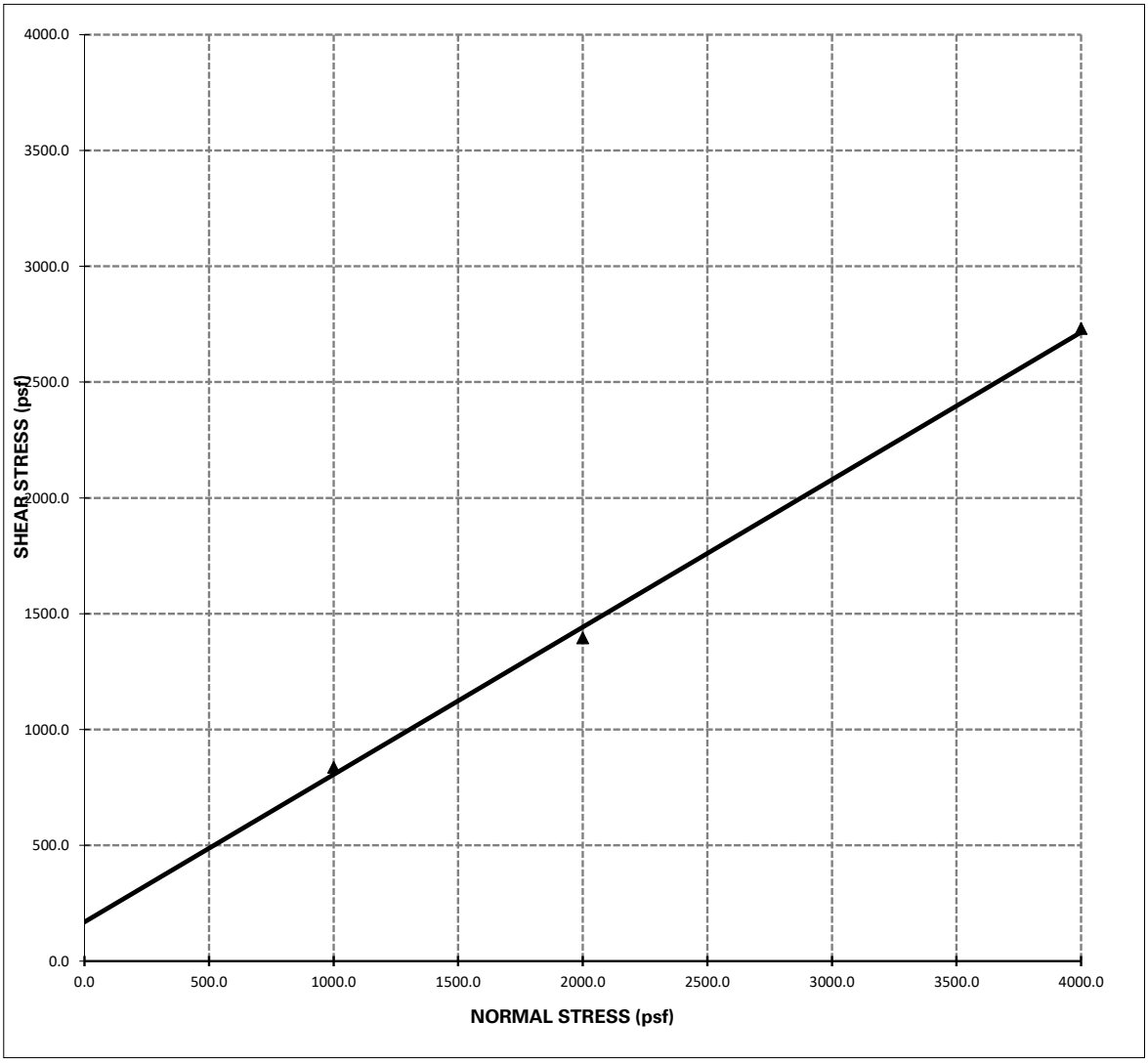
DIRECT SHEAR TEST

Project Name:	The True Life Comapanies	***Sample Location:***	T7 @ 2-3'
Project Number:	2855-CR	***Date Tested:***	9/15/2021

PEAK VALUE



Shear Strength: Φ = **32** ° , **C = 169 psf**

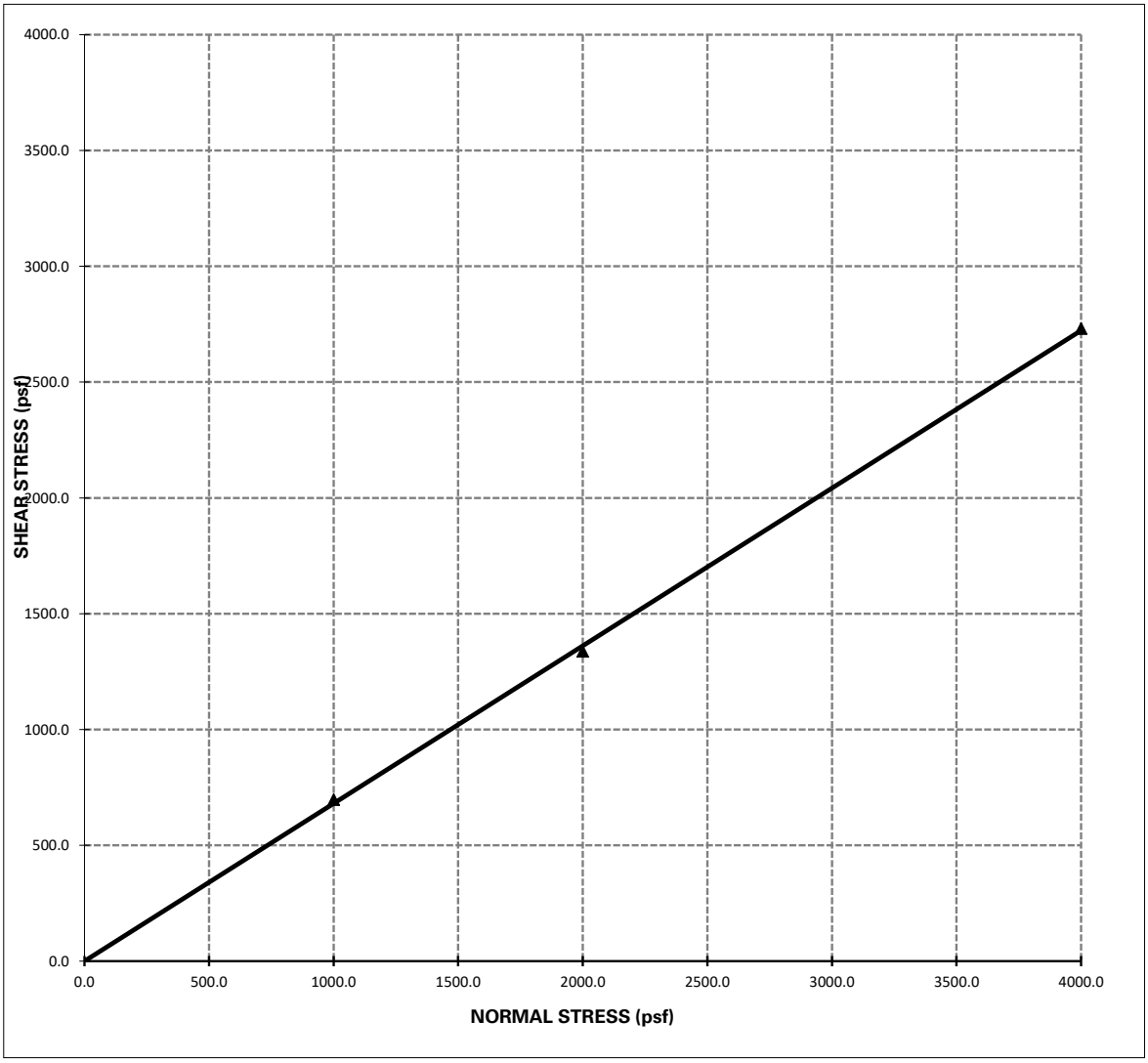
Notes: 1 - The soil specimen used in the shear box was a ring sample remolded to approximately 90% relative compaction from a bulk sample collected during the field investigation.

2 - The above reflect direct shear strength at saturated conditions.

3 - The tests were run at a shear rate of 0.035 in/min.

DIRECT SHEAR TEST

Project Name:	The True Life Comapanies	***Sample Location:***	T7 @ 2-3'
Project Number:	2855-CR	***Date Tested:***	9/15/2021



Shear Strength: Φ = **34** ° , **C = 0 psf**

Notes: 1 - The soil specimen used in the shear box was a ring sample remolded to approximately 90% relative compaction from a bulk sample collected during the field investigation.

2 - The above reflect direct shear strength at saturated conditions.

3 - The tests were run at a shear rate of 0.035 in/min.

GEOTEK

EXPANSION INDEX TEST

(ASTM D4829)

Client:	T□□ Tr□□ □i□□ □ □□□ □□ni□□	***Tested/ Checked By:***	E□ □□□ N□ □□r□n□
Project Number:	□□□□□□□R	***Date Tested:***	□□□□□□□□□□
Project Location:	N□ Iri□A□□ □ □ □i□□□□□ A□□□□□ □□□d□r□□□	***Sample Source:***	T□ □ □□□□
		Sample Description:	

Rin□ □□_____ Rin□ Di□□ □_□□□□" Rin□ □ □□□"

DENSITY DETERMINATION

A	□ □i□□□□□□□□□ □□□□□□d □□□ □□□ □ rin□ □□□ □	□□□□□□
B	□ □i□□□□□rin□ □□□ □	□□□□□□
C	N□□□ □i□□□□□□□□□ □□□ □□□ □	**409.9**
D	□ □□D□n□i□□□□□ □□□ □□ □□□□□□□□□	**123.6**
E	Dr□D□n□i□□□□□ □□□ □D□□F□	**113.5**

SATURATION DETERMINATION

F	M□i□□□r□ □□n□□n□□□	□□□
G	□□□□i□□ □r□□i□□□□□□□ □d	**2.70**
H	□ni□□ □□□□□ □□□r □ □□°C, (pcf)	**62.4**
I	□ □□□r□□i□n	**49.6**

READINGS			
DATE	TIME	READIN□	
□□□□□□□□		□□□□□	Ini□□
□□□□□□□□		□□□□□	□□ □ in□Dr□
□□□□□□□□		□□□□□	Fin□□

FINAL MOISTURE	
Fin□□□ □i□□□□□□□□ □□□ □□□ □ □r□	□ M□i□□r□
□□□□□	**16.3**

EXPANSION INDEX = 17

GEOTEK

EXPANSION INDEX TEST

(ASTM D4829)

Client:	T□□ Tr□□ □i□□ □ □□□ □□ni□□	***Tested/ Checked By:***	R□ □□□ N□ □□r□n□
Project Number:	□□□□□□□R	***Date Tested:***	□□□□□□□□□
Project Location:	N□ Iri□A□□ □ □ □i□□□□□ A□□□□□ □□d□r□□□	***Sample Source:***	T□ □ □□□
		Sample Description:	

Rin□ □□_____ Rin□ Di□□ □ _□□□□"_ Rin□ □ □□□"

DENSITY DETERMINATION

A	□ □i□□□□□□□□□ □□□□□d □□□ □□□ □ rin□ □□□ □	□□□□□
B	□ □i□□□□□rin□ □□□ □	□□□□□
C	N□□□ □i□□□□□□□□□ □□□ □□□ □	**407.9**
D	□ □□D□n□i□□□□□ □□□ □□ □□□□□□□□	**123.0**
E	Dr□D□n□i□□□□□ □□□ □D□□F□	**112.9**

SATURATION DETERMINATION

F	M□i□□r□ □□n□□n□□	□□
G	□□□□i□□ □r□□i□□□□□□ □d	**2.70**
H	□ni□□ □□□□□ □□r □ □□°C, (pcf)	**62.4**
I	□ □□□r□i□n	**49.3**

READINGS

DATE	TIME	READIN□	
□□□□□□□		□□□□□	Ini□□
□□□□□□□		□□□□□	□□ □ in□Dr□
□□□□□□□		□□□□□	Fin□□

FINAL MOISTURE

Fin□□□ □i□□□□□□□ □□ □□□ □□ □ □r□	□ M□i□□r□
□□□□□	**10.3**

EXPANSION INDEX = 0

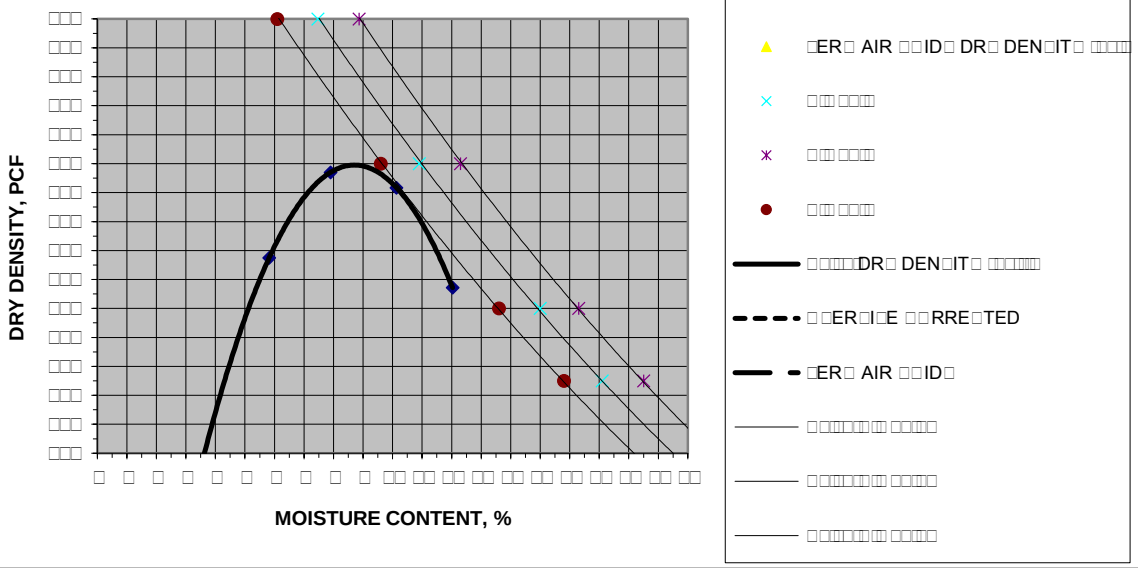
GEOTEK

MOISTURE/DENSITY RELATIONSHIP

Client: T□□ Tr□□ □i□□ □ □□ □□ni□□ **Job No.:** □□□□□□□R
Project: N□ Iri□A□□□□ □ □i□□□□ A□□□ **Lab No.:** □□r□n□
Location: □ □□d□r□□□
Material Type: R□ddi□□ □r□□n □i□□ □□nd
Material Supplier: □
Material Source: □
Sample Location: T□ □ □□□□
□
Sampled By: DA **Date Sampled:** □□□□□□□□□
Received By: R□ **Date Received:** □□□□□□□□□
Tested By: AD **Date Tested:** □□□□□□□□□
Reviewed By: R□ **Date Reviewed:** □□□□□□□□□

Test Procedure: A□TM D□□□□ **Method:** A
Oversized Material (%): □□□ **Correction Required:** yes x no

MOISTURE/DENSITY RELATIONSHIP CURVE



MATERIAL DESCRIPTION

Grain Size Distribution:

□ □r□□□□r□□□in□d □n N□□□□
□ □□nd □□□□in□N□□□□R□□□in□d □n N□□□□□□
□ □i□□□nd □□□□ □□□□in□N□□□□□□

Atterberg Limits:

□i□□id □i□i□□□
□□□□i□ □i□i□□□
□□□□i□i□□ Ind□□□□

Classification:

□ni□□d □□i□□ □ □□□□i□i□□□i□n□
AA□□T□ □□i□□ □ □□□□i□i□□□i□n□

GEOTEK

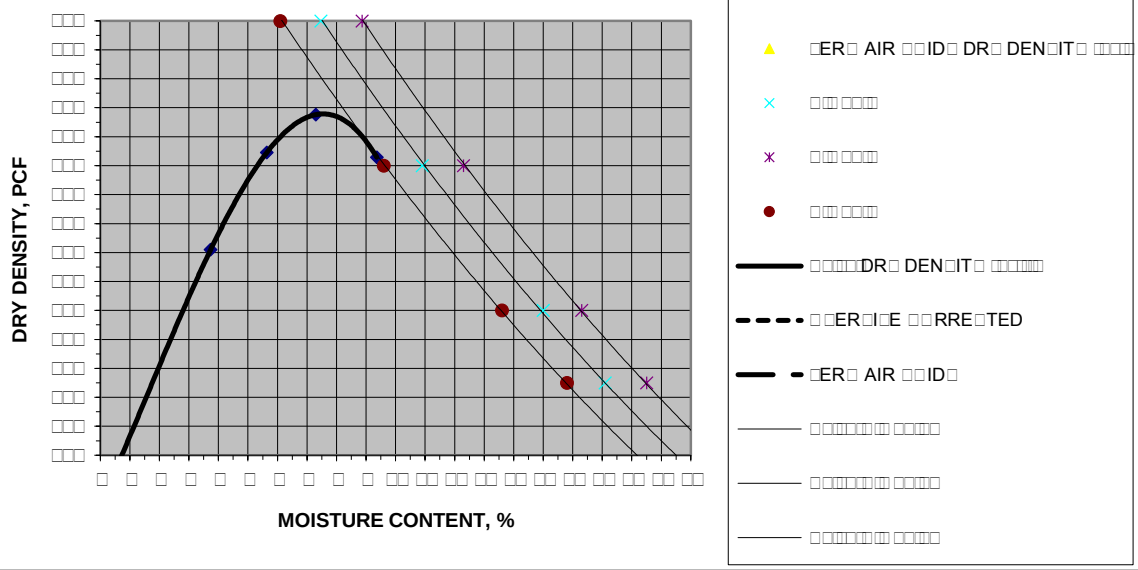
MOISTURE/DENSITY RELATIONSHIP

Client:	T□□ Tr□□ □i□□ □ □□ □□ni□□	**Job No.:**	□□□□□□R
Project:	N□ Iri□A□□□□ □ □i□□□□ A□□□	**Lab No.:**	□□r□n□
Location:	□ □□d□r□□□		
Material Type:	R□ddi□□ □r□□n □i□□ □□nd		
Material Supplier:	□		
Material Source:	□		
Sample Location:	T□ □ □□□□		
	□		
Sampled By:	DA	**Date Sampled:**	□□□□□□□□□
Received By:	R□	**Date Received:**	□□□□□□□□□
Tested By:	AD	**Date Tested:**	□□□□□□□□□
Reviewed By:	R□	**Date Reviewed:**	□□□□□□□□□

Test Procedure: A□TM D□□□□ **Method:** A

Oversized Material (%): □□□ **Correction Required:** [ ] yes [x] no

MOISTURE/DENSITY RELATIONSHIP CURVE



MOISTURE DENSITY RELATIONSHIP VALUES

Maximum Dry Density, pcf	□□□□□	**@ Optimum Moisture, %**	□□□
Corrected Maximum Dry Density, pcf		**@ Optimum Moisture, %**	

MATERIAL DESCRIPTION

Grain Size Distribution:

	□ □r□□□□r□□□in□d □n N□□□□
	□ □□nd □□□□in□N□□□□R□□□in□d □n N□□□□□□
	□ □i□□□nd □□□□ □□□□in□N□□□□□□

Atterberg Limits:

	□i□□id □i□i□□□
	□□□□i□ □i□i□□□
	□□□□i□i□□Ind□□□□

Classification:

□ni□□d □□i□□ □ □□□□i□□□i□n□ _____

AA□□T□ □□i□□ □ □□□□i□□□i□n□ _____

Results Only Soil Testing for NW of Iris Ave Chicago Ave, Woodcrest

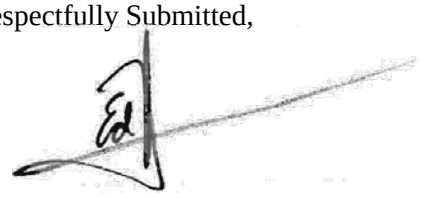
September 9, 2021

Prepared for:

Kyle McHargue
GeoTek, Inc.
1548 North Maple Street
Corona, CA 92280
kmchargue@geotekusa.com

Project X Job#: S210908G
Client Job or PO#: 2855-CR The True Life Companies

Respectfully Submitted,





Eduardo Hernandez, M.Sc., P.E.
Sr. Corrosion Consultant
NACE Corrosion Technologist #16592
Professional Engineer
California No. M37102
ehernandez@projectxcorrosion.com

Soil Analysis Lab Results

Client: GeoTek, Inc.
Job Name: NW of Iris Ave Chicago Ave, Woodcrest
Client Job Number: 2855-CR The True Life Companies
Project X Job Number: S210908G
September 9, 2021

	Method	ASTM D4327		ASTM D4327		ASTM G187		ASTM D4972	ASTM G200	ASTM D4658	ASTM D4327	ASTM D6919	ASTM D6919	ASTM D6919	ASTM D6919	ASTM D6919	ASTM D6919	ASTM D4327	ASTM D4327
Bore# / Description	**Depth**	**Sulfates** SO_4^{2-}		**Chlorides** Cl^-		**Resistivity** As Rec'd | Minimum		**pH**	**Redox**	**Sulfide** S^{2-}	**Nitrate** NO_3^-	**Ammonium** NH_4^+	**Lithium** Li^+	**Sodium** Na^+	**Potassium** K^+	**Magnesium** Mg^{2+}	**Calcium** Ca^{2+}	**Fluoride** F_2^{--}	**Phosphate** PO_4^{3-}
	(ft)	(mg/kg)	(wt%)	(mg/kg)	(wt%)	(Ohm-cm)	(Ohm-cm)		(mV)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
2855-CR T3	1-2	277.8	0.0278	135.9	0.0136	4,221	804	7.7	164	<0.01	404.9	9.1	0.07	229.0	1.2	40.7	148.7	4.8	2.9
2855-CR T7	2-3	46.7	0.0047	15.5	0.0015	9,380	3,685	8.3	116	0.01	35.0	2.6	ND	66.6	1.5	25.2	53.4	2.3	14.9

Cations and Anions, except Sulfide and Bicarbonate, tested with Ion Chromatography
mg/kg = milligrams per kilogram (parts per million) of dry soil weight
ND = 0 = Not Detected | NT = Not Tested | Unk = Unknown
Chemical Analysis performed on 1:3 Soil-To-Water extract
PPM = mg/kg (soil) = mg/L (Liquid)

Project X Corrosion Engineering

Corrosion Control - Soil, Water, and Metallurgy Lab

Lab Request Sheet Chain of Custody

Phone: (213) 928-7213 · Fax (951) 226-1720 · www.projectxcorrosion.com

Ship Samples To: 29990 Technology Dr, Suite 13, Murrieta, CA 92563

Project X Job Number: S210908G Geotek 2855-CR NW of Iris Ave 2 Full

IMPORTANT: Please complete Project and Sample Identification Data as you would like it to appear in report & include this form with samples.

Company Name:	Geotek USA	**Contact Name:**	Kyle McHargue
Mailing Address:	1548 N. Maple St. Corona, CA 92880	**Phone No:**	951-206-5443
Accounting Contact:		**Contact Email:**	Kmchargue@geotekusa.com
Client Project No:	The True Life Companies	**Invoice Email:**	
P.O. #:		**Project Name:**	NW of Iris Ave. Chicago Ave., Woodcrest

(Business Days) Turn Around Time: 3-5 Day Standard [X] | 3 Day Guarantee 50% mark-up [ ] | 24 Hr RUSH 100% mark-up [ ]

Results By: ☐ Phone ☐ Fax ☒ Email

Date & Received by : 09/08/21

Special Instructions:

ANALYSIS REQUESTED (Please circle)

	SAMPLE ID - BORE #	DESCRIPTION	DEPTH (ft)	DATE COLLECTED
59	1	2855-CR	T3	1-2	BULK
60	2	2855-CR	T7	2-3	BULK
	3				
	4				
	5				
	6				
	7				
	8				
	9				
	10				
	11				
	12				
	13				
	14				
	15				

Default Method	Geo Quad				Full Corrosion Series														Full Corrosion Series	Reports										
	Soil Resistivity	pH	Sulfate	Chloride	Redox Potential	Sulfide	Ammonia	Nitrate	Flouride	Phosphate	Lithium	Sodium	Potassium	Magnesium	Calcium	BiCarbonate				Soil Corrosivity Evaluation Report	Water Corrosivity Mini Report	Moisture Content	Total Alkalinity	Thermal Resistivity	Metallurgical Analysis	Langelier Index	Puckorius Index	XRF Elemental Analysis	Water Hardness	
	Caltrans CTM643	Caltrans CTM643	Caltrans CTM417	Caltrans CTM422																										
	AASHTO T288	AASHTO T 289	AASHTO T 290	AASHTO T 291	SM 2580B		SM 4500-NH3	SM 4500-NO3																						
	ASTM G187	ASTM G51	ASTM D4327	ASTM D4327	ASTM G200	SM 4500-S2	ASTM D6919	ASTM D4327	ASTM D4327	ASTM D4327	ASTM D6919	ASTM D6919	ASTM D6919	ASTM D6919	ASTM D6919	SM 2320B						ASTM D2216	SM 2520B								
59																			/											
60																			/											

*Req: Min. 3 Samples, site map, and groundwater info

APPENDIX D

SEISMIC REFRACTION SURVEY RESULTS BY GEOTEK

Updated Geotechnical Evaluation
Proposed Single-Family Residential Development
Woodcrest, Riverside County, California
Project No. 2855-CR

GEOTEK

Subsurface Surveys & Associates, Inc.
2075 Corte Del Nogal, Suite W Carlsbad, CA 92011
Phone: (760) 476-0492 Fax: (760) 476-0493

GeoTek. Inc.
1548 North Maple Street
Corona, CA 92880

August 23, 2021

Attn: Kyle McHargue

Re: Seismic Survey Summary Report
Woodcrest Project, Riverside County

This report covers the results of a seismic refraction survey performed at the Woodcrest Project Site, located northwest of the intersection of Iris Ave and Chicago Ave, in Riverside County, California. The purpose of the survey was to measure the compressional wave velocity of bedrock for rippability assessment and to provide cross sections showing thickness of the weathered zone and depth to the unweathered interface. This should be useful for planning cuts, grading, and other earthwork.

The field work was conducted on August 12, 2021. Seven seismic lines were recorded at locations selected by GeoTek. A survey location map is provided on Figure 1 that shows the position and orientation of the traverses.

GEOLOGIC SETTING

A review of the "Geologic Map of the San Bernardino and Santa Ana 30' x 60' quadrangles, California ", (USGS Open File Report 2006-1217, 2006) indicates the survey area is underlain by Val Verde tonalite (Kvt) of Cretaceous age. This rock unit is described as relatively homogeneous and massive to well foliated.

DATA ACQUISITION AND FIELD METHODS

Seismic refraction data were recorded with a Bison 9024 signal enhancement seismograph and 28 Hz geophones. The standard spread layout used 24 geophones with a 7-foot spacing which provided a line length of 168 feet. Each spread used five shotpoints, one off each end (5-foot offset) and three within the interior of the spread. Depth of investigation was approximately 40-45 feet.

Compressional wave energy was created by sledge hammer impacts on a metal plate. The signal enhancement feature of the seismograph allowed returns from repeated hits to be stacked, thus improving the signal. Each record was stored digitally on an internal hard disk and printed copies of each seismogram were made in the field on thermal paper. Example field records are shown on Figure 2.

Relative elevations of all shotpoints and geophones were determined by differential leveling with a hand level. Geophone 1 (distance = 0 ft.) at the beginning of each line was assigned a elevation value of 0.0 feet. This datum point served as the reference elevation for all other measurements.

Labeled wooden stakes were placed at the beginning and end of each spread and a Garmin handheld GPS receiver was used to record the latitude and longitude coordinates of the stakes. The coordinates were used to make the location map shown on Figure 1.

SEISMIC REFRACTION METHOD

The refraction method involves measuring the total time for compressional waves to travel from a shotpoint through the subsurface to a set of geophones placed linearly along the ground. Based on Snell's Law, when two or more layers are present with increasingly higher acoustic velocity, waves become critically refracted across the layer boundaries and begin traveling at the speed of the underlying layer. The advancing waves then generate new wavefronts back to the ground surface. The first surge of energy hitting the geophone is termed the "first arrival" and is depicted on the seismogram as a high angle deflection along each trace.

Recognition of direct wave arrivals (non-refracted) verses refracted waves is a key element of refraction interpretation. To assist this process, the first arrival times measured from the seismic records are plotted on graphs of time verses distance called Time-Distance graphs. An example T-D graph from Line 1 is shown on Figure 3. Based on changes in slope on the graphs, a preliminary layer number (i.e. 1, 2, 3) is assigned to each segment of the graph. The layer assignments together with time, distance and elevation data are input to a computer for additional processing.

DATA REDUCTION AND VELOCITY DETERMINATION

Processing and interpretation of this data set was accomplished with “SIPT2", an interactive inversion modeling program developed by James Scott for the U.S. Bureau of Mines. The inversion algorithm uses the delay time method to construct a first pass depth model. The model is then adjusted by an iterative ray tracing process that attempts to minimize the discrepancies between the total travel times calculated along ray paths and the observed travel times measured in the field.

This program calculates refractor velocity in two ways. First, apparent velocities from each shot are determined by the inverse slope of a best fit (least squares) line through datum-corrected travel times. True velocity is estimated from the apparent velocities by using the following equation:

$$Vt = 2(Vu \times Vd)/(Vu + Vd)$$

where Vt = true velocity
Vu = apparent up dip velocity
Vd = apparent down dip velocity

The second method uses a more sophisticated set of equations (the Hobson-Overton formula) developed by the Canadian Geological Survey. The final velocity assigned to the refractor is a weighted average of the results of the two methods. The weighting is based on the number of arrival times used in the computations.

SUMMARY OF RESULTS

Results from refraction analysis show a three layer solution beneath all lines (see Figures 5-11). Velocities posted on the cross sections represent averages as described in the previous section. Therefore, minor localized changes in velocity may occur along any profile. A description of the layers is provided below and a cross section summary is shown in Table 1.

Layer 1 - is mostly colluvium with rock fragments and alluvium in low lying areas. Thickness is generally less than 10 feet.

Layer 2 - is interpreted to be weathered bedrock. The velocity range is 3027-4408 ft/sec. Based on the Cat rippability chart shown on Figure 4, this range is considered easily rippable with a D-9 Cat.

Layer 3 - represents slightly weathered to unweathered bedrock.

Table 1. Cross Section Summary Velocity in (ft/sec), Depth in (feet)

Line	Velocity Layer 1	Velocity Layer 2	Velocity Layer 3	Depth Range Layer 2/3 Interface
1	1370	3199	8634	20 - 29
2	1490	4408	12494	5 - 26
3	1699	4345	14636	5 - 13
4	1334	3027	8423	29 - 40
5	1345	3273	10696	13 - 22
6	1471	4018	7011	26 - 37
7	1424	4265	8568	20 - 28

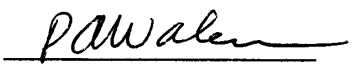
Weathering tends to be gradational for most granitic rock types and usually produces a gradual increase in velocity with depth. Consequently, variation of $\pm$ 10% from the posted averages may occur between the top and bottom of Layer 2.

Figure 4 presents a rippability chart (courtesy of Caterpillar Tractor Co.) for a D9R Ripper. Bar graphs show the relationship between seismic compressional wave velocity and ripper

performance for various rock types in three categories: rippable, marginal, and non-rippable. Granitic rocks are listed as marginally rippable at approximately 6800 ft/sec and are considered non-rippable above 8000 ft/sec. This chart is provided only as a guide and should not be considered absolute. Other geologic factors that may influence bedrock rippability at this site include changes in composition of the bedrock and the presence of fractures and joints.

All data acquired during this survey is considered confidential and is available for review by your staff at any time. We appreciate the opportunity to participate in this project.

Please call if there are any questions.



Phillip A. Walen
Senior Geophysicist
CA Registration No. GP917

Seismic Survey Location Map

Woodcrest Area -- Riverside County



All seismic lines are
168 feet in length.

Figure 1

Example Seismic Field Records

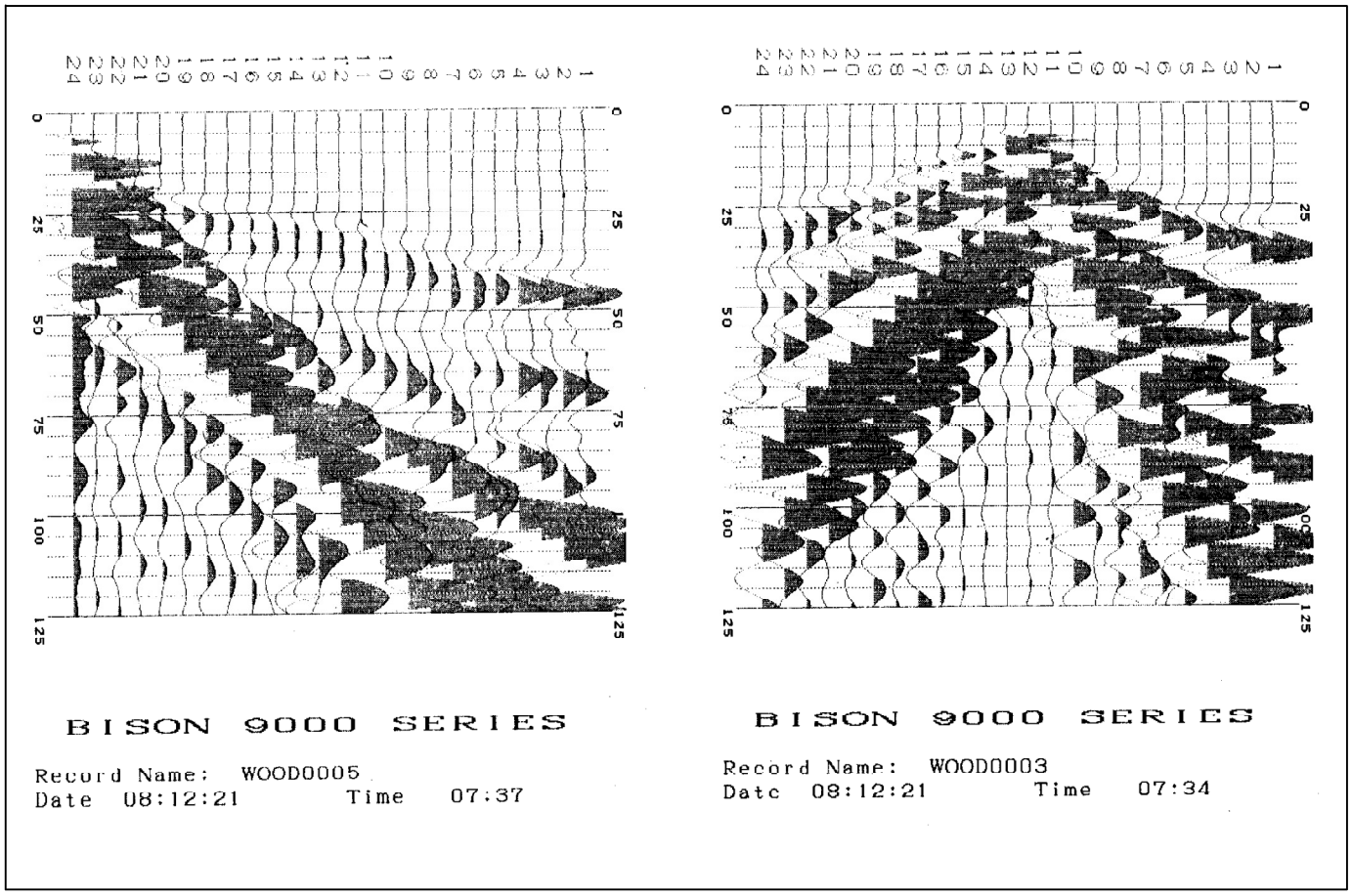


Figure 2

Example Time-Distance Graph -- Line 1

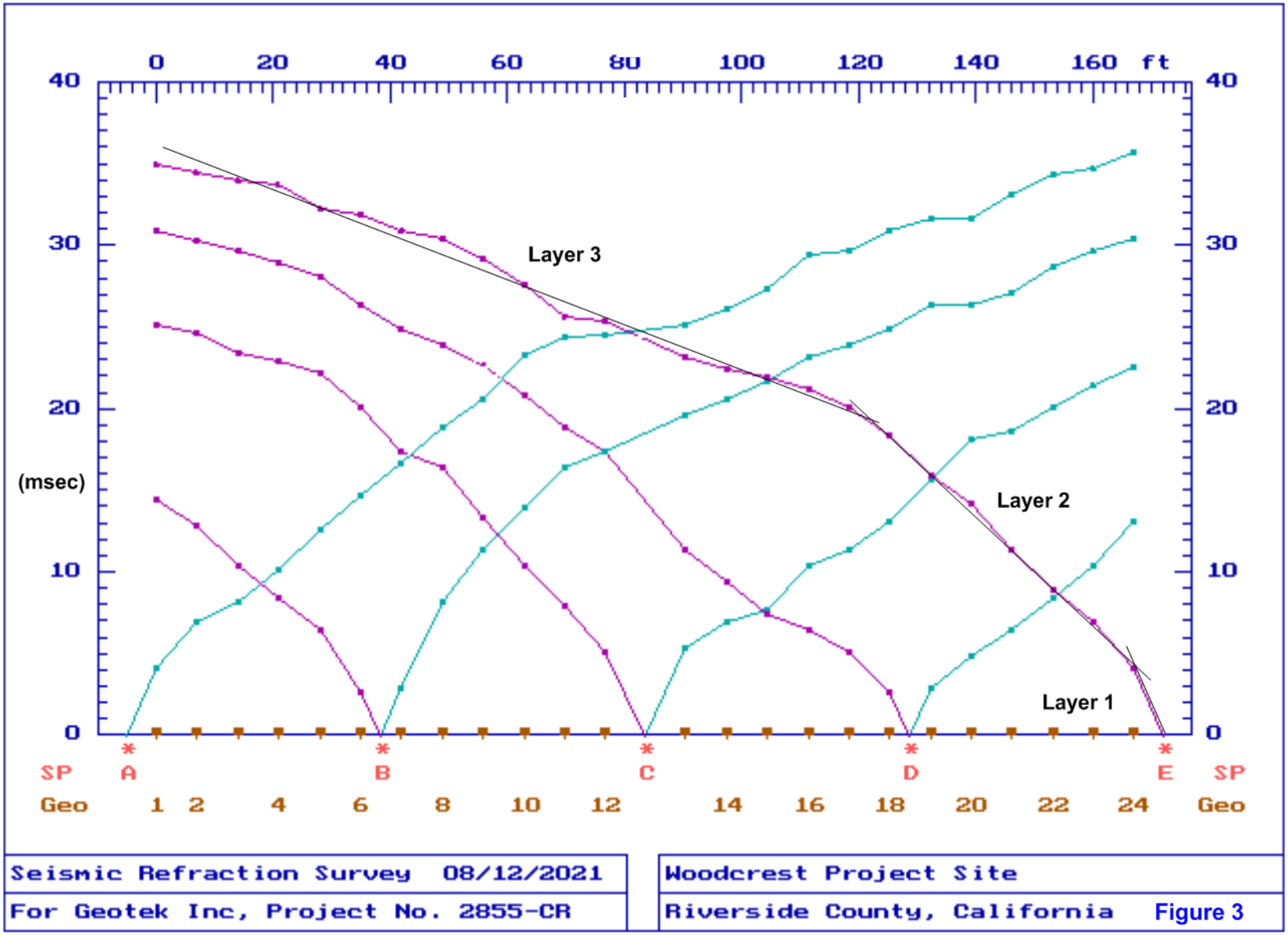


Figure 3

Rippers | Ripper Performance
• D9R/D9T

D9R/D9T
- **Multi or Single Shank No. 9 Ripper**
- **Estimated by Seismic Wave Velocities**

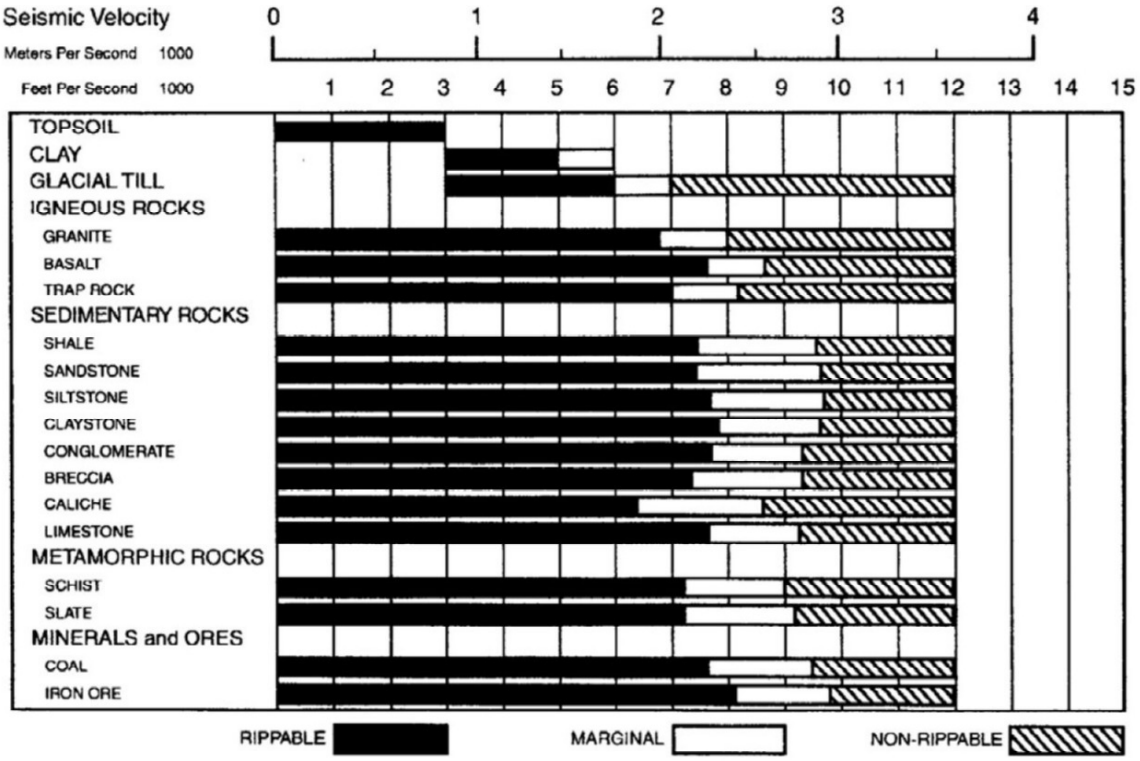
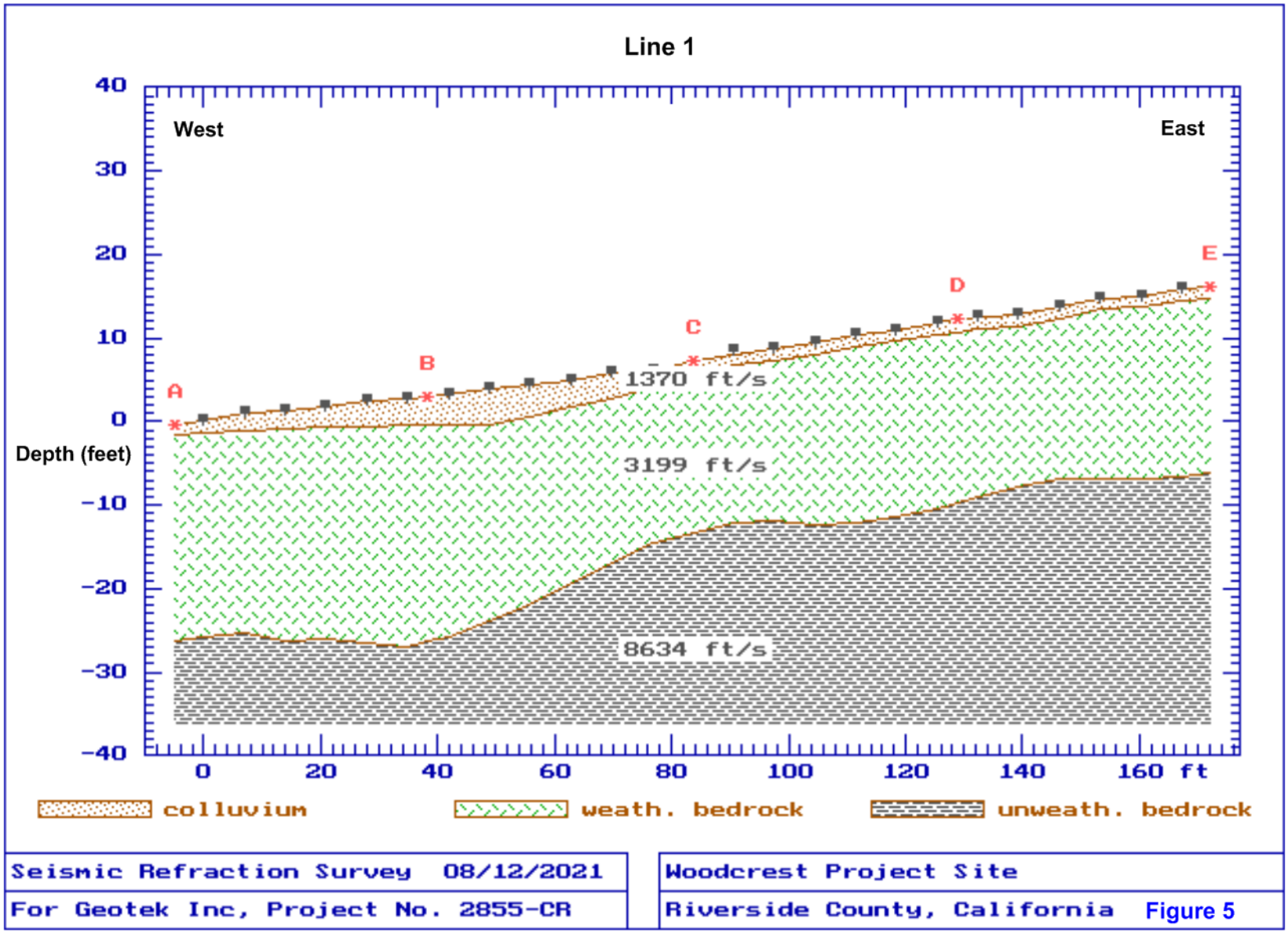
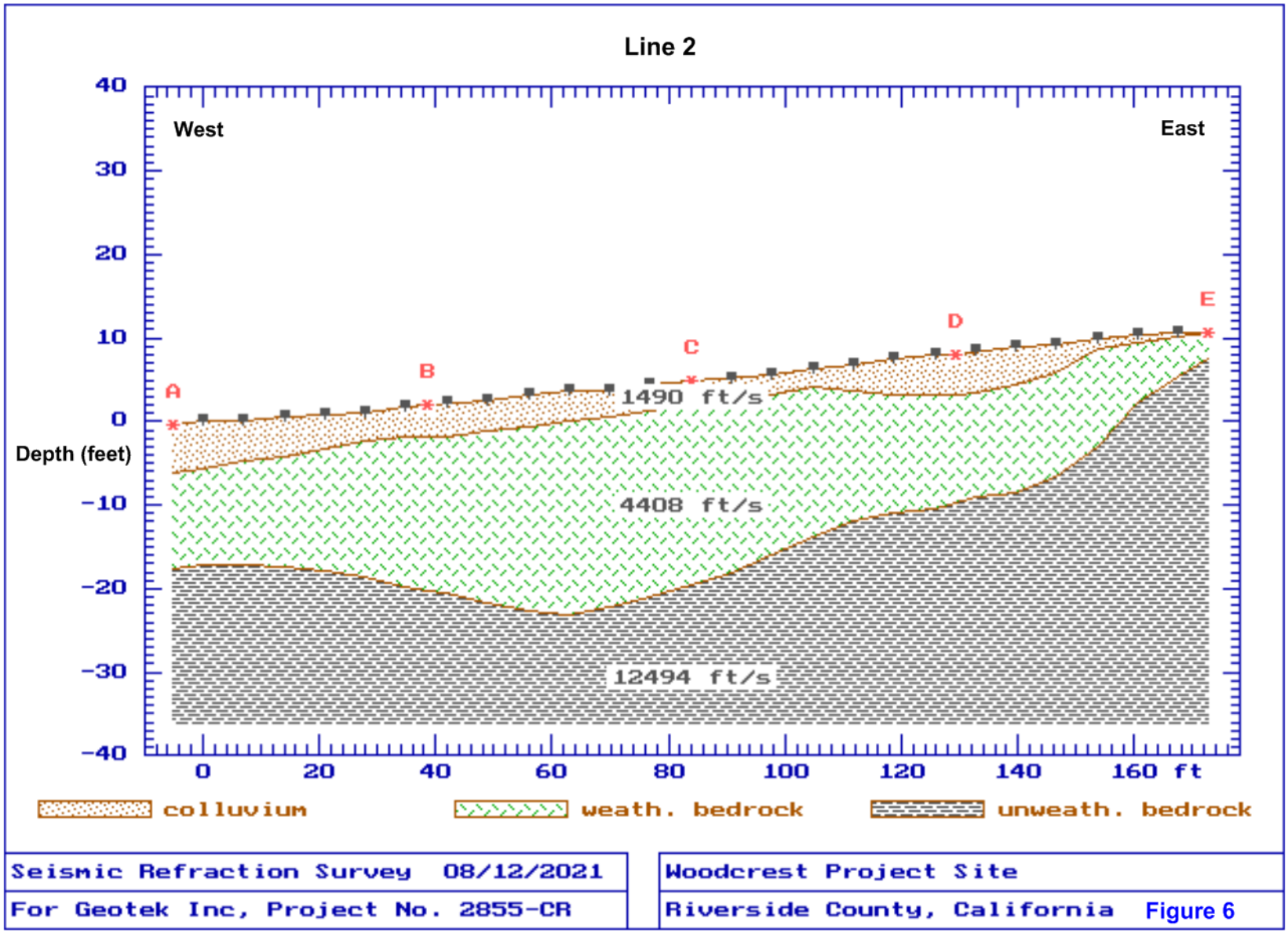
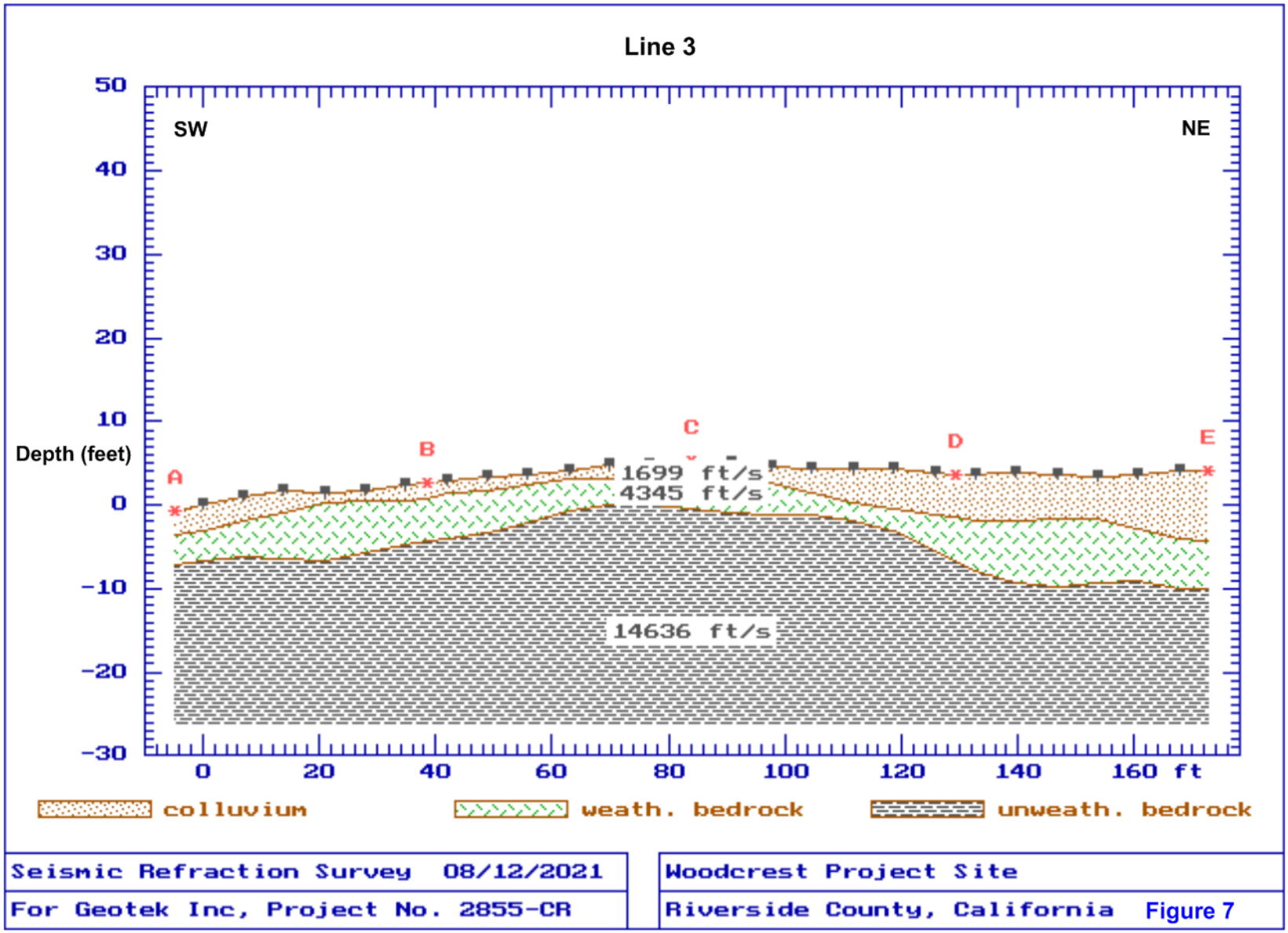


Figure 4


Line 1
West
East
Depth (feet)
40
30
20
10
0
-10
-20
-30
-40
0
20
40
60
80
100
120
140
160 ft
A
B
C
D
E
1370 ft/s
3199 ft/s
8634 ft/s
colluvium
weath. bedrock
unweath. bedrock
Seismic Refraction Survey 08/12/2021
For Geotek Inc, Project No. 2855-CR
Woodcrest Project Site
Riverside County, California
Figure 5


Line 2
West
East
Depth (feet)
40
30
20
10
0
-10
-20
-30
-40
0
20
40
60
80
100
120
140
160 ft
A
B
C
D
E
1490 ft/s
4408 ft/s
12494 ft/s
colluvium
weath. bedrock
unweath. bedrock
Seismic Refraction Survey 08/12/2021
For Geotek Inc, Project No. 2855-CR
Woodcrest Project Site
Riverside County, California
Figure 6



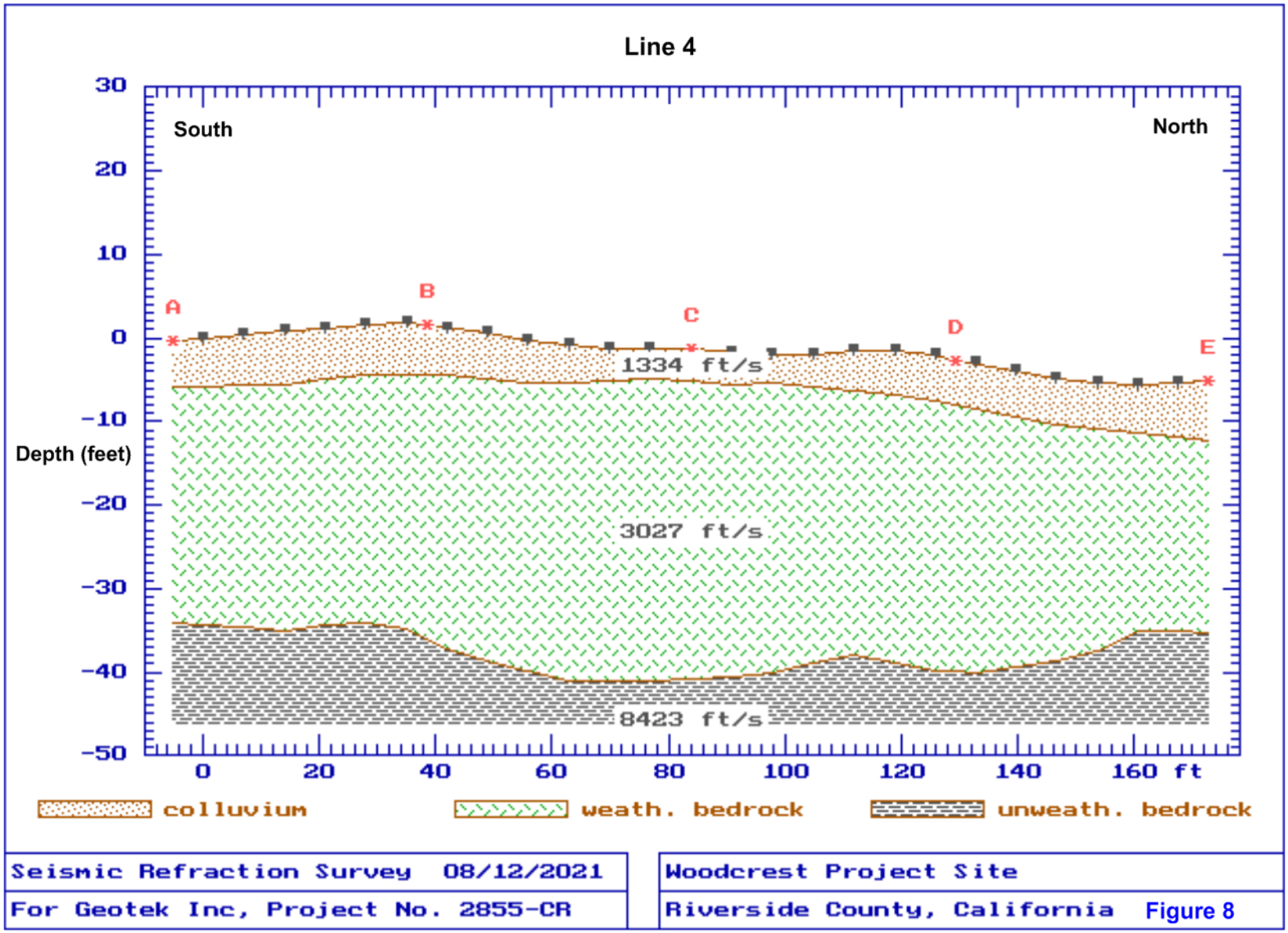
Seismic Refraction Survey 08/12/2021

For Geotek Inc, Project No. 2855-CR

Woodcrest Project Site

Riverside County, California

Figure 7

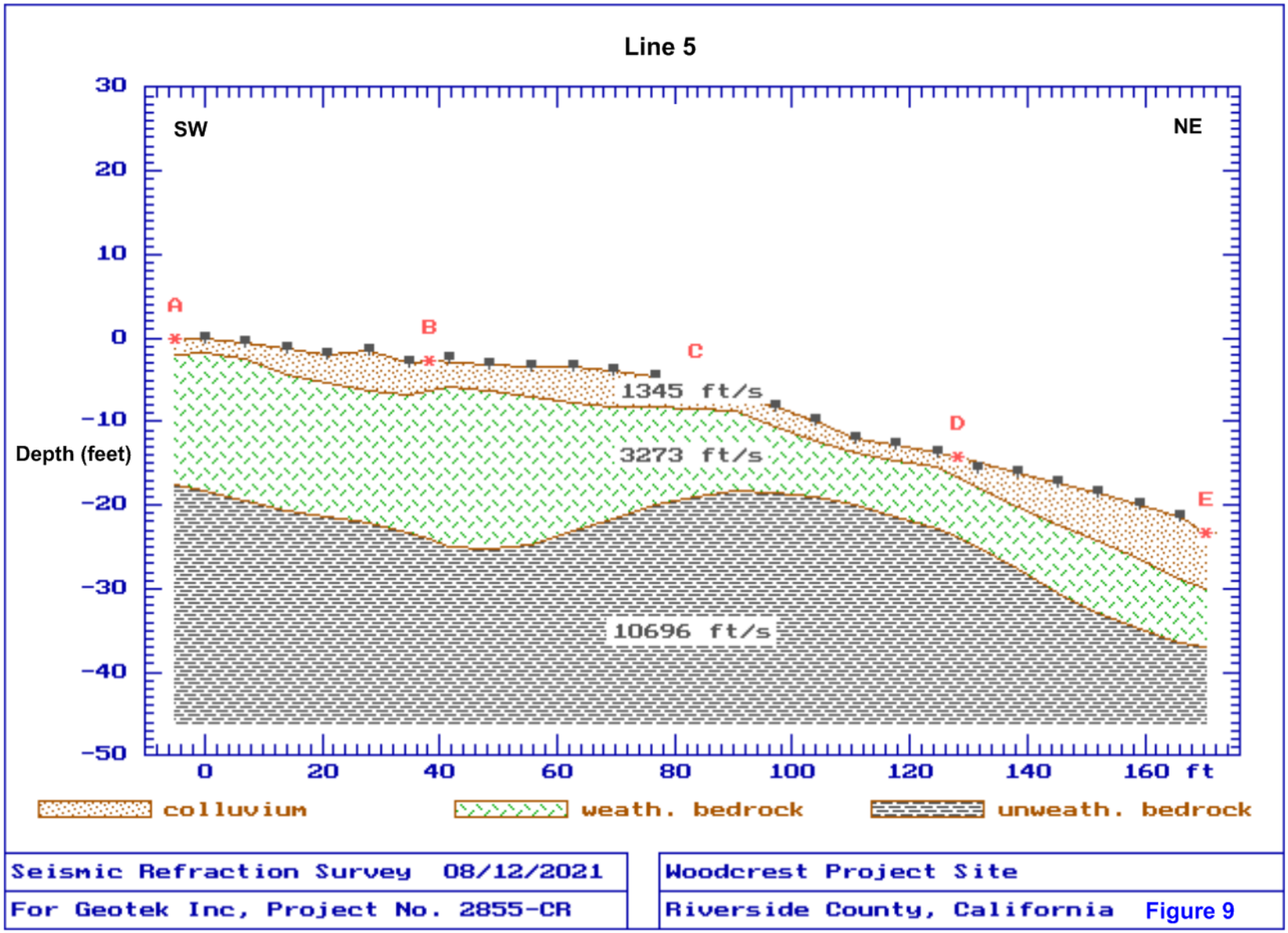


Seismic Refraction Survey 08/12/2021

For Geotek Inc, Project No. 2855-CR

Woodcrest Project Site

Riverside County, California Figure 8



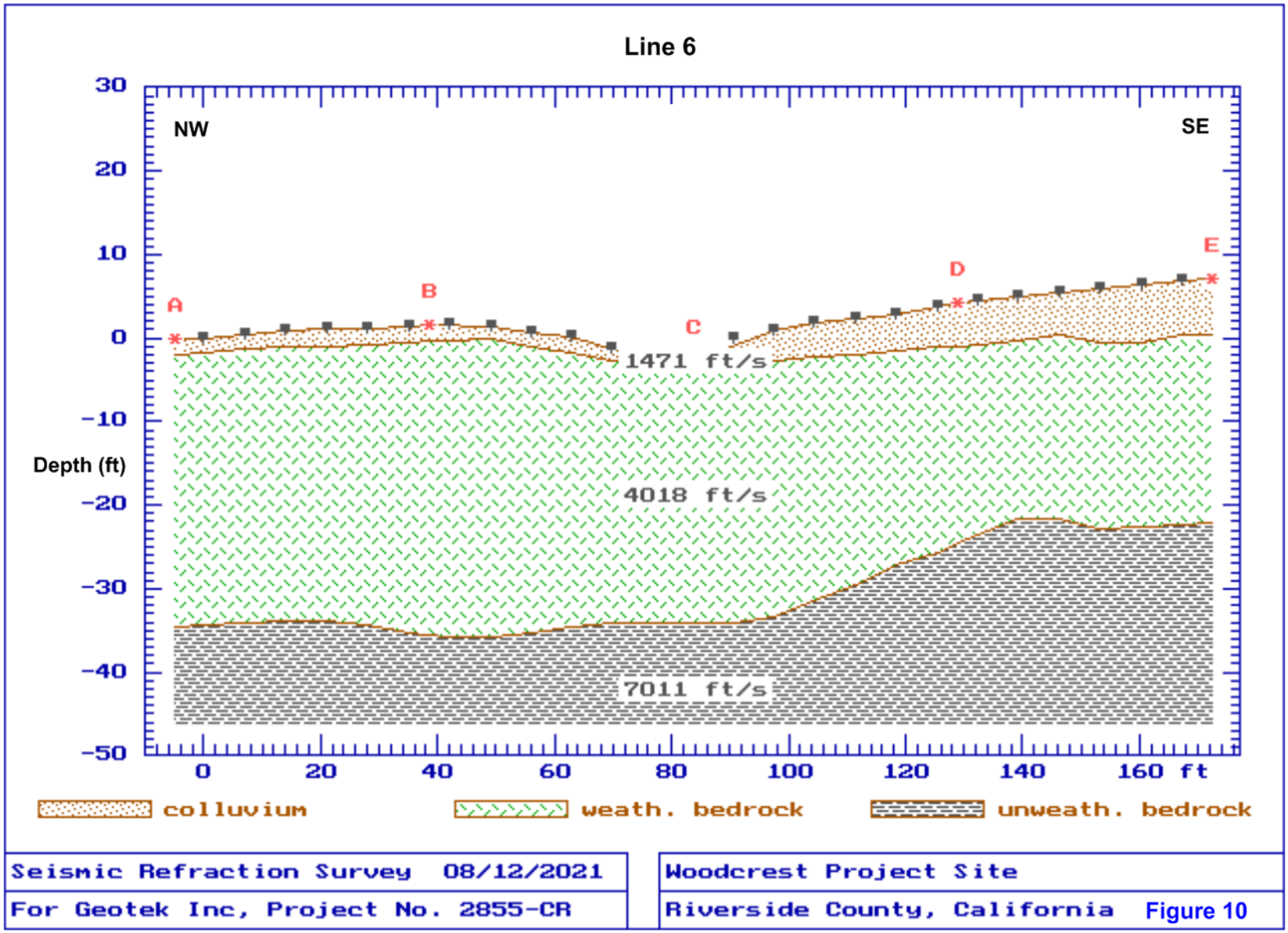
Seismic Refraction Survey 08/12/2021

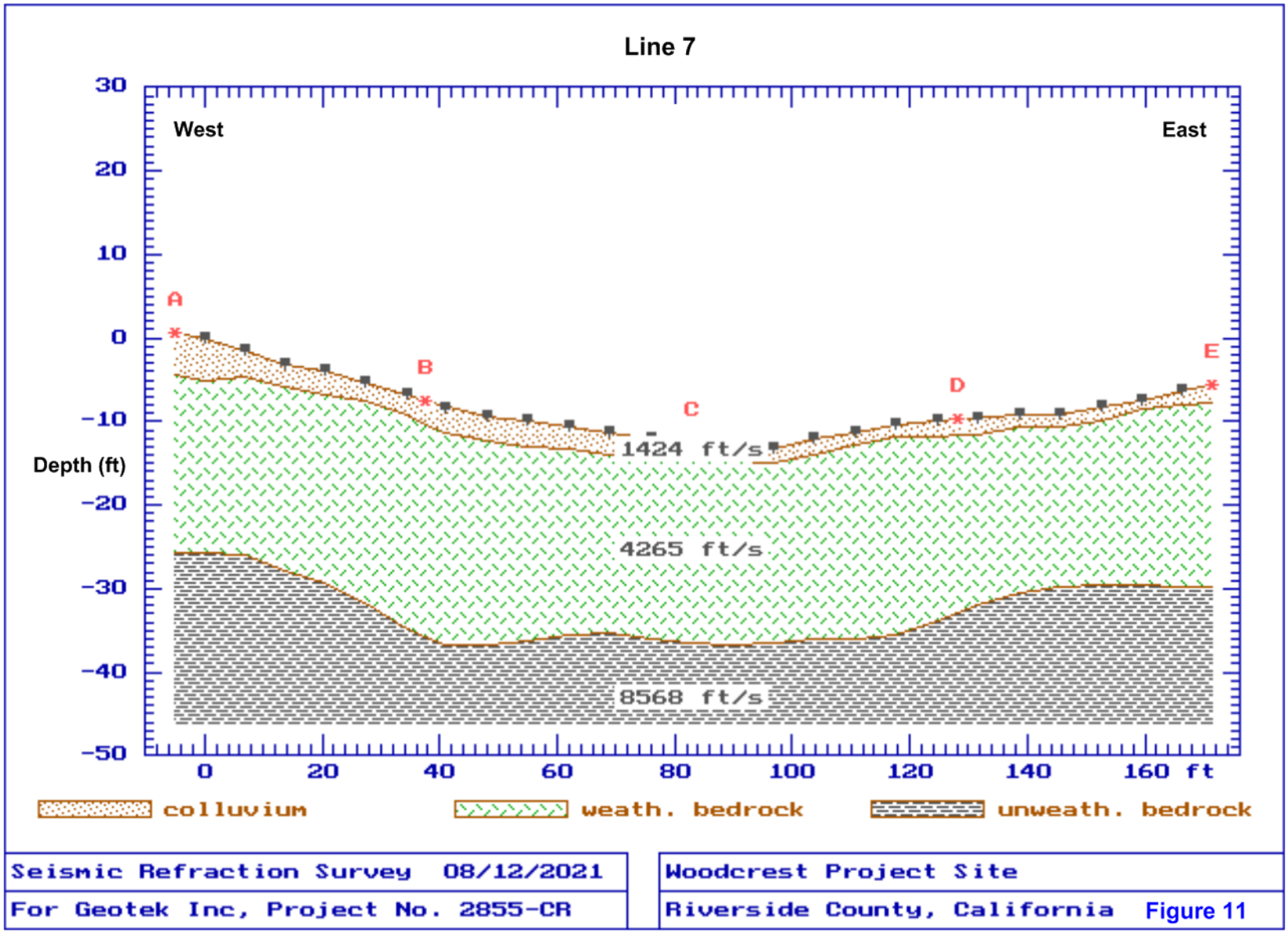
For Geotek Inc, Project No. 2855-CR

Woodcrest Project Site

Riverside County, California

Figure 9


Line 6
NW
SE
A
B
C
D
E
1471 ft/s
4018 ft/s
7011 ft/s
Depth (ft)
30
20
10
0
-10
-20
-30
-40
-50
0
20
40
60
80
100
120
140
160 ft
colluvium
weath. bedrock
unweath. bedrock
Seismic Refraction Survey 08/12/2021
For Geotek Inc, Project No. 2855-CR
Woodcrest Project Site
Riverside County, California
Figure 10


Line 7
West
East
A
B
C
D
E
1424 ft/s
4265 ft/s
8568 ft/s
Depth (ft)
30
20
10
0
-10
-20
-30
-40
-50
0
20
40
60
80
100
120
140
160 ft
colluvium
weath. bedrock
unweath. bedrock
Seismic Refraction Survey 08/12/2021
For Geotek Inc, Project No. 2855-CR
Woodcrest Project Site
Riverside County, California
Figure 11

APPENDIX E

GENERAL GRADING GUIDELINES

Updated Geotechnical Evaluation
Proposed Single-Family Residential Development
Woodcrest, Riverside County, California
Project No. 2855-CR

GEOTEK

GENERAL GRADING GUIDELINES

Guidelines presented herein are intended to address general construction procedures for earthwork construction. Specific situations and conditions often arise which cannot reasonably be discussed in general guidelines, when anticipated these are discussed in the text of the report. Often unanticipated conditions are encountered which may necessitate modification or changes to these guidelines. It is our hope that these will assist the contractor to more efficiently complete the project by providing a reasonable understanding of the procedures that would be expected during earthwork and the testing and observation used to evaluate those procedures.

General

Grading should be performed to at least the minimum requirements of governing agencies, Chapters 18 and 33 of the California Building Code, CBC (2019) and the guidelines presented below.

Preconstruction Meeting

A preconstruction meeting should be held prior to site earthwork. Any questions the contractor has regarding our recommendations, general site conditions, apparent discrepancies between reported and actual conditions and/or differences in procedures the contractor intends to use should be brought up at that meeting. The contractor (including the main onsite representative) should review our report and these guidelines in advance of the meeting. Any comments the contractor may have regarding these guidelines should be brought up at that meeting.

Grading Observation and Testing

1. Observation of the fill placement should be provided by our representative during grading. Verbal communication during the course of each day will be used to inform the contractor of test results. The contractor should receive a copy of the "Daily Field Report" indicating results of field density tests that day. If our representative does not provide the contractor with these reports, our office should be notified.
2. Testing and observation procedures are, by their nature, specific to the work or area observed and location of the tests taken, variability may occur in other locations. The contractor is responsible for the uniformity of the grading operations; our observations and test results are intended to evaluate the contractor's overall level of efforts during grading. The contractor's personnel are the only individuals participating in all aspect of site work. Compaction testing and observation should not be considered as relieving the contractor's responsibility to properly compact the fill.
3. Cleanouts, processed ground to receive fill, key excavations, and subdrains should be observed by our representative prior to placing any fill. It will be the contractor's responsibility to notify our representative or office when such areas are ready for observation.
4. Density tests may be made on the surface material to receive fill, as considered warranted by this firm.
5. In general, density tests would be made at maximum intervals of two feet of fill height or every 1,000 cubic yards of fill placed. Criteria will vary depending on soil conditions and size of the fill. More frequent testing may be performed. In any case, an adequate number of field density tests should be made to evaluate the required compaction and moisture content is generally being obtained.

6. Laboratory testing to support field test procedures will be performed, as considered warranted, based on conditions encountered (e.g. change of material sources, types, etc.) Every effort will be made to process samples in the laboratory as quickly as possible and in progress construction projects are our first priority. However, laboratory workloads may cause in delays and some soils may require a **minimum of 48 to 72 hours to complete test procedures**. Whenever possible, our representative(s) should be informed in advance of operational changes that might result in different source areas for materials.
7. Procedures for testing of fill slopes are as follows:
   a) Density tests should be taken periodically during grading on the flat surface of the fill, three to five feet horizontally from the face of the slope.
   b) If a method other than over building and cutting back to the compacted core is to be employed, slope compaction testing during construction should include testing the outer six inches to three feet in the slope face to determine if the required compaction is being achieved.
8. Finish grade testing of slopes and pad surfaces should be performed after construction is complete.

Site Clearing

1. All vegetation, and other deleterious materials, should be removed from the site. If material is not immediately removed from the site it should be stockpiled in a designated area(s) well outside of all current work areas and delineated with flagging or other means. Site clearing should be performed in advance of any grading in a specific area.
2. Efforts should be made by the contractor to remove all organic or other deleterious material from the fill, as even the most diligent efforts may result in the incorporation of some materials. This is especially important when grading is occurring near the natural grade. All equipment operators should be aware of these efforts. Laborers may be required as root pickers.
3. Nonorganic debris or concrete may be placed in deeper fill areas provided the procedures used are observed and found acceptable by our representative.

Treatment of Existing Ground

1. Following site clearing, all surficial deposits of topsoil, alluvium and colluvium as well as weathered or creep effected bedrock, should be removed unless otherwise specifically indicated in the text of this report.
2. In some cases, removal may be recommended to a specified depth (e.g. flat sites where partial alluvial removals may be sufficient). The contractor should not exceed these depths unless directed otherwise by our representative.
3. Groundwater existing in alluvial areas may make excavation difficult. Deeper removals than indicated in the text of the report may be necessary due to saturation during winter months.
4. Subsequent to removals, the natural ground should be processed to a depth of six inches, moistened to near optimum moisture conditions and compacted to fill standards.
5. Exploratory back hoe or dozer trenches still remaining after site removal should be excavated and filled with compacted fill if they can be located.

Fill Placement

1. Unless otherwise indicated, all site soil and bedrock may be reused for compacted fill; however, some special processing or handling may be required (see text of report).

2. Material used in the compacting process should be evenly spread, moisture conditioned, processed, and compacted in thin lifts six (6) to eight (8) inches in compacted thickness to obtain a uniformly dense layer. The fill should be placed and compacted on a nearly horizontal plane, unless otherwise found acceptable by our representative.
3. If the moisture content or relative density varies from that recommended by this firm, the contractor should rework the fill until it is in accordance with the following:
    a) Moisture content of the fill should be at or above optimum moisture. Moisture should be evenly distributed without wet and dry pockets. Pre-watering of cut or removal areas should be considered in addition to watering during fill placement, particularly in clay or dry surficial soils. The ability of the contractor to obtain the proper moisture content will control production rates.
    b) Each six-inch layer should be compacted to at least 90 percent of the maximum dry density in compliance with the testing method specified by the controlling governmental agency. In most cases, the testing method is ASTM Test Designation D 1557.
4. Rock fragments less than eight inches in diameter may be utilized in the fill, provided:
    a) They are not placed in concentrated pockets;
    b) There is a sufficient percentage of fine-grained material to surround the rocks;
    c) The distribution of the rocks is observed by, and acceptable to, our representative.
5. Rocks exceeding eight (8) inches in diameter should be taken off site, broken into smaller fragments, or placed in accordance with recommendations of this firm in areas designated suitable for rock disposal. On projects where significant large quantities of oversized materials are anticipated, alternate guidelines for placement may be included. If significant oversize materials are encountered during construction, these guidelines should be requested.
6. In clay soil, dry or large chunks or blocks are common. If in excess of eight (8) inches minimum dimension, then they are considered as oversized. Sheepsfoot compactors or other suitable methods should be used to break up blocks. When dry, they should be moisture conditioned to provide a uniform condition with the surrounding fill.

Slope Construction

1. The contractor should obtain a minimum relative compaction of 90 percent out to the finished slope face of fill slopes. This may be achieved by either overbuilding the slope and cutting back to the compacted core, or by direct compaction of the slope face with suitable equipment.
2. Slopes trimmed to the compacted core should be overbuilt by at least three (3) feet with compaction efforts out to the edge of the false slope. Failure to properly compact the outer edge results in trimming not exposing the compacted core and additional compaction after trimming may be necessary.
3. If fill slopes are built "at grade" using direct compaction methods, then the slope construction should be performed so that a constant gradient is maintained throughout construction. Soil should not be "spilled" over the slope face nor should slopes be "pushed out" to obtain grades. Compaction equipment should compact each lift along the immediate top of slope. Slopes should be back rolled or otherwise compacted at approximately every 4 feet vertically as the slope is built.
4. Corners and bends in slopes should have special attention during construction as these are the most difficult areas to obtain proper compaction.
5. Cut slopes should be cut to the finished surface. Excessive undercutting and smoothing of the face with fill may necessitate stabilization.

UTILITY TRENCH CONSTRUCTION AND BACKFILL

Utility trench excavation and backfill is the contractors responsibility. The geotechnical consultant typically provides periodic observation and testing of these operations. While efforts are made to make sufficient observations and tests to verify that the contractors' methods and procedures are adequate to achieve proper compaction, it is typically impractical to observe all backfill procedures. As such, it is critical that the contractor use consistent backfill procedures.

Compaction methods vary for trench compaction and experience indicates many methods can be successful. However, procedures that "worked" on previous projects may or may not prove effective on a given site. The contractor(s) should outline the procedures proposed, so that we may discuss them **prior** to construction. We will offer comments based on our knowledge of site conditions and experience.

1. Utility trench backfill in slopes, structural areas, in streets and beneath flat work or hardscape should be brought to at least optimum moisture and compacted to at least 90 percent of the laboratory standard. Soil should be moisture conditioned prior to placing in the trench.
2. Flooding and jetting are not typically recommended or acceptable for native soils. Flooding or jetting may be used with select sand having a Sand Equivalent (SE) of 30 or higher. This is typically limited to the following uses:
   a) shallow (12 + inches) under slab interior trenches and,
   b) as bedding in pipe zone.

   The water should be allowed to dissipate prior to pouring slabs or completing trench compaction.
3. Care should be taken not to place soils at high moisture content within the upper three feet of the trench backfill in street areas, as overly wet soils may impact subgrade preparation. Moisture may be reduced to 2% below optimum moisture in areas to be paved within the upper three feet below sub grade.
4. Sand backfill should not be allowed in exterior trenches adjacent to and within an area extending below a 1:1 projection from the outside bottom edge of a footing, unless it is similar to the surrounding soil.
5. Trench compaction testing is generally at the discretion of the geotechnical consultant. Testing frequency will be based on trench depth and the contractors procedures. A probing rod would be used to assess the consistency of compaction between tested areas and untested areas. If zones are found that are considered less compact than other areas, this would be brought to the contractors attention.

JOB SAFETY

General

Personnel safety is a primary concern on all job sites. The following summaries are safety considerations for use by all our employees on multi-employer construction sites. On ground personnel are at highest risk of injury and possible fatality on grading construction projects. The company recognizes that construction activities will vary on each site and that job site safety is the contractor's responsibility. However, it is, imperative that all personnel be safety conscious to avoid accidents and potential injury.

In an effort to minimize risks associated with geotechnical testing and observation, the following precautions are to be implemented for the safety of our field personnel on grading and construction projects.

1. Safety Meetings: Our field personnel are directed to attend the contractor's regularly scheduled safety meetings.
2. Safety Vests: Safety vests are provided for and are to be worn by our personnel while on the job site.
3. Safety Flags: Safety flags are provided to our field technicians; one is to be affixed to the vehicle when on site, the other is to be placed atop the spoil pile on all test pits.

In the event that the contractor's representative observes any of our personnel not following the above, we request that it be brought to the attention of our office.

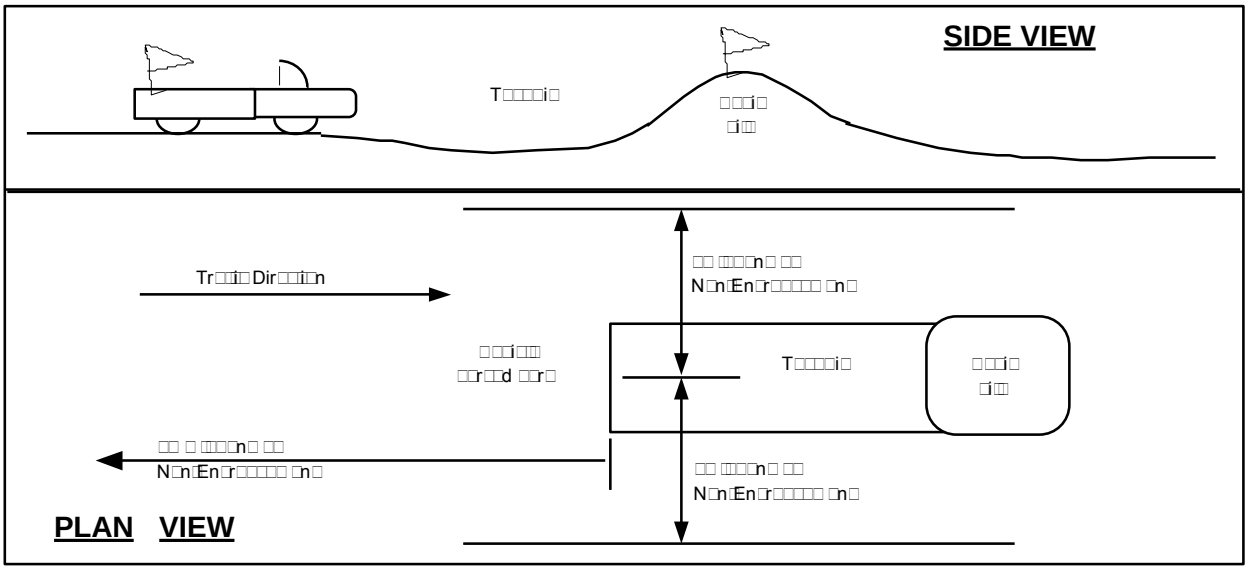
Test Pits Location, Orientation and Clearance

The technician is responsible for selecting test pit locations. The primary concern is the technician's safety. However, it is necessary to take sufficient tests at various locations to obtain a representative sampling of the fill. As such, efforts will be made to coordinate locations with the grading contractors authorized representatives (e.g. dump man, operator, supervisor, grade checker, etc.), and to select locations following or behind the established traffic pattern, preferably outside of current traffic. The contractors authorized representative should direct excavation of the pit and safety during the test period. Again, safety is the paramount concern.

Test pits should be excavated so that the spoil pile is placed away from oncoming traffic. The technician's vehicle is to be placed next to the test pit, opposite the spoil pile. This necessitates that the fill be maintained in a drivable condition. Alternatively, the contractor may opt to park a piece of equipment in front of test pits, particularly in small fill areas or those with limited access.

A zone of non-encroachment should be established for all test pits (see diagram below). No grading equipment should enter this zone during the test procedure. The zone should extend outward to the sides approximately 50 feet from the center of the test pit and 100 feet in the direction of traffic flow. This zone is established both for safety and to avoid excessive ground vibration, which typically decreases test results.

TEST PIT SAFETY PLAN



Slope Tests

When taking slope tests, the technician should park their vehicle directly above or below the test location on the slope. The contractor's representative should effectively keep all equipment at a safe operation distance (e.g. 50 feet) away from the slope during testing.

The technician is directed to withdraw from the active portion of the fill as soon as possible following testing. The technician's vehicle should be parked at the perimeter of the fill in a highly visible location.

Trench Safety

It is the contractor's responsibility to provide safe access into trenches where compaction testing is needed. Trenches for all utilities should be excavated in accordance with CAL-OSHA and any other applicable safety standards. Safe conditions will be required to enable compaction testing of the trench backfill.

All utility trench excavations in excess of 5 feet deep, which a person enters, are to be shored or laid back. Trench access should be provided in accordance with OSHA standards. Our personnel are directed not to enter any trench by being lowered or "riding down" on the equipment.

Our personnel are directed not to enter any excavation which;

1. is 5 feet or deeper unless shored or laid back,
2. exit points or ladders are not provided,
3. displays any evidence of instability, has any loose rock or other debris which could fall into the trench, or
4. displays any other evidence of any unsafe conditions regardless of depth.

If the contractor fails to provide safe access to trenches for compaction testing, our company policy requires that the soil technician withdraws and notifies their supervisor. The contractors representative will then be contacted in an effort to effect a solution. All backfill not tested due to safety concerns or other reasons is subject to reprocessing and/or removal.

Procedures

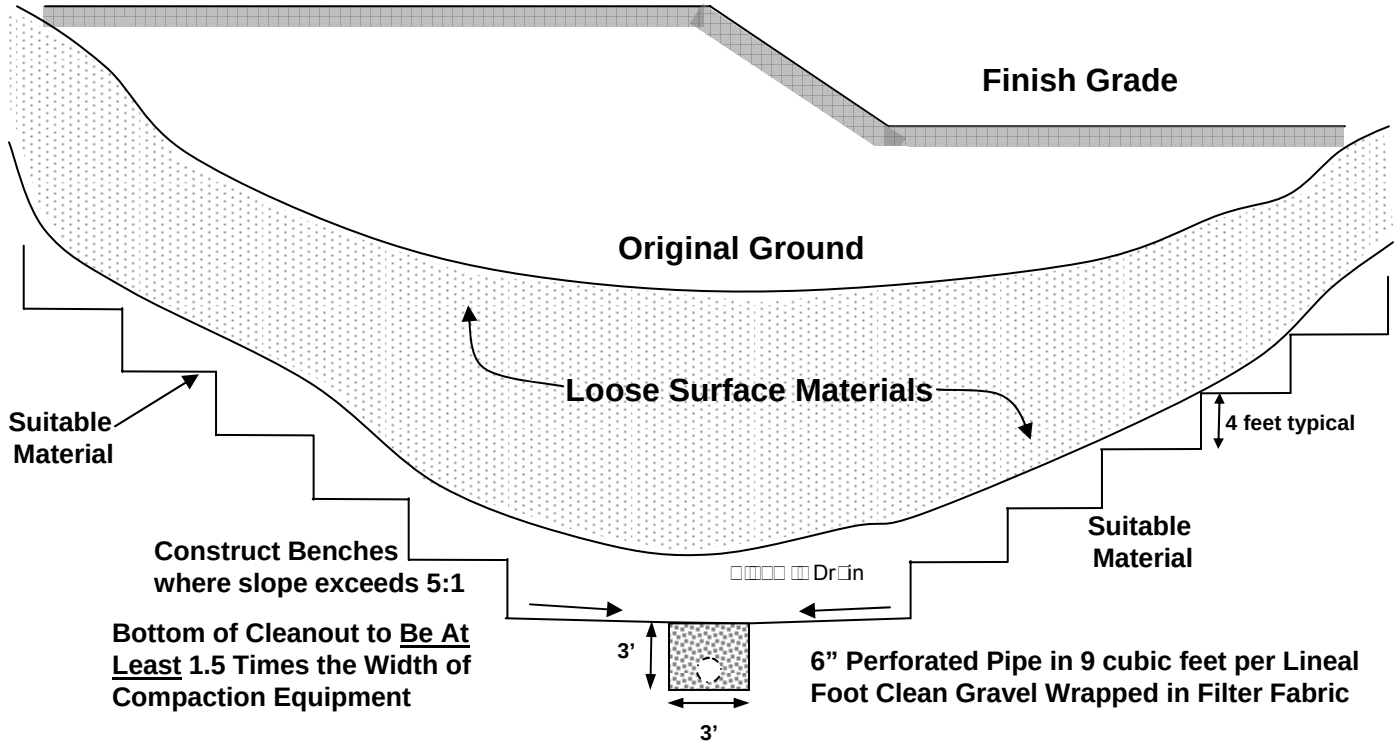
In the event that the technician's safety is jeopardized or compromised as a result of the contractor's failure to comply with any of the above, the technician is directed to inform both the developer's and contractor's representatives. If the condition is not rectified, the technician is required, by company policy, to immediately withdraw and notify their supervisor. The contractor's representative will then be contacted in an effort to effect a solution. No further testing will be performed until the situation is rectified. Any fill placed in the interim can be considered unacceptable and subject to reprocessing, recompaction or removal.

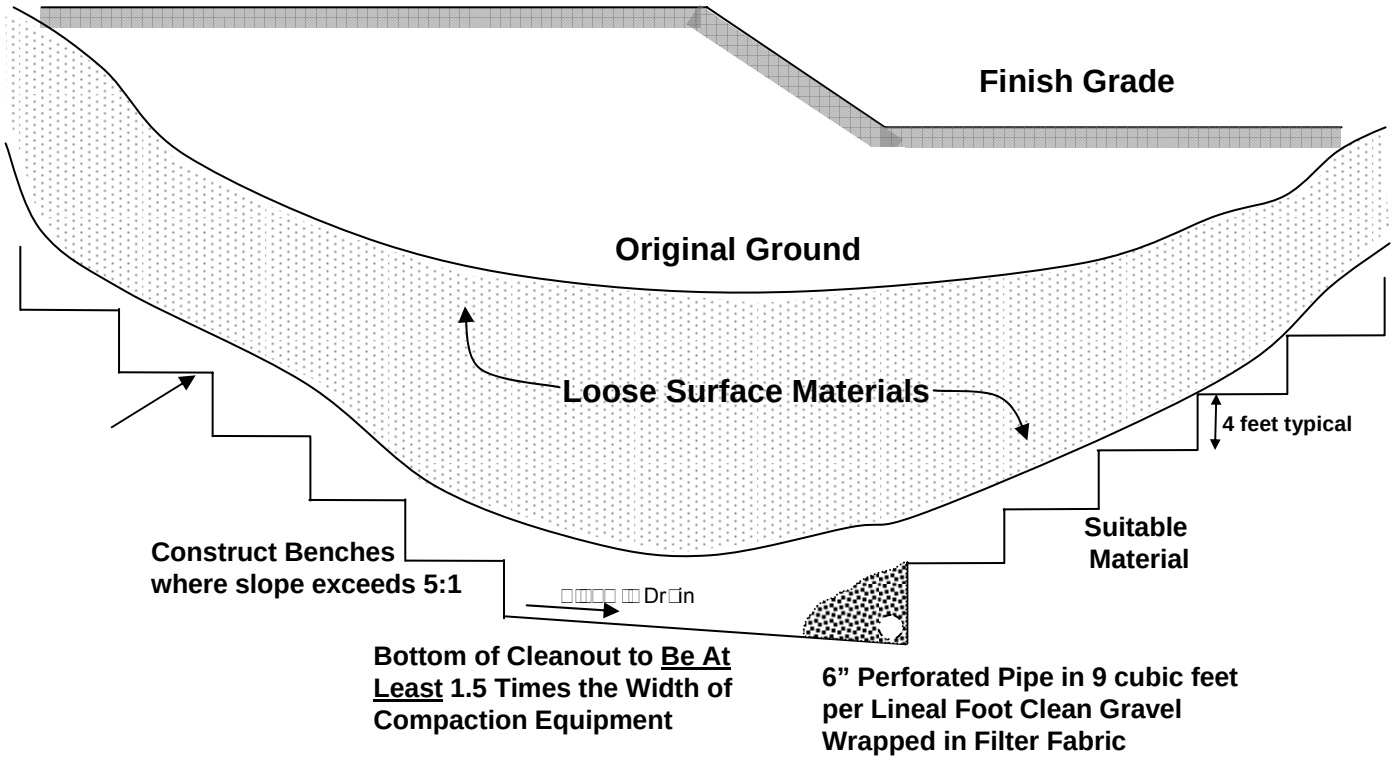
In the event that the soil technician does not comply with the above or other established safety guidelines, we request that the contractor bring this to technicians attention and notify our project manager or office. Effective communication and coordination between the contractors' representative and the field technician(s) is strongly encouraged in order to implement the above safety program and safety in general.

The safety procedures outlined above should be discussed at the contractor's safety meetings. This will serve to inform and remind equipment operators of these safety procedures particularly the zone of non-encroachment.

The safety procedures outlined above should be discussed at the contractor's safety meetings. This will serve to inform and remind equipment operators of these safety procedures particularly the zone of non-encroachment.

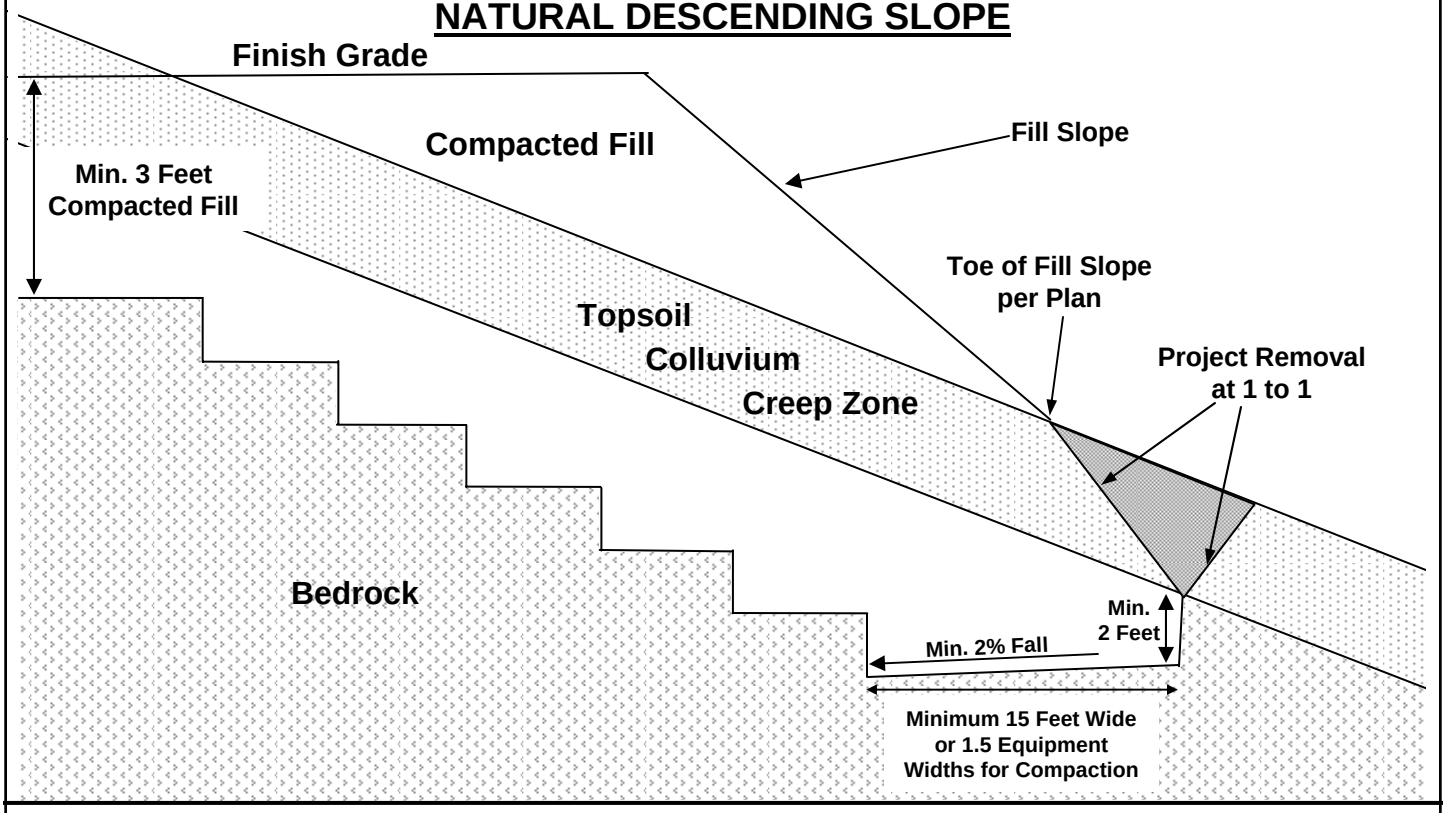
ALTERNATES



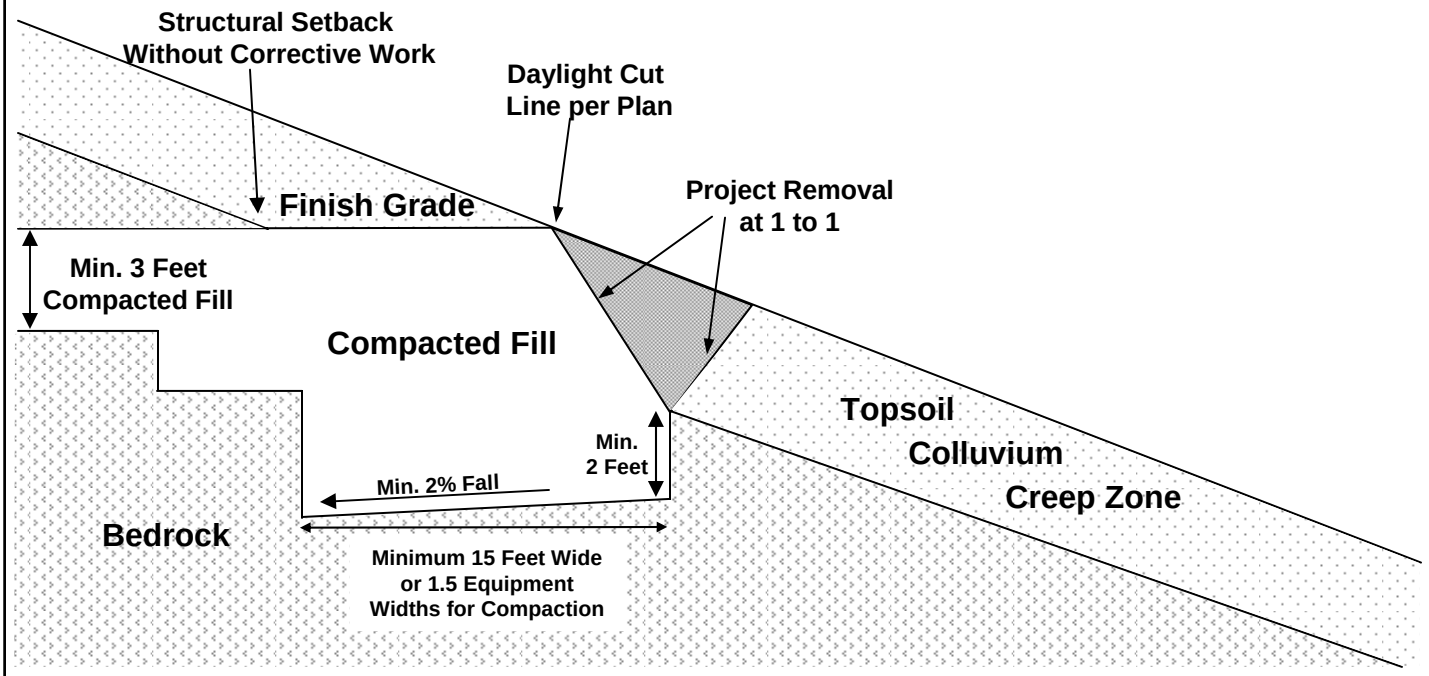


GEOTEK

TYPICAL FILL SLOPE OVER NATURAL DESCENDING SLOPE

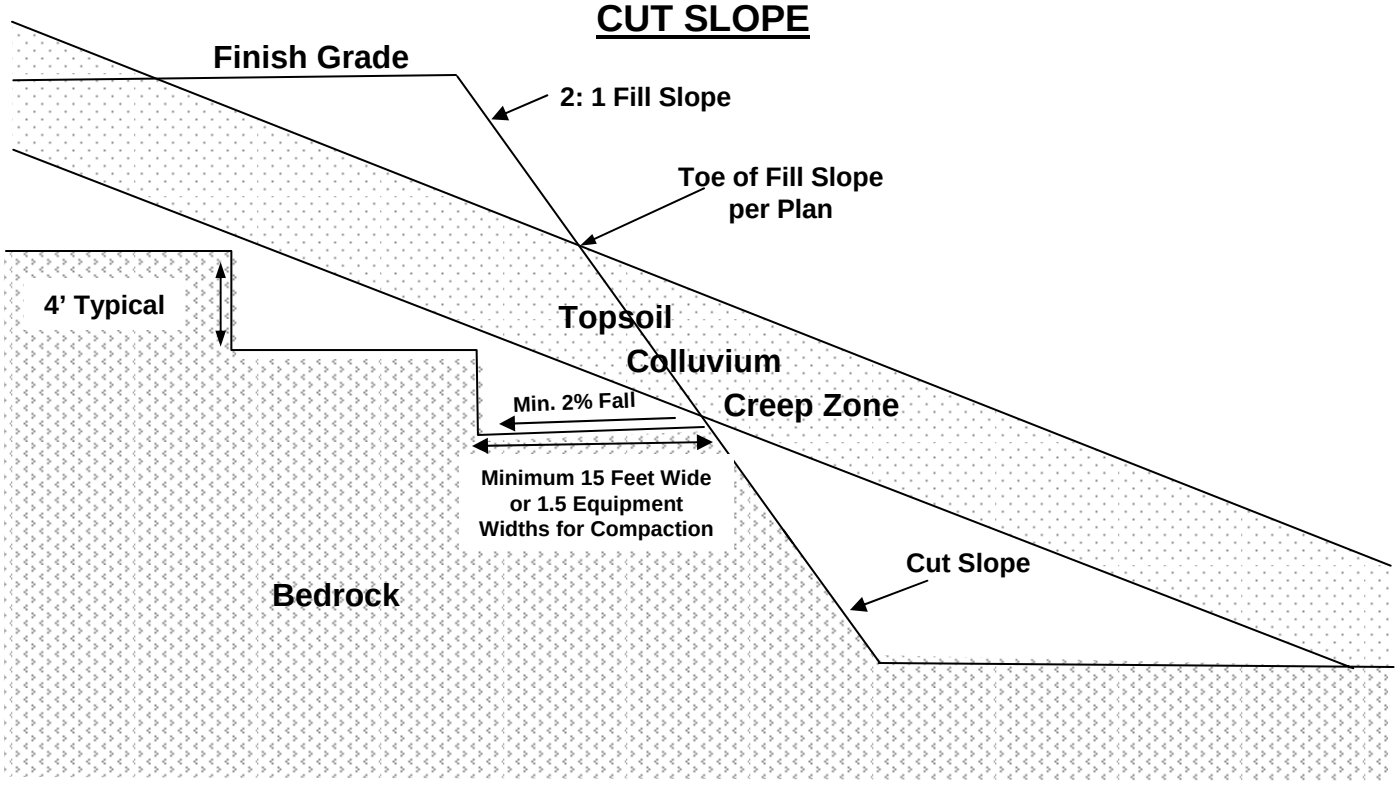


DAYLIGHT CUT AREA OVER NATURAL DESCENDING SLOPE



GEOTEK

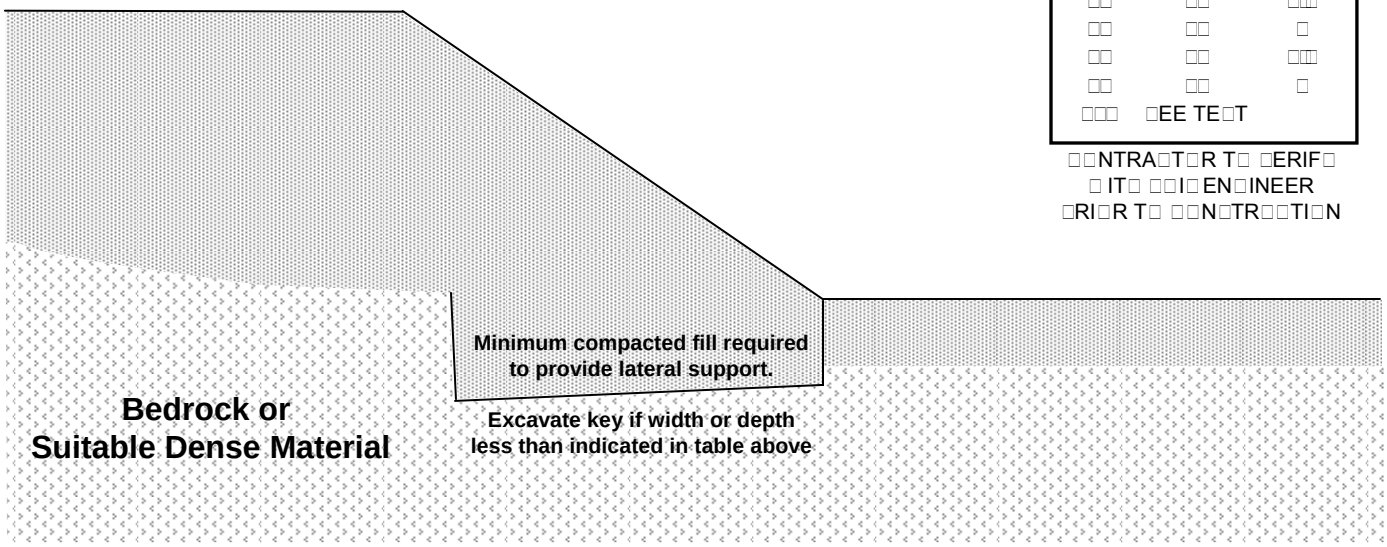
TYPICAL FILL SLOPE OVER CUT SLOPE



TYPICAL FILL SLOPE

□□□□E □EI□□T	MIN□□E□ □IDT□	MIN□□E□ DE□T□
□	□	□
□□	□□	□□□
□□	□□	□
□□	□□	□□□
□□	□□	□
□□□	□EE TE□T	

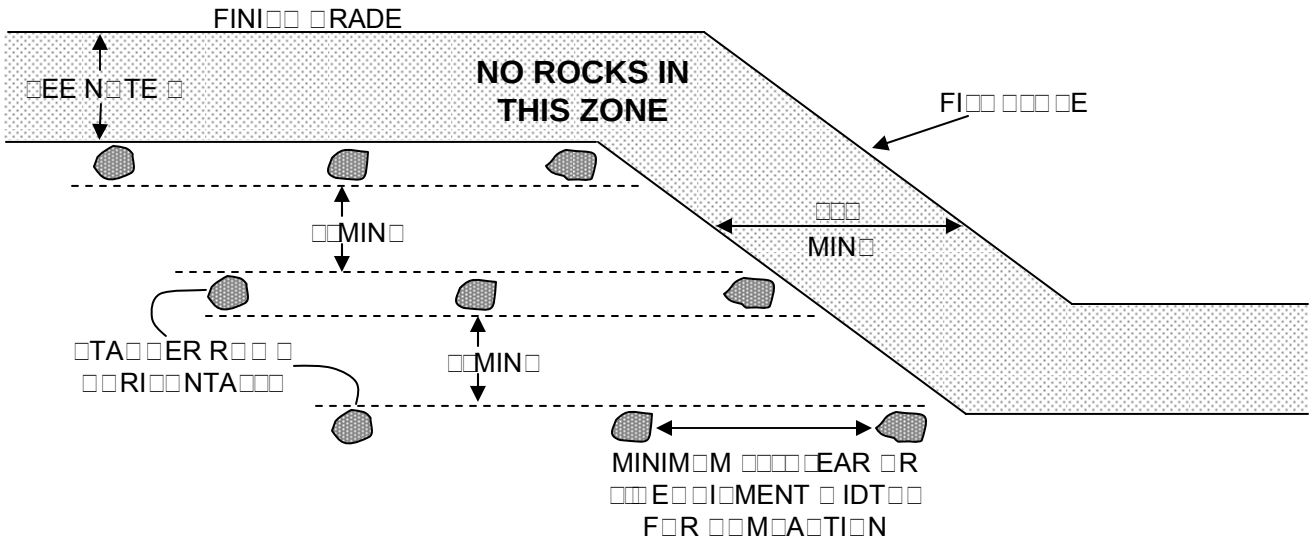
□□NTRA□T□R T□ □ERIF□ □ IT□ □□I□EN□INEER □RI□R T□ □□N□TR□□TI□N



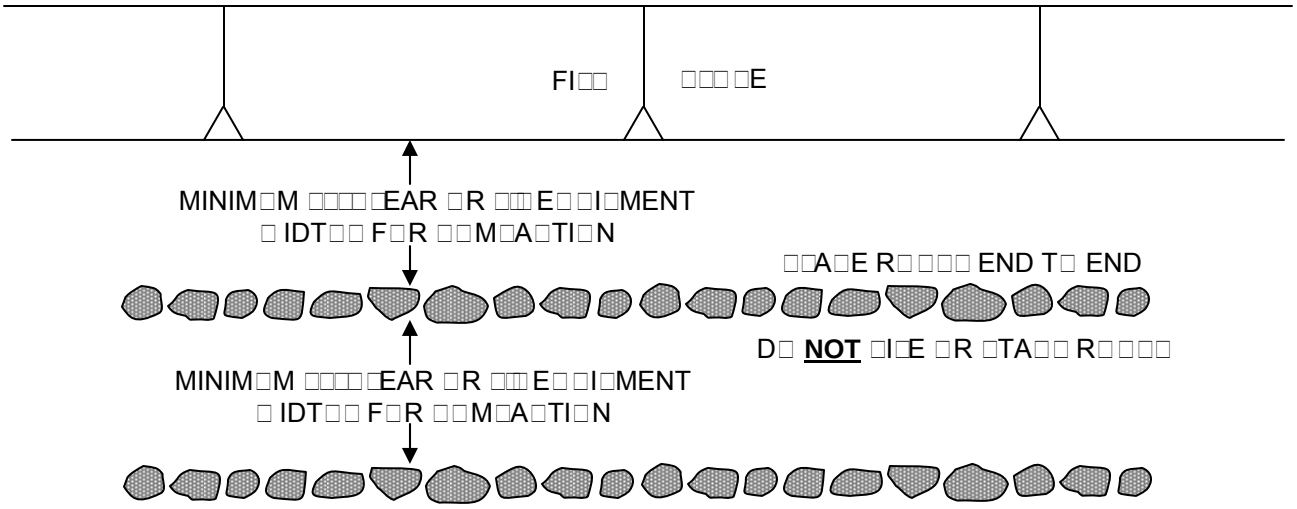
GEOTEK

□□□

CROSS SECTIONAL VIEW



PLAN VIEW



N□TE□□

□□ □□I□ FI□□ □□ER □ INDR□□ □□□□□E □E □FEET □R □ER □□RI□D□I□TI□NA□ □TANDARD□ AND □□FFI□IENT F□R F□T□RE E□□A□ATI□N□ T□ A□□ID R□□□□

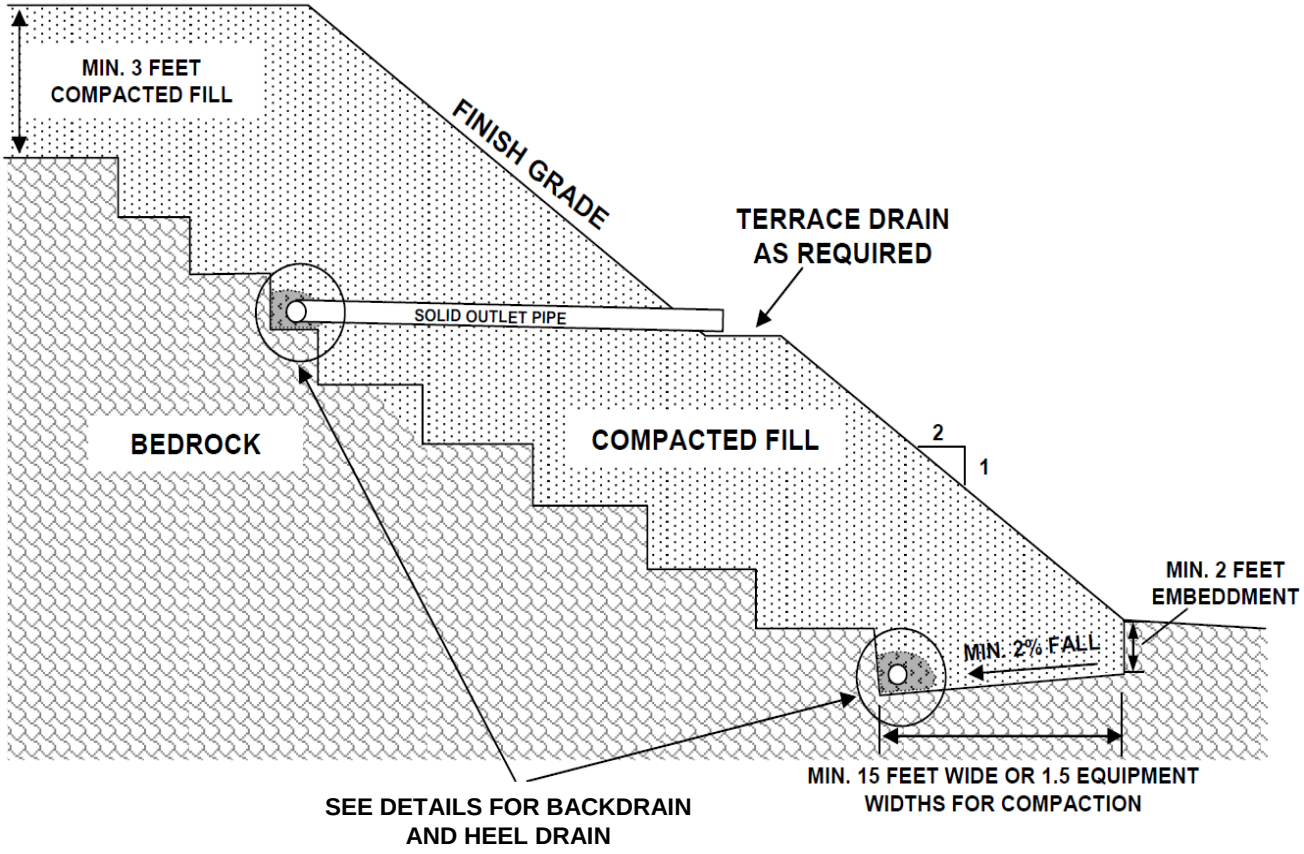
□□ MA□IM□M R□□□ □I□E IN □ INDR□□ □ I□ □FEET IN DIAMETER

□□ □□I□AR□ □ND □ INDR□□ □ T□ □E □AND□ MATERIA□ □□□□E□T T□ □□I□EN□INEER A□□E□TAN□E

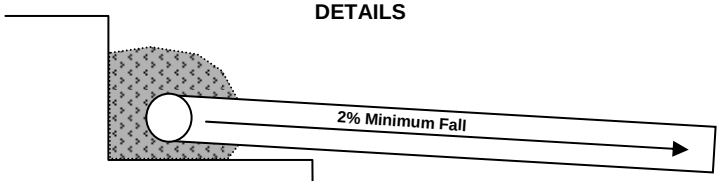
□□ □□A□IN□ AND □□EARAN□E□ M□□T □E □□FFI□IENT T□ A□□□□ F□R □R□□ER □□M□A□TI□N

□□ INDI□D□A□ □AR□E R□□□□ MA□ □E □□RIED IN □IT□□

GEOTEK	□□□□□



BACKDRAIN DETAILS



4" diameter perforated drain pipe (Schedule 40 PVC or equivalent) in 6 cubic feet per lineal foot clean gravel wrapped in filter fabric

4" diameter solid outlet pipe (Schedule 40 PVC or equivalent) laterals to slope face or storm drain system at maximum 100 foot maximum intervals

Note: Additional backdrains may be recommended

HEEL DRAIN DETAILS



6" diameter perforated drain pipe in 6 cubic feet per lineal foot clean gravel wrapped in filter fabric, outlet pipe to gravity flow with 2% minimum fall

GEOTEK

Earth - Strata, Inc.

Geotechnical, Environmental and Materials Testing Consultants

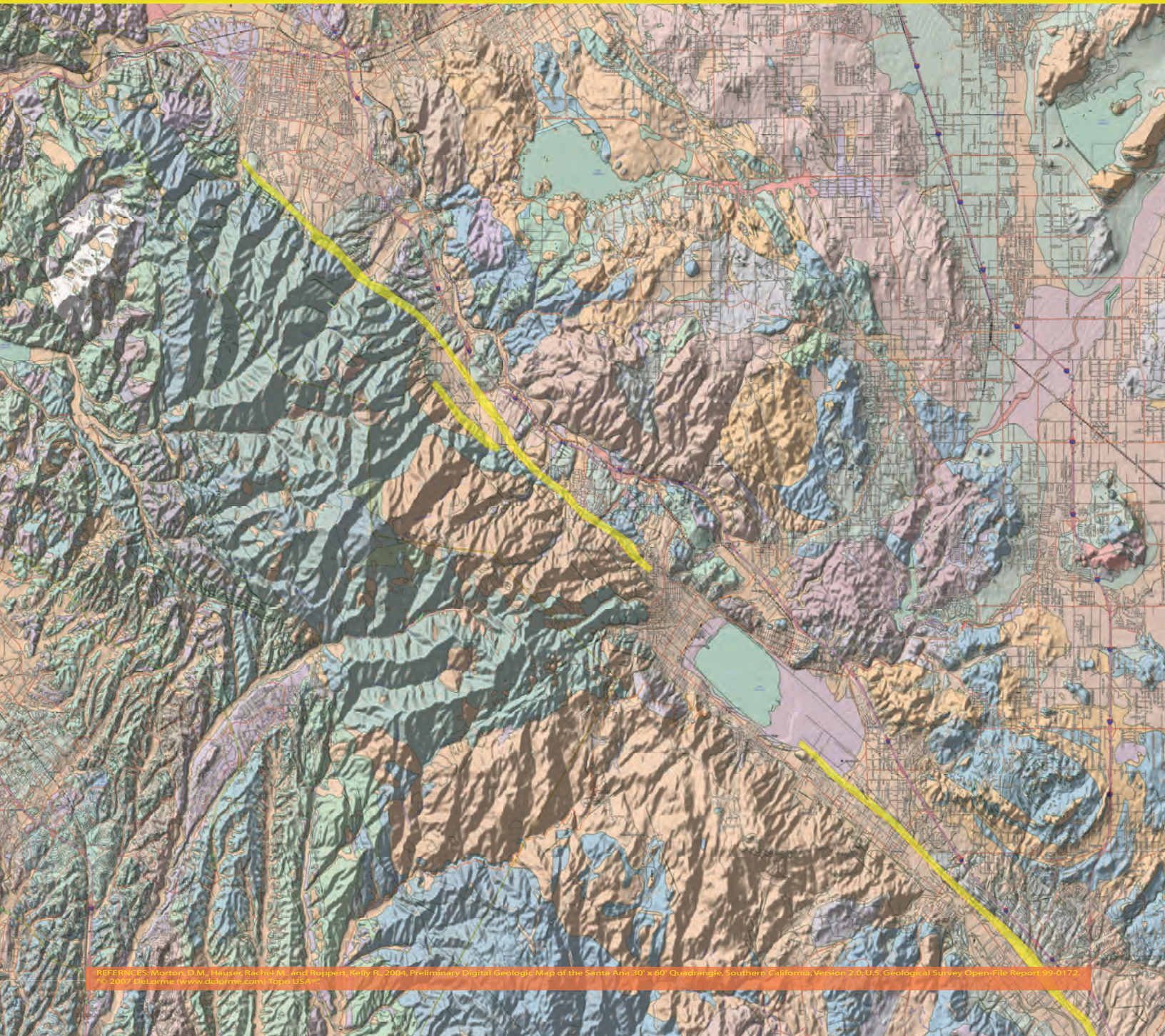
BETTER PEOPLE • BETTER SERVICE • BETTER RESULTS

REVISED PRELIMINARY GEOTECHNICAL INTERPRETIVE REPORT

PROPOSED P & F PROPERTY RESIDENTIAL DEVELOPMENT, ASSESSOR'S PARCEL NUMBER 245-300-001, LOCATED ON THE NORTH SIDE OF IRIS AVENUE AND WEST SIDE OF CHICAGO AVENUE, RIVERSIDE AREA, RIVERSIDE COUNTY, CALIFORNIA

PROJECT NO. 15735-10A

ISSUED: APRIL 27, 2015



Earth - Strata, Inc.
Geotechnical, Environmental and Materials Testing Consultants
BETTER PEOPLE • BETTER SERVICE • BETTER RESULTS

April 27, 2015 Project No. 15735-10A

Mr. Pete Pitassi
DIVERSIFIED PACIFIC
10621 Civic Center Drive
Rancho Cucamonga, CA 91730

Subject: **Revised Preliminary Geotechnical Interpretive Report, Proposed P & F Property Residential Development, Assessor's Parcel Number 245-300-001, Located on the North Side of Iris Avenue and West Side of Chicago Avenue, Riverside Area, Riverside County, California**

Earth-Strata is pleased to present our preliminary geotechnical interpretive report for the proposed P & F Property residential development, located at the above referenced site. This work was performed in accordance with the scope of work described in our proposal, dated January 27, 2015. The purpose of this study is to evaluate the nature, distribution, engineering properties, and geologic strata underlying the site with respect to the proposed development.

Earth-Strata appreciates the opportunity to offer our consultation and advice on this project. In the event that you have any questions, please do not hesitate to contact the undersigned at your earliest convenience.

Respectfully submitted,

EARTH-STRATA, Inc.

Stephen M. Poole, PE, GE
Principal Engineer

SMP/ca

Distribution: (2) Addressee

TABLE OF CONTENTS

Section **Page**

INTRODUCTION 1
SITE DESCRIPTION 1
PROPOSED DEVELOPMENT AND GRADING 1
FIELD EXPLORATION AND LABORATORY TESTING 3
Field Exploration 3
Laboratory Testing 3
FINDINGS 3
Regional Geology 3
Local Geology 4
Geologic Structure 4
Faulting 4
Landslides 6
CONCLUSIONS AND RECOMMENDATIONS 6
General 6
Earthwork 6
Earthwork and Grading 6
Clearing and Grubbing 6
Excavation Characteristics 6
Groundwater 7
Ground Preparation For Fill Areas 7
Oversize Rock 7
Compacted Fill Placement 8
Import Earth Materials 8
Cut/Fill Transitions 9
Cut Areas 9
Shrinkage, Bulking and Subsidence 9
Geotechnical Observations 10
Post Grading Considerations 10
Slope Landscaping and Maintenance 10
Site Drainage 10
Utility Trenches 11
SEISMIC DESIGN CONSIDERATIONS 11
Ground Motions 11
Secondary Seismic Hazards 12
Liquefaction and Lateral Spreading 13
Ground Lurching 13
Ground Subsidence 13
General 13
Allowable Bearing Values 14
Settlement 14
Lateral Resistance 14
Structural Setbacks and Building Clearance 14
Foundation Observations 15
Expansive Soil Considerations 16

Very Low Expansion Potential (Expansion Index of 20 or Less) 16
Footings 16
Building Floor Slabs 16
Low Expansion Potential (Expansion Index of 21 to 50) 17
Footings 17
Building Floor Slabs 18
Post Tensioned Slab/Foundation Design Recommendations 18
Corrosivity 20
RETAINING WALLS 21
Active and At-Rest Earth Pressures 21
Subdrain System 22
Temporary Excavations 22
Retaining Wall Backfill 22
CONCRETE FLATWORK 23
Thickness and Joint Spacing 23
Subgrade Preparation 23
GRADING PLAN REVIEW AND CONSTRUCTION SERVICES 23
REPORT LIMITATIONS 24

Attachments:

Figure 1 – Vicinity Map (Page 2)
Figure 2 – Regional Geologic Map (Page 5)
APPENDIX A – References (Rear of Text)
APPENDIX B – Exploratory Logs (Rear of Text)
APPENDIX C – Laboratory Procedures and Test Results (Rear of Text)
APPENDIX D – Seismicity (Rear of Text)
APPENDIX E – General Earthwork and Grading Specifications (Rear of Text)
Plate 1 – Geotechnical Map (In Pocket)

INTRODUCTION

Earth-Strata is pleased to present our preliminary geotechnical interpretive report for the proposed development. The purpose of this study was to evaluate the nature, distribution, engineering properties, and geologic strata underlying the site with respect to the proposed development, and then provide preliminary grading and foundation design recommendations based on the plans you provided. The general location of the subject property is indicated on the Vicinity Map, Figure 1. The plans you provided were used as the base map to show geologic conditions within the subject site, see Geotechnical Map, Plate 1.

SITE DESCRIPTION

The subject property is located on the north side of Iris Avenue and the west side of Chicago Avenue at 15701 Chicago Avenue in the Riverside area, Riverside County, California. The approximate location of the site is shown on the Vicinity Map, Figure 1.

The subject property is mostly a citrus orchard comprised of approximately 140 acres of undeveloped land. The site has not been graded, with the exception of minor grading associated with the existing orchards and existing buildings. Topographic relief at the subject property is relatively low to moderate with the terrain being generally gently sloping. Elevations at the site range from approximately 1,415 to 1,571 feet above mean sea level (msl), for a difference of about 101± feet across the entire site. Drainage within the subject property generally flows to the west.

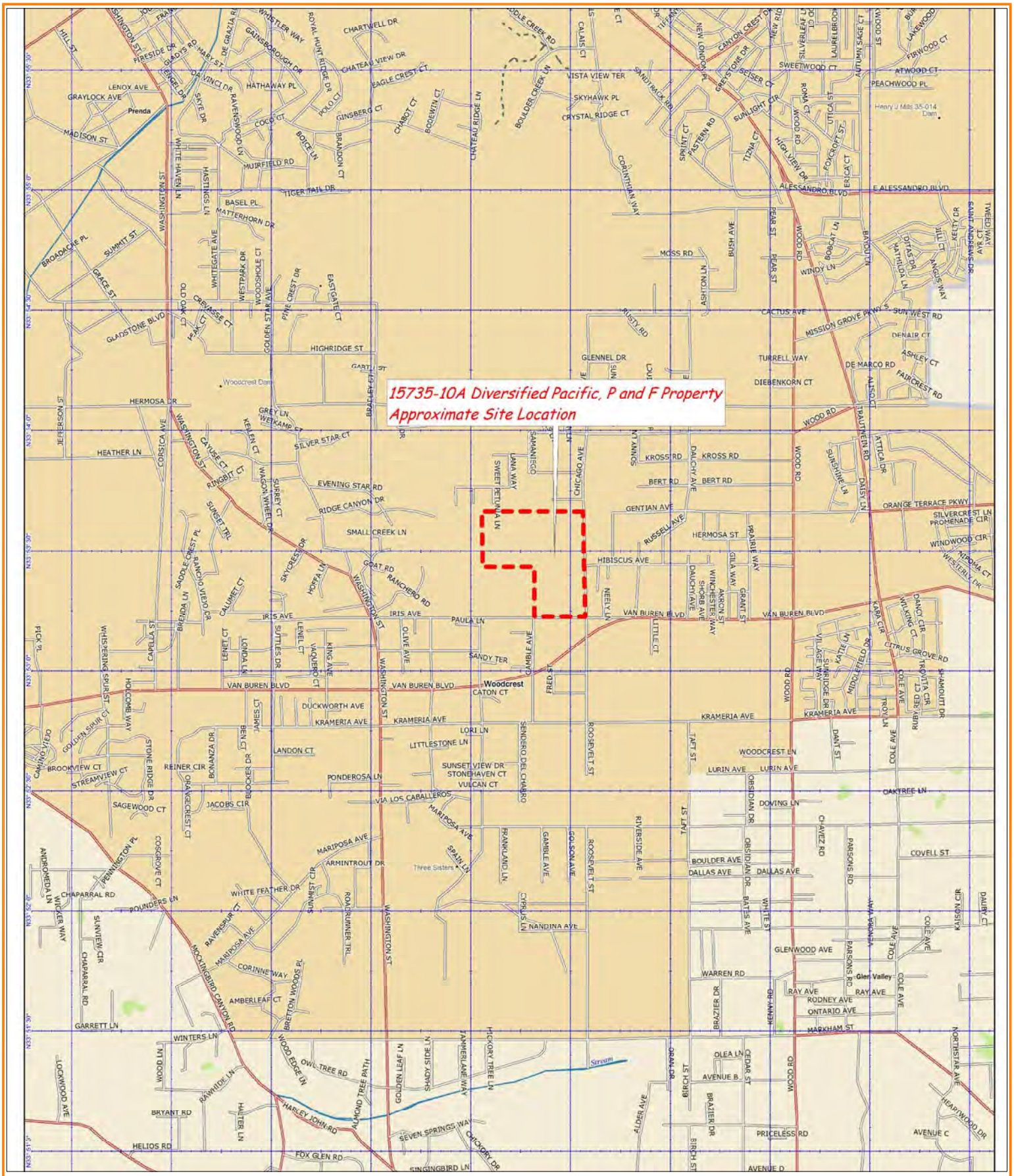
The site is currently bordered by open land and single family residences. Most of the vegetation on the site consists of sparse to moderate amounts of annual weeds/grasses, along with some scattered small to large trees and the orchard.

PROPOSED DEVELOPMENT AND GRADING

The proposed residential development is expected to consist of concrete, wood or steel framed one- and/or two-story structures utilizing slab on grade construction with associated streets, landscape areas, and utilities. The current development plans include numerous building pads positioned throughout the site.

The plans provided by you were utilized in our exploration and form the base for our Geotechnical Map, Plate 1.

Formal plans have not been prepared and await the conclusions and recommendations of this report.



"© 2007 DeLorme (www.delorme.com) Topo USA®".

Earth - Strata, Inc. Geotechnical, Environmental and Materials Testing Consultants BETTER PEOPLE • BETTER SERVICE • BETTER RESULTS	DIVERSIFIED PACIFIC, P AND F PROPERTY	15735-10A
	VICINITY MAP	SEE BAR SCALE
		APRIL 2015 / FIGURE 1

FIELD EXPLORATION AND LABORATORY TESTING

Field Exploration

Subsurface exploration within the subject site was performed in May 2015 for the exploratory excavations. A truck mounted hollow-stem-auger drill rig was utilized to drill 8 borings throughout the site to a maximum depth of 10 feet. A backhoe was utilized to excavate 18 test pits to a maximum depth of 6 feet. An underground utilities clearance was obtained from Underground Service Alert of Southern California, prior to the subsurface exploration.

Earth materials encountered during exploration were classified and logged in general accordance with the Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) of ASTM D 2488. Upon completion of laboratory testing, exploratory logs and sample descriptions may have been reconciled to reflect laboratory test results with regard to ASTM D 2487.

Associated with the subsurface exploration was the collection of bulk (disturbed) samples and relatively undisturbed samples of earth materials for laboratory testing and analysis. The relatively undisturbed samples were obtained with a 3 inch outside diameter modified California split-spoon sampler lined with 1 inch high brass rings. Samples obtained using a hollow stem auger drill rig, were mechanically driven with successive 30 inch drops of a 140-pound trip safety hammer. The blow count per one foot increment was recorded in the boring logs. The central portions of the driven samples were placed in sealed containers and transported to our laboratory for testing and analysis. The approximate exploratory locations are shown on Plate 1 and descriptive logs are presented in Appendix B.

Laboratory Testing

Maximum dry density/optimum moisture content, expansion potential, R-value, pH, resistivity, sulfate content, chloride content, and in-situ density/moisture content were determined for selected undisturbed and bulk samples of earth materials, considered representative of those encountered. An evaluation of the test data is reflected throughout the Conclusions and Recommendations section of this report. A brief description of laboratory test criteria and summaries of test data are presented in Appendix C.

FINDINGS

Regional Geology

Regionally, the site is located in the Peninsular Ranges Geomorphic Province of California. The Peninsular Ranges are characterized by northwest trending steep mountain ranges separated by sediment filled elongated valleys. The dominant structural geologic features reflect the northwest trend of the province. Associated with and subparallel to the San Andreas Fault are the San Jacinto Fault, Newport-Inglewood, and the Whittier-Elsinore Fault. The Santa Ana Mountains abut the west side of the Elsinore Fault while the Perris Block forms the other side of the fault zone to the east. The Perris Block is bounded to the east by the San Jacinto Fault. The northern perimeter of the Los Angeles basin forms part

of a northerly dipping blind thrust fault at the boundary between the Peninsular Ranges Province and the Transverse Range Province.

The mountainous regions within the Peninsular Ranges Province are comprised of Pre-Cretaceous, metasedimentary, and metavolcanic rocks along with Cretaceous plutonic rocks of the Southern California Batholith. The low lying areas are primarily comprised of Tertiary and Quaternary non-marine alluvial sediments consisting of alluvial deposits, sandstones, claystones, siltstones, conglomerates, and occasional volcanic units. A map illustrating the regional geology is presented on the Regional Geologic Map, Figure 2.

Local Geology

The earth materials on the site are primarily comprised of Quaternary Alluvium and bedrock. A general description of the dominant earth materials observed on the site is provided below:

- Quaternary Alluvium (map symbol Qal): Quaternary alluvium was encountered to a maximum depth explored. These alluvial deposits consist predominately of brown, fine to coarse grained silty sand. These deposits were generally noted to be in a moist to very moist, loose to medium dense state.

- Cretaceous Val Verde Tonalite (map symbol Kvt): The Val Verde Tonalite was mapped within the site. Tonalite has a similar chemical composition to gabbro, but includes a higher percentage of quartz. The Val Verde Tonalite was generally noted to be light gray to dark gray, slightly moist and was found to be in a moderately hard to very hard state. Typically, the upper 1 to 3 feet of this unit is more weathered and not as hard.

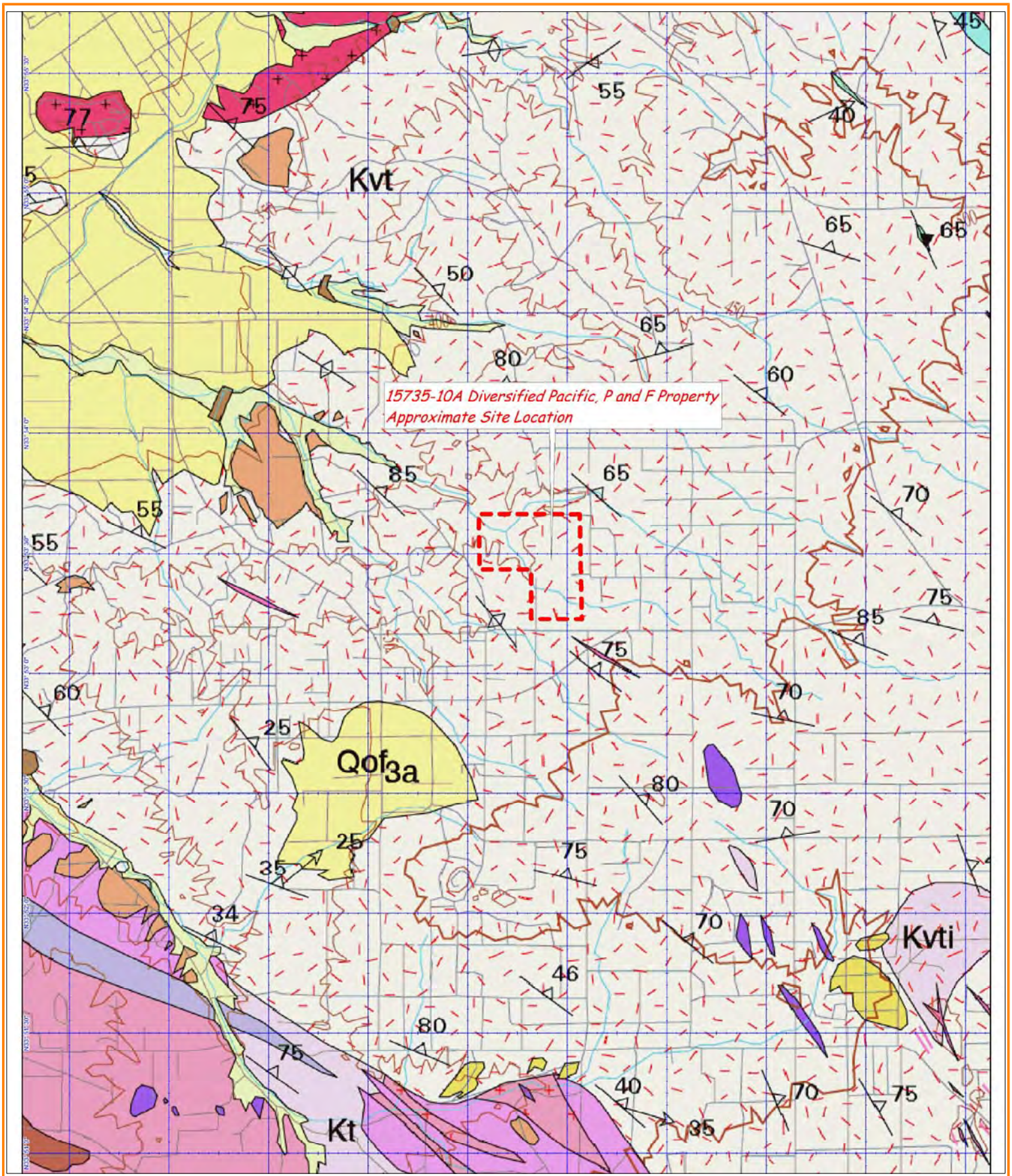
Geologic Structure

The bedrock is generally massive and lacks significant structural planes.

Faulting

The project is located in a seismically active region and as a result, significant ground shaking will likely impact the site within the design life of the proposed project. The geologic structure of the entire southern California area is dominated by northwest-trending faults associated with the San Andreas Fault system, which accommodates for most of the right lateral movement associated with the relative motion between the Pacific and North American tectonic plates. Known active faults within this system include the Newport-Inglewood, Whittier-Elsinore, San Jacinto and San Andreas Faults.

No active faults are known to project through the site and the site is not located within an Alquist-Priolo Earthquake Fault Zone, established by the State of California to restrict the construction of new habitable structures across identifiable traces of known active faults. An active fault is defined by the State of California as having surface displacement within the past 11,000 years or during the Holocene geologic time period.



REFERNCES: Morton, D.M., Hauser, Rachel M., and Ruppert, Kelly R., 2004, Preliminary Digital Geologic Map of the Santa Ana 30' x 60' Quadrangle, Southern California, Version 2.0: U.S. Geological Survey Open-File Report 99-0172.

"© 2007 DeLorme (www.delorme.com) Topo USA®".

Earth - Strata, Inc.
Geotechnical, Environmental and Materials Testing Consultants
BETTER PEOPLE • BETTER SERVICE • BETTER RESULTS

DIVERSIFIED PACIFIC, P AND F PROPERTY | 15735-10A

REGIONAL GEOLOGIC MAP | SEE BAR SCALE

APRIL 2015 | FIGURE 2

Based on our review of regional geologic maps and the computer program (USGS 2002 Interactive Deaggregation), the Elsinore Fault with an approximate source to site distance of 17 kilometers is the closest known active fault anticipated to produce the highest ground accelerations, with an anticipated maximum modal magnitude of 6.77. Based on the data compiled during the preparation of this report, it is our interpretation that the potential for surface rupture to adversely impact the proposed structures is very low to remote.

Landslides

Landslide debris was not observed during our subsurface exploration and no ancient landslides are known to exist on the site.

CONCLUSIONS AND RECOMMENDATIONS

General

From geotechnical and engineering geologic points of view, the subject property is considered suitable for the proposed development, provided the following conclusions and recommendations are incorporated into the plans and are implemented during construction.

Earthwork

Earthwork and Grading

The provisions of the 2013 California Building Code (CBC), including Appendix J Grading, should be applied to all earthwork and grading operations, as well as in accordance with all applicable grading codes and requirements of the appropriate reviewing agency. Unless specifically revised or amended herein, grading operations should also be performed in accordance with applicable provisions of our General Earthwork and Grading Specifications within the last appendix of this report.

Clearing and Grubbing

Vegetation including trees, grasses, weeds, brush, shrubs, or any other debris should be stripped from the areas to be graded and properly disposed of offsite. In addition, laborers should be utilized to remove any roots, branches, or other deleterious materials during grading operations.

Earth-Strata should be notified at the appropriate times to provide observation and testing services during Clearing and Grubbing operations. Any buried structures or unanticipated conditions should be brought to our immediate attention.

Excavation Characteristics

Based on the results of our exploration where the backhoe and drill rig met shallow refusal in bedrock and experience with similar projects in similar settings, the near surface earth materials

except in areas of rock outcrops, will be readily excavated with conventional earth moving equipment. Excavation difficulty is a function of the degree of weathering and amount of fracturing within the bedrock. Bedrock generally becomes harder and more difficult to excavate with increasing depth. Some sewer lines maybe in excess of 25 feet deep on the west portion of the proposed development. The rock rippability should be further evaluated by seismic lines in order to supplement our field investigation.

Groundwater

Groundwater was not observed during our subsurface exploration however, there was water within the blue line stream areas. Groundwater may be encountered within the existing drainage areas.

Ground Preparation For Fill Areas

For each area to receive compacted fill, the removal of low density, compressible earth materials, such as topsoil, upper alluvial materials, and undocumented artificial fill, should continue until firm competent bedrock is encountered. Removal excavations are subject to verification by the project engineer, geologist or their representative. Prior to placing compacted fills, the exposed bottom in each removal area should be scarified to a depth of 6 inches or more, watered or air dried as necessary to achieve near optimum moisture conditions and then compacted to a minimum of 90 percent of the maximum dry density determined by ASTM D 1557.

The intent of remedial grading is to diminish the potential for hydro-consolidation, slope instability, and/or settlement. Remedial grading should extend beyond the perimeter of the proposed structures a horizontal distance equal to the depth of excavation or a minimum of 5 feet, whichever is greater. For cursory purposes the anticipated removal depths are shown on the enclosed Geotechnical Map, Plate 1. In general, the anticipated removal depths should vary from 2 to 4 feet below existing grade within the open areas and 6 to 8 feet below grade for the orchard areas.

Wet Removals

Wet alluvial materials may be encountered within the low lying areas of the site. If removals of wet alluvial materials are required, special grading equipment and procedures can greatly reduce overall costs. Careful planning by an experienced grading contractor can reduce the need for special equipment, such as swamp cats, draglines, excavators, pumps, and top loading earthmovers. Possible solutions may include the placement of imported angular rock and/or geotextile ground reinforcement. More specific recommendations can be provided based on the actual conditions encountered. Drying or mixing of wet materials with dry materials will be needed to bring the wet materials to near optimum moisture prior to placing wet materials into compacted fills.

Oversize Rock

Oversize rock is expected to be encountered during grading. Oversize rock that is encountered (i.e., rock exceeding a maximum dimension of 12 inches) should be disposed of offsite or

stockpiled onsite and crushed for future use. The disposal of oversize rock is discussed in greater detail in General Earthwork and Grading Specifications within the last appendix of this report.

Compacted Fill Placement

Compacted fill materials should be placed in 6 to 8 inch maximum (uncompacted) lifts, watered or air dried as necessary to achieve uniform near optimum moisture content and then compacted to a minimum of 90 percent of the maximum dry density determined by ASTM D 1557.

Import Earth Materials

Should import earth materials be needed to achieve final design grades, all potential import materials should be free of deleterious/oversize materials, non-expansive, and approved by the project geotechnical consultant prior to delivery onsite.

Fill Slopes

When properly constructed, fill slopes up to 20 feet high with inclinations of 2:1 (h:v) or flatter are considered to be grossly stable. Keyways are required at the toe of all fill slopes higher than 5 feet and steeper than 5:1 (h:v). Keyways should be a minimum of 10 feet wide and 2 feet into bedrock materials, as measured on the downhill side. In order to establish keyway removals, backcuts should be cut no steeper than 1:1 or as recommended by the geotechnical engineer or engineering geologist. Compacted fill should be benched into bedrock materials.

Cut Slopes

When properly constructed, cut slopes into bedrock up to 20 feet high with inclinations of 2:1 (h:v) or flatter are considered grossly stable. Cut slopes should be observed by the engineering geologist or his representative during grading, but are anticipated to be stable.

Stabilization Fills

Currently, stabilization fills will not be required for cut slopes in the bedrock. Our engineering geologist or his representative should be called to evaluate all slopes during grading. In the event that unfavorable geologic conditions are encountered, recommendations for stabilization fills or flatter slopes will be provided.

Fill Over Cut Slopes

The fill portion of fill over cut slopes should not be constructed until the cut portion of the slope has been cut to finish grade. The earth materials and geologic structure exposed along the cut slope should be evaluated with regard to suitability for compacted fills or foundations and for stability. If the cut materials are determined to be competent, then the construction of the keyway and subdrain system may commence or additional remedial recommendations will be provided.

Temporary Backcuts

It is the responsibility of the grading contractor to follow all Cal-OSHA requirements with regard to excavation safety. Where existing developments are upslope, adequate slope stability to protect those developments must be maintained. Temporary backcuts will be required to accomplish removals of unsuitable materials and possibly, to perform canyon removals, stabilization fills, and/or keyways. Backcuts should be excavated at a gradient of 1:1 (h:v) or flatter. Flatter backcuts may be required where geologic structure or earth materials are unfavorable. It is imperative that grading schedules minimize the exposure time of the unsupported excavations. All excavations should be stabilized within 30 days of initial excavation.

Cut/Fill Transitions

Cut/fill transitions should be eliminated from all building areas where the depth of fill placed within the "fill" portion exceeds proposed footing depths. This is to diminish distress to structures resulting from excessive differential settlement. The entire foundation of each structure should be founded on a uniform bearing material. This should be accomplished by overexcavating the "cut" portion and replacing the excavated materials as properly compacted fill. Refer to the following table for recommended depths of overexcavation.

DEPTH OF FILL ("fill" portion)	DEPTH OF OVEREXCAVATION ("cut" portion)
Up to 5 feet	Equal Depth
5 to 10 feet	5 feet
Greater than 10 feet	One-half the thickness of fill placed on the "fill" portion (10 feet maximum)

Overexcavation of the "cut" portion should extend beyond the building perimeter a horizontal distance equal to the depth of overexcavation or a minimum of 5 feet, whichever is greater.

Cut Areas

Where low density surficial earth materials such as any undocumented artificial fills, topsoil, colluvium and/or alluvium are not removed in their entirety in cut areas, the entire lot should overexcavated a minimum of 3 feet below the proposed foundations and replaced with compacted fill. Final determination of areas that require overexcavation due to transition conditions should be determined in the field by a representative of Earth-Strata.

Shrinkage, Bulking and Subsidence

Volumetric changes in earth material quantities will occur when poorly consolidated earth materials are replaced with properly compacted fill. Estimates of the percent shrinkage/bulking factors for the various geologic units observed on the subject property are based on in-place densities and on the estimated average percent of relative compaction achieved during grading.

GEOLOGIC UNIT	SHRINKAGE (%)
Artificial Fill	5 to 10
Bedrock	0 to 5

Subsidence from scarification and recompaction of exposed bottom surfaces is expected to be negligible to approximately 0.01 foot.

The estimates of shrinkage/bulking and subsidence are intended as an aid for project engineers in determining earthwork quantities. Since many variables can affect the accuracy of these estimates, they should be used with caution and contingency plans should be in place for balancing the project.

Geotechnical Observations

Clearing operations, removal of unsuitable materials, and general grading procedures should be observed by the project geotechnical consultant or his representative. No compacted fill should be placed without observations by the geotechnical consultant or his representative to verify the adequacy of the removals.

The project geotechnical consultant or his representative should be present to observe grading operations and to check that minimum compaction requirements and proper lift thicknesses are being met, as well as to verify compliance with the other recommendations presented herein.

Post Grading Considerations

Slope Landscaping and Maintenance

Adequate slope and building pad drainage is essential for the long term performance of the subject site. The gross stability of graded slopes should not be adversely affected, provided all drainage provisions are properly constructed and maintained. Engineered slopes should be landscaped with deep rooted, drought tolerant maintenance free plant species, as recommended by the project landscape architect.

Site Drainage

Control of site drainage is important for the performance of the proposed project. Roof gutters are recommended for the proposed structures. Pad and roof drainage should be collected and transferred to driveways, adjacent streets, storm-drain facilities, or other locations approved by the building official in non-erosive drainage devices. Drainage should not be allowed to pond on the pad or against any foundation or retaining wall. Drainage should not be allowed to flow uncontrolled over any descending slope. Planters located within retaining wall backfill should be sealed to prevent moisture intrusion into the backfill. Planters located next to structures should be sealed to the depth of the footings. Drainage control devices require periodic cleaning, testing and maintenance to remain effective.

At a minimum, pad drainage should be designed at the minimum gradients required by the CBC. To divert water away from foundations, the ground surface adjacent to foundations should also be graded at the minimum gradients required per the CBC.

Utility Trenches

All utility trench backfill should be compacted at near optimum moisture to a minimum of 90 percent of the maximum dry density determined by ASTM test method D 1557-00. For utility trench backfill within pavement areas the upper 6 inches of subgrade materials should be compacted to 95 percent of the maximum dry density determined by ASTM D 1557-00. This includes within the street right-of-ways, utility easements, under footings, sidewalks, driveways and building floor slabs, as well as within or adjacent to any slopes. Backfill should be placed in approximately 6 to 8 inch maximum loose lifts and then mechanically compacted with a hydro-hammer, rolling with a sheepsfoot, pneumatic tampers, or similar equipment. The utility trenches should be tested by the project geotechnical engineer or their representative to verify minimum compaction requirements are obtained.

In order to minimize the penetration of moisture below building slabs, all utility trenches should be backfilled with compacted fill, lean concrete or concrete slurry where they undercut the perimeter foundation. Utility trenches that are proposed parallel to any building footings (interior and/or exterior trenches), should not be located within a 1:1 (h:v) plane projected downward from the outside bottom edge of the footing.

SEISMIC DESIGN CONSIDERATIONS

Ground Motions

Structures are required to be designed and constructed to resist the effects of seismic ground motions as provided in the 2013 California Building Code Section 1613. The design is dependent on the site class, occupancy category I, II, III, or IV, mapped spectral accelerations for short periods (S_s), and mapped spectral acceleration for a 1-second period (S_1).

In order for structural design to comply with the 2013 CBC, a computer program, Earthquake Ground Motion Parameters, Version 5.1.0, dated February 10, 2011, was used to compile spectral accelerations for the subject property based on data and maps jointly compiled by the United States Geological Survey (USGS) and the California Geological Survey (CGS). The data found in the following table is based on the Maximum Considered Earthquake (MCE) with 5% damped ground motions having a 2% probability of being exceeded in 50 years (2,475 year return period).

The seismic design coefficients were determined by a combination of the site class, mapped spectral accelerations, and occupancy category. The following seismic design coefficients should be implemented during design of the proposed structures. Summaries of the Seismic Hazard Deaggregation graphs and test data are presented in Appendix D.

2013 CBC	FACTOR
Site Location	Latitude: 33.890183° (North) Longitude: -117.352000°(West)
Site Class	D
Mapped Spectral Accelerations for short periods, S_S	1.500
Mapped Spectral Accelerations for 1-Second Period, S_1	0.600
Maximum Considered Earthquake Spectral Response Acceleration for Short Periods, S_{MS}	1.500
Maximum Considered Earthquake Spectral Response Acceleration for 1-Second Period, S_{M1}	0.900
Design Spectral Response Acceleration for Short Periods, S_{DS}	1.000
Design Spectral Response Acceleration for 1-Second Period, S_{D1}	0.600
Seismic Design Category	D
Importance Factor Based on Occupancy Category	II

We performed the probabilistic seismic hazard assessment for the site in accordance with the 2013 CBC, Section 1805.5.11 and 1803.5.12. The probabilistic seismic hazard maps and data files were jointly prepared by the United States Geological Survey (USGS) and the California Geological Survey (CGS) and can be found at the CGS Probabilistic Seismic Hazards Mapping Ground Motion Page. Actual ground shaking intensities at the site may be substantially higher or lower based on complex variables such as the near source directivity effects, depth and consistency of earth materials, topography, geologic structure, direction of fault rupture, and seismic wave reflection, refraction, and attenuation rates. The mean peak ground acceleration was calculated to be 0.600g.

Secondary Seismic Hazards

Secondary effects of seismic shaking considered as potential hazards include several types of ground failure as well as induced flooding. Different types of ground failure, which could occur as a consequence of severe ground shaking at the site, include landslides, ground lurching, shallow ground rupture, and liquefaction/lateral spreading. The probability of occurrence of each type of ground failure depends on the severity of the earthquake, distance from faults, topography, the state of subsurface earth materials, groundwater conditions, and other factors. Based on our experience, subsurface exploration, and laboratory testing, all of the above secondary effects of seismic activity are considered unlikely.

Seismically induced flooding is normally a consequence of a tsunami (seismic sea wave), a seiche (i.e., a wave-like oscillation of surface water in an enclosed basin that may be initiated by a strong earthquake) or failure of a major reservoir or retention system up gradient of the site. Since the site is at an elevation of more than 1,200 feet above mean sea level and is located more than 30 miles inland from the nearest

coastline of the Pacific Ocean, the potential for seismically induced flooding due to a tsunamis is considered nonexistent. Since no enclosed bodies of water lie adjacent to or up gradient of the site, the likelihood for induced flooding due to a seiche overcoming the dams freeboard is considered nonexistent. It is considered remote that any major reservoir or retention system up gradient of the site would be compromised to a point of failure.

Liquefaction and Lateral Spreading

Liquefaction occurs as a result of a substantial loss of shear strength or shearing resistance in loose, saturated, cohesionless earth materials subjected to earthquake induced ground shaking. Potential impacts from liquefaction include loss of bearing capacity, liquefaction related settlement, lateral movements, and surface manifestation such as sand boils. Seismically induced settlement occurs when loose sandy soils become denser when subjected to shaking during an earthquake. The three factors determining whether a site is likely to be subject to liquefaction include seismic shaking, type and consistency of earth materials, and groundwater level. The proposed structures will be supported by compacted fill and competent bedrock, with groundwater at a depth of over 50 feet. As such, the potential for earthquake induced liquefaction and lateral spreading beneath the proposed structures is considered very low to remote due to the recommended compacted fill, relatively low groundwater level, and the dense nature of the deeper onsite earth materials.

Ground Lurching

The physics of ground lurching are not well understood, but it is generally thought to effect lightly loaded structures such as pavement, pipelines, and sidewalks. Heavier structures typically resist damage from ground lurching. Loose cohesionless earth materials near the surface are prone to ground lurching. Due to the recommendations herein and the lack of loose cohesionless earth materials near the surface, the potential for ground lurching is not expected to occur.

Ground Subsidence

Groundwater or oil withdrawal from sedimentary earth materials can cause the permanent collapse of pore space previously occupied by the fluid. The consolidation of subsurface sediments resulting from fluid withdrawal could cause the ground surface to subside. If sufficient differential subsidence occurs it can significantly damage engineered structures. Since no excessive withdrawal of fluids is planned in the vicinity of the proposed project, the potential for subsidence is considered low to remote.

TENTATIVE FOUNDATION DESIGN RECOMMENDATIONS

General

Provided grading is performed in accordance with the recommendations of this report, shallow foundations are considered feasible for support of the proposed structures. Tentative foundation recommendations are provided herein and graphic presentations of relevant recommendations may also be included on the enclosed map.

Allowable Bearing Values

An allowable bearing value of 2,000 pounds per square foot (psf) is recommended for design of 24 inch square pad footings and 12 inch wide continuous footings founded at a minimum depth of 12 inches below the lowest adjacent final grade. This value may be increased by 20 percent for each additional 1-foot of width and/or depth to a maximum value of 3,000psf. Recommended allowable bearing values include both dead and frequently applied live loads and may be increased by one third when designing for short duration wind or seismic forces.

Settlement

Based on the settlement characteristics of the earth materials that underlie the building sites and the anticipated loading, we estimate that the maximum total settlement of the footings will be less than approximately ¾ inch. Differential settlement is expected to be about ½ inch over a horizontal distance of approximately 20 feet, for an angular distortion ratio of 1:480. It is anticipated that the majority of the settlement will occur during construction or shortly after the initial application of loading.

The above settlement estimates are based on the assumption that the grading and construction are performed in accordance with the recommendations presented in this report and that the project geotechnical consultant will observe or test the earth material conditions in the footing excavations.

Lateral Resistance

Passive earth pressure of 250 psf per foot of depth to a maximum value of 2,500 psf may be used to establish lateral bearing resistance for footings. For areas coved with hardscape, passive earth pressure maybe taken from the surface. For areas without hardscape, the first 3 feet of the soil profile must be neglected when calculating passive earth pressure. A coefficient of friction of 0.36 times the dead load forces may be used between concrete and the supporting earth materials to determine lateral sliding resistance. The above values may be increased by one-third when designing for short duration wind or seismic forces. When combining passive and friction for lateral resistance, the passive component should be reduced by one third. In no case shall the lateral sliding resistance exceed one-half the dead load for clay, sandy clay, sandy silty clay, silty clay, and clayey silt.

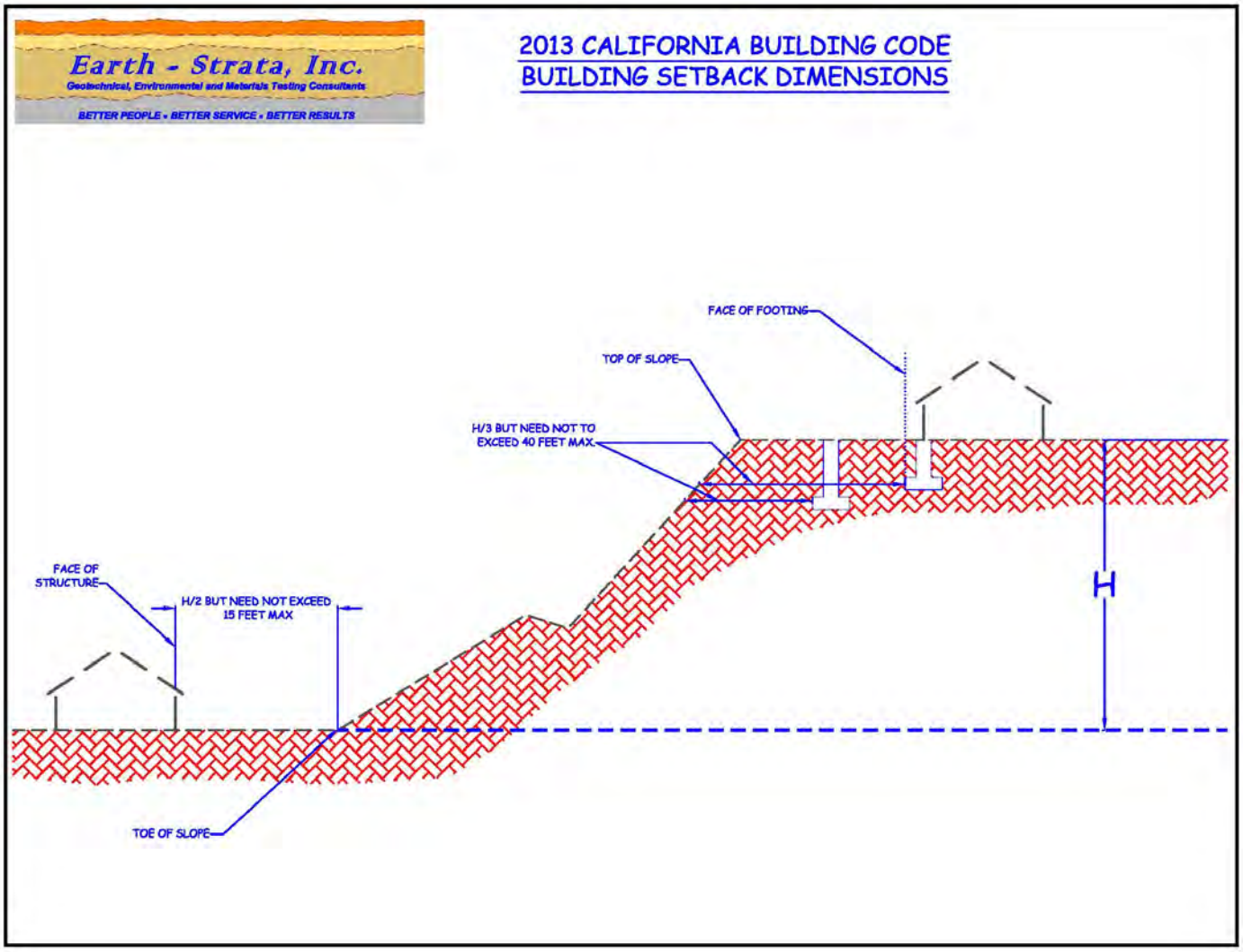
The above lateral resistance values are based on footings for an entire structure being placed directly against either compacted fill or competent bedrock.

Structural Setbacks and Building Clearance

Structural setbacks are required per the 2013 California Building Code (CBC). Additional structural setbacks are not required due to geologic or geotechnical conditions within the site. Improvements constructed in close proximity to natural or properly engineered and compacted slopes can, over time, be affected by natural processes including gravity forces, weathering, and long term secondary settlement. As a result, the CBC requires that buildings and structures be setback or footings deepened to resist the influence of these processes.

For structures that are planned near ascending and descending slopes, the footings should be embedded to satisfy the requirements presented in the CBC, Section 1808.7 as illustrated in the following Foundation Clearances From Slopes diagram.

FOUNDATION CLEARANCES FROM SLOPES



When determining the required clearance from ascending slopes with a retaining wall at the toe, the height of the slope shall be measured from the top of the wall to the top of the slope. The structural setback for pools may be reduced by one-half.

Foundation Observations

In accordance with the 2013 CBC and prior to the placement of forms, concrete, or steel, all foundation excavations should be observed by the geologist, engineer, or his representative to verify that they have been excavated into competent bearing materials. The excavations should be per the approved plans, moistened, cleaned of all loose materials, trimmed neat, level, and square. Any moisture softened earth materials should be removed prior to steel or concrete placement.

Earth materials from foundation excavations should not be placed in slab on grade areas unless the materials are tested for expansion potential and compacted to a minimum of 90 percent of the maximum dry density.

Expansive Soil Considerations

Preliminary laboratory test results indicate onsite earth materials exhibit an expansion potential of **VERY LOW to LOW** as classified in accordance with 2013 CBC Section 1803.5.3 and ASTM D4829-03. Additional, testing for expansive soil conditions should be conducted upon completion of rough grading. The following recommendations should be considered the very minimum requirements, for the earth materials tested. It is common practice for the project architect or structural engineer to require additional slab thickness, footing sizes, and/or reinforcement. The preliminary design and construction recommendations herein are intended for the various levels of expansion potential anticipated at the completion of rough grading.

Very Low Expansion Potential (Expansion Index of 20 or Less)

Our laboratory test results indicate that the earth materials onsite exhibit a **VERY LOW** expansion potential as classified in accordance with 2013 CBC Section 1803.5.3 and ASTM D4829-03. Since the onsite earth materials exhibit expansion indices of 20 or less, the design of slab on ground foundations is exempt from the procedures outlined in Section 1808.6.1 or 1808.6.2.

Footings

- Exterior continuous footings may be founded at the minimum depths below the lowest adjacent final grade (i.e. 12 inch minimum depth for one-story, 18 inch minimum depth for two-story, and 24 inch minimum depth for three-story construction). Interior continuous footings for one-, two-, and three-story construction may be founded at a minimum depth of 12 inches below the lowest adjacent final grade. All continuous footings should have a minimum width of 12, 15, and 18 inches, for one-, two-, and three-story structures, respectively per Table 1809.7 of the 2013 CBC, and should be reinforced with a minimum of two (2) No. 4 bars, one (1) top and one (1) bottom.

- Exterior pad footings intended to support roof overhangs, such as second story decks, patio covers and similar construction should be a minimum of 24 inches square and founded at a minimum depth of 18 inches below the lowest adjacent final grade. No special reinforcement of the pad footings will be required.

Building Floor Slabs

- Building floor slabs should be a minimum of 4 inches thick and reinforced with a minimum of No. 3 bars spaced a maximum of 24 inches on center, each way. All floor slab reinforcement should be supported on concrete chairs or bricks to ensure the desired placement at mid-depth.

- Interior floor slabs, within living or moisture sensitive areas, should be underlain by a

minimum 10-mil thick moisture/vapor barrier to help reduce the upward migration of moisture from the underlying earth materials. The moisture/vapor barrier used should meet the performance standards of an ASTM E 1745 Class A material, and be properly installed in accordance with ACI publication 318-05. It is the responsibility of the contractor to ensure that the moisture/vapor barriers are free of openings, rips, or punctures prior to placing concrete. As an option for additional moisture reduction, higher strength concrete, such as a minimum 28-day compressive strength of 5,000 pounds per square inch (psi) may be used. Ultimately, the design of the moisture/vapor barrier system and recommendations for concrete placement and curing are the purview of the foundation engineer, taking into consideration the project requirements provided by the architect and owner.

- Garage floor slabs should be a minimum of 4 inches thick and should be reinforced in a similar manner as living area floor slabs. Garage floor slabs should be placed separately from adjacent wall footings with a positive separation maintained with ⅜ inch minimum felt expansion joint materials and quartered with weakened plane joints. A 12 inch wide turn down founded at the same depth as adjacent footings should be provided across garage entrances. The turn down should be reinforced with a minimum of two (2) No. 4 bars, one (1) top and one (1) bottom.

- The subgrade earth materials below all floor slabs should be pre-watered to promote uniform curing of the concrete and minimize the development of shrinkage cracks, prior to placing concrete. The pre-watering should be verified by Earth-Strata during construction.

Low Expansion Potential (Expansion Index of 21 to 50)

Our laboratory test results indicate that the earth materials onsite exhibit a **LOW** expansion potential as classified in accordance with 2013 CBC Section 1803.5.3 and ASTM D4829-03. Accordingly, the CBC specifies that slab on ground foundations (floor slabs) resting on earth materials with expansion indices greater than 20, require special design considerations in accordance with 2013 CBC Sections 1808.6.1 and 1808.6.2. The design procedures are based on the thickness and plasticity index of the various earth materials within the upper 15 feet of the proposed structure. For preliminary design purposes, we have assumed an effective plasticity index of 12.

Footings

- Exterior continuous footings may be founded at the minimum depths below the lowest adjacent final grade (i.e. 12 inch minimum depth for one-story, 18 inch minimum depth for two-story, and 24 inch minimum depth for three-story construction). Interior continuous footings for one-, two-, and three-story construction may be founded at a minimum depth of 12 inches below the lowest adjacent final grade. All continuous footings should have a minimum width of 12, 15, and 18 inches, for one-, two-, and three-story structures, respectively, and should be reinforced with a minimum of two (2) No. 4 bars, one (1) top and one (1) bottom.

- Exterior pad footings intended to support roof overhangs, such as second story decks, patio covers and similar construction should be a minimum of 24 inches square and founded at a minimum depth of 18 inches below the lowest adjacent final grade. The pad footings should be reinforced with a minimum of No. 4 bars spaced a maximum of 18 inches on center, each way, and should be placed near the bottom-third of the footings.

Building Floor Slabs

- The project architect or structural engineer should evaluate minimum floor slab thickness and reinforcement in accordance with 2013 CBC Section 1808.6.2 based on an assumed effective plasticity index of 12. Building floor slabs should be a minimum of 4 inches thick and reinforced with a minimum of No. 3 bars spaced a maximum of 18 inches on center, each way. All floor slab reinforcement should be supported on concrete chairs or bricks to ensure the desired placement at mid-depth.

- Interior floor slabs, within living or moisture sensitive areas, should be underlain by a minimum 10-mil thick moisture/vapor barrier to help reduce the upward migration of moisture from the underlying earth materials. The moisture/vapor barrier used should meet the performance standards of an ASTM E 1745 Class A material, and be properly installed in accordance with ACI publication 318-05. It is the responsibility of the contractor to ensure that the moisture/vapor barriers are free of openings, rips, or punctures prior to placing concrete. As an option for additional moisture reduction, higher strength concrete, such as a minimum 28-day compressive strength of 5,000 pounds per square inch (psi) may be used. Ultimately, the design of the moisture/vapor barrier system and recommendations for concrete placement and curing are the purview of the foundation engineer, taking into consideration the project requirements provided by the architect and owner.

- Garage floor slabs should be a minimum of 4 inches thick and should be reinforced in a similar manner as living area floor slabs. Garage floor slabs should be placed separately from adjacent wall footings with a positive separation maintained with ⅜ inch minimum felt expansion joint materials and quartered with weakened plane joints. A 12 inch wide turn down founded at the same depth as adjacent footings should be provided across garage entrances. The turn down should be reinforced with a minimum of two (2) No. 4 bars, one (1) top and one (1) bottom.

- The subgrade earth materials below all floor slabs should be pre-watered to achieve a moisture content that is at least equal or slightly greater than optimum moisture content, prior to placing concrete. This moisture content should penetrate a minimum depth of 12 inches into the subgrade earth materials. The pre-watering should be verified by Earth-Strata during construction.

Post Tensioned Slab/Foundation Design Recommendations

In lieu of the proceeding foundation recommendations, post tensioned slabs may be used to support the proposed structures. We recommend that the foundation engineer design the foundation system using the Preliminary Post Tensioned Foundation Slab Design table below. These parameters have been provided in general accordance with Post Tensioned Design. Alternate designs addressing the effects of expansive earth materials are allowed per 2013 CBC Section 1808.6.2. When utilizing these parameters, the foundation engineer should design the foundation system in accordance with the allowable deflection criteria of applicable codes and per the requirements of the structural engineer/architect.

It should be noted that the post tensioned design methodology is partially based on the assumption that soil moisture changes around and underneath post tensioned slabs, are influenced only by climate

conditions. Soil moisture change below slabs is the major factor in foundation damages relating to expansive soil. However, the design methodology has no consideration for presaturation, owner irrigation, or other non-climate related influences on the moisture content of subgrade earth materials. In recognition of these factors, we modified the geotechnical parameters determined from this methodology to account for reasonable irrigation practices and proper homeowner maintenance. Additionally, we recommend that prior to excavating footings, slab subgrades be presoaked to a depth of 12 inches and maintained at above optimum moisture until placing concrete. Furthermore, we recommend that the moisture content of the earth materials around the immediate perimeter and below the slab be presaturated to at least 1% above optimum moisture content just prior to placing concrete. The pre-watering should be verified and tested by Earth-Strata during construction.

The following geotechnical parameters assume that areas adjacent to the foundations, which are planted and irrigated, will be designed with proper drainage to prevent water from ponding. Water ponding near the foundation causes significant moisture change below the foundation. Our recommendations do not account for excessive irrigation and/or incorrect landscape design. Planters placed adjacent to the foundation, should be designed with an effective drainage system or liners, to prevent moisture infiltration below the foundation. Some lifting of the perimeter foundation beam should be expected even with properly constructed planters. Based on our experience monitoring sites with similar earth materials, elevated moisture contents below the foundation perimeter due to incorrect landscaping irrigation or maintenance, can result in uplift at the perimeter foundation relative to the central portion of the slab.

Future owners should be informed and educated of the importance in maintaining a consistent level of moisture within the earth materials around the structures. Future owners should also be informed of the potential negative consequences of either excessive watering, or allowing expansive earth materials to become too dry. Earth materials will shrink as they dry, followed by swelling during the rainy winter season, or when irrigation is resumed. This will cause distress to site improvements and structures.

Preliminary Post Tensioned Foundation Slab Design

PARAMETER	VALUE	
Expansion Index	Very Low[1]	Low[1]
Percent Finer than 0.002 mm in the Fraction Passing the No. 200 Sieve	< 20 percent (assumed)	< 20 percent (assumed)
Type of Clay Mineral	Montmorillonite (assumed)	Montmorillonite (assumed)
Thornthwaite Moisture Index	+20	+20
Depth to Constant Soil Suction	7 feet	7 feet
Constant Soil Suction	P.F. 3.6	P.F. 3.6
Moisture Velocity	0.7 inches/month	0.7 inches/month
Center Lift — Edge moisture variation distance, e_m Center lift, y_m	5.5 feet 1.5 inches	5.5 feet 2.0 inches
Edge Lift — Edge moisture variation distance, e_m Edge lift, y_m	2.5 feet 0.4 inches	3.0 feet 0.8 inches
Soluble Sulfate Content for Design of Concrete Mixtures in Contact with Earth Materials	Negligible	Negligible
Modulus of Subgrade Reaction, k (assuming presaturation as indicated below)	200 pci	200 pci
Minimum Perimeter Foundation Embedment	12	18
Under Slab Moisture/Vapor Barrier and Sand Layer	10-mil thick moisture/vapor barrier meeting the requirements of a ASTM E 1745 Class A material	

1. Obtained by laboratory testing.
2. Recommendations for foundation reinforcement are ultimately the purview of the foundation/structural engineer based upon the geotechnical criteria presented in this report, and structural engineering considerations.

Corrosivity

Corrosion is defined by the National Association of Corrosion Engineers (NACE) as "a deterioration of a substance or its properties because of a reaction with its environment." From a geotechnical viewpoint, the "substances" are the reinforced concrete foundations or buried metallic elements (not surrounded by concrete) and the "environment" is the prevailing earth materials in contact with them. Many factors can contribute to corrosivity, including the presence of chlorides, sulfates, salts, organic materials, different oxygen levels, poor drainage, different soil types, and moisture content. It is not considered practical or realistic to test for all of the factors which may contribute to corrosivity.

The potential for concrete exposure to chlorides is based upon the recognized Caltrans reference standard "Bridge Design Specifications", under Subsection 8.22.1 of that document, Caltrans has determined that "Corrosive water or soil contains more than 500 parts per million (ppm) of chlorides". Based on limited preliminary laboratory testing, the onsite earth materials have chloride contents *less* than 500 ppm. As such, specific requirements resulting from elevated chloride contents are not required.

Specific guidelines for concrete mix design are provided in 2013 CBC Section 1904.1 and ACI 318, Section 4.3 Table 4.3.1 when the soluble sulfate content of earth materials exceeds 0.1 percent by weight. Based

on limited preliminary laboratory testing, the onsite earth materials are classified in accordance with Table 4.3.1 as having a *negligible* sulfate exposure condition. Therefore, structural concrete in contact with onsite earth materials should utilize Type I or II.

Based on our laboratory testing of resistivity, the onsite earth materials in contact with buried steel should be considered *corrosive to very corrosive*. Additionally, pH values below 9.7 are recognized as being corrosive to most common metallic components including, copper, steel, iron, and aluminum. The pH values for the earth materials tested were *lower* than 9.7. Therefore, any steel or metallic materials that are exposed to the earth materials should be encased in concrete or other measures should be taken to provide corrosion protection.

If building slabs are to be post tensioned, the post tensioning cables should be encased in concrete and/or encapsulated in accordance with the Post Tensioning Institute Guide Specifications. Post tensioning cable end plate anchors and nuts also need to be protected if exposed. If the anchor plates and nuts are in a recess in the edge of the concrete slab, the recess should be filled in with a non-shrink, non-porous, moisture-insensitive epoxy grout so that the anchorage assembly and the end of the cable are completely encased and isolated from the soil. A standard non-shrink, non-metallic cementitious grout may be used only when the post tension anchoring assembly is polyethylene encapsulated similar to that offered by Hayes Industries, LTD or O'Strand, Inc.

The preliminary test results for corrosivity are based on limited samples, and the initiation of grading may blend various earth materials together. This blending or imported material could alter and increase the detrimental properties of the onsite earth materials. Accordingly, additional testing for chlorides and sulfates along with testing for pH and resistivity should be performed upon completion of grading. Laboratory test results are presented in Appendix C.

RETAINING WALLS

Active and At-Rest Earth Pressures

Foundations may be designed in accordance with the recommendations provided in the Tentative Foundation Design Recommendation section of this report. The following table provides the minimum recommended equivalent fluid pressures for design of retaining walls a maximum of 8 feet high. The active earth pressure should be used for design of unrestrained retaining walls, which are free to tilt slightly. The at-rest earth pressure should be used for design of retaining walls that are restrained at the top, such as basement walls, curved walls with no joints, or walls restrained at corners. For curved walls, active pressure may be used if tilting is acceptable and construction joints are provided at each angle point and at a minimum of 15 foot intervals along the curved segments.

MINIMUM STATIC EQUIVALENT FLUID PRESSURES (pcf)		
PRESSURE TYPE	BACKSLOPE CONDITION	
	LEVEL	2:1 (h:v)
Active Earth Pressure	40	63
At-Rest Earth Pressure	60	95

The retaining wall parameters provided do not account for hydrostatic pressure behind the retaining walls. Therefore, the subdrain system is a very important part of the design. All retaining walls should be designed to resist surcharge loads imposed by other nearby walls, structures, or vehicles should be added to the above earth pressures, if the additional loads are being applied within a 1.5:1 (h:v) plane projected up from the heel of the retaining wall footing. As a way of minimizing surcharge loads and the settlement potential of nearby buildings, the footings for the building can be deepened below the 1.5:1 (h:v)plane projected up from the heel of the retaining wall footing.

Upon request and under a separate scope of work, more detailed analyses can be performed to address equivalent fluid pressures with regard to stepped retaining walls, actual retaining wall heights, actual backfill inclinations, specific backfill materials, higher retaining walls requiring earthquake design motions, etc.

Subdrain System

We recommend a perforated pipe and gravel subdrain system be provided behind all proposed retaining walls to prevent the buildup of hydrostatic pressure behind the proposed retaining walls. The perforated pipe should consist of 4 inch minimum diameter Schedule 40 PVC or ABS SDR-35, placed with the perforations facing down. The pipe should be surrounded by 1 cubic foot per foot of ¾- or 1½ inch open graded gravel wrapped in filter fabric. The filter fabric should consist of Mirafi 140N or equivalent to prevent infiltration of fines and subsequent clogging of the subdrain system.

In lieu of a perforated pipe and gravel subdrain system, weep holes or open vertical masonry joints may be provided in the lowest row of block exposed to the air to prevent the buildup of hydrostatic pressure behind the proposed retaining walls. Weep holes should be a minimum of 3 inches in diameter and provided at intervals of at least every 6 feet along the wall. Open vertical masonry joints should be provided at a minimum of 32 inch intervals. A continuous gravel fill, a minimum of 1 cubic foot per foot, should be placed behind the weep holes or open masonry joints. The gravel should be wrapped in filter fabric consisting of Mirafi 140N or equivalent.

The retaining walls should be adequately coated on the backfilled side of the walls with a proven waterproofing compound by an experienced professional to inhibit infiltration of moisture through the walls.

Temporary Excavations

All excavations should be made in accordance with Cal-OSHA requirements. Earth-Strata is not responsible for job site safety.

Retaining Wall Backfill

Retaining wall backfill materials should be approved by the geotechnical engineer or his representative prior to placement as compacted fill. Retaining wall backfill should be placed in lifts no greater than 6 to 8 inches, watered or air dried as necessary to achieve near optimum moisture contents. All retaining wall

backfill should be compacted to a minimum of 90 percent of the maximum dry density as determined by ASTM D 1557. Retaining wall backfill should be capped with a paved surface drain.

CONCRETE FLATWORK

Thickness and Joint Spacing

Concrete sidewalks and patio type slabs should be at least 3½ inches thick and provided with construction or expansion joints every 6 feet or less, to reduce the potential for excessive cracking. Concrete driveway slabs should be at least 4 inches thick and provided with construction or expansion joints every 10 feet or less.

Subgrade Preparation

In order to reduce the potential for unsightly cracking, subgrade earth materials underlying concrete flatwork should be compacted at near optimum moisture to a minimum of 90 percent of the maximum dry density determined by ASTM test method D 1557-00 and then moistened to at least optimum or slightly above optimum moisture content. This moisture should extend to a depth of at least 12 inches below subgrade and be maintained prior to placement of concrete. Pre-watering of the earth materials prior to placing concrete will promote uniform curing of the concrete and minimize the development of shrinkage cracks. The project geotechnical engineer or his representative should verify the density and moisture content of the earth materials and the depth of moisture penetration prior to placing concrete.

Cracking within concrete flatwork is often a result of factors such as the use of too high a water to cement ratio and/or inadequate steps taken to prevent moisture loss during the curing of the concrete. Concrete distress can be reduced by proper concrete mix design and proper placement and curing of the concrete. Minor cracking within concrete flatwork is normal and should be expected.

The subgrade earth materials immediately below the aggregate base (base) should be compacted to a minimum of 95 percent of the maximum dry density determined by ASTM D 1557 to a minimum depth of 12 inches. Base materials should be compacted to a minimum of 95 percent of the maximum dry density determined by ASTM D 1557.

Base materials should consist of Class 2 aggregate base conforming to Section 26-1.02B of the State of California Standard Specifications or crushed aggregate base conforming to Section 200-2 of the Standard Specifications for Public Works Construction (Greenbook). Base materials should be compacted at or slightly below optimum moisture content. Asphaltic concrete materials and construction operations should conform to Section 203 of the Greenbook.

GRADING PLAN REVIEW AND CONSTRUCTION SERVICES

This report has been prepared for the exclusive use of **Diversified Pacific** and their authorized representative. It likely does not contain sufficient information for other parties or other uses. Earth-Strata should be engaged to review the final design plans and specifications prior to construction. This is to verify that the recommendations contained in this report have been properly incorporated into the

project plans and specifications. Should Earth-Strata not be accorded the opportunity to review the project plans and specifications, we are not responsibility for misinterpretation of our recommendations.

We recommend that Earth-Strata be retained to provide geologic and geotechnical engineering services during grading and foundation excavation phases of the work. In order to allow for design changes in the event that the subsurface conditions differ from those anticipated prior to construction.

Earth-Strata should review any changes in the project and modify and approve in writing the conclusions and recommendations of this report. This report and the drawings contained within are intended for design input purposes only and are not intended to act as construction drawings or specifications. In the event that conditions encountered during grading or construction operations appear to be different than those indicated in this report, this office should be notified immediately, as revisions may be required.

REPORT LIMITATIONS

Our services were performed using the degree of care and skill ordinarily exercised, under similar circumstances, by reputable soils engineers and geologists, practicing at the time and location this report was prepared. No other warranty, expressed or implied, is made as to the conclusions and professional advice included in this report.

Earth materials vary in type, strength, and other geotechnical properties between points of observation and exploration. Groundwater and moisture conditions can also vary due to natural processes or the works of man on this or adjacent properties. As a result, we do not and cannot have complete knowledge of the subsurface conditions beneath the subject property. No practical study can completely eliminate uncertainty with regard to the anticipated geotechnical conditions in connection with a subject property. The conclusions and recommendations within this report are based upon the findings at the points of observation and are subject to confirmation by Earth-Strata based on the conditions revealed during grading and construction.

This report was prepared with the understanding that it is the responsibility of the owner or their representative, to ensure that the conclusions and recommendations contained herein are brought to the attention of the other project consultants and are incorporated into the plans and specifications. The owners' contractor should properly implement the conclusions and recommendations during grading and construction, and notify the owner if they consider any of the recommendations presented herein to be unsafe or unsuitable.

APPENDIX A

REFERENCES

APPENDIX A

References

California Building Standards Commission, 2010, *2010 California Building Code, California Code of Regulations Title 24, Part 2, Volume 2 of 2,* Based on 2009 International Building Code.

DeLorme, 2004, (www.delorme.com) *Topo USA*®.

Geo-Slope International, Ltd, 2007, *GeoStudio 2007; Slope/W 2007*, *Stability Modeling; An Engineering Methodology*.

Hart, Earl W. and Bryant, William A., *1997, Fault Rupture Hazard Zones in California, CDMG Special Publication 42,* revised 2003.

Irvine Geotechnical, 2001, Mult Calc 2000, October 10.

Ishihara, K., 1995, *Effects of At-Depth Liquefaction on Embedded Foundations during Earthquakes*, Proc. 10th Asian Regional Conference on Soil Mechanics and Foundation Engineering, August 29-September 2, Beijing, China.

Jenkins, Olaf P., 1978, *Geologic Map of California, Santa Ana Sheet*; CDMG, Scale 1:250,000.

Kennedy, M.P., 2000, Nelson, B., and R. Hauser, *Geologic Map of the Pechanga 7.5 Minute Quadrangle, Riverside and San Diego Counties, California, Version 1.0*: U.S. Geological Survey, CDMG.

Kennedy, M.P., 1977, *Regency and Character of Faulting Along the Elsinore Fault Zone in Southern Riverside County, California*, California Division of Mines and Geology Special Report 131.

Kennedy, M.P., et all, 2005, *Geologic Map of the Oceanside 30' x 60' Quadrangle, California,* U.S. Geological Survey, Department of Earth Sciences, University of California, Riverside.

Kennedy, M.P., S.S. Tan, 2005, *Geologic Map of the San Diego 30' x 60' Quadrangle, California,* U.S. Geological Survey, Department of Earth Sciences, University of California, Riverside.

Morton, D.M., Hauser, Rachel M., and Ruppert, Kelly R., 2004, *Preliminary Digital Geologic Map of the Santa Ana 30' x 60' Quadrangle, Southern California, Version 2.0*: U.S. Geological Survey Open-File Report 99-0172.

Morton, D.M., Hauser, Rachel M., and Ruppert, Kelly R., 2004, *Preliminary Digital Geologic Map of the Murrieta 7.5 Minute Quadrangle, Southern California, Version 1.0*: U.S. Geological Survey Open-File Report 99-0172.

Morton, D.M. (compiler), and Fred K. Miller (compiler), 2003, *Preliminary Geologic Map of the San Bernardino 30' x 60' Quadrangle, California*: U.S. Geological Survey Open-File report 03-293, U.S. Geological Survey, Menlo Park, California.

Morton, D.M. (compiler), and Fred K. Miller (compiler), 2006, *Geologic Map of the San Bernardino and Santa Ana 30' x 60' Quadrangles, California*: U.S. Geological Survey, Version 1, California.

National Association of Corrosion Engineers, 1984, *Corrosion Basics An Introduction*, page 191.

Southern California Earthquake Center (SCEC), 1999, *Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigating Liquefaction Hazards in California,* March.

APPENDIX B

EXPLORATORY LOGS

Geotechnical Boring Log B-1

Date: March 25, 2015	**Project Name: P& F Prpoerty** **Page: 1 of 1**
Project Number: 15735-10A	**Logged By: GWG**
Drilling Company: Drilling It	**Type of Rig: CME 45B**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft):	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Number	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						**Topsoil:**
					SM	Silty SAND; light orange brown, dry to slightly moist, medium dense
	70	1	105.1	10.3		**Cretaceous Val Verde Tonalite (Kvt)**
					SC	Clayey Sandstone; light tan brown, moist, hard to very hard
5	50/4"	2	81.4	19.6	SC	Clayey SAND; light grey, moist, grainitic bedrock
						Dark grey, moist, coarse, very hard
10						End of Boring at 10 feet
						No Groundwater
15						
20						
25						
30						

Geotechnical Boring Log B-2

Date: March 25, 2015	**Project Name: P& F Prpoerty** **Page: 1 of 1**
Project Number: 15735-10A	**Logged By: GWG**
Drilling Company: Drilling It	**Type of Rig: CME 45B**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft):	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Number	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						**Topsoil:**
					SC	Clayey SAND; reddish brown, dry
						Cretaceous Val Verde Tonalite (Kvt)
	68	1	118.6	8.9	SC	Clayey Sandstone; light tan brown, moist, hard to very hard
5	50/8"	2	91.6	4.6		
10						End of Boring at 10 feet
						No Groundwater
15						
20						
25						
30						

Geotechnical Boring Log B-3

Date: March 31, 2015	**Project Name: P& F Prpoerty** **Page: 1 of 1**
Project Number: 15735-10A	**Logged By: GWG**
Drilling Company: Drilling It	**Type of Rig: CME 45B**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft):	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Number	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						**Topsoil:**
					ML	Sandy SILT; light brown, dense
						Cretaceous Val Verde Tonalite (Kvt)
5					SC	Clayey Sandstone; light tan brown, moist, hard to very hard
						End of Boring at 5.5 feet
						No Groundwater
10						
15						
20						
25						
30						

42217 Rio Nedo Road, Suite A-104, Temecula, CA 92590

Earth - Strata, Inc.
Geotechnical, Environmental and Materials Testing Consultants
BETTER PEOPLE • BETTER SERVICE • BETTER RESULTS

Geotechnical Boring Log B-4

Date: March 31, 2015	**Project Name: P& F Prpoerty** **Page: 1 of 1**
Project Number: 15735-10A	**Logged By: GWG**
Drilling Company: Drilling It	**Type of Rig: CME 45B**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft):	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Number	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						**Topsoil:**
						Sandy SILT; light brown, dense
	88/10"	1				**Cretaceous Val Verde Tonalite (Kvt)**
					SC	Clayey Sandstone; light tan brown, moist, hard to very hard
5						
10						End of Boring at 10 feet
						No Groundwater
15						
20						
25						
30						

Geotechnical Boring Log B-5

Date: March 31, 2015	**Project Name: P& F Prpoerty** **Page: 1 of 1**
Project Number: 15735-10A	**Logged By: GWG**
Drilling Company: Drilling It	**Type of Rig: CME 45B**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft):	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Number	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						**Topsoil:**
						Sandy SILT; light brown, dense
						Cretaceous Val Verde Tonalite (Kvt)
	96/8"	1			SC	Clayey Sandstone; light tan brown, moist, hard to very hard
5						
						End of Boring at 7.5
						No Groundwater
10						
15						
20						
25						
30						

42217 Rio Nedo Road, Suite A-104, Temecula, CA 92590

Earth - Strata, Inc.
Geotechnical, Environmental and Materials Testing Consultants
BETTER PEOPLE • BETTER SERVICE • BETTER RESULTS

Geotechnical Boring Log B-6

Date: March 31, 2015	**Project Name: P& F Prpoerty** **Page: 1 of 1**
Project Number: 15735-10A	**Logged By: GWG**
Drilling Company: Drilling It	**Type of Rig: CME 45B**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft):	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Number	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						**Topsoil:**
					ML	Sandy SILT; light brown, dense
						Cretaceous Val Verde Tonalite (Kvt)
	110/3"	1			SC	Clayey Sandstone; light tan brown, moist, hard to very hard
5						
	50/1"	2				
						End of Boring at 6 feet
						No Groundwater
10						
15						
20						
25						
30						

Geotechnical Boring Log B-7

Date: March 31, 2015	**Project Name: P& F Prpoerty** **Page: 1 of 1**
Project Number: 15735-10A	**Logged By: GWG**
Drilling Company: Drilling It	**Type of Rig: CME 45B**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft):	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Number	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						**Topsoil:**
						Sandy SILT; light brown, dense
						Cretaceous Val Verde Tonalite (Kvt)
	50/4"	1			SM	Silty SAND (weathered bedrock);
5						
10						End of Boring at 10 feet
						No Groundwater
15						
20						
25						
30						

Geotechnical Boring Log B-8

Date: March 31, 2015	**Project Name: P& F Prpoerty** **Page: 1 of 1**
Project Number: 15735-10A	**Logged By: DV**
Drilling Company: Drilling It	**Type of Rig: CME 45B**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft):	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Number	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						**Topsoil:**
						Sandy SILT; reddish brown, dense
						Cretaceous Val Verde Tonalite (Kvt)
	50/2"	1			SC	Clayey Sandstone; light tan brown, moist, hard to very hard
5						
						End of Boring at 6 feet
						No Groundwater
10						
15						
20						
25						
30						

42217 Rio Nedo Road, Suite A-104, Temecula, CA 92590

Earth - Strata, Inc.
Geotechnical, Environmental and Materials Testing Consultants
BETTER PEOPLE • BETTER SERVICE • BETTER RESULTS

Geotechnical Boring Log TP-1

Date: March 27, 2015	**Project Name: P & F Properties** **Page: 1 of 1**
Project Number: 15735-10A	**Logged By: SMP**
Drilling Company: Drilling It	**Type of Rig: Mini Excavator**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft):	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Number	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						**Topsoil:**
					SM	Silty SAND; reddish brown, slightly moist, with weathered rock
						Tonalite (Kvt):
5					SP	Sand with SILT and weathered rock, gravel size; grey and light brown
						End of Boring at 6 feet
						No Groundwater
						`
10						
15						
20						
25						
30						

42217 Rio Nedo Road, Suite A-104, Temecula, CA 92590

Earth - Strata, Inc.
Geotechnical, Environmental and Materials Testing Consultants
BETTER PEOPLE • BETTER SERVICE • BETTER RESULTS

Geotechnical Boring Log TP-2

Date: March 28, 2015	**Project Name: P & F Properties** **Page: 1 of 1**
Project Number: 15735-10A	**Logged By: SMP**
Drilling Company: Drilling It	**Type of Rig: Mini Excavator**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft):	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Number	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						**Topsoil:**
					SM	Silty SAND; reddish brown, dry, medium dense
						Tonalite (Kvt):
					SP	SAND with fine GRAVEL (weathered rock); light grey
5						End of Boring at 4.9 feet
						No Groundwater
10						
15						
20						
25						
30						

42217 Rio Nedo Road, Suite A-104, Temecula, CA 92590

Earth - Strata, Inc.
Geotechnical, Environmental and Materials Testing Consultants
BETTER PEOPLE • BETTER SERVICE • BETTER RESULTS

Geotechnical Boring Log TP-3

Date: March 28, 2015	**Project Name: P & F Properties** **Page: 1 of 1**
Project Number: 15735-10A	**Logged By: SMP**
Drilling Company: Drilling It	**Type of Rig: Mini Excavator**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft):	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Number	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						**Topsoil**
					SM	Silty SAND; reddish brown, dry, medium dense
						Tonalite (Kvt):
					SP	Sand with fine GRAVEL; light grey, dry, weatherd bedrock
						End of Boring at 4 feet
5						No Groundwater
10						
15						
20						
25						
30						

42217 Rio Nedo Road, Suite A-104, Temecula, CA 92590

Earth - Strata, Inc.
Geotechnical, Environmental and Materials Testing Consultants
BETTER PEOPLE • BETTER SERVICE • BETTER RESULTS

Geotechnical Boring Log TP-4

Date: March 28, 2015	**Project Name: P & F Properties** **Page: 1 of 1**
Project Number: 15735-10A	**Logged By: SMP**
Drilling Company: Drilling It	**Type of Rig: Mini Excavator**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft):	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Number	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						**Topsoil:**
					SM	Silty SAND; reddish brown, dry, medium dense
5						**Tonalite (Kvt):**
					SP	SAND with SILT; reddish brown, dry, medium dense
						End of Boring at 6 feet
						No Groundwater
10						
15						
20						
25						
30						

42217 Rio Nedo Road, Suite A-104, Temecula, CA 92590

Earth - Strata, Inc.
Geotechnical, Environmental and Materials Testing Consultants
BETTER PEOPLE • BETTER SERVICE • BETTER RESULTS

Geotechnical Boring Log TP-5

Date: March 27, 2015	**Project Name: P & F Properties** **Page: 1 of 1**
Project Number: 15735-10A	**Logged By: SMP**
Drilling Company: Drilling It	**Type of Rig: Mini Excavator**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft):	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Number	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						**Topsoil:**
					SM	Silty SAND; reddish brown, dry, loose to medium dense
						Tonalite (Kvt):
					SP	SAND (weathered bedrock); light grey with black spots, very dense
5						End of Boring at 4.7 feet
						No Groundwater
10						
15						
20						
25						
30						

42217 Rio Nedo Road, Suite A-104, Temecula, CA 92590

Earth - Strata, Inc.
Geotechnical, Environmental and Materials Testing Consultants
BETTER PEOPLE • BETTER SERVICE • BETTER RESULTS

Geotechnical Boring Log TP-6

Date: March 27, 2015	**Project Name: P & F Properties** **Page: 1 of 1**
Project Number: 15735-10A	**Logged By: SMP**
Drilling Company: Drilling It	**Type of Rig: Mini Excavator**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft):	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Number	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						**Topsoil:**
					SM	Silty SAND; reddish brown, dry, loose
						Tonalite (Kvt):
					SP	SAND (weathered bedrock); light grey, dry, very dense
5						End of Boring 5 feet
						No Groundwater
10						
15						
20						
25						
30						

42217 Rio Nedo Road, Suite A-104, Temecula, CA 92590

Earth - Strata, Inc.
Geotechnical, Environmental and Materials Testing Consultants
BETTER PEOPLE • BETTER SERVICE • BETTER RESULTS

Geotechnical Boring Log TP-7

Date: March 27, 2015	**Project Name: P & F Properties** **Page: 1 of 1**
Project Number: 15735-10A	**Logged By: SMP**
Drilling Company: Drilling It	**Type of Rig: Mini Excavator**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft):	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Number	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						**Topsoil:**
					SM	Silty SAND; brown, dry, medium dense
						Tonalite (Kvt):
					SP	SAND (weathered bedrock) with gravel; light grey, very dense
						End of Boring at 2.5 feet
5						No Groundwater
10						
15						
20						
25						
30						

42217 Rio Nedo Road, Suite A-104, Temecula, CA 92590

Earth - Strata, Inc.
Geotechnical, Environmental and Materials Testing Consultants
BETTER PEOPLE • BETTER SERVICE • BETTER RESULTS

Geotechnical Boring Log TP-8

Date: April 7, 2015	**Project Name: P & F Properties** **Page: 1 of 1**
Project Number: 15735-10A	**Logged By: SMP**
Drilling Company: Drilling It	**Type of Rig: Backhoe**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft):	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Number	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						**Topsoil:**
					SM	Silty SAND; Reddish brown, dry, loose
5						**Tonalite (Kvt):**
					SP	SAND (weathered bedrock); light grey, dry, very dense
						End of Boring at 5.1 feet
						No Groundwater
10						
15						
20						
25						
30						

42217 Rio Nedo Road, Suite A-104, Temecula, CA 92590

Earth - Strata, Inc.
Geotechnical, Environmental and Materials Testing Consultants
BETTER PEOPLE • BETTER SERVICE • BETTER RESULTS

Geotechnical Boring Log TP-9

Date: April 7, 2015	**Project Name: P & F Properties** **Page: 1 of 1**
Project Number: 15735-10A	**Logged By: SMP**
Drilling Company: Drilling It	**Type of Rig: Backhoe**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft):	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Number	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						**Topsoil:**
					SM	Silty SAND; reddish brown, dry, loose
5						**Tonalite (Kvt):**
					SP	SAND (weathered bedrock); light grey, hard, dry, very dense
						End of Boring at 6 feet
						No Groundwater
10						
15						
20						
25						
30						

42217 Rio Nedo Road, Suite A-104, Temecula, CA 92590

Earth - Strata, Inc.
Geotechnical, Environmental and Materials Testing Consultants
BETTER PEOPLE • BETTER SERVICE • BETTER RESULTS

Geotechnical Boring Log TP-10

Date: April 7, 2015	**Project Name: P & F Properties** **Page: 1 of 1**
Project Number: 15735-10A	**Logged By: SMP**
Drilling Company: Drilling It	**Type of Rig: Backhoe**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft):	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Number	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						**Topsoil:**
					SM	Silty SAND; reddish brown, dry, loose
						Tonalite (Kvt):
5					SP	SAND (wethered bedrock); light grey, hard, dry, very dense
						End of Boring at 5 feet
						No Groundwater
10						
15						
20						
25						
30						

Geotechnical Boring Log TP-11

Date: April 7, 2015	**Project Name: P & F Properties** **Page: 1 of 1**
Project Number: 15735-10A	**Logged By: SMP**
Drilling Company: Drilling It	**Type of Rig: Backhoe**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft):	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Number	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						**Topsoil:**
					SM	Silty SAND; reddish brown, dry, loose
						Tonalite (Kvt):
					SP	SAND (wethered bedrock); light grey, hard, dry, very dense
						End of Boring at 2.1 feet
5						No Groundwater
10						
15						
20						
25						
30						

42217 Rio Nedo Road, Suite A-104, Temecula, CA 92590

Earth - Strata, Inc.
Geotechnical, Environmental and Materials Testing Consultants
BETTER PEOPLE • BETTER SERVICE • BETTER RESULTS

Geotechnical Boring Log TP-12

Date: April 7, 2015	**Project Name: P & F Properties** **Page: 1 of 1**
Project Number: 15735-10A	**Logged By: SMP**
Drilling Company: Drilling It	**Type of Rig: Backhoe**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft):	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Number	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						**Topsoil:**
					SM	Silty SAND; reddish brown, loose, moist
						Tonalite (Kvt):
5					SP	SAND (weathered bedrock); light grey, moist, very dense
						End of Boring at 5 feet
						No Groundwater
10						
15						
20						
25						
30						

Geotechnical Boring Log TP-13

Date: April 7, 2015	**Project Name: P & F Properties** **Page: 1 of 1**
Project Number: 15735-10A	**Logged By: SMP**
Drilling Company: Drilling It	**Type of Rig: Backhoe**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft):	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Number	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						**Topsoil:**
					SM	Silty SAND; reddish brown, dry, loose
						Tonalite (Kvt):
					SP	SAND (weathered bedrock); light grey, moist, very dense
						End of Boring at 3.8 feet
5						No Groundwater
10						
15						
20						
25						
30						

42217 Rio Nedo Road, Suite A-104, Temecula, CA 92590

Earth - Strata, Inc.
Geotechnical, Environmental and Materials Testing Consultants
BETTER PEOPLE • BETTER SERVICE • BETTER RESULTS

Geotechnical Boring Log TP-14A

Date: April 7, 2015	**Project Name: P & F Properties** **Page: 1 of 1**
Project Number: 15735-10A	**Logged By: SMP**
Drilling Company: Drilling It	**Type of Rig: Backhoe**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft):	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Number	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						**Topsoil:**
					SM	Silty SAND; brown, dry, hard, medium-dense
					SP	**Tonalite (Kvt):**
						SAND (weathered bedrock); brown, dry, very dense
5						End of Boring at 3 feet
						No Groundwater
10						
15						
20						
25						
30						

42217 Rio Nedo Road, Suite A-104, Temecula, CA 92590

Earth - Strata, Inc.
Geotechnical, Environmental and Materials Testing Consultants
BETTER PEOPLE • BETTER SERVICE • BETTER RESULTS

Geotechnical Boring Log TP-14

Date: April 7, 2015	**Project Name: P & F Properties** **Page: 1 of 1**
Project Number: 15735-10A	**Logged By: SMP**
Drilling Company: Drilling It	**Type of Rig: Backhoe**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft):	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Number	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						**Topsoil:**
					SM	Silty SAND; reddish brown, dry, loose
						Tonalite (Kvt):
5					SP	SAND (weathered bedrock); light grey, hard, dry, very dense
						End of Boring at 6 feet
						No Groundwater
10						
15						
20						
25						
30						

42217 Rio Nedo Road, Suite A-104, Temecula, CA 92590

Earth - Strata, Inc.
Geotechnical, Environmental and Materials Testing Consultants
BETTER PEOPLE • BETTER SERVICE • BETTER RESULTS

Geotechnical Boring Log TP-15

Date: April 7, 2015	**Project Name: P & F Properties** **Page: 1 of 1**
Project Number: 15735-10A	**Logged By: SMP**
Drilling Company: Drilling It	**Type of Rig: Backhoe**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft):	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Number	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						**Topsoil:**
					SM	Silty SAND; reddish brown, dry, loose
						Tonalite (Kvt):
					SP	SAND (weathered bedrock); light grey, hard, dry, very dense
5						End of Boring at 5 feet
						No Groundwater
10						
15						
20						
25						
30						

42217 Rio Nedo Road, Suite A-104, Temecula, CA 92590

Earth - Strata, Inc.
Geotechnical, Environmental and Materials Testing Consultants
BETTER PEOPLE • BETTER SERVICE • BETTER RESULTS

Geotechnical Boring Log TP-16

Date: April 7, 2015	**Project Name: P & F Properties** **Page: 1 of 1**
Project Number: 15735-10A	**Logged By: SMP**
Drilling Company: Drilling It	**Type of Rig: Backhoe**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft):	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Number	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						**Topsoil:**
					SM	Silty SAND; reddish brown, dry, loose
						Tonalite (Kvt):
5					SP	SAND (weathered bedrock); light grey, hard, dry, very dense
						End of Boring at 3.2 feet
						No Groundwater
10						
15						
20						
25						
30						

42217 Rio Nedo Road, Suite A-104, Temecula, CA 92590

Earth - Strata, Inc.
Geotechnical, Environmental and Materials Testing Consultants
BETTER PEOPLE • BETTER SERVICE • BETTER RESULTS

Geotechnical Boring Log TP-17

Date: April 7, 2015	**Project Name: P & F Properties** **Page: 1 of 1**
Project Number: 15735-10A	**Logged By: SMP**
Drilling Company: Drilling It	**Type of Rig: Backhoe**
Drive Weight (lbs): 140	**Drop (in): 30** **Hole Diameter (in): 8**
Top of Hole Elevation (ft):	**Hole Location: See Geotechnical Map**

Depth (ft)	Blow Count Per Foot	Sample Number	Dry Density (pcf)	Moisture (%)	Classification Symbol	MATERIAL DESCRIPTION
0						**Topsoil:**
					SM	Silty SAND; reddish brown, dry, loose
5						**Tonalite (Kvt):**
					SP	SAND (weathered bedrock); light grey, hard, dry, very dense
						End of Boring at 5.2 feet
						No Groundwater
10						
15						
20						
25						
30						

APPENDIX C

LABORATORY PROCEDURES AND TEST RESULTS

APPENDIX C

Laboratory Procedures and Test Results

Laboratory testing provided quantitative and qualitative data involving the relevant engineering properties of the representative earth materials selected for testing. The representative samples were tested in general accordance with American Society for Testing and Materials (ASTM) procedures and/or California Test Methods (CTM).

Soil Classification: Earth materials encountered during exploration were classified and logged in general accordance with the Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) of ASTM D 2488. Upon completion of laboratory testing, exploratory logs and sample descriptions were reconciled to reflect laboratory test results with regard to ASTM D 2487.

Moisture and Density Tests: For select samples moisture content was determined using the guidelines of ASTM D 2216 and dry density determinations were made using the guidelines of ASTM D 2937. These tests were performed on relatively undisturbed samples and the test results are presented on the exploratory logs.

Maximum Density Tests: The maximum dry density and optimum moisture content of representative samples were determined using the guidelines of ASTM D 1557. The test results are presented in the table below.

SAMPLE LOCATION	MATERIAL DESCRIPTION	MAXIMUM DRY DENSITY (pcf)	OPTIMUM MOISTURE CONTENT (%)
B-1 @ 0 to 2 feet	Olive Brown SAND with SILT	133.0	7.5
B-2 @ 0 to 2 feet	Dark Yellowish Brown Silty SAND with trace CLAY	127.0	8.0
TP-1 @ 0 to 3 feet	Dark Brown Silty SAND	125.0	11.5
TP-1 @ 4 to 5 feet	Olive Brown Silty SAND	108.5	10.0

Expansion Index: The expansion potential of representative samples was evaluated using the guidelines of ASTM D 4829. The test results are presented in the table below.

SAMPLE LOCATION	MATERIAL DESCRIPTION	EXPANSION INDEX	EXPANSION POTENTIAL
B-1 @ 0 to 2 feet	Olive Brown SAND with SILT	0	Very Low
B-2 @ 0to 2 feet	Dark Yellowish Brown Silty SAND with trace CLAY	7	Very Low
TP-1 @ 0 to 3 feet	Dark Brown Silty SAND	29	Low
TP-1 @ 4 to 5 feet	Olive Brown Silty SAND	7	Very Low

Minimum Resistivity and pH Tests: Minimum resistivity and pH Tests of select samples were performed using the guidelines of CTM 643. The test results are presented in the table below.

SAMPLE LOCATION	MATERIAL DESCRIPTION	pH	MINIMUM RESISTIVITY (ohm-cm)
B-1 @ 0 to 2 feet	Olive Brown SAND with SILT	7.3	1,000
B-2 @ 0 to 2 feet	Dark Yellowish Brown Silty SAND with trace CLAY	7.1	440
TP-1 @ 0 to 3 feet	Dark Brown Silty SAND	7.2	400
TP-1 @ 4 to 5 feet	Olive Brown Silty SAND	7.8	1,100

Soluble Sulfate: The soluble sulfate content of select samples was determined using the guidelines of CTM 417. The test results are presented in the table below.

SAMPLE LOCATION	MATERIAL DESCRIPTION	SULFATE CONTENT (% by weight)	SULFATE EXPOSURE
B-1 @ 0 to 2 feet	Olive Brown SAND with SILT	0.002	Negigible
B-2 @ 0 to 2 feet	Dark Yellowish Brown Silty SAND with trace CLAY	0.029	Negigible
TP-1 @ 0 to 3	Dark Brown Silty SAND	0.002	Negigible
TP-1 @ 4 to 5 feet	Olive Brown Silty SAND	0.002	Negigible

Chloride Content: Chloride content of select samples was determined using the guidelines of CTM 422. The test results are presented in the table below.

SAMPLE LOCATION	MATERIAL DESCRIPTION	CHLORIDE CONTENT (ppm)
B-1 @ 0 to 2 feet	Olive Brown SAND with SILT	50
B-2 @ 0 to 2 feet	Dark Yellowish Brown Silty SAND with trace CLAY	70
TP-1 @ 0 to 3 feet	Dark Brown Silty SAND	60
TP-1 @ 4 to 5 feet	Olive Brown Silty SAND	20

APPENDIX D

SEISMICITY

USGS Design Maps Detailed Report

2009 NEHRP Recommended Seismic Provisions (33.89018°N, 117.352°W)

Site Class D – "Stiff Soil", Risk Category I/II/III

Section 11.4.1 — Mapped Acceleration Parameters and Risk Coefficients

Note: Ground motion values contoured on Figures 22-1, 2, 5, & 6 below are for the direction of maximum horizontal spectral response acceleration. They have been converted from corresponding geometric mean ground motions computed by the USGS by applying factors of 1.1 (to obtain S_{SUH} and S_{SD}) and 1.3 (to obtain S_{1UH} and S_{1D}). Maps in the Proposed 2015 NEHRP Provisions are provided for Site Class B. Adjustments for other Site Classes are made, as needed, in Section 11.4.3.

Figure 22–1: Uniform–Hazard (2% in 50–Year) Ground Motions of 0.2-Second Spectral Response Acceleration (5% of Critical Damping), Site Class B

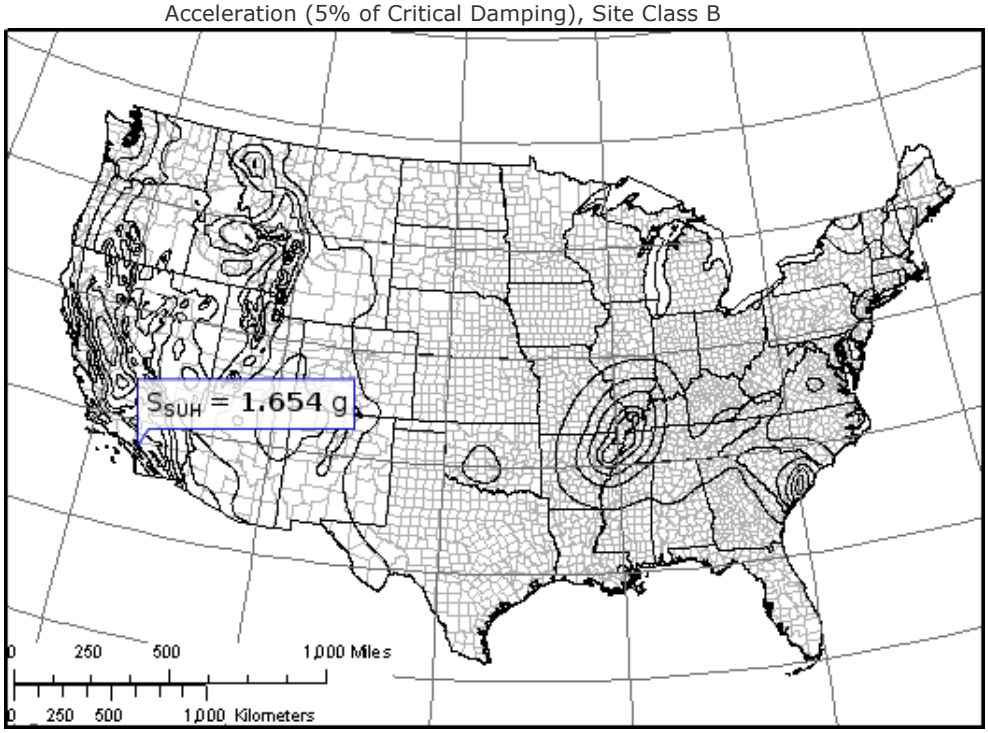
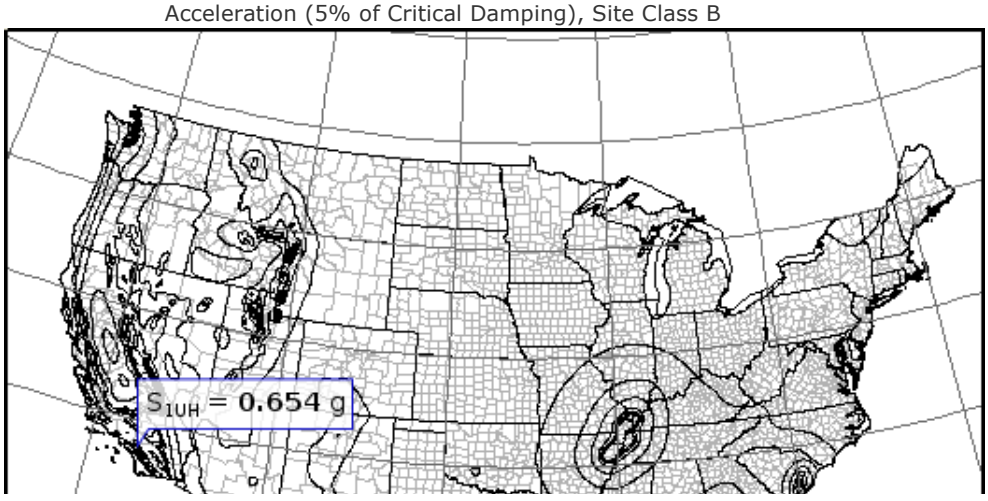


Figure 22–2: Uniform–Hazard (2% in 50–Year) Ground Motions of 1.0-Second Spectral Response Acceleration (5% of Critical Damping), Site Class B



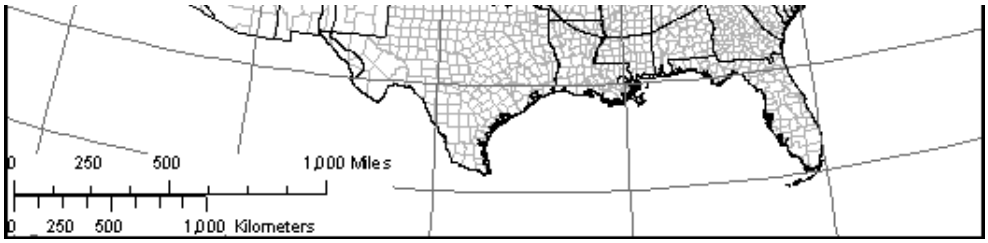

0 250 500 1,000 Miles
0 250 500 1,000 Kilometers

Figure 22–3: Risk Coefficient at 0.2-Second Spectral Response Period

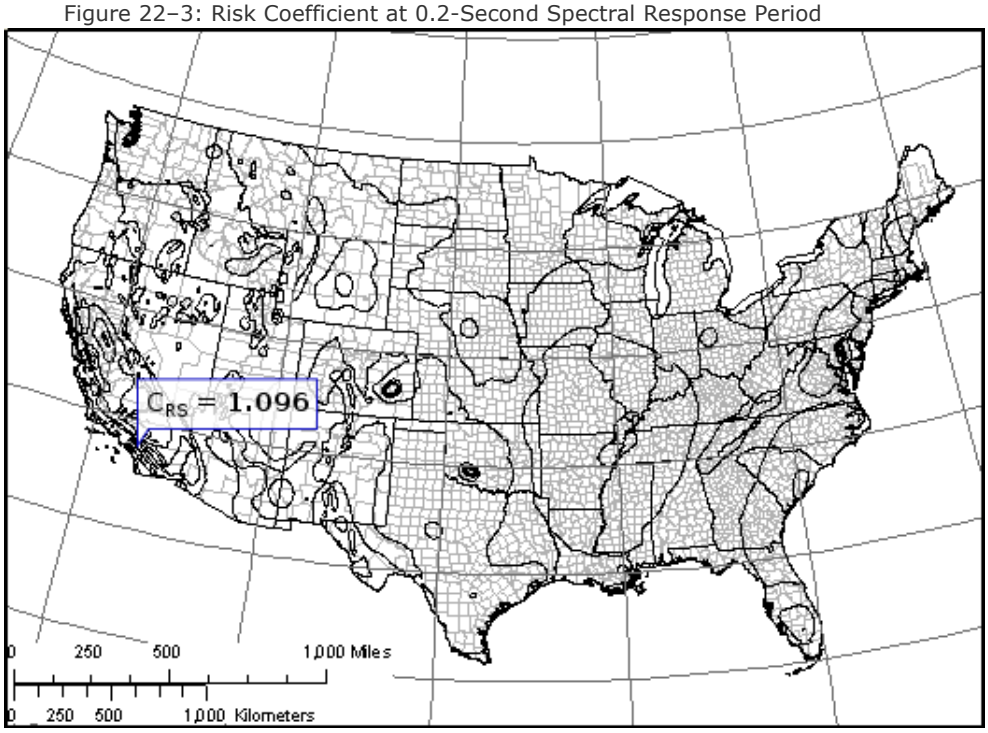


Figure 22–4: Risk Coefficient at 1.0-Second Spectral Response Period

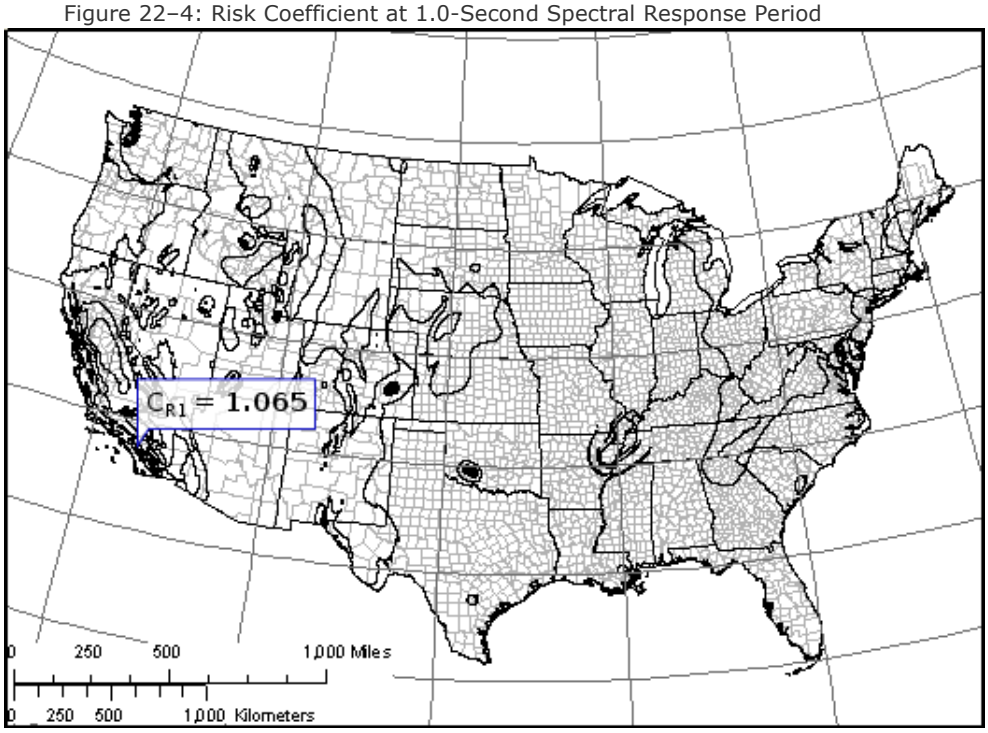


Figure 22–5: Deterministic Ground Motions of 0.2-Second Spectral Response Acceleration (5% of Critical Damping), Site Class B

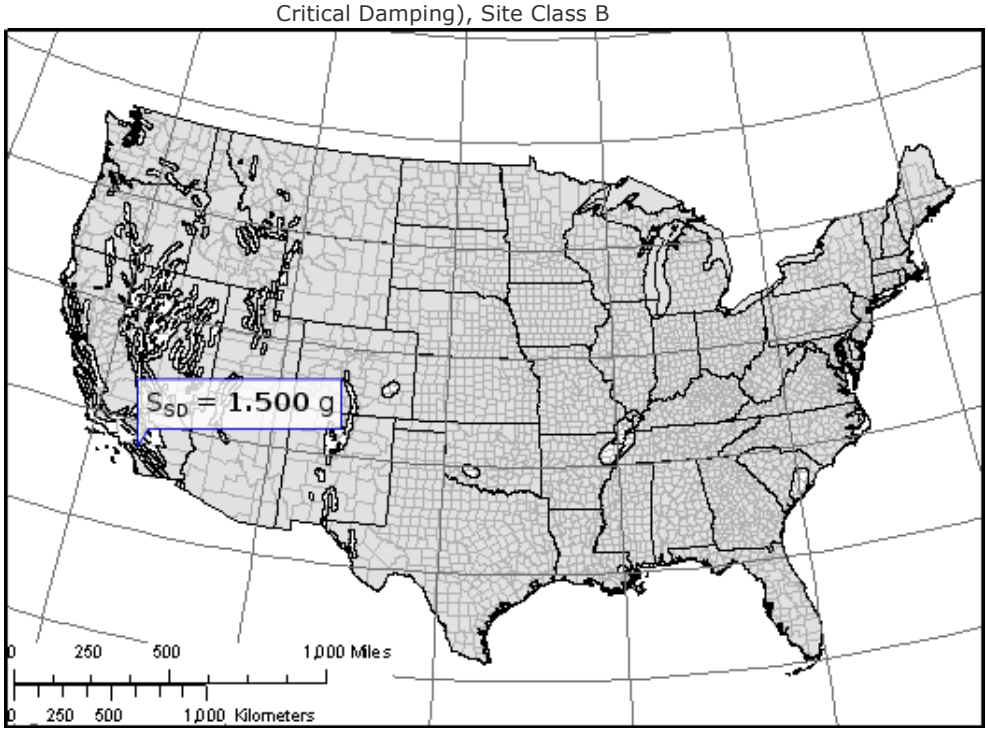
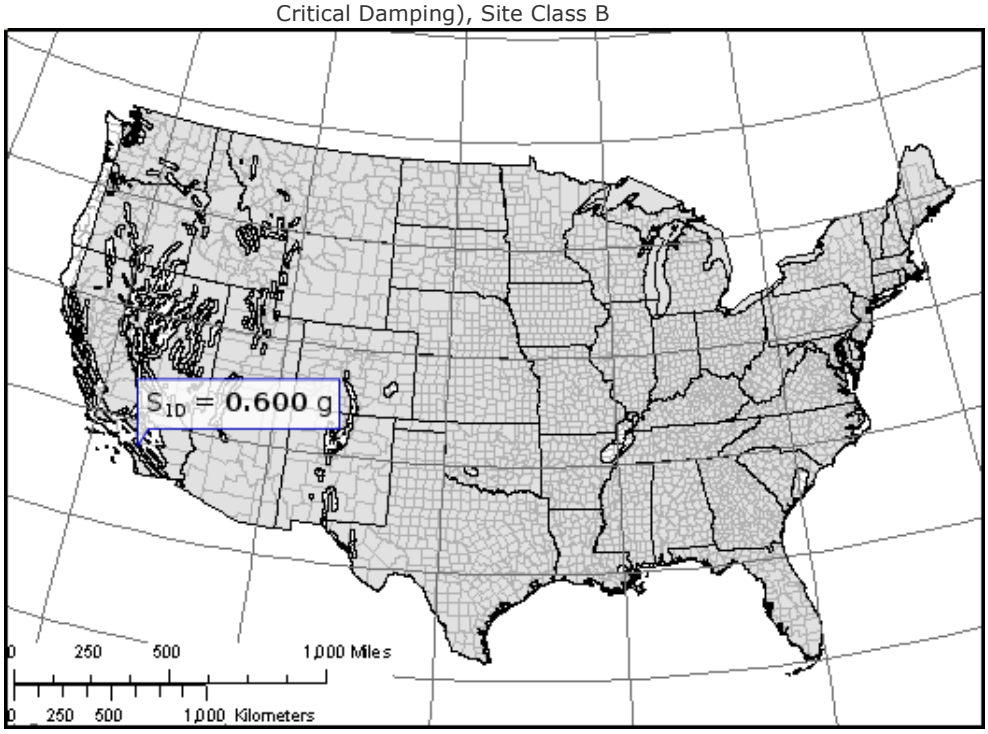


Figure 22–6: Deterministic Ground Motions of 1.0-Second Spectral Response Acceleration (5% of Critical Damping), Site Class B



Section 11.4.2 — Site Class

The authority having jurisdiction (not the USGS), site-specific geotechnical data, and/or the default has classified the site as Site Class D, based on the site soil properties in accordance with Chapter 20.

Table 20.3–1 Site Classification

Site Class	$\overline{v}_s$	$\overline{N}$ or $\overline{N}_{ch}$	$\overline{s}_u$
A. Hard Rock	>5,000 ft/s	N/A	N/A
B. Rock	2,500 to 5,000 ft/s	N/A	N/A
C. Very dense soil and soft rock	1,200 to 2,500 ft/s	>50	>2,000 psf
D. Stiff Soil	600 to 1,200 ft/s	15 to 50	1,000 to 2,000 psf
E. Soft clay soil	<600 ft/s	<15	<1,000 psf
	Any profile with more than 10 ft of soil having the characteristics: • Plasticity index PI > 20, • Moisture content w ≥ 40%, and • Undrained shear strength $\overline{s}_u$ < 500 psf		
F. Soils requiring site response analysis in accordance with Section 21.1	See Section 20.3.1		

For SI: 1ft/s = 0.3048 m/s 1lb/ft² = 0.0479 kN/m²

Section 11.4.3 — Site Coefficients, Risk Coefficients, and Risk–Targeted Maximum Considered Earthquake (MCE_R) Spectral Response Acceleration Parameters

Equation (11.4–1): $C_{RS}S_{SUH}$ = 1.096 x 1.654 = 1.814 g

Equation (11.4–2): S_{SD} = 1.500 g

S_S ≡ "Lesser of values from Equations (11.4–1) and (11.4–2)" = 1.500 g

Equation (11.4–3): $C_{R1}S_{1UH}$ = 1.065 x 0.654 = 0.697 g

Equation (11.4–4): S_{1D} = 0.600 g

S_1 ≡ "Lesser of values from Equations (11.4–3) and (11.4–4)" = 0.600 g

Table 11.4–1: Site Coefficient F_a

Site Class	Spectral Response Acceleration Parameter at Short Period				
	$S_S \leq 0.25$	$S_S = 0.50$	$S_S = 0.75$	$S_S = 1.00$	$S_S \geq 1.25$
A	0.8	0.8	0.8	0.8	0.8
B	1.0	1.0	1.0	1.0	1.0
C	1.2	1.2	1.1	1.0	1.0
D	1.6	1.4	1.2	1.1	1.0
E	2.5	1.7	1.2	0.9	0.9
F	See Section 11.4.7 of ASCE 7				

Note: Use straight–line interpolation for intermediate values of S_S

For Site Class = D and S_s = 1.500 g, F_a = 1.000

Table 11.4–2: Site Coefficient F_v

Site Class	Spectral Response Acceleration Parameter at 1–Second Period				
	$S_1 \leq 0.10$	$S_1 = 0.20$	$S_1 = 0.30$	$S_1 = 0.40$	$S_1 \geq 0.50$
A	0.8	0.8	0.8	0.8	0.8
B	1.0	1.0	1.0	1.0	1.0
C	1.7	1.6	1.5	1.4	1.3
D	2.4	2.0	1.8	1.6	1.5
E	3.5	3.2	2.8	2.4	2.4
F	See Section 11.4.7 of ASCE 7				

Note: Use straight–line interpolation for intermediate values of S_1

For Site Class = D and S_1 = 0.600 g, F_v = 1.500

Equation (11.4–5): $S_{MS} = F_a S_S = 1.000 \times 1.500 = 1.500$ g

Equation (11.4–6): $S_{M1} = F_v S_1 = 1.500 \times 0.600 = 0.900$ g

Section 11.4.4 — Design Spectral Acceleration Parameters

Equation (11.4–7): $S_{DS} = \frac{2}{3} S_{MS} = \frac{2}{3} \times 1.500 = 1.000$ g

Equation (11.4–8): $S_{D1} = \frac{2}{3} S_{M1} = \frac{2}{3} \times 0.900 = 0.600$ g

Section 11.4.5 — Design Response Spectrum

Figure 22–7: Long–period Transition Period, T_L (s)

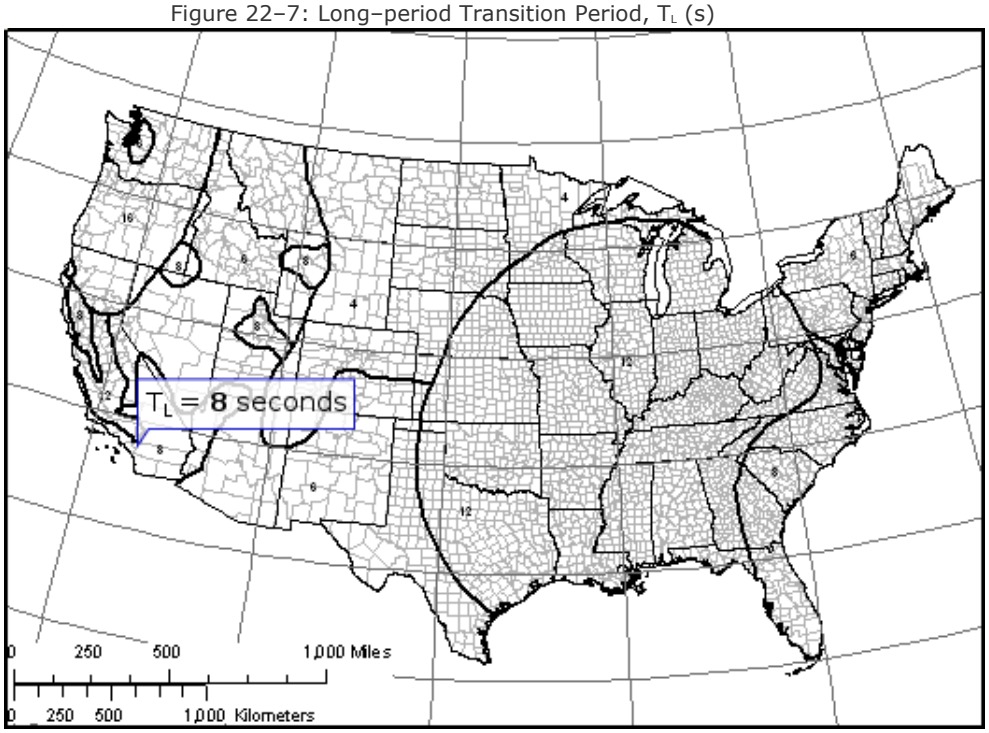
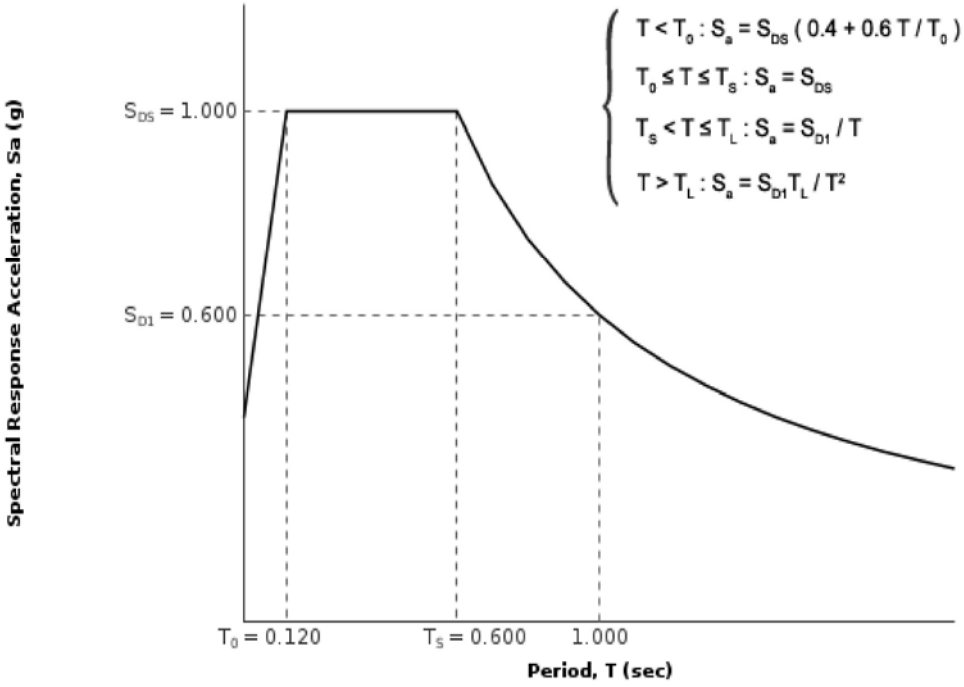
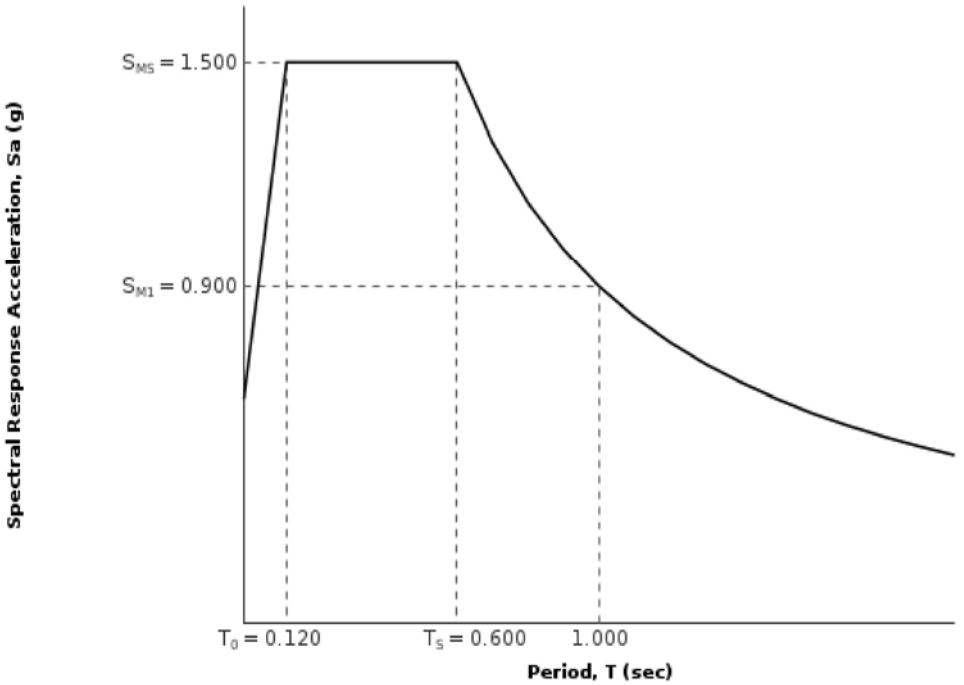


Figure 11.4–1: Design Response Spectrum



Section 11.4.6 — MCE_R Response Spectrum

The MCE_R response spectrum is determined by multiplying the design response spectrum above by 1.5.



Section 11.8.3 — Additional Geotechnical Investigation Report Requirements for Seismic Design Categories D through F

Table 11.8–1: Site Coefficient F_{PGA}

Site Class	Mapped MCE Geometric Mean Peak Ground Acceleration, PGA				
	PGA ≤ 0.10	PGA = 0.20	PGA = 0.30	PGA = 0.40	PGA ≥ 0.50
A	0.8	0.8	0.8	0.8	0.8
B	1.0	1.0	1.0	1.0	1.0
C	1.2	1.2	1.1	1.0	1.0
D	1.6	1.4	1.2	1.1	1.0
E	2.5	1.7	1.2	0.9	0.9
F	See Section 11.4.7 of ASCE 7				

Note: Use straight–line interpolation for intermediate values of PGA

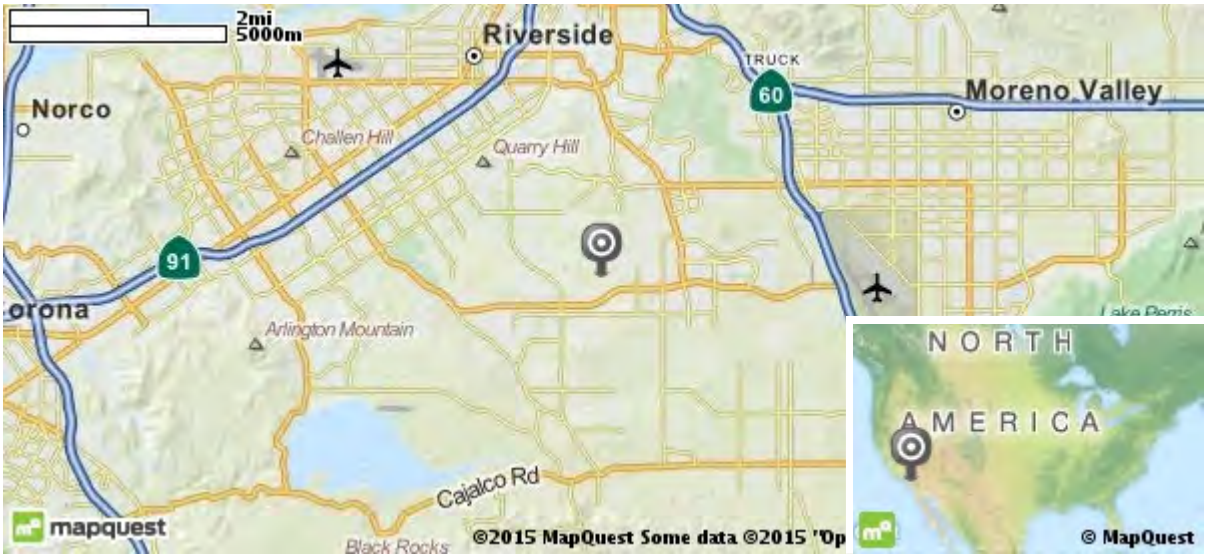
For Site Class = D and PGA = 0.600 g, F_{PGA} = 1.000

Mapped PGA	PGA = 0.600 g
Equation (11.8–1):	$PGA_M = F_{PGA}PGA = 1.000 \times 0.600 = 0.600$ g

USGS Design Maps Summary Report

User–Specified Input

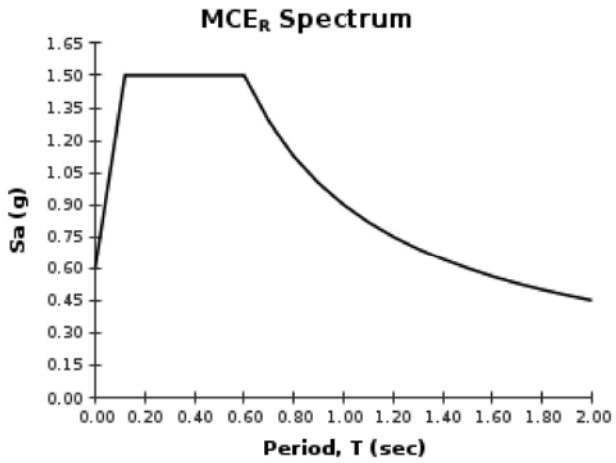
Report Title	P&F Tue April 14, 2015 20:59:20 UTC
Building Code Reference Document	2009 NEHRP Recommended Seismic Provisions (which utilizes USGS hazard data available in 2008)
Site Coordinates	33.89018°N, 117.352°W
Site Soil Classification	Site Class D – "Stiff Soil"
Risk Category	I/II/III

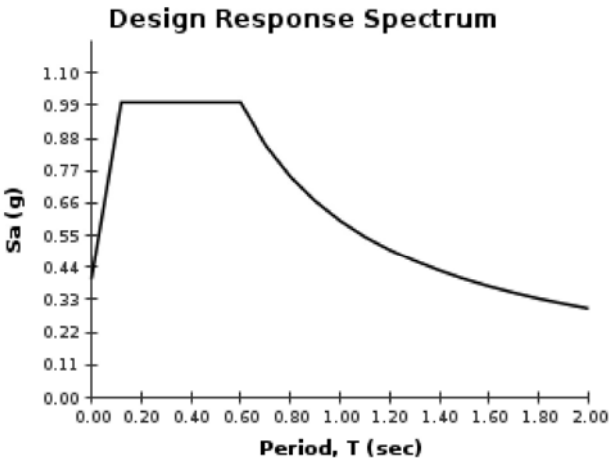


USGS–Provided Output

S_S =	1.500 g	S_{MS} =	1.500 g	S_{DS} =	1.000 g
S_1 =	0.600 g	S_{M1} =	0.900 g	S_{D1} =	0.600 g

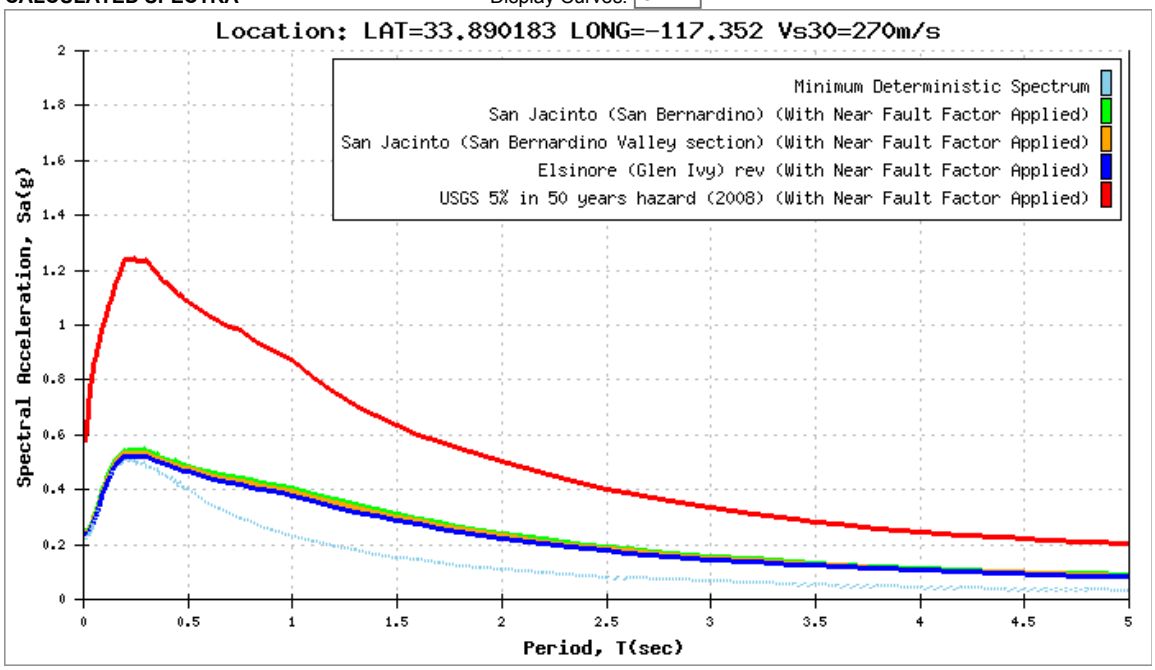
For information on how the S_S and S_1 values above have been calculated from probabilistic (risk-targeted) and deterministic ground motions in the direction of maximum horizontal response, please view the detailed report.





For PGA_M, T_L, C_{RS}, and C_{R1} values, please view the detailed report.

CALCULATED SPECTRA Display Curves: 3



Tabular Data Envelope Only Hide Near Fault Axis Scale Show Basin

Apply Near Fault Adjustment To:
NOTE: Caltrans SDC requires application of a Near Fault Adjustment factor for sites less than 25 km (Rrup) from the causative fault.

☑ Deterministic Spectrum Using

16.98 Km San Jacinto (San Bernardino)
17.60 Km San Jacinto (San Bernardino Valley section)
18.33 Km Elsinore (Glen Ivy) rev

☑ Probabilistic Spectrum Using

16.98 Km (Recommend Performing Deaggregation To Verify)

◉ Show Spectrum with Adjustment Only
○ Show Spectrum with and without near fault Adjustment

OK

APPENDIX E

GENERAL EARTHWORK AND GRADING SPECIFICATIONS

EARTH-STRATA

General Earthwork and Grading Specifications

General

Intent: These General Earthwork and Grading Specifications are intended to be the minimum requirements for the grading and earthwork shown on the approved grading plan(s) and/or indicated in the geotechnical report(s). These General Earthwork and Grading Specifications should be considered a part of the recommendations contained in the geotechnical report(s) and if they are in conflict with the geotechnical report(s), the specific recommendations in the geotechnical report shall supersede these more general specifications. Observations made during earthwork operations by the project Geotechnical Consultant may result in new or revised recommendations that may supersede these specifications and/or the recommendations in the geotechnical report(s).

The Geotechnical Consultant of Record: The Owner shall employ a qualified Geotechnical Consultant of Record (Geotechnical Consultant), prior to commencement of grading or construction. The Geotechnical Consultant shall be responsible for reviewing the approved geotechnical report(s) and accepting the adequacy of the preliminary geotechnical findings, conclusions, and recommendations prior to the commencement of the grading or construction.

Prior to commencement of grading or construction, the Owner shall coordinate with the Geotechnical Consultant, and Earthwork Contractor (Contractor) to schedule sufficient personnel for the appropriate level of observation, mapping, and compaction testing.

During earthwork and grading operations, the Geotechnical Consultant shall observe, map, and document the subsurface conditions to confirm assumptions made during the geotechnical design phase of the project. Should the observed conditions differ significantly from the interpretive assumptions made during the design phase, the Geotechnical Consultant shall recommend appropriate changes to accommodate the observed conditions, and notify the reviewing agency where required.

The Geotechnical Consultant shall observe the moisture conditioning and processing of the excavations and fill materials. The Geotechnical Consultant should perform periodic relative density testing of fill materials to verify that the attained level of compaction is being accomplished as specified.

The Earthwork Contractor: The Earthwork Contractor (Contractor) shall be qualified, experienced, and knowledgeable in earthwork logistics, preparation and processing of earth materials to receive compacted fill, moisture-conditioning and processing of fill, and compacting fill. The Contractor shall be provided with the approved grading plans and geotechnical report(s) for his review and acceptance of responsibilities, prior to commencement of grading. The Contractor shall be solely responsible for performing the grading in accordance with the approved grading plans and geotechnical report(s). Prior to commencement of grading, the Contractor shall prepare and submit to the Owner and the Geotechnical Consultant a work plan that indicates the sequence of earthwork grading, the number of "equipment" of work and the estimated quantities of daily earthwork contemplated for the site. The Contractor shall inform the Owner and the Geotechnical Consultant of work schedule changes and revisions to the work plan at least 24 hours in advance of such changes so that appropriate personnel will be available for observation and testing. No assumptions shall be made by the Contractor with regard to whether the Geotechnical Consultant is aware of all grading operations.

It is the sole responsibility of the Contractor to provide adequate equipment and methods to accomplish the earthwork operations in accordance with the applicable grading codes and agency ordinances, these specifications, and the recommendations in the approved geotechnical report(s) and grading plan(s). At the sole discretion of the Geotechnical Consultant, any unsatisfactory conditions, such as unsuitable earth materials, improper moisture conditioning, inadequate compaction, insufficient buttress keyway size, adverse weather conditions, etc., resulting in a quality of work less than required in the approved grading plans and geotechnical report(s), the Geotechnical Consultant shall reject the work and may recommend to the Owner that grading be stopped until conditions are corrected.

Preparation of Areas for Compacted Fill

Clearing and Grubbing: Vegetation, such as brush, grass, roots, and other deleterious material shall be sufficiently removed and properly disposed in a method acceptable to the Owner, Geotechnical Consultant, and governing agencies.

The Geotechnical Consultant shall evaluate the extent of these removals on a site by site basis. Earth materials to be placed as compacted fill shall not contain more than 1 percent organic materials (by volume). No compacted fill lift shall contain more than 10 percent organic matter.

Should potentially hazardous materials be encountered, the Contractor shall stop work in the affected area, and a hazardous materials specialist shall immediately be consulted to evaluate the potentially hazardous materials, prior to continuing to work in that area.

It is our understanding that the State of California defines most refined petroleum products (gasoline, diesel fuel, motor oil, grease, coolant, etc.) as hazardous waste. As such, indiscriminate dumping or spillage of these fluids may constitute a misdemeanor, punishable by fines and/or imprisonment, and shall be prohibited. The contractor is responsible for all hazardous waste related to his operations. The Geotechnical Consultant does not have expertise in this area. If hazardous waste is a concern, then the Owner should contract the services of a qualified environmental assessor.

Processing: Exposed earth materials that have been observed to be satisfactory for support of compacted fill by the Geotechnical Consultant shall be scarified to a minimum depth of 6 inches. Exposed earth materials that are not observed to be satisfactory shall be removed or alternative recommendations may be provided by the Geotechnical Consultant. Scarification shall continue until the exposed earth materials are broken down and free of oversize material and the working surface is reasonably uniform, flat, and free of uneven features that would inhibit uniform compaction. The earth materials should be moistened or air dried to near optimum moisture content, prior to compaction.

Overexcavation: The Cut Lot Typical Detail and Cut/Fill Transition Lot Typical Detail, included herein provides a graphic illustration that depicts typical overexcavation recommendations made in the approved geotechnical report(s) and/or grading plan(s).

Keyways and Benching: Where fills are to be placed on slopes steeper than 5:1 (horizontal to vertical units), the ground shall be thoroughly benched as compacted fill is placed. Please see the three Keyway and Benching Typical Details with subtitles Cut Over Fill Slope, Fill Over Cut Slope, and Fill Slope for a graphic illustration. The lowest bench or smallest keyway shall be a minimum of 15 feet wide (or ½ the proposed slope height) and at least 2 feet into competent earth materials as advised by the Geotechnical Consultant. Typical benches shall be excavated a minimum height of 4 feet into competent earth materials or as recommended by the Geotechnical Consultant. Fill placed on slopes steeper than 5:1 should be thoroughly benched or otherwise excavated to provide a flat subgrade for the compacted fill.

Evaluation/Acceptance of Bottom Excavations: All areas to receive compacted fill (bottom excavations), including removal excavations, processed areas, keyways, and benching, shall be observed, mapped, general elevations recorded, and/or tested prior to being accepted by the Geotechnical Consultant as suitable to receive compacted fill. The Contractor shall obtain a written acceptance from the Geotechnical Consultant prior to placing compacted fill. A licensed surveyor shall provide the survey control for determining elevations of bottom excavations, processed areas, keyways, and

benching. The Geotechnical Consultant is not responsible for erroneously located, fills, subdrain systems, or excavations.

Fill Materials

General: Earth material to be used as compacted fill should to a large extent be free of organic matter and other deleterious substances as evaluated and accepted by the Geotechnical Consultant.

Oversize: Oversize material is rock that does not break down into smaller pieces and has a maximum diameter greater than 8 inches. Oversize rock shall not be included within compacted fill unless specific methods and guidelines acceptable to the Geotechnical Consultant are followed. For examples of methods and guidelines of oversize rock placement see the enclosed Oversize Rock Disposal Detail. The inclusion of oversize materials in the compacted fill shall only be acceptable if the oversize material is completely surrounded by compacted fill or thoroughly jetted granular materials. No oversize material shall be placed within 10 vertical feet of finish grade or within 2 feet of proposed utilities or underground improvements.

Import: Should imported earth materials be required, the proposed import materials shall meet the requirements of the Geotechnical Consultant. Well graded, very low expansion potential earth materials free of organic matter and other deleterious substances are usually sought after as import materials. However, it is generally in the Owners best interest that potential import earth materials are provided to the Geotechnical Consultant to determine their suitability for the intended purpose. At least 48 hours should be allotted for the appropriate laboratory testing to be performed, prior to starting the import operations.

Fill Placement and Compaction Procedures

Fill Layers: Fill materials shall be placed in areas prepared to receive fill in nearly horizontal layers not exceeding 8 inches in loose thickness. Thicker layers may be accepted by the Geotechnical Consultant, provided field density testing indicates that the grading procedures can adequately compact the thicker layers. Each layer of fill shall be spread evenly and thoroughly mixed to obtain uniformity within the earth materials and consistent moisture throughout the fill.

Moisture Conditioning of Fill: Earth materials to be placed as compacted fill shall be watered, dried, blended, and/or mixed, as needed to obtain relatively uniform moisture contents that are at or slightly above optimum. The maximum density and optimum moisture content tests should be performed in accordance with the American Society of Testing and Materials (ASTM test method D1557-00).

Compaction of Fill: After each layer has been moisture-conditioned, mixed, and evenly spread, it should be uniformly compacted to a minimum of 90 percent of maximum dry density as determined by ASTM test method D1557-00. Compaction equipment shall be adequately sized and be either specifically designed for compaction of earth materials or be proven to consistently achieve the required level of compaction.

Compaction of Fill Slopes: In addition to normal compaction procedures specified above, additional effort to obtain compaction on slopes is needed. This may be accomplished by backrolling of slopes with sheepsfoot rollers as the fill is being placed, by overbuilding the fill slopes, or by other methods producing results that are satisfactory to the Geotechnical Consultant. Upon completion of grading, relative compaction of the fill and the slope face shall be a minimum of 90 percent of maximum density per ASTM test method D1557-00.

Compaction Testing of Fill: Field tests for moisture content and relative density of the compacted fill earth materials shall be periodically performed by the Geotechnical Consultant. The location and frequency of tests shall be at the Geotechnical Consultant's discretion based on field observations. Compaction test locations will not necessarily be random. The test locations may or may not be selected to verify minimum compaction requirements in areas that are typically prone to inadequate compaction, such as close to slope faces and near benching.

Frequency of Compaction Testing: Compaction tests shall be taken at minimum intervals of every 2 vertical feet and/or per 1,000 cubic yards of compacted materials placed. Additionally, as a guideline, at least one (1) test shall be taken on slope faces for each 5,000 square feet of slope face and/or for each 10 vertical feet of slope. The Contractor shall assure that fill placement is such that the testing schedule described herein can be accomplished by the Geotechnical Consultant. The Contractor shall stop or slow down the earthwork operations to a safe level so that these minimum standards can be obtained.

Compaction Test Locations: The approximate elevation and horizontal coordinates of each test location shall be documented by the Geotechnical Consultant. The Contractor shall coordinate with the Surveyor to assure that sufficient grade stakes are established. This will provide the Geotechnical Consultant with sufficient accuracy to determine the approximate test locations and elevations. The Geotechnical Consultant can not be responsible for staking erroneously located by the Surveyor or Contractor. A minimum of two grade stakes should be provided at a maximum horizontal distance of 100 feet and vertical difference of less than 5 feet.

Subdrain System Installation

Subdrain systems shall be installed in accordance with the approved geotechnical report(s), the approved grading plan, and the typical details provided herein. The Geotechnical Consultant may recommend additional subdrain systems and/or changes to the subdrain systems described herein, with regard to the extent, location, grade, or material depending on conditions encountered during grading or other factors. All subdrain systems shall be surveyed by a licensed land surveyor (except for retaining wall subdrain systems) to verify line and grade after installation and prior to burial. Adequate time should be allowed by the Contractor to complete these surveys.

Excavation

All excavations and over-excavations for remedial purposes shall be evaluated by the Geotechnical Consultant during grading operations. Remedial removal depths indicated on the geotechnical plans are estimates only. The actual removal depths and extent shall be determined by the Geotechnical Consultant based on the field evaluation of exposed conditions during grading operations. Where fill over cut slopes are planned, the cut portion of the slope shall be excavated, evaluated, and accepted by the Geotechnical Consultant prior to placement of the fill portion of the proposed slope, unless specifically addressed by the Geotechnical Consultant. Typical details for cut over fill slopes and fill over cut slopes are provided herein.

Trench Backfill

1) The Contractor shall follow all OHSA and Cal/OSHA requirements for trench excavation safety.

2) Bedding and backfill of utility trenches shall be done in accordance with the applicable provisions in the Standard Specifications of Public Works Construction. Bedding materials shall have a Sand Equivalency more than 30 (SE>30). The bedding shall be placed to 1 foot over the conduit and thoroughly jetting to provide densification. Backfill should be compacted to a minimum of 90 percent of maximum dry density, from 1 foot above the top of the conduit to the surface.

3) Jetting of the bedding materials around the conduits shall be observed by the Geotechnical Consultant.

4) The Geotechnical Consultant shall test trench backfill for the minimum compaction requirements recommended herein. At least one test should be conducted for every 300 linear feet of trench and for each 2 vertical feet of backfill.

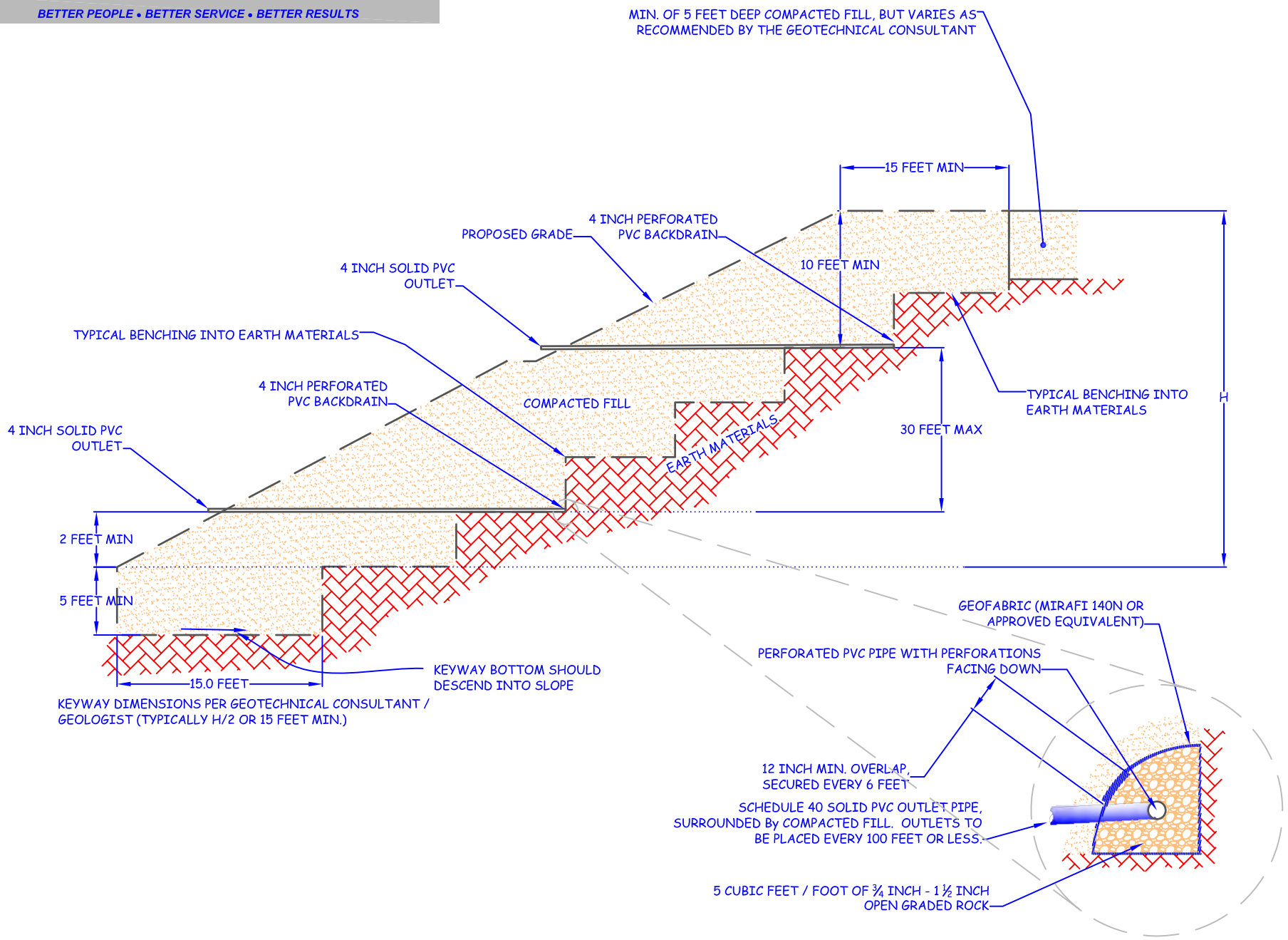
5) For trench backfill the lift thicknesses shall not exceed those allowed in the Standard Specifications of Public Works Construction, unless the Contractor can demonstrate to the Geotechnical Consultant that the fill lift can be compacted to the minimum relative compaction by his alternative equipment or method.

Earth - Strata, Inc.

Geotechnical, Environmental and Materials Testing Consultants

BETTER PEOPLE • BETTER SERVICE • BETTER RESULTS

STABILIZATION FILL TYPICAL DETAIL

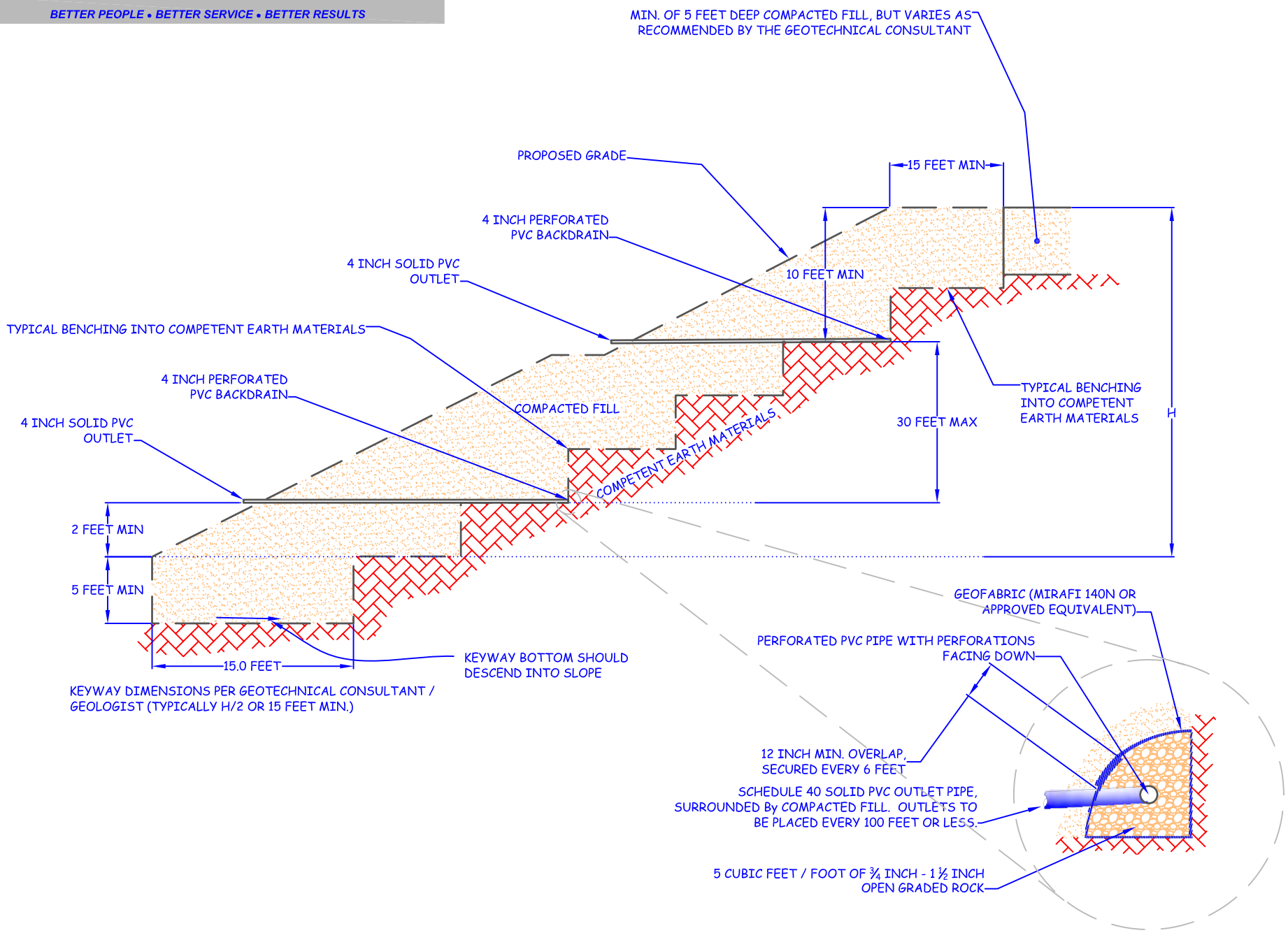


Earth - Strata, Inc.

Geotechnical, Environmental and Materials Testing Consultants

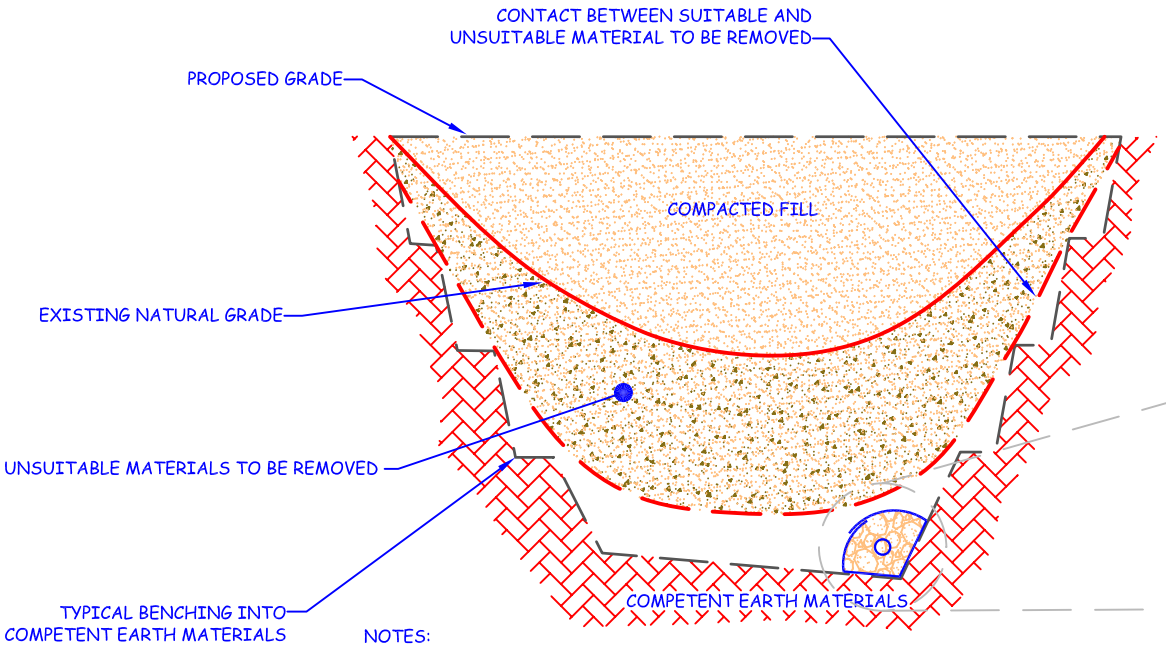
BETTER PEOPLE • BETTER SERVICE • BETTER RESULTS

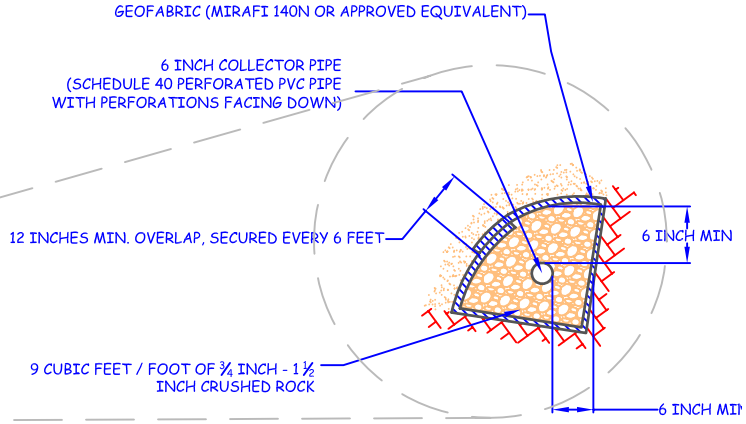
BUTTRESS TYPICAL DETAIL



Earth + Strata, Inc.
Geotechnical, Environmental and Materials Testing Consultants
BETTER PEOPLE • BETTER SERVICE • BETTER RESULTS

CANYON SUBDRAIN SYSTEM TYPICAL DETAIL

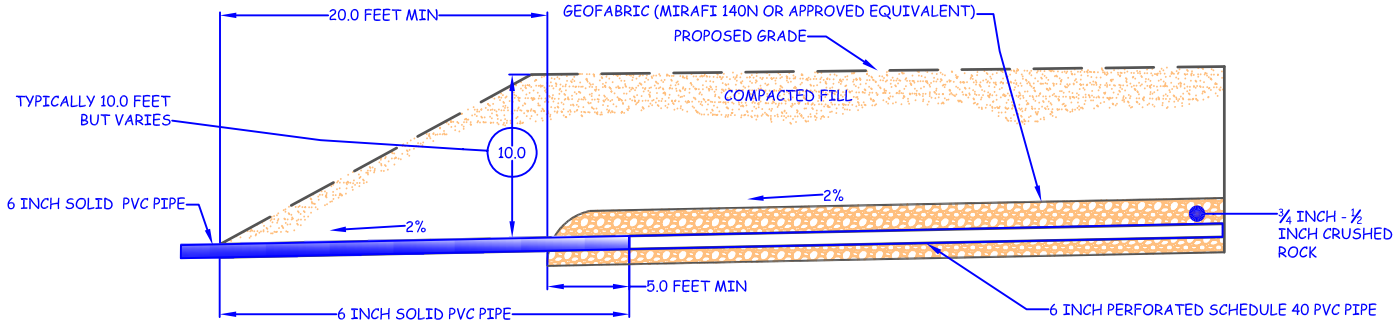




NOTES:
1 - CONTINUOUS RUNS IN EXCESS OF 500 FEET LONG WILL REQUIRE AN 8 INCH DIAMETER PIPE.

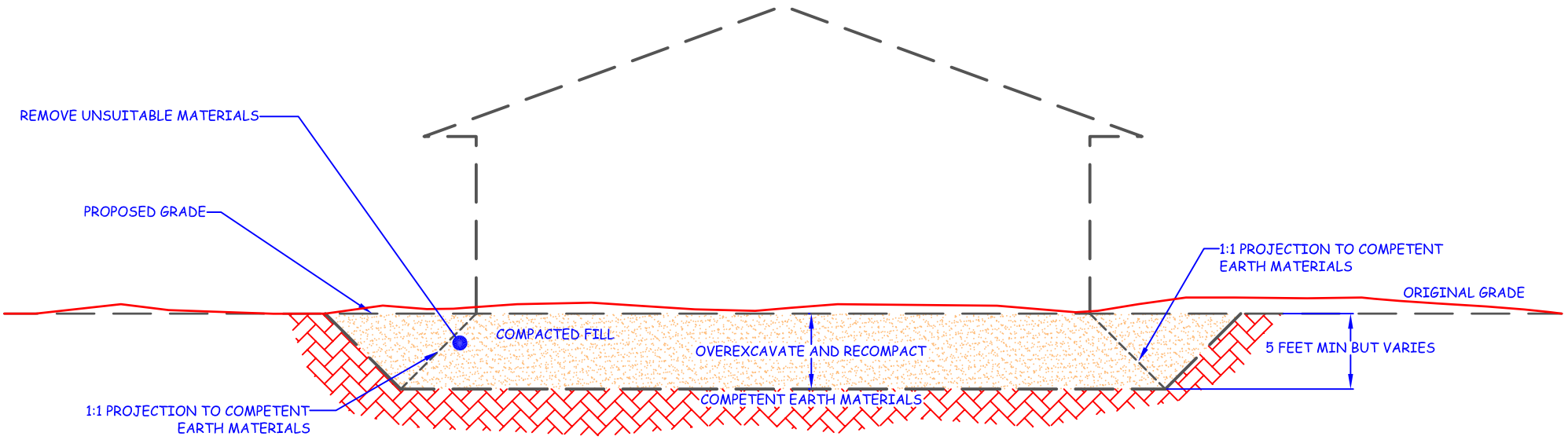
2 - FINAL 20 FEET OF PIPE AT OUTLET WILL BE SOLID AND BACKFILLED WITH COMPACTED FINE-GRAINED EARTH MATERIALS.

CANYON SUBDRAIN TYPICAL OUTLET



Earth = Strata, Inc.
Geotechnical, Environmental and Materials Testing Consultants
BETTER PEOPLE • BETTER SERVICE • BETTER RESULTS

CUT LOT TYPICAL DETAIL

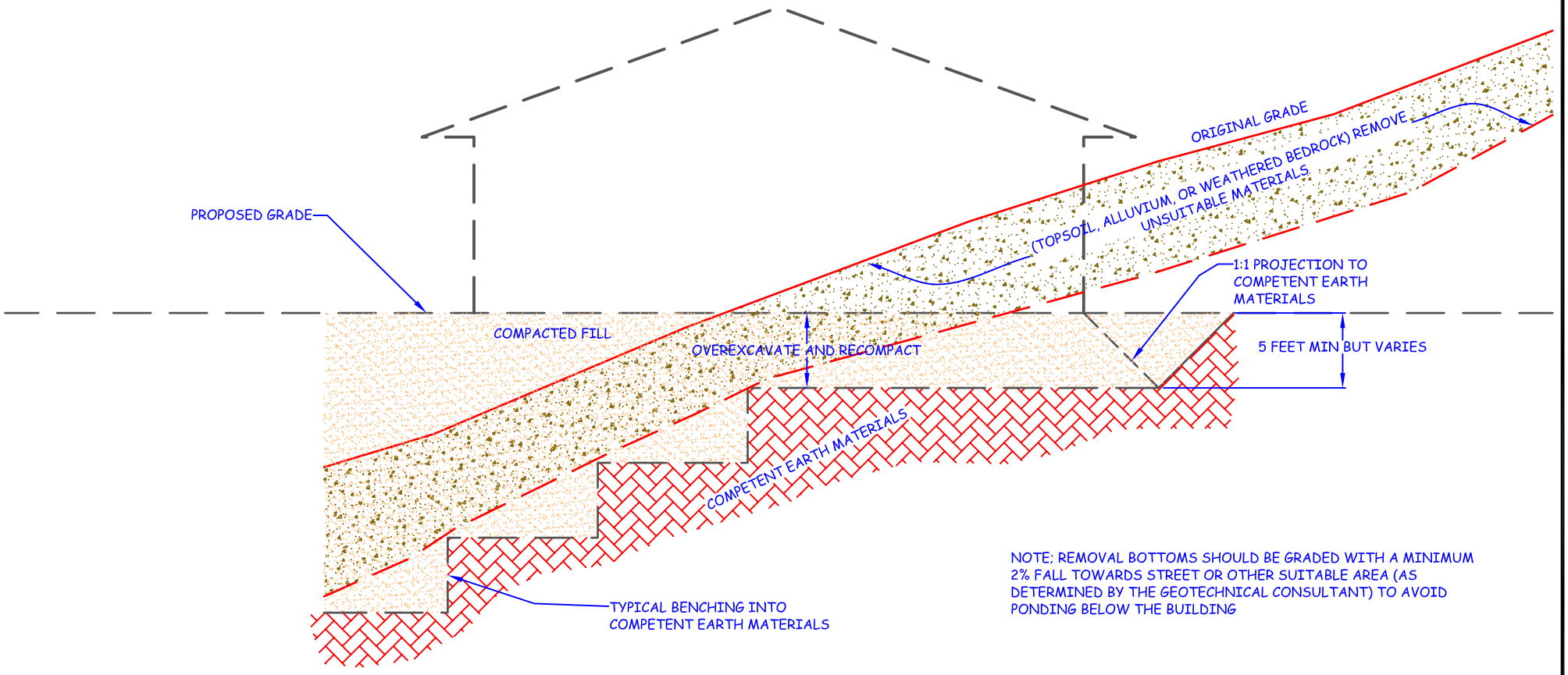


NOTE: REMOVAL BOTTOMS SHOULD BE GRADED WITH A MINIMUM 2% FALL TOWARDS STREET OR OTHER SUITABLE AREA (AS DETERMINED BY THE GEOTECHNICAL CONSULTANT) TO AVOID PONDING BELOW THE BUILDING

NOTE: WHERE DESIGN CUT LOTS ARE EXCAVATED ENTIRELY INTO COMPETENT EARTH MATERIALS, OVEREXCAVATION MAY STILL BY NEEDED FOR HARD-ROCK CONDITIONS OR MATERIALS WITH VARIABLE EXPANSION POTENTIALS

Earth = Strata, Inc.
Geotechnical, Environmental and Materials Testing Consultants
BETTER PEOPLE • BETTER SERVICE • BETTER RESULTS

CUT / FILL TRANSITION LOT TYPICAL DETAIL

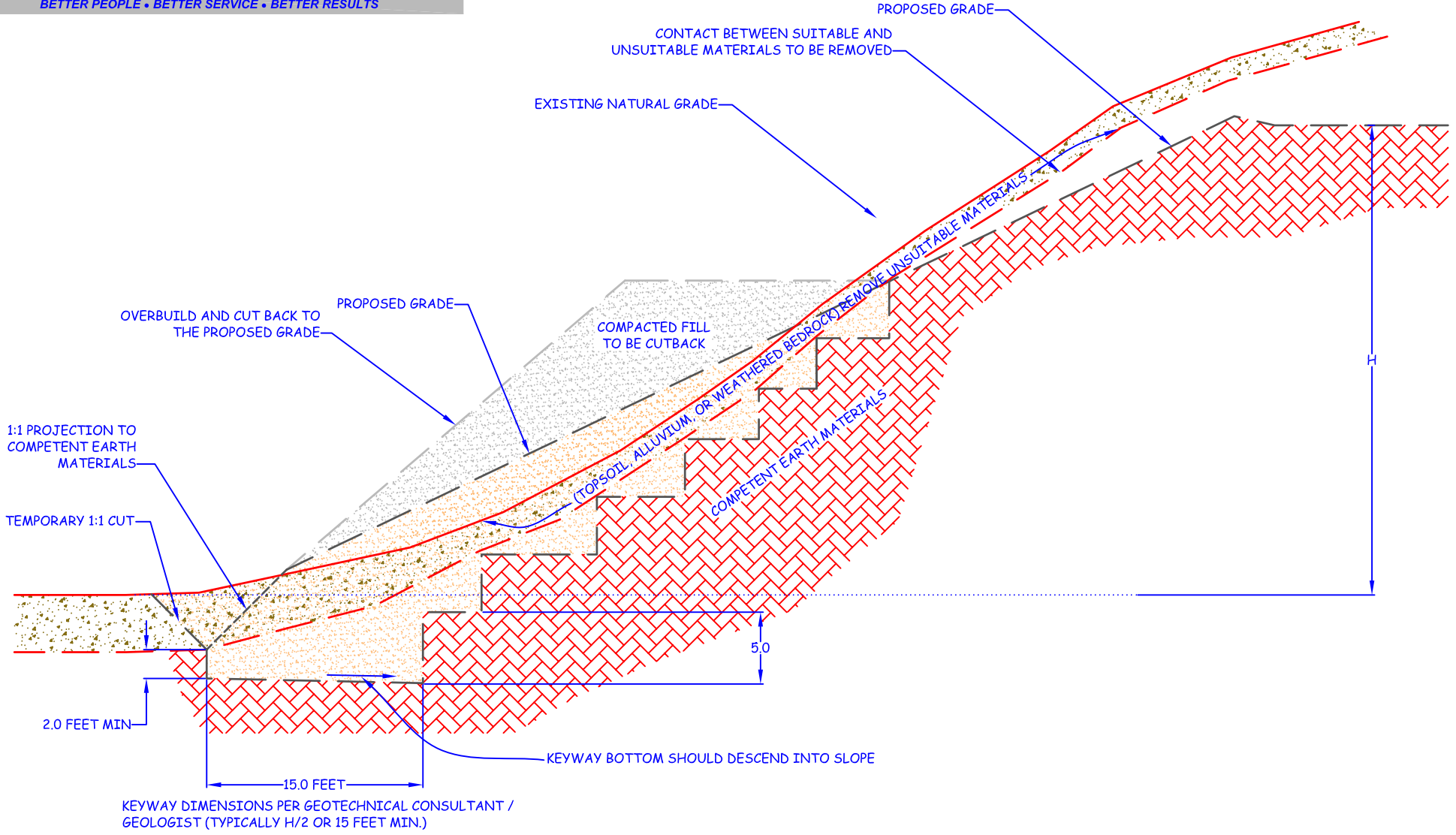


NOTE; REMOVAL BOTTOMS SHOULD BE GRADED WITH A MINIMUM 2% FALL TOWARDS STREET OR OTHER SUITABLE AREA (AS DETERMINED BY THE GEOTECHNICAL CONSULTANT) TO AVOID PONDING BELOW THE BUILDING

NOTE: WHERE DESIGN CUT LOTS ARE EXCAVATED ENTIRELY INTO COMPETENT EARTH MATERIALS, OVEREXCAVATION MAY STILL BY NEEDED FOR HARD-ROCK CONDITIONS OR MATERIALS WITH VARIABLE EXPANSION POTENTIALS

Earth + Strata, Inc.
Geotechnical, Environmental and Materials Testing Consultants
BETTER PEOPLE • BETTER SERVICE • BETTER RESULTS

KEYWAY & BENCHING TYPICAL DETAILS
CUT OVER FILL SLOPE

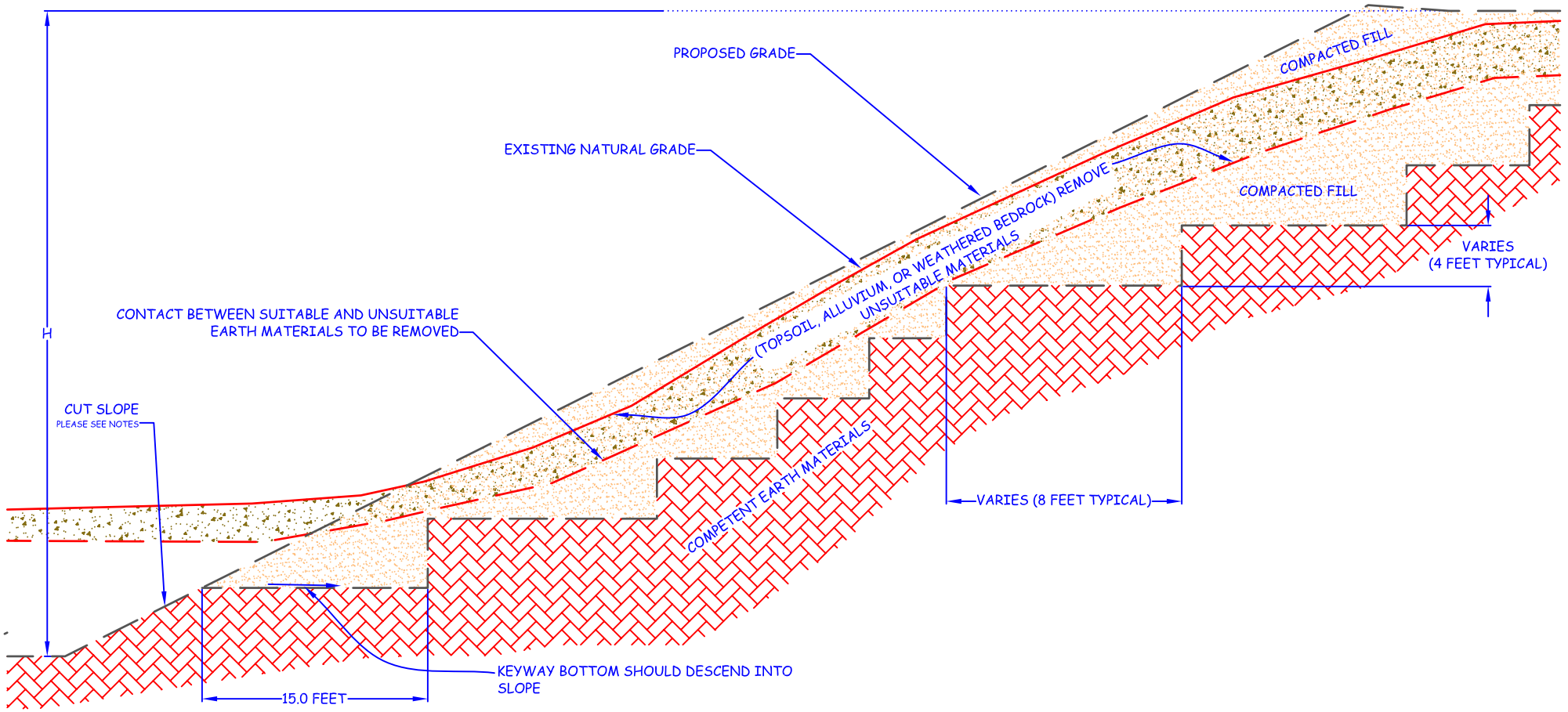


NOTE:

NATURAL SLOPES STEEPER THAN 5:1 (H:V) MUST BE BENCHED INTO COMPETENT EARTH MATERIALS

Earth + Strata, Inc.
Geotechnical, Environmental and Materials Testing Consultants
BETTER PEOPLE • BETTER SERVICE • BETTER RESULTS

KEYWAY & BENCHING TYPICAL DETAILS
FILL OVER CUT SLOPE



KEYWAY DIMENSIONS PER GEOTECHNICAL CONSULTANT / GEOLOGIST (TYPICALLY H/2 OR 15 FEET MIN.)

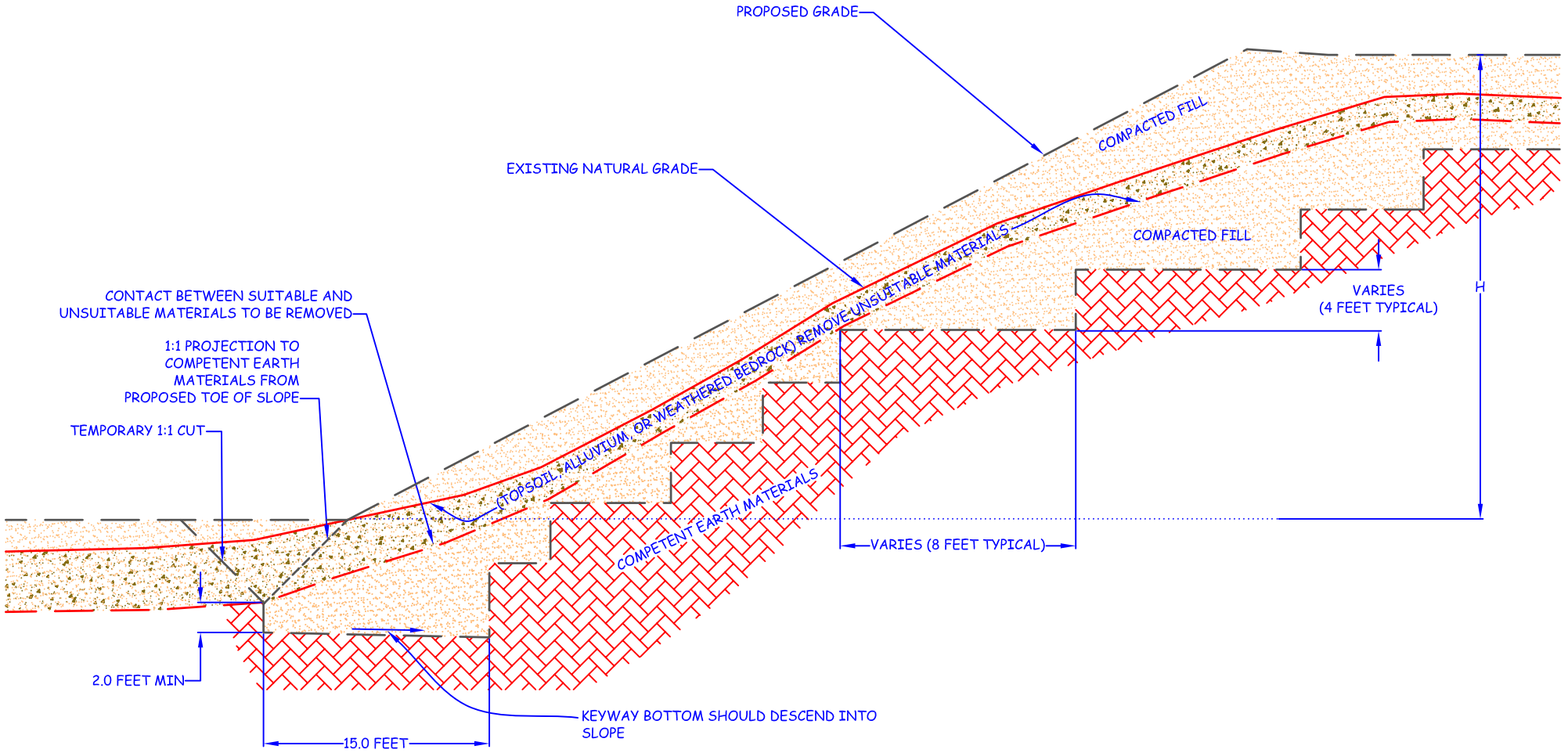
NOTES:

NATURAL SLOPES STEEPER THAN 5:1 (H:V) MUST BE BENCHED INTO COMPETENT EARTH MATERIALS

THE CUT SLOPE MUST BE CONSTRUCTED FIRST

Earth - Strata, Inc.
Geotechnical, Environmental and Materials Testing Consultants
BETTER PEOPLE • BETTER SERVICE • BETTER RESULTS

KEYWAY & BENCHING TYPICAL DETAILS
FILL SLOPE



KEYWAY DIMENSIONS PER GEOTECHNICAL CONSULTANT / GEOLOGIST (TYPICALLY H/2 OR 15 FEET MIN.)

NOTES:

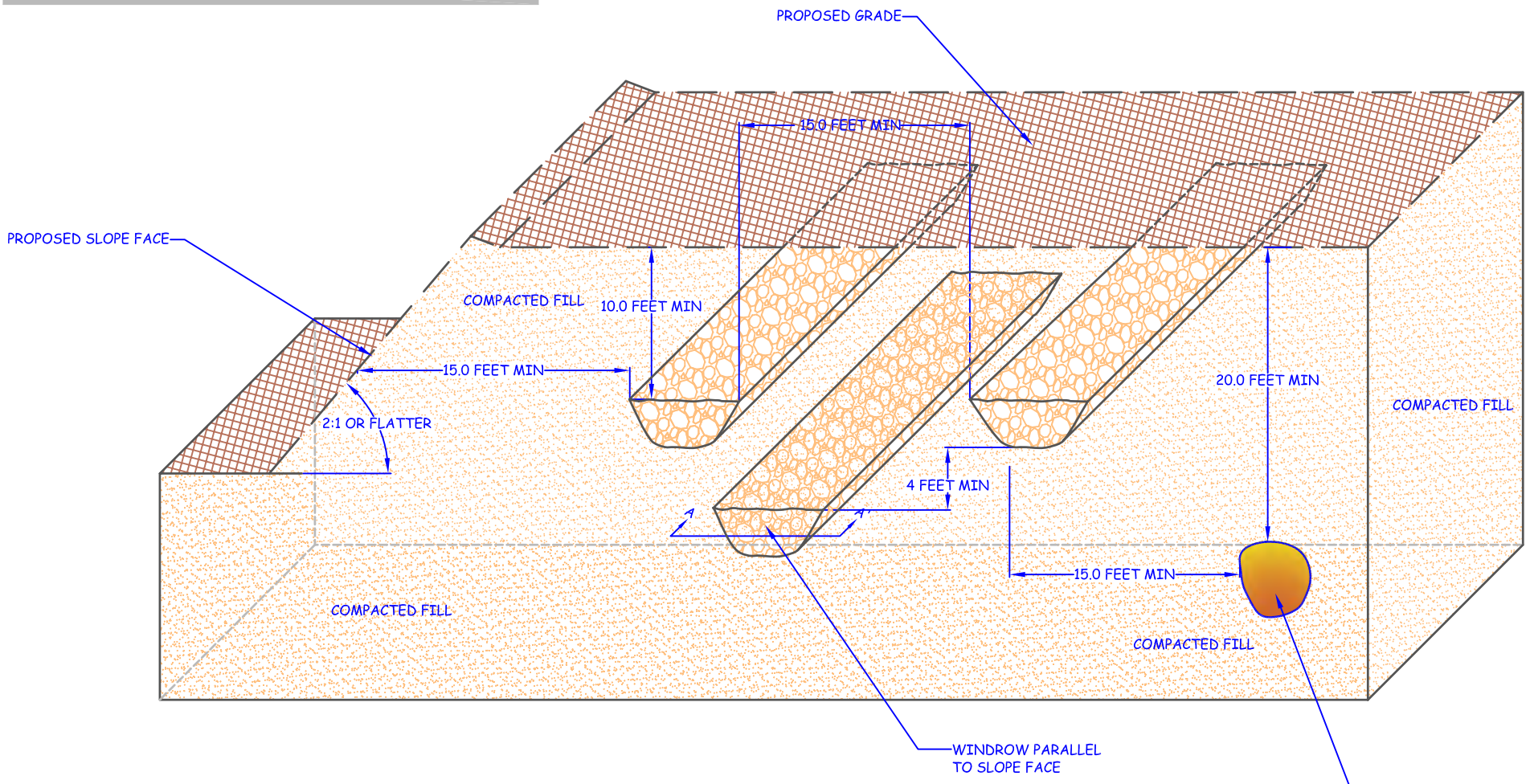
NATURAL SLOPES STEEPER THAN 5:1 (H:V) MUST BE BENCHED INTO COMPETENT EARTH MATERIALS

Earth + Strata, Inc.

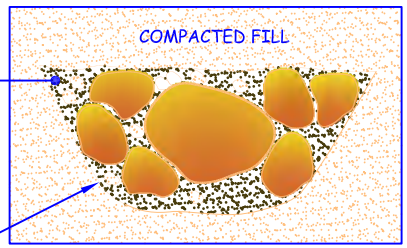
Geotechnical, Environmental and Materials Testing Consultants

BETTER PEOPLE • BETTER SERVICE • BETTER RESULTS

OVERSIZE ROCK TYPICAL DETAIL



CROSS SECTION A-A'



NOTES:

OVERSIZE ROCK IS LARGER THAN
8 INCHES IN MAX DIAMETER

Arroyo Vista

GREENHOUSE GAS ANALYSIS

COUNTY OF RIVERSIDE

PREPARED BY:

Haseeb Qureshi
hqureshi@urbanxroads.com

Ali Dadabhoy
adadabhoy@urbanxroads.com

Shannon Wong
swong@urbanxroads.com

April 27, 2023

TABLE OF CONTENTS

TABLE OF CONTENTS ..... **I**
APPENDICES ..... **I**
LIST OF EXHIBITS ..... **I**
LIST OF TABLES ..... **II**
LIST OF ABBREVIATED TERMS ..... **III**
EXECUTIVE SUMMARY ..... **VII**

ES.1 Summary of Findings vii
ES.2 Project Requirements vii

1 INTRODUCTION **1**

1.1 Site Location 1
1.2 Project Description 1

2 CLIMATE CHANGE SETTING **5**

2.1 Introduction to Global Climate Change 5
2.2 Global Climate Change Defined 5
2.3 Greenhouse Gases 5
2.4 Global Warming Potential 11
2.5 Greenhouse Gas Emissions Inventories 13
2.6 Regulatory Setting 16
2.8 County of Riverside CAP 34

3 PROJECT GREENHOUSE GAS IMPACT **36**

3.1 Introduction 36
3.2 Standards of Significance 36
3.3 California Emissions Estimator Model™ 37
3.4 Construction and Operational Life-Cycle Analysis Not Required 37
3.5 Construction Emissions 38
3.6 Operational Emissions 40
3.7 Emissions Summary 42
3.8 Greenhouse Gas Emissions Findings and Recommendations 42

4 REFERENCES **45**
5 CERTIFICATIONS **50**

APPENDICES

APPENDIX 3.1: CALEEMOD CONSTRUCTION PHASE 1 EMISSIONS MODEL OUTPUTS
APPENDIX 3.2: CALEEMOD CONSTRUCTION PHASE 2 EMISSIONS MODEL OUTPUTS
APPENDIX 3.3: CALEEMOD OPERATIONAL EMISSIONS MODEL OUTPUTS
APPENDIX 3.4: CAP UPDATE CHECKLIST

LIST OF EXHIBITS

EXHIBIT 1-A: LOCATION MAP **2**
EXHIBIT 1-B: SITE PLAN **3**

EXHIBIT 2-A: SUMMARY OF PROJECTED GLOBAL WARMING IMPACT, 2070-2099 (AS COMPARED WITH 1961-1990)..... 12

LIST OF TABLES

TABLE ES-1: SUMMARY OF CEQA SIGNIFICANCE FINDINGS..... VII
TABLE 2-1: GREENHOUSE GASES 6
TABLE 2-2: GWP AND ATMOSPHERIC LIFETIME OF SELECT GHGS..... 12
TABLE 3-1: CONSTRUCTION DURATION..... 38
TABLE 3-2: CONSTRUCTION EQUIPMENT ASSUMPTIONS..... 39
TABLE 3-3: CONSTRUCTION GHG EMISSIONS..... 40
TABLE 3-4: PROJECT GHG EMISSIONS..... 42

LIST OF ABBREVIATED TERMS

%	Percent
°F	Degrees Fahrenheit
(1)	Reference
AB	Assembly Bill
AB 32	Global Warming Solutions Act of 2006
AB 1493	Pavley Fuel Efficiency Standards
ABAU	Adjusted BAU
Annex I	Industrialized Nations
APA	Administrative Procedure Act
BAU	Business as Usual
C_2F_6	Hexafluoroethane
C_2H_6	Ethane
$C_2H_2F_4$	Tetrafluroethane
$C_2H_4F_2$	Ethylidene Fluoride
CAA	Federal Clean Air Act
CalEEMod	California Emissions Estimator Model
CALGAPS	California LBNL GHG Analysis of Policies Spreadsheet
CALGreen	California Green Building Standards Code
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resource Board
CAP	Climate Action Plan
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CF_4	Tetrafluoromethane
CFC	Chlorofluorocarbons
CH_4	Methane
CHF_3	Fluoroform
CH_2FCF	1,1,1,2-tetrafluoroethane
CH_3CF_2	1,1-difluoroethane
CNRA	California Natural Resources Agency
CNRA 2009	2009 California Climate Adaptation Strategy
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
CPUC	California Public Utilities Commission
EMFAC	EMissions FACtor
EPA	U.S. Environmental Protection Agency

GCC	Global Climate Change
Gg	Gigagram
GHGA	Greenhouse Gas Analysis
GWP	Global Warming Potential
HDT	Heavy-Duty Trucks
IPCC	Intergovernmental Panel on Climate Change
LBNL	Lawrence Berkeley National Laboratory
LCA	Life-Cycle Analysis
LCD	Liquid Crystal Display
LCFS	Low Carbon Fuel Standard
LEV III	Low-Emission Vehicle
MMT CO_2e	Million Metric Ton of Carbon Dioxide Equivalent
MPG	Miles Per Gallon
MPOs	Metropolitan Planning Organizations
MT/yr	Metric Tons Per Year
MT CO_2e	Metric Ton of Carbon Dioxide Equivalent
MWELO	California Department of Water Resources' Model Water Efficient
N_20	Nitrous Oxide
NF_3	Nitrogen Trifluoride
NHTSA	National Highway Traffic Safety Administration
NIOSH	National Institute for Occupational Safety and Health
NO_X	Oxides of Nitrogen
Non-Annex I	Developing Nations
OAL	Office of Administrative Law
OPR	Office of Planning and Research
PFC	Perfluorocarbons
ppm	Parts Per Million
ppt	Parts Per Trillion
Project	Arroyo Vista
RPS	Renewable Portfolio Standards
RTPs	Regional Transportation Plans
SB	Senate Bill
SB 32	California Global Warming Solutions Act of 2006: Emission Limit
SB 375	Regional GHG Emissions Reduction Targets/Sustainable Communities Strategies
SCAQMD	South Coast Air Quality Management District

sf	Square Feet
SF_6	Sulfur Hexafluoride
SP	Service Population
SR-79	State Route 79
UNFCCC	United Nations' Framework Convention on Climate Change
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds
WRI	World Resources Institute
ZEV	Zero-Emissions Vehicles

This page intentionally left blank.

EXECUTIVE SUMMARY

ES.1 SUMMARY OF FINDINGS

The results of this Arroyo Vista Greenhouse Gas Analysis (GHGA) is summarized below based on the significance criteria in Section 3 of this report consistent with Appendix G of the California Environmental Quality Act (CEQA Guidelines (1). Table ES-1 shows the findings of significance for potential greenhouse gas (GHG) impacts under CEQA.

TABLE ES-1: SUMMARY OF CEQA SIGNIFICANCE FINDINGS

Analysis	Report Section	Significance Findings	
		Unmitigated	Mitigated
GHG Impact #1: Would the Project generate direct or indirect GHG emission that would result in a significant impact on the environment?	3.8	*Less Than Significant*	*N/A*
GHG Impact #2: Would the Project conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs?	3.8	*Less Than Significant*	*N/A*

ES.2 PROJECT REQUIREMENTS

The Project would be required to comply with regulations imposed by the State of California and the South Coast Air Quality Management District (SCAQMD) aimed at the reduction of air pollutant emissions. Those that are directly and indirectly applicable to the Project and that would assist in the reduction of GHG emissions include:

- California Global Warming Solutions Act of 2006: Emissions Limit (SB 32) (2).
- Regional GHG Emissions Reduction Targets/Sustainable Communities Strategies (Senate Bill (SB) 375) (3).
- Pavley Fuel Efficiency Standards (AB 1493). Establishes fuel efficiency ratings for new vehicles (4).
- California Building Code (Title 24 California Code of Regulations (CCR)). Establishes energy efficiency requirements for new construction (5).
- Appliance Energy Efficiency Standards (Title 20 CCR). Establishes energy efficiency requirements for appliances (6).
- Low Carbon Fuel Standard (LCFS). Requires carbon content of fuel sold in California to be 20% less by 2030 (7).
- California Water Conservation in Landscaping Act of 2006 (AB 1881). Requires local agencies to adopt the Department of Water Resources Model Water Efficient Landscape Ordinance, or equivalent, to ensure efficient landscapes in new development and reduced water waste in existing landscapes (8).

- Statewide Retail Provider Emissions Performance Standards. Requires energy generators to achieve performance standards for GHG emissions (9).
- Renewable Portfolio Standards (RPS). Requires electric corporations to increase the amount of energy obtained from eligible renewable energy resources to 60 percent by 2030, with interim targets of 44 percent by 2024 and 52 percent by 2027 as well (10).

Promulgated regulations that will affect the Project's emissions are accounted for in the Project's GHG calculations provided in this report. In particular, AB 1493, LCFS, and RPS, and therefore are accounted for in the Project's emission calculations.

1 INTRODUCTION

This report presents the results of the Greenhouse Gas Analysis (GHGA) prepared by Urban Crossroads, Inc., for the proposed Arroyo Vista ("Project"). The purpose of this GHGA is to evaluate Project-related construction and operational emissions and determine the level of greenhouse gas (GHG) impacts as a result of constructing and operating the proposed Project.

1.1 SITE LOCATION

The Project site is located on the northwest corner of Chicago Avenue and Iris Avenue in the Woodcrest area of unincorporated County of Riverside, as shown on Exhibit 1-A.

1.2 PROJECT DESCRIPTION

The Project consists of the development of 233[1] single family detached residential dwelling units and associated improvements. The Project is anticipated to be developed in two phases with an opening year of 2026 and 2027, as shown on Exhibit 1-B. The proposed Project is anticipated to be developed in the following phases:

- Phase 1 (2026): 121 single family residential dwelling units
- Project Buildout (2027): 112 single family residential dwelling units

[1] The trip generation utilized in this analysis is based on a previous site plan which assumed slightly more units. As such, the emissions analyzed in this report may be slightly overstated and present a worst case scenario.

EXHIBIT 1-A: LOCATION MAP

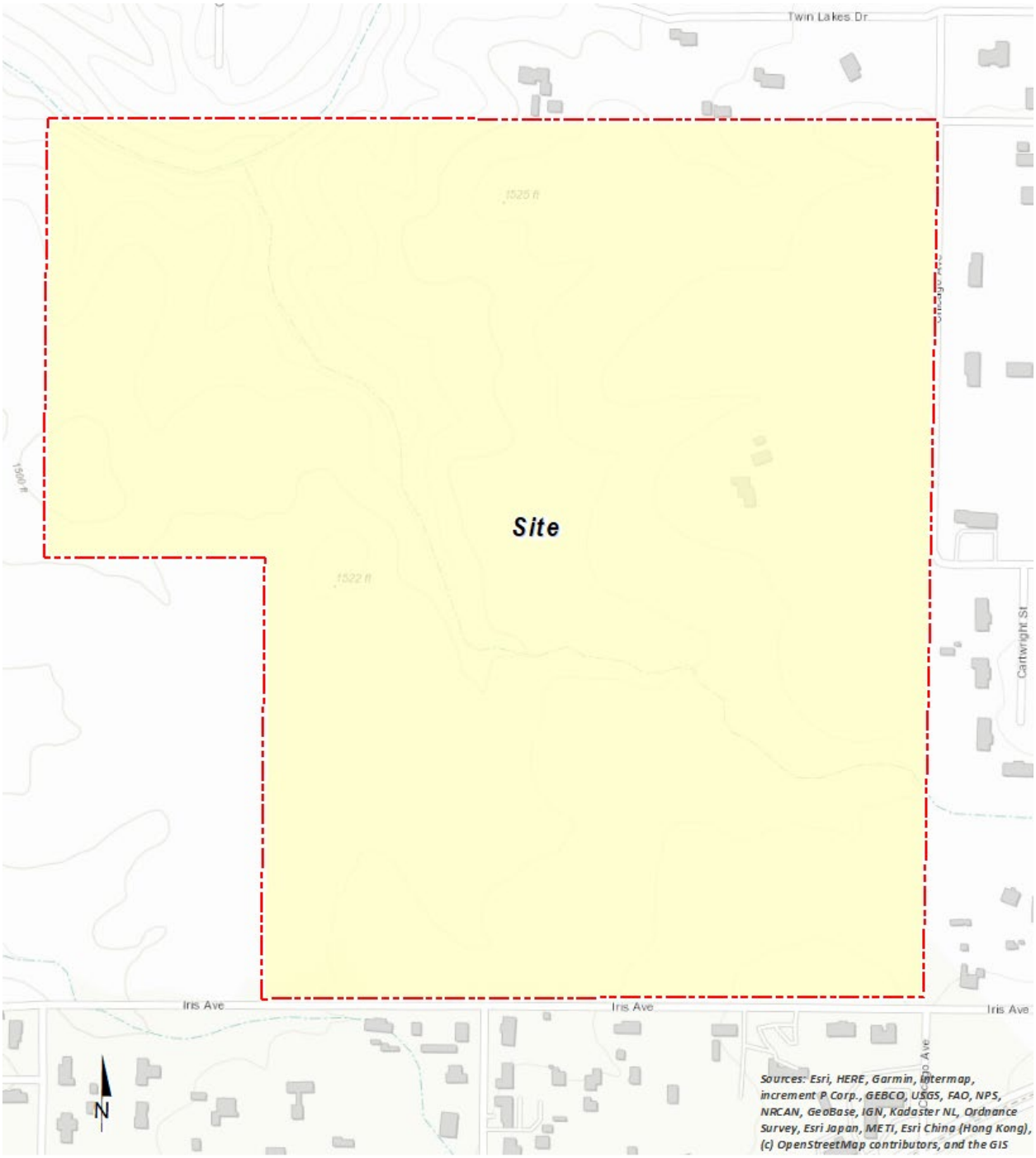
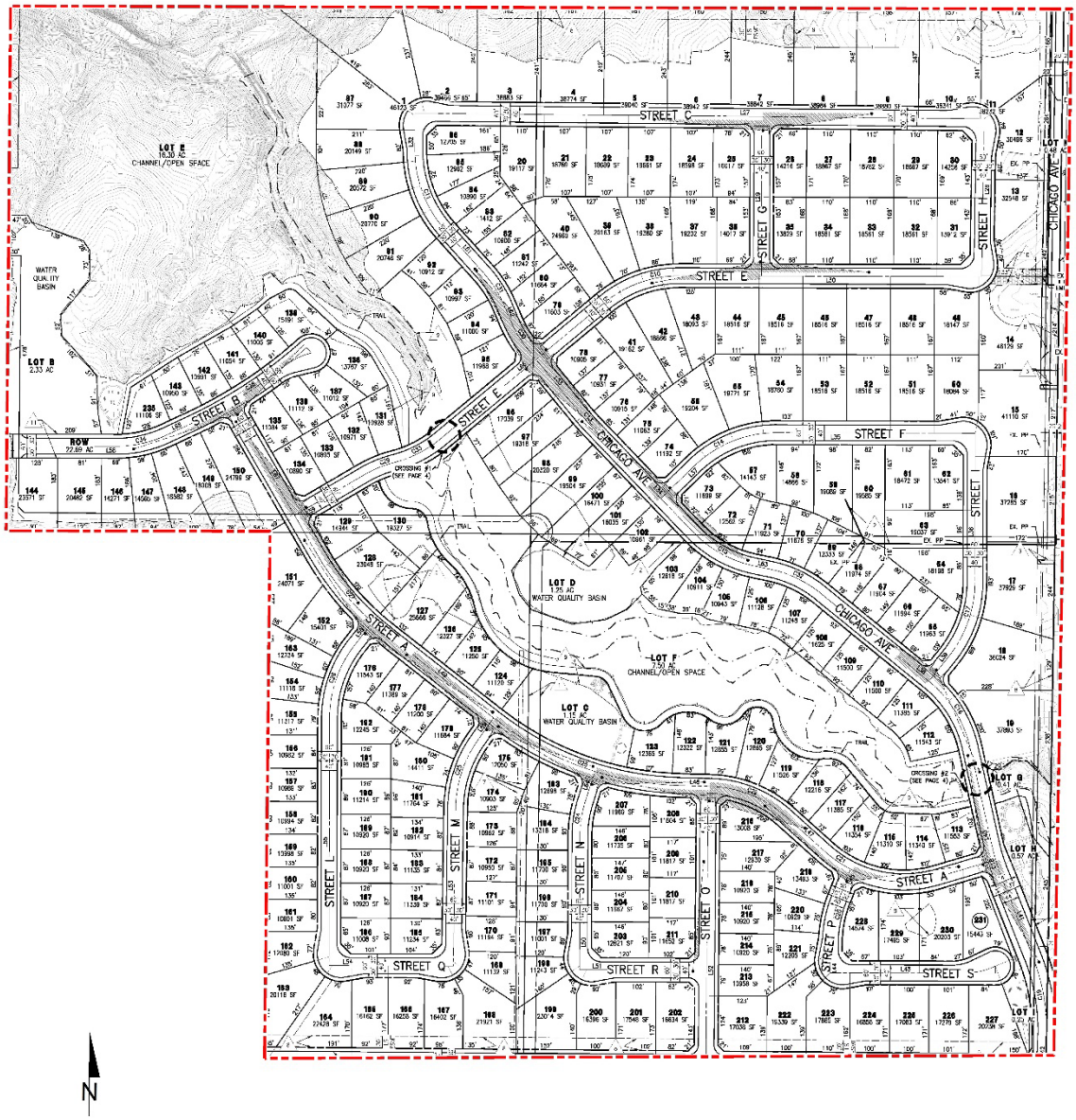


EXHIBIT 1-B: SITE PLAN



This page intentionally left blank

2 CLIMATE CHANGE SETTING

2.1 INTRODUCTION TO GLOBAL CLIMATE CHANGE

Global Climate Change (GCC) is defined as the change in average meteorological conditions on the earth with respect to temperature, precipitation, and storms. The majority of scientists believe that the climate shift taking place since the Industrial Revolution is occurring at a quicker rate and magnitude than in the past. Scientific evidence suggests that current GCC is the result of increased concentrations of GHGs in the earth's atmosphere, including carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and fluorinated gases. The majority of scientists believe that this increased rate of climate change is the result of GHGs resulting from human activity and industrialization over the past 200 years.

An individual project like the proposed Project evaluated in this GHGA cannot generate enough GHG emissions to affect a discernible change in global climate. However, the proposed Project may participate in the potential for GCC by its incremental contribution of GHGs combined with the cumulative increase of all other sources of GHGs, which when taken together constitute potential influences on GCC. Because these changes may have serious environmental consequences, Section 3.0 will evaluate the potential for the proposed Project to have a significant effect upon the environment as a result of its potential contribution to the greenhouse effect.

2.2 GLOBAL CLIMATE CHANGE DEFINED

GCC refers to the change in average meteorological conditions on the earth with respect to temperature, wind patterns, precipitation and storms. Global temperatures are regulated by naturally occurring atmospheric gases such as water vapor, CO_2, N_2O, CH_4, hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF_6). These particular gases are important due to their residence time (duration they stay) in the atmosphere, which ranges from 10 years to more than 100 years. These gases allow solar radiation into the earth's atmosphere, but prevent radioactive heat from escaping, thus warming the earth's atmosphere

Gases that trap heat in the atmosphere are often referred to as GHGs. GHGs are released into the atmosphere by both natural and anthropogenic activity. Without the natural GHG effect, the earth's average temperature would be approximately 61 degrees Fahrenheit (°F) cooler than it is currently. The cumulative increased accumulation of these gases in the earth's atmosphere over the past 200 years is considered to be the cause for the observed increase in the earth's temperature.

2.3 GREENHOUSE GASES

GREENHOUSE GASES AND HEALTH EFFECTS

GHGs trap heat in the atmosphere, creating a GHG effect that results in climate change. Many gases demonstrate these properties and as discussed in Table 2-1. For the purposes of this analysis, emissions of CO_2, CH_4, and N_2O were evaluated because these gases are the primary

contributors to GCC from land use development projects. Although there are other substances such as fluorinated gases that also contribute to GCC, these fluorinated gases were not evaluated as their sources are not well-defined and do not contain accepted emissions factors or methodology to accurately calculate these gases.

TABLE 2-1: GREENHOUSE GASES

Greenhouse Gases	Description	Sources	Health Effects
Water	Water is the most abundant, important, and variable GHG in the atmosphere. Water vapor is not considered a pollutant; in the atmosphere it maintains a climate necessary for life. Changes in its concentration are primarily considered to be a result of climate feedbacks related to the warming of the atmosphere rather than a direct result of industrialization. A climate feedback is an indirect, or secondary, change, either positive or negative, that occurs within the climate system in response to a forcing mechanism. The feedback loop in which water is involved is critically important to projecting future climate change. As the temperature of the atmosphere rises, more water is evaporated from ground storage (rivers, oceans, reservoirs, soil). Because the air is warmer, the relative humidity can be higher (in essence, the air is able to 'hold' more water when it is warmer), leading to more water vapor in the atmosphere. As a GHG, the higher concentration of water vapor is then able to absorb more thermal indirect energy radiated from the Earth, thus further warming the atmosphere. The warmer atmosphere can then hold more water vapor and so on and so on. This is referred to as a "positive feedback loop." The extent to which this positive feedback loop	The main source of water vapor is evaporation from the oceans (approximately 85 percent [%]). Other sources include evaporation from other water bodies, sublimation (change from solid to gas) from sea ice and snow, and transpiration from plant leaves.	There are no known direct health effects related to water vapor at this time. It should be noted however that when some pollutants react with water vapor, the reaction forms a transport mechanism for some of these pollutants to enter the human body through water vapor.

TABLE 2-1: GREENHOUSE GASES

Greenhouse Gases	Description	Sources	Health Effects
	will continue is unknown as there are also dynamics that hold the positive feedback loop in check. As an example, when water vapor increases in the atmosphere, more of it will eventually condense into clouds, which are more able to reflect incoming solar radiation (thus allowing less energy to reach the earth's surface and heat it up) (11).		
CO_2	CO_2 is an odorless and colorless GHG. Since the industrial revolution began in the mid-1700s, the sort of human activity that increases GHG emissions has increased dramatically in scale and distribution. Data from the past 50 years suggests a corollary increase in levels and concentrations. As an example, prior to the industrial revolution, CO_2 concentrations were fairly stable at 280 parts per million (ppm). Today, they are around 370 ppm, an increase of more than 30%. Left unchecked, the concentration of CO_2 in the atmosphere is projected to increase to a minimum of 540 ppm by 2100 as a direct result of anthropogenic sources (12).	CO_2 is emitted from natural and manmade sources. Natural sources include: the decomposition of dead organic matter; respiration of bacteria, plants, animals and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources include: the burning of coal, oil, natural gas, and wood. CO_2 is naturally removed from the air by photosynthesis, dissolution into ocean water, transfer to soils and ice caps, and chemical weathering of carbonate rocks (13).	Outdoor levels of CO_2 are not high enough to result in negative health effects. According to the National Institute for Occupational Safety and Health (NIOSH) high concentrations of CO_2 can result in health effects such as: headaches, dizziness, restlessness, difficulty breathing, sweating, increased heart rate, increased cardiac output, increased blood pressure, coma, asphyxia, and/or convulsions. It should be noted that current concentrations of CO_2 in the earth's atmosphere are estimated to be approximately 370 ppm, the actual reference exposure level (level at which adverse health effects typically occur) is at exposure levels of 5,000 ppm averaged over 10 hours in a 40-hour workweek and short-term reference exposure levels of

TABLE 2-1: GREENHOUSE GASES

Greenhouse Gases	Description	Sources	Health Effects
			30,000 ppm averaged over a 15 minute period (14).
CH_4	CH_4 is an extremely effective absorber of radiation, although its atmospheric concentration is less than CO_2 and its lifetime in the atmosphere is brief (10-12 years), compared to other GHGs.	CH_4 has both natural and anthropogenic sources. It is released as part of the biological processes in low oxygen environments, such as in swamplands or in rice production (at the roots of the plants). Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of CH_4. Other anthropocentric sources include fossil-fuel combustion and biomass burning (15).	CH_4 is extremely reactive with oxidizers, halogens, and other halogen-containing compounds. Exposure to high levels of CH_4 can cause asphyxiation, loss of consciousness, headache and dizziness, nausea and vomiting, weakness, loss of coordination, and an increased breathing rate.
N_2O	N_2O, also known as laughing gas, is a colorless GHG. Concentrations of N_2O also began to rise at the beginning of the industrial revolution. In 1998, the global concentration was 314 parts per billion.	N_2O is produced by microbial processes in soil and water, including those reactions which occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and	N_2O can cause dizziness, euphoria, and sometimes slight hallucinations. In small doses, it is considered harmless. However, in some cases, heavy and extended use can cause Olney's Lesions (brain damage) (16).

TABLE 2-1: GREENHOUSE GASES

Greenhouse Gases	Description	Sources	Health Effects
		vehicle emissions) also contribute to its atmospheric load. It is used as an aerosol spray propellant, i.e., in whipped cream bottles. It is also used in potato chip bags to keep chips fresh. It is used in rocket engines and in race cars. N_2O can be transported into the stratosphere, be deposited on the earth's surface, and be converted to other compounds by chemical reaction (16).	
Chlorofluorocarbons (CFCs)	CFCs are gases formed synthetically by replacing all hydrogen atoms in CH_4 or ethane (C_2H_6) with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble and chemically unreactive in the troposphere (the level of air at the earth's surface).	CFCs have no natural source but were first synthesized in 1928. They were used for refrigerants, aerosol propellants and cleaning solvents. Due to the discovery that they are able to destroy stratospheric ozone, a global effort to halt their production was undertaken and was extremely successful, so much so that levels of the major CFCs are now remaining steady or declining. However, their long atmospheric lifetimes mean that some of the CFCs will remain in the	In confined indoor locations, working with CFC-113 or other CFCs is thought to result in death by cardiac arrhythmia (heart frequency too high or too low) or asphyxiation.

TABLE 2-1: GREENHOUSE GASES

Greenhouse Gases	Description	Sources	Health Effects
		atmosphere for over 100 years (17).	
HFCs	HFCs are synthetic, man-made chemicals that are used as a substitute for CFCs. Out of all the GHGs, they are one of three groups with the highest global warming potential (GWP). The HFCs with the largest measured atmospheric abundances are (in order), fluoroform (CHF_3), 1,1,1,2-tetrafluoroethane (CH_2FCF), and 1,1-difluoroethane (CH_3CF_2). Prior to 1990, the only significant emissions were of CHF_3. CH_2FCF emissions are increasing due to its use as a refrigerant.	HFCs are manmade for applications such as automobile air conditioners and refrigerants.	No health effects are known to result from exposure to HFCs.
PFCs	PFCs have stable molecular structures and do not break down through chemical processes in the lower atmosphere. High-energy ultraviolet rays, which occur about 60 kilometers above earth's surface, are able to destroy the compounds. Because of this, PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane (CF_4) and hexafluoroethane (C_2F_6). The U.S. Environmental Protection Agency (EPA) estimates that concentrations of CF_4 in the atmosphere are over 70 parts per trillion (ppt).	The two main sources of PFCs are primary aluminum production and semiconductor manufacture.	No health effects are known to result from exposure to PFCs.
SF_6	SF_6 is an inorganic, odorless, colorless, nontoxic, nonflammable gas. It also has the highest global warming potential (GWP) of any gas evaluated (23,900) (18). The EPA	SF_6 is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor	In high concentrations in confined areas, the gas presents the hazard of suffocation because it displaces the oxygen needed for breathing.

TABLE 2-1: GREENHOUSE GASES

Greenhouse Gases	Description	Sources	Health Effects
	indicates that concentrations in the 1990s were about 4 ppt.	manufacturing, and as a tracer gas for leak detection.	
Nitrogen Trifluoride (NF_3)	NF_3 is a colorless gas with a distinctly moldy odor. The World Resources Institute (WRI) indicates that NF_3 has a 100-year GWP of 17,200 (19).	NF_3 is used in industrial processes and is produced in the manufacturing of semiconductors, Liquid Crystal Display (LCD) panels, types of solar panels, and chemical lasers.	Long-term or repeated exposure may affect the liver and kidneys and may cause fluorosis (20).

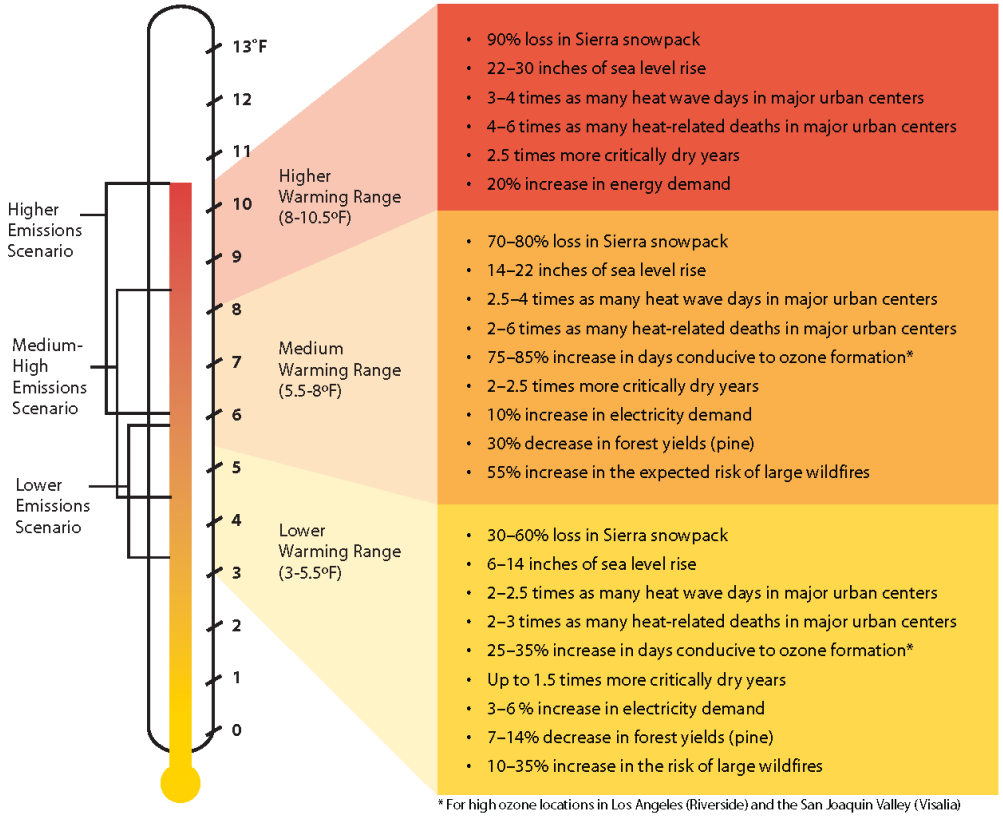
The potential health effects related directly to the emissions of CO_2, CH_4, and N_2O as they relate to development projects such as the proposed Project are still being debated in the scientific community. Their cumulative effects to GCC have the potential to cause adverse effects to human health. Increases in Earth's ambient temperatures would result in more intense heat waves, causing more heat-related deaths. Scientists also purport that higher ambient temperatures would increase disease survival rates and result in more widespread disease. Climate change will likely cause shifts in weather patterns, potentially resulting in devastating droughts and food shortages in some areas (21). Exhibit 2-A presents the potential impacts of global warming (22).

2.4 GLOBAL WARMING POTENTIAL

GHGs have varying GWP values. GWP of a GHG indicates the amount of warming a gas cause over a given period of time and represents the potential of a gas to trap heat in the atmosphere. CO_2 is utilized as the reference gas for GWP, and thus has a GWP of 1. CO_2 equivalent (CO_2e) is a term used for describing the difference GHGs in a common unit. CO_2e signifies the amount of CO_2 which would have the equivalent GWP.

The atmospheric lifetime and GWP of selected GHGs are summarized at Table 2-2. As shown in the table below, GWP for the 6th Assessment Report, the Intergovernmental Panel on Climate Change (IPCC)'s scientific and socio-economic assessment on climate change, range from 1 for CO_2 to 25,200 for SF_6 (23).

EXHIBIT 2-A: SUMMARY OF PROJECTED GLOBAL WARMING IMPACT, 2070-2099 (AS COMPARED WITH 1961-1990)



Source: Barbara H. Allen-Diaz. "Climate change affects us all." *University of California, Agriculture and Natural Resources*, 2009.

TABLE 2-2: GWP AND ATMOSPHERIC LIFETIME OF SELECT GHGS

Gas	Atmospheric Lifetime (years)	GWP (100-year time horizon)
		6th Assessment Report
CO_2	Multiple	1
CH_4	12 .4	28
N_2O	121	273
HFC-23	222	14,600
HFC-134a	13.4	1,526
HFC-152a	1.5	164
SF_6	3,200	25,200

Source: IPCC Second Assessment Report, 1995 and IPCC Sixth Assessment Report, 2022

2.5 GREENHOUSE GAS EMISSIONS INVENTORIES

2.5.1 GLOBAL

Worldwide anthropogenic GHG emissions are tracked by the IPCC for industrialized nations (referred to as Annex I) and developing nations (referred to as Non-Annex I). Human GHG emissions data for Annex I nations are available through 2020. Based on the latest available data, the sum of these emissions totaled approximately 28,026,643 gigagram (Gg) CO2e2 (25) (26) as summarized on Table 2-3.

2.5.2 UNITED STATES

As noted in Table 2-3, the United States, as a single country, was the number two producer of GHG emissions in 2020.

TABLE 2-3: TOP GHG PRODUCING COUNTRIES AND THE EUROPEAN UNION [3]

Emitting Countries	GHG Emissions (Gg CO_2e)
China	12,300,200
United States	5,981,354
European Union (27-member countries)	3,706,110
India	2,839,420
Russian Federation	2,051,437
Japan	1,148,122
Total	**28,026,643**

According to the United States (U.S.) Environmental Protection Agency (EPA), in 2019, GHG emissions in the U.S. totaled 6,558 million metric tons of carbon dioxide equivalents (MT CO_2e), or 5,769 million MT CO_2e after accounting for sequestration from the land sector. Emissions decreased from 2018 to 2019 by 1.7% (after accounting for sequestration from the land sector). This decrease was driven largely by a decrease in emissions from fossil fuel combustion resulting from a decrease in total energy use in 2019 compared to 2018 and a continued shift from coal to natural gas and renewables in the electric power sector. In 2019 U.S. GHG emissions were 13% below 2005 levels (27).

2.5.3 STATE OF CALIFORNIA

California has significantly slowed the rate of growth of GHG emissions due to the implementation of energy efficiency programs as well as adoption of strict emission controls but

[2] The global emissions are the sum of Annex I and non-Annex I countries, without counting Land-Use, Land-Use Change and Forestry (LULUCF). For countries without 2020 data, the United Nations' Framework Convention on Climate Change (UNFCCC) data for the most recent year were used U.N. Framework Convention on Climate Change, "Annex I Parties – GHG total without LULUCF," The most recent GHG emissions for China and India are from 2014 and 2016, respectively.

[3] Used http://unfccc.int data for Annex I countries. Consulted the CAIT Climate Data Explorer in https://www.climatewatchdata.org site to reference Non-Annex I countries of China and India.

is still a substantial contributor to the United States (U.S.) emissions inventory total (28). The California Air Resource Board (CARB) compiles GHG inventories for the State of California. Based upon the 2022 GHG inventory data (i.e., the latest year for which data are available) for the 2000-2020 GHG emissions period, California emitted an average 369.2 million metric tons of CO_2e per year ($MMTCO_2e/yr$) or 369,200 Gg CO_2e (6.17% of the total United States GHG emissions) (29).

2.6 EFFECTS OF CLIMATE CHANGE IN CALIFORNIA

2.6.1 PUBLIC HEALTH

Higher temperatures may increase the frequency, duration, and intensity of conditions conducive to air pollution formation. For example, days with weather conducive to ozone formation could increase from 25 to 35% under the lower warming range to 75 to 85% under the medium warming range. In addition, if global background ozone levels increase as predicted in some scenarios, it may become impossible to meet local air quality standards. Air quality could be further compromised by increases in wildfires, which emit fine particulate matter that can travel long distances, depending on wind conditions. Based on *Our Changing Climate Assessing the Risks to California by the California Climate Change Center*, large wildfires could become up to 55% more frequent if GHG emissions are not significantly reduced (31).

In addition, under the higher warming range scenario, there could be up to 100 more days per year with temperatures above 90°F in Los Angeles and 95°F in Sacramento by 2100. This is a significant increase over historical patterns and approximately twice the increase projected if temperatures remain within or below the lower warming range. Rising temperatures could increase the risk of death from dehydration, heat stroke/exhaustion, heart attack, stroke, and respiratory distress caused by extreme heat.

2.6.2 WATER RESOURCES

A vast network of man-made reservoirs and aqueducts captures and transports water throughout the state from northern California rivers and the Colorado River. The current distribution system relies on Sierra Nevada snowpack to supply water during the dry spring and summer months. Rising temperatures, potentially compounded by decreases in precipitation, could severely reduce spring snowpack, increasing the risk of summer water shortages.

If temperatures continue to increase, more precipitation could fall as rain instead of snow, and the snow that does fall could melt earlier, reducing the Sierra Nevada spring snowpack by as much as 70 to 90%. Under the lower warming range scenario, snowpack losses could be only half as large as those possible if temperatures were to rise to the higher warming range. How much snowpack could be lost depends in part on future precipitation patterns, the projections for which remain uncertain. However, even under the wetter climate projections, the loss of snowpack could pose challenges to water managers and hamper hydropower generation. It could also adversely affect winter tourism. Under the lower warming range, the ski season at lower elevations could be reduced by as much as a month. If temperatures reach the higher warming range and precipitation declines, there might be many years with insufficient snow for skiing and snowboarding.

The State's water supplies are also at risk from rising sea levels. An influx of saltwater could degrade California's estuaries, wetlands, and groundwater aquifers. Saltwater intrusion caused by rising sea levels is a major threat to the quality and reliability of water within the southern edge of the Sacramento/San Joaquin River Delta – a major fresh water supply.

2.6.3 AGRICULTURE

Increased temperatures could cause widespread changes to the agriculture industry reducing the quantity and quality of agricultural products statewide. First, California farmers could possibly lose as much as 25% of the water supply needed. Although higher CO_2 levels can stimulate plant production and increase plant water-use efficiency, California's farmers could face greater water demand for crops and a less reliable water supply as temperatures rise. Crop growth and development could change, as could the intensity and frequency of pest and disease outbreaks. Rising temperatures could aggravate ozone pollution, which makes plants more susceptible to disease and pests and interferes with plant growth.

Plant growth tends to be slow at low temperatures, increasing with rising temperatures up to a threshold. However, faster growth can result in less-than-optimal development for many crops, so rising temperatures could worsen the quantity and quality of yield for a number of California's agricultural products. Products likely to be most affected include wine grapes, fruits, and nuts.

In addition, continued GCC could shift the ranges of existing invasive plants and weeds and alter competition patterns with native plants. Range expansion could occur in many species while range contractions may be less likely in rapidly evolving species with significant populations already established. Should range contractions occur, new or different weed species could fill the emerging gaps. Continued GCC could alter the abundance and types of many pests, lengthen pests' breeding season, and increase pathogen growth rates.

2.6.4 FORESTS AND LANDSCAPES

GCC has the potential to intensify the current threat to forests and landscapes by increasing the risk of wildfire and altering the distribution and character of natural vegetation. If temperatures rise into the medium warming range, the risk of large wildfires in California could increase by as much as 55%, which is almost twice the increase expected if temperatures stay in the lower warming range. However, since wildfire risk is determined by a combination of factors, including precipitation, winds, temperature, and landscape and vegetation conditions, future risks would not be uniform throughout the state. In contrast, wildfires in northern California could increase by up to 90% due to decreased precipitation.

Moreover, continued GCC has the potential to alter natural ecosystems and biological diversity within the state. For example, alpine and subalpine ecosystems could decline by as much as 60 to 80% by the end of the century as a result of increasing temperatures. The productivity of the state's forests has the potential to decrease as a result of GCC.

2.6.5 RISING SEA LEVELS

Rising sea levels, more intense coastal storms, and warmer water temperatures could increasingly

threaten the state's coastal regions. Under the higher warming range scenario, sea level is anticipated to rise 22 to 35 inches by 2100. Elevations of this magnitude would inundate low-lying coastal areas with saltwater, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats. Under the lower warming range scenario, sea level could rise 12-14 inches

2.7 REGULATORY SETTING

2.7.1 FEDERAL

Prior to the last decade, there have been no concrete federal regulations of GHGs or major planning for climate change adaptation. The following are actions regarding the federal government, GHGs, and fuel efficiency.

GHG Endangerment. In *Massachusetts v. Environmental Protection Agency* 549 U.S. 497 (2007), decided on April 2, 2007, the Supreme Court found that four GHGs, including CO_2, are air pollutants subject to regulation under Section 202(a)(1) of the federal Clean Air Act (CAA). The Court held that the EPA Administrator must determine whether emissions of GHGs from new motor vehicles cause or contribute to air pollution, which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs under section 202(a) of the CAA:

- Endangerment Finding: The Administrator finds that the current and projected concentrations of the six key well-mixed GHGs— CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6—in the atmosphere threaten the public health and welfare of current and future generations.
- Cause or Contribute Finding: The Administrator finds that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution, which threatens public health and welfare.

These findings do not impose requirements on industry or other entities. However, this was a prerequisite for implementing GHG emissions standards for vehicles, as discussed in the section "Clean Vehicles" below (32).

Clean Vehicles. Congress first passed the Corporate Average Fuel Economy law in 1975 to increase the fuel economy of cars and light duty trucks. The law has become more stringent over time. In 2010, the EPA and the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) announced a joint final rule establishing a national program that would reduce GHG emissions and improve fuel economy for new cars and trucks sold in the U.S.

The first phase of the national program applied to passenger cars, light-duty trucks, and medium-duty (MD) passenger vehicles, covering model years 2012 through 2016. The program required these vehicles to meet an estimated combined average emissions level of 250 grams of CO_2 per mile, equivalent to 35.5 miles per gallon (mpg), if the automobile industry were to meet this CO_2 level solely through fuel economy improvements. Together, these standards were estimated to reduce CO_2 emissions by an estimated 960 million metric tons and save 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012–2016). The EPA and

the NHTSA issued final rules on a second-phase joint rulemaking establishing national standards for light-duty vehicles for model years 2017 through 2025 in August 2012. The new standards for model years 2017 through 2025 apply to passenger cars, light-duty trucks, and MD passenger vehicles. The final standards are projected to result in an average industry fleetwide level of 163 grams/mile of CO_2 in model year 2025, which is equivalent to 54.5 mpg if achieved exclusively through fuel economy improvements.

The EPA and the U.S. Department of Transportation issued final rules for the first national standards to reduce GHG emissions and improve fuel efficiency of heavy-duty trucks (HDT) and buses in 2011. For combination tractors, the agencies are proposing engine and vehicle standards that begin in the 2014 model year and achieve up to a 20% reduction in CO_2 emissions and fuel consumption by the 2018 model year. For HDT and vans, the agencies are proposing separate gasoline and diesel truck standards, which phase in starting in the 2014 model year and achieve up to a 10% reduction for gasoline vehicles and a 15% reduction for diesel vehicles by the 2018 model year (12 and 17% respectively if accounting for air conditioning leakage). Lastly, for vocational vehicles, the engine and vehicle standards would achieve up to a 10% reduction in fuel consumption and CO_2 emissions from the 2014 to 2018 model years.

On April 2, 2018, the EPA signed the Mid-term Evaluation Final Determination, which declared that the MY 2022-2025 GHG standards are not appropriate and should be revised (33). This Final Determination serves to initiate a notice to further consider appropriate standards for MY 2022-2025 light-duty vehicles. On August 2, 2018, the NHTSA in conjunction with the EPA, released a notice of proposed rulemaking, the *Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks* (SAFE Vehicles Rule). The SAFE Vehicles Rule was proposed to amend exiting Corporate Average Fuel Economy (CAFE) and tailpipe CO_2 standards for passenger cars and light trucks and to establish new standards covering model years 2021 through 2026. As of March 31, 2020, the NHTSA and EPA finalized the SAFE Vehicle Rule, which set new CAFE standards and requires a 1.5% improvement in vehicle fuel efficiency each year through model year 2026 (34).

As of January 2021, Executive Order 13990 directed the EPA to reconsider the EPA's 2019 action titled "The Safer Affordable Fuel-Efficient Vehicles Rule Part One: One National Program Rule (SAFE-1)" for the purposes of rescinding the action taken by the prior administration (35).

Mandatory Reporting of GHGs. The Consolidated Appropriations Act of 2008 requires the establishment of mandatory GHG reporting requirements. The rule requires reporting of GHG emissions from large sources and suppliers in the U.S. and is intended to collect accurate and timely emissions data to inform future policy decisions. Under the rule, suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons per year (MT/yr) or more of GHG emissions are required to submit annual reports to the EPA.

New Source Review. The EPA final rule establishes thresholds for GHGs that define when permits under the New Source Review Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities. This final rule "tailors" the requirements of these CAA permitting programs to limit which facilities will be required to obtain

Prevention of Significant Deterioration and Title V permits. In the preamble to the revisions to the Federal Code of Regulations, the EPA states:

> *"This rulemaking is necessary because without it the Prevention of Significant Deterioration and Title V requirements would apply, as of January 2, 2011, at the 100 or 250 tons per year levels provided under the CAA, greatly increasing the number of required permits, imposing undue costs on small sources, overwhelming the resources of permitting authorities, and severely impairing the functioning of the programs. EPA is relieving these resource burdens by phasing in the applicability of these programs to GHG sources, starting with the largest GHG emitters. This rule establishes two initial steps of the phase-in. The rule also commits the agency to take certain actions on future steps addressing smaller sources but excludes certain smaller sources from Prevention of Significant Deterioration and Title V permitting for GHG emissions until at least April 30, 2016."*

The EPA estimates that facilities responsible for nearly 70% of the national GHG emissions from stationary sources will be subject to permitting requirements under this rule. This includes the nation's largest GHG emitters—power plants, refineries, and cement production facilities.

SmartWay Program. The SmartWay Program is a public-private initiative between the EPA, large and small trucking companies, rail carriers, logistics companies, commercial manufacturers, retailers, and other federal and state agencies. Its purpose is to improve fuel efficiency and the environmental performance (reduction of both GHG emissions and air pollution) of the goods movement supply chains. SmartWay is comprised of four components (36):

1. SmartWay Transport Partnership: A partnership in which freight carriers and shippers commit to benchmark operations, track fuel consumption, and improve performance annually.
2. SmartWay Technology Program: A testing, verification, and designation program to help freight companies identify equipment, technologies, and strategies that save fuel and lower emissions.
3. SmartWay Vehicles: A program that ranks light-duty cars and small trucks and identifies superior environmental performers with the SmartWay logo.
4. SmartWay International Interests: Guidance and resources for countries seeking to develop freight sustainability programs modeled after SmartWay.

SmartWay effectively refers to requirements geared towards reducing fuel consumption. Most large trucking fleets driving newer vehicles are compliant with SmartWay design requirements. Moreover, over time, all HDTs will have to comply with the CARB GHG Regulation that is designed with the SmartWay Program in mind, to reduce GHG emissions by making them more fuel-efficient. For instance, in 2015, 53 foot or longer dry vans or refrigerated trailers equipped with a combination of SmartWay-verified low-rolling resistance tires and SmartWay-verified aerodynamic devices would obtain a total of 10% or more fuel savings over traditional trailers.

Through the SmartWay Technology Program, the EPA has evaluated the fuel saving benefits of various devices through grants, cooperative agreements, emissions and fuel economy testing, demonstration projects and technical literature review. As a result, the EPA has determined the

following types of technologies provide fuel saving and/or emission reducing benefits when used properly in their designed applications, and has verified certain products:

- Idle reduction technologies – less idling of the engine when it is not needed would reduce fuel consumption.
- Aerodynamic technologies minimize drag and improve airflow over the entire tractor-trailer vehicle. Aerodynamic technologies include gap fairings that reduce turbulence between the tractor and trailer, side skirts that minimize wind under the trailer, and rear fairings that reduce turbulence and pressure drop at the rear of the trailer.
- Low rolling resistance tires can roll longer without slowing down, thereby reducing the amount of fuel used. Rolling resistance (or rolling friction or rolling drag) is the force resisting the motion when a tire rolls on a surface. The wheel will eventually slow down because of this resistance.
- Retrofit technologies include things such as diesel particulate filters, emissions upgrades (to a higher tier), etc., which would reduce emissions.
- Federal excise tax exemptions.

2.7.2 STATE

2.7.3.1 EXECUTIVE ORDERS RELATED TO GHG EMISSIONS

California's Executive Branch has issued several Executive Orders (EO) to state agencies to reduce GHGs. EO are not legally enforceable on local governments or the private sector. Although not regulatory and not directly applicable to development projects, they set the tone for the state and guide the actions of state agencies.

EXECUTIVE ORDER S-3-05

Executive Order (EO) S-3-05 initiated the State's formal efforts to reduce GHG emissions and set the following reduction targets for GHG emissions:

- By 2010, reduce GHG emissions to 2000 levels.
- By 2020, reduce GHG emissions to 1990 levels.
- By 2050, reduce GHG emissions to 80% below 1990 levels.

The 2050 reduction goal represents what some scientists believe is necessary to reach levels that will stabilize the climate. The 2020 goal was established to be a mid-term target.

EXECUTIVE ORDER S-01-07

EO S-01-07 mandates a statewide goal to reduce the carbon intensity of California's transportation fuels by at least 10% by 2020. CARB adopted the Low Carbon Fuel Standard (LCFS) to achieve the 10% reduction in GHG emissions from the transportation fuels sector by 2020.

EXECUTIVE ORDER S-13-08

EO S-13-08 requires the creation of the California Climate Adaptation Strategy (CCAS), the first of which was adopted. Objectives include analyzing risks of climate change in California, identifying and exploring strategies to adapt to climate change, and specifying a direction for future research.

EXECUTIVE ORDER B-30-15

EO B-30-15 establishes a California GHG reduction target of 40% below 1990 levels by 2030. The new interim statewide GHG emission reduction target is set at a level to ensure California meets its 2050 target of reducing GHG emissions 80% below 1990 levels. EO B-30-15 directs CARB to update the State Climate Change Scoping Plan to include a 2030 target in terms of millions of MT CO_2e. EO B-30-15 also requires the CCAS to be updated every three years, and for the State to continue its climate change research program, among other provisions.

EXECUTIVE ORDER B-55-18

Executive Order B-55-18 establishes a Statewide policy to achieve carbon neutrality by 2045 and maintain net negative emissions thereafter. As per Executive Order B-55-18, CARB is directed to work with relevant State agencies to develop a framework for implementation and accounting that tracks progress toward this goal and to ensure future Climate Change Scoping Plans identify and recommend measures to achieve the carbon neutrality goal.

EXECUTIVE ORDER N-79-20

EO N-79-20 sets new statewide goals for phasing out gasoline-powered cars and trucks in California. Under EO N-79-20, 100% of in-state sales of new passenger cars and trucks are to be zero-emission by 2035; 100% of in-state sales of medium- and heavy-duty trucks and busses are to be zero-emission by 2045, where feasible; and 100% of off-road vehicles and equipment sales are to be zero-emission by 2035, where feasible. EO-79-20 directs CARB and other state agencies to develop regulations or take other steps within existing authority to achieve these goals.

2.7.3.1 LEGISLATIVE ACTIONS TO REDUCE GHGS

The State of California legislature has enacted a series of bills that constitute the most aggressive program to reduce GHGs of any state in the nation. Some legislation such as Global Warming Solutions Act of 2006 (AB32) and the Global Warming Solutions Act of 2006: Emissions Limit (SB 32) which were specifically enacted to address GHG emissions and the 2020 and 2030 targets identified in EO S-3-05and B-30-15.

GLOBAL WARMING SOLUTIONS ACT OF 2006 (AB 32)

In 2006, the State Legislature enacted AB 32, the California Global Solutions Act of 2006 (HSC §38500-38599), which requires that GHGs emitted in California be reduced to 1990 levels by the year 2020 (this goal has been met since 2016[4]). GHGs as defined under AB 32 include CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6. Since AB32 was enacted, a seventh chemical, nitrogen trifluoride, has also been added to the list of GHGs. CARB is the state agency charged with monitoring and regulating sources of GHGs. AB 32 states the following:

> *"Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse*

[4] Based upon the 2021 GHG inventory data (i.e., the latest year for which data are available) for the 2000-2019 GHG emissions period, California emitted less than the 2020 emissions target of 431 million MT CO_2e in 2016 and each year after that.

> *impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems."*

GLOBAL WARMING SOLUTIONS ACT OF 2006: EMISSIONS LIMIT (SB 32)

In September 2016, the State Legislature enacted SB 32, the California Global Warming Solutions Act of 2006: Emissions Limit (HSC §38566). SB 32 requires the state to reduce statewide GHG emissions to 40% below 1990 levels by 2030, a reduction target that was first introduced in Executive Order B-30-15. The new legislation builds upon AB 32 and provides an intermediate goal to achieving S-3-05, which sets a statewide GHG reduction target of 80% below 1990 levels by 2050 (2).

THE SUSTAINABLE COMMUNITIES AND CLIMATE PROTECTION ACT OF 2008 (SB 375)

According to SB 375, the transportation sector is the largest contributor of GHG emissions, which emits over 40% of the total GHG emissions in California. SB 375 states, "Without improved land use and transportation policy, California will not be able to achieve the goals of AB 32." SB 375 does the following: it (1) requires metropolitan planning organizations to include sustainable community strategies in their regional transportation plans for reducing GHG emissions, (2) aligns planning for transportation and housing, and (3) creates specified incentives for the implementation of the strategies.

Concerning CEQA, SB 375, as codified in Public Resources Code Section 21159.28, states that CEQA findings for certain projects are not required to reference, describe, or discuss (1) growth inducing impacts, or (2) any project-specific or cumulative impacts from cars and light-duty truck trips generated by the project on global warming or the regional transportation network, if the project:

1. Is in an area with an approved sustainable communities strategy or an alternative planning strategy that the CARB accepts as achieving the GHG emission reduction targets.
2. Is consistent with that strategy (in designation, density, building intensity, and applicable policies).
3. Incorporates the mitigation measures required by an applicable prior environmental document.

VEHICULAR EMISSIONS: GREENHOUSE GASES (AB 1493)

California's AB 1493, required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. The standards initially phased in during the 2009 through 2016 model years. The near-term (2009–2012) standards resulted in about a 22% reduction compared with the 2002 fleet, and the mid-term (2013–2016) standards resulted in about a 30% improvement in fuel efficiency. The second phase of the implementation for AB 1493 was incorporated into Amendments to the Low-Emission Vehicle Program (LEV III) or the Advanced Clean Cars (ACC) program. The ACC program combines the control of smog-causing pollutants and GHG emissions into a single coordinated package of requirements for model years

2017 through 2025. The regulation is intended reduce GHGs from new cars by 34% from 2016 levels by 2025. The new rules are intended to clean up gasoline and diesel-powered cars, and deliver increasing numbers of zero-emission technologies, such as full battery electric vehicles (EV), newly emerging plug-in hybrid EVs, and hydrogen fuel cell vehicles. The package will also ensure adequate fueling infrastructure is available for the increasing numbers of hydrogen fuel

CALIFORNIA RENEWABLES PORTFOLIO STANDARD PROGRAM: EMISSIONS OF GREENHOUSE GASES

The State Renewable Portfolio Standard (RPS) was initially established by SB 1078. SB 1078 required electricity providers to increase procurement of electricity from renewable energy sources by at least one percent per year with the goal of reaching 20 percent renewables by 2017. SB 107 accelerated the 20 percent RPS requirement from 2017 to 2010. Subsequently, SB 2 (1X) increased the RPS requirements to 33 percent renewables by 2020 with compliance period targets of 20 percent by 2013 and 25 percent by 2016. SB 350 further increases the RPS requirement to 50 percent by 2030, with interim targets of 40 percent by 2024 and 45 percent by 2027. In addition, the bill requires that 65 percent of RPS procurement must be derived from long-term contracts (10 years or more) starting in 2021. The most recent change is from SB 100, which increases RPS requirements to 60 percent by 2030, with new interim targets of 44 percent by 2024 and 52 percent by 2027 as well. The bill further requires that all of the state's electricity come from carbon-free resources (not only RPS-eligible ones) by 2045.

MODEL WATER EFFICIENT LANDSCAPING ORDINANCE

The Model Water Efficient Landscaping Ordinance (MWELO) was enacted by AB 1881, the Water Conservation Act. AB 1881 required local agencies to adopt a local landscape ordinance at least as effective in conserving water as the Model Ordinance by January 1, 2010. EO B-29-15 directs DWR to update the MELOW through expedited regulation. The California Water Commission approved the revised MELOW became effective December 15, 2015, which requires new development projects that include landscape areas of 500 sf to implement:

- More efficient irrigation systems;
- Incentives for graywater usage;
- Improvements in on-site stormwater capture;
- Limiting the portion of landscapes that can be planted with high water use plants; and
- Includes reporting requirements for local agencies.

SB 97 AND THE CEQA GUIDELINES UPDATE

Passed in August 2007, SB 97 added Section 21083.05 to the Public Resources Code. The code states "(a) On or before July 1, 2009, the OPR shall prepare, develop, and transmit to the Resources Agency guidelines for the mitigation of GHG emissions or the effects of GHG emissions as required by this division, including, but not limited to, effects associated with transportation or energy consumption. (b) On or before January 1, 2010, the Resources Agency shall certify and adopt guidelines prepared and developed by the OPR pursuant to subdivision (a)." Section 21097 was also added to the Public Resources Code. It provided CEQA protection until January 1, 2010 for transportation projects funded by the Highway Safety, Traffic Reduction, Air Quality, and Port

Security Bond Act of 2006 or projects funded by the Disaster Preparedness and Flood Prevention Bond Act of 2006, in stating that the failure to analyze adequately the effects of GHGs would not violate CEQA.

On December 28, 2018, the Natural Resources Agency announced the OAL approved the amendments to the CEQA Guidelines for implementing the CEQA. The CEQA Amendments provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in CEQA documents. The CEQA Amendments fit within the existing CEQA framework by amending existing CEQA Guidelines to reference climate change.

Section 15064.3 was added the CEQA Guidelines and states that in determining the significance of a project's GHG emissions, the lead agency should focus its analysis on the reasonably foreseeable incremental contribution of the project's emissions to the effects of climate change. A project's incremental contribution may be cumulatively considerable even if it appears relatively small compared to statewide, national or global emissions. The agency's analysis should consider a timeframe that is appropriate for the project. The agency's analysis also must reasonably reflect evolving scientific knowledge and state regulatory schemes. Additionally, a lead agency may use a model or methodology to estimate GHG emissions resulting from a project. The lead agency has discretion to select the model or methodology it considers most appropriate to enable decision makers to intelligently take into account the project's incremental contribution to climate change. The lead agency must support its selection of a model or methodology with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use (37).

CALIFORNIA RPS PROGRAM

Under the existing RPS, 25% of retail sales are required to be from renewable sources by December 31, 2016, 33% by December 31, 2020, 40% by December 31, 2024, 45% by December 31, 2027, and 50% by December 31, 2030. SB 100 raises California's RPS requirement to 50% renewable resources target by December 31, 2026, and to achieve a 60% target by December 31, 2030. SB 100 also requires that retail sellers and local publicly owned electric utilities procure a minimum quantity of electricity products from eligible renewable energy resources so that the total kilowatt hours (kWh) of those products sold to their retail end-use customers achieve 44% of retail sales by December 31, 2024, 52% by December 31, 2027, and 60% by December 31, 2030. In addition to targets under AB 32 and SB 32, Executive Order B-55-18 establishes a carbon neutrality goal for the state of California by 2045; and sets a goal to maintain net negative emissions thereafter. The Executive Order directs the California Natural Resources Agency (CNRA), California Environmental Protection Agency (CalEPA), the Department of Food and Agriculture (CDFA), and CARB to include sequestration targets in the Natural and Working Lands Climate Change Implementation Plan consistent with the carbon neutrality goal.

2.7.3.2 CARB

CALIFORNIA CLIMATE CHANGE SCOPING PLAN

2017 CARB SCOPING PLAN

In November 2017, CARB released the *Final 2017 Scoping Plan Update* (*2017 Scoping Plan*), which identifies the State's post-2020 reduction strategy. The *2017 Scoping Plan* reflects the 2030 target of a 40% reduction below 1990 levels, set by Executive Order B-30-15 and codified by SB 32. Key programs that the proposed Second Update builds upon include the Cap-and-Trade Regulation, the LCFS, and much cleaner cars, trucks, and freight movement, utilizing cleaner, renewable energy, and strategies to reduce CH_4 emissions from agricultural and other wastes.

The *2017 Scoping Plan* establishes a new emissions limit of 260 $MMTCO_2e$ for the year 2030, which corresponds to a 40% decrease in 1990 levels by 2030 (38).

California's climate strategy would require contributions from all sectors of the economy, including the land base, and would include enhanced focus on zero and near-zero emission (ZE/NZE) vehicle technologies; continued investment in renewables, including solar roofs, wind, and other distributed generation; greater use of low carbon fuels; integrated land conservation and development strategies; coordinated efforts to reduce emissions of short-lived climate pollutants (CH_4, black carbon, and fluorinated gases); and an increased focus on integrated land use planning to support livable, transit-connected communities and conservation of agricultural and other lands. Requirements for direct GHG reductions at refineries would further support air quality co-benefits in neighborhoods, including in disadvantaged communities historically located adjacent to these large stationary sources, as well as efforts with California's local air pollution control and air quality management districts (air districts) to tighten emission limits on a broad spectrum of industrial sources. Major elements of the *2017 Scoping Plan* framework include:

- Implementing and/or increasing the standards of the Mobile Source Strategy, which include increasing zero-emission vehicles (ZEV) buses and trucks.
- LCFS, with an increased stringency (18% by 2030).
- Implementing SB 350, which expands the RPS to 50% RPS and doubles energy efficiency savings by 2030.
- California Sustainable Freight Action Plan, which improves freight system efficiency, utilizes near-zero emissions technology, and deployment of ZEV trucks.
- Implementing the proposed Short-Lived Climate Pollutant Strategy (SLPS), which focuses on reducing CH_4 and HCF emissions by 40% and anthropogenic black carbon emissions by 50% by year 2030.
- Continued implementation of SB 375.
- Post-2020 Cap-and-Trade Program that includes declining caps.
- 20% reduction in GHG emissions from refineries by 2030.
- Development of a Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

Note, however, that the *2017 Scoping Plan* acknowledges that:

> *"[a]chieving net zero increases in GHG emissions, resulting in no contribution to GHG impacts, may not be feasible or appropriate for every project, however, and the inability of a project to mitigate its GHG emissions to net zero does not imply*

> *the project results in a substantial contribution to the cumulatively significant environmental impact of climate change under CEQA."*

In addition to the statewide strategies listed above, the *2017 Scoping Plan* also identifies local governments as essential partners in achieving the State's long-term GHG reduction goals and identifies local actions to reduce GHG emissions. As part of the recommended actions, CARB recommends that local governments achieve a community-wide goal to achieve emissions of no more than 6 metric tons of CO_2e ($MTCO_2e$) or less per capita by 2030 and 2 $MTCO_2e$ or less per capita by 2050. For CEQA projects, CARB states that lead agencies may develop evidence-based bright-line numeric thresholds—consistent with the *2017 Scoping Plan* and the State's long-term GHG goals—and projects with emissions over that amount may be required to incorporate on-site design features and MMs that avoid or minimize project emissions to the degree feasible; or a performance-based metric using a CAP or other plan to reduce GHG emissions is appropriate.

According to research conducted by the Lawrence Berkeley National Laboratory (LBNL) and supported by CARB, California, under its existing and proposed GHG reduction policies, could achieve the 2030 goals under SB 32. The research utilized a new, validated model known as the California LBNL GHG Analysis of Policies Spreadsheet (CALGAPS), which simulates GHG and criteria pollutant emissions in California from 2010 to 2050 in accordance to existing and future GHG-reducing policies. The CALGAPS model showed that by 2030, emissions could range from 211 to 428 $MTCO_2e$ per year ($MTCO_2e$/yr), indicating that "even if all modeled policies are not implemented, reductions could be sufficient to reduce emissions 40% below the 1990 level [of SB 32]." CALGAPS analyzed emissions through 2050 even though it did not generally account for policies that might be put in place after 2030. Although the research indicated that the emissions would not meet the State's 80% reduction goal by 2050, various combinations of policies could allow California's cumulative emissions to remain very low through 2050 (39) (40) .

CAP-AND-TRADE PROGRAM

The 2017 Scoping Plan identifies a Cap-and-Trade Program as one of the key strategies for California to reduce GHG emissions. According to CARB, a cap-and-trade program will help put California on the path to meet its goal of achieving a 40% reduction in GHG emissions from 1990 levels by 2030. Under cap-and-trade, an overall limit on GHG emissions from capped sectors is established, and facilities subject to the cap will be able to trade permits to emit GHGs within the overall limit.

CARB adopted a California Cap-and-Trade Program pursuant to its authority under AB 32. The Cap-and-Trade Program is designed to reduce GHG emissions from regulated entities by more than 16% between 2013 and 2020, and by an additional 40% by 2030. The statewide cap for GHG emissions from the capped sectors (e.g., electricity generation, petroleum refining, and cement production) commenced in 2013 and will decline over time, achieving GHG emission reductions throughout the program's duration.

Covered entities that emit more than 25.000 $MTCO_2e$/yr must comply with the Cap-and-Trade Program. Triggering of the 25.000 $MTCO_2e$/yr "inclusion threshold" is measured against a subset

of emissions reported and verified under the California Regulation for the Mandatory Reporting of GHG Emissions (Mandatory Reporting Rule or "MRR").

Under the Cap-and-Trade Program, CARB issues allowances equal to the total amount of allowable emissions over a given compliance period and distributes these to regulated entities. Covered entities are allocated free allowances in whole or part (if eligible), and may buy allowances at auction, purchase allowances from others, or purchase offset credits. Each covered entity with a compliance obligation is required to surrender "compliance instruments" for each $MTCO_2e$ of GHG they emit. There also are requirements to surrender compliance instruments covering 30% of the prior year's compliance obligation by November of each year (42).

The Cap-and-Trade Program provides a firm cap, which provides the highest certainty of achieving the 2030 target. An inherent feature of the Cap-and-Trade program is that it does not guarantee GHG emissions reductions in any discrete location or by any particular source. Rather, GHG emissions reductions are only guaranteed on an accumulative basis. As summarized by CARB in the *First Update to the Climate Change Scoping Plan*:

> *"The Cap-and-Trade Regulation gives companies the flexibility to trade allowances with others or take steps to cost-effectively reduce emissions at their own facilities. Companies that emit more have to turn in more allowances or other compliance instruments. Companies that can cut their GHG emissions have to turn in fewer allowances. But as the cap declines, aggregate emissions must be reduced. In other words, a covered entity theoretically could increase its GHG emissions every year and still comply with the Cap-and-Trade Program if there is a reduction in GHG emissions from other covered entities. Such a focus on aggregate GHG emissions is considered appropriate because climate change is a global phenomenon, and the effects of GHG emissions are considered cumulative."* (43)

The Cap-and-Trade Program covered approximately 80% of California's GHG emissions (38). The Cap-and-Trade Program covers the GHG emissions associated with electricity consumed in California, whether generated in-state or imported. Accordingly, GHG emissions associated with CEQA projects' electricity usage are covered by the Cap-and-Trade Program. The Cap-and-Trade Program also covers fuel suppliers (natural gas and propane fuel providers and transportation fuel providers) to address emissions from such fuels and from combustion of other fossil fuels not directly covered at large sources in the Program's first compliance period. The Cap-and-Trade Program covers the GHG emissions associated with the combustion of transportation fuels in California, whether refined in-state or imported.

2022 CARB SCOPING PLAN

On December 15, 2022, CARB adopted the 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan) (44). The 2022 Scoping Plan builds on the 2017 Scoping Plan as well as the requirements set forth by AB 1279, which directs the state to become carbon neutral no later than 2045. To achieve this statutory objective, the 2022 Scoping Plan lays out how California can reduce GHG emissions by 85% below 1990 levels and achieve carbon neutrality by 2045. The Scoping Plan scenario to do this is to "deploy a broad portfolio of existing and emerging fossil fuel alternatives and clean technologies, and align with statutes, Executive Orders, Board direction, and direction from the governor." The 2022 Scoping Plan sets

one of the most aggressive approaches to reach carbon neutrality in the world. Unlike the 2017 Scoping Plan, CARB no longer includes a numeric per capita threshold and instead advocates for compliance with a local GHG reduction strategy (CAP) consistent with CEQA Guidelines section 15183.5.

The key elements of the 2022 CARB Scoping Plan focus on transportation - the regulations that will impact this sector are adopted and enforced by CARB on vehicle manufacturers and outside the jurisdiction and control of local governments. As stated in the Plan's executive summary:

> "The major element of this unprecedented transformation is the aggressive reduction of fossil fuels wherever they are currently used in California, building on and accelerating carbon reduction programs that have been in place for a decade and a half. That means rapidly moving to zero-emission transportation; electrifying the cars, buses, trains, and trucks that now constitute California's single largest source of planet-warming pollution."
>
> "[A]pproval of this plan catalyzes a number of efforts, including the development of new regulations as well as amendments to strengthen regulations and programs already in place, not just at CARB but across state agencies."

Under the 2022 Scoping Plan, the State will lead efforts to meet the 2045 carbon neutrality goal through implementation of the following objectives:

- Reimagine roadway projects that increase VMT in a way that meets community needs and reduces the need to drive.
- Double local transit capacity and service frequencies by 2030.
- Complete the High-Speed Rail (HSR) System and other elements of the intercity rail network by 2040.
- Expand and complete planned networks of high-quality active transportation infrastructure.
- Increase availability and affordability of bikes, e-bikes, scooters, and other alternatives to light-duty vehicles, prioritizing needs of underserved communities.
- Shift revenue generation for transportation projects away from the gas tax into more durable sources by 2030.
- Authorize and implement roadway pricing strategies and reallocate revenues to equitably improve transit, bicycling, and other sustainable transportation choices.
- Prioritize addressing key transit bottlenecks and other infrastructure investments to improve transit operational efficiency over investments that increase VMT.
- Develop and implement a statewide transportation demand management (TDM) framework with VMT mitigation requirements for large employers and large developments.
- Prevent uncontrolled growth of autonomous vehicle (AV) VMT, particularly zero-passenger miles.
- Channel new mobility services towards pooled use models, transit complementarity, and lower VMT outcomes.
- Establish an integrated statewide system for trip planning, booking, payment, and user accounts that enables efficient and equitable multimodal systems.
- Provide financial support for low-income and disadvantaged Californians' use of transit and new mobility services.
- Expand universal design features for new mobility services.

- Accelerate infill development in existing transportation-efficient places and deploy strategic resources to create more transportation-efficient locations.
- Encourage alignment in land use, housing, transportation, and conservation planning in adopted regional plans (RTP/SCS and RHNA) and local plans (e.g., general plans, zoning, and local transportation plans).
- Accelerate production of affordable housing in forms and locations that reduce VMT and affirmatively further fair housing policy objectives.
- Reduce or eliminate parking requirements (and/or enact parking maximums, as appropriate) and promote redevelopment of excess parking, especially in infill locations.
- Preserve and protect existing affordable housing stock and protect existing residents and businesses from displacement and climate risk.

Included in the 2022 Scoping Plan is a set of Local Actions (Appendix D to the 2022 Scoping Plan) aimed at providing local jurisdictions with tools to reduce GHGs and assist the state in meeting the ambitious targets set forth in the 2022 Scoping Plan. Appendix D to the 2022 Scoping Plan includes a section on evaluating plan-level and project-level alignment with the State's Climate Goals in CEQA GHG analyses. In this section, CARB identifies several recommendations and strategies that should be considered for new development in order to determine consistency with the 2022 Scoping Plan. Notably, this section is focused on Residential and Mixed-Use Projects, in fact CARB states in Appendix D (page 4): "…focuses primarily on climate action plans (CAPs) and local authority over new residential development. It does not address other land use types (e.g., industrial) or air permitting."

Additionally on Page 21 in Appendix D, CARB states: "The recommendations outlined in this section apply only to residential and mixed-use development project types. California currently faces both a housing crisis and a climate crisis, which necessitates prioritizing recommendations for residential projects to address the housing crisis in a manner that simultaneously supports the State's GHG and regional air quality goals. CARB plans to continue to explore new approaches for other land use types in the future." As such, it would be inappropriate to apply the requirements contained in Appendix D of the 2022 Scoping Plan to any land use types other than residential or mixed-use residential development

CARB REFRIGERANT MANAGEMENT PROGRAM

CARB adopted a regulation in 2009 to reduce refrigerant GHG emissions from stationary sources through refrigerant leak detection and monitoring, leak repair, system retirement and retrofitting, reporting and recordkeeping, and proper refrigerant cylinder use, sale, and disposal. The regulation is set forth in sections 95380 to 95398 of Title 17, CCR. The rules implementing the regulation establish a limit on statewide GHG emissions from stationary facilities with refrigeration systems with more than 50 lbs of a high GWP refrigerant. The refrigerant management program is designed to (1) reduce emissions of high-GWP GHG refrigerants from leaky stationary, non-residential refrigeration equipment; (2) reduce emissions from the installation and servicing of refrigeration and air-conditioning appliances using high-GWP refrigerants; and (3) verify GHG emission reductions.

LCFS

In 2018, the CARB approved amendments to LCFS that included strengthening the carbon intensity benchmarks through 2030 in compliance with GHG emissions reduction target for 2030.

The amendments included crediting opportunities to promote zero emission vehicle adoption, alternative jet fuel, carbon capture and sequestration, and advanced technologies to achieve deep decarbonization in the transportation sector (45).

PHASE I AND 2 HEAVY-DUTY VEHICLE GHG STANDARDS

CARB has adopted a new regulation for GHG emissions from HDTs and engines sold in California. It establishes GHG emission limits on truck and engine manufacturers and harmonizes with the EPA rule for new trucks and engines nationally. Existing HD vehicle regulations in California include engine criteria emission standards, tractor-trailer GHG requirements to implement SmartWay strategies (i.e., the Heavy-Duty Tractor-Trailer Greenhouse Gas Regulation), and in-use fleet retrofit requirements such as the Truck and Bus Regulation. In September 2011, the EPA adopted their new rule for HDTs and engines. The EPA rule has compliance requirements for new compression and spark ignition engines, as well as trucks from Class 2b through Class 8. Compliance requirements begin with model year (MY) 2014 with stringency levels increasing through MY 2018. The rule organizes truck compliance into three groupings, which include a) HD pickups and vans; b) vocational vehicles; and c) combination tractors. The EPA rule does not regulate trailers.

CARB staff has worked jointly with the EPA and the NHTSA on the next phase of federal GHG emission standards for medium-duty trucks (MDT) and HDT vehicles, called federal Phase 2. The federal Phase 2 standards were built on the improvements in engine and vehicle efficiency required by the Phase 1 emission standards and represent a significant opportunity to achieve further GHG reductions for 2018 and later model year HDT vehicles, including trailers. But as discussed above, the EPA and NHTSA have proposed to roll back GHG and fuel economy standards for cars and light-duty trucks, which suggests a similar rollback of Phase 2 standards for MDT and HDT vehicles may be pursued.

In February 2019, the OAL approved the Phase 2 Heavy-Duty Vehicle GHG Standards and became effective April 1, 2019. The Phase 2 GHG standards are needed to offset projected VMT growth and keep heavy-duty truck CO_2 emissions declining. The federal Phase 2 standards establish for the first time, federal emissions requirements for trailers hauled by heavy-duty tractors. The federal Phase 2 standards are more technology-forcing than the federal Phase 1 standards, requiring manufacturers to improve existing technologies or develop new technologies to meet the standards. The federal Phase 2 standards for tractors, vocational vehicles, and heavy-duty pick-up trucks and vans (PUVs) will be phased-in from 2021-2027, additionally for trailers, the standards are phased-in from 2018 (2020 in California) through 2027 (46).

TRACTOR-TRAILER GHG REGULATION

The tractors and trailers subject to this regulation must either use EPA SmartWay certified tractors and trailers or retrofit their existing fleet with SmartWay verified technologies. The regulation applies primarily to owners of 53-foot or longer box-type trailers, including both dry-van and refrigerated-van trailers, and owners of the HD tractors that pull them on California highways. These owners are responsible for replacing or retrofitting their affected vehicles with compliant aerodynamic technologies and low rolling resistance tires. Sleeper cab tractors model

year 2011 and later must be SmartWay certified. All other tractors must use SmartWay verified low rolling resistance tires. There are also requirements for trailers to have low rolling resistance tires and aerodynamic devices.

2.7.3.3 CALIFORNIA REGULATIONS AND BUILDING CODES

Other legislation such as Title 20 and Title 24 energy standards were originally adopted for other purposes such as energy and water conservation, but also provide GHG reductions.

California has a long history of adopting regulations to improve energy efficiency in new and remodeled buildings. These regulations have kept California's energy consumption relatively flat even with rapid population growth.

TITLE 20 CCR

CCR, Title 20: Division 2, Chapter 4, Article 4, Sections 1601-1608: Appliance Efficiency Regulations regulates the sale of appliances in California. The Appliance Efficiency Regulations include standards for both federally regulated appliances and non-federally regulated appliances. 23 categories of appliances are included in the scope of these regulations. The standards within these regulations apply to appliances that are sold or offered for sale in California, except those sold wholesale in California for final retail sale outside the state and those designed and sold exclusively for use in recreational vehicles or other mobile equipment.

TITLE 24 ENERGY EFFICIENCY STANDARDS AND CALIFORNIA GREEN BUILDING STANDARDS

California Code of Regulations (CCR) Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings, was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption.

The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases greenhouse gas (GHG) emissions. The 2022 version of Title 24 was adopted by the CEC and will be effective on January 1, 2023. The 2022 Title 24 standards require solar photovoltaic systems for new homes, establish requirements for newly constructed healthcare facilities, encourage demand responsive technologies for residential buildings, and update indoor and outdoor lighting standards for nonresidential buildings.

The CEC anticipates that the 2022 energy code will provide $1.5 billion in consumer benefits and reduce GHG emissions by 10 million metric tons (47). The Project would be required to comply with the applicable standards in place at the time building permit document submittals are made. These require, among other items (48):

RESIDENTIAL MANDATORY MEASURES

- EV Charging (new one- and two-family dwellings and townhouses with attached private garages). For each dwelling unit, install a listed raceway to accommodate a dedicated 208/240-volt branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet,

box or other enclosure in close proximity to the proposed location of an EV charger. Raceways are required to be continuous at enclosed, inaccessible or concealed areas and spaces. The service panel and/or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device (4.106.4.1).

- Short-term bicycle parking. If the new project or an additional alteration is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for 5% of new visitor motorized vehicle parking spaces being added, with a minimum of one two-bike capacity rack (5.106.4.1.1).
- Long-term bicycle parking. For new buildings with tenant spaces that have ten or more tenant-occupants, provide secure bicycle parking for 5% of the tenant-occupant vehicular parking spaces with a minimum of one bicycle parking facility (5.106.4.1.2).
- Designated parking. In new projects or additions to alterations that add ten or more vehicular parking spaces, provide designated parking for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles as shown in Table 5.106.5.2 (5.106.5.2).
- Construction waste management. Recycle and/or salvage for reuse a minimum of 65% of the nonhazardous construction and demolition waste in accordance with Section 5.408.1.1. 5.405.1.2, or 5.408.1.3; or meet a local construction and demolition waste management ordinance, whichever is more stringent (5.408.1).
- Excavated soil and land clearing debris. 100% of trees, stumps, rocks and associated vegetation and soils resulting primarily from land clearing shall be reused or recycled. For a phased project, such material may be stockpiled on site until the storage site is developed (5.408.3).
- Recycling by Occupants. Provide readily accessible areas that serve the entire building and are identified for the depositing, storage and collection of non-hazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics, organic waste, and metals or meet a lawfully enacted local recycling ordinance, if more restrictive (5.410.1).
- Water conserving plumbing fixtures and fittings. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the following:
    - Water Closets. The effective flush volume of all water closets shall not exceed 1.28 gallons per flush (5.303.3.1).
    - Urinals. The effective flush volume of wall-mounted urinals shall not exceed 0.125 gallons per flush (5.303.3.2.1). The effective flush volume of floor-mounted or other urinals shall not exceed 0.5 gallons per flush (5.303.3.2.2).
    - Showerheads. Single showerheads shall have a minimum flow rate of not more than 1.8 gallons per minute and 80 psi (5.303.3.3.1). When a shower is served by more than one showerhead, the combine flow rate of all showerheads and/or other shower outlets controlled by a single valve shall not exceed 1.8 gallons per minute at 80 psi (5.303.3.3.2).
    - Faucets and fountains. Nonresidential lavatory faucets shall have a maximum flow rate of note more than 0.5 gallons per minute at 60 psi (5.303.3.4.1). Kitchen faucets shall have a maximum flow rate of not more than 1.8 gallons per minute of 60 psi (5.303.3.4.2). Wash fountains shall have a maximum flow rate of not more than 1.8 gallons per minute (5.303.3.4.3). Metering faucets shall not deliver more than 0.20 gallons per cycle (5.303.3.4.4). Metering faucets for wash fountains shall have a maximum flow rate not more than 0.20 gallons per cycle (5.303.3.4.5).

- Residential lavatory faucets shall have a maximum flow rate of note more than 1.2 gallons per minute at 60 psi (4.303.1.4.1). Lavatory faucets in common or public use areas shall have a maximum flow rate of note more than 0.5 gallons per minute at 60 psi (4.303.1.4.2). Metering faucets shall not deliver more than 0.25 gallons per cycle (4.303.1.4.3). Kitchen faucets shall have a maximum flow rate of not more than 1.8 gallons per minute of 60 psi (4.303.1.4.4).
- Outdoor potable water use in landscaped areas. Nonresidential developments shall comply with a local water efficient landscape ordinance or the current California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent (5.304.1).
- Water meters. Separate submeters or metering devices shall be installed for new buildings or additions in excess of 50,000 sf or for excess consumption where any tenant within a new building or within an addition that is projected to consume more than 1,000 gal/day (5.303.1.1 and 5.303.1.2).
- Outdoor water use in rehabilitated landscape projects equal or greater than 2,500 sf. Rehabilitated landscape projects with an aggregate landscape area equal to or greater than 2,500 sf requiring a building or landscape permit (5.304.3).
- Commissioning. For new buildings 10,000 sf and over, building commissioning shall be included in the design and construction processes of the building project to verify that the building systems and components meet the owner's or owner representative's project requirements (5.410.2).
- Additionally, under California's 2022 Title 24, Part 6 Building Energy Efficiency Standards, solar photovoltaic systems are required for newly constructed low-rise residential buildings and shall be sized sufficient to offset the electricity use of the proposed building as if it was a mixed-fuel building.

2.7.4 REGIONAL

The project is within the South Coast Air Basin (SCAB), which is under the jurisdiction of the SCAQMD.

SCAQMD

SCAQMD is the agency responsible for air quality planning and regulation in the SCAB. The SCAQMD addresses the impacts to climate change of projects subject to SCAQMD permit as a lead agency if they are the only agency having discretionary approval for the project and acts as a responsible agency when a land use agency must also approve discretionary permits for the project. The SCAQMD acts as an expert commenting agency for impacts to air quality. This expertise carries over to GHG emissions, so the agency helps local land use agencies through the development of models and emission thresholds that can be used to address GHG emissions.

In 2008, SCAQMD formed a Working Group to identify GHG emissions thresholds for land use projects that could be used by local lead agencies in the SCAB. The Working Group developed several different options that are contained in the SCAQMD Draft Guidance Document – Interim CEQA GHG Significance Threshold, that could be applied by lead agencies. The working group has not provided additional guidance since release of the interim guidance in 2008. The SCAQMD Board has not approved the thresholds; however, the Guidance Document provides substantial evidence supporting the approaches to significance of GHG emissions that can be considered by

the lead agency in adopting its own threshold. The current interim thresholds consist of the following tiered approach:

- Tier 1 consists of evaluating whether or not the project qualifies for any applicable exemption under CEQA.
- Tier 2 consists of determining whether the project is consistent with a GHG reduction plan. If a project is consistent with a qualifying local GHG reduction plan, it does not have significant GHG emissions.
- Tier 3 consists of screening values, which the lead agency can choose, but must be consistent with all projects within its jurisdiction. A project's construction emissions are averaged over 30 years and are added to the project's operational emissions. If a project's emissions are below one of the following screening thresholds, then the project is less than significant:
    - Residential and Commercial land use: 3,000 MT CO_2e per year
    - Industrial land use: 10,000 MT CO_2e per year
    - Based on land use type: residential: 3,500 MT CO_2e per year; commercial: 1,400 MT CO_2e per year; or mixed use: 3,000 MT CO_2e per year
- Tier 4 has the following options:
    - Option 1: Reduce BAU emissions by a certain percentage; this percentage is currently undefined.
    - Option 2: Early implementation of applicable AB 32 Scoping Plan measures
    - Option 3: 2020 target for service populations (SP), which includes residents and employees: 4.8 MT CO_2e/SP/year for projects and 6.6 MT CO2e/SP/year for plans;
    - Option 3, 2035 target: 3.0 MT CO_2e/SP/year for projects and 4.1 MT CO_2e/SP/year for plans
- Tier 5 involves mitigation offsets to achieve target significance threshold.

The SCAQMD's interim thresholds used the Executive Order S-3-05-year 2050 goal as the basis for the Tier 3 screening level. Achieving the Executive Order's objective would contribute to worldwide efforts to cap CO_2 concentrations at 450 ppm, thus stabilizing global climate.

SCAQMD only has authority over GHG emissions from development projects that include air quality permits. At this time, it is unknown if the project would include stationary sources of emissions subject to SCAQMD permits. Notwithstanding, if the Project requires a stationary permit, it would be subject to the applicable SCAQMD regulations.

SCAQMD Regulation XXVII, adopted in 2009 includes the following rules:

- Rule 2700 defines terms and post global warming potentials.
- Rule 2701, SoCal Climate Solutions Exchange, establishes a voluntary program to encourage, quantify, and certify voluntary, high quality certified GHG emission reductions in the SCAQMD.
- Rule 2702, GHG Reduction Program created a program to produce GHG emission reductions within the SCAQMD. The SCAQMD will fund projects through contracts in response to requests for proposals or purchase reductions from other parties.

CONNECT SOCAL 2020-2045 REGIONAL TRANSPORTATION PLAN/SUSTAINABLE COMMUNITIES STRATEGY

On September 3,2020 SCAG's Regional Council adopted the Connect SoCal 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). The plan charts a path toward a more mobile, sustainable and prosperous region by making key connections: between transportation networks, between planning strategies and between the people whose collaboration can make plans a reality (49).

2.8 COUNTY OF RIVERSIDE CAP

The County of Riverside's Climate Action Plan (CAP) was designed under the premise that the County of Riverside, and the community it represents, is uniquely capable of addressing emissions associated with sources under the County of Riverside's jurisdiction, and that the County of Riverside's emission reduction efforts should coordinate with the state strategies of reducing emissions in order to accomplish these reductions in an efficient and cost-effective manner.

The CAP Update (November 2019) establishes GHG emission reduction programs and regulations that correlate with and support evolving State GHG emissions reduction goals and strategies. The CAP Update includes reduction targets for year 2030 and year 2050. These reduction targets require the County of Riverside to reduce emissions by at least 525,511 MT CO_2e below the adjusted BAU (ABAU) scenario by 2030 and at least 2,982,948 MT CO_2e below the ABAU scenario by 2050 (50).

To evaluate consistency with the CAP Update, the County of Riverside has implemented CAP Update Screening Tables (Screening Tables) to aid in measuring the reduction of GHG emissions attributable to certain design and construction measures incorporated in development projects. To this end, the Screening Tables establish categories of GHG Implementation Measures. Under each Implementation Measure category, mitigation or project design features (collectively "features") are assigned point values that correspond to the minimum GHG emissions reduction that would result from each feature. Projects that yield at least 100 points are considered to be consistent with the GHG emissions reduction quantities anticipated in the County of Riverside's GHG Technical Report and support the GHG emissions reduction targets established under the CAP Update. The potential for such projects to generate direct or indirect GHG emissions that would result in a significant impact on the environment; or conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases would be considered less-than-significant.

This page intentionally left blank

3 PROJECT GREENHOUSE GAS IMPACT

3.1 INTRODUCTION

The Project has been evaluated to determine if it will result in a significant GHG impact. The significance of these potential impacts is described in the following section.

3.2 STANDARDS OF SIGNIFICANCE

The criteria used to determine the significance of potential Project-related GHG impacts are taken from the Initial Study Checklist in Appendix G of the State CEQA Guidelines (14 California Code of Regulations §§15000, et seq.). Based on these thresholds, a project would result in a significant impact related to GHG if it would (1):

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs?

The evaluation of an impact under CEQA requires measuring data from a project against both existing conditions and a "threshold of significance." For establishing significance thresholds, the Office of Planning and Research's amendments to the CEQA Guidelines Section 15064.7(c) state "[w]hen adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence."

CEQA Guidelines Section 15064.4(a) further states, ". . . A lead agency shall have discretion to determine, in the context of a particular project, whether to: (1) Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use . . .; or (2) Rely on a qualitative analysis or performance-based standards."

CEQA Guidelines Section 15064.4 provides that a lead agency should consider the following factors, among others, in assessing the significance of impacts from greenhouse gas emissions:

- **Consideration #1:** The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting.
- **Consideration #2:** Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
- **Consideration #3:** The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of greenhouse gas emissions. In determining the significance of impacts, the lead agency may consider a project's consistency with the State's long-term climate goals or strategies, provided that substantial evidence supports the agency's analysis of how those goals or strategies

address the project's incremental contribution to climate change and its conclusion that the project's incremental contribution is not cumulatively considerable.

4.2.1 THRESHOLDS OF SIGNIFICANCE

As noted above in Section 2.7.5, the County of Riverside CAP Update provides a menu of options for energy efficiency, renewable energy, water conservation measures, and additional measures that provide predictable GHG reductions. Each option within the screening tables includes point values based upon the GHG reduction that each measure can achieve relative to a development project. Projects that achieve at least 100 points from the screening tables are determined to have provided a fair-share contribution of GHG reductions and, therefore, are considered consistent with the County of Riverside CAP Update. Because the County of Riverside CAP Update addresses GHG emissions reductions and is consistent with the requirements of AB 32, SB 32, and international efforts to reduce GHG emissions, Projects that comply with the CAP Update would have a less than significant GHG impact.

3.3 CALIFORNIA EMISSIONS ESTIMATOR MODEL™

In May 2022 California Air Pollution Control Officers Association (CAPCOA) in conjunction with other California air districts, including SCAQMD, released the latest version of the CalEEMod Version 2022.1. The purpose of this model is to calculate construction-source and operational-source criteria pollutant (VOCs, NO_X, SO_X, CO, PM_{10}, and $PM_{2.5}$) and GHG emissions from direct and indirect sources; and quantify applicable air quality and GHG reductions achieved from mitigation (51). Accordingly, the latest version of CalEEMod has been used for this Project to determine construction and operational air quality emissions. CalEEMod output for construction and operational scenarios is provided in Appendices 3.1, 3.2 and 3.3.

3.4 CONSTRUCTION AND OPERATIONAL LIFE-CYCLE ANALYSIS NOT REQUIRED

A full life-cycle analysis (LCA) for construction and operational activity is not included in this analysis due to the lack of consensus guidance on LCA methodology at this time (52). Life-cycle analysis (i.e., assessing economy-wide GHG emissions from the processes in manufacturing and transporting all raw materials used in the project development, infrastructure and on-going operations) depends on emission factors or econometric factors that are not well established for all processes. At this time, an LCA would be extremely speculative and thus has not been prepared.

Additionally, the SCAQMD recommends analyzing direct and indirect project GHG emissions generated within California and not life-cycle emissions because the life-cycle effects from a project could occur outside of California, might not be very well understood or documented, and would be challenging to mitigate (53). Additionally, the science to calculate life cycle emissions is not yet established or well defined; therefore, SCAQMD has not recommended, and is not requiring, life-cycle emissions analysis.

3.5 CONSTRUCTION EMISSIONS

Project construction actvities would generate CO_2 and CH_4 emissions. The report *Arroyo Vista Air Quality Impact Analysis Report* (Urban Crossroads, Inc.) contains detailed information regarding Project construction activities (54). As discussed in the Air Quality Impact Analysis, Construction related emissions are expected from the following construction activities:

- Demolition
- Site Preparation
- Grading
- Building Construction
- Paving
- Architectural Coating

3.5.1 CONSTRUCTION DURATION

Construction is expected to commence in June 2024 and will last through December 2027. The construction schedule utilized in the analysis, shown in Table 3-2, represents a "worst-case" analysis scenario should construction occur any time after the respective dates since emission factors for construction decrease as time passes and the analysis year increases due to emission regulations becoming more stringent.[5] It should be noted that the duration of Building Construction was compressed based on the changes made to the number of days which was decreased from the default parameters to reflect the 2027 Opening Year. The Activity and associated equipment represent a reasonable approximation of the expected construction fleet as required per *CEQA Guidelines* (1).

TABLE 3-1: CONSTRUCTION DURATION

Construction Activity	Start Date	End Date	Days
Phase 1			
Demolition	6/3/2024	7/31/2024	22
Site Preparation	8/1/2024	8/31/2024	22
Grading	9/2/2024	4/4/2025	155
Building Construction	3/3/2025	12/31/2026	479
Paving	5/1/2025	10/1/2025	110
Architectural Coating	6/2/2025	10/31/2025	110

[5] As shown in the CalEEMod User's Guide Version 2022.1, Section 4.3 "Offroad Equipment" as the analysis year increases, emission factors for the same equipment pieces decrease due to the natural turnover of older equipment being replaced by newer less polluting equipment and new regulatory requirements.

Construction Activity	Start Date	End Date	Days
Phase 2			
Demolition	12/2/2024	1/31/2025	45
Site Preparation	2/3/2025	2/28/2025	20
Grading	3/3/2025	6/13/2025	75
Building Construction	9/1/2025	12/31/2027	610
Paving	7/1/2025	9/15/2025	55
Architectural Coating	8/1/2025	10/16/2025	55

Source: Appendices 3.1 and 3.2.

3.5.2 CONSTRUCTION EQUIPMENT

Site specific construction fleet may vary due to specific project needs at the time of construction. The equipment list is generally based on CalEEMod default parameters and confirmed with the Project Applicant. It should be noted that the construction equipment presented on Table 3-3 will be used for the duration of both Phase 1 and Phase 2. A detailed summary of construction equipment assumptions by phase is provided at Table 3-3. Please refer to specific detailed modeling inputs/outputs contained in Appendices 3.1 and 3.2.

TABLE 3-2: CONSTRUCTION EQUIPMENT ASSUMPTIONS

Construction Activity	Equipment[1]	Amount	Hours Per Day
Demolition	Concrete/Industrial Saws	1	8
	Excavators	3	8
	Rubber Tired Dozers	2	8
Site Preparation	Crawler Tractors	4	8
	Rubber Tired Dozers	3	8
Grading	Excavators	2	8
	Graders	1	8
	Rubber Tired Dozers	1	8
	Scrapers	2	8
	Crawler Tractors	2	8
	Bore/Drill Rigs	1	8
	Generator Set	1	8
Building Construction	Cranes	1	8
	Forklifts	3	8
	Generator Sets	1	8
	Tractors/Loaders/Backhoes	3	8
	Welders	1	8

Construction Activity	Equipment[1]	Amount	Hours Per Day
Paving	Pavers	2	8
	Paving Equipment	2	8
	Rollers	2	8
Architectural Coating	Air Compressors	1	8

[1] In order to account for fugitive dust emissions, Crawler Tractors were used in lieu of Tractors/Loaders/Backhoes during the site preparation and grading phases.

3.5.3 CONSTRUCTION EMISSIONS SUMMARY

To evaluate Project construction emissions, GHG emissions are quantified and amortized over the life of the Project and added to the operations emissions. To amortize the emissions over the life of the Project, the SCAQMD recommends calculating the total GHG emissions for the construction activities, dividing it by a 30-year project life then adding that number to the annual operational GHG emissions (55). Therefore, Project construction emissions have been amortized over a 30-year period and added to the annual operational GHG emissions. The amortized construction emissions are presented in Table 3-3.

TABLE 3-3: CONSTRUCTION GHG EMISSIONS

Year	Emissions (MT/yr)				
	CO_2	CH_4	N_2O	R	Total CO_2e[6]
2024	512.50	0.03	0.02	0.05	514.60
2025	1,287.00	0.05	0.02	0.27	1,294.00
2026	814.00	0.02	0.02	0.27	821.00
2027	403.00	0.01	0.01	0.12	407.00
Total GHG Emissions	**3016.50**	**0.11**	**0.07**	**0.71**	**3036.60**
Amortized Construction Emissions	100.55	0.00	0.00	0.02	101.22

Source CalEEMod annual construction-source emissions are presented in Appendices 3.1 and 3.2.

3.6 OPERATIONAL EMISSIONS

Operational activities associated with the proposed Project will result in emissions of CO_2, CH_4, N_2O and R from the following primary sources:

- Area Sources
- Energy Sources
- Mobile Sources
- Water Supply, Treatment, and Distribution

[6] CalEEMod reports the most common GHGs emitted which include CO_2, CH_4, N_2O and R. These GHGs are then converted into the CO_2e by multiplying the individual GHG by the GWP.

- Solid Waste
- Refrigerants

3.6.1 AREA SOURCE EMISSIONS

Landscape maintenance equipment are typically the only area sources that would generate emissions GHG emissions, which are primarily due to fuel combustion and evaporation of unburned fuel. Equipment in this category would include lawnmowers, shedders/grinders, blowers, trimmers, chain saws, and hedge trimmers used to maintain the landscaping of the Project. The emissions associated with landscape maintenance equipment were calculated based on standard assumptions included in CalEEMod.

3.6.2 ENERGY SOURCE EMISSIONS

COMBUSTION EMISSIONS ASSOCIATED WITH NATURAL GAS AND ELECTRICITY

GHGs are emitted from buildings as a result of activities for which electricity and natural gas are typically used as energy sources. Combustion of any type of fuel emits CO_2 and other GHGs directly into the atmosphere; these emissions are considered direct emissions associated with a building; the building energy use emissions do not include street lighting[7]. GHGs are also emitted during the generation of electricity from fossil fuels; these emissions are considered to be indirect emissions. Unless otherwise noted, CalEEMod default parameters were used.

3.6.3 MOBILE SOURCE EMISSIONS

Project mobile source air quality impacts are dependent on both overall daily vehicle trip generation and the effect of the Project on peak hour traffic volumes and traffic operations in the vicinity of the Project. The Project-related operational air quality impacts are derived primarily from the 2,198 vehicle trips generated by the Project. Trip characteristics available from the TA report were utilized in this analysis (56).

3.6.4 WATER SUPPLY, TREATMENT AND DISTRIBUTION

Indirect GHG emissions result from the production of electricity used to convey, treat and distribute water and wastewater. The amount of electricity required to convey, treat and distribute water depends on the volume of water as well as the sources of the water. CalEEMod default parameters were used to estimate GHG emissions associated with water supply, treatment and distribution for the Project scenario.

3.6.5 SOLID WASTE

Residential land uses will result in the generation and disposal of solid waste. A large percentage of this waste will be diverted from landfills by a variety of means, such as reducing the amount of waste generated, recycling, and/or composting. The remainder of the waste not diverted will be disposed of at a landfill. GHG emissions from landfills are associated with the anaerobic

[7] The CalEEMod emissions inventory model does not include indirect emission related to street lighting. Indirect emissions related to street lighting are expected to be negligible and cannot be accurately quantified at this time as there is insufficient information as to the number and type of street lighting that would occur.

breakdown of material. GHG emissions associated with the disposal of solid waste associated with the proposed Project were calculated by CalEEMod using default parameters.

3.6.6 REFRIGERANTS

Air conditioning (A/C) and refrigeration equipment associated with the residential dwelling units are anticipated to generate GHG emissions. CalEEMod automatically generates a default A/C and refrigeration equipment inventory for each project land use subtype based on industry data from the USEPA (2016b). CalEEMod quantifies refrigerant emissions from leaks during regular operation and routine servicing over the equipment lifetime and then derives average annual emissions from the lifetime estimate. Note that CalEEMod does not quantify emissions from the disposal of refrigeration and A/C equipment at the end of its lifetime. Per 17 CCR 95371, new facilities with air conditioning equipment are prohibited from utilizing refrigerants with a GWP of 750 or greater as of January 1, 2025. As such, it was conservatively assumed that air conditioning systems installed at the Project's residential dwelling units would utilize refrigerants with a GWP of 750.

3.7 EMISSIONS SUMMARY

The annual GHG emissions associated with the operation of the proposed Project are estimated to be approximately 4,146.60 MT CO_2e per year as summarized in Table 3-4. Detailed calculations are provided in Appendix 3.3.

TABLE 3-4: PROJECT GHG EMISSIONS

Emission Source	Emissions (MT/yr)				
	CO_2	CH_4	N_2O	R	Total CO_2e
Amortized Construction Emissions	100.55	0.00	0.00	0.02	101.22
Mobile Source	3,065.00	0.13	0.15	4.41	3,116.00
Area Source	54.10	< 0.005	< 0.005	0.00	54.20
Energy Source	781.00	0.07	< 0.005	0.00	785.00
Water Usage	13.10	0.31	0.01	0.00	23.10
Waste	19.00	1.90	0.00	0.00	66.60
Refrigerants	0.00	0.00	0.00	0.48	0.48
Total CO_2e (All Sources)	**4,146.60**				

Source: CalEEMod output, See Appendix 3.3 for detailed model outputs.

3.8 GREENHOUSE GAS EMISSIONS FINDINGS AND RECOMMENDATIONS

GHG -1: Would the Project generate GHG emissions either directly or indirectly, that may have a significant impact on the environment?

The purpose of the CAP Update is to provide guidance on how to analyze GHG emissions and determine significance during the CEQA review of proposed development projects within the

County. To address the state's requirement to reduce GHG emissions, the County prepared its CAP Update with the goal of reducing GHG emissions within the County by 49% below "existing" 2008 levels by the year 2030. The County's target is consistent with the AB 32 target and ensures that the County will be providing GHG reductions locally that will complement state efforts to reduce GHG emissions. The County's target is also consistent with the SB 32 target that expands on AB 32 to reduce GHG emissions to 40% below the 1990 levels by 2030. Because the County's CAP Update addresses GHG emissions reductions and is consistent with the requirements of AB 32, SB 32, and international efforts to reduce GHG emissions, compliance with the CAP Update fulfills the description of mitigation found in the State CEQA Guidelines.

The CAP identifies a two-step approach in evaluating GHG emissions. First, a screening threshold of 3,000 $MTCO_2e$/yr is used to determine if additional analysis is required. Projects that exceed the 3,000 $MTCO_2e$/yr will be required to demonstrate and achieve a 25% reduction minimum of GHG emissions from a 2011-year level of efficiency compared to the mitigated Project buildout year or demonstrate at least 100 points (equivalent to an approximate 15% reduction in GHG emissions) through the CAP Screening Tables.

As shown on Table 3-4, the Project will result in approximately 4,146.60 $MTCO_2e$/yr; the proposed Project would exceed the County's screening threshold of 3,000 $MTCO_2e$/yr. Thus, the Project would have the potential to result in a cumulatively considerable impact with respect to GHG emissions. As previously stated, since the Project exceeds the 3,000 $MTCO_2e$/yr threshold, the Project is required to demonstrate compliance with the County's CAP Screening Tables and achieve a minimum 100 points as identified in the CAP. Mitigation Measure GHG-1 is summarized as follows:

MM GHG-1

Pursuant to MM GHG-1, the Project final plans and designs would conform to provisions of the CAP Update through implementation of the Screening Table Measures.

The Project shall implement Screening Table Measures providing for a minimum 100 points per the County Screening Tables. The Project would be consistent with the CAP Update's requirement to achieve at least 100 points and thus the Project is considered to have a less than significant individual and cumulatively considerable impact on GHG emissions. The County shall verify incorporation of the identified Screening Table Measures within the Project plans and site designs prior to the issuance of building permit(s) and/or site plans (as applicable). The County shall verify implementation of the identified Screening Table Measures prior to the issuance of Certificate(s) of Occupancy. Appendix 3.4 includes the CAP Update Checklist.

GHG-2: Would the Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs?

2022 SCOPING PLAN CONSISTENCY

The Project would not impede the State's progress towards carbon neutrality by 2045 under the 2022 Scoping Plan. The Project would be required to comply with applicable current and future regulatory requirements promulgated through the 2022 Scoping Plan. The Project includes

design features related to water and solid conservation that will further reduce Project GHG emissions. As such, the Project would not be inconsistent with the 2022 Scoping Plan. Lastly, the Project would be required to comply with applicable elements outlined in the City's CAP. As such, the Project would not be inconsistent with the 2022 Scoping Plan

CONSISTENCY WITH THE COUNTY OF RIVERSIDE CAP

The purpose of the County of Riverside CAP Update is to provide guidance on how to analyze GHG emissions and determine significance during the CEQA review of proposed development projects within the County. Because the County of Riverside CAP Update addresses GHG emissions reductions and is consistent with the requirements of AB 32, SB 32, and international efforts to reduce GHG emissions, compliance with the CAP Update fulfills the description of mitigation found in the State CEQA Guidelines.

Pursuant to MM GHG-1, the Project will implement Screening Table Measures providing for a minimum 100 points per the County Screening Tables. Since MM GHG-1 yields a minimum of 100 points, with incorporation of MM GHG-1, the Project would be consistent with the CAP Update. By achieving the 100-point minimum, the Project would be consistent with the GHG Development Review Process' requirement to achieve at least 100 points and thus the Project is considered to have a less than significant individual and cumulatively considerable impact on GHG emissions. Appendix 3.4 includes the CAP Update Checklist.

4 REFERENCES

1. **State of California.** *2019 CEQA California Environmental Quality Act.* 2019.
2. **California Legislative Information.** Senate Bill No. 32. [Online] September 8, 2016. https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB32.
3. **Air Resources Board.** Sustainable Communities. [Online] 2008. http://www.arb.ca.gov/cc/sb375/sb375.htm.
4. —. Clean Car Standards - Pavley, Assembly Bill 1493. [Online] September 24, 2009. http://www.arb.ca.gov/cc/ccms/ccms.htm.
5. **Building Standards Commission.** California Building Standards Code (Title 24, California Code of Regulations). [Online] http://www.bsc.ca.gov/codes.aspx.
6. **California Energy Commission.** California Code of Regulations, TITLE 20, Division 2. [Online] 2019. https://www.energy.ca.gov/rules-and-regulations/appliance-efficiency-regulations-title-20.
7. **Air Resources Board.** Low Carbon Fuel Standard: The Basics. [Online] 2021. https://ww2.arb.ca.gov/sites/default/files/2020-09/basics-notes.pdf.
8. **Department of Water Resources.** Updated Model Water Efficient Landscape Ordinance AB 1881. [Online] 2006. [Cited: November 13, 2013.] http://www.water.ca.gov/wateruseefficiency/landscapeordinance/updatedOrd_history.cfm.
9. **California Energy Commission.** SB 1368 Emission Performance Standards. [Online] September 29, 2006. http://www.energy.ca.gov/emission_standards/.
10. —. Renewables Portfolio Standard (RPS). [Online] 2002. http://www.energy.ca.gov/portfolio/.
11. **National Oceanic and Atmospheric Administration.** Greenhouse Gases - Water Vapor. *NOAA National Centers For Environmental Information.* [Online] https://www.ncdc.noaa.gov/monitoring-references/faq/greenhouse-gases.php?section=watervapor.
12. *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report.* **International Panel on Climate Change.** 4, 2007.
13. *The Carbon Cycle and Climate Change.* **Bennington, Bret J.** 1, s.l. : Brooks/Cole. ISBN 1 3: 978-0-495-73855-8.
14. **The National Institute for Occupational Safety and Health.** Carbon Dioxide. *Centers for Disease Control and Prevention.* [Online] https://www.cdc.gov/niosh/npg/npgd0103.html.
15. **National Oceanic and Atmospheric Administration.** Greenhouse Gases - Methane. *NOAA National Centers for Environmental Information.* [Online] https://www.ncdc.noaa.gov/monitoring-references/faq/greenhouse-gases.php?section=methane.
16. **World Resources Institute.** Climate Analysis Indicator Tool (CAIT). [Online] http://cait.wri.org.
17. **National Oceanic and Atmospheric Administration.** Greenhouse Gases - Chlorofluorocarbons. *NOAA National Centers For Environmental Information.* [Online] https://www.ncdc.noaa.gov/monitoring-references/faq/greenhouse-gases.php?section=chlorofluorocarbons.
18. **United States Environmental Protection Agency.** Regulation for Reducting Sulfur Hexafluoride Emissions from Gas Insulated Switchgear. *Environmental Protection Agency.* [Online] May 7, 2014. https://www.epa.gov/sites/production/files/2016-02/documents/mehl-arb-presentation-2014-wkshp.pdf.

19. **World Resources Institute.** Nitrogen Trifluoride Now Required in GHG Protocol Greenhouse Gas Emissions Inventory. [Online] May 22, 2013. https://www.wri.org/blog/2013/05/nitrogen-trifluoride-now-required-ghg-protocol-greenhouse-gas-emissions-inventories.
20. **National Center for Biotechnology Information.** Nitrogen Trifluoride. *PubChem Compound Database.* [Online] https://pubchem.ncbi.nlm.nih.gov/compound/24553 .
21. **American Lung Association.** Climate Change. [Online] http://www.lung.org/our-initiatives/healthy-air/outdoor/climate-change/.
22. **Barbara H. Allen-Diaz.** Climate change affects us all. *University of California Agriculture and Natural Resources.* [Online] April 1, 2009. http://calag.ucanr.edu/Archive/?article=ca.v063n02p51.
23. **Intergovernmental Panel on Climate Change.** Climate Change 2021 The Physical Science Basis. *Climate Change 2021 The Physical Science Basis.* [Online] https://www.ipcc.ch/report/sixth-assessment-report-working-group-i/.
24. **International Panel on Climate Change.** IPCC: Library - Assessment Reports. *International Panel on Climate Change.* [Online] [Cited: October 15, 2021.] https://www.ipcc.ch/library/.
25. **United Nations.** GHG Profiles - Annex I. [Online] http://di.unfccc.int/ghg_profile_annex1.
26. —. GHG Profiles - Non-Annex I. [Online] http://di.unfccc.int/ghg_profile_non_annex1.
27. **U.S. Environmental Protection Agency.** *Inventory of U.S. Greenhouse Gas Emissions and Sinks.* 2021.
28. **World Resources Institute.** Climate Analysis Indicator Tool (CAIT). [Online] http://cait.wri.org.
29. **Air Resources Board.** 2022 GHG Inventory. *California Greenhouse Gas Emission Inventory 2000-2020 Edition.* [Online] [Cited: February 1, 2022.] http://www.arb.ca.gov/cc/inventory/data/data.htm.
30. —. 2021 GHG Inventory. *California Greenhouse Gas Emission Inventory 2000-2019 Edition.* [Online] [Cited: October 14, 2021.] https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2019/ghg_inventory_trends_00-19.pdf.
31. **California Energy Commission.** *Our Changing Climate Assessing the Risks to California.* 2006.
32. **Agency, United States Environmental Protection.** Endangerment and Cause or Contribute Findings for Greenhouse Gases under the Section 202(a) of the Clean Air Act. *United States Environmental Protection Agency.* [Online] https://www.epa.gov/ghgemissions/endangerment-and-cause-or-contribute-findings-greenhouse-gases-under-section-202a-clean.
33. **Federal Register.** Mid-Term Evaluation of Greenhouse Gas Emissions Standards for Model Year 2022-2025 Light-Duty Vehicles. [Online] 2018. https://www.federalregister.gov/documents/2018/04/13/2018-07364/mid-term-evaluation-of-greenhouse-gas-emissions-standards-for-model-year-2022-2025-light-duty.
34. **Administration, National Highway Traffic Safety.** SAFE: The Safer Affordable Fuel-Efficient 'SAFE' Vehicle Rule. *National Highway Traffic Safety Administration.* [Online] 2020. https://www.nhtsa.gov/corporate-average-fuel-economy/safe.
35. **U.S. Environmental Protection Agency.** *EPA Reconsiders Previous Administration's Withdrawal of California's Waiver to Enforce Greenhouse Gas Standards for Cars and Light Trucks.* Washinbgton D.C. : s.n., April 26, 2021.
36. **United States Environmental Protection Agency.** SmartWay. [Online] https://www.epa.gov/smartway/learn-about-smartway.
37. **Association of Environmental Professionals.** *2018 CEQA California Environmental Quality Act.* 2018.

38. **California Air Resources Board.** California's 2017 Climate Change Scoping Plan . [Online] 2017. https://ww3.arb.ca.gov/cc/scopingplan/scoping_plan_2017_es.pdf.

39. **Lawrence Berkeley National Laboratory.** California's Policies Can Significantly Cut Greenhouse Gas Emissions through 2030. *Lawrence Berkeley National Laboratory.* [Online] January 22, 2015. http://newscenter.lbl.gov/2015/01/22/californias-policies-can-significantly-cut-greenhouse-gas-emissions-2030/.

40. **Ernest Orlando Lawrence Berkeley National Laboratory.** Modeling California policy impacts on greenhouse gas emissions. [Online] 2015. https://eaei.lbl.gov/sites/all/files/lbnl-7008e.pdf.

41. **California Air Resources Board.** 2022 Scoping Plan for Achieving Carbon Neutrality. [Online] 2022. https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp.pdf.

42. —. Legal Disclaimer & User's Notice. [Online] 2019. https://ww3.arb.ca.gov/cc/capandtrade/capandtrade/ct_reg_unofficial.pdf.

43. —. Climate Change Scoping Plan. [Online] 2014. https://ww3.arb.ca.gov/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf.

44. —. *2022 Scoping Plan for Achieving Carbon Neutrality.*

45. —. Low Carbon Fuel Standard. [Online] 2019. https://ww3.arb.ca.gov/fuels/lcfs/lcfs.htm.

46. —. Greenhouse Gas Standards for Medium- and Heavy-Duty Engines and Vehicles. [Online] 2020. https://ww2.arb.ca.gov/node/1594/about.

47. **California Energy Commission.** Energy Commission Adopts Updated Building Standards to Improve Efficiency, Reduce Emissions from Homes and Businesses. [Online] August 11, 2021. https://www.energy.ca.gov/news/2021-08/energy-commission-adopts-updated-building-standards-improve-efficiency-reduce-0.

48. **California Department of General Services.** 2022 CALGreen Code. *CALGreen.* [Online] https://codes.iccsafe.org/content/CAGBC2022P1.

49. **Southern California Association Governments.** Connect SoCal 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy. [Online] 2020. https://www.connectsocal.org/Documents/Adopted/0903fConnectSoCal-Plan.pdf.

50. **County of Riverside.** County of Riverside Climate Action Plan Update. [Online] November 2019. https://planning.rctlma.org/Portals/14/CAP/2019/2019_CAP_Update_Full.pdf.

51. **California Air Pollution Control Officers Association (CAPCOA).** California Emissions Estimator Model (CalEEMod). [Online] September 2016. www.caleemod.com.

52. **California Natural Resources Agency.** Final Statement of Reasons for Regulatory Action, Amendments to the State CEQA Guidelines Addressing Analysis and Mitigation of Greenhouse Gas Emissions Pursuant to SB97. [Online] December 2009.

53. *Minutes for the GHG CEQA Significance.* **South Coast Air Quality Managment District.** 2008.

54. **Urban Crossroads, Inc.** *Arroyo Vista Air Quality Impact Analysis Report.* 2022.

55. **South Coast Air Quality Management District.** *Greenhouse Gas CEQA Significance Threshold Stakeholder Working Group #13.* [Powerpoint] Diamond Bar : s.n., 2009.

56. **Urban Crossroads, Inc.** *Arroyo Vista Traffic Analysis.* 2022.

57. **The California Energy Commission.** 2022 Building Energy Efficiency Standards. *California Energy Commission.* [Online] 2022. https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency.

58. **California Department of General Services.** 2022 CALGreen Code. *CALGreen.* [Online] https://codes.iccsafe.org/content/CAGBC2022P1.

Less than significant impact.

5 CERTIFICATIONS

The contents of this energy analysis report represent an accurate depiction of the environmental impacts associated with the proposed Arroyo Vista. The information contained in this energy analysis report is based on the best available data at the time of preparation. If you have any questions, please contact me directly at hqureshi@urbanxroads.com.

Haseeb Qureshi
Principal
Urban Crossroads, Inc.
hqureshi@urbanxroads.com

EDUCATION

Master of Science in Environmental Studies
California State University, Fullerton • May 2010

Bachelor of Arts in Environmental Analysis and Design
University of California, Irvine • June 2006

PROFESSIONAL AFFILIATIONS

AEP – Association of Environmental Planners
AWMA – Air and Waste Management Association
ASTM – American Society for Testing and Materials

PROFESSIONAL CERTIFICATIONS

Planned Communities and Urban Infill – Urban Land Institute • June 2011
Indoor Air Quality and Industrial Hygiene – EMSL Analytical • April 2008
Principles of Ambient Air Monitoring – California Air Resources Board • August 2007
AB2588 Regulatory Standards – Trinity Consultants • November 2006
Air Dispersion Modeling – Lakes Environmental • June 2006

This page intentionally left blank

APPENDIX 3.1:

CALEEMOD CONSTRUCTION PHASE 1 EMISSIONS MODEL OUTPUTS

14577 - Arroyo Vista Phase 1 Construction (Crushing/Blasting) Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

1.2. Land Use Types

1.3. User-Selected Emission Reduction Measures by Emissions Sector

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

2.2. Construction Emissions by Year, Unmitigated

3. Construction Emissions Details

3.1. Demolition (2024) - Unmitigated

3.3. Site Preparation (2024) - Unmitigated

3.5. Grading (2024) - Unmitigated

3.7. Grading (2025) - Unmitigated

3.9. Building Construction (2025) - Unmitigated

3.11. Building Construction (2026) - Unmitigated

3.13. Paving (2025) - Unmitigated

3.15. Architectural Coating (2025) - Unmitigated

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	14577 - Arroyo Vista Phase 1 Construction (Crushing/Blasting)
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	10.0
Location	33.892195, -117.349735
County	Riverside-South Coast
City	Unincorporated
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5476
EDFZ	11
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Single Family Housing	121	Dwelling Unit	45.4	235,950	1,417,256	—	391	—
Other Non-Asphalt Surfaces	51.8	Acre	51.8	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	6.82	21.6	50.7	55.4	0.11	2.25	5.89	8.15	2.07	2.74	4.81	—	12,399	12,399	0.50	0.18	4.57	12,469
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	6.78	21.6	50.8	54.1	0.11	2.21	3.94	6.16	2.04	1.25	3.29	—	12,321	12,321	0.50	0.18	0.12	12,387
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.31	7.71	16.9	20.9	0.04	0.75	1.16	1.91	0.69	0.43	1.12	—	4,299	4,299	0.17	0.08	1.06	4,327
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.42	1.41	3.08	3.81	0.01	0.14	0.21	0.35	0.13	0.08	0.20	—	712	712	0.03	0.01	0.18	716

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2024	5.67	4.77	45.0	40.2	0.08	2.25	5.89	8.15	2.07	2.74	4.81	—	8,889	8,889	0.36	0.09	1.68	8,928
2025	6.82	21.6	50.7	55.4	0.11	2.21	3.94	6.16	2.04	1.25	3.29	—	12,399	12,399	0.50	0.18	4.57	12,469
2026	1.60	1.35	11.1	17.3	0.03	0.41	0.65	1.06	0.38	0.15	0.54	—	3,499	3,499	0.14	0.08	2.77	3,530
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	5.66	4.77	45.1	39.7	0.08	2.05	3.30	5.35	1.89	1.09	2.98	—	8,860	8,860	0.36	0.09	0.04	8,897
2025	6.78	21.6	50.8	54.1	0.11	2.21	3.94	6.16	2.04	1.25	3.29	—	12,321	12,321	0.50	0.18	0.12	12,387
2026	1.59	1.33	11.2	16.5	0.03	0.41	0.65	1.06	0.38	0.15	0.54	—	3,451	3,451	0.12	0.08	0.07	3,479
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	2.05	1.72	16.2	14.3	0.03	0.75	1.16	1.91	0.69	0.43	1.12	—	2,882	2,882	0.12	0.03	0.25	2,894
2025	2.31	7.71	16.9	20.9	0.04	0.72	1.08	1.80	0.66	0.31	0.97	—	4,299	4,299	0.17	0.08	1.06	4,327
2026	1.13	0.95	7.99	11.9	0.02	0.30	0.46	0.75	0.27	0.11	0.38	—	2,470	2,470	0.09	0.06	0.85	2,491
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.37	0.31	2.95	2.61	< 0.005	0.14	0.21	0.35	0.13	0.08	0.20	—	477	477	0.02	0.01	0.04	479
2025	0.42	1.41	3.08	3.81	0.01	0.13	0.20	0.33	0.12	0.06	0.18	—	712	712	0.03	0.01	0.18	716
2026	0.21	0.17	1.46	2.17	< 0.005	0.05	0.08	0.14	0.05	0.02	0.07	—	409	409	0.01	0.01	0.14	412

3. Construction Emissions Details

3.1. Demolition (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	3.12	2.62	24.9	21.7	0.03	1.06	—	1.06	0.98	—	0.98	—	3,425	3,425	0.14	0.03	—	3,437
Demolition	—	—	—	—	—	—	0.04	0.04	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.37	0.31	2.93	2.56	< 0.005	0.12	—	0.12	0.11	—	0.11	—	404	404	0.02	< 0.005	—	405
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.54	0.47	< 0.005	0.02	—	0.02	0.02	—	0.02	—	66.8	66.8	< 0.005	< 0.005	—	67.0
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.07	1.25	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	216	216	0.01	0.01	0.86	219
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	24.8	24.8	< 0.005	< 0.005	0.07	26.0
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	35.8	35.8	< 0.005	0.01	0.08	37.6

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.12	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	23.7	23.7	< 0.005	< 0.005	0.04	24.0
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.93	2.93	< 0.005	< 0.005	< 0.005	3.06
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.22	4.22	< 0.005	< 0.005	< 0.005	4.43
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.92	3.92	< 0.005	< 0.005	0.01	3.97
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.48	0.48	< 0.005	< 0.005	< 0.005	0.51
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.70	0.70	< 0.005	< 0.005	< 0.005	0.73

3.3. Site Preparation (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.35	4.49	42.5	35.3	0.05	2.25	—	2.25	2.07	—	2.07	—	5,529	5,529	0.22	0.04	—	5,548
Dust From Material Movement	—	—	—	—	—	—	5.66	5.66	—	2.69	2.69	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.32	0.27	2.56	2.13	< 0.005	0.14	—	0.14	0.12	—	0.12	—	333	333	0.01	< 0.005	—	334
Dust From Material Movement	—	—	—	—	—	—	0.34	0.34	—	0.16	0.16	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.47	0.39	< 0.005	0.02	—	0.02	0.02	—	0.02	—	55.2	55.2	< 0.005	< 0.005	—	55.4
Dust From Material Movement	—	—	—	—	—	—	0.06	0.06	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.08	1.46	0.00	0.00	0.23	0.23	0.00	0.05	0.05	—	252	252	0.01	0.01	1.00	256
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.7	12.7	< 0.005	< 0.005	0.04	13.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	14.1	14.1	< 0.005	< 0.005	0.03	14.3
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.77	0.77	< 0.005	< 0.005	< 0.005	0.80

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.34	2.34	< 0.005	< 0.005	< 0.005	2.37
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.13	0.13	< 0.005	< 0.005	< 0.005	0.13
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Grading (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.53	4.64	44.8	38.1	0.08	2.05	—	2.05	1.89	—	1.89	—	8,440	8,440	0.34	0.07	—	8,469
Dust From Material Movement	—	—	—	—	—	—	2.94	2.94	—	1.01	1.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.53	4.64	44.8	38.1	0.08	2.05	—	2.05	1.89	—	1.89	—	8,440	8,440	0.34	0.07	—	8,469
Dust From Material Movement	—	—	—	—	—	—	2.94	2.94	—	1.01	1.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.31	1.10	10.6	9.02	0.02	0.49	—	0.49	0.45	—	0.45	—	1,999	1,999	0.08	0.02	—	2,005
Dust From Material Movement	—	—	—	—	—	—	0.70	0.70	—	0.24	0.24	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.24	0.20	1.94	1.65	< 0.005	0.09	—	0.09	0.08	—	0.08	—	331	331	0.01	< 0.005	—	332
Dust From Material Movement	—	—	—	—	—	—	0.13	0.13	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.13	0.12	2.09	0.00	0.00	0.33	0.33	0.00	0.08	0.08	—	360	360	0.02	0.01	1.43	365
Vendor	< 0.005	< 0.005	0.10	0.03	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	89.4	89.4	< 0.005	0.01	0.25	93.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.12	0.14	1.58	0.00	0.00	0.33	0.33	0.00	0.08	0.08	—	331	331	0.02	0.01	0.04	335
Vendor	< 0.005	< 0.005	0.11	0.03	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	89.5	89.5	< 0.005	0.01	0.01	93.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.39	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	79.3	79.3	< 0.005	< 0.005	0.15	80.4
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	21.2	21.2	< 0.005	< 0.005	0.03	22.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	13.1	13.1	< 0.005	< 0.005	0.02	13.3
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.51	3.51	< 0.005	< 0.005	< 0.005	3.67
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.99	4.19	38.7	35.8	0.08	1.74	—	1.74	1.60	—	1.60	—	8,441	8,441	0.34	0.07	—	8,470
Dust From Material Movement	—	—	—	—	—	—	2.94	2.94	—	1.01	1.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.99	4.19	38.7	35.8	0.08	1.74	—	1.74	1.60	—	1.60	—	8,441	8,441	0.34	0.07	—	8,470

Dust From Material Movement	—	—	—	—	—	—	2.94	2.94	—	1.01	1.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.92	0.77	7.12	6.59	0.01	0.32	—	0.32	0.29	—	0.29	—	1,553	1,553	0.06	0.01	—	1,558
Dust From Material Movement	—	—	—	—	—	—	0.54	0.54	—	0.19	0.19	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.30	1.20	< 0.005	0.06	—	0.06	0.05	—	0.05	—	257	257	0.01	< 0.005	—	258
Dust From Material Movement	—	—	—	—	—	—	0.10	0.10	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.11	0.11	1.93	0.00	0.00	0.33	0.33	0.00	0.08	0.08	—	352	352	0.01	0.01	1.29	358
Vendor	< 0.005	< 0.005	0.10	0.03	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	88.1	88.1	< 0.005	0.01	0.25	92.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.12	0.11	0.12	1.46	0.00	0.00	0.33	0.33	0.00	0.08	0.08	—	324	324	0.02	0.01	0.03	328
Vendor	< 0.005	< 0.005	0.10	0.03	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	88.2	88.2	< 0.005	0.01	0.01	92.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.28	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	60.3	60.3	< 0.005	< 0.005	0.10	61.2
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	16.2	16.2	< 0.005	< 0.005	0.02	17.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.99	9.99	< 0.005	< 0.005	0.02	10.1
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.68	2.68	< 0.005	< 0.005	< 0.005	2.81
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.45	1.21	11.3	14.1	0.03	0.47	—	0.47	0.43	—	0.43	—	2,630	2,630	0.11	0.02	—	2,639
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.45	1.21	11.3	14.1	0.03	0.47	—	0.47	0.43	—	0.43	—	2,630	2,630	0.11	0.02	—	2,639

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.86	0.72	6.73	8.42	0.02	0.28	—	0.28	0.26	—	0.26	—	1,565	1,565	0.06	0.01	—	1,570
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.13	1.23	1.54	< 0.005	0.05	—	0.05	0.05	—	0.05	—	259	259	0.01	< 0.005	—	260
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.23	0.19	0.19	3.36	0.00	0.00	0.57	0.57	0.00	0.13	0.13	—	614	614	0.03	0.02	2.26	623
Vendor	0.01	0.01	0.30	0.09	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	273	273	0.01	0.04	0.77	286
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.21	0.18	0.21	2.54	0.00	0.00	0.57	0.57	0.00	0.13	0.13	—	564	564	0.03	0.02	0.06	572
Vendor	0.01	0.01	0.31	0.10	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	273	273	0.01	0.04	0.02	285
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.14	1.60	0.00	0.00	0.34	0.34	0.00	0.08	0.08	—	340	340	0.02	0.01	0.58	345
Vendor	0.01	< 0.005	0.19	0.06	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	—	162	162	< 0.005	0.02	0.20	170
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.02	0.02	0.02	0.29	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	56.3	56.3	< 0.005	< 0.005	0.10	57.1
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.9	26.9	< 0.005	< 0.005	0.03	28.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.38	1.16	10.7	14.1	0.03	0.41	—	0.41	0.38	—	0.38	—	2,630	2,630	0.11	0.02	—	2,639
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.38	1.16	10.7	14.1	0.03	0.41	—	0.41	0.38	—	0.38	—	2,630	2,630	0.11	0.02	—	2,639
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.99	0.83	7.62	10.0	0.02	0.29	—	0.29	0.27	—	0.27	—	1,878	1,878	0.08	0.02	—	1,885
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	0.15	1.39	1.83	< 0.005	0.05	—	0.05	0.05	—	0.05	—	311	311	0.01	< 0.005	—	312

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.21	0.18	0.17	3.13	0.00	0.00	0.57	0.57	0.00	0.13	0.13	—	601	601	0.03	0.02	2.03	610
Vendor	0.01	0.01	0.29	0.09	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	268	268	0.01	0.04	0.73	281
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.17	0.19	2.37	0.00	0.00	0.57	0.57	0.00	0.13	0.13	—	552	552	0.01	0.02	0.05	559
Vendor	0.01	0.01	0.30	0.09	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	268	268	0.01	0.04	0.02	281
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.12	0.15	1.77	0.00	0.00	0.40	0.40	0.00	0.09	0.09	—	400	400	0.01	0.02	0.63	405
Vendor	0.01	< 0.005	0.21	0.06	< 0.005	< 0.005	0.05	0.06	< 0.005	0.01	0.02	—	192	192	< 0.005	0.03	0.23	201
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.03	0.32	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	66.2	66.2	< 0.005	< 0.005	0.10	67.0
Vendor	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.7	31.7	< 0.005	< 0.005	0.04	33.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Paving (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.95	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.95	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.29	0.24	2.25	3.01	< 0.005	0.11	—	0.11	0.10	—	0.10	—	456	456	0.02	< 0.005	—	457
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.41	0.55	< 0.005	0.02	—	0.02	0.02	—	0.02	—	75.4	75.4	< 0.005	< 0.005	—	75.7
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.08	0.07	0.07	1.16	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	211	211	0.01	0.01	0.78	215
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.07	0.88	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	194	194	0.01	0.01	0.02	197
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.28	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	59.3	59.3	< 0.005	< 0.005	0.10	60.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.82	9.82	< 0.005	< 0.005	0.02	9.96
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.15. Architectural Coating (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	0.17	1.18	1.52	< 0.005	0.04	—	0.04	0.03	—	0.03	—	178	178	0.01	< 0.005	—	179

Architectural Coatings	—	19.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	0.17	1.18	1.52	< 0.005	0.04	—	0.04	0.03	—	0.03	—	178	178	0.01	< 0.005	—	179
Architectural Coatings	—	19.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.35	0.46	< 0.005	0.01	—	0.01	0.01	—	0.01	—	53.7	53.7	< 0.005	< 0.005	—	53.8
Architectural Coatings	—	5.77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.88	8.88	< 0.005	< 0.005	—	8.91
Architectural Coatings	—	1.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.04	0.67	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	123	123	0.01	< 0.005	0.45	125
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.51	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	113	113	0.01	< 0.005	0.01	114
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.16	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	34.5	34.5	< 0.005	< 0.005	0.06	34.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.70	5.70	< 0.005	< 0.005	0.01	5.78
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	6/3/2024	7/31/2024	5.00	43.0	100
Site Preparation	Site Preparation	8/1/2024	8/31/2024	5.00	22.0	60
Grading	Grading	9/2/2024	4/4/2025	5.00	155	155
Building Construction	Building Construction	3/3/2025	12/31/2026	5.00	479	1550
Paving	Paving	5/1/2025	10/1/2025	5.00	110	110
Architectural Coating	Architectural Coating	6/2/2025	10/31/2025	5.00	110	110

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Demolition	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Crawler Tractors	Diesel	Average	4.00	8.00	87.0	0.43
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38

Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Crawler Tractors	Diesel	Average	2.00	8.00	87.0	0.43
Building Construction	Cranes	Diesel	Average	1.00	8.00	367	0.29
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48
Grading	Bore/Drill Rigs	Diesel	Average	1.00	8.00	83.0	0.50
Grading	Scrapers	Diesel	Average	1.00	8.00	300	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	15.0	18.5	LDA,LDT1,LDT2
Demolition	Vendor	0.80	10.2	HHDT,MHDT
Demolition	Hauling	0.51	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	18.5	LDA,LDT1,LDT2

Site Preparation	Vendor	0.41	10.2	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	25.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	2.88	10.2	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	43.6	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	8.91	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	18.5	LDA,LDT1,LDT2
Paving	Vendor	—	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	8.71	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	477,799	159,266	0.00	0.00	135,437

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	1,852	—
Site Preparation	—	—	77.0	0.00	—
Grading	—	—	775	0.00	—
Paving	0.00	0.00	0.00	0.00	53.2

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	3	74%	74%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Single Family Housing	1.33	0%
Other Non-Asphalt Surfaces	51.8	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	532	0.03	< 0.005
2025	0.00	532	0.03	< 0.005
2026	0.00	532	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit

Temperature and Extreme Heat	26.3	annual days of extreme heat
Extreme Precipitation	1.90	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	3.03	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	3	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	3	1	1	3
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	95.3
AQ-PM	73.8
AQ-DPM	17.7
Drinking Water	76.3
Lead Risk Housing	11.3

Pesticides	44.7
Toxic Releases	58.2
Traffic	64.6
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	0.00
Haz Waste Facilities/Generators	31.4
Impaired Water Bodies	12.5
Solid Waste	52.9
Sensitive Population	—
Asthma	14.7
Cardio-vascular	38.7
Low Birth Weights	72.3
Socioeconomic Factor Indicators	—
Education	29.3
Housing	10.5
Linguistic	10.4
Poverty	19.1
Unemployment	35.0

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	84.53740536
Employed	83.80597973
Median HI	94.66187604

Education	—
Bachelor's or higher	68.75401001
High school enrollment	25.49724111
Preschool enrollment	85.15334274
Transportation	—
Auto Access	81.29090209
Active commuting	10.04747851
Social	—
2-parent households	97.03580136
Voting	56.70473502
Neighborhood	—
Alcohol availability	86.03875273
Park access	4.69652252
Retail density	27.22956499
Supermarket access	18.68343385
Tree canopy	35.58321571
Housing	—
Homeownership	94.82869242
Housing habitability	83.8829719
Low-inc homeowner severe housing cost burden	82.90773771
Low-inc renter severe housing cost burden	29.07737713
Uncrowded housing	76.50455537
Health Outcomes	—
Insured adults	84.88387014
Arthritis	75.7
Asthma ER Admissions	80.7
High Blood Pressure	62.1

Cancer (excluding skin)	52.2
Asthma	69.3
Coronary Heart Disease	88.8
Chronic Obstructive Pulmonary Disease	86.1
Diagnosed Diabetes	84.4
Life Expectancy at Birth	87.3
Cognitively Disabled	96.3
Physically Disabled	85.5
Heart Attack ER Admissions	64.8
Mental Health Not Good	73.6
Chronic Kidney Disease	90.3
Obesity	57.4
Pedestrian Injuries	83.8
Physical Health Not Good	83.3
Stroke	88.3
Health Risk Behaviors	—
Binge Drinking	17.1
Current Smoker	66.4
No Leisure Time for Physical Activity	71.3
Climate Change Exposures	—
Wildfire Risk	13.6
SLR Inundation Area	0.0
Children	64.0
Elderly	55.7
English Speaking	67.2
Foreign-born	35.5
Outdoor Workers	39.2

Climate Change Adaptive Capacity	—
Impervious Surface Cover	87.6
Traffic Density	36.0
Traffic Access	46.9
Other Indices	—
Hardship	16.0
Other Decision Support	—
2016 Voting	67.3

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	31.0
Healthy Places Index Score for Project Location (b)	85.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Taken from site plan.
Construction: Construction Phases	Taken from client provided data.
Construction: Off-Road Equipment	T/L/B replaced with Crawler Tractor to accurately calculate disturbance for Site Preparation and Grading phases. Standard 8 hours work days.
Construction: Trips and VMT	Vendor Trips adjusted based on CalEEMod defaults for Building Construction and number of days for Demolition, Site Preparation, Grading, and Building Construction

This page intentionally left blank

APPENDIX 3.2:

CALEEMOD CONSTRUCTION PHASE 2 EMISSIONS MODEL OUTPUTS

14577 - Arroyo Vista Phase 2 Construction (Crushing/Blasting) Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

1.2. Land Use Types

1.3. User-Selected Emission Reduction Measures by Emissions Sector

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

2.2. Construction Emissions by Year, Unmitigated

3. Construction Emissions Details

3.1. Demolition (2024) - Unmitigated

3.3. Demolition (2025) - Unmitigated

3.5. Site Preparation (2025) - Unmitigated

3.7. Grading (2025) - Unmitigated

3.9. Building Construction (2025) - Unmitigated

3.11. Building Construction (2026) - Unmitigated

3.13. Building Construction (2027) - Unmitigated

3.15. Paving (2025) - Unmitigated

3.17. Architectural Coating (2025) - Unmitigated

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	14577 - Arroyo Vista Phase 2 Construction (Crushing/Blasting)
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	10.0
Location	33.893172, -117.351107
County	Riverside-South Coast
City	Unincorporated
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5476
EDFZ	11
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Single Family Housing	112	Dwelling Unit	42.4	218,400	1,311,840	—	362	—
Other Non-Asphalt Surfaces	1.26	Acre	1.26	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.12	27.6	38.9	37.8	0.08	1.74	3.28	5.02	1.60	1.09	2.69	—	8,828	8,828	0.36	0.11	4.14	8,864
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.11	26.7	38.9	37.3	0.08	1.93	5.89	7.82	1.78	2.74	4.52	—	8,800	8,800	0.36	0.09	0.09	8,834
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.08	5.54	15.6	16.7	0.03	0.69	1.20	1.89	0.63	0.42	1.06	—	3,471	3,471	0.14	0.06	0.81	3,489
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.38	1.01	2.84	3.05	0.01	0.13	0.22	0.34	0.12	0.08	0.19	—	575	575	0.02	0.01	0.13	578

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2025	5.12	27.6	38.9	37.8	0.08	1.74	3.28	5.02	1.60	1.09	2.69	—	8,828	8,828	0.36	0.11	4.14	8,864
2026	1.58	1.33	11.1	17.1	0.03	0.41	0.61	1.02	0.38	0.15	0.53	—	3,463	3,463	0.14	0.08	2.64	3,494
2027	1.52	1.28	10.6	16.8	0.03	0.37	0.61	0.97	0.34	0.15	0.48	—	3,448	3,448	0.12	0.08	2.39	3,478
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	3.20	2.69	25.0	22.7	0.03	1.06	0.20	1.26	0.98	0.05	1.02	—	3,645	3,645	0.15	0.04	0.02	3,660
2025	5.11	26.7	38.9	37.3	0.08	1.93	5.89	7.82	1.78	2.74	4.52	—	8,800	8,800	0.36	0.09	0.09	8,834
2026	1.57	1.32	11.2	16.4	0.03	0.41	0.61	1.02	0.38	0.15	0.53	—	3,419	3,419	0.12	0.08	0.07	3,447
2027	1.51	1.27	10.6	16.2	0.03	0.37	0.61	0.97	0.34	0.15	0.48	—	3,404	3,404	0.12	0.08	0.06	3,432
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.19	0.16	1.47	1.34	< 0.005	0.06	0.01	0.07	0.06	< 0.005	0.06	—	214	214	0.01	< 0.005	0.02	215
2025	2.08	5.54	15.6	16.7	0.03	0.69	1.20	1.89	0.63	0.42	1.06	—	3,471	3,471	0.14	0.05	0.55	3,489
2026	1.12	0.94	7.98	11.8	0.02	0.30	0.43	0.73	0.27	0.10	0.38	—	2,447	2,447	0.09	0.06	0.81	2,468
2027	1.08	0.91	7.60	11.6	0.02	0.26	0.43	0.69	0.24	0.10	0.35	—	2,436	2,436	0.09	0.06	0.74	2,456
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.03	0.03	0.27	0.24	< 0.005	0.01	< 0.005	0.01	0.01	< 0.005	0.01	—	35.5	35.5	< 0.005	< 0.005	< 0.005	35.6
2025	0.38	1.01	2.84	3.05	0.01	0.13	0.22	0.34	0.12	0.08	0.19	—	575	575	0.02	0.01	0.09	578
2026	0.20	0.17	1.46	2.15	< 0.005	0.05	0.08	0.13	0.05	0.02	0.07	—	405	405	0.01	0.01	0.13	409
2027	0.20	0.17	1.39	2.12	< 0.005	0.05	0.08	0.13	0.04	0.02	0.06	—	403	403	0.01	0.01	0.12	407

3. Construction Emissions Details

3.1. Demolition (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.12	2.62	24.9	21.7	0.03	1.06	—	1.06	0.98	—	0.98	—	3,425	3,425	0.14	0.03	—	3,437
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	0.15	1.46	1.28	< 0.005	0.06	—	0.06	0.06	—	0.06	—	201	201	0.01	< 0.005	—	202
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.27	0.23	< 0.005	0.01	—	0.01	0.01	—	0.01	—	33.3	33.3	< 0.005	< 0.005	—	33.4
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.08	0.07	0.09	0.95	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	198	198	0.01	0.01	0.02	201
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	21.1	21.1	< 0.005	< 0.005	< 0.005	22.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.8	11.8	< 0.005	< 0.005	0.02	12.0
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.24	1.24	< 0.005	< 0.005	< 0.005	1.30
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.95	1.95	< 0.005	< 0.005	< 0.005	1.98
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.21	0.21	< 0.005	< 0.005	< 0.005	0.21
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Demolition (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.86	2.40	22.2	19.9	0.03	0.92	—	0.92	0.84	—	0.84	—	3,425	3,425	0.14	0.03	—	3,437
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.15	1.35	1.21	< 0.005	0.06	—	0.06	0.05	—	0.05	—	208	208	0.01	< 0.005	—	208
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.25	0.22	< 0.005	0.01	—	0.01	0.01	—	0.01	—	34.4	34.4	< 0.005	< 0.005	—	34.5
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.07	0.88	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	194	194	0.01	0.01	0.02	197
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	20.8	20.8	< 0.005	< 0.005	< 0.005	21.8
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.9	11.9	< 0.005	< 0.005	0.02	12.1
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.26	1.26	< 0.005	< 0.005	< 0.005	1.32
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.98	1.98	< 0.005	< 0.005	< 0.005	2.00

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.21	0.21	< 0.005	< 0.005	< 0.005	0.22
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.82	4.05	37.5	32.4	0.05	1.93	—	1.93	1.78	—	1.78	—	5,528	5,528	0.22	0.04	—	5,547
Dust From Material Movement	—	—	—	—	—	—	5.66	5.66	—	2.69	2.69	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.26	0.22	2.05	1.78	< 0.005	0.11	—	0.11	0.10	—	0.10	—	303	303	0.01	< 0.005	—	304
Dust From Material Movement	—	—	—	—	—	—	0.31	0.31	—	0.15	0.15	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.05	0.04	0.37	0.32	< 0.005	0.02	—	0.02	0.02	—	0.02	—	50.2	50.2	< 0.005	< 0.005	—	50.3
Dust From Material Movement	—	—	—	—	—	—	0.06	0.06	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.08	1.02	0.00	0.00	0.23	0.23	0.00	0.05	0.05	—	227	227	0.01	0.01	0.02	230
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.18	9.18	< 0.005	< 0.005	< 0.005	9.61
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.6	12.6	< 0.005	< 0.005	0.02	12.8
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.50	0.50	< 0.005	< 0.005	< 0.005	0.53
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.08	2.08	< 0.005	< 0.005	< 0.005	2.11
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.08	0.08	< 0.005	< 0.005	< 0.005	0.09
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.99	4.19	38.7	35.8	0.08	1.74	—	1.74	1.60	—	1.60	—	8,441	8,441	0.34	0.07	—	8,470
Dust From Material Movement	—	—	—	—	—	—	2.94	2.94	—	1.01	1.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.99	4.19	38.7	35.8	0.08	1.74	—	1.74	1.60	—	1.60	—	8,441	8,441	0.34	0.07	—	8,470
Dust From Material Movement	—	—	—	—	—	—	2.94	2.94	—	1.01	1.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.02	0.86	7.96	7.36	0.02	0.36	—	0.36	0.33	—	0.33	—	1,734	1,734	0.07	0.01	—	1,740
Dust From Material Movement	—	—	—	—	—	—	0.61	0.61	—	0.21	0.21	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.19	0.16	1.45	1.34	< 0.005	0.07	—	0.07	0.06	—	0.06	—	287	287	0.01	< 0.005	—	288
Dust From Material Movement	—	—	—	—	—	—	0.11	0.11	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.11	0.11	1.93	0.00	0.00	0.33	0.33	0.00	0.08	0.08	—	352	352	0.01	0.01	1.29	358
Vendor	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	34.6	34.6	< 0.005	0.01	0.10	36.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.12	1.46	0.00	0.00	0.33	0.33	0.00	0.08	0.08	—	324	324	0.02	0.01	0.03	328
Vendor	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	34.6	34.6	< 0.005	0.01	< 0.005	36.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.03	0.32	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	67.4	67.4	< 0.005	< 0.005	0.11	68.4
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.11	7.11	< 0.005	< 0.005	0.01	7.44
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.2	11.2	< 0.005	< 0.005	0.02	11.3
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.18	1.18	< 0.005	< 0.005	< 0.005	1.23
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.45	1.21	11.3	14.1	0.03	0.47	—	0.47	0.43	—	0.43	—	2,630	2,630	0.11	0.02	—	2,639
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.45	1.21	11.3	14.1	0.03	0.47	—	0.47	0.43	—	0.43	—	2,630	2,630	0.11	0.02	—	2,639
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.35	0.29	2.70	3.38	0.01	0.11	—	0.11	0.10	—	0.10	—	628	628	0.03	0.01	—	630
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.49	0.62	< 0.005	0.02	—	0.02	0.02	—	0.02	—	104	104	< 0.005	< 0.005	—	104
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.18	0.18	3.11	0.00	0.00	0.53	0.53	0.00	0.12	0.12	—	568	568	0.02	0.02	2.09	577
Vendor	0.01	0.01	0.31	0.10	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	282	282	0.01	0.04	0.80	296
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.17	0.19	2.35	0.00	0.00	0.53	0.53	0.00	0.12	0.12	—	522	522	0.02	0.02	0.05	529
Vendor	0.01	0.01	0.32	0.10	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	282	282	0.01	0.04	0.02	295
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.05	0.59	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	126	126	0.01	< 0.005	0.22	128
Vendor	< 0.005	< 0.005	0.08	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	67.4	67.4	< 0.005	0.01	0.08	70.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	20.9	20.9	< 0.005	< 0.005	0.04	21.2
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	11.2	11.2	< 0.005	< 0.005	0.01	11.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.38	1.16	10.7	14.1	0.03	0.41	—	0.41	0.38	—	0.38	—	2,630	2,630	0.11	0.02	—	2,639
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.38	1.16	10.7	14.1	0.03	0.41	—	0.41	0.38	—	0.38	—	2,630	2,630	0.11	0.02	—	2,639
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.99	0.83	7.62	10.0	0.02	0.29	—	0.29	0.27	—	0.27	—	1,878	1,878	0.08	0.02	—	1,885
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	0.15	1.39	1.83	< 0.005	0.05	—	0.05	0.05	—	0.05	—	311	311	0.01	< 0.005	—	312
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.17	0.16	2.90	0.00	0.00	0.53	0.53	0.00	0.12	0.12	—	556	556	0.02	0.02	1.88	564
Vendor	0.01	0.01	0.30	0.09	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	278	278	0.01	0.04	0.76	291
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.18	0.16	0.18	2.20	0.00	0.00	0.53	0.53	0.00	0.12	0.12	—	511	511	0.01	0.02	0.05	518

Vendor	0.01	0.01	0.31	0.09	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	278	278	0.01	0.04	0.02	291
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.11	0.14	1.64	0.00	0.00	0.37	0.37	0.00	0.09	0.09	—	370	370	0.01	0.01	0.58	375
Vendor	0.01	< 0.005	0.22	0.07	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	198	198	< 0.005	0.03	0.23	208
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.03	0.30	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	61.2	61.2	< 0.005	< 0.005	0.10	62.1
Vendor	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.8	32.8	< 0.005	0.01	0.04	34.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Building Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.33	1.11	10.2	14.0	0.03	0.36	—	0.36	0.34	—	0.34	—	2,630	2,630	0.11	0.02	—	2,639
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.33	1.11	10.2	14.0	0.03	0.36	—	0.36	0.34	—	0.34	—	2,630	2,630	0.11	0.02	—	2,639
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.95	0.79	7.27	10.0	0.02	0.26	—	0.26	0.24	—	0.24	—	1,878	1,878	0.08	0.02	—	1,885
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.33	1.83	< 0.005	0.05	—	0.05	0.04	—	0.04	—	311	311	0.01	< 0.005	—	312
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.18	0.16	0.14	2.68	0.00	0.00	0.53	0.53	0.00	0.12	0.12	—	546	546	0.01	0.02	1.70	553
Vendor	0.01	0.01	0.28	0.09	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	272	272	0.01	0.04	0.69	285
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.17	0.15	0.16	2.02	0.00	0.00	0.53	0.53	0.00	0.12	0.12	—	502	502	0.01	0.02	0.04	508
Vendor	0.01	0.01	0.30	0.09	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	273	273	0.01	0.04	0.02	285
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.12	1.52	0.00	0.00	0.37	0.37	0.00	0.09	0.09	—	363	363	0.01	0.01	0.52	368
Vendor	0.01	< 0.005	0.21	0.06	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	195	195	< 0.005	0.03	0.21	204
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.28	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	60.1	60.1	< 0.005	< 0.005	0.09	60.9

Vendor	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.2	32.2	< 0.005	< 0.005	0.04	33.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.15. Paving (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.95	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.12	1.12	1.50	< 0.005	0.05	—	0.05	0.05	—	0.05	—	228	228	0.01	< 0.005	—	229
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.20	0.27	< 0.005	0.01	—	0.01	0.01	—	0.01	—	37.7	37.7	< 0.005	< 0.005	—	37.8
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.07	1.16	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	211	211	0.01	0.01	0.78	215
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	10.7	10.7	< 0.005	< 0.005	0.03	11.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.14	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	29.7	29.7	< 0.005	< 0.005	0.05	30.1
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.61	1.61	< 0.005	< 0.005	< 0.005	1.69
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.91	4.91	< 0.005	< 0.005	0.01	4.98
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.27	0.27	< 0.005	< 0.005	< 0.005	0.28
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.17. Architectural Coating (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	0.17	1.18	1.52	< 0.005	0.04	—	0.04	0.03	—	0.03	—	178	178	0.01	< 0.005	—	179

Architectural	—	25.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	0.17	1.18	1.52	< 0.005	0.04	—	0.04	0.03	—	0.03	—	178	178	0.01	< 0.005	—	179
Architectural Coatings	—	25.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.18	0.23	< 0.005	0.01	—	0.01	0.01	—	0.01	—	26.8	26.8	< 0.005	< 0.005	—	26.9
Architectural Coatings	—	3.79	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.44	4.44	< 0.005	< 0.005	—	4.46
Architectural Coatings	—	0.69	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.04	0.04	0.04	0.62	0.00	0.00	0.11	0.11	0.00	0.02	0.02	—	114	114	< 0.005	< 0.005	0.42	115
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.79	9.79	< 0.005	< 0.005	0.03	10.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.04	0.47	0.00	0.00	0.11	0.11	0.00	0.02	0.02	—	104	104	< 0.005	< 0.005	0.01	106
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.80	9.80	< 0.005	< 0.005	< 0.005	10.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	15.9	15.9	< 0.005	< 0.005	0.03	16.2
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.48	1.48	< 0.005	< 0.005	< 0.005	1.55
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.64	2.64	< 0.005	< 0.005	< 0.005	2.68
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.24	0.24	< 0.005	< 0.005	< 0.005	0.26
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	12/2/2024	1/31/2025	5.00	45.0	50
Site Preparation	Site Preparation	2/3/2025	2/28/2025	5.00	20.0	30
Grading	Grading	3/3/2025	6/13/2025	5.00	75.0	75
Building Construction	Building Construction	9/1/2025	12/31/2027	5.00	610	740
Paving	Paving	7/1/2025	9/15/2025	5.00	55.0	55
Architectural Coating	Architectural Coating	8/1/2025	10/16/2025	5.00	55.0	55

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Demolition	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Crawler Tractors	Diesel	Average	4.00	8.00	87.0	0.43
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Crawler Tractors	Diesel	Average	2.00	8.00	87.0	0.43
Building Construction	Cranes	Diesel	Average	1.00	8.00	367	0.29

Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48
Grading	Bore/Drill Rigs	Diesel	Average	1.00	8.00	83.0	0.50
Grading	Scrapers	Diesel	Average	1.00	8.00	300	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	15.0	18.5	LDA,LDT1,LDT2
Demolition	Vendor	0.68	10.2	HHDT,MHDT
Demolition	Hauling	0.00	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	0.30	10.2	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	25.0	18.5	LDA,LDT1,LDT2

Grading	Vendor	1.13	10.2	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	40.3	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	9.22	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	18.5	LDA,LDT1,LDT2
Paving	Vendor	0.35	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	8.06	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	0.32	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	442,260	147,420	0.00	0.00	3,293

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	—	—
Site Preparation	—	—	70.0	0.00	—
Grading	—	—	300	0.00	—
Paving	0.00	0.00	0.00	0.00	2.49

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	3	74%	74%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Single Family Housing	1.23	0%
Other Non-Asphalt Surfaces	1.26	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	532	0.03	< 0.005
2025	0.00	532	0.03	< 0.005
2026	0.00	532	0.03	< 0.005
2027	0.00	532	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	26.3	annual days of extreme heat
Extreme Precipitation	1.90	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	3.03	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	3	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	3	1	1	3
Extreme Precipitation	N/A	N/A	N/A	N/A

Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	95.3
AQ-PM	73.8
AQ-DPM	17.7
Drinking Water	76.3
Lead Risk Housing	11.3
Pesticides	44.7
Toxic Releases	58.2
Traffic	64.6
Effect Indicators	—

CleanUp Sites	0.00
Groundwater	0.00
Haz Waste Facilities/Generators	31.4
Impaired Water Bodies	12.5
Solid Waste	52.9
Sensitive Population	—
Asthma	14.7
Cardio-vascular	38.7
Low Birth Weights	72.3
Socioeconomic Factor Indicators	—
Education	29.3
Housing	10.5
Linguistic	10.4
Poverty	19.1
Unemployment	35.0

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	84.53740536
Employed	83.80597973
Median HI	94.66187604
Education	—
Bachelor's or higher	68.75401001
High school enrollment	25.49724111
Preschool enrollment	85.15334274

Transportation	—
Auto Access	81.29090209
Active commuting	10.04747851
Social	—
2-parent households	97.03580136
Voting	56.70473502
Neighborhood	—
Alcohol availability	86.03875273
Park access	4.69652252
Retail density	27.22956499
Supermarket access	18.68343385
Tree canopy	35.58321571
Housing	—
Homeownership	94.82869242
Housing habitability	83.8829719
Low-inc homeowner severe housing cost burden	82.90773771
Low-inc renter severe housing cost burden	29.07737713
Uncrowded housing	76.50455537
Health Outcomes	—
Insured adults	84.88387014
Arthritis	75.7
Asthma ER Admissions	80.7
High Blood Pressure	62.1
Cancer (excluding skin)	52.2
Asthma	69.3
Coronary Heart Disease	88.8
Chronic Obstructive Pulmonary Disease	86.1

Diagnosed Diabetes	84.4
Life Expectancy at Birth	87.3
Cognitively Disabled	96.3
Physically Disabled	85.5
Heart Attack ER Admissions	64.8
Mental Health Not Good	73.6
Chronic Kidney Disease	90.3
Obesity	57.4
Pedestrian Injuries	83.8
Physical Health Not Good	83.3
Stroke	88.3
Health Risk Behaviors	—
Binge Drinking	17.1
Current Smoker	66.4
No Leisure Time for Physical Activity	71.3
Climate Change Exposures	—
Wildfire Risk	13.6
SLR Inundation Area	0.0
Children	64.0
Elderly	55.7
English Speaking	67.2
Foreign-born	35.5
Outdoor Workers	39.2
Climate Change Adaptive Capacity	—
Impervious Surface Cover	87.6
Traffic Density	36.0
Traffic Access	46.9

Other Indices	—
Hardship	16.0
Other Decision Support	—
2016 Voting	67.3

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	31.0
Healthy Places Index Score for Project Location (b)	85.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Taken from site plan
Construction: Construction Phases	Taken from client data

Construction: Off-Road Equipment	T/L/B replaced with Crawler Tractor to accurately calculate disturbance for Site Preparation and Grading phases Standard 8 hours work days
Construction: Trips and VMT	Vendor Trips adjusted based on CalEEMod defaults for Building Construction and number of days for Demolition, Site Preparation, Grading, and Building Construction.

This page intentionally left blank

APPENDIX 3.3:

CALEEMOD OPERATIONAL EMISSIONS MODEL OUTPUTS

14577 - Arroyo Vista Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

1.2. Land Use Types

1.3. User-Selected Emission Reduction Measures by Emissions Sector

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

2.5. Operations Emissions by Sector, Unmitigated

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

4.3. Area Emissions by Source

4.3.2. Unmitigated

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

5.10.3. Landscape Equipment

5.11. Operational Energy Consumption

5.11.1. Unmitigated

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

5.13. Operational Waste Generation

5.13.1. Unmitigated

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	14577 - Arroyo Vista
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	10.0
Location	33.893875, -117.350246
County	Riverside-South Coast
City	Unincorporated
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5476
EDFZ	11
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Single Family Housing	233	Dwelling Unit	88.3	454,350	0.00	—	753	—
Other Non-Asphalt Surfaces	52.5	Acre	52.5	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	11.3	21.0	13.7	90.8	0.23	0.59	6.77	7.37	0.59	1.20	1.79	133	29,130	29,263	14.6	0.95	65.8	29,977
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	9.55	19.3	14.1	65.5	0.22	0.59	6.77	7.36	0.58	1.20	1.78	133	27,889	28,022	14.7	0.97	4.54	28,684
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	9.78	19.7	11.0	74.3	0.20	0.33	6.64	6.97	0.32	1.18	1.50	133	23,619	23,752	14.6	0.96	29.6	24,432
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.78	3.59	2.00	13.6	0.04	0.06	1.21	1.27	0.06	0.22	0.27	22.1	3,910	3,932	2.41	0.16	4.89	4,045

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Mobile	9.44	8.66	7.98	75.2	0.19	0.14	6.77	6.91	0.13	1.20	1.33	—	19,898	19,898	0.75	0.86	62.9	20,237
Area	1.63	12.2	3.60	14.7	0.02	0.29	—	0.29	0.29	—	0.29	0.00	4,451	4,451	0.08	0.01	—	4,456
Energy	0.24	0.12	2.09	0.89	0.01	0.17	—	0.17	0.17	—	0.17	—	4,720	4,720	0.43	0.03	—	4,739
Water	—	—	—	—	—	—	—	—	—	—	—	18.2	61.2	79.3	1.87	0.04	—	139
Waste	—	—	—	—	—	—	—	—	—	—	—	115	0.00	115	11.5	0.00	—	402
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.91	2.91
Total	11.3	21.0	13.7	90.8	0.23	0.59	6.77	7.37	0.59	1.20	1.79	133	29,130	29,263	14.6	0.95	65.8	29,977
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	8.90	8.12	8.55	63.2	0.18	0.14	6.77	6.91	0.13	1.20	1.33	—	18,693	18,693	0.78	0.89	1.63	18,980
Area	0.41	11.1	3.48	1.48	0.02	0.28	—	0.28	0.28	—	0.28	0.00	4,415	4,415	0.08	0.01	—	4,420
Energy	0.24	0.12	2.09	0.89	0.01	0.17	—	0.17	0.17	—	0.17	—	4,720	4,720	0.43	0.03	—	4,739
Water	—	—	—	—	—	—	—	—	—	—	—	18.2	61.2	79.3	1.87	0.04	—	139
Waste	—	—	—	—	—	—	—	—	—	—	—	115	0.00	115	11.5	0.00	—	402
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.91	2.91
Total	9.55	19.3	14.1	65.5	0.22	0.59	6.77	7.36	0.58	1.20	1.78	133	27,889	28,022	14.7	0.97	4.54	28,684
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	8.67	7.90	8.54	64.2	0.18	0.14	6.64	6.78	0.13	1.18	1.31	—	18,512	18,512	0.77	0.88	26.6	18,821
Area	0.87	11.7	0.32	9.16	< 0.005	0.02	—	0.02	0.02	—	0.02	0.00	327	327	0.01	< 0.005	—	328
Energy	0.24	0.12	2.09	0.89	0.01	0.17	—	0.17	0.17	—	0.17	—	4,720	4,720	0.43	0.03	—	4,739
Water	—	—	—	—	—	—	—	—	—	—	—	18.2	61.2	79.3	1.87	0.04	—	139
Waste	—	—	—	—	—	—	—	—	—	—	—	115	0.00	115	11.5	0.00	—	402
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.91	2.91
Total	9.78	19.7	11.0	74.3	0.20	0.33	6.64	6.97	0.32	1.18	1.50	133	23,619	23,752	14.6	0.96	29.6	24,432
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.58	1.44	1.56	11.7	0.03	0.02	1.21	1.24	0.02	0.22	0.24	—	3,065	3,065	0.13	0.15	4.41	3,116
Area	0.16	2.13	0.06	1.67	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	54.1	54.1	< 0.005	< 0.005	—	54.2

Energy	0.04	0.02	0.38	0.16	< 0.005	0.03	—	0.03	0.03	—	0.03	—	781	781	0.07	< 0.005	—	785
Water	—	—	—	—	—	—	—	—	—	—	—	3.01	10.1	13.1	0.31	0.01	—	23.1
Waste	—	—	—	—	—	—	—	—	—	—	—	19.0	0.00	19.0	1.90	0.00	—	66.6
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Total	1.78	3.59	2.00	13.6	0.04	0.06	1.21	1.27	0.06	0.22	0.27	22.1	3,910	3,932	2.41	0.16	4.89	4,045

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	9.44	8.66	7.98	75.2	0.19	0.14	6.77	6.91	0.13	1.20	1.33	—	19,898	19,898	0.75	0.86	62.9	20,237
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	9.44	8.66	7.98	75.2	0.19	0.14	6.77	6.91	0.13	1.20	1.33	—	19,898	19,898	0.75	0.86	62.9	20,237
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	8.90	8.12	8.55	63.2	0.18	0.14	6.77	6.91	0.13	1.20	1.33	—	18,693	18,693	0.78	0.89	1.63	18,980

Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	8.90	8.12	8.55	63.2	0.18	0.14	6.77	6.91	0.13	1.20	1.33	—	18,693	18,693	0.78	0.89	1.63	18,980
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	1.58	1.44	1.56	11.7	0.03	0.02	1.21	1.24	0.02	0.22	0.24	—	3,065	3,065	0.13	0.15	4.41	3,116
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	1.58	1.44	1.56	11.7	0.03	0.02	1.21	1.24	0.02	0.22	0.24	—	3,065	3,065	0.13	0.15	4.41	3,116

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	2,064	2,064	0.20	0.02	—	2,076
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	2,064	2,064	0.20	0.02	—	2,076
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	2,064	2,064	0.20	0.02	—	2,076
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	2,064	2,064	0.20	0.02	—	2,076
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	342	342	0.03	< 0.005	—	344
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	342	342	0.03	< 0.005	—	344

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.24	0.12	2.09	0.89	0.01	0.17	—	0.17	0.17	—	0.17	—	2,656	2,656	0.24	0.01	—	2,663
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.24	0.12	2.09	0.89	0.01	0.17	—	0.17	0.17	—	0.17	—	2,656	2,656	0.24	0.01	—	2,663
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	0.24	0.12	2.09	0.89	0.01	0.17	—	0.17	0.17	—	0.17	—	2,656	2,656	0.24	0.01	—	2,663
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.24	0.12	2.09	0.89	0.01	0.17	—	0.17	0.17	—	0.17	—	2,656	2,656	0.24	0.01	—	2,663
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.04	0.02	0.38	0.16	< 0.005	0.03	—	0.03	0.03	—	0.03	—	440	440	0.04	< 0.005	—	441
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.04	0.02	0.38	0.16	< 0.005	0.03	—	0.03	0.03	—	0.03	—	440	440	0.04	< 0.005	—	441

4.3. Area Emissions by Source

4.3.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.41	0.20	3.48	1.48	0.02	0.28	—	0.28	0.28	—	0.28	0.00	4,415	4,415	0.08	0.01	—	4,420
Consumer Products	—	9.90	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.95	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landscape Equipme	1.23	1.16	0.13	13.2	< 0.005	< 0.005	—	< 0.005	0.01	—	0.01	—	35.3	35.3	< 0.005	< 0.005	—	36.3
Total	1.63	12.2	3.60	14.7	0.02	0.29	—	0.29	0.29	—	0.29	0.00	4,451	4,451	0.08	0.01	—	4,456
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.41	0.20	3.48	1.48	0.02	0.28	—	0.28	0.28	—	0.28	0.00	4,415	4,415	0.08	0.01	—	4,420
Consumer Products	—	9.90	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.95	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.41	11.1	3.48	1.48	0.02	0.28	—	0.28	0.28	—	0.28	0.00	4,415	4,415	0.08	0.01	—	4,420
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.01	< 0.005	0.04	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	50.1	50.1	< 0.005	< 0.005	—	50.1
Consumer Products	—	1.81	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.17	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.15	0.15	0.02	1.65	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.01	4.01	< 0.005	< 0.005	—	4.12
Total	0.16	2.13	0.06	1.67	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	54.1	54.1	< 0.005	< 0.005	—	54.2

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	18.2	61.2	79.3	1.87	0.04	—	139
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	18.2	61.2	79.3	1.87	0.04	—	139
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	18.2	61.2	79.3	1.87	0.04	—	139
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	18.2	61.2	79.3	1.87	0.04	—	139
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	3.01	10.1	13.1	0.31	0.01	—	23.1
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	3.01	10.1	13.1	0.31	0.01	—	23.1

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	115	0.00	115	11.5	0.00	—	402
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	115	0.00	115	11.5	0.00	—	402
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	115	0.00	115	11.5	0.00	—	402
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	115	0.00	115	11.5	0.00	—	402
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	19.0	0.00	19.0	1.90	0.00	—	66.6
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	19.0	0.00	19.0	1.90	0.00	—	66.6

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.91	2.91
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.91	2.91
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.91	2.91
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.91	2.91
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48	0.48

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Single Family Housing	2,197	2,209	1,976	791,040	24,264	24,392	21,819	8,735,466
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	210
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	23

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
920058.75	306,686	0.00	0.00	137,188

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	2,176,044	346	0.0330	0.0040	8,286,485
Other Non-Asphalt Surfaces	0.00	346	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	9,476,990	0.00
Other Non-Asphalt Surfaces	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	66.0	0.00
Other Non-Asphalt Surfaces	0.00	0.00

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced

Single Family Housing	Average room A/C & Other residential A/C and heat pumps	User Defined	750	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	26.3	annual days of extreme heat
Extreme Precipitation	1.90	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	3.03	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	3	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	3	1	1	3
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A

Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	95.3
AQ-PM	73.8
AQ-DPM	17.7
Drinking Water	76.3
Lead Risk Housing	11.3
Pesticides	44.7
Toxic Releases	58.2
Traffic	64.6
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	0.00
Haz Waste Facilities/Generators	31.4
Impaired Water Bodies	12.5
Solid Waste	52.9

Sensitive Population	—
Asthma	14.7
Cardio-vascular	38.7
Low Birth Weights	72.3
Socioeconomic Factor Indicators	—
Education	29.3
Housing	10.5
Linguistic	10.4
Poverty	19.1
Unemployment	35.0

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	84.53740536
Employed	83.80597973
Median HI	94.66187604
Education	—
Bachelor's or higher	68.75401001
High school enrollment	25.49724111
Preschool enrollment	85.15334274
Transportation	—
Auto Access	81.29090209
Active commuting	10.04747851
Social	—
2-parent households	97.03580136

Voting	56.70473502
Neighborhood	—
Alcohol availability	86.03875273
Park access	4.69652252
Retail density	27.22956499
Supermarket access	18.68343385
Tree canopy	35.58321571
Housing	—
Homeownership	94.82869242
Housing habitability	83.8829719
Low-inc homeowner severe housing cost burden	82.90773771
Low-inc renter severe housing cost burden	29.07737713
Uncrowded housing	76.50455537
Health Outcomes	—
Insured adults	84.88387014
Arthritis	75.7
Asthma ER Admissions	80.7
High Blood Pressure	62.1
Cancer (excluding skin)	52.2
Asthma	69.3
Coronary Heart Disease	88.8
Chronic Obstructive Pulmonary Disease	86.1
Diagnosed Diabetes	84.4
Life Expectancy at Birth	87.3
Cognitively Disabled	96.3
Physically Disabled	85.5
Heart Attack ER Admissions	64.8

Mental Health Not Good	73.6
Chronic Kidney Disease	90.3
Obesity	57.4
Pedestrian Injuries	83.8
Physical Health Not Good	83.3
Stroke	88.3
Health Risk Behaviors	—
Binge Drinking	17.1
Current Smoker	66.4
No Leisure Time for Physical Activity	71.3
Climate Change Exposures	—
Wildfire Risk	13.6
SLR Inundation Area	0.0
Children	64.0
Elderly	55.7
English Speaking	67.2
Foreign-born	35.5
Outdoor Workers	39.2
Climate Change Adaptive Capacity	—
Impervious Surface Cover	87.6
Traffic Density	36.0
Traffic Access	46.9
Other Indices	—
Hardship	16.0
Other Decision Support	—
2016 Voting	67.3

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	31.0
Healthy Places Index Score for Project Location (b)	85.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Taken from site plan.
Operations: Vehicle Data	Trip characteristics based on information provided in the Traffic Analysis.
Operations: Hearths	SCAQMD Rule 445 no wood burning devices. Wood burning devices added tp gas devices.
Operations: Refrigerants	Beginning 1 January 2025, all new air conditioning equipment may not use refrigerants with a GWP of 750 or greater.
Operations: Architectural Coatings	SCAQMD Rule 113

This page intentionally left blank

APPENDIX 3.4:

CAP UPDATE CHECKLIST

Table 1: Screening Table for GHG Implementation Measures for Residential Development

Feature	Description	Assigned Point Values	Project Points
Reduction Measure R2-EE5: Exceed Energy Efficiency Standards in New Residential Units			
EE5.A Building Envelope			
EE5.A.1 Insulation	• 2016 Title 24 Requirements (walls R-13, roof/attic R-30) • Modestly Enhanced Insulation (walls R-15, roof/attic R-38) • Enhanced Insulation (rigid wall insulation R-13, roof/attic R-38) • Greatly Enhanced Insulation (spray foam wall insulated walls R-18 or higher, roof/attic R-38 or higher)	0 points 7 points 9 points 11 points	7
EE5.A.2 Windows	• 2016 Title 24 Windows (0.57 U-factor, 0.4 solar heat gain coefficient [SHGC]) • Modestly Enhanced Window (0.4 U-Factor, 0.32 SHGC) • Enhanced Window (0.32 U-Factor, 0.25 SHGC) • Greatly Enhanced Window (0.28 or less U-Factor, 0.22 or less SHGC)	0 points 3 points 4 points 5 points	3
EE5.A.3 Cool Roofs	• Modest Cool Roof (CRRC Rated 0.15 aged solar reflectance, 0.75 thermal emittance) • Enhanced Cool Roof (CRRC Rated 0.2 aged solar reflectance, 0.75 thermal emittance) • Greatly Enhanced Cool Roof (CRRC Rated 0.35 aged solar reflectance, 0.75 thermal emittance)	6 points 7 points 8 points	N/A
EE5.A.4 Air Infiltration	Minimizing leaks in the building envelope is as important as the insulation properties of the building. Insulation does not work effectively if there is excess air leakage. • Air barrier applied to exterior walls, caulking, and visual inspection such as the HERS Verified Quality Insulation Installation (QII or equivalent) • Blower Door HERS Verified Envelope Leakage or equivalent	6 points 5 points	N/A
EE5.A.5 Thermal Storage of Building	Thermal storage is a design characteristic that helps keep a constant temperature in the building. Common thermal storage devices include strategically placed water filled columns, water storage tanks, and thick masonry walls. • Modest Thermal Mass (10% of floor or 10% of walls 12" or more thick exposed concrete or masonry with no permanently installed floor covering such as carpet, linoleum, wood, or other insulating materials) • Enhanced Thermal Mass (20% of floor or 20% of walls 12" or more thick exposed concrete or masonry with no permanently installed floor covering such as carpet, linoleum, wood, or other insulating materials)	1 points 2 points	N/A

Feature	Description	Assigned Point Values	Project Points
EE5.B Indoor Space Efficiencies			
EE5.B.1 Heating/ Cooling Distribution System	• Minimum Duct Insulation (R-4.2 required) • Modest Duct insulation (R-6) • Enhanced Duct Insulation (R-8) • Distribution loss reduction with inspection (HERS Verified Duct Leakage or equivalent)	0 points 4 points 5 points 7 points	4
EE5.B.2 Space Heating/ Cooling Equipment	• 2016 Title 24 Minimum HVAC Efficiency (SEER 13/75% AFUE or 7.7 HSPF) • Improved Efficiency HVAC (SEER 14/78% AFUE or 8 HSPF) • High Efficiency HVAC (SEER 15/80% AFUE or 8.5 HSPF) • Very High Efficiency HVAC (SEER 16/82% AFUE or 9 HSPF)	0 points 2 points 4 points 5 points	4
EE5.B.3 Water Heaters	• 2016 Title 24 Minimum Efficiency (0.57 Energy Factor) • Improved Efficiency Water Heater (0.675 Energy Factor) • High Efficiency Water Heater (0.72 Energy Factor) • Very High Efficiency Water Heater (0.92 Energy Factor) • Solar Pre-heat System (0.2 Net Solar Fraction) • Enhanced Solar Pre-heat System (0.35 Net Solar Fraction)	0 points 7 points 9 points 11 points 2 points 5 points	9
EE5.B.4 Daylighting	Daylighting is the ability of each room within the building to provide outside light during the day reducing the need for artificial lighting during daylight hours. • All peripheral rooms within the living space have at least one window (required) • All rooms within the living space have daylight (through use of windows, solar tubes, skylights, etc.) • All rooms daylighted	0 points 1 point 1 point	1
EE5.B.5 Artificial Lighting	• Efficient Lights (25% of in-unit fixtures considered high efficacy. High efficiency is defined as 40 lumens/watt for 15 watt or less fixtures; 50 lumens/watt for 15-40 watt fixtures, 60 lumens/watt for fixtures >40watt) • High Efficiency Lights (50% of in-unit fixtures are high efficiency) • Very High Efficiency Lights (100% of in-unit fixtures are high efficiency)	5 points 6 points 7 points	6
EE5.B.6 Appliances	• Energy Star Refrigerator (new) • Energy Star Dishwasher (new) • Energy Star Washing Machine (new)	1 point 1 point 1 point	3
EE5.C Miscellaneous Residential Building Efficiencies			
EE5.C.1 Building Placement	North/south alignment of building or other building placement such that the orientation of the buildings optimizes natural heating, cooling, and lighting.	3 points	
EE5.C2 Shading	At least 90% of south-facing glazing will be shaded by vegetation or overhangs at noon on June 21st.	2 points	2
EE5.C3 Energy Star Homes	EPA Energy Star for Homes (version 3 or above)	15 points	15
EE5.C.4 Independent Energy Efficiency Calculations	Provide point values based upon energy efficiency modeling of the project. Note that engineering data will be required documenting the energy efficiency and point values based upon the proven efficiency beyond Title 24 Energy Efficiency Standards.	TBD	N/A
EE5.C.5 Other	This allows innovation by the applicant to provide design features that increase the energy efficiency of the project not provided in the table. Note that engineering data will be required documenting the energy efficiency of innovative designs and point values given based upon the proven efficiency beyond Title 24 Energy Efficiency Standards.	TBD	N/A

Feature	Description	Assigned Point Values	Project Points
EE5.C.6 Existing Residential Retrofits	The applicant may wish to provide energy efficiency retrofit projects to existing residential dwelling units to further the point value of their project. Retrofitting existing residential dwelling units within the unincorporated County is a key reduction measure that is needed to reach the reduction goal. The potential for an applicant to take advantage of this program will be decided on a case-by-case basis and shall have the approval of the Riverside County Planning Department. The decision to allow applicants the ability to participate in this program will be evaluated based upon, but not limited to, the following: • Will the energy efficiency retrofit project benefit low income or disadvantaged residents? • Does the energy efficiency retrofit project provide co-benefits important to the County? • Point value will be determined based upon engineering and design criteria of the energy efficiency retrofit project.	TBD	N/A
Reduction Measure R2-CE1: Clean Energy			
CE1.A Residential Renewable Energy Generation			
CE1.A.1 Photovoltaic	Solar Photovoltaic panels installed on individual homes or in collective neighborhood arrangements such that the total power provided augments: • 30 percent of the power needs of the project • 40 percent of the power needs of the project • 50 percent of the power needs of the project • 60 percent of the power needs of the project • 70 percent of the power needs of the project • 80 percent of the power needs of the project • 90 percent of the power needs of the project • 100 percent of the power needs of the project	9 points 12 points 17 points 20 points 23 points 25 points 28 points 31 points	17
CE1.A.2 Wind Turbines	Some areas of the County lend themselves to wind turbine applications. Analysis of the areas' capability to support wind turbines should be evaluated prior to choosing this feature. Individual wind turbines at homes or collective neighborhood arrangements of wind turbines such that the total power provided augments: • 30 percent of the power needs of the project • 40 percent of the power needs of the project • 50 percent of the power needs of the project • 60 percent of the power needs of the project • 70 percent of the power needs of the project • 80 percent of the power needs of the project • 90 percent of the power needs of the project • 100 percent of the power needs of the project	9 points 12 points 17 points 21 points 23 points 25 points 28 points 31 points	N/A
CE1.A.3 Off-site Renewable Energy Project	The applicant may submit a proposal to supply an off-site renewable energy project such as renewable energy retrofits of existing homes. These off-site renewable energy retrofit project proposals will be determined on a case-by-case basis and shall be accompanied by a detailed plan that documents the quantity of renewable energy the proposal will generate. Point values will be determined based upon the energy generated by the proposal.	TBD	N/A
CE1.A.4 Other Renewable Energy Generation	The applicant may have innovative designs or unique site circumstances (such as geothermal) that allow the project to generate electricity from renewable energy not provided in the table. The ability to supply other renewable energy and the point values allowed will be decided based upon engineering data documenting the ability to generate electricity.	TBD	N/A

Feature	Description	Assigned Point Values	Project Points
Reduction Measure R2-W2: Exceed Water Efficiency Standards			
W2.A Residential Irrigation and Landscaping			
W2.A.1 Water Efficient Landscaping	• Limit conventional turf to < 25% of required landscape area • Limit conventional turf to < 50% of required landscape area • No conventional turf (warm season turf to < 50% of required landscape area and/or low water using plants are allowed) • Only California Native Plants that requires no irrigation or some supplemental irrigation	0 points 2 points 4 points 5 points	2
W2.A.2 Water Efficient irrigation systems	• Low precipitation spray heads < .75"/hr or drip irrigation • Weather based irrigation control systems or moisture sensors (demonstrate 20% reduced water use)	1 point 2 points	3
W2.A.3 Storm water Reuse Systems	Innovative on-site stormwater collection, filtration, and reuse systems are being developed that provide supplemental irrigation water and provide vector control. These systems can greatly reduce the irrigation needs of a project. Point values for these types of systems will be determined based upon design and engineering data documenting the water savings.	TBD	N/A
W2.B Residential Potable Water			
W2.B.1 Showers	Water Efficient Showerheads (2.0 gpm)	2 points	2
W2.B.2 Toilets	Water Efficient Toilets (1.5 gpm)	2 points	2
W2.B.3 Faucets	Water Efficient faucets (1.28 gpm)	2 points	2
W2.B.4 Dishwasher	Water Efficient Dishwasher (6 gallons per cycle or less)	1 point	1
W2.B.5 Washing Machine	Water Efficient Washing Machine (Water factor <5.5)	1 point	1
W2.B.6 WaterSense	EPA WaterSense Certification	7 points	N/A
W2.C Increase Residential Reclaimed Water Use			
W2.C.1 Recycled Water	5% of the total project's water use comes from recycled/reclaimed water	5 points	5
Reduction Measure R2-T1: Alternative Transportation Options			
T1.A Increase Residential Density			
T1.A.1 Residential Density	Designing the project with increased densities, where allowed by the General Plan and/or Zoning Ordinance, reduces GHG emissions associated with traffic in several ways. Increased densities affect the distance people travel and provide greater options for the modes of travel they choose. This strategy also provides a foundation for implementation of many other strategies which would benefit from increased densities. • 1 point is allowed for each 10% increase in density beyond 7 units/acre, up to 500% (50 points)	1–50 points	N/A

Feature	Description	Assigned Point Values	Project Points
T1.B Mixed-Use Development			
T1.B.1 Mixed-Use	Mixes of land uses that complement one another in a way that reduces the need for vehicle trips can greatly reduce GHG emissions. The point value of mixed-use projects will be determined based upon a Transportation Impact Analysis (TIA) demonstrating trip reductions and/or reductions in vehicle miles traveled. Suggested ranges: • Diversity of land uses complementing each other (2–28 points) • Increased destination accessibility other than transit (1–18 points) • Increased Transit Accessibility (1–25 points) • Infill location that reduces vehicle trips or VMT beyond the measures described above (points TBD based on traffic data).	TBD	N/A
T1.B.2 Residential Near Local Retail (Residential only Projects)	Having residential developments within walking and biking distances of local retail helps to reduce vehicle trips and/or vehicle miles traveled. The point value of residential projects in close proximity to local retail will be determined based upon traffic studies that demonstrate trip reductions and/or reductions in vehicle miles traveled (VMT) The suburban project will have at least three of the following on site and/or off site within ¼-mile: Residential Development, Retail Development, Park, Open Space, *(for proposed bus stop)* or Office. The mixed-use development should encourage walking and other non-auto modes of transport from residential to office/commercial locations (and vice versa). The project should minimize the need for external trips by including services/facilities for daycare, banking/ATM, restaurants, vehicle refueling, and shopping.	1–16 points	4
T1.C Traffic Flow Management Improvements			
T1.C.1 Signal Synchronization	Techniques for improving traffic flow include: traffic signal coordination to reduce delay, incident management to increase response time to breakdowns and collisions, Intelligent Transportation Systems (ITS) to provide real-time information regarding road conditions and directions, and speed management to reduce high free-flow speeds. • Signal synchronization • Traffic signals connected to existing ITS	1 point/signal 3 points/signal	
T1.D Increase Public Transit			
T1.D.1 Public Transit Access	The point value of a projects ability to increase public transit use will be determined based upon a Transportation Impact Analysis (TIA) demonstrating decreased use of private vehicles and increased use of public transportation. • Increased transit accessibility (1–15 points)	TBD	3
Reduction Measure R2-T2: Adopt and Implement a Bicycle Master Plan to Expand Bike Routes around the County			
T2.A.1 Sidewalks	• Provide sidewalks on one side of the street (required) • Provide sidewalks on both sides of the street • Provide pedestrian linkage between residential and commercial uses within 1 mile	0 points 1 point 3 points	3
T2.A.2 Bicycle paths	• Provide bicycle paths within project boundaries • Provide bicycle path linkages between residential and other land uses • Provide bicycle path linkages between residential and transit	TBD 2 points 5 points	N/A

Feature	Description	Assigned Point Values	Project Points
Reduction Measure R2-T4: Electrify the Fleet			
T4.A.1 Electric Vehicle Recharging	• Provide circuit and capacity in garages of residential units for use by an electric vehicle. Charging stations are for on-road electric vehicles legally able to drive on all roadways including Interstate Highways and freeways. • Install electric vehicle charging stations for each residential unit included in the project. Projects that include charging stations for fewer than all units shall receive points on a proportional basis.	1 point 8 points	1
T4.A.2 Neighborhood Electric Vehicle (NEV) Infrastructure	NEVs are electric vehicles usually built to have a top speed of 25 miles per hour, and a maximum loaded weight of 3,000 pounds. • Provide NEV safe routes within project site. • Provide NEV safe routes between the project site and other land uses.	4 points 5 points	N/A
Reduction Measure R2-S1: Reduce Waste to Landfills			
S1.A.1 Recycling	County initiated recycling program diverting 100% of waste requires coordination in neighborhoods to realize this goal. The following recycling features will help the County fulfill this goal: • Provide green waste composting bins at each residential unit • Multi-family residential projects that provide dedicated recycling bins separated by types of recyclables combined with instructions/education program explaining how to use the bins and the importance or recycling	4 points 3 points	4
Other GHG Reduction Feature Implementation			
O.A.1 Other GHG Emissions Reduction Features	This allows innovation by the applicant to provide residential design features for the GHG emissions from construction and/or operation of the project not provided in the table. Note that engineering data will be required documenting the GHG reduction amount and point values given based upon emission reductions calculations using approved models, methods, and protocols.	TBD	N/A
Total Points Earned by Residential Project:			104

PHASE I AND LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT
ASSESSOR'S PARCEL NUMBER'S (APN'S) 245-300-001 AND -004
NORTHWEST OF IRIS AVENUE AND CHICAGO AVENUE
WOODCREST AREA OF RIVERSIDE COUNTY, CALIFORNIA 92508

May 22, 2025

Project No. 2855-CR

Prepared For:

TTLC Riverside Chicago LLC
4350 Von Karma Avenue, Suite 200
Newport Beach, California 92660

GEOTEK

GeoTek, Inc.
1548 North Maple Street, Corona, California 92878
(951) 710-1160 Office (951) 710-1167 Fax www.geotekusa.com

May 22, 2025
Project No. 2855-CR

TTLC Riverside Chicago LLC
4350 Von Karma Avenue, Suite 200
Newport Beach, California 92660

Attention: Mr. Michael Torres

Subject: **Phase I and Limited Phase II Environmental Site Assessment**
Assessor's Parcel Number's (APNs) 245-300-001 and -004
Northwest of Iris Avenue and Chicago Avenue
Woodcrest Area of Riverside County, California 92508

Dear Mr. Torres:

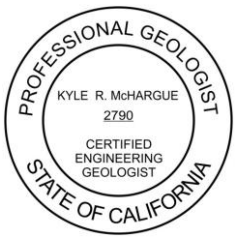
GEOTEK, INC. (GEOTEK) is pleased to present this Phase I and Limited Phase II Environmental Site Assessment for the above-referenced Subject Property. Services were conducted in substantial conformance with the scope and limitations of the American Society of Testing and Materials E 1527-21, "*Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process,*" which is approved to meet the requirements of the federal All Appropriate Inquiries (AAI) standards as set forth in the Code of Federal Regulations, Title 40, Section 312 (40 CFR 312), and GEOTEK'S Proposal No. P-0501925-CR dated May 2, 2025.

Based on the investigation, this Phase I and Limited Phase II Environmental Site Assessment has not revealed evidence of a recognized environmental condition (REC), controlled recognized environmental condition (CREC), historical recognized environmental condition (HREC) or significant data gaps on or near the Subject Property. No further investigation is recommended at this time.

Please be aware that prior to demolition of any of the existing Subject Property structures, federal and state regulations require asbestos-containing materials (ACM) and lead-based paint (LBP) surveys be performed.

GEOTEK appreciates this opportunity to be of service. If you have any questions, or if GEOTEK can be of further service, please contact the office at (951) 710-1160.

Sincerely,
GEOTEK, INC.



Kyle R. McHargue
Project Geologist, CEG 2790
Expires 02/28/2026

Cynthia Diaz Ruiz
Staff Engineer

EXECUTIVE SUMMARY

GEOTEK, INC. (GEOTEK) has performed a Phase I and Limited Phase II Environmental Site Assessment (ESA) for APNs 245-300-001 and -004 (the "Subject Property"), located in the Woodcrest Area of Riverside County, California. GEOTEK'S services were conducted in substantial conformance with the scope and limitations of the American Society of Testing and Materials (ASTM) E 1527-21, "*Standard Practice for Environmental Site Assessments: Phase Environmental Site Assessment Process*", which is approved to meet the requirements of the federal All Appropriate Inquiries (AAI) standards as set forth in the Code of Federal Regulations, Title 40, Section 312 (40 CFR 312), and GEOTEK Proposal No. P-0501925-CR dated May 2, 2025. Any additions or deletions from the scope of services are discussed in the appropriate sections of this assessment.

A representative of GEOTEK conducted a Subject Property reconnaissance on May 6, 2025. The weather was cool, and the sky was cloudy. The irregular shaped Subject Property is currently comprised of 2 parcels of land (Riverside County Assessor's Parcel Numbers [APNs] 245-300-001 and -004). The Subject Property parcels encompass a total of approximately 139.38 acres. The Subject Property can generally be accessed from Iris Avenue to the south and Chicago Avenue to the east.

The Subject Property currently consists of a cut-down orchard, a single-family residence, two (2) detached garages and a shed/barn structure. The shed/barn structure contains old farming equipment, plywood, fencing materials, and is essentially utilized for storage of agricultural equipment associated with the former orchard operations. Irrigation lines were observed throughout the Subject Property and transmission power lines run along the east boundary of the Subject Property. The inside of the single-family residence was not observed during the Subject Property reconnaissance as it was not accessible.

Visual evidence of hazardous substances and waste was observed during the Subject Property reconnaissance. One (1) unmarked above-ground storage tank (AST) was observed near the garage structure on the central east portion of the Subject Property (see photograph 20). The tank was empty and appeared in relatively good condition and working order. According to Mr. Harry Takeno, it is his understanding that the AST was previously used as a water carrier associated with the irrigation of the orchard. Smudge pot lids were observed on some bedrock outcrops located in the central west portion of the Subject Property (see photograph 35). According to Mr. Harry Takeno, it is his understanding that the smudge pots were never used during the agricultural orchard operations. No additional evidence suggesting the use of smudge pots was identified during the Subject Property reconnaissance or historical aerial photograph review. No evidence of soil staining or other signs of potential contamination were

observed near the smudge pot lids or elsewhere in the former orchard at the time of the Subject Property reconnaissance. The unmarked aboveground storage tank and smudge pot lids should be properly removed by a qualified professional prior to any future development in this area.

No visual indication of spills or leaks were observed. No pungent or acrid odors were observed emanating from the Subject Property.

The Subject Property is in an area largely characterized by residential development, land utilized for agricultural operations and vacant land. The Subject Property is bound by residential structures and vacant land to the north. Chicago Avenue, followed by residential structures bound the Subject Property to the east. Vacant land bound the Subject Property to the west. Vacant land and Iris Avenue, followed by residential structures bound the Subject Property to the south. None of the adjoining properties appear to represent a recognized environmental condition or environmental concern to the Subject Property.

The Subject Property does appear on the environmental database report obtained for this assessment. The Subject Property is listed as Unlimited Engineering Inc. on the HWTS (Hazardous Waste Tracking System) database. The facility status is listed as, "active." No violations are listed. No other pertinent information is provided on this database. Based on the available information, it is GEOTEK'S opinion that the listing has not created a recognized environmental condition to the Subject Proper.

There are no adjoining facilities listed in the database report within the various search distances specified by ASTM E 1527-21.

There are six (6) other facilities listed in the database report within the various search distances specified by ASTM E 1527-21. Due to the facility status and type of listings, distance and/or location hydrogeologically cross- or down-grandient, it is GEOTEK'S opinion that these facilities have not created a recognized environmental condition to the Subject Property.

Based on readily available historic information, the Subject Property appears to have been vacant land and/or utilized for agricultural purposes from 1931 to about 1961. The Subject Property appears to be land utilized for agriculture orchard operations with a single-family residence from at least 1967 until at least 2020. The Subject Property appears similar to current conditions in an aerial photograph dated 2025.

The surrounding properties appear to have been vacant land and/or utilized for agricultural purposes in the aerial photographs dated 1931 and 1938. Structures can be observed on the property to the south and east of the Subject Property in an aerial photograph dated 1948. The remaining surrounding properties appear to be vacant land and/or utilized for agricultural purposes. Additional structures can be observed on the property to the south of the Subject Property in the aerial photographs dated 1953 and 1961. Structures and an orchard can be observed on the property to the east of the Subject Property in an aerial photograph dated 1967. The properties to the north and west appear to be vacant land. The property to the west appears to be a mix of land utilized for agriculture purposes and vacant land in an aerial photograph dated 1974. Residential structures and land utilized for agriculture purposes can be observed on the property to the east of the Subject Property in the aerial photographs dated 1978 and 1985. Structures can be observed on the property to the north, along with vacant land. A few new structures can be observed on the property to the north of the Subject Property in an aerial photograph dated 1989. The property to the west appears to be vacant land. The surrounding properties appear to be in similar conditions in the aerial photographs dated 2006, 2009, 2012, 2016, 2020 and 2025.

Historically, some agricultural sites have utilized pesticides that are currently considered a health risk and no longer used. This particular environmental concern was previously investigated by GEOTEK, INC. (GEOTEK, 2021). Near surface soil samples were collected from the Subject Property and were analyzed for organo-chlorinated pesticides and arsenic (U.S. Environmental Protection Agency [EPA] Methods 8081 and 6010B, respectively). The laboratory testing concluded that organo-chlorinated pesticides and arsenic were not detected above regional screening levels (RSLs) in the soil samples tested. Based on this laboratory testing, it is GEOTEK'S opinion that the historical agricultural use on the Subject Property does not represent a recognized environmental condition (REC) for the Subject Property.

Historically, some agricultural sites have utilized smudge pots to prevent crop frost damage. However, they are currently considered a health risk and no longer used. As part of this assessment, GEOTEK conducted soil sampling to address potential environmental impacts related to the historical use of smudge pots and potential contaminant releases associated with agricultural equipment maintenance near the shed/barn structure. A total of eight (8) near surface soil samples were collected across the Subject Property and analyzed for total petroleum hydrocarbons (TPH) (EPA Test Method 8015B). Two (2) additional samples were collected near the observed smudge pot lids and analyzed for TPH. Four (4) soil samples were collected near the shed/barn structure and analyzed for both TPH and CAM metals (EPA Test Methods 6010B). Laboratory results indicated that all analytes were either non-detect or below regional screening levels (RSLs) for residential soils. Based on these results, no further

testing for TPH or CAM metals is recommended at this time. GEOTEK concludes that the potential historical use of smudge pots and potential contaminant releases associated with agricultural equipment maintenance near the shed/barn structure do not represent a recognized environmental condition (REC) for the Subject Property.

Based on the investigation, this Phase I and Limited Phase II Environmental Site Assessment has not revealed evidence of a recognized environmental condition (REC), controlled recognized environmental condition (CREC), historical recognized environmental condition (HREC) or significant data gaps on or near the Subject Property. No further investigation is recommended at this time.

No visual indication of other conditions of concern (water wells, drywells, cesspools, etc.) that may indicate a recognized environmental condition was observed during the Subject Property reconnaissance. However, based on previous referenced reporting by RMA Group dated September 5, 2014, four water wells exist on the Subject Property. Two of the water wells are reportedly located in the general vicinity of the residence; one of the water wells is east of the residence near Chicago Avenue; and the fourth is at an unknown location. As a direct pathway to the subsurface environment, this represents an environmental concern to the Subject Property. If these wells are indeed present, the wells should be located and properly abandoned per Riverside County guidelines and/or state of California guidelines prior to any land development.

No evidence of a septic system was observed during the Subject Property reconnaissance. However, given the age of the existing residence it is likely that a septic system exists on the Subject Property. If a septic system is encountered during future development, it should be abandoned and removed per Riverside County Department of Environmental Health guidelines.

Please be aware that prior to demolition of any of the existing Subject Property structures, federal and state regulations require asbestos-containing materials (ACM) and lead-based paint (LBP) surveys be performed.

This executive summary does not contain all the information that is found in the full report. The report should be read in its entirety to obtain a more complete understanding of the information provided and to aid in any decisions made or actions taken based on this information.

TABLE OF CONTENTS

EXECUTIVE SUMMARY ES-1
1.0 INTRODUCTION 1
1.1 Purpose 1
1.2 Scope of Work 1
1.3 Significant Assumptions 2
1.4 Limitations and Exceptions 3
1.5 Special Terms and Conditions 4
1.6 Reliance 4
2.0 DESCRIPTION OF SUBJECT PROPERTY AND SURROUNDING AREA 5
2.1 Subject Property Location and Legal Description 5
2.2 Subject Property and Vicinity General Characteristics 5
2.3 Current Property Use 6
2.4 Subject Property Improvements 6
2.4.1 Hazardous Substances 6
2.4.2 Storage Tanks 7
2.4.3 Poly-Chlorinated Biphenyls (PCBs) 7
2.4.4 Controlled Substances 8
2.4.5 Indications of Solid Waste Disposal 8
2.4.6 Utility Supply 8
2.4.7 Drainage 8
2.4.8 Other Conditions of Concern 9
2.4.9 Interviews 9
2.5 Current Adjoining Property Use 10
3.0 CLIENT PROVIDED INFORMATION 11
3.1 Environmental Clean Up Liens 11
3.2 Activity and Use Limitations 11
3.3 Specialized Knowledge 11
3.4 Purchase Price 11
3.5 Commonly Known Information 11
3.6 Obvious Indicators of Contamination 11
4.0 OWNER, PROPERTY MANAGER AND OCCUPANT INFORMATION 12
4.1 Owner, Property Manager and Occupant Information 12
4.2 Interviews 12
4.3 Reason for Performing Phase I and Limited Phase II ESA 13
4.4 Other User Provided Information 13
5.0 PROPERTY PHYSICAL SETTING 14
5.1 Regional Geology 14

TABLE OF CONTENTS

5.2 Local Geologic Setting 14
5.3 Topography 14
5.4 Vicinity Surface Drainage 14
5.5 Hydrogeology 15
6.0 ENVIRONMENTAL REGULATORY RECORDS REVIEW 16
6.1 Environmental Database Records Search 16
6.2 Discussion of Regulatory Records 17
6.2.1 Department of Defense 17
6.2.2 National Priorities List 18
6.2.3 Superfund Enterprise Management System 18
6.2.4 Resource Conservation and Recovery Act 18
6.2.5 Federal Institutional Control/Engineering Control Registries 19
6.2.6 Emergency Response Notification System 19
6.2.7 State Response Facilities 20
6.2.8 EnviroStor Database 20
6.2.9 California Hazardous Material Incident Report System 20
6.2.10 Cleanup Program Facilities 20
6.2.11 Solid Waste Facilities List 21
6.2.12 Leaking Underground Storage Tanks List 21
6.2.13 Underground Storage Tanks List 22
6.2.14 State Institutional Control/Engineering Control Registries 22
6.2.15 Federal and/or State Voluntary Cleanup Program 23
6.2.16 Brownfields Sites 23
6.2.17 Local and/or Tribal Databases 23
6.2.18 Drycleaners 23
6.2.19 Other Databases 24
6.2.20 Unmappable Facilities 25
6.3 Local Regulatory Agency Records 26
6.4 Per- and Polyfluoroalkyl Substances (PFAS) 26
7.0 VAPOR ENCROACHMENT SCREENING 28
8.0 SUBJECT PROPERTY AND SURROUNDING AREA HISTORY 29
8.1 Historical Subject Property Usage 29
8.1.1 Aerial Photograph Review 29
8.1.2 Assessor's Information 29
8.1.3 Building Department Records 30
8.1.4 Chain of Title 30
8.1.5 City Directory Review 30

TABLE OF CONTENTS

8.1.6 INTERVIEWS 30
8.1.7 RECORDER'S INFORMATION 31
8.1.8 SANBORN MAP REVIEW 31
8.1.9 TOPOGRAPHIC MAP REVIEW 31
8.2 HISTORICAL IMMEDIATELY SURROUNDING PROPERTY USAGE 33
8.2.1 AERIAL PHOTOGRAPH REVIEW 33
8.2.2 CITY DIRECTORIES 34
8.2.3 SANBORN MAP REVIEW 34
8.2.4 TOPOGRAPHIC MAP REVIEW 34
8.3 HISTORICAL USE SUMMARY 35
9.0 SIGNIFICANT DATA GAPS 37
10.0 SUMMARY OF LIMITED SOIL ANALYSIS 38
11.0 CONCLUSIONS AND RECOMMENDATIONS 43
12.0 CERTIFICATIONS 45
13.0 REFERENCES 46

LIST OF APPENDICES

Appendix A: Figures
Appendix B: Documents Obtained from EDR
Appendix C: Questionnaire(s) and Subject Property Documents from Other Sources
Appendix D: Photographs
Appendix E: Environmental Database Report
Appendix F: Vapor Encroachment Screening
Appendix G: Laboratory Test Results
Appendix H: Project Team Qualifications

1.0 INTRODUCTION

GEOTEK, INC. (GEOTEK) has performed a Phase I and Limited Phase II Environmental Site Assessment (ESA) for APNs 245-300-001 and -004 (the "Subject Property"), located in the Woodcrest area of Riverside County, California.

1.1 PURPOSE

The purpose of this Phase I and Limited Phase II ESA was to identify and evaluate actual and potential recognized environmental conditions (RECs) at the Subject Property. It was not the purpose of this assessment to determine the degree or extent of contamination, if any, but rather the potential for contamination. A REC is defined in ASTM E1527-21 as:

> *"The presence of hazardous substances or petroleum products in, on, or at the Subject Property due to a release to the environment; (2) the likely presence of hazardous substances or petroleum products in, on, or at the Subject Property; or (3) the presence of hazardous substances or petroleum products in, on, or at the Subject Property under conditions that pose a material threat of a future release to the environment. De minimis conditions are not recognized environmental conditions."*

ASTM E1527-21 defines a *de minimis* condition as:

> *"A condition related to a release that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. A condition determined to be a de minimis condition is not a recognized environmental condition nor a controlled recognized environmental condition."*

1.2 SCOPE OF WORK

The Phase I and Limited Phase II ESA is a general characterization of environmental concerns based on reasonably ascertainable information and observations. GEOTEK performed the Phase I and Limited Phase II ESA in substantial accordance with ASTM Standard E 1527-21. The following services were provided for the assessment:

- A reconnaissance of the Subject Property and surrounding properties to visually assess current utilization and indications of potential surface contamination. This was accomplished by driving the Subject Property boundaries, and then traversing the Subject Property until the entire Subject Property had been surveyed.

- A reconnaissance of the surrounding area for approximately one-half mile was conducted, without entering the properties, making observations concerning property uses, conditions and housekeeping.

- Interviews were conducted, either in person, via telephone, or via a written questionnaire(s) with the client representative, the seller's representative, and/or appropriate regulatory agency personnel.

- A review of the geologic and hydro-geologic settings was conducted using reasonably ascertainable public records and documents.

- An environmental database report was obtained from a data service provider. This database report compiles and locates documented "hazardous waste" facilities within specific minimum search distances as defined by ASTM E 1527-21. If necessary, additional information on identified facilities was gathered by a file review at the appropriate federal, state, local, and/or tribal regulatory agency.

- A review of reasonably ascertainable historical records (including aerial photographs, topographic maps, building records, and city directories) was conducted to assess the historical land utilization and indications of potential contamination or sources of contamination for the Subject Property.

- This report was prepared, which relates the findings of this study and presents the conclusions and recommendations.

Specific items not included in this Scope of Services are water analysis, asbestos containing materials analysis, radon analysis, lead-based paint analysis, lead in drinking water, wetlands, regulatory compliance, cultural and historic resources, industrial hygiene, health and safety, ecological resources, endangered species, indoor air quality, vapor intrusion testing, high voltage power lines, and other items not within the scope of ASTM E 1527-21.

1.3 SIGNIFICANT ASSUMPTIONS

Specific assumptions by GEOTEK for this assessment include:

- GEOTEK had permission to access the Subject Property grounds.

- The client has provided GEOTEK with available geotechnical or environmental reports for the Subject Property.

- The client has provided GEOTEK with known current or historic uses of hazardous materials at the Subject Property, or with other specialized knowledge of the environmental history of the Subject Property and surrounding area.

- The client is not the sole and absolute source of information.

- The seller has provided proper and complete access to their knowledge, both written and verbal, and GEOTEK can rely on the information.

1.4 LIMITATIONS AND EXCEPTIONS

GEOTEK conducted a Phase I and Limited Phase II Environmental Site Assessment in substantial accordance with ASTM E 1527-21 and authorized by TTLC RIVERSIDE CHICAGO LLC. This study does not include sampling of groundwater and/or materials on-site for environmental testing. This report is intended for the use of TTLC RIVERSIDE CHICAGO LLC. The contents should not be relied upon by any party other than the aforementioned without the express written consent of GEOTEK.

The findings, conclusions, and recommendations made in this report are based on the information that was made available to GEOTEK, in most instances from public records. The information is relevant to the date of the sitework and should not be relied on to represent conditions at any later date. The opinions and conclusions expressed herein are based on information obtained during the assessment and on experience and current standards of technical practice. GEOTEK makes no other warranties, either express or implied, concerning the completeness of the data furnished to us. GEOTEK cannot be responsible for conditions or consequences arising from relevant facts that were concealed, withheld, or not fully disclosed at the time the assessment was undertaken. GEOTEK is not responsible, nor liable for work, testing or recommendations performed or provided by others. This Phase I and Limited Phase II Environmental Site Assessment is not and should not be construed as a warranty or guarantee about the presence or absence of environmental hazards or contaminants which may affect the Subject Property. Facts, conditions, and acceptable risk factors change with time; accordingly, this report should be viewed within this context.

Specific limitations to the scope of ASTM E 1527-21 due to contract limitations, availability of resources, and/or encountered Subject Property conditions are discussed in the appropriate sections of this report.

1.5 Special Terms and Conditions

This assessment report is presented as fulfilling the standard requirements of most financial institutions, governmental regulatory agencies, ASTM, and generally accepted industry standards and practices. Please refer to GeoTek Proposal No. P-0501925-CR for complete terms and conditions for this assessment.

1.6 Reliance

This assessment has been prepared for its exclusive use, and may be relied upon by TTLC RIVERSIDE CHICAGO LLC, their successors and assignees. Third party reliance letters may be issued upon request and upon the payment of the, then current, fee for such letters. All third parties relying on this report, by such reliance, agree to be bound by the General Conditions and Limitations agreed by TTLC RIVERSIDE CHICAGO LLC. No reliance by any party is permitted without such an agreement, regardless of the content of the reliance letter itself.

2.0 DESCRIPTION OF SUBJECT PROPERTY AND SURROUNDING AREA

The objective of describing the Subject Property and surrounding area is to document current conditions as observed and to obtain information which would indicate the likelihood of a recognized environmental condition in connection with the Subject Property. A representative of GEOTEK conducted a Subject Property reconnaissance on May 6, 2025. The weather was cool, and the sky was cloudy. The Subject Property can generally be accessed from Iris Avenue to the south and Chicago Avenue to the east.

2.1 SUBJECT PROPERTY LOCATION AND LEGAL DESCRIPTION

The Subject Property is located northwest corner of Iris Avenue and Chicago Avenue in the Woodcrest Area of Riverside County, California.

According to the U.S. Geological Survey (USGS) Riverside East, Riverside West, Steele Peak and Lake Matthews quadrangle topographic map sheets (7.5-minute series), the Subject Property is located in Section 24 Township 3 South, Range 5 West, San Bernardino Principal Meridian (see Figure 1 in Appendix A and documents in Appendix B). The irregular shaped Subject Property is currently comprised of 2 parcels of land (Riverside County Assessor's Parcel Numbers [APNs] 245-300-001 and -004). Additional legal descriptions for the Subject Property are included in the Environmental Lien and AUL Search as obtained from Environmental Data Resources, Inc. (EDR) included in Appendix B. A Property Tax Map Report as obtained from EDR is also included in Appendix B. A Riverside County Parcel Report as obtained from the County of Riverside Map My County website (Map My County Public v12.00) is also included in Appendix C.

2.2 SUBJECT PROPERTY AND VICINITY GENERAL CHARACTERISTICS

The Subject Property currently consists of a cut-down orchard, a single-family residence, two (2) detached garages and a shed/barn structure. The shed/barn structure contains old farming equipment, plywood, fencing materials, and is essentially utilized for storage of agricultural equipment associated with the former orchard operations. Irrigation lines were observed throughout the Subject Property and transmission power lines run along the east boundary of the Subject Property. The inside of the single-family residence was not observed during the Subject Property reconnaissance as it was not accessible.

The Subject Property is in an area largely characterized by residential development, land utilized for agricultural purposes and vacant land.

The Subject Property is currently zoned as "A-1-10" (Light Agriculture) on the Riverside County Map My County Website (Map My County Public v12.00). A copy of the zoning map is included in Appendix C.

2.3 CURRENT PROPERTY USE

The Subject Property currently consists of a cut-down orchard, a single-family residence, two (2) detached garages and a shed/barn structure. The shed/barn structure contains old farming equipment, plywood, fencing materials, and is essentially utilized for storage of agricultural equipment associated with the former orchard operations. Irrigation lines were observed throughout the Subject Property and transmission power lines run along the east boundary of the Subject Property. The inside of the single-family residence was not observed during the Subject Property reconnaissance as it was not accessible.

2.4 SUBJECT PROPERTY IMPROVEMENTS

The Subject Property currently consists of a cut-down orchard, a single-family residence, two (2) detached garages and a shed/barn structure. The shed/barn structure contains old farming equipment, plywood, fencing materials, and is essentially utilized for storage of agricultural equipment associated with the former orchard operations. Irrigation lines were observed throughout the Subject Property and transmission power lines run along the east boundary of the Subject Property. The inside of the single-family residence was not observed during the Subject Property reconnaissance as it was not accessible.

Photographs of the Subject Property are included in Appendix D, and locations of the photographs are shown on Figure 3 in Appendix A.

2.4.1 HAZARDOUS SUBSTANCES

Visual evidence of hazardous substances and waste was observed during the Subject Property reconnaissance. One (1) unmarked above-ground storage tank (AST) was observed near the garage structure on the central east portion of the Subject Property (see photograph 20 and Figure 3). The tank was empty and appeared in relatively good condition and working order. According to Mr. Harry Takeno, it is his understanding that the AST was previously used as a water cart carrier associated with the irrigation of the orchard. Smudge pot lids were observed on some bedrock outcrops located in the central west portion of the Subject Property (see photograph 35). According to Mr. Harry Takeno, it is his understanding that the smudge pots were never used during the agricultural orchard operations. No additional

evidence suggesting the use of smudge pots was identified during the Subject Property reconnaissance or within historical aerial photographs. No evidence of soil staining or other signs of potential contamination were observed near the smudge pot lids or elsewhere in the former orchard at the time of the Subject Property reconnaissance.

The unmarked above-ground storage tank and smudge pot lids should be properly removed by a qualified professional prior to any future development in this area. No visual indication of spills or leaks were observed. No pungent or acrid odors were observed emanating from the Subject Property.

2.4.2 STORAGE TANKS

GEOTEK did not observe evidence of underground fuel storage tanks (such as vent pipes, fill pipes, regular-shaped depressions, etc.) on the Subject Property.

One (1) unmarked aboveground storage tank (AST) was observed near the garage structure on the central east portion of the Subject Property (see photograph 20 and Figure 3). The tank was empty and appeared in relatively good condition and working order. According to Mr. Harry Takeno, it is his understanding that the AST was previously used as a water cart carrier associated with the irrigation of the orchard. Smudge pot lids were observed on some bedrock outcrops located in the central west portion of the Subject Property (see photograph 35 and Figure 3). According to Mr. Harry Takeno, it is his understanding that the smudge pots were never used during the agricultural orchard operations. No additional evidence suggesting the use of smudge pots was identified during the Subject Property reconnaissance. No evidence of soil staining or other signs of potential contamination were observed near the smudge pot lids or elsewhere in the former orchard at the time of the Subject Property reconnaissance. The unmarked above-ground storage tank and smudge pot lids should be properly removed by a qualified professional prior to any future development in this area.

2.4.3 POLY-CHLORINATED BIPHENYLS (PCBS)

GEOTEK observed four (4) pole-mounted transformers which may contain PCBs on the Subject Property (see photographs 2, 4, 9 and 15 and Figure 3). There was no visual evidence of spills or leaks from the pole-mounted units. GEOTEK did not observe other suspect equipment (elevators, hydraulic lift mechanisms, trash compactors, etc.) which may contain PCBs on the Subject Property.

2.4.4 CONTROLLED SUBSTANCES

GEOTEK consulted the U.S. Drug Enforcement Agency (DEA) website (Clandestine Drug Labs in the United States | DEA.gov) to cross-check the Subject Property address and adjoining properties against published facilities subject to DEA enforcement. The Subject Property nor any adjoining facilities appeared on the list of published facilities for the last five (5) years.

GEOTEK consulted with the County of Riverside Fire and Sheriff Departments regarding controlled substances in association with the Subject Property or adjoining facilities. Neither agency had information regarding the Subject Property.

GEOTEK did not observe evidence of illegal or controlled substances being used or manufactured at the Subject Property.

2.4.5 INDICATIONS OF SOLID WASTE DISPOSAL

GEOTEK observed scattered trash, vehicle tires, concrete remnants, smudge pot lids, wood, and landscaping debris at the Subject Property (see photographs 18, 20, 23, 24, 27, 34 and 35 and Figure 3). The debris is considered a *de minimus* condition and should be removed, transported, and disposed of at a proper facility prior to any future land development. Waste disposal for the Subject Property and Subject Property area is provided by Burrtec Waste Industries, Inc.

2.4.6 UTILITY SUPPLY

Sewer and water services for the Subject Property and area are understood to be provided by Western Municipal Water District. Electric services for the Subject Property and area are provided by Southern California Edison. Gas services for the Subject Property and the surrounding areas are provided by Southern California Gas Company.

2.4.7 DRAINAGE

Natural drainage at the Subject Property is generally interpreted to be toward the northwest, conforming to the natural topography in the area. Ponded water was not observed during the Subject Property reconnaissance.

2.4.8 OTHER CONDITIONS OF CONCERN

No visual indication of conditions of concern (drywells, cesspools, etc.) that would indicate a recognized environmental condition was observed during the Subject Property reconnaissance.

No visual indication of other conditions of concern (water wells, drywells, cesspools, etc.) that may indicate a recognized environmental condition was observed during the Subject Property reconnaissance. However, based on previous referenced reporting by RMA Group dated September 5, 2014, four water wells exist on the Subject Property. Two of the water wells are reportedly located in the general vicinity of the residence; one of the water wells is east of the residence near Chicago Avenue; and the fourth is at an unknown location. As a direct pathway to the subsurface environment, this represents an environmental concern to the Subject Property. If these wells are indeed present, the wells should be located and properly abandoned per Riverside County guidelines and/or state of California guidelines prior to any land development.

No evidence of a septic system was observed during the Subject Property reconnaissance. However, given the age of the existing residence it is likely that a septic system exists on the Subject Property. If a septic system is encountered during future development, it should be abandoned, and removed per Riverside County Department of Environmental Health guidelines.

2.4.9 INTERVIEWS

GEOTEK interviewed the following individuals while performing this assessment:

- Mr. Michael Torres, a representative of the future Subject Property owner, completed a User Questionnaire, dated May 20, 2025.
- Mr. Michael Torres, a representative of the future Subject Property owner, completed a Property Owner Questionnaire, dated May 20, 2023.
- Mr. Harry Takeno, a representative of the current Subject Property owner who assists with the management of the Subject Property, conducted a field interview with a representative from GEOTEK on May 8, 2025.

Information from these interviews is incorporated into the appropriate sections of this report.

2.5 CURRENT ADJOINING PROPERTY USE

The Subject Property is in an area largely characterized by residential development, land utilized for agricultural operations and vacant land. The Subject Property is bound by residential structures (17525 Country Manor Lane; 231 East Alessandro Boulevard and 17795-17975 Twin Lakes Drive) and vacant land to the north. Chicago Avenue, followed by residential structures (18025 Gentian Avenue; 15600 and 15650 Chicago Avenue; 18010 Hibiscus Avenue; 15765-15825 Cartwright Drive; and 18010 and 18090 Iris Avenue) bound the Subject Property to the east. Vacant land bounds the Subject Property to the west. Vacant land and Iris Avenue, followed by residential structures (17801-17975 Iris Avenue; 16005, 16015 and 16015 Gamble Avenue; and 17625 and 17645 Iris Avenue) bound the Subject Property to the south. None of the adjoining properties appear to represent a recognized environmental condition or environmental concern to the Subject Property.

3.0 CLIENT PROVIDED INFORMATION

As a form of interview, Mr. Michael Torres, a representative of the future Subject Property owner, completed a "User Questionnaire" for the Subject Property, in accordance with ASTM E 1527-21. A copy of the completed questionnaire is included in Appendix C.

3.1 Environmental Clean Up Liens

Mr. Michael Torres is not aware of any environmental clean-up liens at the Subject Property.

3.2 Activity and Use Limitations

Mr. Michael Torres is not aware of any activity use limitations at the Subject Property.

3.3 Specialized Knowledge

Mr. Michael Torres is not aware of any specialized knowledge of the Subject Property or nearby properties.

3.4 Purchase Price

Mr. Michael Torres did not state if the purchase price being paid for the Subject Property reflects the fair market value.

3.5 Commonly Known Information

Mr. Michael Torres states that he is not aware of commonly known or reasonably ascertainable information for the Subject Property.

3.6 Obvious Indicators of Contamination

Mr. Michael Torres did not state if he is aware of obvious indicators of a likely environmental impact at the Subject Property.

4.0 OWNER, PROPERTY MANAGER AND OCCUPANT INFORMATION

This section contains other relevant information regarding this assessment in accordance with ASTM E 1527-21.

4.1 OWNER, PROPERTY MANAGER AND OCCUPANT INFORMATION

It is GEOTEK'S understanding that P & F Investment Company currently owns and manages the Subject Property. The Subject Property is currently unoccupied by a residential structure and individuals.

4.2 INTERVIEWS

GEOTEK interviewed the following individuals while performing this assessment:

- Mr. Michael Torres, a representative of the future Subject Property owner, completed a User Questionnaire, dated May 20, 2025.
- Mr. Michael Torres, a representative of the future Subject Property owner, completed a Property Owner Questionnaire, dated May 20, 2023
- Mr. Harry Takeno, a representative of the current Subject Property owner who assists with the management of the Subject Property, conducted a field interview with a representative from GEOTEK on May 8, 2025.
  - Mr. Harry Takeno indicated that the aboveground storage tank (AST) observed during the reconnaissance was previously used as a water carrier associated with the irrigation of the orchard. Additionally, Mr. Harry Takeno stated that the smudge pots lids were never used during the agricultural orchard operations.

Information from these interviews is incorporated into the appropriate sections of this report.

As a form of interview, Mr. Michael Torres, a representative of the current Subject Property owner, completed a "Property Owner Questionnaire" for the Subject Property in accordance with ASTM E 1527-21. A copy of the completed questionnaire is included in Appendix C.

GEOTEK'S Subject Property reconnaissance and research did not discover significant contradictory information from the Property Owner Questionnaire.

4.3 REASON FOR PERFORMING PHASE I AND LIMITED PHASE II ESA

This Phase I and Limited Phase II ESA was performed at the request of TTLC RIVERSIDE CHICAGO LLC as part of the due diligence efforts to acquire the Subject Property.

4.4 OTHER USER PROVIDED INFORMATION

GEOTEK was provided with other information from an environmental perspective for the Subject Property by TTLC RIVERSIDE CHICAGO LLC.

A previous environmental report was completed by RMA Group (RMA) for Diversified Pacific (RMA Group, 2014). Within that report, Mr. Brian Bush of Diversified Pacific completed a questionnaire for the Subject Property. Mr. Bush was not aware of any environmental liens or any activity or use limitations. Mr. Bush had no specialized knowledge and states there is no value reduction for environmental reasons. Mr. Bush was not aware of any obvious indicators of contamination. Mr. Bush also provided with a list of chemical pesticides previously used on the Subject Property, including Honcho Plus Herbicide, Wilco Gopher Getter Restricted Use Bait, P.C.Q Pelleted Rodent Bair, Admire Pro Systemic Protectant, Glyfos X-tra, Esteem and Ridomil Gold (RMA Group, 2014). These containers were not observed during the Subject Property visit.

Additionally, RMA conducted near surface soil sampling and laboratory testing of six samples for organochlorine pesticides (EPA test method 8080), organophosphorus pesticides (EPA test method 8141), chlorinated herbicides (EPA test method 8151) and heavy metals (EPA test method 6010B). RMA concluded that the chemicals tested were below residential screening levels and did not present an environmental condition or concern to the Subject Property.

RMA concluded that their study did not reveal any recognized environmental conditions in connection with the property except for the following: numerous onsite chemicals should be disposed of properly; above ground storage tanks should be removed from the Subject Property by a qualified environmental contractor; and the Lawler's Self-Service Leaking Underground Storage Tank (LUST) facility is located nearby the Subject Property but likely would not impact the Subject Property. It should be noted, the Lawler Self-Service LUST facility now has a facility status of "completed-case closed" as of March 8, 2021.

5.0 PROPERTY PHYSICAL SETTING

Surface and subsurface environments are of interest because they control the movement of water-born contaminants, which could be transported to and from the Subject Property. GEOTEK reviewed information regarding the physical setting of the Subject Property and immediate surrounding area.

5.1 REGIONAL GEOLOGY

The property is situated in the Peninsular Ranges geomorphic province. The Peninsular Ranges province is one of the largest geomorphic units in western North America. Basically, it extends from the point of contact with the Transverse Ranges geomorphic province, southerly to the tip of Baja California. This province varies in width from about 30 to 100 miles. It is bounded on the west by the Pacific Ocean, on the south by the Gulf of California and on the east by the Colorado Desert Province.

The Peninsular Ranges are essentially a series of northwest-southeast oriented fault blocks. Several major fault zones are found in this province. The Elsinore Fault zone and the San Jacinto Fault zone trend northwest-southeast and are found near the middle of the province. The San Andreas Fault zone borders the northeasterly margin of the province.

5.2 LOCAL GEOLOGIC SETTING

The Subject Property and Subject Property area are understood to be underlain by quartz diorite bedrock (Dibblee, T.W. and Minch, J.A., 2003). Additional data regarding soil survey information for the Subject Property and Subject Property area is also included in Appendix B.

5.3 TOPOGRAPHY

The Subject Property and Subject Property area can be considered as having relatively flat to hillside terrain. Based on the USGS topographic map for the area and other documents reviewed for this report, the elevation of the Subject Property ranges from approximately 1,490 to 1,555 feet above mean sea level.

5.4 VICINITY SURFACE DRAINAGE

Natural drainage at the Subject Property is interpreted to be dominantly directed toward the northwest, conforming to the natural topography in the area.

According to the Federal Emergency Management Agency (FEMA), the Subject Property is in an "area with flood risk due to levee" (Community Panel Numbers 06065C-0740G, dated August 28, 2008). A copy of the FEMA map is included in Appendix C.

5.5 HYDROGEOLOGY

According to a review of historical groundwater data (California Department of Water Resources and California State Water Resources Control Board groundwater well data [http://wdl.water.ca.gov and http://geotracker.waterboards.ca.gov]) and in-house information, groundwater is greater than 100 feet below ground surface with a flow estimated to be directed to the northwest.

6.0 ENVIRONMENTAL REGULATORY RECORDS REVIEW

The records review is conducted to help identify known recognized environmental conditions at the Subject Property and/or on adjoining or nearby properties which may have impacted the Subject Property.

6.1 ENVIRONMENTAL DATABASE RECORDS SEARCH

GEOTEK obtained and reviewed an environmental database report of the federal and state environmental records specified by ASTM E 1527-21. The database report was provided by Environmental Data Resources, Inc. (EDR) of Shelton, Connecticut. Additionally, orphan, or un-mappable facilities listed by EDR were reviewed for the approximate minimum search distances noted and included in the discussion, if applicable. Refer to Appendix E for a copy of the database report.

ENVIRONMENTAL DATABASE	MINIMUM SEARCH DISTANCE	SUBJECT PROPERTY	ADJOINING	TOTAL LISTED
U.S. Department of Defense (DOD) facilities and Formerly Used Defense Sites (FUDS)	1.0 Mile	No	0	0
Environmental Protection Agency (EPA) - National Priorities List (NPL), including delisted NPL	1.0 Mile	No	0	0
EPA – Superfund Enterprise Management System (SEMS), including archived sites (formerly CERCLIS)	0.5 Mile	No	0	0
EPA – Resource Conservation and Recovery Act (RCRA), Corrective Action Facilities (CORRACTS)	1.0 Mile	No	0	0
EPA – RCRA, Transportation, Storage, and Disposal facilities (TSD)	0.5 Mile	No	0	0
EPA - RCRA Generators	Subject Property and Adjoining	No	0	0
EPA – Emergency Response Notification System (ERNS)	Subject Property	No	N/A	0
Federal institutional control/engineering control registries	Subject Property	No	N/A	0
California Environmental Protection Agency (CEPA) – State Response Sites (Response, formerly Annual Work Plan and Bond Expenditure Plan)	1.0 Mile	No	0	0

ENVIRONMENTAL DATABASE	MINIMUM SEARCH DISTANCE	SUBJECT PROPERTY	ADJOINING	TOTAL LISTED
CEPA – EnviroStor Database (ENVIROSTOR, formerly CALSITES)	0.5 Mile	No	0	0
CEPA – California Hazardous Materials Information Reporting System (CHMIRS)	0.25 Mile	No	0	0
CEPA – Cleanup Program Sites (CPS, formerly SLIC)[i]	0.5 Mile	No	0	0
Department of Resources, Recycling, and Recovery (DRRR) and CEPA - Solid Waste Fill/Landfill (SWF/LF), Solid Waste Assessment Test (SWAT)/Waste Management Unit Database System (WMUDS) and Recycling Facilities (SWRCY)	0.5 Mile	No	0	1
CEPA – Leaking Underground Storage Tanks (LUST), including historic and archive databases	0.5 Mile	No	0	5
CEPA – Underground Storage Tanks (UST), including historic and archive databases	Subject Property and Adjoining	No	0	0
State institutional control/engineering control registries	Subject Property	No	N/A	0
Federal and/or state Voluntary Cleanup Program (VCP) sites	0.5 Mile	No	0	0
Federal and/or state Brownfield Sites (BFS)	0.5 Mile	No	0	0
Local and/or Tribal databases	Up To 1.0 Mile	No	0	0
Drycleaners	0.25 Mile	No	0	0
Other databases	Up to 1.0 Mile	**YES**	0	21
Unmappable facilities	Up to 1.0 Mile	No	0	2

N/A – Not Applicable
[i] Spills, Leaks, Investigations, and Cleanups (SLIC) facilities.

6.2 Discussion of Regulatory Records

6.2.1 Department of Defense

The Department of Defense (DOD) facility database includes federal facilities operated by the DOD which encompasses greater than 640 acres. Formerly Used Defense Sites (FUDS) are

properties where the U.S. Army Corps of Engineers is actively working or will take necessary cleanup actions. Environmental impacts from the operations of such facilities have been documented across the continental United States. The DOD and FUDS databases are searched for a 1.0-mile distance.

The Subject Property does not appear on the DOD or FUDS databases. There are no facilities listed on the DOD or FUDS databases within 1.0-mile of the Subject Property.

6.2.2 National Priorities List

The National Priorities List (NPL) is the EPA's list of confirmed or proposed Superfund facilities. GeoTek's review of this data includes facilities which have been delisted from the NPL. The NPL is searched for a 1.0-mile distance.

The Subject Property does not appear on the NPL. There are no NPL facilities located within 1.0-mile of the Subject Property.

6.2.3 Superfund Enterprise Management System

The Superfund Enterprise Management System (SEMS, formerly CERCLIS) is a compilation of facilities that the EPA has investigated or is currently investigating for a release or threatened release of hazardous substances. GeoTek's review of SEMS facilities includes archive (no further remedial action planned) facilities. The SEMS list is searched for a 0.5-mile distance.

The Subject Property does not appear on the SEMS list. There are no SEMS facilities located within 0.5-mile of the Subject Property.

The Subject Property does not appear on the SEMS-ARCHIVE list. There are no facilities on the SEMS-ARCHIVE list within 0.5-mile of the Subject Property.

6.2.4 Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) compiles selective information on facilities which generate, transport, store, treat and/or dispose of hazardous waste. RCRA facilities can be listed on one of three databases:

- *Corrective Action Facilities (CORRACTS)* are facilities undergoing corrective action. A corrective action order is issued pursuant to RCRA Section 3008(h) when there has

been a release of hazardous waste or constituents into the environment from a RCRA facility. The CORRACTS list is searched for a 1.0-mile distance.

The Subject Property does not appear on the CORRACTS list. There are no CORRACTS facilities located within 1.0-mile of the Subject Property.

- *Transportation, Storage, and Disposal Facilities (TSD)* includes facilities that transport, store or dispose of hazardous waste and are not listed on the RCRA Generators list. The TSD is searched for a 0.5-mile distance.

  The Subject Property does not appear on the RCRA TSD list. There are no RCRA TSD facilities located within 0.5-mile of the Subject Property.

- *Generators List* identifies and tracks hazardous waste from the point of generation to the point of disposal. The RCRA Generators database is a compilation by the EPA of reporting facilities that generate hazardous waste. The RCRA generators list is searched for the Subject Property and adjoining properties.

  The Subject Property does not appear on the RCRA Generators list. There are no facilities listed on the RCRA Generators list that adjoin the Subject Property.

6.2.5 Federal Institutional Control/Engineering Control Registries

The EPA maintains three (3) databases which list facilities that have institutional and/or engineering controls in place as part of their operations. These databases are searched for the Subject Property.

The Subject Property does not appear on these databases.

6.2.6 Emergency Response Notification System

The Emergency Response Notification System (ERNS) is a national database used to collect information on reported releases of oil or hazardous substances. The ERNS list is searched for the Subject Property.

The Subject Property does not appear on the ERNS list.

6.2.7 STATE RESPONSE FACILITIES

The State Response facilities (RESPONSE) records are the state equivalent to the federal National Priorities List (NPL) database. The RESPONSE database is searched for a 1.0-mile distance.

The Subject Property does not appear on the RESPONSE database. There are no RESPONSE facilities located within 1.0 mile of the Subject Property.

6.2.8 ENVIROSTOR DATABASE

The EnviroStor Database (EnviroStor, formerly CALSITES) records are the state equivalent to the federal SEMS database. EnviroStor is searched for a 0.5-mile distance.

The Subject Property does not appear on the EnviroStor database. There are no EnviroStor facilities located within 0.5-mile of the Subject Property.

6.2.9 CALIFORNIA HAZARDOUS MATERIAL INCIDENT REPORT SYSTEM

The California Hazardous Material Incident Report Systems (CHMIRS) is a state database used to collect information on reported hazardous materials incidents (accidental leaks and spills). The CHMIRS list is searched for a 0.25-mile distance.

The Subject Property does not appear on the CHMIRS database. There are no facilities listed on the CHMIRS within 0.25-mile of the Subject Property.

6.2.10 CLEANUP PROGRAM FACILITIES

The California Cleanup Program Sites (CPS) database (formerly the SLIC database) is compiled by the CEPA State Water Resources Control Board through its Regional Water Quality Control Boards (RWQCB). It is designed to protect and restore water quality from spills, leaks, and similar discharges. The CPS is searched for a 0.5-mile distance.

The Subject Property does not appear on the CPS database. There are no CPS facilities located within 0.5-mile of the Subject Property.

6.2.11 SOLID WASTE FACILITIES LIST

Department of Resources, Recycling, and Recovery (DRRR) and CEPA maintain multiple databases identifying and tracking landfill facilities. The Solid Waste Fill/Landfill (SWF/LF), Waste Management Unit Database System (WMUDS)/Solid Waste Assessment Test (SWAT), and Solid Waste Recycling Facilities (SWRCY) databases includes information pertaining to closed and open solid waste facilities operating in the State of California (collectively the "SWLF"). The SWLF databases are searched for a 0.5-mile distance.

The Subject Property does not appear on the WMUDS/SWAT, SWF/LF or SWRCY lists.

There are no facilities on the WMUDS/SWAT or SWRCY lists within 0.5-mile of the Subject Property.

There is one (1) facility listed on the SWF/LF database within 0.5 mile of the Subject Property. The facility is listed as Wade Landfill, located at 11749 Roberts Road. The facility is approximately 1,932 feet (0.366-mile) north of the Subject Property. The facility has an operational status of closed. Due to the operational status and distance, it is GEOTEK'S opinion that this facility is not considered an environmental concern to the Subject Property.

6.2.12 LEAKING UNDERGROUND STORAGE TANKS LIST

The California Leaking Underground Storage Tanks (LUST) list is a compilation of petroleum storage tank facilities that have reported a release. GEOTEK'S review includes historic, archived, and tribal LUST databases. The LUST list is searched for a 0.5-mile distance.

The Subject Property does not appear on the LUST list.

There are five (5) facilities identified on the LUST databases withing 0.5-mile of the Subject Property. The information regarding these facilities can be found on the table below:

Facility Name	Facility Address	Facility Distance from Subject Property	Facility Status
Lawler's Self-Serve	17945 Van Buren Boulevard	778 feet (0.147 mile) SSE (Up-Gradient)	Pollution Characterization
Lawler's Self-Serve	17945 Van Buren Boulevard	778 feet (0.147 mile) SSE (Up-Gradient)	Completed – Case Closed
G and K Petro Inc.	17755 Van Buren Boulevard	1,547 feet (0.293 mile) S (Up-Gradient)	Completed – Case Closed

Facility Name	Facility Address	Facility Distance from Subject Property	Facility Status
Lawler Woodcrest Service	18400 Van Buren Boulevard	2,027 feet (0.384 mile) ESE (Up-Gradient)	Case Closed
Lawler Woodcrest Service	18400 Van Buren Boulevard	2,027 feet (0.384 mile) ESE (Up-Gradient)	Completed – Case Closed

Due to facility status and/or distance from the Subject Property, it is GEOTEK'S opinion that these facilities have not created a recognized environmental condition to the Subject Property.

6.2.13 UNDERGROUND STORAGE TANKS LIST

The California Underground Storage Tank (UST) list is a compilation of petroleum storage tank facilities that are registered with the State of California. GEOTEK'S review included historic, archived, and tribal UST databases. The UST list is searched for the Subject Property and adjoining properties.

The Subject Property does not appear on the UST list. There are no facilities adjoining to the Subject Property on the UST list.

The Subject Property does not appear on the HIST UST list. There are no facilities adjoining to the Subject Property on the HIST UST list.

6.2.14 STATE INSTITUTIONAL CONTROL/ENGINEERING CONTROL REGISTRIES

The State of California maintains institutional and engineering control databases or registries. This lists facilities with engineering or institutional controls in place. Institutional controls include administrative measures intended to prevent exposure to contaminants remaining on the site. Engineering controls include various forms of caps, building foundations, liners, and treatment methods. The State Institutional Control/Engineering Control Registries is searched for the Subject Property.

The Subject Property does not appear on the State Institutional Control/Engineering Control Registries.

6.2.15 Federal and/or State Voluntary Cleanup Program

Voluntary Cleanup Program (VCP) facilities are those where the current or past owner of which has entered into an agreement with EPA or the state to utilize their own resources to remediate a site or facility. The VCP databases are searched for 0.5-mile.

The Subject Property does not appear on the VCP databases. There are no facilities identified on the VCP databases withing 0.5-mile of the Subject Property.

6.2.16 Brownfields Sites

Brownfields sites (BFS) are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Federal brownfields are listed by EPA. State brownfields in California are listed by CEPA. BFSs are searched for 0.5-mile.

The Subject Property does not appear on the federal or stated BFS database. There are no BFS facilities within 0.5-mile of the Subject Property.

6.2.17 Local and/or Tribal Databases

The Subject Property does not appear on the local databases reviewed.

Tribal governments are under the jurisdiction of the EPA for environmental concerns. Currently, the EPA Region 9 publishes LUST and UST information for tribes in Arizona, California, Hawaii, Nevada, and the Pacific Territories. The LUST database is searched for 0.5 mile and the UST database is searched for 0.25 mile.

The Subject Property does not appear on the Tribal LUST or UST databases. No facilities were identified on the Tribal LUST or UST databases within 0.5 mile of the Subject Property.

6.2.18 Drycleaners

The DRYCLEANERS list is compiled and provided by CEPA. The DRYCLEANER database is searched for a 0.25-mile distance.

The Subject Property does not appear on the DRYCLEANER list. There are no DRYCLEANER facilities listed within 0.25-mile of the Subject Property.

6.2.19 OTHER DATABASES

EDR compiles information from multiple federal, state, local and proprietary databases. Most are secondary or tertiary or redundant. Facilities compiled on these other databases are evaluated based on the severity of the listing, distance, and location.

The Subject Property appears on the environmental database report obtained for this assessment. The Subject Property is listed as Unlimited Engineering Inc. on the HWTS (Hazardous Waste Tracking System) database. The facility status is listed as, "active." No violations are listed. No other pertinent information is provided on this database. Based on the available information, it is GEOTEK'S opinion that the listing has not created a recognized environmental condition to the Subject Proper.

Two (2) facilities are listed on the EnviroStor database that are located greater than 0.5-mile from the Subject Property.

Three (3) facilities are listed with CERS HAZ WASTE.

One (1) facility is listed with SWEEPS UST.

Two (2) facilities are listed with CERS TANKS.

One (1) facility is listed with CA FID UST.

Six (6) facilities are listed with RCRA NonGen / NLR.

Three (3) facilities are listed Cortese.

Three (3) facilities are listed with HIST CORTESE.

Due to the facility status and type of listings, it is GEOTEK'S opinion that these facilities have not created a recognized environmental condition to the Subject Property.

6.2.19.1 HISTORIC AUTOMOTIVE FACILITIES

EDR provides a proprietary database including the names, locations and dates of known historic automotive repair and service facilities. This database is searched for 0.25-mile.

The Subject Property does not appear on the historic automotive facilities database. There are no historic automotive facilities listed within 0.25-mile of the Subject Property.

6.2.19.2 HISTORICAL DRYCLEANERS

EDR provides a proprietary database including the names, locations, and dates active of known dry-cleaning facilities. The state and certain local regulatory agencies also provide information on dry-cleaning facilities. These databases are searched for 0.25-mile.

The Subject Property does not appear on the Historical Drycleaners database. There are no facilities listed on the Historical Drycleaners database within 0.25-mile.

6.2.19.3 MANUFACTURED GAS PLANTS

EDR provides a proprietary database including the names, locations, and dates active of known manufactured gas plants (MGP). This database is searched for 1.0-mile.

The Subject Property does not appear on the MGP database. There are no listed facilities within 0.25-mile.

6.2.20 UNMAPPABLE FACILITIES

GEOTEK reviewed the listing of "orphan" or unmappable facilities in the database report. There are two (2) unmapped facilities in the database report.

The first facility is located at the intersection of Central Avenue and Chicago Avenue. The facility is listed with CDL, clandestine drug labs. This facility has no name due to the facility being located "in van." This facility is approximately 4.2 miles north of the Subject Property.

The second facility is being listed as Target Distribution Center T3856, located at 25000 Van Buren Boulevard. This facility is being listed with CERS HAZ WASTE. This facility is located approximately 2.7 miles east of the Subject Property.

Due to the type of listing and distance from the Subject Property, these facilities are not considered an environmental concern to the Subject Property.

6.3 LOCAL REGULATORY AGENCY RECORDS

GEOTEK reviewed the CEPA (State Water Resources Control Board) "GeoTracker" database (GeoTracker (ca.gov)) and the CEPA (Department of Toxic Substances Control) "EnviroStor" database (EnviroStor (ca.gov)) for information on the Subject Property.

The Subject Property does not appear on the "GeoTracker" or "EnviroStor" databases.

GEOTEK consulted with the County of Riverside Fire and Sheriff Departments regarding controlled substances, aboveground and underground storage tanks, hazardous material permits, emergency responses, spills, inspections, or other information of an environmental or hazardous nature in association with the Subject Property or adjoining facilities. Neither agency had information regarding the Subject Property.

6.4 PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)

Per- and Poly-Fluoroalkyl substances (PFAS) are a group of over 9,000 synthetic chemicals that have been used for over 70 years. Due to the very stable carbon-fluorine bonds, perfluoroalkyls are resistant to biodegradation, photooxidation, direct photolysis, and hydrolysis. Atmospheric deposition can lead to contamination of soils and leaching into groundwater away from point sources. Health effects in humans may include cancer, cardiovascular, immunological, endocrine, reproductive, and hepatic harm.

At the time of the adoption of ASTM 1527-21 standard, PFAS chemicals were considered to be "emerging contaminants" and therefore technically are considered to be non-scope considerations, per the ASTM-1527-21 standards. However, as of April 19, 2024, the United States Environmental Protection Agency (USEPA) officially designated the regulatory status of two (2) commonly utilized PFAS chemicals as hazardous substances under CERCLA with the final ruling going into effect on July 8, 2024. The two (2) chemicals are perfluoro octane sulfonic acid (PFOS) and perfluorooctanoic acid (PFOA). Furthermore, it is likely that numerous additional chemicals within the PFAS family will become officially designated as hazardous substances in the near future.

As PFOA and PFOS are now classified as hazardous substances, GEOTEK has reviewed available information from Federal and State databases, with regards to PFAS, for the Subject Property and surrounding properties to determine if there are any potential recognized environmental conditions. Generally, high-risk PFAS sites include airports, landfills, wastewater-treatment plants, government and military sites, petroleum plants, fire suppression/firefighting sites with

aqueous film forming foam (AFFF), PFAS treated material and food packaging facilities, plating facilities, some biosolid farming sites, and most chemical production and manufacturing facilities, among others. These substances are searched by EDR under PFAS NPL, PFAS FEDERAL SITES, PFAS TSCA, PFAS RCRA MANIFEST, PFAS ATSDR, PFAS WQP, PFAS NPDES, PFAS ECHO, PFAS ECHO FIRE TRAINING, and PFAS Part 139 Airport within 0.25 search radius. The Subject Property does not appear on the PFAS ECHO database.

The Subject Property does not appear on the PFAS database within the EDR Radius Report. The Subject Property does not appear on the GeoTracker PFAS Map website (GeoTracker PFAS Map (ca.gov)). The Subject Property does not appear on the USEPA PFAS Analytic Tools website (PFAS Analytic Tools (epa.gov)). There are no facilities within the search distances that appear on a PFAS database.

Based on the lack of high-risk facilities and no obvious signs of substantial PFAS contamination at the Subject Property, it is GEOTEK'S opinion that PFAS chemicals do not represent a recognized environmental condition to the Subject Property.

7.0 VAPOR ENCROACHMENT SCREENING

The purpose of a Vapor Encroachment Screen (VES) is to identify, to the extent feasible, if a Vapor Encroachment Condition (VEC) exists at the Subject Property.

A Vapor Encroachment Screen Report was generated for the Subject Property and Subject Property area utilizing EDR's Vapor Encroachment Worksheet (see Appendix F).

It was determined that there are no historical automotive facilities, historical dry cleaners, former manufactured gas plants or former industrial sites located within 600 feet and/or up gradient from the Subject Property. It was also determined that no other conditions that would indicate a VEC exists at the Subject Property.

It is GEOTEK'S opinion that a VEC is not likely to exist at the Subject Property. The Vapor Encroachment Screen report is included in Appendix F.

8.0 SUBJECT PROPERTY AND SURROUNDING AREA HISTORY

In order to construct the history of the Subject Property and the surrounding area, GEOTEK reviewed reasonably ascertainable public documents, including aerial photographs, topographic maps, building records, city directories, fire insurance maps, environmental liens, and activity use limitations (AULs) and county assessor history records.

8.1 HISTORICAL SUBJECT PROPERTY USAGE

8.1.1 AERIAL PHOTOGRAPH REVIEW

GEOTEK reviewed aerial photographs dated 1931, 1938, 1948, 1953, 1961, 1967, 1974, 1978, 1985, 1989, 2006, 2009, 2012, 2016, 2020 and 2025 (see Appendix A and B).

The Subject Property appears to be vacant land and/or utilized for agricultural purposes from at least 1931 until at least 1961.

The Subject Property appears to be land utilized for agricultural orchard operations in the aerial photographs dated 1967, 1974,1978, 1985, 1989, 2006 and 2009. Additionally, structures can be observed in the central east portion of the Subject Property. The northwest portion of the Subject Property appears to be vacant land.

A concrete slab can be observed in the southwest portion of the Subject Property in the aerial photographs dated 2012, 2016 and 2020. The northwest portion of the Subject Property appears to be vacant land. Structures can also be observed in the central east portion of the Subject Property. The remainder of the Subject Property appears to be land utilized for agriculture orchard operations.

The Subject Property appears similar to current conditions in an aerial photograph dated 2025.

A 2025 aerial photograph is utilized for Figures 2 and 3 (Appendix A).

8.1.2 ASSESSOR'S INFORMATION

The irregular shaped Subject Property is currently comprised of 2 parcels of land (Riverside County Assessor's Parcel Numbers [APNs] 245-300-001 and -004). Additional legal descriptions for the Subject Property are included in the Environmental Lien and AUL Search as obtained from Environmental Data Resources, Inc. (EDR) included in Appendix B. A Property Tax Map Report as obtained from EDR is also included in Appendix B. A Riverside County

Parcel Report as obtained from the County of Riverside Map My County website (Map My County Public v12.00) is also included in Appendix C.

8.1.3 Building Department Records

A Building Permit Report, as obtained from and provided by EDR, is included in Appendix B. No permits were identified in the report for the address 15701 Chicago Avenue.

8.1.4 Chain of Title

GeoTek has not received or been authorized to obtain Chain-of-Title documents for the Subject Property.

8.1.5 City Directory Review

GeoTek obtained The EDR – City Directory Image Report, as obtained from and provided by EDR, and included in Appendix B. The Subject Property address of 15701 Chicago Avenue is listed in the City Directory report. Information on the Subject Property findings can be found in the table below:

YEAR	SOURCE	ADDRESS	LISTING(S)
1970	Pacific Telephone	15701 Chicago Avenue	Takeno Rikinosuke
1977	Pacific Telephone	15701 Chicago Avenue	Takeno Rikinosuke
1981	Pacific Telephone	15701 Chicago Avenue	Takeno Rikinosuke
1986	Pacific Bell Yellow Pages	15701 Chicago Avenue	Takeno Rikinosuke
1990	Pacific Bell	15701 Chicago Avenue	Takeno Rikinosuke
1994	Cole Information Services	15701 Chicago Avenue	Takeno, R
2001	Haines & Company, Inc.	15701 Chicago Avenue	XXXX
2004	Cole Information Services	15701 Chicago Avenue	Occupant Unknown
2009	Cole Information Services	15701 Chicago Avenue	Occupant Unknown
2014	Cole Information Services	15701 Chicago Avenue	Occupant Unknown

Based on the nature of these listings, it is GeoTek's opinion that the listings do not represent an environmental concern to the Subject Property. A copy of the City Directory Image report is included in Appendix B.

8.1.6 Interviews

GeoTek interviewed the following individuals while performing this assessment:

- Mr. Michael Torres, a representative of the future Subject Property owner, completed a User Questionnaire, dated May 20, 2025.
- Mr. Michael Torres, a representative of the future Subject Property owner, completed a Property Owner Questionnaire, dated May 20, 2023
- Mr. Harry Takeno, a representative of the current Subject Property owner who assists with the management of the Subject Property, conducted a field interview with a representative from GEOTEK on May 8, 2025.
  - Mr. Harry Takeno indicated that the aboveground storage tank (AST) observed during the renaissance was previously used as a water carrier associated with the irrigation of the orchard. Additionally, Mr. Harry Takeno stated that the smudge pots lids were never used during the agricultural orchard operations.

Information from these interviews is incorporated into the appropriate sections of this report.

As a form of interview, Mr. Michael Torres, a representative of the current Subject Property owner, completed a "Property Owner Questionnaire" for the Subject Property in accordance with ASTM E 1527-21. A copy of the completed questionnaire is included in Appendix C.

GEOTEK'S Subject Property reconnaissance and research did not discover significant contradictory information from the Property Owner Questionnaire.

8.1.7 RECORDER'S INFORMATION

According to information provided by the EDR Environmental Lien and AUL Search, the Subject Property is currently owned by P & F Investment Company. No record of environmental liens nor activity and use limitations (AULs) was revealed in the documents reviewed. A copy of this report is included in Appendix B.

8.1.8 SANBORN MAP REVIEW

Sanborn Fire Insurance Maps for the Subject Property were requested from EDR-Sanborn, which owns and maintains the largest and most complete collection of the maps. No source sheets were provided in the Sanborn Map Report. The Sanborn Map Report is included in Appendix B.

8.1.9 TOPOGRAPHIC MAP REVIEW

GEOTEK reviewed the following topographic map sheets:

- Riverside Quadrangle (15-minute series), dated 1901
- Riverside Vicinity Quadrangle (7.5-minute series), dated 1942
- Riverside Quadrangle (15-minute series), dated 1947
- Riverside East, Riverside West, Steele Peak, and Lake Matthews Quadrangles (7.5-minute series), dated 1953
- Riverside East, Riverside West, Steele Peak, and Lake Matthews Quadrangles (7.5-minute series), dated 1967
- Riverside East, Riverside West, and Lake Matthews Quadrangles (7.5-minute series), dated 1980/1982
- Riverside East, Riverside West, Steele Peak, and Lake Matthews Quadrangles (7.5-minute series), dated 2012
- Riverside East, Riverside West, Steele Peak, and Lake Matthews Quadrangles (7.5-minute series), dated 2015
- Riverside East, Riverside West, Steele Peak, and Lake Matthews Quadrangles (7.5-minute series), dated 2018
- Riverside East, Riverside West, Steele Peak, and Lake Matthews Quadrangles (7.5-minute series), dated 2021/2022

The Topo Map Report, as obtained from EDR, is included in Appendix B.

Two structures are depicted in the northwest portion of the Subject Property on a topographic map sheet dated 1901.

The Subject Property appears to be vacant land on the topographic map sheets dated 1942, 1947 and 1953.

A structure and an outbuilding are depicted in the central east portion of the Subject Property on the topographic map sheets dated 1967 and 1980/1982. The northwest portion of the Subject Property appears to be vacant land. The remaining portions of the Subject Property are depicted as land utilized for agriculture.

The 2012 topographic map depicts the Subject Property as mostly land utilized for agriculture and shows little detail other than streets in the vicinity.

The 2015, 2018 and 2021/2022 topographic map sheets show little detail other than streets in the vicinity.

A 2021/2022 topographic map sheet is utilized for Figure 1 (Appendix A).

8.2 Historical Immediately Surrounding Property Usage

8.2.1 Aerial Photograph Review

GeoTek reviewed aerial photographs dated 1931, 1938, 1948, 1953, 1961, 1967, 1974, 1978, 1985, 1989, 2006, 2009, 2012, 2016, 2020 and 2025 (see Appendix A and B).

The surrounding properties appear to have been vacant land and/or utilized for agricultural purposes in the aerial photographs dated 1931 and 1938.

Structures can be observed on the property to the south and east of the Subject Property in an aerial photograph dated 1948. The remaining surrounding properties appear to be vacant land and/or utilized for agricultural purposes.

Additional structures can be observed on the property to the south of the Subject Property in the aerial photographs dated 1953 and 1961. The remaining surrounding properties appear to be vacant land and/or utilized for agricultural purposes.

Structures and an orchard can be observed on the property to the east of the Subject Property in an aerial photograph dated 1967. New structures can be observed on the property to the south of the Subject Property. The properties to the north and west appear to be vacant land.

The property to the west appears to be a mix of land utilized for agriculture purposes and vacant land in an aerial photograph dated 1974. The properties to the north are not visible. The visible portions of the property to the north appear to be vacant land. Structures can be observed on the property to the south of the Subject Property.

Residential structures and land utilized for agriculture purposes can be observed on the property to the east of the Subject Property in the aerial photographs dated 1978 and 1985. Residential structures can be observed on the property to the south. The property to the west appears to be vacant land. Structures can be observed on the property to the north, along with vacant land.

A few new structures can be observed on the property to the north of the Subject Property in an aerial photograph dated 1989. Residential structures and land utilized for agriculture purposes can be observed on the property to the east. Residential structures can be observed on the property to the south. The property to the west appears to be vacant land.

The surrounding properties appear to be in similar conditions in the aerial photographs dated 2006, 2009, 2012, 2016, 2020 and 2025.

A 2025 aerial photograph is utilized for Figures 2 and 3 (Appendix A).

8.2.2 CITY DIRECTORIES

GEOTEK has reviewed a City Directory Image report obtained from and provided by EDR for the Subject Property and surrounding property addresses. The City Directory Image report provides information on numerous property addresses. The surrounding properties appear to be primarily residential in nature. These facilities do not appear to have created a recognized environmental condition at the Subject Property.

8.2.3 SANBORN MAP REVIEW

Sanborn Fire Insurance Maps for the Subject Property were requested from EDR-Sanborn, which owns and maintains the largest and most complete collection of the maps. No source sheets were provided in the Sanborn Map Report. The Sanborn Map Report is included in Appendix B.

8.2.4 TOPOGRAPHIC MAP REVIEW

GEOTEK reviewed the following topographic map sheets:

- Riverside Quadrangle (15-minute series), dated 1901
- Riverside Vicinity Quadrangle (7.5-minute series), dated 1942
- Riverside Quadrangle (15-minute series), dated 1947
- Riverside East, Riverside West, Steele Peak, and Lake Matthews Quadrangles (7.5-minute series), dated 1953
- Riverside East, Riverside West, Steele Peak, and Lake Matthews Quadrangles (7.5-minute series), dated 1967
- Riverside East, Riverside West, and Lake Matthews Quadrangles (7.5-minute series), dated 1980/1982
- Riverside East, Riverside West, Steele Peak, and Lake Matthews Quadrangles (7.5-minute series), dated 2012
- Riverside East, Riverside West, Steele Peak, and Lake Matthews Quadrangles (7.5-minute series), dated 2015
- Riverside East, Riverside West, Steele Peak, and Lake Matthews Quadrangles (7.5-minute series), dated 2018

- Riverside East, Riverside West, Steele Peak, and Lake Matthews Quadrangles (7.5-minute series), dated 2021/2022

The Topo Map Report, as obtained from EDR, is included in Appendix B.

Two structures are depicted on the property to the north of the Subject Property on the topographic map sheet dated 1901. The remaining surrounding properties appear to be vacant land.

The surrounding properties appear to be vacant land on the topographic map sheet dated 1942.

Four structures are depicted on the property to the south of the Subject Property on the topographic map sheet dated 1947. Structures are depicted on the property to the east of the Subject Property. The properties to the north and west appear to be vacant land.

New structures are depicted on the properties to the east and south of the Subject Property on the topographic map sheet dated 1953. The properties to the north and west appear to be vacant land.

Several new structures are depicted on the properties to the east and south of the Subject Property on the topographic map sheet dated 1967. The properties to the north and west appear to be vacant land.

Several structures are depicted on the property to the north of the Subject Property on the topographic map sheet dated 1980/1982. Structures can be observed on the properties to the east and south. A roadway can be observed on the property to the west, with the remaining portions appearing to be vacant land.

The 2012, 2015, 2018 and 2021/2022 topographic map sheets show little detail other than streets in the vicinity.

A 2021/2022 topographic map sheet is utilized for Figure 1 (Appendix A).

8.3 HISTORICAL USE SUMMARY

Based on readily available historic information, the Subject Property appears to have been vacant land and/or utilized for agricultural purposes from 1931 to about 1961. The Subject Property appears to be land utilized for agriculture orchard operations with a single-family

residence from at least 1967 until at least 2020. The Subject Property appears similar to current conditions in an aerial photograph dated 2025.

The surrounding properties appear to have been vacant land and/or utilized for agricultural purposes in the aerial photographs dated 1931 and 1938. Structures can be observed on the property to the south and east of the Subject Property in an aerial photograph dated 1948. The remaining surrounding properties appear to be vacant land and/or utilized for agricultural purposes. Additional structures can be observed on the property to the south of the Subject Property in the aerial photographs dated 1953 and 1961. Structures and an orchard can be observed on the property to the east of the Subject Property in an aerial photograph dated 1967. The properties to the north and west appear to be vacant land. The property to the west appears to be a mix of land utilized for agriculture purposes and vacant land in an aerial photograph dated 1974. Residential structures and land utilized for agriculture purposes can be observed on the property to the east of the Subject Property in the aerial photographs dated 1978 and 1985. Structures can be observed on the property to the north, along with vacant land. A few new structures can be observed on the property to the north of the Subject Property in an aerial photograph dated 1989. The property to the west appears to be vacant land. The surrounding properties appear to be in similar conditions in the aerial photographs dated 2006, 2009, 2012, 2016, 2020 and 2025.

Data gaps exist from 1901 to 1931, 1931 to 1938, 1953 to 1961, 1967 to 1974 and 1989 to 2006 due to the limited records which are reasonably ascertainable in the local area. However, it is GEOTEK'S opinion that additional historical information, if it were to become available, is not likely to change the conclusions or recommendations of this assessment.

9.0 SIGNIFICANT DATA GAPS

No significant data gaps were discovered while performing this Phase I and Limited Phase II Environmental Site Assessment. Therefore, it is GEOTEK'S opinion that sufficient information was obtained to identify current Subject Property conditions and past Subject Property usage.

Minor data gaps include:

- Gaps in the historic records from 1901 to 1931, 1931 to 1938, 1953 to 1961, 1967 to 1974 and 1989 to 2006 due to the limited resources readily available and reasonably ascertainable in the local area or through online resources.

- GEOTEK has not received or reviewed Chain-of-Title documents for the Subject Property.

It is GEOTEK'S opinion that additional information, if it were to become available, is not likely to change the conclusions or recommendations of this assessment.

10.0 SUMMARY OF LIMITED SOIL ANALYSIS

GEOTEK previously performed a *Phase I and Limited Phase II Environmental Site Assessment* (GEOTEK, 2021) for the Subject Property.

At the request of Mr. Alberto Lopez, Supervising Environmental Health Specialist for the County of Riverside, via an email on April 24, 2025, additional soil sampling was required in areas where the smudge pot lids were discarded and in locations where smudge pots were potentially used during the historical agricultural orchard operations. Mr. Lopez also requested that soil samples be collected near the shed/barn structure to evaluate the potential hazardous material releases associated with agricultural equipment maintenance activities.

GEOTEK prepared and submitted a work plan outlining the proposed sample locations of the additional soil sampling and testing. The work plan was reviewed and approved by Mr. Alberto Lopez and The Riverside County Department of Environmental Health Environmental Cleanup Program (RCDEH-ECP) via email on May 2, 2025.

In accordance with the approved work plan, GEOTEK collected a total of 14 soil samples (samples A1 through A14) on May 8, 2025 at the Subject Property (see Sample Location Maps, Figure 4, 5, and 6). The sampling was conducted to address potential environmental impacts related to the historical use of smudge pots and potential contaminant releases associated with agricultural equipment maintenance near the shed/barn structure.

Selected Areas across the Subject Property

Eight (8) soil samples were obtained from selected areas across the Subject Property at a depth of approximately six (6) inches below existing grades and tested for Total Petroleum Hydrocarbons (TPHs) (EPA Test Method 8015B).

Area Near the Smudge Pot Lids

Two (2) soil samples were obtained in the area near the observed smudge pot lids (samples A9 and A10). These samples were collected at a depth of approximately six (6) inches below existing grades and were tested for TPHs (EPA Test Method 8015B).

Shed/Barn Structure Perimeters

Four (4) samples were obtained near the shed/barn structure located in the central east portion of the Subject Property (samples A11 through A14). These samples were collected at a depth of approximately six (6) inches below existing grades and tested for CAM Metals (EPA Test Methods 6010B) and Total Petroleum Hydrocarbons (TPHs) (EPA Test Method 8015B).

Soil Laboratory Testing

Fourteen (14) soil samples were transported and submitted by GEOTEK to a state certified laboratory (Alliance Technical Group of Tustin, California) under proper chain of custody protocols.

Selected Areas across at the Subject Property

Total Petroleum Hydrocarbons

The results of the TPH laboratory analysis are summarized in the following table:

TPH SUMMARY ANALYTICAL RESULTS

Sample Name	TPH as GROs (C6-C10) Gasoline mg/kg	TPH-d (C10-C25) Diesel (mg/kg)	TPH-mo (C26-C36) Oil (mg/kg)
A1	<0.20 (ND)	14	62
A2	<0.20 (ND)	<10 (ND)	<50 (ND)
A3	<0.20 (ND)	11	<50 (ND)
A4	<0.20 (ND)	<10 (ND)	<50 (ND)
A5	<0.20 (ND)	<10 (ND)	<50 (ND)
A6	<0.20 (ND)	<10 (ND)	<50 (ND)
A7	<0.20 (ND)	<10 (ND)	<50 (ND)
A8	<0.20 (ND)	<10 (ND)	<50 (ND)
Screening Level	**250***	**96***	**230,000***

mg/kg = milligram per kilogram
ND = Not Detected
* = EPA Regional Screening Level (RSL) for residential soil, November 2024

The concentrations of the TPH compounds from the sampled areas were not above screening levels for residential soils as determined by EPA Regional Screening Level (RSL) for residential soil, November 2024 (TR=1E-06, HQ=1.0).

Area Near the Smudge Pot Lids

Total Petroleum Hydrocarbons

The results of the TPH laboratory analysis are summarized in the following table:

TPH SUMMARY ANALYTICAL RESULTS

Sample Name	TPH as GROs (C6-C10) Gasoline mg/kg	TPH-d (C10-C25) Diesel (mg/kg)	TPH-mo (C26-C36) Oil (mg/kg)
A9	<0.20 (ND)	<10 (ND)	<50 (ND)
A10	<0.20 (ND)	<10 (ND)	<50 (ND)
Screening Level	**250***	**96***	**230,000***

mg/kg = milligram per kilogram
ND = Not Detected
* = EPA Regional Screening Level (RSL) for residential soil, November 2024

The concentrations of the TPH compounds from the sampled areas were not above screening levels for residential soils as determined by EPA Regional Screening Level (RSL) for residential soil, November 2024 (TR=1E-06, HQ=1.0).

Shed/Barn Structure Perimeters

Total Petroleum Hydrocarbons

The results of the TPH laboratory analysis are summarized in the following table:

TPH SUMMARY ANALYTICAL RESULTS

Sample Name	TPH as GROs (C6-C10) Gasoline mg/kg	TPH-d (C10-C25) Diesel (mg/kg)	TPH-mo (C26-C36) Oil (mg/kg)
A11	<0.20 (ND)	<10 (ND)	<50 (ND)
A12	<0.20 (ND)	<10 (ND)	<50 (ND)
A13	<0.20 (ND)	<10 (ND)	<50 (ND)
A14	<0.20 (ND)	<10 (ND)	<50 (ND)
Screening Level	**250***	**96***	**230,000***

mg/kg = milligram per kilogram
ND = Not Detected
* = EPA Regional Screening Level (RSL) for residential soil, November 2024

The concentrations of the TPH compounds from the sampled areas were not above screening levels for residential soils as determined by EPA Regional Screening Level (RSL) for residential soil, November 2024 (TR=1E-06, HQ=1.0).

CAM Metals

The applicable results of the CAM Metals laboratory analysis are summarized in the following tables:

METALS SUMMARY ANALYTICAL RESULTS

Analyte	A11 (mg/kg)	A12 (mg/kg)	A13 (mg/kg)	A15 (mg/kg)	Screening Level (mg/kg)
Antimony	<2.0 (ND)	<2.0 (ND)	<2.0 (ND)	<2.0 (ND)	31*
Arsenic	<2.0 (ND)	<2.0 (ND)	<2.0 (ND)	<2.0 (ND)	0.11**
Barium	120	84	110	93	15,000*
Beryllium	<0.50 (ND)	0.61	0.55	0.50	16**
Cadmium	<0.50 (ND)	<0.50 (ND)	<0.50 (ND)	<0.50 (ND)	7.1*
Chromium	18	23	22	20	***
Cobalt	9.4	13	12	12	23*
Copper	17	19	19	19	3,100*
Lead	6.2	6.9	8.0	9.2	200*
Mercury	<0.10 (ND)	<0.10 (ND)	<0.10 (ND)	<0.10 (ND)	1**
Molybdenum	<1.0 (ND)	<1.0 (ND)	<1.0 (ND)	<1.0 (ND)	390*
Nickel	9.0	13	12	11	820**
Selenium	<4.8 (ND)	<4.8 (ND)	<4.8 (ND)	<4.8 (Nd)	390*
Silver	<0.50 (ND)	<0.50 (ND)	<0.50 (ND)	<0.50 (ND)	390*
Thallium	<2.0	<2.0 (ND)	<2.0 (ND)	<2.0 (ND)	0.78*
Vanadium	41	51	47	42	390*
Zinc	200	53	54	54	23,000*

mg/kg = milligram per kilogram
ND = Not Detected
* = Regional Screening Levels (RSLs) for residential soil (November 2024)
** = DTSC Recommended Screening Levels (RSL) for residential soil (May 2022)
*** = No screening level for total chromium

Analysis of the soil samples detect measurable quantities of CAM Metals in the soil samples tested; however, the concentrations of the CAM Metals were not above screening levels for residential soils.

Copies of the laboratory reports and Chain-of-Custody documentation are included in Appendix F of this report.

Laboratory results indicated that all analytes were either non-detect or below regional screening levels (RSLs) for residential soils. Based on these results, no further testing for TPH or CAM metals is recommended at this time. GEOTEK concludes that the potential historical use of smudge pots and potential contaminant releases associated with agricultural equipment

maintenance near the shed/barn structure do not represent a recognized environmental condition (REC) for the Subject Property.

11.0 CONCLUSIONS AND RECOMMENDATIONS

GEOTEK has performed a Phase I and Limited Phase II Environmental Site Assessment (ESA) for the Subject Property in substantial conformance with the scope and limitations of ASTM E 1527-21 and GEOTEK Proposal No. P-0501925-CR dated May 2, 2025. Any exceptions to, or deletions from, this practice are described in the appropriate sections of this report.

Historically, some agricultural sites have utilized pesticides that are currently considered a health risk and no longer used. This particular environmental concern was previously investigated by GEOTEK, INC. (GEOTEK, 2021). Near surface soil samples were collected from the Subject Property and were analyzed for organo-chlorinated pesticides and arsenic (U.S. Environmental Protection Agency [EPA] Methods 8081 and 6010B, respectively). The laboratory testing concluded that organo-chlorinated pesticides and arsenic were not detected above regional screening levels (RSLs) in the soil samples tested. Based on this laboratory testing, it is GEOTEK'S opinion that the historical agricultural use on the Subject Property does not represent a recognized environmental condition (REC) for the Subject Property.

Historically, some agricultural sites have utilized smudge pots to prevent crop frost damage, however they are currently considered a health risk and no longer used. As part of this assessment, GEOTEK conducted soil sampling to address potential environmental impacts related to the historical use of smudge pots and potential contaminant releases associated with agricultural equipment maintenance near the shed/barn structure. A total of eight (8) near surface soil samples were collected across the site and analyzed for total petroleum hydrocarbons (TPH) (EPA Test Method 8015B). Two (2) additional samples were collected near the observed smudge pot lids and analyzed for TPH. Four (4) soil samples were collected near the shed/barn structure and analyzed for both TPH and CAM metals (EPA Test Methods 6010B). Laboratory results indicated that all analytes were either non-detect or below regional screening levels (RSLs) for residential soils. Based on these results, no further testing for TPH or CAM metals is recommended at this time. GEOTEK concludes that the potential historical use of smudge pots and potential contaminant releases associated with agricultural equipment maintenance near the shed/barn structure do not represent a recognized environmental condition (REC) for the Subject Property.

Based on the investigation, this Phase I and Limited Phase II Environmental Site Assessment has not revealed evidence of a recognized environmental condition (REC), controlled recognized environmental condition (CREC), historical recognized environmental condition (HREC) or significant data gaps on or near the Subject Property. No further investigation is recommended at this time.

No visual indication of other conditions of concern (water wells, drywells, cesspools, etc.) that may indicate a recognized environmental condition was observed during the Subject Property reconnaissance. However, based on previous referenced reporting by RMA Group dated September 5, 2014, four water wells exist on the Subject Property. Two of the water wells are reportedly located in the general vicinity of the residence; one of the water wells is east of the residence near Chicago Avenue; and the fourth is at an unknown location. As a direct pathway to the subsurface environment, this represents an environmental concern to the Subject Property. If these wells are indeed present, the wells should be located and properly abandoned per Riverside County guidelines and/or state of California guidelines prior to any land development.

No evidence of a septic system was observed during the Subject Property reconnaissance. However, given the age of the existing residence it is likely that a septic system exists on the Subject Property. If a septic system is encountered during future development, it should be abandoned, and removed per Riverside County Department of Environmental Health guidelines.

Please be aware that prior to demolition of any of the existing Subject Property structures, federal and state regulations require asbestos-containing materials (ACM) and lead-based paint (LBP) surveys be performed.

12.0 CERTIFICATIONS

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in 40 CFR 312. I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the Subject Property. I have developed and performed all the appropriate inquiries in conformance with the standards and practices set forth in 40 CFR 312.

The qualifications of the Project Team are included in Appendix H.

GEOTEK appreciates this opportunity to be of service. If you have any questions, or if GEOTEK can be of further service, please contact the office at (951) 710-1160.

Sincerely,
GEOTEK, INC.



Kyle R. McHargue
Project Geologist, CEG 2790
Exp. 02/28/2026

Cynthia Diaz Ruiz, EIT
Staff Engineer

https://geotekusa.sharepoint.com/teams/Corona_Branch/Shared Documents/Projects/GeoTek Inc/2800/2855/ENV/Working Files/ESA/2855CR ESA Woodcrest 05-22-2025.doc

13.0 REFERENCES

CALIFORNIA, STATE OF

- Dibblee, T.W. and Minch, J.A., 2003, "Geologic map of the Riverside East/south ½ of San Bernardino South quadrangles, San Bernardino and Riverside County, California", Dibblee Geological Foundation, Dibblee Foundation Map DF-109, scale 1:24,000
- EnviroStor, Records Inquiry, https://www.envirostor.dtsc.ca.gov/public/
- Geotracker, Records Inquiry, https://geotracker.waterboards.ca.gov/
- Water Resources, Department of Hydrologic Data

ENVIRONMENTAL DATA RESOURCES, INC.

- Aerial Photo Decade Package, Inquiry No. 7981882.11, dated May 7, 2025
- Building Permit Report, Inquiry No. 7981882.8, dated May 7, 2025
- Certified Sanborn Map Report, Inquiry No. 7981882.3, dated May 7, 2025
- City Directory Image Report, Inquiry No. 7981882.5, dated May 7, 2025
- Environmental Lien and AUL Search Report, Inquiry No. 7981882.7, dated May 9, 2025
- Historical Topo Map Report, Inquiry No. 7981882.4, dated May 7, 2025
- Property Tax Map Report, Inquiry No. 7981882.6, dated May 7, 2025
- Radius Map Report, Inquiry No. 7981882.2s, dated May 8, 2025
- Vapor Encroachment Screen Report, Inquiry No. 7981882.2s, dated May 15, 2025

FEDERAL EMERGENCY MANAGEMENT AGENCY

- Flood Insurance Map, Community Panel Number 06065C-0740G, dated August 28, 2008, accessed on May 7, 2025

GEOTEK, INC.

- "Phase I and Limited Phase II Environmental Site Assessment, Assessor's Parcel Numbers (APNs) 245-300-001 and -004, Woodcrest Area of Riverside County, California, 92508" Project No. 2855, dated September 21, 2021

RIVERSIDE, COUNTY OF

- Assessor's Office, Records Inquiry
- Fire Department, Records Inquiry
- Sheriff Department, Records Inquiry

RMA GROUP

- "Phase I and Limited Phase II Environmental Site Assessment for Proposed Residential Development, APN 245-300-001, Northwest Corner of Iris and Chicago Avenues,

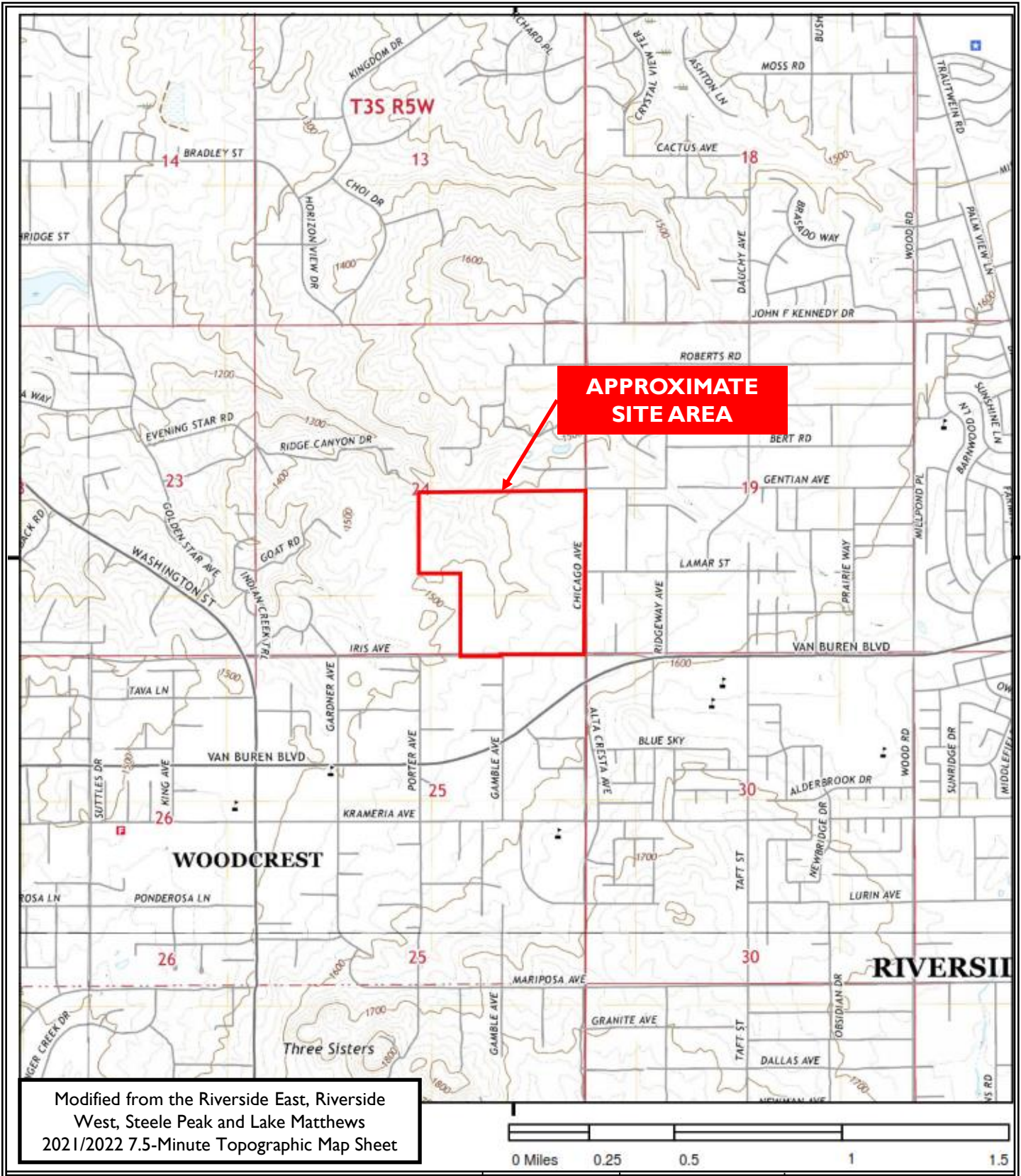
Woodcrest Area of Riverside County, CA", RMA Job Number: 14-104-02, dated September 5, 2014

U.S. GOVERNMENT

- Drug Enforcement Agency
- Records inquiry, http://www.dea.gov/seizures

APPENDIX A

FIGURES



Modified from the Riverside East, Riverside West, Steele Peak and Lake Matthews 2021/2022 7.5-Minute Topographic Map Sheet

0 Miles 0.25 0.5 1 1.5

TTLC Riverside Chicago LLC
Assessor's Parcel Numbers 245-300-001 and -004
Northwest of Iris Avenue and Chicago Avenue
Woodcrest Area of Riverside County, California

GeoTek Project No. 2855-CR

NORTH

Figure 1

Site Location and Topography Map

GEOTEK

Aerial Photograph dated March 20, 2025

3/2025

Vacant Land

Residential Development

Vacant Land

Single-Family Structure

Shed/ Garage

Smudge Pot Lids

Subject Property

Residential Development

Vacant Land

Residential Development

Cecil Ave

Ridgeway Ave

Russel Ave

Hibiscus Ave

Iris Ave

Van Buren Boulevard

Sage Ave

1866 ft

NORTH

Legend

Subject Property Boundary

TTLC Riverside Chicago LLC
Assessor's Parcel Numbers 245-300-001 and -004
Northwest of Iris Avenue and Chicago Avenue
Woodcrest Area of Riverside County, California

GeoTek Project No. 2855-CR

GEOTEK

Figure 2

General Subject Property Layout Map

Aerial Photograph dated March 20, 2025

3/2025

30-31
28-29
32
33
25-26
34
20-24
27
16-19
10-11
35-36
14-15
12-13
37-38
3
1-2
4-6
7-9

Gentian Ave
Summer Ct
Summer Ct
Cecil Ave
Ridgeway Ave
Hibiscus Ave
Hibiscus Ave
Ridgeway Ave
Neely Ln
Iris Ave
Iris Ave
Iris Ave
Paula Ln
1381 ft

NORTH

Legend

Subject Property Boundary

20 Photo Location

TTLC Riverside Chicago LLC
Assessor's Parcel Numbers 245-300-001 and -004
Northwest of Iris Avenue and Chicago Avenue
Woodcrest Area of Riverside County, California

GeoTek Project No. 2855-CR

GEOTEK

Figure 3

Photo Location Map

Aerial Photograph dated March 20, 2025

3/2025

A1
A2
A3
A4
A5
A6
A7
A8

Cecil Ave
Ridgeway Ave & Hibiscus Ave
Iris Ave
1499 ft

NORTH

Legend

- A8 — Approximate Location of TPH (8015)
- Figure 5
- Figure 6
- Site Boundary

TTLC Riverside Chicago LLC
Assessor's Parcel Numbers 245-300-001 and -004
Northwest of Iris Avenue and Chicago Avenue
Woodcrest Area of Riverside County, California

GeoTek Project No. 2855-CR

GEOTEK

Figure 4

Sample Location Map



TTLC Riverside Chicago LLC
Assessor's Parcel Numbers 245-300-001 and -004
Northwest of Iris Avenue and Chicago Avenue
Woodcrest Area of Riverside County, California

GeoTek Project No. 2855-CR

GEOTEK

Figure 5

Sample Location Map (Smudge Pot Area)

Aerial Photograph dated March 20, 2025

3/2025

A11

Shed/Barn

A14

A13

A12

Garage

Garage

96 ft

NORTH

Legend

A14 — Approximate Location of TPH (8015) and CAM Metals (6010B) Sample

Site Boundary

TTLC Riverside Chicago LLC
Assessor's Parcel Numbers 245-300-001 and -004
Northwest of Iris Avenue and Chicago Avenue
Woodcrest Area of Riverside County, California

GeoTek Project No. 2855-CR

GEOTEK

Figure 6

Sample Location Map (Shed/Barn Area)

APPENDIX B

DOCUMENTS OBTAINED FROM EDR

APN 245-300-001 and -004

15701 CHICAGO AVE

RIVERSIDE, CA 92508

Inquiry Number: 7981882.11

May 07, 2025

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

05/07/25

Site Name:

APN 245-300-001 and -004
15701 CHICAGO AVE
RIVERSIDE, CA 92508
EDR Inquiry # 7981882.11

Client Name:

Geotek
1548 North Maple Street
Corona, CA 92880
Contact: Cynthia Diaz Ruiz

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	*Scale*	*Details*	*Source*
2020	1"=500'	Flight Year: 2020	USDA/NAIP
2016	1"=500'	Flight Year: 2016	USDA/NAIP
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2006	1"=500'	Flight Year: 2006	USDA/NAIP
1989	1"=500'	Flight Date: August 15, 1989	USDA
1985	1"=500'	Flight Date: July 28, 1985	USDA
1978	1"=500'	Flight Date: September 20, 1978	USDA
1974	1"=500'	Flight Date: November 06, 1974	USGS
1967	1"=500'	Flight Date: May 15, 1967	USDA
1961	1"=500'	Flight Date: June 15, 1961	USDA
1953	1"=500'	Flight Date: September 22, 1953	USDA
1948	1"=500'	Flight Date: July 20, 1948	USGS
1938	1"=500'	Flight Date: June 14, 1938	USDA
1931	1"=500'	Flight Date: September 18, 1931	FAIR

When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.

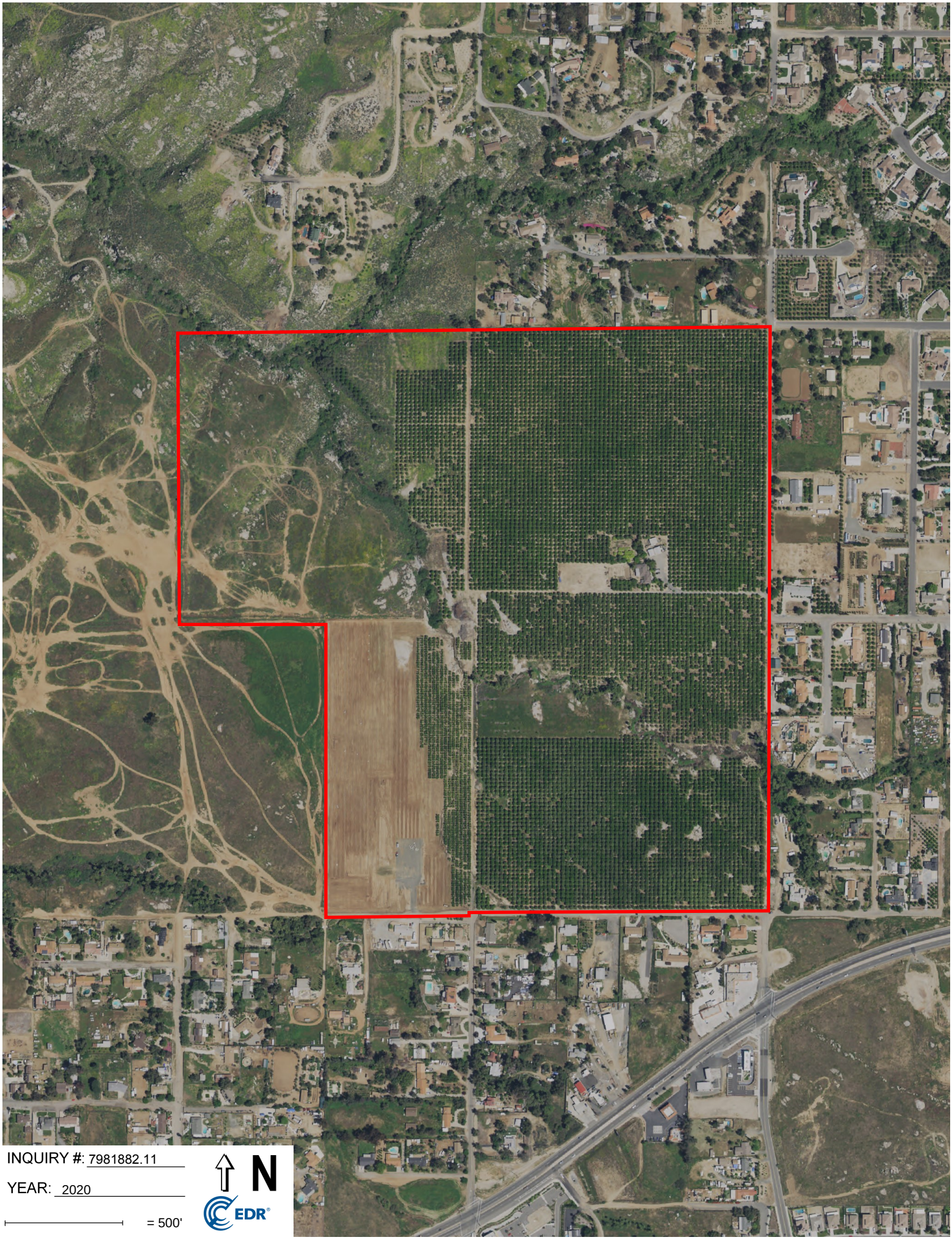
Disclaimer - Copyright and Trademark Notice

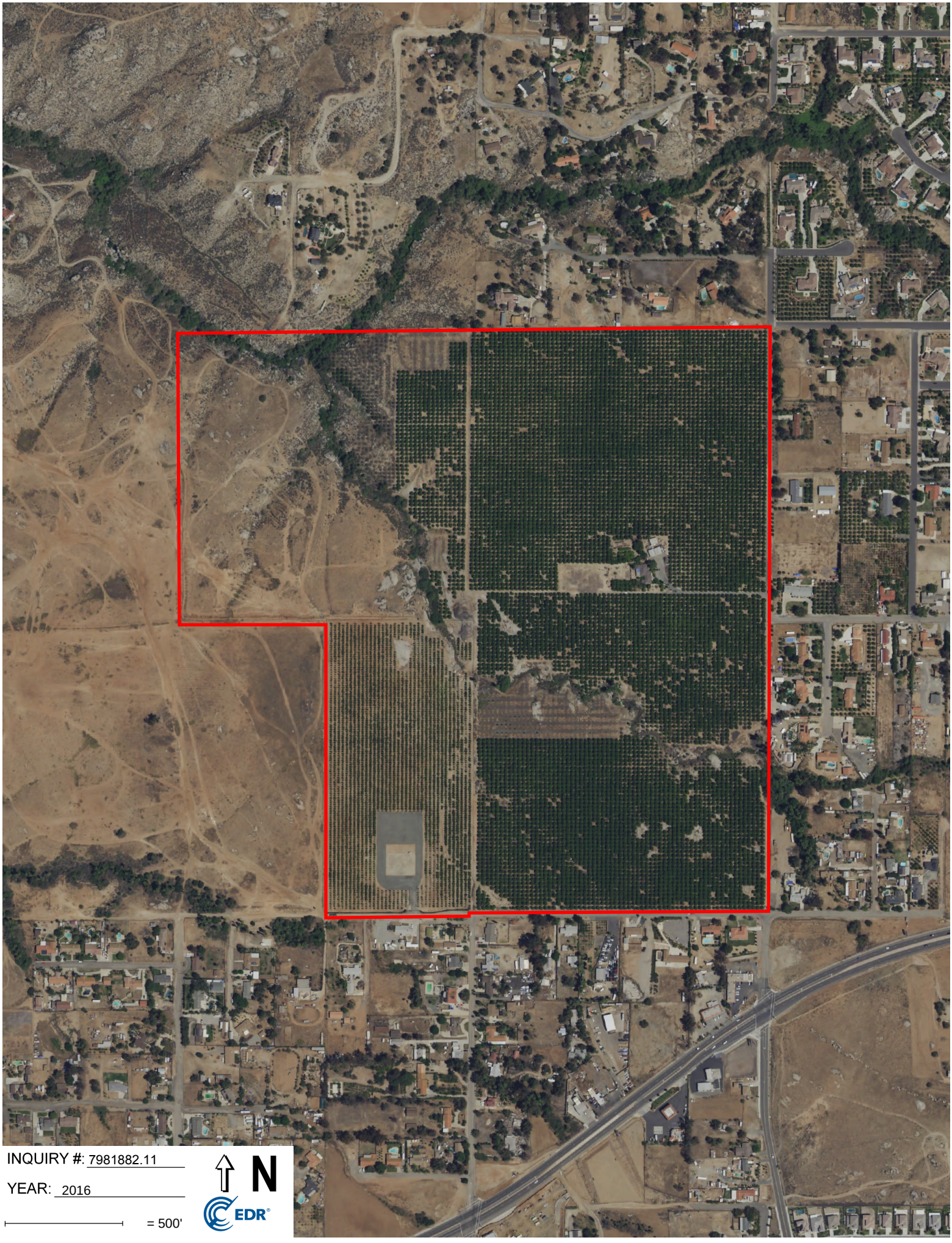
This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, LLC. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. This Report is provided on an "AS IS", "AS AVAILABLE" basis. NO WARRANTY EXPRESS OR IMPLIED IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, LLC AND ITS SUBSIDIARIES, AFFILIATES AND THIRD PARTY SUPPLIERS DISCLAIM ALL WARRANTIES, OF ANY KIND OR NATURE, EXPRESS OR IMPLIED, ARISING OUT OF OR RELATED TO THIS REPORT OR ANY OF THE DATA AND INFORMATION PROVIDED IN THIS REPORT, INCLUDING WITHOUT LIMITATION, ANY WARRANTIES REGARDING ACCURACY, QUALITY, CORRECTNESS, COMPLETENESS, COMPREHENSIVENESS, SUITABILITY, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE, NON-INFRINGEMENT, MISAPPROPRIATION, OR OTHERWISE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, LLC OR ITS SUBSIDIARIES, AFFILIATES OR THIRD PARTY SUPPLIERS BE LIABLE TO ANYONE FOR ANY DIRECT, INCIDENTAL, INDIRECT, SPECIAL, CONSEQUENTIAL OR OTHER DAMAGES OF ANY TYPE OR KIND (INCLUDING BUT NOT LIMITED TO LOSS OF PROFITS, LOSS OF USE, OR LOSS OF DATA), ARISING OUT OF OR IN ANY WAY CONNECTED WITH THIS REPORT OR ANY OF THE DATA AND INFORMATION PROVIDED IN THIS REPORT.

Any analyses, estimates, ratings, environmental risk levels, or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only an assessment performed by a qualified environmental professional can provide findings, opinions or conclusions regarding the environmental risk or conditions in, on or at any property.

Copyright 2025 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, LLC or its affiliates. All other trademarks used herein are the property of their respective owners.


INQUIRY #: 7981882.11
YEAR: 2020
= 500'
N
EDR



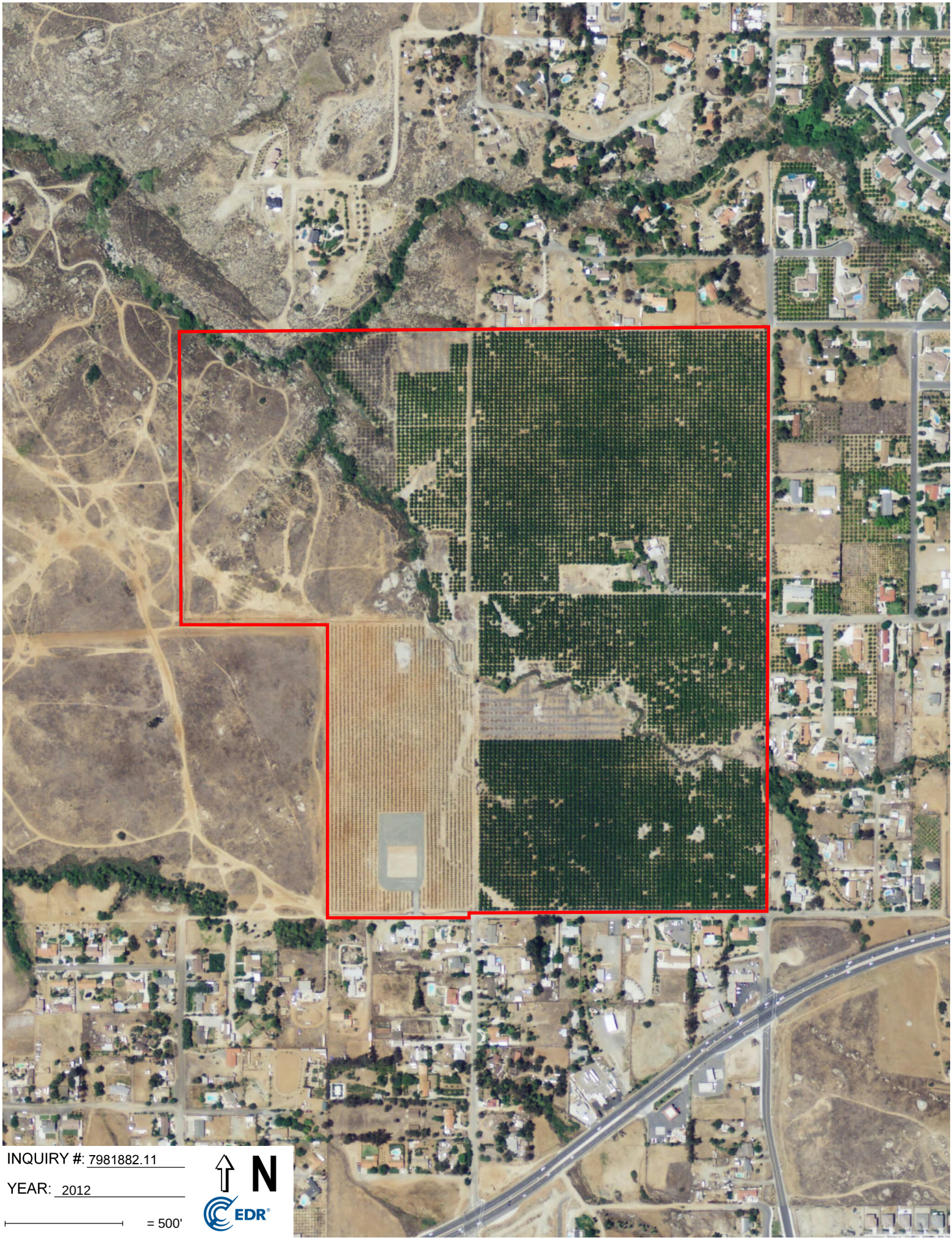
INQUIRY #: 7981882.11

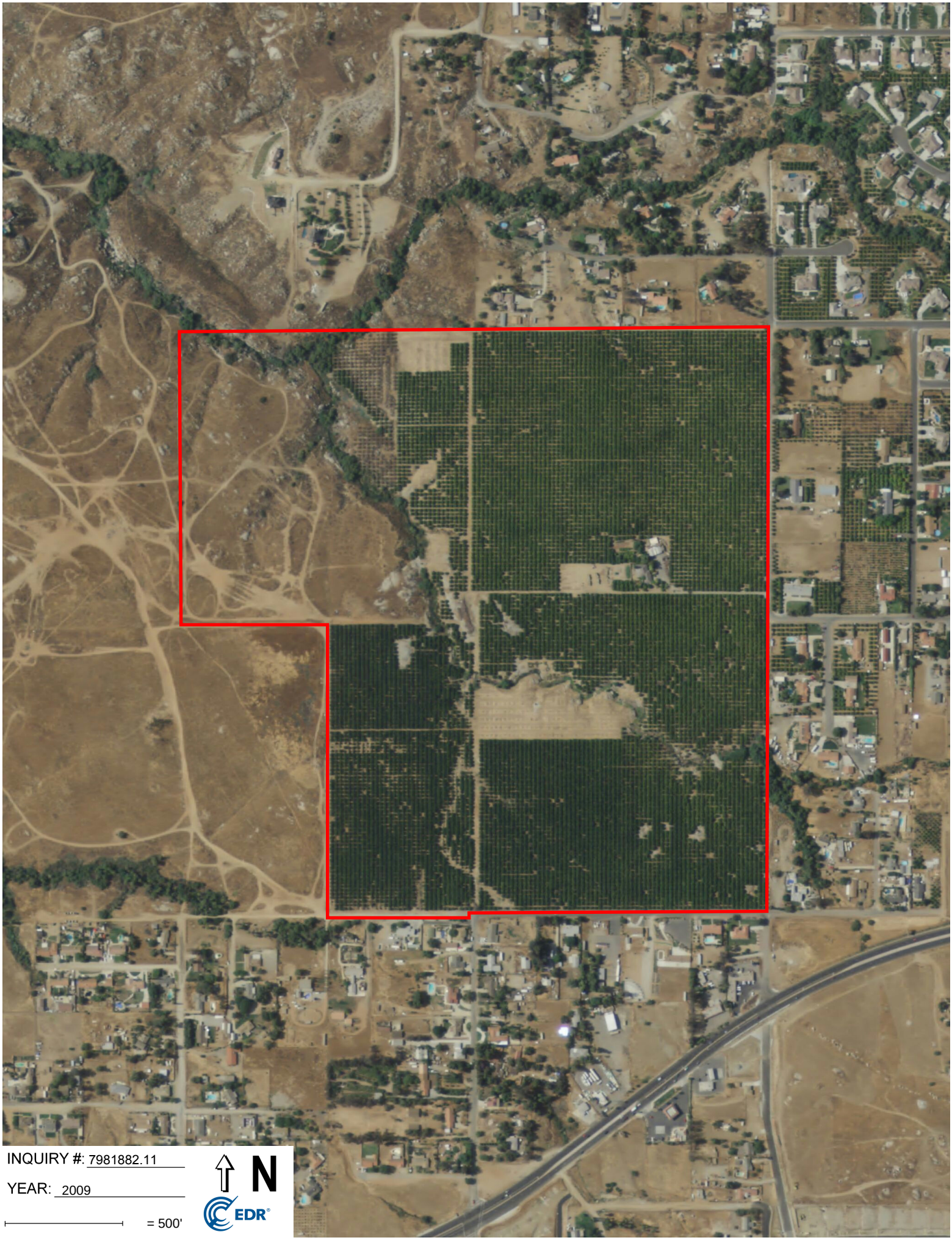
YEAR: 2016

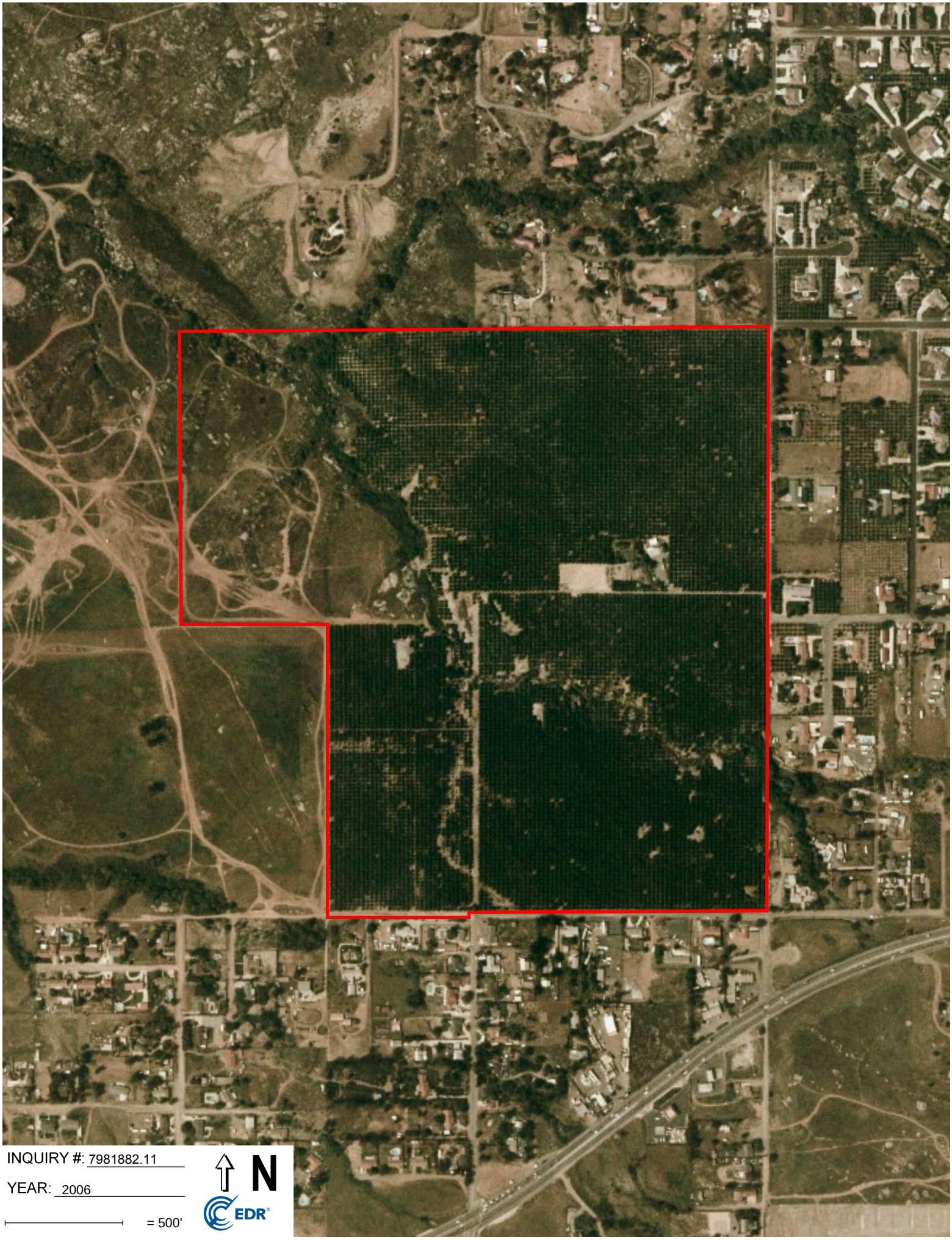
= 500'

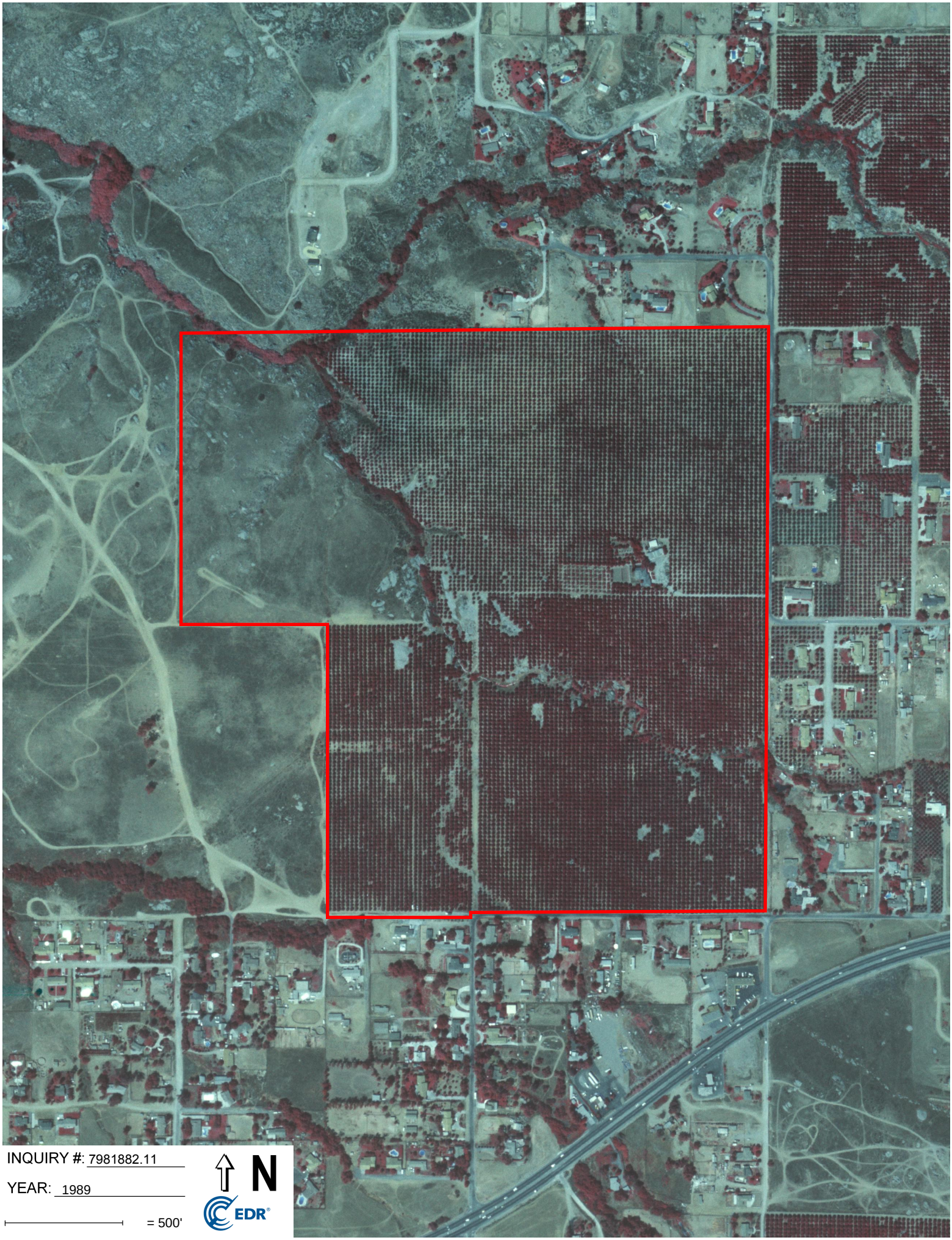
N

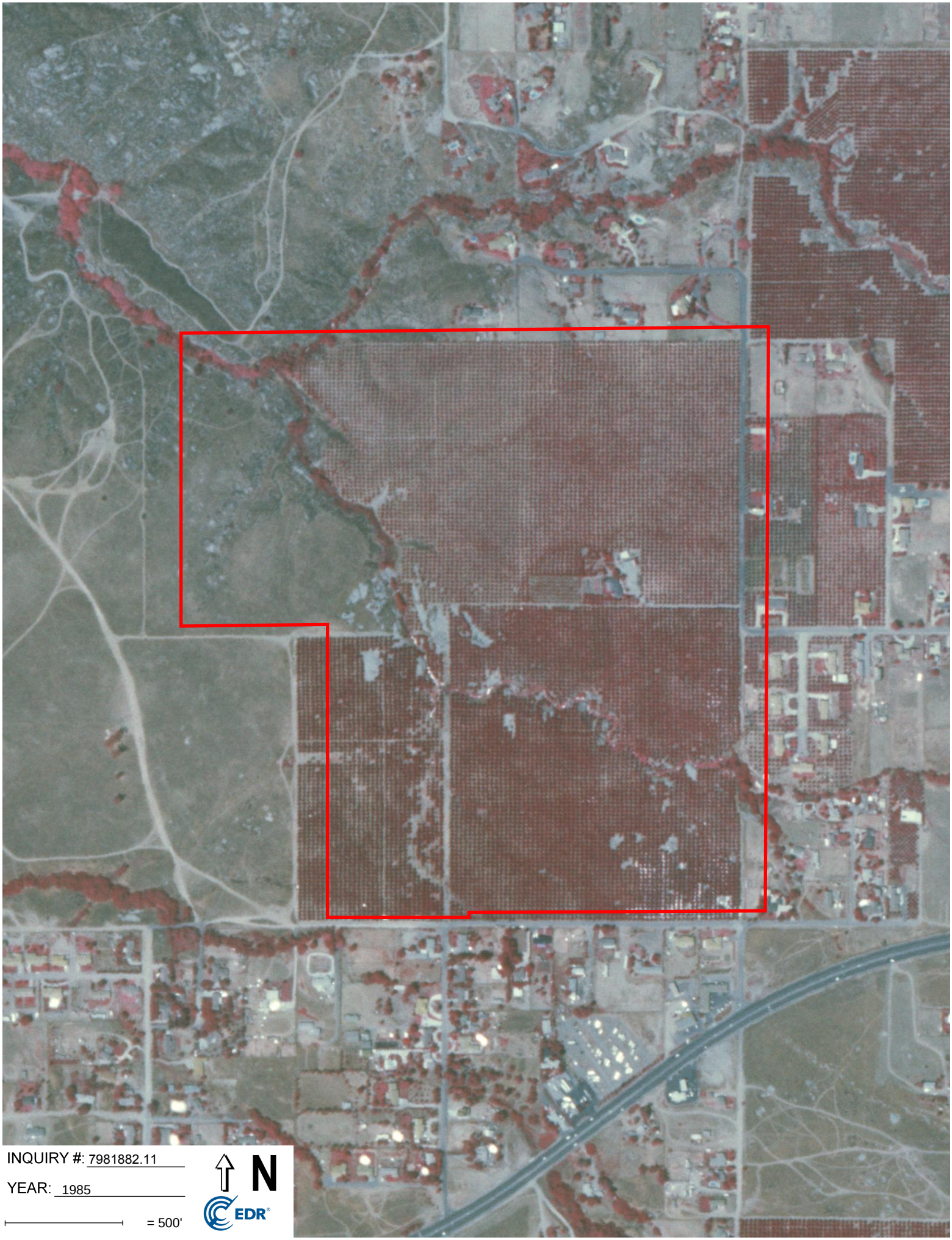
EDR


INQUIRY #: 7981882.11
YEAR: 2012
= 500'
N
EDR


INQUIRY #: 7981882.11
YEAR: 2009
= 500'
N
EDR


INQUIRY #: 7981882.11
YEAR: 2006
= 500'
N
EDR


INQUIRY #: 7981882.11
YEAR: 1989
= 500'
N
EDR


INQUIRY #: 7981882.11
YEAR: 1985
= 500'
N
EDR



INQUIRY #: 7981882.11

YEAR: 1978

= 500'

N

EDR



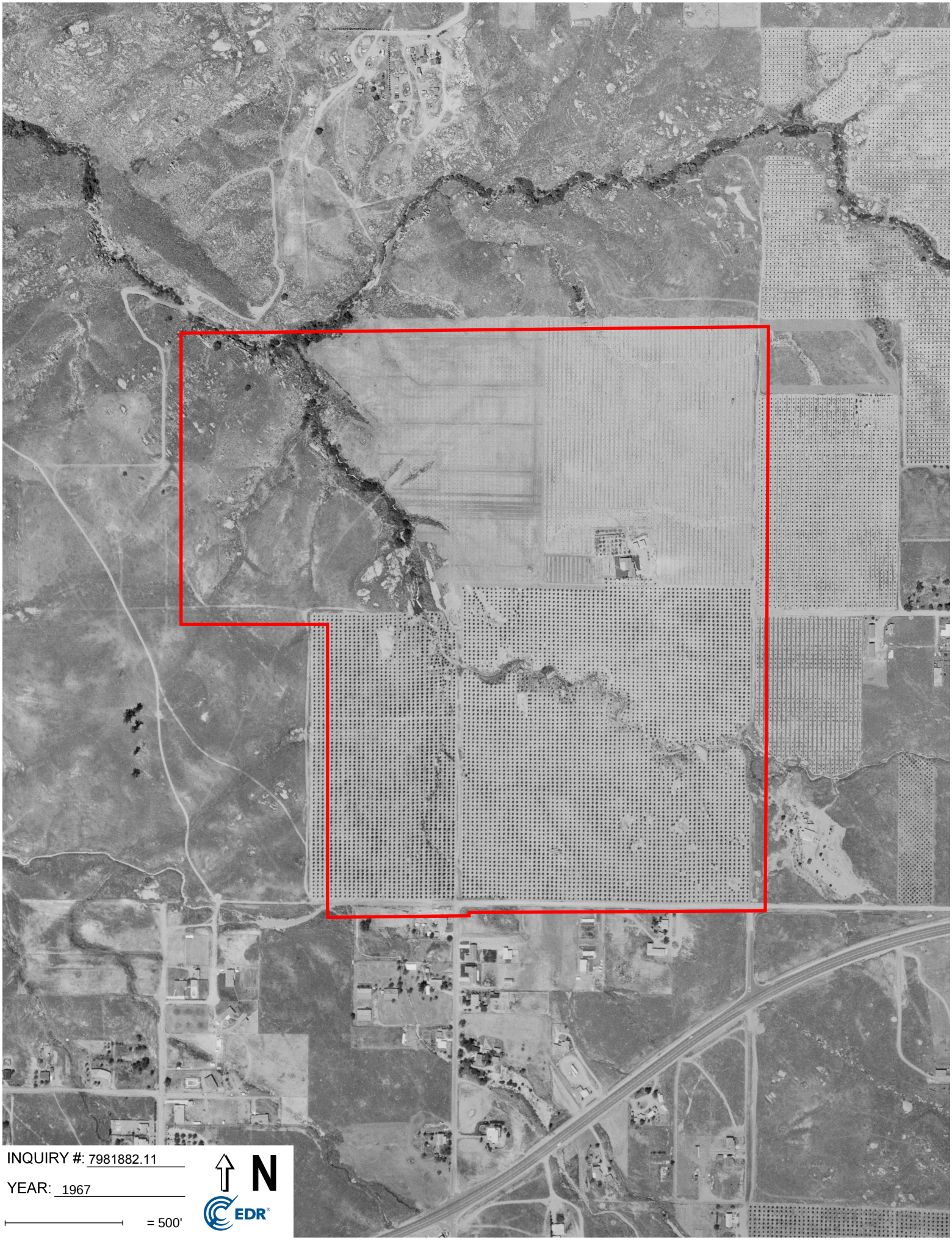
INQUIRY #: 7981882.11

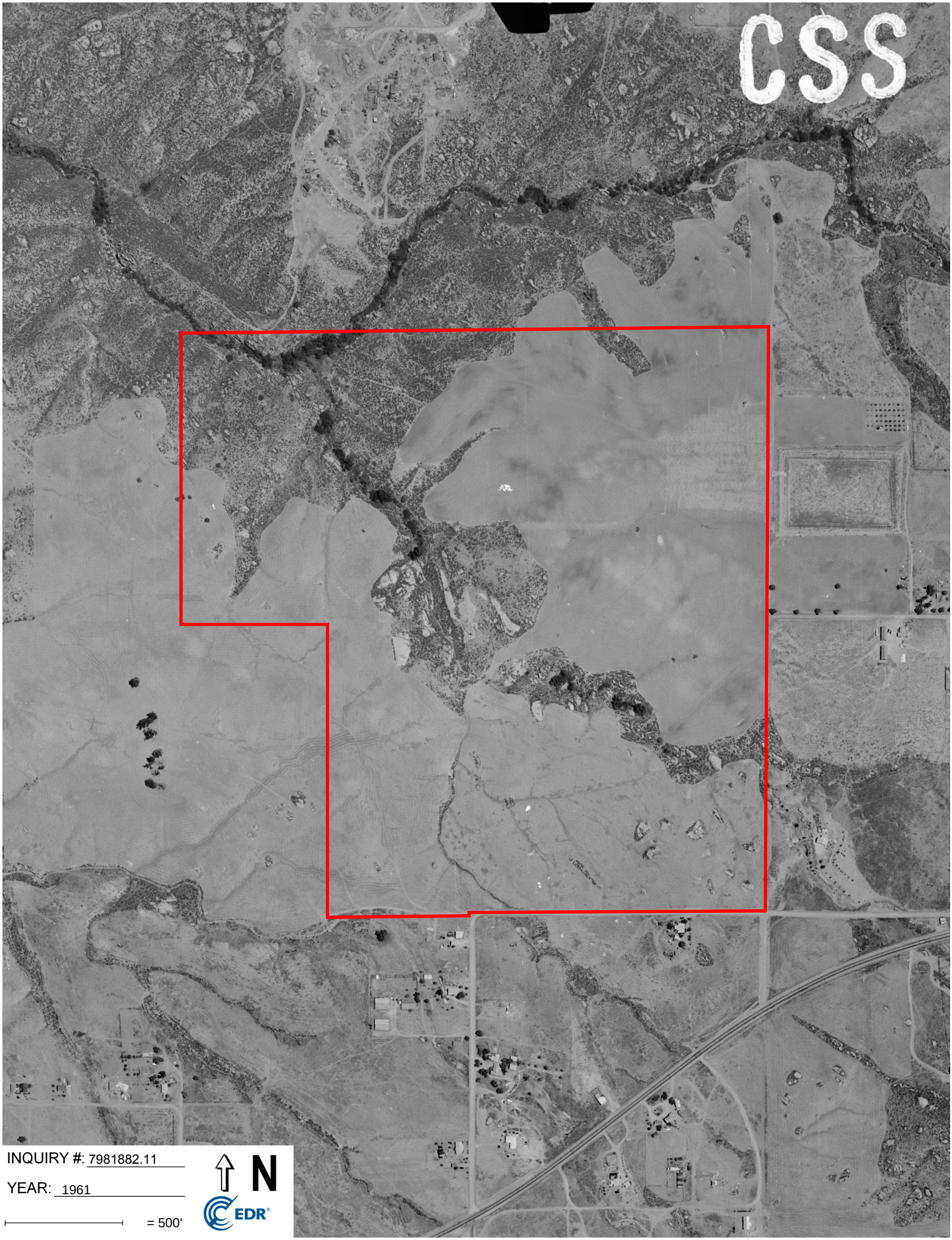
YEAR: 1974

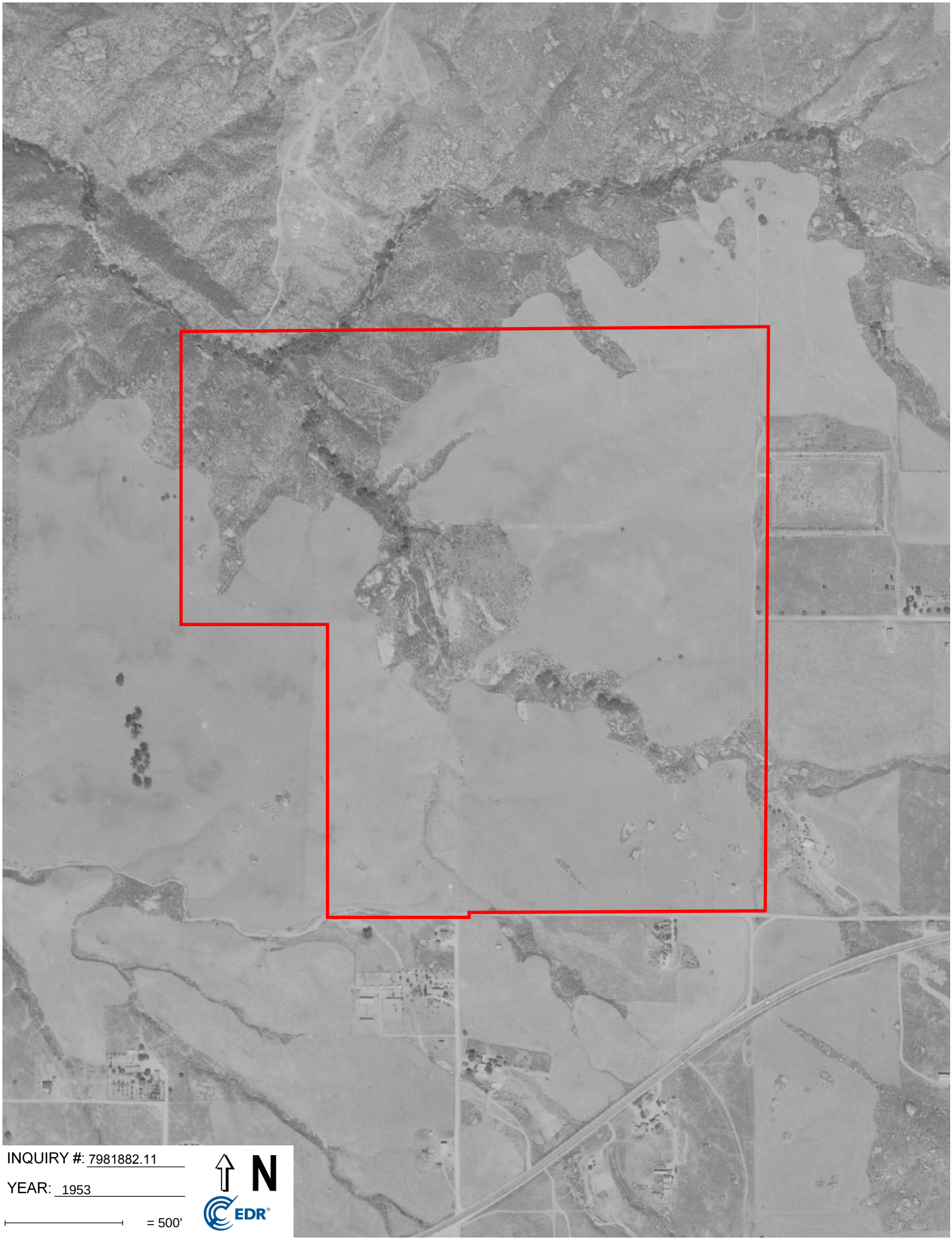
= 500'

N

EDR


INQUIRY #: 7981882.11
YEAR: 1967
= 500'
N
EDR


CSS
INQUIRY #: 7981882.11
YEAR: 1961
= 500'
N
EDR



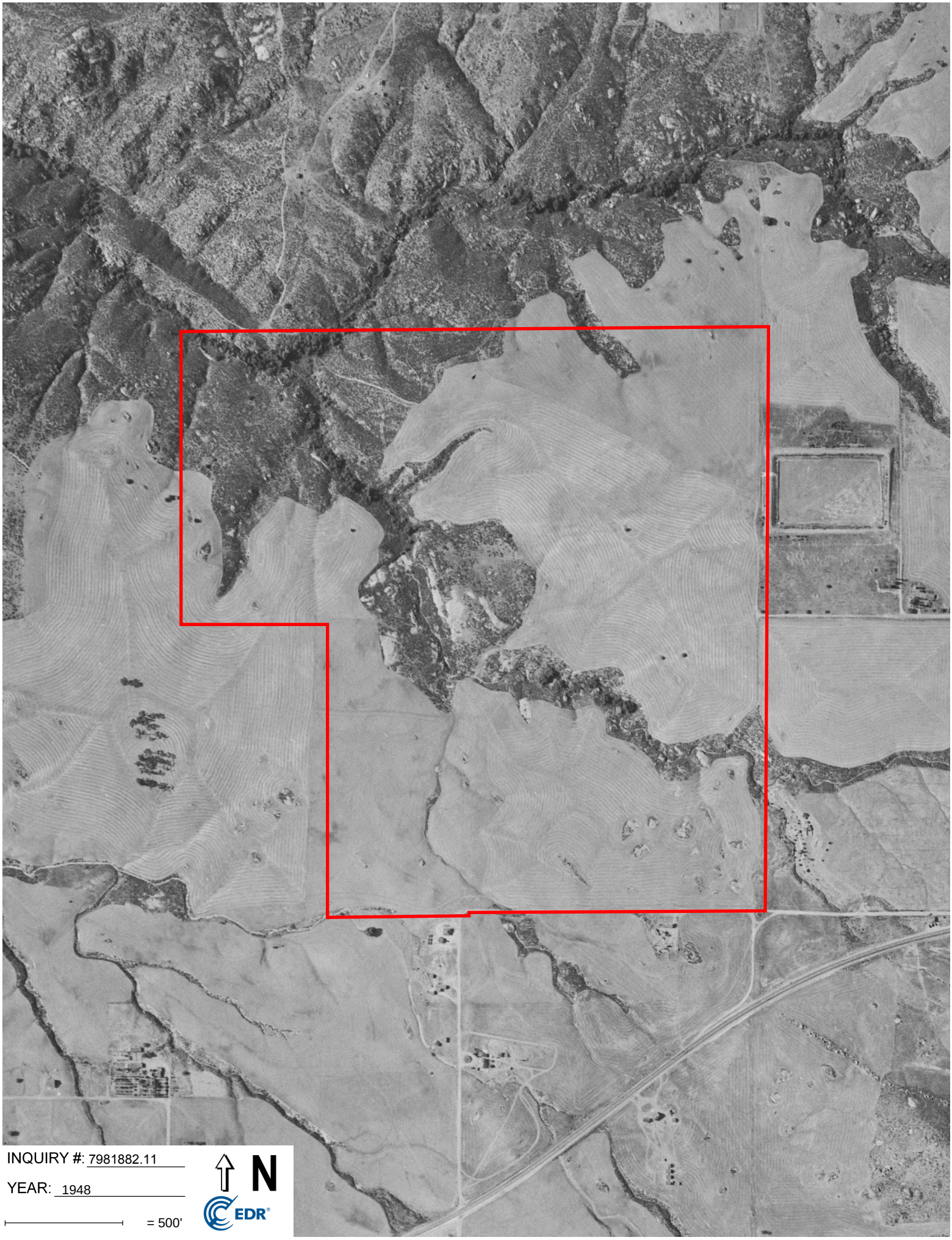
INQUIRY #: 7981882.11

YEAR: 1953

= 500'

N

EDR



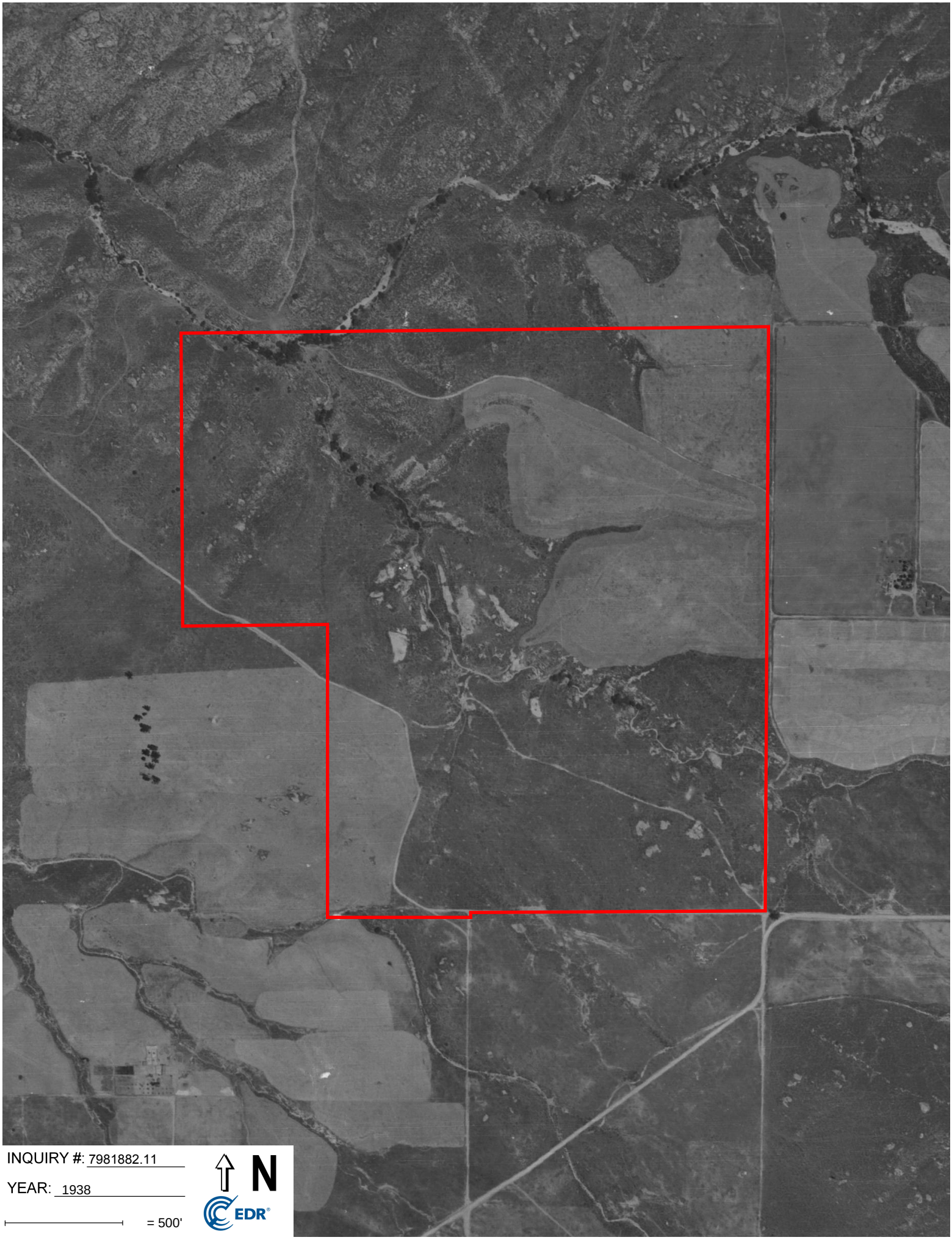
INQUIRY #: 7981882.11

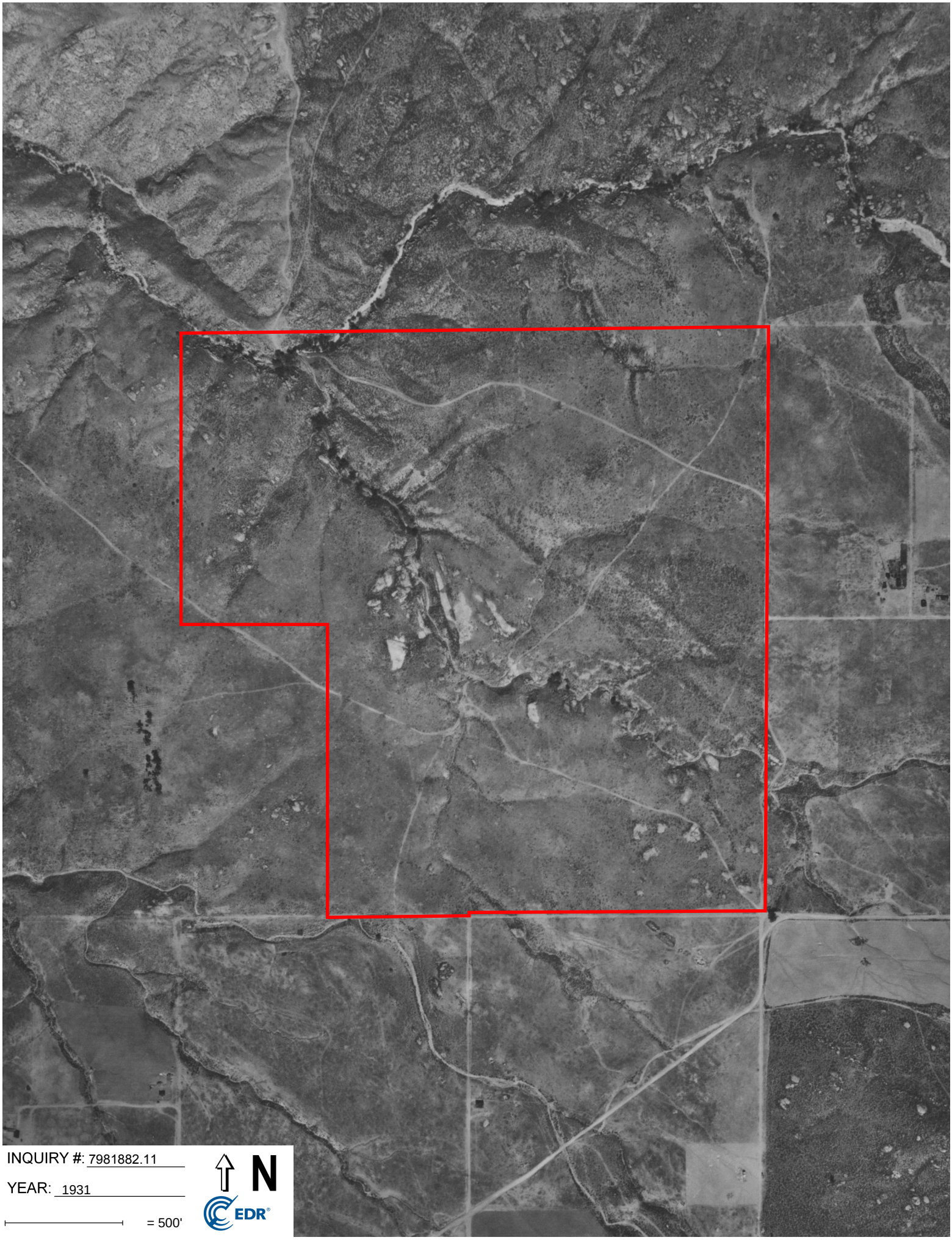
YEAR: 1948

= 500'

N

EDR


INQUIRY #: 7981882.11
YEAR: 1938
= 500'
N
EDR



INQUIRY #: 7981882.11

YEAR: 1931

= 500'

N

EDR

APN 245-300-001 and -004
15701 CHICAGO AVE
RIVERSIDE, CA 92508

Inquiry Number: 7981882.8
May 07, 2025

EDR Building Permit Report

Target Property and Adjoining Properties

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION

About This Report

Executive Summary

Findings

Glossary

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, LLC. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. This Report is provided on an "AS IS", "AS AVAILABLE" basis. **NO WARRANTY EXPRESS OR IMPLIED IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, LLC AND ITS SUBSIDIARIES, AFFILIATES AND THIRD PARTY SUPPLIERS DISCLAIM ALL WARRANTIES, OF ANY KIND OR NATURE, EXPRESS OR IMPLIED, ARISING OUT OF OR RELATED TO THIS REPORT OR ANY OF THE DATA AND INFORMATION PROVIDED IN THIS REPORT, INCLUDING WITHOUT LIMITATION, ANY WARRANTIES REGARDING ACCURACY, QUALITY, CORRECTNESS, COMPLETENESS, COMPREHENSIVENESS, SUITABILITY, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE, NON-INFRINGEMENT, MISAPPROPRIATION, OR OTHERWISE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, LLC OR ITS SUBSIDIARIES, AFFILIATES OR THIRD PARTY SUPPLIERS BE LIABLE TO ANYONE FOR ANY DIRECT, INCIDENTAL, INDIRECT, SPECIAL, CONSEQUENTIAL OR OTHER DAMAGES OF ANY TYPE OR KIND (INCLUDING BUT NOT LIMITED TO LOSS OF PROFITS, LOSS OF USE, OR LOSS OF DATA), ARISING OUT OF OR IN ANY WAY CONNECTED WITH THIS REPORT OR ANY OF THE DATA AND INFORMATION PROVIDED IN THIS REPORT.** Any analyses, estimates, ratings, environmental risk levels, or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only an assessment performed by a qualified environmental professional can provide findings, opinions or conclusions regarding the environmental risk or conditions in, on or at any property.

Copyright 2023 by Environmental Data Resources, LLC. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, LLC, or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, LLC or its affiliates. All other trademarks used herein are the property of their respective owners.

EDR BUILDING PERMIT REPORT

About This Report

The EDR Building Permit Report provides a practical and efficient method to search building department records for indications of environmental conditions. Generated via a search of municipal building permit records gathered from more than 1,600 cities nationwide, this report will assist you in meeting the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E1527 - 21), or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

Building permit data can be used to identify current and/or former operations and structures/features of environmental concern. The data can provide information on a target property and adjoining properties such as the presence of underground storage tanks, pump islands, sumps, drywells, etc., as well as information regarding water, sewer, natural gas, electrical connection dates, and current/former septic tanks.

Methodology

EDR has developed the EDR Building Permit Report through our partnership with BuildFax, the nation's largest repository of building department records. BuildFax collects, updates, and manages building department records from local municipal governments. The database now includes 30 million permits, on more than 10 million properties across 1,600 cities in the United States.

The EDR Building Permit Report comprises local municipal building permit records, gathered directly from local jurisdictions, including both target property and adjoining properties. Years of coverage vary by municipality. Data reported includes (where available): date of permit, permit type, permit number, status, valuation, contractor company, contractor name, and description.

Incoming permit data is checked at seven stages in a regimented quality control process, from initial data source interview, to data preparation, through final auditing. To ensure the building department is accurate, each of the seven quality control stages contains, on average, 15 additional quality checks, resulting in a process of approximately 105 quality control "touch points."

For more information about the EDR Building Permit Report, please contact your EDR Account Executive at (800) 352-0050.

EDR® Environmental Data Resources Inc

BUILD FAX PROPERTY HISTORY

EXECUTIVE SUMMARY: SEARCH DOCUMENTATION

A search of building department records was conducted by Environmental Data Resources, Inc (EDR) on behalf of Geotek on May 07, 2025.

TARGET PROPERTY

15701 CHICAGO AVE
RIVERSIDE, CA 92508

SEARCH METHODS

EDR searches available lists for both the Target Property and Surrounding Properties.

RESEARCH SUMMARY

Building permits identified: **NO PERMITS IDENTIFIED**

The following research sources were consulted in the preparation of this report. An "X" indicates where information was identified in the source and provided in this report.

Name: JurisdictionName
Years: Years
Source: Source
Phone: Phone

BUILDING DEPARTMENT RECORDS SEARCHED

Name: Corona
Years: 1965-2025
Source: City of Corona, Comm Development, Building Division, CORONA, CA
Phone: (951) 736-2250

Name: Redding
Years: 1926-2025
Source: City of Redding, Development Services, Building Division, FONTANA, CA
Phone: 530-225-4014

Name: Riverside
Years: 1964-2025
Source: City of Riverside, Comm Devel, Building and Safety Division, RIVERSIDE, CA
Phone: (951) 826-5697

Name: Riverside County
Years: 1963-2025
Source: Riverside County, Building and Safety, RIVERSIDE, CA
Phone: (951) 955-6742

Name: Sacramento County
Years: 1980-2025
Source: Sacramento County, Planning and Community Development Department, SACRAMENTO, CA
Phone: (916) 874-6141

Name: San Bernardino County
Years: 1970-2025
Source: San Bernardino County, Land Use, Building & Safety, ONTARIO, CA
Phone: (909) 387-8311

Name: Santa Clara County Unincorporated Area
Years: 1957-2025
Source: Santa Clara County, Development Services Office, PALO ALTO, CA
Phone: (408) 299-5700

Name: Perris
Years: 1964-2025
Source: City of Perris, Development Services, PERRIS, CA
Phone: (951) 443-1029

TARGET PROPERTY FINDINGS

TARGET PROPERTY DETAIL

15701 CHICAGO AVE
RIVERSIDE, CA 92508

No Permits Found

ADJOINING PROPERTY FINDINGS

ADJOINING PROPERTY DETAIL

The following Adjoining Property addresses were researched for this report. Detailed findings are provided for each address.

No Permits Found

GLOSSARY

General Building Department concepts

- **ICC:** The International Code Council. The governing body for the building/development codes used by all jurisdictions who've adopted the ICC guidelines. MOST of the US has done this. Canada, Mexico, and other countries use ICC codes books and guides as well. There are a few states who have added guidelines to the ICC codes to better fit their needs. For example, California has added seismic retrofit requirements for most commercial structures.
- **Building Department (Permitting Authority, Building Codes, Inspections Department, Building and Inspections):** This is the department in a jurisdiction where an owner or contractor goes to obtain permits and inspections for building, tearing down, remodeling, adding to, re-roofing, moving or otherwise making changes to any structure, Residential or Commercial.
- **Jurisdiction:** This is the geographic area representing the properties over which a Permitting Authority has responsibility.
- **GC:** General Contractor. Usually the primary contractor hired for any Residential or Commercial construction work.
- **Sub:** Subordinate contracting companies or subcontractors. Usually a "trades" contractor working for the GC. These contractors generally have an area of expertise in which they are licensed like Plumbing, Electrical, Heating and Air systems, Gas Systems, Pools etc. (called "trades").
- **Journeymen:** Sub contractors who have their own personal licenses in one or more trades and work for different contracting companies, wherever they are needed or there is work.
- **HVAC (Mechanical, Heating & Air companies):** HVAC = Heating, Ventilation, and Air Conditioning.
- **ELEC (Electrical, TempPole, TPole, TPower, Temporary Power, Panel, AMP Change, Power Release):** Electrical permits can be pulled for many reasons. The most common reason is to increase the AMPs of power in an electrical power panel. This requires a permit in almost every jurisdiction. Other commons reason for Electrical permits is to insert a temporary power pole at a new construction site. Construction requires electricity, and in a new development, power has yet to be run to the lot. The temporary power pole is usually the very first permit pulled for new development. The power is released to the home owner when construction is complete and this sometimes takes the form of a Power Release permit or inspection.
- **"Pull" a permit:** To obtain and pay for a building permit.
- **CBO:** Chief Building Official
- **Planning Department:** The department in the development process where the building /structural plans are reviewed for their completeness and compliance with building codes
- **Zoning Department:** The department in the development process where the site plans are reviewed for their compliance with the regulations associated with the zoning district in which they are situated.
- **Zoning District:** A pre-determined geographic boundary within a jurisdiction where certain types of structures are permitted / prohibited. Examples are Residential structure, Commercial/Retail structures, Industrial/Manufacturing structures etc. Each zoning district has regulations associated with it like the sizes of the lots, the density of the structures on the lots, the number of parking spaces required for certain types of structures on the lots etc.
- **PIN (TMS, GIS ID, Parcel#):** Property Identification Number and Tax Map System number.
- **State Card (Business license):** A license card issued to a contractor to conduct business.
- **Building Inspector (Inspector):** The inspector is a building department employee that inspects building construction for compliance to codes.
- **C.O.:** Certificate of Occupancy. This is the end of the construction process and designates that the owners now have permission to occupy a structure after its building is complete. Sometimes also referred to as a Certificate of Compliance.

GLOSSARY

Permit Content Definitions

- Permit Number: The alphanumerical designation assigned to a permit for tracking within the building department system. Sometimes the permit number gives clues to its role, e.g. a "PL" prefix may designate a plumbing permit.
- Description: A field on the permit form that allows the building department to give a brief description of the work being done. More often than not, this is the most important field for EP's to find clues to the prior use (s) of the property.
- Permit Type: Generally a brief designation of the type of job being done. For example BLDG-RES, BLDG-COM, ELEC, MECH etc.

Sample Building Permit Data

Date: Nov 09, 2000
Permit Type: Bldg -
New Permit Number: 101000000405
Status: Valuation: $1,000,000.00
Contractor Company: OWNER-BUILDER
Contractor Name:

Description: New one store retail (SAV-ON) with drive-thru pharmacy. Certificate of Occupancy.

APN 245-300-001 and -004
15701 CHICAGO AVE
RIVERSIDE, CA 92508

Inquiry Number: 7981882.5
May 07, 2025

The EDR-City Directory Abstract

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION

Executive Summary

Findings

City Directory Images

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, LLC. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. This Report is provided on an "AS IS", "AS AVAILABLE" basis. **NO WARRANTY EXPRESS OR IMPLIED IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, LLC AND ITS SUBSIDIARIES, AFFILIATES AND THIRD PARTY SUPPLIERS DISCLAIM ALL WARRANTIES, OF ANY KIND OR NATURE, EXPRESS OR IMPLIED, ARISING OUT OF OR RELATED TO THIS REPORT OR ANY OF THE DATA AND INFORMATION PROVIDED IN THIS REPORT, INCLUDING WITHOUT LIMITATION, ANY WARRANTIES REGARDING ACCURACY, QUALITY, CORRECTNESS, COMPLETENESS, COMPREHENSIVENESS, SUITABILITY, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE, NON-INFRINGEMENT, MISAPPROPRIATION, OR OTHERWISE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, LLC OR ITS SUBSIDIARIES, AFFILIATES OR THIRD PARTY SUPPLIERS BE LIABLE TO ANYONE FOR ANY DIRECT, INCIDENTAL, INDIRECT, SPECIAL, CONSEQUENTIAL OR OTHER DAMAGES OF ANY TYPE OR KIND (INCLUDING BUT NOT LIMITED TO LOSS OF PROFITS, LOSS OF USE, OR LOSS OF DATA), ARISING OUT OF OR IN ANY WAY CONNECTED WITH THIS REPORT OR ANY OF THE DATA AND INFORMATION PROVIDED IN THIS REPORT.** Any analyses, estimates, ratings, environmental risk levels, or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only an assessment performed by a qualified environmental professional can provide findings, opinions or conclusions regarding the environmental risk or conditions in, on or at any property.

Copyright 2023 by Environmental Data Resources, LLC. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, LLC, or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, LLC or its affiliates. All other trademarks used herein are the property of their respective owners.

EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Abstract is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Abstract includes a search and abstract of available city directory data. For each address, the directory lists the name of the corresponding occupant at approximately five year intervals.

Business directories including city, cross reference and telephone directories were reviewed, if available, at approximately five year intervals for the years spanning 1921 through current. This report compiles information gathered in this review by geocoding the latitude and longitude of properties identified and gathering information about properties within 660 feet of the target property.

Summary information obtained is provided in the text of this report.

RECORD SOURCES

The EDR City Directory Report accesses a variety of business directory sources, including Haines, InfoUSA, Polk, Cole, Bresser, and Stewart. Listings marked as EDR Digital Archive access Cole and InfoUSA records. The various directory sources enhance and complement each other to provide a more thorough and accurate report.

EDR is licensed to reproduce certain City Directory works by the copyright holders of those works. The purchaser of this EDR City Directory Report may include it in report(s) delivered to a customer.

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. An "X" indicates where information was identified in the source and provided in this report.

Year	Source	TP	Adjoining	Text Abstract	Source Image
2020	EDR Digital Archive	-	X	X	-
2017	Cole Information	-	X	X	-
2014	Cole Information	X	X	X	-
2010	Cole Information	X	X	X	-
2005	Cole Information	X	X	X	-
2002	SBC PACIFIC BELL	-	X	X	-
2001	Haines & Company, Inc.	X	X	X	-
2000	Cole Information	-	X	X	-
1996	Pacific Bell	-	X	X	-
1995	Cole Information	-	X	X	-
1993	Pacific Bell	-	-	-	-
1992	Cole Information	X	X	X	-
1990	Pacific Bell	X	X	X	-
1986	Pacific Bell Yellow Pages	X	X	X	-
1981	Pacific Telephone	X	X	X	-
1977	Pacific Telephone	X	X	X	-

EXECUTIVE SUMMARY

Year	Source	TP	Adjoining	Text Abstract	Source Image
1970	Pacific Telephone	X	X	X	-
1967	Luskey Brothers & Co.	-	-	-	-
1966	Luskey Brothers & Company Inc.	-	-	-	-
1961	Luskey Brothers & Co.	-	-	-	-
1960	Luskeys Brothers & Co., Publishers	-	-	-	-
1956	Luskey Brothers & Co.	-	-	-	-
1955	Luskeys Brothers Co., Publishers	-	-	-	-
1951	Pacific Telephone & Telegraph Co.	-	-	-	-
1946	Southern California Telephone Company	-	-	-	-
1945	Los Angeles Directory Co.	-	-	-	-
1941	Pacific Directory Co.	-	-	-	-
1939	Los Angeles Directory Co.	-	-	-	-
1936	Los Angeles Directory Co.	-	-	-	-
1931	Southern California Telephone Co.	-	-	-	-
1930	Los Angeles Directory Co.	-	-	-	-
1927	Los Angeles Directory Co.	-	-	-	-
1925	Los Angeles Directory Co.	-	-	-	-
1924	Kaasen Directory Co.	-	-	-	-
1921	Riverside Directory Co.	-	-	-	-

FINDINGS

TARGET PROPERTY INFORMATION

ADDRESS

15701 CHICAGO AVE
RIVERSIDE, CA 92508

FINDINGS DETAIL

Target Property research detail.

CHICAGO AVE

15701 CHICAGO AVE

Year	*Uses*	*Source*
2014	OCCUPANT UNKNOWN	Cole Information
2010	OCCUPANT UNKNOWN	Cole Information
2005	OCCUPANT UNKNOWN	Cole Information
2001	XXXX	Haines & Company, Inc.
1992	TAKENO, R	Cole Information
1990	Takeno Rikinosuke	Pacific Bell
1986	Takeno Rikinosuke	Pacific Bell Yellow Pages
1981	Takeno Rikinosuke	Pacific Telephone
1977	Takeno Rikinosuke	Pacific Telephone
1970	Takeno Rikinosuke	Pacific Telephone

FINDINGS

ADJOINING PROPERTY DETAIL

The following Adjoining Property addresses were researched for this report. Detailed findings are provided for each address.

CECIL AVE

15589 CECIL AVE

Year	Uses	Source
2020	MICHELLE ELROD	EDR Digital Archive
	BRIAN ELROD	EDR Digital Archive
2017	ETHAN ELROD	Cole Information

15601 CECIL AVE

Year	Uses	Source
2020	WESLEY SKOVINSKI	EDR Digital Archive
2017	PAUL BLECKER	Cole Information
2005	SADAMU HOTTA	Cole Information
2000	OCCUPANT UNKNOWN	Cole Information
1992	HOTTA, SADAMU	Cole Information

15630 CECIL AVE

Year	Uses	Source
2002	Hoisington John & Dixie	SBC PACIFIC BELL
2001	HOISINGTON Dale	Haines & Company, Inc.
	SHOISINGTONJoh S	Haines & Company, Inc.
1996	Berg T	Pacific Bell
1990	Berg T	Pacific Bell

15651 CECIL AVE

Year	Uses	Source
2017	RUTH BLECKER	Cole Information
2014	RUTH BLECKER	Cole Information
2001	BLECKER Aroold	Haines & Company, Inc.
2000	ARNOLD BLECKER	Cole Information
1995	BLECKER, ARNOLD	Cole Information
1992	BLECKER, ARNOLD	Cole Information

FINDINGS

Year	Uses	Source
1986	Blecker Arnold	Pacific Bell Yellow Pages
1981	Blecker Arnold	Pacific Telephone

15676 CECIL AVE

Year	Uses	Source
2002	Job Samuel	SBC PACIFIC BELL
2001	JOB Samuel	Haines & Company, Inc.
1996	Job Samuel	Pacific Bell
1990	Job Samuel	Pacific Bell
1981	Arrty H G	Pacific Telephone

CHICAGO AVE

15600 CHICAGO AVE

Year	Uses	Source
2020	DEVON DAVIS	EDR Digital Archive
	ELLEN NOZAWA	EDR Digital Archive
	MING NAZAWA	EDR Digital Archive
2014	SHOZO NOZAWA	Cole Information
2010	JOEL DANIEL	Cole Information
2005	SHOZO NAZAWA	Cole Information
2002	Wheeler Richard A DVM	SBC PACIFIC BELL
2001	WHEELER Rchard DVM	Haines & Company, Inc.
2000	WHEELER RICHARD A DVM	Cole Information
	OCCUPANT UNKNOWN	Cole Information
1996	Wheeler Richard A DVM	Pacific Bell
1995	WHEELER, RICHARD A	Cole Information
1992	WHEELER, RICHARD A	Cole Information
1990	Wheeler Richard A DVM	Pacific Bell
1986	Mc Lain Jas A	Pacific Bell Yellow Pages
1981	Mc ain Jas A	Pacific Telephone

15650 CHICAGO AVE

Year	Uses	Source
2020	PATRICIA ASTFALK	EDR Digital Archive

FINDINGS

Year	Uses	Source
2020	CORINNE ASTFALK	EDR Digital Archive
	LUKE ASTFALK	EDR Digital Archive
	GARY ASTFALK	EDR Digital Archive
2017	GARY ASTFALK	Cole Information
2014	GARY ASTFALK	Cole Information
2010	GARY ASTFALK	Cole Information
2005	GARY ASTFALK	Cole Information
2002	Szucsko SV	SBC PACIFIC BELL
2001	SZUCSKOSV	Haines & Company, Inc.
2000	SHIRLEY SZUCSKO	Cole Information
1996	Szucsko S V	Pacific Bell
1995	SZUCSKO, SHIRLEY V	Cole Information
1992	SZUCSKO, SHIRLEY V	Cole Information
1990	Szucsko S V	Pacific Bell
1986	Szucsko S V	Pacific Bell Yellow Pages
	I Szucsko T	Pacific Bell Yellow Pages

GENTIAN AVE

18025 GENTIAN AVE

Year	Uses	Source
2020	BAXTER DODD	EDR Digital Archive
	SHERRY DODD	EDR Digital Archive
2017	BAXTER DODD	Cole Information
2014	BAXTER DODD	Cole Information
2010	BAXTER DODD	Cole Information
	DODDS DESIGNS	Cole Information
2005	BAXTER DODD	Cole Information
2000	SHARON DODD	Cole Information
1977	Bond Claire D	Pacific Telephone

18033 GENTIAN AVE

Year	Uses	Source
2000	OCCUPANT UNKNOWN	Cole Information

FINDINGS

HIBISCUS AVE

18010 HIBISCUS AVE

Year	Uses	Source
2020	LINDA WRAY	EDR Digital Archive
	DINA WRAY	EDR Digital Archive
2017	LINDA WRAY	Cole Information
2014	LINDA WRAY	Cole Information
2010	DENA WRAY	Cole Information
2005	DENA WRAY	Cole Information
2002	Wray L K	SBC PACIFIC BELL
2001	WRAYLK	Haines & Company, Inc.
	X CARTWRIGHT DR	Haines & Company, Inc.
2000	LINDA WRAY	Cole Information
1996	Wray L K	Pacific Bell
1981	Wray Linda K	Pacific Telephone
	Wray Robt L	Pacific Telephone

18101 HIBISCUS AVE

Year	Uses	Source
2001	SLOVATO Patricia	Haines & Company, Inc.

18103 HIBISCUS AVE

Year	Uses	Source
2001	XXXX	Haines & Company, Inc.
1981	Giron Jackie	Pacific Telephone

18105 HIBISCUS AVE

Year	Uses	Source
2001	XXXX	Haines & Company, Inc.

HIBISCUS DR

18103 HIBISCUS DR

Year	Uses	Source
1970	Kelly Robt	Pacific Telephone

FINDINGS

18107 HIBISCUS DR

Year	*Uses*	*Source*
1970	Eddington Tom	Pacific Telephone

FINDINGS

ADJOINING PROPERTY: ADDRESSES NOT IDENTIFIED IN RESEARCH SOURCE

The following Adjoining Property addresses were researched for this report, and the addresses were not identified in research source.

Address Researched	Address Not Identified in Research Source
15589 CECIL AVE	2014, 2010, 2005, 2002, 2001, 2000, 1996, 1995, 1993, 1992, 1990, 1986, 1981, 1977, 1970, 1967, 1966, 1961, 1960, 1956, 1955, 1951, 1946, 1945, 1941, 1939, 1936, 1931, 1930, 1927, 1925, 1924, 1921
15600 CHICAGO AVE	2017, 1993, 1977, 1970, 1967, 1966, 1961, 1960, 1956, 1955, 1951, 1946, 1945, 1941, 1939, 1936, 1931, 1930, 1927, 1925, 1924, 1921
15601 CECIL AVE	2014, 2010, 2002, 2001, 1996, 1995, 1993, 1990, 1986, 1981, 1977, 1970, 1967, 1966, 1961, 1960, 1956, 1955, 1951, 1946, 1945, 1941, 1939, 1936, 1931, 1930, 1927, 1925, 1924, 1921
15630 CECIL AVE	2020, 2017, 2014, 2010, 2005, 2000, 1995, 1993, 1992, 1986, 1981, 1977, 1970, 1967, 1966, 1961, 1960, 1956, 1955, 1951, 1946, 1945, 1941, 1939, 1936, 1931, 1930, 1927, 1925, 1924, 1921
15650 CHICAGO AVE	1993, 1981, 1977, 1970, 1967, 1966, 1961, 1960, 1956, 1955, 1951, 1946, 1945, 1941, 1939, 1936, 1931, 1930, 1927, 1925, 1924, 1921
15651 CECIL AVE	2020, 2010, 2005, 2002, 1996, 1993, 1990, 1977, 1970, 1967, 1966, 1961, 1960, 1956, 1955, 1951, 1946, 1945, 1941, 1939, 1936, 1931, 1930, 1927, 1925, 1924, 1921
15676 CECIL AVE	2020, 2017, 2014, 2010, 2005, 2000, 1995, 1993, 1992, 1986, 1977, 1970, 1967, 1966, 1961, 1960, 1956, 1955, 1951, 1946, 1945, 1941, 1939, 1936, 1931, 1930, 1927, 1925, 1924, 1921
18010 HIBISCUS AVE	1995, 1993, 1992, 1990, 1986, 1977, 1970, 1967, 1966, 1961, 1960, 1956, 1955, 1951, 1946, 1945, 1941, 1939, 1936, 1931, 1930, 1927, 1925, 1924, 1921
18025 GENTIAN AVE	2002, 2001, 1996, 1995, 1993, 1992, 1990, 1986, 1981, 1970, 1967, 1966, 1961, 1960, 1956, 1955, 1951, 1946, 1945, 1941, 1939, 1936, 1931, 1930, 1927, 1925, 1924, 1921
18033 GENTIAN AVE	2020, 2017, 2014, 2010, 2005, 2002, 2001, 1996, 1995, 1993, 1992, 1990, 1986, 1981, 1977, 1970, 1967, 1966, 1961, 1960, 1956, 1955, 1951, 1946, 1945, 1941, 1939, 1936, 1931, 1930, 1927, 1925, 1924, 1921
18101 HIBISCUS AVE	2020, 2017, 2014, 2010, 2005, 2002, 2000, 1996, 1995, 1993, 1992, 1990, 1986, 1981, 1977, 1970, 1967, 1966, 1961, 1960, 1956, 1955, 1951, 1946, 1945, 1941, 1939, 1936, 1931, 1930, 1927, 1925, 1924, 1921
18103 HIBISCUS AVE	2020, 2017, 2014, 2010, 2005, 2002, 2000, 1996, 1995, 1993, 1992, 1990, 1986, 1977, 1970, 1967, 1966, 1961, 1960, 1956, 1955, 1951, 1946, 1945, 1941, 1939, 1936, 1931, 1930, 1927, 1925, 1924, 1921
18103 HIBISCUS DR	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1996, 1995, 1993, 1992, 1990, 1986, 1981, 1977, 1967, 1966, 1961, 1960, 1956, 1955, 1951, 1946, 1945, 1941, 1939, 1936, 1931, 1930, 1927, 1925, 1924, 1921
18105 HIBISCUS AVE	2020, 2017, 2014, 2010, 2005, 2002, 2000, 1996, 1995, 1993, 1992, 1990, 1986, 1981, 1977, 1970, 1967, 1966, 1961, 1960, 1956, 1955, 1951, 1946, 1945, 1941, 1939, 1936, 1931, 1930, 1927, 1925, 1924, 1921
18107 HIBISCUS DR	2020, 2017, 2014, 2010, 2005, 2002, 2001, 2000, 1996, 1995, 1993, 1992, 1990, 1986, 1981, 1977, 1967, 1966, 1961, 1960, 1956, 1955, 1951, 1946, 1945, 1941, 1939, 1936, 1931, 1930, 1927, 1925, 1924, 1921

TARGET PROPERTY: ADDRESS NOT IDENTIFIED IN RESEARCH SOURCE

The following Target Property addresses were researched for this report, and the addresses were not identified in the research source.

Address Researched	Address Not Identified in Research Source
15701 CHICAGO AVE	2020, 2017, 2002, 2000, 1996, 1995, 1993, 1967, 1966, 1961, 1960, 1956, 1955, 1951, 1946, 1945, 1941, 1939, 1936, 1931, 1930, 1927, 1925, 1924, 1921

APN 245-300-001 and -004
15701 CHICAGO AVE
RIVERSIDE, CA 92508

Inquiry Number: 7981882.6
May 07, 2025

The EDR Property Tax Map Report

EDR® Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

EDR Property Tax Map Report

Environmental Data Resources, Inc.'s EDR Property Tax Map Report is designed to assist environmental professionals in evaluating potential environmental conditions on a target property by understanding property boundaries and other characteristics. The report includes a search of available property tax maps, which include information on boundaries for the target property and neighboring properties, addresses, parcel identification numbers, as well as other data typically used in property location and identification.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OR DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction orforecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2022 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc. or its affiliates is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSES ONLY. NO LIABILITY IS ASSUMED FOR ACCURACY OF THE DATA SHOWN. ASSESSOR'S PARCEL MAY NOT COMPLY WITH LOCAL LOT-SPLIT OR BUILDING SITE ORDINANCES.

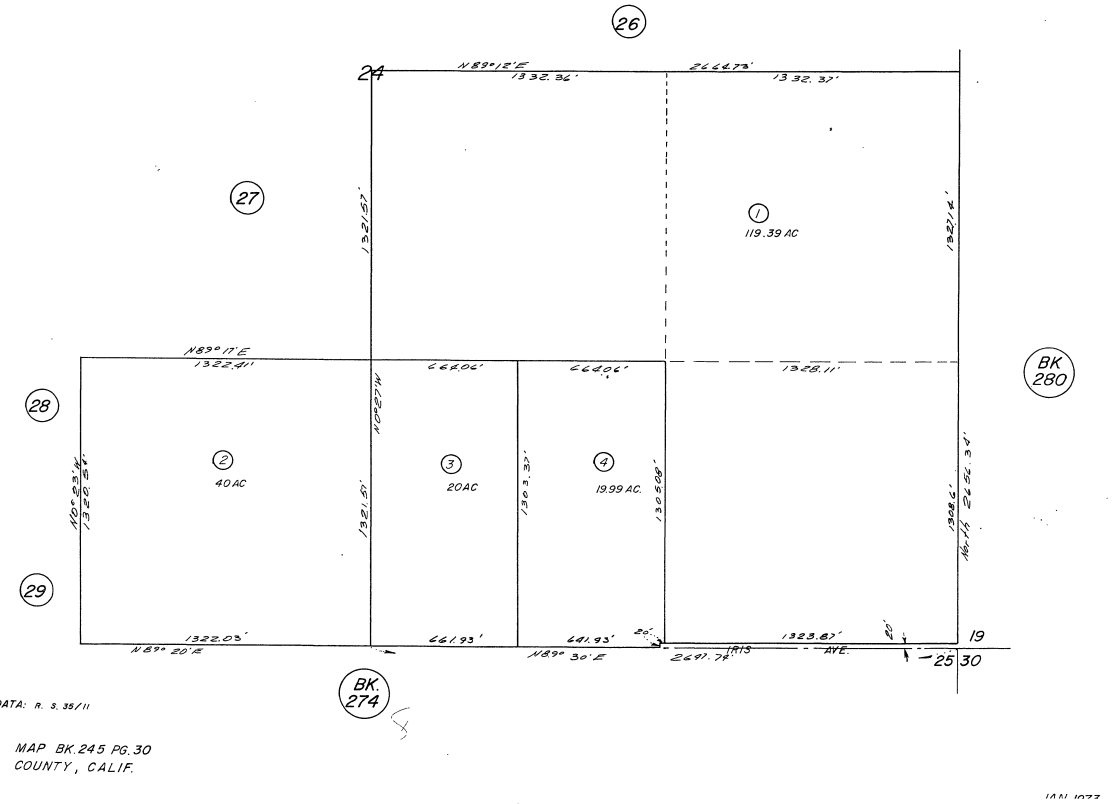
MAY 08 2007

POR. S1/2 SEC. 24 T.3 S. R.5 W.

T.R. A. 8807

11-46

245-30



1" = 400'

DATE	OLD NO	NEW NO

DATA: R. S. 35/11

ASSESSOR'S MAP BK. 245 PG. 30
RIVERSIDE COUNTY, CALIF.

JAN 1977

APN 245-300-001 and -004
15701 CHICAGO AVE
RIVERSIDE, CA 92508

Inquiry Number: 7981882.7
May 09, 2025

EDR Environmental Lien and AUL Search

EDR® Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

EDR Environmental Lien and AUL Search

The EDR Environmental Lien Search Report provides results from a search of available current land title records for environmental cleanup liens and other activity and use limitations (AULs), such as engineering controls and institutional controls.

A network of professional, trained researchers, following established procedures, uses client supplied address information to:

- search for parcel number and/or legal description
- search for ownership information
- research official land title documents recorded at jurisdictional agencies such as recorders' offices, registries of deeds, county clerks' offices, etc.
- search for publicly available environmental encumbering instrument(s) filed on or after the recording of the current deed; between the recording of the current deed and the most current publicly available date
- provide a copy of any environmental encumbrance(s)
- provide a copy of the current deed when available

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, LLC. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. This Report is provided on an "AS IS", "AS AVAILABLE" basis. NO WARRANTY EXPRESS OR IMPLIED IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, LLC AND ITS SUBSIDIARIES, AFFILIATES AND THIRD PARTY SUPPLIERS DISCLAIM ALL WARRANTIES, OF ANY KIND OR NATURE, EXPRESS OR IMPLIED, ARISING OUT OF OR RELATED TO THIS REPORT OR ANY OF THE DATA AND INFORMATION PROVIDED IN THIS REPORT, INCLUDING WITHOUT LIMITATION, ANY WARRANTIES REGARDING ACCURACY, QUALITY, CORRECTNESS, COMPLETENESS, COMPREHENSIVENESS, SUITABILITY, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE, NON-INFRINGEMENT, MISAPPROPRIATION, OR OTHERWISE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, LLC OR ITS SUBSIDIARIES, AFFILIATES OR THIRD PARTY SUPPLIERS BE LIABLE TO ANYONE FOR ANY DIRECT, INCIDENTAL, INDIRECT, SPECIAL, CONSEQUENTIAL OR OTHER DAMAGES OF ANY TYPE OR KIND (INCLUDING BUT NOT LIMITED TO LOSS OF PROFITS, LOSS OF USE, OR LOSS OF DATA), ARISING OUT OF OR IN ANY WAY CONNECTED WITH THIS REPORT OR ANY OF THE DATA AND INFORMATION PROVIDED IN THIS REPORT. Any analyses, estimates, ratings, environmental risk levels, or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only an assessment performed by a qualified environmental professional can provide findings, opinions or conclusions regarding the environmental risk or conditions in, on or at any property.

Copyright 2024 by Environmental Data Resources, LLC. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, LLC, or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, LLC or its affiliates. All other trademarks used herein are the property of their respective owners.

EDR Environmental Lien and AUL Search

TARGET PROPERTY INFORMATION

ADDRESS

15701 CHICAGO AVE
APN 245-300-001 and -004
RIVERSIDE, CA 92508

ENVIRONMENTAL LIEN

Environmental Lien: Found ☐ Not Found ☒

OTHER ACTIVITY AND USE LIMITATIONS (AULs)

AULs: Found ☐ Not Found ☒

RESEARCH SOURCE

Source 1:

Riverside Recorder
Riverside, CA

PROPERTY INFORMATION

Deed 1:

Type of Deed:	Corproation Grant Deed
Title is vested in:	P & F Investment Company
Title received from:	Takeno Citrus Inc
Deed Dated	10/4/1990
Deed Recorded:	1/10/1991
Book:	NA
Page:	NA
Volume:	NA
Instrument:	011247
Docket:	NA
Land Record Comments:	see exhibit
Miscellaneous Comments:	NA
Legal Description:	see exhibit
Legal Current Owner:	P & F Investment Company
Parcel # / Property Identifier:	245-300-001
Comments:	see exhibit

Deed Exhibit 1

11247

RECORDING REQUESTED BY

CHICAGO TITLE COMPANY

AND WHEN RECORDED MAIL THIS DEED AND, UNLESS OTHERWISE SHOWN BELOW, MAIL TAX STATEMENTS TO:

NAME Kwang-Tien Ho
STREET ADDRESS P & F Investment Company
12225 South St., #106
CITY, STATE ZIP Artesia, CA 90701

Title Order No..... Escrow No.....

PAID Doc. Transfer Tax WILLIAM E. CONERLY Riv. Co. Recorder

RECEIVED FOR RECORD AT 8:30 O'CLOCK A.M. At Request of CHICAGO TITLE INS. CO.

JAN 10 1991

Recorded in Official Records of Riverside County, California
Recorder
Fees $

SURVEYORS Monument Fund $1.00

This space for Recorder's use

5-

245-300-001-7

Corporation Grant Deed

THE UNDERSIGNED GRANTOR(s) DECLARE(s)
DOCUMENTARY TRANSFER TAX is $ 6,105.00
X☒ unincorporated area ☐ City of
Parcel No.
☐ computed on full value of property conveyed, or
☐ computed on full value less value of liens or encumbrances remaining at time of sale, and

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,

TAKENO CITRUS, INC.

a California Corporation hereby GRANT(S) to

P & F INVESTMENT COMPANY, a California limited partnership

the following described real property in the County of Riverside, State of California:

The Southeast Quarter of Section 24, Township 3 South, Range 5 West, San Bernardino Base and Meridian, according to the Official Plat thereof.

EXCEPTING THEREFROM the Southwest Quarter of the Southeast Quarter of said Section 24.

ALSO EXCEPTING THEREFROM the Southerly 20 Feet of the Southeast Quarter of the Southeast Quarter of said Section 24, as described in a Deed to the County of Riverside, recorded June 2, 1971, as Instrument No. 58755, Official Records.

Said land is also situated in the unincorporated area of Riverside County.

9014466-03

TAKENO CITRUS, INC., a California corporation
By: Rikinosuke Takeno
By: Harry Takeno

Dated October 4, 1990

STATE OF CALIFORNIA
COUNTY OF Riverside } SS.

On this 8th day of October, in the year 1990, before me, the undersigned, a Notary Public in and for said County and State, personally appeared HARRY TAKENO & RIKINOSUKE TAKENO personally known to me (or proved to me on the basis of satisfactory evidence) to be the Pres. President, and HARRY TAKENO personally known to me (or proved to me on the basis of satisfactory evidence) to be HARRY TAKENO Secretary of the corporation that executed the within Instrument, and acknowledged to me that such corporation executed the within instrument pursuant to its by-laws or a resolution of its board of directors.

Signature

Name (Typed or Printed)
Notary Public in and for said County and State

OFFICIAL SEAL
DAN DAVIDSON
NOTARY PUBLIC - CALIFORNIA
RIVERSIDE COUNTY
My Comm. Expires July 31, 1992

(Space above for official notarial seal)

MAIL TAX STATEMENTS TO PARTY SHOWN ON FOLLOWING LINE; IF NO PARTY SO SHOWN, MAIL AS DIRECTED ABOVE

Name | Street Address | City & State

1-102 REV. 6/83 PRINTCO

0-1-4-1

Jan. 10, 1991

APN 245-300-001 and -004

15701 CHICAGO AVE

RIVERSIDE, CA 92508

Inquiry Number: 7981882.3

May 07, 2025

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

05/07/25

Site Name:

APN 245-300-001 and -004
15701 CHICAGO AVE
RIVERSIDE, CA 92508
EDR Inquiry # 7981882.3

Client Name:

Geotek
1548 North Maple Street
Corona, CA 92880
Contact: Cynthia Diaz Ruiz

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Geotek were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # 9F9A-434E-BF9F

PO # NA

Project 2855-CR

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

Sanborn® Library search results

Certification #: 9F9A-434E-BF9F

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

The Sanborn Library LLC Since 1866™

Limited Permission To Make Copies

Geotek (the client) is permitted to make up to FIVE photocopies of this Sanborn Map transmittal and each fire insurance map accompanying this report solely for the limited use of its customer. No one other than the client is authorized to make copies. Upon request made directly to an EDR Account Executive, the client may be permitted to make a limited number of additional photocopies. This permission is conditioned upon compliance by the client, its customer and their agents with EDR's copyright policy; a copy of which is available upon request.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, LLC. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. This Report is provided on an "AS IS", "AS AVAILABLE" basis. NO WARRANTY EXPRESS OR IMPLIED IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, LLC AND ITS SUBSIDIARIES, AFFILIATES AND THIRD PARTY SUPPLIERS DISCLAIM ALL WARRANTIES, OF ANY KIND OR NATURE, EXPRESS OR IMPLIED, ARISING OUT OF OR RELATED TO THIS REPORT OR ANY OF THE DATA AND INFORMATION PROVIDED IN THIS REPORT, INCLUDING WITHOUT LIMITATION, ANY WARRANTIES REGARDING ACCURACY, QUALITY, CORRECTNESS, COMPLETENESS, COMPREHENSIVENESS, SUITABILITY, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE, NON-INFRINGEMENT, MISAPPROPRIATION, OR OTHERWISE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, LLC OR ITS SUBSIDIARIES, AFFILIATES OR THIRD PARTY SUPPLIERS BE LIABLE TO ANYONE FOR ANY DIRECT, INCIDENTAL, INDIRECT, SPECIAL, CONSEQUENTIAL OR OTHER DAMAGES OF ANY TYPE OR KIND (INCLUDING BUT NOT LIMITED TO LOSS OF PROFITS, LOSS OF USE, OR LOSS OF DATA), ARISING OUT OF OR IN ANY WAY CONNECTED WITH THIS REPORT OR ANY OF THE DATA AND INFORMATION PROVIDED IN THIS REPORT. Any analyses, estimates, ratings, environmental risk levels, or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only an assessment performed by a qualified environmental professional can provide findings, opinions or conclusions regarding the environmental risk or conditions in, on or at any property.

Copyright 2025 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, LLC or its affiliates. All other trademarks used herein are the property of their respective owners.

APN 245-300-001 and -004

15701 CHICAGO AVE

RIVERSIDE, CA 92508

Inquiry Number: 7981882.4

May 07, 2025

EDR Historical Topo Map Report

with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

05/07/25

Site Name:

APN 245-300-001 and -004
15701 CHICAGO AVE
RIVERSIDE, CA 92508
EDR Inquiry # 7981882.4

Client Name:

Geotek
1548 North Maple Street
Corona, CA 92880
Contact: Cynthia Diaz Ruiz

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Geotek were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:

P.O.# NA
Project: 2855-CR

Coordinates:

Latitude:	33.891471 33° 53' 29" North
Longitude:	-117.352345 -117° 21' 8" West
UTM Zone:	Zone 11 North
UTM X Meters:	467420.30
UTM Y Meters:	3750178.46
Elevation:	1514.79' above sea level

Maps Provided:

2022, 2021	1942
2018	1901
2015	
2012	
1980, 1982	
1967	
1953	
1947	

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, LLC. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. This Report is provided on an "AS IS", "AS AVAILABLE" basis. NO WARRANTY EXPRESS OR IMPLIED IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, LLC AND ITS SUBSIDIARIES, AFFILIATES AND THIRD PARTY SUPPLIERS DISCLAIM ALL WARRANTIES, OF ANY KIND OR NATURE, EXPRESS OR IMPLIED, ARISING OUT OF OR RELATED TO THIS REPORT OR ANY OF THE DATA AND INFORMATION PROVIDED IN THIS REPORT, INCLUDING WITHOUT LIMITATION, ANY WARRANTIES REGARDING ACCURACY, QUALITY, CORRECTNESS, COMPLETENESS, COMPREHENSIVENESS, SUITABILITY, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE, NON-INFRINGEMENT, MISAPPROPRIATION, OR OTHERWISE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, LLC OR ITS SUBSIDIARIES, AFFILIATES OR THIRD PARTY SUPPLIERS BE LIABLE TO ANYONE FOR ANY DIRECT, INCIDENTAL, INDIRECT, SPECIAL, CONSEQUENTIAL OR OTHER DAMAGES OF ANY TYPE OR KIND (INCLUDING BUT NOT LIMITED TO LOSS OF PROFITS, LOSS OF USE, OR LOSS OF DATA), ARISING OUT OF OR IN ANY WAY CONNECTED WITH THIS REPORT OR ANY OF THE DATA AND INFORMATION PROVIDED IN THIS REPORT. Any analyses, estimates, ratings, environmental risk levels, or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only an assessment performed by a qualified environmental professional can provide findings, opinions or conclusions regarding the environmental risk or conditions in, on or at any property.

Copyright 2025 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

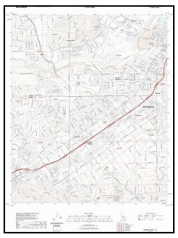
EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, LLC or its affiliates. All other trademarks used herein are the property of their respective owners.

Topo Sheet Key

This EDR Topo Map Report provided data in the following pages in order to locate the property.

2022, 2021 Source Sheets


Riverside East
2022
7.5-minute, 24000

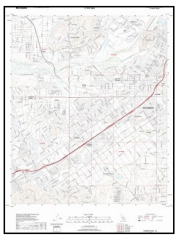

Riverside West
2022
7.5-minute, 24000


Steele Peak
2021
7.5-minute, 24000


Lake Mathews
2021
7.5-minute, 24000

2018 Source Sheets

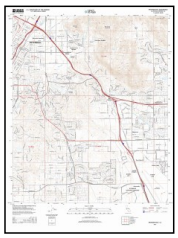

Riverside East
2018
7.5-minute, 24000

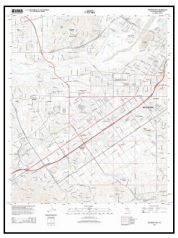

Riverside West
2018
7.5-minute, 24000

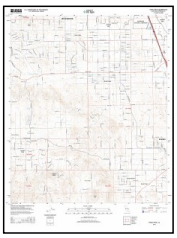

Steele Peak
2018
7.5-minute, 24000


Lake Mathews
2018
7.5-minute, 24000

2015 Source Sheets

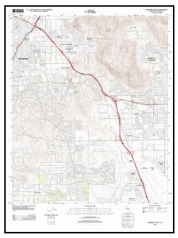

Riverside East
2015
7.5-minute, 24000


Riverside West
2015
7.5-minute, 24000


Steele Peak
2015
7.5-minute, 24000


Lake Mathews
2015
7.5-minute, 24000

2012 Source Sheets


Riverside East
2012
7.5-minute, 24000


Riverside West
2012
7.5-minute, 24000


Steele Peak
2012
7.5-minute, 24000


Lake Mathews
2012
7.5-minute, 24000

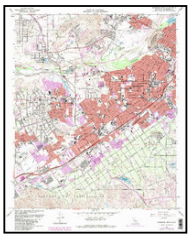
Topo Sheet Key

This EDR Topo Map Report provided data in the following format.

1980, 1982 Source Sheets



Riverside East
1980
7.5-minute, 24000
Aerial Photo Revised 1978



Riverside West
1980
7.5-minute, 24000
Aerial Photo Revised 1978



Lake Mathews
1982
7.5-minute, 24000
Aerial Photo Revised 1980

1967 Source Sheets



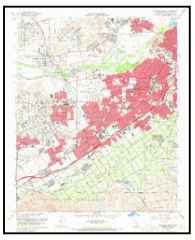
Riverside East
1967
7.5-minute, 24000
Aerial Photo Revised 1966



Steele Peak
1967
7.5-minute, 24000
Aerial Photo Revised 1966



Lake Mathews
1967
7.5-minute, 24000
Aerial Photo Revised 1966

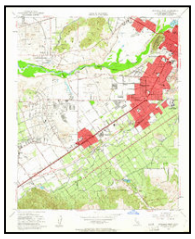


Riverside West
1967
7.5-minute, 24000
Aerial Photo Revised 1966

1953 Source Sheets



Steele Peak
1953
7.5-minute, 24000
Aerial Photo Revised 1951



Riverside West
1953
7.5-minute, 24000
Aerial Photo Revised 1951

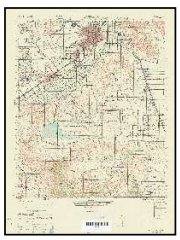


Lake Mathews
1953
7.5-minute, 24000
Aerial Photo Revised 1951



Riverside East
1953
7.5-minute, 24000
Aerial Photo Revised 1951

1947 Source Sheets



RIVERSIDE
1947
15-minute, 50000

Topo Sheet Key

This EDR Topo Map Report with its 1x1 mile grid pattern printed on a USGS topographic map is designed for use in identifying and locating environmental risk sites.

1942 Source Sheets



RIVERSIDE VICINITY
1942
7.5-minute, 31680

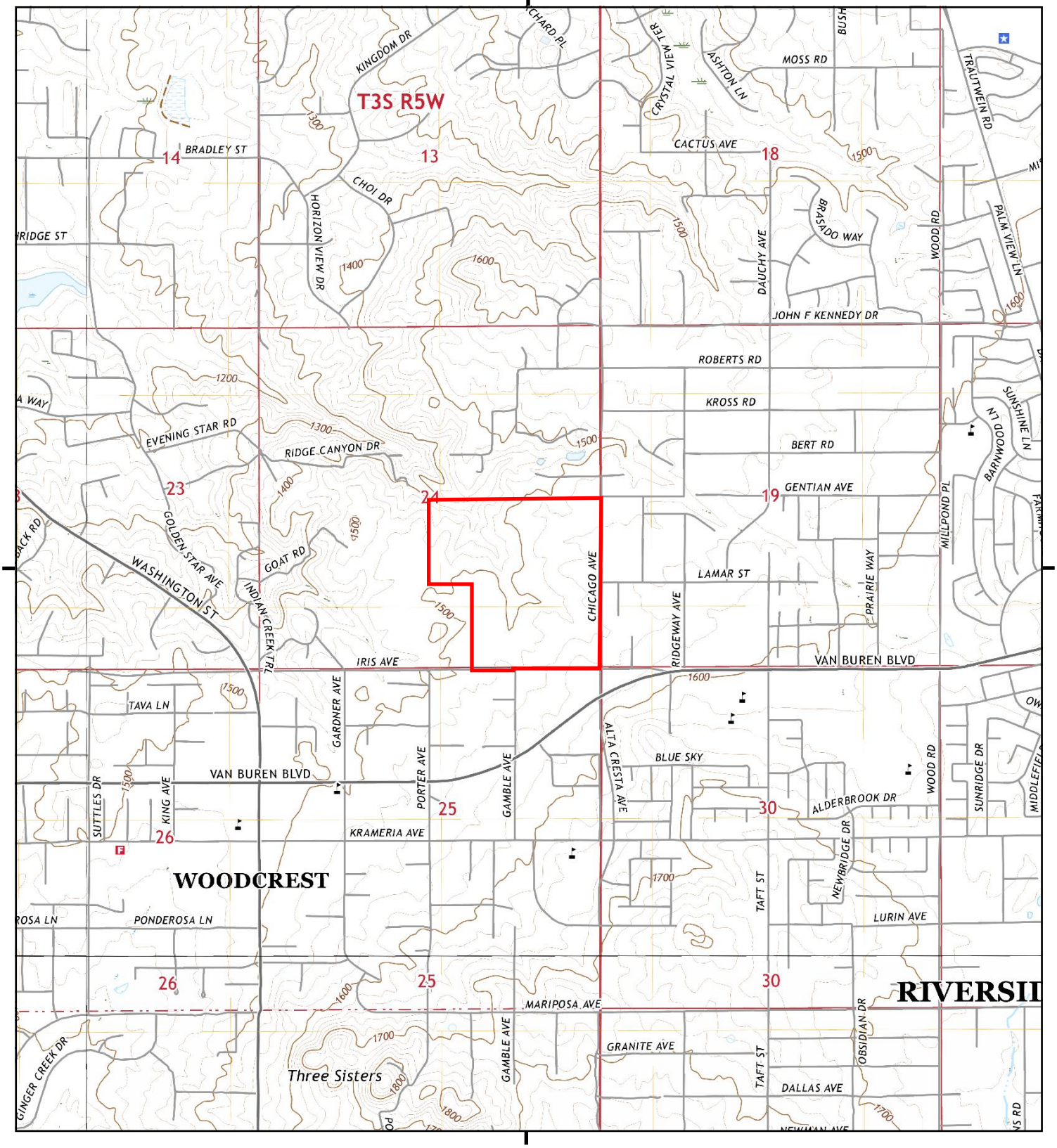
1901 Source Sheets



Riverside
1901
15-minute, 62500

Historical Topo Map

2022, 2021



T□i□r□□□r□in□□d□□in□r□ □i□n r□□ □□□
□□□□□in□ □ □□ □□□□□□□□□

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

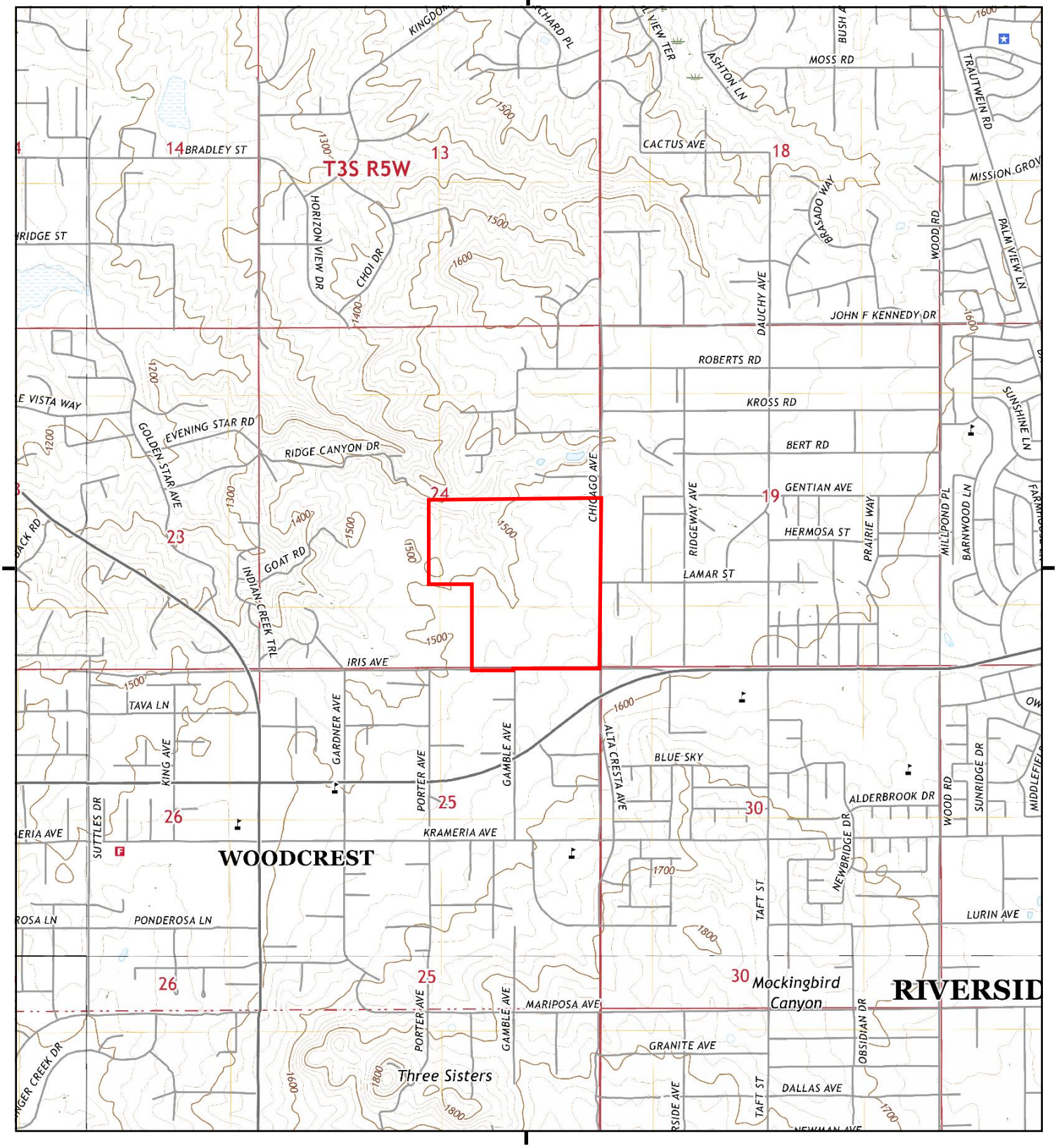
TP, Riverside East, 2022, 7.5-minute
SE, Steele Peak, 2021, 7.5-minute
SW, Lake Mathews, 2021, 7.5-minute
NW, Riverside West, 2022, 7.5-minute

□ITE NAME□ APN 245-300-001 and -004
ADDRE□□□ 15701 CHICAGO AVE
RIVERSIDE, CA 92508
□□IENT□ Geotek

N

Historical Topo Map

2018



T□i□r□□□r□in□□d□□in□r□ □i□n r□□ □□□
□□□□□in□ □ □□ □□□□□□□□□

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

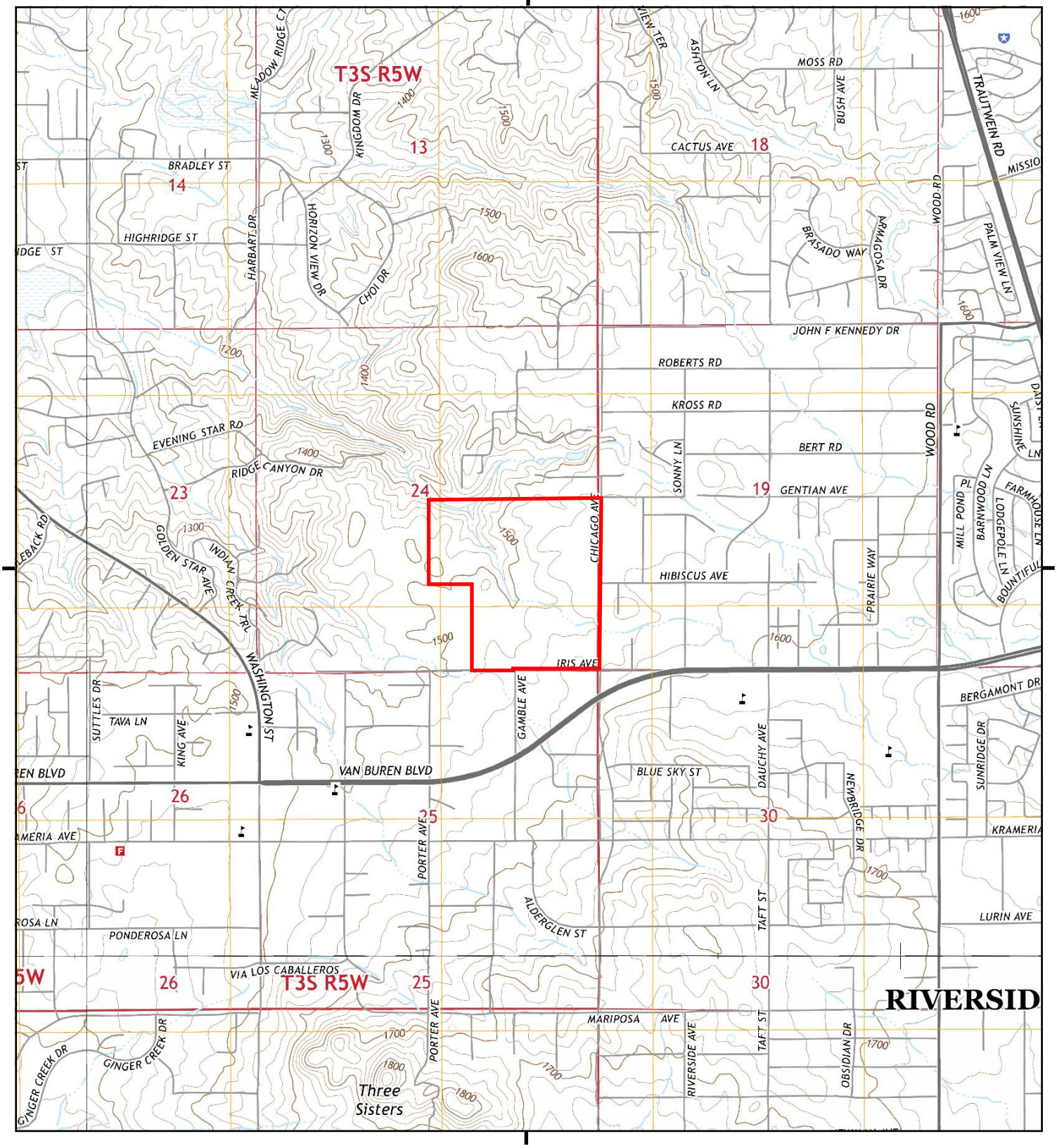
TP, Riverside East, 2018, 7.5-minute
SE, Steele Peak, 2018, 7.5-minute
SW, Lake Mathews, 2018, 7.5-minute
NW, Riverside West, 2018, 7.5-minute

□ITE NAME□ APN 245-300-001 and -004
ADDRE□□□ 15701 CHICAGO AVE
RIVERSIDE, CA 92508
□□IENT□ Geotek

N

Historical Topo Map

2015



T□i□r□□□r□in□□d□□in□r□ □i□n r□□ □□□
□□□□in□ □ □□ □□□□□□□□□

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

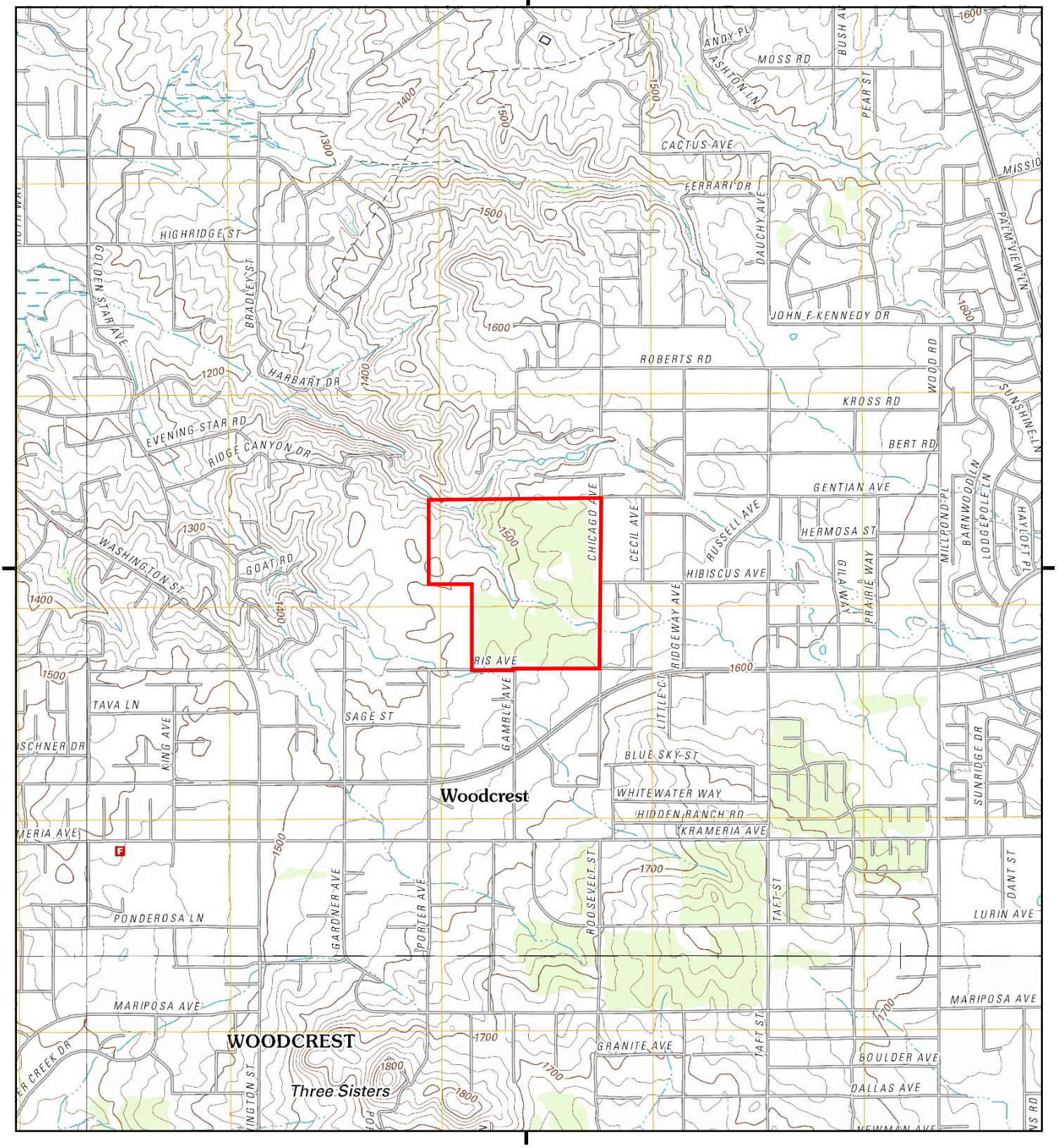
TP, Riverside East, 2015, 7.5-minute
SE, Steele Peak, 2015, 7.5-minute
SW, Lake Mathews, 2015, 7.5-minute
NW, Riverside West, 2015, 7.5-minute

□ITE NAME□ APN 245-300-001 and -004
ADDRE□□□ 15701 CHICAGO AVE
RIVERSIDE, CA 92508
□□IENT□ Geotek

N

Historical Topo Map

2012



This map was created by a user of The EDR Historical Topo Map Report. The user's study area is outlined in red.

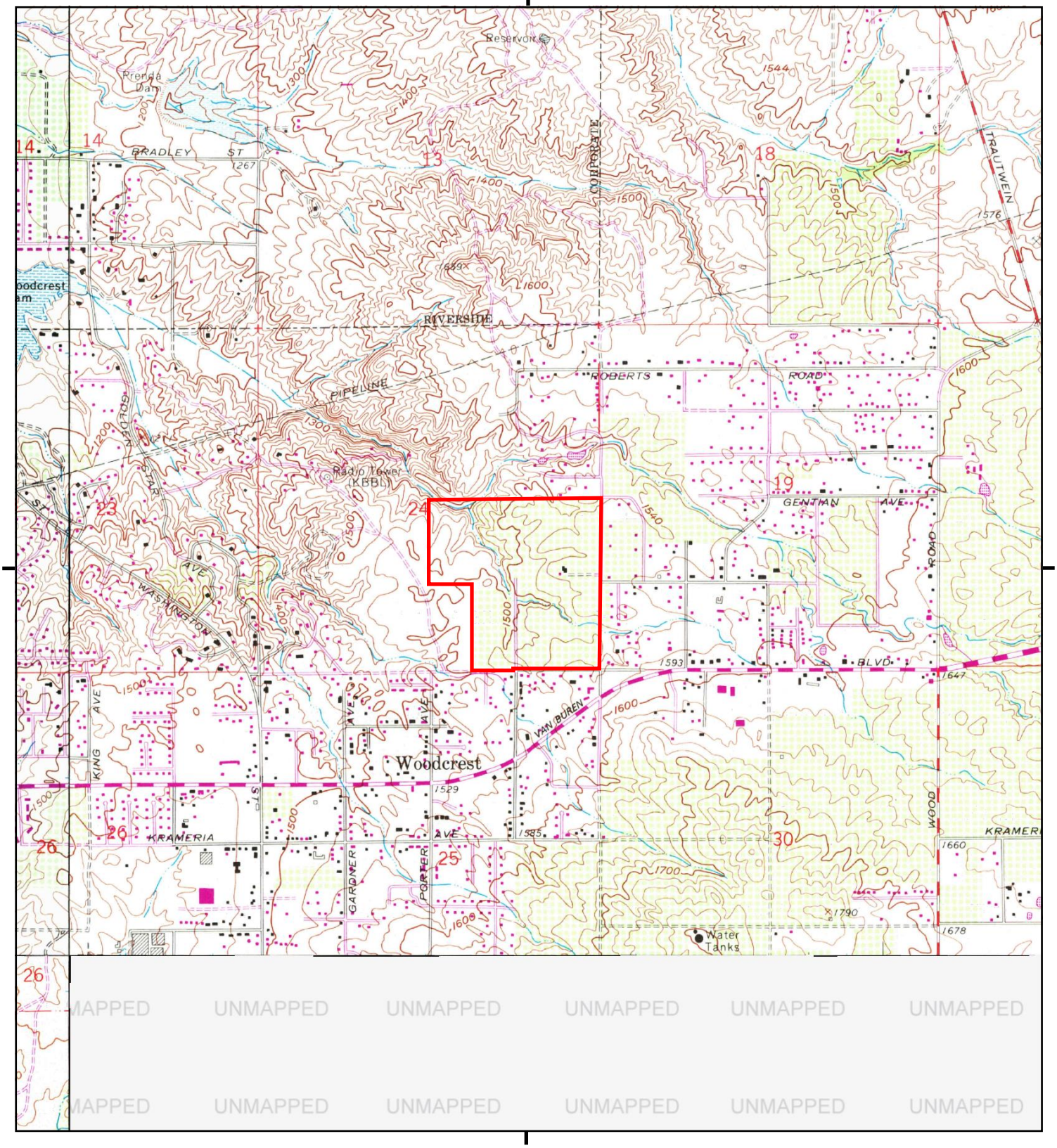
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Riverside East, 2012, 7.5-minute
SE, Steele Peak, 2012, 7.5-minute
SW, Lake Mathews, 2012, 7.5-minute
NW, Riverside West, 2012, 7.5-minute

SITE NAME: APN 245-300-001 and -004
ADDRESS: 15701 CHICAGO AVE
RIVERSIDE, CA 92508
CLIENT: Geotek

N



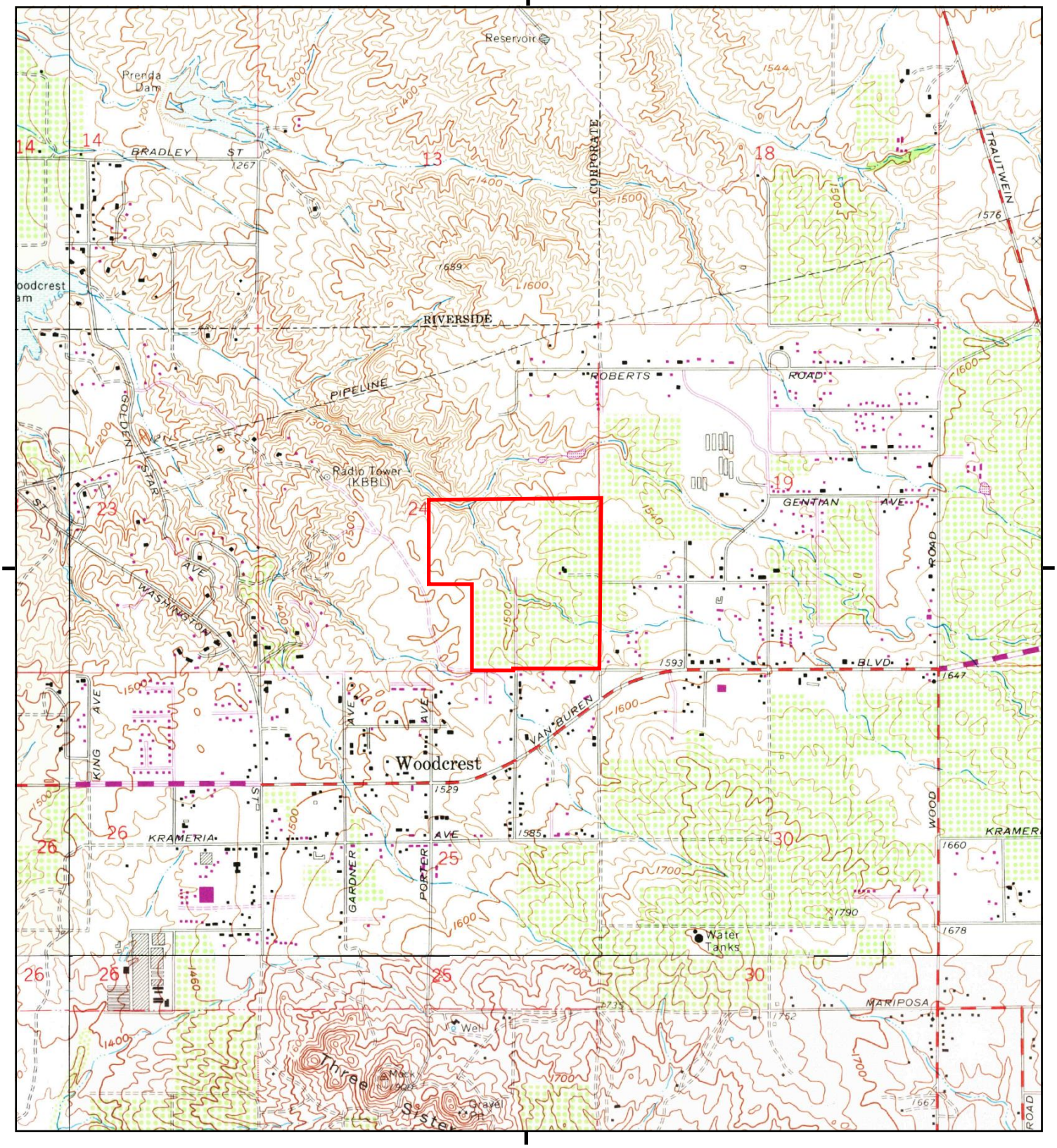
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

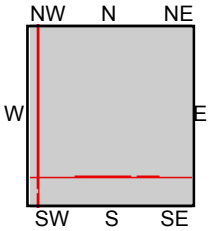
TP, Riverside East, 1980, 7.5-minute
SW, Lake Mathews, 1982, 7.5-minute
NW, Riverside West, 1980, 7.5-minute

ITE NAME APN 245-300-001 and -004
ADDRE 15701 CHICAGO AVE
RIVERSIDE, CA 92508
IENT Geotek

N



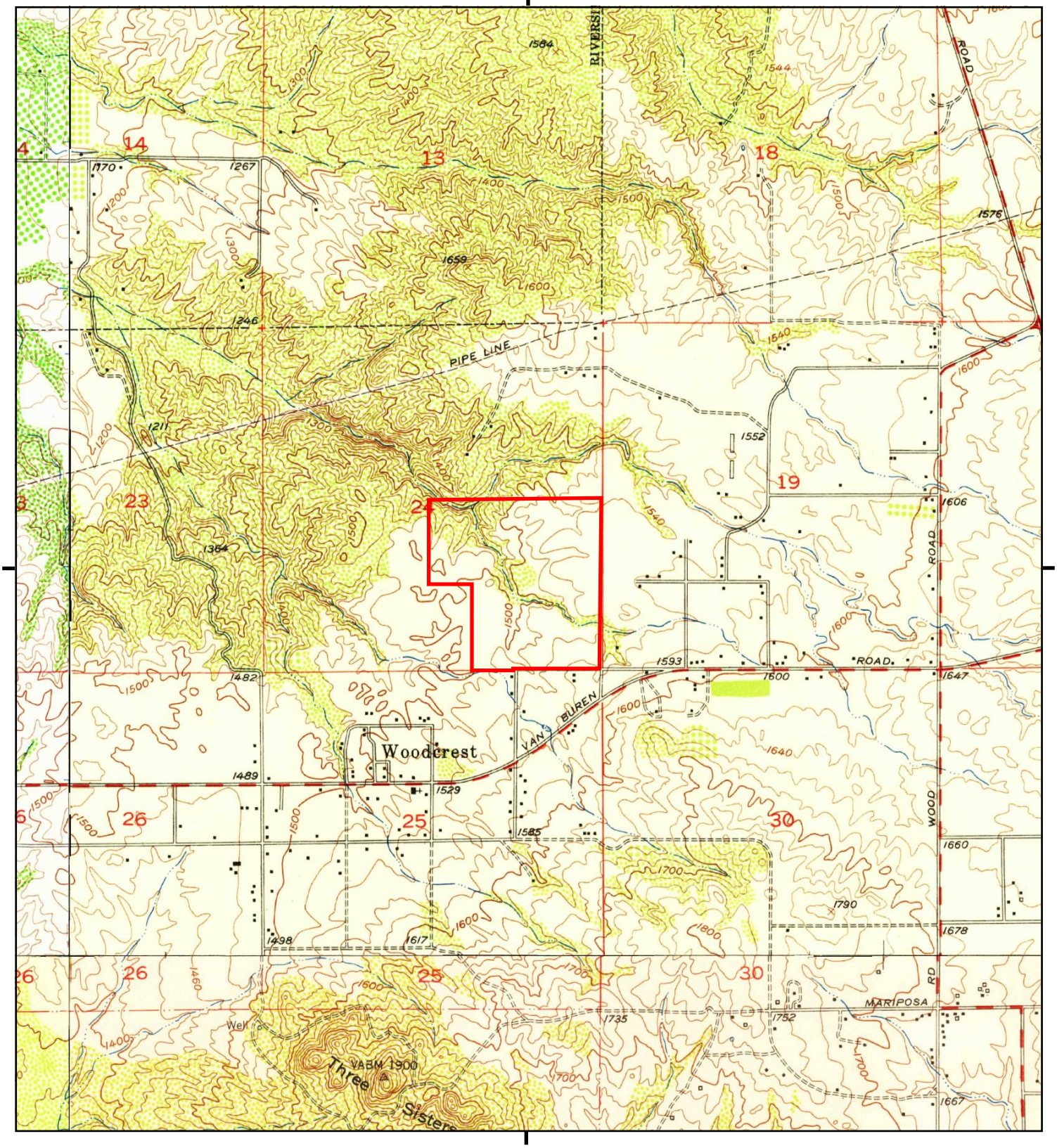
0 Miles 0.25 0.5 1 1.5



TP, Riverside East, 1967, 7.5-minute
SE, Steele Peak, 1967, 7.5-minute
SW, Lake Mathews, 1967, 7.5-minute
NW, Riverside West, 1967, 7.5-minute

SITE NAME: APN 245-300-001 and -004
ADDRESS: 15701 CHICAGO AVE
RIVERSIDE, CA 92508
CLIENT: Geotek

N



T□ □r□□□r□in□□d□□in□r□ □i□n r□□ □□□
□□□□□in□ □ □□ □□□□□□□□□

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

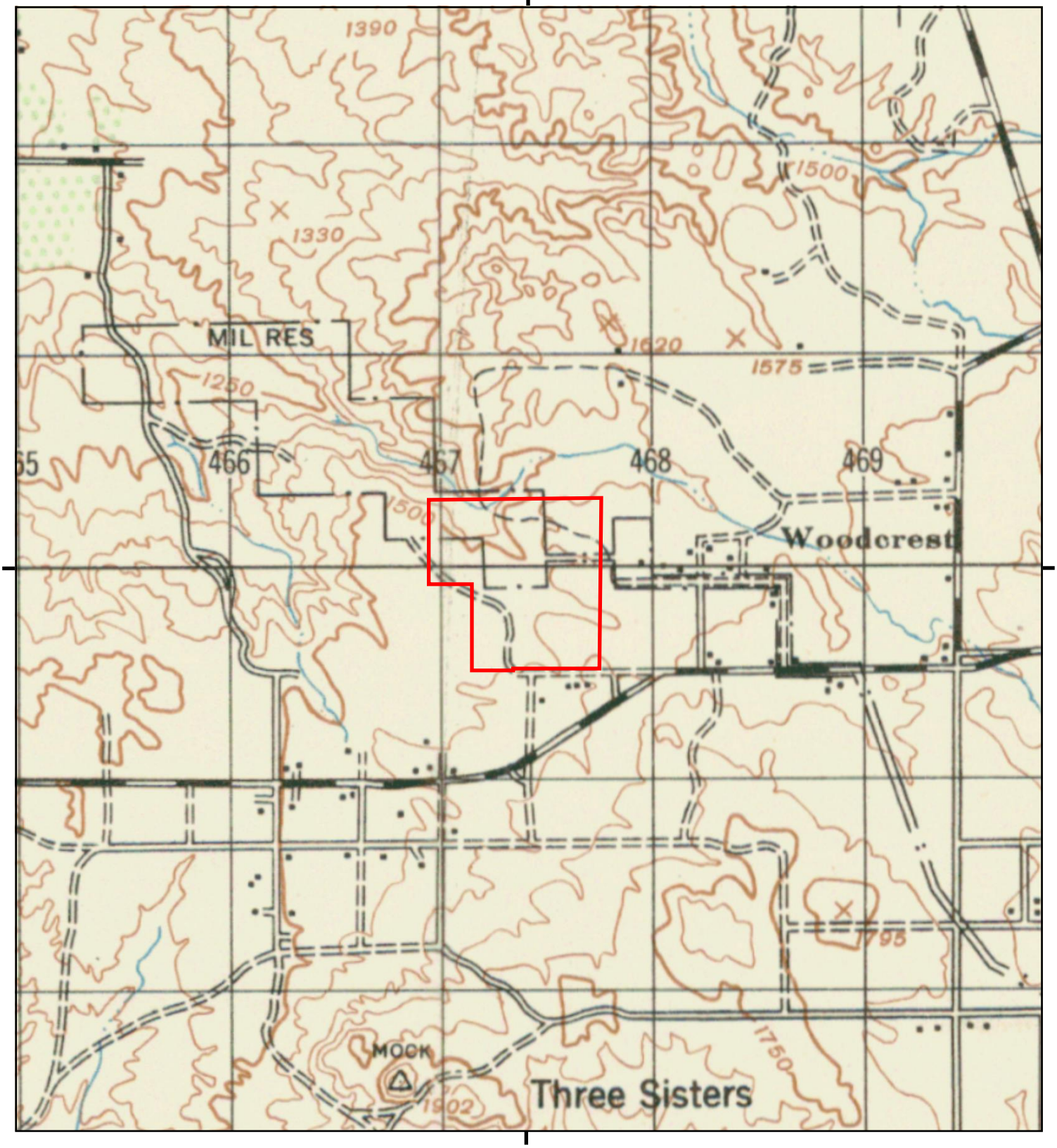
TP, Riverside East, 1953, 7.5-minute
SE, Steele Peak, 1953, 7.5-minute
SW, Lake Mathews, 1953, 7.5-minute
NW, Riverside West, 1953, 7.5-minute

□ITE NAME□ APN 245-300-001 and -004
ADDRE□□□ 15701 CHICAGO AVE
RIVERSIDE, CA 92508
□□IENT□ Geotek

N

Historical Topo Map

1947



T□i□r□□□r□in□□□d□□in□□r□ □□i□n □r□□ □□□
□□□□□□in□ □ □□ □□□□□□□□□□

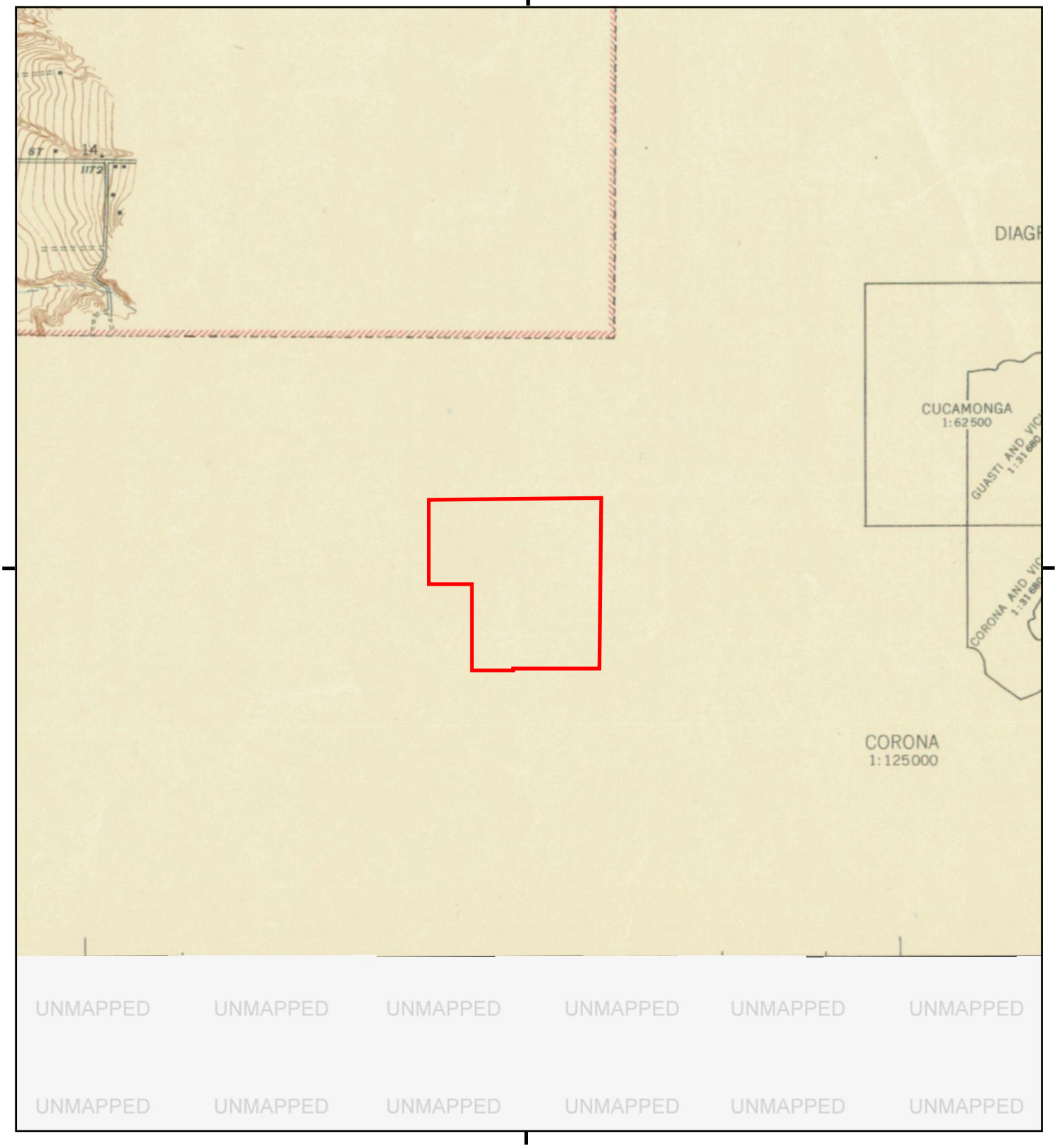
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, RIVERSIDE, 1947, 15-minute

□ITE NAME□ APN 245-300-001 and -004
ADDRE□□□ 15701 CHICAGO AVE
RIVERSIDE, CA 92508
□□IENT□ Geotek

N



T□i□r□□□r□in□□d□□in□r□ □i□n r□□ □□□
□□□□in□ □ □□ □□□□□□□□

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

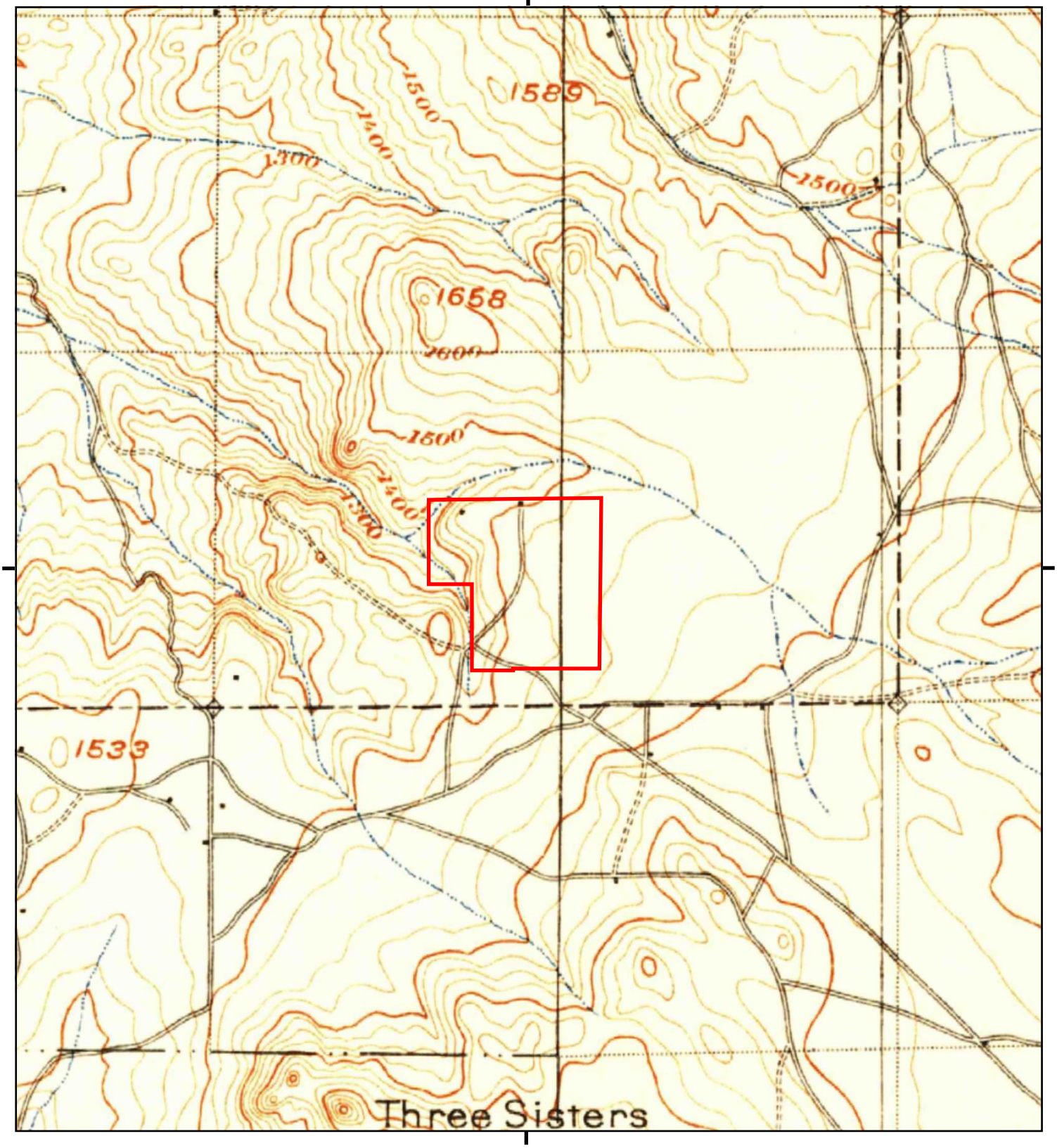
TP, RIVERSIDE VICINITY, 1942, 7.5-minute

□ITE NAME□ APN 245-300-001 and -004
ADDRE□□□ 15701 CHICAGO AVE
RIVERSIDE, CA 92508
□□IENT□ Geotek

N

Historical Topo Map

1901



T□i□r□□□r□in□□□d□□in□□r□ □□i□n □r□□ □□□
□□□□□□in□ □ □□ □□□□□□□□□□

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Riverside, 1901, 15-minute

□ITE NAME□ APN 245-300-001 and -004
ADDRE□□□ 15701 CHICAGO AVE
RIVERSIDE, CA 92508
□□IENT□ Geotek

N

7981882 - 4 □□□□ 15

APPENDIX C

QUESTIONNAIRE(S) AND SUBJECT PROPERTY DOCUMENTS FROM OTHER SOURCES

USER QUESTIONNAIRE

INTRODUCTION

In order to qualify for one of the *Landowner Liability Protections* offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2002, the *user* must provide the following information (if available) to the *environmental professional.* Failure to provide this information could result in a determination that "*all appropriate inquiry*" is not complete.

(1) Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?

CIRCLE YES *or* NO

If yes, please explain in detail.

(2) Are you aware of any Act Use Limitations (AUL), such as *engineering controls*, land use restrictions or *institutional controls* that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law?

YES *or* NO

If yes, please explain.

(3) As the *user* of this Environmental Site Assessment (ESA) do you have any specialized knowledge or familiarity related to the *property* or nearby properties? For example, are you involved in the same line of business as the current or former *occupants* of the *property* or its neighboring *property,* so that you may have specific knowledge of the chemicals and processes used by this type of business?

YES *or* NO

If yes, please explain.

(4) Does the purchase price being paid for this *property* reasonably reflect the fair market value of the *property*?

YES *or* NO

If you believe that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property?

YES *or* NO

If yes, please explain.

(5) Are you aware of commonly known or *reasonably* ascertainable information that would help the *environment professional* to identify conditions pinpointing releases or threaten releases of hazardous materials and/ or chemicals? For example, as user,

(a.) Do you know of any past uses of the *property?* YES or NO

(b.) Do you know of specific chemicals that are present or once were present at the *property*? YES or NO

(c.) Do you know of any chemical spills or any other chemical releases that have taken place at the *property?* YES or NO

(d.) Do you know of any environmental cleanups that have taken place at the *property*? YES *or* NO

If any yes, please explain.

(6) As the user of this Environmental Site Assessment (ESA), based on your knowledge and experience related to the *property* are there any *obvious* indicators that point to the presence or likely presence of contamination at the *property*?

YES *or* NO

If yes, please explain.

Completed By Michael Torres VP Land Aquisition/Development
Print Name

Michael Torres
Signature

5.20.25
Date

PROPERTY OWNER QUESTIONNAIRE

To the best of your actual knowledge and in good faith, please complete the following property questionnaire.

PROPERTY INFORMATION

Property/Site Name: ARROYO VISTA
Property Street Address(es): 15701 CHICAGO AVE
Property City, State, Zip: RIVERSIDE COUNTY CA

PROPERTY LAND USE DESCRIPTION

Area of Property (square feet or acres) 139 ACRES
Assessor Parcel Number(s): 245-300-001, 245-300-004
Additional Street Addresses used at Property (current or past) —
Description of Property and Improvements (number of buildings, date(s) of construction, type of buildings, former structures no longer on property): ONE RESIDENTIAL STRUCTURE NO KNOWN DATE

UTILITY SERVICES (list suppliers/providers/servicers)

Electric: UNKNOWN
Natural Gas
Propane: "
Water: UNKNOWN
Sewer: "
Trash Removal: "

CURRENT/PRIOR PROPERTY OWNERSHIP AND USE

How long have you owned the property? 1991
Describe the property usage during your ownership: AGRICULTURE ORCHARD NOTE: ORCHARD REMOVED 10 YEARS AGO
Who owned the property before you and for how long? UNKNOWN
Describe the property usage prior to your ownership: UNKNOWN

ADJOINING PROPERTY LAND USE DESCRIPTION

North Land Use: UNKNOWN
South Land Use: UNKNOWN
East Land Use: "
West Land Use: "

Your Name: MICHAEL TORRES **Firm:** TLC RIVERSIDE CHICAGO LLC

Signature: **Date:** 5.20.25

PROPERTY OWNER QUESTIONNAIRE

No.	Question	Please indicate your response to each question. ("Unk" indicates a response of "unknown")			
		Yes	No	Unk	**Please explain each affirmative or unknown answer in the space provided.**
1a	Is the *property* used for an industrial use?		/		
1b	Is any *adjoining property* used for an industrial use?		/		
2a	Do you observe evidence or do you have any prior knowledge that the *property* has been used for an industrial use in the past?		/		
2b	Did you observe evidence or do you have any prior knowledge that any *adjoining property* has been used for an industrial use in the past.		/		
3a	Is the *property* used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)?		/		
3b	Is any *adjoining property* used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)?		/		
4a	Did you observe evidence or do you have any knowledge that the *property* has been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)?		/		
4b	Did you observe evidence or do you have any prior knowledge that any *adjoining property* has been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)?		/		

PROPERTY OWNER QUESTIONNAIRE

No.	Question	Please indicate your response to each question. ("Unk" indicates a response of "unknown")			
		Yes	No	Unk	**Please explain each affirmative or unknown answer in the space provided.**
5a	Are there currently any damage or discarded automotive or industrial batteries, pesticides, paints, or other chemicals in individual containers of >5 gal (19L.) in volume or 50 gal (190 L.) in the aggregated, stored on or used at the *property* or at the facility?		/		
5b	Did you observe evidence or do you have any prior knowledge that there have been previously any damaged or discarded automotive or industrial batteries, or pesticides, paints, or other chemicals in individual containers of >5 gal (19 L.) in volume or 50 gal (190 L.) in the aggregated, stored on or used at the *property* or at the facility?		/		
6a	Are there currently any industrial *drums* (typically 55-gal (208 L.)) or sacks of chemicals located on the property or at the facility?		/		
6b	Did you observe evidence or do you have prior knowledge that there have been previously any industrial *drums*(typically 55 gal (208 L.)) or sacks of chemicals on located on the property of at the facility?		/		
7a	Did you observe evidence or do you have prior knowledge that *fill dirt* that has been brought onto the property that originated from a contaminated site?		/		
7b	Did you observe evidence or do you have prior knowledge that *fill dirt* that has been brought onto the property that is of an unknown origin?		/		
8a	Are there currently *pits, ponds, or lagoons* located on the *property* in connection with waste treatment or waste disposal?		/		
8b	Did you observe evidence or do you have prior knowledge that there have been previously, any *pits, ponds, or lagoons* located on the *property* in connection with waste treatment or waste disposal?		/		
9a	Is there currently any stained soil on the *property*?		/		
9b	Did you observe evidence or do you have prior knowledge that there has been previously, any stained soil on the *property*?		/		

PROPERTY OWNER QUESTIONNAIRE

No.	Question	Please indicate your response to each question. ("Unk" indicates a response of "unknown")			
		Yes	No	Unk	**Please explain each affirmative or unknown answer in the space provided.**
10a	Are there any currently any registered or unregistered storage tanks (above or underground) located on the *property*?		✓		
10b	Did you observe evidence or do you have prior knowledge that there have been previously, any registered or unregistered storage tanks (above or underground) located on the *property*?		✓		
11a	Are there currently any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the *property* or adjacent to any structure located on the *property*?		✓		
11b	Did you observe evidence or do you have prior knowledge that there have been previously, any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the *property* or adjacent to any structure located on the *property*?		✓		
12a	Is there currently evidence of leaks, spills or staining by substances other than water, or foul odors, associated with any flooring, drains, walls, ceilings, or exposed grounds on the property?		✓		
12b	Did you observe evidence or do you have any prior knowledge that there have been previously any leaks, spills, or staining by substances other than water, or foul odors, associated with any flooring, drains, walls, ceilings, or exposed grounds on the property?		✓		
13a	If the property is served by a private well or non-public water system, is there evidence or do you have prior knowledge that contaminants have been identified in the well or system of that exceed guidelines applicable to the water system?		✓		
13b	If the property is served by a private well or non-public system, is there evidence or do you have prior knowledge that the well has been designated a contaminated by any government environmental/health agency?		✓		

PROPERTY OWNER QUESTIONNAIRE

No.	Question	Please indicate your response to each question. ("Unk" indicates a response of "unknown")			
		Yes	No	Unk	**Please explain each affirmative or unknown answer in the space provided.**
14	Does the *owner* or *occupants* of the *property* have any knowledge of *environmental liens* or governmental notification relating to past or recurrent violations of environmental laws with respect to the *property* or any facility located on the *property*?		✓		
15a	Has the *owner* or *occupant* of the *property* been informed of the past existence of *hazardous substances* or *petroleum products* with respect to the *property* or any facility located on the *property*?		✓		
15b	Has the *owner* or *occupant* of the *property* been informed of the current existence of *hazardous substances* or *petroleum products* with respect to the *property* or any facility located on the *property*?		✓		
15c	Has the *owner* or *occupant* of the *property* been informed of the past existence of environmental violations with respect to the *property* or any facility located on the *property*?		✓		
15d	Has the *owner* or *occupant* of the *property* been informed of the current existence of environmental violations with respect to the *property* or any facility located on the *property*?		✓		
16	Does the *owner* or *occupant* of the *property* have any knowledge of any *environmental site assessments* of the *property* or facility that indicated the presence of *hazardous substances* or *petroleum products* on, or contamination of, the *property* or recommended further assessment of the *property*?		✓		
17	Does the *owner* or *occupant* of the *property* know of any past, threatened, or pending lawsuits or administrative proceedings concerning a release or threatened release of any *hazardous substance* or *petroleum products* involving the *property* by any owner or occupant of the *property*?		✓		
18a	Does the *property* discharge waste water (not including sanitary waste or storm water) onto or adjacent to the property and/or into a storm water system?		✓		

PROPERTY OWNER QUESTIONNAIRE

No.	Question	Please indicate your response to each question. ("Unk" indicates a response of "unknown")			
		Yes	No	Unk	**Please explain each affirmative or unknown answer in the space provided.**
18b	Does the *property* discharge waste water (not including sanitary waste or storm water) onto or adjacent to the property and/or into a sanitary sewer system?		✓		
19	Did you observe or do you have any knowledge that any *hazardous substances* or *petroleum products*, unidentified waste materials, tires, automotive or industrial batteries, or any other waste materials have been dumped above grade, buried and/or burned on the *property*?		✓		
20	Is there a transformer, capacitor, or any hydraulic equipment for which there are any records indicating the presence of PCBs?		✓		
21a	Are there hydraulic elevators on the property?		✓		
21b	Have the hydraulic elevators been tested within the past twelve months?		✓		
21c	Are there available maintenance records for the hydraulic elevators?		✓		
22a	Is there a Radiology installation located on this property?		✓		
22b	Does the Radiology installation use film?		✓		
22c	Is the Radiology film disposed-of by a licensed recycler or disposal company?		✓		
23a	Is there an emergency generator located on the property?		✓		
23b	Is the emergency generator fueled from aboveground or underground tanks?		✓		
24	Is there a Hematology facility located on the property?		✓		
25a	Is bulk medical gas stored on the property?		✓		

Riverside County Parcel Report

Full Report
245300001, 245300001, 245300004

Maps, permit information and data are to be used for reference purposes only. Map features are approximate, and are not necessarily accurate to surveying or engineering standards. The County of Riverside makes no warranty or guarantee as to the content (the source is often third party), accuracy, timeliness, or completeness of any of the data provided, and assumes no legal responsibility for the information contained on this map. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user.

ASSESSOR DATA

APN	**245-300-001-7**	Owner Name(s)	NOT AVAILABLE ONLINE
Previous APN	114600226,114600228,114600229, 114600230,11, more	Mailing Address	9702 CRESTVIEW CIR, VILLA PARK CA 92861
Address	15701 CHICAGO AVE RIVERSIDE CA 92508		
Lot Size	119.39		

Legal Description

Recorded Book/Page:		Lot/Parcel:	Tract Number:
Subdivision:		Block:	

Property Characteristics

Year Constructed:	1984	Property Area (sq ft):	567 sq ft.
Stories:		Construction Type:	Wood or Light Steel (D)
Baths:		Roof Type:	
Bedrooms:		Garage Type:	Detached Garage - Single Family
			Pool: NO
			Central Cool: NO
			Central Heat: NO

APN	**245-300-001-7**	Owner Name(s)	NOT AVAILABLE ONLINE
Previous APN	114600226,114600228,114600229, 114600230,11, more	Mailing Address	9702 CRESTVIEW CIR, VILLA PARK CA 92861
Address	15701 CHICAGO AVE RIVERSIDE CA 92508		
Lot Size	119.39		

Legal Description

Recorded Book/Page:		Lot/Parcel:	Tract Number:
Subdivision:		Block:	

Property Characteristics

Year Constructed:	1984	Property Area (sq ft):	2736 sq ft.
Stories:	1	Construction Type:	Wood or Light Steel (D)
Baths:	3	Roof Type:	Tile/Slate
Bedrooms:	3	Garage Type:	
			Pool: NO
			Central Cool: YES
			Central Heat: YES

APN	**245-300-004-0**	Owner Name(s)	NOT AVAILABLE ONLINE
Previous APN	114600226,114600228,114600229, 114600230,11, more	Mailing Address	1441 RAVENSWOOD LN, RIVERSIDE CA 92506
Address			
Lot Size	19.99		

Legal Description

Recorded Book/Page:		Lot/Parcel:	Tract Number:
Subdivision:		Block:	

Property Characteristics

Year Constructed:	Property Area (sq ft):	Pool: NO
Stories:	Construction Type:	Central Cool: NO
Baths:	Roof Type:	Central Heat: NO
Bedrooms:	Garage Type:	

PARCEL DATA

City Boundary	NOT IN A CITY
City Spheres of Influence	RIVERSIDE
Elevation	1478 ft
Indian Tribal Land	NOT IN A TRIBAL LAND
March Joint Powers Authority	NOT IN THE JURISDICTION OF THE MARCH JOINT POWERS AUTHORITY
Supervisorial District	KAREN SPIEGEL, DISTRICT 2
Thomas Bros. Map Page/Grid	PAGE: 746, GRID: A2 PAGE: 746, GRID: A3 PAGE: 746, GRID: B2 PAGE: 746, GRID: B3
Township/Range	T3SR5W SEC 24 NE T3SR5W SEC 24 SE

PLANNING

Agricultural Preserve	NOT IN AN AGRICULTRAL PRESERVE
Airport Compatibility Zones	MARCH AIR RESERVE BASE, ZONE D
Airport Influence Areas	MARCH AIR RESERVE BASE
Area Plan (RCIP)	Lake Mathews / Woodcrest
Community Advisory Councils	WOODCREST MAC
Community Facilities Districts	NOT IN A COMMUNITY FACILITY DISTRICT
General Plan Policy Areas	NOT IN A GENERAL PLAN POLICY AREA
General Plan Policy Overlays	NOT IN A GENERAL PLAN POLICY OVERLAY
Historic Preservation Districts	NOT IN A HISTORIC PRESERVATION DISTRICT
Land Use Designations	RC-VLDR

Residential Permit Stats

Expected Units:			
BRS Permit Units:	Final	Issued	Active
Current Permits:			
Cumulative Total:			
% of Expected:			

Environmental Justice Communities	NOT IN AN ENVIRONMENTAL JUSTICE COMMUNITY
Specific Plans	NOT IN A SPECIFIC PLAN
Zoning Classifications (ORD. 348)	Contact the Planning Dept at https://planning.rctlma.org/Contact-Us for more information A-1-10
Zoning Overlays	NOT IN A ZONING OVERLAY
Zoning Districts and Zoning Areas	WOODCREST DIST

ENVIRONMENTAL	
Coachella Valley Multi-Species Habitat Conservation Plan (CVMSHCP) Plan Area	NOT IN A COACHELLA VALLEY MSHCP FEE AREA
CVMSHCP Conservation Area	NOT COACHELLA VALLEY CONSERVATION AREA
CVMSHCP Fluvial Sand Transport Special Provision Areas	NOT IN A FLUVIAL SAND TRANSPORT SPECIAL PROVISION AREA
Habitat Acquisition and Negotiation Strategy/Expedited Review Process	NOT IN A HANS/ERP PROJECT
Vegetation (2005)	AGRICULTURE MAPPING UNIT BRITTLEBUSH - CALIFORNIA BUCKWHEAT MAPPING UNIT CALIFORNIA ANNUAL GRASSLAND ALLIANCE CALIFORNIA SAGEBRUSH - (CALIFORNIA BUCKWHEAT) - ANNUAL GRASS-HERB MAPPING UNIT CALIFORNIA SYCAMORE ALLIANCE URBAN OR DEVELOPMENT MAPPING UNIT WILLOW MAPPING UNIT
Western Riverside County Multi-Species Habitat Conservation Plan (WRMSHCP) Plan Area	WESTERN RIVERSIDE COUNTY
WRMSHCP Cell Group	NOT IN A CELL GROUP
WRMSHCP Cell Number	NOT IN A CELL NUMBER

FIRE	
Fire Hazard Classification (Ord. 787)	VERY HIGH
Fire Responsibility Area	LRA

DEVELOPMENT FEES	
CVMSHCP Fee Area (Ord 875)	NOT IN A COACHELLA VALLEY MSHCP FEE AREA
Development Agreements	NOT IN A DEVELOPMENT AGREEMENT
Development Impact Fee Area (Ord. 659)	LAKE MATHEWS, AREA 7
Eastern Transportation Uniform Mitigation Fee (TUMF) (Ord. 673)	NOT IN THE EASTERN TUMF FEE AREA
Road & Bridge Benefit District	NOT IN A ROAD BRIDGE BENEFIT DISTRICT
Stephen's Kangaroo Rat Fee Area (Ord. 663.10)	IN OR PARTIALLY WITHIN THE SKR FEE AREA
Western Transportation Uniform Mitigation Fee (TUMF) (Ord. 824)	IN OR PARTIALLY WITHIN A TUMF FEE AREA
WRMSHCP Fee Area (Ord. 810)	WESTERN RIVERSIDE COUNTY

TRANSPORTATION	
Circulation Element Ultimate Right-of-Way	NOT IN A CIRCULATION ELEMENT RIGHT-OF-WAY
Community and Environmental Transportation Acceptability Process Corridors	NOT IN A CETAP CORRIDOR
Road Book Page	53

Transportation Agreements	NOT IN A TRANS AGREEMENT

HYDROLOGY

Flood Control District	RIVERSIDE COUNTY FLOOD CONTROL DISTRICT
Flood Plan Review	*MAYBE REQUIRED, CONTACT RIVERSIDE COUNTY FLOOD CONTROL TO VERIFY|OUTSIDE FLOODPLAIN, REVIEW NOT REQUIRED
Water District	WESTERN MUNICIPAL WATER DISTRICT
Watershed	SANTA ANA RIVER

GEOLOGIC

Fault Zone	NOT IN A FAULT ZONE
Faults	NOT IN A FAULT LINE
Liquefaction Potential	NOT IN A LIQUEFACTION AREA
Paleontological Sensitivity	LOW POTENTIAL (L): FOLLOWING A LITERATURE SEARCH, RECORDS CHECK AND A FIELD SURVEY, AREAS MAY BE DETERMINED BY A QUALIFIED VERTEBRATE PALEONTOLOGIST AS HAVING LOW POTENTIAL FOR CONTAINING SIGNIFICANT PALEONTOLOGICAL RESOURCES SUBJECT TO ADVERSE IMPACTS.
Subsidence	NOT IN A SUBSIDENCE AREA

MISCELLANEOUS

2010 Census Tract	420.05
Communities	WOODCREST
Farmland	LOCAL IMPORTANCE OTHER LANDS PRIME FARMLAND STATEWIDE IMPORTANCE UNIQUE FARMLAND URBAN-BUILT UP LAND
Lighting (Ord. 655)	NOT IN A PALOMAR OBSERVATORY ZONE
School District	RIVERSIDE UNIFIED
Special Notes	NO SPECIAL NOTES
Tax Rate Areas	088007 - CO FREE LIBRARY 088007 - CO STRUCTURE FIRE PROTECTION 088007 - CO WASTE RESOURCE MGMT DIST 088007 - CSA 152 088007 - FLOOD CONTROL ADMIN 088007 - FLOOD CONTROL ZN 2 088007 - GENERAL 088007 - GENERAL PURPOSE 088007 - MWD WEST 1302999 088007 - NW MOSQUITO & VECTOR CNTL DIST 088007 - RIV CO REGIONAL PARK & OPEN SP 088007 - RIV CORONA RESOURCE CONSERVATION 088007 - RIVERSIDE CITY COMMUNITY COLLEGE 088007 - RIVERSIDE CO OFC OF EDUCATION 088007 - RIVERSIDE UNIFIED SCHOOL 088007 - SO. CALIF,JT(19,30,33,36,37,56) 088007 - WESTERN MUNICIPAL WATER 088007 - WMWD IMP DIST 1
Vapor Intrusion Mitigation Systems	NOT IN A VAPOR INTRUSION MITIGATION SYSTEM

DEPARTMENT OF ENVIRONMENTAL HEALTH PERMITS

Septic Systems

Record Id	Application Date	Plan Check Approved Date	Final Inspection Date	Approved Date
ON0003062	27 Jul 2011			

Well Water

Record Id	PE	Permit Paid Date	Permit Approved Date	Well Finaled Date
N/A	N/A	N/A	N/A	N/A

PLUS PERMITS & CASES

Administration Cases

Case	Case Description	Status
MT071881	PM19922 LOT 4	PAID

Building and Safety Cases

Case	Case Description	Status
047284	SPECIAL INSP; FIRE DAMAGED SLAB	FINAL
053662	REPAIR DWELLING/SPEC INSP#115831 DWELL R-3 WOOD 1825 58400	FINAL
160142	DWLG ONLY DWELLX1 R-3 WOOD 3262 139940 AIR R-3 R 3262 7829 PRCHX1 PR V-N 1248 12605	FINAL
160143	DETACHED GARAGE PRIGRX1 M-1 WOOD 861 12140	FINAL
197000	DWLG ONLY DWELL R-3 WOOD 3262 68176 AIR R-3 R 3262 5872 PRCH PR V-N 1174 4579	FINAL
197001		FINAL
BFE980011	AG REGISTRATION - POLE BARN	EXPIRED
BGR060820	AS BUILT ROUGH GRADING	FINAL
BNR110069	CITRUS PACKING,TRACTOR STORAGE, CARETAKER RESIDENC BLDG IS 6250 SQFT AND ATTACHED CANOPIES 6250 SQFT	WITHDRAWN
BRS110160	DWLG AND ATT GAR/STORAGE	CANCELED
BZ94510	DWELLING AND ATTACHED GARAGE	FINAL
BZ94511	MACHINERY STORAGE SHED	FINAL
BZ99976	4'8" BLOCK WALL	FINAL

Code Cases

Case	Case Description	Status
CV1008280		Closed - Field
CV1100413		Closed - Field
CV1700008		Closed - Field
CVCR200004		Closed in Compliance
CVCR210139		Closed Unfounded

Fire Cases

Case	Case Description	Status
FHAZ1901396		Closed - Verified Non-Billable
FHAZ9408664		Closed - Verified Non-Billable

Planning Cases

Case	Case Description	Status

AG00864	DIMINISHMENT - WOODCREST #1 MAP #20	APPROVED
CEQ220090	CEQA ANALYSIS FOR GPA220009, CZ200031, TTM38510.	ABANDONED
CEQ230001	CEQA EIR FOR CC010793 (GPA220009, CZ200031, TTM38510) (NOTE: THIS PLAN IS A CEQ01 - GRADING PERMIT) PLAN TYPE BUT IS BEING USED BECAUSE IT CONTAINS A FULL AND COMPLETE "PLAN REVIEW" WF STEP, WHEREAS THE ORIGINAL CEQ PLAN (CEQ220090) DOES NOT.)	DAC REVIEW
CFG02257	FOR EA38829 AND CZ06729	PAID
CFG06187	CFW FEE ($50.00) FOR EA42807 (CZ07876, TR36897 - WITHDRAWN)	PAID
CZ06726	CHANGE ZONE FROM A-1-10 TO R-A	ABANDONED
CZ07876	CHANGE ZONE FROM A-1-10 TO R-1-1/2	WITHDRAWN
CZ2200031	CHANGE OF ZONE FOR THE SUBJECT PROPERTY (140.8 GROSS ACRES) FROM LIGHT AGRICULTURE (A-1-10) TO ONE-FAMILY DWELLINGS (R-1-10,000) [10,000 SQ. FT. MINIMUM SIZED LOTS].	DAC REVIEW
EA38829	EA FOR CHANGE OF ZONE 06726 FROM A-1-10 TO R-A	ABANDONED
EA42807	EA FOR TR36897	WITHDRAWN
GEO02453	GEO REPORT FOR TR36897	WITHDRAWN
GEO230013	GEO REPORT REVIEW FOR GPA220009, CZ2200031, TTM38510.	ASSIGNED
GPA220009	GENERAL PLAN AMENDMENT FOR THE SUBJECT PROPERTY (140.8 GROSS ACRES) TO MODIFY THE LAND USE DESIGNATION FROM RC-VLDR (1 D.U./AC.) TO RURAL COMMUNITY-LOW DENSITY RESIDENTIAL (RC-LDR) (2 D.U./AC.), WHICH WOULD RESULT IN AN INCREASE IN DENSITY, ALLOWING THE MAXIMUM NUMBER OF RESIDENTIAL UNITS TO INCREASE BY 141 UNITS, FROM 140 TO 281 UNITS.	DAC REVIEW
PAR210156	THIS IS A REQUEST FOR A PRE-APPLICATION REVIEW (PAR) PROPOSING TO DEVELOP 273 LOTS ON APPROXIMATELY 140 ACRES.	DAC REVIEW
PDA04930	DRAFT CULTURAL RESOURCES ASSESS. & PALEO REVIEW	APPLIED
PDB06191	WESTERN RIVERSIDE COUNTY MSHCP CONSISTENCY ASSESSMENT DATE OF SURVEY: DATE OF REPORT: MAY 28, 2015 BY: SCOTT CRAWFORD	APPROVED
PDB06192	PRELIMINARY DELINEATION OF JURISDICTIONAL WATERS AND WETLANDS DATE OF SURVEY: DATE OF REPORT: 5/27/15 BY; BILLYE BRECKENRIDGE	APPROVED
PDB230044	DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS REPORT FOR THE PROPOSED WOODCREST PROJECT (PROJECT SITE OR SITE) TTM38510.	APPROVED
PDB230045	HABITAT ASSESSMENT AND MSHCP CONSISTENCY ANALYSIS - GPA220009, CZ2200031; TTM38510	PEND CORRECTION
TR36897	TENT TR MAP WITH 103 LOTS 1/2 AC MIN AND OPEN SPAC	WITHDRAWN
TTM38510	SCHEDULE "A" SUBDIVISION OF 140.8-GROSS ACRES INTO 230 RESIDENTIAL LOTS WITH AN OVERALL PROJECT DENSITY OF 1.6 D.U./AC., RANGING FROM 10,890 SQUARE FEET (SQ. FT.) TO MORE THAN 1 ACRE IN SIZE, AS WELL AS APPROXIMATELY 27 ACRES OF OPEN SPACE.	DAC REVIEW

Survey Cases

Case	Case Description	Status
COC06981	CERTIFY LOT AS A LEGAL LOTCERTIFY LAND DIVISION	APPROVED
LLA05106	ADJUST LINES BETWEEN 245-260-034/035&036	APPROVED
MAP31498		ISSUED
MAP35825		ISSUED
MAP35826		ISSUED
MAP36897		ISSUED

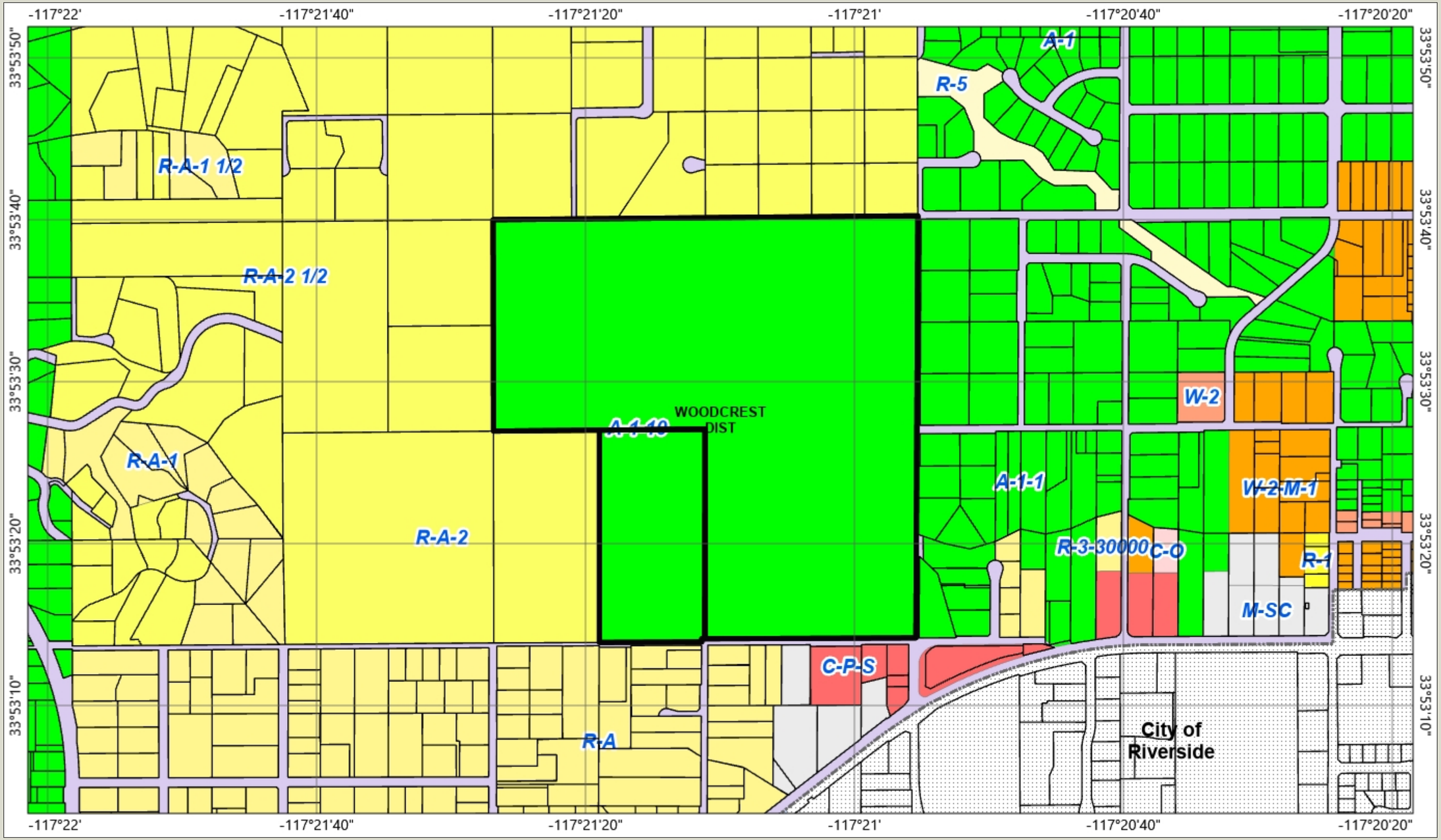
MAP38510	TRACT MAP IN THE UNINCORPORATED	APPLIED

Transportation Cases

Case	Case Description	Status
N/A	N/A	N/A

Riverside County - Map My County

Zoning Map





Legend

- County Boundary
- City Boundaries
- Parcels, Public
- City Boundaries
- Zoning
  - A-1
  - A-1-1
  - A-1-1 1/2
  - A-1-1/2
  - A-1-10
  - A-1-15
  - A-1-2
  - A-1-2 1/2
  - A-1-2 1/4
  - A-1-20
  - A-1-30000
  - A-1-4
  - A-1-40
  - A-1-5
  - A-2
  - A-2-1
  - A-2-10
  - A-2-2
  - A-2-2 1/2
  - A-2-20
  - A-2-5
  - A-D
  - A-P
  - A-P-10
  - A-P-2 1/2
  - A-P-5
  - C-1/C-P
  - C-C/V
  - C-O
  - C-P-S
  - C-P-S-2 1/2
  - C-R
  - C-T
  - C/V
  - C/V-10
  - C/V-20

0 752 1,505 Feet

IMPORTANT Maps and data are to be used for reference purposes only. Map features are approximate, and are not necessarily accurate to surveying or engineering standards. The County of Riverside makes no warranty or guarantee as to the content (the source is often third party), accuracy, timeliness, or completeness of any of the data provided, and assumes no legal responsibility for the information contained on this map. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user.

REPORT PRINTED ON... 5/7/2025 12:27:10 PM

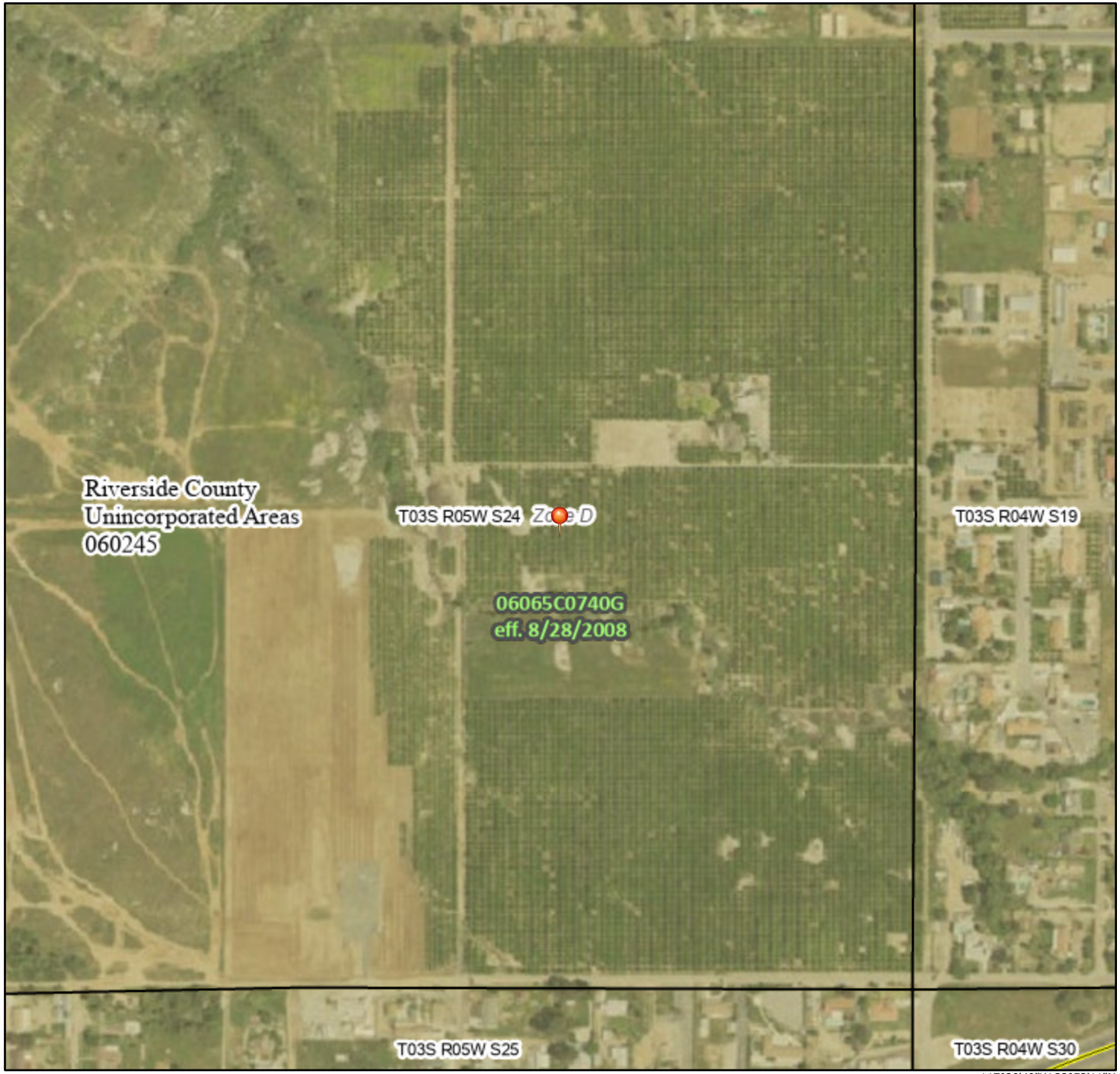
© Riverside County GIS

Notes

National Flood Hazard Layer FIRMette

FEMA

117°21'26"W 33°53'41"N



117°20'49"W 33°53'11"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 5/7/2025 at 5:45 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

APPENDIX D

PHOTOGRAPHS

PHOTOGRAPHS
APNs 245-300-001 and -004
Woodcrest Area of Riverside County, California



1. Showing connection for irrigation system in southwest boundary of Subject Property.



2. Showing pole-mounted transformer in southwest boundary of Subject Property.

PHOTOGRAPHS
APNs 245-300-001 and -004
Woodcrest Area of Riverside County, California



3. View north from southwest portion of Subject Property.



4. Showing pole-mounted transformer in south central boundary of Subject Property. Showing adjoining commercial property.

PHOTOGRAPHS
APNs 245-300-001 and -004
Woodcrest Area of Riverside County, California



5. View southwest, along Iris Avenue from south central boundary of Subject Property. Showing residential development.



6. View southeast, along Iris Avenue from south central boundary of Subject Property. Showing residential development.

PHOTOGRAPHS
APNs 245-300-001 and -004
Woodcrest Area of Riverside County, California



7. View northwest from southeast corner of Subject Property.



8. View northeast from southeast corner of Subject Property. Showing adjoining residential development.

PHOTOGRAPHS
APNs 245-300-001 and -004
Woodcrest Area of Riverside County, California

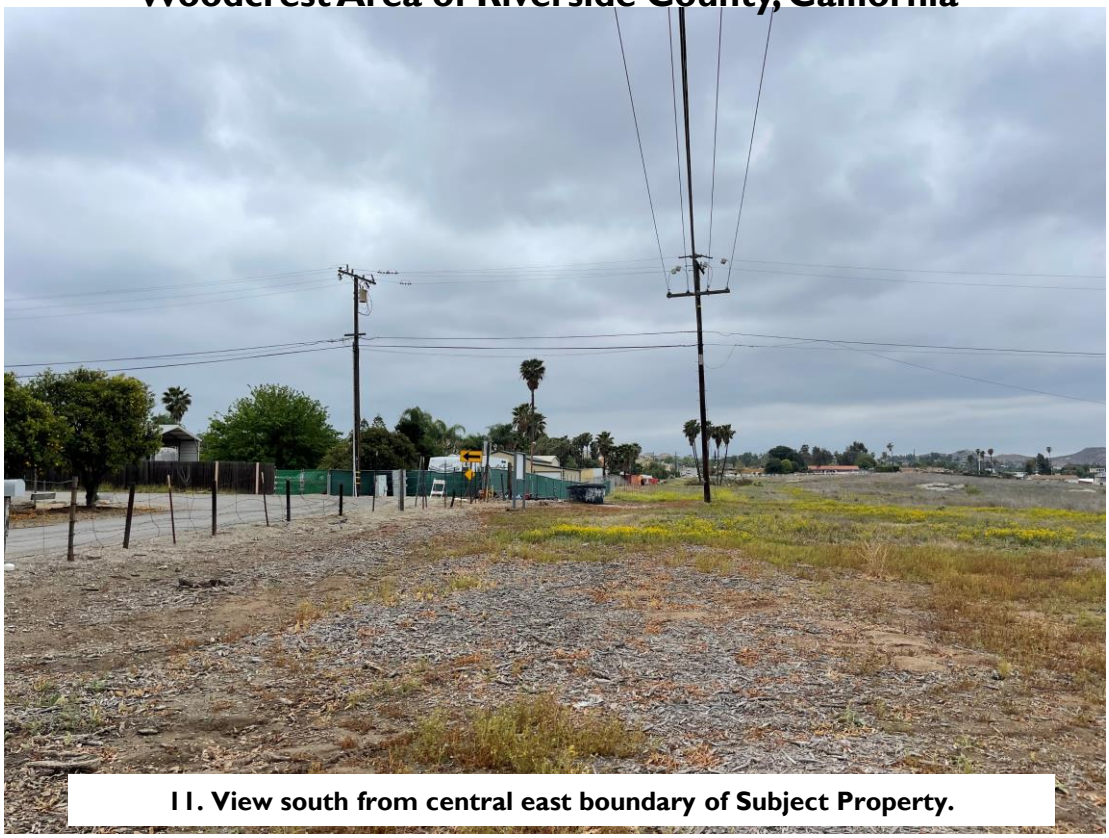


9. Showing pole-mounted transformer in southeast corner of Subject Property.



10. View north from central east boundary of Subject Property.

PHOTOGRAPHS
APNs 245-300-001 and -004
Woodcrest Area of Riverside County, California



11. View south from central east boundary of Subject Property.



12. View east from southeast portion of Subject Property.

PHOTOGRAPHS
APNs 245-300-001 and -004
Woodcrest Area of Riverside County, California



13. View southwest from southeast portion of Subject Property.



14. View east from central east portion of Subject Property.

PHOTOGRAPHS
APNs 245-300-001 and -004
Woodcrest Area of Riverside County, California



15. Showing pole-mounted transformer in central east portion of Subject Property.

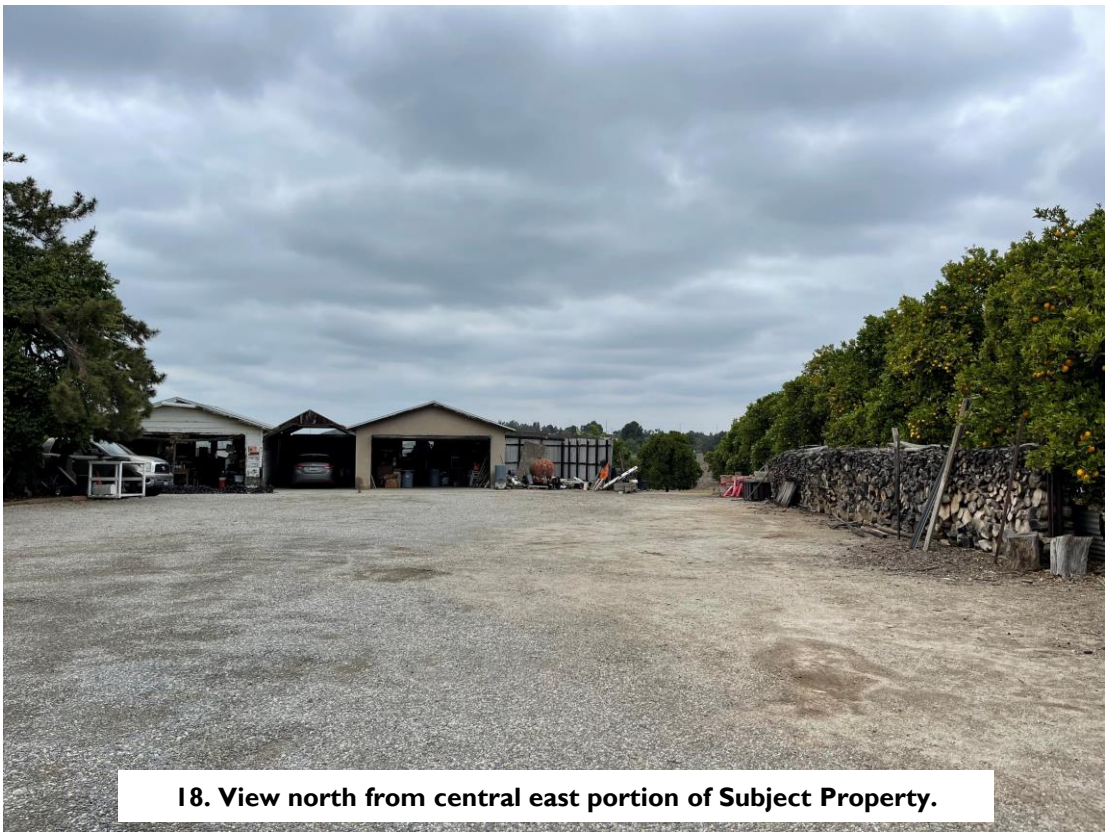


16. Showing east, showing gravel road from central east portion of Subject Property.

PHOTOGRAPHS
APNs 245-300-001 and -004
Woodcrest Area of Riverside County, California



17. View northwest, showing citrus grove from central east portion of Subject Property.



18. View north from central east portion of Subject Property.

PHOTOGRAPHS
APNs 245-300-001 and -004
Woodcrest Area of Riverside County, California



19. Showing single-family residence in central east portion of Subject Property.



20. Showing empty unmarked tank, outdoor storage and landscaping supplies in central portion of Subject Property.

PHOTOGRAPHS
APNs 245-300-001 and -004
Woodcrest Area of Riverside County, California



21. Showing detached garage structure in central east portion of Subject Property.



22. Showing agricultural equipment in shed structure and miscellaneous debris in central east portion of Subject Property.

PHOTOGRAPHS
APNs 245-300-001 and -004
Woodcrest Area of Riverside County, California



23. Showing wood debris in central east portion of Subject Property.



24. Showing rear view of garage structures and wood debris in central east portion of Subject Property.

PHOTOGRAPHS
APNs 245-300-001 and -004
Woodcrest Area of Riverside County, California



25. View west from central east portion of Subject Property.



26. View northeast from central east portion of Subject Property.

PHOTOGRAPHS
APNs 245-300-001 and -004
Woodcrest Area of Riverside County, California



27. Showing wood debris and abandoned tires in central east portion of Subject Property.

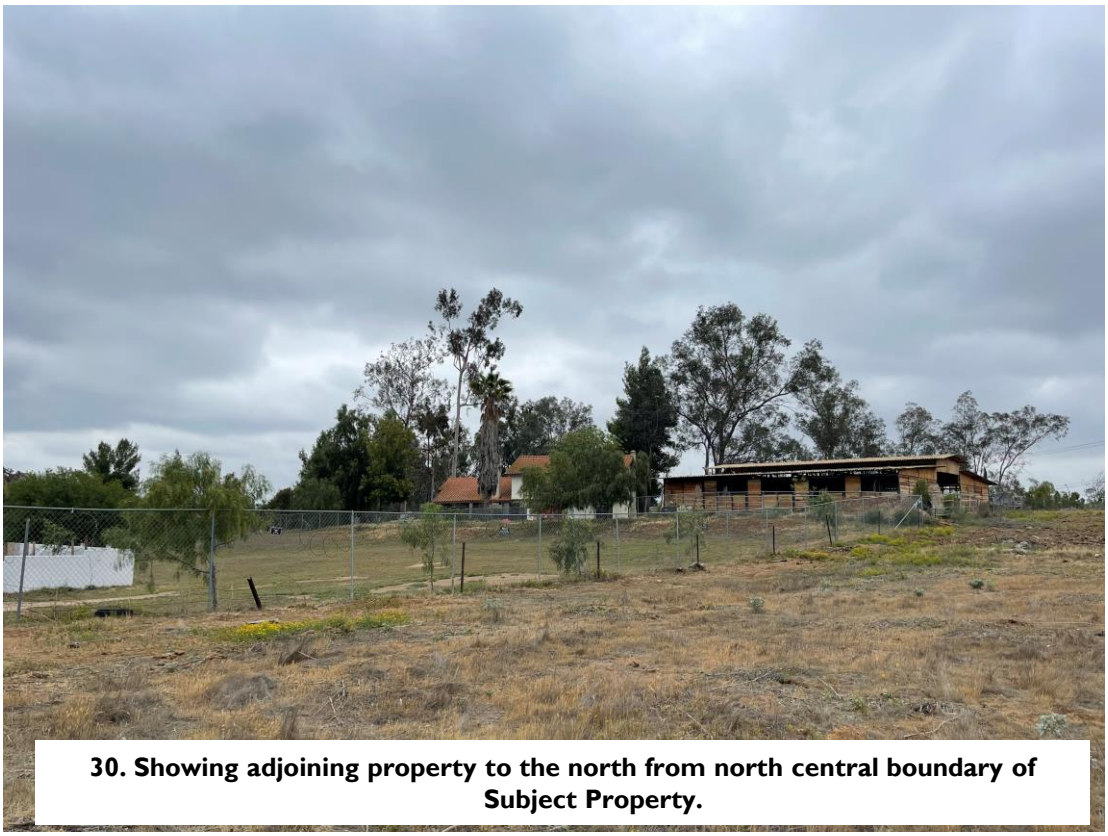


28. View southwest from northeast corner of Subject Property.

PHOTOGRAPHS
APNs 245-300-001 and -004
Woodcrest Area of Riverside County, California

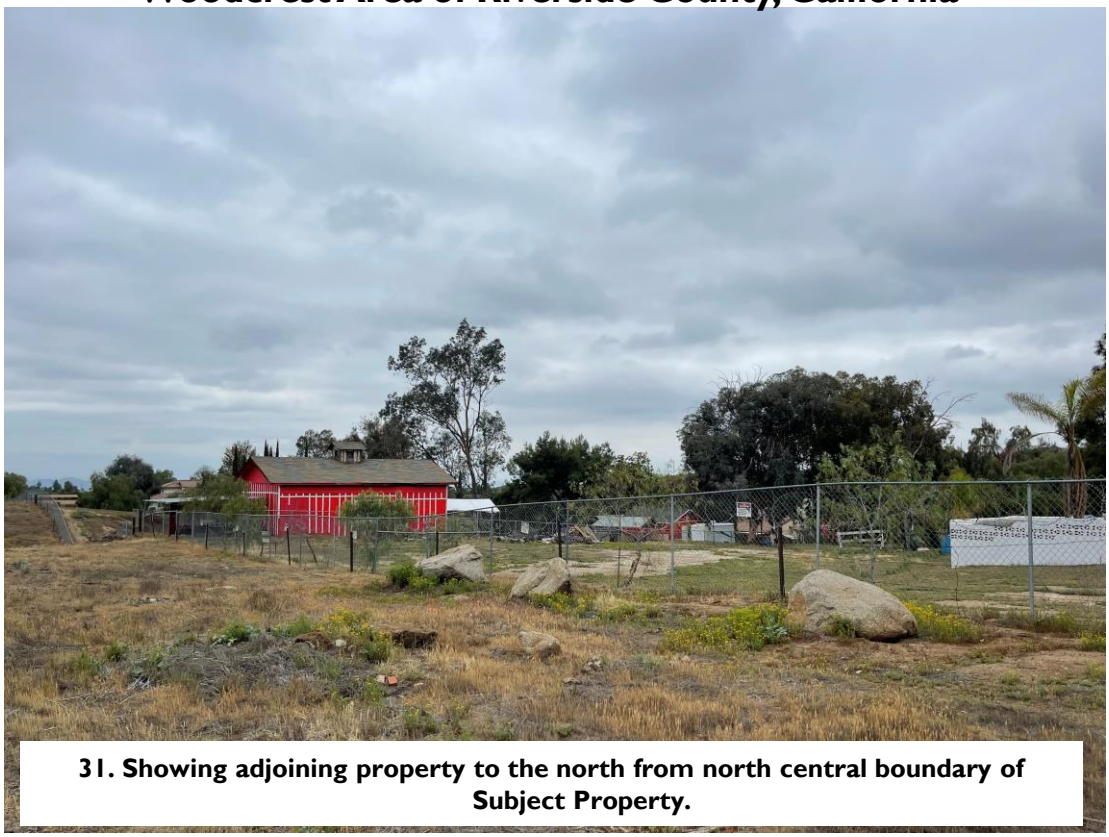


29. View south, along Chicago Avenue from northeast corner of Subject Property.



30. Showing adjoining property to the north from north central boundary of Subject Property.

PHOTOGRAPHS
APNs 245-300-001 and -004
Woodcrest Area of Riverside County, California



31. Showing adjoining property to the north from north central boundary of Subject Property.



32. View south from northwest portion of Subject Property.

PHOTOGRAPHS
APNs 245-300-001 and -004
Woodcrest Area of Riverside County, California



33. View west from northwest portion of Subject Property



34. View west, showing concrete and wood debris from central west portion of Subject Property

PHOTOGRAPHS
APNs 245-300-001 and -004
Woodcrest Area of Riverside County, California



35. Showing smudge pot lids in central portion of Subject Property.

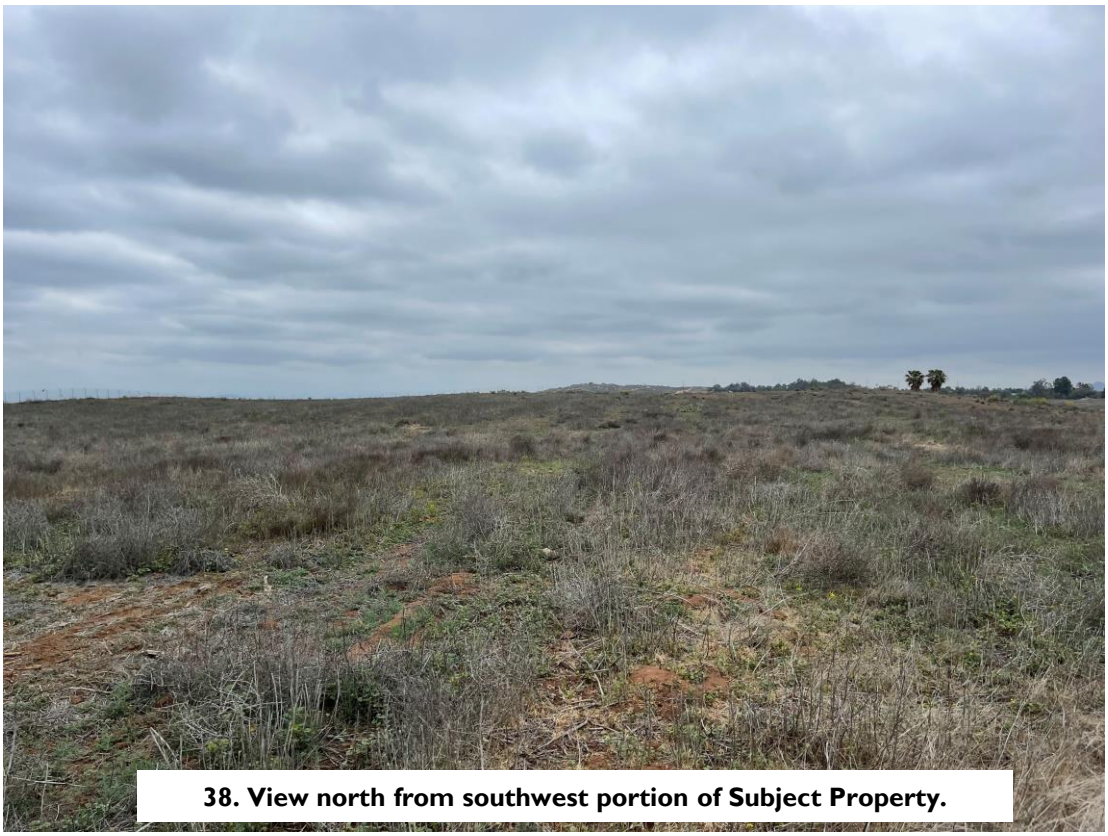


36. View east from central portion of Subject Property.

PHOTOGRAPHS
APNs 245-300-001 and -004
Woodcrest Area of Riverside County, California



37. View south from southwest portion of Subject Property.



38. View north from southwest portion of Subject Property.

APPENDIX E

ENVIRONMENTAL DATABASE REPORT

APN 245-300-001 and -004
15701 CHICAGO AVE
RIVERSIDE, CA 92508

Inquiry Number: 7981882.2s
May 08, 2025

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION	PAGE
Executive Summary	ES1
Overview Map	2
Detail Map	3
Map Findings Summary	4
Map Findings	9
Orphan Summary	264
Government Records Searched/Data Currency Tracking	GR-1

GEOCHECK ADDENDUM

Physical Setting Source Addendum	A-1
Physical Setting Source Summary	A-2
Physical Setting SSURGO Soil Map	A-5
Physical Setting Source Map	A-12
Physical Setting Source Map Findings	A-14
Physical Setting Source Records Searched	PSGR-1

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, LLC. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. This Report is provided on an "AS IS", "AS AVAILABLE" basis. **NO WARRANTY EXPRESS OR IMPLIED IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, LLC AND ITS SUBSIDIARIES, AFFILIATES AND THIRD PARTY SUPPLIERS DISCLAIM ALL WARRANTIES, OF ANY KIND OR NATURE, EXPRESS OR IMPLIED, ARISING OUT OF OR RELATED TO THIS REPORT OR ANY OF THE DATA AND INFORMATION PROVIDED IN THIS REPORT, INCLUDING WITHOUT LIMITATION, ANY WARRANTIES REGARDING ACCURACY, QUALITY, CORRECTNESS, COMPLETENESS, COMPREHENSIVENESS, SUITABILITY, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE, NON-INFRINGEMENT, MISAPPROPRIATION, OR OTHERWISE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, LLC OR ITS SUBSIDIARIES, AFFILIATES OR THIRD PARTY SUPPLIERS BE LIABLE TO ANYONE FOR ANY DIRECT, INCIDENTAL, INDIRECT, SPECIAL, CONSEQUENTIAL OR OTHER DAMAGES OF ANY TYPE OR KIND (INCLUDING BUT NOT LIMITED TO LOSS OF PROFITS, LOSS OF USE, OR LOSS OF DATA) INFORMATION PROVIDED IN THIS REPORT.** Any analyses, estimates, ratings, environmental risk levels, or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only an assessment performed by a qualified environmental professional can provide findings, opinions or conclusions regarding the environmental risk or conditions in, on or at any property.

Copyright 2025 by Environmental Data Resources, LLC. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, LLC, or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, LLC or its affiliates. All other trademarks used herein are the property of their respective owners.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E1527 - 21), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E2247 - 16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E1528 - 22) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

15701 CHICAGO AVE
RIVERSIDE, CA 92508

COORDINATES

Latitude (North):	33.8914710 - 33° 53' 29.29''
Longitude (West):	117.3523450 - 117° 21' 8.44''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	467419.6
UTM Y (Meters):	3749984.2
Elevation:	1514 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	50005833 RIVERSIDE EAST, CA
Version Date:	2022
Southeast Map:	50004756 STEELE PEAK, CA
Version Date:	2021
Southwest Map:	50004705 LAKE MATHEWS, CA
Version Date:	2021
Northwest Map:	50005834 RIVERSIDE WEST, CA
Version Date:	2022

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20200423
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
15701 CHICAGO AVE
RIVERSIDE, CA 92508

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
1	UNLIMITED ENGINEERIN	LAT/LONG_USED	HWTS	Higher	1 ft.
A2	RIVERSIDE VALERO	17945 VAN BUREN BLVD	UST	Higher	778, 0.147, SSE
A3	LAWLER'S SELF SERVIC	17945 VAN BUREN BLVD	SWEEPS UST, CA FID UST, HIST CORTESE	Higher	778, 0.147, SSE
A4	LAWLER'S SELF SERVE	17945 VAN BUREN BLVD	LUST, Cortese	Higher	778, 0.147, SSE
A5	RIVERSIDE PETROL INC	17945 VAN BUREN BLVD	RCRA NonGen / NLR, E MANIFEST	Higher	778, 0.147, SSE
A6	LAWLER'S SELF SERVE	17945 VAN BUREN BLVD	UST	Higher	778, 0.147, SSE
A7	LAWLER'S SELF SERVE	17945 VAN BUREN BLVD	LUST	Higher	778, 0.147, SSE
A8	LAWLER'S SELF SERVE	17945 VAN BUREN BLVD	UST FINDER RELEASE	Higher	778, 0.147, SSE
A9	RIVERSIDE VALERO	17945 VAN BUREN BLVD	UST FINDER	Higher	778, 0.147, SSE
A10	RIVERSIDE PETROL INC	17945 VAN BUREN BLVD	CERS HAZ WASTE, CERS TANKS, HWTS, HAZNET, CERS	Higher	778, 0.147, SSE
11	16176 PORTER AVENUE	16176 PORTER AVENUE	RCRA NonGen / NLR, E MANIFEST	Higher	970, 0.184, SSW
12	15803 RIDGEWAY AVE	15803 RIDGEWAY AVE	RCRA NonGen / NLR, E MANIFEST	Higher	1036, 0.196, ESE
13	16201 ALTA CRESTA AV	16201 ALTA CRESTA AV	RCRA NonGen / NLR, E MANIFEST	Higher	1088, 0.206, SSE
B14	RIVERSIDE CAR CLINIC	17846 VAN BUREN BLVD	CERS HAZ WASTE, HWTS, HAZNET	Higher	1130, 0.214, South
B15	RIVERSIDE CAR CLINIC	17846 VAN BUREN BLVD	RCRA NonGen / NLR, E MANIFEST	Higher	1130, 0.214, South
B16	PINNACLE CONVENIENCE	17905 VAN BUREN BLVD	UST	Higher	1237, 0.234, South
B17	ORANGE TREE FRESH FR	17905 VAN BUREN BLVD	UST FINDER	Higher	1237, 0.234, South
B18	WOODCREST 76/CIRCLE	17905 VAN BUREN BLVD	RCRA NonGen / NLR, E MANIFEST	Higher	1237, 0.234, South
B19	ARCO AM/PM MINI MART	17905 VAN BUREN BLVD	UST	Higher	1237, 0.234, South
B20	WOODCREST 76/CIRCLE	17905 VAN BUREN BLVD	CERS HAZ WASTE, CERS TANKS, HWTS, HAZNET, CERS	Higher	1237, 0.234, South
C21	G AND K PETRO INC.	17755 VAN BUREN BLVD	LUST, Cortese, HIST CORTESE, CERS	Higher	1547, 0.293, South
C22	G & K PETRO INC.	17755 VAN BUREN BLVD	UST FINDER RELEASE	Higher	1547, 0.293, South
23	WADE LANDFILL	11749 ROBERTS ROAD	SWF/LF, CERS	Higher	1932, 0.366, North
D24	LAWLER WOODCREST SER	18400 VAN BUREN BLVD	UST FINDER RELEASE	Higher	2027, 0.384, ESE
D25	LAWLERS WOODCREST SE	18400 VAN BUREN BLVD	RCRA-SQG, LUST, CERS HAZ WASTE, SWEEPS UST, CA FID	Higher	2027, 0.384, ESE
D26	LAWLER WOODCREST SER	18400 VAN BUREN BLVD	LUST, CERS	Higher	2027, 0.384, ESE
27	SE CORNER OF WASHING	17055 VAN BUREN BLVD	ENVIROSTOR, VCP, CERS HAZ WASTE, HWTS, HAZNET	Lower	3558, 0.674, SW
28	PROPOSED CITRUS HERI	SW AND SE CORNER OF	ENVIROSTOR, SCH	Higher	3948, 0.748, SSE

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Lists of Federal NPL (Superfund) sites

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Lists of Federal Delisted NPL sites

Delisted NPL ---------- National Priority List Deletions

Lists of Federal sites subject to CERCLA removals and CERCLA orders

FEDERAL FACILITY ---------- Federal Facility Site Information listing
SEMS ---------- Superfund Enterprise Management System

Lists of Federal CERCLA sites with NFRAP

SEMS-ARCHIVE ---------- Superfund Enterprise Management System Archive

Lists of Federal RCRA facilities undergoing Corrective Action

CORRACTS ---------- Corrective Action Report

Lists of Federal RCRA TSD facilities

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

Lists of Federal RCRA generators

RCRA-LQG ---------- RCRA - Large Quantity Generators
RCRA-SQG ---------- RCRA - Small Quantity Generators
RCRA-VSQG ---------- RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

Federal institutional controls / engineering controls registries

LUCIS ---------- Land Use Control Information System

US ENG CONTROLS---------- Engineering Controls Sites List
US INST CONTROLS---------- Institutional Controls Sites List

Federal ERNS list

ERNS---------- Emergency Response Notification System

Lists of state- and tribal (Superfund) equivalent sites

RESPONSE---------- State Response Sites

Lists of state and tribal leaking storage tanks

INDIAN LUST---------- Leaking Underground Storage Tanks on Indian Land
CPS-SLIC---------- Statewide SLIC Cases

Lists of state and tribal registered storage tanks

FEMA UST---------- Underground Storage Tank Listing
AST---------- Aboveground Petroleum Storage Tank Facilities
INDIAN UST---------- Underground Storage Tanks on Indian Land

Lists of state and tribal voluntary cleanup sites

INDIAN VCP---------- Voluntary Cleanup Priority Listing
VCP---------- Voluntary Cleanup Program Properties

Lists of state and tribal brownfield sites

BROWNFIELDS---------- Considered Brownfieds Sites Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS---------- A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT---------- Waste Management Unit Database
SWRCY---------- Recycler Database
HAULERS---------- Registered Waste Tire Haulers Listing
INDIAN ODI---------- Report on the Status of Open Dumps on Indian Lands
ODI---------- Open Dump Inventory
DEBRIS REGION 9---------- Torres Martinez Reservation Illegal Dump Site Locations
IHS OPEN DUMPS---------- Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL---------- Delisted National Clandestine Laboratory Register
HIST Cal-Sites---------- Historical Calsites Database
SCH---------- School Property Evaluation Program
CDL---------- Clandestine Drug Labs
Toxic Pits---------- Toxic Pits Cleanup Act Sites

US CDL ..... National Clandestine Laboratory Register

Local Lists of Registered Storage Tanks

HIST UST ..... Hazardous Substance Storage Container Database

Local Land Records

LIENS ..... Environmental Liens Listing
LIENS 2 ..... CERCLA Lien Information
DEED ..... Deed Restriction Listing

Records of Emergency Release Reports

HMIRS ..... Hazardous Materials Information Reporting System
CHMIRS ..... California Hazardous Material Incident Report System
LDS ..... Land Disposal Sites Listing
MCS ..... Military Cleanup Sites Listing
SPILLS 90 ..... SPILLS 90 data from FirstSearch

Other Ascertainable Records

FUDS ..... Formerly Used Defense Sites
DOD ..... Department of Defense Sites
SCRD DRYCLEANERS ..... State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR ..... Financial Assurance Information
EPA WATCH LIST ..... EPA WATCH LIST
2020 COR ACTION ..... 2020 Corrective Action Program List
TSCA ..... Toxic Substances Control Act
TRIS ..... Toxic Chemical Release Inventory System
SSTS ..... Section 7 Tracking Systems
ROD ..... Records Of Decision
RMP ..... Risk Management Plans
RAATS ..... RCRA Administrative Action Tracking System
PRP ..... Potentially Responsible Parties
PADS ..... PCB Activity Database System
ICIS ..... Integrated Compliance Information System
FTTS ..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS ..... Material Licensing Tracking System
COAL ASH DOE ..... Steam-Electric Plant Operation Data
COAL ASH EPA ..... Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER ..... PCB Transformer Registration Database
RADINFO ..... Radiation Information Database
HIST FTTS ..... FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS ..... Incident and Accident Data
CONSENT ..... Superfund (CERCLA) Consent Decrees
INDIAN RESERV ..... Indian Reservations
FUSRAP ..... Formerly Utilized Sites Remedial Action Program
UMTRA ..... Uranium Mill Tailings Sites
LEAD SMELTERS ..... Lead Smelter Sites
US AIRS ..... Aerometric Information Retrieval System Facility Subsystem
US MINES ..... Mines Master Index File
ABANDONED MINES ..... Abandoned Mines
MINES MRDS ..... Mineral Resources Data System

FINDS Facility Index System/Facility Registry System
UXO Unexploded Ordnance Sites
DOCKET HWC Hazardous Waste Compliance Docket Listing
ECHO Enforcement & Compliance History Information
FUELS PROGRAM EPA Fuels Program Registered Listing
PFAS NPL Superfund Sites with PFAS Detections Information
PFAS FEDERAL SITES Federal Sites PFAS Information
PFAS TRIS List of PFAS Added to the TRI
PFAS TSCA PFAS Manufacture and Imports Information
PFAS RCRA MANIFEST PFAS Transfers Identified In the RCRA Database Listing
PFAS ATSDR PFAS Contamination Site Location Listing
PFAS WQP Ambient Environmental Sampling for PFAS
PFAS NPDES Clean Water Act Discharge Monitoring Information
PFAS PROJECT NORTHEASTERN UNIVERSITY PFAS PROJECT
PFAS ECHO Facilities in Industries that May Be Handling PFAS Listing
PFAS ECHO FIRE TRAIN Facilities in Industries that May Be Handling PFAS Listing
PFAS PT 139 AIRPORT All Certified Part 139 Airports PFAS Information Listing
AQUEOUS FOAM NRC Aqueous Foam Related Incidents Listing
BIOSOLIDS ICIS-NPDES Biosolids Facility Data
PFAS PFAS Investigation Site Location Listing
AQUEOUS FOAM Former Fire Training Facility Assessments Listing
CA BOND EXP. PLAN Bond Expenditure Plan
CHROME PLATING Chrome Plating Facilities Listing
CUPA Listings CUPA Resources List
DRYCLEANERS Cleaner Facilities
EMI Emissions Inventory Data
ENF Enforcement Action Listing
Financial Assurance Financial Assurance Information Listing
ICE Inspection, Compliance and Enforcement
HWP EnviroStor Permitted Facilities Listing
HWT Registered Hazardous Waste Transporter Database
HAZNET Facility and Manifest Data
MINES Mines Site Location Listing
MWMP Medical Waste Management Program Listing
NPDES NPDES Permits Listing
PEST LIC Pesticide Regulation Licenses Listing
PROC Certified Processors Database
Notify 65 Proposition 65 Records
HAZMAT Hazardous Material Facilities
UIC UIC Listing
UIC GEO UIC GEO (GEOTRACKER)
WASTEWATER PITS Oil Wastewater Pits Listing
WDS Waste Discharge System
WIP Well Investigation Program Case List
MILITARY PRIV SITES MILITARY PRIV SITES (GEOTRACKER)
PROJECT PROJECT (GEOTRACKER)
WDR Waste Discharge Requirements Listing
CIWQS California Integrated Water Quality System
CERS CERS
NON-CASE INFO NON-CASE INFO (GEOTRACKER)
OTHER OIL GAS OTHER OIL & GAS (GEOTRACKER)
PROD WATER PONDS PROD WATER PONDS (GEOTRACKER)
SAMPLING POINT SAMPLING POINT (GEOTRACKER)
WELL STIM PROJ Well Stimulation Project (GEOTRACKER)

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP EDR Proprietary Manufactured Gas Plants

EXECUTIVE SUMMARY

EDR Hist Auto ---------- EDR Exclusive Historical Auto Stations
EDR Hist Cleaner ---------- EDR Exclusive Historical Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF ---------- Recovered Government Archive Solid Waste Facilities List
RGA LUST ---------- Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

Lists of state- and tribal hazardous waste facilities

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 01/21/2025 has revealed that there are 2 ENVIROSTOR sites within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
PROPOSED CITRUS HERI Facility Id: 60000618 Status: No Further Action	***SW AND SE CORNER OF***	***SSE 1/2 - 1 (0.748 mi.)***	***28***	***260***

Lower Elevation	Address	Direction / Distance	Map ID	Page
SE CORNER OF WASHING Facility Id: 60002193 Status: Refer: 1248 Local Agency	***17055 VAN BUREN BLVD***	***SW 1/2 - 1 (0.674 mi.)***	***27***	***173***

Lists of state and tribal landfills and solid waste disposal facilities

SWF/LF: The Solid Waste Facilities/Landfill Sites records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. The data come from the Integrated Waste Management Board's Solid Waste Information System (SWIS) database.

A review of the SWF/LF list, as provided by EDR, has revealed that there is 1 SWF/LF site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
WADE LANDFILL	***11749 ROBERTS ROAD***	***N 1/4 - 1/2 (0.366 mi.)***	***23***	***156***
Database: SWF/LF (SWIS), Date of Government Version: 02/03/2025 Facility ID: 33-CR-0035 Operational Status: Closed Regulation Status: Pre-regulation				

Lists of state and tribal leaking storage tanks

LUST: Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

A review of the LUST list, as provided by EDR, has revealed that there are 5 LUST sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
LAWLER'S SELF SERVE	***17945 VAN BUREN BLVD***	***SSE 1/8 - 1/4 (0.147 mi.)***	***A4***	***14***
Database: LUST REG 8, Date of Government Version: 02/14/2005 Facility Status: Pollution Characterization Global ID: T0606500466				
LAWLER'S SELF SERVE	17945 VAN BUREN BLVD	SSE 1/8 - 1/4 (0.147 mi.)	A7	22
Database: LUST, Date of Government Version: 02/24/2025 Database: RIVERSIDE CO. LUST, Date of Government Version: 06/11/2024 Status: Completed - Case Closed Facility Id: 960678 Global Id: T0606500466 Facility Status: 0				
G AND K PETRO INC.	***17755 VAN BUREN BLVD***	***S 1/4 - 1/2 (0.293 mi.)***	***C21***	***150***
Database: LUST REG 8, Date of Government Version: 02/14/2005 Database: LUST, Date of Government Version: 02/24/2025 Database: RIVERSIDE CO. LUST, Date of Government Version: 06/11/2024 Status: Completed - Case Closed Facility Status: Case Closed Facility Id: 961024 Global Id: T0606500473 Facility Status: 9 Global ID: T0606500473				
LAWLERS WOODCREST SE	***18400 VAN BUREN BLVD***	***ESE 1/4 - 1/2 (0.384 mi.)***	***D25***	***158***
Database: LUST REG 8, Date of Government Version: 02/14/2005 Facility Status: Case Closed				

Global ID: T0606599025

LAWLER WOODCREST SER ***18400 VAN BUREN BLVD*** ***ESE 1/4 - 1/2 (0.384 mi.)*** ***D26*** ***171***
Database: LUST, Date of Government Version: 02/24/2025
Database: RIVERSIDE CO. LUST, Date of Government Version: 06/11/2024
Status: Completed - Case Closed
Facility Id: 980433
Global Id: T0606599025
Facility Status: 9

Lists of state and tribal registered storage tanks

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the UST list, as provided by EDR, has revealed that there are 4 UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
RIVERSIDE VALERO Database: UST, Date of Government Version: 11/26/2024 Database: RIVERSIDE CO. UST, Date of Government Version: 12/05/2024 Facility Id: FA0034761	17945 VAN BUREN BLVD	SSE 1/8 - 1/4 (0.147 mi.)	A2	9
LAWLER'S SELF SERVE Database: UST, Date of Government Version: 11/26/2024 Facility Id: 445	17945 VAN BUREN BLVD	SSE 1/8 - 1/4 (0.147 mi.)	A6	21
PINNACLE CONVENIENCE Database: UST, Date of Government Version: 11/26/2024 Database: RIVERSIDE CO. UST, Date of Government Version: 12/05/2024 Facility Id: FA0020615	17905 VAN BUREN BLVD	S 1/8 - 1/4 (0.234 mi.)	B16	107
ARCO AM/PM MINI MART Database: UST, Date of Government Version: 11/26/2024 Facility Id: FA0020615	17905 VAN BUREN BLVD	S 1/8 - 1/4 (0.234 mi.)	B19	117

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Hazardous waste / Contaminated Sites

CERS HAZ WASTE: List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

A review of the CERS HAZ WASTE list, as provided by EDR, and dated 01/12/2025 has revealed that there are 3 CERS HAZ WASTE sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
RIVERSIDE PETROL INC	***17945 VAN BUREN BLVD***	***SSE 1/8 - 1/4 (0.147 mi.)***	***A10***	***37***
RIVERSIDE CAR CLINIC	***17846 VAN BUREN BLVD***	***S 1/8 - 1/4 (0.214 mi.)***	***B14***	***86***

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
WOODCREST 76/CIRCLE	*17905 VAN BUREN BLVD*	*S 1/8 - 1/4 (0.234 mi.)*	*B20*	*118*

Local Lists of Registered Storage Tanks

SWEEPS UST: Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

A review of the SWEEPS UST list, as provided by EDR, and dated 06/01/1994 has revealed that there is 1 SWEEPS UST site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
LAWLER'S SELF SERVIC	*17945 VAN BUREN BLVD*	*SSE 1/8 - 1/4 (0.147 mi.)*	*A3*	*12*
Status: A				
Tank Status: A				
Comp Number: 59659				

CERS TANKS: List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Aboveground Petroleum Storage and Underground Storage Tank regulatory programs.

A review of the CERS TANKS list, as provided by EDR, and dated 01/12/2025 has revealed that there are 2 CERS TANKS sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
RIVERSIDE PETROL INC	*17945 VAN BUREN BLVD*	*SSE 1/8 - 1/4 (0.147 mi.)*	*A10*	*37*
WOODCREST 76/CIRCLE	*17905 VAN BUREN BLVD*	*S 1/8 - 1/4 (0.234 mi.)*	*B20*	*118*

CA FID UST: The Facility Inventory Database contains active and inactive underground storage tank locations. The source is the State Water Resource Control Board.

A review of the CA FID UST list, as provided by EDR, and dated 10/31/1994 has revealed that there is 1 CA FID UST site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
LAWLER'S SELF SERVIC	*17945 VAN BUREN BLVD*	*SSE 1/8 - 1/4 (0.147 mi.)*	*A3*	*12*
Facility Id: 33007130				
Status: A				

Other Ascertainable Records

RCRA NonGen / NLR: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA)

of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 02/17/2025 has revealed that there are 6 RCRA NonGen / NLR sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
RIVERSIDE PETROL INC EPA ID:: CAL000352974	***17945 VAN BUREN BLVD***	***SSE 1/8 - 1/4 (0.147 mi.)***	***A5***	***16***
16176 PORTER AVENUE EPA ID:: CAC003007806	***16176 PORTER AVENUE***	***SSW 1/8 - 1/4 (0.184 mi.)***	***11***	***74***
15803 RIDGEWAY AVE EPA ID:: CAC003186691	***15803 RIDGEWAY AVE***	***ESE 1/8 - 1/4 (0.196 mi.)***	***12***	***78***
16201 ALTA CRESTA AV EPA ID:: CAC003061826	***16201 ALTA CRESTA AV***	***SSE 1/8 - 1/4 (0.206 mi.)***	***13***	***82***
RIVERSIDE CAR CLINIC EPA ID:: CAL000448901	***17846 VAN BUREN BLVD***	***S 1/8 - 1/4 (0.214 mi.)***	***B15***	***94***
WOODCREST 76/CIRCLE EPA ID:: CAL000139489	***17905 VAN BUREN BLVD***	***S 1/8 - 1/4 (0.234 mi.)***	***B18***	***111***

UST FINDER: EPA developed UST Finder, a web map application containing a comprehensive, state-sourced national map of underground storage tank (UST) and leaking UST (LUST) data. It provides the attributes and locations of active and closed USTs, UST facilities, and LUST sites from states and from Tribal lands and US territories . UST Finder contains information about proximity of UST facilities and LUST sites to: surface and groundwater public drinking water protection areas; estimated number of private domestic wells and number of people living nearby; and flooding and wildfires.

A review of the UST FINDER list, as provided by EDR, and dated 06/08/2023 has revealed that there are 2 UST FINDER sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
RIVERSIDE VALERO	17945 VAN BUREN BLVD	SSE 1/8 - 1/4 (0.147 mi.)	A9	36
ORANGE TREE FRESH FR	17905 VAN BUREN BLVD	S 1/8 - 1/4 (0.234 mi.)	B17	110

UST FINDER RELEASE: US EPA's UST Finder data is a national composite of leaking underground storage tanks. This data contains information about, and locations of, leaking underground storage tanks. Data was collected from state sources and standardized into a national profile by EPA's Office of Underground Storage Tanks, Office of Research and Development, and the Association of State and Territorial Solid Waste Management Officials.

A review of the UST FINDER RELEASE list, as provided by EDR, and dated 06/08/2023 has revealed that there are 3 UST FINDER RELEASE sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
LAWLER'S SELF SERVE	17945 VAN BUREN BLVD	SSE 1/8 - 1/4 (0.147 mi.)	A8	35
G & K PETRO INC.	17755 VAN BUREN BLVD	S 1/4 - 1/2 (0.293 mi.)	C22	155
LAWLER WOODCREST SER	18400 VAN BUREN BLVD	ESE 1/4 - 1/2 (0.384 mi.)	D24	158

E MANIFEST: EPA established a national system for tracking hazardous waste shipments electronically. This system, known as ?e-Manifest,? will modernize the nation?s cradle-to-grave hazardous waste tracking process while saving valuable time, resources, and dollars for industry and states.

A review of the E MANIFEST list, as provided by EDR, and dated 02/17/2025 has revealed that there are 6 E MANIFEST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
RIVERSIDE PETROL INC	***17945 VAN BUREN BLVD***	***SSE 1/8 - 1/4 (0.147 mi.)***	***A5***	***16***
16176 PORTER AVENUE	***16176 PORTER AVENUE***	***SSW 1/8 - 1/4 (0.184 mi.)***	***11***	***74***
15803 RIDGEWAY AVE	***15803 RIDGEWAY AVE***	***ESE 1/8 - 1/4 (0.196 mi.)***	***12***	***78***
16201 ALTA CRESTA AV	***16201 ALTA CRESTA AV***	***SSE 1/8 - 1/4 (0.206 mi.)***	***13***	***82***
RIVERSIDE CAR CLINIC	***17846 VAN BUREN BLVD***	***S 1/8 - 1/4 (0.214 mi.)***	***B15***	***94***
WOODCREST 76/CIRCLE	***17905 VAN BUREN BLVD***	***S 1/8 - 1/4 (0.234 mi.)***	***B18***	***111***

Cortese: The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

A review of the Cortese list, as provided by EDR, and dated 12/11/2024 has revealed that there are 3 Cortese sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
LAWLER'S SELF SERVE	***17945 VAN BUREN BLVD***	***SSE 1/8 - 1/4 (0.147 mi.)***	***A4***	***14***
Cleanup Status: COMPLETED - CASE CLOSED				
G AND K PETRO INC.	***17755 VAN BUREN BLVD***	***S 1/4 - 1/2 (0.293 mi.)***	***C21***	***150***
Cleanup Status: COMPLETED - CASE CLOSED				
LAWLERS WOODCREST SE	***18400 VAN BUREN BLVD***	***ESE 1/4 - 1/2 (0.384 mi.)***	***D25***	***158***
Cleanup Status: COMPLETED - CASE CLOSED				

HIST CORTESE: The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

A review of the HIST CORTESE list, as provided by EDR, and dated 04/01/2001 has revealed that there are 3 HIST CORTESE sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
LAWLER'S SELF SERVIC	***17945 VAN BUREN BLVD***	***SSE 1/8 - 1/4 (0.147 mi.)***	***A3***	***12***
Reg Id: 083302861T				
G AND K PETRO INC.	***17755 VAN BUREN BLVD***	***S 1/4 - 1/2 (0.293 mi.)***	***C21***	***150***
Reg Id: 083302900T				
LAWLERS WOODCREST SE	***18400 VAN BUREN BLVD***	***ESE 1/4 - 1/2 (0.384 mi.)***	***D25***	***158***
Reg Id: 083003185T				

EXECUTIVE SUMMARY

HWTS: DTSC maintains the Hazardous Waste Tracking System that stores ID number information since the early 1980s and manifest data since 1993. The system collects both manifest copies from the generator and destination facility.

A review of the HWTS list, as provided by EDR, and dated 07/19/2024 has revealed that there is 1 HWTS site within approximately 0.001 miles of the target property.

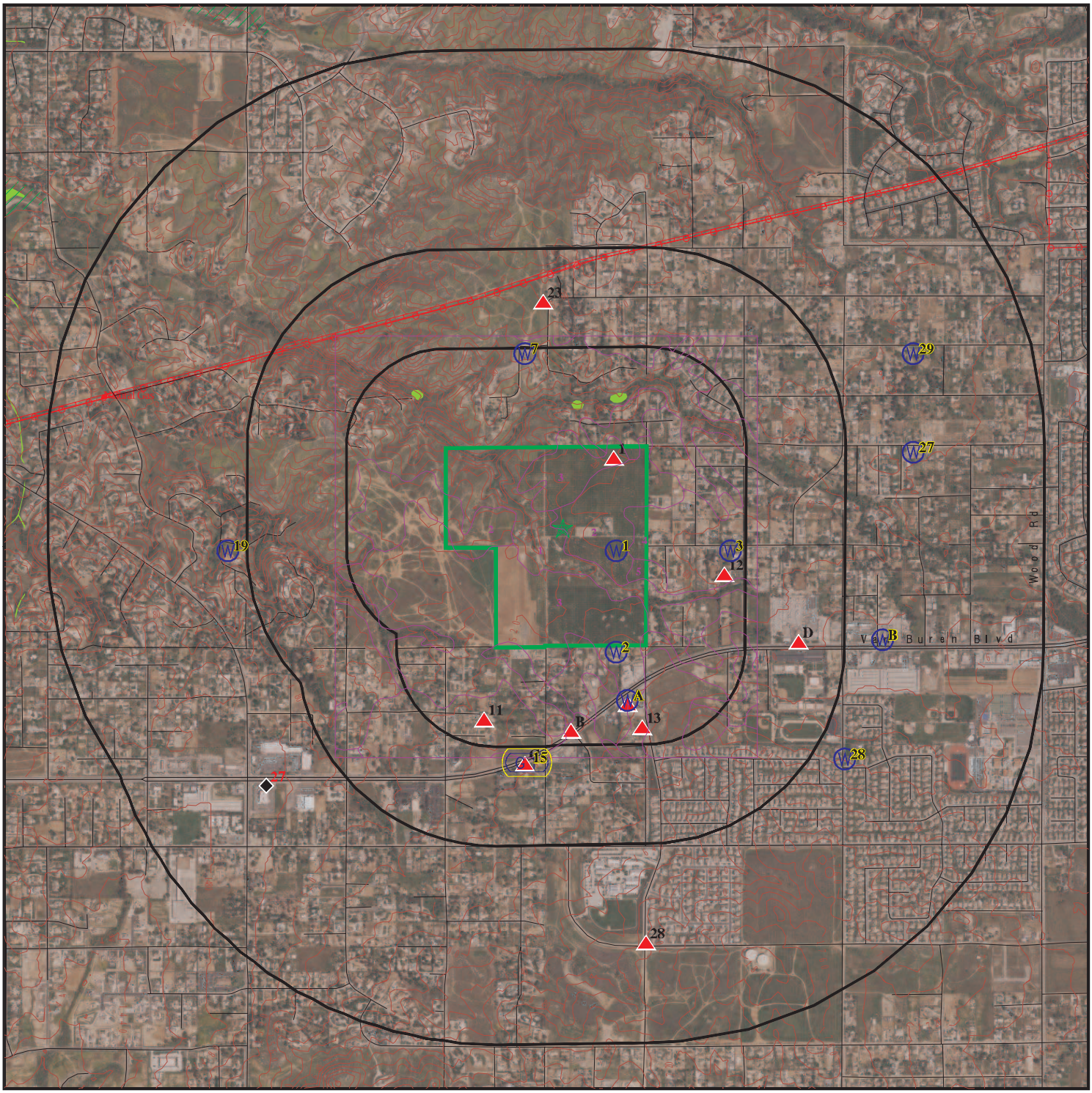
Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
UNLIMITED ENGINEERIN	LAT/LONG_USED	0 - 1/8 (0.000 mi.)	1	9

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 2 records.

Site Name	Database(s)
TARGET DISTRIBUTION CENTER T3856	CERS HAZ WASTE CDL

OVERVIEW MAP - 7981882.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

National Priority List Sites

Dept. Defense Sites

0 1/4 1/2 1 Miles

Indian Reservations BIA

Power transmission lines

Pipelines

Special Flood Hazard Area (1%)

0.2% Annual Chance Flood Hazard

National Wetland Inventory

State Wetlands

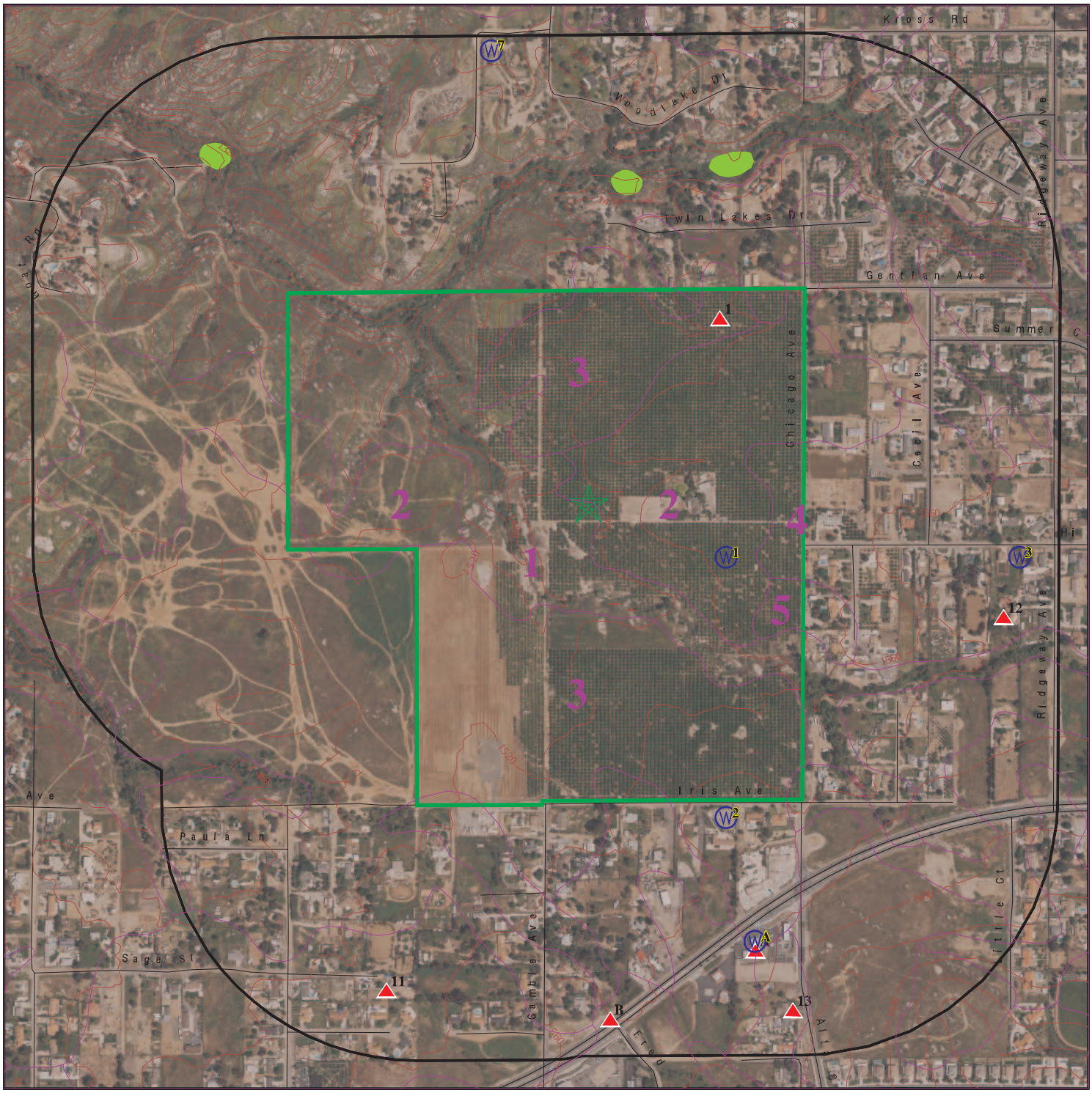
Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	APN 245-300-001 and -004	CLIENT:	Geotek
ADDRESS:	15701 CHICAGO AVE RIVERSIDE CA 92508	CONTACT:	Cynthia Diaz Ruiz
LAT/LONG:	33.891471 / 117.352345	INQUIRY #:	7981882.2s
		DATE:	May 08, 2025 9:05 am

Copyright © 2025 EDR, Inc. © 2015 TomTom Rel. 2015.

DETAIL MAP - 7981882.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

Power transmission lines

Special Flood Hazard Area (1%)

0.2% Annual Chance Flood Hazard

National Wetland Inventory

State Wetlands

Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	APN 245-300-001 and -004	CLIENT:	Geotek
ADDRESS:	15701 CHICAGO AVE RIVERSIDE CA 92508	CONTACT:	Cynthia Diaz Ruiz
		INQUIRY #:	7981882.2s
LAT/LONG:	33.891471 / 117.352345	DATE:	May 08, 2025 9:07 am

Copyright © 2025 EDR, Inc. © 2015 TomTom Rel. 2015.

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Lists of Federal NPL (Superfund) sites								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	1.000		0	0	0	0	NR	0
Lists of Federal Delisted NPL sites								
Delisted NPL	1.000		0	0	0	0	NR	0
Lists of Federal sites subject to CERCLA removals and CERCLA orders								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Lists of Federal CERCLA sites with NFRAP								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Lists of Federal RCRA facilities undergoing Corrective Action								
CORRACTS	1.000		0	0	0	0	NR	0
Lists of Federal RCRA TSD facilities								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Lists of Federal RCRA generators								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-VSQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROLS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	0.001		0	NR	NR	NR	NR	0
Lists of state- and tribal (Superfund) equivalent sites								
RESPONSE	1.000		0	0	0	0	NR	0
Lists of state- and tribal hazardous waste facilities								
ENVIROSTOR	1.000		0	0	0	2	NR	2
Lists of state and tribal landfills and solid waste disposal facilities								
SWF/LF	0.500		0	0	1	NR	NR	1

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
Lists of state and tribal leaking storage tanks								
LUST	0.500		0	2	3	NR	NR	5
INDIAN LUST	0.500		0	0	0	NR	NR	0
CPS-SLIC	0.500		0	0	0	NR	NR	0
Lists of state and tribal registered storage tanks								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		0	4	NR	NR	NR	4
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
Lists of state and tribal voluntary cleanup sites								
INDIAN VCP	0.500		0	0	0	NR	NR	0
VCP	0.500		0	0	0	NR	NR	0
Lists of state and tribal brownfield sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	0.001		0	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	0.001		0	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
CDL	0.001		0	NR	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
CERS HAZ WASTE	0.250		0	3	NR	NR	NR	3
US CDL	0.001		0	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.250		0	1	NR	NR	NR	1
HIST UST	0.250		0	0	NR	NR	NR	0
CERS TANKS	0.250		0	2	NR	NR	NR	2
CA FID UST	0.250		0	1	NR	NR	NR	1
Local Land Records								
LIENS	0.001		0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
LIENS 2	0.001		0	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0
CHMIRS	0.001		0	NR	NR	NR	NR	0
LDS	0.001		0	NR	NR	NR	NR	0
MCS	0.001		0	NR	NR	NR	NR	0
SPILLS 90	0.001		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	6	NR	NR	NR	6
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	0.001		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.001		0	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	0.001		0	NR	NR	NR	NR	0
TRIS	0.001		0	NR	NR	NR	NR	0
SSTS	0.001		0	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	0.001		0	NR	NR	NR	NR	0
RAATS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		0	NR	NR	NR	NR	0
PADS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001		0	NR	NR	NR	NR	0
FTTS	0.001		0	NR	NR	NR	NR	0
MLTS	0.001		0	NR	NR	NR	NR	0
COAL ASH DOE	0.001		0	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001		0	NR	NR	NR	NR	0
DOT OPS	0.001		0	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	0.001		0	NR	NR	NR	NR	0
US AIRS	0.001		0	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
MINES MRDS	0.250		0	0	NR	NR	NR	0
FINDS	0.001		0	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
DOCKET HWC	0.001		0	NR	NR	NR	NR	0
ECHO	0.001		0	NR	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
PFAS NPL	0.250		0	0	NR	NR	NR	0
PFAS FEDERAL SITES	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
PFAS TRIS	0.250		0	0	NR	NR	NR	0
PFAS TSCA	0.250		0	0	NR	NR	NR	0
PFAS RCRA MANIFEST	0.250		0	0	NR	NR	NR	0
PFAS ATSDR	0.250		0	0	NR	NR	NR	0
PFAS WQP	0.250		0	0	NR	NR	NR	0
PFAS NPDES	0.250		0	0	NR	NR	NR	0
PFAS PROJECT	0.250		0	0	NR	NR	NR	0
PFAS ECHO	0.250		0	0	NR	NR	NR	0
PFAS ECHO FIRE TRAIN	0.250		0	0	NR	NR	NR	0
PFAS PT 139 AIRPORT	0.250		0	0	NR	NR	NR	0
AQUEOUS FOAM NRC	0.250		0	0	NR	NR	NR	0
BIOSOLIDS	0.001		0	NR	NR	NR	NR	0
UST FINDER	0.250		0	2	NR	NR	NR	2
UST FINDER RELEASE	0.500		0	1	2	NR	NR	3
E MANIFEST	0.250		0	6	NR	NR	NR	6
PFAS	0.250		0	0	NR	NR	NR	0
AQUEOUS FOAM	0.250		0	0	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
CHROME PLATING	0.500		0	0	0	NR	NR	0
Cortese	0.500		0	1	2	NR	NR	3
CUPA Listings	0.250		0	0	NR	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
EMI	0.001		0	NR	NR	NR	NR	0
ENF	0.001		0	NR	NR	NR	NR	0
Financial Assurance	0.001		0	NR	NR	NR	NR	0
ICE	0.001		0	NR	NR	NR	NR	0
HIST CORTESE	0.500		0	1	2	NR	NR	3
HWP	1.000		0	0	0	0	NR	0
HWT	0.250		0	0	NR	NR	NR	0
HWTS	0.001		1	NR	NR	NR	NR	1
HAZNET	0.001		0	NR	NR	NR	NR	0
MINES	0.250		0	0	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
NPDES	0.001		0	NR	NR	NR	NR	0
PEST LIC	0.001		0	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
HAZMAT	0.250		0	0	NR	NR	NR	0
UIC	0.001		0	NR	NR	NR	NR	0
UIC GEO	0.001		0	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	0.001		0	NR	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
MILITARY PRIV SITES	0.001		0	NR	NR	NR	NR	0
PROJECT	0.001		0	NR	NR	NR	NR	0
WDR	0.001		0	NR	NR	NR	NR	0
CIWQS	0.001		0	NR	NR	NR	NR	0
CERS	0.001		0	NR	NR	NR	NR	0
NON-CASE INFO	0.001		0	NR	NR	NR	NR	0
OTHER OIL GAS	0.001		0	NR	NR	NR	NR	0
PROD WATER PONDS	0.001		0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
SAMPLING POINT	0.001		0	NR	NR	NR	NR	0
WELL STIM PROJ	0.001		0	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	0.001		0	NR	NR	NR	NR	0
RGA LUST	0.001		0	NR	NR	NR	NR	0
- Totals --		0	1	30	10	2	0	43

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

1 **UNLIMITED ENGINEERING INC** **HWTS** **S128374337**
LAT/LONG_USED **N/A**
< 1/8 **RIVERSIDE, CA 92503**
1 ft.

Relative:
Higher

Actual:
1525 ft.

HWTS:

Name:	UNLIMITED ENGINEERING INC
Address:	LAT/LONG_USED
Address 2:	Not reported
City,State,Zip:	RIVERSIDE, CA 92503
EPA ID:	CAC003163729
Inactive Date:	Not reported
Create Date:	02/25/2022
Last Act Date:	Not reported
Mailing Name:	Not reported
Mailing Address:	510 E STUART AVE
Mailing Address 2:	Not reported
Mailing City,State,Zip:	REDLANDS, CA 92374
Owner Name:	UNLIMITED ENGINEERING
Owner Address:	510 E STUART AVE
Owner Address 2:	Not reported
Owner City,State,Zip:	REDLANDS, CA 92374
Owner Phone:	Not reported
Owner Fax:	Not reported
Contact Name:	STEVE LUMPKIN
Contact Address:	510 E STUART AVE
Contact Address 2:	Not reported
City,State,Zip:	REDLANDS, CA 92374
Contact Phone:	Not reported
Contact Fax:	Not reported
Facility Status:	Active
Facility Type:	TEMPORARY
Category:	STATE
Latitude:	33.894099
Longitude:	-117.350106

A2 **RIVERSIDE VALERO** **UST** **U004354464**
SSE **17945 VAN BUREN BLVD** **N/A**
1/8-1/4 **RIVERSIDE, CA 92508**
0.147 mi.
778 ft. **Site 1 of 9 in cluster A**

Relative:
Higher

Actual:
1575 ft.

RIVERSIDE CO. UST:

Name:	RIVERSIDE VALERO
Address:	17945 VAN BUREN BLVD
City,State,Zip:	RIVERSIDE, CA 92508-9253
Region:	RIVERSIDE
Total Tanks:	3

UST:

Name:	RIVERSIDE VALERO
Address:	17945 VAN BUREN BLVD
City,State,Zip:	RIVERSIDE, CA 92508
Facility ID:	FA0034761
Permitting Agency:	Riverside County Department of Environmental Health
CERSID:	10511479
Latitude:	33.8852000
Longitude:	-117.349500
Owner type:	Non-Government

RIVERSIDE VALERO (Continued) **U004354464**

Facility type:	Motor Vehicle Fueling
Num of inuse ust:	Not reported
Num of closed ust:	0
Num of oos ust:	0
Epa region:	9
Tribal lands:	No
Tank owner name:	Kevin Tran
Tank owner mailing address:	17945 Van Buren
Tank owner mailing city:	Riverside
Tank owner mailing zip:	92508
Tank owner mailing state:	CA
Tank operator name:	Kevin Tran
Tank operator mailing address:	17945 Van Buren
Tank operator mailing city:	Riverside
Tank operator mailing zip:	92508
Tank operator mailing state:	CA
Tankidnumber:	1
Tank status:	Confirmed/Updated Information
Tank configuration:	Stand Alone Tank
Tank closure date:	Not reported
Tank installation date:	6/1/1998 12:00:00 AM
Tank num of compartments:	1
Tank contents:	Regular Unleaded
Tank capacity gallons:	12000
Tank type:	Double Wall
Tank pc construction:	Steel
Tank pwpiping construction:	Flexible
Tank piping type:	Pressure
Tank piping construction:	Double Walled
Tank sacrificial anode:	No
Tank cp impressed current:	No
Tank cp shutoff:	Yes
Tank alarms:	No
Tank ball float:	No
Tank spill bucket:	Yes

Name:	RIVERSIDE VALERO
Address:	17945 VAN BUREN BLVD
City,State,Zip:	RIVERSIDE, CA 92508
Facility ID:	FA0034761
Permitting Agency:	Riverside County Department of Environmental Health
CERSID:	10511479
Latitude:	33.8852000
Longitude:	-117.349500
Owner type:	Non-Government
Facility type:	Motor Vehicle Fueling
Num of inuse ust:	Not reported
Num of closed ust:	0
Num of oos ust:	0
Epa region:	9
Tribal lands:	No
Tank owner name:	Kevin Tran
Tank owner mailing address:	17945 Van Buren
Tank owner mailing city:	Riverside
Tank owner mailing zip:	92508
Tank owner mailing state:	CA
Tank operator name:	Kevin Tran

RIVERSIDE VALERO (Continued) **U004354464**

Tank operator mailing address:	17945 Van Buren
Tank operator mailing city:	Riverside
Tank operator mailing zip:	92508
Tank operator mailing state:	CA
Tankidnumber:	2
Tank status:	Confirmed/Updated Information
Tank configuration:	Stand Alone Tank
Tank closure date:	Not reported
Tank installation date:	6/1/1998 12:00:00 AM
Tank num of compartments:	1
Tank contents:	Premium Unleaded
Tank capacity gallons:	12000
Tank type:	Double Wall
Tank pc construction:	Steel
Tank pwpiping construction:	Flexible
Tank piping type:	Pressure
Tank piping construction:	Double Walled
Tank sacrificial anode:	No
Tank cp impressed current:	No
Tank cp shutoff:	Yes
Tank alarms:	No
Tank ball float:	No
Tank spill bucket:	Yes

Name:	RIVERSIDE VALERO
Address:	17945 VAN BUREN BLVD
City,State,Zip:	RIVERSIDE, CA 92508
Facility ID:	FA0034761
Permitting Agency:	Riverside County Department of Environmental Health
CERSID:	10511479
Latitude:	33.8852000
Longitude:	-117.349500
Owner type:	Non-Government
Facility type:	Motor Vehicle Fueling
Num of inuse ust:	Not reported
Num of closed ust:	0
Num of oos ust:	0
Epa region:	9
Tribal lands:	No
Tank owner name:	Kevin Tran
Tank owner mailing address:	17945 Van Buren
Tank owner mailing city:	Riverside
Tank owner mailing zip:	92508
Tank owner mailing state:	CA
Tank operator name:	Kevin Tran
Tank operator mailing address:	17945 Van Buren
Tank operator mailing city:	Riverside
Tank operator mailing zip:	92508
Tank operator mailing state:	CA
Tankidnumber:	3
Tank status:	Confirmed/Updated Information
Tank configuration:	Stand Alone Tank
Tank closure date:	Not reported
Tank installation date:	6/1/1998 12:00:00 AM
Tank num of compartments:	1
Tank contents:	Diesel
Tank capacity gallons:	8000