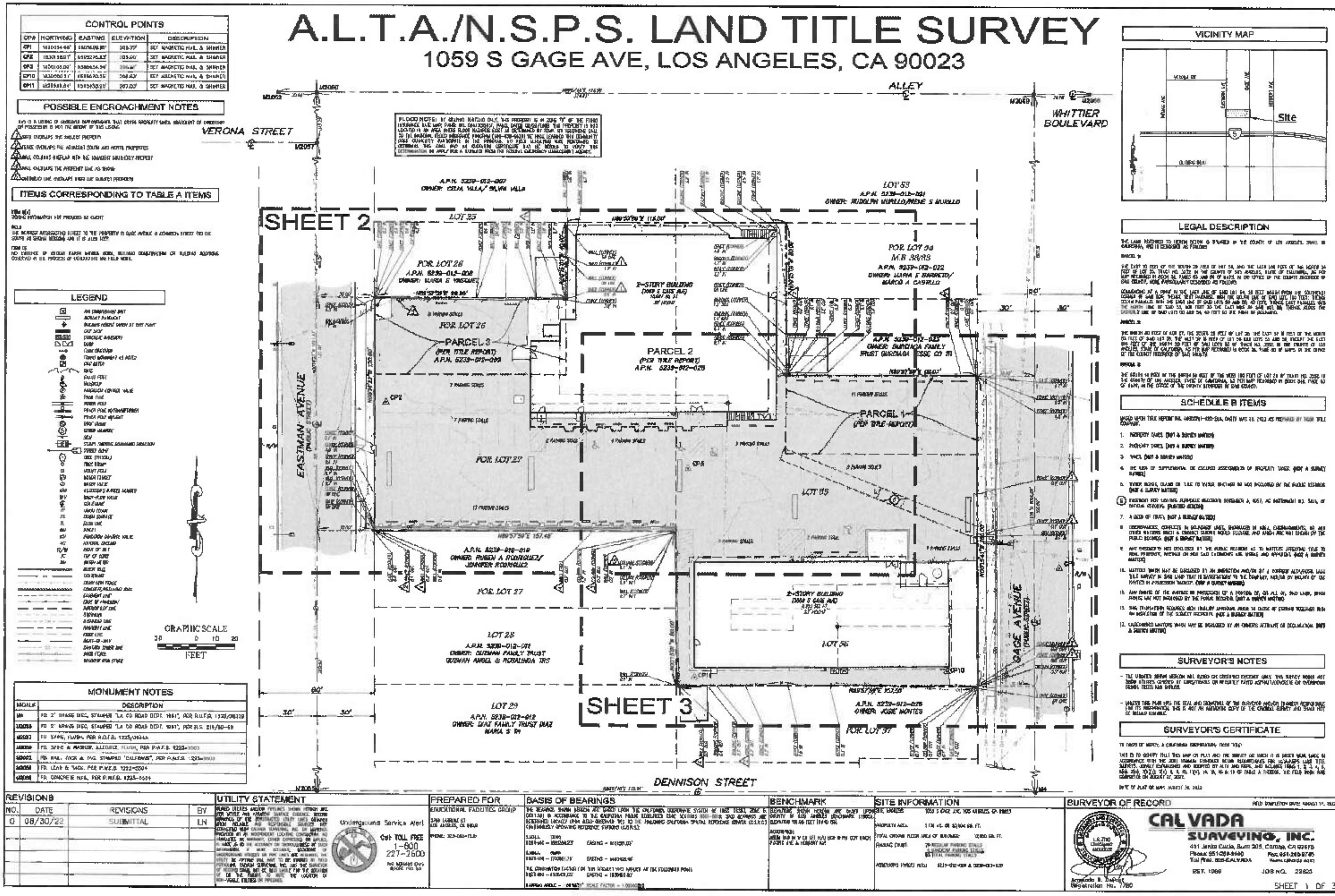
REFERENCE: SEISMIC HAZARD ZONES, LOS ANGELES QUADRANGLE OFFICIAL MAP (CDMG, 1999)

SEISMIC HAZARD ZONE MAP

Geotechnologies, Inc.
Consulting Geotechnical Engineers

EXTERA PUBLIC SCHOOLS
1059 SOUTH GAGE AVENUE, LOS ANGELES

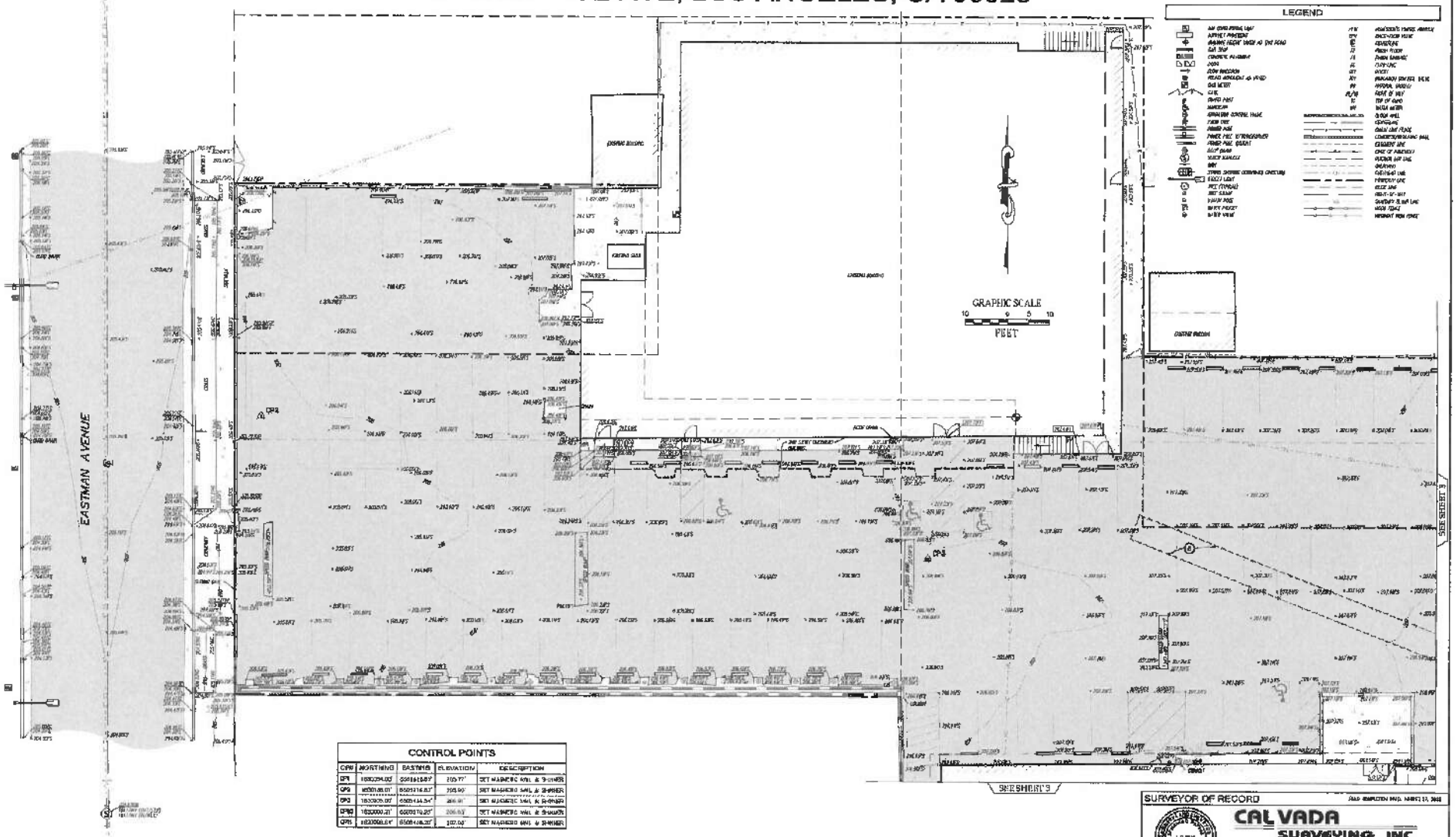
FILE NO. 22311



A.L.T.A./N.S.P.S. LAND TITLE SURVEY
1059 S GAGE AVE, LOS ANGELES, CA 90023
CONTROL POINTS
POSSIBLE ENCROACHMENT NOTES
ITEMS CORRESPONDING TO TABLE A ITEMS
LEGEND
GRAPHIC SCALE
FEET
MONUMENT NOTES
VICINITY MAP
Site
LEGAL DESCRIPTION
SCHEDULE B ITEMS
SURVEYOR'S NOTES
SURVEYOR'S CERTIFICATE
ALLEY
VERONA STREET
WHITTIER BOULEVARD
EASTMAN AVENUE
GAGE AVENUE
DENNISON STREET
SHEET 2
SHEET 3
PARCEL 1
PARCEL 2
PARCEL 3
LOT 25
LOT 53
LOT 55
LOT 56
LOT 28
LOT 29
POR. LOT 26
POR. LOT 27
POR. LOT 54
POR. LOT 57
2-STORY BUILDING
REVISIONS
NO. DATE REVISIONS BY
0 08/30/22 SUBMITTAL LN
UTILITY STATEMENT
PREPARED FOR
BASIS OF BEARINGS
BENCHMARK
SITE INFORMATION
SURVEYOR OF RECORD
CAL VADA SURVEYING, INC.
EST. 1989
SHEET 1 OF 3

A.L.T.A./N.S.P.S. LAND TITLE SURVEY

1059 S GAGE AVE, LOS ANGELES, CA 90023



CONTROL POINTS				
CP#	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP1	1830234.05'	6501615.83'	205.77'	SET MAGNETIC NAIL & SHINER
CP2	1830126.01'	6501216.83'	205.90'	SET MAGNETIC NAIL & SHINER
CP3	1829905.07'	6501134.54'	206.01'	SET MAGNETIC NAIL & SHINER
CP4	1829999.21'	6501570.25'	206.53'	SET MAGNETIC NAIL & SHINER
CP5	1830068.61'	6501426.20'	207.04'	SET MAGNETIC NAIL & SHINER

SURVEYOR OF RECORD

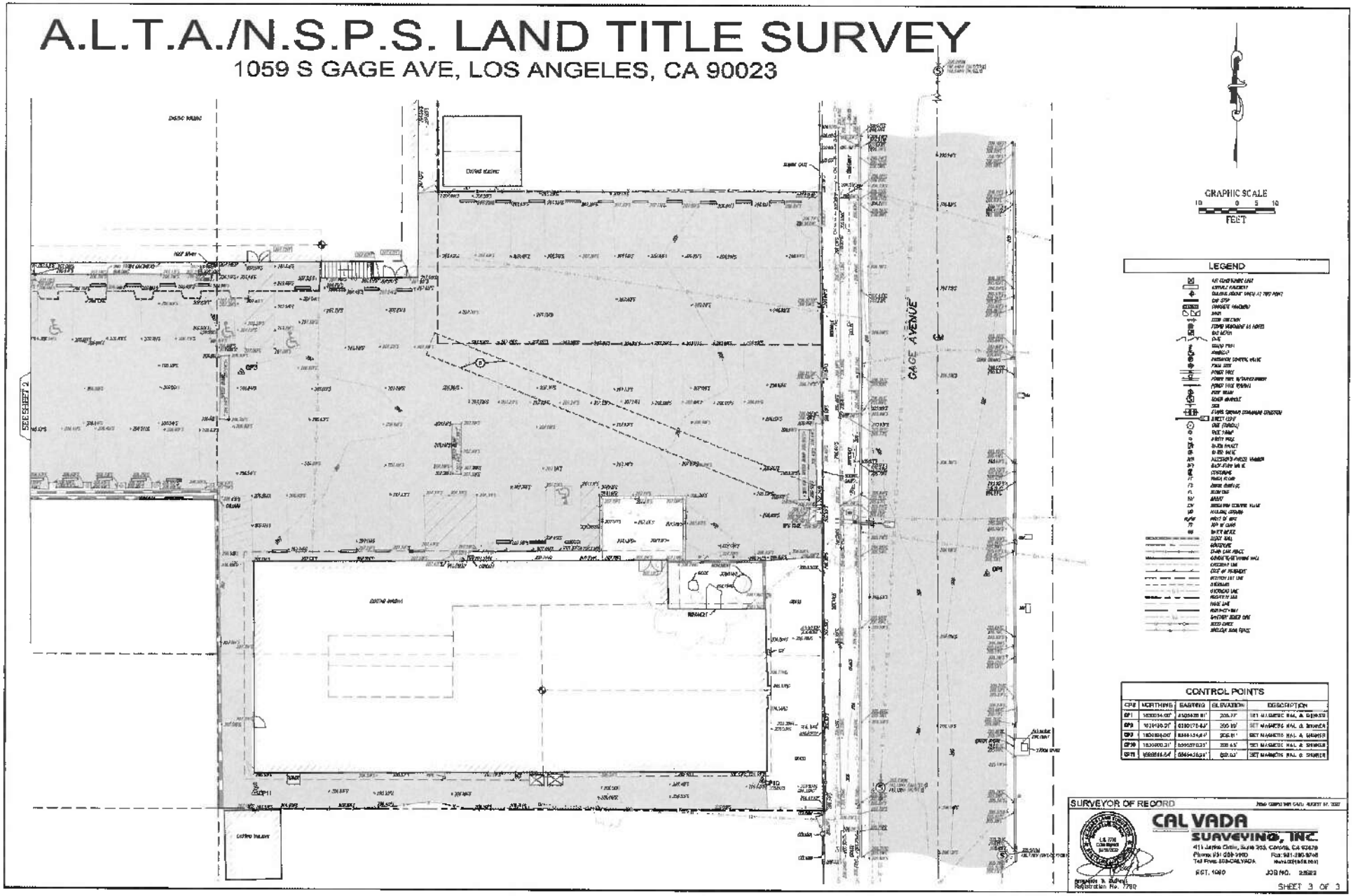
CALVADA SURVEYING, INC.
431 Jason Court, Suite 205, Corona, CA 92878
Phone 951-268-9488 Fax 951-340-9748
Toll Free 866-CALVADA www.calvada.com
EST. 1989

JOB NO. 24823

SHEET 2 OF 3

A.L.T.A./N.S.P.S. LAND TITLE SURVEY

1059 S GAGE AVE, LOS ANGELES, CA 90023



CONTROL POINTS				
CP#	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP1	1830034.03'	6405628.81'	295.77'	SET MAGNETIC NAIL & DISK/LS
CP2	1829926.21'	6406078.43'	295.19'	SET MAGNETIC NAIL & DISK/LS
CP3	1829884.00'	6406134.43'	295.91'	SET MAGNETIC NAIL & DISK/LS
CP10	1830000.31'	6406037.03'	295.43'	SET MAGNETIC NAIL & DISK/LS
CP11	1829864.64'	6406436.24'	295.03'	SET MAGNETIC NAIL & DISK/LS

SURVEYOR OF RECORD

CAL VADA SURVEYING, INC.
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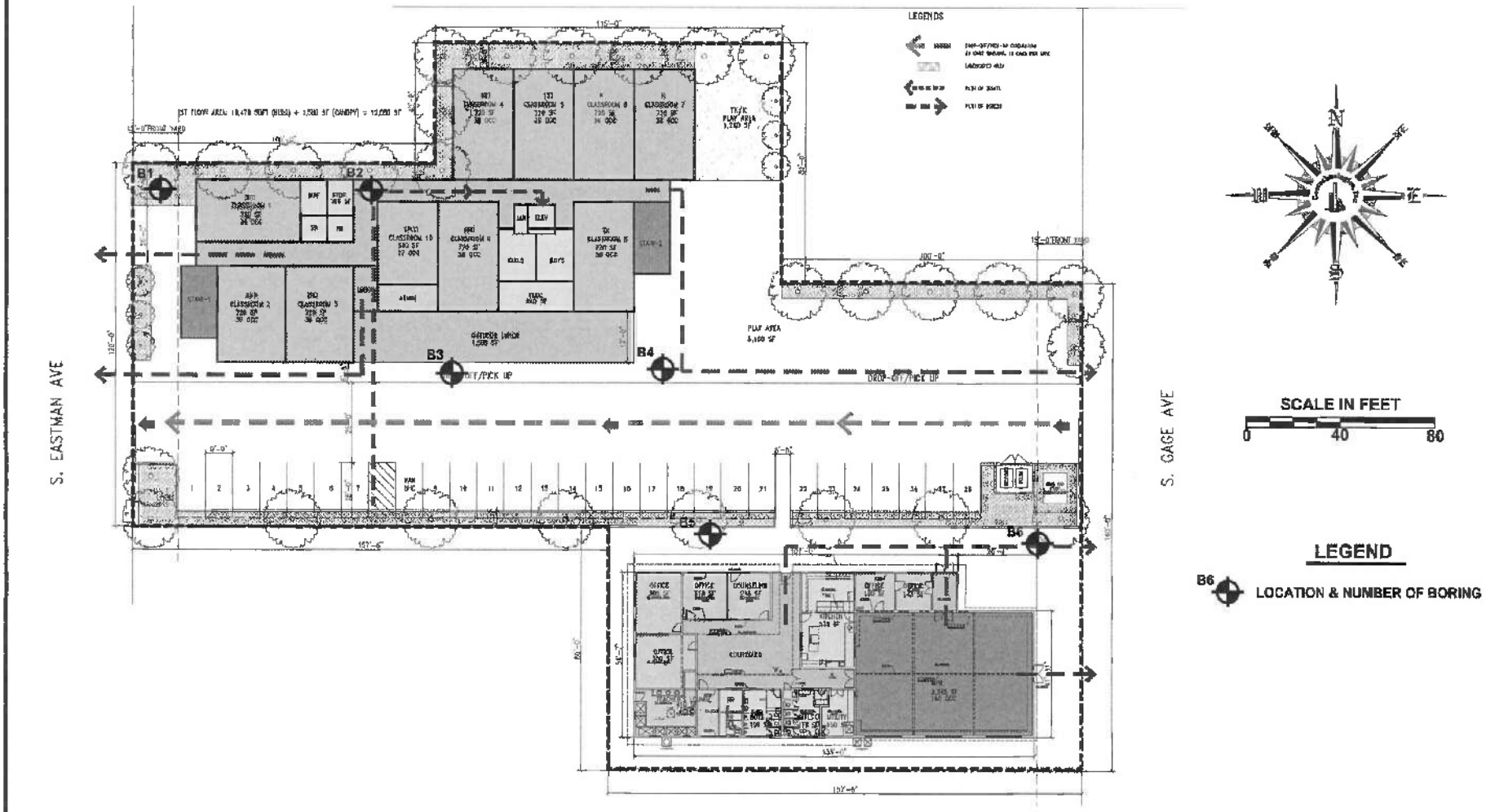
EST. 1980 JOB NO. 24522

Benjamin J. Guffey
Registration No. 7780

SHEET 3 OF 3



REFERENCE: SITE PLAN PROVIDED BY FRANCO ARCHITECTS, INC.
June 20, 2022

Geotechnologies, Inc.
Consulting Geotechnical Engineers

PLOT PLAN
ECTORA PUBLIC SCHOOLS
File No.: 22311
Date: August 2022

BORING LOG NUMBER 1

Extera Public School **Date: 8/24/22** **Approx. Elevation: 206**

File No. 22311 **Method: 8-Inch Diameter Hollow Stem Auger**

In

Sample Depth ft.	Blows per ft.	Moisture content %	Dry Density p.c.f.	Depth in feet	USCS Class.	Description Surface Conditions: Asphalt For Parking
				0		5 Inch Asphalt, No Base
				1		
				2		
2.5	10	17.2	107.9	3		
				4		
5	40	19.6	110.9	5	ML/CL	Sandy Silt to Silty Clay, dark brown, moist, stiff
				6		
				7		
				8		
				9		
10	48	14.0	119.9	10		
				11		
				12		
				13		
				14		
15	66	14.7	120.0	15	SM/ML	Silty Sand to Clayey Silt, dark and yellowish brown, moist, dense, fine grained, stiff
				16		
				17		
				18		
				19	SM/SP	Silty Sand to Sand, dark and yellowish brown, moist, very dense, fine grained
20	33 50/4"	12.4	107.6	20		Total Depth: 20 Feet No Water Fill To 5 Feet NOTE: The stratification lines represent the approximate boundary between earth types; the transition may be gradual. Used 8-inch diameter Hollow-Stem Auger 140-lb. Automatic Hammer, 30-inch drop Modified California Sampler used unless otherwise noted
				21		
				22		
				23		
				24		
				25		

BORING LOG NUMBER 2

Extera Public School **Date: 8/24/22** **Approx. Elevation: 207**

File No. 22311 **Method: 8-Inch Diameter Hollow Stem Auger**

In

Sample Depth ft.	Blows per ft.	Moisture content %	Dry Density p.c.f.	Depth in feet	USCS Class.	Description Surface Conditions: Asphalt For Parking
				0		5 Inch Asphalt, 4 Inch Base
				1		
				2		FILL: Silty Sand to Sandy Silt, dark brown, moist, medium dense, fine grained, stiff
2.5	17	15.5	112.2	3		
				4	SM/ML	Silty Sand to Sandy Silt, dark brown, moist, medium dense, fine grained, stiff
5	67	17.0	117.1	5		
				6	ML	Sandy to Clayey Silt, dark brown, moist, stiff
				7		
				8		
				9		
10	64 50/4"	16.9	116.8	10		
				11		
				12		
				13		
				14		
15	80	11.3	116.8	15		
				16	SM	Silty Sand, yellowish brown, moist, very dense, fine grained
				17		
				18		
				19		
					SP	Sand, yellowish brown, moist, very dense, fine grained
20	75	7.2	106.6	20		
				21		Total Depth: 20 Feet No Water Fill To 3 Feet
				22		
				23		NOTE: The stratification lines represent the approximate boundary between earth types; the transition may be gradual.
				24		
				25		Used 8-inch diameter Hollow-Stem Auger 140-lb. Automatic Hammer, 30-inch drop Modified California Sampler used unless otherwise noted

BORING LOG NUMBER 3

Extera Public School **Date: 8/23/22** **Approx. Elevation: 206.5**

File No. 22311 **Method: 8-Inch Diameter Hollow Stem Auger**

In

Sample Depth ft.	Blows per ft.	Moisture content %	Dry Density p.c.f.	Depth in feet	USCS Class.	Description Surface Conditions: Asphalt For Parking
				0		4 Inch Asphalt, 5 Inch Base
				1		FILL: Silty Sand to Sandy Silt, dark brown, moist, medium dense, fine grained, stiff
2.5	7	5.2	111.6	2		
				3		Silty Sand, dark and yellowish brown, moist, medium dense, fine grained, minor brick fragments
				4		
5	13	12.6	117.1	5		
				6		
				7		
7.5	28	14.8	115.3	8	SM/ML	Silty Sand to Sandy Silt, dark and yellowish brown, moist, medium dense, fine grained, stiff
				9		
10	21	17.7	111.4	10	SM/SP	Silty Sand to Sandy Silt, dark and yellowish brown, moist, medium dense, fine grained
				11		
				12		
				13		
				14		
15	57	8.7	135.6	15	SM/ML	Silty Sand to Sandy Silt, dark brown, moist, medium dense, fine grained
				16		
				17		
				18		
				19	SM/SP	Silty Sand to Sand, dark and yellowish brown, moist, very dense, fine grained
20	94	7.1	119.6	20		Total Depth: 20 Feet No Water Fill To 7.5 Feet
				21		
				22		NOTE: The stratification lines represent the approximate boundary between earth types; the transition may be gradual.
				23		
				24		Used 8-inch diameter Hollow-Stem Auger 140-lb. Automatic Hammer, 30-inch drop Modified California Sampler used unless otherwise noted
				25		

BORING LOG NUMBER 4

Extera Public School **Date: 8/23/22** **Approx. Elevation: 207.5**

File No. 22311 **Method: 8-Inch Diameter Hollow Stem Auger**

In

Sample Depth ft.	Blows per ft.	Moisture content %	Dry Density p.c.f.	Depth in feet	USCS Class.	Description Surface Conditions: Asphalt For Parking
				0		6 Inch Asphalt, 4 Inch Base
				1		
				2		FILL: Silty Sand to Sandy Silt, dark brown, moist, medium dense, fine grained, stiff
2.5	8	11.4	111.3	3		
				4		
5	18	17.8	SPT	5	ML/CL	Clayey Silt to Silty Clay, dark brown, moist, stiff
				6		
				7		
7.5	44	16.6	117.6	8	ML/SM	Sandy Silt to Silty Sand, dark and yellowish brown, moist, medium dense, fine grained, stiff
				9		
10	20	16.9	SPT	10		
				11		
				12		
12.5	65	9.3	130.4	13	SM/SP	Silty Sand to Sand, dark brown, moist, dense, fine to medium grained, minor cobbles
				14		
15	24	8.0	SPT	15		
				16	SP	Sand, dark brown, moist, medium dense, fine to medium grained, minor cobbles
				17		
17.5	65	6.5	126.9	18	SM/SP	Silty Sand to Sand, dark brown, moist, dense, fine to medium grained, minor cobbles
				19		
20	30	9.5	SPT	20		
				21		
				22		
22.5	53	13.7	117.7	23		
				24		
25	27	8.9	SPT	25		

BORING LOG NUMBER 4

Extera Public School

File No. 22311

In

Sample Depth ft.	Blows per ft.	Moisture content %	Dry Density p.c.f.	Depth in feet	USCS Class.	Description
				26		
				27		
27.5	66 50/5"	9.6	115.7	28	SP	Sand, dark and yellowish brown, moist, very dense, fine grained
				29		
30	27	14.6	SPT	30	SP/CL	Sand to Silty Clay, yellow and dark brown, moist, medium dense, fine grained, stiff
				31		
32.5	71	17.8	115.8	32	ML/CL	Sandy Silt to Silty Clay, dark brown, moist, very stiff
				33		
35	30	15.2	SPT	34	ML/SM	Silty Sand to Sandy Silt, dark brown, moist, stiff, medium dense, fine grained
				35		
37.5	80	15.8	120.5	36	ML	Sandy to Clayey Silt, dark brown, moist, stiff
				37		
40	22	15.4	SPT	38		
				39		
42.5	79	19.1	111.7	40		
				41		
45	36	18.2	SPT	42		
				43		NOTE: The stratification lines represent the approximate boundary between earth types; the transition may be gradual.
				44		
				45		Used 8-inch diameter Hollow-Stem Auger 140-lb. Automatic Hammer, 30-inch drop Modified California Sampler used unless otherwise noted
				46		
47.5	82	12.3	124.6	47		SPT=Standard Penetration Test
				48	SM/ML	Silty Sand to Sandy Silt, dark brown, moist, very dense, fine grained, very stiff
				49		
50	36	14.6	SPT	50		Total Depth: 50 Feet No Water Fill To 5 Feet

BORING LOG NUMBER 5

Extera Public School **Date: 8/24/22** **Approx. Elevation: 207**

File No. 22311 **Method: 8-Inch Diameter Hollow Stem Auger**

Sample Depth ft.	Blows per ft.	Moisture content %	Dry Density p.c.f.	Depth in feet	USCS Class.	Description Surface Conditions: Asphalt For Parking
				0		5 Inch Asphalt, 3 Inch Base
				1		FILL: Silty Sand to Sandy Silt, dark brown, moist, medium dense, fine grained
				2		
2.5	5	17.2	107.1			
				3		Silty Sand to Sandy Silt, dark brown, moist, medium dense, fine grained, stiff
				4		
5	28	20.7	109.1	5	ML/CL	Clayey Silt to Silty Clay, dark brown, moist, stiff
				6		
				7		
7.5	77	12.5	121.4			
				8	SM/ML	Silty Sand to Clayey Silt, dark brown, moist, stiff and dense, fine grained
				9		
10	33	7.3	112.3	10	SM/SP	Silty Sand to Sandm dark brown, moist, medium dense, fine grained
				11		
				12		
				13		
				14		
15	55	15.2	119.1	15		
				16		
				17		
				18		
				19	SP/SW	Sand to Cobbly Sand, dark brown, moist, very dense, fine to coarse grained
20	45 50/4"	6.3	121.0	20		Total Depth: 20 Feet No Water Fill To 5 Feet
				21		
				22		NOTE: The stratification lines represent the approximate boundary between earth types; the transition may be gradual.
				23		
				24		Used 8-inch diameter Hollow-Stem Auger 140-lb. Automatic Hammer, 30-inch drop Modified California Sampler used unless otherwise noted
				25		

BORING LOG NUMBER 6

Extera Public School **Date: 8/24/22** **Approx. Elevation: 207**

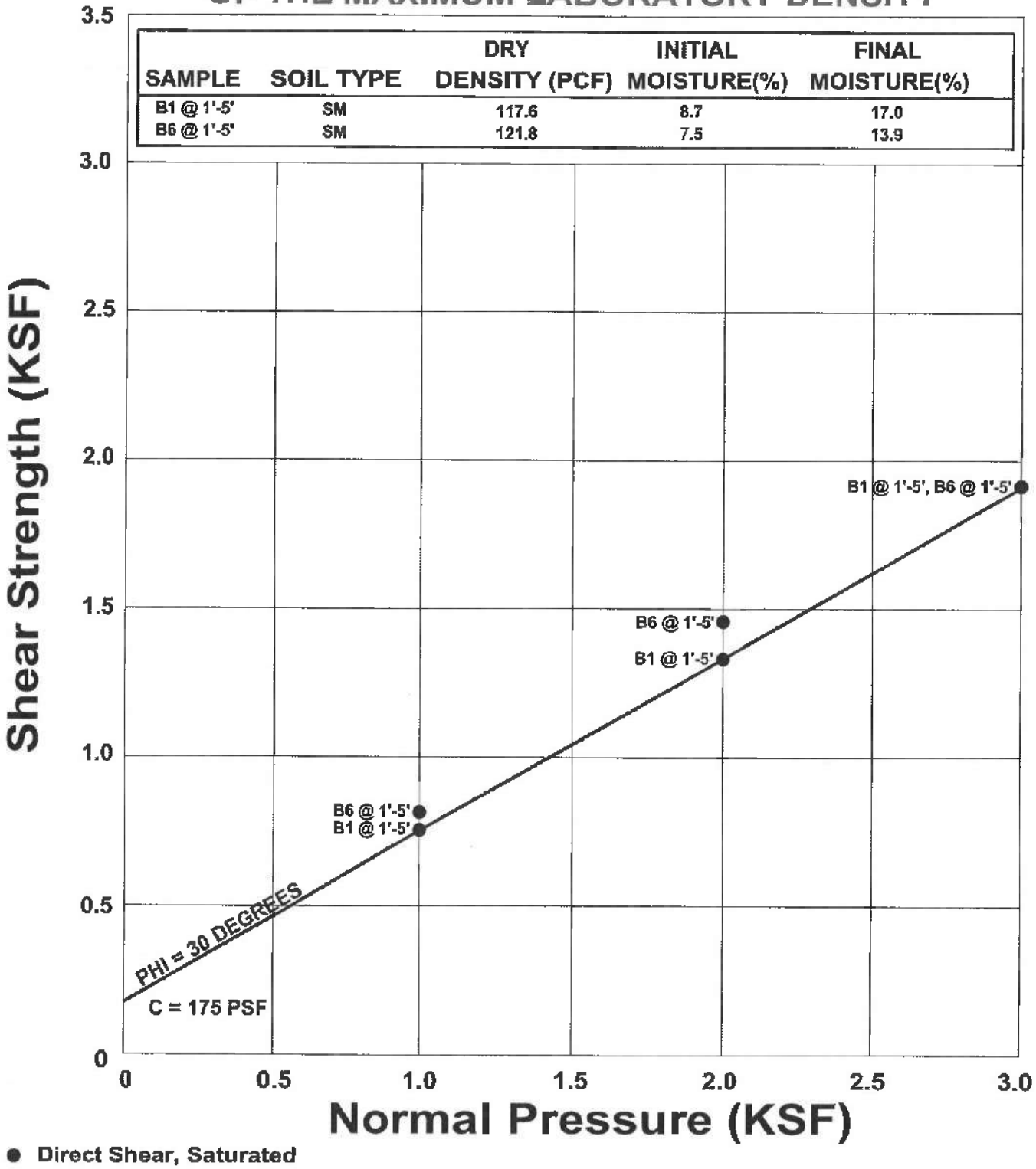
File No. 22311 **Method: 8-Inch Diameter Hollow Stem Auger**

In

Sample Depth ft.	Blows per ft.	Moisture content %	Dry Density p.c.f.	Depth in feet	USCS Class.	Description Surface Conditions: Asphalt For Parking
				0		4 Inch Asphalt, 6 Inch Base
				1		
				2		FILL: Silty Sand, dark brown, moist, medium dense, fine grained
2.5	16	7.1	111.0	3		
				4		Silty Sand to Sand, dark brown, moist, medium dense, fine to medium grained
5	12	6.7	101.5	5		
				6		Silty Sand to Sand with Brick Fragments, dark and yellowish brown, moist, medium dense, fine grained, minor brick fragments
				7		
				8		
				9	ML	Sandy to Clayey Silt, dark brown, moist, stiff
10	37	17.3	114.4	10		
				11		
				12		
				13		
				14		
15	84	13.5	120.5	15		
				16	SM/ML	Silty Sand to Clayey Silt, dark brown, moist, dense, fine grained, stiff
				17		
				18		
				19		
					SM	Silty Sand, yellowish brown, moist, dense, fine grained
20	61	9.7	122.4	20		
				21		Total Depth: 20 Feet No Water Fill To 8 Feet
				22		
				23		NOTE: The stratification lines represent the approximate boundary between earth types; the transition may be gradual.
				24		Used 8-inch diameter Hollow-Stem Auger 140-lb. Automatic Hammer, 30-inch drop
				25		Modified California Sampler used unless otherwise noted

BULK SAMPLE REMOLDED TO 90 PERCENT OF THE MAXIMUM LABORATORY DENSITY

SAMPLE	SOIL TYPE	DRY DENSITY (PCF)	INITIAL MOISTURE(%)	FINAL MOISTURE(%)
B1 @ 1'-5'	SM	117.6	8.7	17.0
B6 @ 1'-5'	SM	121.8	7.5	13.9



● Direct Shear, Saturated

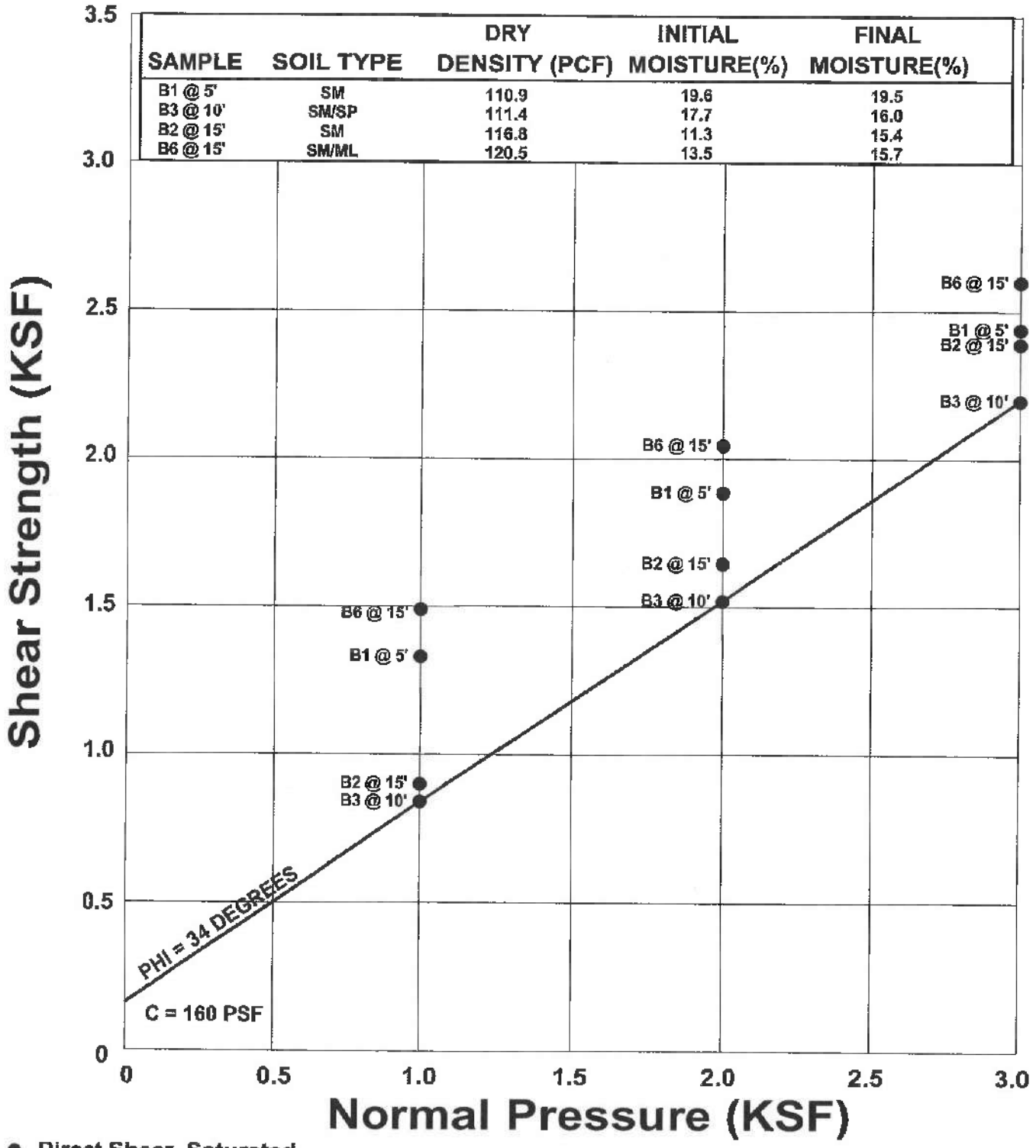
SHEAR TEST DIAGRAM

Geotechnologies, Inc.
Consulting Geotechnical Engineers

EXTERA PUBLIC SCHOOLS
1059 SOUTH GAGE AVENUE, LOS ANGELES

FILE NO. 22311 | PLATE: B-1

SAMPLE	SOIL TYPE	DRY DENSITY (PCF)	INITIAL MOISTURE(%)	FINAL MOISTURE(%)
B1 @ 5'	SM	110.9	19.6	19.5
B3 @ 10'	SM/SP	111.4	17.7	16.0
B2 @ 15'	SM	116.8	11.3	15.4
B6 @ 15'	SM/ML	120.5	13.5	15.7



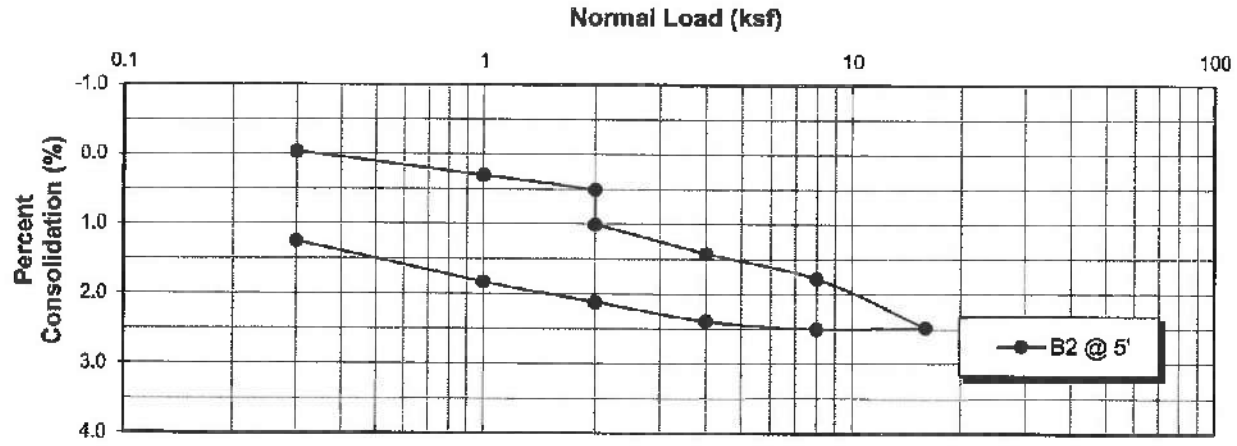
● Direct Shear, Saturated

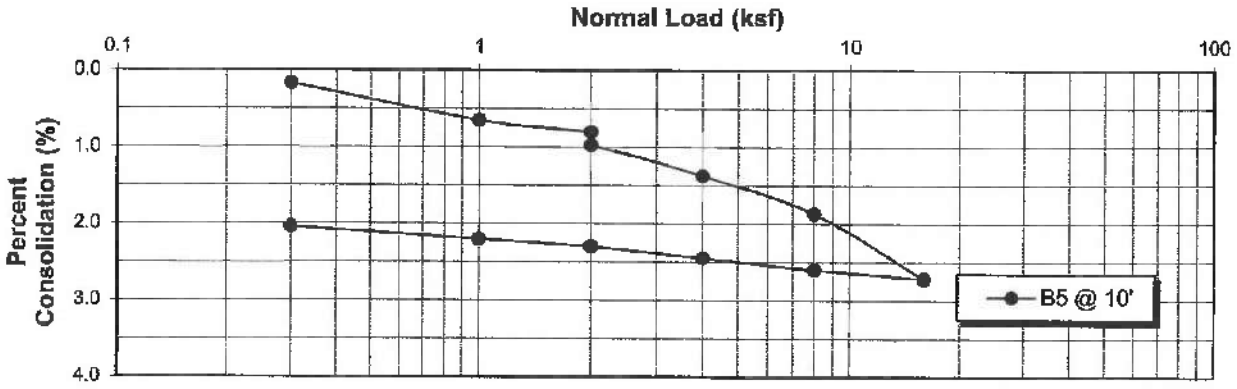
SHEAR TEST DIAGRAM

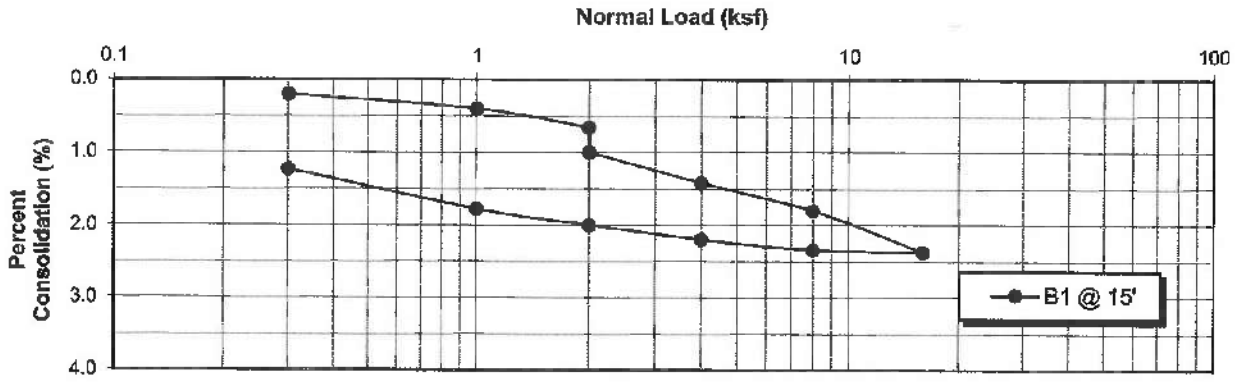
Geotechnologies, Inc.
Consulting Geotechnical Engineers

EXTERA PUBLIC SCHOOLS
1059 SOUTH GAGE AVENUE, LOS ANGELES

FILE NO. 22311 | PLATE: B-2







Water added at 2 KSF

CONSOLIDATION

Geotechnologies, Inc.
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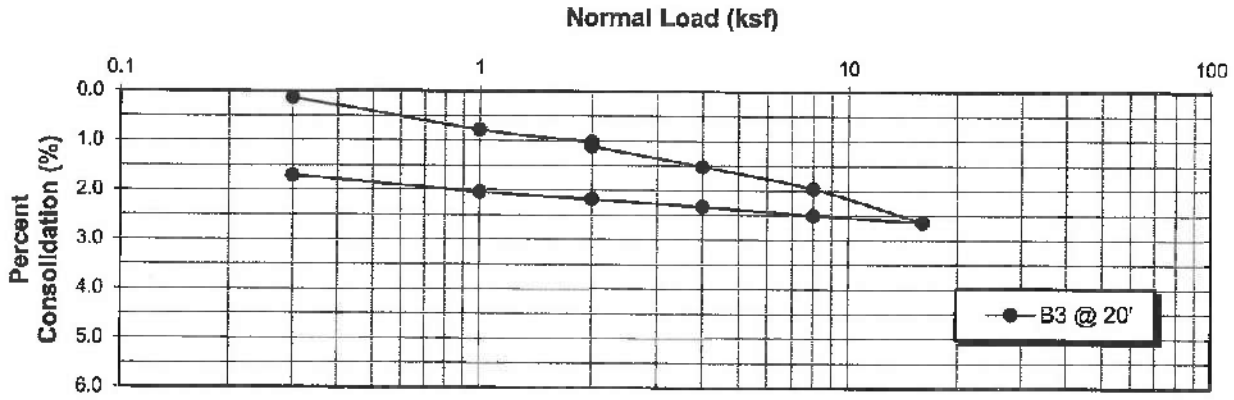
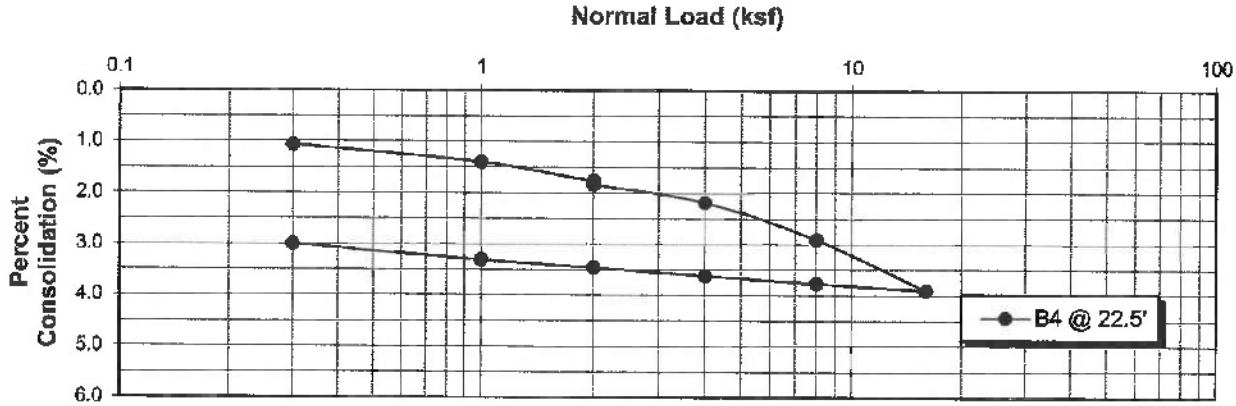
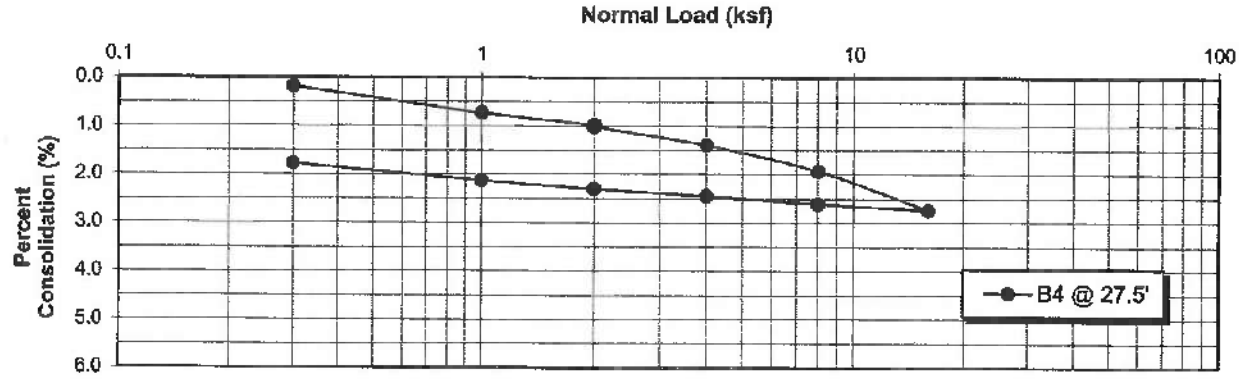
PROJECT: EXTERA PUBLIC SCHOOLS

FILE NO.: 22311 | PLATE: C-1







Water added at 2 KSF

CONSOLIDATION

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Consulting Geotechnical Engineers

PROJECT: EXTERA PUBLIC SCHOOLS

FILE NO.: 22311 | PLATE: C-2

ASTM D-1557		
SAMPLE	B1 @ 1'-5'	B6 @ 1'-5'
SOIL TYPE	SM	SM
MAXIMUM DENSITY PCF.	129.8	133.9
OPTIMUM MOISTURE %	9.0	8.0

ASTM D 4829		
SAMPLE	B1 @ 1'-5'	B3 @ 1'-5'
SOIL TYPE	SM	SM
EXPANSION INDEX UBC STANDARD 18-2	58	20
EXPANSION CHARACTER	MODERATE	LOW

SULFATE CONTENT		
SAMPLE	B1 @ 1'-5'	B6 @ 1'-5'
SULFATE CONTENT: (PERCENTAGE BY WEIGHT)	<0.1%	<0.1%

COMPACTION/EXPANSION/SULFATE DATA SHEET

Geotechnologies, Inc.
Consulting Geotechnical Engineers

EXTERA PUBLIC SCHOOLS
1059 SOUTH GAGE AVENUE, LOS ANGELES

FILE NO: 22311 | PLATE: D

Geotechnologies, Inc.
File No.: 22311
Project: Extera Public School

EVALUATION OF EARTHQUAKE-INDUCED SETTLEMENTS IN DRY SANDY SOILS

Boring No.: 4

EARTHQUAKE INFORMATION:

Earthquake Magnitude:	6.83
Peak Horiz. Acceleration (g):	0.89
Design Horiz. Acceleration (g):	0.59

Depth of Base of Strata (ft)	Thickness of Layer (ft)	USCS Classification	Depth of Mid-point of Layer (ft)	Soil Unit Weight (pcf)	Overburden Pressure at Mid-point (tsf)	Mean Effective Pressure at Mid-point (tsf)	Average Cyclic Shear Stress [Tav]	Field SPT blowcount	Relative density Dr	Correction Factor [Cer]	Correction Factor [Cn]	Corrected [N1]60	Fine Content %	Fine Correction d[N1]60	Fines Corrected [N1]60	Maximum Shear Mod. [Gmax] (tsf)	[geff]*[Geff] [Gmax]	From Tbl. 4-4 Shear Strain [geff]	From Tbl. 4-5 Shear Strain [geff]*100%	Volumetric Strain (Ev) (%)	Number of Strain Cycles [Nc]	Corrected Vol. Strains [Ec]	Settlement [S] (inches)
5.0	5.0	ML/CL	2.5	124.0	0.16	0.10	0.060	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7.5	2.5	ML/SM	6.3	137.0	0.40	0.27	0.152	18	47	1.30	1.42	33.2	64.4	5.6	38.8	779.236	1.73E-04	5.30E-04	5.30E-02	1.80E-02	9.5582	0.0147	0.01
12.5	5.0	SM/SP	10.0	142.0	0.66	0.44	0.252	20	60	1.30	1.21	31.5	20.5	4.6	36.0	980.724	2.14E-04	5.20E-04	5.20E-02	2.30E-02	9.5582	0.0188	0.02
17.5	5.0	SM/SP	15.0	135.0	1.01	0.67	0.379	24	78	1.30	1.00	31.2	12.3	2.2	33.4	1181.330	2.48E-04	6.30E-04	6.30E-02	3.00E-02	9.5582	0.0245	0.03
30.0	12.5	ML/CL	23.8	136.0	1.60	1.07	0.584	27	73	1.30	0.82	28.8	70.2	5.6	34.4	1503.963	2.68E-04	6.00E-04	6.00E-02	2.70E-02	9.5582	0.0220	0.07
35.0	5.0	ML/SM	32.5	139.0	2.20	1.47	0.767	30	41	1.30	0.68	26.5	72.3	5.6	32.1	1723.546	2.80E-04	5.60E-04	5.60E-02	2.70E-02	9.5582	0.0220	0.03
37.5	2.5	ML	36.3	133.0	2.45	1.64	0.837	19	55	1.30	0.62	15.3	77.6	5.6	20.9	1578.064	3.23E-04	6.30E-04	6.30E-02	6.00E-02	9.5582	0.0490	0.03
47.5	10.0	SM/ML	42.5	140.0	2.89	1.93	0.943	36	70	1.30	0.62	29.0	56.0	5.6	34.6	2026.476	2.71E-04	4.60E-04	4.60E-02	1.80E-02	9.5582	0.0147	0.04
50.0	2.5	SM/ML	48.8	140.0	3.33	2.23	1.036	36	69	1.30	0.60	28.1	51.2	5.6	33.7	2154.908	2.69E-04	4.60E-04	4.60E-02	1.90E-02	9.5582	0.0155	0.01

** Clay layers not included in the dry sand settlement analysis, unlikely to be affected by seismic ground shakings

Total Earthquake-Induced Settlements in Dry Sandy Soils (inches) = 0.23

HYDROLOGY MAP

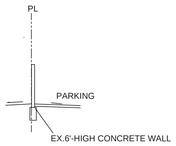
PRE-DEVELOPMENT

ABBREVIATIONS:

C/B ..... Catch Basin
CBW ..... Conc. Block Wall
C&G ..... Curb and Gutter
CLF ..... Chain Linked Fence
CL ..... Clearance Height
CONC. ..... Concrete
D/A ..... Driveway Appron
DS ..... Outlet From Roof Drain
EC ..... Edge of Concrete
EP ..... Edison Pole
EX. ..... Existing
FF ..... Finish Floor Elevation
FH ..... Fire Hydrant
FG ..... Finish Grade Elevation
FL ..... Flow Line Elevation
FOW ..... Face of Wall
FS ..... Finish Surface Elevation
FP ..... Finish Pavement Elevation
GB ..... Grade Break Elevation
HP ..... High Point Elevation
Hr ..... Retaining Height
Hv ..... Wall Height
INV. ..... Invert Elevation
LIP. ..... Lip of Gutter
LS. ..... Land Scaping
PFL ..... Pipe Flow Line
RW ..... Retaining Wall
R/W ..... Right of Way
SMH ..... Sewer Manhole
S/W ..... Sidewalk
TBR ..... To Be Removed
TC ..... Top of Curb Elevation
TF ..... Top of Footing Elevation
TG ..... Top of Grate Elevation
TW ..... Top of Wall Elevation
TWB ..... Top of Block Wall Elevation
WF ..... Wooden Fence
WM ..... Water Meter

LEGEND:

100.36 ..... Design Elevation
(100.10) ..... Existing Elevation
..... Ex. Structure
..... Street Light
..... Ex. Tree
..... Ex. Flow
..... Pervious Area



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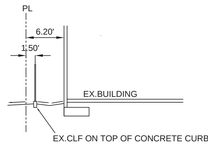
NOT TO SCALE



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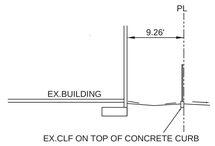

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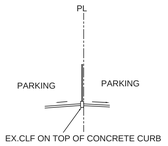
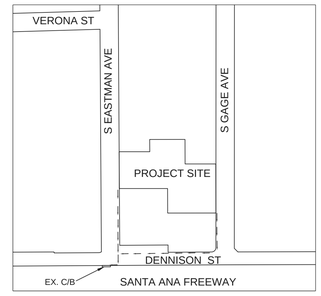


SECTION 4 (TYP.)
NOT TO SCALE

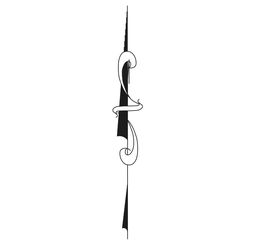
NOTE:
- NOT WITHIN FEMA FLOOD ZONE "A"
- NOT WITHIN COUNTY ADOPTED FLOODWAY


EX.CLF ON TOP OF CONCRETE CURB

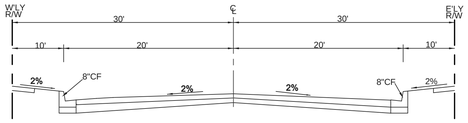


KEY MAP
SCALE: 1"=100'

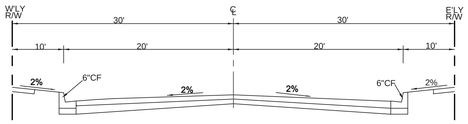
VICINITY MAP
TG: 675-D-1 NOT TO SCALE



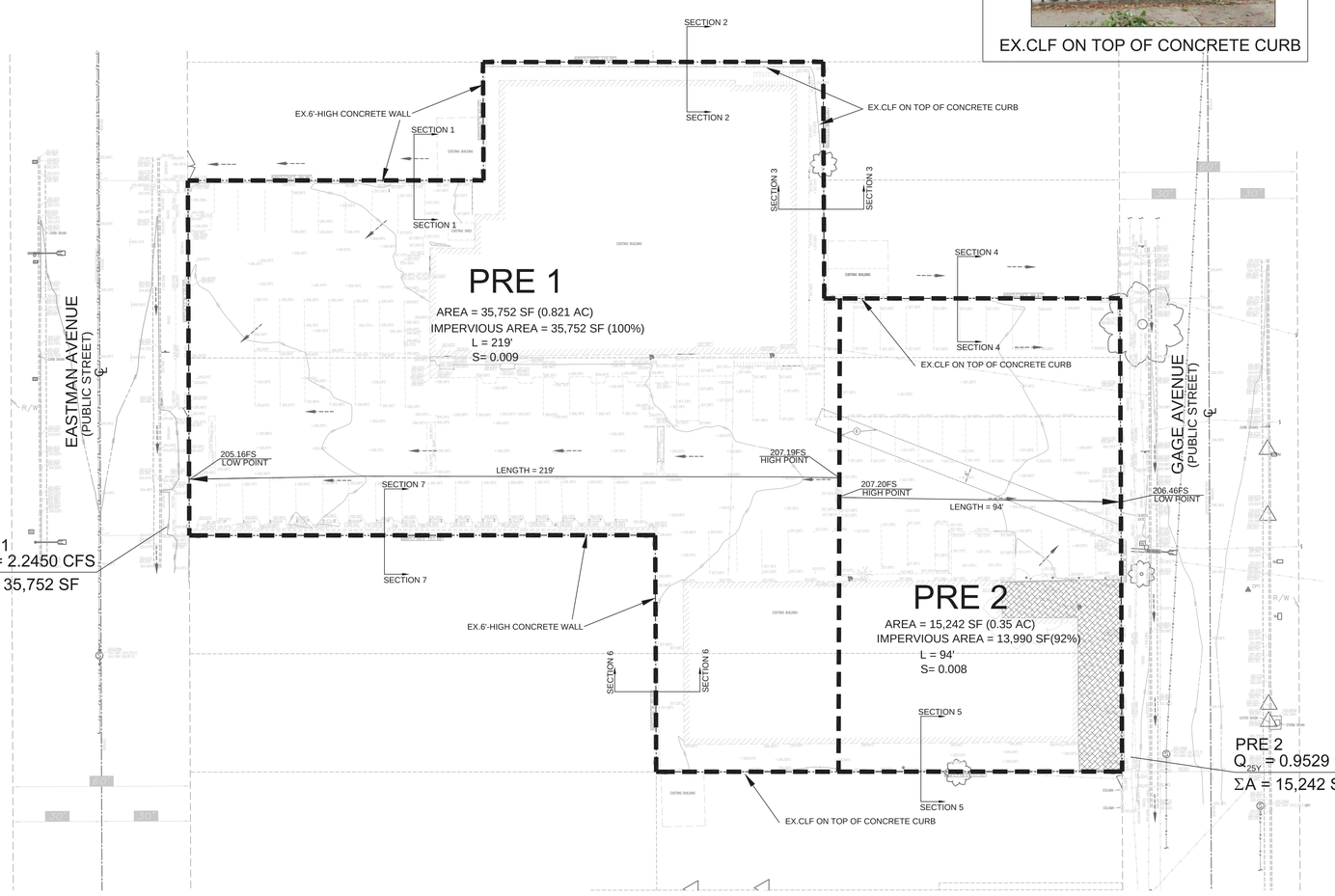
SCALE 1" = 20'

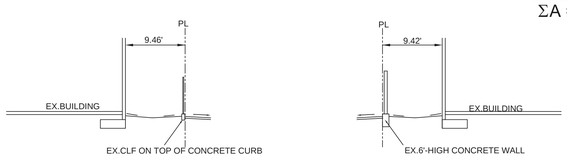


TYPICAL SECTION
S EASTMAN AVE



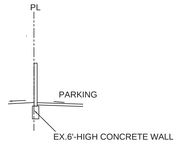
TYPICAL SECTION
S GAGE AVE





SECTION 5 (TYP.)
NOT TO SCALE

SECTION 6 (TYP.)
NOT TO SCALE



SECTION 7 (TYP.)
NOT TO SCALE

PERCENT OF IMPERVIOUS CALCULATION

TOTAL AREA = 50,994 SF (1.171 AC)
IMPERVIOUS AREA = 49,742 SF (1.142 AC)
PERVIOUS AREA = 1,252 SF (0.029 AC)
PERCENT OF IMPERVIOUSNESS = 98%

AREA PRE 1
AREA = 35,752 SF (0.821 AC)
IMPERVIOUS AREA = 35,752 SF (0.821 AC)
PERVIOUS AREA = 0 SF
PERCENT OF IMPERVIOUSNESS = 100%

AREA PRE 2
AREA = 15,242 SF (0.35 AC)
IMPERVIOUS AREA = 13,990 SF (0.32 AC)
PERVIOUS AREA = 1,252 SF (0.029 AC)
PERCENT OF IMPERVIOUSNESS = 92%

..... Pervious Area

HYDROLOGIC DESIGN DATA

SOIL TYPE	016
DPA ZONES	7
50-YEAR 24-HOUR ISOHYET	5.8"
85TH PERCENTILE ISOHYET	0.92"

	AREA (SF)	AREA (ACRE)	LENGTH (FT)	SLOPE	IMPERVIOUS AREA (SF)	%IMP	Q_{25Y}(CFS)
PRE 1	35,752	0.821	219'	0.009	35,752	1.00	2.2450
PRE 2	15,242	0.350	94'	0.008	13,990	0.92	0.9529
TOTAL	50,994	1.171			49,742	0.98	3.1979

DRAINAGE PATTERN FROM PROJECT SITE TO PUBLIC STORMDRAIN SYSTEM

REGISTERED PROFESSIONAL ENGINEER
GUAN WANG
No. 79702
EXP. 09-30-24
CIVIL
STATE OF CALIFORNIA

HYDROLOGY STUDY APPROVED

REVIEWED BY: AYM DATE 02/13/24

APPROVED BY: Thong Ngov DATE 2/15/24

COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
LAND DEVELOPMENT DIVISION

SHEET INDEX

SOIL ENGINEER:
GEOTECHNOLOGIES, INC
439 WESTERN AVE,
GLENDALE, CA 91201
Tel(818)240-9600
FILE NO.22311
DATE: SEPTEMBER 23, 2022

SURVEY:
CAL VADA SURVEYING, INC
411 Jenks Circle, Suite 205, Corona, CA 92878
Phone: 951-280-9960
Armando D. DuPont, Registration No. 7780
JOB NO:22623
FIELD COMPLETION DATE: AUGUST 17, 2022

OWNER:
EDUCATIONAL FACILITIES GROUP
3700 LATROBE ST
LOS ANGELES, CA 90031
PHONE: 323-505-7536

LEGAL DESCRIPTION
POR.LOT 26, 27, 54, 55, AND 56 OF TRACT 3552
IN THE CITY OF LOS ANGELES, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 38, PAGE 83-84 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.
APN# : 5239-012-009 & 5239-012-028

BENCH MARK:
ELEVATIONS SHOWN HEREON ARE BASED UPON COUNTY OF LOS ANGELES BENCHMARK LY9859, ELEVATION 191.90 FEET (NAVD 88).
DESCRIPTION:
RDBM TAG IN W CB 1FT N/O BCR @ NW COR UNION PACIFIC AVE & HERBERT AVE

PLANS PREPARED BY:
TRITECH ENGINEERING GROUP
LAND SURVEY SUBDIVISION
CIVIL ENGINEERING & DESIGN
135 N. SAN GABRIEL BLVD.
SAN GABRIEL, CA 91775
TEL: (626) 570-1918
EMAIL: info@tritechengineer.com
JOB NO. 220918

FRANCO ARCHITECTS INC.
12345 Ventura Blvd. H
Studio City, CA 91604
Tel 818 754-2030
Fax 818 754-2032
Architecture and Planning

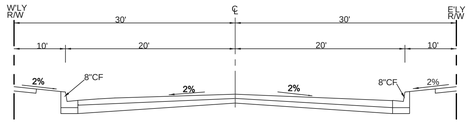
EXTERA PUBLIC SCHOOLS
1059 S. GAGE AVE., LOS ANGELES, CA90023

REV	DESCRIPTION	DATE
	PLANNING SUBMITTAL	10/31/2022

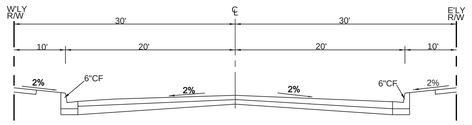
PROJECT: EXTERA PUBLIC SCHOOLS
PROJECT ADDRESS: 1059 S. GAGE AVE., LOS ANGELES, CA 90023
DRAWING TITLE: HYDROLOGY MAP PRE-DEVELOPMENT
DRAWN BY:
ISSUE DATE: 02/08/2024
JOB NUMBER:
DRAWING SCALE:
APPROVED BY:
DRAWING NUMBER: HY - 1

HYDROLOGY MAP

POST-DEVELOPMENT



TYPICAL SECTION
S EASTMAN AVE



TYPICAL SECTION
S GAGE AVE

NOTE:
- NOT WITHIN FEMA FLOOD ZONE "A"
- NOT WITHIN COUNTY ADOPTED FLOODWAY
- ALL PROPOSED DRAINAGE DEVICES NOT TO BE MAINTAINED BY LACFCD

HYDROLOGIC DESIGN DATA

SOIL TYPE	016
DPA ZONES	7
50-YEAR 24-HOUR ISOHYET	5.8"
85TH PERCENTILE ISOHYET	0.92"

	AREA (SF)	AREA (ACRE)	LENGTH (FT)	SLOPE	IMPERVIOUS AREA (SF)	%IMP	Q_{25Y}(CFS)	Q_{85TH}(CFS)	SWQDv (CU.FT.)
POST 1	19,414	0.446	40'	0.02	17,689	0.91	1.2136	0.2057	1,223.65
POST 2	10,397	0.239	42'	0.02	9,403	0.90	0.6500	0.1093	649.42
POST 3	5,468	0.126	68'	0.01	4,994	0.91	0.3429	0.0492	345.60
POST 4	15,715	0.361	42'	0.01	13,350	0.85	0.9791	0.1444	933.13
TOTAL	50,994	1.171			45,436	0.89	3.1856	0.5086	3,151.80

HYDROLOGY STUDY APPROVED

REVIEWED BY: _____ DATE 02/13/24

APPROVED BY: Thong Ngou DATE 2/15/24

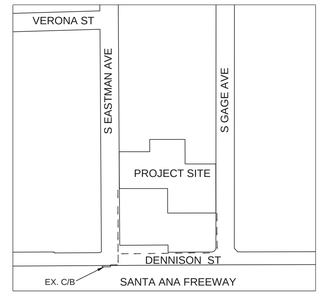
COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
LAND DEVELOPMENT DIVISION

ABBREVIATIONS:

C/B ..... Catch Basin
CBW ..... Conc. Block Wall
C&G ..... Curb and Gutter
CLF ..... Chain Linked Fence
CL ..... Clearance Height
CONC. .... Concrete
D/A ..... Driveway Appron
DS ..... Outlet From Roof Drain
EC ..... Edge of Concrete
EP ..... Edison Pole
EX. ..... Existing
FF ..... Finish Floor Elevation
FH ..... Fire Hydrant
FG ..... Finish Grade Elevation
FL ..... Flow Line Elevation
FOW ..... Face of Wall
FS ..... Finish Surface Elevation
FP ..... Finish Pavement Elevation
GB ..... Grade Break Elevation
HP ..... High Point Elevation
Hr ..... Retaining Height
Hv ..... Wall Height
INV. ..... Invert Elevation
LIP. ..... Lip of Gutter
LS. ..... Land Scaping
PFL ..... Pipe Flow Line
RW ..... Retaining Wall
R/W ..... Right of Way
SMH ..... Sewer Manhole
S/W ..... Sidewalk
TBR ..... To Be Removed
TC ..... Top of Curb Elevation
TF ..... Top of Footing Elevation
TG ..... Top of Grate Elevation
TW ..... Top of Wall Elevation
TWB ..... Top of Block Wall Elevation
WF ..... Wooden Fence
WM ..... Water Meter

LEGEND:

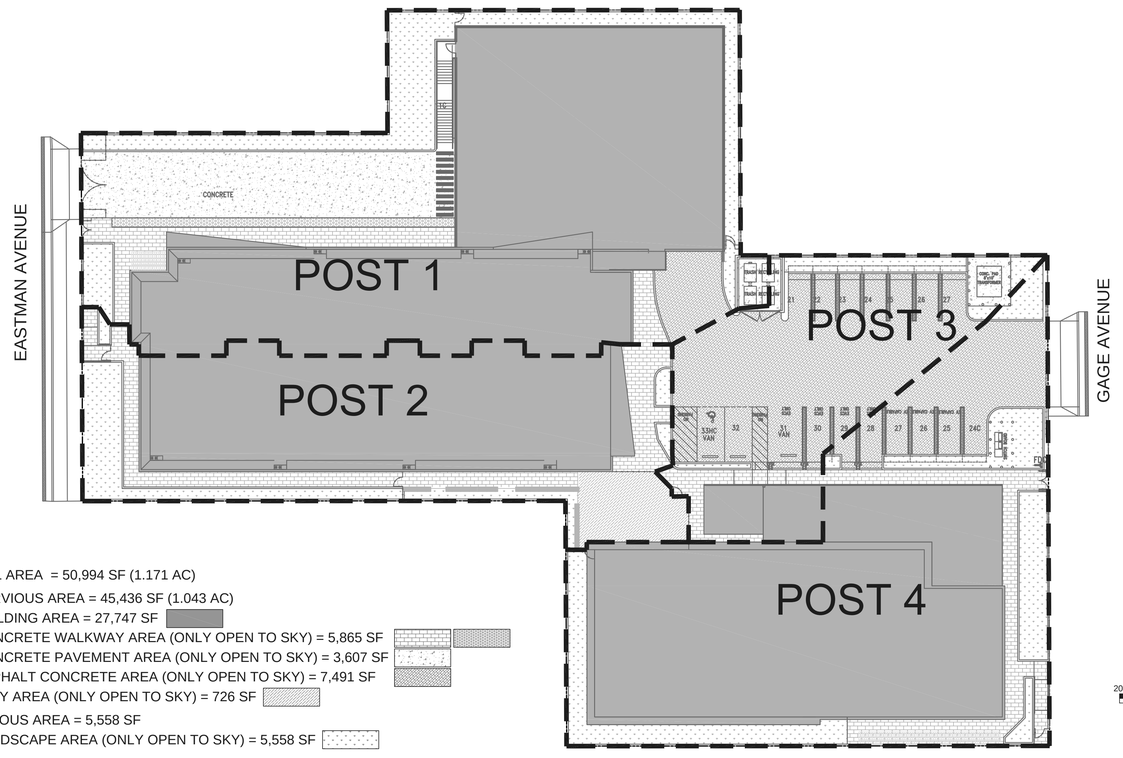
100.36 ..... Design Elevation
(100.10) ..... Existing Elevation
..... Ex. Structure
..... Street Light
..... Ex. Tree, Diameter
..... Prop. Flow Line for Swale
..... Prop. Sheet Flow
..... Ex. Flow
..... Catch Basin
..... Area Drain
..... Landscape Area
..... Walkway Area
..... Concrete Pavement
..... Asphalt Concrete Pavement
..... Play Ground Area (Impervious)
..... Infiltration trench



KEY MAP
SCALE: 1"=100'

VICINITY MAP
TG: 675-D-1 NOT TO SCALE

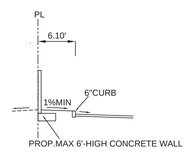
PAVEMENT EXHIBIT



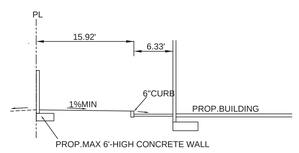
TOTAL AREA = 50,994 SF (1.171 AC)

IMPERVIOUS AREA = 45,436 SF (1.043 AC)
- BUILDING AREA = 27,747 SF
- CONCRETE WALKWAY AREA (ONLY OPEN TO SKY) = 5,865 SF
- CONCRETE PAVEMENT AREA (ONLY OPEN TO SKY) = 3,607 SF
- ASPHALT CONCRETE AREA (ONLY OPEN TO SKY) = 7,491 SF
- PLAY AREA (ONLY OPEN TO SKY) = 726 SF

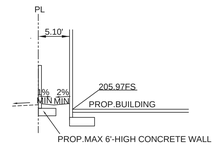
PERVIOUS AREA = 5,558 SF
- LANDSCAPE AREA (ONLY OPEN TO SKY) = 5,558 SF



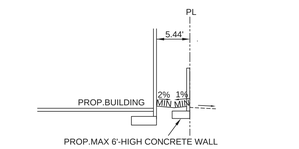
SECTION 1 (TYP.)
NOT TO SCALE



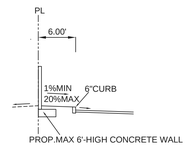
SECTION 2 (TYP.)
NOT TO SCALE



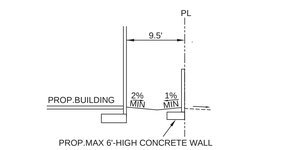
SECTION 3 (TYP.)
NOT TO SCALE



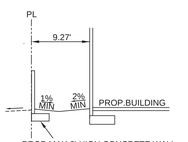
SECTION 4 (TYP.)
NOT TO SCALE



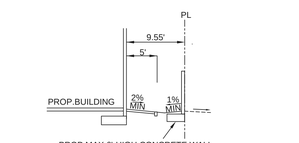
SECTION 5 (TYP.)
NOT TO SCALE



SECTION 6 (TYP.)
NOT TO SCALE



SECTION 7 (TYP.)
NOT TO SCALE



SECTION 8 (TYP.)
NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
GUAN WANG
No. 79702
EXP. 09-30-24
CIVIL
STATE OF CALIFORNIA

SOIL ENGINEER:
GEOTECHNOLOGIES, INC
439 WESTERN AVE,
GLENDALE, CA 91201
Tel(818)240-9600
FILE NO.22311
DATE: SEPTEMBER 23, 2022

SURVEY:
CAL VADA SURVEYING, INC
411 Jenks Circle, Suite 205, Corona, CA 92878
Phone: 951-280-9960
Armando D. DuPont, Registration No. 7780
JOB NO:22623
FIELD COMPLETION DATE: AUGUST 17, 2022

OWNER:
EDUCATIONAL FACILITIES GROUP
3700 LATROBE ST
LOS ANGELES, CA 90031
PHONE: 323-505-7536

LEGAL DESCRIPTION
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DESCRIPTION:
RDBM TAG IN W CB 1FT N/O BCR @ NW COR UNION PACIFIC AVE & HERBERT AVE

PLANS PREPARED BY:
TRITECH ENGINEERING GROUP
LAND SURVEY SUBDIVISION
CIVIL ENGINEERING & DESIGN
135 N. SAN GABRIEL BLVD.
SAN GABRIEL, CA 91775
TEL: (626) 570-1918
EMAIL: info@tritechengineer.com
JOB NO. 220918

FRANCO ARCHITECTS INC.
12345 Ventura Blvd. H
Studio City, CA 91604
Tel 818 754-2030
Fax 818 754-2032
Architecture and Planning

EXTERA PUBLIC SCHOOLS
1059 S. GAGE AVE., LOS ANGELES, CA90023

REV	DESCRIPTION	DATE
	PLANNING SUBMITTAL	10/31/2022

PROJECT: EXTERA PUBLIC SCHOOLS
PROJECT ADDRESS: 1059 S. GAGE AVE., LOS ANGELES, CA 90023
DRAWING TITLE: HYDROLOGY MAP POST-DEVELOPMENT
DRAWN BY:
ISSUE DATE: 02/08/2024
JOB NUMBER:
DRAWING SCALE:
APPROVED BY:
DRAWING NUMBER: HY - 2

HYDROLOGY MAP

POST-DEVELOPMENT

ROOF PLAN

NOTE:
- NOT WITHIN FEMA FLOOD ZONE "A"
- NOT WITHIN COUNTY ADOPTED FLOODWAY
- ALL PROPOSED DRAINAGE DEVICES NOT TO BE MAINTAINED BY LACFCD

HYDROLOGY STUDY APPROVED

REVIEWED BY: AyM Jean Cam DATE 02/13/24

APPROVED BY: Thong Ngov DATE 2/15/24

COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
LAND DEVELOPMENT DIVISION

POST 1

POST 2

POST 3

POST 4

DRAIN ON DECK CONNECT TO DOWNSPOUT

PIPE ON GROUND FLOOR

INLET: POST 3
Q_{25Y} = 0.3429 CFS
ΣA = 5,468 SF

INLET:POST 1
Q_{25Y} = 1.2136 CFS
ΣA = 19,414 SF

INLET: POST 2
Q_{25Y} = 0.6500 CFS
ΣA = 10,397 SF

INLET:POST 4
Q_{25Y} = 0.9791 CFS
ΣA = 15,715 SF

OUTLET
Q_{25Y} = 3.1310 CFS
ΣA = 50,994 SF

ALL AREAS
Q_{25Y} = 3.1856 CFS
ΣA = 50,994 SF

234.25TG
LOW POINT

235.05FS
HIGH POINT

235.09FS
HIGH POINT

234.25TG
LOW POINT

205.15TG
LOW POINT

205.83FS
HIGH POINT

205.92FL
HIGH POINT

205.50TG
LOW POINT

LENGTH =40'

LENGTH =42'

LENGTH = 68'

LENGTH =42'

① TOP OF TRENCH: 199.50
BOTTOM OF TRENCH: 196.50
INFILTRATION TRENCH

EASTMAN AVENUE
(PUBLIC STREET)

GAGE AVENUE
(PUBLIC STREET)

EASTMAN AVE

DENNISON ST.

EX.CURB & GUTTER

SCALE 1" = 10'

RUNOFF TO EASTMAN AVE

PRE-DEVELOPMENT Q_{25Y} = 2.2450 CFS	
POST-DEVELOPMENT Q_{25Y} = 3.1856 CFS	

RUNOFF TO GAGE AVE

PRE-DEVELOPMENT Q_{25Y} = 0.9529 CFS	
POST-DEVELOPMENT Q_{25Y} = 0 CFS	

CONSTRUCTION NOTES

1. CONST. 12" X 12" CATCH BASIN PER BROOKS PRODUCTS INC. DWG, NO. 1212CB USE TRAFFIC GRATE OR EQUAL, NOT TO BE MAINTAINED BY LACFCD
2. INSTALL "FLOGARD LOPRO" SHALLOW CATCH BASIN FILTER INSERT PER KRISTAR ENTERPRISES, INC MODEL FG-M1212 OR EQUAL, NOT TO BE MAINTAINED BY LACFCD
3. INSTALL STORM DRAIN STENCIL, NOT TO BE MAINTAINED BY LACFCD
4. CONST. 24" X 24" CATCH BASIN PER BROOKS PRODUCTS INC. DWG, NO. 2424CB USE TRAFFIC GRATE OR EQUAL, NOT TO BE MAINTAINED BY LACFCD
5. INSTALL "FLOGARD LOPRO" SHALLOW CATCH BASIN FILTER INSERT PER KRISTAR ENTERPRISES, INC MODEL FG-M2424 OR EQUAL, NOT TO BE MAINTAINED BY LACFCD
6. CONST. 24" X 24" CATCH BASIN PER BROOKS PRODUCTS INC. DWG, NO. 2424CB USE TRAFFIC SOLID COVER OR EQUAL, NOT TO BE MAINTAINED BY LACFCD
7. CONST. 36" X 36" CATCH BASIN PER BROOKS PRODUCTS INC. DWG, NO. 3636CB USE PARKWAY SOLID COVER OR EQUAL, NOT TO BE MAINTAINED BY LACFCD
8. CONST. TRENCH DRAIN, WIDTH OF TRENCH = 4" PER ALHAMBRA FOUNDRY COMPANY, LTD MODEL A-2440 FOR NON-TRAFFIC OR EQUAL, NOT TO BE MAINTAINED BY LACFCD
9. INSTALL FLOGARD LOPRO TRENCH DRAIN FILTER INSERT PER KRISTAR ENTERPRISES, INC MODEL FG-TDOF4 OR EQUAL, NOT TO BE MAINTAINED BY LACFCD
10. CONST. 4" AREA DRAIN, NOT TO BE MAINTAINED BY LACFCD
11. CONST. INFILTRATION TRENCH, WIDTH = 40', LENGTH = 73', DEPTH = 3' NOT TO BE MAINTAINED BY LACFCD, GPS: 34.021130, -118.185333
12. CONST. PARKWAY DRAIN PER SPPWC STD 151-2, S=30', INLET TYPE 1, NOT TO BE MAINTAINED BY LACFCD
13. INSTALL "FLOGARD LOPRO" SHALLOW CATCH BASIN FILTER INSERT PER KRISTAR ENTERPRISES, INC MODEL FG-M3636 OR EQUAL, NOT TO BE MAINTAINED BY LACFCD

FLOW CONVERGES AT THE INTERSECTION OF EASTMAN AVE AND DENNISON ST.

EXISTING CONDITION, TOTAL FLOW AT THIS LOCATION: 9.8982 CFS (25-YEAR)
PROPOSED CONDITION, TOTAL FLOW AT THIS LOCATION: 9.8859 CFS (25-YEAR)

DESPITE TOTAL FLOW INCREASE TO EASTMAN AVE, CAPACITY IS SUFFICIENT FOR THE TOTAL AMOUNT OF FLOW. THERE IS NO INCREASE OF FLOW TO THE DOWNSTREAM CATCH BASIN.

REGISTERED PROFESSIONAL ENGINEER
GUAN WANG
No. 79702
EXP. 09-30-24
CIVIL
STATE OF CALIFORNIA

DIGALERT

DIAL TOLL FREE
1-800-227-2600
AT LEAST TWO DAYS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

SOIL ENGINEER:
GEOTECHNOLOGIES, INC

439 WESTERN AVE,
GLENDALE, CA 91201
Tel(818)240-9600
FILE NO.22311
DATE: SEPTEMBER 23, 2022

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Tel 818 754-2030
Fax 818 754-2032
Architecture and Planning

EXTERA PUBLIC SCHOOLS
1059 S. GAGE AVE., LOS ANGELES, CA90023

REV	DESCRIPTION	DATE
	PLANNING SUBMITTAL	10/31/2022

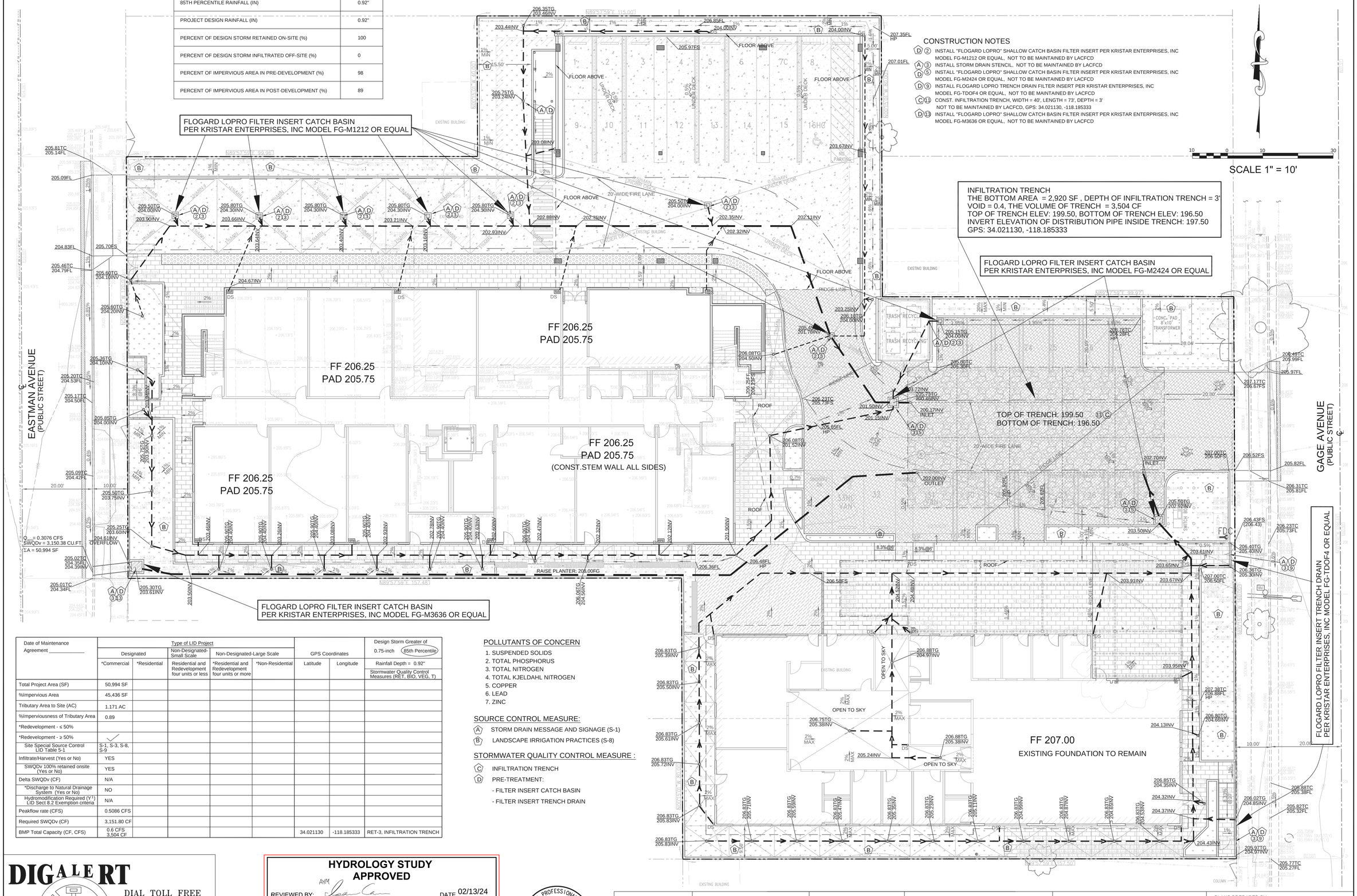
PROJECT: EXTERA PUBLIC SCHOOLS
PROJECT ADDRESS: 1059 S. GAGE AVE., LOS ANGELES, CA 90023
DRAWING TITLE: HYDROLOGY MAP POST-DEVELOPMENT
DRAWN BY:
ISSUE DATE: 02/08/2024
JOB NUMBER:
DRAWING SCALE:
APPROVED BY:
DRAWING NUMBER: HY - 3

LOW IMPACT DEVELOPMENT PLAN

BMPs SUMMARY

CONTRIBUTING AREA	AREA (SF)	AREA (ACRE)	PERVIOUS AREA (SF)	IMPERVIOUS AREA (SF)	%IMP	Q_{85TH}(CFS)	REQUIRED Q_{85TH}(CFS)	BMPs TYPE	TREATMENT FLOWRATE(CFS)	SWQDv(CF)	REQUIRED VOLUME (CF)	BMPs TYPE	PROVIDED VOLUME (CF)	REQUIRED SURFACE AREA (SF)	PROVIDED SURFACE AREA (SF)
POST 1, POST 2, POST 3, AND POST 4	50,994	1.171	5,558	45,436	0.89	0.5086	0.5086	FILTER INSERT CATCH BASIN MODEL FG-M2424 TOTAL 2 FILTERS	0.60	3,151.80	3,151.80	INFILTRATION TRENCH WIDTH = 53', LENGTH = 55', DEPTH = 3', VOID = 0.4 GPS: 34.021130, -118.185333	3,498	2,625.32	2,915

85TH PERCENTILE RAINFALL (IN)	0.92"
PROJECT DESIGN RAINFALL (IN)	0.92"
PERCENT OF DESIGN STORM RETAINED ON-SITE (%)	100
PERCENT OF DESIGN STORM INFILTRATED OFF-SITE (%)	0
PERCENT OF IMPERVIOUS AREA IN PRE-DEVELOPMENT (%)	98
PERCENT OF IMPERVIOUS AREA IN POST-DEVELOPMENT (%)	89



Date of Maintenance Agreement _____	Type of LID Project					GPS Coordinates		Design Storm Greater of 0.75-inch (85th Percentile)
	Designated		Non-Designated-Small Scale	Non-Designated-Large Scale				
	*Commercial	*Residential	Residential and Redevelopment four units or less	*Residential and Redevelopment four units or more	*Non-Residential	Latitude	Longitude	Rainfall Depth = 0.92"
								Stormwater Quality Control Measures (RET, BIO, VEG, T)
Total Project Area (SF)	50,994 SF							
%Impervious Area	45,436 SF							
Tributary Area to Site (AC)	1.171 AC							
%Imperviousness of Tributary Area	0.89							
*Redevelopment - ≤ 50%								
*Redevelopment - ≥ 50%	✓							
Site Special Source Control LID Table 5-1	S-1, S-3, S-8, S-9							
Infiltrate/Harvest (Yes or No)	YES							
SWQDv 100% retained onsite (Yes or No)	YES							
Delta SWQDv (CF)	N/A							
*Discharge to Natural Drainage System (Yes or No)	NO							
Hydromodification Required (Y^1) LID Sect 8.2 Exemption criteria	N/A							
Peakflow rate (CFS)	0.5086 CFS							
Required SWQDv (CF)	3,151.80 CF							
BMP Total Capacity (CF, CFS)	0.6 CFS 3,504 CF					34.021130	-118.185333	RET-3, INFILTRATION TRENCH

POLLUTANTS OF CONCERN

1. SUSPENDED SOLIDS
2. TOTAL PHOSPHORUS
3. TOTAL NITROGEN
4. TOTAL KJELDAHL NITROGEN
5. COPPER
6. LEAD
7. ZINC

SOURCE CONTROL MEASURE:

A STORM DRAIN MESSAGE AND SIGNAGE (S-1)
B LANDSCAPE IRRIGATION PRACTICES (S-8)

STORMWATER QUALITY CONTROL MEASURE :

C INFILTRATION TRENCH
D PRE-TREATMENT:
- FILTER INSERT CATCH BASIN
- FILTER INSERT TRENCH DRAIN

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UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

HYDROLOGY STUDY APPROVED

REVIEWED BY: AVM DATE 02/13/24

APPROVED BY: Thong Ngov DATE 2/15/24

COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
LAND DEVELOPMENT DIVISION

REGISTERED PROFESSIONAL ENGINEER — SUAN WANG — No. 79702 EXP. 09-30-24 — CIVIL — STATE OF CALIFORNIA

SOIL ENGINEER:
GEOTECHNOLOGIES, INC
439 WESTERN AVE,
GLENDALE, CA 91201
Tel(818)240-9600
FILE NO.22311
DATE: SEPTEMBER 23, 2022

SURVEY:
CAL VADA SURVEYING, INC
411 Jenks Circle, Suite 205, Corona, CA 92878
Phone: 951-280-9960
Armando D. DuPont, Registration No. 7780
JOB NO:22623
FIELD COMPLETION DATE: AUGUST 17, 2022

OWNER:
EDUCATIONAL FACILITIES GROUP
3700 LATROBE ST
LOS ANGELES, CA 90031
PHONE: 323-505-7536

LEGAL DESCRIPTION
POR.LOT 26, 27, 54, 55, AND 56 OF TRACT 3552
IN THE CITY OF LOS ANGELES, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 38, PAGE 83-84 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.
APN# : 5239-012-009 & 5239-012-028

BENCH MARK:
ELEVATIONS SHOWN HEREON ARE BASED UPON COUNTY OF LOS ANGELES BENCHMARK LY9859, ELEVATION 191.90 FEET (NAVD 88).
DESCRIPTION:
RDBM TAG IN W CB 1FT N/O BCR @ NW COR UNION PACIFIC AVE & HERBERT AVE

PLANS PREPARED BY:
TRITECH ENGINEERING GROUP
LAND SURVEY SUBDIVISION
CIVIL ENGINEERING & DESIGN
135 N. SAN GABRIEL BLVD.
SAN GABRIEL, CA 91775
TEL: (626) 570-1918
EMAIL: info@tritechengineer.com
JOB NO. 220918

FRANCO ARCHITECTS INC.
12345 Ventura Blvd. H
Studio City, CA 91604
Tel 818 754-2030
Fax 818 754-2032
Architecture and Planning

EXTERA PUBLIC SCHOOLS
1059 S. GAGE AVE., LOS ANGELES, CA90023

REV	DESCRIPTION	DATE
	PLANNING SUBMITTAL	10/31/2022

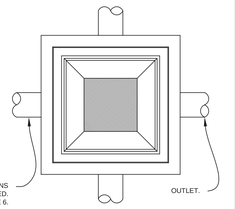
PROJECT: EXTERA PUBLIC SCHOOLS
PROJECT ADDRESS: 1059 S. GAGE AVE., LOS ANGELES, CA 90023
DRAWING TITLE: LOW IMPACT DEVELOPMENT PLAN
DRAWN BY: ISSUE DATE: 02/08/2024
JOB NUMBER: DRAWING SCALE:
APPROVED BY:
DRAWING NUMBER: LID - 1

FG-LP-0001

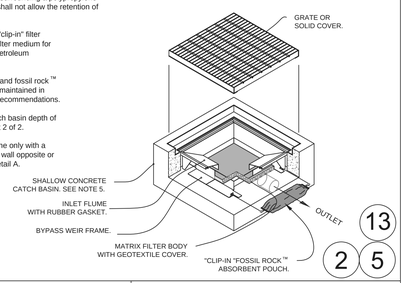
SPECIFIER CHART				
MODEL	CATCH BASIN ID	SOLIDS STORAGE CAPACITY CUBIC FEET	FILTERED FLOW CUBIC FEET / SECOND	TOTAL BYPASS CAPACITY CUBIC FEET /SECOND
FG-M1212	12" X 12"	0.05	0.05	0.50
FG-M2424	24" X 24"	0.30	0.30	1.70
FG-M3030	30" X 30"	0.60	0.70	3.10
FG-M3636	36" X 36"	0.80	0.90	4.10
FG-M4848	48" X 48"	1.40	1.60	7.10
FG-M6060	60" X 60"	2.20	2.50	11.20

NOTES:

1. Inlet flume & bypass weir frame shall be constructed from stainless steel Type 304.
2. Matrix filter element is constructed from durable polypropylene woven monofilament geotextile surrounding a polypropylene matrix skeleton. Filter element shall not allow the retention of water between storm events.
3. Filter inserts are supplied with "clip-in" filter pouches utilizing fossil rock™ filter medium for the collection and retention of petroleum hydrocarbons (oils & greases).
4. FloGard® LoPro™ filter inserts and fossil rock™ filter medium must be maintained in accordance with manufacturer recommendations.
5. Device requires a minimum catch basin depth of 6.50" beneath grate. See sheet 2 of 2.
6. Additional inlets are limited to one only with a 6" diameter maximum, and to a wall opposite or at a right angle to outlet. See detail A.



DETAIL A
ADDITIONAL INLETS
NOT TO SCALE



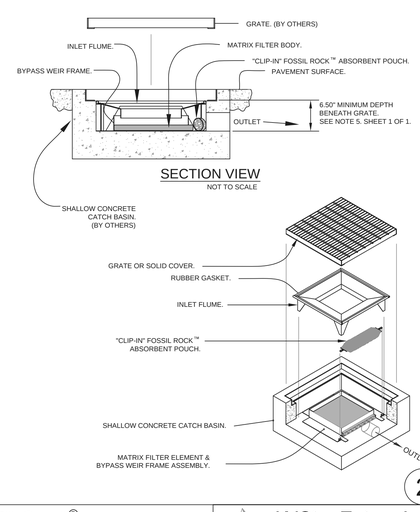
13
2 5

TITLE
FloGard® LoPro™
SHALLOW CATCH BASIN FILTER INSERT

KriStar Enterprises, Inc.
360 Sutton Place, Santa Rosa, CA 95407
Ph: 800.579.8819, Fax: 707.524.8186, www.kristar.com

DRAWING NO.	REV.	RDD	DATE	CHK.	DATE
FG-LP-0001	D	0104 JPR 6/6/12		JPR 12/18/06	SHEET 1 OF 2

FG-LP-0001



SECTION VIEW
NOT TO SCALE

13
2 5

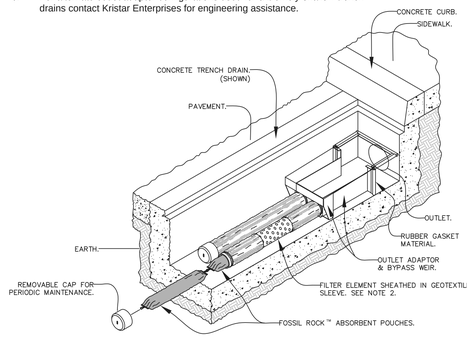
TITLE
FloGard® LoPro™
SHALLOW CATCH BASIN FILTER INSERT

KriStar Enterprises, Inc.
360 Sutton Place, Santa Rosa, CA 95407
Ph: 800.579.8819, Fax: 707.524.8186, www.kristar.com

DRAWING NO.	REV.	RDD	DATE	CHK.	DATE
FG-LP-0001	D	0104 JPR 6/6/12		JPR 12/18/06	SHEET 2 OF 2

NOTES:

1. Filter outlet adapter shall be constructed from stainless steel Type 304.
2. Filter element is constructed from polypropylene woven monofilament geotextile surrounding a perforated filter housing. Filter element shall not allow the retention of water between storm events.
3. Filter inserts are supplied with "clip-in" filter pouches utilizing fossil rock™ filter medium for the collection and retention of petroleum hydrocarbons (oils & greases).
4. FloGard® LoPro™ filter inserts and fossil rock™ filter medium pouches must be maintained in accordance with manufacturer recommendations.
5. Outlet adapter can accommodate outlet openings at right angles and/or bottom outlet openings.
6. For alternate outlet adapter configurations used for extremely shallow trench drains contact Kristar Enterprises for engineering assistance.



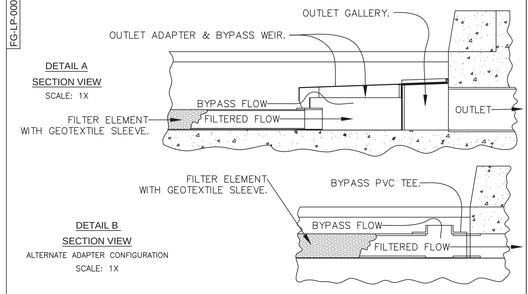
9

TITLE
FloGard® LoPro™
TRENCH DRAIN FILTER INSERT

KriStar Enterprises, Inc.
P.O. Box 6419, Santa Rosa, CA 95406
Ph: 800.579.8819, Fax: 707.524.8186, www.kristar.com

DRAWING NO.	REV.	RDD	DATE	CHK.	DATE
FG-LP-0002	C	0020 3/7/07		JPR 2/21/07	SHEET 1 OF 2

FG-LP-0002



SPECIFIER CHART						
MODEL	FILTER TYPE	TRENCH WIDTH "ID" (CLEAR OPENING)	MINIMUM TRENCH DEPTH (FROM BOTTOM OF GRATE)	SOLIDS STORAGE CAPACITY CUBIC FEET	FILTERED FLOW CUBIC FEET / SECOND	TOTAL BYPASS CAPACITY CUBIC FEET /SECOND
FG-TDOF3	PIPE *	3.0	6.5	0.1	0.5	0.1
FG-TDOF4	PIPE *	4.0	6.5	0.2	0.5	0.1
FG-TDOF6	PIPE	6.0	6.5	0.4	0.5	0.2
FG-TDOF8	PIPE	8.0	6.5	0.7	0.5	0.3
FG-TDOF10	PIPE	10.0	6.5	0.9	0.5	0.5
FG-TDOF12	PIPE	12.0	6.5	0.9	1.0	0.6

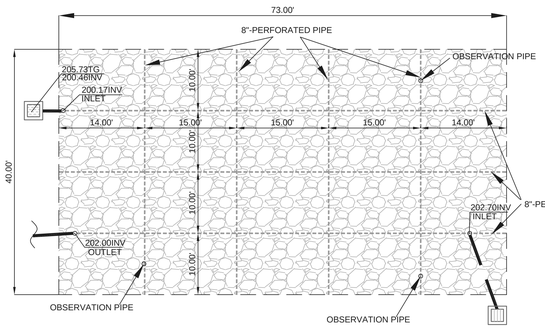
* ALTERNATE ADAPTER CONFIGURATION. SEE DETAIL B.

9

TITLE
FloGard® LoPro™
TRENCH DRAIN FILTER INSERT

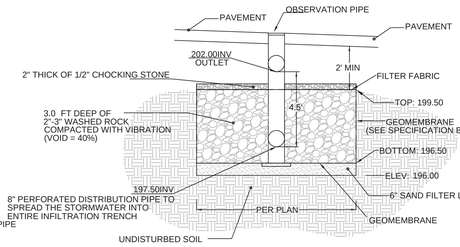
KriStar Enterprises, Inc.
P.O. Box 6419, Santa Rosa, CA 95406
Ph: 800.579.8819, Fax: 707.524.8186, www.kristar.com

DRAWING NO.	REV.	RDD	DATE	CHK.	DATE
FG-LP-0002	C	0020 3/7/07		JPR 2/21/07	SHEET 2 OF 2



PLAN
SCALE: 1"=10'

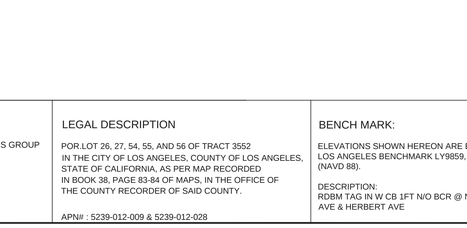
INFILTRATION TRENCH
THE BOTTOM AREA = 2,920 SF , DEPTH OF INFILTRATION TRENCH = 3'
VOID = 0.4, THE VOLUME OF TRENCH = 3,504 CF
TOP OF TRENCH ELEV: 199.50, BOTTOM OF TRENCH ELEV: 196.50
INVERT ELEVATION OF DISTRIBUTION PIPE INSIDE TRENCH: 197.50
GPS: 34.021130, -118.185333



SECTION (TYP.)
NOT TO SCALE

GEOMEMBRANE SPECIFICATION

PARAMETER	TEST METHOD	SPECIFICATIONS
MATERIAL		NONWOVEN GEOMEMBRANE LINER
UNIT WEIGHT		8 oz/yd^3 (minimum)
FILTRATION RATE		0.08 in/sec (minimum)
PUNCTURE STRENGTH	ASTM D-751 (MODIFIED)	125 lbs (minimum)
MULLEN BURST STRENGTH	ASTM D-751	400 lb/in^2 (minimum)
TENSILE STRENGTH	AST D-1682	300 lbs (minimum)
EQUIV.OPENING SIZE	US STANDARD SIEVE	NO.80 (minimum)



CONNECTION DETAILS
NOT TO SCALE

INFILTRATION TRENCH
GPS: 34.021130, -118.185333

11

SOURCE CONTROL MEASURE:

- (A) STORM DRAIN MESSAGE AND SIGNAGE (S-1)
- (B) LANDSCAPE IRRIGATION PRACTICES (S-8)

STORMWATER QUALITY CONTROL MEASURE :

- (C) INFILTRATION TRENCH
- (D) PRE-TREATMENT:
  - FILTER INSERT CATCH BASIN
  - FILTER INSERT TRENCH DRAIN

CONSTRUCTION NOTES

(2) INSTALL "FLOGARD LOPRO" SHALLOW CATCH BASIN FILTER INSERT PER KRISTAR ENTERPRISES, INC MODEL FG-M1212 OR EQUAL, NOT TO BE MAINTAINED BY LACFCD
(3) INSTALL STORM DRAIN STENCIL, NOT TO BE MAINTAINED BY LACFCD
(5) INSTALL "FLOGARD LOPRO" SHALLOW CATCH BASIN FILTER INSERT PER KRISTAR ENTERPRISES, INC MODEL FG-M2424 OR EQUAL, NOT TO BE MAINTAINED BY LACFCD
(9) INSTALL FLOGARD LOPRO TRENCH DRAIN FILTER INSERT PER KRISTAR ENTERPRISES, INC MODEL FG-TDOF4 OR EQUAL, NOT TO BE MAINTAINED BY LACFCD
(11) CONST. INFILTRATION TRENCH, WIDTH = 40', LENGTH = 73', DEPTH = 3' NOT TO BE MAINTAINED BY LACFCD, GPS: 34.021130, -118.185333
(13) INSTALL "FLOGARD LOPRO" SHALLOW CATCH BASIN FILTER INSERT PER KRISTAR ENTERPRISES, INC MODEL FG-M3636 OR EQUAL, NOT TO BE MAINTAINED BY LACFCD

STORM DRAIN STENCIL DETAIL
NOT TO SCALE

3

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REGISTERED PROFESSIONAL ENGINEER
JUAN WANG
No. 79702
EXP. 09-30-24
CIVIL
STATE OF CALIFORNIA

SOIL ENGINEER:	SURVEY:	OWNER:	LEGAL DESCRIPTION	BENCH MARK:	PLANS PREPARED BY:
GEOTECHNOLOGIES, INC 439 WESTERN AVE. GLENDALE, CA 91201 Tel(818)240-9600 FILE NO.22311 DATE: SEPTEMBER 23, 2022	CAL VADA SURVEYING, INC 411 Jenks Circle, Suite 205, Corona, CA 92878 Phone: 951-280-9960 Armando D. DuPont, Registration No. 7780 JOB NO:22623 FIELD COMPLETION DATE: AUGUST 17, 2022	EDUCATIONAL FACILITIES GROUP 3700 LATROBE ST LOS ANGELES, CA 90031 PHONE: 323-505-7536	POR.LOT 26, 27, 54, 55, AND 56 OF TRACT 3552 IN THE CITY OF LOS ANGELES, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 38, PAGE 83-84 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY. APN# : 5239-012-009 & 5239-012-028	RDBM TAG IN W CB 1FT N/O BCR @ NW COR UNION PACIFIC AVE & HERBERT AVE DESCRIPTION:	LAND SURVEY SUBDIVISION CIVIL ENGINEERING & DESIGN 135 N. SAN GABRIEL BLVD. SAN GABRIEL, CA 91775 TEL: (626) 570-1918 EMAIL: info@tritechengineer.com JOB NO. 220918

TRITECH ENGINEERING GROUP

FRANCO ARCHITECTS INC.
12345 Ventura Blvd. H
Studio City, CA 91604
Tel 818 754-2030
Fax 818 754-2032
Architecture and Planning

EXTERA PUBLIC SCHOOLS
1059 S. GAGE AVE., LOS ANGELES, CA90023

REV	DESCRIPTION	DATE
	PLANNING SUBMITTAL	10/31/2022

PROJECT
EXTERA PUBLIC SCHOOLS

PROJECT ADDRESS
1059 S. GAGE AVE.,
LOS ANGELES, CA 90023

DRAWING TITLE
LOW IMPACT DEVELOPMENT PLAN DETAILS

DRAWN BY	ISSUE DATE
	02/08/2024
JOB NUMBER	DRAWING SCALE
APPROVED BY:	

DRAWING NUMBER
LID-2

DouglasKim+Associates,LLC

NOISE ANALYSIS ASSUMPTIONS

Construction Schedule

- Construction Duration (11/1/2024-11/30/2025)
- Demolition (11/1/2024-11/30/2024)
- Site Preparation (12/1/2024-12/4/2024)
- Grading (12/5/2024-12/16/2024)
- Trenching (12/18/2024-3/16/2025)
- Building Construction (12/18/2024-3/16/2025)
- Paving (9/15/2025-9/29/2025)
- Architectural Coatings (8/1/2025-11/30/2025)

Days/Week of Construction: 5

Grading: 971 cubic yards of soil removal

- Assumes 10 cubic yard capacity for haul truck
- Assumes 25-mile distance to landfill
- Assumes grading of entire site on a given day

Demolition: 2,433 tons of debris

- Assumes 25,302 square feet of buildings @ 12' height = 3,711 CY @ 1,000 lb/CY
- Assumes 26,000 square feet of asphalt parking lot @ 6" depth = 481 CY @ 2,400 lb/CY
- Assumes 25-mile distance to landfill

On-Site Construction Noise

- Ambient Noise Measurements: 10/5/2022
- Sound Pressure: 75 dBA at 50 feet of distance pursuant to LAMC section 112.05
- Noise modeling: SoundPLAN Essential 5.1, full sphere propagation of sound power

Off-Site Construction Noise

- Assumes 838 haul truck trips during demolition
- Assumes 194 haul truck trips during grading
- Worker Trips (Daily)
    - Demolition – 12.5
    - Site Preparation – 7.5
    - Grading – 10
    - Trenching – 5
    - Building Construction – 13.5
    - Paving – 12.5
    - Architectural Coatings 2.7
- Vendor Trips 5.28
- Passenger Car Equivalent 19.1 for heavy-duty trucks

Operational Trip Generation for Existing Church (Source: Linscott, Law & Greenspan)

- 192 average daily trips

- 8 A.M. peak hour trips, 12 P.M. peak hour trips

Operational Trip Generation for Proposed Project (Source: Linscott, Law & Greenspan)

- 1,019 average daily trips
- 506 A.M. peak hour trips, 192 P.M. peak hour trips

NOISE TECHNICAL REPORT

Introduction

This technical report evaluates noise impacts from construction and operation of a Proposed Project at 1059 South Gage Avenue in the County of Los Angeles. The analysis discusses applicable regulations and compares impacts to appropriate thresholds of significance. Noise measurements, calculation worksheets, and a map of noise receptors and measurement locations are included in the Technical Appendix to this analysis.

Fundamentals of Noise

Characteristics of Sound

Sound can be described in terms of its loudness (amplitude) and frequency (pitch). The standard unit of measurement for sound is the decibel (dB). Because the human ear is not equally sensitive to sound at all frequencies, the A-weighted scale (dBA) is used to reflect the normal hearing sensitivity range. On this scale, the range of human hearing extends from 3 to 140 dBA. Table 1 provides examples of A-weighted noise levels from common sources.

Table 1
A-Weighted Decibel Scale

Typical A-Weighted Sound Levels	Sound Level (dBA L_{eq})
Near Jet Engine	130
Rock and Roll Band	110
Jet flyover at 1,000 feet	100
Power Motor	90
Food Blender	80
Living Room Music	70
Human Voice at 3 feet	60
Residential Air Conditioner at 50 feet	50
Bird Calls	40
Quiet Living Room	30
Average Whisper	20
Rustling Leaves	10
Source: Cowan, James P., Handbook of Environmental Acoustics, 1993. These noise levels are approximations intended for general reference and informational use.	

Noise Definitions. This noise analysis discusses sound levels in terms of equivalent noise level (L_{eq}), maximum noise level (L_{max}) and the Community Noise Equivalent Level (CNEL).

- Equivalent Noise Level (L_{eq}): L_{eq} represents the average noise level on an energy basis for a specific time period. Average noise level is based on the energy content (acoustic energy) of sound. For example, the L_{eq} for one hour is the energy average noise level

during that hour. L_{eq} can be thought of as a continuous noise level of a certain period equivalent in energy content to a fluctuating noise level of that same period.

- Maximum Noise Level (L_{max}): L_{max} represents the maximum instantaneous noise level measured during a given time period.

- Community Noise Equivalent Level (CNEL): CNEL is an adjusted noise measurement scale of average sound level during a 24-hour period. Due to increased noise sensitivities during evening and night hours, human reaction to sound between 7:00 P.M. and 10:00 P.M. is as if it were actually 5 dBA higher than had it occurred between 7:00 A.M. and 7:00 P.M. From 10:00 P.M. to 7:00 A.M., humans perceive sound as if it were 10 dBA higher. To account for these sensitivities, CNEL figures are obtained by adding an additional 5 dBA to evening noise levels between 7:00 P.M. and 10:00 P.M. and 10 dBA to nighttime noise levels between 10:00 P.M. and 7:00 A.M. As such, 24-hour CNEL figures are always higher than their corresponding actual 24-hour averages.

Effects of Noise. The degree to which noise can impact an environment ranges from levels that interfere with speech and sleep to levels that can cause adverse health effects. Most human response to noise is subjective. Factors that influence individual responses include the intensity, frequency, and pattern of noise; the amount of background noise present; and the nature of work or human activity exposed to intruding noise. According to the National Institute of Health (NIH), extended or repeated exposure to sounds at or above 85 dB can cause hearing loss. Sounds of 70 dBA or less, even after continuous exposure, are unlikely to cause hearing loss.[1] The World Health Organization (WHO) reports that adults should not be exposed to sudden "impulse" noise events of 140 dB or greater. For children, this limit is 120 dB.[2]

Exposure to elevated nighttime noise levels can disrupt sleep, leading to increased levels of fatigue and decreased work or school performance. For the preservation of healthy sleeping environments, the WHO recommends that continuous interior noise levels not exceed 30 dBA and that individual noise events of 45 dBA or higher be avoided.[3] Assuming a conservative exterior to interior sound reduction of 15 dBA, continuous exterior noise levels should therefore not exceed 45 dBA. Individual exterior events of 60 dBA or higher should also be limited. Some epidemiological studies have shown a weak association between long-term exposure to noise levels of 65 to 70 dBA and cardiovascular effects, including ischemic heart disease and hypertension. However, at this time, the relationship is largely inconclusive.

People with normal hearing sensitivity can recognize small changes in sound levels of approximately 3 dBA. Changes of at least 5 dBA can be readily noticeable while sound level

1 National Institute of Health, National Institute on Deafness and Other Communication, www.nidcd.nih.gov/health/noise-induced-hearing-loss.

2 World Health Organization, Guidelines for Community Noise, 1999.

3 Ibid.

increases of 10 dBA or greater are perceived as a doubling in loudness.[4] However, during daytime, few people are highly annoyed by noise levels below 55 dBA L_{eq}.[5]

Noise Attenuation. Noise levels decrease as the distance from noise sources to receivers increases. For each doubling of distance, noise from stationary sources can decrease by about 6 dBA over hard surfaces (e.g., reflective surfaces such as parking lots) and 7.5 dBA over soft surfaces (e.g., absorptive surfaces such as soft dirt and grass). For example, if a point source produces a noise level of 89 dBA at a reference distance of 50 feet over an asphalt surface, its noise level would be approximately 83 dBA at a distance of 100 feet, 77 dBA at 200 feet, etc. Noises generated by mobile sources such as roadways decrease by about 3 dBA over hard surfaces and 4.5 dBA over soft surfaces for each doubling of distance. It should be noted that because decibels are logarithmic units, they cannot be added or subtracted. For example, two cars each producing 60 dBA of noise would not produce a combined 120 dBA.

Noise is most audible when traveling by direct line of sight, an unobstructed visual path between noise source and receptor. Barriers that break line of sight between sources and receivers, such as walls and buildings, can greatly reduce source noise levels by allowing noise to reach receivers by diffraction only. As a result, sound barriers can generally reduce noise levels by up to 15 dBA.[6] The effectiveness of barriers can be greatly reduced when they are not high or long enough to completely break line of sight from sources to receivers.

Regulatory Framework

Noise

Federal. No federal noise standards regulate environmental noise associated with short-term construction activities or long-term operations of development projects. As such, temporary and long-term noise impacts produced by the Project would be largely regulated or evaluated by State and County of Los Angeles standards designed to protect public well-being and health.

State. The State's 2017 General Plan Guidelines establish county and city standards for acceptable exterior noise levels based on land use. These standards are incorporated into land use planning processes to prevent or reduce noise and land use incompatibilities. Table 2 illustrates State compatibility considerations between land uses and exterior noise levels.

California Government Code Section 65302 also requires each county and city to prepare and adopt a comprehensive long-range general plan for its physical development. Section 65302(f) requires a noise element to be included in the general plan. This noise element must identify and appraise noise problems in the community, recognize Office of Noise Control guidelines, and analyze and quantify current and projected noise levels.

4 Federal Transit Administration, Transit Noise and Vibration Impact Assessment, 2018.

5 World Health Organization, Guidelines for Community Noise, 1999.

6 California Department of Transportation, Technical Noise Supplement to the Traffic Noise Analysis Protocol, September 2013.

Table 2
State of California Noise/Land Use Compatibility Matrix

Source: California Office of Planning and Research "General Plan Guidelines, Noise Element Guidelines (Appendix D, Figure 2), 2017.

The State has also established noise insulation standards for new multi-family residential units, hotels, and motels that are subject to relatively high levels of noise from transportation. The noise insulation standards, collectively referred to as the California Noise Insulation Standards (Title 24, California Code of Regulations) set forth an interior standard of 45 dBA CNEL for habitable rooms. The standards require an acoustical analysis which indicates that dwelling units meet this interior standard where such units are proposed in areas subject to exterior noise levels greater than 60 dBA CNEL. Local jurisdictions typically enforce the California Noise Insulation Standards through the building permit application process.

Los Angeles County Airport Land Use Commission Comprehensive Land Use Plan. In Los Angeles County, the Regional Planning Commission has the responsibility for acting as the Airport Land Use Commission and for coordinating the airport planning of public agencies within the County. The Airport Land Use Commission coordinates planning for the areas surrounding public use airports. The Comprehensive Land Use Plan provides for the orderly expansion of Los Angeles County's public use airports and the areas surrounding them. It is intended to provide for the adoption of land use measures that will minimize the public's exposure to excessive noise and safety hazards. In formulating the Comprehensive Land Use Plan, the Los Angeles County Airport Land Use Commission has established provisions for safety, noise insulation, and the regulation of building height within areas adjacent to each of the public airports in the County.

County of Los Angeles General Plan Noise Element. The County of Los Angeles General Plan includes a Noise Element that includes policies and standards to guide the control of noise to protect residents, workers, and visitors. The noise standards identified in the Noise Element serve as guidelines to evaluate the acceptability of the transportation noise level impacts. These standards are used to assess the long-term traffic noise impacts on land uses. The following is a summary of General Plan policies that are relevant to the proposed project.

Policy N 1.3: Minimize impacts to noise-sensitive land uses by ensuring adequate site design, acoustical construction, and use of barriers, berms, or additional engineering controls through Best Available Technologies (BAT).

Policy N 1.4: Enhance and promote noise abatement programs in an effort to maintain acceptable levels of noise as defined by the Los Angeles County Exterior Noise Standards and other applicable noise standards.

Policy N 1.5: Ensure compliance with the jurisdictions of State Noise Insulation Standards (Title 24, California Code of Regulations and Chapter 35 of the Uniform Building Code), such as noise insulation of new multifamily dwellings constructed within the 60 dB (CNEL or L_{dn}) noise exposure contours.

Policy N 1.9: Require construction of suitable noise attenuation barriers on noise sensitive uses that would be exposed to exterior noise levels of 65 dBA CNEL and above, when unavoidable impacts are identified.

Policy N 1.12: Decisions on land adjacent to transportation facilities, such as the airports, freeways and other major highways, must consider both existing and future noise levels of these transportation facilities to assure the compatibility of proposed uses.

Based on these guidelines, an exterior noise level of 65 dBA CNEL is generally considered the maximum exterior noise level for noise-sensitive receptors.

County of Los Angeles Municipal Code. The County of Los Angeles noise control ordinance restricts unnecessary, excessive, and annoying noise. Examples of violations cited in the Noise Ordinance that would pertain to the proposed project include:

12.08.390. Exterior Noise Standards. Citations for violations are authorized when:

A. Unless otherwise herein provided, the following exterior noise levels shall apply to all receptor properties within a designated noise zone:

Noise Zone	Designated Noise Zone Land Use (Receptor Property)	Time Interval	Exterior Noise Level (dB)
I	Noise Sensitive	Anytime	45
II	Residential	10:00 P.M. to 7:00 A.M.	45
		7:00 A.M. to 10:00 P.M.	50
III	Commercial	10:00 P.M. to 7:00 A.M.	55
		7:00 A.M. to 10:00 P.M.	60
IV	Industrial	Anytime	70
Source: DKA Planning, 2022.			

B. Unless otherwise herein provided, no person shall operate or cause to be operated, any source of sound at any location within the unincorporated County, or allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person which causes the noise level, when measured on any other property either incorporated or unincorporated, to exceed any of the following exterior noise standards:[7]

[7] Ambient noise levels were measured at the Project Site on November 1, 2023 from 1:55 P.M.-2:55 P.M. using a Larson Davis Sound Advisor 831C unit. This showed that while ambient noise levels for the area were consistent with exterior standards set by the County, noise levels for Standard 1 were slightly higher than the recommended standard.

Standard No. 1 shall be the exterior noise level which may not be exceeded for a cumulative period of more than 30 minutes in any hour. Standard No. 1 shall be the applicable noise level from subsection A of this section; or, if the ambient L_{50} exceeds the foregoing level, then the ambient L_{50} becomes the exterior noise level for Standard No. 1.

Standard No. 2 shall be the exterior noise level which may not be exceeded for a cumulative period of more than 15 minutes in any hour. Standard No. 2 shall be the applicable noise level from subsection A of this section plus 5 dB; or, if the ambient L_{25} exceeds the foregoing level, then the ambient L_{25} becomes the exterior noise level for Standard No. 2.

Standard No. 3 shall be the exterior noise level which may not be exceeded for a cumulative period of more than five minutes in any hour. Standard No. 3 shall be the applicable noise level from subsection A of this section plus 10 dB; or, if the ambient $L_{8.3}$ exceeds the foregoing level, then the ambient $L_{8.3}$ becomes exterior noise level for Standard No. 3.

Standard No. 4 shall be the exterior noise level which may not be exceeded for a cumulative period of more than one minute in any hour. Standard No. 4 shall be the applicable noise level from subsection A of this section plus 15 dB; or, if the ambient $L_{1.7}$ exceeds the foregoing level, then the ambient $L_{1.7}$ becomes the exterior noise level for Standard No. 4.

Standard No. 5 shall be the exterior noise level which may not be exceeded for any period of time. Standard No. 5 shall be the applicable noise level from subsection A of this section plus 20 dB; or, if the ambient L_0 exceeds the foregoing level then the ambient L_0 becomes the exterior noise level for Standard No. 5.

C. If the measurement location is on a boundary property between two different zones, the exterior noise level utilized in subsection B of this section to determine the exterior standard shall be the arithmetic mean of the exterior noise levels in subsection A of the subject zones. Except as provided for above in this subsection C, when an intruding noise source originates on an industrial property and is impacting another noise zone, the applicable exterior noise level as designated in subsection A shall be the daytime exterior noise level for the subject receptor property.

D. The ambient noise histogram shall be measured at the same location along the property line utilized in subsection B of this section, with the alleged intruding noise source inoperative. If for any reason the alleged intruding noise source cannot be turned off, the ambient noise histogram will be estimated by performing a measurement in the same general area of the alleged intruding noise source but at a sufficient distance such that the noise from the alleged

Exterior Noise Levels at Project Site (1059 S. Gage Avenue)

Exterior Noise Standards dBA - Industrial										
Duration	Std #1 = L50		Std #2 = L25		Std #3 = L8.3		Std #4 = L1.7		Std #5 = L0	
	30 min/hr	Result	15 min/hr	Result	5 min/hr	Result	1 min/hr	Result	At no time	Result
One hour	50.0	51.3	55.0	53.0	60.0	54.7	65.0	57.9	70.0	69.5
Shaded measurement represents standard dB exceedance for the cumulative period. Measurements taken November 1, 2023 from 1:55 P.M.-2:55 P.M.										

intruding noise source is at least 10 dB below the ambient noise histogram in order that only the actual ambient noise histogram be measured. If the difference between the ambient noise histogram and the alleged intruding noise source is 5 to 10 dB, then the level of the ambient noise histogram itself can be reasonably determined by subtracting a one- decibel correction to account for the contribution of the alleged intruding noise source.

E. In the event the intrusive exceeds the exterior noise standards as set forth in subsections B and C of this section at a specific receptor property and the health officer has reason to believe that this violation at said specific receptor property was unanticipated and due to abnormal atmospheric conditions, the health officer shall issue an abatement notice in lieu of a citation. If the specific violation is abated, no citation shall be issued therefor. If, however, the specific violation is not abated, the health officer may issue a citation.

12.08.440 - Construction noise.

A. Operating or causing the operation of any tools or equipment used in construction, drilling, repair, alteration or demolition work between weekday hours of 7:00 p.m. and 7:00 a.m., or at any time on Sundays or holidays, such that the sound therefrom creates a noise disturbance across a residential or commercial real-property line, except for emergency work of public service utilities or by variance issued by the health officer is prohibited.
B. Noise Restrictions at Affected Structures. The contractor shall conduct construction activities in such a manner that the maximum noise levels at the affected buildings will not exceed those listed in the following schedule:

1. At Residential Structures.

    a. Mobile Equipment. Maximum noise levels for nonscheduled, intermittent, short-term operation (less than 10 days) of mobile equipment:

	Single-Family Residential	**Multi-Family Residential**	**Semi-Residential/ Commercial**
Daily, except Sundays and legal holidays, 7:00 A.M. to 8:00 P.M.	75 dBA	80 dBA	85 dBA
Daily, 8:00 P.M. to 7:00 A.M. and all day Sunday and legal holidays	60 dBA	64 dBA	70 dBA
Source: Los Angeles County General Plan Noise Element (Los Angeles County 2015).			

    b. Stationary Equipment. Maximum noise level for repetitively scheduled and relatively long-term operation (periods of 10 days or more) of stationary equipment:

	Single-Family Residential	Multi-Family Residential	Semi-Residential/ Commercial
Daily, except Sundays and legal holidays, 7:00 A.M. to 8:00 P.M.	60 dBA	65 dBA	70 dBA
Daily, 8:00 P.M. to 7:00 A.M. and all day Sunday and legal holidays	50 dBA	55 dBA	60 dBA
Source: Los Angeles County General Plan Noise Element (Los Angeles County 2015).			

C. All mobile or stationary internal-combustion-engine powered equipment or machinery shall be equipped with suitable exhaust and air-intake silencers in proper working order.

12.08.530 - Residential air conditioning or refrigeration equipment.

Operating or permitting the operation of any air conditioning or refrigeration equipment in such a manner as to exceed any of the following sound levels is prohibited.

Measurement Location	Units Installed Before 1-1-80 (dBA)	Units Installed On or After 1-1-80 (dBA)
Any point on neighboring property line, 5 ft above grade level, no closer than 3 ft from any wall.	60	55
Center of neighboring patio, 5 ft above grade level, no closer than 3 ft from any wall.	55	50
Outside the neighboring living area window nearest the equipment location, not more than 3 ft from the window opening, but at least 3 ft from any other surface.	55	50
Source: Los Angeles County General Plan Noise Element (Los Angeles County 2015).		

Existing Conditions

Noise Sensitive Receptors

The Project Site is located in a residential area within East Los Angeles. Sensitive receptors within 0.25 miles of the Project Site include, but are not limited to, the following representative sampling:[8]

- Multi-Family Residences, 1067-1075 Gage Avenue; five feet south of the Project Site.
- Multi-Family Residences, 1049 Gage Avenue; five feet north and east of the Project Site.
- Multi-Family Residences, Eastman Avenue (east side); five feet north and south of the Project Site.

8 Land use classifications based on Los Angeles County Assessor Portal, www. portal.assessor.lacounty.gov.

- Multi-Family Residences, Gage Avenue (east side); 70 feet east of the Project Site. While most homes on that block are multi-family residences, 1070 Gage Avenue is a single-family residence.
- Multi-Family Residences, 1142 Eastman Avenue; 320 feet south of the Project Site.
- LA Community Hospital, 400 feet southwest of the Project Site.
- Eastman Avenue Elementary School, 740 feet south of the Project Site.

Existing Ambient Noise Levels

The Project Site is improved with two church-related buildings totaling 25,302 square feet with a surface parking lot. Operational noise from the Project Site includes six roof-top units providing air conditioning for the two main buildings on-site that occasionally generate minor levels of noise (approximately 81.9 dBA at one foot of distance).[9]

There is also minor noise from the operation of the church's parking lot, including tire friction as vehicles navigate to and from parking spaces, minor engine acceleration, doors slamming, and occasional car alarms. Most of these sources are instantaneous (e.g., car alarm chirp, door slam) while others may last a few seconds. Intermittent noise from solid waste management and collection activities are of short duration, as are occasional loading of goods.

Existing development also produces noise off-site, as 192 daily vehicle trips travel to and from the Project Site,[10] as traffic is the primary source of noise near the Project Site, largely from the operation of vehicles with internal combustion engines and frictional contact with the ground and air.[11]

In October 2022, DKA Planning took short-term noise measurements near the Project site to determine the ambient noise conditions of the neighborhood near sensitive receptors.[12] As shown in Table 3, noise levels along roadways near the Project Site ranged from 53.6 to 68.1 dBA L_{eq}, which was generally consistent with the traffic volumes on the applicable street(s) and exposure to freeway traffic on the I-5 freeway, despite the presence of ten-foot high soundwalls on both the north- and southbound lanes of the freeway. Figure 1 illustrates where ambient noise levels were measured near the Project Site to establish the noise environment and their relationship to the applicable sensitive receptor(s). 24-hour CNEL noise levels are generally considered "Normally Acceptable" and "Conditionally Acceptable" for the types of land uses near the Project Site.

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9 County of Pomona, Pomona Ranch Plaza WalMart Expansion Project, Table 4.4-5; August 2014. Source was cluster of mechanical rooftop condensers including two Krack MXE-04 four-fan units and one MXE-02 two-fan unit. Reference noise level based on 30 minutes per hour of activity.

10 Linscott, Law & Greenspan, Project Trip Generation, Extera Public School; September 2022.

11 World Health Organization, https://www.who.int/docstore/peh/noise/Comnoise-2.pdf accessed March 18, 2021.

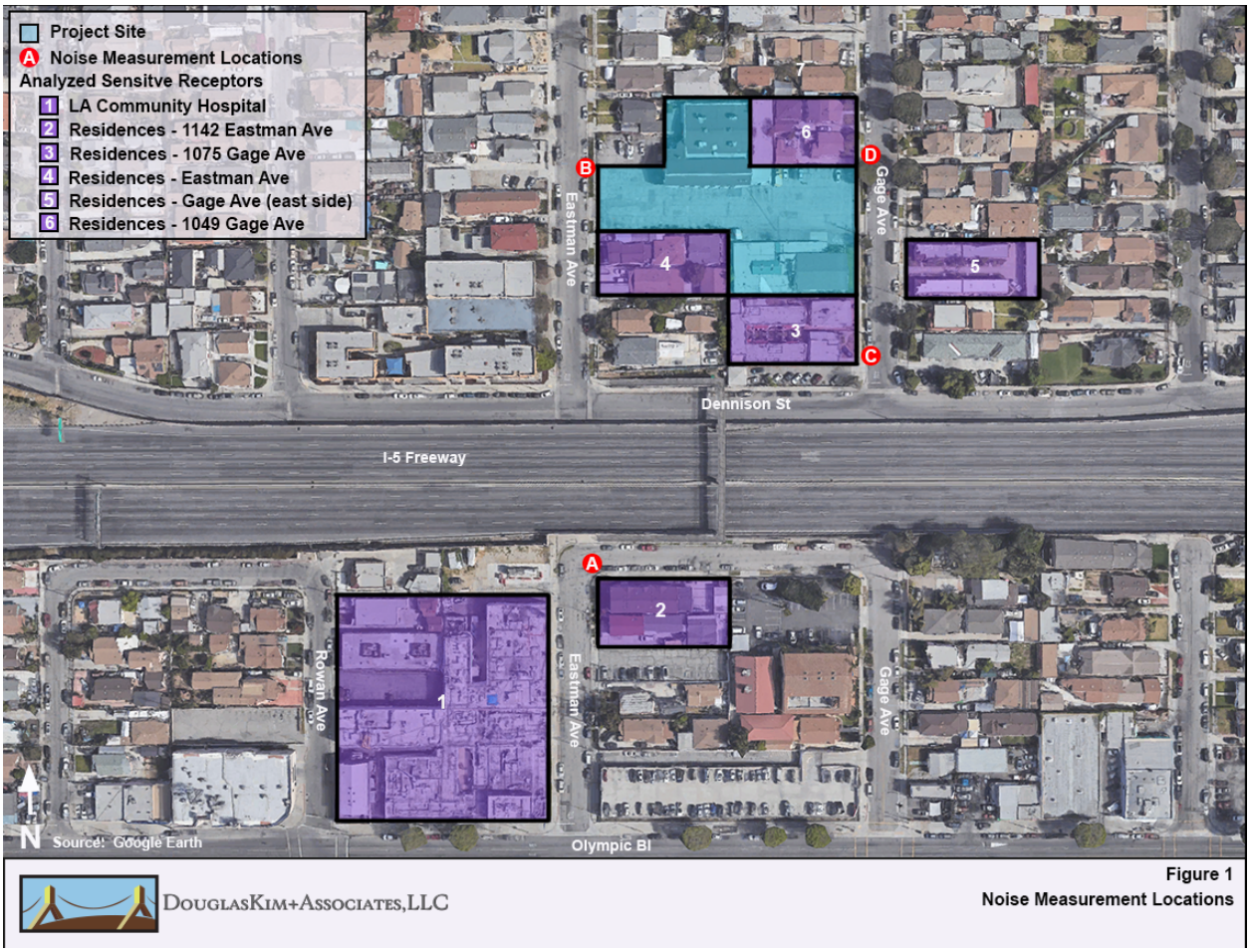
12 Noise measurements were taken using a Quest Technologies Sound Examiner SE-400 Meter. The Sound Examiner meter complies with the American National Standards Institute (ANSI) and International Electrotechnical Commission (IEC) for general environmental measurement instrumentation. The meter was equipped with an omni-directional microphone, calibrated before the day's measurements, and set at approximately five feet above the ground.

Table 3
Existing Noise Levels

Noise Measurement Locations	Primary Noise Source	Sound Levels		Nearest Sensitive Receptor(s)	Noise/Land Use Compatibility[b]
		dBA (L_{eq})	dBA (CNEL)[a]		
A. 1142 Eastman Ave.	Traffic on I-5 Freeway	61.8	59.8	LA Community Hospital; Residences-1142 Eastman Ave.	Normally Acceptable
B. 1044 Eastman Ave.	Traffic on Eastman Ave.	57.5	55.5	Residences-Eastman Ave.	Normally Acceptable
C. 1075 Gage Ave.	Traffic on I-5 Freeway	68.1	66.1	Residences-1075 Gage Ave, Gage Ave (east side)	Conditionally Acceptable
D. 1049 Gage Ave.	Traffic on Gage Ave.	53.6	51.6	Residences – 1049 Gage Ave.	Normally Acceptable

[a] Estimated based on short-term (15-minute) noise measurement using Federal Transit Administration procedures from 2018 Transit Noise and Vibration Impact Assessment Manual, Appendix E, Option 4.
[b] Pursuant to California Office of Planning and Research "General Plan Guidelines, Noise Element Guidelines, 2017. When noise measurements apply to two or more land use categories, the more noise-sensitive land use category is used. See Table 2 above for definition of compatibility designations.

Source: DKA Planning, 2022



DouglasKim+Associates,LLC

Figure 1
Noise Measurement Locations

Project Impacts

Methodology

On-Site Construction Activities. Construction noise levels at off-site sensitive receptors were modeled employing the ISO 9613-2 sound attenuation methodologies using the SoundPLAN Essential model (version 5.1). This software package considers reference equipment noise levels, noise management techniques, distance to receptors, and any attenuating features to predict noise levels from sources like construction equipment. Construction noise sources were modeled as area sources to reflect the mobile nature of construction equipment. These vehicles would not operate directly where the Project's property line abuts adjacent structures, as they would retain some setback to preserve maneuverability. This equipment would also occasionally operate at reduced power and intensity to maintain precision at these locations.

Off-Site Construction Noise Activities. The Project's off-site construction noise impact from haul trucks, vendor deliveries, and other vehicles accessing the Project Site was analyzed by considering the Project's anticipated vehicle trip generation with existing traffic and roadway noise levels along local roadways, particularly those likely to be part of any haul route. Because it takes

a doubling of traffic volumes on a roadway to generate the increased sound energy it takes to elevate ambient noise levels by 3 dBA,[13] the analysis focused on whether truck and auto traffic would double traffic volumes on key roadways to be used for hauling soils to and/or from the Project Site during construction activities. Because haul trucks generate more noise than traditional passenger vehicles, a 19.1 passenger car equivalency (PCE) was used to convert haul truck trips to a reference level conversion to an equivalent number of passenger vehicles.[14] It should be noted that because an official haul route has not been approved as of the preparation of this analysis, assumptions were made about logical routes that would minimize haul truck traffic on local streets in favor of major arterials that can access regional-serving freeways.

On-Site Operational Noise Activities. The Project's potential to result in significant noise impacts from on-site operational noise sources was evaluated by identifying sources of on-site noise sources and considering the impact that they could produce given the nature of the source (i.e., loudness and whether noise would be produced during daytime or more-sensitive nighttime hours), distances to nearby sensitive receptors, ambient noise levels near the Project Site, the presence of similar noise sources in the vicinity, and maximum noise levels permitted by the County.

Off-Site Operational Noise Activities. The Project's off-site noise impact from Project-related traffic was evaluated based its potential to increase traffic volumes on local roadways that serve the Project site. Because it takes a doubling of traffic volumes on a roadway to generate the increased sound energy it takes to elevate ambient noise levels by 3 dBA, the analysis focused on whether auto trips generated by the Proposed Project would double traffic volumes on key roadways that access the Project site.

Thresholds of Significance

Construction Noise Thresholds. For this analysis, the on-site construction noise impact would be considered significant if:

- Construction activities would exceed standards in LA County Code Section 12.08.440[15];
- Construction activities would exceed existing ambient exterior noise levels by 5 dBA (hourly L_{eq}) or more at a noise-sensitive use,

Operational Noise Thresholds. In addition to applicable County standards and guidelines that would regulate or otherwise moderate the Project's operational noise impacts, the following criteria are adopted to assess the impact of the Project's operational noise sources:

- Project operations would cause ambient noise levels at off-site locations to increase by 3 dBA CNEL or more to or within "normally unacceptable" or "clearly unacceptable"

13 Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual, September 2018.

14 Caltrans, Technical Noise Supplement Table 3-3, 2013.

15 The County's noise ordinance does not have standards for noise from mobile equipment lasting ten days or more. As a result, the standards for mobile source noise less than ten days (LA County Code Section 12.08.440) is used for longer construction activities.

noise/land use compatibility categories, as defined by the State's 2017 General Plan Guidelines.

- Project operations would cause any 5 dBA CNEL or greater noise increase.[16]

Analysis of Project Impacts

a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less Than Significant Impact.

Construction

On-Site Construction Activities

Construction would generate noise during the construction process that would span twelve months of demolition, site preparation, grading, utilities trenching, building construction, paving, and application of architectural coatings, as shown in Table 4. During all construction phases, noise-generating activities could occur at the Project Site Monday through Saturday between 7:00 A.M. and 7:00 P.M. in accordance with Section 12.08.440 of the County's noise ordinance.

Table 4
Construction Schedule Assumptions

Phase	Duration	Notes
Demolition	Month 1	Removal of 25,302 square feet of building floor area and 26,000 square feet of asphalt/concrete parking lot hauled 25 miles to landfill in 10-cubic yard capacity trucks.
Site Preparation	Month 2 (one week)	Grubbing and removal of trees, plants, landscaping, weeds
Grading	Month 2 (two weeks)	Fine grading, with approximately 971 cubic yards of soil (including 15 percent swell factor for topsoil) hauled 25 miles to landfill in 10-cubic yard capacity trucks.
Trenching	Months 3-6	Trenching for utilities, including gas, water, electricity, and telecommunications.
Building Construction	Months 3-12	Footings and foundation work (e.g., pouring concrete pads), framing, welding; installing mechanical, electrical, and plumbing. Floor assembly, cabinetry and carpentry, elevator installations, low voltage systems, trash management.
Paving	Month 10	Flatwork, including paving of driveways and walkways

16 As a 3 dBA increase represents a slightly noticeable change in noise level, this threshold considers any increase in ambient noise levels to or within a land use's "normally unacceptable" or "clearly unacceptable" noise/land use compatibility categories to be significant so long as the noise level increase can be considered barely perceptible. In instances where the noise level increase would not necessarily result in "normally unacceptable" or "clearly unacceptable" noise/land use compatibility, a 5 dBA increase is still considered to be significant. Increases less than 3 dBA are unlikely to result in noticeably louder ambient noise conditions and would therefore be considered less than significant.

Table 4
Construction Schedule Assumptions

Architectural Coatings	Months 9-12	Application of interior and exterior coatings and sealants.
Source: DKA Planning, 2022.		

Noise levels would generally peak during the demolition and grading phases, when diesel-fueled heavy-duty equipment like excavators and dozers are used to move large amounts of debris and dirt, respectively. This equipment is mobile in nature and does not always operate at in a steady-state mode full load, but rather powers up and down depending on the duty cycle needed to conduct work. As such, equipment is occasionally idle during which time no noise is generated.

During other phases of construction (e.g., trenching, building construction, paving, architectural coatings), noise impacts are generally lesser than during grading because they are less reliant on using heavy equipment with internal combustion engines. Smaller equipment such as forklifts, generators, and various powered hand tools and pneumatic equipment would generally be utilized. Off-site secondary noises would be generated by construction worker vehicles, vendor deliveries, and haul trucks. Figure 2 illustrates how noise would propagate from the construction site during the demolition and grading phase.

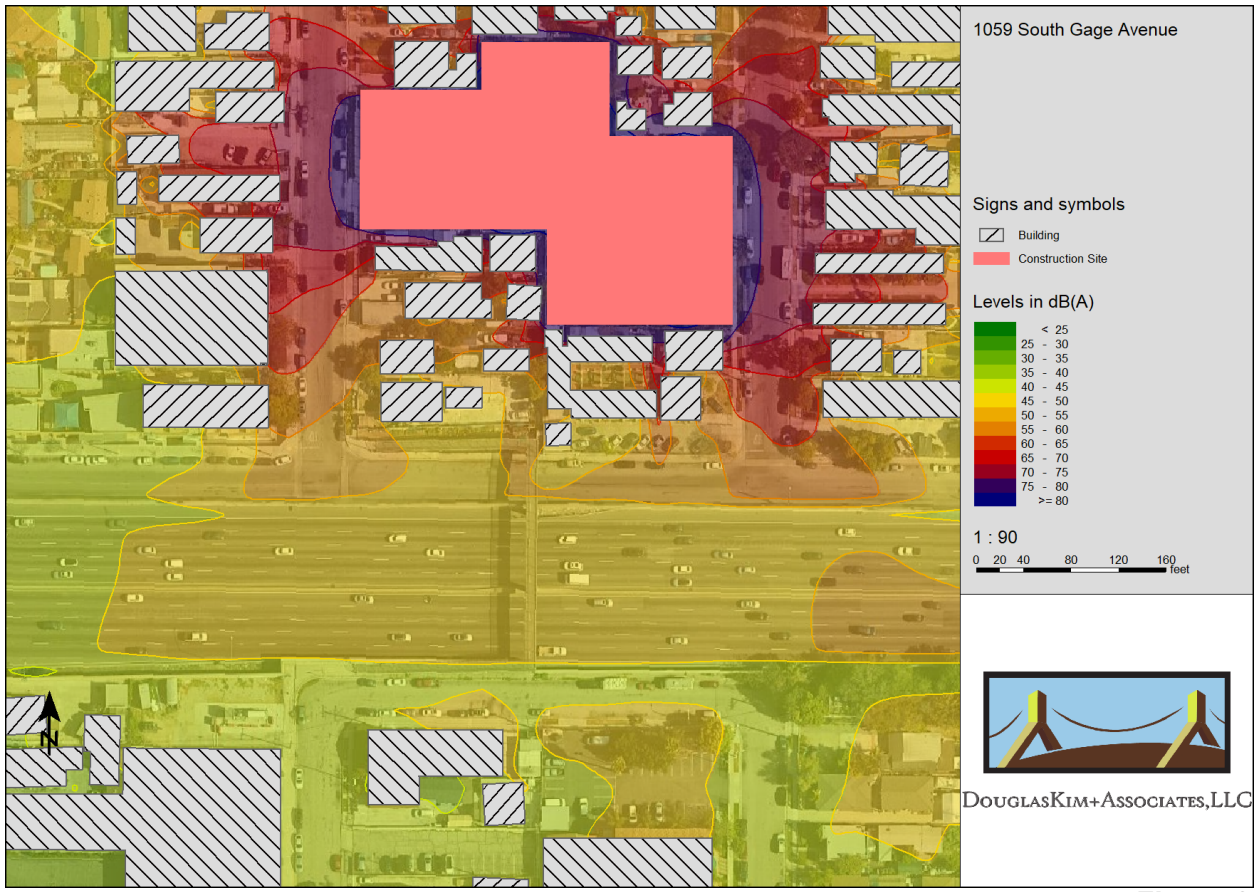


Figure 2
Construction Noise Sound Contours (Without Mitigation)

For purposes of this analysis, the threshold of significance for the Project's construction noise impacts is an increase of 5 dBA over existing ambient noise levels. As shown in Table 5, when considering ambient noise levels, the use of multiple pieces of powered equipment simultaneously would elevate ambient noise more than 5 dBA at two of the six analyzed sensitive receptors.

Table 5
Construction Noise Impacts at Off-Site Sensitive Receptors (Without Mitigation)

Receptor	Maximum Construction Noise Level (dBA L_{eq})	Absolute Noise Threshold*	Existing Ambient Noise Level (dBA L_{eq})	New Ambient Noise Level (dBA L_{eq})	Increase (dBA L_{eq})	Potentially Significant ?
1. LA Community Hospital	44.3	85.0	61.8	61.9	0.1	No
2. Multi-Family Residences – 1049 Gage Ave.	69.0	80.0	53.6	69.1	15.5	Yes
3. Multi-Family Residences – 1067-1075 Gage Ave.	67.2	80.0	68.1	70.7	2.6	No
4. Multi-Family Residences – 1142 Eastman Ave.	44.5	80.0	61.8	61.9	0.1	No

5. Multi-Family Residences – Eastman Ave.	65.0	80.0	57.5	65.7	8.2	Yes
6. Multi-Family Residences – Gage Ave. (east side)	70.9	75.0/80.0	68.1	72.7	4.6	No
* Pursuant to LA County Code Section 12.08.440 for daytime construction between 7:00 A.M. and 8:00 P.M. ** Threshold for single-family and multi-family residential Source: DKA Planning, 2023.						

For all the residential receptors near the Project Site, maximum noise levels would not violate County Noise Ordinance Section 12.08.440(a), which establishes maximum noise levels allowable during construction. Specifically, it sets an 80 dBA limit at multi-family residential and 75 dBA at single-family residences for construction that lasts less than ten days.[17] The limit for commercial uses is 85 dBA. Therefore, the Project's on-site construction noise impact would be significant but mitigable. Mitigation Measures MM-NOI-1 through MM-NOI-5 would help comply with Title 12, Section 12.08.440.

Mitigation Measures

MM-NOI-1 A temporary noise barrier shall be installed along the northern perimeter of the Project Site from Eastman Avenue to Gage Avenue. The barrier shall be capable of reducing construction-related noise levels at the adjacent residences by at least 10.6 dBA and not have any gaps or holes between the panels or at the bottom.

MM-NOI-2 A temporary noise barrier shall be installed along the perimeter of the Project Site that fronts on 1058 and 1064 Eastman Avenue. The barrier shall be capable of reducing construction-related noise levels at the adjacent residences by at least 3.3 dBA and not have any gaps or holes between the panels or at the bottom.

MM-NOI-3 All construction equipment shall be equipped with the manufacturers' recommended noise suppression devices, such as mufflers and engine covers. These devices shall be kept in good working condition throughout the construction process.

MM-NOI-4 All construction equipment shall be properly maintained and tuned to minimize noise emissions.

MM-NOI-5 Stationary noise sources (e.g., generators and compressors) shall be located as far from residential receptor location as is feasible.

Construction Noise Impacts After Mitigation

As summarized in Table 6, construction noise impacts at all sensitive receptors would be less than significant following implementation of Mitigation Measures MM-NOI-1 through MM-NOI-5.

Table 6
Construction Noise Impacts at Off-Site Sensitive Receptors (With Mitigation)

Receptor	Maximum Construction Noise Level (dBA L_{eq})	Absolute Noise Threshold*	Existing Ambient Noise	New Ambient Noise Level (dBA L_{eq})	Increase (dBA L_{eq})	Potentially Significant ?

[17] The County's noise ordinance does not have standards for noise from mobile equipment lasting ten days or more. As a result, the standards for mobile source noise less than ten days (LA County Code Section 12.08.440) is used for longer construction activities.

			Level (dBA L_{eq})			
1. LA Community Hospital	41.2	85.0	61.8	61.8	0.0	No
2. Multi-Family Residences – 1049 Gage Ave.	56.5	80.0	53.6	58.3	4.7	No
3. Multi-Family Residences – 1067-1075 Gage Ave.	57.5	80.0	68.1	68.5	0.4	No
4. Multi-Family Residences – 1142 Eastman Ave.	41.6	80.0	61.8	61.8	0.0	No
5. Multi-Family Residences – Eastman Ave.	60.0	80.0	57.5	61.9	4.4	No
6. Multi-Family Residences – Gage Ave. (east side)	68.2	75.0/80.0	68.1	71.2	3.1	No
* Pursuant to LA County Code Section 12.08.440 for daytime construction between 7:00 A.M. and 8:00 P.M.						
** Threshold for single-family and multi-family residential						
Source: DKA Planning, 2023.						

Off-Site Construction Activities

The Project would also generate noise at off-site locations from haul trucks moving debris and soil from the Project Site during demolition and grading activities, respectively; vendor and contractor trips; and worker commute trips. These activities would generate up to an estimated 116 peak hourly PCE vehicle trips, as summarized in Table 7, during the demolition phase, assuming all workers travel to the worksite at the same time and that all worker trips, vendor trips, and haul trips use the same route (Whittier Boulevard) to travel to and from the Project Site. This includes converting noise from heavy-duty truck trips to an equivalent number of passenger vehicle trips. During this phase, construction vehicle trips would represent 10.9 percent of the 1,068 vehicles that travel east-west on Whittier Boulevard at Ditman Avenue during the A.M. peak hour.[18]

Whittier Boulevard would serve as part of the haul route for any soil and debris exported from the Project Site given its connection to the Santa Ana Freeway via Ditman Avenue to the west or Downey Road to the east. Because the Project's construction-related trips would not cause a doubling in traffic volumes (i.e., 100 percent increase) on Whittier Boulevard, the Project's construction-related traffic would not increase existing noise levels by 3 dBA or more. Therefore, the Project's noise impacts from construction-related traffic would be less than significant.

[18] County of Los Angeles Public Works. Machine Count Traffic Volumes https://pw.lacounty.gov/tnl/trafficcounts/?street=Whittier&cross=Ditman. 2020 traffic counts adjusted by one percent annually to reflect 2022 baseline conditions.

Table 7
Construction Vehicle Trips (Maximum Hourly)

Construction Phase	Worker Trips [a]	Vendor Trips	Haul Trips	Total Trips	Percent of Peak A.M. Hour Trips on Whittier Blvd.[e]
Demolition	13	0	104[b]	117	10.9
Site Preparation	8	0	0	8	0.7
Grading	10	0	59[c]	69	6.4
Trenching	5	0	0	5	0.5
Building Construction	14	14[d]	0	28	2.6
Grading	13	0	0	13	1.2
Architectural Coating	3	0	0	3	0.3

[a] Assumes all worker trips occur in the peak hour of construction activity.
[b] The project would generate 838 haul trips over a 22-day period with seven-hour work days. Because haul trucks emit more noise than passenger vehicles, a 19.1 passenger car equivalency (PCE) was used to convert haul truck trips to a passenger car equivalent
[c] The project would generate 194 haul trips over a ten-day period with seven-hour work days. Assumes a 19.1 PCE.
[d] This phase would generate about five vendor truck trips daily over a seven-hour work day. Assumes a blend of vehicle types and a 9.55 PCE.
[e] Percent of existing traffic volumes on Whittier Boulevard east of Ditman Avenue.

Source: DKA Planning, 2022

Operation

On-Site Operational Noise

During long-term operations, the proposed elementary and middle schools would produce noise from both on- and off-site sources. As discussed below, the Project would not result in an exposure of persons to or a generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. The Project would also not increase surrounding noise levels by more than 5 dBA CNEL, the minimum threshold of significance based on the noise/land use category of sensitive receptors near the Project Site. As a result, the Project's on-site operational noise impacts would be considered less than significant.

Mechanical Equipment

The Project would operate mechanical equipment on the roof that would generate incremental long-term noise impacts. HVAC equipment in the form of large rooftop units suitable for cooling large volumes of a building would be located on the rooftop. This equipment would include a number of sound sources, including compressors, condenser fans, supply fans, return fans, and

exhaust fans that could generate a sound pressure level of up to 81.9 dBA at one foot.[19] This equipment would not be subject to County ordinance Section 12.08.530, which sets air conditioning noise limits for residential projects.

However, noise impacts from rooftop mechanical equipment on nearby sensitive receptors would be negligible for several reasons. First, there would be no line-of-sight from these rooftop units to the sensitive receptors, which are almost exclusively one-story in height. The setback of these rooftop units combined with the setbacks of the building from common property lines, the edge of the roof, and height of the building would ensure that noise impacts are substantially attenuated at the nearby residences. As a result, noise from HVAC units would negligibly elevate ambient noise levels, far less than the 5 dBA CNEL threshold of significance for operational impacts.

All equipment would be fully enclosed within the new school structure, shielded from outside sources, and would therefore produce minimal noise impacts for off-site sensitive receptors. This includes any electrical or mechanical room.

Auto-Related Activities

The majority of vehicle-related noise impacts at the Project Site would come from vehicles entering and exiting the two schools from a driveway off Gage Avenue. During the peak A.M. hour (i.e., 7:00 A.M. to 8:00 A.M), about 250 vehicles would generate noise entering onto the property for child drop-offs.[20] This is a conservative assumption assuming the elementary and middle school bell times are not staggered. Nearly all incoming vehicles would queue along the drop-off line along the north side of the new school building before approximately 226 vehicles exit onto Eastman Avenue. Noise would be generated by vehicles as engines idle, doors open and close, and children and staff talk during the drop-off process. While noise levels during this hour of student drop-off will be audible at off-site receptors, they will not result in substantial noise impacts over a 24-hour day.

Nearby residences across Gage Avenue and Eastman Avenue would have a direct line of sight to the driveway, approximately 80 feet away. As shown in Table 8, the peak use of the parking lot for vehicle drop-offs would elevate ambient noise levels by 0.6 dBA L_{eq} at residences on Gage Avenue and 0.2 dBA L_{eq} at residences on Eastman Avenue. Twenty-four hour CNEL levels would be well below the 5 dBA threshold of significance for operational sources of noise.

In the P.M. peak hour, about 32 vehicles would enter the Project Site and 50 would exit after bell times, resulting in less noise impacts than the morning peak hour.

Parking lot noise for vehicles parking throughout the day would include tire friction as vehicles navigate to and from parking spaces, doors slamming, car alarms, and minor engine acceleration. Most of these sources are instantaneous (e.g., car alarm chirp, door slam) while others may last

19 County of Pomona, Pomona Ranch Plaza WalMart Expansion Project, Table 4.4-5; August 2014. Source was cluster of mechanical rooftop condensers including two Krack MXE-04 four-fan units and one MXE-02 two-fan unit. Reference noise level based on 30 minutes per hour of activity.

20 Linscott, Law & Greenspan, Project Trip Generation, Extera Public School; September 2022

a few seconds. As such, the Project's parking lot activities would not have a significant impact on the surrounding noise environment.

Table 8
Parking Lot-Related Impacts at Off-Site Sensitive Receptors

Receptor	Maximum Noise Level (dBA L_{eq})	Existing Ambient Noise Level (dBA L_{eq})	New Ambient Noise Level (dBA L_{eq})	Increase (dBA L_{eq})	Significant?
Residences – Gage Avenue (east side)	45.3	53.6	54.2	0.6	No
Residences – Eastman Avenue (east side)	44.8	57.5	57.7	0.2	No
Source: DKA Planning, 2022, using FTA Noise Impact Assessment Spreadsheet.					

Outdoor Uses

While most operations would be conducted inside the development, outdoor activities could generate noise that could impact local sensitive receptors. This would include human conversation, special events, trash collection, landscape maintenance, and commercial loading. These are discussed below:

- Human conversation and recreation. Noise associated with everyday residential activities would largely be contained internally within the school buildings. Noise could include passive activities such as human conversation and socializing in outdoor spaces, including lunchtime activities in the outdoor lunch patio and the play area for transitional and kindergarten students.

  During the lunch period, up to 157 middle school or elementary school students would socialize, generating noise from the 2,350 square-foot outdoor patio. These activities would produce noise from human speech, which would generally be a function of the Lombard effect. This phenomenon recognizes that voice noise levels in face-to-face conversations generally increase proportionally to background ambient noise levels, but only up to approximately 67 dBA at a reference distance of one meter. Specifically, vocal intensity increases about 0.38 dB for every 1.0 dB increase in noise levels above 55 dB, meaning people talk slightly above ambient noise levels in order to communicate.[21] Residents to the south of the Project Site would be partially shielded by the existing building along the south boundary of the Project Site, while residences along Eastman Avenue would be partially shielded from lunch patio noise by the new school building. Nevertheless, noise levels would be elevated from students eating and socializing on the patio.

  During the play period, transitional kindergarten and kindergarten children would play in the 1,200 square-foot outdoor play area between the existing and new school

21 Acoustical Society of America, Volume 134; Evidence that the Lombard effect is frequency-specific in humans, Stowe and Golob, July 2013.

buildings. This would result in elevated noise levels during that limited play period that would be audible at residences along both Eastman Avenue and Gage Avenue, particularly residences west of the play area along Eastman Avenue.

Regardless, noise from socializing and recreation at the outdoor lunch patio and play area, respectively, would not result in significant noise impacts, as noise standards for the operation of the school are based on 24-hour CNEL levels. Any noise at these outdoor spaces would be intermittent and would not elevate noise levels at the adjacent residences over a 24-hour period by 5 dBA CNEL or more.

Moreover, operational noise impacts would not violate exterior noise standards outlined in County ordinance 12.08.390. Specifically, the ordinance sets a standard that the exterior noise level of 70 dBA at residential receptors from 7:00 A.M. to 10:00 P.M.

- Special events. Throughout the course of the academic school year, there would be 10-20 events held at the school for a variety of academic and cultural events. Most of these events would be held during the day, either during school or afterward. These events could involve parents and/or students. Like the regular school activities, most of these special events would occur inside the two school buildings. Occasional events would be held in the late afternoon (e.g., spelling bee and Back to School Night from 4:00 P.M. to 6:00 P.M.). No activities are planned in the evenings. While some of these events could use outdoor spaces, noise impacts would be similar to and likely less than those associated with lunchtime activities and use of the outdoor play area.
- Trash collection. On-site trash and recyclable materials for the school would be managed from the waste collection area. Haul trucks would access solid waste from Gage or Eastman Avenue, where solid waste activities would include use of trash compactors and hydraulics associated with the refuse trucks themselves. Noise levels of approximately 71 dBA L_{eq} and 66 dBA L_{eq} could be generated by collection trucks and trash compactors, respectively, at 50 feet of distance.[22] Intermittent solid waste management activities would operate during the day, similar to current service for the church facility. Trash collection activities would not substantially elevate 24-hour noise levels at off-site locations by 5 dBA CNEL or more.
- Landscape maintenance. Noise from gas-powered leaf flowers, lawnmowers, and other landscape equipment can generated substantial bursts of noise during regular maintenance. For example, gas powered leaf blowers and other equipment with two-stroke engines can generated 100 dBA L_{eq} and cause nuisance or potential noise impacts for nearby receptors.[23] The landscape plan focuses on a modest palette of accent trees and raised planters that will minimize the need for powered landscaping equipment, as some of this can be managed by hand. Any intermittent landscape

22 RK Engineering Group, Inc. Wal-Mart/Sam's Club reference noise level, 2003.

23 Erica Walker et al, Harvard School of Public Health; Characteristics of Lawn and Garden Equipment Sound; 2017

equipment would operate during the day and would represent a negligible impact that would not increase 24-hour noise levels at off-site locations by 5 dBA CNEL or more.[24]

- Commercial loading. On-site loading and unloading activities would be managed in the surface parking lot and would be similar to current deliveries to the church facility. As a result, there would be negligible noise impacts on off-site receptors and impacts would not substantially increase CNEL noise levels at off-site locations.

Based on an assessment of these on-site sources, the impact of on-site operational noise sources would be considered less than significant.

Off-Site Operational Noise

The majority of the Project's operational noise impacts would be off-site from vehicles traveling to and from the school. The Project would add up to 827 net vehicle trips to the local roadway network on a peak weekday at the start of operations in late 2025, including up to 468 net hourly vehicle trips.[25] This would represent 43.8 percent of the 1,068 vehicles that travel east-west on Whittier Boulevard at Ditman Avenue during the A.M. peak hour.[26]

Because it takes a doubling of traffic volumes (i.e., 100 percent) to increase ambient noise levels by 3 dBA L_{eq}, the Project's traffic would neither increase ambient noise levels 3 dBA or more into "normally unacceptable" or "clearly unacceptable" noise/land use compatibility categories, nor increase ambient noise levels 5 dBA or more. Twenty-four hour CNEL impacts would similarly be minimal, far below criterion for significant operational noise impacts, which begin at 3 dBA. As such, this impact would be considered less than significant.

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

Less Than Significant Impact.

The Project Site is located about 17.6 miles east of the Santa Monica Airport and 17.2 miles east of Los Angeles International Airport. Because the Proposed Project would not be located within the vicinity of a private airstrip or within two miles of a public airport, the Project would not expose local workers or residents in the area to excessive noise levels. This would be considered a less than significant impact.

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24 While AB 1346 (Berman, 2021) bans the sale of new gas-powered leaf blowers by 2024, existing equipment can continue to operate indefinitely.

25 Linscott, Law & Greenspan, Project Trip Generation, Extera Public School; September 2022.

26 County of Los Angeles Public Works. Machine Count Traffic Volumes https://pw.lacounty.gov/tnl/trafficcounts/?street=Whittier&cross=Ditman. 2020 traffic counts adjusted by one percent annually to reflect 2022 baseline conditions.

Cumulative Impacts

Construction

On-Site Construction Noise

During construction of the proposed Project, there could be other construction activity in the area that contributes to cumulative noise impacts at sensitive receptors. Noise from construction of development projects is localized and can affect noise-sensitive uses within 500 feet. As such, noise from two construction sites within 1,000 feet of each other can contribute to cumulative noise impacts for receptors located between.

There are no current construction projects or reasonably foreseeable related projects within 1,000 feet of the Project Site, which is located in a mature residential area near the Santa Ana Freeway. Any potential related projects would likely be located on Whittier Boulevard, nearly 900 feet north of the Project Site or south of the Santa Ana Freeway in commercially-zoned arterials.

Construction-related noise levels from any related project would be intermittent and temporary. As with the Project, any related projects would comply with the County's restrictions, including restrictions on construction hours and noise from powered equipment. Noise associated with cumulative construction activities would be reduced to the degree reasonably and technically feasible through proposed mitigation measures for each individual related project and compliance with the noise ordinance.

As a result, there are no reasonably foreseeable related projects that could contribute to cumulative noise impacts at the analyzed sensitive receptors. Based on this, there would not be cumulative noise impacts at any nearby sensitive uses located near the Project Site and related projects in the event of concurrent construction activities.

Off-Site Construction Noise

Other concurrent construction activities from related projects can contribute to cumulative off-site impacts if haul trucks, vendor trucks, or worker trips for any related project(s) were to utilize the same roadways. Distributing trips to and from each related project construction site substantially reduces the potential that cumulative development could more than double traffic volumes on existing streets, which would be necessary to increase ambient noise levels by 3 dBA. The Proposed Project would contribute up to 116 peak hourly PCE vehicle trips, which would represent 10.9 percent of the 1,068 vehicles that travel east-west on Whittier Boulevard at Ditman Avenue during the A.M. peak hour.[27] Any related projects would have to add 952 peak hour vehicles trips to double volumes on Whittier Boulevard. As there are no known related projects within 1,000 feet of the Project Site, cumulative noise due to construction truck traffic from the Project and related projects do not have the potential to exceed the ambient noise levels along

[27] County of Los Angeles Public Works. Machine Count Traffic Volumes https://pw.lacounty.gov/tnl/trafficcounts/?street=Whittier&cross=Ditman. 2020 traffic counts adjusted by one percent annually to reflect 2022 baseline conditions.

the haul route by 5 dBA. As such, cumulative noise impacts from off-site construction would be less than significant.

Operation

The Project Site and East Los Angeles has been developed with residential and commercial land uses that have previously generated, and will continue to generate, noise from a number of operational noise sources, including mechanical equipment (e.g., HVAC systems), outdoor activity areas, and vehicle travel. As there are no known related projects within 1,000 feet of the Project Site, cumulative noise due to operational traffic from the Project and related projects do not have the potential to exceed the ambient noise levels along the haul route by 5 dBA. As such, cumulative noise impacts from operations of new projects would be less than significant.

On-Site Stationary Noise Sources

Noise from on-site mechanical equipment (e.g., HVAC units) and any other human activities from related projects would not be typically associated with excessive noise generation that could result in increases of 5 dBA or more in ambient noise levels at sensitive receptors when combined with operational noise from the Proposed Project. As there are no known related projects within 1,000 feet of the Project Site, cumulative stationary source noise impacts associated with operation of the Project and related projects would be less than significant.

Off-Site Mobile Noise Sources

The Project would add up to 827 net vehicle trips to the local roadway network on a peak weekday at the start of operations in late 2025, including up to 468 net hourly vehicle trips.[28] This would represent 43.8 percent of the 1,068 vehicles that travel east-west on Whittier Boulevard at Ditman Avenue during the A.M. peak hour.[29] As there are known related projects within 1,000 feet of the Project Site, cumulative traffic associated with operation of the Project and related projects would not double traffic volumes on Whittier Boulevard that could increase ambient noise levels by 3 dBA to or within their respective “Normally Unacceptable” or “Clearly Unacceptable” noise categories. Further, such cumulative traffic would not elevate traffic noise levels by 5 dBA or greater overall. Additionally, the Project would not result in an exposure of persons to or a generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

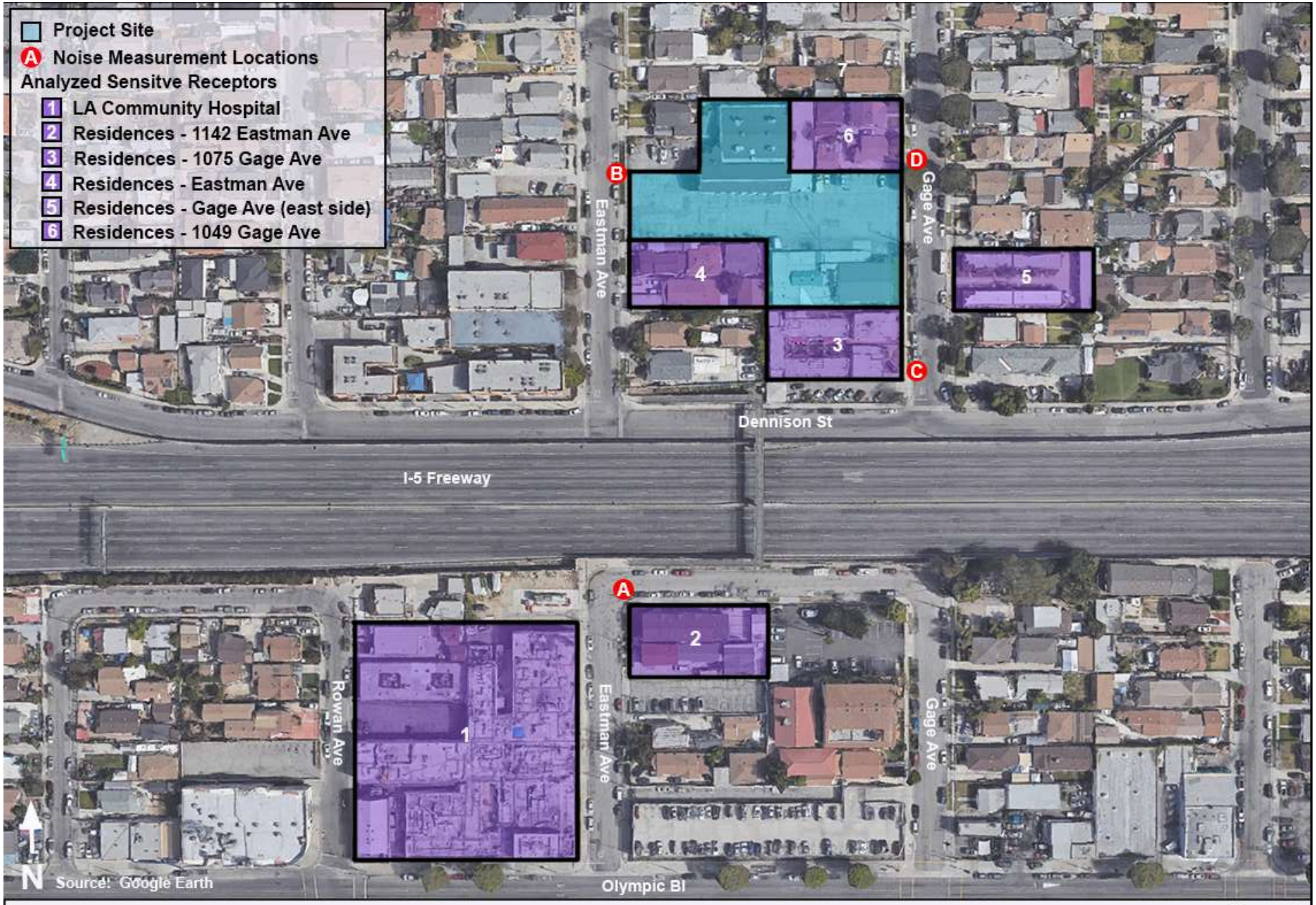
28 Linscott, Law & Greenspan, Project Trip Generation, Extera Public School; September 2022.

29 County of Los Angeles Public Works. Machine Count Traffic Volumes https://pw.lacounty.gov/tnl/trafficcounts/?street=Whittier&cross=Ditman. 2020 traffic counts adjusted by one percent annually to reflect 2022 baseline conditions.

TECHNICAL APPENDIX

DouglasKim+Associates,LLC

AMBIENT NOISE MEASUREMENTS



DouglasKim+Associates,LLC

Figure 1
Noise Measurement Locations

Session Report

10/13/2022

Information Panel

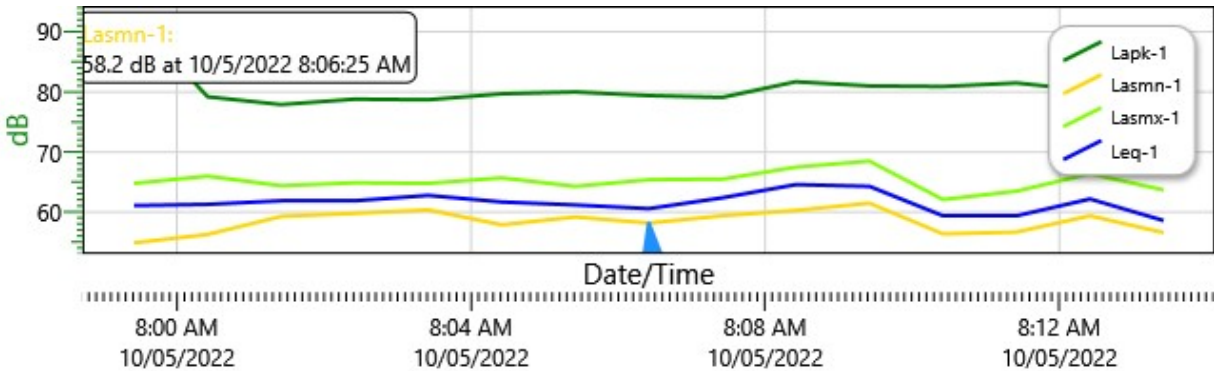
Name	1142 Eastman Avenue
Comments	
Start Time	10/5/2022 7:58:25 AM
Stop Time	10/5/2022 8:13:28 AM
Run Time	00:15:03
Serial Number	SE40213991
Device Name	SE40213991
Model Type	Sound Examiner
Device Firmware Rev	R.11C
Company Name	
Description	
Location	
User Name	

Summary Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	61.8 dB			
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	OFF

Logged Data Chart

1142 Eastman Avenue: Logged Data Chart



Logged Data Table

Date/Time	Lapk-1	Lasmn-1	Lasmx-1	Leq-1

Date/Time	Lapk-1	Lasmn-1	Lasmx-1	Leq-1
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8:00:25 AM	79.2	56.3	66	61.3
8:01:25 AM	77.9	59.3	64.4	61.9
8:02:25 AM	78.8	59.8	64.9	61.9
8:03:25 AM	78.7	60.4	64.8	62.8
8:04:25 AM	79.7	57.9	65.7	61.7
8:05:25 AM	80	59.2	64.3	61.2
8:06:25 AM	79.4	58.2	65.4	60.6
8:07:25 AM	79.1	59.4	65.5	62.4
8:08:25 AM	81.7	60.3	67.5	64.6
8:09:25 AM	81	61.5	68.5	64.3
8:10:25 AM	80.9	56.4	62.1	59.4
8:11:25 AM	81.5	56.7	63.5	59.4
8:12:25 AM	80.2	59.4	66.4	62.2
8:13:25 AM	86.7	56.6	63.7	58.6

Session Report

10/13/2022

Information Panel

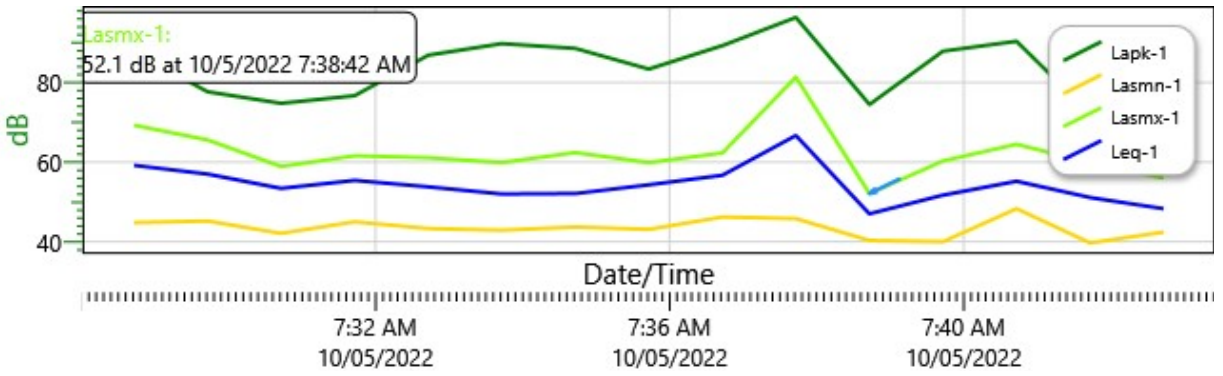
Name	1044 Eastman Avenue
Comments	
Start Time	10/5/2022 7:27:43 AM
Stop Time	10/5/2022 7:42:55 AM
Run Time	00:15:12
Serial Number	SE40213991
Device Name	SE40213991
Model Type	Sound Examiner
Device Firmware Rev	R.11C
Company Name	
Description	
Location	
User Name	

Summary Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	57.5 dB			
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	OFF

Logged Data Chart

1044 Eastman Avenue: Logged Data Chart



Logged Data Table

Date/Time	Lapk-1	Lasmn-1	Lasmx-1	Leq-1

Date/Time	Lapk-1	Lasmn-1	Lasmx-1	Leq-1
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7:29:43 AM	77.7	45.2	65.6	57
7:30:43 AM	74.8	42.1	58.9	53.4
7:31:43 AM	76.7	45	61.6	55.4
7:32:43 AM	86.9	43.3	61.1	53.8
7:33:43 AM	89.8	42.9	59.9	52
7:34:43 AM	88.6	43.7	62.4	52.1
7:35:43 AM	83.4	43.1	59.9	54.3
7:36:43 AM	89.3	46.2	62.3	56.7
7:37:43 AM	96.4	45.8	81.4	66.7
7:38:43 AM	74.5	40.3	52.1	47
7:39:43 AM	87.9	40	60.3	51.7
7:40:43 AM	90.4	48.3	64.5	55.2
7:41:43 AM	72.2	39.7	59.8	51.1
7:42:43 AM	71.2	42.4	56	48.3

Session Report

10/13/2022

Information Panel

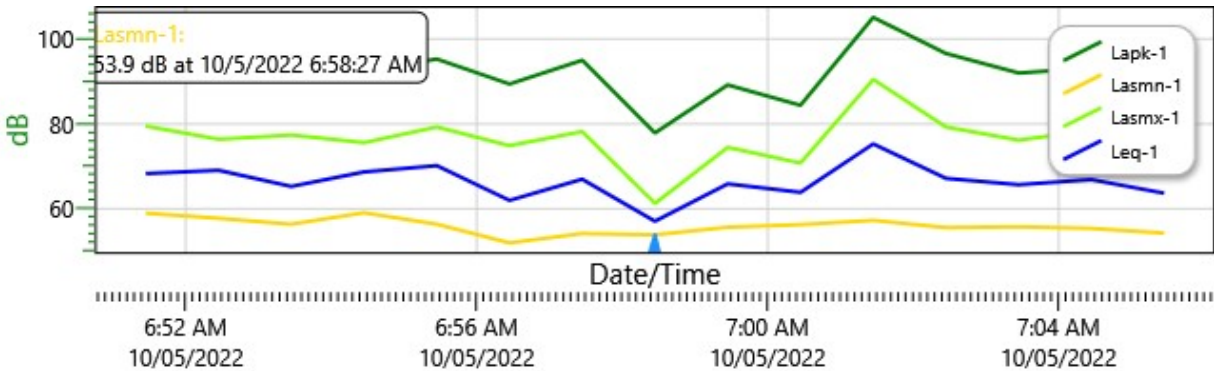
Name	1075 South Gage Avenue
Comments	
Start Time	10/5/2022 6:50:27 AM
Stop Time	10/5/2022 7:05:38 AM
Run Time	00:15:11
Serial Number	SE40213991
Device Name	SE40213991
Model Type	Sound Examiner
Device Firmware Rev	R.11C
Company Name	
Description	
Location	
User Name	

Summary Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	68.1 dB			
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	OFF

Logged Data Chart

1075 South Gage Avenue: Logged Data Chart



Logged Data Table

Date/Time	Lapk-1	Lasmn-1	Lasmx-1	Leq-1

Date/Time	Lapk-1	Lasmn-1	Lasmx-1	Leq-1
10/5/2022 6:51:27 AM	94.8	59	79.5	68.3
6:52:27 AM	91.9	57.8	76.4	69.1
6:53:27 AM	92.4	56.4	77.4	65.3
6:54:27 AM	92.4	59.1	75.6	68.7
6:55:27 AM	95.3	56.4	79.3	70.2
6:56:27 AM	89.4	52	74.9	62
6:57:27 AM	95	54.2	78.2	67
6:58:27 AM	77.9	53.9	61.3	57.1
6:59:27 AM	89.2	55.7	74.5	65.9
7:00:27 AM	84.4	56.3	70.8	63.9
7:01:27 AM	105.1	57.3	90.5	75.3
7:02:27 AM	96.6	55.6	79.3	67.2
7:03:27 AM	92	55.8	76.2	65.7
7:04:27 AM	93.2	55.4	78.5	66.9
7:05:27 AM	89.3	54.3	75.5	63.7

Session Report

10/13/2022

Information Panel

Name	1049 Gage Avenue
Comments	
Start Time	10/5/2022 7:06:01 AM
Stop Time	10/5/2022 7:21:03 AM
Run Time	00:15:02
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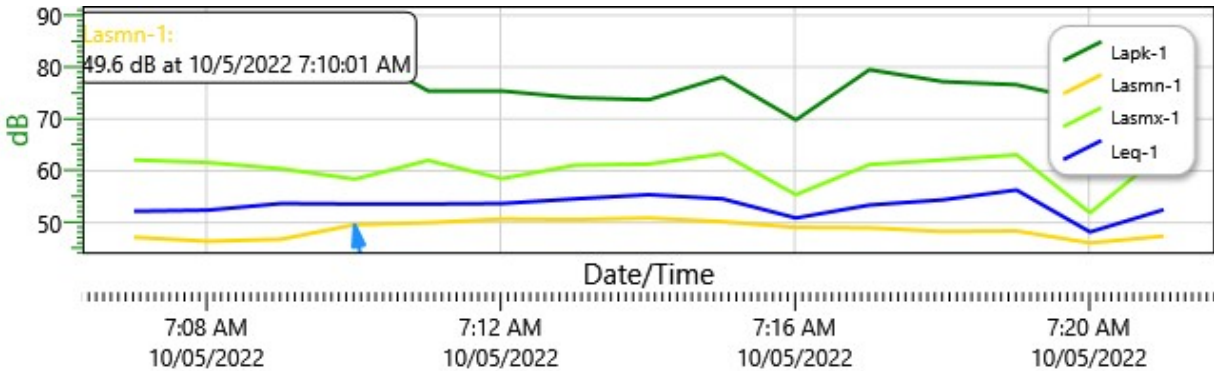
Device Name	SE40213991
Model Type	Sound Examiner
Device Firmware Rev	R.11C
Company Name	
Description	
Location	
User Name	

Summary Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	53.6 dB			
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	OFF

Logged Data Chart

1049 Gage Avenue: Logged Data Chart



Logged Data Table

Date/Time	Lapk-1	Lasmn-1	Lasmx-1	Leq-1

Date/Time	Lapk-1	Lasmn-1	Lasmx-1	Leq-1
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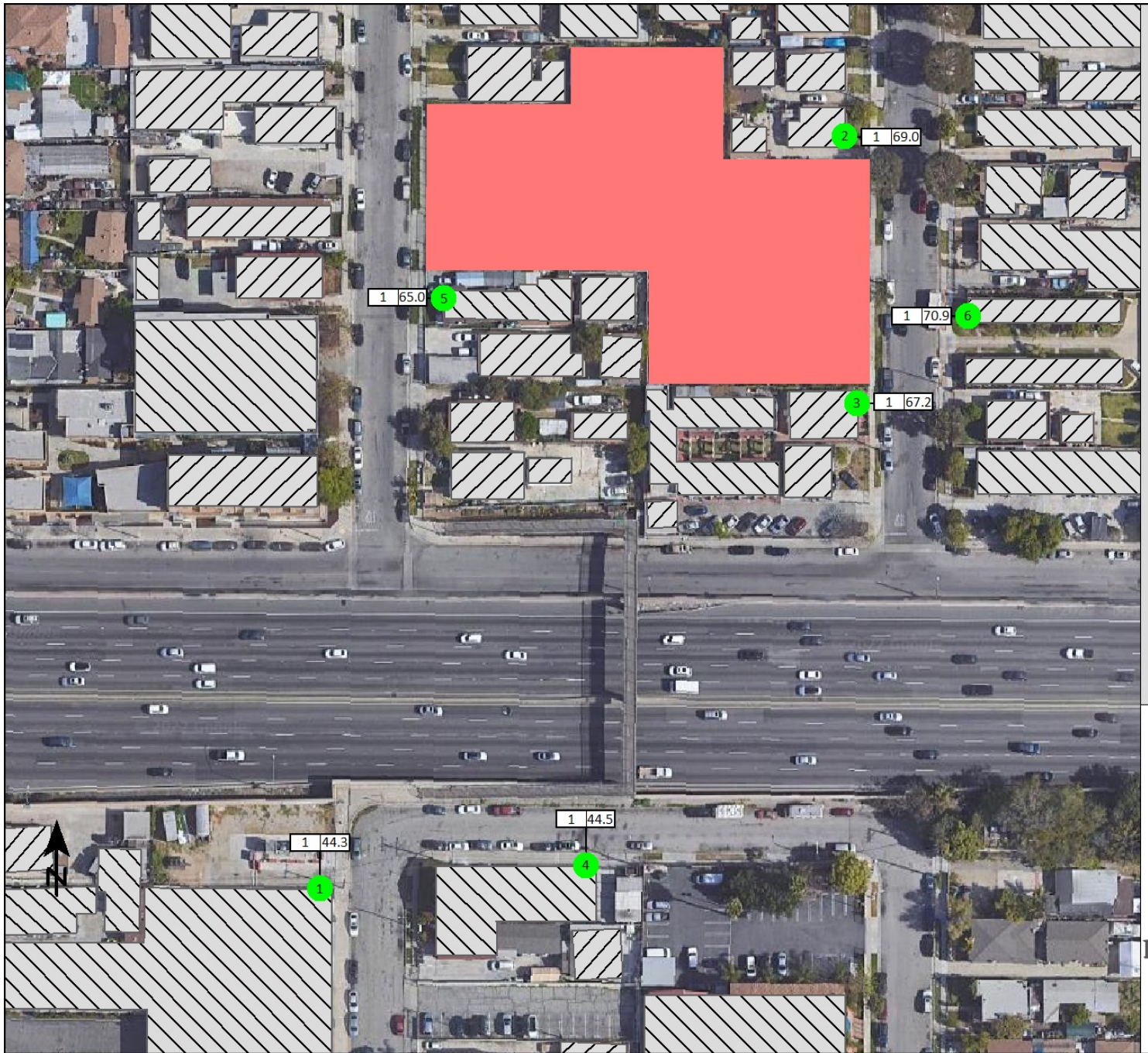
7:08:01 AM	87.2	46.4	61.6	52.4
7:09:01 AM	85.4	46.8	60.4	53.7
7:10:01 AM	83.2	49.6	58.4	53.6
7:11:01 AM	75.4	50	62	53.6
7:12:01 AM	75.4	50.7	58.5	53.7
7:13:01 AM	74.1	50.6	61.1	54.6
7:14:01 AM	73.7	50.9	61.3	55.4
7:15:01 AM	78.1	50.2	63.3	54.6
7:16:01 AM	69.8	49.1	55.4	50.9
7:17:01 AM	79.5	49	61.2	53.4
7:18:01 AM	77.2	48.3	62.1	54.4
7:19:01 AM	76.6	48.4	63.1	56.3
7:20:01 AM	73.5	46.1	51.9	48.2
7:21:01 AM	86.6	47.4	63.5	52.5

DouglasKim+Associates,LLC

CONSTRUCTION NOISE IMPACTS
UNMITIGATED



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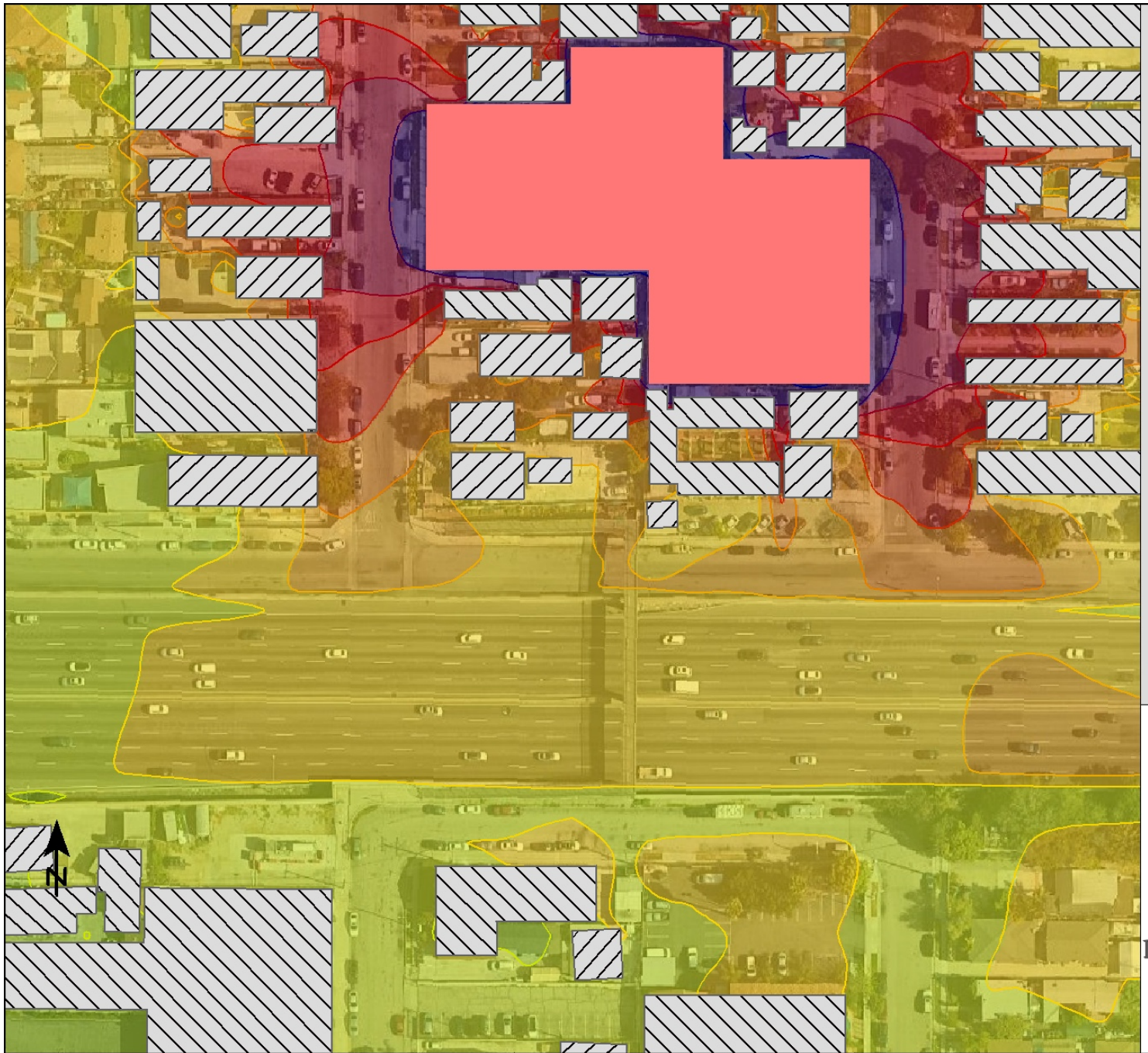

1059 South Gage Avenue

Signs and symbols

Building

Construction Site

Levels in dB(A)

< 25
25 - 30
30 - 35
35 - 40
40 - 45
45 - 50
50 - 55
55 - 60
60 - 65
65 - 70
70 - 75
75 - 80
>= 80

1 : 90

0 20 40 80 120 160 feet

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Construction Noise Impacts (Without Mitigation)

Receptor	Existing Leq	Noise	New Leq	Difference Leq	Significant?
LA Community Hospital	61.8	44.3	61.9	0.1	**No**
Residences - 1049 Gage Ave.	53.6	69.0	69.1	15.5	**Yes**
Residences - 1075 Gage Ave.	68.1	67.2	70.7	2.6	**No**
Residences - 1142 Eastman Ave.	61.8	44.5	61.9	0.1	**No**
Residences - Eastman Ave.	57.5	65.0	65.7	8.2	**Yes**
Residences - Gage Ave. (east side)	68.1	70.9	72.7	4.6	**No**

OFF-SITE CONSTRUCTION-RELATED TRAVEL VOLUMES

Construction Phase	Worker Trips	Vendor Trips	Haul Trips	Total	% of Traffic Volumes
Demolition	12.5	0	103.9	116	10.9%
Site Preparation	7.5	0		8	0.7%
Grading	10	0	58.8	69	6.4%
Trenching	5	0		5	0.5%
Building Construction	13.5	14.4		28	2.6%
Paving	12.5	0		12.5	1.2%
Architectural Coatings	2.71	0		2.71	0.3%

Haul trips represent heavy-duty truck trips with a 19.1 Passenger Car Equivalent applied; Vendor trips are a blend of vehicle types with a 9.5

1,068 Traffic Volumes on Whittier Boulevard east of Ditman Avenue

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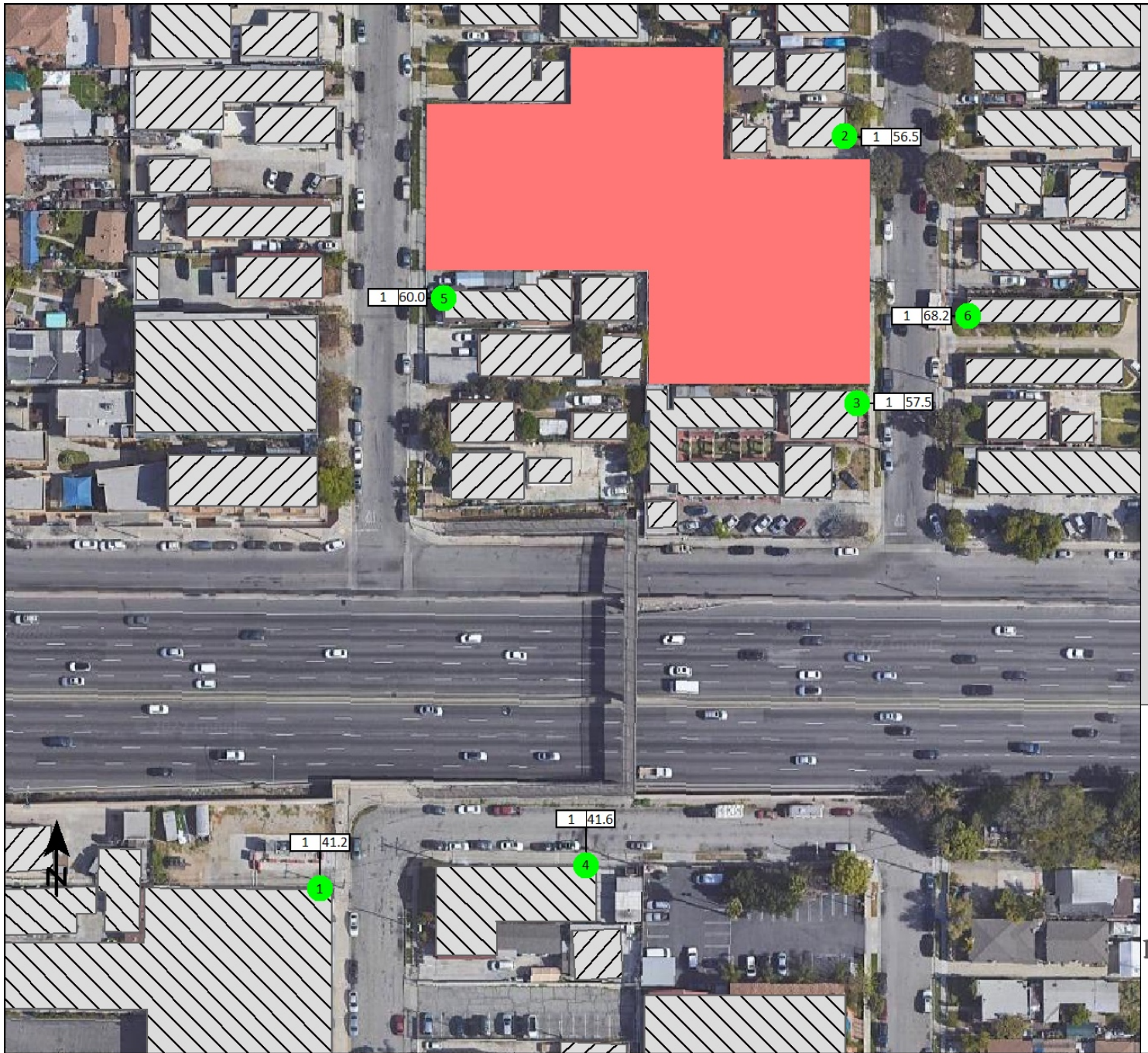
CONSTRUCTION NOISE IMPACTS MITIGATED



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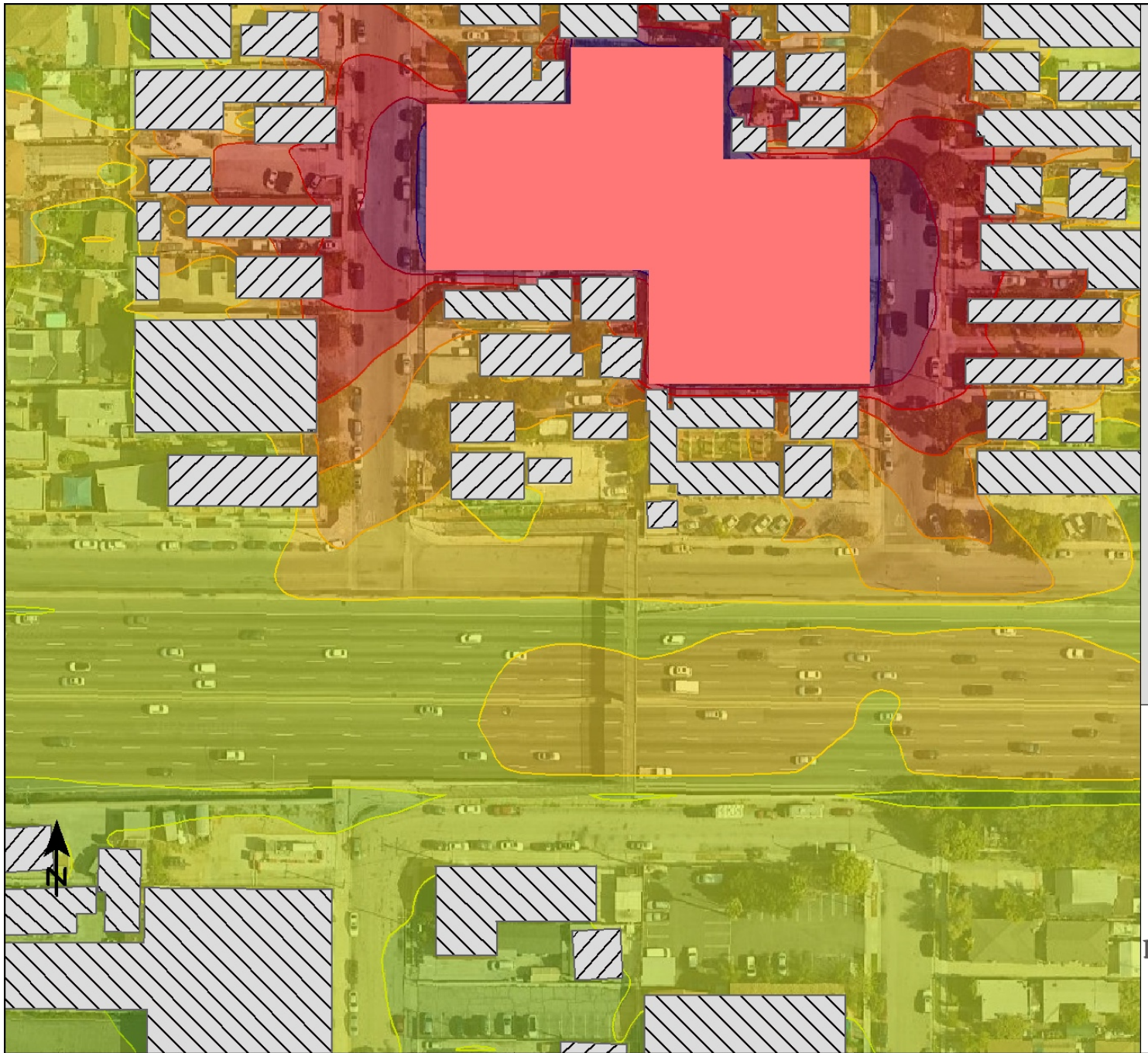

1059 South Gage Avenue

Signs and symbols

Building

Construction Site

Levels in dB(A)

< 25
25 - 30
30 - 35
35 - 40
40 - 45
45 - 50
50 - 55
55 - 60
60 - 65
65 - 70
70 - 75
75 - 80
>= 80

1 : 90

0 20 40 80 120 160 feet

DouglasKim+Associates,LLC

Construction Noise Impacts (With Mitigation)

DouglasKim+Associates,LLC

Receptor	Existing Leq	Noise	New Leq	Difference Leq	Significant?
LA Community Hospital	61.8	41.2	61.8	0.0	**No**
Residences - 1049 Gage Ave.	53.6	56.5	58.3	4.7	**No**
Residences - 1075 Gage Ave.	68.1	57.5	68.5	0.4	**No**
Residences - 1142 Eastman Ave.	61.8	41.6	61.8	0.0	**No**
Residences - Eastman Ave.	57.5	60.0	61.9	4.4	**No**
Residences - Gage Ave. (east side)	68.1	68.2	71.2	3.1	**No**

Note: Sound Power Level (Lw) assumes full sphere propagation

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OPERATIONS NOISE CALCULATIONS

Federal Transit Administration
Noise Impact Assessment Spreadsheet

version: 1/29/2019

Project:	1059 South Gage Avenue

Receiver Parameters	
Receiver:	Residences - Gage Avenue (east side)
Land Use Category:	3. Institutional
Existing Noise (Measured or Generic Value):	54 dBA

Noise Source Parameters	
Number of Noise Sources:	1

Noise Source Parameters		**Source 1**
	Source Type:	Stationary Source
	Specific Source:	Parking Garage
Noisiest hr of Activity During Sensitive hrs	**Number of Autos/hr**	250
Distance	**Distance from Source to Receiver (ft)**	80
	Number of Intervening Rows of Buildings	0
Adjustments	**Noise Barrier?**	No

	Noise Barrier?	No
	Joint Track/Crossover?	No
	Embedded Track?	No
	Aerial Structure?	No

	Noise Barrier?

	Noise Barrier?

	Noise Barrier?

Project Results Summary

Existing Leqh:	54 dBA
Total Project Leqh:	45 dBA
Total Noise Exposure:	54 dBA
Increase:	1 dB
Impact?:	None

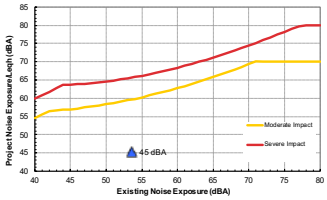
Distance to Impact Contours

Dist to Mod. Impact Contour (Source 1):	22 ft
Dist to Sev. Impact Contour (Source 1):	12 ft

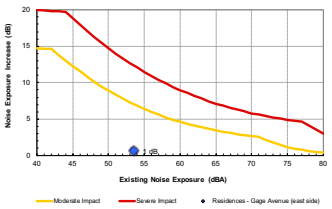
Source 1 Results

Leqh:	45.3 dBA

Noise Impact Criteria
(FTA Manual, Fig 4-2)

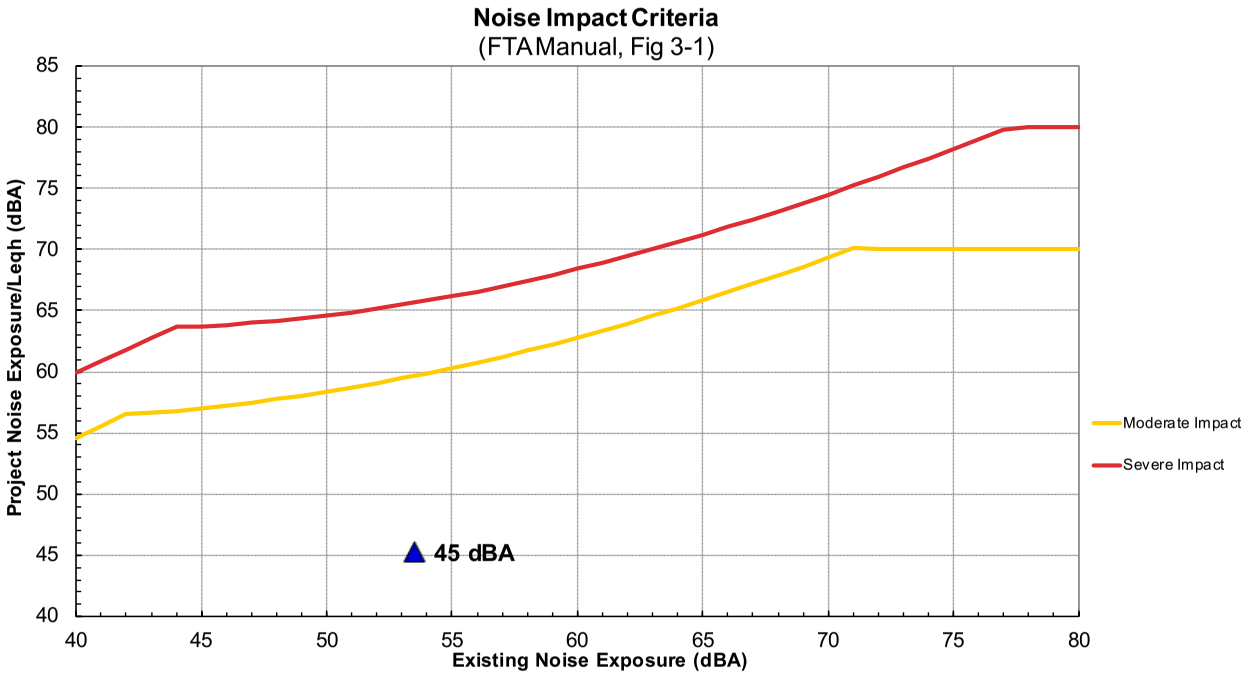


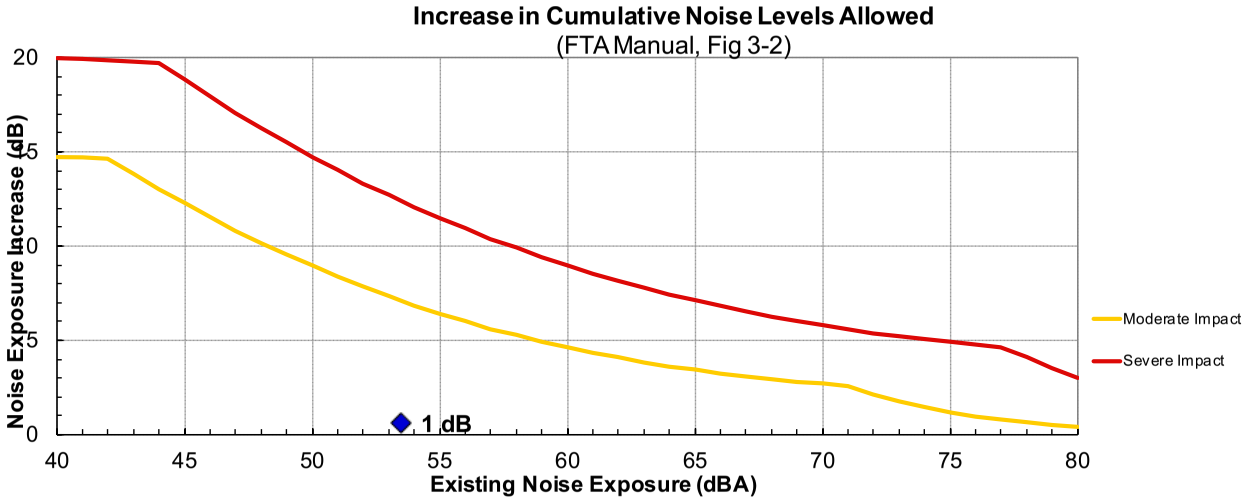
Increase in Cumulative Noise Levels Allowed
(FTA Manual, Figs 4-3 and 4-4)



Project: 1059 South Gage Avenue
Receiver: Residences - Gage Avenue (east side)

	Source	Distance	Project Leqh	Existing Leqh	Noise Criteria Mod. Impact	Noise Criteria Sev. Impact	Impact?
1	Parking Garage	80 ft	45.3 dBA	54 dBA	59 dBA	65 dBA	None
2	--	50 ft		54 dBA	59 dBA	65 dBA	
3	--	50 ft		54 dBA	59 dBA	65 dBA	
4	--	70 ft		54 dBA	59 dBA	65 dBA	
5	--	ft		54 dBA	59 dBA	65 dBA	
6	--	ft	0.0 dBA	54 dBA	59 dBA	65 dBA	None
	Combined Sources		**45 dBA**	**54 dBA**	**59 dBA**	**65 dBA**	**None**


Noise Impact Criteria
(FTA Manual, Fig 3-1)
Project Noise Exposure/Leqh (dBA)
Existing Noise Exposure (dBA)
85
80
75
70
65
60
55
50
45
40
40
45
50
55
60
65
70
75
80
45 dBA
Moderate Impact
Severe Impact


Increase in Cumulative Noise Levels Allowed
(FTA Manual, Fig 3-2)
Noise Exposure Increase (dB)
Existing Noise Exposure (dBA)
20
15
10
5
0
40
45
50
55
60
65
70
75
80
1 dB
Moderate Impact
Severe Impact

Federal Transit Administration
Noise Impact Assessment Spreadsheet

version: 1/29/2019

Project:	1059 South Gage Avenue

Receiver Parameters	
Receiver:	Residences - Eastman Avenue
Land Use Category:	3. Institutional
Existing Noise (Measured or Generic Value):	58 dBA

Noise Source Parameters	
Number of Noise Sources:	1

Noise Source Parameters		**Source 1**
	Source Type:	Stationary Source
	Specific Source:	Parking Garage
Noisiest hr of Activity During Sensitive hrs	**Number of Autos/hr**	226
Distance	**Distance from Source to Receiver (ft)**	80
	Number of Intervening Rows of Buildings	0
Adjustments	**Noise Barrier?**	No

	Noise Barrier?	No
	Joint Track/Crossover?	No
	Embedded Track?	No
	Aerial Structure?	No

Noise Barrier?	

Noise Barrier?	

Noise Barrier?	

Noise Barrier?	

Project Results Summary

Existing Leqh:	58 dBA
Total Project Leqh:	45 dBA
Total Noise Exposure:	58 dBA
Increase:	0 dB
Impact?:	None

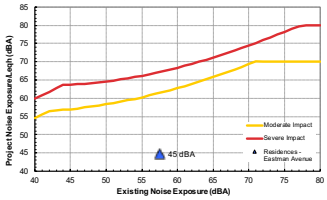
Distance to Impact Contours

Dist to Mod. Impact Contour (Source 1):	18 ft
Dist to Sev. Impact Contour (Source 1):	10 ft

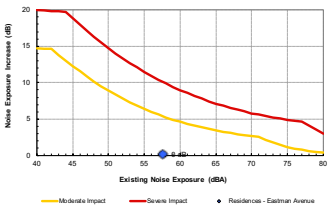
Source 1 Results

Leqh:	44.8 dBA

Noise Impact Criteria
(FTA Manual, Fig 4-2)

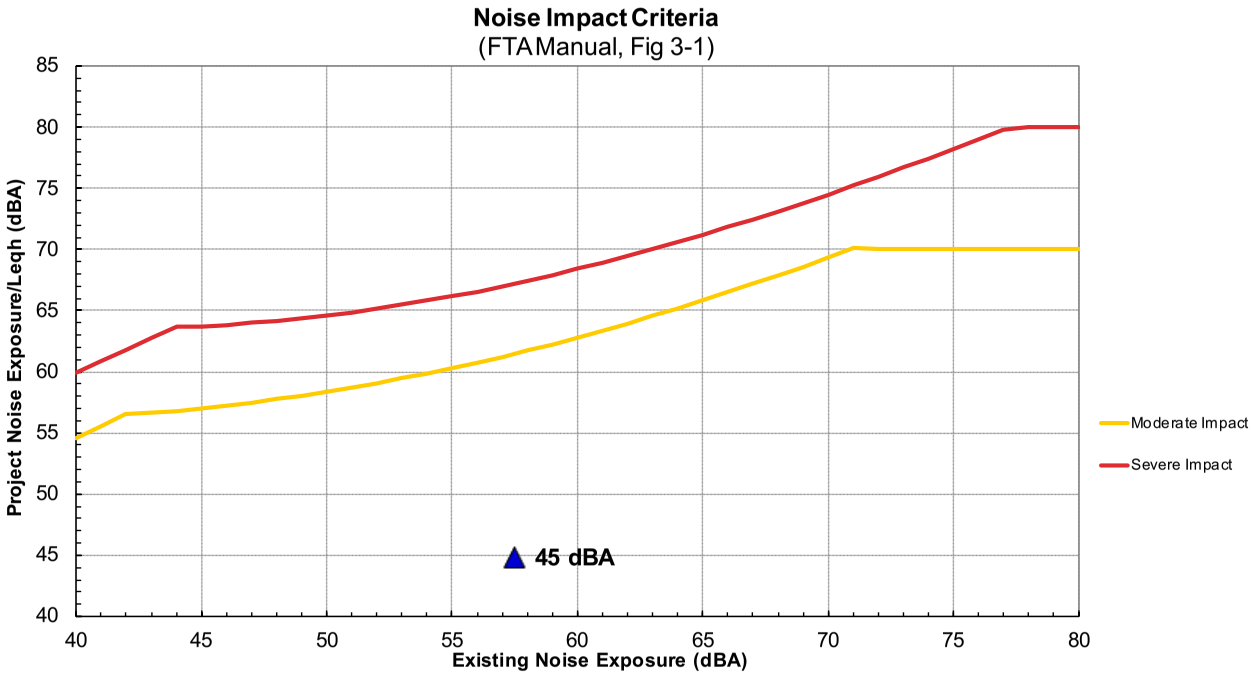


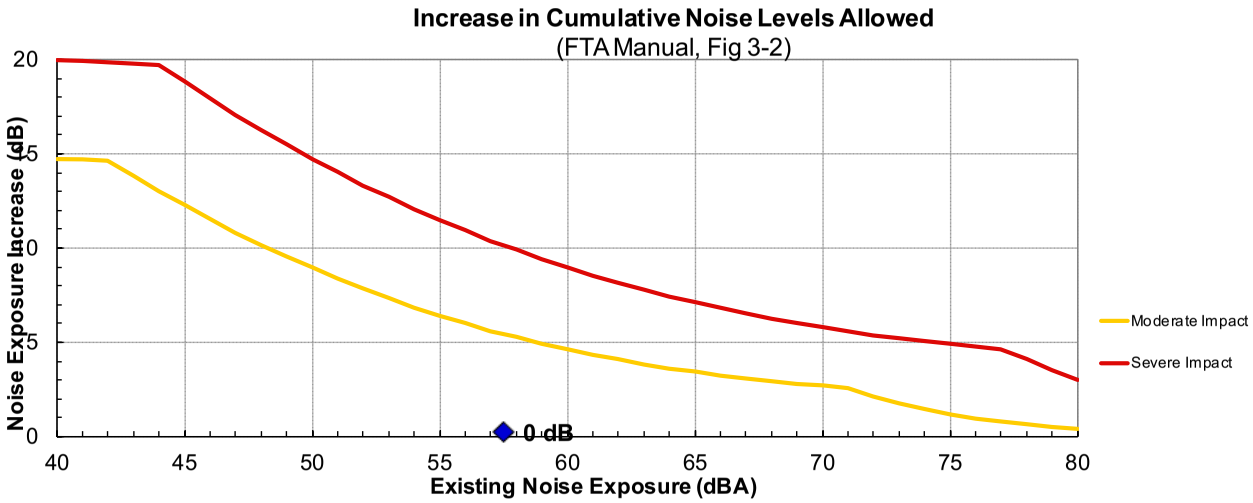
Increase in Cumulative Noise Levels Allowed
(FTA Manual, Figs 4-3 and 4-4)



Project: 1059 South Gage Avenue
Receiver: Residences - Eastman Avenue

	Source	Distance	Project Leqh	Existing Leqh	Noise Criteria Mod. Impact	Noise Criteria Sev. Impact	Impact?
1	Parking Garage	80 ft	44.8 dBA	58 dBA	61 dBA	67 dBA	None
2	--	50 ft		58 dBA	61 dBA	67 dBA	
3	--	50 ft		58 dBA	61 dBA	67 dBA	
4	--	70 ft		58 dBA	61 dBA	67 dBA	
5	--	ft		58 dBA	61 dBA	67 dBA	
6	--	ft	0.0 dBA	58 dBA	61 dBA	67 dBA	None
	Combined Sources		**45 dBA**	**58 dBA**	**61 dBA**	**67 dBA**	**None**


Noise Impact Criteria
(FTA Manual, Fig 3-1)
Project Noise Exposure/Leqh (dBA)
85
80
75
70
65
60
55
50
45
40
45 dBA
40
45
50
55
60
65
70
75
80
Existing Noise Exposure (dBA)
Moderate Impact
Severe Impact


Increase in Cumulative Noise Levels Allowed
(FTA Manual, Fig 3-2)
Noise Exposure Increase (dB)
20
15
10
5
0
0 dB
40
45
50
55
60
65
70
75
80
Existing Noise Exposure (dBA)
Moderate Impact
Severe Impact

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TRAFFIC NOISE CALCULATIONS

Los Angeles County Department of Public Works
Machine Count Traffic Volumes

Location	Count Date	Day	Condition	Jur	Hwp	Direction	24 Hr Vol	AM Peak Began	AM Peak Hr Vol	PM Peak Began	PM Peak Hr Vol
WHITTIER BOULEVARD E/O DITMAN AVENUE	06/11/2020	Thu	Clear	142	Major	Total	16328	11:45 AM	1047		
						E/B	8067	11:45 AM	522	04:15 PM	703
						W/B	8261	10:30 AM	540	12:30 PM	549
WHITTIER BOULEVARD E/O DITMAN AVENUE	06/10/2020	Wed	Clear	142	Major	Total	16460	11:00 AM	1074		
						E/B	8161	11:45 AM	547	04:45 PM	778
						W/B	8299	10:45 AM	564	01:30 PM	568

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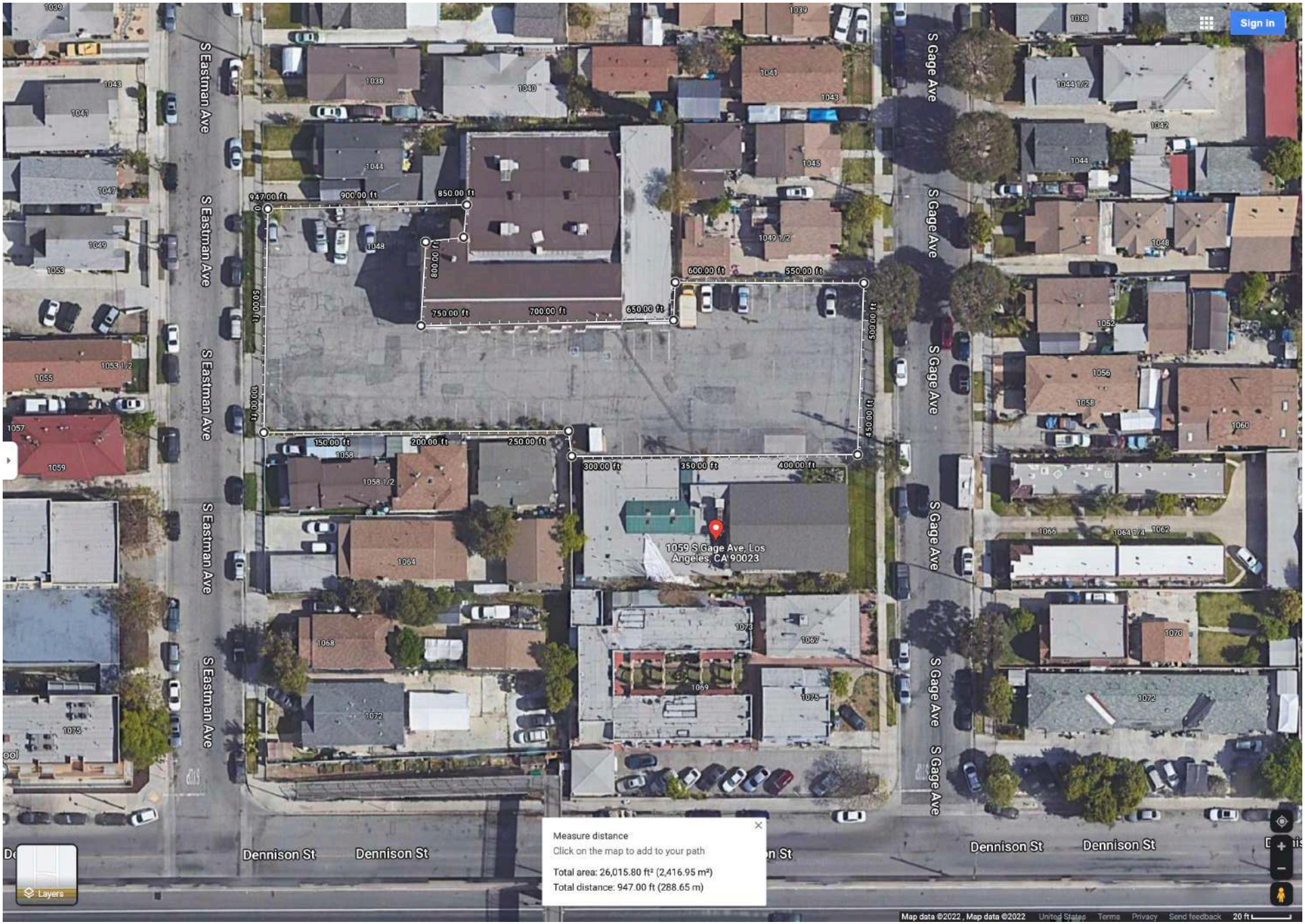
DEMOLITION ANALYSIS


S Eastman Ave
S Gage Ave
Dennison St
947.00 ft
900.00 ft
850.00 ft
800.00 ft
600.00 ft
550.00 ft
500.00 ft
750.00 ft
700.00 ft
650.00 ft
500.00 ft
450.00 ft
400.00 ft
350.00 ft
300.00 ft
250.00 ft
200.00 ft
150.00 ft
100.00 ft
1059 S Gage Ave, Los Angeles, CA 90023
Measure distance
Click on the map to add to your path
Total area: 26,015.80 ft² (2,416.95 m²)
Total distance: 947.00 ft (288.65 m)
Layers
Sign in
Map data ©2022 , Map data ©2022
United States
Terms
Privacy
Send feedback
20 ft

DouglasKim+Associates,LLC

CONSTRUCTION BUILDING DEBRIS

Materials	Total SF	Height	Cubic Yards	Pounds per Cub	Tons	Truck Capacity (CY)	Truck Trips	Source
Construction and Debris	0	0	-	484	-	10	-	Florida Department of Environmental Protection A Fact Sheet for C&D Debris Facility Operators
General Building	25,302	12	3,711	1,000	1,855	10	742	*Federal Emergency Management Agency, Debris Estimating Field Guide (FEMA 329), September 2010. General Building Formula*
Single Family Residence	-	12	-	1,000	-	10	-	Federal Emergency Management Agency. Debris Estimating Field Guide (FEMA 329), September 2010. Single Family Residence Formula, assumes 1 story, Medium vegetative cover multiplier (1.3)
Multi-Family Residence		12	-	1,000	-	10	-	
Mobile Home				1,000	-	10	-	
Mixed Debris			-	480	-	10	-	Florida Department of Environmental Protection A Fact Sheet for C&D Debris Facility Operators
Vegetative Debris (Hardwoods)			-	500	-	10	-	
Vegetative Debris (Softwoods)			-	333	-	10	-	
Asphalt or concrete (Constructior	26,000	0.5	481	2,400	578	10	96	
TOTAL			4,192		2,433		838	

VIBRATION TECHNICAL REPORT

Introduction

This section evaluates vibration impacts that would be generated by construction and operation of the Proposed 1059 South Gage Avenue Project in the County of Los Angeles. The analysis compares these impacts to applicable regulations and thresholds of significance. Vibration calculation worksheets are included in the Technical Appendix.

Fundamentals of Vibration

Characteristics of Vibration. Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, and acceleration. Unlike noise, vibration is not a common environmental problem, as it is unusual for vibration from vehicle sources to be perceptible. Common sources of vibration include trains, construction activities, and certain industrial operations.

Vibration Definitions. This analysis discusses vibration in terms of Peak Particle Velocity (PPV). PPV is commonly used to describe and quantify vibration impacts to buildings and other structures. PPV levels represent the maximum instantaneous peak of a vibration signal and are usually measured in inches per second.[1] This analysis also discusses the vibration of events in decibel scale, known as Vibration Decibels (VdB), which is a unitless measure of vibration that is expressed on a logarithmic scale.

Effects of Vibration. High levels of vibration may cause physical personal injury or damage to buildings. However, groundborne vibration levels rarely affect human health. Instead, most people consider groundborne vibration to be an annoyance that can disrupt concentration or disturb sleep. Groundborne vibration can also interfere with certain types of highly sensitive equipment and machines, especially imaging devices used in medical laboratories.

Perceptible Vibration Changes. Unlike noise, groundborne vibration is not an environmental issue that most people experience every day. Background vibration levels in residential areas are usually well below the threshold of perception for humans, approximately 0.01 inches per second.[2] Perceptible indoor vibrations are most often caused by sources within buildings themselves, such as slamming doors or heavy footsteps. Common outdoor sources of groundborne vibration include construction equipment, trains, and traffic on rough or unpaved roads. Traffic vibration from smooth and well-maintained roads is typically not perceptible.

Regulatory Framework

1 California Department of Transportation, Transportation and Construction Vibration Guidance Manual, September 2013.

2 Ibid.

Federal

Federal Transit Administration (FTA). In 2018, the FTA published the Transit Noise and Vibration Impact Assessment Manual to aid in the estimation and analysis of vibration impacts. Typically, potential building and structural damages are the foremost concern when evaluating the impacts of construction-related vibrations. Table 1 summarizes FTA's vibration guidelines for building and structural damage. While these are reference values for vibration levels at 25 feet of distance, this analysis uses logarithmic equations to determine whether building damage would occur regardless of actual distance between construction activity and nearby buildings.

Table 1
FTA Vibration Damage Potential Threshold Criteria

Structure and Condition	Threshold Criteria (in/sec PPV) at 25 Feet
I. Reinforced-concrete, steel or timber (no plaster)	0.5
II. Engineered concrete and masonry (no plaster)	0.3
III. Non-engineered timber and masonry buildings	0.2
IV. Buildings extremely susceptible to vibration damage	0.12
Source: Federal Transit Administration "Transit Noise and Vibration Impact Assessment Manual", September 2018.	

The FTA Assessment Manual also cites criteria for cases where more detailed analysis may be required. For buildings consisting of concrete wall and floor foundations, masonry or concrete walls, or stone masonry retaining walls, continuous vibrations of 0.3 inches per second PPV can be damaging. For buildings consisting of steel or reinforced concrete, such as factories, retaining walls, bridges, steel towers, open channels, underground chambers and tunnels with and without concrete alignment, continuous vibrations of 0.5 inches per second PPV can be damaging.

State

California's Civil Code Section 832 protects adjacent properties when excavation of a site occurs.

> *Each coterminous owner is entitled to the lateral and subjacent support which his land receives from the adjoining land, subject to the right of the owner of the adjoining land to make proper and usual excavations on the same for purposes of construction or improvement, under the following conditions:*
>
> *1. Any owner of land or his lessee intending to make or to permit an excavation shall give reasonable notice to the owner or owners of adjoining lands and of buildings or other structures, stating the depth to which such excavation is intended to be made, and when the excavating will begin.*
>
> *2. In making any excavation, ordinary care and skill shall be used, and reasonable precautions taken to sustain the adjoining land as such, without*

regard to any building or other structure which may be thereon, and there shall be no liability for damage done to any such building or other structure by reason of the excavation, except as otherwise provided or allowed by law.

3. If at any time it appears that the excavation is to be of a greater depth than are the walls or foundations of any adjoining building or other structure, and is to be so close as to endanger the building or other structure in any way, then the owner of the building or other structure must be allowed at least 30 days, if he so desires, in which to take measures to protect the same from any damage, or in which to extend the foundations thereof, and he must be given for the same purposes reasonable license to enter on the land on which the excavation is to be or is being made.

4. If the excavation is intended to be or is deeper than the standard depth of foundations, which depth is defined to be a depth of nine feet below the adjacent curb level, at the point where the joint property line intersects the curb and if on the land of the coterminous owner there is any building or other structure the wall or foundation of which goes to standard depth or deeper then the owner of the land on which the excavation is being made shall, if given the necessary license to enter on the adjoining land, protect the said adjoining land and any such building or other structure thereon without cost to the owner thereof, from any damage by reason of the excavation, and shall be liable to the owner of such property for any such damage, excepting only for minor settlement cracks in buildings or other structures.

Caltrans has identified building damage significance guidance that provides thresholds for different categories of structures, including historic buildings that may not be considered extremely fragile (Table 2).

Table 2
Caltrans Vibration Damage Potential Threshold Criteria

Structure and Condition	Significance Thresholds (in/sec PPV)	
	Transient Sources	Continuous/ Frequent/ Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5
Source: California Department of Transportation, 2013.		

County of Los Angeles. The Los Angeles County Municipal Code does not include criteria for assessing vibration impacts; therefore, for the purpose of determining the significance of

vibration impacts experienced at buildings and structures near the project, the FTA's guidelines are used to determine vibration impacts.

Methodology

Construction Vibration. Ground-borne vibration impacts during construction activities were evaluated for both on-site and off-site construction activities by identifying potential vibration sources (e.g., construction equipment), estimating the vibration levels at off-site structures, and comparing the proposed impacts against applicable vibration significance thresholds.

Operational Vibration. As with many non-industrial projects, the Proposed Project does not include land uses that would generate high levels of ground-borne vibration. Instead, any vibration related to operation of the Proposed Project would involve vehicle activity traveling to and from the Project Site. However, vibration from vehicle activities using rubber-tired wheels is unlikely to be perceptible by people. Rubber-tired vehicles traveling at a distance of 50 feet typically generate groundborne vibration of approximately 63.5 VdB.[3] The typical threshold of perception for groundborne vibration is approximately 65 VdB.[4] As such, operational impacts on ground-borne vibration are not analyzed further.

Threshold of Significance

Groundborne Vibration Thresholds. There are no adopted County standards or other applicable regulations that would govern the Project's vibration impacts. In assessing impacts related to noise and vibration in this section, the County uses Appendix G as the thresholds of significance. The FTA's criteria in its 2018 Transit Noise and Vibration Impact Assessment manual will be used where applicable and relevant to assist in analyzing the Appendix G thresholds. In addition, Caltrans' thresholds for historic buildings will be used when structures are not Category IV structures considered extremely susceptible to vibration damage.

Existing Conditions

Existing Ambient Vibration Levels

The Project Site is improved with a 25,302 square-foot church with a surface parking lot. Intermittent vibration from solid waste management and collection activities are of short duration and use Gage or Eastman Avenue. These activities occur intermittently for the residences nearby as well. Occasional loading activities generate negligible vibration from trucks that load and unload goods. None of these activities involve use of equipment or heavy-duty vehicles that generate substantive groundborne vibration.

[3] Federal Transportation Administration, Transit Noise and Vibration Impact Assessment Manual; Generalized Ground Surface Vibration Equations (Table 6-10); September 2018.

[4] Ibid.

The primary source of groundborne vibration near the Project Site is vehicle travel, including the 192 daily vehicle trips traveling to and from the Project Site.[5] The blend of passenger vehicles, trucks, delivery trucks, and other vehicles generate minimal levels of vibration. As noted by federal guidance, "[i]t is unusual for vibration from sources such as buses and trucks to be perceptible…"[6] As such, vehicle movement generates imperceptible ground vibration, with the occasional exception of heavy-duty vehicles that travel over speed bumps, potholes, and other street irregularities.

There are several residences adjacent to the Project Site that could be exposed to groundborne vibration during construction and operation of the proposed development that include:

- Residences, 1075 Gage Avenue; five feet south of the Project Site.
- Residences, 1049 Gage Avenue; five feet north and east of the Project Site.
- Residences, Eastman Avenue (east side); five feet north and south of the Project Site.

Analysis of Project Impacts

a. Generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact.

Construction

Building Damage Vibration Impact – On-Site Sources

Construction equipment can produce groundborne vibration based on equipment and methods employed. While this spreads through the ground and diminishes in strength with distance, buildings on nearby soil can be affected. This ranges from no perceptible effects at the lowest levels, low rumbling sounds and perceptible vibration at moderate levels, and slight damage at the highest levels. Table 3 summarizes vibratory levels for common construction equipment.

Table 3
Vibration Source Levels for Construction Equipment

Equipment	Approximate PPV at 25 feet (in/sec)
Pile Driver (impact)	0.644
Pile Drive (sonic)	0.170
Clam shovel drop (slurry wall)	0.202
Hydromill (slurry wall)	0.008
Vibratory Roller	0.210
Hoe Ram	0.089
Large Bulldozer	0.089

[5] Linscott, Law & Greenspan, Project Trip Generation, Extera Public School; September 2022.

[6] Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual, September 2018.

Caisson Drilling	0.089
Loaded Truck	0.076
Jackhammer	0.035
Small Bulldozer	0.003
Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual, 2018.	

Groundborne vibration would be generated by a number of construction activities at the Project site. As a result of equipment that could include on-site bulldozer operations or the vibrational equivalent, vibration velocities of up to 0.148 inches per second PPV are projected to occur at any of the residences nearest the Project Site. This impact is below the 0.20 inches per second PPV threshold from FTA that is considered potentially harmful to non-engineered timber and masonry buildings. More distant receptors would experience even lower levels of groundborne vibration. Other potential construction activities would produce less vibration and have lesser potential impacts on nearby sensitive receptors. As a result, construction-related structural vibration impacts would be considered less than significant.

Table 4
Building Damage Vibration Levels – On-Site Sources

Off-Site Receptor Location	Distance to Project Site (feet)[a]	Vibration Velocity Levels at Off-Site Sensitive Receptors from Construction Equipment (in/sec PPV)					Significance Criterion (PPV)	Potentially Significant Impact?
		Large Bulldozer	Caisson Drilling	Loaded Trucks	Jack-hammer	Small Bulldozer		
FTA Reference Vibration Level (25 Feet)	N/A	0.089	0.089	0.076	0.035	0.003	--	--
1075 Gage Ave.	15	0.148	0.148	0.127	0.058	0.005	0.20[b]	No
1049 Gage Ave.	15	0.148	0.148	0.127	0.058	0.005	0.20[b]	No
Eastman Ave residences	15	0.148	0.148	0.127	0.058	0.005	0.20[b]	No

[a] Includes ten-foot buffer for equipment maneuverability
[b] FTA criterion for Category III (non-engineered timber and masonry buildings)
Source: DKA Planning, 2022.

Building Damage Vibration Impact – Off-Site Sources

Construction of the Project would generate trips from large trucks including haul trucks, concrete mixing trucks, concrete pumping trucks, and vendor delivery trucks. Regarding building damage, based on FTA data, the vibration generated by a typical heavy-duty truck would be approximately 63 VdB (0.006 PPV) at a distance of 50 feet from the truck.[7] According to the FTA "[i]t is unusual for vibration from sources such as buses and trucks to be perceptible,

[7] Federal Transit Administration, "Transit Noise and Vibration Impact Assessment," May 2006, Figure 7-3.

even in locations close to major roads." Nonetheless, there are buildings along the Project's haul route on Whittier Boulevard that are situated away from the right-of-way and would be exposed to groundborne vibration levels of approximately 0.006 PPV. This estimated vibration generated by construction trucks traveling along the anticipated haul route(s) would be well below the most stringent building damage criteria of 0.12 PPV for buildings extremely susceptible to vibration. The Project's potential to damage roadside buildings and structures as the result of groundborne vibration generated by its truck trips would therefore be considered less than significant.

Operation

During operation of the elementary and middle schools, there would be no significant stationary sources of groundborne vibration, such as heavy equipment or industrial operations. Operational groundborne vibration in the Project Site's vicinity would be generated by its related vehicle travel on local roadways. However as previously discussed, road vehicles rarely create vibration levels perceptible to humans unless road surfaces are poorly maintained and have potholes or bumps. As a result, the Project's long-term vibration impacts would be less than significant.

Cumulative Impacts

Construction

On-Site Construction Vibration

During construction of the Project, vibration impacts are generally limited to buildings and structures located near the construction site (i.e., within 15 feet as related to building damage). As noted earlier, the Project's potential to damage nearby buildings is less than significant. However, nearby structures could be subject to cumulative vibration impacts if concurrent construction and vibration activities were to occur within close proximity. Any such projects would need to limit or avoid use of pile drivers or other impacting equipment for any shoring of structures.

There are no identified or reasonably foreseeable related projects that could generate cumulative vibration impacts when the Proposed Project begins construction in 2023. As such, there is no potential for a cumulative construction vibration impact that subjects nearby buildings to vibration levels that exceed the FTA's vibration damage criteria.

Off-Site Construction Vibration

While haul trucks from any related projects and other concurrent construction projects could generate additional vibration along haul routes, the potential to damage buildings is extremely low. The FTA finds that "[i]t is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads." The vibration generated by a typical heavy truck would be approximately 0.00566 in/sec PPV at a distance of 50 feet.

As discussed above, there are buildings near the right- of-way of the anticipated haul route for the Project (i.e., Whittier Boulevard). These buildings would be exposed to groundborne vibration levels that are far less than the levels identified by FTA as potential thresholds for building damage. Trucks from any related projects are expected to generate similar groundborne vibration levels. Therefore, the vibration levels generated from off-site construction trucks associated with the Project and other related projects along the anticipated haul route(s) would be below the most stringent building damage threshold of 0.12 PPV for buildings extremely susceptible to vibration. Therefore, potential cumulative vibration impacts with respect to building damage from off-site construction would be less than significant.

Summary of Cumulative Construction Vibration Impacts

Due to the rapid attenuation characteristics of groundborne vibration and the proximity of major development proposed in this part of the Whittier Boulevard corridor, there is no potential for a cumulative construction vibration impact with respect to building damage associated with groundborne vibration from on-site sources. In addition, potential cumulative vibration impacts with respect to building damage from off-site construction would be less than significant. Therefore, on-site and off-site construction activities associated with the Project and one or more potential related projects would not generate excessive groundborne vibration levels with respect to building damage.

Operation

The Project Site and surrounding Whittier Boulevard corridor have been developed with commercial, residential, medical, and other uses that will continue to generate minimal groundborne vibration. Similar to the Project, any related projects in the vicinity of the Project Site could generate vibration from ongoing day-to-day operations. However, given the commercial and residential zoning along Whittier Boulevard and adjacent residential neighborhoods, any related projects would not be typically associated with excessive groundborne vibration from on-site sources. However, each project would produce traffic volumes that are capable of generating roadway vibration impacts. The potential cumulative noise impacts associated with on-site and off-site vibration sources are addressed below.

On-Site Operation Vibration

During operation of the Project, vibration impacts are generally limited to buildings and structures located near the construction site (i.e., within 15 feet as related to building damage). In general, related projects in this corridor would be commercial retail, medical, or residential land uses that do not operate impact equipment and operations and would not generate substantial vibration. As a result, operation of new cumulative development in the area would have no potential to exceed FTA vibration damage standards at off-site receptors.

Off-Site Operation Vibration

Like the Project, any concurrent development near the Project Site would contribute normal passenger vehicle traffic that would generate negligible changes to roadway vibration. Use of

larger heavy-duty trucks for delivery of goods and materials would be intermittent and not result in significant, cumulative increases in groundborne vibration on Whittier Boulevard and other local roadways. Therefore, potential cumulative vibration impacts with respect to building damage from off-site operations would be less than significant.

Summary of Operational Construction Vibration Impacts

Due to the rapid attenuation characteristics of groundborne vibration and the proximity of major development proposed in this part of the Whittier Boulevard corridor, there is no potential for a cumulative operations vibration impact with respect to building damage associated with groundborne vibration from on-site sources. In addition, potential cumulative vibration impacts with respect to building damage from off-site construction would be less than significant. Therefore, on-site and off-site operations activities associated with the Project and one or more potential related projects would not generate excessive groundborne vibration levels with respect to building damage.

TECHNICAL APPENDIX

DouglasKim+Associates,LLC

1059 Gage Avenue Project

Construction Vibration

Receptor: 1075 Gage Avenue
Equipment: Large Bulldozer, Auger Drill Rig

Source PPV (in/sec)	0.089
Reference Distance (ft)	25
Ground Factor (N)	1
Distance (ft)	15
Vibration Level (in/sec)	**0.148**

Receptor: 1075 Gage Avenue
Equipment: Loaded Trucks

Source PPV (in/sec)	0.076
Reference Distance (ft)	25
Ground Factor (N)	1
Distance (ft)	15
Vibration Level (in/sec)	**0.127**

Receptor: 140 Gage Avenue
Equipment: Large Bulldozer, Auger Drill Rig

Source PPV (in/sec)	0.089
Reference Distance (ft)	25
Ground Factor (N)	1
Distance (ft)	15
Vibration Level (in/sec)	**0.148**

Receptor: 140 Gage Avenue
Equipment: Loaded Trucks

Source PPV (in/sec)	0.076
Reference Distance (ft)	25
Ground Factor (N)	1
Distance (ft)	15
Vibration Level (in/sec)	**0.127**

Receptor: Eastman Avenue Residences
Equipment: Large Bulldozer, Auger Drill Rig

Source PPV (in/sec)	0.089
Reference Distance (ft)	25
Ground Factor (N)	1
Distance (ft)	15
Vibration Level (in/sec)	**0.148**

Receptor: Eastman Avenue Residences
Equipment: Loaded Trucks

Source PPV (in/sec)	0.076
Reference Distance (ft)	25
Ground Factor (N)	1
Distance (ft)	15
Vibration Level (in/sec)	**0.127**

1059 Gage Avenue Project

Receptor: 1075 Gage Avenue
Equipment: Small Dozer-Type Equipment

Source PPV (in/sec)	0.003
Reference Distance (ft)	25
Ground Factor (N)	1
Distance (ft)	15
Vibration Level (in/sec)	**0.005**

Receptor: 1075 Gage Avenue
Equipment: Jackhammer

Source PPV (in/sec)	0.035
Reference Distance (ft)	25
Ground Factor (N)	1
Distance (ft)	15
Vibration Level (in/sec)	**0.058**

Receptor: 140 Gage Avenue
Equipment: Small Dozer-Type Equipment

Source PPV (in/sec)	0.003
Reference Distance (ft)	25
Ground Factor (N)	1
Distance (ft)	15
Vibration Level (in/sec)	**0.005**

Receptor: 140 Gage Avenue
Equipment: Jackhammer

Source PPV (in/sec)	0.035
Reference Distance (ft)	25
Ground Factor (N)	1
Distance (ft)	15
Vibration Level (in/sec)	**0.058**

Receptor: Eastman Avenue Residences
Equipment: Small Dozer-Type Equipment

Source PPV (in/sec)	0.003
Reference Distance (ft)	25
Ground Factor (N)	1
Distance (ft)	15
Vibration Level (in/sec)	**0.005**

Receptor: Eastman Avenue Residences
Equipment: Jackhammer

Source PPV (in/sec)	0.035
Reference Distance (ft)	25
Ground Factor (N)	1
Distance (ft)	15
Vibration Level (in/sec)	**0.058**

Sources

California Department of Transportation (Caltrans), *Transportation and Construction Vibration Guidance Manual*,
Federal Transit Administration (FTA), *Transit Noise and Vibration Impact Assessment*, May 2006

LOS ANGELES UNIFIED SCHOOL DISTRICT
Facilities Services Division

October 17, 2023

Sherrie Cruz
CAJA Environmental Services, LLC
9410 Topanga Canyon Blvd, Suite 101
Chatsworth, CA 91311

Re: Extera Public Schools Project

Dear Ms. Cruz,

In response to your request for information, please find a ***LAUSD Schools Enrollments and Capacities Report*** for the schools and programs serving the Extera Public Schools Project locate at 1059 South Gage Avenue, Los Angeles, CA 90023. The project consists of a transitional kindergarten (TK) to 8th grade charter school serving 525 students, which will include 22 classrooms, offices, outdoor eating areas and play areas, and a multi-purpose room. At this time reporting is based on individual project address, without reporting on the combined impacts of other project addresses served by the same schools. This report contains the most recent data available on operating capacities and enrollments, and is designed to address any questions pertaining to overcrowding and factors related to school capacity. All schools operate on single track calendar.

Please note that no new school construction is planned and the data in this report *already take into account*: portable classrooms on site, additions being built onto existing schools, student permits and transfers, programs serving choice areas, and any other operational activities or educational programming affecting the operating capacities and enrollments among LAUSD schools.

Additional information about LAUSD's Capital improvement programs can be found on the Facilities Services Division main webpage. Listings of residential schools and other programs serving the project can be found using LAUSD's Residential School Finder.

Student generation rates can be found in the Developer Fee Justification Study.

MASTER PLANNING AND DEMOGRAPHICS RESPONSE TO SPECIFIC QUESTIONS

Questions: 1 & 2 — The project is located in a HS attendance choice/option area. Please see LAUSD Schools Enrollments and Capacities Report details;

Question: 3 — Please contact the LAUSD Developer Fee Program Office (DFPO) at (213) 241-6266 if more information regarding fees and student generation rates is needed.

ATTACHMENTS

1. LAUSD SCHOOLS ENROLLMENTS AND CAPACITIES REPORT

2. BOUNDARY DESCRIPTIONS FOR SCHOOLS SERVING PROPOSED PROJECT
   Boundary descriptions for existing schools identified as serving the proposed project

Sincerely,

Vincent Maffei, Director
School Management Services and Demographics

PROJECT SERVED: Extera Public Schools Project locate at 1059 South Gage Avenue, Los Angeles, CA 90023. The project consists of a transitional kindergarten (TK) to 8th grade charter school serving 525 students, which will include 22 classrooms, offices, outdoor eating areas and play areas, and a multi-purpose room.

SCHOOL YEAR: 2022-2023

1	2	3	4	5	6	7	8	9	10
Cost Center Code	School Name	Capacity	Resident Enrollment	Actual Enrollment	**Current seating overage/(shortage)**	Overcrowded **Now**?	Projected Enrollment	**Projected seating overage/(shortage)**	Overcrowding Projected in **Future**?
1352101	Eastman Ave El	671	920	608	(249)	**Yes**	653	18	**Yes**
1838701	Stevenson CCP	1066	1544	882	(478)	**Yes**	1166	(100)	**Yes**
a	**SCHOOL CHOICE AREA TOTALS** (schools listed below)	**4030**	**5107**	**3853**	**(1077)**	**Yes**	**4738**	**(708)**	**Yes**
	EASTSIDE HS ZONE OF CHOICE								
1775201	Solis LA	245	-	223	-	-	-	-	-
1777201	Torres Renaissance	465	-	396	-	-	-	-	-
1777301	Torres Eng Tech	438	-	383	-	-	-	-	-
1777501	Torres Hum Art Tech	455	-	416	-	-	-	-	-
1777701	Torres HS SJLA Mag	262	-	186	-	-	-	-	-
1867901	Garfield SH	2165	-	2249	-	-	-	-	-

[a] Schools & programs that are part of a "school choice area" pull enrollments from the area school(s) that have resident attendance boundaries.

Seating overage/shortage and overcrowding is calculated and reported for the school choice area as a whole; capacity and actual enrollment is reported for each individual school and/or program listed in the shaded cells.

Schools Planned to Relieve Known Overcrowding

NONE

see next page

NOTES:

[1] School's ID code.

[2] School's name

[3] School's operating capacity. The maximum number of students the school can serve with the school's classroom utilization. Excludes capacity allocated to charter co-locations. Includes capacity for dual language and magnet programs.

[4] The total number of students living in the school's attendance area and who are eligilble to be served by school programs as of the start of the school year. Includes resident students enrolled at any dual language or on-site magnet centers.

[5] The number of all students actually attending all programs at the school at the start of the reported school year. Includes all dual language and magnet students.

[6] Reported school year seating overage or (shortage): equal to (capacity) - (resident enrollment).

[7] Reported school year overcrowding status of school. The school is overcrowded if any of these conditions exist:

-There is a seating shortage.

-There is a seating overage of LESS THAN or EQUAL TO a margin of 20 seats.

[8] Projected 5-year total number of students living in the school's attendance area and who are eligible to be served by school programs as of the start of the school year. Includes resident students enrolled at any dual language or on-site magnet centers.

[9] Projected seating overage or (shortage): equal to (capacity) - (projected enrollment).

[10] Projected overcrowding status of school. The school will be considered overcrowded in the future if any of these conditions exist:

-There is a seating shortage in the future.

-There is a seating overage of LESS THAN or EQUAL TO a margin of 20 seats in the future.

° Magnet Schools with Resident Kindergarten Enrollment: Resident enrollment is reported for Kindergarten only. Actual enrollment is reported for all grades in school. Projected data not reported.

* Enrollment is by application only.

LOS ANGELES UNIFIED SCHOOL DISTRICT
Facilities **S**ervices **D**ivision

LOC. CODE: 8387 **COST CENTER:** 1838701

SUBJECT: NAME CHANGE OF ROBERT LOUIS STEVENSON MIDDLE SCHOOL TO ROBERT LOUIS STEVENSON COLLEGE and CAREER PREPARATORY MIDDLE SCHOOL EFFECTIVE SEPTEMBER 1, 1974 (UPDATED 7-1-1994; 7-1-1995; 7-1-1997; 7-1-2008; 7-1-2010; 7-1-2015) (NAME CHANGE 7-1-2018).

This name change does not change the intent of the attendance area boundary as it was approved for September 1, 1974 (updated 7-1-1994, 7-1-1995, 7-1-1997, 7-1-2008, 7-1-2010, 7-1-2015). The description starts at the most northwesterly corner and follows the streets in clockwise order. Boundaries are on the center of the street unless otherwise noted.

This is an official copy for your file.

ROBERT LOUIS STEVENSON COLLEGE and CAREER PREPARATORY SCHOOL

(GRADES 6 - 8)

FIRST STREET * DITMAN AVENUE * THIRD STREET * EASTERN AVENUE * UNION PACIFIC RAILROAD * LOS ANGELES CITY BOUNDARY * GRANDE VISTA AVENUE * LORENA STREET * EIGHTH STREET * ANGELES CITY BOUNDARY * GRANDE VISTA AVENUE * LORENA STREET * EIGHTH STREET * GRANDE VISTA AVENUE AND EXTENSION (BOTH SIDES EXCLUDED) * SANTA ANA FREEWAY * FRESNO STREET AND EXTENSIONS (BOTH SIDES EXCLUDED) * WHITTIER BOULEVARD * EUCLID AVENUE * FOURTH STREET * LORENA STREET.

(GRADES 7 - 8)

AREA I

FIRST STREET * LORENA STREET * FOURTH STREET * EVERGREEN AVENUE.

AREA II

WHITTIER BOULEVARD * FRESNO STREET AND EXTENSIONS (BOTH SIDES) * SANTA ANA FREEWAY * GRANDE VISTA AVENUE AND EXTENSION (BOTH SIDES) * EIGHTH STREET * LORENA STREET * GRANDE VISTA AVENUE TO EIGHTH STREET * EIGHTH STREET * EUCLID AVENUE.

OPTIONAL: STEVENSON COLLEGE and CAREER PREPARATORY AND HOLLENBECK MIDDLE SCHOOLS

(GRADES 7 - 8)

SANTA MONICA FREEWAY * POMONA FREEWAY * EIGHTH STREET AND EXTENSION * GRANDE VISTA AVENUE * LOS ANGELES CITY BOUNDARY * LOS ANGELES RIVER.

For assistance, please call Master Planning & Demographics, Facilities Services Division, at (213) 241-8044.

APPROVED: MARK HOVATTER, Chief Facilities Executive, Facilities Services Division

DISTRIBUTION:

School
Transportation Branch
Master Planning and Demographics
Office of Environmental Health and Safety
Department of Transportation, City of L. A.

LOS ANGELES UNIFIED SCHOOL DISTRICT
Facilities **S**ervices **D**ivision

LOC. CODE: 8679 **COST CENTER:** 1867901

SUBJECT: UPDATE BOUNDARY DESCRIPTION FOR JAMES A. GARFIELD HIGH SCHOOL EFFECTIVE JULY 1, 2013 (UPDATE 7-1-2014; 7-1-2015).

Reconfiguration has changed the grade levels serviced by this school and the boundary description has been updated to reflect this change. This updating does not change the intent of the boundary as it was approved on July 1, 2013 (update 7-1-2014). The description starts at the most northwesterly corner and follows the streets in clockwise order. Boundaries are on the center of the street unless otherwise noted.

This is an official copy for your file.

EASTSIDE ACADEMIC ZONE of CHOICE

(GRADES 9 - 12)

SAN BERNARDINO FREEWAY * LOS ANGELES CITY BOUNDARY TO ALMA AVENUE AT ATWOOD STREET * ALMA AVENUE TO AND EXCLUDING 1200 ALMA AVENUE * ALMA AVENUE (BOTH SIDES) * A LINE EASTERLY EXCLUDING 1201 HICKS AVENUE * HICKS AVENUE * POMEROY STREET * GAGE AVENUE * EDISON POWER LINE * GERAGHTY AVENUE (BOTH SIDES) TO THE INTERSECTION OF GERAGHTY AVENUE AND MEISNER STREET * A LINE SOUTHERLY INCLUDING BOTH SIDES OF GERAGHTY AVENUE * DOBINSON STREET (BOTH SIDES) * BONNIE BEACH PLACE (BOTH SIDES) * SNOW DRIVE AND EXTENSION EXCLUDING 1139 AND 1142 VAN PELT AVENUE TO AND EXCLUDING 1139 AND 1142 EASTERN AVENUE * EASTERN AVENUE (BOTH SIDES) * SHERIFF ROAD (BOTH SIDES) * LOS ANGELES UNIFIED SCHOOL DISTRICT BOUNDARY * UNION PACIFIC RAILROAD * INDIANA STREET AND EXTENSION * MALABAR STREET * EVERGREEN AVENUE * BOULDER STREET * MOTT STREET * MALABAR STREET * FICKETT STREET AND EXTENSION.

OPTIONAL: EASTSIDE ACADEMIC ZONE AND NORTHEAST ACADEMIC ZONE

SAN BERNARDINO FREEWAY * HERBERT AVENUE AND EXTENSION * CITY TERRACE DRIVE * VAN PELT AVENUE * WOOLWINE DRIVE * LUELLA DRIVE (BOTH SIDES EXCLUDED) * EASTERN AVENUE (BOTH SIDES) TO AND INCLUDING 1139 AND 1142 EASTERN AVENUE * SNOW DRIVE AND EXTENSION INCLUDING 1139 AND 1142 VAN PELT AVENUE TO BONNIE BEACH PLACE * BONNIE BEACH PLACE (BOTH SIDES EXCLUDED) * DOBINSON STREET (BOTH SIDES EXCLUDED) * GERAGHTY AVENUE (BOTH SIDES EXCLUDED) TO MEISNER STREET * A LINE SOUTHERLY EXCLUDING BOTH SIDES OF GERAGHTY AVENUE TO THE EDISON POWER LINE * EDISON POWER LINE * GAGE AVENUE * POMEROY STREET * HICKS AVENUE * A LINE WESTERLY, FROM AND INCLUDING 1201 HICKS AVENUE * ALMA AVENUE (BOTH SIDES EXCLUDED) TO AND INCLUDING 1200 ALMA AVENUE * ALMA AVENUE * ATWOOD STREET * LOS ANGELES CITY BOUNDARY.

Eastside Academic Zone of Choice: six schools or educational programs that students will be able to make application to when resident to the Eastside Academic Zone of Choice. For the 2015-2016 school year students in grades 9 - 12 have six choices: James A. Garfield High School; Torres High School programs East Los Angeles Renaissance Academy, Engineering & Technology Academy, Humanitas Academy of Art & Technology, Social Justice Leadership Academy; and Hilda L. Solis Learning Academy.

For assistance, please call Master Planning & Demographics, Facilities Services Division, at (213) 241-8044.

APPROVED: MARK HOVATTER, Chief Facilities Executive, Facilities Services Division

DISTRIBUTION:
School
Transportation Branch
Master Planning and Demographics
Office of Environmental Health and Safety
Department of Transportation, City of L. A.

Dear Sherrie Cruz,

Please find below our responses to your questions:

1. The proposed project is located in the Unincorporated East Los Angeles - Northwest study area established as part of the 2016 Los Angeles Countywide Comprehensive Parks and Recreation Needs Assessment. The following table lists the parks in the study area:

Park Name	Address	Size (acres)	Classification	Park Features	Approximate Distance to Project (miles)
Ruben F Salazar Park	3864 Whittier Boulevard, Los Angeles, CA 90023	5.82	Neighborhood	The park includes a gymnasium, swimming pool, multi-purpose buildings, a senior center, children's play areas, sports courts, picnic areas, restrooms, multipurpose sports fields, walking paths, fitness zones, and two parking lots.	0.28
Belvedere Community Regional Park	4914 East Cesar Chavez Avenue Los Angeles, CA 90022	37.07	Community Regional	The park includes multipurpose sports fields, several community and recreation buildings, a skatepark, a swimming pool, children's play areas, sports courts, picnic areas, restrooms, walking paths, fitness zones, a splash pad, and three parking lots.	2.32
Eugene A. Obregon Park	4021 E. First St. Los Angeles, CA 90063	9.84	Neighborhood	The park includes a gymnasium, swimming pool, a community center, children's play areas, a sports court, picnic areas, restrooms, multipurpose sports fields, walking paths, fitness zones, and two parking lots.	1.4
City Terrace Park	1126 North Hazard Avenue East Los Angeles, CA 90063	15.45	Community	The park includes a gymnasium, swimming pool, a community center, children's play areas, sports courts, picnic areas, restrooms, a splash pad, multipurpose sports fields,	2..36

				walking paths, and one parking lot.	
Parque de los Suenos	1333 South Bonnie Beach Place Los Angeles, CA 90032	1.61	Pocket	The park includes sports courts, children's play areas, walking paths, picnic areas, restrooms and two parking lots	0.5

2. Ruben F Salazar Park Parkwide Modernization Project: The project will improve Salazar Park in the unincorporated community of East Los Angeles by building a new cultural and arts plaza with performance stage and multi-purpose event space, a splash pad with seating and shade, fitness zones with exercise stations, shade structures for events and gatherings, public art of historical significance, solar lighting, native drought-tolerant landscaping throughout the park and improving walking and jogging paths.

3. The Unincorporated East Los Angeles - Northwest study area has been determined to have a park need level of Very High. The study area has approximately 1 acre of parkland per 1,000 residents, which is much lower than the countywide average of 3.3 acres of parkland per 1,000 residents and the General Plan goal of 4 acres of local parkland per 1,000 residents. In total, there are 69.8 acres of parkland located throughout the community. About 45% of Unincorporated East Los Angeles - Northwest residents can walk to a park within walking distance (half-mile) of a park compared to the countywide average of 49%.

   Please refer to the study area report for more details: https://lacountyparkneeds.org/wp-content/root/FinalReportAppendixA/StudyArea_070.pdf

Thank you,

Jui Ing Chien
County of Los Angeles
Department of Parks and Recreation
1000 S. Fremont Ave, Unit #40
Building A-9 West, 3rd Floor
Alhambra, CA 91803
Tel: (626) 588-5317
Fax: (626) 458-8346
E-mail: jchien@parks.lacounty.gov

SKYE PATRICK
Library Director

LA COUNTY LIBRARY

November 20, 2023

CAJA Environmental Services, LLC
9410 Topanga Canyon Blvd., Suite 101
Chatsworth, CA 91311

REQUEST FOR LIBRARY SERVICES INFORMATION FOR THE EXTERA PUBLIC SCHOOLS PROJECT

Dear Ms. Cruz:

This is in response to your request for library services information regarding the Extera Public Schools Project which proposes the development of a charter school with 22 classrooms, offices, outdoor eating areas and play areas, and a multi-purpose room. Attached is a report of LA County Library's analysis of the development and the projected impact to services.

If you have any questions or need additional information, please contact Elsa Muñoz at (562) 940-8450 or EMunoz@library.lacounty.gov.

Very best,

JPina for
Skye Patrick
County Librarian

SP:YP:GR:EM

c: Grace Reyes, Administrative Deputy, LA County Library
Jesse Walker-Lanz, Assistant Director, Public Services, LA County Library
Ting Fanti, Departmental Finance Manager, Budget and Fiscal Services, LA County Library

https://lacounty.sharepoint.com/sites/publiclibrary/docs/staffservices/Documents/EIR/Extera Public Schools Project/Extera Public Schools Project response.doc

LA COUNTY LIBRARY
EXTERA PUBLIC SCHOOLS PROJECT

1. **Which libraries would serve the proposed project? Please provide:**
    a. **Name and address**
    b. **Size (Square feet)**
    c. **Number of volumes and circulation**
    d. **Staffing levels**
    e. **Current service population and future service population**
    f. **Whether there are planned improvements to add capacity through expansion**

The project area is served by the El Camino Real Library, located at 4264 E. Whittier Boulevard, Los Angeles, CA, 90023, which is 0.6 miles from the project site.

El Camino Real Library has a facility size of 5,529 square feet, a collection of 26,644 books and other library materials, and 11 public access computers (as of June 30, 2023). El Camino Real Library staffing includes 2 full-time staff, and 5 part-time staff. There are no volunteers that regularly assist in the running of the library.

The library serves the residents of unincorporated East Los Angeles area of the County of Los Angeles (County), a population of 22,979. Project implementation will not increase service population since it is not a residential project, and therefore will not create the need for added capacity or expansion of library facilities.

2. **What are the current desired standards of services (i.e., facility size, number of volumes, etc.) for population?**

LA County Library service level guidelines entail a minimum of 0.50 gross square foot of library facility space per capita, 3.0 items (books and other library materials) per capita for regional libraries and 2.75 items per capita for community libraries, and 1.0 public access computer per 1,000 people served.

El Camino Real Library is a community library and based on these guidelines does not currently meet the minimum requirements for the population of this service area. The current deficiency is 5,961 sq. ft. of facility space, 36,549 collection items, and 12 public access computers.

3. **Are there plans to build any new libraries that would serve the project area?**

Currently, LA County Library does not have plans for improvements or new construction of library facilities in the El Camino Real Library service area.

MEMORANDUM

To:	Los Angeles County Public Works	Date:	January 3, 2024
From:	David S. Shender, P.E. Jason A. Shender, AICP Linscott, Law & Greenspan, Engineers	LLG Ref:	1-22-4500-1
Subject:	**Extera Public School – Transportation Impact Analysis Screen-Out**		

LINSCOTT LAW & GREENSPAN
engineers

Engineers & Planners
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Transportation
Parking

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Irvine
San Diego

This memorandum has been prepared by Linscott, Law & Greenspan, Engineers ("LLG") to demonstrate that the proposed Extera Public School project ("Project") located at 1059 S. Gage Avenue within the East Los Angeles Community Plan Area and Community Standards District of unincorporated Los Angeles County ("Project Site") screens out from a Transportation Impact Analysis ("TIA") per Section 3.1.2.3 of the *Los Angeles County Public Works Transportation Impact Analysis Guidelines*[1] ("TIA Guidelines"). The Project proposes the development and construction of a new permanent public charter school facility accommodating a maximum enrollment of 525 students. Specifically, the Project proposes to serve 336 students in Transitional Kindergarten ("TK") through 5th grades and 189 students in the 6th through 8th grades. The Project Site location and general vicinity are shown in ***Figure 1***. The site plan for the Project is illustrated in ***Figure 2***.

Briefly, the Project will result in a less than significant transportation impact based on the TIA Guidelines. The Project is located within one-half mile of an existing stop along a High-Quality Transit Corridor ("HQTC") and is located within a High-Quality Transit Area ("HQTA") per *Connect SoCal*[2], the Regional Transportation Plan/Sustainable Communities Strategy ("RTP/SCS") of the Southern California Association of Governments ("SCAG"). This memorandum provides additional details to demonstrate that the Project screens out from a TIA.

Existing Setting

As noted above, the Project Site is located at 1059 S. Gage Avenue (Assessor Parcel Nos. 5239-012-009 and 5239-012-028) within the East Los Angeles Community Plan Area and Community Standards District of unincorporated Los Angeles County. The Project Site is located within the County's First Supervisorial District. The Project Site is occupied by the Oasis of Mercy Catholic Church ("Church") and is improved with two buildings and a surface parking lot. Specifically, the Project Site is improved with a two-story building providing 18,309 square feet of floor area

[1] *Los Angeles County Public Works Transportation Impact Analysis Guidelines,* Los Angeles County Public Works, July 2020.
[2] *Connect SoCal – The 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy of the Southern California Association of Governments,* Southern California Association of Governments, September 3, 2020.

("Building 1") and a one-story building providing 6,993 square feet of floor area ("Building 2"). The Project Site is generally bound by single-family residences to the north and south, Eastman Avenue to the west, and Gage Avenue to the east.

Project Description

The Project proposes to (i) renovate Building 2, including the removal of an existing 509 square-foot covered courtyard, and add a new 2,265 square-foot outdoor lunch patio and (ii) demolish and construct a new Building 1 in a different location on the Project Site. The new two-story Building 1 will provide 29,676 square feet of floor area (inclusive of a new 6,500 square-foot concrete deck covering the onsite parking spaces). The renovated Building 2 will provide a total of 8,749 square feet in floor area. In total, the Project will provide 38,425 square feet of total building floor area.

The Project consists of a new permanent public charter school facility serving a maximum enrollment of 525 students. Specifically, the Project proposes to serve 336 students in TK through 5th grades and 189 students in the 6th through 8th grades. The Project will include 22 classrooms, offices, outdoor eating and play areas, and a multi-purpose room. The Project proposes to provide 38 parking spaces within an onsite surface parking lot. Construction and occupancy of the Project is proposed to be completed by August 2025. As shown on *Figure 2*, vehicular access to the Project Site will be provided via one inbound-only driveway along the west side of Gage Avenue and one outbound-only driveway along the east side of Eastman Avenue.

Project Trip Generation

In conjunction with the County's TIA Guidelines, a vehicular trip generation forecast has been prepared using trip rates provided in the Institute of Transportation Engineers' ("ITE") *Trip Generation Manual*.[3] The following trip generation rates were used to forecast the traffic volumes expected to be generated by the Project land use components:

- Charter Elementary School: ITE Land Use Code 536 (Charter Elementary School) trip generation average rates were used to forecast the traffic volumes expected to be generated by the charter elementary school component of the Project during the weekday AM and PM peak hours of generator, as well as on a daily basis.

[3] Institute of Transportation Engineers, *Trip Generation Manual*, 11th Edition, Washington, D.C., 2021.

- Charter Middle School: ITE Land Use Code 522 (Middle School/Junior High School) trip generation average rates were used to forecast the traffic volumes expected to be generated by the charter middle school component of the Project on a typical weekday.

- Charter Middle School: ITE Land Use Code 538 (Charter School K-12) trip generation average rates were used to forecast the traffic volumes expected to be generated by the charter middle school component of the Project during the weekday AM and PM peak hours of generator.

In addition to the trip generation forecasts for the proposed Project (which are essentially an estimate of the number of vehicles that could be expected to enter and exit the Project Site access points), an adjustment was made to the trip generation forecast based on the Project Site's existing land use. The existing land use to be removed is 25,302 square feet of church floor area, which is currently operational. ITE Land Use Code 560 (Church) trip generation average rates were used to estimate the trip reduction related to the existing use from the Project Site.

While it is anticipated that some students and employees will utilize public transportation for travel to and from the Project Site, a transit adjustment was not made to provide a conservative forecast of the Project's trip generation.

Table 1 attached to this memorandum provides the trip generation forecast for the Project. As shown in *Table 1*, the Project on a typical weekday is forecast to result in 827 net new daily trips (e.g., 414 inbound trips, 413 outbound trips), 530 net new AM peak hour trips (280 inbound trips and 250 outbound trips), and 368 net new PM peak hour trips (183 inbound trips and 185 outbound trips).

Vehicle Miles Traveled Analysis

The State of California Governor's Office of Planning and Research ("OPR") issued proposed updates to the CEQA Guidelines in November 2017 and an accompanying technical advisory guidance in April 2018 ("OPR *Technical Advisory*") that amends the Appendix G question for transportation impacts to delete reference to vehicle delay and level of service and instead refer to Section 15064.3, subdivision (b)(1) of the CEQA Guidelines asking if the project will result in a substantial increase in vehicle miles traveled ("VMT"). Section 15064.3, subdivision (b)(1) states the following:

- Development Projects. Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop

along an existing high-quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be considered to have a less than significant transportation impact.

The California Natural Resources Agency certified and adopted the CEQA Guidelines in December 2018, which are now in effect. Accordingly, Los Angeles County Public Works ("LACPW") has adopted significance criteria for transportation impacts based on VMT for land use projects and plans in accordance with the amended Appendix G question:

- For a development project, would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)(1)?

For development projects, the intent of this question is to assess whether a proposed project or plan adequately reduces total VMT. LACPW provides the following guidance regarding screening and impact criteria to address this question. The following screening criteria and impact criteria are only meant to serve as guidance for projects to determine whether a TIA should be performed, and the criteria to determine if a project generates a significant transportation impact. The criteria shall be determined on a project-by-project basis as approved by LACPW.

Proximity to Transit Based Screening Criteria

Per Section 3.1.2.3 of the TIA Guidelines, if a project is located near a Major Transit Stop or HQTC, the following question should be answered:

- Is the project located within a one-half mile radius of a Major Transit Stop or an existing stop along a HQTC?

Per the California Public Resources Code Section 21155(b), a HQTC is defined as a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours. The Project is located within 1,000 feet of eastbound and westbound transit stops along the Whittier Boulevard corridor. The Whittier Boulevard corridor is served by Metro Local Line 18 ("Metro 18"). Metro 18 provides eastbound and westbound service from the Wilshire & Western transit stop in the Koreatown area of the City of Los Angeles to the Montebello Metrolink Station in the City of Montebello. A radius map depicting the locations of the Project Site and Firestone Station is shown in ***Figure 3***. A route map and schedule for Metro 18 is provided in ***Appendix A***.

Page 83 of the *Connect SoCal* Transit Technical Appendix[4] describes the relevant methodology for determining peak period bus service intervals (also called frequency). SCAG utilized the peak commute periods defined within the SCAG regional travel demand model (i.e., the weekday morning peak period is from 6:00 AM to 9:00 AM, and the afternoon peak period is from 3:00 PM to 7:00 PM). The peak frequency is calculated by dividing 420 minutes (i.e., the total seven-hour peak commute period converted to minutes) by the total population of bus trips occurring during the combined peak periods. Bus lines must have an average service frequency of 15 minutes or less over the seven-hour period to meet the HQTC criteria.

To identify the number of bus trips occurring during the peak commute hours, the total number of trips from the line's point of origin is looked at, and a trip is included if its median time falls within the AM or PM peak period. To calculate the median time, the time at the trip origin is subtracted from the arrival time at the final station, divided by two, and then added to the origin time. For example, for a westbound Metro 18 trip departing the Montebello Metrolink Station at 6:16 PM and arriving at Wilshire & Western at 7:38 PM, the total trip time is 82 minutes, therefore the median time would be 6:57 PM. This sample trip would therefore be included as occurring within the PM peak period.

An analysis for Metro 18 has been provided based on the current schedule provided on Metro's website. The peak hour headways and service frequency (in minutes), are summarized in ***Table 2***, attached to this memorandum. A route map and schedule for Metro Local Line 18 is provided in *Appendix A*. Eligible trips are boxed in red on the schedules provided in *Appendix A*. As shown in *Table 2*, the average service frequency during the peak periods is 6.7 minutes for the eastbound direction and 6.8 minutes for the westbound direction. The average service frequency calculations are as follows:

- Eastbound Direction: 420 minutes (i.e., the total seven-hour peak commute period converted to minutes) / 25 AM Peak Hour Trips + 38 PM Peak Hour Trips = 6.7-minute average service frequency.

- Westbound Direction: 420 minutes / 28 AM Peak Hour Trips + 34 PM Peak Hour Trips = 6.8-minute average service frequency.

Therefore, Metro 18's current service frequency meets the SCAG threshold of 15 minutes or less in each direction. As a result, Whittier Boulevard currently qualifies as a HQTC.

[4] https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocal_transit.pdf?1606002122

It is noted that while the Wilshire & Western transit stop and the Montebello Metrolink Station are the start and end points for Metro 18, not all trips start or end at these stations. However, all Metro 18 trips serve the eastbound and westbound stops within the half-mile radius of the Project Site, and therefore, the peak hour headways and average service frequencies shown in *Table 2* are applicable.

According to the TIA Guidelines, if the answer to the question on Page 4 is yes, then the following subsequent questions should be considered. If the answer to all four questions is no, further analysis is not required, a less than significant determination can be made, and a TIA does not have to be prepared.

- Does the project have a Floor Area Ratio less than 0.75?

The Project's overall lot area is 50,994 square feet. The Project's building floor area was calculated per Section 22.04.050(E) of the Los Angeles County Code of Ordinances ("County Code"). Per Section 22.04.050(E) of the County Code, the first floor of the new Building 1 will provide 17,876 square feet of floor area and the second floor will provide 11,800 square feet of floor area. Building 2 will provide 8,749 square feet of floor area. The overall gross floor area of the building is 38,425 square feet, which results in a Floor Area Ratio ("FAR") of 0.754.

- Does the project provide more parking than required by the County Code?

Per Table 22.112.070-A of the County Code, the parking requirements for the Project are shown in ***Table 3*** below.

Table 3
Los Angeles County Code of Ordinances
Required Parking Spaces Calculation

Use	Units	Quantity	Parking Rate	Required Spaces
School	Classrooms	22	1 space per classroom	22
Largest Assembly Space	Occupants	160	1 space per 5 occupants	32
Subtotal Required Parking Spaces				**54**
TOTAL PARKING SPACES PROVIDED				**38**

As summarized in *Table 3* above, the Project will provide a total of 38 parking spaces.

Per Table 22.112.100-A of the County Code, the bicycle parking requirements for the Project are shown in ***Table 4*** below.

Table 4
Los Angeles County Code of Ordinances
Required Bicycle Parking Calculation

Type	Units	Quantity	Parking Rate	Required Spaces
Short-Term	Classrooms	22	4 spaces per classroom	88
Long-Term	Classrooms	22	1 space per 10 classrooms	2

Additionally, as summarized in *Table 4* above, the Project is required to provide 88 short-term bicycle parking spaces and two long-term bicycle parking spaces. The Project will provide bicycle parking onsite in accordance with Table 22.112.100-A of the County Code.

- Is the project inconsistent with the SCAG RTP/SCS?

The 2020-2045 SCAG RTP/SCS entitled *Connect SoCal,* was adopted by SCAG in September 2020. "*Connect SoCal* is a long-range visioning plan that builds upon and expands land use and transportation strategies established over several planning cycles to increase mobility options and achieve a more sustainable growth pattern. It charts a path toward a more mobile, sustainable and prosperous region by making connections between transportation networks, between planning strategies and between the people whose collaboration can improve the quality of life for Southern Californians."

The Project is consistent with the SCAG RTP/SCS. *Connect SoCal* prioritizes growth near destinations and mobility options that facilitate multimodal access to work, educational and other destinations. Additionally, *Connect SoCal* encourages infill development, and development in Priority Growth Areas, such as HQTAs. As the Project is an infill development located within one-half mile of transit stops along a HQTC, it will facilitate multimodal transportation. Additionally, the Project will provide bicycle parking facilities onsite, and is located within an area with excellent pedestrian infrastructure. Therefore, the Project is consistent with SCAG's greenhouse gas reduction goals, and the overall goals of *Connect SoCal*. Chapter 3 of *Connect SoCal* provides the goals and visions of the plan. Relevant references from *Connect SoCal* are attached in ***Appendix B***.

Conclusions

This memorandum has been prepared to demonstrate that the proposed Extera Public School project located at 1059 S. Gage Avenue within the East Los Angeles Community Plan Area and Community Standards District of unincorporated Los Angeles County screens out from a TIA per Section 3.1.2.3 of the County's TIA Guidelines. The conclusions are as follows:

- The Project consists of a new permanent public charter school facility serving a maximum enrollment of 525 students. Specifically, the Project proposes to serve 336 students in TK through 5th grades and 189 students in the 6th through 8th grades. The Project will include 22 classrooms, offices, outdoor eating and play areas, and a multi-purpose room. The Project proposes to provide 38 parking spaces within an onsite surface parking lot. Construction and occupancy of the Project is proposed to be completed by August 2025.

- The Project is forecast to generate 827 net new daily trips, 530 net new AM peak hour trips, and 368 net new PM peak hour trips during a typical weekday.

- The County's TIA Guidelines provide screening criteria for purposes of assessing whether a VMT analysis is required to evaluate potential transportation impacts related to development projects. The Project is located within 1,000 feet of eastbound and westbound transit stops along the Whittier Boulevard corridor, which are served by Metro 18, a local transit line providing service between the Koreatown area of the City of Los Angeles and the City of Montebello. Based on the Project's proximity to public transit and satisfying the related screening criteria provided in the County's TIA Guidelines, it is determined that the Project is presumed to have a less than significant transportation impact. No further analysis is required.

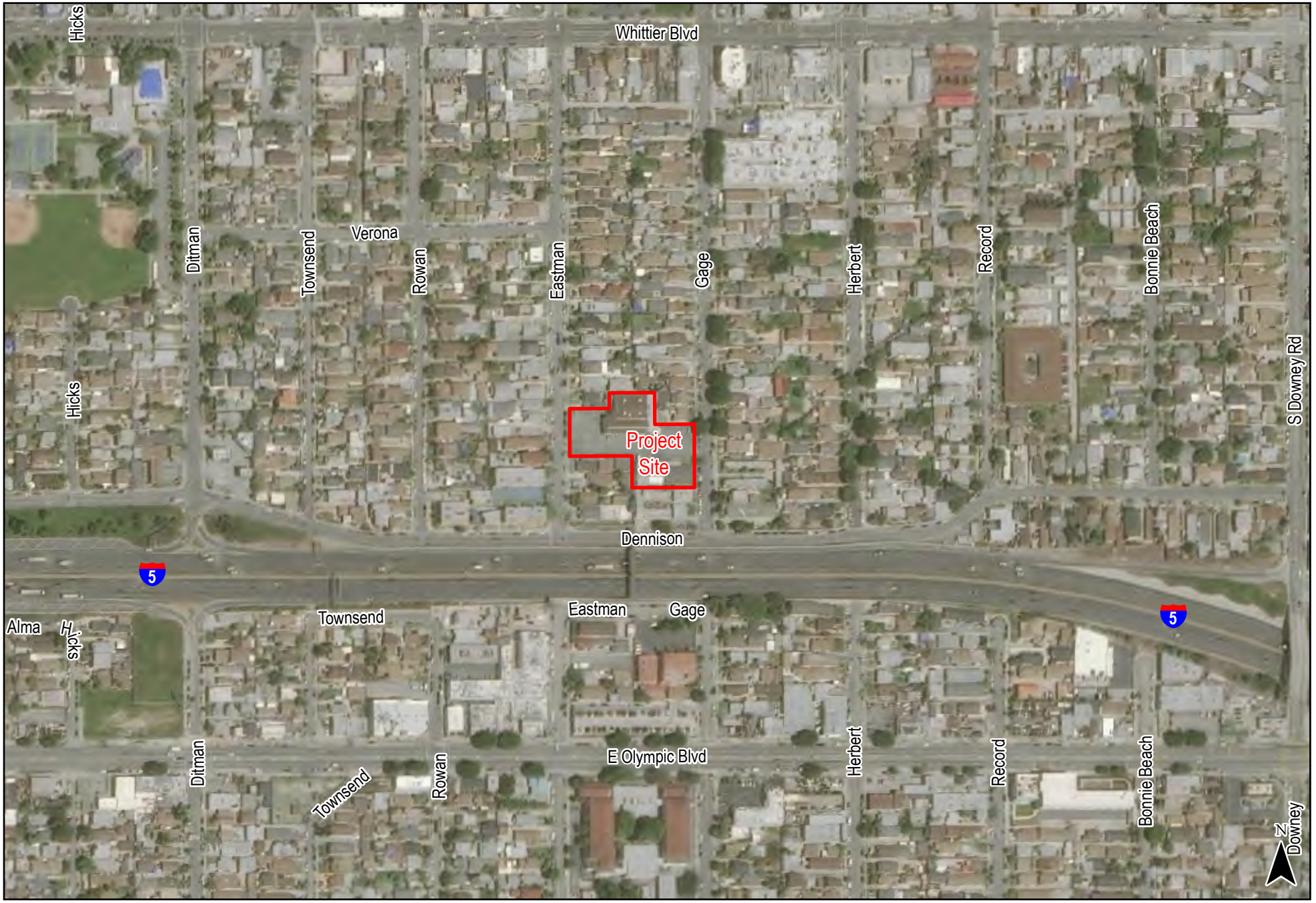

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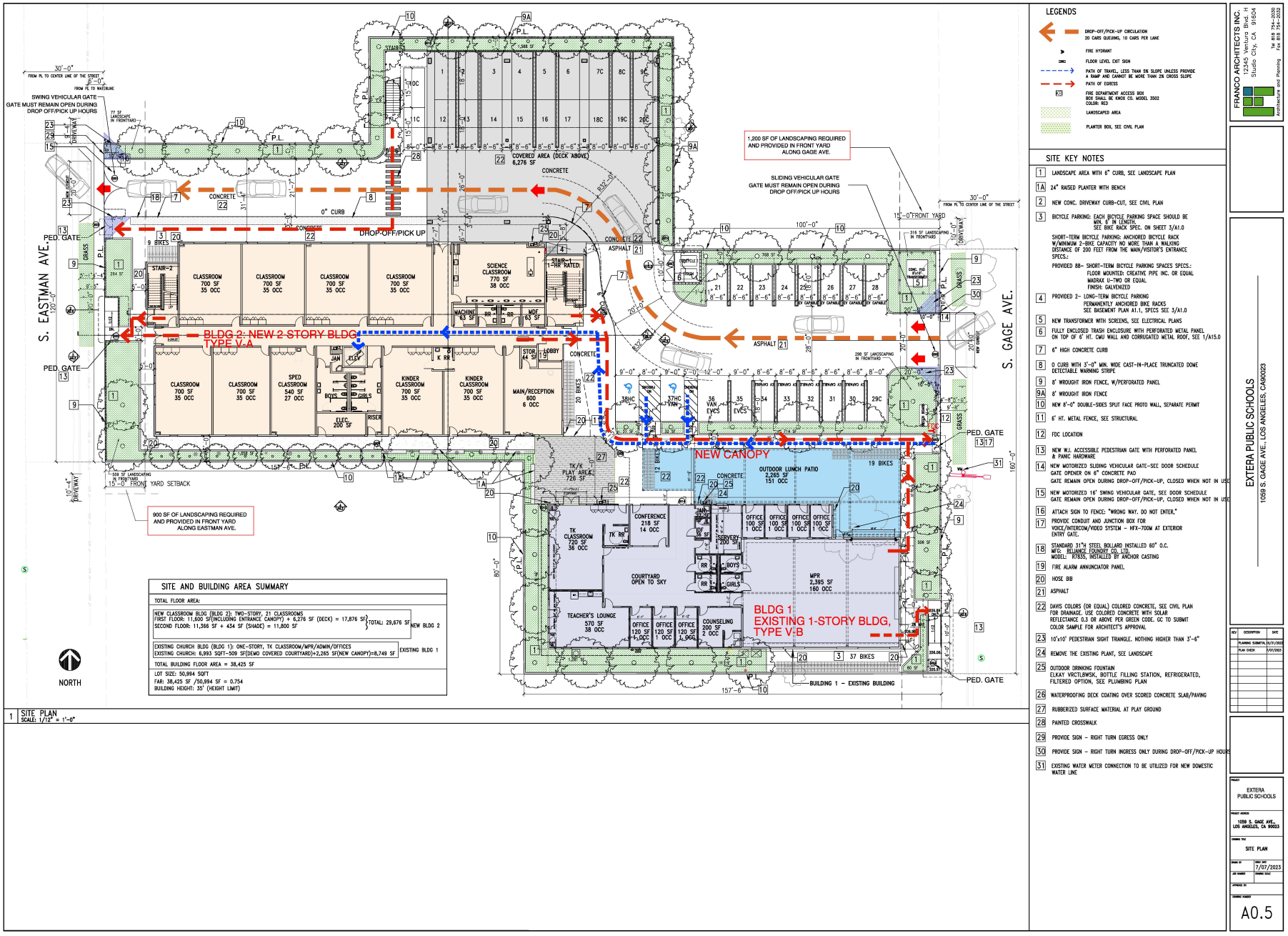
Figure 1
Vicinity Map

Extera Public School



LEGENDS

- DROP-OFF/PICK-UP CIRCULATION — 20 CARS QUEUING, 10 CARS PER LANE
- FIRE HYDRANT
- FLOOR LEVEL EXIT SIGN
- PATH OF TRAVEL, LESS THAN 5% SLOPE UNLESS PROVIDE A RAMP AND CANNOT BE MORE THAN 2% CROSS SLOPE
- PATH OF EGRESS
- FIRE DEPARTMENT ACCESS BOX — BOX SHALL BE KNOX CO. MODEL 3502 COLOR: RED
- LANDSCAPED AREA
- PLANTER BOX, SEE CIVIL PLAN

SITE KEY NOTES

1. LANDSCAPE AREA WITH 6" CURB, SEE LANDSCAPE PLAN
1A. 24" RAISED PLANTER WITH BENCH
2. NEW CONC. DRIVEWAY CURB-CUT, SEE CIVIL PLAN
3. BICYCLE PARKING: EACH BICYCLE PARKING SPACE SHOULD BE MIN. 6' IN LENGTH. SEE BIKE RACK SPEC. ON SHEET 3/A1.0
   SHORT-TERM BICYCLE PARKING: ANCHORED BICYCLE RACK W/MINIMUM 2-BIKE CAPACITY NO MORE THAN A WALKING DISTANCE OF 200 FEET FROM THE MAIN/VISITOR'S ENTRANCE
   SPECS.:
   PROVIDED 88– SHORT-TERM BICYCLE PARKING SPACES SPECS.: FLOOR MOUNTED: CREATIVE PIPE INC. OR EQUAL MADRAX U-TWO OR EQUAL FINISH: GALVENIZED
4. PROVIDED 2– LONG-TERM BICYCLE PARKING PERMANENTLY ANCHORED BIKE RACKS SEE BASEMENT PLAN A1.1, SPECS SEE 3/A1.0
5. NEW TRANSFORMER WITH SCREENS, SEE ELECTRICAL PLANS
6. FULLY ENCLOSED TRASH ENCLOSURE WITH PERFORATED METAL PANEL ON TOP OF 6' HT. CMU WALL AND CORRUGATED METAL ROOF, SEE 1/A15.0
7. 6" HIGH CONCRETE CURB
8. 0 CURB WITH 3'–0" MIN. WIDE CAST-IN-PLACE TRUNCATED DOME DETECTABLE WARNING STRIPE
9. 8' WROUGHT IRON FENCE, W/PERFORATED PANEL
9A. 8' WROUGHT IRON FENCE
10. NEW 8'–0" DOUBLE-SIDES SPLIT FACE PROTO WALL, SEPARATE PERMIT
11. 6' HT. METAL FENCE, SEE STRUCTURAL
12. FDC LOCATION
13. NEW W.I. ACCESSIBLE PEDESTRIAN GATE WITH PERFORATED PANEL & PANIC HARDWARE
14. NEW MOTORIZED SLIDING VEHICULAR GATE–SEE DOOR SCHEDULE GATE OPENER ON 6" CONCRETE PAD
    GATE REMAIN OPEN DURING DROP–OFF/PICK–UP, CLOSED WHEN NOT IN USE
15. NEW MOTORIZED 16' SWING VEHICULAR GATE, SEE DOOR SCHEDULE GATE REMAIN OPEN DURING DROP–OFF/PICK–UP, CLOSED WHEN NOT IN USE
16. ATTACH SIGN TO FENCE: "WRONG WAY. DO NOT ENTER."
17. PROVIDE CONDUIT AND JUNCTION BOX FOR VOICE/INTERCOM/VIDEO SYSTEM – HFX–700M AT EXTERIOR ENTRY GATE.
18. STANDARD 31"H STEEL BOLLARD INSTALLED 60" O.C. MFG: RELIANCE FOUNDRY CO. LTD. MODEL: R7835, INSTALLED BY ANCHOR CASTING
19. FIRE ALARM ANNUNCIATOR PANEL
20. HOSE BIB
21. ASPHALT
22. DAVIS COLORS (OR EQUAL) COLORED CONCRETE, SEE CIVIL PLAN FOR DRAINAGE. USE COLORED CONCRETE WITH SOLAR REFLECTANCE 0.3 OR ABOVE PER GREEN CODE. GC TO SUBMIT COLOR SAMPLE FOR ARCHITECT'S APPROVAL
23. 10'x10' PEDESTRIAN SIGHT TRIANGLE. NOTHING HIGHER THAN 3'–6"
24. REMOVE THE EXISTING PLANT, SEE LANDSCAPE
25. OUTDOOR DRINKING FOUNTAIN ELKAY VRCTLRWSK, BOTTLE FILLING STATION, REFRIGERATED, FILTERED OPTION, SEE PLUMBING PLAN
26. WATERPROOFING DECK COATING OVER SCORED CONCRETE SLAB/PAVING
27. RUBBERIZED SURFACE MATERIAL AT PLAY GROUND
28. PAINTED CROSSWALK
29. PROVIDE SIGN – RIGHT TURN EGRESS ONLY
30. PROVIDE SIGN – RIGHT TURN INGRESS ONLY DURING DROP–OFF/PICK–UP HOURS
31. EXISTING WATER METER CONNECTION TO BE UTILIZED FOR NEW DOMESTIC WATER LINE

FRANCO ARCHITECTS INC.
12345 Ventura Blvd. H
Studio City, CA 91604
Tel 818 754-2030
Fax 818 754-2033
Architecture and Planning

EXTERA PUBLIC SCHOOLS
1059 S. GAGE AVE., LOS ANGELES, CA90023

REV	DESCRIPTION	DATE
	PLANNING SUBMITTAL	6/21/2023
	PLAN CHECK	7/07/2023

PROJECT: EXTERA PUBLIC SCHOOLS
PROJECT ADDRESS: 1059 S. GAGE AVE., LOS ANGELES, CA 90023
DRAWING TITLE: SITE PLAN
DRAWN BY:
DATE: 7/07/2023
JOB NUMBER:
DRAWING SCALE:
APPROVED BY:
DRAWING NUMBER: A0.5

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Figure 2
Project Site Plan

Extera Public School

Table 1
PROJECT TRIP GENERATION [1]

11-Dec-23

LAND USE	SIZE	DAILY TRIP ENDS [2] VOLUMES	AM PEAK HOUR VOLUMES [2] IN	AM PEAK HOUR VOLUMES [2] OUT	AM PEAK HOUR VOLUMES [2] TOTAL	PM PEAK HOUR VOLUMES [2] IN	PM PEAK HOUR VOLUMES [2] OUT	PM PEAK HOUR VOLUMES [2] TOTAL
Proposed Project								
Charter Elementary School [3], [4], [5]	336 Students	622	191	169	360	119	123	242
Charter Middle School [6], [7], [8]	189 Students	397	94	84	178	69	69	138
Subtotal Project Driveway Trips		**1,019**	**285**	**253**	**538**	**188**	**192**	**380**
Existing Site								
Church [9]	(25,302) GSF	(192)	(5)	(3)	(8)	(5)	(7)	(12)
Subtotal Existing Driveway Trips		**(192)**	**(5)**	**(3)**	**(8)**	**(5)**	**(7)**	**(12)**
NET INCREASE DRIVEWAY TRIPS		**827**	**280**	**250**	**530**	**183**	**185**	**368**

[1] Source: ITE *Trip Generation Manual,* 11th Edition, 2021.
[2] Trips are one-way traffic movements, entering or leaving.
[3] ITE Land Use Code 536 (Charter Elementary School) trip generation average rates per number of students.
- Daily Trip Rate: 1.85 trips/student; 50% inbound and 50% outbound
[4] ITE Land Use Code 536 (Charter Elementary School) trip generation average rates per number of students.
- Weekday, AM Peak Hour of Generator Trip Rate: 1.07 trips/student; 53% inbound/47% outbound
[5] ITE Land Use Code 536 (Charter Elementary School) trip generation average rates per number of students.
- Weekday, PM Peak Hour of Generator Trip Rate: 0.72 trips/student; 49% inbound/51% outbound
[6] ITE Land Use Code 522 (Middle School/Junior High School) trip generation average rates per number of students.
- Daily Trip Rate: 2.10 trips/student; 50% inbound and 50% outbound
[7] ITE Land Use Code 538 (Charter School K-12) trip generation average rates per number of students.
- Weekday, AM Peak Hour of Generator Trip Rate: 0.94 trips/student; 53% inbound/47% outbound
[8] ITE Land Use Code 538 (Charter School K-12) trip generation average rates per number of students.
- Weekday, PM Peak Hour of Generator Trip Rate: 0.73 trips/student; 50% inbound/50% outbound
[9] ITE Land Use Code 560 (Church) trip generation average rates per 1,000 SF of floor area.
- Daily Trip Rate: 7.60 trips/1,000 SF of floor area; 50% inbound/50% outbound
- Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7:00 and 9:00 AM: 0.32 trips/1,000 SF of floor area; 62% inbound/38% outbound
- Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4:00 and 6:00 PM: 0.49 trips/1,000 SF of floor area; 44% inbound/56% outbound

LINSCOTT LAW & GREENSPAN engineers

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Figure 3
High-Quality Transit Corridor - Whittier Boulevard
Metro Local Line 18

Extera Public School

Table 2
HIGH-QUALITY TRANSIT CORRIDOR ANALYSIS [1]
WHITTIER BOULEVARD

17-Aug-23

ROUTE	NO. OF BUSES DURING PEAK HOURS [2]			AVERAGE FREQUENCY IN PEAK HOURS (MINUTES)	ELIGIBLE LINE [3]
	DIR	AM	PM		
Metro Local Line 18 [4]	EB	25	38	6.7	YES
	WB	28	34	6.8	

[1] Source: Southern California Association of Governments ("SCAG")

[2] AM Peak Hours: 6:00 AM - 9:00 AM / PM Peak Hours: 3:00 PM - 7:00 PM

[3] Bus routes must have an average service frequency of 15 minutes or less over the seven-hour period.
the seven-hour peak period.

[4] Source: Los Angeles County Metropolitan Transportation Authority ("Metro") website, 2023.

APPENDIX A

METRO LOCAL LINE 18
ROUTE MAP AND SCHEDULE
HIGH-QUALITY TRANSIT CORRIDOR ANALYSIS

Monday through Friday

Effective Jun 25 2023

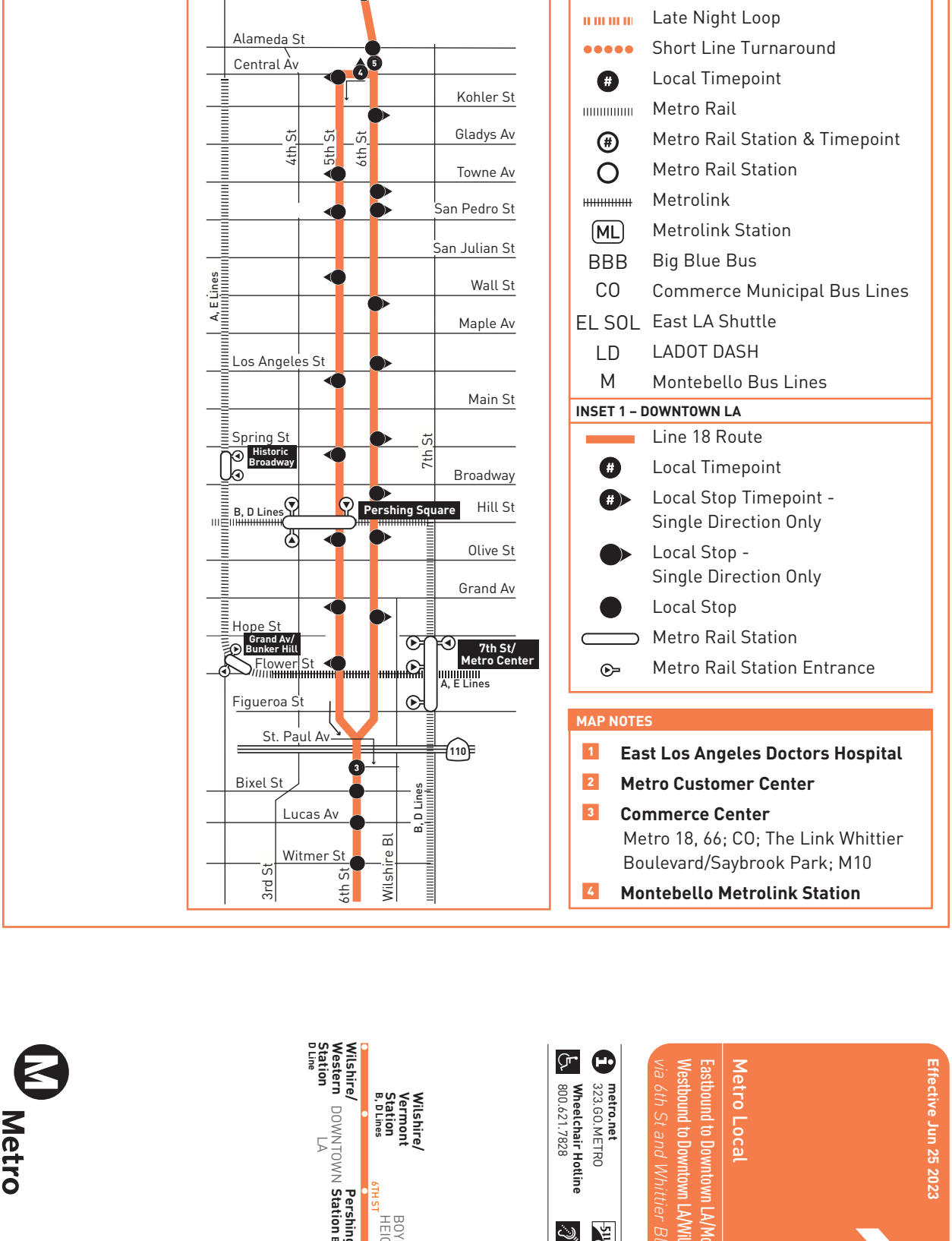
Eastbound *Al Este* (Approximate Times / *Tiempos Aproximados*)

WILSHIRE CENTER		DOWNTOWN LOS ANGELES		BOYLE HEIGHTS	EAST LOS ANGELES	COMMERCE	MONTEBELLO
1	2	3	5	6	7	8	10
Wilshire & Western	6th & Vermont H	6th & St. Paul	6th & Alameda	Whittier & Soto	Whittier & Atlantic	Commerce Center	Montebello Metrolink Station
—	—	—	E4:17A	4:22A	4:38A	—	4:49A
4:25A	4:31A	4:43A	4:56	5:01	5:17	—	5:28
4:37	4:43	4:55	5:08	5:13	5:29	—	5:40
4:49	4:55	5:07	5:20	5:25	5:41	—	5:52
5:01	5:07	5:19	5:32	5:37	5:53	—	6:04
5:13	5:19	5:31	5:44	5:49	6:05	—	6:16
5:24	5:30	5:43	5:56	6:01	6:17	—	6:28
5:36	5:42	5:55	6:09	6:14	6:30	—	6:41
—	5:54	6:07	6:21	6:26	6:43	—	6:54
5:57	6:04	6:17	6:31	6:36	6:53	—	7:04
—	6:14	6:27	6:41	6:46	7:03	—	7:16
6:15	6:22	6:35	6:49	6:54	7:12	7:18A	—
—	6:27	6:41	6:55	7:00	7:19	—	7:32
6:25	6:33	6:47	7:01	7:06	7:25	7:31	—
—	6:39	6:53	7:08	7:13	7:32	—	7:45
6:39	6:47	7:01	7:16	7:21	7:40	7:46	—
—	6:53	7:07	7:22	7:27	7:47	—	8:00
6:51	6:59	7:13	7:28	7:33	7:53	7:59	—
—	7:05	7:19	7:34	7:39	7:59	—	8:12
7:03	7:11	7:25	7:40	7:45	8:05	8:11	—
—	7:17	7:31	7:46	7:51	8:11	—	8:24
7:15	7:23	7:37	7:52	7:57	8:17	8:23	—
—	7:28	7:43	7:58	8:03	8:23	—	8:36
7:26	7:34	7:49	8:04	8:09	8:29	8:36	—
—	7:40	7:55	8:10	8:15	8:35	—	8:48
7:38	7:46	8:01	8:16	8:21	8:41	8:48	—
—	7:52	8:07	8:22	8:27	8:47	—	9:00
7:50	7:58	8:13	8:28	8:33	8:53	9:00	—
—	8:04	8:19	8:34	8:39	8:59	—	9:12
8:02	8:10	8:25	8:40	8:45	9:06	9:13	—
—	8:16	8:31	8:46	8:51	9:12	—	9:25
8:14	8:22	8:37	8:52	8:57	9:18	9:25	—
—	8:28	8:43	8:58	9:03	9:24	—	9:37
8:26	8:34	8:49	9:05	9:10	9:31	9:38	—
—	8:41	8:56	9:13	9:18	9:39	—	9:52
8:40	8:48	9:03	9:21	9:26	9:47	9:54	—
—	8:56	9:11	9:29	9:35	9:56	—	10:09
8:55	9:03	9:18	9:36	9:42	10:03	10:10	—
—	9:11	9:26	9:44	9:50	10:11	—	10:24
9:12	9:20	9:35	9:53	9:59	10:20	10:27	—
—	9:28	9:43	10:01	10:07	10:28	—	10:41
9:27	9:35	9:50	10:08	10:14	10:35	10:42	—
—	9:43	9:58	10:16	10:22	10:43	—	10:56
9:42	9:50	10:05	10:23	10:29	10:50	10:57	—
—	9:58	10:13	10:31	10:37	10:58	—	11:11
9:57	10:05	10:20	10:38	10:44	11:05	11:12	—
—	10:13	10:28	10:46	10:52	11:13	—	11:26
10:12	10:20	10:35	10:53	10:59	11:20	11:27	—
—	10:28	10:43	11:01	11:07	11:28	—	11:41
10:27	10:35	10:50	11:08	11:14	11:35	11:43	—
—	10:43	10:58	11:16	11:22	11:43	—	11:56
10:42	10:50	11:05	11:23	11:29	11:50	11:58	—
—	10:57	11:13	11:31	11:37	11:58	—	12:11P
10:56	11:04	11:20	11:38	11:44	12:05P	12:13P	—
—	11:12	11:28	11:46	11:52	12:13	—	12:26
11:11	11:19	11:35	11:53	11:59	12:20	12:28	—
—	11:27	11:43	12:01P	12:07P	12:28	—	12:41
11:26	11:34	11:50	12:08	12:14	12:35	12:43	—
—	11:42	11:58	12:16	12:22	12:43	—	12:56
11:41	11:49	12:05P	12:23	12:29	12:50	12:58	—
—	11:57	12:13	12:31	12:37	12:58	—	1:11
11:56	12:04P	12:20	12:38	12:44	1:05	1:13	—
—	12:12	12:28	12:46	12:52	1:13	—	1:26
12:11P	12:19	12:35	12:53	12:59	1:20	1:28	—
—	12:27	12:43	1:01	1:07	1:28	—	1:41
12:26	12:34	12:50	1:08	1:14	1:35	1:43	—
—	12:42	12:58	1:16	1:22	1:43	—	1:56
12:41	12:49	1:05	1:23	1:29	1:50	1:58	—
—	12:57	1:13	1:31	1:37	1:58	—	2:11
12:56	1:04	1:20	1:38	1:44	2:05	2:13	—
—	1:12	1:28	1:46	1:52	2:13	—	2:26
1:11	1:19	1:35	1:53	1:59	2:20	2:28	—
—	1:27	1:43	2:01	2:07	2:28	—	2:41
1:26	1:34	1:50	2:08	2:14	2:35	2:43	—
—	1:42	1:58	2:17	2:23	2:44	—	2:57
1:41	1:49	2:05	2:24	2:30	2:51	2:59	—
—	1:57	2:13	2:32	2:38	2:59	—	3:12
1:55	2:04	2:20	2:39	2:45	3:06	3:14	—
—	2:12	2:28	2:47	2:53	3:14	—	3:27
2:10	2:19	2:35	2:54	3:00	3:21	3:29	—
—	2:27	2:43	3:02	3:08	3:29	—	3:42
2:25	2:34	2:50	3:09	3:15	3:38	3:46	—
—	2:41	2:57	3:16	3:22	3:45	—	3:58
2:39	2:48	3:04	3:23	3:29	3:52	4:00	—
—	2:53	3:10	3:29	3:35	3:58	—	4:11
2:50	2:59	3:16	3:35	3:41	4:04	4:12	—
—	3:05	3:22	3:41	3:47	4:10	—	4:23
3:02	3:11	3:28	3:47	3:53	4:16	4:24	—
—	3:17	3:34	3:53	3:59	4:22	—	4:35
3:14	3:23	3:40	3:59	4:05	4:28	4:36	—
—	3:29	3:46	4:05	4:11	4:34	—	4:47
3:25	3:35	3:52	4:11	4:17	4:40	4:48	—
—	3:41	3:58	4:17	4:23	4:46	—	4:59
3:37	3:47	4:04	4:23	4:29	4:52	5:00	—
—	3:53	4:10	4:29	4:35	4:58	—	5:11
3:49	3:59	4:16	4:35	4:41	5:04	5:12	—
—	4:05	4:22	4:41	4:47	5:10	—	5:23
4:01	4:11	4:28	4:47	4:53	5:16	5:24	—
—	4:17	4:34	4:53	4:59	5:21	—	5:34
4:13	4:23	4:40	4:59	5:05	5:27	5:35	—
—	4:29	4:46	5:04	5:10	5:32	—	5:45
4:25	4:35	4:52	5:10	5:16	5:38	5:46	—
—	4:41	4:58	5:15	5:21	5:43	—	5:56
4:37	4:47	5:04	5:21	5:27	5:49	5:57	—
—	4:54	5:10	5:27	5:33	5:55	—	6:08
4:50	5:00	5:16	5:33	5:39	6:01	6:08	—
—	5:06	5:22	5:39	5:45	6:06	—	6:19
5:02	5:12	5:28	5:45	5:51	6:12	6:19	—
—	5:18	5:34	5:51	5:57	6:18	—	6:31
5:14	5:24	5:40	5:57	6:03	6:24	6:31	—
—	5:30	5:46	6:03	6:09	6:30	—	6:43
5:26	5:36	5:52	6:09	6:15	6:35	6:42	—
—	5:43	5:59	6:16	6:22	6:42	—	6:55
5:41	5:51	6:07	6:24	6:30	6:49	6:56	—
—	5:58	6:14	6:31	6:36	6:55	—	7:08
5:56	6:06	6:22	6:38	6:43	7:02	7:09	—
—	6:13	6:29	6:45	6:50	7:09	—	7:22
6:11	6:21	6:37	6:53	6:58	7:17	7:24	—
—	6:28	6:44	7:00	7:05	7:24	—	7:37
6:26	6:36	6:52	7:08	7:13	7:31	7:38	—
—	6:43	6:59	7:15	7:20	7:38	7:45	—
6:42	6:51	7:07	7:23	7:28	7:46	—	7:59
—	6:58	7:14	7:30	7:35	7:53	8:00	—
6:59	7:08	7:24	7:40	7:45	8:03	—	8:16
—	7:19	7:34	7:50	7:55	8:12	8:19	—
7:21	7:30	7:44	8:00	8:05	8:22	—	8:35
7:32	7:40	7:54	8:09	8:14	8:31	8:38	—
7:42	7:50	8:04	8:19	8:24	8:41	—	8:53
7:52	8:00	8:14	8:29	8:34	8:51	—	9:03
8:02	8:10	8:24	8:39	8:44	9:01	—	9:13
8:19	8:27	8:41	8:56	9:01	9:17	—	9:29
8:41	8:49	B9:03	9:21	9:26	9:41	—	9:53
9:11	9:19	9:33	9:49	9:54	10:09	—	10:21
9:41	9:49	B10:01	10:19	10:24	10:39	—	10:50
10:13	10:21	10:33	10:49	10:54	11:08	—	11:19
10:44	10:51	B11:02	11:20	11:25	11:39	—	11:50
11:19	11:26	11:37	11:53	11:58	12:12A	—	12:23A
11:48	11:55	B12:06A	12:24A	12:29A	12:43	—	12:54
—	—	—	E1:21	1:26	B1:40	—	—
—	—	—	E2:19	2:24	B2:38	—	—
—	—	—	E3:18	3:23	B3:37	—	—

Westbound *Al Oeste* (Approximate Times / *Tiempos Aproximados*)

MONTEBELLO		COMMERCE	EAST LOS ANGELES	BOYLE HEIGHTS	DOWNTOWN LOS ANGELES		WILSHIRE CENTER	
10	9	8	7	6	4	3	2	1
Montebello Metrolink Station	Whittier & Garfield	Commerce Center	Whittier & Atlantic	Whittier & Soto	Central & 6th	6th & St. Paul	6th & Vermont F	Wilshire & Western
—	3:33A	—	3:40A	3:55A	C4:00A	4:19A	4:29A	4:35A
4:18A	4:23	—	4:30	4:45	4:50	5:02	5:12	5:18
4:38	4:43	—	4:50	5:05	5:10	5:22	5:32	5:38
4:54	4:59	—	5:06	5:21	5:26	5:38	5:49	5:55
5:06	5:11	—	5:18	5:33	5:38	5:50	6:01	6:07
5:13	5:18	—	5:25	5:41	5:46	5:58	6:10	—
5:19	5:24	—	5:31	5:47	5:52	6:04	6:15	6:21
5:25	5:30	—	5:37	5:53	5:58	6:10	6:21	6:27
—	—	5:38A	5:42	5:58	6:04	6:16	6:27	6:33
5:36	5:41	—	5:48	6:04	6:10	6:22	6:34	—
—	—	5:49	5:53	6:10	6:16	6:28	6:39	6:45
5:47	5:52	—	5:59	6:16	6:22	6:34	6:46	—
—	—	6:01	6:05	6:22	6:28	6:40	6:51	6:57
5:58	6:03	—	6:11	6:28	6:34	6:46	6:58	—
—	—	6:13	6:17	6:34	6:40	6:52	7:04	7:13
6:09	6:14	—	6:22	6:40	6:46	6:58	7:11	—
—	—	6:24	6:28	6:46	6:52	7:04	7:19	7:28
6:20	6:25	—	6:33	6:51	6:57	7:10	7:23	—
—	—	6:35	6:39	6:57	7:03	7:16	7:31	7:40
6:30	6:36	—	6:44	7:02	7:09	7:22	7:36	—
—	—	6:45	6:49	7:08	7:15	7:28	7:43	7:52
6:41	6:47	—	6:55	7:14	7:21	7:34	7:49	—
—	—	6:55	6:59	7:19	7:26	7:40	7:55	8:04
6:50	6:56	—	7:05	7:25	7:32	7:46	8:01	—
—	—	7:07	7:11	7:31	7:38	7:52	8:07	8:16
7:02	7:08	—	7:17	7:38	7:45	7:59	8:14	—
—	—	7:20	7:24	7:45	7:52	8:06	8:21	8:30
7:13	7:19	—	7:28	7:50	7:57	8:12	8:27	—
—	—	7:32	7:36	7:58	8:05	8:20	8:35	8:44
7:29	7:35	—	7:44	8:06	8:13	8:28	8:43	—
—	—	7:47	7:51	8:13	8:20	8:35	8:50	8:59
7:43	7:49	—	7:58	8:20	8:27	8:43	8:58	—
—	—	8:01	8:05	8:27	8:34	8:50	9:05	9:14
7:58	8:04	—	8:13	8:35	8:42	8:58	9:13	—
—	—	8:16	8:20	8:42	8:49	9:05	9:20	9:29
8:12	8:18	—	8:27	8:49	8:56	9:13	9:28	—
—	—	8:30	8:34	8:56	9:03	9:20	9:35	9:44
8:27	8:33	—	8:42	9:04	9:11	9:28	9:43	—
—	—	8:45	8:49	9:11	9:18	9:35	9:50	9:59
8:41	8:47	—	8:56	9:18	9:25	9:43	9:58	—
—	—	8:59	9:03	9:25	9:32	9:50	10:05	10:14
8:56	9:02	—	9:11	9:33	9:40	9:58	10:13	—
—	—	9:14	9:18	9:40	9:47	10:05	10:20	10:29
9:11	9:17	—	9:26	9:48	9:55	10:13	10:28	—
—	—	9:29	9:33	9:55	10:02	10:20	10:35	10:44
9:25	9:31	—	9:41	10:03	10:10	10:28	10:43	—
—	—	9:44	9:48	10:10	10:17	10:35	10:50	10:59
9:40	9:46	—	9:56	10:18	10:25	10:43	10:58	—
—	—	9:59	10:03	10:25	10:32	10:50	11:05	11:14
9:55	10:01	—	10:11	10:33	10:40	10:58	11:14	—
—	—	10:14	10:18	10:40	10:47	11:05	11:20	11:29
10:10	10:16	—	10:26	10:48	10:55	11:13	11:29	—
—	—	10:29	10:33	10:55	11:02	11:20	11:35	11:44
10:25	10:31	—	10:41	11:03	11:10	11:28	11:44	—
—	—	10:44	10:48	11:10	11:17	11:35	11:50	11:59
10:40	10:46	—	10:56	11:18	11:25	11:43	11:59	—
—	—	10:59	11:03	11:25	11:32	11:50	12:05P	12:14P
10:55	11:01	—	11:11	11:33	11:40	11:58	12:14	—
—	—	11:14	11:18	11:40	11:47	12:05P	12:20	12:29
11:10	11:16	—	11:26	11:48	11:55	12:13	12:29	—
—	—	11:29	11:33	11:55	12:02P	12:20	12:35	12:44
11:25	11:31	—	11:41	12:03P	12:10	12:28	12:44	—
—	—	11:44	11:48	12:10	12:17	12:35	12:50	12:59
11:40	11:46	—	11:56	12:18	12:25	12:43	12:59	—
—	—	11:59	12:03P	12:25	12:32	12:50	1:05	1:14
11:55	12:01P	—	12:11	12:33	12:40	12:58	1:14	—
—	—	12:14P	12:18	12:40	12:47	1:05	1:20	1:29
12:10P	12:16	—	12:26	12:48	12:55	1:13	1:29	—
—	—	12:29	12:33	12:55	1:02	1:20	1:35	1:44
12:25	12:31	—	12:41	1:03	1:10	1:28	1:44	—
—	—	12:44	12:48	1:10	1:17	1:35	1:50	1:59
12:40	12:46	—	12:56	1:18	1:25	1:43	1:59	—
—	—	12:59	1:03	1:25	1:32	1:50	2:05	2:14
12:55	1:01	—	1:11	1:33	1:40	1:58	2:14	—
—	—	1:14	1:18	1:40	1:47	2:05	2:20	2:29
1:09	1:16	—	1:26	1:48	1:55	2:13	2:29	—
—	—	1:29	1:33	1:55	2:02	2:20	2:35	2:44
1:24	1:31	—	1:41	2:03	2:10	2:28	2:44	—
—	—	1:44	1:48	2:10	2:17	2:35	2:50	2:59
1:40	1:47	—	1:57	2:19	2:26	2:43	2:59	—
—	—	2:00	2:04	2:26	2:33	2:50	3:05	3:14
1:55	2:02	—	2:12	2:34	2:41	2:58	3:14	—
—	—	2:14	2:18	2:40	2:47	3:04	3:19	3:28
2:06	2:14	—	2:24	2:46	2:53	3:10	3:26	—
—	—	2:26	2:30	2:52	2:59	3:16	3:31	3:40
2:18	2:26	—	2:36	2:58	3:05	3:22	3:38	—
—	—	2:38	2:42	3:04	3:11	3:28	3:43	3:52
2:30	2:38	—	2:48	3:10	3:17	3:34	3:50	—
—	—	2:50	2:54	3:16	3:23	3:40	3:55	4:04
2:42	2:50	—	3:00	3:22	3:29	3:46	4:02	—
—	—	3:02	3:06	3:28	3:35	3:52	4:07	4:16
2:54	3:02	—	3:12	3:34	3:41	3:58	4:14	—
—	—	3:14	3:18	3:40	3:47	4:04	4:19	4:28
3:06	3:14	—	3:24	3:46	3:53	4:10	4:26	—
—	—	3:26	3:30	3:52	3:59	4:16	4:31	4:40
3:18	3:26	—	3:36	3:58	4:05	4:22	4:38	—
—	—	3:38	3:42	4:04	4:11	4:28	4:43	4:52
3:30	3:38	—	3:48	4:10	4:17	4:34	4:50	—
—	—	3:50	3:54	4:16	4:23	4:40	4:55	5:04
3:42	3:50	—	4:00	4:22	4:29	4:46	5:02	—
—	—	4:02	4:06	4:28	4:35	4:52	5:07	5:16
3:54	4:02	—	4:12	4:34	4:41	4:58	5:14	—
—	—	4:14	4:18	4:40	4:47	5:04	5:19	5:28
4:06	4:14	—	4:24	4:46	4:53	5:10	5:26	—
—	—	4:26	4:30	4:52	4:59	5:16	5:31	5:40
4:19	4:27	—	4:37	4:59	5:05	5:22	5:38	—
—	—	4:39	4:43	5:05	5:11	5:28	5:43	5:52
4:31	4:39	—	4:49	5:11	5:17	5:34	5:50	—
—	—	4:51	4:55	5:17	5:23	5:40	5:55	6:04
4:45	4:53	—	5:03	5:25	5:31	5:48	6:04	—
—	—	5:06	5:10	5:32	5:38	5:55	6:10	6:19
5:00	5:08	—	5:18	5:40	5:46	6:03	6:19	—
—	—	5:21	5:25	5:47	5:53	6:10	6:25	6:34
5:15	5:23	—	5:33	5:55	6:01	6:18	6:34	—
—	—	5:37	5:41	6:03	6:09	6:26	6:41	6:50
5:33	5:41	—	5:51	6:12	6:18	6:35	6:51	—
—	—	5:58	6:02	6:23	6:29	6:45	7:00	7:08
5:54	6:02	—	6:12	6:33	6:39	6:55	7:11	—
—	—	6:19	6:23	6:43	6:49	7:05	7:20	7:28
6:16	6:24	—	6:34	6:54	7:00	7:15	7:30	7:38
—	—	6:40	6:44	7:04	7:10	7:25	7:40	7:48
6:37	6:44	—	6:54	7:14	7:20	7:35	7:50	7:58
—	—	7:00	7:04	7:24	7:30	7:45	8:00	8:08
6:59	7:04	—	7:14	7:34	7:40	7:55	8:11	—
—	—	7:21	7:25	7:44	7:50	8:05	8:19	8:27
7:22	7:27	—	7:36	7:54	8:00	8:15	8:31	—
7:37	7:42	—	7:51	8:09	8:15	8:30	8:44	8:52
7:57	8:02	—	8:11	8:29	8:35	8:50	9:04	9:12
8:22	8:27	—	8:36	8:54	C9:00	9:16	9:29	9:37
8:53	8:58	—	9:07	9:25	9:30	9:45	9:57	10:04
9:25	9:30	—	9:39	9:56	C10:01	10:17	10:29	10:36
10:01	10:06	—	10:14	10:31	10:36	10:51	11:03	11:10
10:29	10:34	—	10:42	10:58	C11:03	11:19	11:31	11:38
10:57	11:02	—	11:09	11:25	11:30	11:45	11:57	12:04A
11:28	11:33	—	11:40	11:56	C12:01A	12:17A	12:28A	12:35
12:30A	12:35A	—	12:41A	12:55A	D1:00	—	—	—
1:28	1:33	—	1:39	1:53	D1:58	—	—	—
—	2:32	—	2:38	2:52	D2:57	—	—	—

ROUTE MAP



INSET 1 – DOWNTOWN LOS ANGELES

LEGEND

- Line 18 Route
- Late Night Loop
- Short Line Turnaround
- Local Timepoint
- Metro Rail
- Metro Rail Station & Timepoint
- Metro Rail Station
- Metrolink
- ML — Metrolink Station
- BBB — Big Blue Bus
- CO — Commerce Municipal Bus Lines
- EL SOL — East LA Shuttle
- LD — LADOT DASH
- M — Montebello Bus Lines

INSET 1 – DOWNTOWN LA

- Line 18 Route
- Local Timepoint
- Local Stop Timepoint - Single Direction Only
- Local Stop - Single Direction Only
- Local Stop
- Metro Rail Station
- Metro Rail Station Entrance

MAP NOTES

1. **East Los Angeles Doctors Hospital**
2. **Metro Customer Center**
3. **Commerce Center**
   Metro 18, 66; CO; The Link Whittier Boulevard/Saybrook Park; M10
4. **Montebello Metrolink Station**

Metro

Subject to change without notice
Sujeto a cambios sin previo aviso

Wilshire/ Western Station D Line — DOWNTOWN LA — Wilshire/ Vermont Station B, D Lines — BOYLE HEIGHTS — EAST LA — COMMERCE — MONTEBELLO — Pershing Square Station B, D Lines — 6TH ST — WHITTIER BL — Montebello Station Metrolink

metro.net 323.GO.METRO
Wheelchair Hotline 800.621.7828
Travel Info 511
California Relay Service 711

Effective Jun 25 2023

18

Metro Local

Eastbound to Downtown LA/Montebello
Westbound to Downtown LA/Wilshire/Western Station
via 6th St and Whittier Bl

Saturday

Effective Jun 25 2023

18

Eastbound *Al Este* (Approximate Times / *Tiempos Aproximados*)

Wilshire Center: 1 Wilshire & Western	Wilshire Center: 2 6th & Vermont H	Downtown Los Angeles: 3 6th & St. Paul	Downtown Los Angeles: 5 6th & Alameda	Boyle Heights: 6 Whittier & Soto	East Los Angeles: 7 Whittier & Atlantic	Commerce: 8 Commerce Center	Montebello: 10 Montebello Metrolink Station
—	—	—	E4:17A	4:21A	4:35A	—	4:45A
4:26A	4:32A	4:44A	4:57	5:02	5:16	—	5:26
4:46	4:52	5:04	5:17	5:23	5:37	—	5:47
5:04	5:10	5:22	5:35	5:41	5:55	—	6:05
5:19	5:25	5:37	5:50	5:56	6:11	—	6:21
5:34	5:40	5:52	6:05	6:11	6:26	—	6:36
5:49	5:55	6:07	6:20	6:26	6:42	6:49A	—
—	6:06	6:18	6:31	6:37	6:53	—	7:03
6:07	6:14	6:26	6:40	6:46	7:02	7:09	—
—	6:20	6:32	6:46	6:52	7:08	—	7:18
6:22	6:29	6:41	6:55	7:01	7:17	7:24	—
—	6:36	6:48	7:02	7:08	7:24	—	7:34
6:37	6:44	6:56	7:10	7:16	7:32	7:39	—
—	6:51	7:03	7:17	7:23	7:39	—	7:49
6:51	6:58	7:11	7:25	7:31	7:48	7:55	—
—	7:05	7:18	7:32	7:38	7:55	—	8:05
7:06	7:13	7:26	7:41	7:47	8:04	8:11	—
—	7:20	7:33	7:48	7:54	8:11	—	8:21
7:21	7:28	7:41	7:56	8:02	8:19	8:26	—
—	7:35	7:48	8:03	8:09	8:26	—	8:36
7:36	7:43	7:56	8:12	8:18	8:35	8:42	—
—	7:49	8:02	8:18	8:24	8:41	—	8:51
7:49	7:56	8:09	8:25	8:31	8:48	8:55	—
—	8:02	8:15	8:31	8:37	8:54	—	9:04
8:02	8:10	8:23	8:39	8:45	9:02	9:09	—
—	8:17	8:30	8:46	8:52	9:10	—	9:20
8:17	8:25	8:38	8:54	9:00	9:19	9:26	—
—	8:34	8:47	9:03	9:09	9:28	—	9:38
8:34	8:42	8:55	9:12	9:18	9:37	9:44	—
—	8:50	9:03	9:20	9:26	9:45	—	9:55
8:49	8:57	9:11	9:28	9:34	9:53	10:00	—
—	9:03	9:18	9:35	9:41	10:00	—	10:10
9:03	9:11	9:26	9:43	9:49	10:08	10:15	—
—	9:18	9:33	9:50	9:56	10:15	—	10:25
9:18	9:26	9:41	9:58	10:04	10:23	10:30	—
—	9:33	9:48	10:05	10:11	10:30	—	10:40
9:33	9:41	9:56	10:13	10:19	10:39	10:47	—
—	9:48	10:03	10:20	10:26	10:46	—	10:56
9:48	9:56	10:11	10:28	10:34	10:54	11:02	—
—	10:03	10:18	10:35	10:41	11:01	—	11:11
10:03	10:11	10:26	10:43	10:49	11:09	11:17	—
—	10:18	10:33	10:50	10:56	11:16	—	11:26
10:18	10:26	10:41	10:58	11:04	11:24	11:32	—
—	10:33	10:48	11:05	11:11	11:31	—	11:41
10:33	10:41	10:56	11:13	11:19	11:39	11:47	—
—	10:48	11:03	11:20	11:26	11:46	—	11:56
10:48	10:56	11:11	11:28	11:34	11:54	12:02P	—
—	11:03	11:18	11:35	11:41	12:01P	—	12:11P
11:03	11:11	11:26	11:43	11:49	12:09	12:17	—
—	11:18	11:33	11:50	11:56	12:16	—	12:26
11:18	11:26	11:41	11:58	12:04P	12:24	12:32	—
—	11:33	11:48	12:05P	12:11	12:31	—	12:41
11:33	11:41	11:56	12:13	12:19	12:39	12:47	—
—	11:48	12:03P	12:20	12:26	12:46	—	12:56
11:48	11:56	12:11	12:28	12:34	12:54	1:02	—
—	12:03P	12:18	12:35	12:41	1:01	—	1:11
12:03P	12:11	12:26	12:44	12:50	1:10	1:18	—
—	12:18	12:33	12:51	12:57	1:17	—	1:27
12:18	12:26	12:41	12:59	1:05	1:25	1:33	—
—	12:33	12:48	1:06	1:12	1:32	—	1:42
12:33	12:41	12:56	1:14	1:20	1:40	1:48	—
—	12:48	1:03	1:21	1:27	1:47	—	1:57
12:48	12:56	1:11	1:29	1:35	1:55	2:03	—
—	1:03	1:18	1:36	1:42	2:02	—	2:12
1:03	1:11	1:26	1:44	1:50	2:10	2:18	—
—	1:18	1:33	1:51	1:57	2:17	—	2:27
1:18	1:26	1:41	1:59	2:05	2:25	2:33	—
—	1:33	1:48	2:06	2:12	2:32	—	2:42
1:33	1:41	1:56	2:14	2:20	2:40	2:48	—
—	1:48	2:03	2:21	2:27	2:47	—	2:57
1:48	1:56	2:11	2:29	2:35	2:55	3:03	—
—	2:03	2:18	2:36	2:42	3:02	—	3:12
2:03	2:11	2:26	2:44	2:50	3:10	3:18	—
—	2:18	2:33	2:51	2:57	3:16	—	3:26
2:18	2:26	2:41	2:59	3:05	3:24	3:32	—
—	2:33	2:48	3:06	3:12	3:31	—	3:41
2:33	2:41	2:56	3:14	3:20	3:39	3:47	—
—	2:48	3:03	3:21	3:27	3:46	—	3:56
2:48	2:56	3:11	3:29	3:35	3:54	4:02	—
—	3:03	3:18	3:36	3:42	4:01	—	4:11
3:03	3:11	3:26	3:43	3:49	4:08	4:16	—
—	3:18	3:33	3:50	3:56	4:15	—	4:25
3:18	3:26	3:41	3:58	4:04	4:23	4:31	—
—	3:33	3:48	4:05	4:11	4:30	—	4:40
3:33	3:41	3:56	4:13	4:19	4:38	4:46	—
—	3:48	4:03	4:20	4:26	4:45	—	4:55
3:48	3:56	4:11	4:28	4:34	4:53	5:01	—
—	4:03	4:18	4:35	4:41	5:00	—	5:10
4:03	4:11	4:26	4:42	4:48	5:06	5:14	—
—	4:18	4:33	4:49	4:55	5:13	—	5:23
4:18	4:26	4:41	4:57	5:03	5:21	5:29	—
—	4:33	4:48	5:04	5:10	5:28	—	5:38
4:33	4:41	4:56	5:12	5:18	5:36	5:44	—
—	4:48	5:03	5:19	5:25	5:43	—	5:53
4:47	4:55	5:10	5:26	5:32	5:50	5:58	—
—	5:02	5:17	5:33	5:39	5:57	—	6:07
5:03	5:11	5:26	5:42	5:48	6:06	6:13	—
—	5:18	5:33	5:49	5:55	6:13	—	6:23
5:18	5:26	5:41	5:57	6:03	6:21	6:28	—
—	5:33	5:48	6:04	6:10	6:28	—	6:38
5:33	5:41	5:56	6:12	6:18	6:36	6:43	—
—	5:48	6:03	6:19	6:25	6:43	—	6:53
5:48	5:56	6:11	6:27	6:33	6:51	6:58	—
—	6:03	6:18	6:34	6:40	6:58	—	7:08
6:04	6:12	6:27	6:43	6:49	7:07	7:14	—
—	6:22	6:37	6:53	6:59	7:17	—	7:27
6:24	6:32	6:47	7:03	7:09	7:27	7:34	—
6:34	6:42	6:57	7:13	7:19	7:36	—	7:48
6:45	6:53	7:07	7:23	7:29	7:46	—	7:58
6:55	7:03	7:17	7:33	7:39	7:56	—	8:08
7:05	7:13	7:27	7:43	7:49	8:06	—	8:18
7:15	7:23	7:37	7:53	7:59	8:16	—	8:27
7:25	7:33	7:47	8:03	8:09	8:26	—	8:37
7:35	7:43	7:57	8:13	8:19	8:36	—	8:47
7:47	7:55	8:09	8:25	8:31	8:48	—	8:59
8:12	8:20	8:34	8:50	8:56	9:13	—	9:24
8:35	8:43	B8:57	9:15	9:20	9:37	—	9:48
9:09	9:17	9:31	9:47	9:52	10:08	—	10:19
9:40	9:48	B10:01	10:19	10:24	10:40	—	10:51
10:10	10:18	10:31	10:47	10:52	11:07	—	11:18
10:40	10:48	B11:01	11:19	11:24	11:39	—	11:49
11:16	11:23	11:33	11:49	11:54	12:09A	—	12:19A
11:47	11:54	B12:04A	12:22A	12:27A	12:41	—	12:51
—	—	—	E1:18	1:23	G1:37	—	—
—	—	—	E2:18	2:23	G2:37	—	—
—	—	—	E3:17	3:22	G3:36	—	—

Westbound *Al Oeste* (Approximate Times / *Tiempos Aproximados*)

Montebello: 10 Montebello Metrolink Station	Montebello: 9 Whittier & Garfield	Commerce: 8 Commerce Center	East Los Angeles: 7 Whittier & Atlantic	Boyle Heights: 6 Whittier & Soto	Downtown Los Angeles: 4 Central & 6th	Downtown Los Angeles: 3 6th & St. Paul	Wilshire Center: 2 6th & Vermont F	Wilshire Center: 1 Wilshire & Western
—	3:31A	—	3:37A	3:51A	C3:56A	4:16A	4:27A	4:33A
4:21A	4:26	—	4:32	4:46	4:51	5:02	5:13	5:19
4:59	5:04	—	5:10	5:25	5:30	5:42	5:53	5:58
5:19	5:24	—	5:30	5:45	5:50	6:02	6:13	6:18
5:38	5:43	—	5:50	6:05	6:10	6:22	6:33	6:38
5:53	5:58	—	6:05	6:20	6:25	6:38	6:49	—
6:06	6:11	—	6:18	6:33	6:38	6:51	7:03	7:08
6:13	6:18	—	6:25	6:40	6:45	6:58	7:09	—
—	—	6:29A	6:33	6:48	6:53	7:06	7:18	7:23
6:28	6:33	—	6:40	6:55	7:00	7:13	7:24	—
—	—	6:44	6:48	7:03	7:08	7:21	7:33	7:38
6:43	6:48	—	6:55	7:10	7:15	7:28	7:40	—
—	—	6:59	7:03	7:18	7:23	7:36	7:48	7:53
6:57	7:02	—	7:10	7:25	7:30	7:43	7:55	—
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7:11	7:16	—	7:24	7:40	7:45	7:58	8:10	—
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7:24	7:29	—	7:37	7:53	7:58	8:13	8:25	—
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7:38	7:43	—	7:51	8:07	8:13	8:28	8:40	—
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7:53	7:58	—	8:06	8:22	8:28	8:43	8:55	—
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8:07	8:12	—	8:20	8:37	8:43	8:58	9:11	—
—	—	8:24	8:28	8:45	8:51	9:06	9:18	9:24
8:21	8:26	—	8:34	8:51	8:57	9:13	9:26	—
—	—	8:38	8:42	8:59	9:05	9:21	9:33	9:39
8:36	8:41	—	8:49	9:06	9:12	9:28	9:41	—
—	—	8:52	8:56	9:14	9:20	9:36	9:48	9:54
8:49	8:54	—	9:02	9:21	9:27	9:43	9:56	—
—	—	9:06	9:10	9:29	9:35	9:51	10:03	10:09
9:02	9:08	—	9:17	9:36	9:42	9:58	10:12	—
—	—	9:21	9:25	9:44	9:50	10:06	10:18	10:24
9:16	9:22	—	9:31	9:50	9:56	10:13	10:27	—
—	—	9:34	9:38	9:57	10:04	10:21	10:33	10:39
9:30	9:36	—	9:45	10:04	10:11	10:28	10:42	—
—	—	9:49	9:53	10:12	10:19	10:36	10:48	10:54
9:45	9:51	—	10:00	10:19	10:26	10:43	10:57	—
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9:59	10:05	—	10:15	10:34	10:41	10:58	11:13	—
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10:14	10:20	—	10:30	10:49	10:56	11:13	11:28	—
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10:29	10:35	—	10:45	11:04	11:11	11:28	11:43	—
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10:43	10:49	—	10:59	11:19	11:26	11:43	11:58	—
—	—	11:03	11:07	11:27	11:34	11:51	12:03P	12:09P
10:58	11:04	—	11:14	11:34	11:41	11:58	12:13	—
—	—	11:18	11:22	11:42	11:49	12:06P	12:18	12:24
11:13	11:19	—	11:29	11:49	11:56	12:13	12:28	—
—	—	11:33	11:37	11:57	12:04P	12:21	12:33	12:39
11:28	11:34	—	11:44	12:04P	12:11	12:28	12:43	—
—	—	11:48	11:52	12:12	12:19	12:36	12:48	12:54
11:43	11:49	—	11:59	12:19	12:26	12:43	12:58	—
—	—	12:03P	12:07P	12:27	12:34	12:51	1:03	1:09
11:58	12:04P	—	12:14	12:34	12:41	12:58	1:13	—
—	—	12:18	12:22	12:42	12:49	1:06	1:18	1:24
12:13P	12:19	—	12:29	12:49	12:56	1:13	1:28	—
—	—	12:33	12:37	12:57	1:04	1:21	1:33	1:39
12:28	12:34	—	12:44	1:04	1:11	1:28	1:43	—
—	—	12:48	12:52	1:12	1:19	1:36	1:48	1:54
12:43	12:49	—	12:59	1:19	1:26	1:43	1:58	—
—	—	1:03	1:07	1:27	1:34	1:51	2:03	2:09
12:58	1:04	—	1:14	1:34	1:41	1:58	2:13	—
—	—	1:18	1:22	1:42	1:49	2:06	2:18	2:24
1:13	1:19	—	1:29	1:49	1:56	2:13	2:28	—
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1:28	1:34	—	1:44	2:04	2:11	2:28	2:43	—
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1:43	1:49	—	1:59	2:19	2:26	2:43	2:58	—
—	—	2:03	2:07	2:27	2:34	2:51	3:03	3:09
1:58	2:04	—	2:14	2:34	2:41	2:58	3:13	—
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2:13	2:19	—	2:29	2:49	2:56	3:13	3:28	—
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2:28	2:34	—	2:44	3:04	3:11	3:28	3:43	—
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2:43	2:49	—	2:59	3:19	3:26	3:43	3:58	—
—	—	3:03	3:07	3:27	3:34	3:51	4:03	4:09
2:58	3:04	—	3:14	3:34	3:41	3:58	4:13	—
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3:13	3:19	—	3:29	3:49	3:56	4:13	4:28	—
—	—	3:33	3:37	3:57	4:04	4:21	4:33	4:39
3:28	3:34	—	3:44	4:04	4:11	4:28	4:43	—
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3:43	3:49	—	3:59	4:19	4:26	4:43	4:58	—
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3:58	4:04	—	4:14	4:34	4:41	4:58	5:13	—
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4:14	4:20	—	4:30	4:50	4:57	5:13	5:28	—
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4:30	4:36	—	4:46	5:06	5:12	5:28	5:43	—
—	—	4:50	4:54	5:14	5:20	5:36	5:48	5:54
4:45	4:51	—	5:01	5:21	5:27	5:43	5:58	—
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5:00	5:06	—	5:16	5:36	5:42	5:58	6:13	—
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5:15	5:21	—	5:31	5:51	5:57	6:12	6:27	—
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5:31	5:37	—	5:47	6:07	6:13	6:28	6:43	6:50
5:41	5:47	—	5:57	6:17	6:23	6:38	6:53	7:00
5:52	5:58	—	6:07	6:27	6:33	6:48	7:03	7:10
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6:17	6:22	—	6:31	6:51	6:57	7:12	7:27	7:34
6:37	6:42	—	6:51	7:11	7:17	7:32	7:47	7:54
6:57	7:02	—	7:11	7:31	7:37	7:52	8:07	8:14
7:17	7:22	—	7:31	7:51	7:57	8:12	8:27	8:34
7:38	7:43	—	7:52	8:11	8:17	8:32	8:46	8:53
7:58	8:03	—	8:12	8:31	8:37	8:52	9:06	9:13
8:21	8:26	—	8:35	8:54	C9:00	9:17	9:31	9:38
8:48	8:53	—	9:02	9:21	9:27	9:42	9:54	10:01
9:23	9:28	—	9:36	9:53	C9:59	10:16	10:28	10:35
9:56	10:01	—	10:09	10:26	10:32	10:47	10:59	11:06
10:27	10:32	—	10:40	10:55	C11:00	11:17	11:29	11:36
10:59	11:04	—	11:11	11:26	11:31	11:46	11:58	12:05A
11:27	11:32	—	11:39	11:54	C11:59	12:16A	12:27A	12:34
12:27A	12:32A	—	12:38A	12:52A	D12:57A	—	—	—
1:27	1:32	—	1:38	1:52	D1:57	—	—	—
—	2:31	—	2:37	2:51	D2:56	—	—	—

Sunday and Holiday

18

Eastbound *Al Este* (Approximate Times / *Tiempos Aproximados*)

Wilshire Center: 1 Wilshire & Western	Wilshire Center: 2 6th & Vermont H	Downtown Los Angeles: 3 6th & St. Paul	Downtown Los Angeles: 5 6th & Alameda	Boyle Heights: 6 Whittier & Soto	East Los Angeles: 7 Whittier & Atlantic	Commerce: 8 Commerce Center	Montebello: 10 Montebello Metrolink Station
—	—	—	E4:17A	4:22A	4:35A	—	4:45A
4:26A	4:32A	4:44A	4:56	5:01	5:14	—	5:24
4:46	4:52	5:04	5:16	5:21	5:34	—	5:44
5:04	5:10	5:22	5:34	5:39	5:52	—	6:02
5:19	5:25	5:37	5:49	5:54	6:07	—	6:17
5:34	5:40	5:52	6:05	6:10	6:25	—	6:35
5:49	5:55	6:07	6:21	6:26	6:41	6:48A	—
—	6:06	6:18	6:32	6:37	6:52	—	7:02
6:07	6:14	6:26	6:40	6:45	7:00	7:07	—
—	6:20	6:32	6:46	6:51	7:07	—	7:17
6:22	6:29	6:41	6:55	7:00	7:16	7:23	—
—	6:36	6:48	7:02	7:08	7:24	—	7:34
6:37	6:44	6:56	7:10	7:16	7:32	7:39	—
—	6:51	7:03	7:17	7:23	7:39	—	7:49
6:51	6:58	7:11	7:25	7:31	7:47	7:54	—
—	7:05	7:18	7:32	7:38	7:54	—	8:04
7:06	7:13	7:26	7:41	7:47	8:03	8:10	—
—	7:20	7:33	7:48	7:54	8:10	—	8:20
7:21	7:28	7:41	7:56	8:02	8:19	8:26	—
—	7:35	7:48	8:03	8:09	8:26	—	8:36
7:35	7:43	7:56	8:11	8:17	8:34	8:41	—
—	7:49	8:02	8:17	8:23	8:40	—	8:50
7:48	7:56	8:09	8:24	8:30	8:47	8:54	—
—	8:02	8:15	8:30	8:36	8:53	—	9:03
8:02	8:10	8:23	8:39	8:45	9:02	9:09	—
—	8:17	8:30	8:46	8:52	9:10	—	9:20
8:17	8:25	8:38	8:54	9:00	9:18	9:25	—
—	8:34	8:47	9:03	9:09	9:27	—	9:37
8:34	8:42	8:55	9:11	9:17	9:35	9:42	—
—	8:50	9:03	9:19	9:25	9:43	—	9:53
8:49	8:57	9:11	9:27	9:33	9:51	9:58	—
—	9:03	9:18	9:34	9:40	9:58	—	10:08
9:03	9:11	9:26	9:42	9:48	10:06	10:13	—
—	9:18	9:33	9:49	9:55	10:13	—	10:23
9:18	9:26	9:41	9:57	10:03	10:21	10:28	—
—	9:33	9:48	10:04	10:10	10:28	—	10:38
9:33	9:41	9:56	10:12	10:18	10:37	10:44	—
—	9:48	10:03	10:19	10:25	10:44	—	10:54
9:48	9:56	10:11	10:27	10:33	10:52	10:59	—
—	10:03	10:18	10:34	10:40	10:59	—	11:09
10:03	10:11	10:26	10:42	10:48	11:07	11:14	—
—	10:18	10:33	10:49	10:55	11:14	—	11:24
10:18	10:26	10:41	10:57	11:03	11:22	11:29	—
—	10:33	10:48	11:04	11:10	11:29	—	11:39
10:33	10:41	10:56	11:12	11:18	11:37	11:44	—
—	10:48	11:03	11:19	11:25	11:44	—	11:54
10:48	10:56	11:11	11:27	11:33	11:52	11:59	—
—	11:03	11:18	11:34	11:40	11:59	—	12:09P
11:03	11:11	11:26	11:42	11:48	12:07P	12:14P	—
—	11:18	11:33	11:49	11:55	12:14	—	12:24
11:18	11:26	11:41	11:57	12:03P	12:22	12:29	—
—	11:33	11:48	12:04P	12:10	12:29	—	12:39
11:33	11:41	11:56	12:12	12:18	12:37	12:44	—
—	11:48	12:03P	12:19	12:25	12:44	—	12:54
11:48	11:56	12:11	12:27	12:33	12:52	12:59	—
—	12:03P	12:18	12:34	12:40	12:59	—	1:09
12:03P	12:11	12:26	12:42	12:48	1:07	1:14	—
—	12:18	12:33	12:49	12:55	1:14	—	1:24
12:18	12:26	12:41	12:57	1:03	1:22	1:29	—
—	12:33	12:48	1:04	1:10	1:29	—	1:39
12:33	12:41	12:56	1:12	1:18	1:37	1:44	—
—	12:48	1:03	1:19	1:25	1:44	—	1:54
12:48	12:56	1:11	1:27	1:33	1:52	1:59	—
—	1:03	1:18	1:34	1:40	1:59	—	2:09
1:03	1:11	1:26	1:42	1:48	2:07	2:14	—
—	1:18	1:33	1:49	1:55	2:14	—	2:24
1:18	1:26	1:41	1:57	2:03	2:22	2:29	—
—	1:33	1:48	2:04	2:10	2:29	—	2:39
1:33	1:41	1:56	2:12	2:18	2:37	2:44	—
—	1:48	2:03	2:19	2:25	2:44	—	2:54
1:48	1:56	2:11	2:27	2:33	2:52	2:59	—
—	2:03	2:18	2:34	2:40	2:59	—	3:09
2:03	2:11	2:26	2:42	2:48	3:07	3:14	—
—	2:18	2:33	2:49	2:55	3:14	—	3:24
2:18	2:26	2:41	2:57	3:03	3:22	3:29	—
—	2:33	2:48	3:04	3:10	3:29	—	3:39
2:33	2:41	2:56	3:12	3:18	3:37	3:44	—
—	2:48	3:03	3:19	3:25	3:44	—	3:54
2:48	2:56	3:11	3:27	3:33	3:52	3:59	—
—	3:03	3:18	3:34	3:40	3:59	—	4:09
3:03	3:11	3:26	3:42	3:48	4:07	4:14	—
—	3:18	3:33	3:49	3:55	4:14	—	4:24
3:18	3:26	3:41	3:57	4:03	4:22	4:29	—
—	3:33	3:48	4:04	4:10	4:29	—	4:39
3:33	3:41	3:56	4:12	4:18	4:37	4:44	—
—	3:48	4:03	4:19	4:25	4:44	—	4:54
3:48	3:56	4:11	4:27	4:33	4:52	4:59	—
—	4:03	4:18	4:34	4:40	4:59	—	5:09
4:03	4:11	4:26	4:42	4:48	5:06	5:13	—
—	4:18	4:33	4:49	4:55	5:13	—	5:23
4:18	4:26	4:41	4:57	5:03	5:21	5:28	—
—	4:33	4:48	5:04	5:10	5:28	—	5:38
4:33	4:41	4:56	5:12	5:18	5:36	5:43	—
—	4:48	5:03	5:19	5:25	5:43	—	5:53
4:47	4:55	5:10	5:26	5:32	5:50	5:57	—
—	5:02	5:17	5:33	5:39	5:57	—	6:07
5:03	5:11	5:26	5:42	5:48	6:06	6:13	—
—	5:18	5:33	5:49	5:55	6:13	—	6:23
5:18	5:26	5:41	5:57	6:03	6:21	6:28	—
—	5:33	5:48	6:04	6:10	6:28	—	6:38
5:33	5:41	5:56	6:12	6:18	6:36	6:43	—
—	5:48	6:03	6:19	6:25	6:43	—	6:53
5:48	5:56	6:11	6:27	6:33	6:51	6:58	—
—	6:03	6:18	6:34	6:40	6:58	—	7:08
6:04	6:12	6:27	6:43	6:49	7:07	7:14	—
—	6:22	6:37	6:53	6:59	7:17	—	7:27
6:24	6:32	6:47	7:03	7:09	7:27	7:34	—
6:34	6:42	6:57	7:13	7:19	7:36	—	7:47
6:45	6:53	7:07	7:23	7:29	7:46	—	7:57
6:55	7:03	7:17	7:33	7:39	7:56	—	8:07
7:05	7:13	7:27	7:43	7:49	8:06	—	8:17
7:15	7:23	7:37	7:53	7:59	8:16	—	8:27
7:25	7:33	7:47	8:03	8:09	8:26	—	8:37
7:35	7:43	7:57	8:13	8:19	8:36	—	8:47
7:47	7:55	8:09	8:25	8:31	8:48	—	8:59
8:12	8:20	8:34	8:50	8:56	9:13	—	9:24
8:35	8:43	B8:57	9:15	9:21	9:38	—	9:49
9:08	9:16	9:30	9:46	9:52	10:09	—	10:20
9:40	9:47	B10:00	10:18	10:24	10:40	—	10:51
10:11	10:18	10:31	10:47	10:52	11:07	—	11:18
10:41	10:48	B11:01	11:19	11:24	11:39	—	11:50
11:14	11:21	11:32	11:48	11:53	12:08A	—	12:19A
11:46	11:53	B12:04A	12:22A	12:27A	12:42	—	12:53
—	—	—	E1:20	1:25	G1:40	—	—
—	—	—	E2:19	2:24	G2:39	—	—
—	—	—	E3:18	3:23	G3:38	—	—

Westbound *Al Oeste* (Approximate Times / *Tiempos Aproximados*)

Montebello: 10 Montebello Metrolink Station	Montebello: 9 Whittier & Garfield	Commerce: 8 Commerce Center	East Los Angeles: 7 Whittier & Atlantic	Boyle Heights: 6 Whittier & Soto	Downtown Los Angeles: 4 Central & 6th	Downtown Los Angeles: 3 6th & St. Paul	Wilshire Center: 2 6th & Vermont F	Wilshire Center: 1 Wilshire & Western
—	3:31A	—	3:37A	3:51A	C3:56A	4:16A	4:26A	4:31A
4:21A	4:26	—	4:32	4:46	4:51	5:02	5:12	5:17
5:00	5:05	—	5:11	5:25	5:30	5:42	5:53	5:58
5:20	5:25	—	5:31	5:45	5:50	6:02	6:13	6:18
5:38	5:43	—	5:49	6:03	6:08	6:22	6:33	6:38
5:52	5:57	—	6:04	6:19	6:24	6:38	6:49	—
6:05	6:10	—	6:17	6:32	6:37	6:51	7:02	7:07
6:12	6:17	—	6:24	6:39	6:44	6:58	7:09	—
—	—	6:29A	6:32	6:47	6:52	7:06	7:17	7:22
6:26	6:31	—	6:38	6:53	6:58	7:13	7:24	—
—	—	6:43	6:46	7:01	7:06	7:21	7:32	7:37
6:40	6:45	—	6:52	7:08	7:13	7:28	7:40	—
—	—	6:57	7:00	7:16	7:21	7:36	7:47	7:52
6:55	7:00	—	7:07	7:23	7:28	7:43	7:55	—
—	—	7:12	7:15	7:31	7:36	7:51	8:02	8:07
7:10	7:15	—	7:22	7:38	7:43	7:58	8:10	—
—	—	7:27	7:30	7:46	7:51	8:06	8:17	8:22
7:24	7:29	—	7:36	7:52	7:57	8:13	8:25	—
—	—	7:40	7:43	7:59	8:05	8:21	8:32	8:37
7:37	7:42	—	7:49	8:06	8:12	8:28	8:41	—
—	—	7:54	7:57	8:14	8:20	8:36	8:47	8:52
7:51	7:56	—	8:03	8:20	8:26	8:43	8:56	—
—	—	8:08	8:11	8:28	8:34	8:51	9:02	9:07
8:05	8:10	—	8:18	8:35	8:41	8:58	9:12	—
—	—	8:23	8:26	8:43	8:49	9:06	9:17	9:22
8:19	8:24	—	8:32	8:50	8:56	9:13	9:27	—
—	—	8:37	8:40	8:58	9:04	9:21	9:32	9:37
8:34	8:39	—	8:47	9:05	9:11	9:28	9:42	—
—	—	8:50	8:53	9:12	9:18	9:36	9:47	9:52
8:47	8:52	—	9:00	9:19	9:25	9:43	9:57	—
—	—	9:04	9:07	9:26	9:32	9:51	10:02	10:07
9:00	9:05	—	9:14	9:33	9:39	9:58	10:12	—
—	—	9:19	9:22	9:41	9:47	10:06	10:17	10:22
9:15	9:20	—	9:29	9:48	9:54	10:13	10:27	—
—	—	9:34	9:37	9:56	10:02	10:21	10:32	10:37
9:29	9:34	—	9:43	10:02	10:09	10:28	10:42	—
—	—	9:48	9:51	10:10	10:17	10:36	10:47	10:52
9:44	9:49	—	9:58	10:17	10:24	10:43	10:57	—
—	—	10:03	10:06	10:25	10:32	10:51	11:02	11:07
9:59	10:04	—	10:13	10:32	10:39	10:58	11:12	—
—	—	10:18	10:21	10:40	10:47	11:06	11:17	11:22
10:14	10:19	—	10:28	10:47	10:54	11:13	11:27	—
—	—	10:33	10:36	10:55	11:02	11:21	11:32	11:37
10:28	10:33	—	10:43	11:02	11:09	11:28	11:42	—
—	—	10:48	10:51	11:10	11:17	11:36	11:47	11:52
10:42	10:47	—	10:57	11:17	11:24	11:43	11:57	—
—	—	11:02	11:05	11:25	11:32	11:51	12:02P	12:07P
10:57	11:02	—	11:12	11:32	11:39	11:58	12:12	—
—	—	11:17	11:20	11:40	11:47	12:06P	12:17	12:22
11:11	11:16	—	11:26	11:46	11:53	12:13	12:27	—
—	—	11:31	11:34	11:54	12:01P	12:21	12:32	12:37
11:26	11:31	—	11:41	12:01P	12:08	12:28	12:42	—
—	—	11:46	11:49	12:09	12:16	12:36	12:47	12:52
11:41	11:46	—	11:56	12:16	12:23	12:43	12:57	—
—	—	12:01P	12:04P	12:24	12:31	12:51	1:02	1:07
11:56	12:01P	—	12:11	12:31	12:38	12:58	1:12	—
—	—	12:16	12:19	12:39	12:46	1:06	1:17	1:22
12:11P	12:16	—	12:26	12:46	12:53	1:13	1:27	—
—	—	12:31	12:34	12:54	1:01	1:21	1:32	1:37
12:26	12:31	—	12:41	1:01	1:08	1:28	1:42	—
—	—	12:46	12:49	1:09	1:16	1:36	1:47	1:52
12:41	12:46	—	12:56	1:16	1:23	1:43	1:57	—
—	—	1:01	1:04	1:24	1:31	1:51	2:02	2:07
12:56	1:01	—	1:11	1:31	1:38	1:58	2:12	—
—	—	1:16	1:19	1:39	1:46	2:06	2:17	2:22
1:11	1:16	—	1:26	1:46	1:53	2:13	2:27	—
—	—	1:31	1:34	1:54	2:01	2:21	2:32	2:37
1:26	1:31	—	1:41	2:01	2:08	2:28	2:42	—
—	—	1:46	1:49	2:09	2:16	2:36	2:47	2:52
1:41	1:46	—	1:56	2:16	2:23	2:43	2:57	—
—	—	2:01	2:04	2:24	2:31	2:51	3:02	3:07
1:56	2:01	—	2:11	2:31	2:38	2:58	3:12	—
—	—	2:16	2:19	2:39	2:46	3:06	3:17	3:22
2:11	2:16	—	2:26	2:46	2:53	3:13	3:27	—
—	—	2:31	2:34	2:54	3:01	3:21	3:32	3:37
2:26	2:31	—	2:41	3:01	3:08	3:28	3:42	—
—	—	2:46	2:49	3:09	3:16	3:36	3:47	3:52
2:42	2:47	—	2:57	3:17	3:24	3:43	3:57	—
—	—	3:02	3:05	3:25	3:32	3:51	4:02	4:07
2:57	3:02	—	3:12	3:32	3:39	3:58	4:12	—
—	—	3:18	3:21	3:41	3:48	4:06	4:17	4:22
3:14	3:19	—	3:29	3:49	3:56	4:13	4:27	—
—	—	3:34	3:37	3:57	4:04	4:21	4:32	4:37
3:29	3:34	—	3:44	4:04	4:11	4:28	4:43	—
—	—	3:49	3:52	4:12	4:19	4:36	4:47	4:52
3:45	3:50	—	4:00	4:20	4:27	4:43	4:58	—
—	—	4:06	4:09	4:29	4:35	4:51	5:02	5:07
4:01	4:06	—	4:16	4:36	4:42	4:58	5:14	—
—	—	4:21	4:24	4:44	4:50	5:06	5:17	5:22
4:17	4:22	—	4:32	4:52	4:58	5:13	5:29	—
—	—	4:37	4:40	5:00	5:06	5:21	5:32	5:37
4:32	4:37	—	4:47	5:07	5:13	5:28	5:44	—
—	—	4:52	4:55	5:15	5:21	5:36	5:47	5:52
4:48	4:53	—	5:03	5:22	5:28	5:43	5:59	—
—	—	5:08	5:11	5:30	5:36	5:51	6:03	6:10
5:03	5:08	—	5:18	5:37	5:43	5:58	6:14	—
—	—	5:22	5:25	5:44	5:50	6:05	6:20	6:27
5:17	5:22	—	5:32	5:51	5:57	6:12	6:28	—
—	—	5:36	5:39	5:58	6:04	6:19	6:34	6:41
5:35	5:40	—	5:49	6:07	6:13	6:28	6:43	6:50
5:45	5:50	—	5:59	6:17	6:23	6:38	6:53	7:00
5:55	6:00	—	6:09	6:27	6:33	6:48	7:03	7:10
6:05	6:10	—	6:19	6:37	6:43	6:58	7:13	7:20
6:19	6:24	—	6:33	6:51	6:57	7:12	7:27	7:34
6:39	6:44	—	6:53	7:11	7:17	7:32	7:47	7:54
6:59	7:04	—	7:13	7:31	7:37	7:52	8:07	8:14
7:19	7:24	—	7:33	7:51	7:57	8:12	8:26	8:33
7:39	7:44	—	7:53	8:11	8:17	8:32	8:45	8:52
7:59	8:04	—	8:13	8:31	8:37	8:52	9:05	9:12
8:22	8:27	—	8:36	8:54	C9:00	9:17	9:30	9:37
8:49	8:54	—	9:03	9:21	9:27	9:42	9:54	10:01
9:24	9:29	—	9:37	9:54	C9:59	10:16	10:28	10:35
9:57	10:02	—	10:10	10:26	10:31	10:46	10:58	11:05
10:28	10:33	—	10:41	10:56	C11:01	11:18	11:30	11:37
10:59	11:04	—	11:12	11:27	11:32	11:47	11:59	12:06A
11:26	11:31	—	11:39	11:54	C11:59	12:16A	12:27A	12:34
12:28A	12:33A	—	12:39A	12:54A	D12:59A	—	—	—
1:27	1:32	—	1:38	1:53	D1:58	—	—	—
—	2:31	—	2:37	2:52	D2:57	—	—	—

Sunday and Holiday Schedules

Sunday and Holiday Schedule in effect on New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day.

Horarios de domingo y días feriados

Horarios de domingo y días feriados en vigor para New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day y Christmas Day.

Special Notes

- **B** Trip arrives at 6th & Broadway 5 minutes after time shown and waits 6 minutes for late night connections.
- **C** Trip arrives at 5th & Spring 4-6 minutes after time shown and waits 6-11 minutes for late night connections.
- **D** Trip terminates at 5th & Hill approximately 5 minutes after time shown.
- **E** Trip originates at 5th & Hill approximately 9 minutes before time shown, and waits 3 minutes at 6th & Broadway for transfer connections.
- **F** If no time shown for Western & Wilshire, trip terminates at Wilshire & Vermont Station at time shown.
- **G** Trip terminates at Whittier & Garfield 5 minutes after time shown.
- **H** If no time shown for Western & Wilshire, trip starts at Wilshire/Vermont Station 2-4 minutes before time shown.

Avisos especiales

- **B** *El viaje llega a la 6th y Broadway 5 minutos después de la hora mostrada y espera 6 minutos por las conexiones nocturnas.*
- **C** *El viaje llega a la 5th y Spring 4-6 minutos después de la hora mostrada y espera 6-11 minutos por las conexiones nocturnas.*
- **D** *El viaje termina en la 5th y Hill aproximadamente 5 minutos después de la hora mostrada.*
- **E** *El viaje empieza en la 5th y Hill aproximadamente 9 minutos antes de la hora mostrada, y espera 3 minutos en 6th y Broadway para ser conexiones de tránsito.*
- **F** *Si no se muestra hora en Western y Wilshire, el viaje termina en Wilshire & Vermont Station a la hora mostrada.*
- **G** *El viaje termina en Whittier y Garfield 5 minutos después de la hora mostrada.*
- **H** *Si no se muestra hora en Western y Wilshire, el viaje empieza en Wilshire/Vermont Station 2-4 minutos antes de la hora mostrada.*

APPENDIX B

REFERENCES FROM CHAPTER 3 OF *CONNECT SOCAL*

CHAPTER 3

CHAPTER 3

A PATH TO GREATER ACCESS, MOBILITY & SUSTAINABILITY

CORE VISION

Rooted in the 2008 and 2012 RTP/SCS plans, Connect SoCal's "Core Vision" centers on maintaining and better managing the transportation network we have for moving people and goods, while expanding mobility choices by locating housing, jobs and transit closer together and increasing investment in transit and complete streets. Examples of SCAG's Core Vision are embedded throughout this chapter in blue highlight boxes, and include progress made since the 2016 RTP/SCS. These highlights are presented alongside the narrative, which provides a more comprehensive overview of strategies planned to advance the region's core vision for mobility and sustainability. The Core Vision includes:

SUSTAINABLE DEVELOPMENT

SYSTEM PRESERVATION & RESILIENCE

DEMAND & SYSTEM MANAGEMENT

TRANSIT BACKBONE

COMPLETE STREETS

GOODS MOVEMENT

There is no one-size-fits-all solution for regional challenges. Instead, we must explore an integrated web of creative strategies to achieve the goals of Connect SoCal. In this chapter we will lay out clear policy guidance, action-oriented strategies and pragmatic tools that can be utilized to achieve a coordinated and balanced regional transportation system. This chapter also describes strategies to integrate the region's Forecasted Development Pattern with the transportation network to demonstrate reductions in greenhouse gas (GHG) emissions.

OUR VISION FOR A CONNECTED REGION

As the region's population increases, ages and diversifies, it is crucial that land use decisions and transportation investments made at the federal, state, regional and local levels are coordinated to be able to achieve Connect SoCal's regional goals. Developing compact centers with a robust mix of land uses, a range of building types and connected public spaces can strengthen the fabric of communities. Targeting rideshare and transportation demand management strategies near employment centers can reduce travel costs and improve air quality. Thoughtfully locating freight delivery facilities and logistics centers can reduce truck travel and the impact of goods movement on communities. While coordinating land-use and transportation strategies makes sense and can yield beneficial outcomes, implementation is difficult in a region where authority is divided among myriad agencies. This plan is not designed to dictate or supersede local actions and policies, but rather to lay out a path to achieving regional goals set by the Regional Council.

Our vision for the region incorporates a range of best practices for increasing transportation choices, reducing dependence on personal automobiles, further improving air quality and encouraging growth in walkable, mixed-use communities with ready access to transit infrastructure and employment. More and varied housing types and employment opportunities would be located in and near job centers, transit stations and walkable neighborhoods where goods and services are easily accessible via shorter trips. To support shorter trips, people would have the choice of using neighborhood bike networks, car share or micro-mobility services like shared bicycles or scooters. For longer commutes, people would have expanded regional transit services and more employer incentives to carpool or vanpool. Other longer trips

would be supported by on-demand services such as microtransit, carshare and citywide partnerships with ride hailing services. For those that choose to drive, hotspots of congestion would be less difficult to navigate due to cordon pricing, and using an electric vehicle will be easier thanks to an expanded regional charging network.

There are certainly inherent constraints to expansive regional growth, and areas that are susceptible to natural hazards and a changing climate must be recognized. Connect SoCal therefore emphasizes options that conserve important farmland, resource areas and habitat corridors, and de-prioritizes growth on lands that are vulnerable to wildfire, flooding and near term sea-level rise.

OUR APPROACH

Connect SoCal addresses regional challenges in several ways. A key, formative step is to develop a Regional Growth Forecast in collaboration with local jurisdictions, which helps SCAG identify opportunities and barriers to development. The plan forecasts the number of people, households and jobs (at the jurisdictional level) expected throughout SCAG's 191 cities and in unincorporated areas by 2045. This forecast helps the region understand in a very general sense where we expect growth and allows us to focus attention on areas experiencing change and increases in transportation needs. For additional details on growth forecast methodology, refer to the Demographics and Growth Forecast Technical Report.

The Regional Growth Forecast is then complemented by a set of strategies to guide integrated land use development decisions and transportation investments to achieve regional goals, called the Connect SoCal Growth Vision. The resulting Forecasted Development Pattern includes strategies to prioritize areas for new development, like near destinations and mobility options, and places enhanced conservation value on resource areas, key farm lands and areas vulnerable to natural hazards. However, Connect SoCal does not dictate or supersede local policies, actions or strategies – applying the Forecasted Development Pattern at the local level is the authority and responsibility of towns, cities and counties. The regional Forecasted Development Pattern identifies areas sufficient to house the region's population, including all economic segments of the population, through 2045. It takes into account

KEY CONNECTIONS

In this chapter, we also describe Connect SoCal's "Key Connections" in yellow highlight boxes. Key Connections augment the Core Vision of the plan to address trends and emerging challenges while "closing the gap" between what can be accomplished through intensification of core planning strategies alone, and what must be done to meet increasingly aggressive greenhouse gas reduction goals. These Key Connections lie at the intersection of land use, transportation and innovation, aiming to coalesce policy discussions and advance promising strategies for leveraging new technologies and partnerships to accelerate progress on regional planning goals. The Key Connections include:

- SMART CITIES & JOB CENTERS
- HOUSING SUPPORTIVE INFRASTRUCTURE
- GO ZONES
- ACCELERATED ELECTRIFICATION
- SHARED MOBILITY & MOBILITY AS A SERVICE

CORE VISION

SUSTAINABLE DEVELOPMENT

Through our continuing efforts to better align transportation investments and land use decisions, we strive to improve mobility and reduce greenhouse gases by bringing housing, jobs and transit closer together.

PROGRESS SINCE 2016

From 2008 to 2016, 71 percent of the region's household growth and 75 percent of the region's job growth occurred in Connect SoCal's priority growth areas. During this same period, only 11 percent of the region's household growth and 5 percent of the job growth occurred on constrained areas like prime farmland, and in areas vulnerable to rising seas.

PLANNING FOR 2045

From 2016 to 2045, 64 percent of new households and 74 percent of new jobs will occur in priority growth areas. During this same period, roughly 10 percent of new households and 9 percent of new jobs will occur in constrained areas.

SCAG's Sustainable Communities Program supports planning in local jurisdictions to advance the regional Growth Vision. In addition, new regional data tools, like the Regional Data Platform, will help local jurisdictions identify areas well suited for infill and redevelopment as well as natural and farm lands to be preserved. Studies and partnerships will also be pursued to establish a Regional Advanced Mitigation Program (RAMP), a strategic habitat and agricultural land conservation-planning program that identifies mitigation solutions for infrastructure projects early in the planning process.

net migration into the region, population growth, household formation and employment growth. Moreover, Connect SoCal identifies areas within the region sufficient to house near-term and long-term growth and support a diverse economy and workforce. For additional details on the Growth Vision and Forecasted Development Pattern, see the Sustainable Communities Strategy Technical Report.

Key investments are coupled with our Forecasted Development Pattern to optimize the regional transportation system and accommodate the increased service and infrastructure demands posed by land-use changes. Connect SoCal's transportation investments are financially constrained to reflect core and reasonably available revenues and are progressively integrated with projected land use patterns and coordinated across transportation modes to advance plan goals.

By integrating the Forecasted Development Pattern with a suite of financially constrained transportation investments, Connect SoCal can reach the regional target of reducing greenhouse gases, or GHGs, from autos and light-duty trucks by 8 percent per capita by 2020, and 19 percent by 2035 (compared to 2005 levels). Moreover, this integration can yield tangible outcomes that make our everyday travel needs easier when compared to a future without the plan — for example, the combined work trips made by carpooling, active transportation, and public transit increases by 3 percent and travel delay reduces by 26 percent per capita.

SUSTAINABLE COMMUNITIES STRATEGY

As part of the state's mandate to reduce per-capita GHG emissions from automobiles and light trucks, Connect SoCal presents strategies and tools that are consistent with local jurisdictions' land use policies and incorporate best practices for achieving the state-mandated reductions in GHG emissions at the regional level through reduced per-capita vehicle miles traveled (VMT).

These strategies identify how the SCAG region can implement Connect SoCal and achieve related GHG reductions. It is important to note that SCAG does not have a direct role in implementing the Sustainable Communities Strategy

—neither through decisions about what type of development goes where, nor what transportation projects are ultimately built. However, SCAG works to support local jurisdictions and partnerships by identifying ways to implement the Sustainable Communities Strategy (SCS) in a way that fits the vision and needs of each local community. Additionally, SCAG serves as a leader as well as a hub to convene stakeholders and to find ways to collaborate on broader regional initiatives. See the Sustainable Communities Strategy Technical Report for more details on GHG reduction and implementation of the SCS.

The following strategies are intended to be supportive of implementing the regional Sustainable Communities Strategy. Several are directly tied to supporting related GHG reductions while others support the broader goals of Connect SoCal:

Focus Growth Near Destinations & Mobility Options

- Emphasize land use patterns that facilitate multimodal access to work, educational and other destinations
- Focus on a regional jobs/housing balance to reduce commute times and distances and expand job opportunities near transit and along center-focused main streets
- Plan for growth near transit investments and support implementation of first/last mile strategies
- Promote the redevelopment of underperforming retail developments and other outmoded nonresidential uses
- Prioritize infill and redevelopment of underutilized land to accommodate new growth, increase amenities and connectivity in existing neighborhoods
- Encourage design and transportation options that reduce the reliance on and number of solo car trips (this could include mixed uses or locating and orienting close to existing destinations)
- Identify ways to "right size" parking requirements and promote alternative parking strategies (e.g. shared parking or smart parking)

Promote Diverse Housing Choices

- Preserve and rehabilitate affordable housing and prevent displacement
- Identify funding opportunities for new workforce and affordable housing development
- Create incentives and reduce regulatory barriers for building context-sensitive accessory dwelling units to increase housing supply
- Provide support to local jurisdictions to streamline and lessen barriers to housing development that supports reduction of greenhouse gas emissions

Leverage Technology Innovations

- Promote low emission technologies such as neighborhood electric vehicles, shared rides hailing, car sharing, bike sharing and scooters by providing supportive and safe infrastructure such as dedicated lanes, charging and parking/drop-off space
- Improve access to services through technology—such as telework and telemedicine as well as other incentives such as a "mobility wallet," an app-based system for storing transit and other multi-modal payments
- Identify ways to incorporate "micro-power grids" in communities, for example solar energy, hydrogen fuel cell power storage and power generation

Support Implementation of Sustainability Policies

- Pursue funding opportunities to support local sustainable development implementation projects that reduce greenhouse gas emissions
- Support statewide legislation that reduces barriers to new construction and that incentivizes development near transit corridors and stations
- Support local jurisdictions in the establishment of Enhanced Infrastructure Financing Districts (EIFDs), Community Revitalization and Investment Authorities (CRIAs), or other tax increment or value capture tools to finance sustainable infrastructure and development projects, including parks and open space
- Work with local jurisdictions/communities to identify opportunities and assess barriers to implement sustainability strategies
- Enhance partnerships with other planning organizations to promote resources and best practices in the SCAG region
- Continue to support long range planning efforts by local jurisdictions
- Provide educational opportunities to local decisions makers and staff on new tools, best practices and policies related to implementing the Sustainable Communities Strategy

Promote a Green Region

- Support development of local climate adaptation and hazard mitigation plans, as well as project implementation that improves community resiliency to climate change and natural hazards
- Support local policies for renewable energy production, reduction of urban heat islands and carbon sequestration
- Integrate local food production into the regional landscape
- Promote more resource efficient development focused on conservation, recycling and reclamation
- Preserve, enhance and restore regional wildlife connectivity
- Reduce consumption of resource areas, including agricultural land
- Identify ways to improve access to public park space

LAND USE TOOLS

CENTER FOCUSED PLACEMAKING

Creating dynamic, connected built environments that support multimodal mobility, reduced reliance on single-occupancy vehicles, and reduced GHG emissions is critical throughout the region. Center focused placemaking is an approach that supports attractive and functional places for Southern California residents to live, work and play, in urban, suburban and rural settings. Although center focused placemaking can be applied in a wide range of settings, priority must be placed, however, on urban and suburban infill, in existing/planned service areas and, for unincorporated county growth, within the planning boundary known as "Spheres of Influence" (SOI) where applicable and feasible.

Successful centers are typically human-scale, compact and pedestrian-oriented with a variety of housing types and ranges of affordability. For example, transit-oriented development (TOD) in Transit Priority Areas (TPAs) and high quality transit areas (HQTAs) within centers and nodes along corridors can play a pivotal role in supporting compact development that is less reliant on single-occupancy vehicles. Elements of center-focused placemaking can be implemented when transit service is neither existing nor planned. Center-focused placemaking includes smart locations and linkages, neighborhood patterns and design and green infrastructure and buildings. Some key elements are specified the Sustainable Communities Strategy Technical Report.

PRIORITY GROWTH AREAS

Priority Growth Areas (PGAs) follow the principles of center focused placemaking and are locations where many Connect SoCal strategies can be fully realized. Connect SoCal's PGAs—Job Centers, TPAs, HQTAs, Neighborhood Mobility Areas (NMAs), Livable Corridors and Spheres of Influence (SOIs)—account for only 4 percent of region's total land area, but implementation of SCAG's recommended growth strategies will help these areas accommodate 64 percent of forecasted household growth and 74 percent of forecasted employment growth between 2016 and 2045. This more compact form of regional development, if fully realized, can reduce travel distances, increase mobility options, improve access to workplaces, and conserve the region's resource areas.

Jurisdictions should continue to be sensitive to the possibility of gentrification and employ strategies to mitigate negative community impacts – particularly in PGAs. Although the region will see benefits from infill development, communities are encouraged to actively acknowledge and plan for potential impacts including displacement. Production and preservation of permanent affordable housing to complement infill strategies is essential to achieving equitable outcomes.

Exhibits for priority growth areas and growth constraints, spheres of influence, job centers, transit priority areas, high quality transit areas, and neighborhood mobility areas can be found at the end of this chapter (**EXHIBIT 3.4-3.10**). Following is a description of Connect SoCal's PGAs and their associated strategies.

JOB CENTERS

Job Centers are where regional strategies that support economic prosperity can be deployed in catalytic ways. Job Centers have been identified in all six counties in the SCAG region and represent areas that have a significantly higher employment density than surrounding areas. Employment growth and residential growth are prioritized in existing Job Centers in order to leverage existing density and infrastructure. However, it is recognized that capacity

for infrastructure or services may need to be evaluated before residential or employment population is increased in a given area. By encouraging regional growth and employing transportation strategies in the 70+ Job Centers throughout the region, Connect SoCal seeks to reinforce regional economic prosperity. SCAG's methodology to identify Job Centers is not all-inclusive and additional potential centers can be identified.

Job Centers represent areas with local employment peaks rather than simply places with the most jobs. Identified Job Centers are present in over 60 percent of the region's cities and contain about one-third of Southern California's jobs – but only cover less than 1 percent of the region's land area. These Job Centers range in size from over 250,000 jobs in the region's most urbanized areas, to roughly 1,500 jobs in rural areas – all with employment densities far higher than neighboring areas. When growth is concentrated in Job Centers, the length of vehicle trips for residents can be reduced.

TRANSIT PRIORITY AREAS

Transit Priority Areas (TPAs) are Priority Growth Areas that are within one half mile of existing or planned 'major' transit stops in the region. A 'major' transit stop is defined as a site containing an existing or planned rail or bus rapid transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods. TPAs are where TOD can be realized – where people can live, work and play in higher density, compact communities with ready access to a multitude of safe and convenient transportation alternatives.

Focusing regional growth in areas with planned or existing transit stops is key to achieving equity, economic, and environmental goals. Infill within TPAs can reinforce the assets of existing communities, efficiently leveraging existing infrastructure and potentially lessening impacts on natural and working lands. Growth within TPAs supports Connect SoCal's strategies for preserving natural lands and farmlands and alleviates development pressure in sensitive resource areas by promoting compact, focused infill development in established communities with access to high-quality transportation. Although TPAs comprise less than 1 percent of Southern California's land area, around 30 percent of new households are projected to occur within these transit rich areas.

HIGH QUALITY TRANSIT AREAS

High Quality Transit Areas (HQTAs) are corridor-focused Priority Growth Areas within one half mile of an existing or planned fixed guideway transit stop or a bus transit corridor where buses pick up passengers at a frequency of every 15 minutes (or less) during peak commuting hours. Freeway transit corridors with no bus stops on the freeway alignment do not have a directly associated HQTA. Like Transit Priority Areas, HQTAs are places where vibrant TOD can be realized and are a cornerstone of land use planning best practice in the SCAG region.

HQTAs represent under 3 percent of the region's acreage but are projected to be home to over 51 percent of new households between 2016 and 2045. Infrastructure investments that support walkable, compact communities that integrate land use and transportation planning for a better functioning built environment are essential within HQTAs. Active transportation and new developments should be context-sensitive, responding to the existing physical conditions of the surrounding area. Sensitively designed TODs can preserve existing development patterns and neighborhood character while providing a balance of modal and housing choices.

NEIGHBORHOOD MOBILITY AREAS

Neighborhood mobility area (NMAs) focus on creating, improving, restoring and enhancing safe and convenient connections to schools, shopping, services, places of worship, parks, greenways and other destinations. NMAs are Priority Growth Areas with robust residential to non-residential land use connections, high roadway intersection densities and low-to-moderate traffic speeds. NMAs can encourage safer, multimodal, short trips in existing and planned neighborhoods and reduce reliance on single occupancy vehicles. NMAs support the principles of center focused placemaking. Fundamental to neighborhood scale mobility in urban, suburban and rural settings is encouraging "walkability," active transportation and short, shared vehicular trips on a connected network through increased density, mixed land uses, neighborhood design, enhanced destination accessibility and reduced distance to transit.

From 2016 to 2045, nearly 29 percent of new households are projected to be located in NMAs. Although 38 percent of all trips made in the SCAG region are three miles or less, more than 78 percent of these short trips are made

by driving. Improving public health and reducing per-capita VMT, and GHG reductions relies on our region's ability to support safe and convenient short trips at the neighborhood scale—by foot, bicycle, micro-mobility devices and slow speed electric vehicles such as e-bikes, scooters, and neighborhood electric vehicles. Adopting and implementing Complete Streets policies supports safer neighborhood mobility and connected, economically dynamic communities. Targeting future growth in these areas has inherent benefits to Southern California residents – providing access to "walkable" and destination-rich neighborhoods to more people in the future.

LIVABLE CORRIDORS

The Livable Corridor strategy encourages local jurisdictions to plan and zone for increased density at nodes along key corridors, and to "redevelop" single-story under-performing retail with well-designed, higher density housing and employment centers. Growth at strategic nodes along key corridors, many of which are within HQTAs, will make transit a more convenient and viable option. The Livable Corridors strategy is comprised of three components that will encourage context sensitive density, improve retail performance, combat disinvestment, and improve fiscal outcomes for local communities:

- **Transit improvements:** Some corridors have been identified as candidates for on-street, dedicated lane Bus Rapid Transit (BRT) or semi-dedicated "BRT-lite" transit. Other corridors have the potential to support features that improve the user experience and bus performance, including enhanced bus shelters, real-time travel information, off-bus ticketing, all-door boarding and longer distances between stops to increase speeds.
- **Active transportation improvements:** Increased investments in Complete Streets within Livable Corridors and intersecting arterials are essential to support safe bicycling and walking. Investments should include protected lanes to encourage safe bicycling and lower speed mobility, improved pedestrian access and bicycle and micro-mobility parking.
- **Land use policies:** Mixed-use retail centers at key nodes along Livable Corridors are essential, as is increasing neighborhood-oriented retail at intersections, and flexible zoning that allows for the replacement of under-performing auto-oriented retail.

SPHERES OF INFLUENCE

Local Agency Formation Commissions, or LAFCos, are given the authority to determine SOIs for all local governmental agencies, and each county in the SCAG region has an associated LAFCo. An SOI is a planning boundary outside of a local agency's legal boundary (such as the city limit line) that designates the agency's probable future boundary and service area. The intent of an SOI is to promote the efficient, effective and equitable delivery of local and regional services for existing and future residents and to encourage a collaborative process between agencies. A city will periodically annex parcels in an SOI into the city limits to include new developments or areas with infrastructure needs. Some factors considered in an SOI designation focus on current and future land uses and the need and capacity for services.

Decisions made by LAFCos in the SCAG region can support the implementation of Connect SoCal goals related to infill development, GHG emissions reductions, and climate change resilience. Connect SoCal encourages future unincorporated county growth be prioritized within existing SOIs to discourage urban sprawl and the premature conversion of agricultural and natural lands, support alignment of policies across jurisdictions, and rehabilitate and utilize existing infrastructure. This strategy promotes growth in an efficient manner that limits sprawl and "leapfrog" development and minimizes costs to taxpayers. As a result, 4 percent of the region's future household growth will be located in SOIs outside of incorporated city boundaries from 2016 to 2045.

GREEN REGION

A sustainable, "green" region requires that the built environment and natural resource areas coexist in a well-balanced land use pattern that encourages mutual co-benefits. The quality and range of conservation, natural and agricultural areas present in the region can be reinforced and enhanced by a range of regional and local tools.

Paired with PGAs, Connect SoCal's conservation strategies consider the economic and ecological benefits of preserving natural areas and farmlands, while also maximizing their potential for GHG reduction. New housing and employment development is emphasized in PGAs such as Job Centers, TPAs, HQTAs and NMAs, and away from natural and farm lands on the edges of urban and suburban areas, to incentivize infill development and the concentration

MEMORANDUM

To:	Los Angeles County Public Works	Date:	January 3, 2024
From:	David S. Shender, P.E. Jason A. Shender, AICP Linscott, Law & Greenspan, Engineers	LLG Ref:	1-22-4500-1
Subject:	**Non-CEQA Vehicle Queuing Analysis for the Extera Public School Project** **1059 S. Gage Avenue**		

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This memorandum has been prepared by Linscott, Law & Greenspan, Engineers ("LLG") to provide a non-CEQA vehicle queuing analysis related to the Extera Public School project ("Project") located at 1059 S. Gage Avenue (Assessor Parcel Nos. 5239-012-009 and 5239-012-028) within the East Los Angeles Community Plan Area and Community Standards District of unincorporated Los Angeles County ("Project Site"). The existing Project Site is occupied by the Oasis of Mercy Catholic Church ("Church") and is improved with two buildings and a surface parking lot. Specifically, the Project Site is improved with a two-story building providing 18,309 square feet of floor area ("Building 1") and a one-story building providing 6,993 square feet of floor area ("Building 2"). The Project Site is generally bound by single-family residences to the north and south, Eastman Avenue to the west, and Gage Avenue to the east.

The Project proposes to (i) renovate Building 2, including the removal of an existing 509 square-foot covered courtyard, and add a new 2,265 square-foot outdoor lunch patio and (ii) demolish and construct a new Building 1 in a different location on the Project Site. The new two-story Building 1 will provide 29,676 square feet of floor area (inclusive of a new 6,500 square-foot concrete deck covering the onsite parking spaces). The renovated Building 2 will provide a total of 8,749 square feet in floor area. In total, the Project will provide 38,425 square feet of total building floor area.

The Project consists of a new permanent public charter school facility serving a maximum enrollment of 525 students. Specifically, the Project proposes to serve 336 students in Transitional Kindergarten ("TK") through 5th grades and 189 students in the 6th through 8th grades. The Project will include 22 classrooms, offices, outdoor eating and play areas, and a multi-purpose room. The Project would have a total of 28 full-time faculty members. The Project proposes to provide 38 parking spaces within an onsite surface parking lot. Construction and occupancy of the Project is proposed to be completed by August 2025. The Project Site location and general vicinity are shown in ***Figure 1***. The site plan and proposed site access scheme for the Project is presented in ***Figure 2***.

Vehicular Project Site Access and Student Drop-Off/Pick-Up Operations

The proposed student drop-off/pick-up plan is shown in ***Figure 3***. As shown in *Figure 3*, ingress traffic movements to the Project Site are proposed to be accommodated via one inbound-only driveway along the west side of Gage Avenue, on the easterly portion of the Project Site. For student drop-off and pick-up operations, motorists will be instructed to make a right-turn into the Project Site's drop-off/pick-up area, travel within the proposed onsite drop-off/pick-up lane, complete the student drop-off or pick-up, and then exit from the proposed driveway along the east side of Eastman Avenue via a right-turn movement. Left-turn ingress and egress movements will be prohibited at all times. Traffic regulatory signs will be posted at the ingress and egress driveways indicating the turning restrictions. Onsite traffic monitors will also assist with indicating turning restrictions to motorists. Community outreach will be provided to the public, including administrative staff, parents/caregivers, and neighboring residents, regarding the school's queuing and traffic management plan.

In addition, parents/caregivers will be advised to have students sit in the rear of their vehicles so that the students can exit the vehicle on the driver's side (i.e., adjacent to the school building). Students sitting in the front passenger seat will wait for a traffic monitor to assist them in exiting the vehicle and crossing the onsite drop-off/pick-up lanes to access the school building. Similarly, students sitting in vehicles with no rear door on the driver's side will wait for a traffic monitor to assist them in exiting the vehicle from the rear door on the passenger's side and crossing the onsite drop-off/pick-up lanes to access the school building. Students sitting in vehicles within the outer drop-off/pick-up lane (i.e., the drop-off/pick-up lane that is not immediately adjacent to the school building) will wait for a traffic monitor to assist them in exiting the vehicle and crossing the onsite drop-off/pick-up lanes to access the school building. At the beginning of each semester, the school will distribute its queuing plan to parents and caregivers. Parents and caregivers will be required to review the student drop-off/pick-up operational plan and acknowledge acceptance of the plan by signature.

The drive aisle accommodating the onsite drop-off/pick-up area is approximately 26 feet in width, which is sufficient to accommodate two lanes of queued vehicles. Furthermore, each drive aisle provides approximately 233 feet of onsite queuing distance from the Gage Avenue driveway to the student drop-off/pick-up point. As such, the proposed drop-off/pick-up area can facilitate two lanes of queued vehicles within the site and can therefore accommodate a total of approximately 20 vehicles[1] queued within the site: six (6) vehicles in the designated drop-off/pick-up area and 14 vehicles in the onsite queue leading to the designated drop-off/pick-up zone. It is

[1] The vehicle queue capacity is based on a highly conservative ("worst case") design vehicle of 19 feet in length, plus additional space (at least three feet) between queued vehicles.

noted that a minimum of six (6) traffic monitors and one crossing guard will be onsite to assist students in safely crossing the double queue of vehicles during the drop-off and pick-up periods. Two additional traffic monitors will be stationed at the entrance and exit driveways (one per driveway) to direct vehicles entering the drop-off/pick-up area into two lanes and to direct vehicles exiting the drop-off/pick-up area out onto Eastman Avenue. In addition to directing vehicles, the driveway monitors will also serve as crossing guards to facilitate safe crossings across the driveways to avoid potential vehicle/pedestrian conflicts. During the student pick-up period, a staff member will announce when a student's ride has arrived to ensure an efficient pick-up. In addition to the student drop-off and pick-up periods, the school will station monitors throughout the onsite surface parking lot and at the driveways when hosting other school events when students are present. A letter from the Applicant, Extera Public Schools, describing the commitment to implement two lanes of onsite vehicle queuing during the drop-off and pick-up periods and to utilize traffic monitors during student drop-off and pick-up is provided in ***Appendix A***.

As previously noted, the ingress driveway along the west side of Gage Avenue is proposed to accommodate right-turn vehicular ingress only (i.e., left-turn ingress movements will not be permitted, and egress movements will not be permitted). In addition, the egress driveway along the east side of Eastman Avenue is proposed to accommodate right-turn vehicular egress only at all times (i.e., ingress movements will not be permitted, and left-turn egress movements will not be permitted). Thus, motorists will not be permitted to make left-turn ingress movements outside of drop-off/pick-up periods. Signs will be posted at the ingress and egress driveways indicating the turning restrictions. The traffic monitors onsite will also assist with indicating turning restrictions to motorists. Community outreach will be provided to the public, including administrative staff, parents/caregivers, and neighboring residents, regarding the school's traffic management plan. Therefore, motorists destined to the Project will be aware of the right-turn only ingress operation at the Gage Avenue driveway and will plan their travel routes in advance so as to arrive at the Project Site via southbound Gage Avenue. A roadway signing/striping plan will be prepared for the immediate Project Site vicinity and submitted to Public Works for approval prior to the issuance of building permits.

The Project's exact start and dismissal times are unknown at the time of preparation of this analysis. It is expected that both the elementary and middle school components would start between 7:00 and 9:00 AM, and that both would dismiss between 3:00 and 4:00 PM. However, the Project proposes to stagger the start and dismissal times of the proposed elementary and middle schools by a minimum of 20 minutes. For example, 175 students would commence at 7:30 AM, 175 students would commence at 7:50 AM, and 175 students would commence at 8:10 AM. By staggering the student start and dismissal times by 20 minutes, the peak one-hour period of traffic is dispersed over a longer period of time (i.e., to 80 minutes), which reduces the number of vehicles queuing at the Project Site during drop-off and pick-

up times. A letter from the Applicant describing the commitment to stagger the Project's start and dismissal times is provided in *Appendix A*.

Estimated Peak Vehicle Queue

Private vehicles are the only component that contributes to the vehicle queuing analysis during the peak student drop-off and pick-up periods. Students would not be bussed to the Project Site. Delivery and trash collection vehicles would not be permitted to access the Project Site during the student drop-off and pick-up periods. The analysis focuses on the morning student drop-off period because the pick-up of students tends to be dispersed on a relative basis throughout the afternoon, particularly as students are involved with after-school activities.

The proposed Project (without the consideration of an adjustment due to the removal of the existing Church) is forecast to generate a total of 285 inbound trips and 253 outbound trips during the AM peak hour as shown in ***Table 1***. The trip generation forecast was prepared based on trip rates provided in the Institute of Transportation Engineers' ("ITE") *Trip Generation Manual*.[2]

As noted above, the Project proposes to stagger the start times of the proposed elementary and middle schools by at least 20 minutes, thereby likely resulting in the dispersing of Project-related trips beyond the 60-minute window for which the trip forecast is yielded through use of the ITE peak hour trip rates. However, to provide a conservative "worst case" analysis of vehicle queuing at the Project Site, it is assumed that the peak hour trip forecast provided by use of the ITE trip rates will occur within a 60-minute period.

A review of the Project Site location, pedestrian walkway network, and nearby public transit stops indicates that pedestrian movements can be accommodated as part of the Project. Streets in the immediate Project vicinity are improved with sidewalks. Students and employees traveling to and from the Project Site by walking or public transit can safely access the Project Site via the existing pedestrian network and enter the Project Site via pedestrian entrances along the Project Site's Gage Avenue and Eastman Avenue frontages. The pedestrian entrances are located away from the Project driveways to reduce the possibility of vehicle/pedestrian conflict. Furthermore, adult monitors will be stationed at the Project driveways to facilitate safe pedestrian crossings. It is also noted that the Project Site is located within 1,000 feet of eastbound and westbound transit stops located along Whitter Boulevard, a High-Quality Transit Corridor ("HQTC") as defined by the Southern California Association of Governments ("SCAG"), which is served by Metro Local Line 18. While it is anticipated that some students and employees will utilize public

[2] Institute of Transportation Engineers *Trip Generation Manual*, 11th Edition, Washington, D.C., 2021.

transportation for travel to and from the Project Site, a transit adjustment was not made to provide a conservative forecast of the Project's trip generation.

While the ITE trip rates do not distinguish between trips related to staff arrivals and student drop-offs in the morning, it can be generally assumed that the 253 outbound trips during the AM peak hour would correlate with at least 253 inbound trips during this period related to student drop-off operations. The remaining inbound vehicle trips during the AM peak hour are likely due to administrative staff, visitors, etc. Therefore, for this queuing analysis, it has been assumed that 253 vehicles would utilize the onsite vehicle queue area as part of the student drop-off operations.

It is noted that parking for the Project will be provided in an onsite surface parking lot. Administrative staff will be instructed to arrive at the Project Site prior to the commencement of the student drop-off period to prevent interference with student drop-off operations. Thus, by arriving at the Project Site before the drop-off period, staff are not expected to interfere with student drop-off operations.

The M/M/s queuing model was used to prepare the onsite queuing analysis. The M/M/s queuing model calculates average queuing, as well as peak queues at various confidence levels. For this analysis, the peak queue at the 95th percentile confidence level was utilized, which means the forecast vehicle queue will be equal to or less than the 95th percentile queue 95% of the time during the peak of the morning student drop-off period. By example, the 95th percentile peak hour confidence level is used by traffic engineers in the design of left-turn pocket lengths at intersections to accommodate peak hour vehicle queues.

The model requires the input of three parameters: 1) average arrival rate per hour, 2) the number of servers (i.e., adult monitors assisting students to and from cars), and 3) average service rate per hour for each adult monitor. For this analysis, the model inputs are based on an arrival rate of 253 vehicles per hour accommodated by the six monitors (servers), with each monitor able to process one car per minute (or 60 vehicles per hour) during the student drop-off period. As previously stated, the start times of the Project's middle school and elementary school will be staggered by a minimum of 20 minutes, thereby dispersing the arrival of traffic over a longer period of time. However, this analysis conservatively assumes that the forecast arrival of traffic will occur over a 60-minute period.

The M/M/s queuing calculations[3] prepared for the Project are provided in ***Appendix B***. As shown *Appendix B*, the expected average onsite queue at the Project Site is approximately 5.02 vehicles (customers). As further shown in the table provided in *Appendix B*, at the 95th percent confidence level (precisely, 95.90% as shown in *Appendix B*), the maximum onsite queue is calculated to be 11 vehicles.

[3] *Tutorial on Queuing Theory,* Kardi Teknomo, 2014.

As previously noted, the onsite drop-off/pick-up area can accommodate 20 queued vehicles, which can readily accommodate the forecast peak queue of 11 vehicles. Accordingly, Project-related trips are not expected to queue onto Gage Avenue. Therefore, it is concluded that the planned onsite vehicle queuing area can adequately accommodate the forecast peak queue of 11 vehicles during the morning student drop-off operation at the Project. Furthermore, vehicle queuing will not have an adverse effect on public safety at the Project's driveways as 1) Project-related trips are not expected to queue onto Gage Avenue, and 2) adult monitors will be stationed at the Project driveways to facilitate the safe crossing of pedestrians as to avoid vehicle/pedestrian conflicts.

Summary

This memorandum has been prepared to provide a non-CEQA vehicle queuing analysis related to the proposed Extera Public School located at 1059 S. Gage Avenue within the East Los Angeles Community Plan Area and Community Standards District of unincorporated Los Angeles County. The Project proposes to remove the existing Church to accommodate the development and construction of a new permanent public charter school facility with 22 classrooms, offices, outdoor eating and play areas, and a multi-purpose room. The Project will accommodate a maximum enrollment of 525 students. Specifically, the Project proposes to serve 336 students in TK through 5th grades and 189 students in the 6th through 8th grades.

The findings of the queuing analysis are as follows:

- For student drop-off and pick-up operations, motorists will be directed to enter the Project Site's drop-off/pick-up area by making a right-turn from Gage Avenue, travel through the onsite drop-off/pick-up lane, complete the student drop-off or pick-up, and then exit onto Eastman Avenue via a right-turn movement. Signs will be posted at the ingress and egress driveways indicating turning restrictions. Traffic monitors will also assist in directing vehicles through the drop-off/pick-up area.

- The Project Applicant, Extera Public Schools, has provided a letter describing its commitment to stagger the student start and dismissal times, implement two lines of onsite vehicle queuing during the drop-off and pick-up periods, and to utilize traffic monitors to facilitate safe and efficient student drop-off and pick-up operations at the Project.

- The start and dismissal times of the Project's middle school and elementary school components will be staggered by a minimum of 20 minutes, thereby dispersing the arrival of traffic over a longer period of time.

- The Project's onsite drop-off/pick-up area can accommodate 20 queued vehicles within two lanes of queuing: six vehicles in the drop-off/pick-up zone and 14 vehicles queued onsite in advance of the drop-off/pick-up zone.

- Using trip generation rates published by ITE and based on the M/M/s queuing model, it is forecast that during the morning student drop-off period, the Project will generate an average queue of 5.02 vehicles and a peak queue of 11 vehicles. This peak queue can be accommodated by the Project's drop-off/pick-up area which can accommodate 20 queued vehicles onsite. The Project will not cause vehicles to queue onto Gage Avenue.

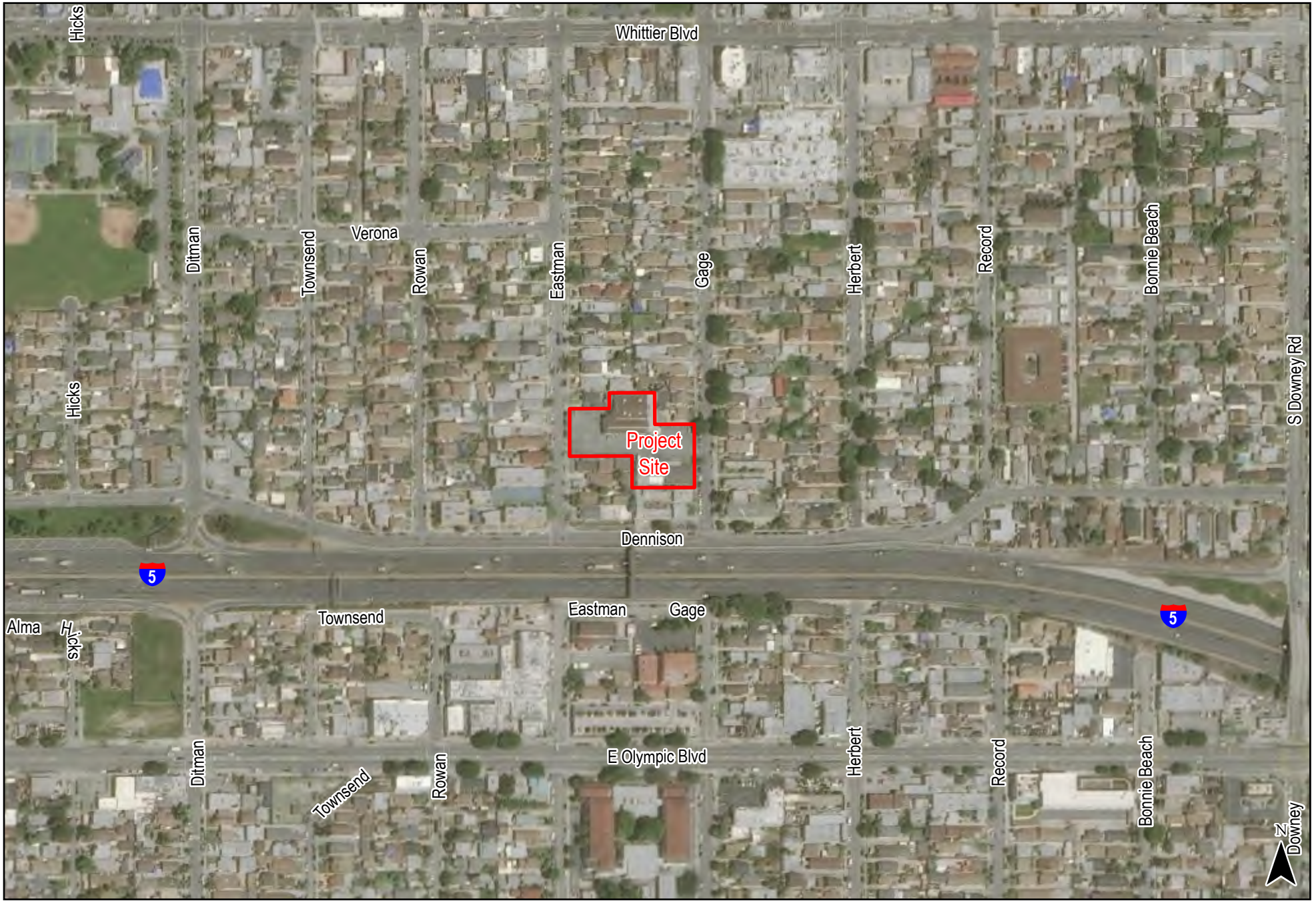

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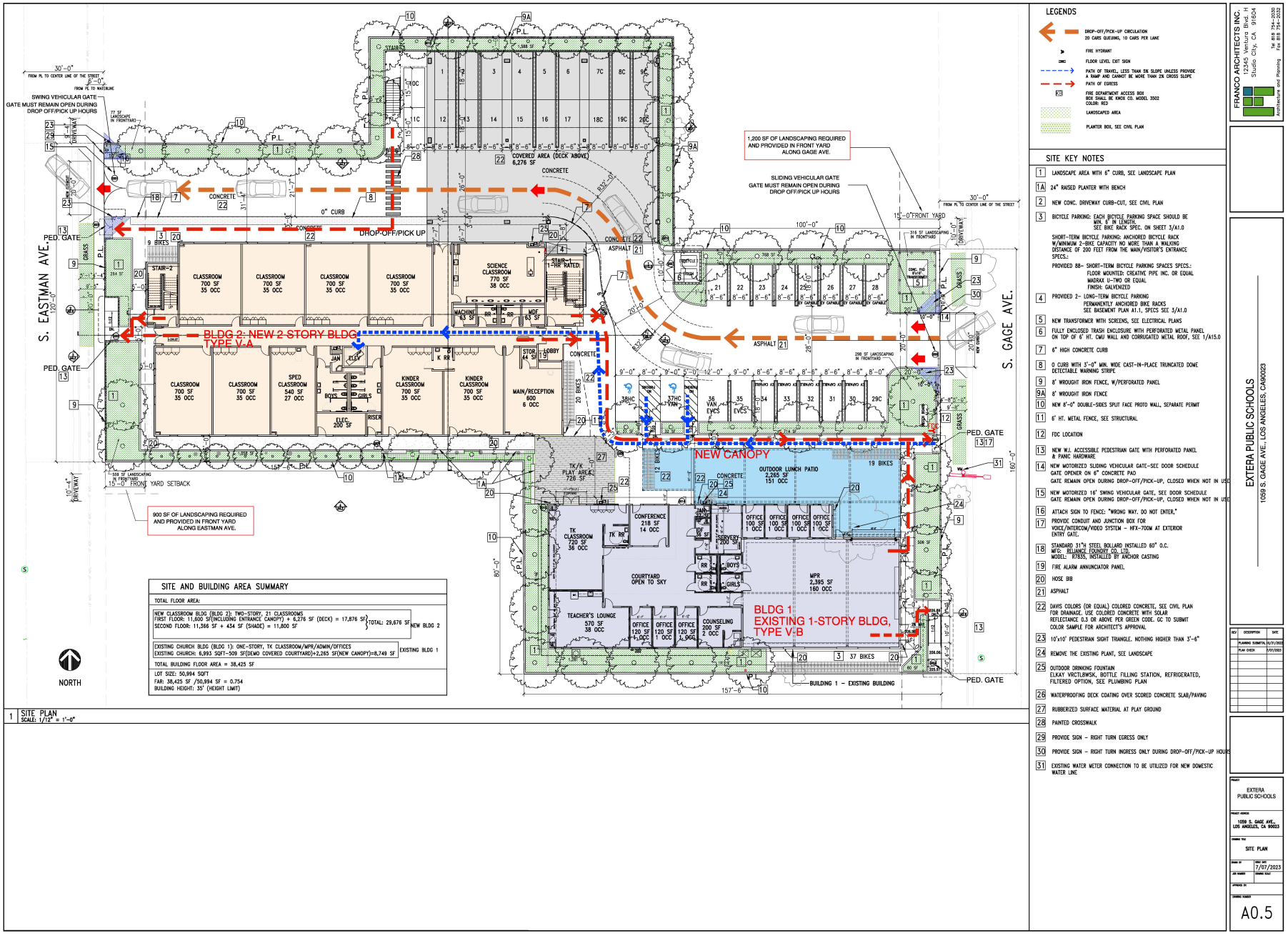
Figure 1
Vicinity Map

Extera Public School



LEGENDS

- DROP-OFF/PICK-UP CIRCULATION — 20 CARS QUEUING, 10 CARS PER LANE
- FIRE HYDRANT
- FLOOR LEVEL EXIT SIGN
- PATH OF TRAVEL, LESS THAN 5% SLOPE UNLESS PROVIDE A RAMP AND CANNOT BE MORE THAN 2% CROSS SLOPE
- PATH OF EGRESS
- FIRE DEPARTMENT ACCESS BOX — BOX SHALL BE KNOX CO. MODEL 3502 COLOR: RED
- LANDSCAPED AREA
- PLANTER BOX, SEE CIVIL PLAN

SITE KEY NOTES

1. LANDSCAPE AREA WITH 6" CURB, SEE LANDSCAPE PLAN
1A. 24" RAISED PLANTER WITH BENCH
2. NEW CONC. DRIVEWAY CURB-CUT, SEE CIVIL PLAN
3. BICYCLE PARKING: EACH BICYCLE PARKING SPACE SHOULD BE MIN. 6' IN LENGTH. SEE BIKE RACK SPEC. ON SHEET 3/A1.0
   SHORT-TERM BICYCLE PARKING: ANCHORED BICYCLE RACK W/MINIMUM 2-BIKE CAPACITY NO MORE THAN A WALKING DISTANCE OF 200 FEET FROM THE MAIN/VISITOR'S ENTRANCE
   SPECS.:
   PROVIDED 88– SHORT-TERM BICYCLE PARKING SPACES SPECS.: FLOOR MOUNTED: CREATIVE PIPE INC. OR EQUAL MADRAX U-TWO OR EQUAL FINISH: GALVENIZED
4. PROVIDED 2– LONG-TERM BICYCLE PARKING PERMANENTLY ANCHORED BIKE RACKS SEE BASEMENT PLAN A1.1, SPECS SEE 3/A1.0
5. NEW TRANSFORMER WITH SCREENS, SEE ELECTRICAL PLANS
6. FULLY ENCLOSED TRASH ENCLOSURE WITH PERFORATED METAL PANEL ON TOP OF 6' HT. CMU WALL AND CORRUGATED METAL ROOF, SEE 1/A15.0
7. 6" HIGH CONCRETE CURB
8. 0 CURB WITH 3'–0" MIN. WIDE CAST-IN-PLACE TRUNCATED DOME DETECTABLE WARNING STRIPE
9. 8' WROUGHT IRON FENCE, W/PERFORATED PANEL
9A. 8' WROUGHT IRON FENCE
10. NEW 8'–0" DOUBLE-SIDES SPLIT FACE PROTO WALL, SEPARATE PERMIT
11. 6' HT. METAL FENCE, SEE STRUCTURAL
12. FDC LOCATION
13. NEW W.I. ACCESSIBLE PEDESTRIAN GATE WITH PERFORATED PANEL & PANIC HARDWARE
14. NEW MOTORIZED SLIDING VEHICULAR GATE–SEE DOOR SCHEDULE GATE OPENER ON 6" CONCRETE PAD
    GATE REMAIN OPEN DURING DROP–OFF/PICK–UP, CLOSED WHEN NOT IN USE
15. NEW MOTORIZED 16' SWING VEHICULAR GATE, SEE DOOR SCHEDULE GATE REMAIN OPEN DURING DROP–OFF/PICK–UP, CLOSED WHEN NOT IN USE
16. ATTACH SIGN TO FENCE: "WRONG WAY. DO NOT ENTER."
17. PROVIDE CONDUIT AND JUNCTION BOX FOR VOICE/INTERCOM/VIDEO SYSTEM – HFX–700M AT EXTERIOR ENTRY GATE.
18. STANDARD 31"H STEEL BOLLARD INSTALLED 60" O.C. MFG: RELIANCE FOUNDRY CO. LTD. MODEL: R7835, INSTALLED BY ANCHOR CASTING
19. FIRE ALARM ANNUNCIATOR PANEL
20. HOSE BIB
21. ASPHALT
22. DAVIS COLORS (OR EQUAL) COLORED CONCRETE, SEE CIVIL PLAN FOR DRAINAGE. USE COLORED CONCRETE WITH SOLAR REFLECTANCE 0.3 OR ABOVE PER GREEN CODE. GC TO SUBMIT COLOR SAMPLE FOR ARCHITECT'S APPROVAL
23. 10'x10' PEDESTRIAN SIGHT TRIANGLE. NOTHING HIGHER THAN 3'–6"
24. REMOVE THE EXISTING PLANT, SEE LANDSCAPE
25. OUTDOOR DRINKING FOUNTAIN ELKAY VRCTLRWSK, BOTTLE FILLING STATION, REFRIGERATED, FILTERED OPTION, SEE PLUMBING PLAN
26. WATERPROOFING DECK COATING OVER SCORED CONCRETE SLAB/PAVING
27. RUBBERIZED SURFACE MATERIAL AT PLAY GROUND
28. PAINTED CROSSWALK
29. PROVIDE SIGN – RIGHT TURN EGRESS ONLY
30. PROVIDE SIGN – RIGHT TURN INGRESS ONLY DURING DROP–OFF/PICK–UP HOURS
31. EXISTING WATER METER CONNECTION TO BE UTILIZED FOR NEW DOMESTIC WATER LINE

FRANCO ARCHITECTS INC.
12345 Ventura Blvd. H
Studio City, CA 91604
Tel 818 754-2030
Fax 818 754-2033
Architecture and Planning

EXTERA PUBLIC SCHOOLS
1059 S. GAGE AVE., LOS ANGELES, CA90023

REV	DESCRIPTION	DATE
	PLANNING SUBMITTAL	6/21/2023
	PLAN CHECK	7/07/2023

PROJECT: EXTERA PUBLIC SCHOOLS
PROJECT ADDRESS: 1059 S. GAGE AVE., LOS ANGELES, CA 90023
DRAWING TITLE: SITE PLAN
DRAWN BY:
DATE: 7/07/2023
JOB NUMBER:
DRAWING SCALE:
APPROVED BY:
DRAWING NUMBER: A0.5

LINSCOTT LAW & GREENSPAN engineers

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Figure 2
Project Site Plan

Extera Public School

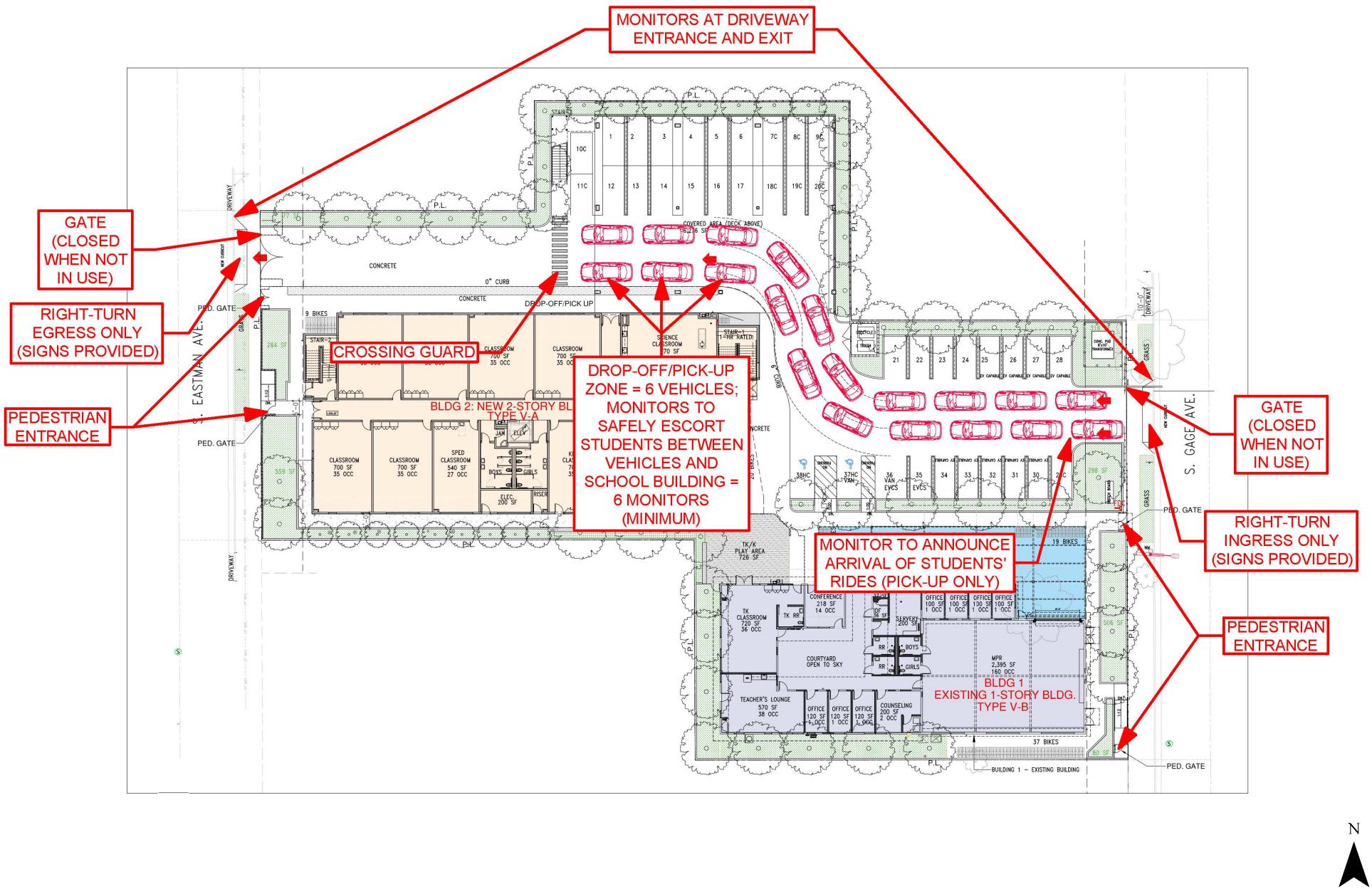

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Figure 3
Student Drop-Off/Pick-Up Plan

Extera Public School

Table 1
PROJECT TRIP GENERATION [1]

11-Dec-23

LAND USE	SIZE	DAILY TRIP ENDS [2] VOLUMES	AM PEAK HOUR VOLUMES [2] IN	AM PEAK HOUR VOLUMES [2] OUT	AM PEAK HOUR VOLUMES [2] TOTAL	PM PEAK HOUR VOLUMES [2] IN	PM PEAK HOUR VOLUMES [2] OUT	PM PEAK HOUR VOLUMES [2] TOTAL
Proposed Project								
Charter Elementary School [3], [4], [5]	336 Students	622	191	169	360	119	123	242
Charter Middle School [6], [7], [8]	189 Students	397	94	84	178	69	69	138
Subtotal Project Driveway Trips		**1,019**	**285**	**253**	**538**	**188**	**192**	**380**
Existing Site								
Church [9]	(25,302) GSF	(192)	(5)	(3)	(8)	(5)	(7)	(12)
Subtotal Existing Driveway Trips		**(192)**	**(5)**	**(3)**	**(8)**	**(5)**	**(7)**	**(12)**
NET INCREASE DRIVEWAY TRIPS		**827**	**280**	**250**	**530**	**183**	**185**	**368**

[1] Source: ITE *Trip Generation Manual,* 11th Edition, 2021.
[2] Trips are one-way traffic movements, entering or leaving.
[3] ITE Land Use Code 536 (Charter Elementary School) trip generation average rates per number of students.
- Daily Trip Rate: 1.85 trips/student; 50% inbound and 50% outbound
[4] ITE Land Use Code 536 (Charter Elementary School) trip generation average rates per number of students.
- Weekday, AM Peak Hour of Generator Trip Rate: 1.07 trips/student; 53% inbound/47% outbound
[5] ITE Land Use Code 536 (Charter Elementary School) trip generation average rates per number of students.
- Weekday, PM Peak Hour of Generator Trip Rate: 0.72 trips/student; 49% inbound/51% outbound
[6] ITE Land Use Code 522 (Middle School/Junior High School) trip generation average rates per number of students.
- Daily Trip Rate: 2.10 trips/student; 50% inbound and 50% outbound
[7] ITE Land Use Code 538 (Charter School K-12) trip generation average rates per number of students.
- Weekday, AM Peak Hour of Generator Trip Rate: 0.94 trips/student; 53% inbound/47% outbound
[8] ITE Land Use Code 538 (Charter School K-12) trip generation average rates per number of students.
- Weekday, PM Peak Hour of Generator Trip Rate: 0.73 trips/student; 50% inbound/50% outbound
[9] ITE Land Use Code 560 (Church) trip generation average rates per 1,000 SF of floor area.
- Daily Trip Rate: 7.60 trips/1,000 SF of floor area; 50% inbound/50% outbound
- Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7:00 and 9:00 AM: 0.32 trips/1,000 SF of floor area; 62% inbound/38% outbound
- Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4:00 and 6:00 PM: 0.49 trips/1,000 SF of floor area; 44% inbound/56% outbound

APPENDIX A

EXTERA PUBLIC SCHOOLS LETTER

extera public schools

HOME OFFICE
3626 East Fifth Street, 2ND Floor, Los Angeles, CA 90063
Office 323.261.0059
WWW.EXTERASCHOOLS.ORG

January 3, 2024

Kent Tsujii, P.E.
Senior Civil Engineer
Los Angeles County Public Works

SUBJECT: **Proposed Extera Public School**
1059 South Gage Avenue
Los Angeles, CA 90023

Dear Mr. Tsujii:

This letter is provided by Extera Public Schools related to the vehicle queuing and circulation analysis prepared by Extera's transportation consultant, Linscott, Law & Greenspan, Engineers (LLG) for the proposed Extera Public School project at 1059 South Gage Avenue. We understand Public Works has requested a letter from Extera stating our commitment to implement the recommended transportation management measures identified in LLG's vehicle queuing analysis dated January 3, 2024. As the owner and operator of the proposed Extera Public School on South Gage Avenue, Extera commits to:

- Implement two lines of onsite vehicle queuing during the peak periods of student drop-off and pick-up as indicated in Figure 3 of the LLG vehicle queuing analysis;
- Utilize up to ten adult monitors during student drop-off and pick-up periods consisting of:
    - Six (6) monitors and one (1) crossing guard to safely assist students to and from their vehicles
    - One monitor in the student pick-up area to announce vehicle arrivals to waiting students (afternoon pick-up period only)
    - One monitor near the inbound driveway to, among other duties, discourage student drop-off/pick-up on Gage Avenue and encourage right-turns into the driveway from Gage Avenue
    - One monitor near the exit driveway to, among other duties, discourage student drop-off/pick-up on Eastman Avenue; and
- Implement staggered start and dismissal times by a minimum separation of 20 minutes.

Please let us know of any questions.

Sincerely,

Nicole Ann Duquette, M.Ed.
Interim CEO
Extera Public Schools

APPENDIX B

M/M/S QUEUING MODEL OUTPUT

Queuing M/M/s (Multi-Channel)

Arrival rate, lambda	253	customers/hour
Mean service time, miu	60	customers/hour
Number of servers, s	6	(max = 50)

Economic Analysis of Queue

Waiting cost per time period per each unit, Cw	1	$/Hour
Service cost per time period for each channel, Cs	1	$/Hour

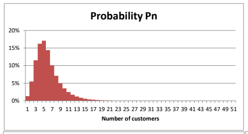
Queuing Performances

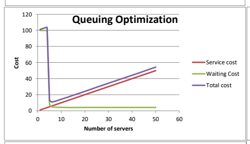
utilization single server, rho	4.216666667	
Utilization factor, U	70%	*OK*
Prob. Empty system, P0	1%	
Average queue length Lq	0.8050	customers
Average system length L	5.0217	customers
Average waiting in queue Wq	0.0032	hour =
Average waiting in system W	0.0198	hour =
Prob. of waiting	34.05%	
Optimum number of servers	6	

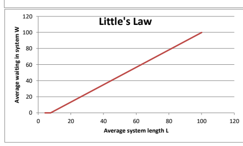
Number of customers	Probability	Sum
0	1.30%	1.30%
1	5.47%	6.76%
2	11.52%	18.28%
3	16.20%	34.48%
4	17.07%	51.56%
5	14.40%	65.95%
6	10.12%	76.07%
7	7.11%	83.18%
8	5.00%	88.18%
9	3.51%	91.70%
10	2.47%	94.16%
11	1.73%	95.90%
12	1.22%	97.12%
13	0.86%	97.97%
14	0.60%	98.58%
15	0.42%	99.00%
16	0.30%	99.30%
17	0.21%	99.51%
18	0.15%	99.65%
19	0.10%	99.76%
20	0.07%	99.83%
21	0.05%	99.88%
22	0.04%	99.92%
23	0.03%	99.94%
24	0.02%	99.96%
25	0.01%	99.97%
26	0.01%	99.98%
27	0.01%	99.99%
28	0.00%	99.99%
29	0.00%	99.99%
30	0.00%	99.99%
31	0.00%	100.00%
32	0.00%	100.00%
33	0.00%	100.00%
34	0.00%	100.00%
35	0.00%	100.00%
36	0.00%	100.00%
37	0.00%	100.00%
38	0.00%	100.00%
39	0.00%	100.00%
40	0.00%	100.00%
41	0.00%	100.00%
42	0.00%	100.00%
43	0.00%	100.00%
44	0.00%	100.00%
45	0.00%	100.00%
46	0.00%	100.00%
47	0.00%	100.00%
48	0.00%	100.00%
49	0.00%	100.00%
50	0.00%	100.00%
>50	0.00%	100.00%
Sum	100.00%	

This workbook is a companion of **Kardi Teknomo's tutorial** on
Queuing Theory

Visit the complete version of this tutorial in
http://people.revoledu.com/kardi/tutorial







$$P_0 = \left(\sum_{n=0}^{s-1} \frac{\rho^n}{n!} + \frac{\rho^s}{s!} \left(\frac{s\mu}{s\mu - \lambda} \right) \right)^{-1}$$

Computation of the Probability of empty server, P0

n	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
adden for each n	1	4.2167	8.8901	12.496	13.172	11.109	7.807	4.7028	2.4788	1.1613	0.4897	0.1877	0.066	0.0214	0.0064	0.0018	0.0005	0.0001	3E-05	6E-06	1E-06	3E-07	5E-08	9E-09	2E-09	3E-10
denominator adden	1	4.2167	8.8901	12.496	13.172	11.109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

n	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
adden for each n	4E-11	7E-12	1E-12	2E-13	2E-14	3E-15	4E-16	5E-17	6E-18	7E-19	8E-20	1E-20	1E-21	1E-22	1E-23	1E-24	1E-25	1E-26	1E-27	1E-28	1E-29	9E-31	8E-32	7E-33	5.82624E-34
denominator adden	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Computation of Optimization Table

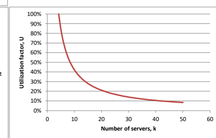
Number of servers, k	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Average system length, L	100	100	100	100	7.6652	5.0217	4.4708	4.3018	4.245	4.2258	4.2195	4.2175	4.2169	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167
Service cost	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Waiting Cost	100	100	100	100	7.6652	5.0217	4.4708	4.3018	4.245	4.2258	4.2195	4.2175	4.2169	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167
Total cost	101	102	103	104	12.665	11.022	11.471	12.302	13.245	14.226	15.219	16.217	17.217	18.217	19.217	20.217	21.217	22.217	23.217	24.217	25.217	26.217	27.217	28.217	29.217
optimum server	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

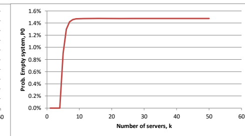
Number of servers, k	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
Average system length, L	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167
Service cost	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
Waiting Cost	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167
Total cost	30.217	31.217	32.217	33.217	34.217	35.217	36.217	37.217	38.217	39.217	40.217	41.217	42.217	43.217	44.217	45.217	46.217	47.217	48.217	49.217	50.217	51.217	52.217	53.217	54.217
optimum server	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

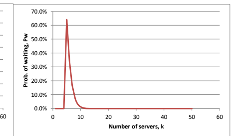
Queuing Performances Table

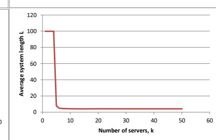
Number of servers, k	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
utilization single server, rho	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167
Utilization factor, U	422%	211%	141%	105%	84%	70%	60%	53%	47%	42%	38%	35%	32%	30%	28%	26%	25%	23%	22%	21%	20%	19%	18%	18%	17%
Prob. Empty system, P0	0.0%	0.0%	0.0%	0.0%	0.9%	1.3%	1.4%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
Average queue length Lq	100	100	100	100	3.4485	0.805	0.2541	0.0851	0.0283	0.0091	0.0028	0.0008	0.0002	6E-05	1E-05	3E-06	8E-07	2E-07	3E-08	6E-09	1E-09	2E-10	4E-11	6E-12	1E-12
Average system length L	100	100	100	100	7.6652	5.0217	4.4708	4.3018	4.245	4.2258	4.2195	4.2175	4.2169	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167
Average waiting in queue Wq	100	100	100	100	0.0136	0.0032	0.001	0.0003	0.0001	4E-05	1E-05	3E-06	9E-07	2E-07	6E-08	1E-08	3E-09	6E-10	1E-10	3E-11	5E-12	9E-13	1E-13	2E-14	4E-15
Average waiting in system W	100	100	100	100	0.0303	0.0198	0.0177	0.017	0.0168	0.0167	0.0167	0.0167	0.0167	0.0167	0.0167	0.0167	0.0167	0.0167	0.0167	0.0167	0.0167	0.0167	0.0167	0.0167	0.0167
Prob. of waiting, Pw	0.0%	0.0%	0.0%	0.0%	64.1%	34.0%	16.8%	7.6%	3.2%	1.2%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

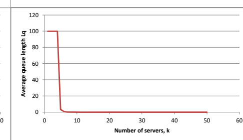
Number of servers, k	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
utilization single server, rho	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167
Utilization factor, U	16%	16%	15%	15%	14%	14%	13%	13%	12%	12%	12%	11%	11%	11%	11%	10%	10%	10%	10%	9%	9%	9%	9%	9%	8%
Prob. Empty system, P0	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
Average queue length Lq	1E-13	2E-14	3E-15	4E-16	6E-17	8E-18	1E-18	1E-19	1E-20	2E-21	2E-22	2E-23	2E-24	2E-25	2E-26	2E-27	2E-28	2E-29	2E-30	2E-31	2E-32	1E-33	1E-34	1E-35	9E-37
Average system length L	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167	4.2167
Average waiting in queue Wq	6E-16	9E-17	1E-17	2E-18	2E-19	3E-20	4E-21	5E-22	6E-23	7E-24	7E-25	8E-26	9E-27	9E-28	9E-29	9E-30	9E-31	9E-32	8E-33	7E-34	7E-35	6E-36	5E-37	4E-38	3E-39
Average waiting in system W	0.0167	0.0167	0.0167	0.0167	0.0167	0.0167	0.0167	0.0167	0.0167	0.0167	0.0167	0.0167	0.0167	0.0167	0.0167	0.0167	0.0167	0.0167	0.0167	0.0167	0.0167	0.0167	0.0167	0.0167	0.0167
Prob. of waiting, Pw	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

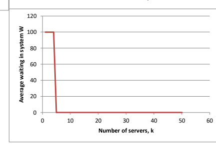


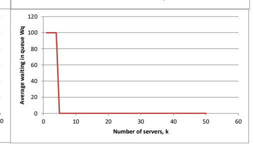












RE: 1059 S. Gage Avenue - Extera Public School

Isuda Esmaeilpour <IEsmaeilpour@dpw.lacounty.gov>

Tue 1/9/2024 1:28 PM

To:Jason Shender <jshender@llgengineers.com>
Cc:Mireya Gonzalez <mireya@edfacgroup.org>;Kathy Dominguez <kathy@edfacgroup.org>;Melissa Liang <MLiang@dpw.lacounty.gov>;Ruben Cruz <RCRUZ@dpw.lacounty.gov>;Claudia Gomez El Azar <claudia@edfacgroup.org>; Kent Tsujii <KTSUJII@dpw.lacounty.gov>;Mingliang Shi <mshi@dpw.lacounty.gov>;Frank Gonzalez <frank@edfacgroup.org>

Jason,

TSM-Studies has no additional comments to the latest TIA Screen-out memo submitted on 1/3/2024 for the 1059 S Gage Avenue project (Extera Charter School project). We will inform the Department of Regional Planning and Public Works Land Development Division about our findings.

Note that the queuing analysis for this project is still with administration for review and is still pending.

Regards,

Isuda Esmaeilpour

Senior Civil Engineering Assistant

Los Angeles County Public Works

Office: (626) 300-4720

From: Isuda Esmaeilpour
Sent: Tuesday, December 12, 2023 4:08 PM
To: Jason Shender <jshender@llgengineers.com>
Cc: Mireya Gonzalez <mireya@edfacgroup.org>; Kathy Dominguez <kathy@edfacgroup.org>; Melissa Liang <MLiang@dpw.lacounty.gov>; Ruben Cruz <RCRUZ@dpw.lacounty.gov>; Claudia Gomez El Azar <claudia@edfacgroup.org>; Kent Tsujii <KTSUJII@dpw.lacounty.gov>; Mingliang Shi <mshi@dpw.lacounty.gov>; Frank Gonzalez <frank@edfacgroup.org>
Subject: RE: 1059 S. Gage Avenue - Extera Public School

Jason,

The email sent on 12/7/2023 on this thread is the formal email stating "TSM-Studies has no additional comments to the TIA Screen-out of the 1059 S Gage Avenue project (Extera Charter School project). We will inform the Department of Regional Planning and Public Works Land Development Division about our findings."

If you have any questions, feel free to contact me.

Regards,

Isuda Esmaeilpour
Senior Civil Engineering Assistant
Los Angeles County Public Works
Office: (626) 300-4720

From: Jason Shender <jshender@llgengineers.com>
Sent: Monday, December 11, 2023 1:26 PM
To: Isuda Esmaeilpour <IEsmaeilpour@dpw.lacounty.gov>
Cc: Mireya Gonzalez <mireya@edfacgroup.org>; Kathy Dominguez <kathy@edfacgroup.org>; Melissa Liang <MLiang@dpw.lacounty.gov>; Ruben Cruz <RCRUZ@dpw.lacounty.gov>; Claudia Gomez El Azar <claudia@edfacgroup.org>; Kent Tsujii <KTSUJII@dpw.lacounty.gov>; Mingliang Shi <mshi@dpw.lacounty.gov>; Frank Gonzalez <frank@edfacgroup.org>
Subject: Re: 1059 S. Gage Avenue - Extera Public School

Can you please send the formal email discussed on today's call for the TIA screen-out at your earliest convenience? Thank you.

From: Isuda Esmaeilpour <IEsmaeilpour@dpw.lacounty.gov>
Sent: Monday, December 11, 2023 10:26 AM
To: Jason Shender <jshender@llgengineers.com>
Cc: Mireya Gonzalez <mireya@edfacgroup.org>; Kathy Dominguez <kathy@edfacgroup.org>; Melissa Liang <MLiang@dpw.lacounty.gov>; Ruben Cruz <RCRUZ@dpw.lacounty.gov>; Claudia Gomez El Azar <claudia@edfacgroup.org>; Kent Tsujii <KTSUJII@dpw.lacounty.gov>; Mingliang Shi <mshi@dpw.lacounty.gov>; Frank Gonzalez <frank@edfacgroup.org>
Subject: RE: 1059 S. Gage Avenue - Extera Public School

Jason,

Per our meeting discussion this morning, issuing a formal letter confirming the findings is not required. Regarding the queuing analysis, we are awaiting the next submittal for review.

Regards,

Isuda Esmaeilpour

Senior Civil Engineering Assistant

Los Angeles County Public Works

Office: (626) 300-4720

From: Isuda Esmaeilpour <IEsmaeilpour@dpw.lacounty.gov>
Sent: Thursday, December 7, 2023 4:47 PM
To: Jason Shender <jshender@llgengineers.com>
Cc: Mireya Gonzalez <mireya@edfacgroup.org>; Kathy Dominguez <kathy@edfacgroup.org>; Melissa Liang <MLiang@dpw.lacounty.gov>; Ruben Cruz <RCRUZ@dpw.lacounty.gov>; Claudia Gomez El Azar <claudia@edfacgroup.org>; Kent Tsujii <KTSUJII@dpw.lacounty.gov>; Mingliang Shi <mshi@dpw.lacounty.gov>; Frank Gonzalez <frank@edfacgroup.org>
Subject: Re: 1059 S. Gage Avenue - Extera Public School

Jason,

I will get back to you regarding your questions.

Regards,

Isuda Esmaeilpour

Senior Civil Engineering Assistant

Los Angeles County Public Works

Office: (626) 300-4720

From: Jason Shender <jshender@llgengineers.com>
Sent: Thursday, December 7, 2023 3:57 PM
To: Isuda Esmaeilpour <IEsmaeilpour@dpw.lacounty.gov>
Cc: Mireya Gonzalez <mireya@edfacgroup.org>; Kathy Dominguez <kathy@edfacgroup.org>; Melissa Liang <MLiang@dpw.lacounty.gov>; Ruben Cruz <RCRUZ@dpw.lacounty.gov>; Claudia Gomez El Azar <claudia@edfacgroup.org>; Kent Tsujii <KTSUJII@dpw.lacounty.gov>; Mingliang Shi <mshi@dpw.lacounty.gov>; Frank Gonzalez <frank@edfacgroup.org>
Subject: Re: 1059 S. Gage Avenue - Extera Public School

Isuda,

Thank you for the update. Will a formal approval letter be issued confirming the findings?

Regarding the queuing analysis, when do you expect review to be completed?

Thanks,
Jason

Jason Shender, AICP

Transportation Planner III

jshender@llgengineers.com

Linscott, Law & Greenspan, Engineers

600 South Lake Avenue, Suite 500

Pasadena, CA 91106

626.796.2322 x235 | 626.486.2748 (Direct)

www.llgengineers.com

From: Isuda Esmaeilpour <IEsmaeilpour@dpw.lacounty.gov>
Sent: Thursday, December 7, 2023 3:41 PM
To: Jason Shender <jshender@llgengineers.com>
Cc: Mireya Gonzalez <mireya@edfacgroup.org>; Kathy Dominguez <kathy@edfacgroup.org>; Melissa Liang <MLiang@dpw.lacounty.gov>; Ruben Cruz <RCRUZ@dpw.lacounty.gov>; Claudia Gomez El Azar <claudia@edfacgroup.org>; Kent Tsujii <KTSUJII@dpw.lacounty.gov>; Mingliang Shi <mshi@dpw.lacounty.gov>; Frank Gonzalez <frank@edfacgroup.org>
Subject: Re: 1059 S. Gage Avenue - Extera Public School

Jason,

TSM-Studies has no additional comments to the TIA Screen-out of the 1059 S Gage Avenue project (Extera Charter School project). We will inform the Department of Regional Planning and Public Works Land Development Division about our findings.

The queuing analysis for this project has not been approved and is still pending.

Regards,

Isuda Esmaeilpour

Senior Civil Engineering Assistant

Los Angeles County Public Works

Office: (626) 300-4720

From: Etmny Cornejo <etmny@francoarchitects.com>
Sent: Friday, November 3, 2023 4:40 PM
To: Ruben Cruz <RCRUZ@dpw.lacounty.gov>
Cc: Melissa Liang <MLiang@dpw.lacounty.gov>; Isuda Esmaeilpour <IEsmaeilpour@dpw.lacounty.gov>
Subject: RE: 1059 S. Gage Avenue - Extera Public School

Thank you, Ruben! We will follow your advice.

Have a great weekend.

ETMNY CORNEJO

FRANCO ARCHITECTS INC.
ARCHITECTURE DESIGN PLANNING
12345 Ventura Blvd., Suite H
Studio City, CA 91604-2511

T 818 754 2030 x4 F 818 754 2032
C 818 331 7379

www.francoarchitects.com

From: Ruben Cruz <RCRUZ@dpw.lacounty.gov>
Sent: Friday, November 3, 2023 11:54 AM
To: Etmny Cornejo <etmny@francoarchitects.com>
Cc: Melissa Liang <MLiang@dpw.lacounty.gov>; Isuda Esmaeilpour <IEsmaeilpour@dpw.lacounty.gov>
Subject: RE: 1059 S. Gage Avenue - Extera Public School

Hi Etmny,

Attached is the Public Works memo of the items and the contact information that are still pending from Public Works prior to public hearing.

As discussed, you may need to contact the plan checkers and request if they can expedite the studies that are still pending.

For Traffic Items, We are processing the approval of the Screenout Memo and the Queuing Analysis. I will update you when the traffic items have been approved.

Let me know if you have any questions. You can contact me on my private cell.

Ruben Cruz, PE

Civil Engineer

Los Angeles County Public Works

(626) 300-4847

From: Etmny Cornejo <etmny@francoarchitects.com>
Sent: Friday, November 3, 2023 9:10 AM

To: Ruben Cruz <RCRUZ@dpw.lacounty.gov>
Subject: FW: 1059 S. Gage Avenue - Extera Public School

CAUTION: External Email. Proceed Responsibly.

Hi Ruben,

Please see the site plan attached. Also, I found this clearance letter from Land Development. I am reviewing all these comments now.

Thank you so much for your help with all this! I really appreciate it, Ruben.

Let me know if you have any questions or need anything else.

Thank you, thank you!

ETMNY CORNEJO

FRANCO ARCHITECTS INC.
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12345 Ventura Blvd., Suite H
Studio City, CA 91604-2511
T 818 754 2030 x4 F 818 754 2032
C 818 331 7379

www.francoarchitects.com

From: Stephanie Liu <stephanie@francoarchitects.com>
Sent: Friday, November 3, 2023 8:58 AM
To: Etmny Cornejo <etmny@francoarchitects.com>
Subject: Fw: 1059 S. Gage Avenue - Extera Public School

Thank you,

Stephanie Liu

FRANCO ARCHITECTS

ARCHITECTURE DESIGN PLANNING

12345 Ventura Blvd., Suite H Studio City, CA 91604-2511

T 818 754 2030 x3 F 818 754 2032 C 818 568 7064

stephanie@francoarchitects.com

From: Stephanie Liu <stephanie@francoarchitects.com>
Sent: Monday, October 16, 2023 11:35 AM
To: Jason Shender <jshender@llgengineers.com>; Kathy Dominguez <kathy@edfacgroup.org>
Cc: Frank Gonzalez <frank@edfacgroup.org>; Mireya Gonzalez <mireya@edfacgroup.org>; Etmny Cornejo <etmny@francoarchitects.com>; Claudia Gomez El Azar <claudia@edfacgroup.org>
Subject: Re: 1059 S. Gage Avenue - Extera Public School

Good morning Jason, Attached please find the latest site plan without notes. Please let us know if you have any questions.

Thank you,

Stephanie Liu

FRANCO ARCHITECTS

ARCHITECTURE DESIGN PLANNING

12345 Ventura Blvd., Suite H Studio City, CA 91604-2511

T 818 754 2030 x3 F 818 754 2032 C 818 568 7064

stephanie@francoarchitects.com

From: Jason Shender <jshender@llgengineers.com>
Sent: Monday, October 16, 2023 10:33 AM

To: Stephanie Liu <stephanie@francoarchitects.com>; Kathy Dominguez <kathy@edfacgroup.org>
Cc: Frank Gonzalez <frank@edfacgroup.org>; Mireya Gonzalez <mireya@edfacgroup.org>; Etmny Cornejo <etmny@francoarchitects.com>; Claudia Gomez El Azar <claudia@edfacgroup.org>
Subject: RE: 1059 S. Gage Avenue - Extera Public School

Hi Stephanie,

Can you please provide us with a version of this plan without the notes, as well as the Site and Building Area summary? Let me know of any questions.

Thanks,

Jason

From: Stephanie Liu <stephanie@francoarchitects.com>
Sent: Wednesday, September 27, 2023 3:12 PM
To: Jason Shender <jshender@llgengineers.com>; Kathy Dominguez <kathy@edfacgroup.org>
Cc: Frank Gonzalez <frank@edfacgroup.org>; Mireya Gonzalez <mireya@edfacgroup.org>; Etmny Cornejo <etmny@francoarchitects.com>; Claudia Gomez El Azar <claudia@edfacgroup.org>
Subject: Re: 1059 S. Gage Avenue - Extera Public School

Hi Jason, Attached please the Site Plan A0.5 with a table of Building Floor Area calculation. Let me know if you have any questions or need anything else.

Thank you,

Stephanie Liu

FRANCO ARCHITECTS

ARCHITECTURE DESIGN PLANNING

12345 Ventura Blvd., Suite H Studio City, CA 91604-2511

T 818 754 2030 x3 F 818 754 2032 C 818 568 7064

stephanie@francoarchitects.com

From: Jason Shender <jshender@llgengineers.com>
Sent: Wednesday, September 27, 2023 2:40 PM
To: Stephanie Liu <stephanie@francoarchitects.com>; Kathy Dominguez <kathy@edfacgroup.org>
Cc: Frank Gonzalez <frank@edfacgroup.org>; Mireya Gonzalez <mireya@edfacgroup.org>; Etmny Cornejo <etmny@francoarchitects.com>; Claudia Gomez El Azar <claudia@edfacgroup.org>
Subject: RE: 1059 S. Gage Avenue - Extera Public School

Hi All,

Thank you for participating in the call this afternoon. Action items/next steps are summarized below:

- AB 2097 Language
  - EFG: Please send sample language/correspondence from KIPP Ignite related to AB 2097 to Melissa Liang (MLiang@dpw.lacounty.gov) and Isuda Esmaeilpour (IEsmaeilpour@dpw.lacounty.gov), with Ruben Cruz (RCRUZ@dpw.lacounty.gov) and Mingliang Shi (mshi@dpw.lacounty.gov) copied.
  - Public Works will be reaching out to DRP to discuss AB 2097 as it relates to this project.
- Site Plan Updates
  - Franco will update sheet A0.5 to show 1) the floor areas of all the buildings, and 2) provide a table with the floor area breakdown.

Let me know if there's anything else I'm missing. Once we have the updated site plan and AB 2097 information confirmed, we will be able to finalize and submit the memo within a day or so.

Thanks,
Jason

From: Stephanie Liu <stephanie@francoarchitects.com>
Sent: Tuesday, September 26, 2023 12:50 PM
To: Kathy Dominguez <kathy@edfacgroup.org>
Cc: Jason Shender <jshender@llgengineers.com>; Frank Gonzalez <frank@edfacgroup.org>; Mireya Gonzalez <mireya@edfacgroup.org>; Etmny Cornejo <etmny@francoarchitects.com>; Claudia Gomez El Azar <claudia@edfacgroup.org>
Subject: Re: 1059 S. Gage Avenue - Extera Public School

We are available 2-3pm tomorrow or Thursday morning 8-9am.

Thank you,

Stephanie

Franco Architects

On Sep 26, 2023, at 12:32 PM, Kathy Dominguez <kathy@edfacgroup.org> wrote:

Thanks, Jason. **Etmny and Stephanie, please respond with your availability as soon as possible.** We need to get this meeting scheduled asap.

On Tue, Sep 26, 2023 at 2:15 PM Jason Shender <jshender@llgengineers.com> wrote:

> Thanks, Kathy. Etmny and/or Stephanie, can you please let me know which time works best for you?
>
> FYI, the County will be sending the meeting invite. Please look out for a Teams invite from them once the meeting is confirmed.
>
> ---
>
> **From:** Kathy Dominguez <kathy@edfacgroup.org>
> **Sent:** Tuesday, September 26, 2023 11:59 AM
> **To:** Jason Shender <jshender@llgengineers.com>
> **Cc:** Frank Gonzalez <frank@edfacgroup.org>; Mireya Gonzalez <mireya@edfacgroup.org>; Etmny Cornejo <etmny@francoarchitects.com>; Stephanie Liu <stephanie@francoarchitects.com>; Claudia Gomez El Azar <claudia@edfacgroup.org>
> **Subject:** Re: FW: 1059 S. Gage Avenue - Extera Public School
>
> We can make any of those work.
>
> Claudia, this is FYI, in case are you scheduling any meetings for us.
>
> Kathy

On Tue, Sep 26, 2023 at 1:06 PM Jason Shender <jshender@llgengineers.com> wrote:

> Team,
>
> Any preference on a day/time for a call with Public Works? Either of the afternoon slots work for me.
>
> Thanks,
> Jason
>
> ---
>
> **From:** Isuda Esmaeilpour <IEsmaeilpour@dpw.lacounty.gov>
> **Sent:** Tuesday, September 26, 2023 11:04 AM
> **To:** Jason Shender <jshender@llgengineers.com>
> **Cc:** Ruben Cruz <RCRUZ@dpw.lacounty.gov>; Mingliang Shi <mshi@dpw.lacounty.gov>; Kathy Dominguez <kathy@edfacgroup.org>; Frank Gonzalez <frank@edfacgroup.org>; Mireya Gonzalez <mireya@edfacgroup.org>; Kent Tsujii <KTSUJII@dpw.lacounty.gov>; Melissa Liang <MLiang@dpw.lacounty.gov>
> **Subject:** RE: 1059 S. Gage Avenue - Extera Public School
>
> Jason,
>
> Our available times are the following. Please let me know which time works for you.
>
> Wednesday 9/27 2-3 PM
>
> Thursday 9/28 8-9 AM or 2-3 PM
>
> Regards,
>
> Isuda Esmaeilpour
>
> Civil Engineering Assistant
>
> Los Angeles County Public Works
>
> Office: (626) 300-4720

From: Jason Shender <jshender@llgengineers.com>
Sent: Tuesday, September 26, 2023 9:27 AM
To: Isuda Esmaeilpour <IEsmaeilpour@dpw.lacounty.gov>
Cc: Ruben Cruz <RCRUZ@dpw.lacounty.gov>; Mingliang Shi <mshi@dpw.lacounty.gov>; Kathy Dominguez <kathy@edfacgroup.org>; Frank Gonzalez <frank@edfacgroup.org>; Mireya Gonzalez <mireya@edfacgroup.org>; Kent Tsujii <KTSUJII@dpw.lacounty.gov>; Melissa Liang <MLiang@dpw.lacounty.gov>
Subject: RE: 1059 S. Gage Avenue - Extera Public School

I have a call scheduled with your team on another matter at 2:00 PM. Can you please provide other windows for this week?

From: Isuda Esmaeilpour <IEsmaeilpour@dpw.lacounty.gov>
Sent: Tuesday, September 26, 2023 9:24 AM
To: Jason Shender <jshender@llgengineers.com>
Cc: Ruben Cruz <RCRUZ@dpw.lacounty.gov>; Mingliang Shi <mshi@dpw.lacounty.gov>; Kathy Dominguez <kathy@edfacgroup.org>; Frank Gonzalez <frank@edfacgroup.org>; Mireya Gonzalez <mireya@edfacgroup.org>; Kent Tsujii <KTSUJII@dpw.lacounty.gov>; Melissa Liang <MLiang@dpw.lacounty.gov>
Subject: RE: 1059 S. Gage Avenue - Extera Public School

Hello Jason,

We are available today at 2:30 PM. Please let me know if this time works for you.

Regards,

Isuda Esmaeilpour

Civil Engineering Assistant

Los Angeles County Public Works

Office: (626) 300-4720

From: Jason Shender <jshender@llgengineers.com>
Sent: Tuesday, September 26, 2023 9:09 AM
To: Isuda Esmaeilpour <IEsmaeilpour@dpw.lacounty.gov>
Cc: Ruben Cruz <RCRUZ@dpw.lacounty.gov>; Mingliang Shi <mshi@dpw.lacounty.gov>; Kathy Dominguez <kathy@edfacgroup.org>; Frank Gonzalez <frank@edfacgroup.org>; Mireya Gonzalez <mireya@edfacgroup.org>; Kent Tsujii <KTSUJII@dpw.lacounty.gov>; Melissa Liang <MLiang@dpw.lacounty.gov>
Subject: RE: 1059 S. Gage Avenue - Extera Public School

Isuda,

Can you please provide us with your availability for a call this week to discuss?

Thanks,

Jason

From: Isuda Esmaeilpour <IEsmaeilpour@dpw.lacounty.gov>
Sent: Thursday, September 21, 2023 4:36 PM
To: Jason Shender <jshender@llgengineers.com>
Cc: Ruben Cruz <RCRUZ@dpw.lacounty.gov>; Mingliang Shi <mshi@dpw.lacounty.gov>; Kathy Dominguez <kathy@edfacgroup.org>; Frank Gonzalez <frank@edfacgroup.org>; Mireya Gonzalez <mireya@edfacgroup.org>; Kent Tsujii <KTSUJII@dpw.lacounty.gov>; Melissa Liang <MLiang@dpw.lacounty.gov>
Subject: RE: 1059 S. Gage Avenue - Extera Public School

Hello Jason,

I will get back to you about our available times. Have a great weekend.

Regards,

Isuda Esmaeilpour

Civil Engineering Assistant

Los Angeles County Public Works

Office: (626) 300-4720

From: Jason Shender <jshender@llgengineers.com>
Sent: Thursday, September 21, 2023 2:43 PM
To: Isuda Esmaeilpour <IEsmaeilpour@dpw.lacounty.gov>
Cc: Ruben Cruz <RCRUZ@dpw.lacounty.gov>; Mingliang Shi <mshi@dpw.lacounty.gov>; Kathy Dominguez <kathy@edfacgroup.org>; Frank Gonzalez <frank@edfacgroup.org>; Mireya Gonzalez <mireya@edfacgroup.org>; Kent Tsujii <KTSUJII@dpw.lacounty.gov>; Melissa Liang <MLiang@dpw.lacounty.gov>
Subject: RE: 1059 S. Gage Avenue - Extera Public School

Isuda,

Confirming receipt of your comments. We would like to schedule a meeting with your team to discuss a few of the comments. Can you please provide your team's availability next week for a call?

Thanks,

Jason Shender, AICP

Transportation Planner III

jshender@llgengineers.com

Linscott, Law & Greenspan, Engineers

600 South Lake Avenue, Suite 500

Pasadena, CA 91106

626.796.2322 x235 | 626.486.2748 (Direct)

www.llgengineers.com

From: Isuda Esmaeilpour <IEsmaeilpour@dpw.lacounty.gov>
Sent: Thursday, September 21, 2023 10:56 AM
To: Jason Shender <jshender@llgengineers.com>
Cc: Ruben Cruz <RCRUZ@dpw.lacounty.gov>; Mingliang Shi <mshi@dpw.lacounty.gov>; Kathy Dominguez <kathy@edfacgroup.org>; Frank Gonzalez <frank@edfacgroup.org>; Mireya Gonzalez <mireya@edfacgroup.org>; Amrita Shankar <shankar@llgengineers.com>; Kent Tsujii <KTSUJII@dpw.lacounty.gov>; Melissa Liang <MLiang@dpw.lacounty.gov>
Subject: RE: 1059 S. Gage Avenue - Extera Public School

Good Morning,

Please see our comments for the Extera Charter School TIA Screen-Out Memo (ESTU2023000503).

Feel free to contact me if you have any questions.

Regards,

Isuda Esmaeilpour

Civil Engineering Assistant

Los Angeles County Public Works

Office: (626) 300-4720

From: Jason Shender <jshender@llgengineers.com>
Sent: Thursday, August 17, 2023 2:55 PM
To: Kent Tsujii <KTSUJII@dpw.lacounty.gov>
Cc: Ruben Cruz <RCRUZ@dpw.lacounty.gov>; Mingliang Shi <mshi@dpw.lacounty.gov>; Isuda Esmaeilpour <IEsmaeilpour@dpw.lacounty.gov>; Kathy Dominguez <kathy@edfacgroup.org>; Frank Gonzalez <frank@edfacgroup.org>; Mireya Gonzalez <mireya@edfacgroup.org>; Amrita Shankar <shankar@llgengineers.com>
Subject: RE: 1059 S. Gage Avenue - Extera Public School

Kent,

Hope all is well. I wanted to circle back with you on the Extera Public School project located at 1059 S. Gage Avenue. We were previously working under the assumption that the project would be categorically exempt from CEQA, and therefore, a TIA would not be required. There was a great deal of back and forth within DRP on this project, but they've ultimately determined that the project needs to prepare an MND, which in turn, would require a TIA. However, the project meets the Proximity to Transit Screening Criteria, and we will hopefully be submitting the supporting documentation sometime next week (similar to what was prepared for the KIPP Ignite project at 1628 E. 81st Street). It would be greatly appreciated if we could get the invoice for that shortly after submitting.

Additionally, we were working with Mingliang, Ruben, and Isuda on the queuing analysis for the project, and the architects adjusted the site plan to address some of their concerns. We had a call to go over other comments, which will be addressed in an updated queuing memo. We hope to submit that next week as well.

Given the time lost on this project, whatever can be done on your end to expedite these reviews would be greatly appreciated. Let me know of any questions.

Thanks,

Jason Shender, AICP

Transportation Planner III

jshender@llgengineers.com

Linscott, Law & Greenspan, Engineers

600 South Lake Avenue, Suite 500

Pasadena, CA 91106

626.796.2322 x235 | 626.486.2748 (Direct)

www.llgengineers.com

From: Kent Tsujii <KTSUJII@dpw.lacounty.gov>
Sent: Wednesday, May 10, 2023 11:30 AM
To: Jason Shender <jshender@llgengineers.com>
Cc: Ruben Cruz <RCRUZ@dpw.lacounty.gov>; Mingliang Shi <mshi@dpw.lacounty.gov>; Isuda Esmaeilpour <IEsmaeilpour@dpw.lacounty.gov>; Kathy Dominguez <kathy@edfacgroup.org>
Subject: RE: 1059 S. Gage Avenue - Extera Public School

Jason,

My staff was just reviewing the project and noted that the categorical exemption was not granted to the project yet, therefore they were providing the recommendation as a precautionary note. However, you are correct if an exemption is required then a TIA would not be required.

If you would like to discuss further please let me know.

Kent Tsujii, PE

Senior Civil Engineer

Los Angeles County Public Works

Office: (626) 300-4776

From: Jason Shender <jshender@llgengineers.com>
Sent: Wednesday, May 3, 2023 12:38 PM
To: Kent Tsujii <KTSUJII@dpw.lacounty.gov>
Cc: Ruben Cruz <RCRUZ@dpw.lacounty.gov>; Mingliang Shi <mshi@dpw.lacounty.gov>; Isuda Esmaeilpour <IEsmaeilpour@dpw.lacounty.gov>; Kathy Dominguez <kathy@edfacgroup.org>
Subject: 1059 S. Gage Avenue - Extera Public School
Importance: High

Hi Kent,

Our project's planner received communication from Ed Gerlits at Public Works that based on the queuing analysis and turning movement analysis that a TIA would be required. As you may be aware, we've submitted one version of the queuing analysis and Isuda provided us with comments at the end of March. The project's architects are working with Isuda on requested revisions to the site plan. The latest version of the site plan was submitted to Isuda earlier this week. Isuda has confirmed receipt and stated that she'd complete her turning movement analysis by the end of next week. Once we get the site plan issue resolved, we would update the queuing analysis accordingly, incorporating the comments provided by Isuda.

Based on our initial conversations with yourself and County Counsel, it was understood that as long as the project was determined to be categorically exempt from CEQA that a TIA would not be required. We as a team are trying to understand why Ed is now telling Regional Planning that a TIA would be required. Any information you're able to provide would be greatly appreciated.

Thanks,

Jason Shender, AICP

Transportation Planner III

jshender@llgengineers.com

Linscott, Law & Greenspan, Engineers

600 South Lake Avenue, Suite 500

Pasadena, CA 91106

626.796.2322 x235 | 626.486.2748 (Direct)

www.llgengineers.com

--

Kathy V. Dominguez

Chief Operating Officer

Educational Facilities Group

Office 323-505-7536

Cell 323-493-3415

--

Kathy V. Dominguez

Chief Operating Officer

Educational Facilities Group

Office 323-505-7536

Cell 323-493-3415

COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

"To Enrich Lives Through Effective and Caring Service"

900 SOUTH FREMONT AVENUE
ALHAMBRA, CALIFORNIA 91803-1331
Telephone: (626) 458-5100
http://dpw.lacounty.gov

MARK PESTRELLA, Director

ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1460
ALHAMBRA, CALIFORNIA 91802-1460

IN REPLY PLEASE
REFER TO FILE: T-4

January 10, 2024

Jason Shender
Linscott, Law & Greenspan, Engineers
600 South Lake Avenue Unit: Suite 500
Pasadena, CA 91106

Dear Jason Shender:

1059 SOUTH GAGE AVENUE
TRAFFIC QUEUING ANALYSIS
UNINCORPORATED EAST LOS ANGELES AREA

We have reviewed the Traffic Queuing Analysis report dated January 3, 2024, for the proposed Extera Charter School project at 1059 South Gage Avenue in the unincorporated East Los Angeles area.

According to the Traffic Queueing Analysis report, the proposed school will accommodate the expected peak-hour vehicle queues on-site. We generally agree with the findings in the Traffic Queueing Analysis report; however, the project shall adhere to the conditions listed below:

Site Access Requirements

- The site shall accommodate at least 20 vehicles in queue.
- The site shall provide ingress via right-turn only on Gage Avenue and egress via right-turn only onto Eastman Avenue during drop-off and pick-up hours.
- The site shall restrict left turn ingress on Gage Avenue and left turn egress onto Eastman Avenue at all times.

Site Procedures

- To ensure the expected peak-hour vehicle queues are accommodated on-site, the project applicant shall provide at least 10 staff (six monitors, one crossing guard, two traffic monitors, and one additional afternoon monitor) to monitor and direct on-site vehicle traffic during drop-off and pick-up times and to assist students in safely crossing driveways and the double queue of vehicles.

- The project shall provide six designated drop-off/pick-up processing points.

- The project applicant shall install and maintain signs at the ingress/egress driveways indicating the turning restrictions.

- The project applicant shall stagger the start and dismissal times of the middle school and elementary school components by a minimum of 20 minutes to evenly distribute the number of students across an entire hour.

If you have any questions, please contact Ms. Isuda Esmaeilpour, Traffic Safety and Mobility Division, at (626) 300-4720 or iesmaeilpour@pw.lacounty.gov.

Very truly yours,

MARK PESTRELLA, PE
Director of Public Works

AMIR S. IBRAHIM, P.E., L.S.
Principal Engineer
Traffic Safety and Mobility Division

IE:al
SP:\DOCS\STU\ELECT\DATECOMP\EIR23-0015-ETSU2023000065EXTERA

bc: Land Development (Suarez, Lasso)

From: Christina Nguyen
Sent: Monday, November 20, 2023 4:59 PM
To: Gabrieleno Administration <admin@gabrielenoindians.org>
Subject: RE: FW: AB-52 Formal Notification of Proposed Charter School Project (1059 South Gage Avenue, Los Angeles, CA 90023)

Hello,

The applicant for this project is willing to accept all of the proposed TCR mitigation measures. As there is no further discussion required on the TCR mitigation measures, our department is concluding tribal consultation with the Gabrieleno Band of Mission Indians - Kizh Nation for the subject proposed charter school. If you have any objections, please respond to this email within the next thirty (30) days.

Thank you,

CHRISTINA NGUYEN (she/her/hers)
PLANNER, Metro Development Services
Office: (213) 974-6411 • Direct: (213) 262-1325
Email: cnguyen@planning.lacounty.gov

Los Angeles County Department of Regional Planning
320 West Temple Street, 13th Floor, Los Angeles, CA 90012
planning.lacounty.gov

Our field offices are currently open to the public. Please visit planning.lacounty.gov for information about available services, public meeting schedules, and planning projects.

From: Gabrieleno Administration <admin@gabrielenoindians.org>
Sent: Friday, November 3, 2023 3:38 PM
To: Christina Nguyen <CNguyen@planning.lacounty.gov>
Subject: Re: FW: AB-52 Formal Notification of Proposed Charter School Project (1059 South Gage Avenue, Los Angeles, CA 90023)

Hello Christina

Chairman Salas would like to know if you are okay with utilizing the same mitigations that were agreed to for the Charter School at 900 E. Rosecrans project. Please let us know if this is okay with you.

Thank you

Brandy Salas
Admin Specialist
Gabrieleno Band of Mission Indians - Kizh Nation
PO Box 393
Covina, CA 91723
Office: 844-390-0787
website: www.gabrielenoindians.org

The region where Gabrieleño culture thrived for more than eight centuries encompassed most of Los Angeles County, more than half of Orange County and portions of Riverside and San Bernardino counties. It was the labor of the Gabrieleño who built the missions, ranchos and the pueblos of Los Angeles. They were trained in the trades, and they did the construction and maintenance, as well as the farming and managing of herds of livestock. "The Gabrieleño are the ones who did all this work, and they really are the foundation of the early economy of the Los Angeles area ". "That's a contribution that Los Angeles has not recognized--the fact that in its early decades, without the Gabrieleño, the community simply would not have survived."

On Fri, Nov 3, 2023 at 12:19PM Gabrieleno Administration <admin@gabrielenoindians.org> wrote:

> Hello Christina
>
> I am sorry for the confusion. We will be sending the information out to you if not today by early next week.
>
> Thank you

Brandy Salas
Admin Specialist
Gabrieleno Band of Mission Indians - Kizh Nation
PO Box 393
Covina, CA 91723
Office: 844-390-0787
website: www.gabrielenoindians.org

The region where Gabrieleño culture thrived for more than eight centuries encompassed most of Los Angeles County, more than half of Orange County and portions of Riverside and San Bernardino counties. It was the labor of the Gabrieleño who built the missions, ranchos and the pueblos of Los Angeles. They were trained in the trades, and they did the construction and maintenance, as well as the farming and managing of herds of livestock. "The Gabrieleño are the ones who did all this work, and they really are the foundation of the early economy of the Los Angeles area ". "That's a contribution that Los Angeles has not recognized--the fact that in its early decades, without the Gabrieleño, the community simply would not have survived."

On Thu, Nov 2, 2023 at 11:03AM Christina Nguyen <CNguyen@planning.lacounty.gov> wrote:

> Hello,
>
> On the October 11th email further down below, you informed me that you would send over information by email and I'm assumed that since we aren't conducting a phone consultation to discuss historical documentation that you would be providing those items and proposed mitigation measures by email? And I haven't heard from you since then, so I'm checking in on the status of your request for consultation on this Project. Please let me know if there was a different understanding on our earlier correspondences.
>
> Thank you,
>
> **CHRISTINA NGUYEN**
> **PLANNER, Metro Development Services**
>
> **From:** Gabrieleno Administration <admin@gabrielenoindians.org>
> **Sent:** Thursday, November 2, 2023 10:57 AM
> **To:** Christina Nguyen <CNguyen@planning.lacounty.gov>
> **Subject:** Re: FW: AB-52 Formal Notification of Proposed Charter School Project (1059 South Gage Avenue, Los Angeles, CA 90023)
>
> CAUTION: External Email. Proceed Responsibly.

Hello Christina

We would like to know what consultation materials you are looking for?

Admin Specialist
Gabrieleno Band of Mission Indians - Kizh Nation
PO Box 393
Covina, CA 91723
Office: 844-390-0787
website: www.gabrielenoindians.org

The region where Gabrieleño culture thrived for more than eight centuries encompassed most of Los Angeles County, more than half of Orange County and portions of Riverside and San Bernardino counties. It was the labor of the Gabrieleño who built the missions, ranchos and the pueblos of Los Angeles. They were trained in the trades, and they did the construction and maintenance, as well as the farming and managing of herds of livestock. "The Gabrieleño are the ones who did all this work, and they really are the foundation of the early economy of the Los Angeles area ". "That's a contribution that Los Angeles has not recognized--the fact that in its early decades, without the Gabrieleño, the community simply would not have survived."

On Wed, Nov 1, 2023 at 12:34PM Christina Nguyen <CNguyen@planning.lacounty.gov> wrote:

> Hello,
>
> I hope you're doing well. I'm checking in on the consultation materials for a new school in East Los Angeles.
>
> Thank you,
>
> **CHRISTINA NGUYEN**
> **PLANNER, Metro Development Services**
>
> **From:** Christina Nguyen
> **Sent:** Wednesday, October 11, 2023 10:42 AM
> **To:** Gabrieleno Administration <admin@gabrielenoindians.org>
> **Subject:** RE: AB-52 Formal Notification of Proposed Charter School Project (1059 South Gage Avenue, Los Angeles, CA 90023)
>
> Much appreciated, thank you.
>
> **CHRISTINA NGUYEN**
> **PLANNER, Metro Development Services**

From: Gabrieleno Administration <admin@gabrielenoindians.org>
Sent: Wednesday, October 11, 2023 10:31 AM
To: Christina Nguyen <CNguyen@planning.lacounty.gov>
Subject: Re: AB-52 Formal Notification of Proposed Charter School Project (1059 South Gage Avenue, Los Angeles, CA 90023)

CAUTION: External Email. Proceed Responsibly.

Hello Christina

Thank you for your response. We will have the information out to you as soon as possible.

Thank you

Brandy Salas
Admin Specialist
Gabrieleno Band of Mission Indians - Kizh Nation
PO Box 393
Covina, CA 91723
Office: 844-390-0787
website: www.gabrielenoindians.org

The region where Gabrieleño culture thrived for more than eight centuries encompassed most of Los Angeles County, more than half of Orange County and portions of Riverside and San Bernardino counties. It was the labor of the Gabrieleño who built the missions, ranchos and the pueblos of Los Angeles. They were trained in the trades, and they did the construction and maintenance, as well as the farming and managing of herds of livestock. "The Gabrieleño are the ones who did all this work, and they really are the foundation of the early economy of the Los Angeles area ". "That's a contribution that Los Angeles has not recognized--the fact that in its early decades, without the Gabrieleño, the community simply would not have survived."

On Wed, Oct 11, 2023 at 8:09AM Christina Nguyen <CNguyen@planning.lacounty.gov> wrote:

> Hi Brandy,
>
> December would be a bit far out. If conducting consultation via email is sufficient for your review process, then that should be fine. Please let me know if there is anything else that is needed for this project?
>
> Thank you,
>
> **CHRISTINA NGUYEN**
> **PLANNER, Metro Development Services**

From: Gabrieleno Administration <admin@gabrielenoindians.org>
Sent: Tuesday, October 3, 2023 12:26 PM
To: Christina Nguyen <CNguyen@planning.lacounty.gov>
Subject: Re: AB-52 Formal Notification of Proposed Charter School Project (1059 South Gage Avenue, Los Angeles, CA 90023)

CAUTION: External Email. Proceed Responsibly.

Hello Christina

Thank you for your email. Chairman Salas's schedule is fully booked this month and next month. If December is too far out Chairman Salas is giving the option of going through consultation via email. We can provide substantial evidence, maps, and mitigation measures. Please let us know what you would like to do.

Thank you

Brandy Salas
Admin Specialist
Gabrieleno Band of Mission Indians - Kizh Nation
PO Box 393
Covina, CA 91723
Office: 844-390-0787
website: www.gabrielenoindians.org

The region where Gabrieleño culture thrived for more than eight centuries encompassed most of Los Angeles County, more than half of Orange County and portions of Riverside and San Bernardino counties. It was the labor of the Gabrieleño who built the missions, ranchos and the pueblos of Los Angeles. They were trained in the trades, and they did the construction and maintenance, as well as the farming and managing of herds of livestock. "The Gabrieleño are the ones who did all this work, and they really are the foundation of the early economy of the Los Angeles area ". "That's a contribution that Los Angeles has not recognized--the fact that in its early decades, without the Gabrieleño, the community simply would not have survived."

On Tue, Oct 3, 2023 at 6:55AM Christina Nguyen <CNguyen@planning.lacounty.gov> wrote:

> Good morning,
>
> I am in receipt of your letter from 9/27/2023, and welcome the opportunity to discuss the charter school

project with the Kizh Nation. I can work around your schedule, so please let me know your earliest availability for a project consultation.

Regards,

CHRISTINA NGUYEN
PLANNER, Metro Development Services

-----Original Message-----
From: Gabrieleno Administration <admin@gabrielenoindians.org>
Sent: Wednesday, September 27, 2023 10:08 AM
To: Christina Nguyen <CNguyen@planning.lacounty.gov>
Subject: Re: AB-52 Formal Notification of Proposed Charter School Project (1059 South Gage Avenue, Los Angeles, CA 90023)

CAUTION: External Email. Proceed Responsibly.

Hello Christina

Please see the attachment below.

Thank you

Brandy Salas
Admin Specialist
Gabrieleno Band of Mission Indians - Kizh Nation PO Box 393 Covina, CA 91723
Office: 844-390-0787
website: http://secure-web.cisco.com/1Yp-lPpDZRMNKsPFfeRMjkh6LmbV_xo5bbOlkSVQ8wPjIN6ctXZo3TyDcr0XtUZE3vQrbQH-c1U8MxJQsPNqqWHJkoCO4zy2oUmM_8WgDA9Iu8shWfs7-NVLjGsyWoafq2KhJCh99sCfvSEU-Xltqb8WkxPzgC8muEax5W7QLqhcLZox5p1Hv4SQeeEk-LWgpXN4ITwLrvQFQktaWsD1jjaayedIiEzvw20WSvih4Kha3R-CrIWGV8xL85j4LCmEXQ7oGw-0ot43VT3qmU-Y27LSDnhWijBOucZqzO-HtJmRxLs7BCacJWlL6-wXv7pc9XvDtuG_ABJx80qhwCwc6dU-rOxCuugL7mUfgJSfOH9C6rMKIMsnOYs_u86c1FUPg/http%3A%2F%2Fwww.gabrielenoindians.org

The region where Gabrieleño culture thrived for more than eight centuries encompassed most of Los Angeles County, more than half of Orange County and portions of Riverside and San Bernardino counties.
It was the labor of the Gabrieleño who built the missions, ranchos and the pueblos of Los Angeles. They were trained in the trades, and they did the construction and maintenance, as well as the farming and managing of herds of livestock. “The Gabrieleño are the ones who did all this work, and they really are the foundation of the early economy of the Los Angeles area “ . “That’s a contribution that Los Angeles has not recognized--the fact that in its early decades, without the Gabrieleño, the community simply would not have survived.”

On Wed, Sep 27, 2023 at 9:37AM Christina Nguyen <CNguyen@planning.lacounty.gov> wrote:
>
> Dear Mr. Salas,
>
> I hope this message finds you well. Enclosed is a formal notification letter detailing a proposed Charter School project in East Los Angeles, an unincorporated community in Los Angeles County, with a vicinity map and

conceptual plans for your review. The Los Angeles County Planning Department welcomes the opportunity to consult with you regarding this proposed project and to identify potential concerns related to Tribal Cultural Resources. Information on initiating a formal consultation is detailed in the attached letter.
>
> Please let me know if you have any questions.
>
> Thank you,
>
> CHRISTINA NGUYEN (she/her/hers)
>
> PLANNER, Metro Development Services
>
> Office: (213) 974-6411 • Direct: (213) 262-1325
> Email: cnguyen@planning.lacounty.gov
>
> Los Angeles County Department of Regional Planning
> 320 West Temple Street, 13th Floor, Los Angeles, CA 90012
> planning.lacounty.gov
>
> Our field offices are currently open to the public. Please visit planning.lacounty.gov for information about available services, public meeting schedules, and planning projects.
>
>

LOS ANGELES COUNTY SANITATION DISTRICTS
Converting Waste Into Resources

Robert C. Ferrante
Chief Engineer and General Manager

1955 Workman Mill Road, Whittier, CA 90601-1400
Mailing Address: P.O. Box 4998, Whittier, CA 90607-4998
(562) 699-7411 • www.lacsd.org

September 29, 2023

Ref. DOC 7038432

VIA EMAIL sherrie@ceqa-nepa.com

Ms. Sherrie Cruz
CAJA Environmental Services, LLC
9410 Topanga Canyon Boulevard, Suite 101
Chatsworth, CA 91311

Dear Ms. Cruz:

Will Serve Letter for Extera Public Schools Project

The Los Angeles County Sanitation Districts (Districts) received your will serve letter request for the subject project located in the City of Los Angeles on September 26, 2023. The proposed project is located within the jurisdictional boundaries of District No. 2. We offer the following comments regarding sewerage service:

1. The wastewater flow originating from the proposed project will discharge to a local sewer line, which is not maintained by the Districts, for conveyance to the Districts' Jane Street Branch Trunk Sewer, located in South Hicks Avenue at East Olympic Boulevard. The Districts' 12-inch diameter trunk sewer has a capacity of 2.1 million gallons per day (mgd) and conveyed a peak flow of 0.39 mgd when last measured in 2016.

2. The wastewater generated by the proposed project will be treated at the Joint Water Pollution Control Plant located in the City of Carson, which has a capacity of 400 mgd and currently processes an average flow of 243.1 mgd.

3. The expected increase in average wastewater flow from the project, described in the request letter as 38,425 square feet private school, is 2,625 gallons per day, after a 25,302 square feet private school building on the project site is demolished. For a copy of the Districts' average wastewater generation factors, go to www.lacsd.org, under Services, then Wastewater Program and Permits and select Will Serve Program, and click on the Table 1, Loadings for Each Class of Land Use link.

4. The Districts are empowered by the California Health and Safety Code to charge a fee to connect facilities (directly or indirectly) to the Districts' Sewerage System or to increase the strength or quantity of wastewater discharged from connected facilities. This connection fee is used by the Districts for its capital facilities. Payment of a connection fee may be required before this project is permitted to discharge to the Districts' Sewerage System. For more information and a copy of the Connection Fee Information Sheet, go to www.lacsd.org, under Services, then Wastewater (Sewage) and select Rates & Fees. In determining the impact to the Sewerage System and applicable connection fees, the Districts will determine the user category (e.g. Condominium, Single Family Home, etc.) that best represents the actual or anticipated use of the parcel(s) or facilities on the parcel(s) in the development. For more specific information regarding the connection fee application procedure and fees, please contact the Districts' Wastewater Fee Public Counter at (562) 908-4288, extension 2727.

5. In order for the Districts to conform to the requirements of the Federal Clean Air Act (CAA), the capacities of the Districts' wastewater treatment facilities are based on the regional growth forecast adopted by the Southern California Association of Governments (SCAG). Specific policies included in the development of the SCAG regional growth forecast are incorporated into clean air plans, which are prepared by the South Coast and Antelope Valley Air Quality Management Districts in order to improve air quality in the South Coast and Mojave Desert Air Basins as mandated by the CAA. All expansions of Districts' facilities must be sized and service phased in a manner that will be consistent with the SCAG regional growth forecast for the counties of Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial. The available capacity of the Districts' treatment facilities will, therefore, be limited to levels associated with the approved growth identified by SCAG. As such, this letter does not constitute a guarantee of wastewater service but is to advise the developer that the Districts intend to provide this service up to the levels that are legally permitted and to inform the developer of the currently existing capacity and any proposed expansion of the Districts' facilities.

If you have any questions, please contact the undersigned at (562) 908-4288, extension 2742, or phorsley@lacsd.org.

Very truly yours,

Patricia Horsley

Patricia Horsley
Environmental Planner
Facilities Planning Department

PLH:plh

SEWER AREA STUDY

FOR

ESTU 2023XXXXXX
PC XXXXXAS

1059 S. GAGE AVE., LOS ANGELES, CA90023
S.M.D. S/C-1861; APN : 5239-012-009 & 5239-012-028

PREPARED FOR

EDUCATIONAL FACILITIES GROUP
3700 LATROBE ST
LOS ANGELES, CA 90031
TEL: 323-505-7536

PREPARED BY

TRITECH ENGINEERING GROUP

SUBDIVISION
LAND SURVEY
CIVIL ENGINEERING
& DESIGN

135 N. SAN GABRIEL BLVD.
SAN GABRIEL, CA 91775
TEL: (626) 570-1918
EMAIL: info@tritechengineer.com

DATE: 11/06/2023

JOB. NO. 220918

INDEX

I. INTRODUCTION

The following Sewer Area Study has been prepared by Tritech Engineering Group, Inc. to determine and show:

a) The capacity of the existing sewer segments from proposed development site to the Los Angeles County Sanitation District (LACSD) maintained trunk sewers.

b) Some of the existing sewer facility will not be adequate for the proposed development, new sewer pipe lines need to be install to service the new developments.

II. SITE DESCRIPTION

The subject property is located on the east of S Eastman Ave and west of S Gage Ave between Whittier Blvd and Dennison St in the city of Los Angeles, County of Los Angeles. Before development, the project is the commercial site that consisted of 2 commercial buildings and parking lots. The building at north of property will be demolished. The building at southeast corner will remain and remodel. The APN number is 5239-012-009 & 5239-012-028 and the site is approximately 50,994 SF (1.171 ACRES).

III. PROJECT DESCRIPTION

The project site is occupied by a new school building, EXTERA PUBLIC SCHOOLS. The school will have max. 500 students and 37 teachers. This project will propose 6" VCP sewer lateral with minimum 1%slope (by gravity), it will be connected to ex. sewer main line between manhole No.289 and No.290 per PC#08589 (Existing 8"-VCP pipe with 2%slope) located on Gage St.

IV. SEWER PIPE CAPACITY ANALYSIS

Calculations were performed in accordance with the Los Angeles County Department of Public Works design criteria. Each pipe segment between the point of connection and the Sanitation District's trunk main was analyzed to determine capacity based on size and slope utilizing the monograph from County Standard S-C4. The monograph is based on Kutter's formula and 1/2 full pipe flowing for 12"-pipe or less and 3/4 full pipe flowing for 15" pipe or more

The equation to calculate the tributary sewer discharge follows:

$$Q=ZA$$

Where: Q= Sewer discharge (cfs)

Z = Zoning coefficient (cfs/acre)

A = Area (acres)

V. CONCLUSION

From Sewer Study Table, the maximum peak Calculated flow/Capacity is 55.2% at pipe between M.H.362 and TRUNK is less than 100%. Therefore this development will not adversely impact to the existing sewer capacity.

VI. APPENDIX - SEWER CAPACITY CALCULATIONS

TABLE 1
SEWER DISCHARGE CALCULATIONS
BASED ON TRIBUTARY AREA AND LAND USE

AREAS IN ACRE ARE DETERMINED FROM
https://rpgis.isd.lacounty.gov/Html5Viewer/index.html?viewer=GISNET_Public.GIS-NET_Public
(SEE ATTACHED COLORED ZONING MAP AND SEWER INDEX MAP FOR DETAILS)

M.H. 289-287: AREA A1 + **SITE (Extera Public School-Elementary school)**
AREA A1: ZONE R3 = 2.79+2.75+0.39 = 5.93 AC
ZONE R3, COEFFICIENTS = 0.012, Q = 5.93 x 0.012 = 0.0712 CFS.
PROJECT SITE: **Elementary school, 500 students**
FLOW = (500x10) x 2.5 / (7.481x24x60x60) = 0.0193 CFS

Q1 = 0.0712 + 0.0193 = 0.0905 CFS.

M.H. 364-363: AREA B1
AREA B1: ZONE R3 = 1.70+1.75 = 3.45 AC
ZONE R3, COEFFICIENTS = 0.012, Q = 3.45 x 0.012 = 0.0414 CFS.

Q2 = 0.0414 CFS.

M.H. 363-362: AREA C1 + AREA C2 + AREA C3
AREA C1: ZONE R3 = 0.62 AC
ZONE R1, COEFFICIENTS = 0.012, Q = 0.62 x 0.012 = 0.0074 CFS.
AREA C2: ZONE C-M = 0.25 AC
ZONE C-M, COEFFICIENTS = 0.015, Q = 0.25 x 0.015 = 0.0038 CFS.
AREA C3: ZONE C-3 = 1.14 AC
ZONE C2, COEFFICIENTS = 0.015, Q = 1.14 x 0.015 = 0.0171 CFS.

Q3 = 0.0074+0.0038+0.0171 = 0.0283 CFS.

M.H. 362-TRUNK: AREA D1 + AREA D2 + LOS ANGELES COMMUNITY HOSPITAL
AREA D1: ZONE R3 = 1.01+2.69+4.97+3.94+1.81+0.48+1.48+0.72+1.19+0.61 = 18.90 AC
ZONE R1, COEFFICIENTS = 0.012, Q = 18.90 x 0.012 = 0.2268 CFS.
AREA D2: ZONE C-M = 0.62+0.11+0.61+0.26 = 1.6 AC
ZONE C-M, COEFFICIENTS = 0.015, Q = 1.6 x 0.015 = 0.0240 CFS.
LOS ANGELES COMMUNITY HOSPITAL: 130 BEDS
FLOW = (500x130) x2.5 / (7.481x24x60x60) = 0.2514 CFS

Q4 = 0.2268+0.0240+0.2514 = 0.5022 CFS.

TOTAL FLOW = 0.6624 CFS.

Table 2: Sewer Area Study Table

Street Name	Segment		PIPE		*Capacity		Area (acres)	Zoning Coeff.	Calculated Flow(cfs)	***Cumulative Calculated Flow (cfs)	PC or CI Construction Plan #	Calculated Flow/ Capacity	Comment	Jurisdiction
	M.H. #	M.H. #	Size (in.)	Slope (%)	1/2 Full(<15")	3/4 Full(>15")								
GAGE AVE	289	287	10	0.40%	0.6482									
AREA A1: ZONE R3							5.93	0.012	0.0712					
PROJECT SITE: Extera Public School-Elementary School, 500 students														
500x10 = 5,000 GPD, PEAK FLOW = (2.5 x 5,000 / (7.481x24x60x60))									0.0193	0.0905	P.C.8589	14.0%	OK	LA COUNTY
DENNISON ST	287	300	10	0.24%	0.5003				0.0000	0.0905	P.C.8589	18.1%	OK	LA COUNTY
DENNISON ST	300	364	10	0.20%	0.4560				0.0000	0.0905	P.C.8590	19.8%	OK	LA COUNTY
DITMAN AVE	364	363	8	0.72%	0.4687									
AREA B1: ZONE R3							3.45	0.012	0.0414	0.1319	C.I.566	28.1%	OK	LA COUNTY
DITMAN AVE	363	362	8	1.40%	0.6545									
AREA C1: ZONE R3							0.62	0.012	0.0074					
AREA C2: ZONE C-M							0.25	0.015	0.0038					
AREA C3: ZONE C-3							1.14	0.015	0.0171	0.1602	C.I.566	24.5%	OK	LA COUNTY
DITMAN AVE	362	TRUNK	10	1.36%	1.1996									
AREA D1: ZONE R3							18.90	0.012	0.2268					
AREA D2: ZONE C-M							1.60	0.015	0.0240					
LOS ANGELES COMMUNITY HOSPITAL, 130 BEDS														
130x500 = 65,000 GPD, PEAK FLOW = 2.5x65,000/(7.481x24x60x60)									0.2514	0.6624	A.I.137	55.2%	OK	LA COUNTY

* Calculated using Kutter's Formula with n=0.013 (as in S-C4 graph in PC Procedural Manua)

** Design capacity keeps three decimal places at least.

*** Based on current land use and coefficients per LA County, (Attach supporting calculations)

**** For pipes < 15" %, design capacity of the sewer mainline is defined as 1/2 full = 100% capacity (d/D)

***** For pipes ≥ 15" %, design capacity of the sewer mainline is defined as 3/4 full = 100% capacity (d/D)

VII. APPENDIX - REFERENCES.

1. ESTIMATED AVERAGE DAILY SEWAGE FLOWS FOR VARIOUS OCCUPANCIES AND ZONING COEFFICIENTS
2. S-C4 GRAPH (SEWER PIPE CAPACITY CALCULATIONS)
3. HOSPITAL DATA
4. SITE PLAN AND SEWER CONNECTION
5. AREA MAP
6. ZONING MAP
7. SEWER INDEX MAP & CSMD MAP
8. "AS-BUILT" SEWER PLANS
9. ASSESSOR'S MAP

Estimated Average Daily Sewage Flows for Various Occupancies

Occupancy	Abbreviation	*Average daily flow	
Apartment Buildings:			
Bachelor or Single dwelling units	Apt	150	gal/D.U.
1 bedroom dwelling units	Apt	200	gal/D.U.
2 bedroom dwelling units	Apt	250	gal/D.U.
3 bedroom or more dwelling units	Apt	300	gal/D.U.
Auditoriums, churches, etc.	Aud	5	gal/seat
Automobile parking	P	25	gal/1000 sq ft gross floor area
Bars, cocktails lounges, etc.	Bar	20	gal/seat
Commercial Shops & Stores	CS	100	gal/1000 sq ft gross floor area
Hospitals (surgical)	HS	500	gal/bed
Hospitals (convalescent)	HC	85	gal/bed
Hotels	H	150	gal/room
Medical Buildings	MB	300	gal/1000 sq ft gross floor area
Motels	MB	150	gal/unit
Office Buildings	Off	200	gal/1000 sq ft gross floor area
Restaurants, cafeterias, etc.	R	50	gal/seat
Schools:			
Elementary or Jr. High	S	10	gal/student
High Schools	HS	15	gal/student
Universities or Colleges	U	20	gal/student
College Dormitories	CD	85	gal/student

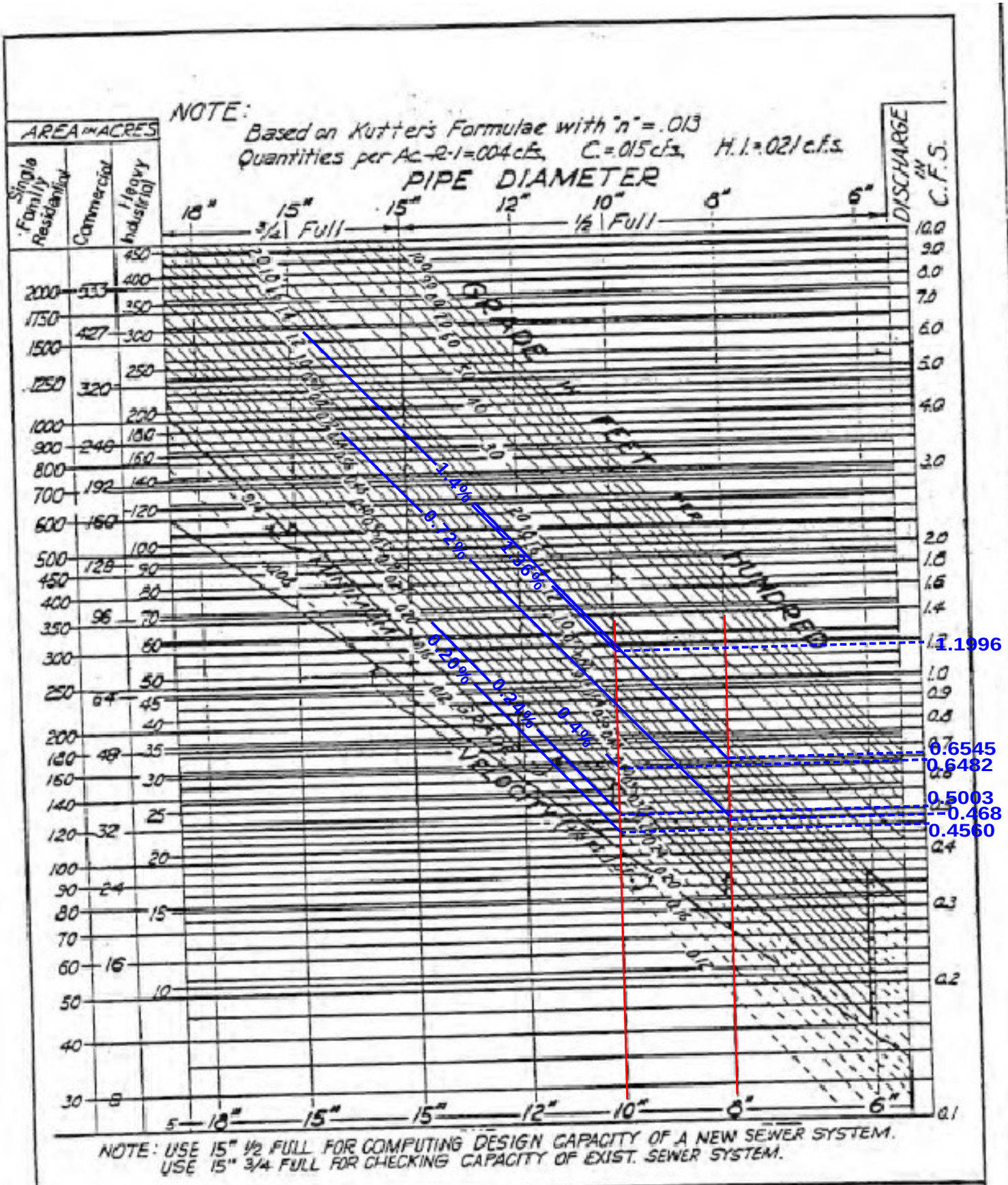
*Multiply the average daily flow by 2.5 to obtain the peak flow

Zoning Coefficients

Zone	Coefficient (cfs/Acre)
Agriculture ----------	0.001
Residential*:	
R-1 ----------	0.004
R-2 ----------	0.008
R-3 ----------	0.012
R-4 ----------	0.016*
Commercial:	
C-1 through C-4 ----------	0.015*
Heavy Industrial:	
M-1 through M-4 ----------	0.021*

* Individual building, commercial or industrial plant capacities shall be the determining factor when they exceed the coefficients shown

* Use 0.001 (cfs/unit) for condominiums only



NOTE: USE 15" 1/2 FULL FOR COMPUTING DESIGN CAPACITY OF A NEW SEWER SYSTEM.
USE 15" 3/4 FULL FOR CHECKING CAPACITY OF EXIST. SEWER SYSTEM.

FLOW DIAGRAM FOR THE DESIGN OF CIRCULAR SANITARY SEWERS

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

ASSISTANT DEPUTY

COUNTY ENGINEER

COUNTY ENGINEER STANDARD S-C4

DATE: 3/80

DESIGN RCE

Los Angeles Community Hospital

About Los Angeles Community Hospital

One Mission. One Team. One You.

Los Angeles Community Hospital has been taking care of generations of east Los Angeles families. Having a strong presence in our community has been critical to our success since our inception, along with offering quality, compassionate healthcare accessible to everybody. Most of our doctors, nurses and other employees live in the community, creating a culture of neighbors taking care of neighbors.

We have changed with our community—both in the way we deliver medical care and by reaching beyond the walls of our hospital. We work closely with community members to help meet their most important needs.

Services

Our 130-bed, acute care hospital offers a wide range of medical programs and services, including cardiology, internal medicine and surgical services. For a complete list of services, click here. Other specialty services are available through transfer agreements with affiliated tertiary care centers.

Quality, Accessible Care

Our primary focus is on the complete care of the patient—in a healing environment, with compassionate care and a collaborative team approach to ensure the best outcomes for our patients. You can be confident you are being taken care of by expert medical and support teams.

Los Angeles Community Hospital is nationally recognized by Healthgrades as among the top 5 percent in the nation for Patient Safety Excellence (2023), top 5 percent for Pulmonary Services (2019-2023) and top 5 percent for GI Care (2023). In addition, our hospital is a 5-star recipient for treatment of heart attack, heart failure, hip fracture, COPD, pneumonia, GI bleed and sepsis. This means our patients have access to nationally recognized care close to home.

For analysis, Healthgrades evaluates approximately 45 million Medicare inpatient records for almost 4,500 hospitals nationwide to assess hospital performance in 31 common conditions and procedures to evaluate outcomes and identify 5-star recipients.

Los Angeles Community Hospital also received 4 stars Overall Hospital Quality Rating given by Centers for Medicare and Medicaid Services (CMS) for 2022.

Our hospital also is accredited by The Joint Commission. The Gold Seal of Approval® is a symbol of quality that reflects our commitment to providing safe and effective patient care.

Leadership

Our leadership team includes:

- **Hector Hernandez**, Chief Executive Officer

- **Keith Levy,** Administrator
- **Tony Desai, RN,** Chief Nursing Officer

Locations

Los Angeles Community Hospital is conveniently located just south of the 5 (Santa Ana) freeway and west of the 710 (Long Beach) freeway with free parking for our patients and visitors. Call us at (323) 267-0477.

We are affiliated with Prospect Medical, which operates hospitals in four states, including seven hospitals in Southern California.

Contact Us

Hospital Address
4081 E. Olympic Blvd.
Los Angeles, CA 90023

Phone Directory
(323) 267-0477

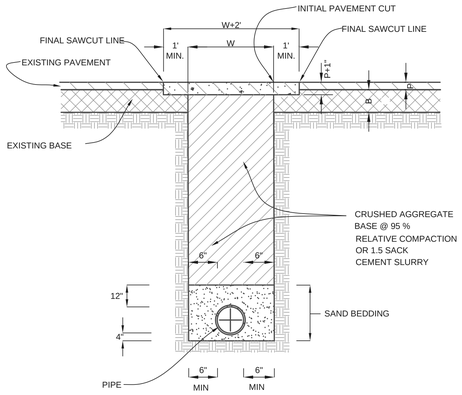
Follow Us

(https://www.facebook.com/LosAngelesCommunityHospital/)

(https://twitter.com/HoldingsMedical)

(https://www.instagram.com/prospect_medical/?hl=en)

SITE PLAN AND SEWER CONNECTION



10 TRENCH PAVING SECTION FOR SEWER AND WATER LINE
PER SPPWC STD PLAN NO.133-3
NOT TO SCALE

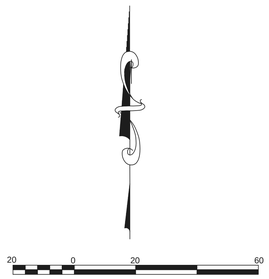
PAVING NOTES:

1. NEW PAVEMENT THICKNESS SHALL BE EXISTING PLUS ONE INCH (P+1"), BUT NOT LESS THAN SIX INCHES (6").
2. PERMANENT PAVING SHALL BE COMPLETED WITHIN FIVE (5) DAYS AFTER EXCAVATION. TEMPORARY PAVING SHALL BE TWO-INCH (2") MINIMUM HOT MIX.
3. TRENCH PAVING CUT AREAS SHALL BE SEALED WITH SS 1-H ASPHALTIC EMULSION AT THE RATE OF 0.08 TO 0.10 GALLON PER SQUARE YARD, NOT SOONER THAN 24 HOURS AFTER PLACEMENT OF PAVEMENT.

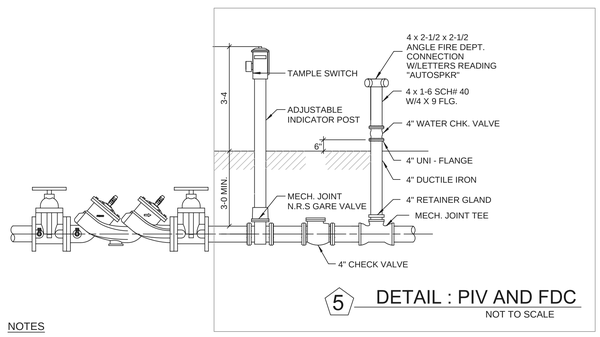
SPECIFY APPROVED METALLIC WATER LINE CONNECTORS FROM SHUTOFFS TO PLUMBING FIXTURES. RUBBER AND PLASTICS ARE NOT PERMITTED.

NOTE:

GAS WILL BE DETERMINED BY GAS COMPANY.



SCALE 1" = 20'

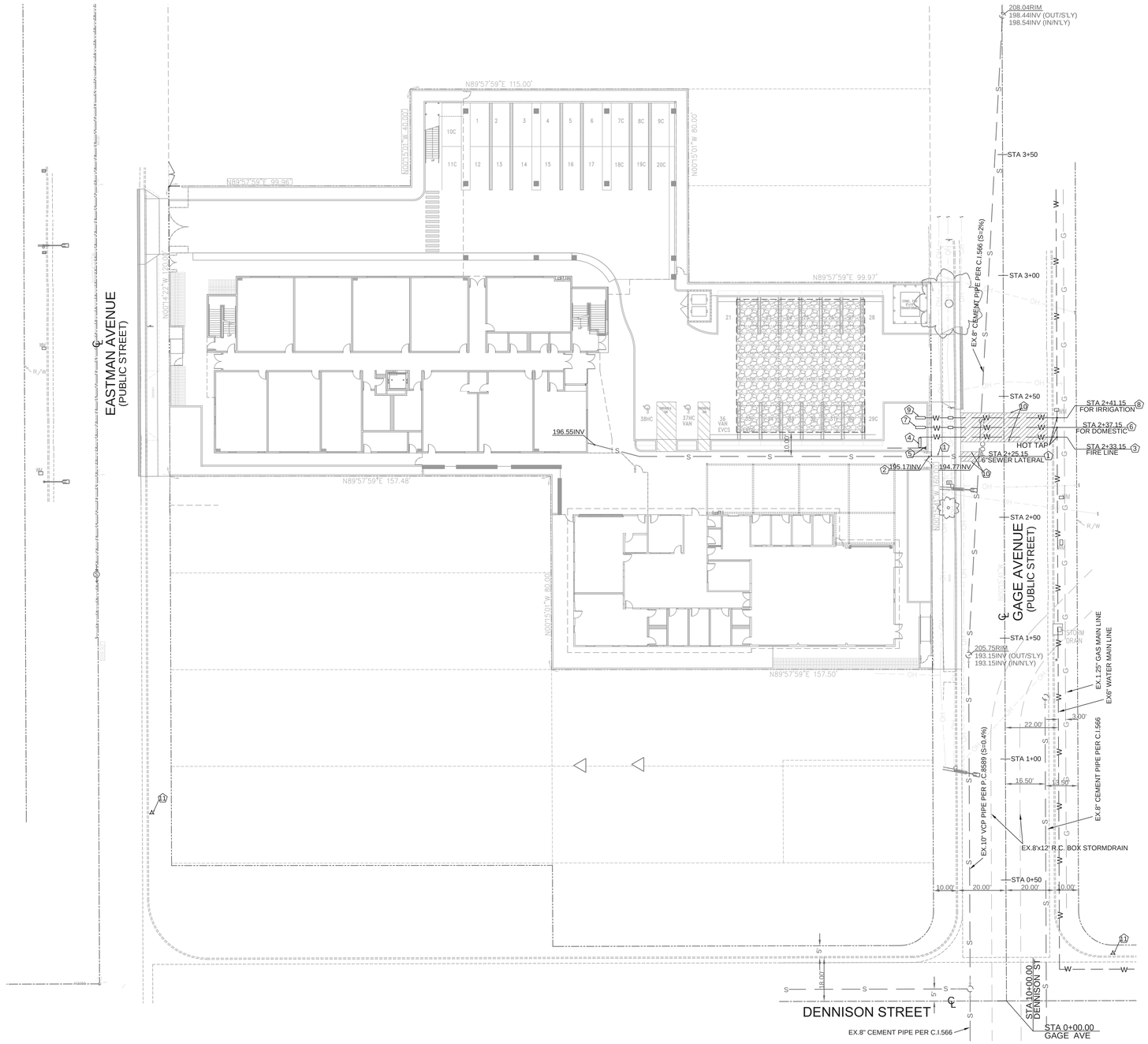


5 DETAIL : PIV AND FDC
NOT TO SCALE

NOTES

1. THE ASSEMBLY SHALL BE APPROVED BY THE FOUNDATION FOR CROSS-CONNECTION CONTROL AND HYDRAULIC RESEARCH AT THE UNIVERSITY OF SOUTHERN CALIFORNIA.
2. INSTALLATION SHALL COMPLY WITH THE LATEST PLUMBING CODES AND APPLICABLE LOCAL AGENCY REQUIREMENTS.
3. THRUST BLOCKS SHALL BE SIZED PER DETAIL.

4 4-INCH FEBCO DOUBLE CHECK ASSEMBLY MODEL LF850
NOT TO SCALE



CONSTRUCTION NOTES:

1. INSTALL 6" VCP. SEWER LATERAL, CONNECT TO EX. SEWER MAIN LINE ON STREET, PER SPPWC STD PLAN NO 222-2, TYPE C
2. INSTALL SEWER CLEANOUT PER SPPWC STD NO 204-2
3. INSTALL 4" CI WATER LATERAL WITH 4"WATER METER FOR FIRE LINE
4. INSTALL 4-INCH FEBCO DOUBLE CHECK ASSEMBLY MODEL LF850 PER LA. COUNTY WATERWORKS STANDARD PLAN W-6
5. INSTALL PIV AND FDC, SEE DETAILS HEREON
6. INSTALL 2.5" CI WATER LATERAL WITH 2"WATER METER FOR DOMESTIC
7. INSTALL 2.5"REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER WILKINS MODEL NO.375 PER PLUMBING PLAN
8. INSTALL 2" CI WATER LATERAL WITH 2"WATER METER FOR IRRIGATION
9. INSTALL 2.0"REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER WILKINS MODEL NO.375 PER PLUMBING PLAN
10. REMOVE AND RECONST PAVEMENT PER TRENCH PAVING SECTION, SEE DETAILS HEREON
11. EXISTING FIRE HYDRANT TO REMAIN

DIGALERT

DIAL TOLL FREE
1-800-227-2600
AT LEAST TWO DAYS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

LEGEND:

—S— —S—	SEWER LINE
—W— —W—	WATER LINE
—G— —G—	GAS LINE
	FIRE HYDRANT

ABBREVIATIONS:

EPB	ELECTRICAL PULL BOX
CATV	CABLE TV BOX
EM	ELECTRICAL METER
WM	WATER METER

REGISTERED PROFESSIONAL ENGINEER
GUAN WANG
No. 79702
EXP. 09-30-24
CIVIL
STATE OF CALIFORNIA

SOIL ENGINEER:
GEOTECHNOLOGIES, INC
439 WESTERN AVE,
GLENDALE, CA 91201
Tel(818)240-9600
FILE NO.22311
DATE: SEPTEMBER 23, 2022

SURVEY:
CAL VADA SURVEYING, INC
411 Jenks Circle, Suite 205, Corona, CA 92878
Phone: 951-280-9960
Armando D. DuPont, Registration No. 7780
JOB NO:22623
FIELD COMPLETION DATE: AUGUST 17, 2022

OWNER:
EDUCATIONAL FACILITIES GROUP
3700 LATROBE ST
LOS ANGELES, CA 90031
PHONE: 323-505-7536

LEGAL DESCRIPTION
POR.LOT 26, 27, 54, 55, AND 56 OF TRACT 3552
IN THE CITY OF LOS ANGELES, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 38, PAGE 83-84 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.
APN# : 5239-012-009 & 5239-012-028

BENCH MARK:
ELEVATIONS SHOWN HEREON ARE BASED UPON COUNTY OF LOS ANGELES BENCHMARK LY9859, ELEVATION 191.90 FEET (NAVD 88).
DESCRIPTION:
RDBM TAG IN W CB 1FT N/O BCR @ NW COR UNION PACIFIC AVE & HERBERT AVE

PLANS PREPARED BY:
TRITECH ENGINEERING GROUP
LAND SURVEY SUBDIVISION
CIVIL ENGINEERING & DESIGN
135 N. SAN GABRIEL BLVD.
SAN GABRIEL, CA 91775
TEL: (626) 570-1918
EMAIL: info@tritechengineer.com
JOB NO. 220918

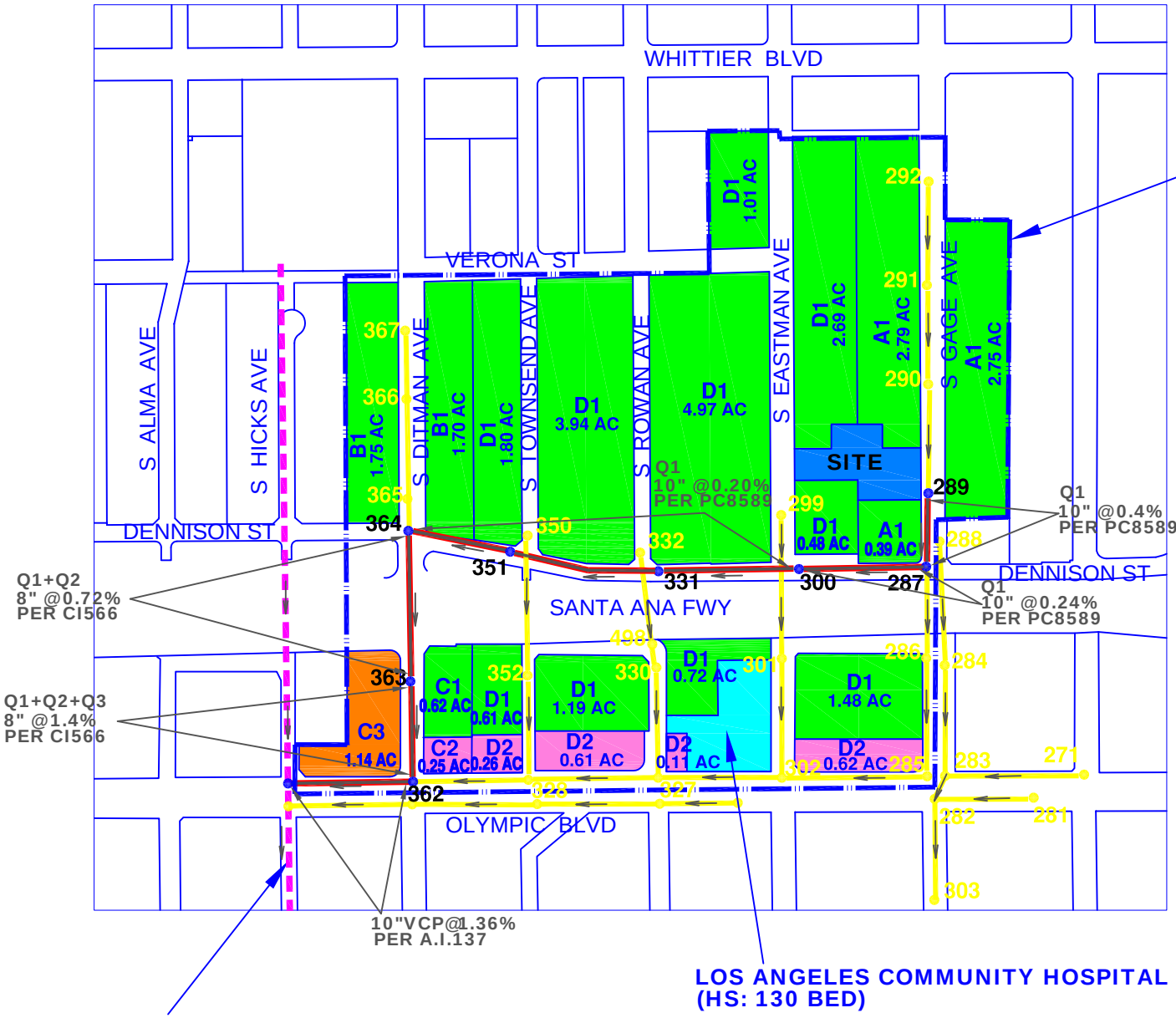
FRANCO ARCHITECTS INC.
12345 Ventura Blvd. H
Studio City, CA 91604
Tel 818 754-2030
Fax 818 754-2032
Architecture and Planning

EXTERA PUBLIC SCHOOLS
1059 S. GAGE AVE., LOS ANGELES, CA90023

REV	DESCRIPTION	DATE
	PLANNING SUBMITTAL	10/31/2022

PROJECT
EXTERA PUBLIC SCHOOLS
PROJECT ADDRESS
1059 S. GAGE AVE., LOS ANGELES, CA 90023
DRAWING TITLE
COMPOSITE UTILITY PLAN
DRAWN BY
ISSUE DATE
06/15/2023
JOB NUMBER
DRAWING SCALE
APPROVED BY:
DRAWING NUMBER
C - 10

AREA MAP



SEWER SHED

LEGEND:

- R-3
- C-3
- C-M
- HOSPITAL

LOS ANGELES COMMUNITY HOSPITAL
(HS: 130 BED)

EX. 12"VCP PER A.I.137

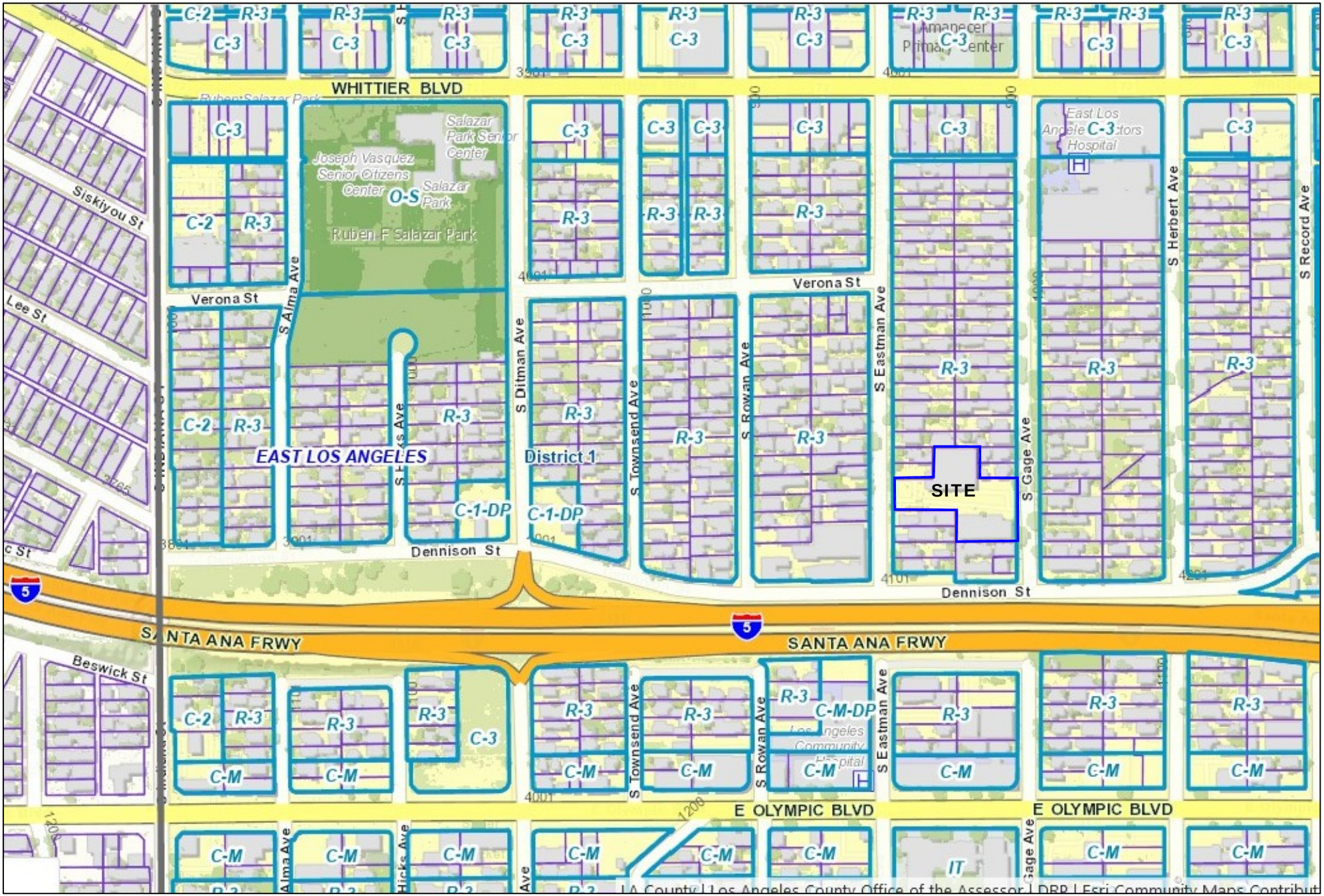
JANE ST.BRANCH OF BELVEDERE TRUNK SEWER SANITARY DISTRICT NO.2

N

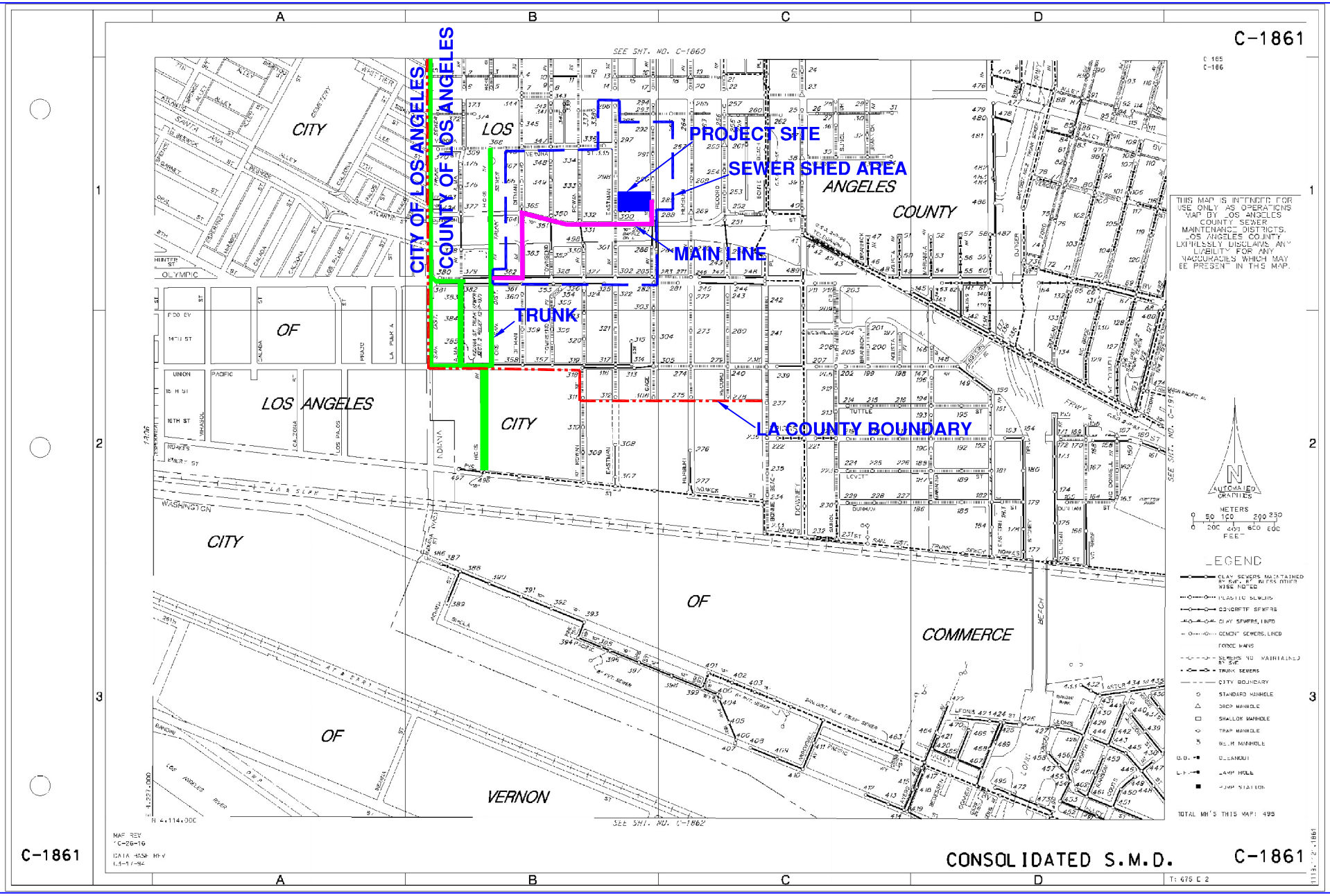
SCALE: 1"=400'

6. ZONING MAP

SOURCE: http://rpgis.isd.lacounty.gov/Html5Viewer/index.html?viewer=GISNET_Public.GIS-NET_Public

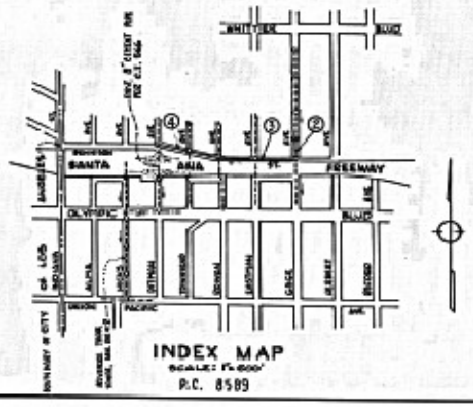


SEWER INDEX MAP & CSMD MAP



BAL BY GITG ELEV. 188.330

RIVERA QUAD. 1952



County Sanitation Districts shall be notified prior to the following so that required inspection can be made (Phone 867-8155 - - 1820-1865)

Acceptance of the project.

No connections for the disposal of industrial wastes shall be made to sewers shown on these drawings without permission from the Chief Engineer and General Manager of the County Sanitation Districts.

GENERAL NOTES:

CONSTRUCTION NOTES:

PROFILE, ALIGNMENT AND GRADE OF

SANITARY SEWERS PAGE 1

TO BE CONSTRUCTED IN

DENNISON STREET AND GAGE AVENUE

PRIVATE CONTRACT NO. 8589

W.S. 7, E-2

2 SHEETS, 4 PAGES

SCALE: 1"=40' MARCH, 1977

PREPARED IN THE OFFICES OF BONNETT, SALIT & SALIT, INC.

REG. C.E. No. 15,960

43439

COUNTY OF LOS ANGELES, CALIFORNIA

HARVEY T. BRANDT, COUNTY ENGINEER JOHN D. PARKHURST, CHIEF ENGINEER

APPROVED [signature] 4-4-77

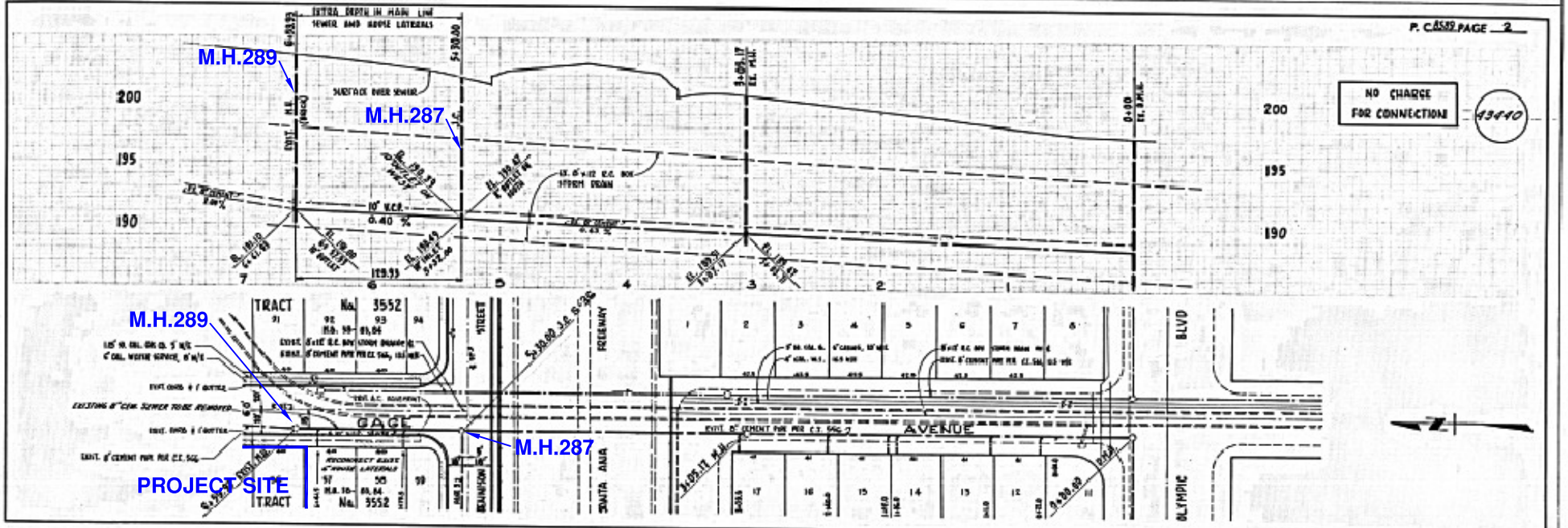
CHECKED [signature] 4/4/77

CO. CR. No. 7858

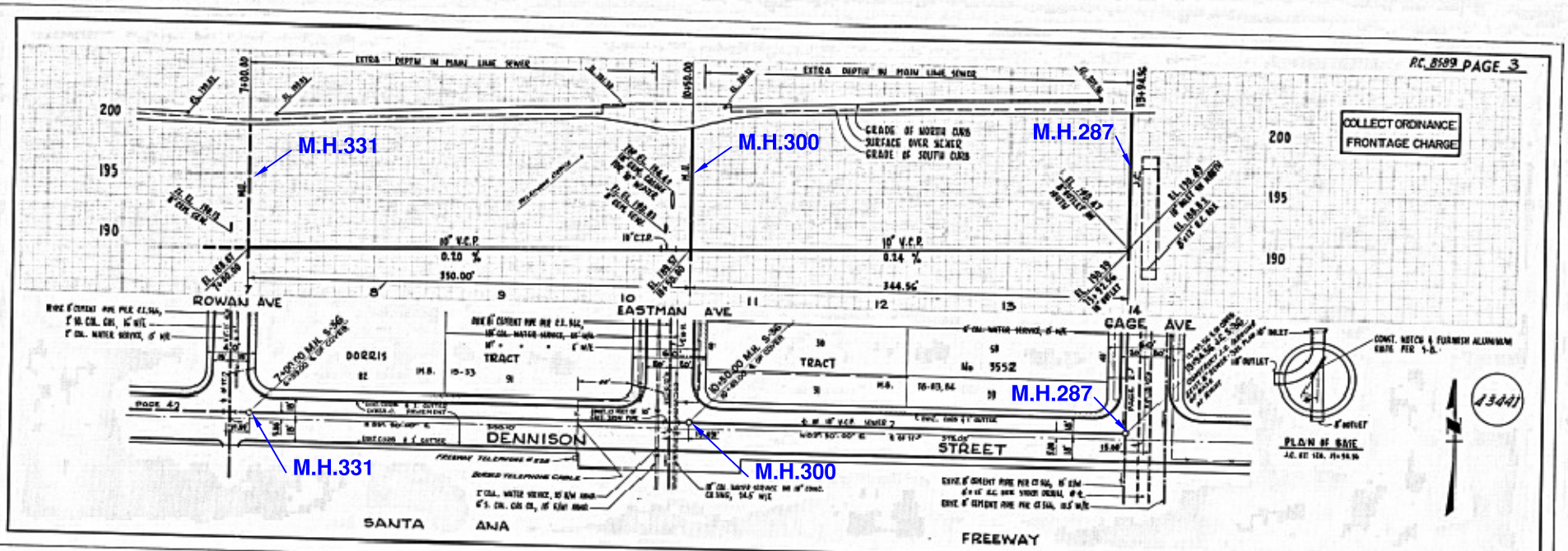
STATE OF CALIFORNIA BLDG. DIST. 6

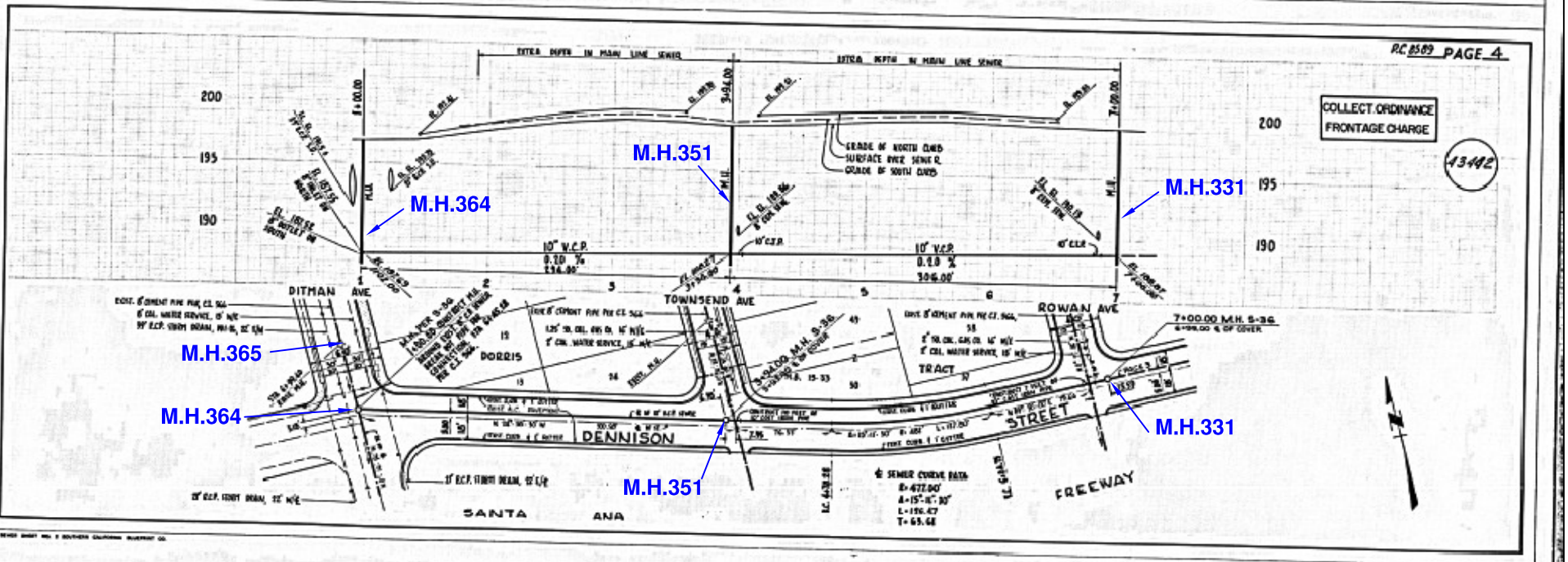
B.M. 0370.93

P.C. 8589 PAGE 2

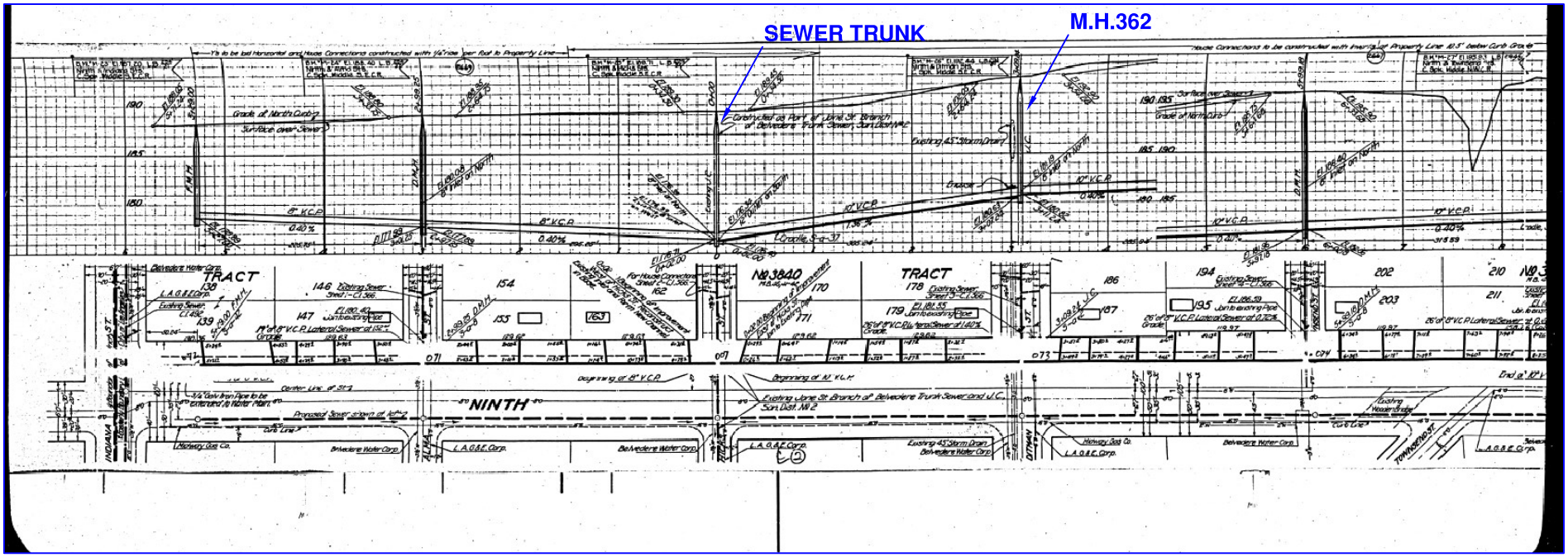


PC.08589

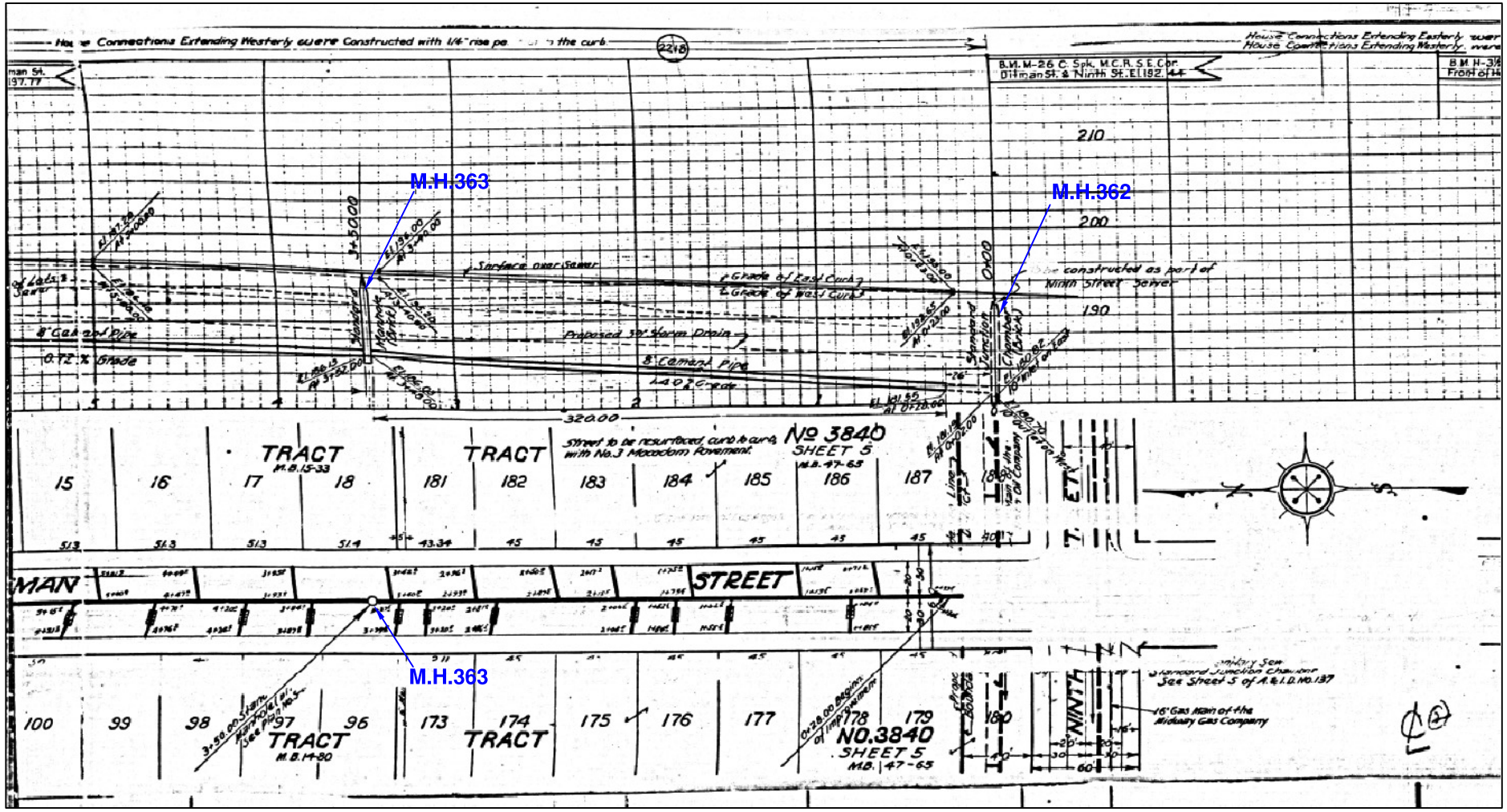

RC 8589 PAGE 3
M.H.331
M.H.300
M.H.287
COLLECT ORDINANCE FRONTAGE CHARGE
ROWAN AVE
EASTMAN AVE
CAGE AVE
DORRIS TRACT
TRACT 9552
DENNISON
STREET
SANTA ANA
FREEWAY
PLAN OF GATE
13441


RC 8589 PAGE 4
M.H.351
M.H.364
M.H.331
M.H.365
COLLECT ORDINANCE FRONTAGE CHARGE
13442
DITMAN AVE
TOWNSEND AVE
ROWAN AVE
DORRIS TRACT
DENNISON
STREET
SANTA ANA
FREEWAY

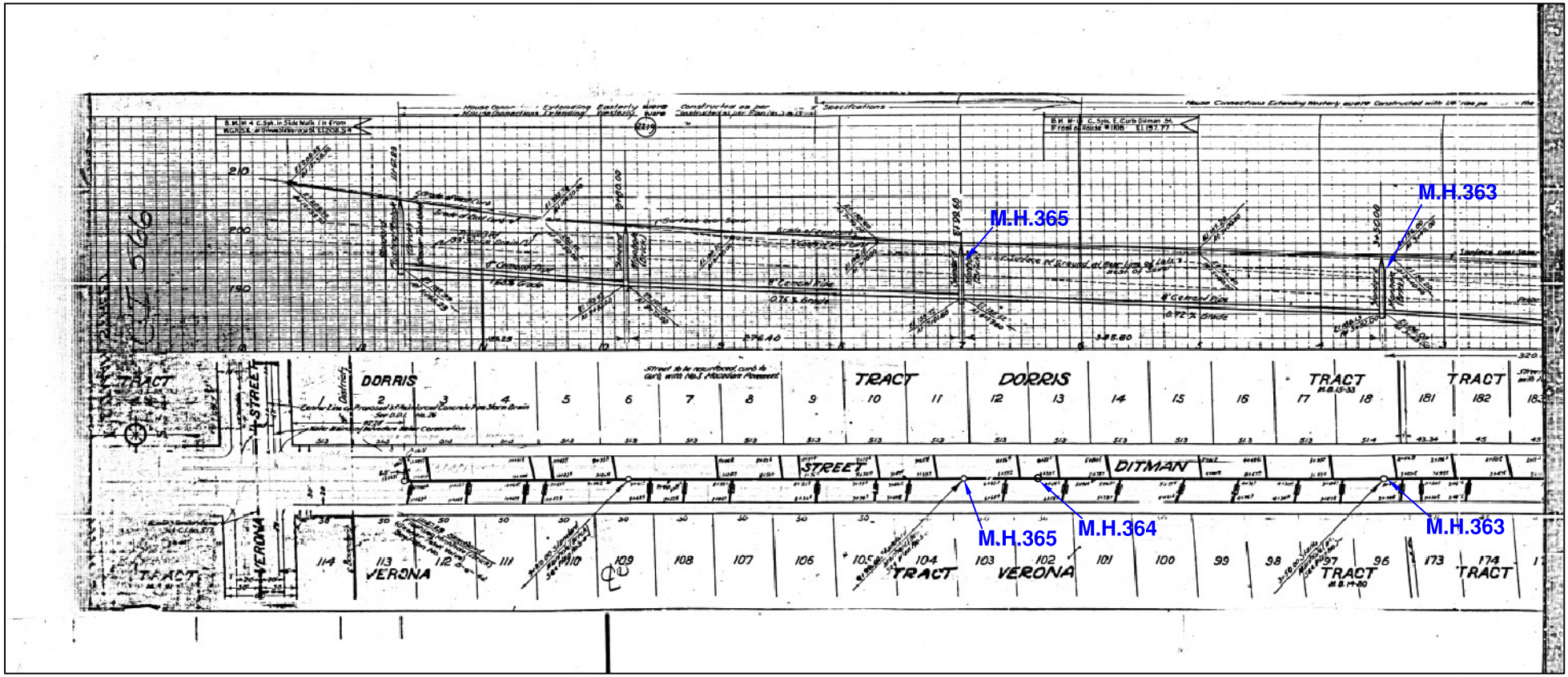
AI.137


SEWER TRUNK
M.H.362
NINTH
TRACT
TRACT
Existing Vine St. Branch of Belvedere Trunk Sewer and J.C.
Existing 45" Storm Drain
Belvedere Water Corp.
L.A.G.&E. Corp.
Hotaway Gas Co.

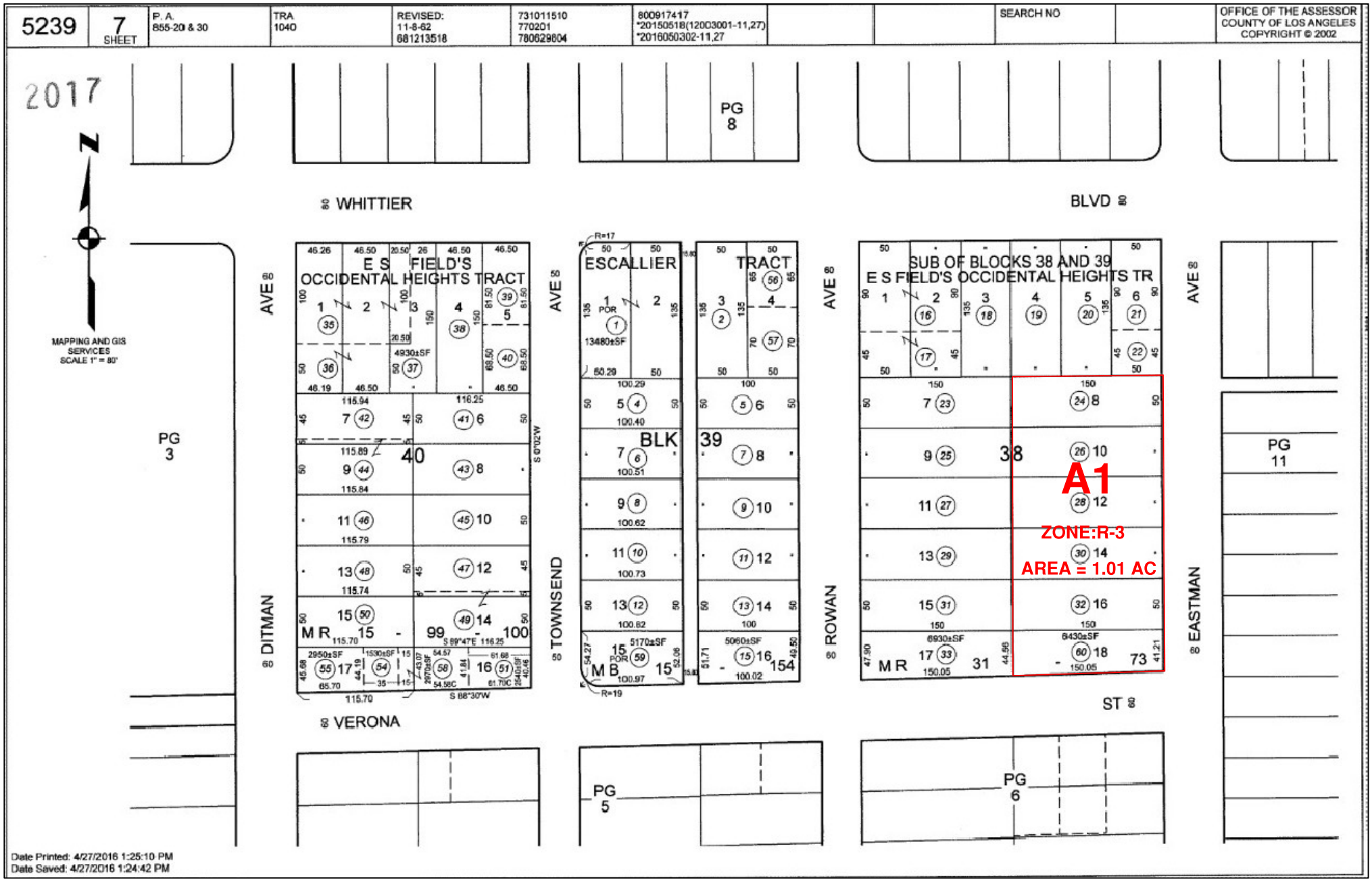
CI.566

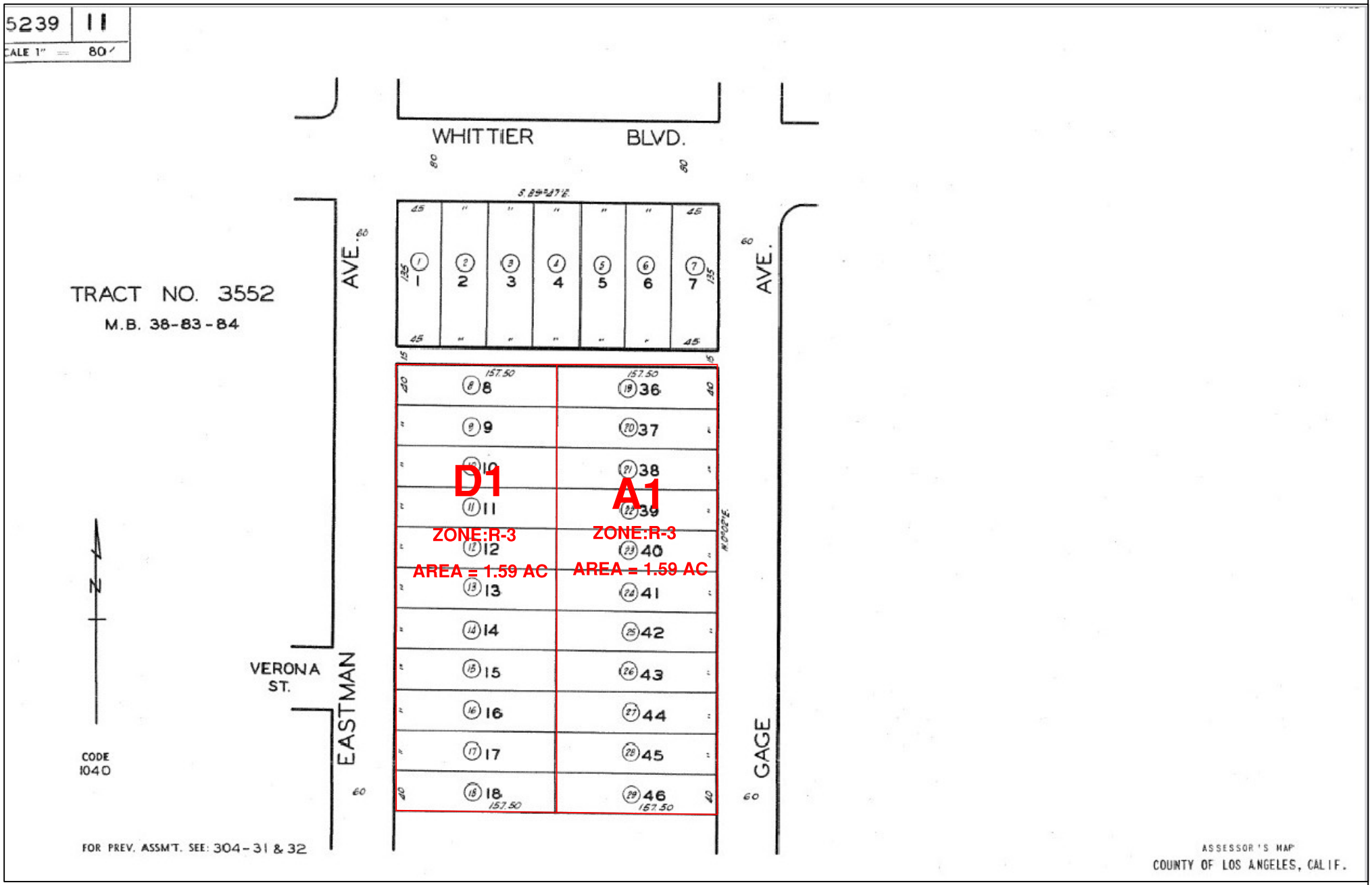

M.H.363
M.H.362
M.H.363
Surface over Sewer
Proposed 30" Storm Drain
8" Cement Pipe
0.72 % Grade
320.00
TRACT
M.B.15-33
TRACT
No 3840
SHEET 5
M.B.47-65
STREET
TRACT
M.B.14-80
TRACT
No.3840
SHEET 5
M.B.147-65
constructed as part of
Ninth Street Sewer
See Sheet 5 of A.&I.D. No.137
16" Gas Main of the
Midway Gas Company

Cl.566


M.H.365
M.H.363
M.H.365
M.H.364
M.H.363
DORRIS
TRACT
DORRIS
TRACT
TRACT
STREET
DITMAN
VERONA
TRACT
VERONA
TRACT
TRACT

9. ASSESSOR'S MAP

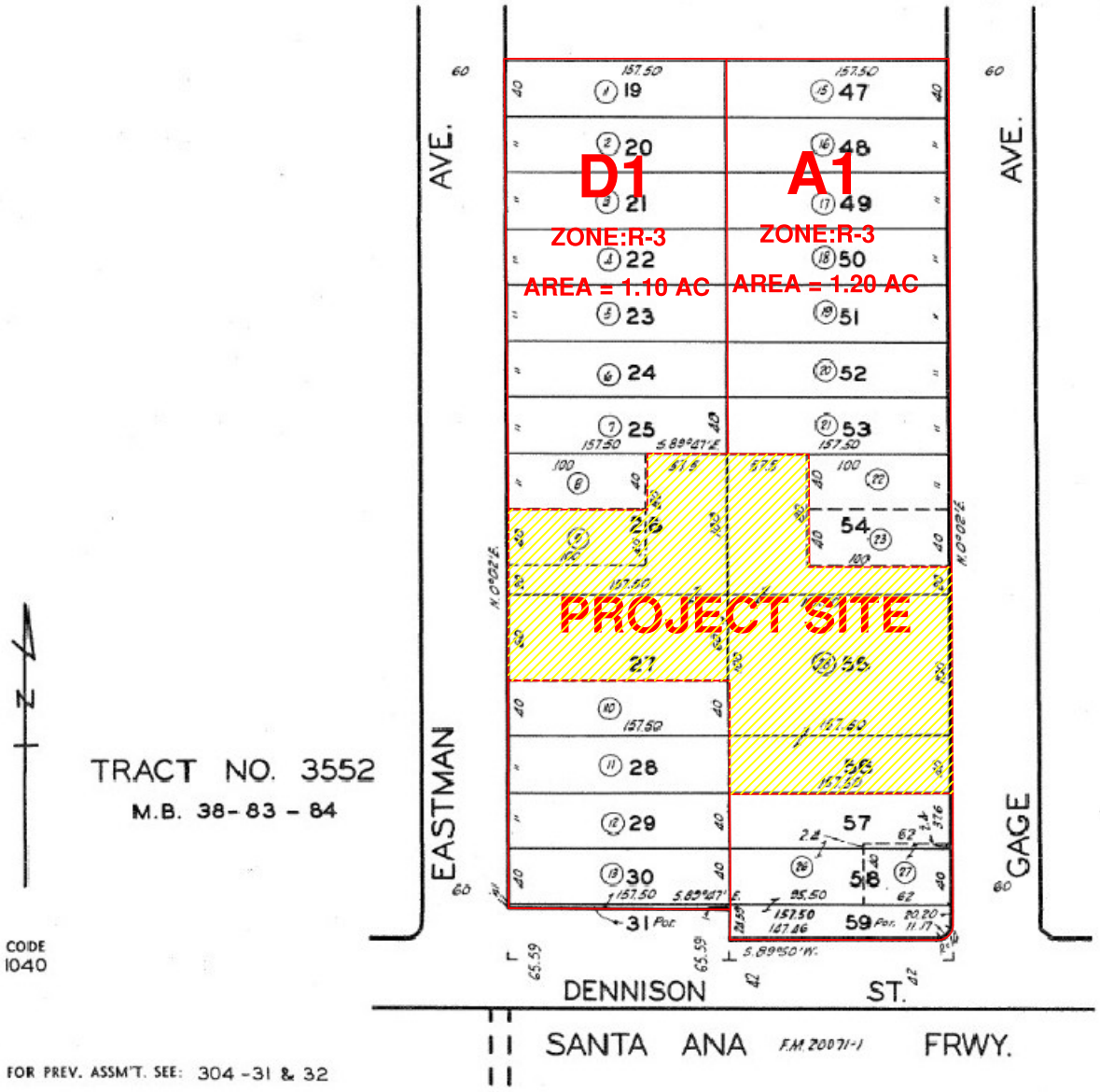



5239 | 11
CALE 1" = 80'
WHITTIER BLVD.
80
80
S 89°47'E
TRACT NO. 3552
M.B. 38-83-84
AVE.
AVE.
GAGE
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
D1
ZONE:R-3
AREA = 1.59 AC
A1
ZONE:R-3
AREA = 1.59 AC
157.50
N
VERONA ST.
EASTMAN
CODE
1040
FOR PREV. ASSM'T. SEE: 304-31 & 32
ASSESSOR'S MAP
COUNTY OF LOS ANGELES, CALIF.

5239 | 12

CALE 1" = 80'

7010218 31



5239 | 6

SCALE 1" = 80'

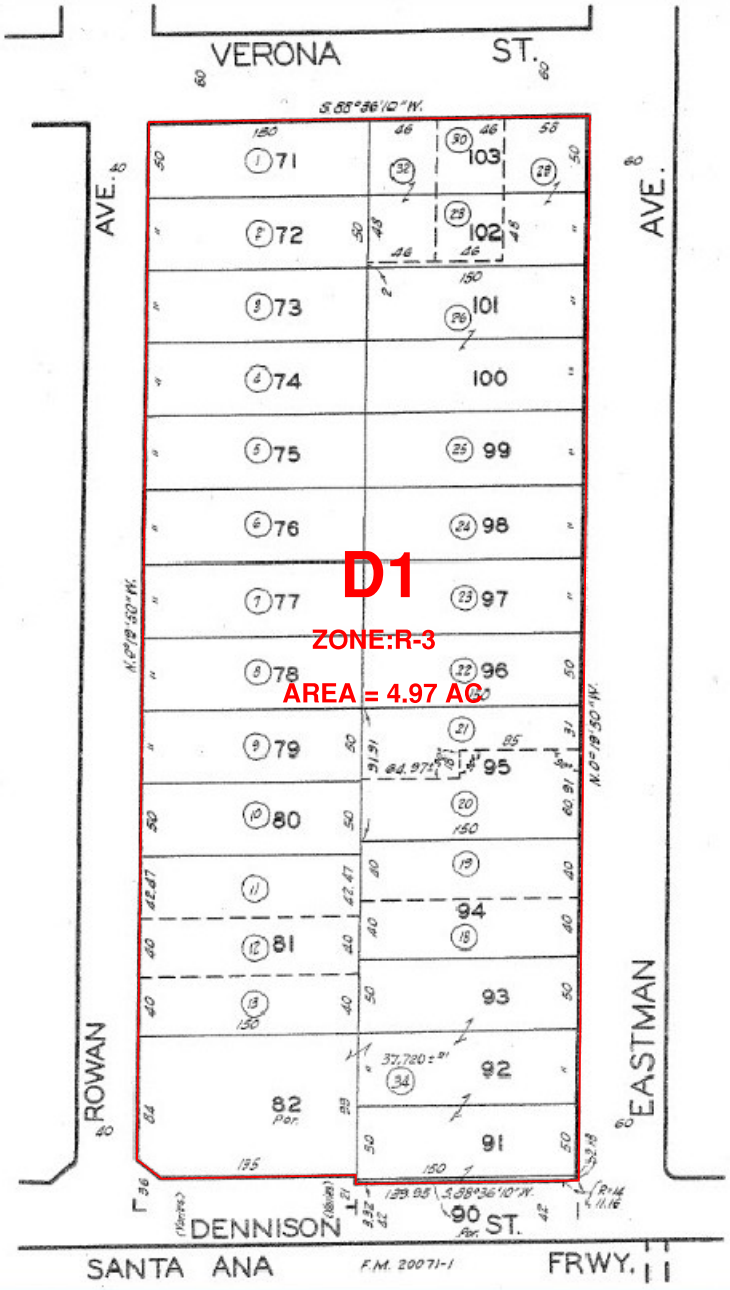
2008

DORRIS TRACT

M.B. 15 - 33

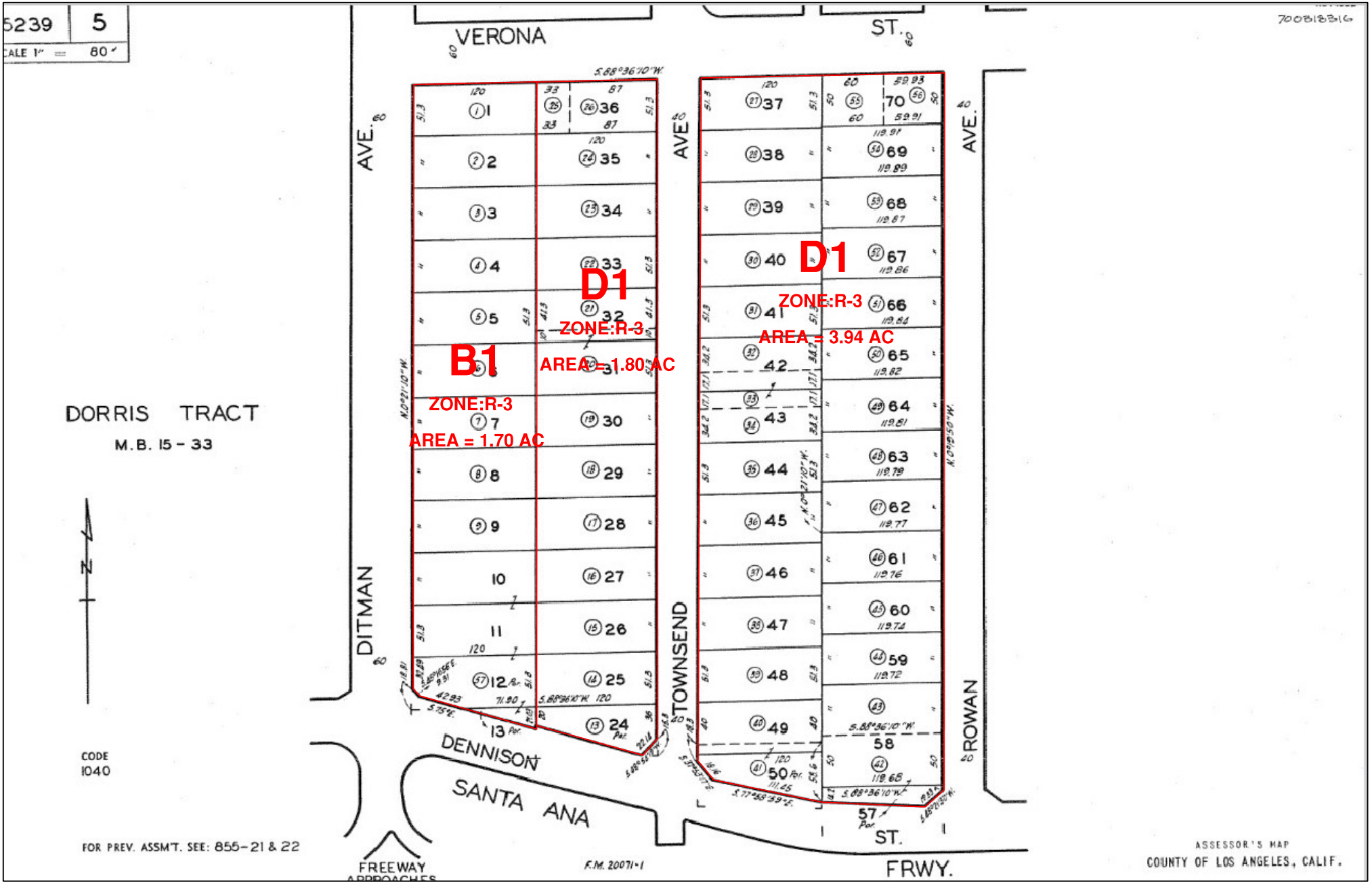
CODE
1040

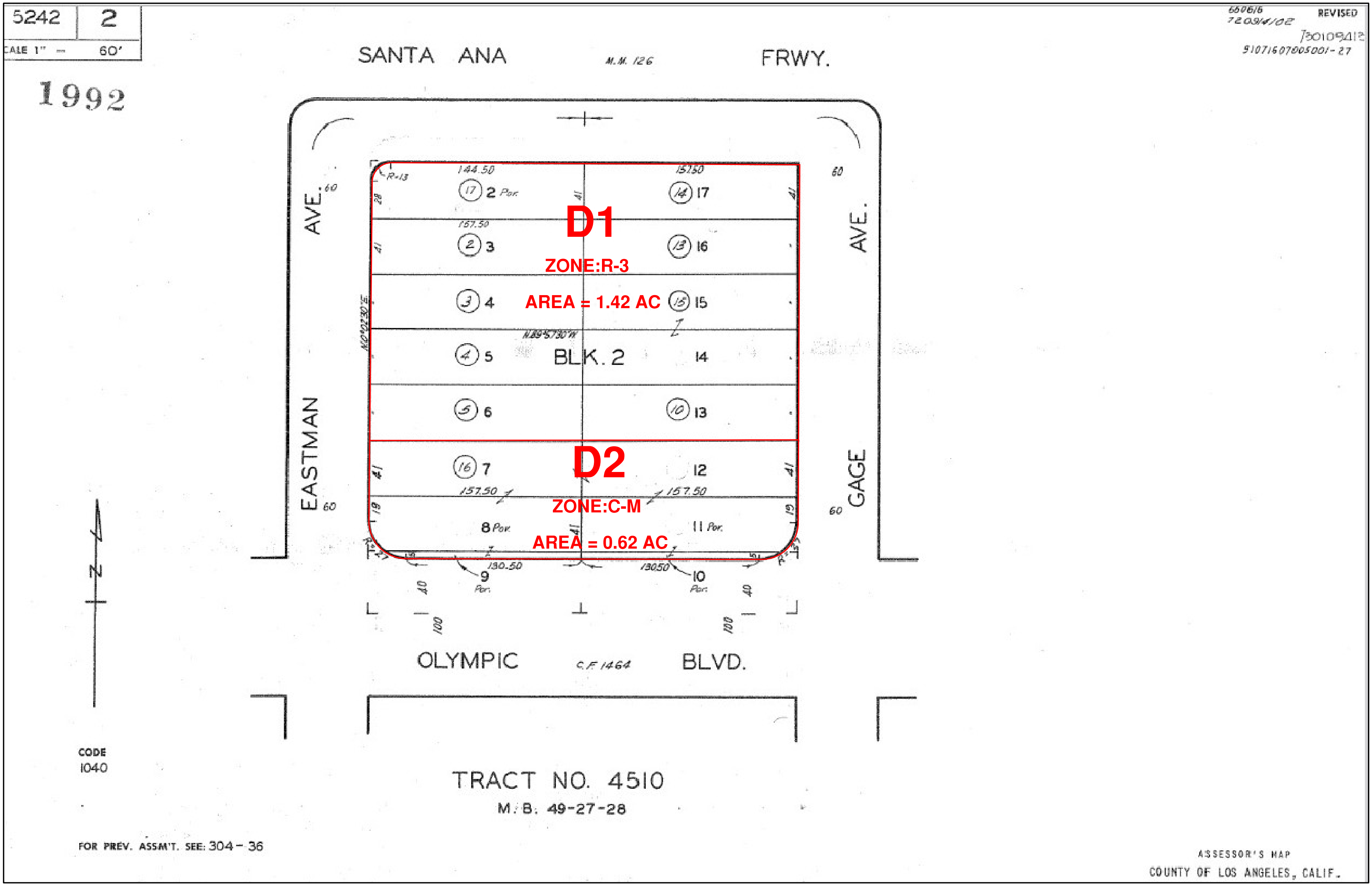
FOR PREV. ASSM'T. SEE: 855-23



REVISED
1-11-63
7/01/1950
2008011403002001-11

ASSESSOR'S MAP
COUNTY OF LOS ANGELES, CALIF.


5239
5
CALE 1" = 80'
VERONA
ST.
AVE.
DITMAN
TOWNSEND
ROWAN
DENNISON
SANTA ANA
FRWY.
FREEWAY APPROACHES
D1
ZONE:R-3
AREA = 1.80 AC
B1
ZONE:R-3
AREA = 1.70 AC
D1
ZONE:R-3
AREA = 3.94 AC
DORRIS TRACT
M.B. 15 - 33
CODE
1040
FOR PREV. ASSM'T. SEE: 855-21 & 22
F.M. 20071-1
ASSESSOR'S MAP
COUNTY OF LOS ANGELES, CALIF.

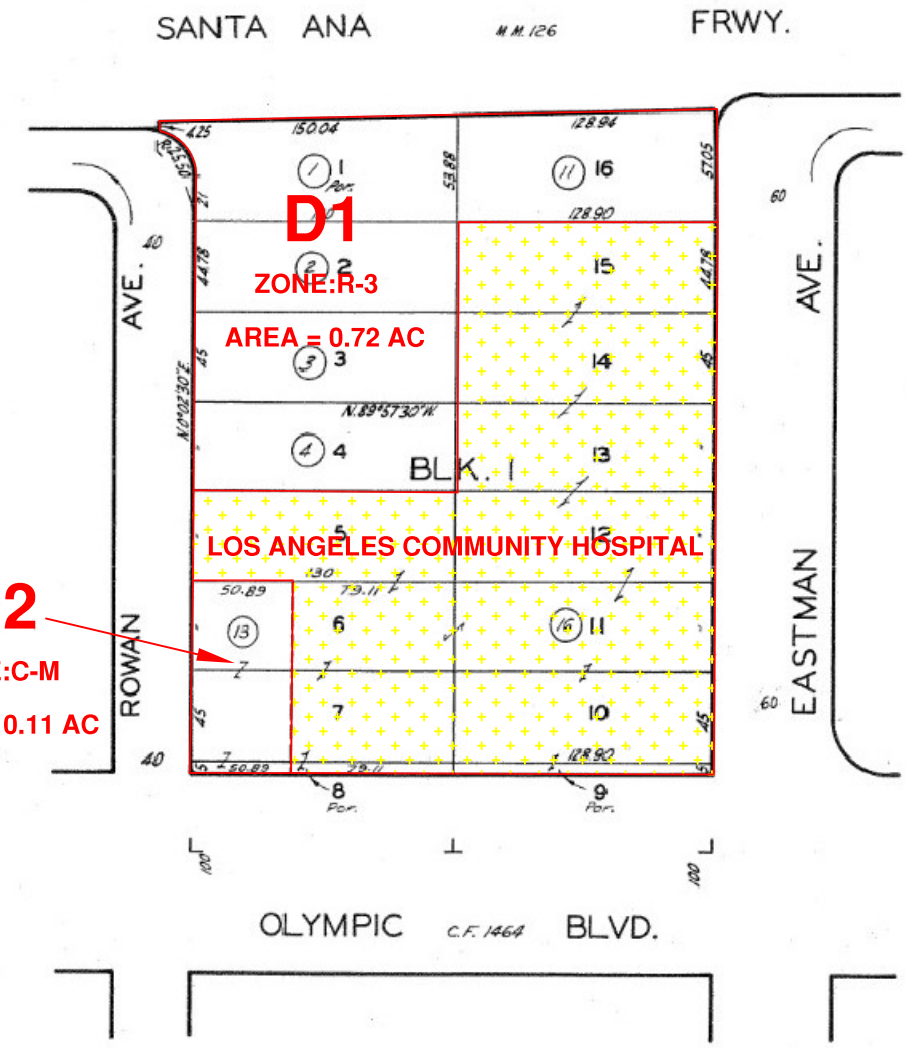


5242
2
SCALE 1" = 60'
1992
REVISED
SANTA ANA
M.M. 126
FRWY.
EASTMAN AVE.
GAGE AVE.
D1
ZONE:R-3
AREA = 1.42 AC
D2
ZONE:C-M
AREA = 0.62 AC
BLK. 2
OLYMPIC
C.F. 1464
BLVD.
CODE
1040
TRACT NO. 4510
M.B. 49-27-28
FOR PREV. ASSM'T. SEE: 304-36
ASSESSOR'S MAP
COUNTY OF LOS ANGELES, CALIF.

5242 | 3

ALE 1" = 60'

REVISED
2-1-60
2-7-61



CODE
1040

TRACT NO. 4510
M. B. 49-27-28

FOR PREV. ASSM'T. SEE: 304-36

ASSESSOR'S MAP
COUNTY OF LOS ANGELES, CALIF.

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2020

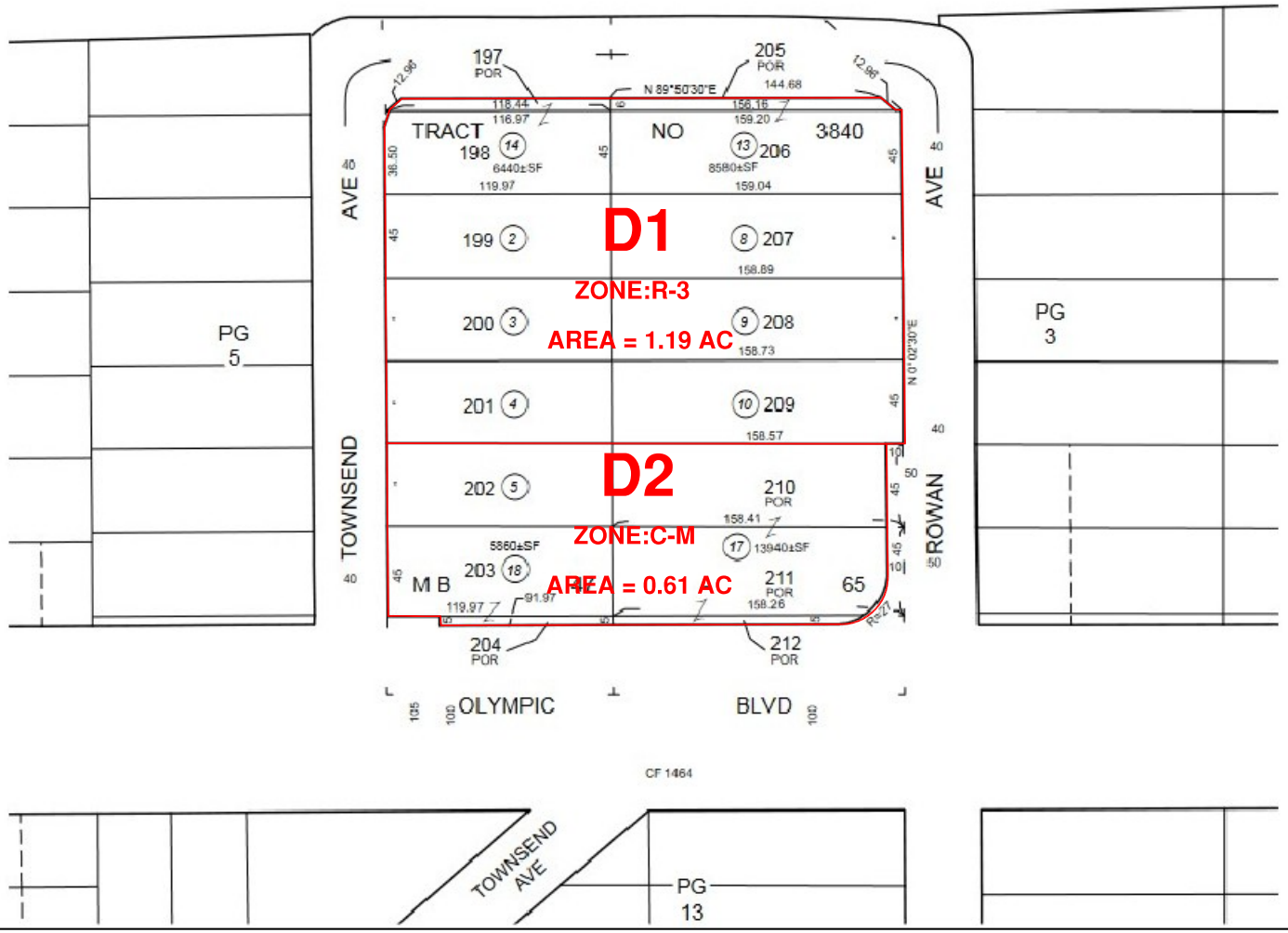
BK 5239

SANTA ANA RTE 5 FRWY

MM 126

N

MAPPING AND GIS SERVICES
SCALE 1" = 60'



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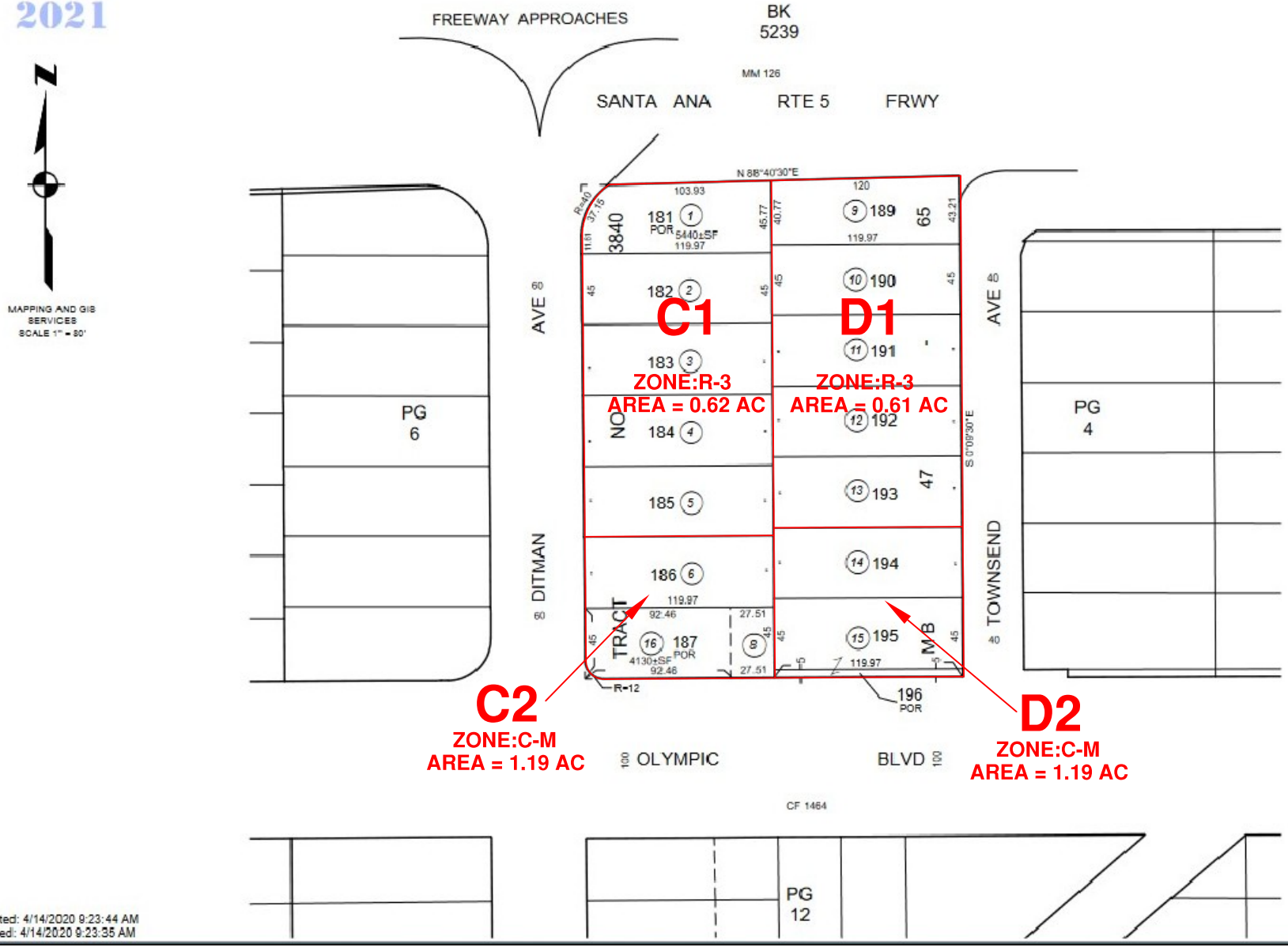
2021



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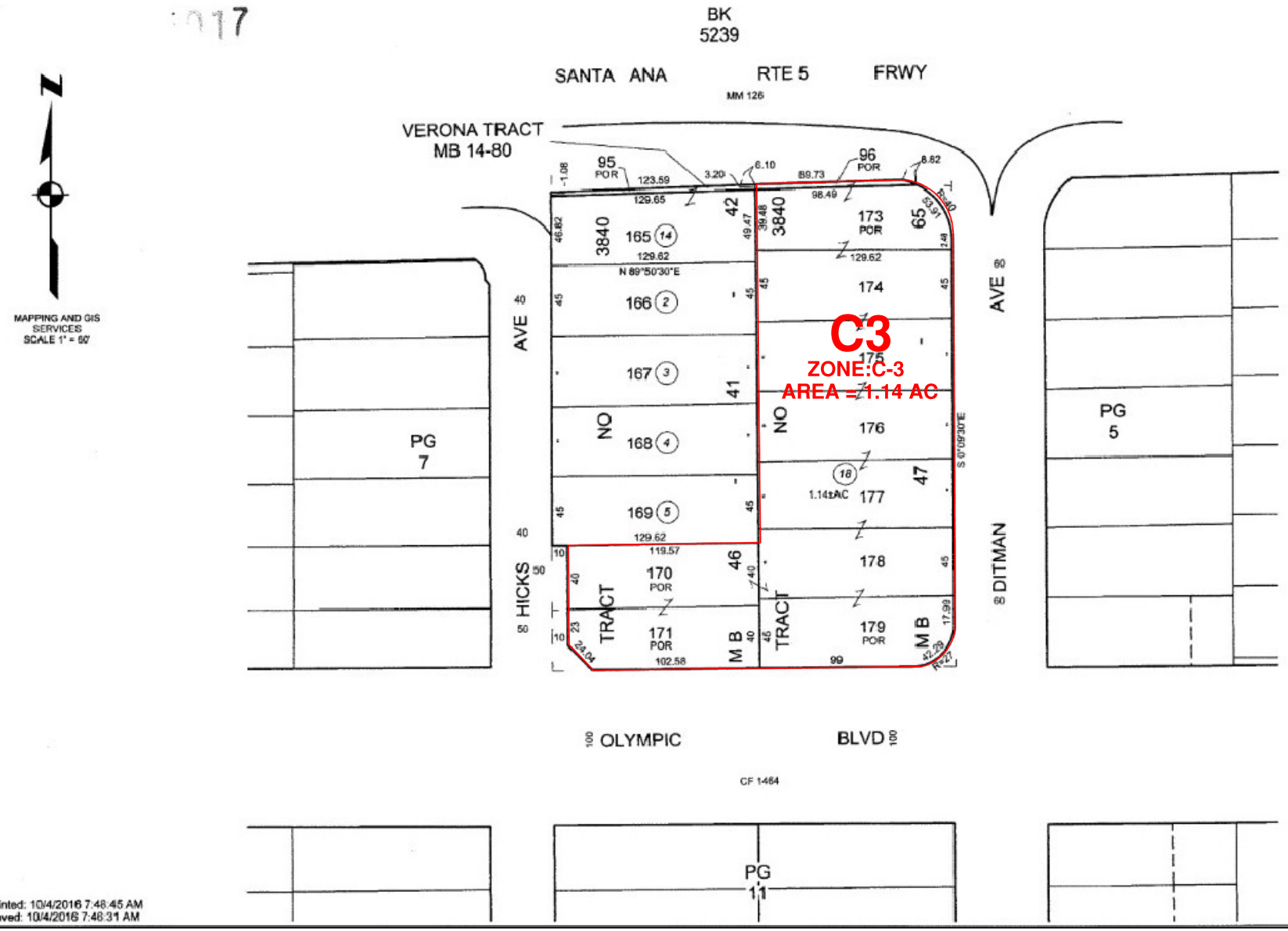

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2005

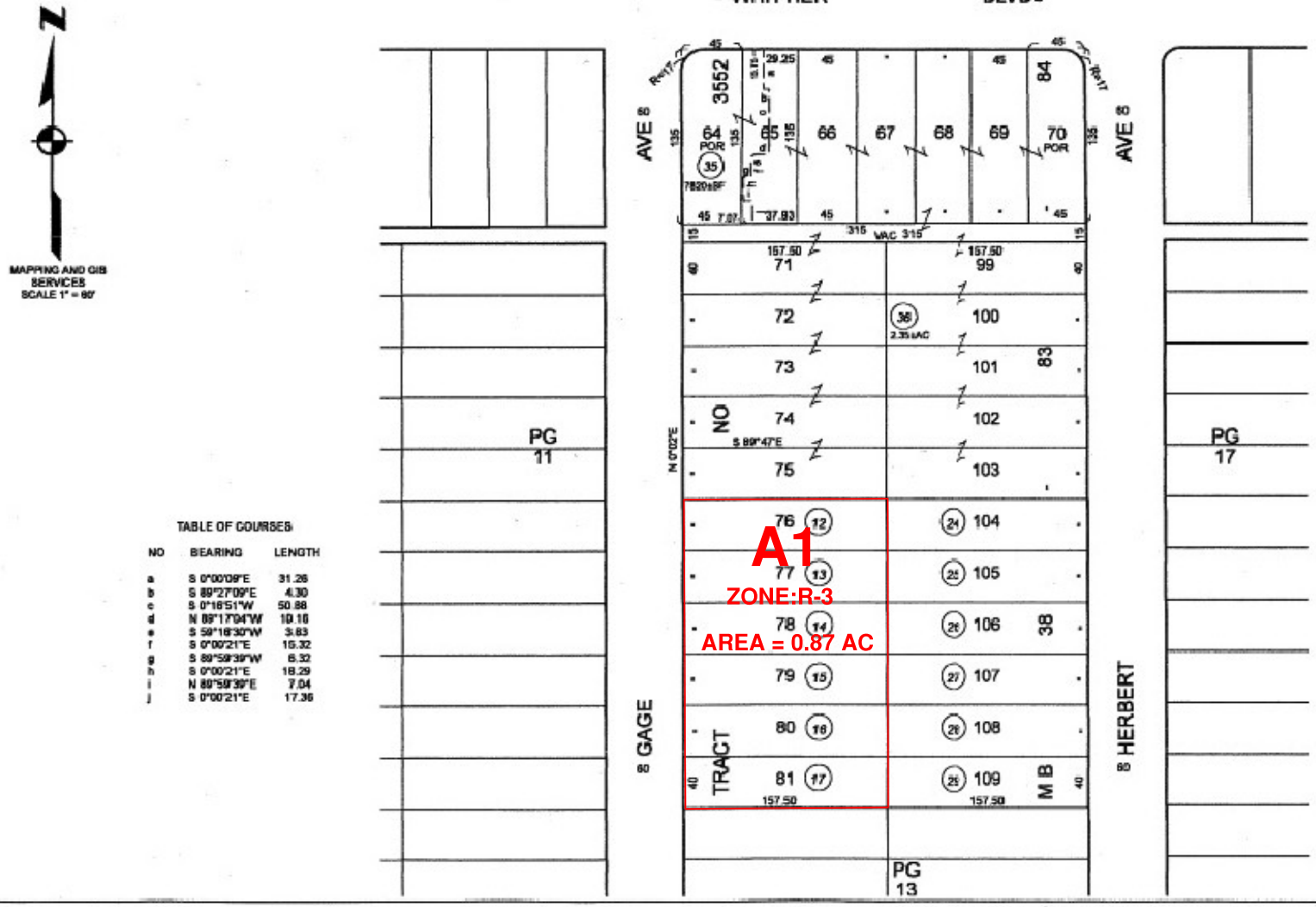

TABLE OF COURSES

NO	BEARING	LENGTH
a	S 0°00'09"E	31.26
b	S 89°27'09"E	4.30
c	S 0°18'51"W	50.88
d	N 89°17'04"W	19.16
e	S 59°18'30"W	3.83
f	S 0°00'21"E	16.32
g	S 89°59'39"W	6.32
h	S 0°00'21"E	18.29
i	N 89°59'39"E	7.04
j	S 0°00'21"E	17.36

5239 | 13

SCALE 1" = 80'