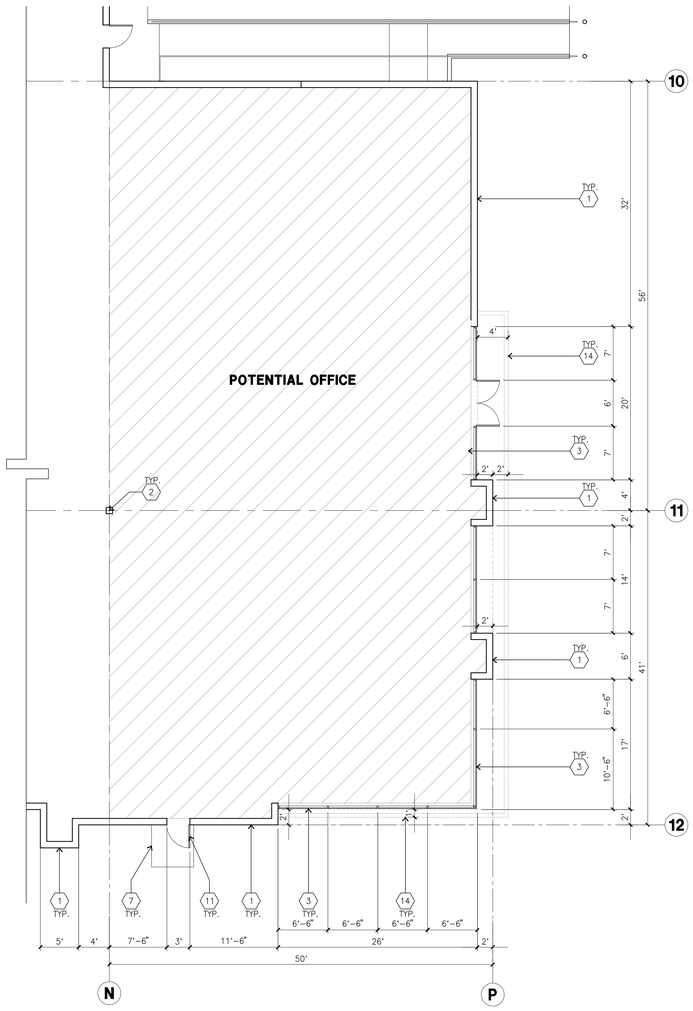


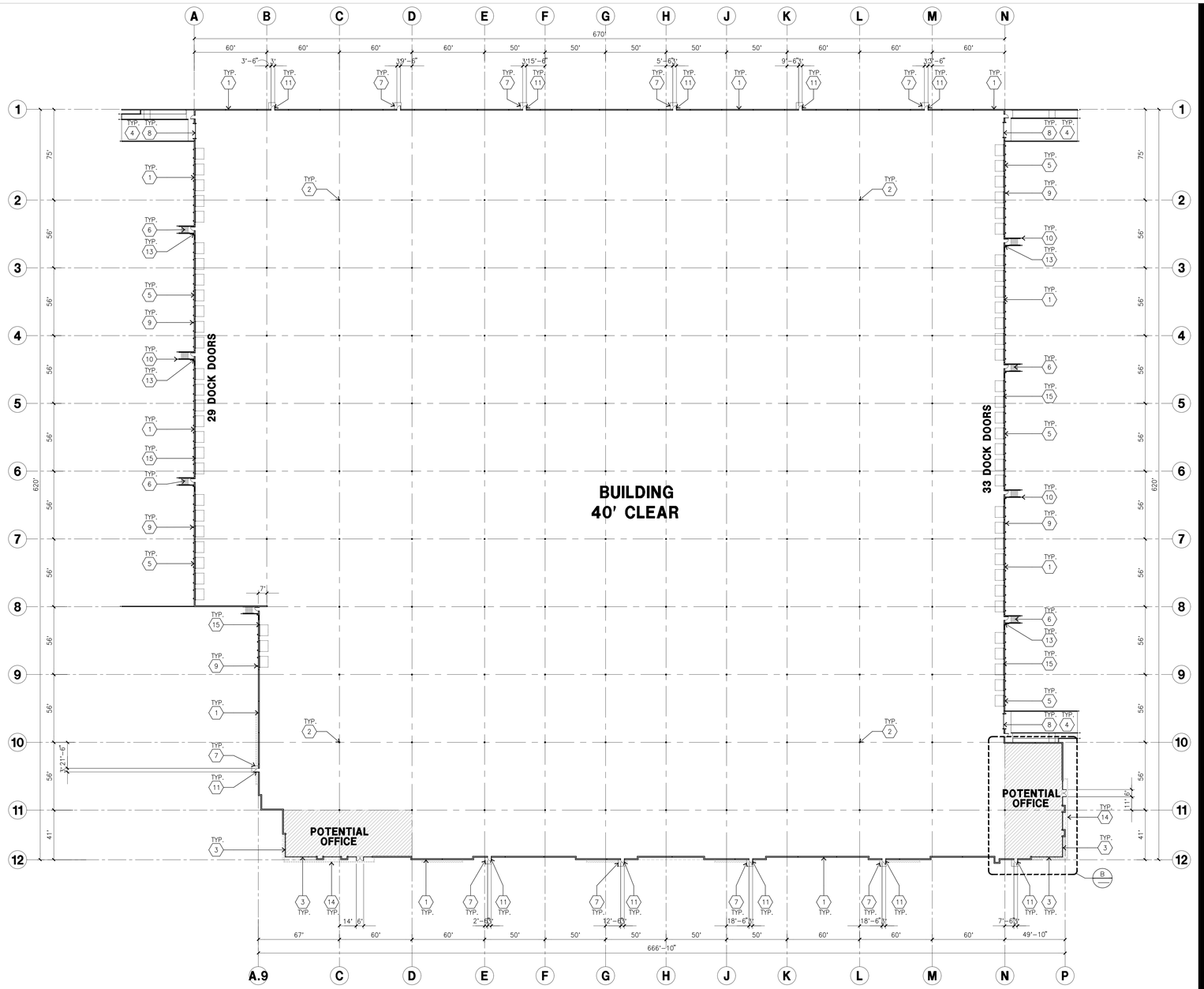
ENLARGED FLOOR PLAN B

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

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

0 8' 16' 24'

TRUE NORTH



OVERALL FLOOR PLAN A

scale: 1" = 40'-0"

SCALE: 1" = 40'-0"

0 40' 80' 120'

TRUE NORTH

KEYNOTES - FLOOR PLAN

1. CONCRETE TILT-UP PANEL.
2. STRUCTURAL STEEL COLUMN.
3. TYPICAL STOREFRONT SYSTEM WITH GLAZING. SEE OFFICE BLOW-UP AND ELEVATIONS FOR SIZE, COLOR AND LOCATIONS.
4. CONCRETE RAMP W/ 42"HIGH CONC TILT-UP GUARD WALL OR BUILDING WALL ON BOTH SIDE OF RAMP.
5. 9'-0" X 10' TRUCK DOOR, SECTIONAL O'H., STANDARD GRADE.
6. EXTERIOR CONCRETE STAIR
7. 5'-6"X5'-6"X4" THICK CONCRETE EXTERIOR LANDING PAD TYPICAL AT ALL EXTERIOR MAN DOORS TO LANDSCAPED AREA. FINISH TO BE MEDIUM BLOOM FINISH. SLOPE TO BE 1/4" - 12" MAX. PROVIDE WALK TO HARD SURFACE PER CITY REQUIREMENTS.
8. 12' X 14' DRIVE THRU. SECTIONAL OH., STANDARD GRADE.
9. DOCK DOOR BUMPER
10. CONC. FILLED GUARD POST. 6" DIA. U.N.O.. 42"H.
11. 3'X7' HOLLOW METAL EXTERIOR MAN DOOR.
12. SOFFIT LINE ABOVE
13. EXTERIOR DOWNSPOUT WITH OVERFLOW SCUPPER,
14. PAINTED I-BEAM CANOPY
15. Z GUARD
16. LONG TERM BICYCLE PARKING.

GENERAL NOTES - FLOOR PLAN

A. THIS BUILDING IS DESIGNED FOR HIGH PILE STORAGE WITH FIRE ACCESS MAN DOORS AT 100' MAXIMUM O.C. A SEPARATE PERMIT WILL BE REQUIRED FOR ANY RACKING/CONVEYER SYSTEMS.

B. FIRE HOSE LOCATIONS SHALL BE APPROVED PER FIRE DEPARTMENT.

C. THE BUILDING FLOOR SLAB IS SLOPED, SEE "C" DRAWINGS FOR FINISH SURFACE ELEVATIONS.

D. NOT USED

E. WAREHOUSE INTERIOR CONCRETE WALLS ARE PAINTED WHITE. COLUMNS ARE TO RECEIVE PRIMER ONLY. ALL GYP. BD. WALLS IN WAREHOUSE TO RECEIVE 1 COAT OF WHITE TO COVER.

F. SLOPE POUR STRIP 1/2" TO EXTERIOR AT ALL MANDOOR EXITS. SEE "S" DRAWINGS FOR POUR STRIP LOCATION.

G. ALL DIMENSIONS ARE TO THE FACE OF CONCRETE PANEL WALL, GRIDLINE, OR FACE OF STUD U.N.O.

H. SEE CIVIL DRAWINGS FOR POINT OF CONNECTIONS TO OFF-SITE UTILITIES. CONTRACTOR TO VERIFY ACTUAL UTILITY LOCATIONS. PLUMBING/ELECTRICAL COORDINATION.

I. FOR DOOR TYPES AND SIZES, SEE DETAIL SHEET AD.4. NOTE: ALL DOORS PER DOOR SCHEDULE ARE FINISH OPENINGS.

J. CONTRACTOR TO PROTECT AND KEEP THE FLOOR SLAB CLEAN. ALL EQUIPMENT TO BE DIAPERED INCLUDING CARS AND TRUCKS.

K. ALL EXIT MAN DOORS IN WAREHOUSE TO HAVE ILLUMINATED EXIT SIGN. HARDWARE.

L. HIGHLY FLAMMABLE AND COMBUSTIBLE MATERIAL SHALL NOT BE USED OR STORED IN THIS BUILDING.

M. EACH EXTERIOR EXIT DOOR SHALL BE IDENTIFIED BY A TACTILE EXIT SIGN WITH THE WORDS "EXIT". THE MOUNTING HEIGHT FOR SUCH SIGNAGE SHALL BE 60" FROM FINISH FLOOR LEVEL TO THE CENTER OF THE SIGN.

N. NON-ACCESSIBLE DOOR. PROVIDE WARNING SIGN LOCATED IN THE INTERIOR SIDE PER CBC 1133B.1.1.1

O. ALL ROOF MOUNTED MATERIALS SHALL BE FULLY SCREENED FROM PUBLIC VIEW, SEE A/A4.1 OFFICE SECTION.

HPA architecture

hpa, inc.
18831 bardeen avenue, - ste. #100
irvine, ca
92612
tel: 949•863•1770
fax: 949•863•0851
email: hpa@hparchs.com

Owner:

HILLWOOD
A PEROT COMPANY

Hillwood
901 Via Piemonte, Ste 175
Ontario, CA 91764
909-256-5924
ATTN: John Grace

Project:

NEC Ethanac Road & Trumble Road

Perris, CA

Consultants:

CIVIL	WEBB
STRUCTURAL	-
MECHANICAL	-
PLUMBING	-
ELECTRICAL	-
LANDSCAPE	WEBB
FIRE PROTECTION	-
SOILS ENGINEER	-

Title: OVERALL FLOOR PLAN

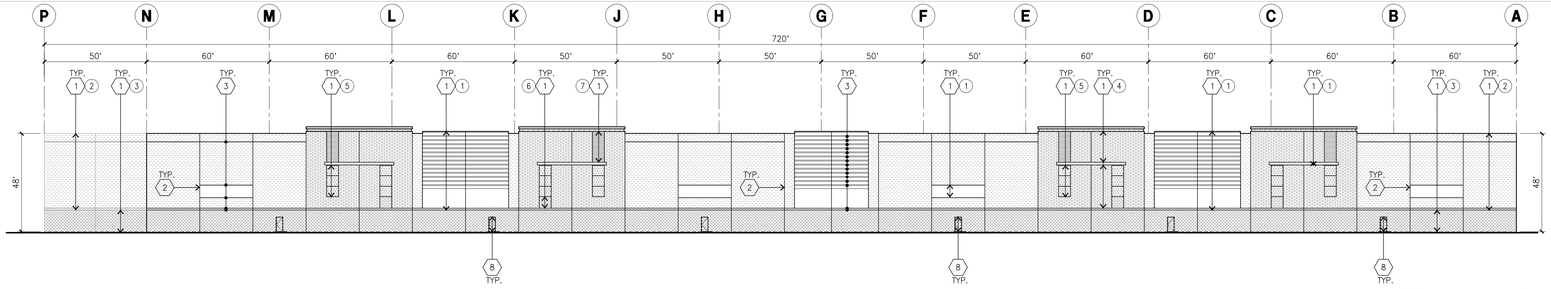
Project Number:	22215
Drawn by:	KT
Date:	03/29/2023

Revision:

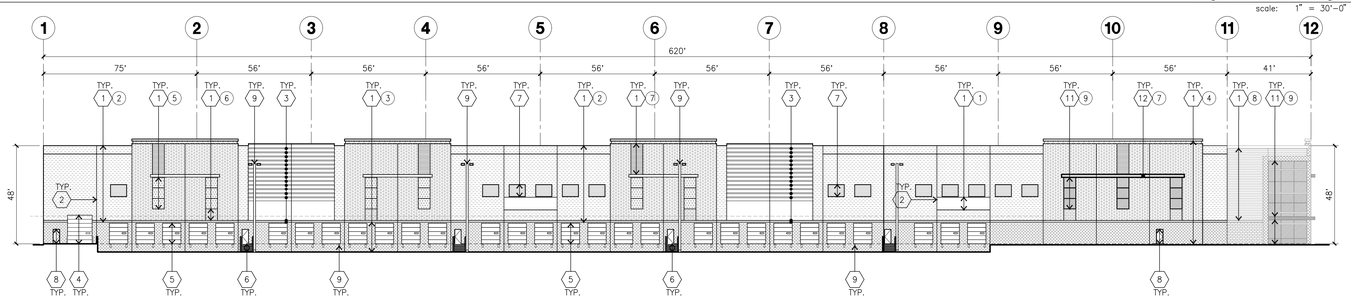
1ST SUBMITTAL	10/21/2022
2ND SUB / PC1	01/11/2023
3RD SUB / PC2	03/29/2023

Sheet:

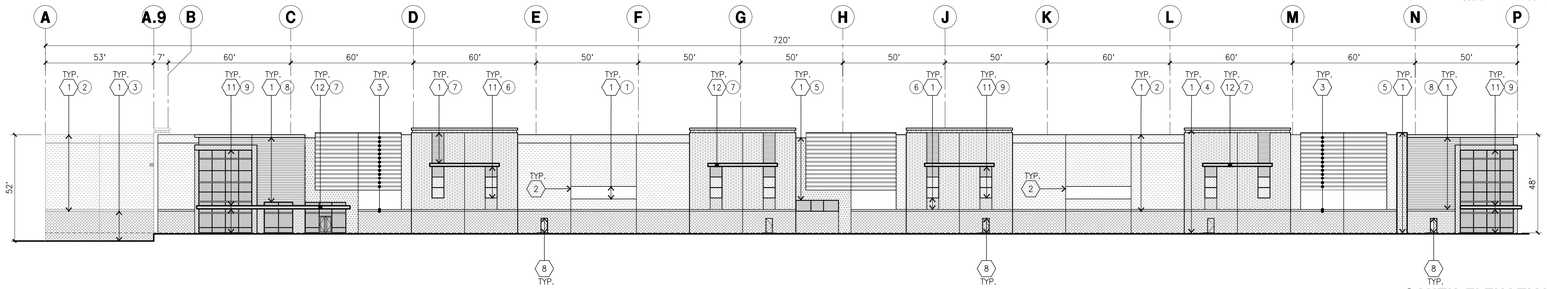
DAB-A2.1



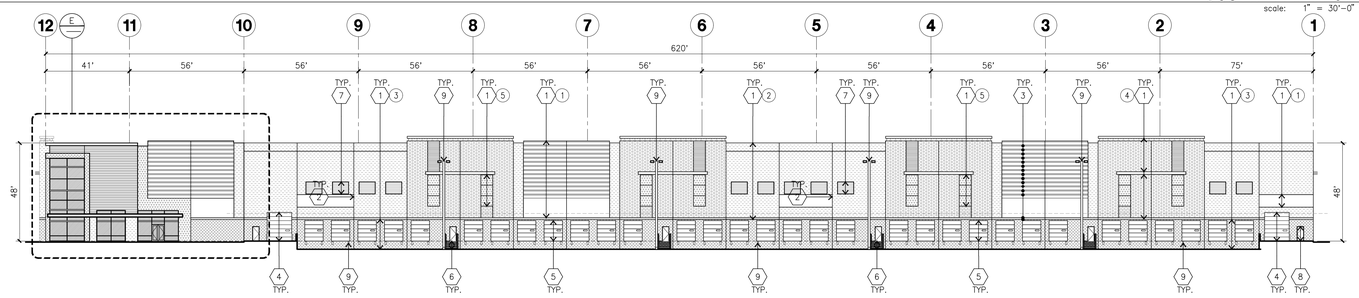
NORTH ELEVATION A
scale: 1" = 30'-0"



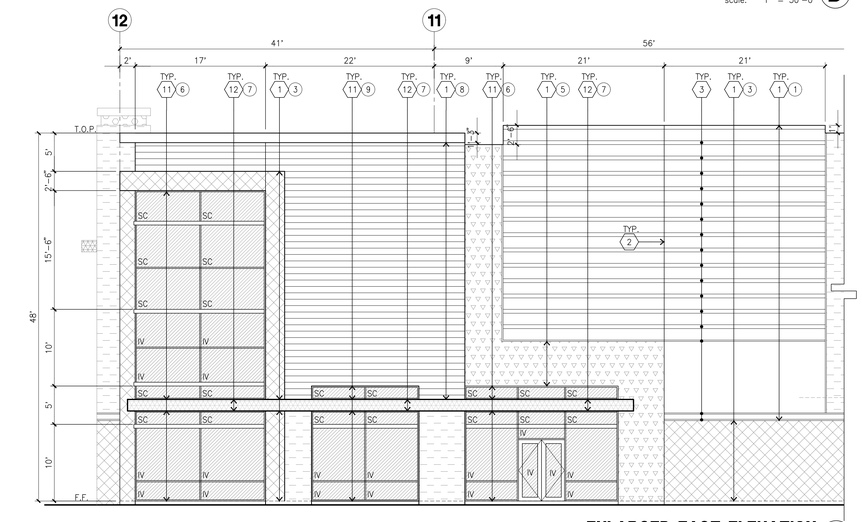
WEST ELEVATION B
scale: 1" = 30'-0"



SOUTH ELEVATION C
scale: 1" = 30'-0"



EAST ELEVATION D
scale: 1" = 30'-0"



ENLARGED EAST ELEVATION E
scale: 1/8" = 1'-0"

KEYNOTES - ELEVATIONS

1. CONCRETE TILT-UP PANEL(PAINTED). FINISH GRADE VARIES. SEE "C" DRAWINGS. WATERPROOF ALL WALLS WHERE GRADE IS HIGHER AND EXPOSED TO THE WEATHER ONE SIDE. WATERPROOFING TO BE PROTECTED WITH PROTECTION BOARD AND A MIN. OF 6" OF GRAVEL. PROVIDE TRENCH DRAIN AT BOTTOM AND DAYLIGHT TO CURB OR TAKE TO STORM DRAIN. NOT REQUIRED AT DOCK HIGH CONDITION OR AT RAMP WALLS.
2. PANEL JOINT.
3. PANEL REVEAL. ALL REVEALS TO HAVE A MAX. OF 3/8" CHAMFER. REVEAL COLOR TO MATCH ADJACENT BUILDING FIELD COLOR. U.N.O.
4. OVERHEAD DOOR @ DRIVE THRU. SEE DOOR SCHEDULE. PROVIDE COMPLETE WEATHER-STRIPPING PROTECTION ALL AROUND.
5. OVERHEAD DOOR @ DOCK HIGH. SEE DOOR SCHEDULE. PROVIDE COMPLETE WEATHER-STRIPPING PROTECTION ALL AROUND.
6. CONCRETE STAIR, LANDING AND GUARDRAIL W/ METAL PIPE HANDRAIL. PROVIDE NON SKID NOSING TO MEET ADA REQUIREMENTS. PROVIDE CONTRASTING COLORED 3" WIDE WARNING STRIPE INTEGRAL TO CONCRETE AT TOP LANDING AND BOTTOM TREAD PER ADA REQUIREMENTS.
7. METAL LOUVER, PAINT TO MATCH BUILDING COLOR.
8. 3'X7' HOLLOW METAL EXTERIOR MAN DOOR. PROVIDE COMPLETE WEATHER STRIPING ALL AROUND DOOR. PROVIDE FOR RAIN DIVERTER ABOVE DOOR.
9. EXTERIOR DOWNSPOUT AND OVERFLOW SCUPPER
10. DOCK BUMPER
11. ALUMINUM STOREFRONT FRAMING WITH TEMPERED GLAZING AT ALL DOORS, SIDELITES ADJACENT TO DOORS AND GLAZING WITH BOTTOMS LESS THAN 18" ABOVE FINISH FLOOR ELEVATION.
12. PAINTED I-BEAM CANOPY

GENERAL NOTES - ELEVATIONS

A. ALL PAINT COLOR CHANGES TO OCCUR AT INSIDE CORNERS UNLESS NOTED OTHERWISE.
B. ALL PAINT FINISHES ARE TO BE FLAT UNLESS NOTED OTHERWISE.
C. T.O.P. EL= TOP OF PARAPET ELEVATION.
D. F.F. = FINISH FLOOR ELEVATION.
E. STOREFRONT CONSTRUCTION: GLASS, METAL ATTACHMENTS AND LINTELS SHALL BE DESIGNED TO RESIST 90 MPH. EXPOSURE "C" WINDS. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS PRIOR TO INSTALLATION.
F. CONTRACTOR SHALL FULLY PAINT ONE CONCRETE PANEL W/ SELECTED COLORS. ARCHITECT AND OWNER SHALL APPROVE PRIOR TO PAINTING REMAINDER OF BUILDING.
G. BACK SIDE OF PARAPETS TO HAVE SMOOTH FINISH AND BE PAINTED WITH ELASTOMERIC PAINT.
H. FOR SPANDREL GLAZING, ALLOW SPACE BEHIND SPANDREL TO BREATH.
J. USE ADHESIVE BACK WOOD STRIPS FOR ALL REVEAL FORMS.
K. THE FIRST COAT OF PAINT TO BE ROLLED-ON AND THE SECOND COAT TO BE SPRAYED-ON

COLOR SCHEDULE - ELEVATIONS

1	CONCRETE TILT-UP PANEL	PAINT BRAND	SHERWIN WILLIAMS SW 7005 (255-C1) PURE WHITE
2	CONCRETE TILT-UP PANEL	PAINT BRAND	SHERWIN WILLIAMS SW 7071 (235-C1) GRAY SCREEN
3	CONCRETE TILT-UP PANEL	PAINT BRAND	SHERWIN WILLIAMS SW 7073 (235-C3) NETWORK GRAY
4	CONCRETE TILT-UP PANEL	PAINT BRAND	SHERWIN WILLIAMS SW 7074 (235-C5) SOFTWARE
5	CONCRETE TILT-UP PANEL	PAINT BRAND	SHERWIN WILLIAMS SW 6524 (185-C7) COMMODORE
6	CORONADO STONE	PAINT BRAND	WIRECUT BRICK - 2 1/2" x 8" COLOR: ICEBERG, GROUT: WHITE
7	METAL PANEL CLADDING	PAINT BRAND	BRIDGERSTEEL SHIPLAP WALL - 12" COLOR: SILVER METALLIC
8	METAL PANEL CLADDING	PAINT BRAND	BRIDGERSTEEL SHIPLAP WALL - 12" COLOR: SLATE GRAY
9	GLAZING/MULLIONS	COLOR	CLEAR GLAZING WITH CLEAR ANODIZED ALUMINUM MULLIONS
10	METAL CANOPY	PAINT BRAND	SHERWIN WILLIAMS SW 7005 (255-C1) PURE WHITE

GLAZING LEGEND

ALL GLAZING TO BE TEMPERED GLASS.

IV INSULATED VISION GLASS

SC SPANDREL GLASS WITH CONCRETE BEHIND

V SINGLE LITE VISION GLASS

IV : INSULATED VISION GLASS
1/4" **VISTACOOL PACIFICA** + 1/4" **SOLARBAN 60** CLEAR
1" INSULATED GLASS UNIT WITH 1/2" AIRSPACE AND 1/4" LITES
U: **0.27** SHGC: **0.21** VLT: **26%**
MINIMUM VT TO BE 0.42 PER 2016 CEC TABLE 140.3-B

SC : SPANDREL WITH CONCRETE BEHIND
1/4" **VISTACOOL PACIFICA** WITH **WARM GRAY** OPACICOAT PAINTED ON REFLECTIVE. INSTALLED ON CONCRETE.

V : VISION GLASS
1/4" **VISTACOOL PACIFICA**

MULLIONS : **ANODIZED CLEAR.**

HPA architecture

hpa, inc.
18831 bardeen avenue, - ste. #100
irvine, ca
92612
tel: 949•863•1770
fax: 949•863•0851
email: hpa@hparchs.com

Owner:

HILLWOOD
A PEROT COMPANY

Hillwood
901 Via Piemonte, Ste 175
Ontario, CA 91764
909-256-5924
ATTN: John Grace

Project:

NEC Ethanac Road & Trumble Road

Perris, CA

Consultants:

CIVIL	WEBB
STRUCTURAL	-
MECHANICAL	-
PLUMBING	-
ELECTRICAL	-
LANDSCAPE	WEBB
FIRE PROTECTION	-
SOILS ENGINEER	-

Title: ELEVATIONS

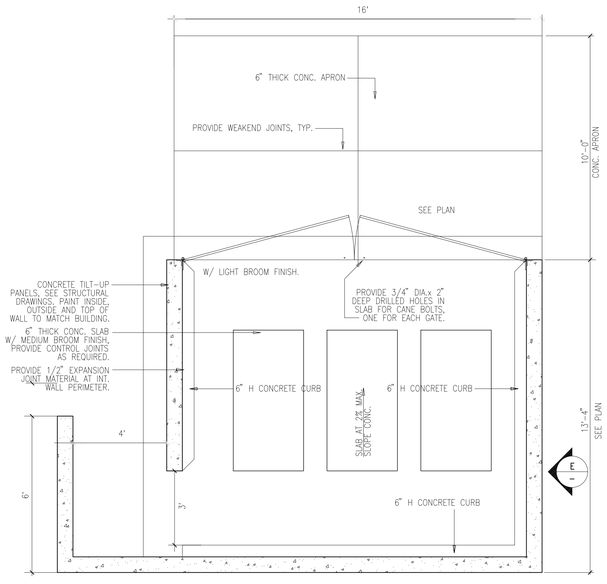
Project Number:	22215
Drawn by:	KT
Date:	03/29/2023

Revision:

1ST SUBMITTAL	10/21/2022
2ND SUB / PC1	01/11/2023
3RD SUB / PC2	03/29/2023

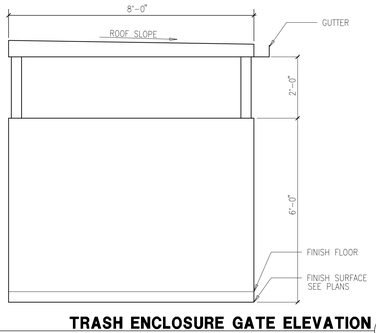
Sheet:

DAB-A3.1

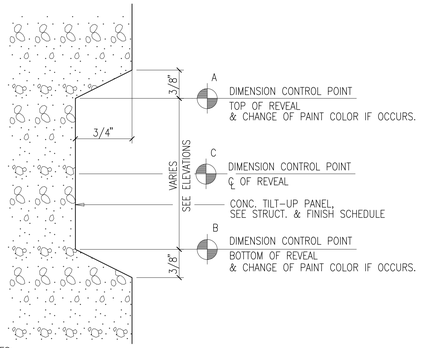


NOTES:
1. SEE SITE PLAN FOR LOCATIONS.
2. SEE STRUCTURAL DRAWINGS FOR STEEL REINFORCING.
3. SACK AND PATCH ALL PANEL LIFT POINTS ON OF WALL AND PAINT TO MATCH.

TRASH ENCLOSURE PLAN (D)
scale: N.T.S.

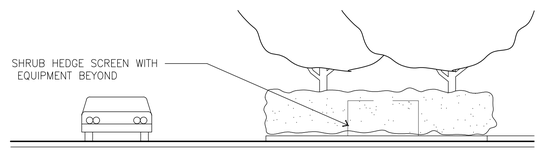


TRASH ENCLOSURE GATE ELEVATION (E)
scale: N.T.S.

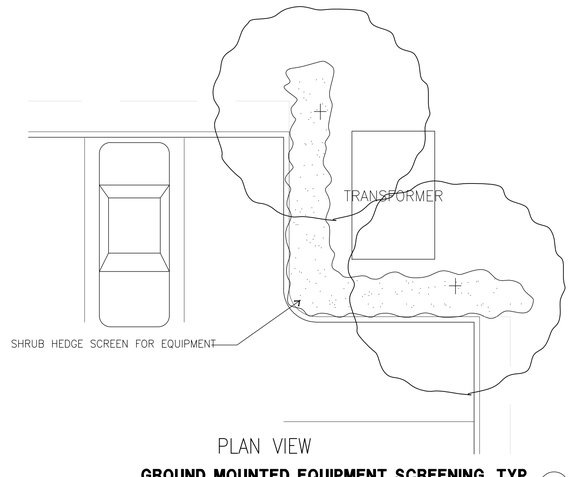


NOTES:
1. DIMENSION CONTROL POINTS AT REVEALS AND EDGE OF CONCRETE OPENINGS WHERE OCCUR, SEE WALL SECTIONS.
2. PAINT COLOR CHANGES TO ALWAYS OCCUR AT CONTROL POINT "A" OR "B"

TYP. CONCRETE REVEAL (B)
scale: N.T.S.

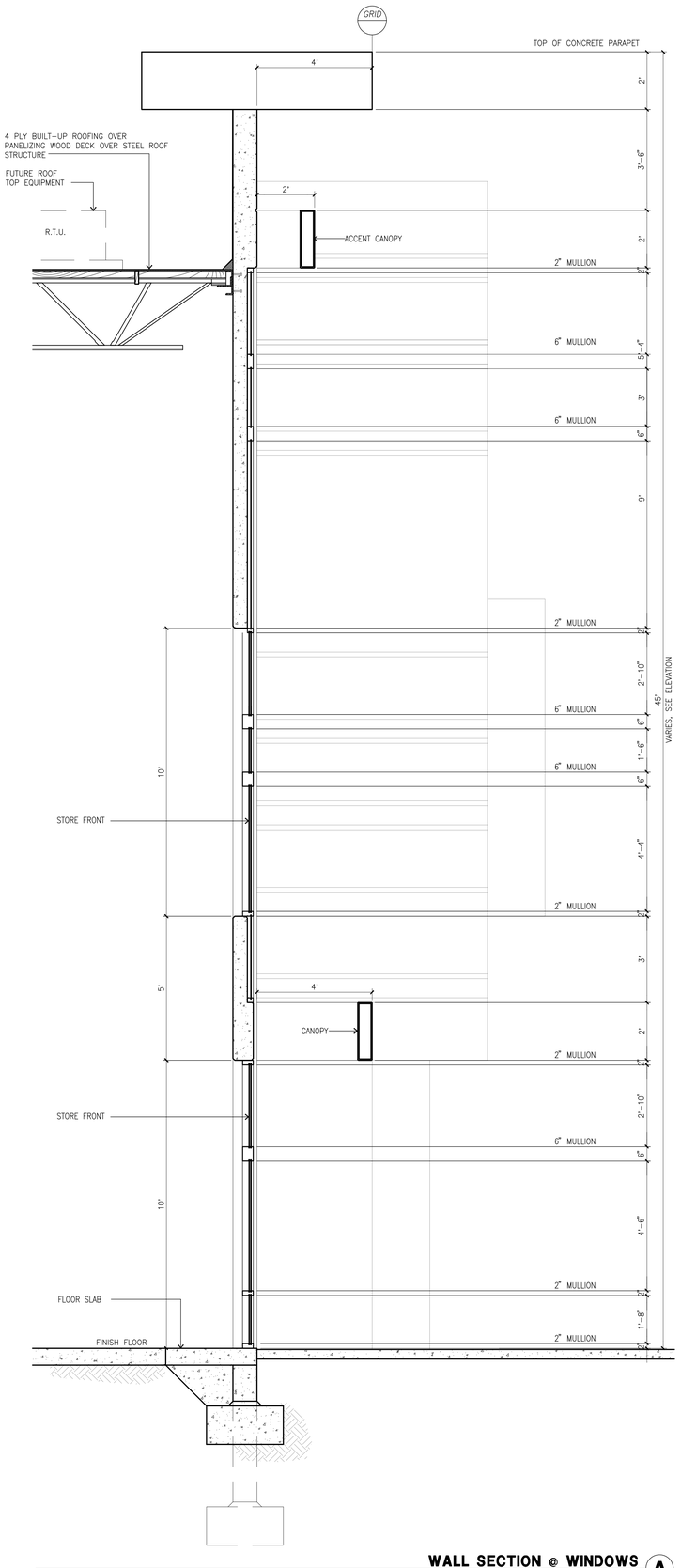


ELEVATION



PLAN VIEW

GROUND MOUNTED EQUIPMENT SCREENING, TYP. (C)
scale: N.T.S.



WALL SECTION @ WINDOWS (A)
scale: 1/2"=1'-0"

HPA architecture

hpa, inc.
18831 bardeen avenue, - ste. #100
irvine, ca
92612
tel: 949•863•1770
fax: 949•863•0851
email: hpa@hparchs.com

Owner:

HILLWOOD
A PEROT COMPANY

Hillwood
901 Via Piemonte, Ste 175
Ontario, CA 91764
909-256-5924
ATTN: John Grace

Project:

NEC Ethanac Road & Trumble Road

Perris, CA

Consultants:

CIVIL	WEBB
STRUCTURAL	-
MECHANICAL	-
PLUMBING	-
ELECTRICAL	-
LANDSCAPE	WEBB
FIRE PROTECTION	-
SOILS ENGINEER	-

Title: Details

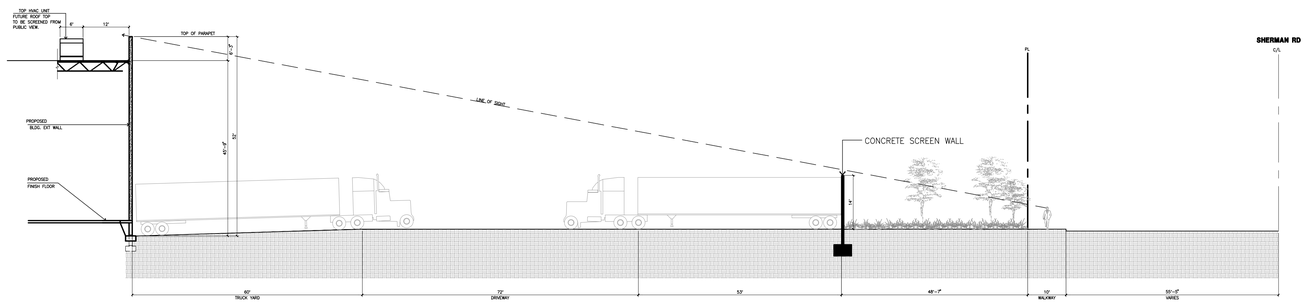
Project Number:	22215
Drawn by:	KT
Date:	03/29/2023

Revision:

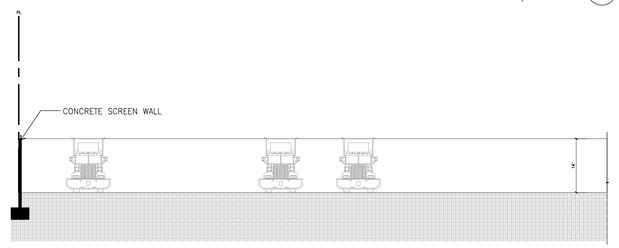
1ST SUBMITTAL	10/21/2022
2ND SUB / PC1	01/11/2023
3RD SUB / PC2	03/29/2023

Sheet:

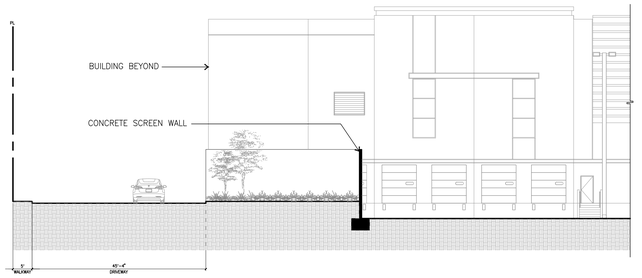
DAB-A4.1



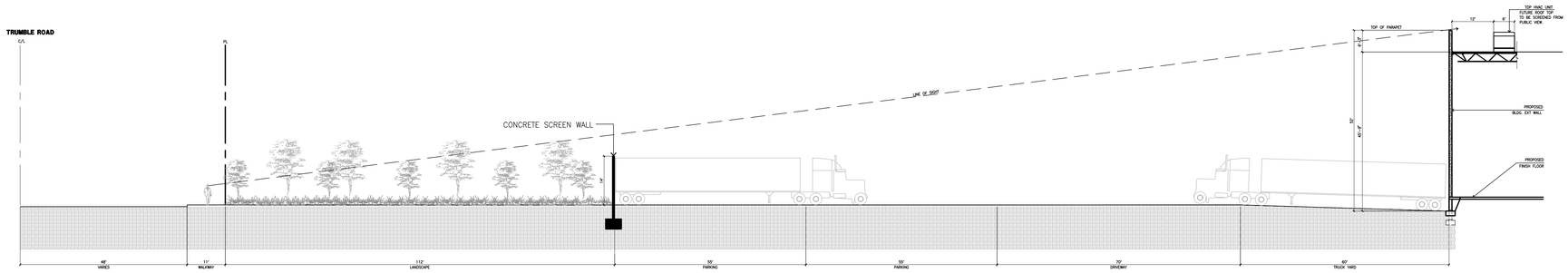
SITE SECTION (SHERMAN ROAD) A
scale:1/16" = 1'-0"



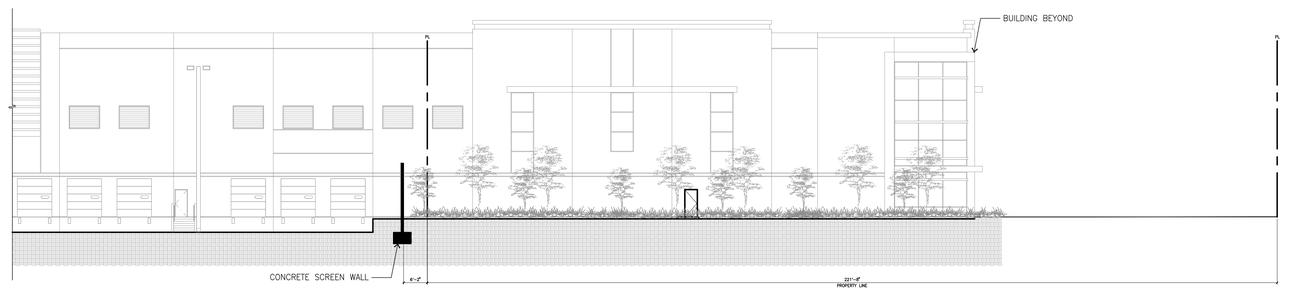
SITE SECTION B
scale:1/16" = 1'-0"



SITE SECTION C
scale:1/16" = 1'-0"



SITE SECTION (TRUMBLE ROAD) D
scale:1/16" = 1'-0"



SITE SECTION E
scale:1/16" = 1'-0"

HPA architecture

hpa, inc.
18831 bardeen avenue, - ste. #100
irvine, ca
92612
tel: 949•863•1770
fax: 949•863•0851
email: hpa@hparchs.com

Owner:

HILLWOOD
A PEROT COMPANY

Hillwood
901 Via Piemonte, Ste 175
Ontario, CA 91764
909-256-5924
ATTN: John Grace

Project:

NEC Ethanac Road & Trumble Road

Perris, CA

Consultants:

CIVIL	WEBB
STRUCTURAL	-
MECHANICAL	-
PLUMBING	-
ELECTRICAL	-
LANDSCAPE	WEBB
FIRE PROTECTION	-
SOILS ENGINEER	-

Title: DETAILS

Project Number:	22215
Drawn by:	KT
Date:	03/29/2023

Revision:

1ST SUBMITTAL	10/21/2022
2ND SUB / PC1	01/11/2023
3RD SUB / PC2	03/29/2023

Sheet:

DAB-A4.2

Figure 4

Google Historical Aerial 2002
Hillwood-Ethanac
City of Perris, Riverside County, California

N

Hernandez Environmental Services

Figure 5

CDFW Jurisdiction Map
Hillwood-Ethanac
City of Perris, Riverside County, California

Legend

Project Site

Offsite Project Area

CDFW Jurisdiction (0.05 acre, 132 linear feet)

N

Hernandez Environmental Services

Figure 6

Waters of the United States
Hillwood-Ethanac
City of Perris, Riverside County, California

Legend

Project Site

Offsite Project Area

Waters of the United States (0.04 acre, 132 linear feet)

N

Hernandez Environmental Services

Figure 7

Waters of the State
Hillwood-Ethanac
City of Perris, Riverside County, California

Legend

Project Site

Offsite Project Area

Waters of the State (0.04 acre, 132 linear feet)

N

Hernandez Environmental Services

APPENDIX A

View of mulefat at the start of the manmade earthen canal on site adjacent to Trumble Road.

View of tamarisk and palo verde in manmade earthen canal.

Hernandez Environmental Services

View of box culvert at the western end of Illinois Avenue that collects runoff from I-215.

View of ditch offsite that carries run off from I-215 to box culvert.

Hernandez Environmental Services

APPENDIX B

Soil Map—Western Riverside Area, California
(ECORP Hillwood PL)

Map Scale: 1:7,620 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 100 200 400 600

Feet
0 350 700 1400 2100

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Western Riverside Area, California
Survey Area Data: Version 15, Sep 6, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 14, 2022—Mar 17, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
EnA	Exeter sandy loam, 0 to 2 percent slopes	0.7	1.7%
EnC2	Exeter sandy loam, 2 to 8 percent slopes, eroded	0.8	1.9%
GyC2	Greenfield sandy loam, 2 to 8 percent slopes, eroded	0.0	0.0%
MaA	Madera fine sandy loam, 0 to 2 percent slopes	27.3	63.4%
MmB	Monserate sandy loam, 0 to 5 percent slopes	7.7	17.9%
MnD2	Monserate sandy loam, shallow, 5 to 15 percent slopes, eroded	6.5	15.0%
RaA	Ramona sandy loam, 0 to 2 percent slopes, MLRA 19	0.0	0.1%
Totals for Area of Interest		**43.1**	**100.0%**

INITIAL STUDY - APPENDIX B

Geology and Soils

SCG-A

Geotechnical Investigation

GEOTECHNICAL INVESTIGATION
PROPOSED WAREHOUSE

NWC Ethanac Road and Sherman Road
Perris, California
for
Hillwood

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

February 23, 2022

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Hillwood
901 Via Piemonte, Suite 175
Ontario, California 91764

Attention: Mr. John Grace
Vice President, Development

Project No.: **22G107-1**

Subject: **Geotechnical Investigation**
Proposed Warehouse
NWC Ethanac Road and Sherman Road
Perris, California

Ms. Buckle/Mr. Morse:

In accordance with your request, we have conducted a geotechnical investigation at the subject site. We are pleased to present this report summarizing the conclusions and recommendations developed from our investigation.

We sincerely appreciate the opportunity to be of service on this project. We look forward to providing additional consulting services during the course of the project. If we may be of further assistance in any manner, please contact our office.

Respectfully Submitted,

SOUTHERN CALIFORNIA GEOTECHNICAL, INC.

Daniel W. Nielsen, GE 3166
Senior Engineer

REGISTERED PROFESSIONAL ENGINEER
DANIEL W. NIELSEN
No. 3166
GEOTECHNICAL
STATE OF CALIFORNIA

Robert G. Trazo, GE 2655
Principal Engineer

REGISTERED PROFESSIONAL ENGINEER
ROBERT TRAZO
No. 2655
GEOTECHNICAL
STATE OF CALIFORNIA

Distribution: (1) Addressee

TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY

Presented below is a brief summary of the conclusions and recommendations of this investigation. Since this summary is not all inclusive, it should be read in complete context with the entire report.

Geotechnical Design Considerations

- The near-surface soils encountered at the boring locations consist of older alluvium which possesses high strengths and favorable consolidation/collapse characteristics.
- Granodiorite to tonalite bedrock was encountered at four (4) of the boring locations at depths of 5½ to 12± feet below the ground surface, extending to at least to the maximum depth explored of 25± feet.
- The near-surface alluvial soils possess varying strengths. These soils, in their present condition, are not considered suitable for support of the foundation loads of the new structure.
- Remedial grading is recommended in the proposed building pad area in order to provide more uniform support characteristics in the proposed foundation and floor slab areas and to help reduce the potential for differential settlements.

Site Preparation

- Remedial grading is recommended to be performed within the proposed building area in order to provide consistent support characteristics throughout the proposed building pad area and to help limit potential differential settlements to within tolerable limits. The proposed building area should be overexcavated to a depth of at least 2 feet below existing grade and to a depth of 2 feet below proposed building pad subgrade elevation, whichever is greater. Within the foundation influence zones, the overexcavation should extend to a depth of at least 2 feet below proposed foundation bearing grade. The overexcavation should extend horizontally at least 5 feet beyond the building and foundation perimeters.
- After the overexcavation has been completed, the resulting subgrade soils should be evaluated by the geotechnical engineer to identify any additional soils that should be removed. The resulting subgrade should then be scarified to a depth of 12 inches and moisture conditioned (or air dried) to 2 to 4 percent above optimum. The previously excavated soils may then be replaced as compacted structural fill. All structural fill soils should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density.
- The new pavement and flatwork subgrade soils are recommended to be scarified to a depth of 12± inches, thoroughly moisture conditioned and recompacted to at least 90 percent of the ASTM D-1557 maximum dry density.

Building Foundations

- Conventional shallow foundations, supported in newly placed compacted fill.
- 2,500 lbs/ft^2 maximum allowable soil bearing pressure.
- Reinforcement consisting of at least four (4) No. 5 rebars (2 top and 2 bottom) in strip footings, due to the presence of medium expansive soils. Additional reinforcement may be necessary for structural considerations.

Building Floor Slab

- Conventional Slab-on-Grade: minimum 6 inches thick.

- Modulus of Subgrade Reaction: k = 125 psi/in.
- Minimum slab reinforcement: No. 3 bars at 18 inches on center in both directions due to the presence of medium expansive soils. The actual floor slab reinforcement should be determined by the structural engineer, based on the imposed loading.

Pavement Design Recommendations

ASPHALT PAVEMENTS (R= 20)					
Materials	**Thickness (inches)**				
	Auto Parking (TI = 4.0)	Auto Drive Lanes (TI = 5.0)	Truck Traffic		
			(TI = 6.0)	(TI = 7.0)	(TI = 8.0)
Asphalt Concrete	3	3	3½	4	5
Aggregate Base	6	8	10	12	14
Compacted Subgrade	12	12	12	12	12

PORTLAND CEMENT CONCRETE PAVEMENTS (R=20)				
Materials	**Thickness (inches)**			
	Auto Parking & Drives (TI = 5.0)	Truck Traffic		
		(TI =6.0)	(TI =7.0)	(TI =8.0)
PCC	5	5	5½	7
Compacted Subgrade (95% minimum compaction)	12	12	12	12

2.0 SCOPE OF SERVICES

The scope of services performed for this project was in accordance with our Proposal No. 21P511, dated December 17, 2021. The scope of services included a visual site reconnaissance, subsurface exploration, field and laboratory testing, and geotechnical engineering analysis to provide criteria for preparing the design of the building foundations, building floor slab, and parking lot pavements along with site preparation recommendations and construction considerations for the proposed development. The evaluation of the environmental aspects of this site was beyond the scope of services for this geotechnical investigation.

3.0 SITE AND PROJECT DESCRIPTION

3.1 Site Conditions

The subject site is located at the northwest corner of Ethanac Road and Sherman Road in Perris, California. The site is bounded to the north by a commercial/industrial building and a vacant lot, to the west by Trumble Road, to the south by Ethanac Road, and to the east by Sherman Road. The general location of the site is illustrated on the Site Location Map, enclosed as Plate 1 in Appendix A of this report.

The site consists of several contiguous rectangular-shaped parcels which total 24± acres in size. The site is currently vacant and undeveloped. The ground surface cover generally consists of exposed soil with moderate native grass and weed growth. Concrete debris, including concrete fragments and a concrete pipe, is scattered on the ground surface in the southern portion of the site. Several small to medium sized trees are also present in the southern region of the site.

Based on our review of readily available historical aerial photographs, two (2) small structures were present in the southwestern portion of the overall site, between 1966 and 1997.

Detailed topographic information was not available at the time of this report. Based on elevations obtained from Google Earth, and visual observations made at the time of the subsurface investigation, the overall site topography is relatively flat that gently slopes downward to the northwest at a gradient of less than 1 percent.

3.2 Proposed Development

A conceptual site plan for the proposed development, identified as Scheme 7, prepared by Herdman Architecture and Design, was provided to our office by the client. Based on this plan, the subject site will be developed with a 547,520± ft² warehouse, located in the central region of the site. Dock-high doors will be constructed along a portion of the northern and southern building walls. The proposed building is expected to be surrounded by asphaltic concrete pavements in the parking and drive areas, Portland cement concrete pavements in the truck loading areas, and concrete flatwork with some landscaped areas.

Detailed structural information has not been provided. We assume that the new building will be a single-story structure of tilt-up concrete construction, typically supported on a conventional shallow foundation system with a concrete slab-on-grade floor. Based on the assumed construction, maximum column and wall loads are expected to be on the order of 100 kips and 4 to 6 kips per linear foot, respectively.

No significant amounts of below-grade construction, such as basements or crawl spaces, are expected to be included in the proposed development. Based on the assumed topography, cuts and fills of up to 4 to 7± feet are expected to be necessary to achieve the proposed site grades.

4.0 SUBSURFACE EXPLORATION

4.1 Scope of Exploration/Sampling Methods

The subsurface exploration conducted for this project consisted of eight (8) borings (identified as Boring Nos. B-1 through B-8) advanced to depths of 10 to 25± feet below the existing site grades. All of the borings were logged during drilling by a member of our staff.

The borings were advanced with hollow-stem augers, by a conventional truck-mounted drilling rig. Representative bulk and relatively undisturbed soil samples were taken during drilling. Relatively undisturbed soil samples were taken with a split barrel "California Sampler" containing a series of one inch long, 2.416± inch diameter brass rings. This sampling method is described in ASTM Test Method D-3550. Samples were also taken using a 1.4± inch inside diameter split spoon sampler, in general accordance with ASTM D-1586. Both of these samplers are driven into the ground with successive blows of a 140-pound weight falling 30 inches. The blow counts obtained during driving are recorded for further analysis. Bulk samples were collected in plastic bags to retain their original moisture content. The relatively undisturbed ring samples were placed in molded plastic sleeves that were then sealed and transported to our laboratory.

The approximate locations of the borings are indicated on the Boring Location Plan, included as Plate 2 in Appendix A of this report. The Boring Logs, which illustrate the conditions encountered at the boring locations, as well as the results of some of the laboratory testing, are included in Appendix B.

4.2 Geotechnical Conditions

Older Alluvium

Older native alluvial soils were encountered at the ground surface at all of the boring locations, extending to depths of at least 5½ to 25± feet below ground surface. The older alluvium generally consists of stiff to hard fine sandy clays, fine to coarse sandy clays and medium dense to very dense clayey fine to medium sands.

Granodiorite to Tonalite (Kdgv)

Granodiorite to Tonalite bedrock, map symbol Kdgv, was encountered beneath the older alluvium at Boring Nos. B-1, B-4, B-5, and B-6, at depths of 5½ to 12± feet below ground surface, extending to the maximum depths explored at each of these borings of 15 to 25± feet. The bedrock generally consists of medium dense to very dense gray brown, highly weathered, friable, fine- to coarse-grained granodiorite to tonalite.

Groundwater

Free water was not encountered during the drilling of any of the borings. Based on the moisture content of the recovered soil samples and the lack of free water in the borings, the static groundwater table is at a greater depth than 25± feet below existing site grades.

As part of our research, we reviewed readily available groundwater data in order to determine regional groundwater depths. The primary reference used to determine the groundwater depths in the subject site area is the California Department of Water Resources website, http://www.water.ca.gov/waterdatalibrary/. The nearest monitoring well is located approximately 1,320 feet northwest from the site. Water level readings within this monitoring well indicates a high groundwater level of 95.6 feet below the ground surface in September 1995.

4.3 Geologic Conditions

Regional geologic conditions were obtained from the Preliminary Geologic Map of the Romoland 7.5' Quadrangle, Riverside County, California, by Douglas M. Morton, published by the U.S. Geologic Survey Department of Sciences University of California Riverside. A portion of this map indicating the location of the subject site, is included as Plate 3 in Appendix A of this report. This map indicates that the site is underlain by old alluvial-fan deposits (Map Symbol Qof). Qof is described as indurated, sandy alluvial-fan deposits.

Bedrock materials were encountered beneath the older alluvial soils at Boring Nos. B-1, B-4, B-5, and B-6 at depths of 6½ to 12± feet below the existing site grades. The bedrock is weathered, friable, and fine- to coarse- grained. Based on the characteristics of these bedrock materials and the geologic mapping in the vicinity of the subject site, it is our opinion that these bedrock materials consist of Granodiorite to Tonalite, (Map Symbol Kgdv). The Granodiorite to Tonalite unit is described on this map as relatively uniform, massive hornblende biotite granodiorite grading into tonalite.

5.0 LABORATORY TESTING

The soil samples recovered from the subsurface exploration were returned to our laboratory for further testing to determine selected physical and engineering properties of the soils. The tests are briefly discussed below. It should be noted that the test results are specific to the actual samples tested, and variations could be expected at other locations and depths.

Classification

All recovered soil samples were classified using the Unified Soil Classification System (USCS), in accordance with ASTM D-2488. Field identifications were then supplemented with additional visual classifications and/or by laboratory testing. The USCS classifications are shown on the Boring Logs and are periodically referenced throughout this report.

Density and Moisture Content

The density has been determined for selected relatively undisturbed ring samples. These densities were determined in general accordance with the method presented in ASTM D-2937. The results are recorded as dry unit weight in pounds per cubic foot. The moisture contents are determined in accordance with ASTM D-2216, and are expressed as a percentage of the dry weight. These test results are presented on the Boring Logs.

Consolidation

One selected soil sample has been tested to determine its consolidation and collapse potential, in accordance with ASTM D-2435. The testing apparatus is designed to accept either natural or remolded samples in a one-inch-high ring, approximately 2.416 inches in diameter. Each sample is then loaded incrementally in a geometric progression and the resulting deflection is recorded at selected time intervals. Porous stones are in contact with the top and bottom of the sample to permit the addition or release of pore water. The samples are typically inundated with water at an intermediate load to determine their potential for collapse or heave. The results of the consolidation testing are plotted on Plate C-1 in Appendix C of this report.

Maximum Dry Density and Optimum Moisture Content

A representative bulk sample has been tested for its maximum dry density and optimum moisture content. The results have been obtained using the Modified Proctor procedure, per ASTM D-1557 and are presented on Plate C-2 in Appendix C of this report. This test is generally used to compare the in-situ densities of undisturbed field samples, and for later compaction testing. Additional testing of other soil types or soil mixes may be necessary at a later date.

Expansion Index

The expansion potential of the on-site soils was determined in general accordance with ASTM D-4829. The testing apparatus is designed to accept a 4-inch diameter, 1-in high, remolded sample. The sample is initially remolded to 50± 1 percent saturation and then loaded with a surcharge equivalent to 144 pounds per square foot. The sample is then inundated with water and allowed

to swell against the surcharge. The resultant swell or consolidation is recorded after a 24-hour period. The results of the EI testing are as follows:

Sample Identification	Expansion Index	Expansive Potential
B-6 @ 0 to 5 feet	62	Medium

Soluble Sulfates

A representative sample of the near-surface soils was submitted to a subcontracted analytical laboratory for determination of soluble sulfate content. Soluble sulfates are naturally present in soils, and if the concentration is high enough, can result in degradation of concrete which comes into contact with these soils. The results of the soluble sulfate testing are presented below, and are discussed further in a subsequent section of this report.

Sample Identification	Soluble Sulfates (%)	Sulfate Classification
B-1 @ 0 to 5 feet	0.003	Not Applicable (S0)

Corrosivity Testing

One representative bulk sample of the near-surface soils was submitted to a subcontracted corrosion engineering laboratory to identify potentially corrosive characteristics with respect to common construction materials. The corrosivity testing included a determination of the electrical resistivity, pH, and chloride and nitrate concentrations of the soils, as well as other tests. The results of some of these tests are presented below.

Sample Identification	Saturated Resistivity (ohm-cm)	pH	Chlorides (mg/kg)	Nitrates (mg/kg)
B-1 @ 0 to 5 feet	3,400	7.9	3.0	5.7

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of our review, field exploration, laboratory testing and geotechnical analysis, the proposed development is considered feasible from a geotechnical standpoint. The recommendations contained in this report should be taken into the design, construction, and grading considerations.

The recommendations are contingent upon all grading and foundation construction activities being monitored by the geotechnical engineer of record. The recommendations are provided with the assumption that an adequate program of client consultation, construction monitoring, and testing will be performed during the final design and construction phases to verify compliance with these recommendations. Maintaining Southern California Geotechnical, Inc., (SCG) as the geotechnical consultant from the beginning to the end of the project will provide continuity of services. The geotechnical engineering firm providing testing and observation services shall assume the responsibility of Geotechnical Engineer of Record.

The Grading Guide Specifications, included as Appendix D, should be considered part of this report, and should be incorporated into the project specifications. The contractor and/or owner of the development should bring to the attention of the geotechnical engineer any conditions that differ from those stated in this report, or which may be detrimental for the development.

6.1 Seismic Design Considerations

The subject site is located in an area which is subject to strong ground motions due to earthquakes. The performance of a site-specific seismic hazards analysis was beyond the scope of this investigation. However, numerous faults capable of producing significant ground motions are located near the subject site. Due to economic considerations, it is not generally considered reasonable to design a structure that is not susceptible to earthquake damage. Therefore, significant damage to structures may be unavoidable during large earthquakes. The proposed structures should, however, be designed to resist structural collapse and thereby provide reasonable protection from serious injury, catastrophic property damage and loss of life.

Faulting and Seismicity

Research of available maps indicates that the subject site is not located within an Alquist-Priolo Earthquake Fault Zone. Furthermore, SCG did not identify any evidence of faulting during the geotechnical investigation. Therefore, the possibility of significant fault rupture on the site is considered to be low.

The potential for other geologic hazards such as seismically induced settlement, lateral spreading, tsunamis, inundation, seiches, flooding, and subsidence affecting the site is considered low.

Seismic Design Parameters

The 2019 California Building Code (CBC) provides procedures for earthquake resistant structural design that include considerations for on-site soil conditions, occupancy, and the configuration of

the structure including the structural system and height. The seismic design parameters presented below are based on the soil profile and the proximity of known faults with respect to the subject site.

Based on standards in place at the time of this report, the proposed development is expected to be designed in accordance with the requirements of the 2019 edition of the California Building Code (CBC), which was adopted on January 1, 2020.

The 2019 CBC Seismic Design Parameters have been generated using the SEAOC/OSHPD Seismic Design Maps Tool, a web-based software application available at the website www.seismicmaps.org. This software application calculates seismic design parameters in accordance with several building code reference documents, including ASCE 7-16, upon which the 2019 CBC is based. The application utilizes a database of risk-targeted maximum considered earthquake (MCE_R) site accelerations at 0.01-degree intervals for each of the code documents. The tables below were created using data obtained from the application. The output generated from this program is included as Plate E-1 in Appendix E of this report. Based on this output, the following parameters may be utilized for the subject site:

2019 CBC SEISMIC DESIGN PARAMETERS

Parameter		Value
Mapped Spectral Acceleration at 0.2 sec Period	S_S	1.421
Mapped Spectral Acceleration at 1.0 sec Period	S_1	0.528
Site Class	---	C
Site Modified Spectral Acceleration at 0.2 sec Period	S_{MS}	1.705
Site Modified Spectral Acceleration at 1.0 sec Period	S_{M1}	0.777
Design Spectral Acceleration at 0.2 sec Period	S_{DS}	1.137
Design Spectral Acceleration at 1.0 sec Period	S_{D1}	0.518

Liquefaction

Liquefaction is the loss of strength in generally cohesionless, saturated soils when the pore-water pressure induced in the soil by a seismic event becomes equal to or exceeds the overburden pressure. The primary factors which influence the potential for liquefaction include groundwater table elevation, soil type and plasticity characteristics, relative density of the soil, initial confining pressure, and intensity and duration of ground shaking. The depth within which the occurrence of liquefaction may impact surface improvements is generally identified as the upper 50 feet below the existing ground surface. Liquefaction potential is greater in saturated, loose, poorly graded fine sands with a mean (d_{50}) grain size in the range of 0.075 to 0.2 mm (Seed and Idriss, 1971). Non-sensitive clayey (cohesive) soils which possess a plasticity index of at least 18 (Bray and Sancio, 2006) are generally not considered to be susceptible to liquefaction, nor are those soils which are above the historic static groundwater table.

The Riverside County GIS website indicates that the subject site is located within a zone of low liquefaction susceptibility. In addition, the subsurface conditions encountered at the boring locations are not considered to be conducive to liquefaction. These conditions consist of moderate

to high strength alluvial soils underlain by bedrock, with no evidence of a long-term groundwater table within the depths explored by the borings. Based on these considerations, liquefaction is not considered to be a design concern for this project.

6.2 Geotechnical Design Considerations

General

The proposed building area is underlain by relatively high strength older alluvial soils. The results of consolidation testing indicate that the near surface soils may be subject to minor consolidation settlement when loaded. In order to provide more uniform support characteristics below the floor slab and foundation areas, and to help limit potential differential settlements, some remedial grading is considered warranted within the proposed building pad area in order to remove the upper portion of the existing soils and replace them as compacted structural fill.

Settlement

The recommended remedial grading will remove the upper portion of the near-surface native alluvium, and replace these soils as compacted structural fill. The native soils that will remain in place below the recommended depth of overexcavation generally possess favorable consolidation characteristics and will not be subject to significant load increases from the foundations of the new structure. Provided that the recommended remedial grading is completed, the post-construction static settlements of the proposed structure is expected to be within tolerable limits.

Expansion

Laboratory testing performed on a representative sample of the near surface soils indicates that these materials possess a medium expansion potential (EI = 62). Based on the presence of expansive soils at this site, care should be given to proper moisture conditioning of all building pad subgrade soils to a moisture content of 2 to 4 percent above the ASTM D-1557 optimum during site grading. In addition to adequately moisture conditioning the subgrade soils and fill soils during grading, special care must be taken to maintaining moisture content of these soils at 2 to 4 percent above the optimum moisture content. This will require the contractor to frequently moisture condition these soils throughout the grading process, unless grading occurs during a period of relatively wet weather.

Soluble Sulfates

The results of the soluble sulfate testing indicated a sulfate concentration of approximately 0.003 percent for the selected sample of the near-surface soils. This concentration is considered to be "not applicable" (S0) with respect to the American Concrete Institute (ACI) Publication 318-14 Building Code Requirements for Structural Concrete and Commentary, Section 4.3. Therefore, specialized concrete mix designs are not considered to be necessary, with regard to sulfate protection purposes. It is, however, recommended that additional soluble sulfate testing be conducted at the completion of rough grading to verify the soluble sulfate concentrations of the soils which are present at pad grade within the building area.

Corrosion Potential

The results of laboratory testing indicate that the on-site soils possess a saturated resistivity of 3,400 ohm-cm, and a pH value of 7.9. These test results have been evaluated in accordance with guidelines published by the Ductile Iron Pipe Research Association (DIPRA). The DIPRA guidelines consist of a point system by which characteristics of the soils are used to quantify the corrosivity characteristics of the site. Resistivity and pH are two of the five factors that enter into the evaluation procedure. Redox potential, relative soil moisture content and sulfides are also included. Although sulfide testing was not part of the scope of services for this project, we have evaluated the corrosivity characteristics of the on-site soils using resistivity, pH and moisture content. Based on these factors, and utilizing the DIPRA procedure, the on-site soils are not considered to be corrosive to ductile iron pipe.

A relatively low concentration (3.0 mg/kg) of chlorides were detected in the sample submitted for corrosivity testing. In general, soils possessing chloride concentrations in excess of 500 parts per million (ppm) are considered to be corrosive with respect to steel reinforcement within reinforced concrete. Based on the lack of any significant chlorides in the tested sample, the site is considered to have a C1 chloride exposure in accordance with the American Concrete Institute (ACI) Publication 318 Building Code Requirements for Structural Concrete and Commentary. Therefore, a specialized concrete mix design for reinforced concrete for protection against chloride exposure is not considered warranted.

Nitrates present in soil can be corrosive to copper tubing at concentrations greater than 50 mg/kg. The tested sample possess a nitrate concentration of 5.7 mg/kg. Based on this test result, the on-site soils are not considered to be corrosive to copper pipe.

Since SCG does not practice in the area of corrosion engineering, we recommend that the client contact a corrosion engineer to provide a more thorough evaluation.

Shrinkage/Subsidence

Based on the results of the laboratory testing, removal and recompaction of the near-surface older native alluvium will result in an average shrinkage of 0 to 6 percent. It should be noted that the potential shrinkage estimate is based on dry density testing performed on small-diameter samples taken at the boring locations. If a more accurate and precise shrinkage estimate is desired, SCG can perform a shrinkage study involving several excavated test-pits where in-place densities are determined using in-situ testing methods instead of laboratory density testing on small-diameter samples. Please contact SCG for details and a cost estimate regarding a shrinkage study, if desired.

Minor ground subsidence is expected to occur in the soils below the zone of removal, due to settlement and machinery working. The subsidence is estimated to be 0.10 feet.

These estimates are based on previous experience and the subsurface conditions encountered at the boring locations. The actual amount of subsidence is expected to be variable and will be dependent on the type of machinery used, repetitions of use, and dynamic effects, all of which are difficult to assess precisely.

Grading and Foundation Plan Review

It is recommended that we be provided with copies of the finalized grading and foundation plans, when they become available, for review with regard to the conclusions, recommendations, and assumptions contained within this report.

6.3 Site Grading Recommendations

The grading recommendations presented below are based on the subsurface conditions encountered at the boring locations and our understanding of the proposed development. We recommend that all grading activities be completed in accordance with the Grading Guide Specifications included as Appendix D of this report, unless superseded by site-specific recommendations presented below.

Site Stripping

Initial site preparation should include stripping of any surficial vegetation. This includes the removal of the moderate native grass, weeds, and shrubs present at the site. These materials should be disposed of off-site. The actual extent of site stripping should be determined in the field by the geotechnical engineer, based on the organic content and stability of the materials encountered.

At the time of site stripping, trash and concrete debris should also should be removed from the site. Any remnants of the previous structures, if present, should be demolished. Demolition should include all subsurface remnants of the previous structures, including foundations, floor slabs, septic systems and any utilities that will not be reutilized with the proposed development. Any debris resultant from demolition should be disposed of offsite in accordance with local regulations. Any excavations associated with demolition should be backfilled with compacted fill soils.

Treatment of Existing Soils: Building Pad

Remedial grading should be performed within the proposed building pad area in order to remove the upper portion of the near-surface alluvial soils in order to provide more uniform support characteristics below the floor slab and foundation areas. The overexcavation is recommended to extend to a depth of at least 2 feet below existing grade, and to a depth of at least 2 feet below proposed grade, whichever is greater. Within the influence zones of the new foundations, the overexcavation should extend to a depth of at least 2 feet below proposed foundation bearing grade.

The overexcavation areas should extend at least 5 feet beyond the building perimeters, and to an extent equal to the depth of fill below the new foundations. If the proposed structure incorporates any exterior columns (such as for a canopy or overhang) the area of overexcavation should also encompass these areas.

Following completion of the overexcavation, the subgrade soils within the overexcavation areas should be evaluated by the geotechnical engineer to verify their suitability to serve as the structural fill subgrade, as well as to support the foundation loads of the new structure. This

evaluation should include proofrolling and probing to identify any soft, loose, or otherwise unstable soils that must be removed. Some localized areas of deeper excavation may be required if additional fill or loose, porous, or low-density native soils are encountered at the base of the overexcavation.

After a suitable overexcavation subgrade has been achieved, the exposed soils should be scarified to a depth of at least 12 inches and moisture conditioned or air dried to achieve a moisture content of 2 to 4 percent above optimum moisture content. The subgrade soils should then be recompacted to at least 90 percent of the ASTM D-1557 maximum dry density.

The building pad area may then be raised to grade with previously excavated soils or imported, very low expansive structural fill. All structural fill soils present within the proposed building area should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density.

Treatment of Existing Soils: Retaining Walls and Site Walls

The existing soils within the areas of proposed retaining and non-retaining site walls should be overexcavated to a depth of at least 2 feet below foundation bearing grade and replaced as compacted structural fill. Subgrades for erection pads for concrete tilt-up walls are considered to be a part of the foundation system and should also be overexcavated. The overexcavation subgrade soils should be evaluated by the geotechnical engineer prior to scarifying, moisture conditioning and recompacting the upper 12 inches of exposed subgrade soils. The previously excavated soils may then be replaced as compacted structural fill.

If the full lateral extent of overexcavation is not achievable for the proposed walls, the foundations should be redesigned using a lower bearing pressure. The geotechnical engineer of record should be contacted for recommendations pertaining to this type of condition.

Treatment of Existing Soils: Parking and Drive Areas

Based on economic considerations, overexcavation of the existing soils in the new parking and drive areas is not considered warranted, with the exception of areas where lower strength, or unstable soils are identified by the geotechnical engineer during grading.

Subgrade preparation in the new parking and drive areas should initially consist of removal of all soils disturbed during stripping. The geotechnical engineer should then evaluate the subgrade to identify any areas of additional unsuitable soils. The subgrade soils should then be scarified to a depth of 12± inches, moisture conditioned to 2 to 4 percent above optimum, and recompacted to at least 90 percent of the ASTM D-1557 maximum dry density. Based on the presence of variable strength soils throughout the site, it is expected that some isolated areas of additional overexcavation may be required to remove zones of lower strength, unsuitable soils.

The grading recommendations presented above for the proposed parking and drive areas assume that the owner and/or developer can tolerate minor amounts of settlement within the proposed parking areas. The grading recommendations presented above do not provide remedial grading throughout the entire parking areas. As such, settlement and associated pavement distress could occur. Typically, repair of such distressed areas involves significantly lower costs than completely mitigating these soils at the time of construction. If the owner cannot tolerate the risk of such settlements, the parking and drive areas should be overexcavated to a depth of 2 feet below

proposed pavement subgrade elevation, with the resulting soils replaced as compacted structural fill.

Fill Placement

- Fill soils should be placed in thin (6± inches), near-horizontal lifts, moisture conditioned to 2 to 4 percent above the optimum moisture content, and compacted.
- On-site soils may be used for fill provided they are cleaned of any debris to the satisfaction of the geotechnical engineer.
- All grading and fill placement activities should be completed in accordance with the requirements of the 2019 CBC and the grading code of the city of Perris.
- All fill soils should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density. Fill soils should be well mixed.
- Compaction tests should be performed periodically by the geotechnical engineer as random verification of compaction and moisture content. These tests are intended to aid the contractor. Since the tests are taken at discrete locations and depths, they may not be indicative of the entire fill and therefore should not relieve the contractor of his responsibility to meet the job specifications.

Imported Structural Fill

All imported structural fill should consist of very low to low expansive (EI < 50), well graded soils possessing at least 10 percent fines (that portion of the sample passing the No. 200 sieve). Additional specifications for structural fill are presented in the Grading Guide Specifications, included as Appendix D.

Utility Trench Backfill

In general, all utility trench backfill soils should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density. As an alternative, a clean sand (minimum Sand Equivalent of 30) may be placed within trenches and compacted in place (jetting or flooding is not recommended). Compacted trench backfill should conform to the requirements of the local grading code, and more restrictive requirements may be indicated by the city of Perris. All utility trench backfills should be witnessed by the geotechnical engineer. The trench backfill soils should be compaction tested where possible; probed and visually evaluated elsewhere.

Utility trenches which parallel a footing, and extending below a 1h:1v plane projected from the outside edge of the footing should be backfilled with structural fill soils, compacted to at least 90 percent of the ASTM D-1557 standard. Pea gravel backfill should not be used for these trenches.

6.4 Construction Considerations

Excavation Considerations

The near-surface soils generally consist of moderate to high strength sandy clays and clayey sands. These materials may be subject to minor to moderate caving within shallow excavations. Where caving does occur, flattened excavation slopes may be sufficient to provide excavation

stability. On a preliminary basis, the inclination of temporary slopes should not exceed 1½h:1v. Temporary excavations into bedrock may be laid back at a 1h:1v, at the discretion of the geotechnical engineer. Deeper excavations may require some form of external stabilization such as shoring or bracing. Maintaining adequate moisture content within the near-surface soils will improve excavation stability. All excavation activities on this site should be conducted in accordance with Cal-OSHA regulations.

Medium dense to very dense granodiorite to tonalite bedrock was encountered at Boring Nos. B-1, B-4, B-5, and B-6, at depths of 5½ to 12± feet below the existing site grades. The recovered samples of the bedrock materials generally friable, and refusal conditions were not encountered during drilling. Based on the conditions at the boring locations, we expect that the near surface bedrock materials will be rippable using conventional grading equipment.

Expansive Soils

Based on results of laboratory testing, the near-surface soils at this site possess medium expansion potentials. Due to the presence of expansive soils at this site, provisions should be made to limit the potential for surface water to penetrate the soils immediately adjacent to the structures. These provisions should include directing surface runoff into rain gutters and area drains, reducing the extent of landscaped areas around the structures, and sloping the ground surface away from the buildings. Where possible, it is recommended that landscaped planters not be located immediately adjacent to the buildings. If landscaped planters around the buildings are necessary, it is recommended that drought tolerant plants or a drip irrigation system be utilized, to minimize the potential for deep moisture penetration around the structures. Presented below is a list of additional soil moisture control recommendations that should be considered by the owner, developer, and civil engineer:

- Ponding and areas of low flow gradients in unpaved walkways, grass and planter areas should be avoided. In general, minimum drainage gradients of 2 percent should be maintained in unpaved areas.
- Bare soil within five feet of proposed structures should be sloped at a minimum five percent gradient away from the structure (about three inches of fall in five feet), or the same area could be paved with a minimum surface gradient of one percent. Pavement is preferable.
- Decorative gravel ground cover tends to provide a reservoir for surface water and may hide areas of ponding or poor drainage. Decorative gravel is, therefore, not recommended and should not be utilized for landscaping unless equipped with a subsurface drainage system designed by a licensed landscape architect.
- Positive drainage devices, such as graded swales, paved ditches, and catch basins should be installed at appropriate locations within the area of proposed development.
- Concrete walks and flatwork should not obstruct the free flow of surface water to the appropriate drainage devices.
- Area drains should be recessed below grade to allow free flow of water into the drain. Concrete or brick flatwork joints should be sealed with mortar or flexible mastic.
- Gutter and downspout systems should be installed to capture all discharge from roof areas. Downspouts should discharge directly into a pipe or paved surface system to be conveyed offsite.
- Enclosed planters adjoining, or in close proximity to proposed structures, should be sealed at the bottom and provided with subsurface collection systems and outlet pipes.
- Depressed planters should be raised with soil to promote runoff (minimum drainage gradient two percent or five percent, see above), and/or equipped with area drains to eliminate ponding.

- Drainage outfall locations should be selected to avoid erosion of slopes and/or properly armored to prevent erosion of graded surfaces. No drainage should be directed over or towards adjoining slopes.
- All drainage devices should be maintained on a regular basis, including frequent observations during the rainy season to keep the drains free of leaves, soil and other debris.
- Landscape irrigation should conform to the recommendations of the landscape architect and should be performed judiciously to preclude either soaking or excessive drying of the foundation soils. This should entail regular watering during the drier portions of the year and little or no irrigation during the rainy season. Automatic sprinkler systems should, therefore, be switched to manual operation during the rainy season. Good irrigation practice typically requires frequent application of limited quantities of water that are sufficient to sustain plant growth, but do not excessively wet the soils. Ponding and/or run-off of irrigation water are indications of excessive watering.

Other provisions, as determined by the landscape architect or civil engineer, may also be appropriate.

Moisture Sensitive Subgrade Soils

Most of the near surface soils possess appreciable silt and clay content and may become unstable if exposed to significant moisture infiltration or disturbance by construction traffic. In addition, based on their granular content, some of the on-site soils will also be susceptible to erosion. The site should, therefore, be graded to prevent ponding of surface water and to prevent water from running into excavations.

Groundwater

The static groundwater table is considered to exist at a depth greater than 25± feet below the existing site grades. Therefore, groundwater is not expected to impact the grading or foundation construction activities.

6.5 Foundation Design and Construction

Based on the preceding grading recommendations, it is assumed that the new building pad will be underlain by newly placed structural fill soils extending to a depth of at least 2 feet below foundation bearing grade. Based on this subsurface profile, the proposed structure may be supported on shallow foundations.

Foundation Design Parameters

New square and rectangular footings may be designed as follows:

- Maximum, net allowable soil bearing pressure: 2,500 lbs/ft^2.
- Minimum wall/column footing width: 14 inches/24 inches.
- Minimum longitudinal steel reinforcement within strip footings: Four (4) No. 5 rebars (2 top and 2 bottom). Due to the presence of expansive soils. Additional reinforcement may be necessary for structural considerations.

- Minimum foundation embedment: 12 inches into suitable structural fill soils, and at least 18 inches below adjacent exterior grade. Interior column footings may be placed immediately beneath the floor slab.

- It is recommended that the perimeter building foundations be continuous across all exterior doorways. Any flatwork adjacent to the exterior doors should be doweled into the perimeter foundations in a manner determined by the structural engineer.

The allowable bearing pressures presented above may be increased by 1/3 when considering short duration wind or seismic loads. The minimum steel reinforcement recommended above is based on standard geotechnical practice. Additional rigidity may be necessary for structural considerations. The actual design of the foundations should be determined by the structural engineer.

Foundation Construction

The foundation subgrade soils should be evaluated at the time of overexcavation, as discussed in Section 6.3 of this report. It is further recommended that the foundation subgrade soils be evaluated by the geotechnical engineer immediately prior to steel or concrete placement. Soils suitable for direct foundation support should consist of newly placed structural fill compacted at least 90 percent of the ASTM D-1557 maximum dry density. Any unsuitable materials should be removed to a depth of suitable bearing compacted structural fill, with the resulting excavations backfilled with compacted fill soils. As an alternative, lean concrete slurry (500 to 1,500 psi) may be used to backfill such isolated overexcavations.

The foundation subgrade soils should also be properly moisture conditioned to 2 to 4 percent above the Modified Proctor optimum, to a depth of at least 12 inches below bearing grade. Since it is typically not feasible to increase the moisture content of the floor slab and foundation subgrade soils once rough grading has been completed, care should be taken to maintain the moisture content of the building pad subgrade soils throughout the construction process.

Estimated Foundation Settlements

Post-construction total and differential static settlements of shallow foundations designed and constructed in accordance with the previously presented recommendations are estimated to be less than 1.0 and 0.5 inches, respectively, under static conditions. Differential movements are expected to occur over a 50-foot span, thereby resulting in an angular distortion of less than 0.002 inches per inch.

Lateral Load Resistance

Lateral load resistance will be developed by a combination of friction acting at the base of foundations and slab and the passive earth pressure developed by footings below grade. The following friction and passive pressure may be used to resist lateral forces:

- Passive Earth Pressure: 250 lbs/ft^3
- Friction Coefficient: 0.28

These are allowable values, and include a factor of safety. When combining friction and passive resistance, the passive pressure component should be reduced by one-third. These values assume that footings will be poured directly against compacted structural fill soils. The maximum allowable passive pressure is 3,000 lbs/ft^2.

6.6 Floor Slab Design and Construction

Subgrades which will support new floor slab should be prepared in accordance with the recommendations contained in the ***Site Grading Recommendations*** section of this report. Based on the anticipated grading which will occur at this site, the floor of the proposed structure may be constructed as a conventional slab-on-grade, supported on newly placed structural fill (or densified existing soils), extending to a depth of at least 2 feet below finished pad grade. Based on geotechnical considerations, the floor slabs may be designed as follows:

- Minimum slab thickness: 6 inches.

- Modulus of Subgrade Reaction: 100 psi/in.

- Minimum slab reinforcement: No. 3 bars at 18 inches on center in both directions due to the presence of low expansive soils. The actual floor slab reinforcement should be determined by the structural engineer, based on the imposed loading.

- Slab underlayment: If moisture sensitive floor coverings will be used then minimum slab underlayment should consist of a moisture vapor barrier constructed below the entire slab area where such moisture sensitive floor coverings are expected. The moisture vapor barrier should meet or exceed the Class A rating as defined by ASTM E 1745-97 and have a permeance rating less than 0.01 perms as described in ASTM E 96-95 and ASTM E 154-88. A polyolefin material such as a 15-mil Stego® Wrap Vapor Barrier or equivalent will meet these specifications. The moisture vapor barrier should be properly constructed in accordance with all applicable manufacturer specifications. Given that a rock free subgrade is anticipated and that a capillary break is not required, sand below the barrier is not required. The need for sand and/or the amount of sand above the moisture vapor barrier should be specified by the structural engineer or concrete contractor. The selection of sand above the barrier is not a geotechnical engineering issue and hence outside our purview. Where moisture sensitive floor coverings are not anticipated, the vapor barrier may be eliminated.

- Moisture condition the floor slab subgrade soils to 2 to 4 percent above the Modified Proctor optimum moisture content, to a depth of 12 inches. The moisture content of the floor slab subgrade soils should be verified by the geotechnical engineer within 24 hours prior to concrete placement.

- Proper concrete curing techniques should be utilized to reduce the potential for slab curling or the formation of excessive shrinkage cracks.

The actual design of the floor slab should be completed by the structural engineer to verify adequate thickness and reinforcement.

6.7 Retaining Wall Design and Construction

Although not indicated on the site plan, some small (less than 6 feet in height) retaining walls may be required in truck court area and to facilitate the new site grades. The parameters recommended for use in the design of these walls are presented below.

Retaining Wall Design Parameters

Based on the soil conditions encountered at the boring locations, the following parameters may be used in the design of new retaining walls for this site. The near surface soils generally consist of sandy clays and have been determined to possess a medium expansion potential. We do not recommend that the on-site soils be used to backfill retaining walls, based on their expansion potential. The following parameters assume that imported fill soils, consisting of very low expansive sands or silty sands will be utilized for retaining wall backfill. These materials are expected to possess a friction angle of at least 30 degrees when compacted to at least 90 percent of the ASTM D-1557 maximum dry density.

If desired, SCG could provide design parameters for an alternative select backfill material behind the retaining walls. The use of select backfill material could result in lower lateral earth pressures. In order to use the design parameters for the imported select fill, this material must be placed within the entire active failure wedge. This wedge is defined as extending from the heel of the retaining wall upwards at an angle of approximately 60° from horizontal. If select backfill material behind the retaining wall is desired, SCG should be contacted for supplementary recommendations.

RETAINING WALL DESIGN PARAMETERS

Design Parameter		**Soil Type**
		Imported Silty Sands and Sands
Internal Friction Angle (ϕ)		30°
Unit Weight		130 lbs/ft^3
Equivalent Fluid Pressure:	Active Condition (level backfill)	43 lbs/ft^3
	Active Condition (2h:1v backfill)	70 lbs/ft^3
	At-Rest Condition (level backfill)	65 lbs/ft^3

Regardless of the backfill type, the walls should be designed using a soil-footing coefficient of friction of 0.28 and an equivalent passive pressure of 250 lbs/ft^3. The structural engineer should incorporate appropriate factors of safety in the design of the retaining walls.

The active earth pressure may be used for the design of retaining walls that do not directly support structures or support soils that in turn support structures and which will be allowed to deflect. The at-rest earth pressure should be used for walls that will not be allowed to deflect

such as those which will support foundation bearing soils, or which will support foundation loads directly.

Where the soils on the toe side of the retaining wall are not covered by a "hard" surface such as a structure or pavement, the upper 1 foot of soil should be neglected when calculating passive resistance due to the potential for the material to become disturbed or degraded during the life of the structure.

Seismic Lateral Earth Pressures

In accordance with the 2019 CBC, any retaining walls more than 6 feet in height must be designed for seismic lateral earth pressures. If walls 6 feet or more are required for this site, the geotechnical engineer should be contacted for supplementary seismic lateral earth pressure recommendations.

Retaining Wall Foundation Design

The retaining wall foundations should be supported within newly placed compacted structural fill, extending to a depth of at least 2 feet below proposed foundation bearing grade. Foundations to support new retaining walls should be designed in accordance with the general Foundation Design Parameters presented in a previous section of this report.

Backfill Material

On-site soils may be used to backfill the retaining walls. However, all backfill material placed within 3 feet of the back-wall face should have a particle size no greater than 3 inches. The retaining wall backfill materials should be well graded.

It is recommended that a properly installed prefabricated drainage composite such as the MiraDRAIN 6000XL (or approved equivalent), which is specifically designed for use behind retaining walls be used. If the drainage composite material is not covered by an impermeable surface, such as a structure or pavement, a 12-inch thick layer of a low permeability soil should be placed over the backfill to reduce surface water migration to the underlying soils. The drainage composite should be separated from the backfill soils by a suitable geotextile, approved by the geotechnical engineer.

All retaining wall backfill should be placed and compacted under engineering-controlled conditions in the necessary layer thicknesses to ensure an in-place density between 90 and 93 percent of the maximum dry density as determined by the Modified Proctor test (ASTM D1557). Care should be taken to avoid over-compaction of the soils behind the retaining walls, and the use of heavy compaction equipment should be avoided.

Subsurface Drainage

As previously indicated, the retaining wall design parameters are based upon drained backfill conditions. Consequently, some form of permanent drainage system will be necessary in conjunction with the appropriate backfill material. Subsurface drainage may consist of either:

- A weep hole drainage system typically consisting of a series of 2-inch diameter holes in the wall situated slightly above the ground surface elevation on the exposed side of the wall and at an approximate 10-foot on-center spacing. Alternatively, 4-inch diameter holes at an approximate 20-foot on-center spacing can be used for this type of drainage system. In addition, the weep holes should include a 2 cubic foot pocket of open graded gravel, surrounded by an approved geotextile fabric, at each weep hole location.

- A 4-inch diameter perforated pipe surrounded by 2 cubic feet of gravel per linear foot of drain placed behind the wall, above the retaining wall footing. The gravel layer should be wrapped in a suitable geotextile fabric to reduce the potential for migration of fines. The footing drain should be extended to daylight or tied into a storm drainage system. The actual design of this type of system should be determined by the civil engineer to verify that the drainage system possesses the adequate capacity and slope for its intended use.

6.8 Pavement Design Parameters

Site preparation in the pavement area should be completed as previously recommended in the ***Site Grading Recommendations*** section of this report. The subsequent pavement recommendations assume proper drainage and construction monitoring, and are based on either PCA or CALTRANS design parameters for a twenty (20) year design period. However, these designs also assume a routine pavement maintenance program to obtain the anticipated 20-year pavement service life.

Pavement Subgrades

It is anticipated that the new pavements will be primarily supported on a layer of compacted structural fill, consisting of scarified, thoroughly moisture conditioned and recompacted existing soils. The near-surface soils generally consist of fine sandy clays, fine to coarse sandy clays, and clayey sands. These soils are generally considered to possess poor to fair pavement support characteristics with estimated R-values ranging from 20 to 30. The subsequent pavement design is therefore based upon an assumed R-value of 20. Any fill material imported to the site should have support characteristics equal to or greater than that of the on-site soils and be placed and compacted under engineering-controlled conditions. It is recommended that R-value testing be performed at the completion of rough grading. Depending upon the results of the R-value testing, it may be feasible to use thinner pavement sections in some areas of the site.

Asphaltic Concrete

Presented below are the recommended thicknesses for new flexible pavement structures consisting of asphaltic concrete over a granular base. The pavement designs are based on the traffic indices (TI's) indicated. The client and/or civil engineer should verify that these TI's are representative of the anticipated traffic volumes. If the client and/or civil engineer determine that the expected traffic volume will exceed the applicable traffic index, we should be contacted for supplementary recommendations. The design traffic indices equate to the following approximate daily traffic volumes over a 20-year design life, assuming six operational traffic days per week.

Traffic Index	No. of Heavy Trucks per Day
4.0	0
5.0	1
6.0	3
7.0	11
8.0	35

For the purpose of the traffic volumes indicated above, a truck is defined as a 5-axle tractor trailer unit with one 8-kip axle and two 32-kip tandem axles. All of the traffic indices allow for 1,000 automobiles per day.

ASPHALT PAVEMENTS (R= 20)					
Materials	**Thickness (inches)**				
	Auto Parking (TI = 4.0)	Auto Drive Lanes (TI = 5.0)	Truck Traffic		
			(TI = 6.0)	(TI = 7.0)	(TI = 8.0)
Asphalt Concrete	3	3	3½	4	5
Aggregate Base	6	8	10	12	14
Compacted Subgrade	12	12	12	12	12

The aggregate base course should be compacted to at least 95 percent of the ASTM D-1557 maximum dry density. The asphaltic concrete should be compacted to at least 95 percent of the batch plant-reported maximum density. The aggregate base course may consist of crushed aggregate base (CAB) or crushed miscellaneous base (CMB), which is a recycled gravel, asphalt and concrete material. The gradation, R-Value, Sand Equivalent, and Percentage Wear of the CAB or CMB should comply with appropriate specifications contained in the current edition of the "Greenbook" Standard Specifications for Public Works Construction.

Portland Cement Concrete

The preparation of the subgrade soils within concrete pavement areas should be performed as previously described for proposed asphalt pavement areas. The minimum recommended thicknesses for the Portland Cement Concrete pavement sections are as follows:

PORTLAND CEMENT CONCRETE PAVEMENTS (R=20)				
Materials	**Thickness (inches)**			
	Auto Parking & Drives (TI = 5.0)	Truck Traffic		
		(TI =6.0)	(TI =7.0)	(TI =8.0)
PCC	5	5	5½	7
Compacted Subgrade (95% minimum compaction)	12	12	12	12

The concrete should have a 28-day compressive strength of at least 3,000 psi. The maximum joint spacing within all of the PCC pavements is recommended to be equal to or less than 30 times the pavement thickness. The actual joint spacing and reinforcing of the Portland cement concrete pavements.

7.0 GENERAL COMMENTS

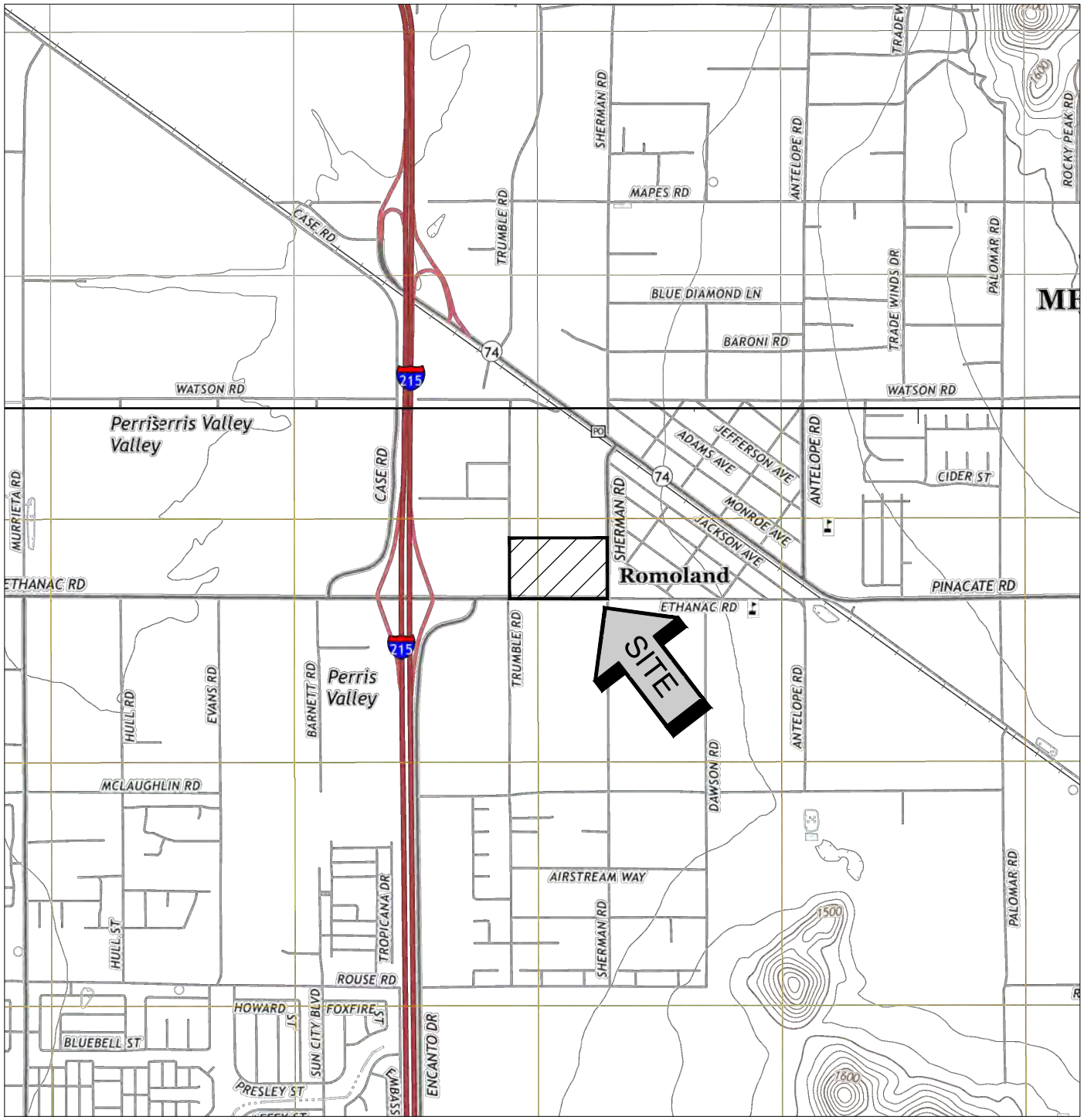
This report has been prepared as an instrument of service for use by the client, in order to aid in the evaluation of this property and to assist the architects and engineers in the design and preparation of the project plans and specifications. This report may be provided to the contractor(s) and other design consultants to disclose information relative to the project. However, this report is not intended to be utilized as a specification in and of itself, without appropriate interpretation by the project architect, civil engineer, and/or structural engineer. The reproduction and distribution of this report must be authorized by the client and Southern California Geotechnical, Inc. Furthermore, any reliance on this report by an unauthorized third party is at such party's sole risk, and we accept no responsibility for damage or loss which may occur. The client(s)' reliance upon this report is subject to the Engineering Services Agreement, incorporated into our proposal for this project.

The analysis of this site was based on a subsurface profile interpolated from limited discrete soil samples. While the materials encountered in the project area are considered to be representative of the total area, some variations should be expected between boring locations and sample depths. If the conditions encountered during construction vary significantly from those detailed herein, we should be contacted immediately to determine if the conditions alter the recommendations contained herein.

This report has been based on assumed or provided characteristics of the proposed development. It is recommended that the owner, client, architect, structural engineer, and civil engineer carefully review these assumptions to ensure that they are consistent with the characteristics of the proposed development. If discrepancies exist, they should be brought to our attention to verify that they do not affect the conclusions and recommendations contained herein. We also recommend that the project plans and specifications be submitted to our office for review to verify that our recommendations have been correctly interpreted.

The analysis, conclusions, and recommendations contained within this report have been promulgated in accordance with generally accepted professional geotechnical engineering practice. No other warranty is implied or expressed.

APPENDIX A



SOURCE: USGS TOPOGRAPHIC MAP OF THE ROMOLAND & PERRIS QUADRANGLES, RIVERSIDE COUNTY, CALIFORNIA, 2018.

SITE LOCATION MAP

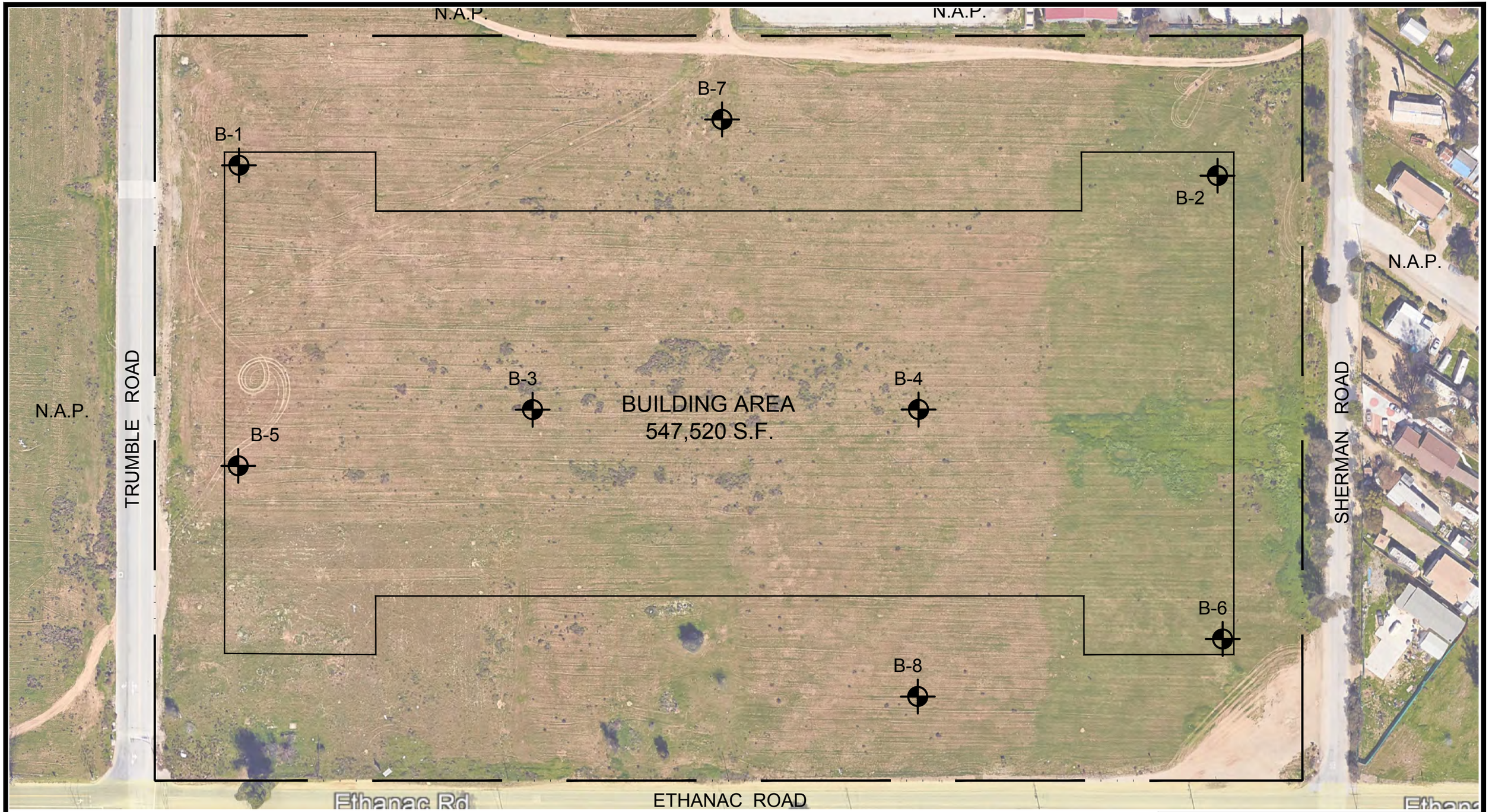
PROPOSED WAREHOUSE

PERRIS, CALIFORNIA

SCALE: 1" = 2000'	
DRAWN: MD CHKD: DN	
SCG PROJECT 22G107-1	
PLATE 1	

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL



GEOTECHNICAL LEGEND

APPROXIMATE BORING LOCATION

NORTH

NOTE: CONCEPTUAL SITE PLAN (SCHEME 7) PREPARED BY HERDMAN ARCHITECTURE + DESIGN.
AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH (2018)

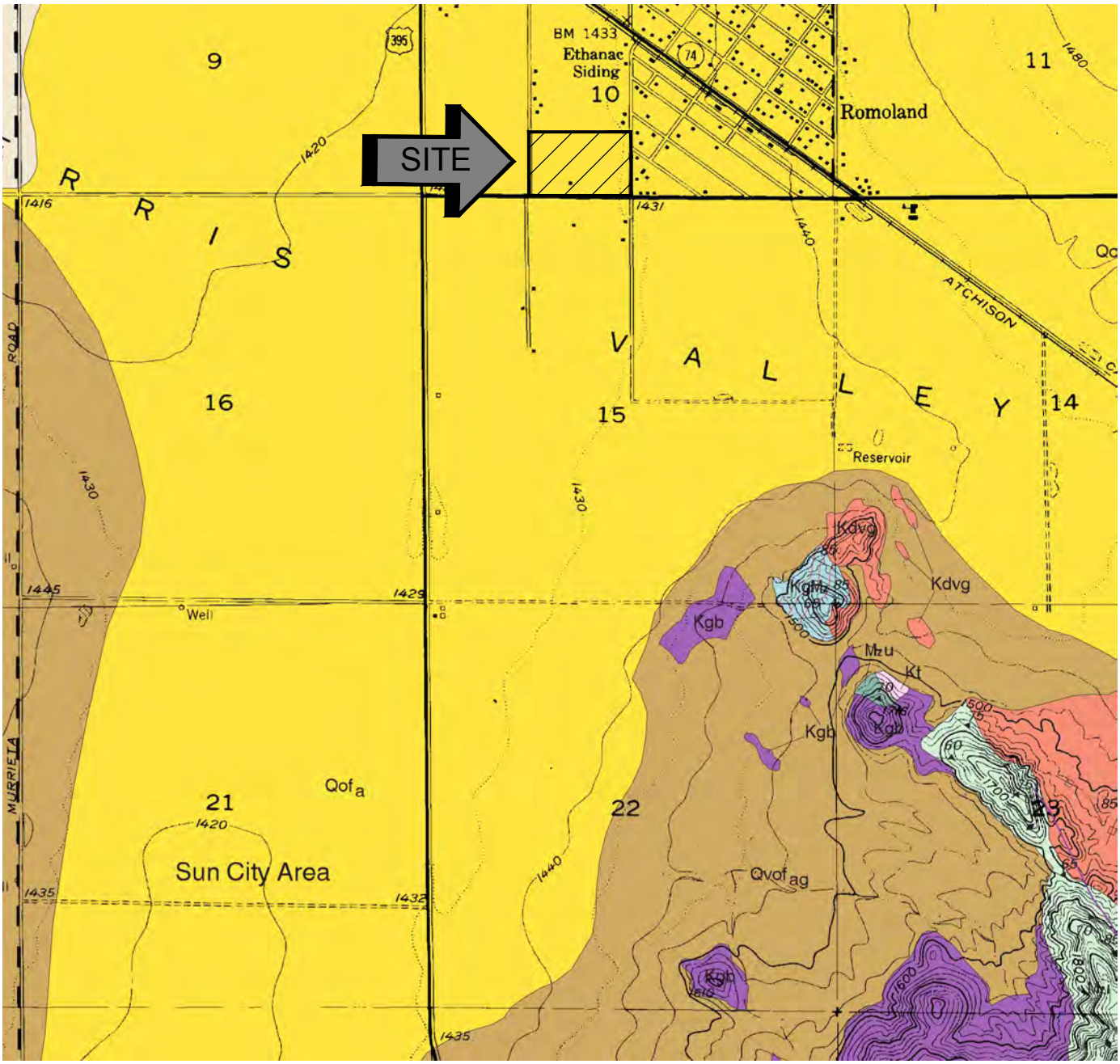
BORING LOCATION PLAN

PROPOSED WAREHOUSE

PERRIS, CALIFORNIA

SCALE: 1" = 100'	
DRAWN: OS CHKD: RGT	
SCG PROJECT 22G107-1	
PLATE 2	

SOUTHERN CALIFORNIA GEOTECHNICAL



DESCRIPTION OF MAP UNITS

Qof — **Old alluvial fan deposits (late to middle Pleistocene)**—Reddish brown, gravel and sand alluvial fan deposits; indurated, commonly slightly dissected. In places includes thin alluvial fan deposits of Holocene age

Kdvg — **Granodiorite to tonalite**—Relatively uniform, massive hornblende biotite granodiorite grading into tonalite. Principal rock type of Domenigoni Valley pluton. Contains some mafic rich rocks in southern part of pluton. Common accessory minerals are zircon, sphene, apatite, and magnetite-ilmenite.

SOURCE: "GEOLOGIC MAP OF THE ROMOLAND 7.5' QUADRANGLE, RIVERSIDE COUNTY, CALIFORNIA" BY D. M. MORTON.

GEOLOGIC MAP

PROPOSED WAREHOUSE

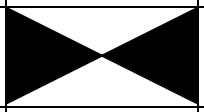
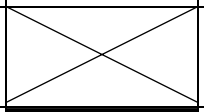
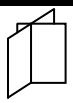
PERRIS, CALIFORNIA

SCALE: 1" = 2000'	
DRAWN: JAH CHKD: DN	
SCG PROJECT 22G107-1	
PLATE 3	

SoCalGeo SOUTHERN CALIFORNIA GEOTECHNICAL

APPENDIX B

BORING LOG LEGEND

SAMPLE TYPE	GRAPHICAL SYMBOL	SAMPLE DESCRIPTION
AUGER		SAMPLE COLLECTED FROM AUGER CUTTINGS, NO FIELD MEASUREMENT OF SOIL STRENGTH. (DISTURBED)
CORE		ROCK CORE SAMPLE: TYPICALLY TAKEN WITH A DIAMOND-TIPPED CORE BARREL. TYPICALLY USED ONLY IN HIGHLY CONSOLIDATED BEDROCK.
GRAB		SOIL SAMPLE TAKEN WITH NO SPECIALIZED EQUIPMENT, SUCH AS FROM A STOCKPILE OR THE GROUND SURFACE. (DISTURBED)
CS		CALIFORNIA SAMPLER: 2-1/2 INCH I.D. SPLIT BARREL SAMPLER, LINED WITH 1-INCH HIGH BRASS RINGS. DRIVEN WITH SPT HAMMER. (RELATIVELY UNDISTURBED)
NSR		NO RECOVERY: THE SAMPLING ATTEMPT DID NOT RESULT IN RECOVERY OF ANY SIGNIFICANT SOIL OR ROCK MATERIAL.
SPT		STANDARD PENETRATION TEST: SAMPLER IS A 1.4 INCH INSIDE DIAMETER SPLIT BARREL, DRIVEN 18 INCHES WITH THE SPT HAMMER. (DISTURBED)
SH		SHELBY TUBE: TAKEN WITH A THIN WALL SAMPLE TUBE, PUSHED INTO THE SOIL AND THEN EXTRACTED. (UNDISTURBED)
VANE		VANE SHEAR TEST: SOIL STRENGTH OBTAINED USING A 4 BLADED SHEAR DEVICE. TYPICALLY USED IN SOFT CLAYS-NO SAMPLE RECOVERED.

COLUMN DESCRIPTIONS

DEPTH: Distance in feet below the ground surface.

SAMPLE: Sample Type as depicted above.

BLOW COUNT: Number of blows required to advance the sampler 12 inches using a 140 lb hammer with a 30-inch drop. 50/3" indicates penetration refusal (>50 blows) at 3 inches. WH indicates that the weight of the hammer was sufficient to push the sampler 6 inches or more.

POCKET PEN.: Approximate shear strength of a cohesive soil sample as measured by pocket penetrometer.

GRAPHIC LOG: Graphic Soil Symbol as depicted on the following page.

DRY DENSITY: Dry density of an undisturbed or relatively undisturbed sample in lbs/ft^3.

MOISTURE CONTENT: Moisture content of a soil sample, expressed as a percentage of the dry weight.

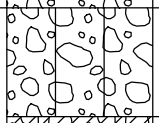
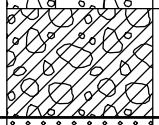
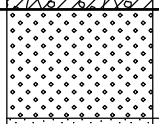
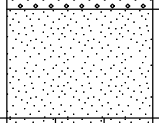
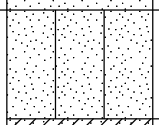
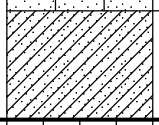
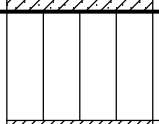
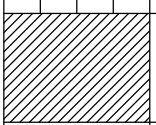
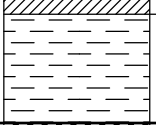
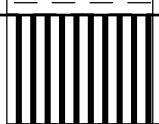
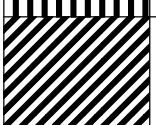
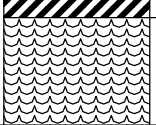
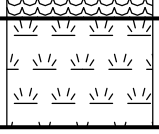
LIQUID LIMIT: The moisture content above which a soil behaves as a liquid.

PLASTIC LIMIT: The moisture content above which a soil behaves as a plastic.

PASSING #200 SIEVE: The percentage of the sample finer than the #200 standard sieve.

UNCONFINED SHEAR: The shear strength of a cohesive soil sample, as measured in the unconfined state.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-1

JOB NO.: 22G107-1
PROJECT: Proposed Warehouse
LOCATION: Perris, California

DRILLING DATE: 1/21/22
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Oscar Sandoval

WATER DEPTH: Dry
CAVE DEPTH: 11 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		47	4.5		OLDER ALLUVIUM: Red Brown fine to coarse Sandy Clay, trace Silt, hard-moist	123	10					
		50/5"				116	11					
5		77/11"	4.5		Red Brown fine Sandy Clay, trace Silt, hard-damp to moist	124	8					
		82	4.5			125	9					
		80/10"			@ 8½ feet, trace medium to coarse Sand	116	8					
10												
		59			GRANODIORITE TO TONALITE (Kdvg): Light Gray Clayey fine- to coarse-grained granodiorite to tonalite, friable, highly weathered, dense to very dense-moist		10					
15												
		53					7					
20												
		46					8					
25					Boring Terminated at 25'							

TBL 22G107-1.GPJ SOCALGEO.GDT 2/23/22

TEST BORING LOG **PLATE B-1**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-2

JOB NO.: 22G107-1
PROJECT: Proposed Warehouse
LOCATION: Perris, California

DRILLING DATE: 1/21/22
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Oscar Sandoval

WATER DEPTH: Dry
CAVE DEPTH: 5 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		68	4.0		OLDER ALLUVIUM: Light Brown fine to coarse Sandy Clay, trace Silt, hard-damp		8					
		82/11"					8					
5												
		80/11"	3.5		Light Brown to Brown fine Sandy Clay, very stiff to hard-moist to very moist		11					
		24	2.5		Light Brown Clayey fine to coarse Sand to fine to coarse Sandy Clay, trace Silt, medium dense to very stiff-damp to moist to very moist		23 6					
10												
		14					15					
15												
					Light Brown to Brown fine to coarse Sand, trace Silt, medium dense-damp							
		16					6					
20					Boring Terminated at 20'							

TBL 22G107-1.GPJ SOCALGEO.GDT 2/23/22

TEST BORING LOG

PLATE B-2

SOUTHERN CALIFORNIA GEOTECHNICAL

BORING NO. B-3

JOB NO.: 22G107-1
PROJECT: Proposed Warehouse
LOCATION: Perris, California

DRILLING DATE: 1/21/22
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Oscar Sandoval

WATER DEPTH: Dry
CAVE DEPTH: 7 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		70/9"	4.5		OLDER ALLUVIUM: Dark Brown fine to coarse Sandy Clay, trace Silt, hard-damp to moist		8					
		50/4"					6					
5		42	4.5				11					
		43			Brown Clayey fine to coarse Sand, dense-damp		5					
10												
		40					6					
15					Boring Terminated at 20'							

TBL 22G107-1.GPJ SOCALGEO.GDT 2/23/22

TEST BORING LOG

PLATE B-3

SOUTHERN CALIFORNIA GEOTECHNICAL

BORING NO. B-4

JOB NO.: 22G107-1
PROJECT: Proposed Warehouse
LOCATION: Perris, California

DRILLING DATE: 1/21/22
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Oscar Sandoval

WATER DEPTH: Dry
CAVE DEPTH: 6 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		36	4.5		OLDER ALLUVIUM: Dark Red Brown fine to medium Sandy Clay, trace Silt, very stiff to hard-moist to very moist	126	9					
		57	4.5			120	15					
5		72/10"	4.5			131	10					
		43			GRANODIORITE TO TONALITE (Kdvg): Light Gray Brown Clayey fine- to coarse-grained granodiorite to tonalite, friable, highly weathered, medium dense to dense-moist	122	9					
		49				121	8					
10												
		26					7					
15					Boring Terminated at 15'							

TBL 22G107-1.GPJ SOCALGEO.GDT 2/23/22

TEST BORING LOG

PLATE B-4

SOUTHERN CALIFORNIA GEOTECHNICAL

BORING NO. B-5

JOB NO.: 22G107-1
PROJECT: Proposed Warehouse
LOCATION: Perris, California

DRILLING DATE: 1/21/22
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Oscar Sandoval

WATER DEPTH: Dry
CAVE DEPTH: 6 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		42	4.5		OLDER ALLUVIUM: Red Brown fine to medium Sandy Clay, trace Silt, hard-moist		10					
		73	3.0				10					
5		31			GRANODIORITE TO TONALITE (Kdvg): Light Gray Brown Clayey fine- to coarse-grained granodiorite to tonalite, friable, highly weathered, medium dense to dense-moist		9					
		39					9					
10												
		18					12					
15												
		41					8					
20					Boring Terminated at 15'							

TBL 22G107-1.GPJ SOCALGEO.GDT 2/23/22

TEST BORING LOG

PLATE B-5

SOUTHERN CALIFORNIA GEOTECHNICAL

BORING NO. B-6

JOB NO.: 22G107-1 | DRILLING DATE: 1/21/22 | WATER DEPTH: Dry
PROJECT: Proposed Warehouse | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 6 feet
LOCATION: Perris, California | LOGGED BY: Oscar Sandoval | READING TAKEN: At Completion

DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					FIELD RESULTS / LABORATORY RESULTS							
		70/11"	4.5		OLDER ALLUVIUM: Dark Red Brown fine to medium Sandy Clay, trace Silt, hard-moist	114	14					EI = 62 @ 0 to 5'
		77/11"	4.5			113	13					
5		58	4.5			123	10					
		64	4.5			130	10					
		45	4.5			128	11					
10												
		82/11"			GRANODIORITE TO TONALITE (Kdvg): Light Gray Brown Clayey fine- to coarse-grained granodiorite to tonalite, friable, highly weathered, very dense-moist		10					
15												
		55					10					
20												
		55					9					
25					Boring Terminated at 25'							

TBL 22G107-1.GPJ SOCALGEO.GDT 2/23/22

TEST BORING LOG **PLATE B-6**

SOUTHERN CALIFORNIA GEOTECHNICAL

BORING NO. B-7

JOB NO.: 22G107-1
PROJECT: Proposed Warehouse
LOCATION: Perris, California

DRILLING DATE: 1/21/22
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Oscar Sandoval

WATER DEPTH: Dry
CAVE DEPTH: 4 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		80	4.5		OLDER ALLUVIUM: Light Brown fine Sandy Clay, trace medium Sand, trace Silt, hard-damp to moist		10					
		60					7					
5		80	4.5				9					
		50/5"	2.0		@ 8½ feet, stiff to very stiff		9					
10					Boring Terminated at 10'							

TBL 22G107-1.GPJ SOCALGEO.GDT 2/23/22

TEST BORING LOG

PLATE B-7

SOUTHERN CALIFORNIA GEOTECHNICAL

BORING NO. B-8

JOB NO.: 22G107-1
PROJECT: Proposed Warehouse
LOCATION: Perris, California

DRILLING DATE: 1/21/22
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Oscar Sandoval

WATER DEPTH: Dry
CAVE DEPTH: 8 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		85	4.5		OLDER ALLUVIUM: Dark Brown fine to medium Sandy Clay, trace Silt, trace coarse Sand, hard-moist		10					
		65/11"					9					
5		50/5"	4.5				9					
		87/10"					12					
10					Boring Terminated at 10'							

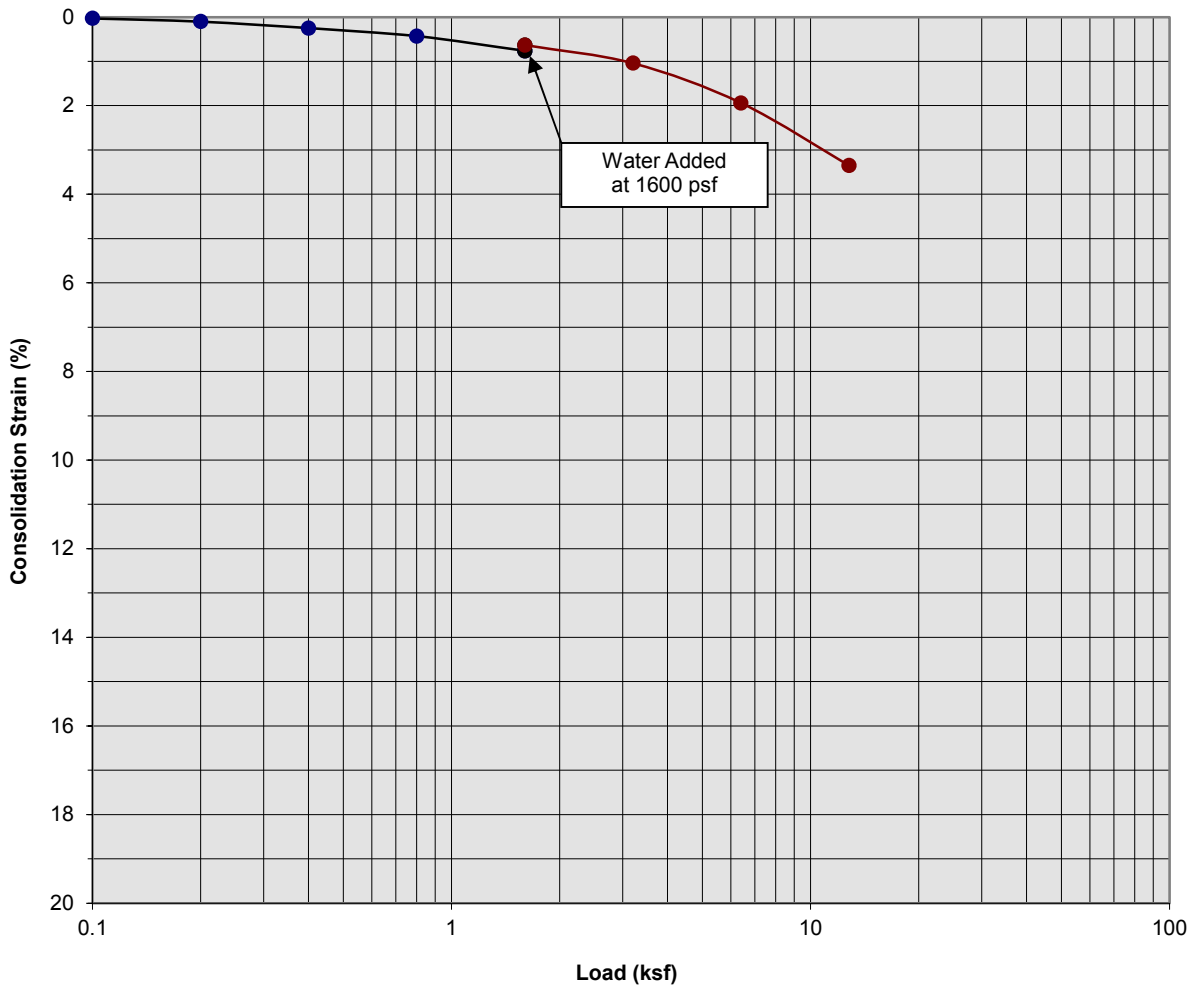
TBL 22G107-1.GPJ SOCALGEO.GDT 2/23/22

TEST BORING LOG

PLATE B-8

APPENDIX C

Consolidation/Collapse Test Results



Classification: Dark Red Brown fine to medium Sandy Clay, trace Silt

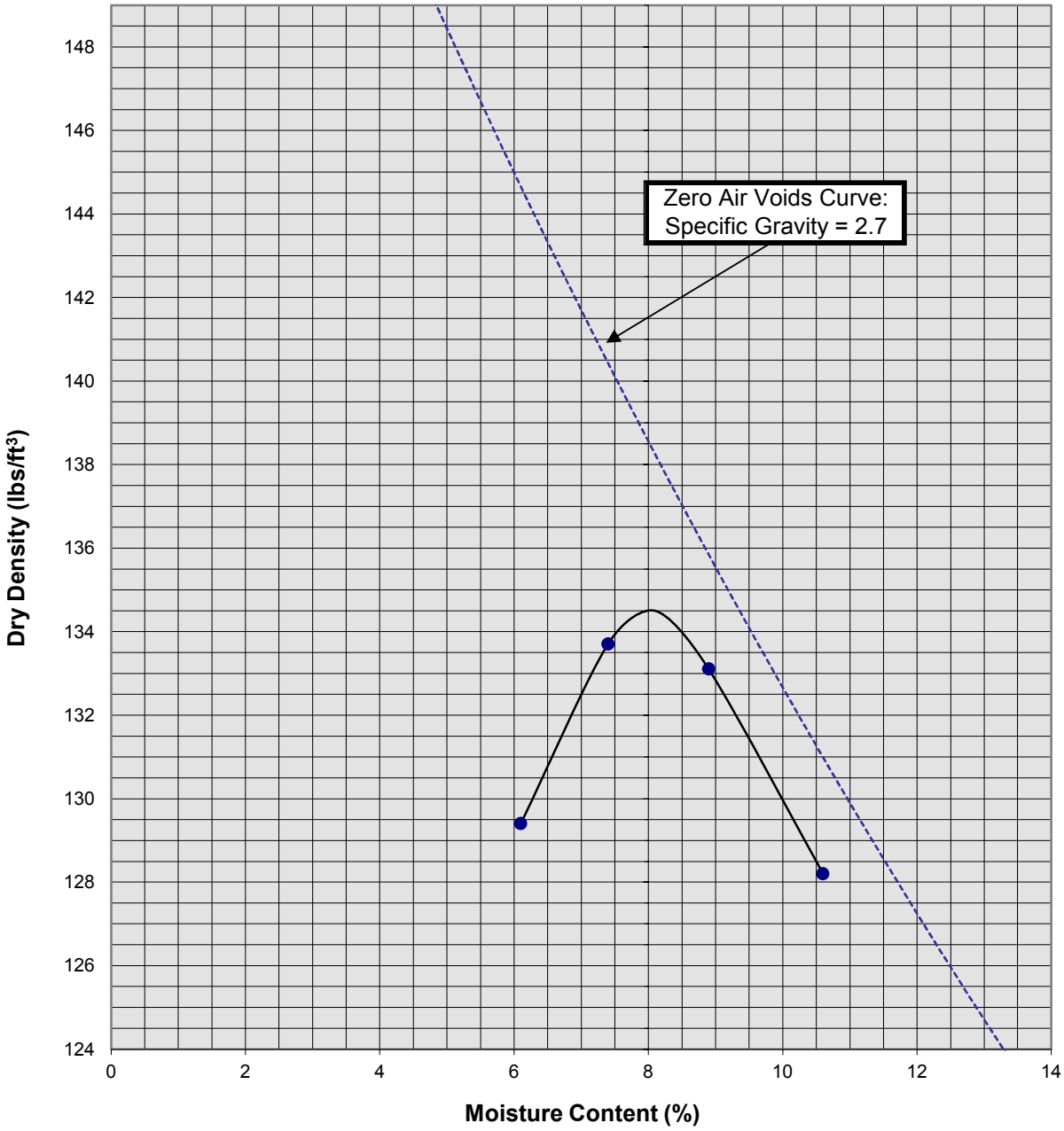
Boring Number:	B-4	Initial Moisture Content (%)	15
Sample Number:	---	Final Moisture Content (%)	19
Depth (ft)	3 to 4	Initial Dry Density (pcf)	119.7
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	124.1
Specimen Thickness (in)	1.0	Percent Collapse (%)	-0.13

Proposed Warehouse
Perris, California
Project No. 22G107-1

PLATE C- 1

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Moisture/Density Relationship
ASTM D-1557



Soil ID Number	B-1 @ 0 to 5'
Optimum Moisture (%)	8
Maximum Dry Density (pcf)	134.5
Soil Classification	Red Brown fine to coarse Sandy Clay, trace Silt

Proposed Warehouse
Perris, CA
Project No. 22G107-1

PLATE C-2

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

APPENDIX D

GRADING GUIDE SPECIFICATIONS

These grading guide specifications are intended to provide typical procedures for grading operations. They are intended to supplement the recommendations contained in the geotechnical investigation report for this project. Should the recommendations in the geotechnical investigation report conflict with the grading guide specifications, the more site specific recommendations in the geotechnical investigation report will govern.

General

- The Earthwork Contractor is responsible for the satisfactory completion of all earthwork in accordance with the plans and geotechnical reports, and in accordance with city, county, and applicable building codes.

- The Geotechnical Engineer is the representative of the Owner/Builder for the purpose of implementing the report recommendations and guidelines. These duties are not intended to relieve the Earthwork Contractor of any responsibility to perform in a workman-like manner, nor is the Geotechnical Engineer to direct the grading equipment or personnel employed by the Contractor.

- The Earthwork Contractor is required to notify the Geotechnical Engineer of the anticipated work and schedule so that testing and inspections can be provided. If necessary, work may be stopped and redone if personnel have not been scheduled in advance.

- The Earthwork Contractor is required to have suitable and sufficient equipment on the job-site to process, moisture condition, mix and compact the amount of fill being placed to the approved compaction. In addition, suitable support equipment should be available to conform with recommendations and guidelines in this report.

- Canyon cleanouts, overexcavation areas, processed ground to receive fill, key excavations, subdrains and benches should be observed by the Geotechnical Engineer prior to placement of any fill. It is the Earthwork Contractor's responsibility to notify the Geotechnical Engineer of areas that are ready for inspection.

- Excavation, filling, and subgrade preparation should be performed in a manner and sequence that will provide drainage at all times and proper control of erosion. Precipitation, springs, and seepage water encountered shall be pumped or drained to provide a suitable working surface. The Geotechnical Engineer must be informed of springs or water seepage encountered during grading or foundation construction for possible revision to the recommended construction procedures and/or installation of subdrains.

Site Preparation

- The Earthwork Contractor is responsible for all clearing, grubbing, stripping and site preparation for the project in accordance with the recommendations of the Geotechnical Engineer.

- If any materials or areas are encountered by the Earthwork Contractor which are suspected of having toxic or environmentally sensitive contamination, the Geotechnical Engineer and Owner/Builder should be notified immediately.

- Major vegetation should be stripped and disposed of off-site. This includes trees, brush, heavy grasses and any materials considered unsuitable by the Geotechnical Engineer.

- Underground structures such as basements, cesspools or septic disposal systems, mining shafts, tunnels, wells and pipelines should be removed under the inspection of the Geotechnical Engineer and recommendations provided by the Geotechnical Engineer and/or city, county or state agencies. If such structures are known or found, the Geotechnical Engineer should be notified as soon as possible so that recommendations can be formulated.

- Any topsoil, slopewash, colluvium, alluvium and rock materials which are considered unsuitable by the Geotechnical Engineer should be removed prior to fill placement.

- Remaining voids created during site clearing caused by removal of trees, foundations basements, irrigation facilities, etc., should be excavated and filled with compacted fill.

- Subsequent to clearing and removals, areas to receive fill should be scarified to a depth of 10 to 12 inches, moisture conditioned and compacted

- The moisture condition of the processed ground should be at or slightly above the optimum moisture content as determined by the Geotechnical Engineer. Depending upon field conditions, this may require air drying or watering together with mixing and/or discing.

Compacted Fills

- Soil materials imported to or excavated on the property may be utilized in the fill, provided each material has been determined to be suitable in the opinion of the Geotechnical Engineer. Unless otherwise approved by the Geotechnical Engineer, all fill materials shall be free of deleterious, organic, or frozen matter, shall contain no chemicals that may result in the material being classified as “contaminated,” and shall be very low to non-expansive with a maximum expansion index (EI) of 50. The top 12 inches of the compacted fill should have a maximum particle size of 3 inches, and all underlying compacted fill material a maximum 6-inch particle size, except as noted below.

- All soils should be evaluated and tested by the Geotechnical Engineer. Materials with high expansion potential, low strength, poor gradation or containing organic materials may require removal from the site or selective placement and/or mixing to the satisfaction of the Geotechnical Engineer.

- Rock fragments or rocks less than 6 inches in their largest dimensions, or as otherwise determined by the Geotechnical Engineer, may be used in compacted fill, provided the distribution and placement is satisfactory in the opinion of the Geotechnical Engineer.

- Rock fragments or rocks greater than 12 inches should be taken off-site or placed in accordance with recommendations and in areas designated as suitable by the Geotechnical Engineer. These materials should be placed in accordance with Plate D-8 of these Grading Guide Specifications and in accordance with the following recommendations:

    - Rocks 12 inches or more in diameter should be placed in rows at least 15 feet apart, 15 feet from the edge of the fill, and 10 feet or more below subgrade. Spaces should be left between each rock fragment to provide for placement and compaction of soil around the fragments.

    - Fill materials consisting of soil meeting the minimum moisture content requirements and free of oversize material should be placed between and over the rows of rock or

concrete. Ample water and compactive effort should be applied to the fill materials as they are placed in order that all of the voids between each of the fragments are filled and compacted to the specified density.

- Subsequent rows of rocks should be placed such that they are not directly above a row placed in the previous lift of fill. A minimum 5-foot offset between rows is recommended.

- To facilitate future trenching, oversized material should not be placed within the range of foundation excavations, future utilities or other underground construction unless specifically approved by the soil engineer and the developer/owner representative.

- Fill materials approved by the Geotechnical Engineer should be placed in areas previously prepared to receive fill and in evenly placed, near horizontal layers at about 6 to 8 inches in loose thickness, or as otherwise determined by the Geotechnical Engineer for the project.

- Each layer should be moisture conditioned to optimum moisture content, or slightly above, as directed by the Geotechnical Engineer. After proper mixing and/or drying, to evenly distribute the moisture, the layers should be compacted to at least 90 percent of the maximum dry density in compliance with ASTM D-1557-78 unless otherwise indicated.

- Density and moisture content testing should be performed by the Geotechnical Engineer at random intervals and locations as determined by the Geotechnical Engineer. These tests are intended as an aid to the Earthwork Contractor, so he can evaluate his workmanship, equipment effectiveness and site conditions. The Earthwork Contractor is responsible for compaction as required by the Geotechnical Report(s) and governmental agencies.

- Fill areas unused for a period of time may require moisture conditioning, processing and recompaction prior to the start of additional filling. The Earthwork Contractor should notify the Geotechnical Engineer of his intent so that an evaluation can be made.

- Fill placed on ground sloping at a 5-to-1 inclination (horizontal-to-vertical) or steeper should be benched into bedrock or other suitable materials, as directed by the Geotechnical Engineer. Typical details of benching are illustrated on Plates D-2, D-4, and D-5.

- Cut/fill transition lots should have the cut portion overexcavated to a depth of at least 3 feet and rebuilt with fill (see Plate D-1), as determined by the Geotechnical Engineer.

- All cut lots should be inspected by the Geotechnical Engineer for fracturing and other bedrock conditions. If necessary, the pads should be overexcavated to a depth of 3 feet and rebuilt with a uniform, more cohesive soil type to impede moisture penetration.

- Cut portions of pad areas above buttresses or stabilizations should be overexcavated to a depth of 3 feet and rebuilt with uniform, more cohesive compacted fill to impede moisture penetration.

- Non-structural fill adjacent to structural fill should typically be placed in unison to provide lateral support. Backfill along walls must be placed and compacted with care to ensure that excessive unbalanced lateral pressures do not develop. The type of fill material placed adjacent to below grade walls must be properly tested and approved by the Geotechnical Engineer with consideration of the lateral earth pressure used in the design.

Foundations

- The foundation influence zone is defined as extending one foot horizontally from the outside edge of a footing, and proceeding downward at a ½ horizontal to 1 vertical (0.5:1) inclination.

- Where overexcavation beneath a footing subgrade is necessary, it should be conducted so as to encompass the entire foundation influence zone, as described above.

- Compacted fill adjacent to exterior footings should extend at least 12 inches above foundation bearing grade. Compacted fill within the interior of structures should extend to the floor subgrade elevation.

Fill Slopes

- The placement and compaction of fill described above applies to all fill slopes. Slope compaction should be accomplished by overfilling the slope, adequately compacting the fill in even layers, including the overfilled zone and cutting the slope back to expose the compacted core

- Slope compaction may also be achieved by backrolling the slope adequately every 2 to 4 vertical feet during the filling process as well as requiring the earth moving and compaction equipment to work close to the top of the slope. Upon completion of slope construction, the slope face should be compacted with a sheepsfoot connected to a sideboom and then grid rolled. This method of slope compaction should only be used if approved by the Geotechnical Engineer.

- Sandy soils lacking in adequate cohesion may be unstable for a finished slope condition and therefore should not be placed within 15 horizontal feet of the slope face.

- All fill slopes should be keyed into bedrock or other suitable material. Fill keys should be at least 15 feet wide and inclined at 2 percent into the slope. For slopes higher than 30 feet, the fill key width should be equal to one-half the height of the slope (see Plate D-5).

- All fill keys should be cleared of loose slough material prior to geotechnical inspection and should be approved by the Geotechnical Engineer and governmental agencies prior to filling.

- The cut portion of fill over cut slopes should be made first and inspected by the Geotechnical Engineer for possible stabilization requirements. The fill portion should be adequately keyed through all surficial soils and into bedrock or suitable material. Soils should be removed from the transition zone between the cut and fill portions (see Plate D-2).

Cut Slopes

- All cut slopes should be inspected by the Geotechnical Engineer to determine the need for stabilization. The Earthwork Contractor should notify the Geotechnical Engineer when slope cutting is in progress at intervals of 10 vertical feet. Failure to notify may result in a delay in recommendations.

- Cut slopes exposing loose, cohesionless sands should be reported to the Geotechnical Engineer for possible stabilization recommendations.

- All stabilization excavations should be cleared of loose slough material prior to geotechnical inspection. Stakes should be provided by the Civil Engineer to verify the location and dimensions of the key. A typical stabilization fill detail is shown on Plate D-5.

- Stabilization key excavations should be provided with subdrains. Typical subdrain details are shown on Plates D-6.

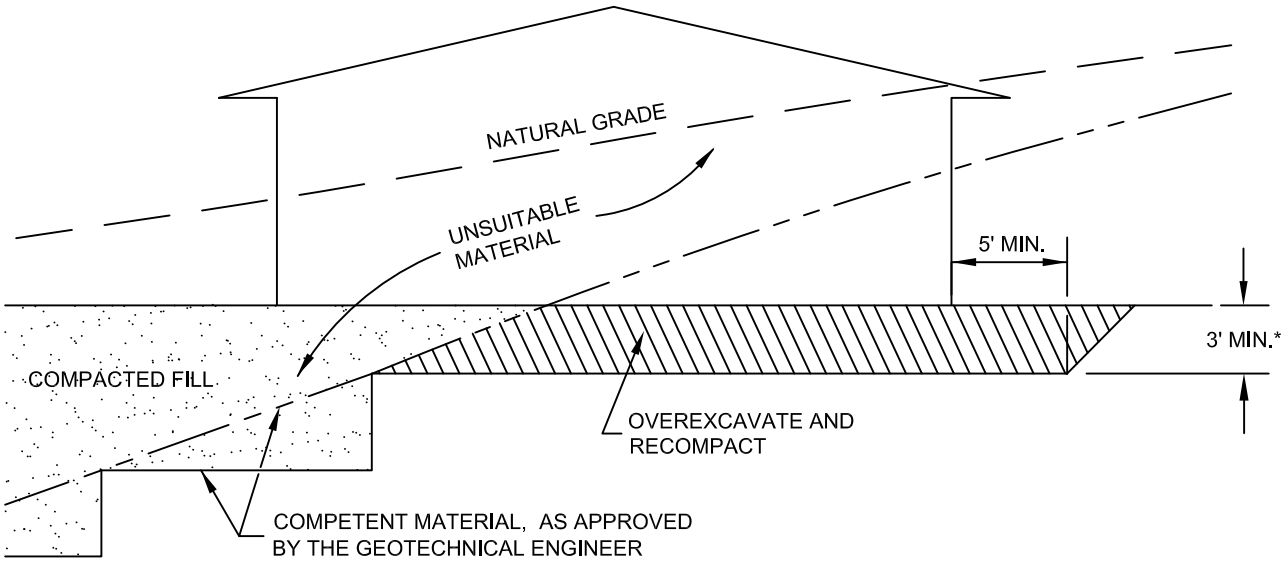
Subdrains

- Subdrains may be required in canyons and swales where fill placement is proposed. Typical subdrain details for canyons are shown on Plate D-3. Subdrains should be installed after approval of removals and before filling, as determined by the Soils Engineer.

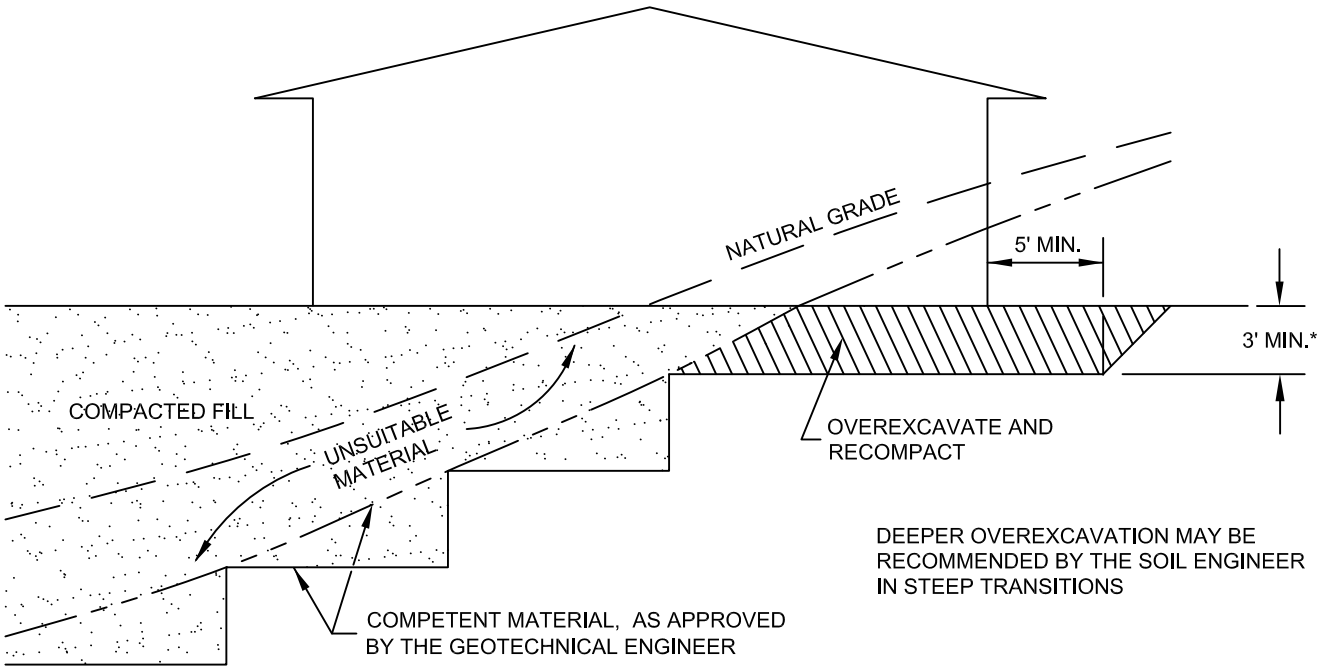
- Plastic pipe may be used for subdrains provided it is Schedule 40 or SDR 35 or equivalent. Pipe should be protected against breakage, typically by placement in a square-cut (backhoe) trench or as recommended by the manufacturer.

- Filter material for subdrains should conform to CALTRANS Specification 68-1.025 or as approved by the Geotechnical Engineer for the specific site conditions. Clean ¾-inch crushed rock may be used provided it is wrapped in an acceptable filter cloth and approved by the Geotechnical Engineer. Pipe diameters should be 6 inches for runs up to 500 feet and 8 inches for the downstream continuations of longer runs. Four-inch diameter pipe may be used in buttress and stabilization fills.

CUT LOT



CUT/FILL LOT (TRANSITION)



*SEE TEXT OF REPORT FOR SPECIFIC RECOMMENDATION. ACTUAL DEPTH OF OVEREXCAVATION MAY BE GREATER.

TRANSITION LOT DETAIL

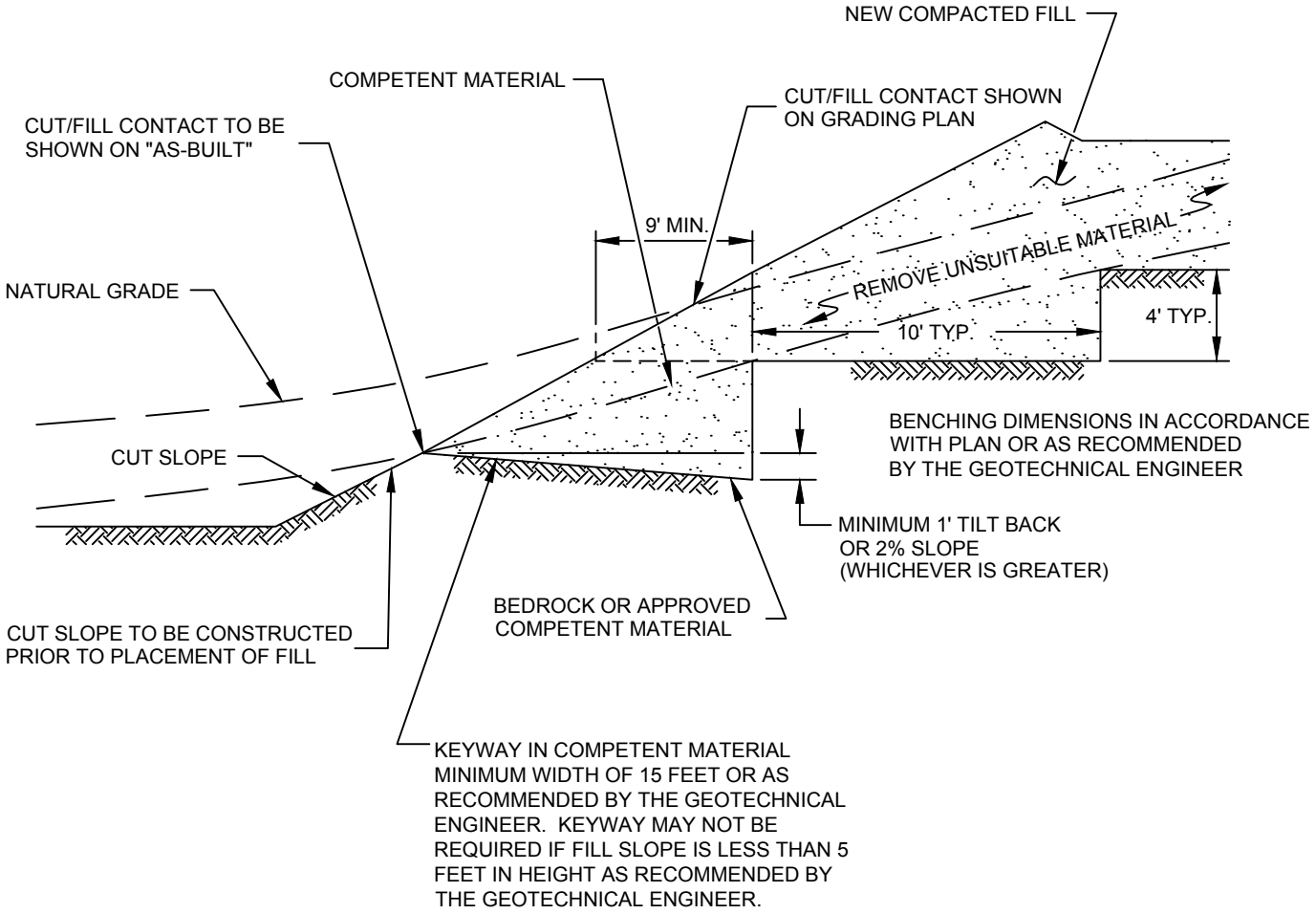
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-1

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



FILL ABOVE CUT SLOPE DETAIL

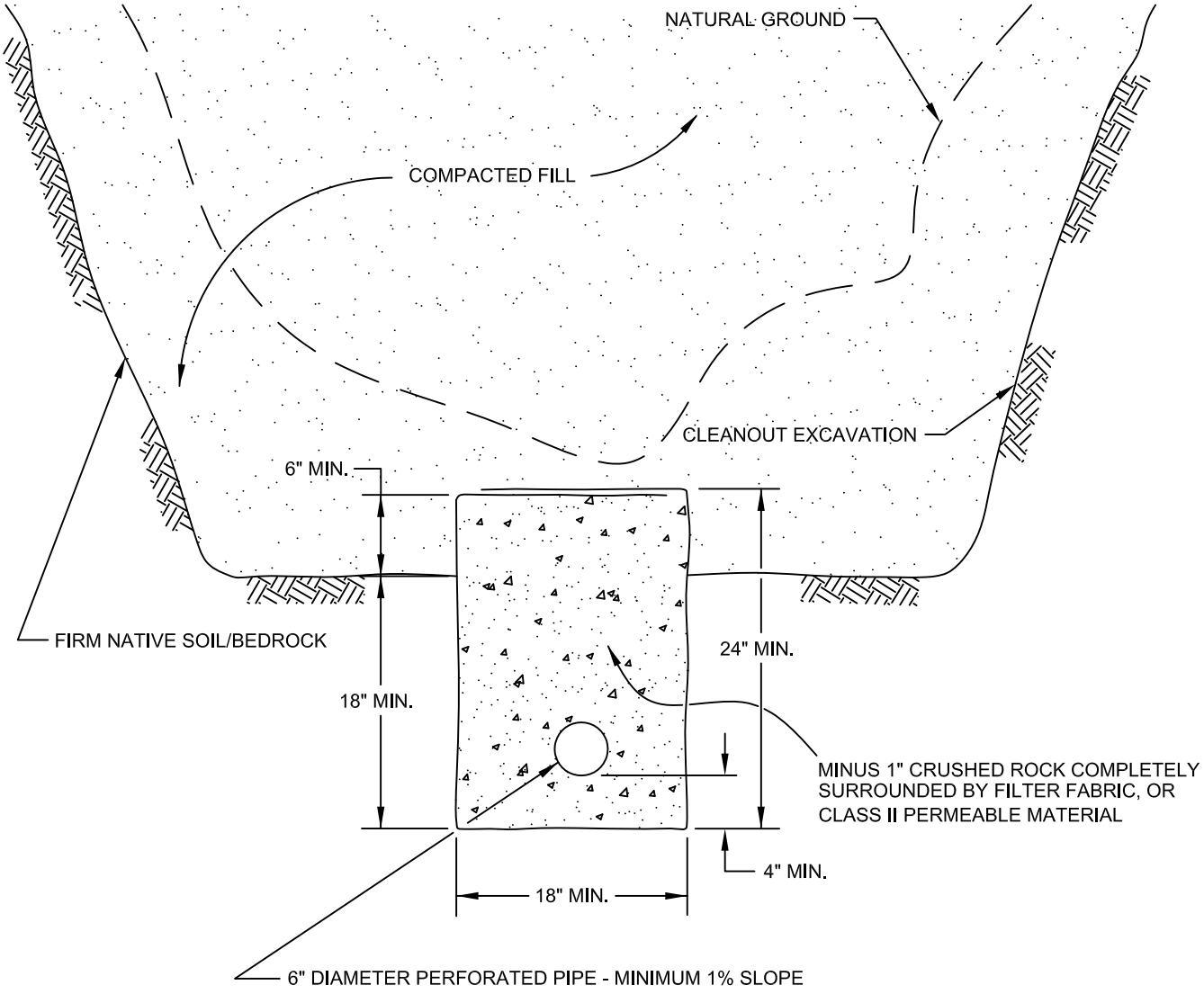
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-2

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



PIPE MATERIAL	DEPTH OF FILL OVER SUBDRAIN
ADS (CORRUGATED POLETHYLENE)	8
TRANSITE UNDERDRAIN	20
PVC OR ABS: SDR 35	35
SDR 21	100

SCHEMATIC ONLY
NOT TO SCALE

CANYON SUBDRAIN DETAIL

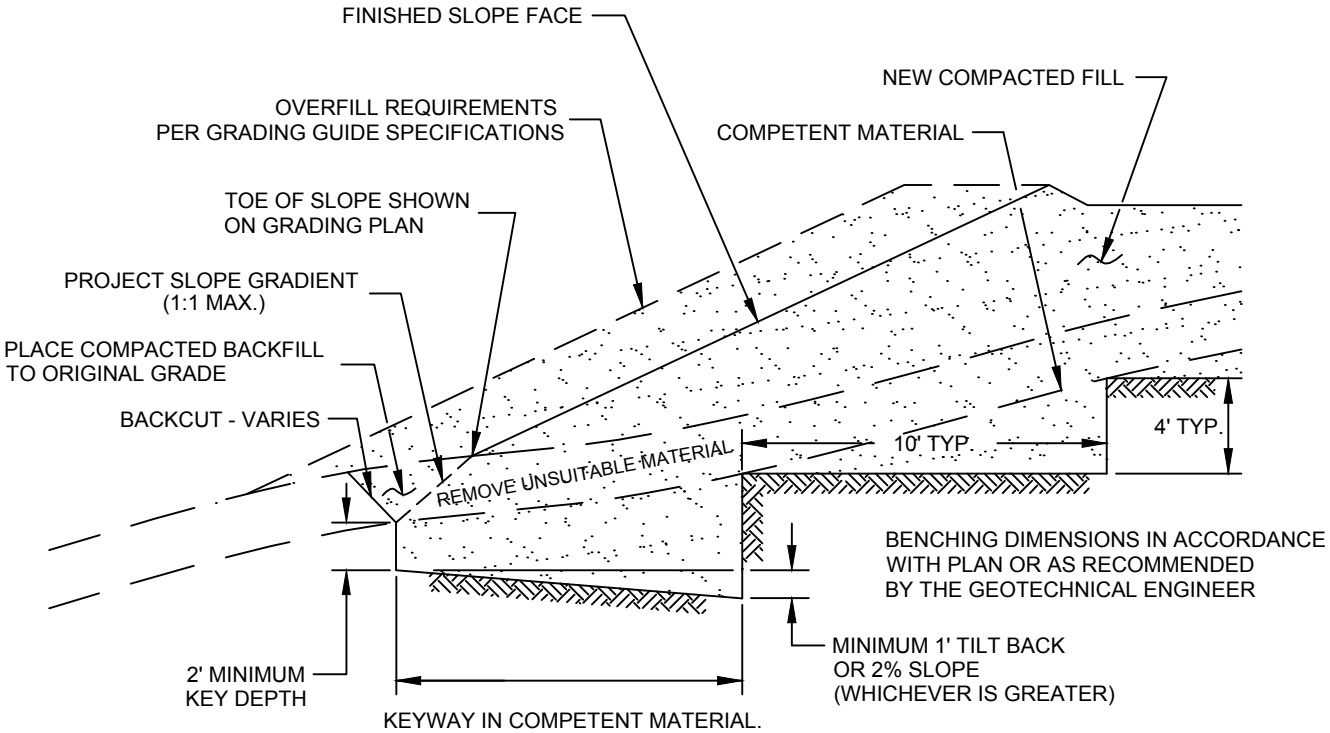
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-3

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



NOTE:
BENCHING SHALL BE REQUIRED WHEN NATURAL SLOPES ARE EQUAL TO OR STEEPER THAN 5:1 OR WHEN RECOMMENDED BY THE GEOTECHNICAL ENGINEER.

FILL ABOVE NATURAL SLOPE DETAIL

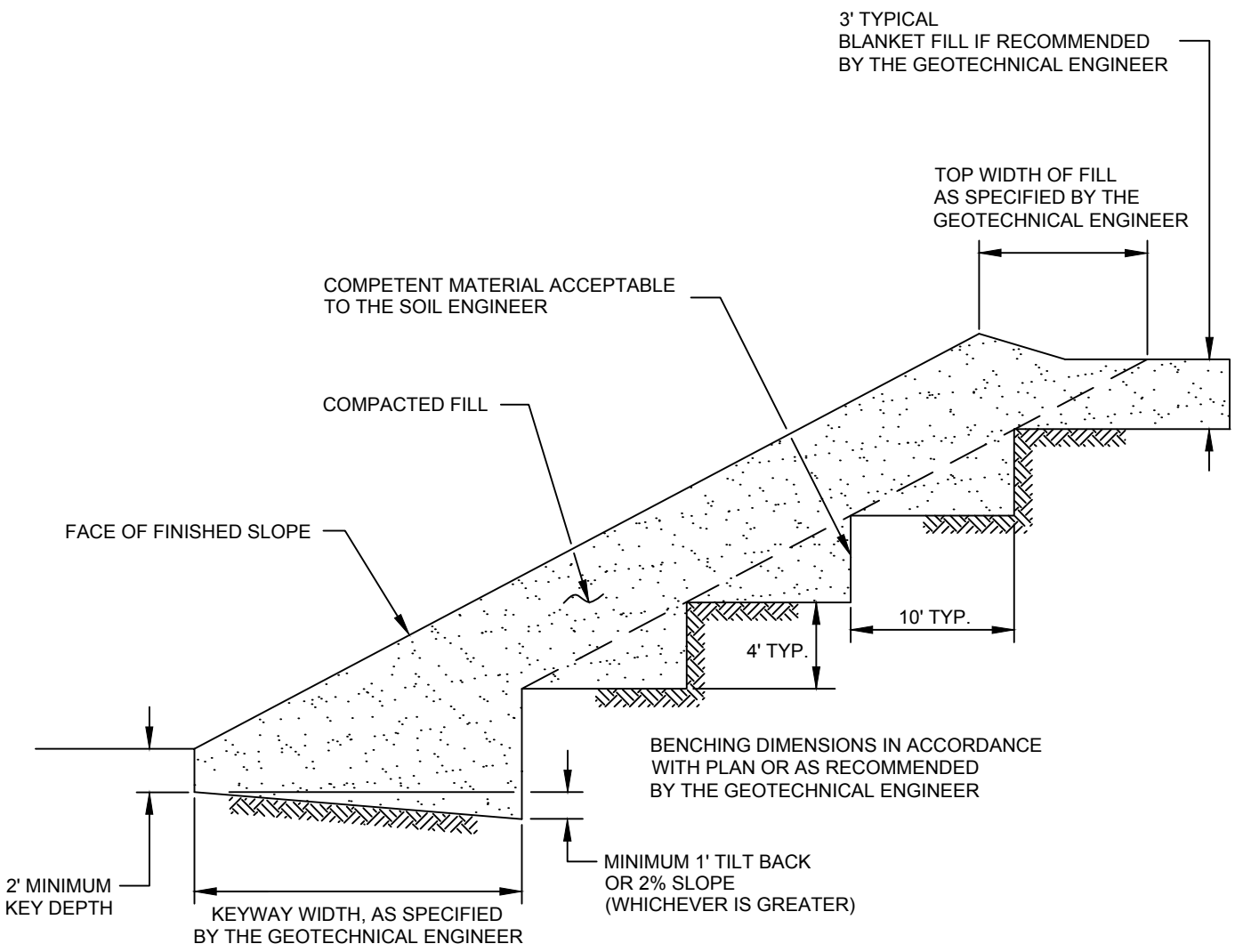
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-4

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



STABILIZATION FILL DETAIL

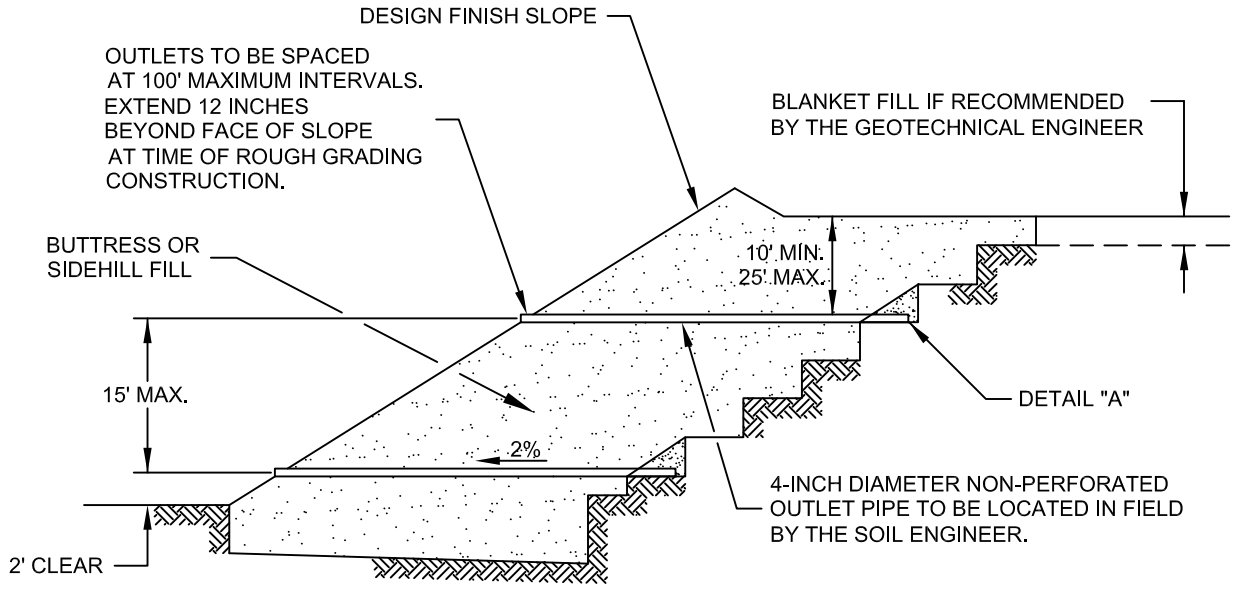
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-5

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



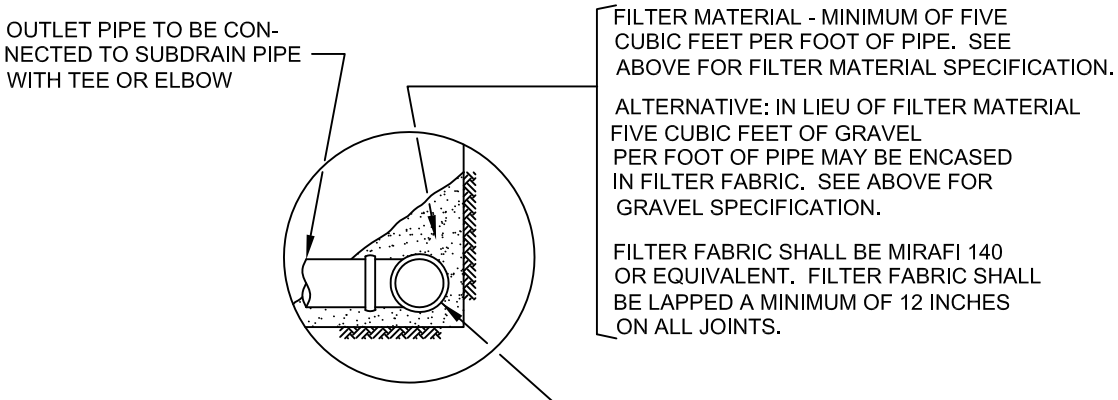
"FILTER MATERIAL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT: (CONFORMS TO EMA STD. PLAN 323)

SIEVE SIZE	PERCENTAGE PASSING
1"	100
3/4"	90-100
3/8"	40-100
NO. 4	25-40
NO. 8	18-33
NO. 30	5-15
NO. 50	0-7
NO. 200	0-3

"GRAVEL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT:

SIEVE SIZE	MAXIMUM PERCENTAGE PASSING
1 1/2"	100
NO. 4	50
NO. 200	8

SAND EQUIVALENT = MINIMUM OF 50



DETAIL "A"

NOTES:
1. TRENCH FOR OUTLET PIPES TO BE BACKFILLED WITH ON-SITE SOIL.

SLOPE FILL SUBDRAINS

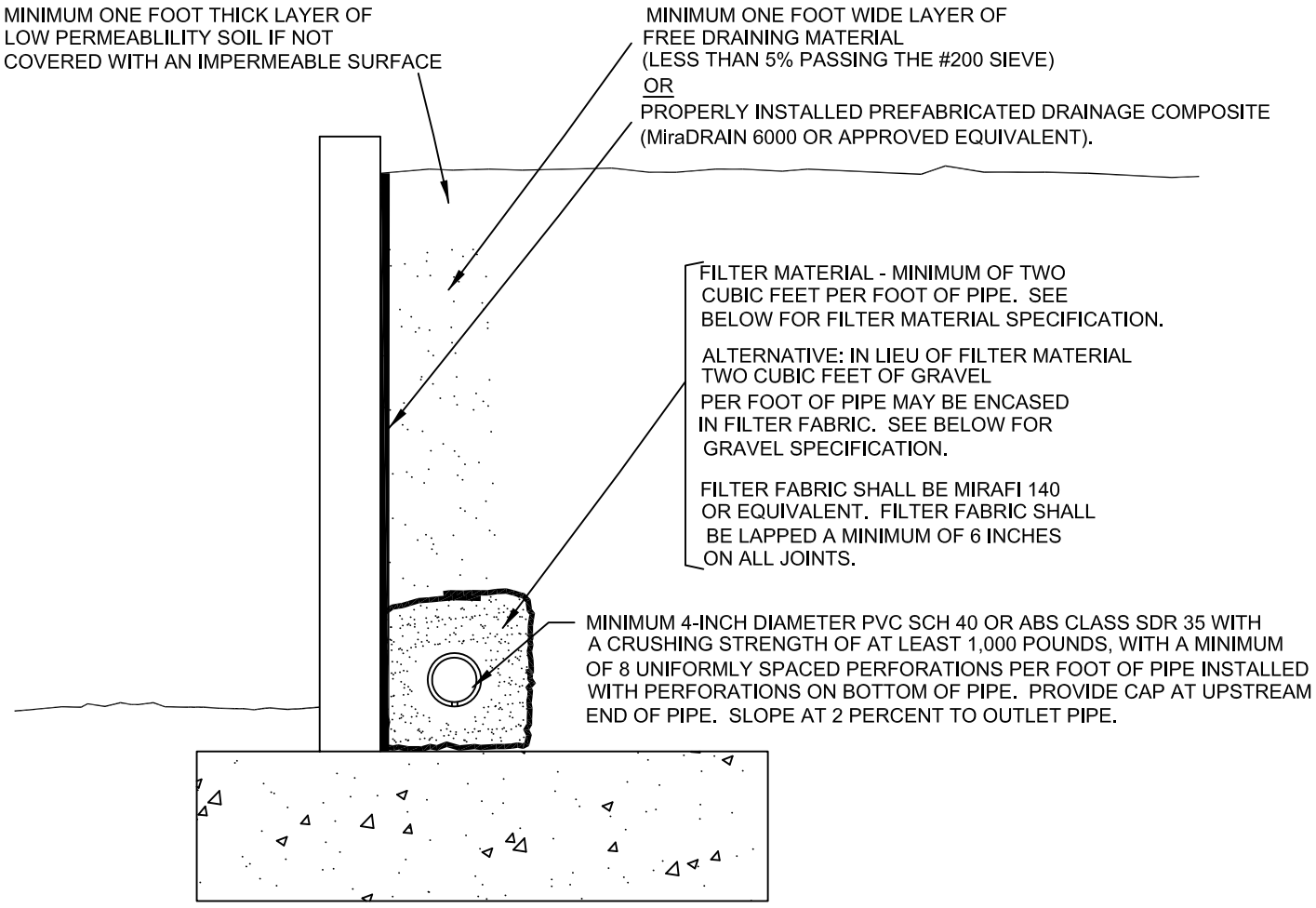
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-6

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



"FILTER MATERIAL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT: (CONFORMS TO EMA STD. PLAN 323)

SIEVE SIZE	PERCENTAGE PASSING
1"	100
3/4"	90-100
3/8"	40-100
NO. 4	25-40
NO. 8	18-33
NO. 30	5-15
NO. 50	0-7
NO. 200	0-3

"GRAVEL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT:

SIEVE SIZE	MAXIMUM PERCENTAGE PASSING
1 1/2"	100
NO. 4	50
NO. 200	8

SAND EQUIVALENT = MINIMUM OF 50

RETAINING WALL BACKDRAINS

GRADING GUIDE SPECIFICATIONS

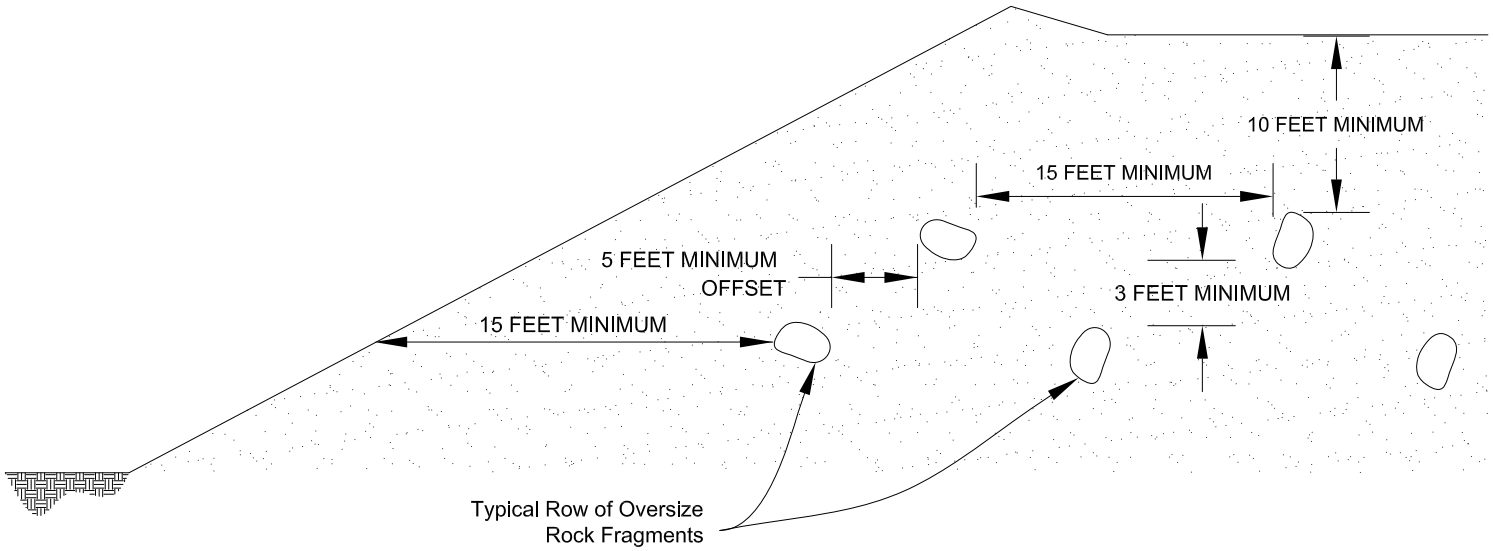
NOT TO SCALE

DRAWN: JAS
CHKD: GKM

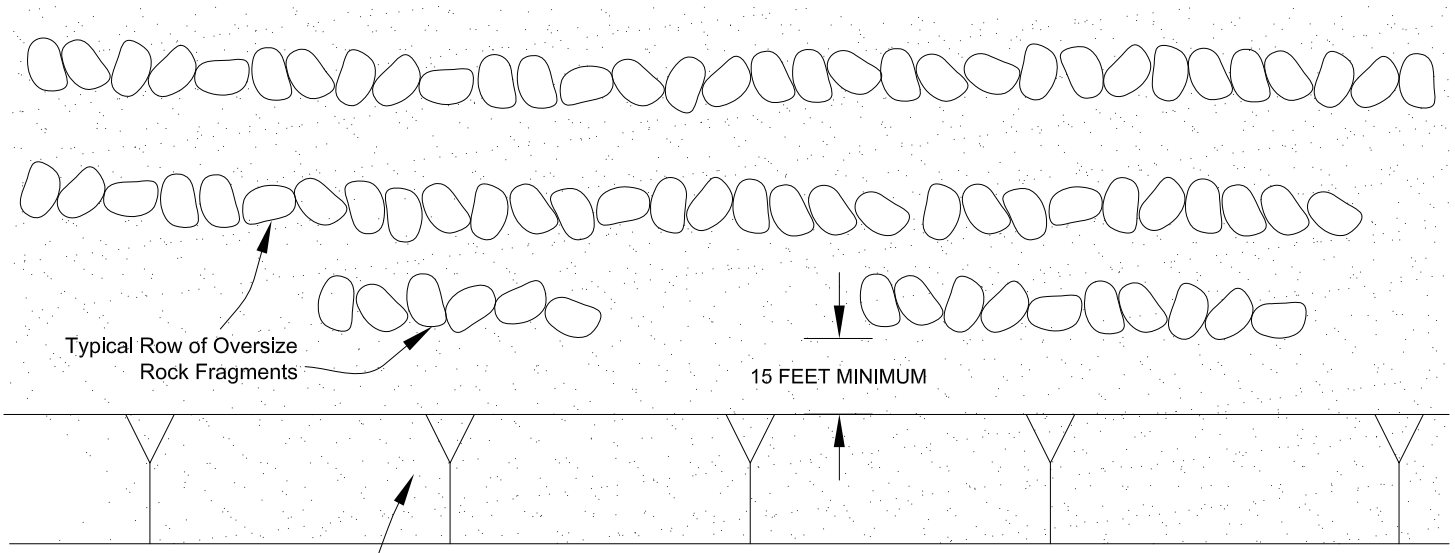
PLATE D-7

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL



Section View



Plan View

PLACEMENT OF OVERSIZED MATERIAL

GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: PM
CHKD: GKM

PLATE D-8

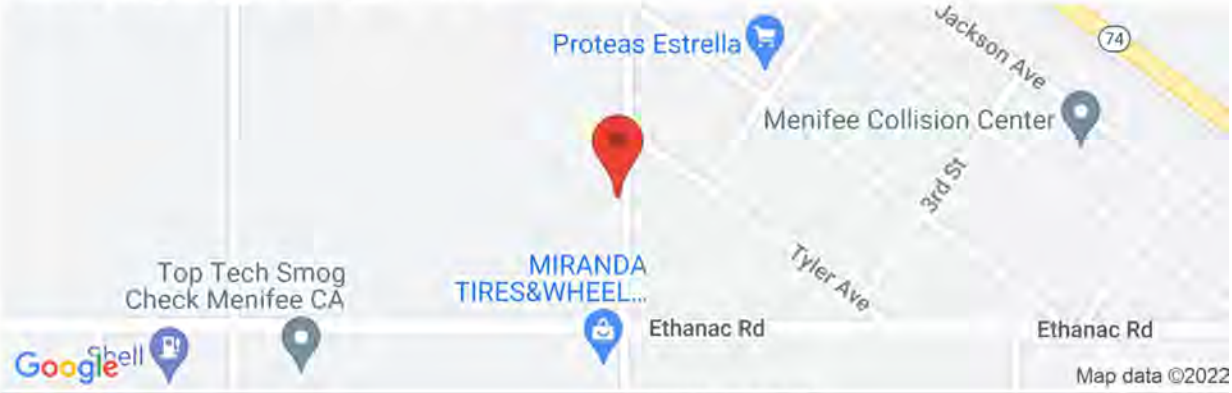
SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL

APPENDIX E

OSHPD

Latitude, Longitude: 33.744164, -117.180544



Date	2/23/2022, 10:19:50 AM
Design Code Reference Document	ASCE7-16
Risk Category	III
Site Class	C - Very Dense Soil and Soft Rock

Type	Value	Description
S_S	1.421	MCE_R ground motion. (for 0.2 second period)
S_1	0.528	MCE_R ground motion. (for 1.0s period)
S_{MS}	1.705	Site-modified spectral acceleration value
S_{M1}	0.777	Site-modified spectral acceleration value
S_{DS}	1.137	Numeric seismic design value at 0.2 second SA
S_{D1}	0.518	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	D	Seismic design category
F_a	1.2	Site amplification factor at 0.2 second
F_v	1.472	Site amplification factor at 1.0 second
PGA	0.5	MCE_G peak ground acceleration
F_{PGA}	1.2	Site amplification factor at PGA
PGA_M	0.6	Site modified peak ground acceleration
T_L	8	Long-period transition period in seconds
SsRT	1.421	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	1.52	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	1.5	Factored deterministic acceleration value. (0.2 second)
S1RT	0.528	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	0.575	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S1D	0.6	Factored deterministic acceleration value. (1.0 second)
PGAd	0.5	Factored deterministic acceleration value. (Peak Ground Acceleration)
C_{RS}	0.935	Mapped value of the risk coefficient at short periods
C_{R1}	0.918	Mapped value of the risk coefficient at a period of 1 s

SOURCE: SEAOC/OSHPD Seismic Design Maps Tool
<https://seismicmaps.org/>

SEISMIC DESIGN PARAMETERS - 2019 CBC

PROPOSED WAREHOUSE

PERRIS, CALIFORNIA

DRAWN: MD
CHKD: DN

SCG PROJECT
22G107-1

PLATE E-1

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL

SCG-B

Limited Geotechnical Investigation

May 1, 2023

Hillwood
901 Via Piemonte, Suite 175
Ontario, California 91764

Attention: Mr. John Grace

Project No.: **22G107-3**

Subject: **Limited Geotechnical Investigation**
Ethanac Assemblage – Off-Site Improvements
NWC Ethanac Road and Sherman Road
Perris, California

Mr. Grace:

In accordance with your request, this letter presents geotechnical design recommendations for the street improvements associated with the Ethanac Assemblage project. The purpose of this limited geotechnical investigation is to provide construction and design considerations associated with the proposed storm drain and associated improvements. In order to prepare this report, we have performed subsurface exploration and laboratory testing.

Project Description

The overall site, identified as the Ethanac Assemblage, is located at the northwest corner of Ethanac Road and Sherman Road in Perris, California. The site is bounded to the north by a commercial/industrial building and a vacant lot, to the west by Trumble Road, to the south by Ethanac Road, and to the east by Sherman Road.

The overall site consists of several contiguous rectangular-shaped parcels which total 20.7± acres in size. The site is currently vacant and undeveloped. The ground surface cover generally consists of exposed soil with moderate native grass and weed growth.

A preliminary site plan for the proposed development was provided to our office by the client. Based on this plan, the subject site will be developed with a 413,350± ft² warehouse, located in the central region of the site. Dock-high doors will be constructed along a portion of the northern and southern building walls. The proposed building is expected to be surrounded by asphaltic concrete pavements in the parking and drive areas, Portland cement concrete pavements in the truck loading areas, and concrete flatwork with some landscaped areas.

Based on our review of the plans provided to our office, it is expected that the project will consist of widening the portions of the existing roads which front the overall site. Ethanac Road will be widened 40 to 60± feet to the north. Sherman Road will be widened 20 to 30± feet to the west, and Trumble Road will be widened 10 to 15 feet to the east. The new pavements will be comprised of asphaltic concrete pavements over an aggregate base section.

In addition to the street widening procedures, the plan provided to our office indicates that the project will include replacement of an existing 48-inch and 36-inch diameter storm drain line, located within Illinois Avenue. The new storm drain will be a 5-ft by 4-ft RCB, which will extend

approximately 1,142 linear feet west of Trumble Road. Information regarding the depth of the proposed storm drain line has not been provided. The new storm drain line is estimated to extend to depths of 10 to 15± feet below existing surface grades.

Subsurface Exploration

The subsurface exploration conducted for this project consisted of seven (7) borings (identified as Boring Nos. B-1 through B-7) advanced to depths of 5 to 20± feet below the existing site grades. All of the borings were logged during drilling by a member of our staff. Boring Nos. B-1 though B-3 were performed within Illinois Avenue, as part of the storm drain improvements. Boring Nos. B-4 through B-7 were performed in the proposed street widening areas, adjacent to Ethanac Road and Sherman Road. These borings were advance using manually-operated hand-auger equipment.

Boring Nos. B-1 through B-3 were advanced with hollow-stem augers, by a conventional truck-mounted drilling rig. Representative bulk and relatively undisturbed soil samples were taken during drilling. Relatively undisturbed soil samples were taken with a split barrel "California Sampler" containing a series of one inch long, 2.416± inch diameter brass rings. This sampling method is described in ASTM Test Method D-3550. In-situ samples were also taken using a 1.4± inch inside diameter split spoon sampler, in general accordance with ASTM D-1586. Both of these samplers are driven into the ground with successive blows of a 140-pound weight falling 30 inches. The blow counts obtained during driving are recorded for further analysis. Bulk samples were collected in plastic bags to retain their original moisture content. The relatively undisturbed ring samples were placed in molded plastic sleeves that were then sealed and transported to our laboratory.

The approximate locations of the borings are indicated on the Boring Location Plan, included as Plates 2A and 2B in this report. The Boring Logs, which illustrate the conditions encountered at the boring locations, as well as the results of some of the laboratory testing, are included with this report.

Geotechnical Conditions

Pavements

AC pavements were encountered at the ground surface at Boring Nos. B-1 through B-3, which were drilled within Illinois Avenue. At these locations, the pavement sections consist of 5 to 7½± inches of asphaltic concrete, underlain by 4 to 8± inches of aggregate base. The thicknesses of the existing pavement sections are presented in the table below.

Boring No. Identification	Asphaltic Concrete Thickness (inches)	Aggregate Base Thickness (inches)	Location
B-1	7½	4	Illinois Avenue
B-2	5	8	Illinois Avenue
B-3	5	7	Illinois Avenue

Artificial Fill

Artificial fill soils were encountered at the ground surface at most of the boring locations, extending to depths of 2½ to 5½± feet below the existing site grades. The fill soils consist of loose to medium dense silty fine sands and clayey fine sands, with varying medium sand and clay content, and fine sandy clays. The fill soils possess a disturbed and mottled appearance, resulting in their classification of artificial fill.

Older Alluvium

Native alluvium was encountered beneath the artificial fill soils or at the ground surface at all the boring locations, extending to at least the maximum depth explored of 20± feet. The older alluvium generally consists of medium dense to very dense silty sands, clayey sands, and fine sandy silts with varying medium to coarse sand, and very stiff to hard fine sandy clays.

Groundwater

Free water was not encountered during the drilling of any of the borings. Based on the lack of any water within the borings and the moisture contents of the recovered soil samples, the static groundwater table is considered to have existed at a depth in excess of 20± feet at the time of the subsurface exploration.

As part of our research, we reviewed readily available groundwater data in order to determine regional groundwater depths. The primary reference used to determine the groundwater depths in the subject site area is the California Department of Water Resources website, http://www.water.ca.gov/waterdatalibrary/. The nearest monitoring well is located directly south of Illinois Avenue. Water level readings within this monitoring well indicates a high groundwater level of 95± feet below the ground surface in September 1995.

Laboratory Testing

Classification

All recovered soil samples were classified using the Unified Soil Classification System (USCS), in accordance with ASTM D-2488. Field identifications were then supplemented with additional visual classifications and/or by laboratory testing. The USCS classifications are shown on the Boring Logs and are periodically referenced throughout this report.

In-situ Density and Moisture Content

The density has been determined for selected relatively undisturbed ring samples. These densities were determined in general accordance with the method presented in ASTM D-2937. The results are recorded as dry unit weight in pounds per cubic foot. The moisture contents are determined in accordance with ASTM D-2216, and are expressed as a percentage of the dry weight. These test results are presented on the Boring Logs.

Grain Size Analysis

The grain size distribution of two (2) selected soils has been determined using a range of wire mesh screens. These tests were performed in general accordance with ASTM D-422 and/or ASTM D-1140. The weight of the portion of the sample retained on each screen is recorded and the

percentage finer or coarser of the total weight is calculated. The grain size distribution for each of the tested samples has been graphed and included in as Plates C-1 and C-2 in this report.

Maximum Dry Density and Optimum Moisture Content

Three (3) representative bulk samples were tested for their maximum dry densities and optimum moisture contents. The results have been obtained using the Modified Proctor procedure, per ASTM D-1557. These tests are generally used to compare the in-situ densities of undisturbed field samples, and for later compaction testing. Additional testing of other soil type or soil mixes may be necessary at a later date. The result of the test is plotted on Plates C-3 through C-5 with this report.

Direct Shear

Direct shear testing was performed on one (1) undisturbed sample to determine its shear strength parameters. The test was performed in accordance with ASTM D-3080. The testing apparatus is designed to accept either natural or remolded samples in a one-inch high ring, approximately 2.416 inches in diameter. Three undisturbed soil samples are loaded with different normal loads and the resulting shear strength is determined for that particular normal load. The shearing of the samples is performed at a rate slow enough to permit the dissipation of excess pore water pressure. Porous stones are in contact with the top and bottom of the sample to permit the addition or release of pore water. The result of the direct shear test is presented on Plate C-6.

Corrosivity Testing

Two (2) representative samples of the near-surface soils within the proposed storm drain areas were submitted to a subcontracted corrosion engineering laboratory to identify potentially corrosive characteristics with respect to common construction materials. The corrosivity testing included a determination of the electrical resistivity, pH, chloride, nitrate and sulfide concentrations, and redox potential. The resistivity of the soils is a measure of their potential to attack buried metal improvements such as utility lines. The results of these tests are presented below:

Sample Identification	Saturated Resistivity (ohm-cm)	pH	Chlorides (mg/kg)	Nitrates (mg/kg)	Sulfides (mg/kg)	Redox Potential (mV)
B-2 @ 1 to 5 feet	2,948	8.6	21.5	17.0	1.9	102
B-3 @ 1 to 5 feet	3,080	9.0	4.8	6.6	1.3	113

Sand Equivalent

Sand equivalency values have been determined for representative soil samples recovered at the subject site. Testing has been performed in accordance with ASTM D-2419. Sand Equivalent values are often used to characterize the claylike portion of a soil or aggregate sample. The results of the Sand Equivalent Testing are presented below.

Sample Identification	San Equivalent
B-2 @ 1 to 5 feet	13
B-3 @ 1 to 5 feet	14

R-Value

R (resistance)-value testing was conducted on three (3) representative samples of the existing soils obtained from the proposed improvement areas. The R-value was determined in accordance with CA Test Method 301. This test provides a measure of the pavement support characteristics of the soils and is used in the pavement thickness design procedure. The results of the R-value testing are as follows:

Sample Identification	R-Value
B-2 @ 1 to 5 feet	33
B-5 @ 1 to 5 feet	42
B-7 @ 1 to 5 feet	36

Geotechnical Design Considerations

The excavated soils are suitable to be recompacted and used as structural backfill for the storm drain line.

Bedding and Shading

The existing soils recovered from the proposed street improvement areas possess appreciable silt and clay content. **Based on the results of sand equivalent testing the underlying soil materials are not considered suitable for bedding or shading purposes**. It is expected that import soils will be required in order to obtain the sand equivalent for bedding and shading required by the city and/or the county.

Corrosion Potential

The results of laboratory testing indicate that the tested samples of the on-site soils possess saturated resistivities of 2,948 to 3,080 ohm-cm, and pH values of 8.6 to 9.0. The soils possess redox potentials of 102 and 113 mV and sulfide concentrations of 1.3 to 1.9 parts per million. These test results have been evaluated in accordance with guidelines published by the Ductile Iron Pipe Research Association (DIPRA). The DIPRA guidelines consist of a point system by which characteristics of the soils are used to quantify the corrosivity characteristics of the site. Resistivity, pH, sulfide concentration, redox potential, and moisture content the five factors that enter into the evaluation procedure. Based on these factors, the on-site soils are considered to be mildly corrosive to ferrous pipes. Therefore, corrosion protection is expected to be required for cast iron or ductile iron pipes.

Concentrations of chlorides ranging from 4.8 to 21.5 ppm were detected in the sample submitted for corrosivity testing. In general, soils possessing chloride concentrations in excess of 500 parts per million (ppm) are considered to be corrosive with respect to steel reinforcement within reinforced concrete. Based on the lack of any significant chlorides in the tested sample, the site is considered to have a C1 chloride exposure in accordance with the American Concrete Institute

(ACI) Publication 318 Building Code Requirements for Structural Concrete and Commentary. Therefore, a specialized concrete mix design for reinforced concrete for protection against chloride exposure is not considered warranted.

Nitrates present in soil can be corrosive to copper tubing at concentrations greater than 50 mg/kg. The tested samples possess nitrate concentrations ranging from 6.6 to 17.0 mg/kg. Based on this test result, the on-site soils are not considered to be corrosive to copper pipe.

Since SCG does not practice in the area of corrosion engineering, we recommend that the client contact a corrosion engineer to provide recommendations for the protection of copper tubing/pipe in contact with the on-site soils.

Site Grading Recommendations

The grading recommendations presented below are based on the subsurface conditions encountered at the boring locations and our understanding of the proposed development. We recommend that all grading activities be completed in accordance with the Grading Guide Specifications included as an enclosure to this report, unless superseded by site-specific recommendations presented below.

Site Stripping and Demolition

Initial site stripping should include removal of any surficial vegetation from the site. Stripping should include grass, weeds, shrubs, and any organic topsoil located in the proposed improvement areas. The actual extent of site stripping should be determined in the field by the geotechnical engineer, based on the organic content and stability of the materials encountered.

Some demolition of the existing asphaltic concrete pavements and areas of Portland cement concrete may be required to facilitate the construction of the proposed improvements. Demolition should include any subsurface improvements that will not remain in place with the new development. Debris resultant from demolition should also be disposed of off-site. Alternatively, concrete and asphalt debris may be pulverized to a maximum 2-inch particle size, well-mixed with sands, and placed as new compacted structural fill or it may be crushed and made into crushed miscellaneous base (CMB).

Treatment of Existing Soils: Pavement Areas

Subgrade preparation in the new pavement areas should initially consist of removal of all soils disturbed during demolition operations. The geotechnical engineer should then evaluate the subgrade to identify any areas of unsuitable soils. The subgrade soils should then be scarified to a depth of 12± inches, moisture conditioned to 2 to 4 percent above optimum moisture content, and recompacted to at least 90 percent of the ASTM D-1557 maximum dry density.

Fill Placement

- Fill soils should be placed in thin (6± inches), near-horizontal lifts, moisture conditioned to 2 to 4 percent above optimum moisture content, and compacted.
- On-site soils may be used for fill provided they are cleaned of any debris to the satisfaction of the geotechnical engineer.

- All grading and fill placement activities should be completed in accordance with the requirements of the 2022 California Building Code and the requirements of the City of Perris.
- All fill soils should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density. Fill soils should be well mixed.
- Compaction tests should be performed periodically by the geotechnical engineer as random verification of compaction and moisture content. These tests are intended to aid the contractor. Since the tests are taken at discrete locations and depths, they may not be indicative of the entire fill and therefore should not relieve the contractor of his responsibility to meet the job specifications.

Imported Structural Fill

All imported structural fill should consist of very low expansive (EI < 20), well graded soils possessing at least 10 percent fines (that portion of the sample passing the No. 200 sieve). Additional specifications for structural fill are presented in the enclosed Grading Guide Specifications.

Utility Trench Backfill

In general, all utility trench backfill soils should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density. It is recommended that materials in excess of 3 inches in size not be used for utility trench backfill. Compacted trench backfill should conform to the requirements of the local grading code, and more restrictive requirements may be indicated by the city of Perris. All utility trench backfills should be witnessed by the geotechnical engineer. The trench backfill soils should be compaction tested where possible; probed and visually evaluated elsewhere.

Construction Considerations

Moisture Sensitive Subgrade Soils

Most of the near-surface soils possess appreciable silt content and will become unstable if exposed to significant moisture infiltration or disturbance by construction traffic. In addition, based on their granular content, some of the on-site soils will be susceptible to erosion. Therefore, the site should be graded to prevent ponding of surface water and to prevent water from running into excavations.

Excavation Considerations

The near surface fill soils generally consist medium dense silty sands and sandy clays. Based on their granular composition, some caving of shallow excavations may occur. Where caving occurs within shallow excavations, flattened excavation slopes may be sufficient to provide excavation stability. On a preliminary basis, temporary excavation slopes should be made no steeper than 1.5h:1v. Deeper excavations may require some form of external stabilization such as shoring, trench shields, or bracing. Maintaining adequate moisture content within the near surface soils will improve excavation stability. All excavation activities on this site should be conducted in accordance with Cal-OSHA regulations.

Groundwater

The static groundwater table is considered to have existed at depths greater than 20± feet at the time of the subsurface exploration. Therefore, groundwater is not expected to impact the proposed grading or excavations performed for utility construction.

Temporary Shoring Recommendations

It is expected that shoring may be required during excavation for the storm drain line along portions of the existing street segments. The following recommendations assume that the retained soil heights will extend to depths of 10 to 15± feet and any surcharge loads will be setback at least 10 feet from the face of the shoring. Based on the potential for various sources of surcharge loads on a construction site, such as the subject project, potential construction surcharge loads must be considered by the shoring engineer. It is expected that the shoring will consist of a soldier pile and lagging system.

The proposed shoring is also expected to be required in order to protect the existing utility lines located on the proposed storm drain line alignment. The contractor should take all necessary precautions to maintain the integrity of any existing underground lines.

Lateral Earth Pressures

The gradient behind the shoring system will be relatively level. Based on the assumed type of shoring, a triangular earth pressure distribution is considered appropriate. Plate 3 included in this report illustrates the at-rest and active lateral earth pressure distributions. As shown on Plate 3, the at-rest and active pressures to be used in the shoring design should be 56H and 36H, respectively. These distributions are based on static conditions.

As previously discussed, if surcharge loads are imposed upon the shoring, they must be considered by the shoring engineer. In accordance with the Caltrans Trenching and Shoring Manual, a construction surcharge of 72 lbs/ft^2, per foot of depth, should also be applied to the back of the shoring system, extending to a depth of 10 feet below the top of the shoring system or to the excavation line, whichever is less. These loads assume normal construction traffic, consisting of lightly loaded vehicles and storage of small amounts of materials. If large stockpiles of soil, concentrated pallet loads, or crane loads are expected, SCG should be contacted for additional surcharge load recommendations. In the areas where automobile traffic is anticipated within 10 feet of the back of the shoring system, a traffic surcharge load of 250 lbs/ft^2 should be utilized in place of the construction load described above. These loads are considered to be rectangular distributions acting at the back of the shoring system. The passive resistance value of the soil below the level of excavation may be assumed to be 350 lbs/ft^2, per foot of depth, to a maximum of 3,000 lbs/ft^2.

Shoring Construction

If soldier piles are utilized, they should be spaced no closer than 3 times the nominal soldier pile diameter. The contractor should take all necessary provisions to assure firm contact between the retained soils and the shoring system. A 2-sack cement slurry may be used to fill voids where inadequate contact between the shoring system and the retained soils are observed.

Since the shoring system will be designed as a cantilever wall, some deflection will occur. In order to develop the full active pressure, a deflection of ¼ to ½ inch is expected to occur at the top of

the shoring system. The design of the shoring system as well as the protection of adjacent improvements should take this deflection into consideration.

Pavement Design Recommendations

Site preparation in the pavement area should be completed as previously recommended in the ***Site Grading Recommendations*** section of this report. The subsequent pavement recommendations assume proper drainage and construction monitoring, and are based on either PCA or CALTRANS design parameters for a twenty (20) year design period. However, these designs also assume a routine pavement maintenance program to obtain the anticipated 20-year pavement service life.

Pavement Subgrades

It is anticipated that the new pavements will be primarily supported on a layer of compacted structural fill, consisting of scarified, thoroughly moisture conditioned and recompacted existing soils. The on-site soils generally consist of silty sands and clayey sands. These materials possess fair pavement support characteristics, with R-value test results ranging from 33 to 42. Based on the variation in composition of the encountered subgrade soils, and results of the R-value testing, the following pavement design was performed using an R-value of 30. Any fill material imported to the site should have support characteristics equal to or greater than that of the on-site soils and be placed and compacted under engineering-controlled conditions. It may be desirable to perform R-value testing after the completion of rough grading to verify the R-value of the as-graded parking subgrade.

Asphaltic Concrete

Presented below are the recommended thicknesses for new flexible pavement structures consisting of asphaltic concrete over a granular base. The pavement designs are based on the traffic indices (TI's) indicated. The client and/or civil engineer should verify that these TI's are representative of the anticipated traffic volumes and acceptable to the county of San Bernardino. If the client and/or civil engineer determine that the expected traffic volume will exceed the applicable traffic index, we should be contacted for supplementary recommendations. The design traffic indices equate to the following approximate daily traffic volumes over a 20-year design life, assuming six operational traffic days per week.

ASPHALTIC CONCRETE PAVEMENTS (R = 30)					
Materials	**Truck Traffic**				
	TI = 8.0	TI = 9.0	TI = 10.0	TI = 11.0	TI = 12.0
Asphaltic Concrete	5	5½	6½	7	8
Aggregate Base	11	13	14	16	18
Compacted Subgrade	12	12	12	12	12

The aggregate base course should be compacted to at least 95 percent of the ASTM D-1557 maximum dry density. The asphaltic concrete should be compacted to at least 95 percent of the Marshall maximum density, as determined by ASTM D-2726. The aggregate base course may

consist of crushed aggregate base (CAB) or crushed miscellaneous base (CMB), which is a recycled gravel, asphalt and concrete material. The gradation, R-Value, Sand Equivalent, and Percentage Wear of the CAB or CMB should comply with appropriate specifications contained in the current edition of the "Greenbook" Standard Specifications for Public Works Construction.

Portland Cement Concrete

The preparation of the subgrade soils within concrete pavement areas should be performed as previously described for proposed asphalt pavement areas. The minimum recommended thicknesses for the Portland Cement Concrete pavement sections are as follows:

PORTLAND CEMENT PAVEMENTS (R = 30)					
Materials	**Truck Traffic**				
	TI = 8.0	TI = 9.0	TI = 10.0	TI = 11.0	TI = 12.0
Concrete	6½	8.0	9.0	10.0	11.5
Compacted Subgrade (95% minimum compaction)	12	12	12	12	12

The concrete should have a 28-day compressive strength of at least 3,000 psi. The maximum joint spacing within all of the PCC pavements is recommended to be equal to or less than 30 times the pavement thickness.

Closure

We sincerely appreciate the opportunity to be of continued service on this project. If we may be of further assistance in any manner, please contact our office.

Respectfully Submitted,

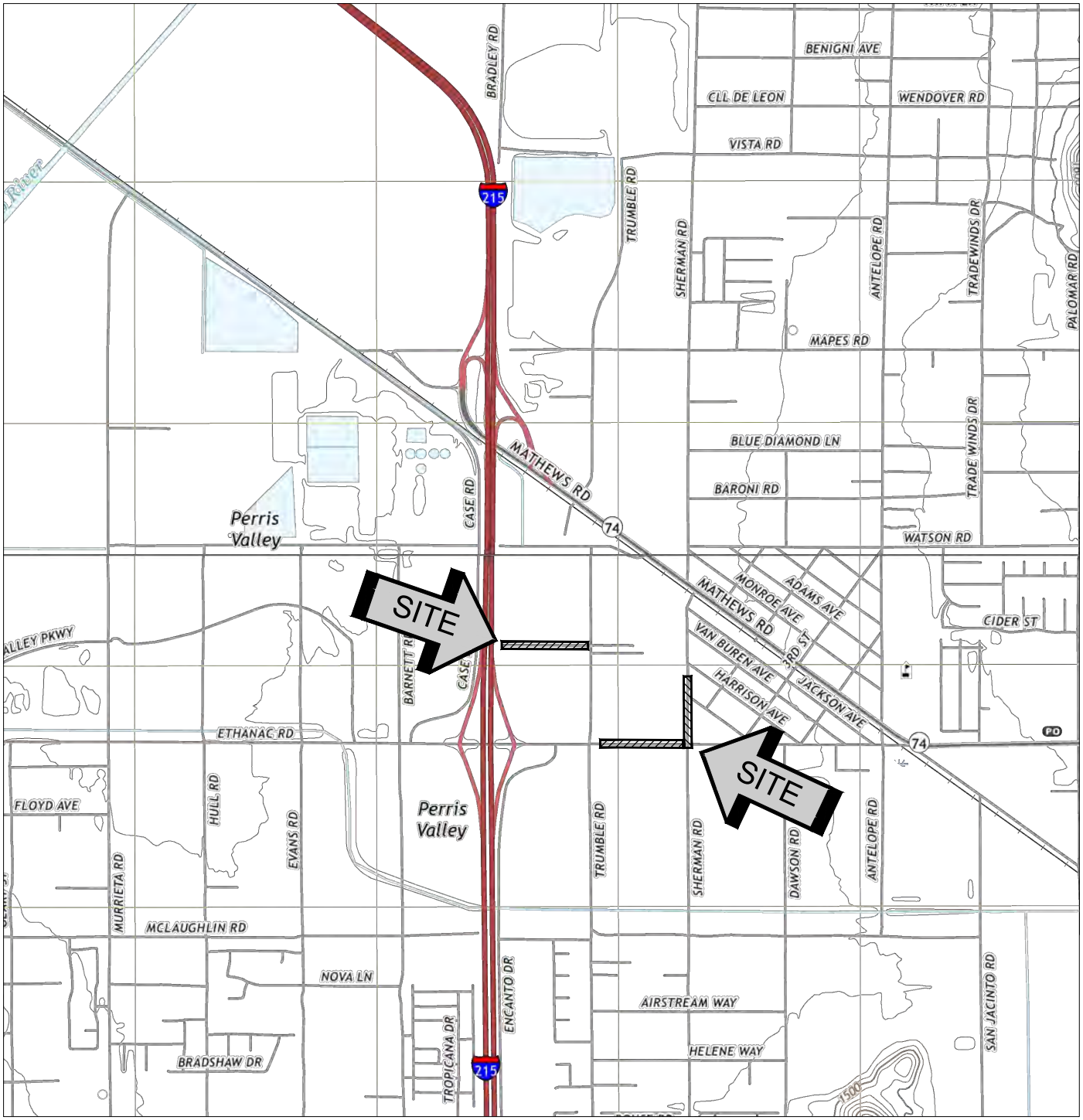
SOUTHERN CALIFORNIA GEOTECHNICAL, INC.

Pablo Montes Jr.
Project Engineer

Robert G. Trazo, M.Sc., GE 2655
Principal Engineer

Distribution: (1) Addressee

Enclosures: Plate 1 – Site Map
Plate 2A and 2B – Boring Location Map
Plate 3 – Pressure Diagram for Shoring
Boring Log Legend and Logs (9 pages)
Plates C-1 through C-6 – Results of Laboratory Testing
Grading Guide Specifications



SOURCE: USGS TOPOGRAPHIC MAPS OF THE PERRIS AND ROMOLAND QUADRANGLE, RIVERSIDE COUNTY, CALIFORNIA, 2021.

SITE LOCATION MAP

ETHANAC ASSEMBLAGE - STREET IMPROVEMENTS

PERRIS, CALIFORNIA

SCALE: 1" = 2000'	
DRAWN: JJH CHKD: RGT	
SCG PROJECT 23G107-3	
PLATE 1	

SOUTHERN CALIFORNIA GEOTECHNICAL

NORTH

SoCalGeo

NOTE: AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH

GEOTECHNICAL LEGEND

APPROXIMATE BORING LOCATION

BORING LOCATION PLAN

ETHANAC ASSEMBLAGE - STREET IMPROVEMENTS

PERRIS, CALIFORNIA

SCALE: 1" = 300'

DRAWN: JJH
CHKD: RGT

SCG PROJECT
22G107-3

PLATE 2A

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL

NORTH
SoCalGeo

NOTE: AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH

GEOTECHNICAL LEGEND

APPROXIMATE BORING LOCATION

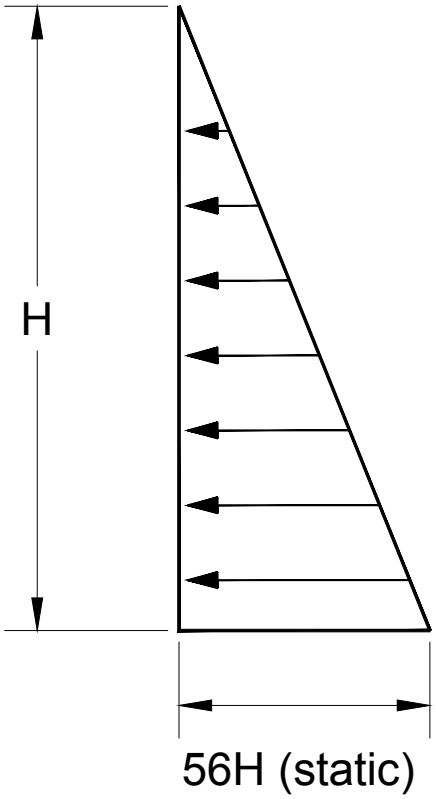
BORING LOCATION PLAN

ETHANAC ASSEMBLAGE - STREET IMPROVEMENTS

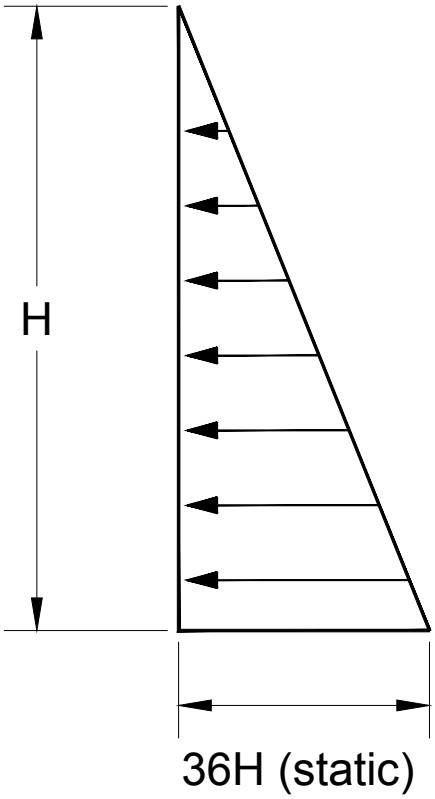
PERRIS, CALIFORNIA

SCALE: 1" = 200'	
DRAWN: JJH CHKD: RGT	
SCG PROJECT 22G107-3	
PLATE 2B	

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



AT-REST PRESSURE



ACTIVE PRESSURE

NOTES: THE LATERAL EARTH PRESSURES DEPICTED IN THIS DIAGRAM DO NOT INCLUDE ANY SURCHARGE LOADS.

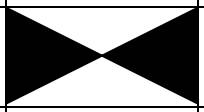
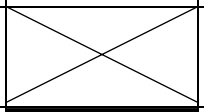
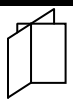
PRESSURE DIAGRAM FOR SHORING

NOT TO SCALE
DRAWN: PM CHKD: RGT
SCG PROJECT 22G107-3
PLATE 3

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL

BORING LOG LEGEND

SAMPLE TYPE	GRAPHICAL SYMBOL	SAMPLE DESCRIPTION
AUGER		SAMPLE COLLECTED FROM AUGER CUTTINGS, NO FIELD MEASUREMENT OF SOIL STRENGTH. (DISTURBED)
CORE		ROCK CORE SAMPLE: TYPICALLY TAKEN WITH A DIAMOND-TIPPED CORE BARREL. TYPICALLY USED ONLY IN HIGHLY CONSOLIDATED BEDROCK.
GRAB		SOIL SAMPLE TAKEN WITH NO SPECIALIZED EQUIPMENT, SUCH AS FROM A STOCKPILE OR THE GROUND SURFACE. (DISTURBED)
CS		CALIFORNIA SAMPLER: 2-1/2 INCH I.D. SPLIT BARREL SAMPLER, LINED WITH 1-INCH HIGH BRASS RINGS. DRIVEN WITH SPT HAMMER. (RELATIVELY UNDISTURBED)
NSR		NO RECOVERY: THE SAMPLING ATTEMPT DID NOT RESULT IN RECOVERY OF ANY SIGNIFICANT SOIL OR ROCK MATERIAL.
SPT		STANDARD PENETRATION TEST: SAMPLER IS A 1.4 INCH INSIDE DIAMETER SPLIT BARREL, DRIVEN 18 INCHES WITH THE SPT HAMMER. (DISTURBED)
SH		SHELBY TUBE: TAKEN WITH A THIN WALL SAMPLE TUBE, PUSHED INTO THE SOIL AND THEN EXTRACTED. (UNDISTURBED)
VANE		VANE SHEAR TEST: SOIL STRENGTH OBTAINED USING A 4 BLADED SHEAR DEVICE. TYPICALLY USED IN SOFT CLAYS-NO SAMPLE RECOVERED.

COLUMN DESCRIPTIONS

DEPTH: Distance in feet below the ground surface.

SAMPLE: Sample Type as depicted above.

BLOW COUNT: Number of blows required to advance the sampler 12 inches using a 140 lb hammer with a 30-inch drop. 50/3" indicates penetration refusal (>50 blows) at 3 inches. WH indicates that the weight of the hammer was sufficient to push the sampler 6 inches or more.

POCKET PEN.: Approximate shear strength of a cohesive soil sample as measured by pocket penetrometer.

GRAPHIC LOG: Graphic Soil Symbol as depicted on the following page.

DRY DENSITY: Dry density of an undisturbed or relatively undisturbed sample in lbs/ft^3.

MOISTURE CONTENT: Moisture content of a soil sample, expressed as a percentage of the dry weight.

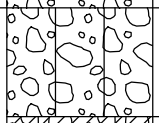
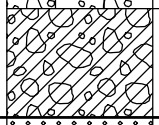
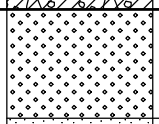
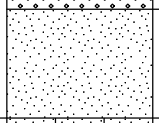
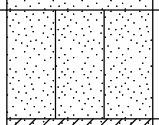
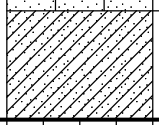
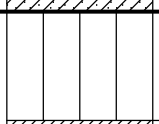
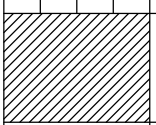
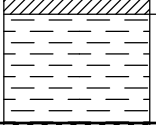
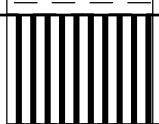
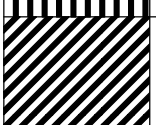
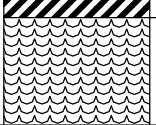
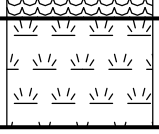
LIQUID LIMIT: The moisture content above which a soil behaves as a liquid.

PLASTIC LIMIT: The moisture content above which a soil behaves as a plastic.

PASSING #200 SIEVE: The percentage of the sample finer than the #200 standard sieve.

UNCONFINED SHEAR: The shear strength of a cohesive soil sample, as measured in the unconfined state.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-1

JOB NO.: 22G107-3
PROJECT: Ethanac Assemblage - Street Imp.
LOCATION: Perris, California

DRILLING DATE: 3/27/23
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Ryan Bremer

WATER DEPTH: Dry
CAVE DEPTH: 15 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					Illinois Avenue Pavements: 7½± inches of Asphaltic Concrete, over 4± inches Aggregate Base							
		9			FILL:: Brown Silty fine to medium Sand, mottled, loose-moist		12					
		82/11"			OLDER ALLUVIUM: Red Brown Silty fine to medium Sand, trace coarse Sand, very dense-moist		12					
5												
		49	4.5		Red Brown Silty Clay, trace fine to medium Sand, some calcareous veining, hard-moist to very moist		14					
		47	4.5				14					
10												
					Brown Silty fine to medium Sand, trace Clay, dense-moist to very moist							
		36					11					
15												
		43					14					
20												
					Boring Terminated at 20'							

TBL 22G107-3.GPJ SOCALGEO.GDT 5/1/23

TEST BORING LOG

PLATE B-1

SOUTHERN CALIFORNIA GEOTECHNICAL

BORING NO. B-2

JOB NO.: 22G107-3
PROJECT: Ethanac Assemblage - Street Imp.
LOCATION: Perris, California

DRILLING DATE: 3/27/23
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Ryan Bremer

WATER DEPTH: Dry
CAVE DEPTH: 15 feet
READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	SURFACE ELEVATION: MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					Illinois Avenue Pavements:5± inches of Asphaltic Concrete, over 8± inches Aggregate Base							
		29			FILL:: Brown Clayey fine to medium Sand, little Silt, loose to medium dense-moist to very moist	121	13					SE = 13 @ 1-2'
		14				115	15					
5		73/9"			OLDER ALLUVIUM: Brown Clayey fine to medium Sand, some Silt, very dense-moist	124	12					
		77/11"				122	13					
		75/11"			Brown Silty fine to coarse Sand, trace Clay, very dense-moist	123	11					
10												
					Brown fine to medium Sandy Clay, some Silt, trace coarse Sand, very stiff-very moist							
		44	4.0			116	19					
15												
					Brown Silty fine to medium Sand, little Clay, very dense-very moist							
		71/11"				110	17					
20					Boring Terminated at 20'							

TBL 22G107-3.GPJ SOCALGEO.GDT 5/1/23

TEST BORING LOG

PLATE B-2

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-3

JOB NO.: 22G107-3
PROJECT: Ethanac Assemblage - Street Imp.
LOCATION: Perris, California

DRILLING DATE: 3/27/23
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Ryan Bremer

WATER DEPTH: Dry
CAVE DEPTH: 16 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					Illinois Avenue Pavements:5± inches of Asphaltic Concrete, over 7± inches Aggregate Base							
		20			FILL:: Brown Silty fine to medium Sand, little coarse Sand, little fine Gravel, medium dense to very dense-moist		12					SE = 14 @ 1-5'
		66/11"					12			31		
5												
		43			OLDER ALLUVIUM: Brown Clayey fine to medium Sand, some Silt, loose to very dense-moist		12					
		9					13					
10												
		37					12					
15												
		40					13					
20					Boring Terminated at 20'							

TBL 22G107-3.GPJ SOCALGEO.GDT 5/1/23

TEST BORING LOG

PLATE B-3

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-4

JOB NO.: 22G107-3
PROJECT: Ethanac Assemblage - Street Imp.
LOCATION: Perris, California

DRILLING DATE: 3/27/23
DRILLING METHOD: Hand Auger
LOGGED BY: Joey Hernandez

WATER DEPTH: Dry
CAVE DEPTH: N/A
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					FILL: Brown Silty fine Sand, little Clay, trace medium to coarse Sand, medium dense-very moist		16					
					OLDER ALLUVIUM: Brown Silty fine to medium Sand, trace coarse Sand, trace Clay, medium dense-very moist		20					
5					Boring Terminated at 5'							

TBL 22G107-3.GPJ SOCALGEO.GDT 5/1/23

TEST BORING LOG **PLATE B-4**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-5

JOB NO.: 22G107-3
PROJECT: Ethanac Assemblage - Street Imp.
LOCATION: Perris, California

DRILLING DATE: 3/27/23
DRILLING METHOD: Hand Auger
LOGGED BY: Joey Hernandez

WATER DEPTH: Dry
CAVE DEPTH: N/A
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					FILL: Brown Silty fine Sand, little Clay, medium dense-moist		8					
					OLDER ALLUVIUM: Brown Silty fine to medium Sand, little coarse Sand, medium dense-moist		11					
5					Boring Terminated at 5'							

TBL 22G107-3.GPJ SOCALGEO.GDT 5/1/23

TEST BORING LOG

PLATE B-5

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-6

JOB NO.: 22G107-3
PROJECT: Ethanac Assemblage - Street Imp.
LOCATION: Perris, California

DRILLING DATE: 3/27/23
DRILLING METHOD: Hand Auger
LOGGED BY: Joey Hernandez

WATER DEPTH: Dry
CAVE DEPTH: N/A
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					OLDER ALLUVIUM: Brown Silty fine Sand, trace medium to coarse Sand, trace fine root fibers, medium dense-very moist		15					
							14					
5					Boring Terminated at 5'							

TBL 22G107-3.GPJ SOCALGEO.GDT 5/1/23

TEST BORING LOG

PLATE B-6

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-7

JOB NO.: 22G107-3
PROJECT: Ethanac Assemblage - Street Imp.
LOCATION: Perris, California

DRILLING DATE: 3/27/23
DRILLING METHOD: Hand Auger
LOGGED BY: Joey Hernandez

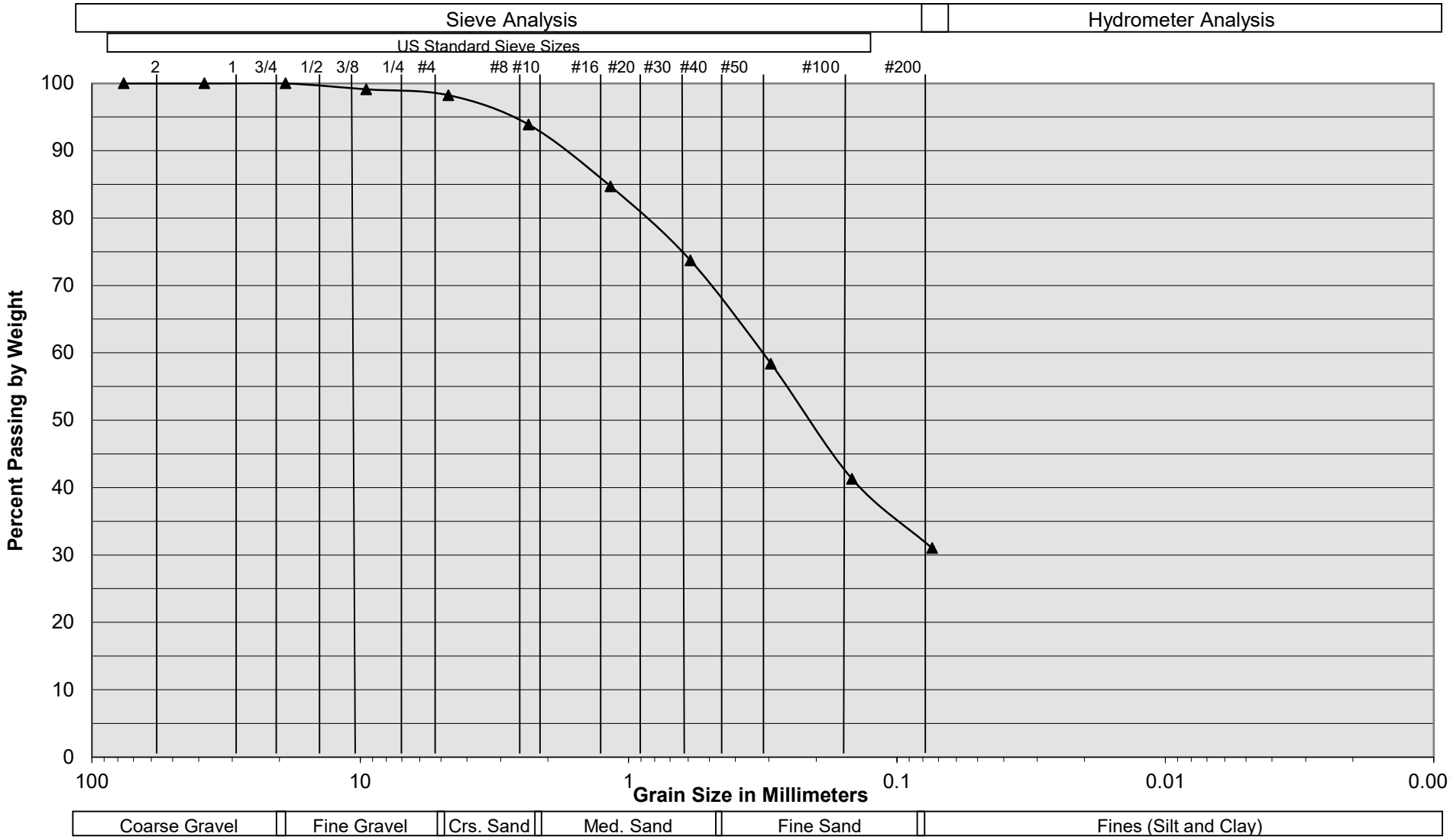
WATER DEPTH: Dry
CAVE DEPTH: N/A
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					OLDER ALLUVIUM: Brown Clayey fine Sand, little Silt, trace medium to coarse Sand, trace fine root fibers, medium dense-moist		12					
							12					
5					Boring Terminated at 5'							

TBL 22G107-3.GPJ SOCALGEO.GDT 5/1/23

TEST BORING LOG **PLATE B-7**

Grain Size Distribution

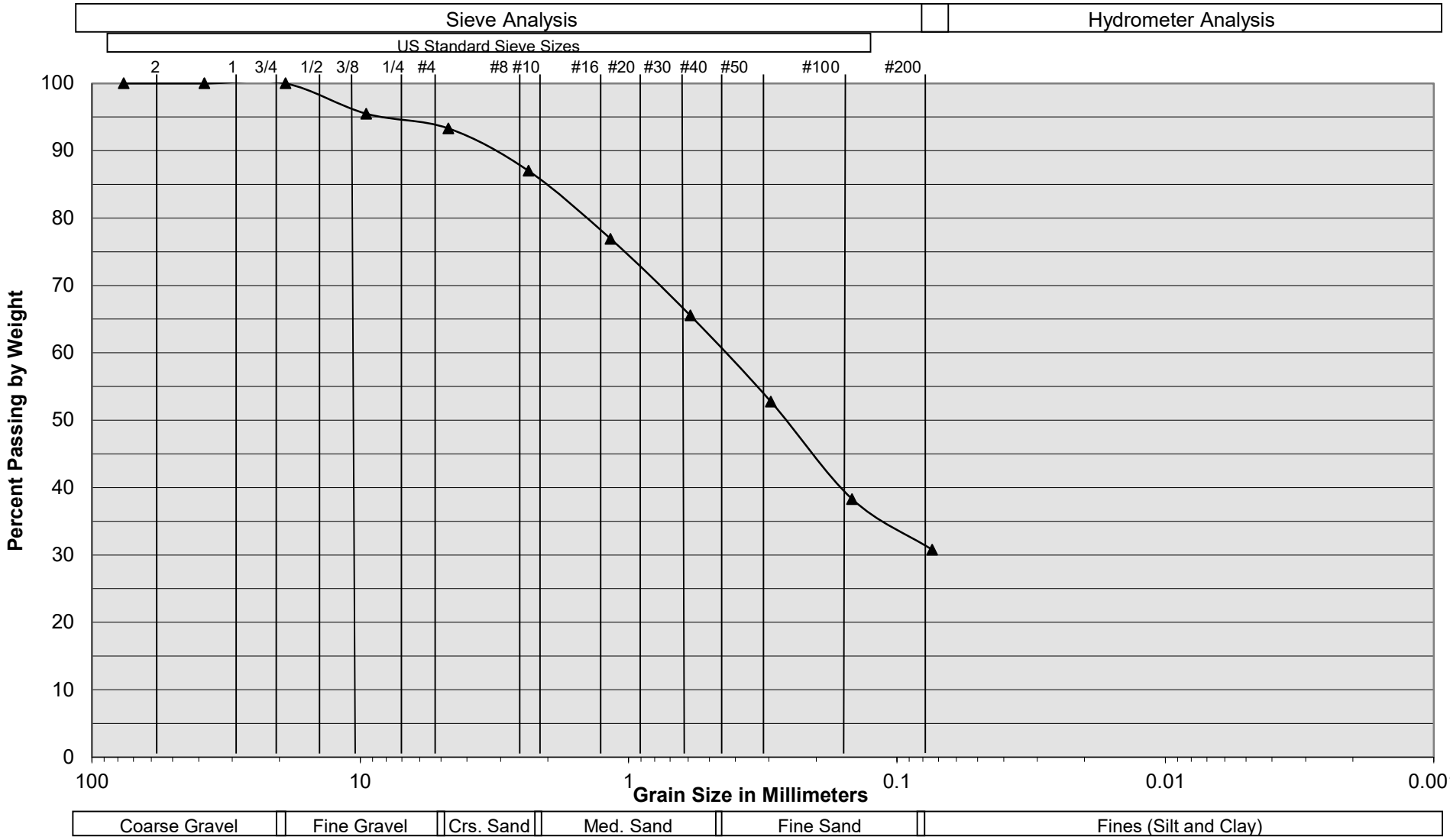


Sample Description	B-1 @ 3½ to 5 feet
Soil Classification	Red Brown Silty fine to medium Sand, trace coarse Sand

Ethanac Assemblage - Street Improvements
Perris, CA
Project No. 22G107-3
PLATE C- 1

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

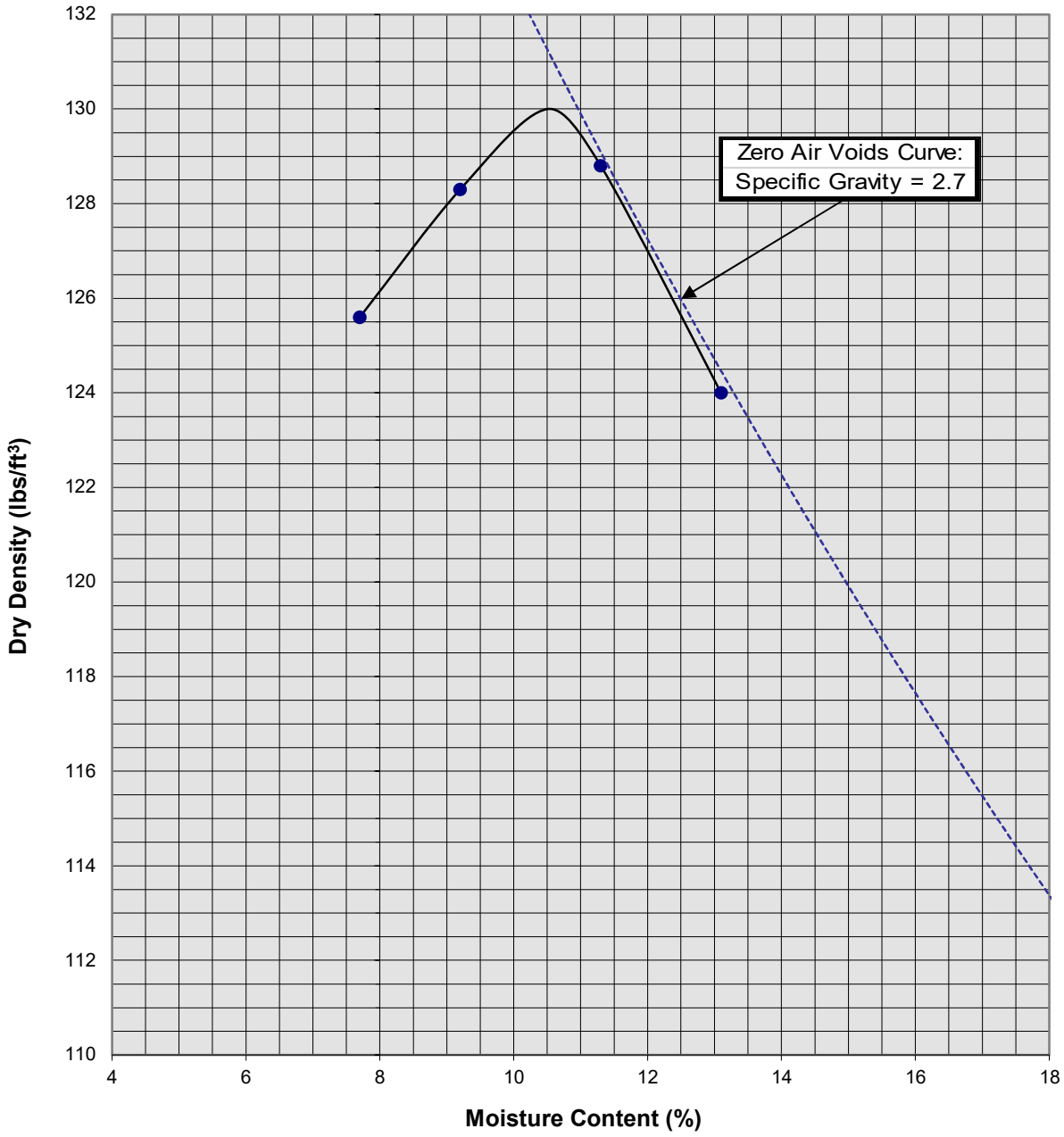


Sample Description	B-3 @ 3½ to 5 feet
Soil Classification	Brown Silty fine to medium Sand, little coarse Sand, little fine Gravel

Ethanac Assemblage - Street Improvements
Perris, CA
Project No. 22G107-3
PLATE C- 2

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Moisture/Density Relationship
ASTM D-1557



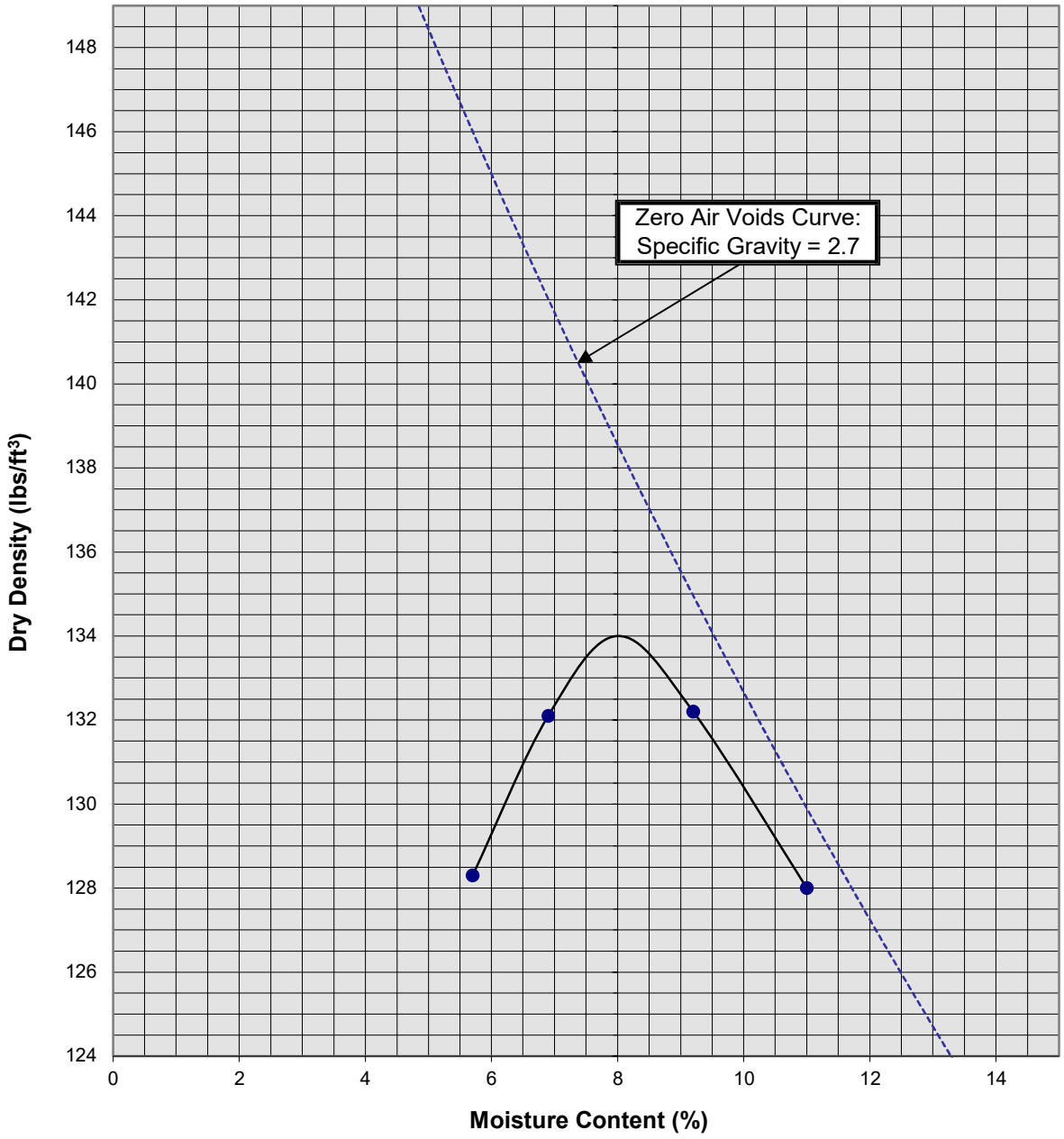
Soil ID Number	B-1 @ 1-5
Optimum Moisture (%)	10.5
Maximum Dry Density (pcf)	130
Soil Classification	Brown Silty fine to medium Sand

Ethanac Assemblage - Street Improvements
Perris, California
Project No. 22G107-3

PLATE C-3

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Moisture/Density Relationship
ASTM D-1557



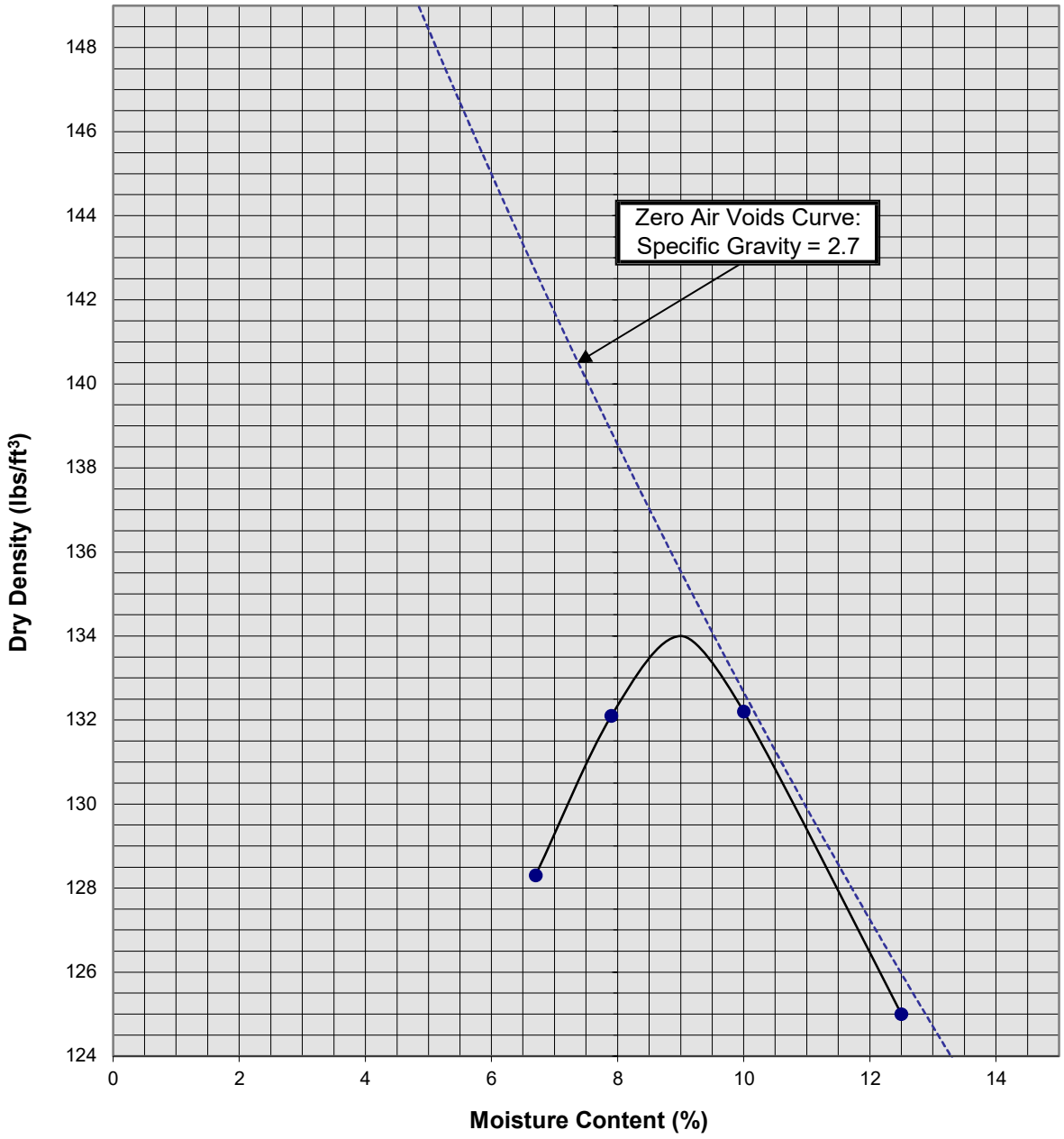
Soil ID Number	B-5 @ 1-5
Optimum Moisture (%)	8
Maximum Dry Density (pcf)	134
Soil Classification	Brown Silty fine to coarse Sand, little Clay

Ethanac Assemblage - Street Improvements
Perris, California
Project No. 22G107-3

PLATE C-4

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Moisture/Density Relationship
ASTM D-1557



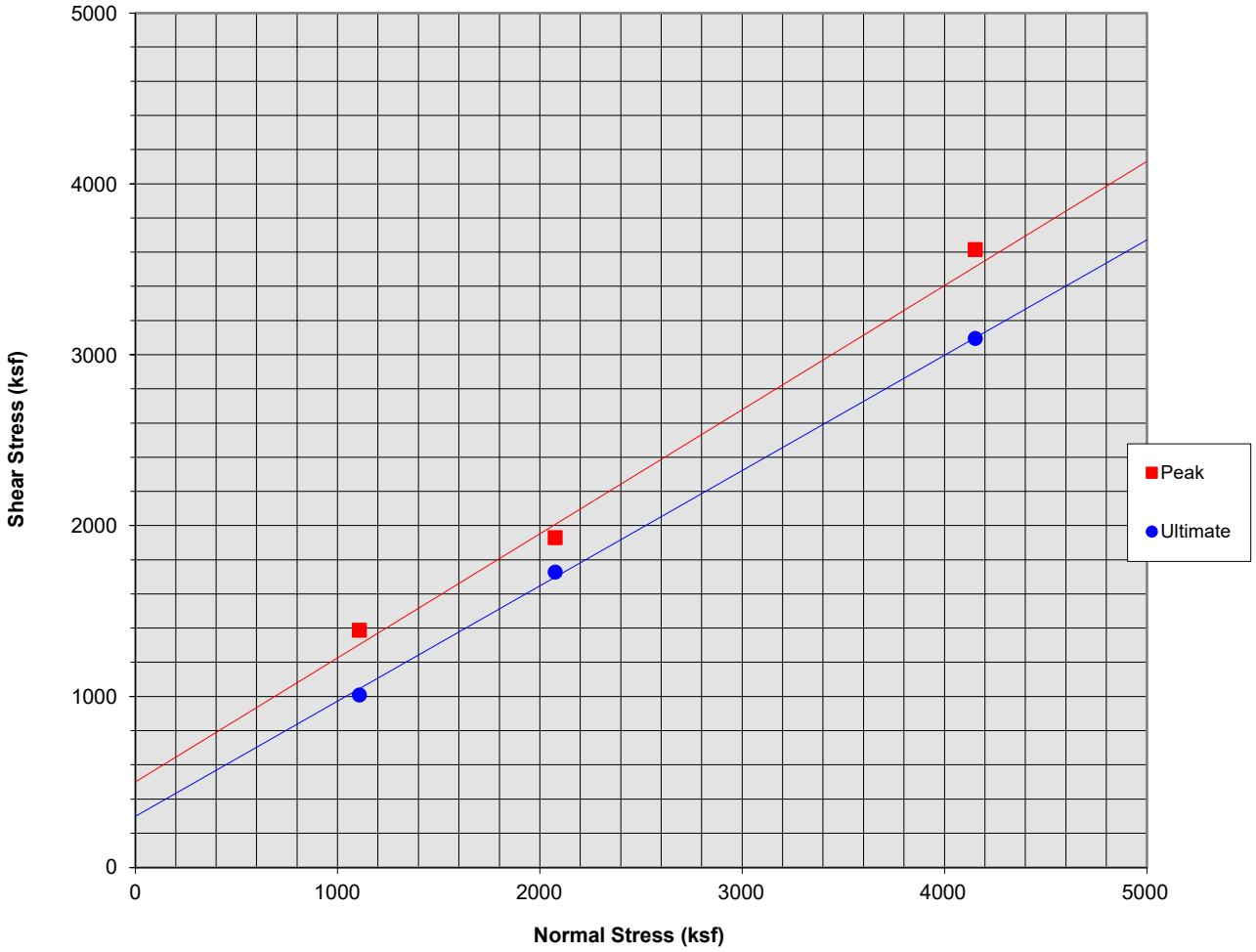
Soil ID Number	B-7 @ 1-5
Optimum Moisture (%)	9
Maximum Dry Density (pcf)	134
Soil Classification	Brown Clayey fine Sand, little Silt, trace medium to coarse Sand

Ethanac Assemblage - Street Improvements
Perris, California
Project No. 22G107-3

PLATE C-5

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Direct Shear Test Results
(Undisturbed)



Sample Description: B-2 @ 3 to 4 feet

Classification: Brown Clayey fine to medium Sand, little Silt

Sample Data		Test Results		
Initial Moisture Content	15.0			
Final Moisture Content	18.0		Peak	Ultimate
Initial Dry Density	115.0	ϕ (°)	36.0	34.0
Final Dry Density	--	**C** (psf)	500	300
Specimen Diameter (in)	2.4			
Specimen Thickness (in)	1.0			

Ethanac Assemblage - Street Improvements
Perris, California
Project No. 22G107-3

PLATE C- 6

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

GRADING GUIDE SPECIFICATIONS

These grading guide specifications are intended to provide typical procedures for grading operations. They are intended to supplement the recommendations contained in the geotechnical investigation report for this project. Should the recommendations in the geotechnical investigation report conflict with the grading guide specifications, the more site specific recommendations in the geotechnical investigation report will govern.

General

- The Earthwork Contractor is responsible for the satisfactory completion of all earthwork in accordance with the plans and geotechnical reports, and in accordance with city, county, and applicable building codes.

- The Geotechnical Engineer is the representative of the Owner/Builder for the purpose of implementing the report recommendations and guidelines. These duties are not intended to relieve the Earthwork Contractor of any responsibility to perform in a workman-like manner, nor is the Geotechnical Engineer to direct the grading equipment or personnel employed by the Contractor.

- The Earthwork Contractor is required to notify the Geotechnical Engineer of the anticipated work and schedule so that testing and inspections can be provided. If necessary, work may be stopped and redone if personnel have not been scheduled in advance.

- The Earthwork Contractor is required to have suitable and sufficient equipment on the job-site to process, moisture condition, mix and compact the amount of fill being placed to the approved compaction. In addition, suitable support equipment should be available to conform with recommendations and guidelines in this report.

- Canyon cleanouts, overexcavation areas, processed ground to receive fill, key excavations, subdrains and benches should be observed by the Geotechnical Engineer prior to placement of any fill. It is the Earthwork Contractor's responsibility to notify the Geotechnical Engineer of areas that are ready for inspection.

- Excavation, filling, and subgrade preparation should be performed in a manner and sequence that will provide drainage at all times and proper control of erosion. Precipitation, springs, and seepage water encountered shall be pumped or drained to provide a suitable working surface. The Geotechnical Engineer must be informed of springs or water seepage encountered during grading or foundation construction for possible revision to the recommended construction procedures and/or installation of subdrains.

Site Preparation

- The Earthwork Contractor is responsible for all clearing, grubbing, stripping and site preparation for the project in accordance with the recommendations of the Geotechnical Engineer.

- If any materials or areas are encountered by the Earthwork Contractor which are suspected of having toxic or environmentally sensitive contamination, the Geotechnical Engineer and Owner/Builder should be notified immediately.

- Major vegetation should be stripped and disposed of off-site. This includes trees, brush, heavy grasses and any materials considered unsuitable by the Geotechnical Engineer.

- Underground structures such as basements, cesspools or septic disposal systems, mining shafts, tunnels, wells and pipelines should be removed under the inspection of the Geotechnical Engineer and recommendations provided by the Geotechnical Engineer and/or city, county or state agencies. If such structures are known or found, the Geotechnical Engineer should be notified as soon as possible so that recommendations can be formulated.

- Any topsoil, slopewash, colluvium, alluvium and rock materials which are considered unsuitable by the Geotechnical Engineer should be removed prior to fill placement.

- Remaining voids created during site clearing caused by removal of trees, foundations basements, irrigation facilities, etc., should be excavated and filled with compacted fill.

- Subsequent to clearing and removals, areas to receive fill should be scarified to a depth of 10 to 12 inches, moisture conditioned and compacted

- The moisture condition of the processed ground should be at or slightly above the optimum moisture content as determined by the Geotechnical Engineer. Depending upon field conditions, this may require air drying or watering together with mixing and/or discing.

Compacted Fills

- Soil materials imported to or excavated on the property may be utilized in the fill, provided each material has been determined to be suitable in the opinion of the Geotechnical Engineer. Unless otherwise approved by the Geotechnical Engineer, all fill materials shall be free of deleterious, organic, or frozen matter, shall contain no chemicals that may result in the material being classified as “contaminated,” and shall be very low to non-expansive with a maximum expansion index (EI) of 50. The top 12 inches of the compacted fill should have a maximum particle size of 3 inches, and all underlying compacted fill material a maximum 6-inch particle size, except as noted below.

- All soils should be evaluated and tested by the Geotechnical Engineer. Materials with high expansion potential, low strength, poor gradation or containing organic materials may require removal from the site or selective placement and/or mixing to the satisfaction of the Geotechnical Engineer.

- Rock fragments or rocks less than 6 inches in their largest dimensions, or as otherwise determined by the Geotechnical Engineer, may be used in compacted fill, provided the distribution and placement is satisfactory in the opinion of the Geotechnical Engineer.

- Rock fragments or rocks greater than 12 inches should be taken off-site or placed in accordance with recommendations and in areas designated as suitable by the Geotechnical Engineer. These materials should be placed in accordance with Plate D-8 of these Grading Guide Specifications and in accordance with the following recommendations:

    - Rocks 12 inches or more in diameter should be placed in rows at least 15 feet apart, 15 feet from the edge of the fill, and 10 feet or more below subgrade. Spaces should be left between each rock fragment to provide for placement and compaction of soil around the fragments.

    - Fill materials consisting of soil meeting the minimum moisture content requirements and free of oversize material should be placed between and over the rows of rock or

concrete. Ample water and compactive effort should be applied to the fill materials as they are placed in order that all of the voids between each of the fragments are filled and compacted to the specified density.

- Subsequent rows of rocks should be placed such that they are not directly above a row placed in the previous lift of fill. A minimum 5-foot offset between rows is recommended.

- To facilitate future trenching, oversized material should not be placed within the range of foundation excavations, future utilities or other underground construction unless specifically approved by the soil engineer and the developer/owner representative.

- Fill materials approved by the Geotechnical Engineer should be placed in areas previously prepared to receive fill and in evenly placed, near horizontal layers at about 6 to 8 inches in loose thickness, or as otherwise determined by the Geotechnical Engineer for the project.

- Each layer should be moisture conditioned to optimum moisture content, or slightly above, as directed by the Geotechnical Engineer. After proper mixing and/or drying, to evenly distribute the moisture, the layers should be compacted to at least 90 percent of the maximum dry density in compliance with ASTM D-1557-78 unless otherwise indicated.

- Density and moisture content testing should be performed by the Geotechnical Engineer at random intervals and locations as determined by the Geotechnical Engineer. These tests are intended as an aid to the Earthwork Contractor, so he can evaluate his workmanship, equipment effectiveness and site conditions. The Earthwork Contractor is responsible for compaction as required by the Geotechnical Report(s) and governmental agencies.

- Fill areas unused for a period of time may require moisture conditioning, processing and recompaction prior to the start of additional filling. The Earthwork Contractor should notify the Geotechnical Engineer of his intent so that an evaluation can be made.

- Fill placed on ground sloping at a 5-to-1 inclination (horizontal-to-vertical) or steeper should be benched into bedrock or other suitable materials, as directed by the Geotechnical Engineer. Typical details of benching are illustrated on Plates D-2, D-4, and D-5.

- Cut/fill transition lots should have the cut portion overexcavated to a depth of at least 3 feet and rebuilt with fill (see Plate D-1), as determined by the Geotechnical Engineer.

- All cut lots should be inspected by the Geotechnical Engineer for fracturing and other bedrock conditions. If necessary, the pads should be overexcavated to a depth of 3 feet and rebuilt with a uniform, more cohesive soil type to impede moisture penetration.

- Cut portions of pad areas above buttresses or stabilizations should be overexcavated to a depth of 3 feet and rebuilt with uniform, more cohesive compacted fill to impede moisture penetration.

- Non-structural fill adjacent to structural fill should typically be placed in unison to provide lateral support. Backfill along walls must be placed and compacted with care to ensure that excessive unbalanced lateral pressures do not develop. The type of fill material placed adjacent to below grade walls must be properly tested and approved by the Geotechnical Engineer with consideration of the lateral earth pressure used in the design.

Foundations

- The foundation influence zone is defined as extending one foot horizontally from the outside edge of a footing, and proceeding downward at a ½ horizontal to 1 vertical (0.5:1) inclination.

- Where overexcavation beneath a footing subgrade is necessary, it should be conducted so as to encompass the entire foundation influence zone, as described above.

- Compacted fill adjacent to exterior footings should extend at least 12 inches above foundation bearing grade. Compacted fill within the interior of structures should extend to the floor subgrade elevation.

Fill Slopes

- The placement and compaction of fill described above applies to all fill slopes. Slope compaction should be accomplished by overfilling the slope, adequately compacting the fill in even layers, including the overfilled zone and cutting the slope back to expose the compacted core

- Slope compaction may also be achieved by backrolling the slope adequately every 2 to 4 vertical feet during the filling process as well as requiring the earth moving and compaction equipment to work close to the top of the slope. Upon completion of slope construction, the slope face should be compacted with a sheepsfoot connected to a sideboom and then grid rolled. This method of slope compaction should only be used if approved by the Geotechnical Engineer.

- Sandy soils lacking in adequate cohesion may be unstable for a finished slope condition and therefore should not be placed within 15 horizontal feet of the slope face.

- All fill slopes should be keyed into bedrock or other suitable material. Fill keys should be at least 15 feet wide and inclined at 2 percent into the slope. For slopes higher than 30 feet, the fill key width should be equal to one-half the height of the slope (see Plate D-5).

- All fill keys should be cleared of loose slough material prior to geotechnical inspection and should be approved by the Geotechnical Engineer and governmental agencies prior to filling.

- The cut portion of fill over cut slopes should be made first and inspected by the Geotechnical Engineer for possible stabilization requirements. The fill portion should be adequately keyed through all surficial soils and into bedrock or suitable material. Soils should be removed from the transition zone between the cut and fill portions (see Plate D-2).

Cut Slopes

- All cut slopes should be inspected by the Geotechnical Engineer to determine the need for stabilization. The Earthwork Contractor should notify the Geotechnical Engineer when slope cutting is in progress at intervals of 10 vertical feet. Failure to notify may result in a delay in recommendations.

- Cut slopes exposing loose, cohesionless sands should be reported to the Geotechnical Engineer for possible stabilization recommendations.

- All stabilization excavations should be cleared of loose slough material prior to geotechnical inspection. Stakes should be provided by the Civil Engineer to verify the location and dimensions of the key. A typical stabilization fill detail is shown on Plate D-5.

- Stabilization key excavations should be provided with subdrains. Typical subdrain details are shown on Plates D-6.

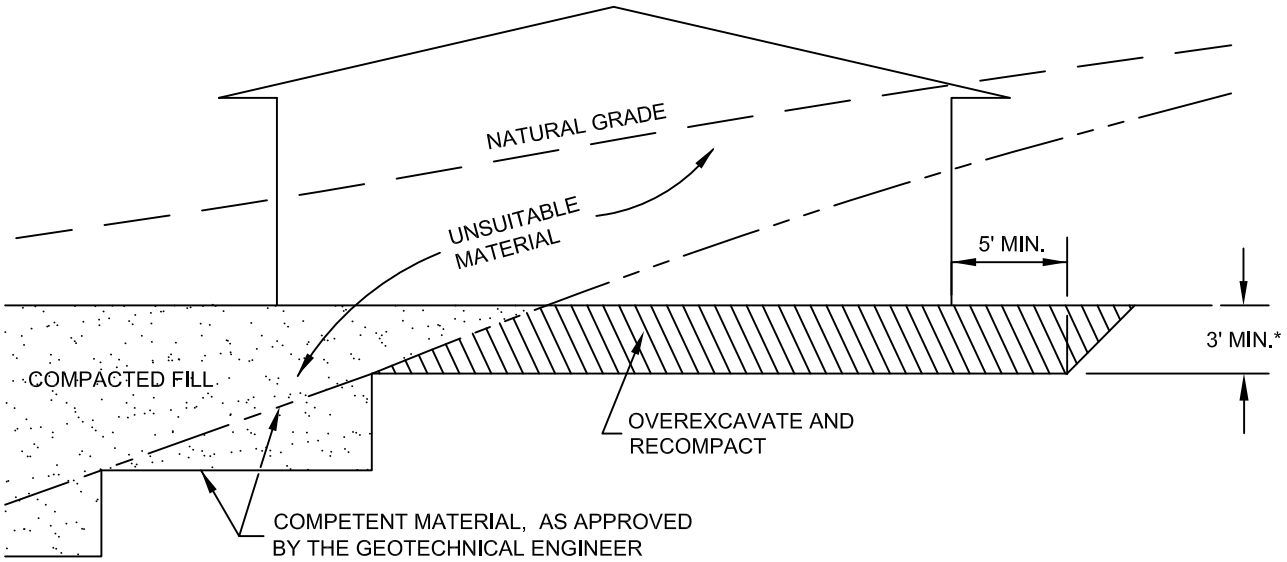
Subdrains

- Subdrains may be required in canyons and swales where fill placement is proposed. Typical subdrain details for canyons are shown on Plate D-3. Subdrains should be installed after approval of removals and before filling, as determined by the Soils Engineer.

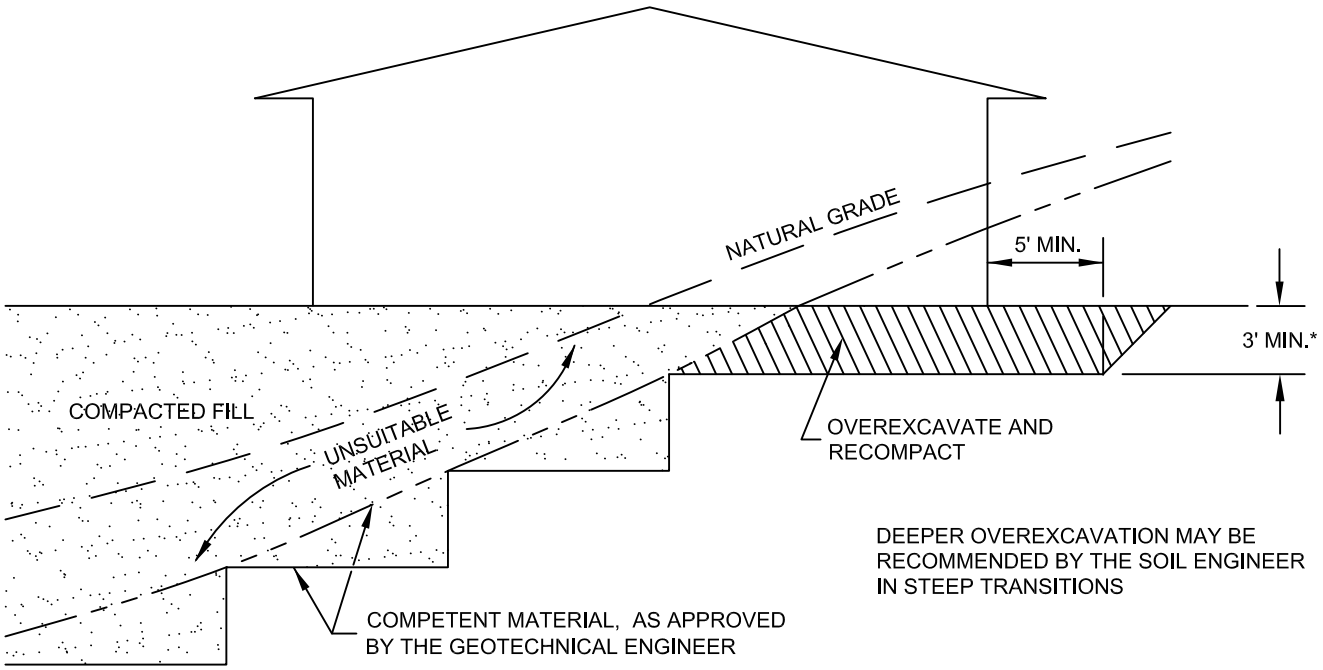
- Plastic pipe may be used for subdrains provided it is Schedule 40 or SDR 35 or equivalent. Pipe should be protected against breakage, typically by placement in a square-cut (backhoe) trench or as recommended by the manufacturer.

- Filter material for subdrains should conform to CALTRANS Specification 68-1.025 or as approved by the Geotechnical Engineer for the specific site conditions. Clean ¾-inch crushed rock may be used provided it is wrapped in an acceptable filter cloth and approved by the Geotechnical Engineer. Pipe diameters should be 6 inches for runs up to 500 feet and 8 inches for the downstream continuations of longer runs. Four-inch diameter pipe may be used in buttress and stabilization fills.

CUT LOT



CUT/FILL LOT (TRANSITION)



*SEE TEXT OF REPORT FOR SPECIFIC RECOMMENDATION. ACTUAL DEPTH OF OVEREXCAVATION MAY BE GREATER.

TRANSITION LOT DETAIL

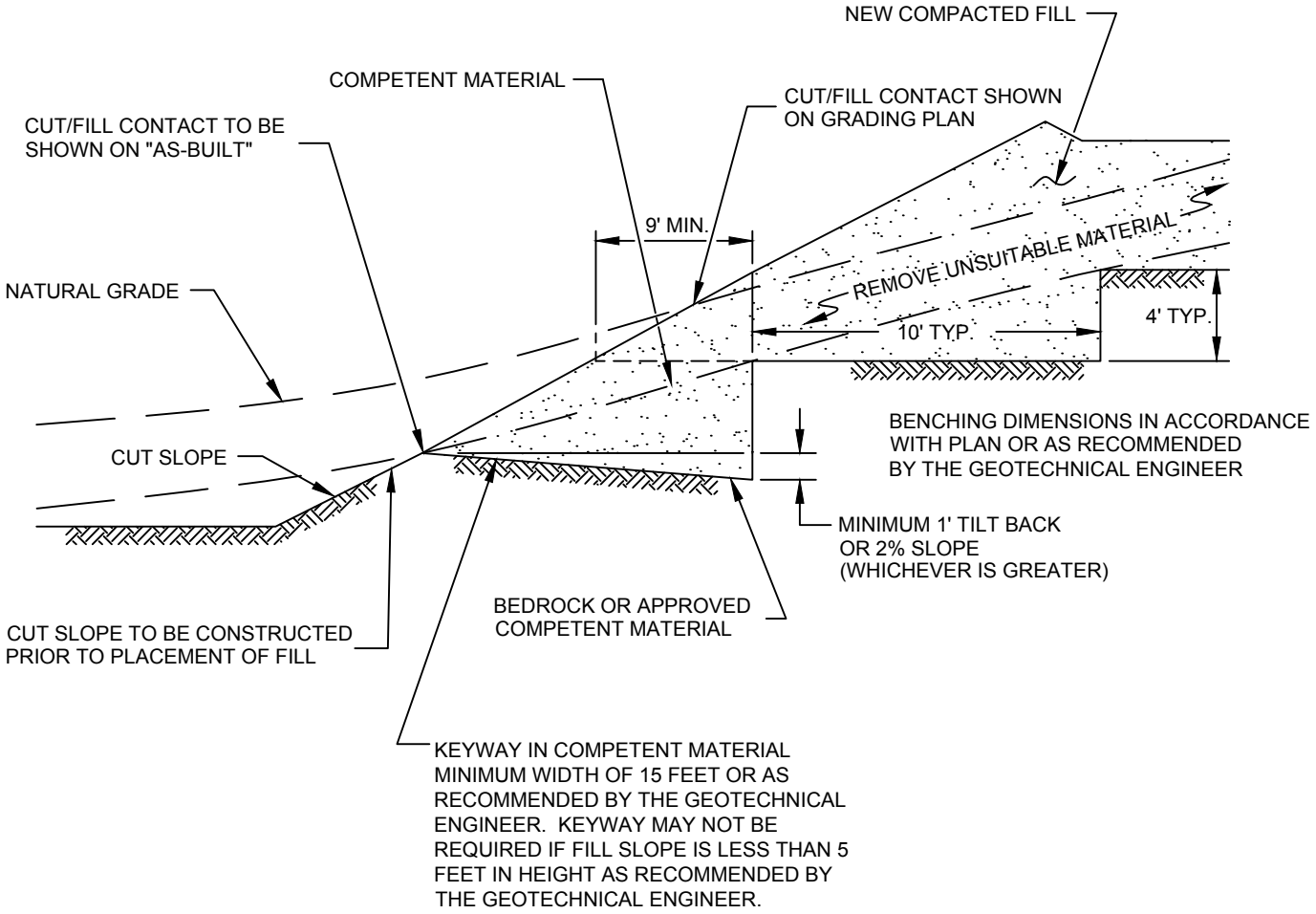
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-1

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



FILL ABOVE CUT SLOPE DETAIL

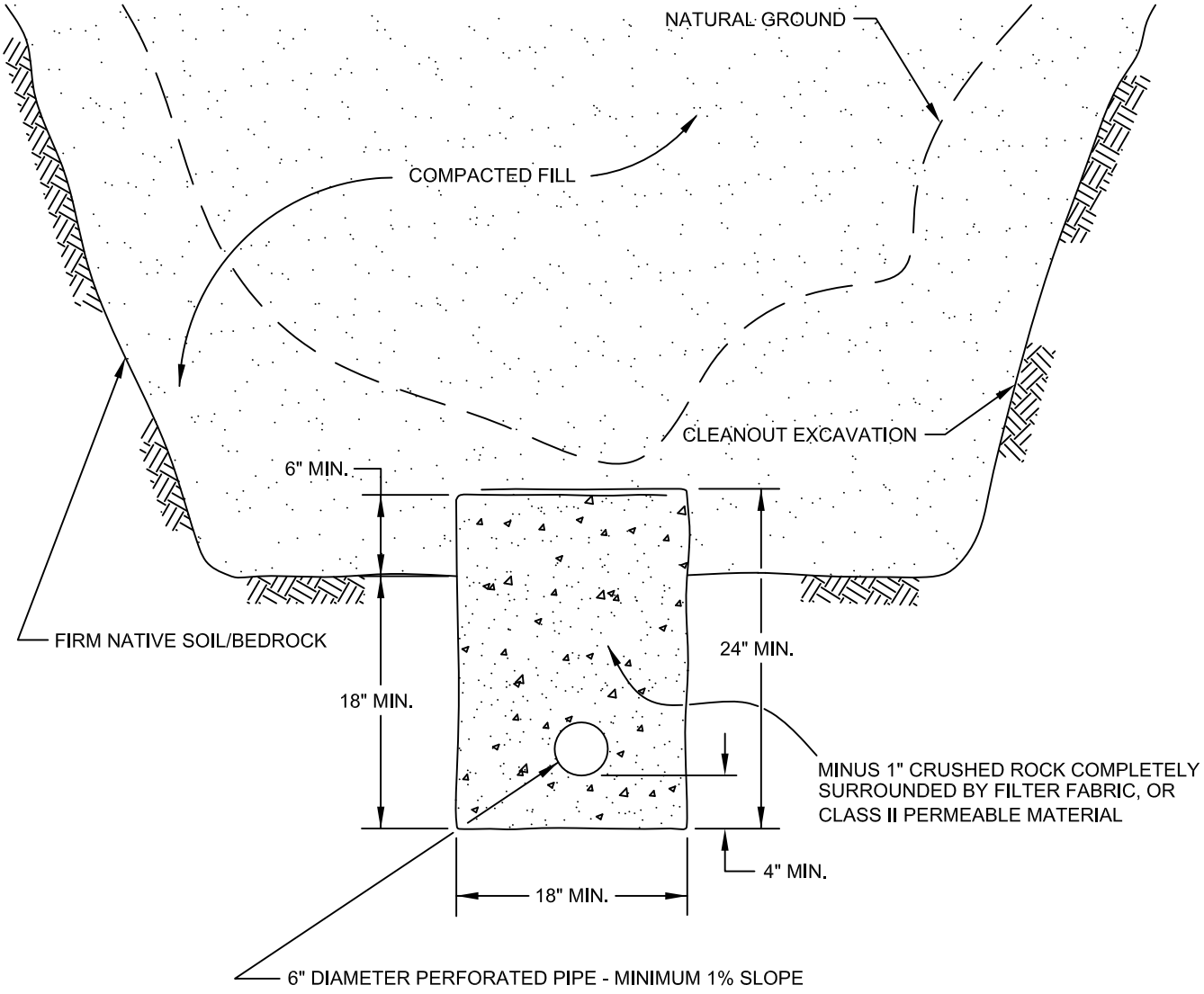
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-2

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



PIPE MATERIAL	DEPTH OF FILL OVER SUBDRAIN
ADS (CORRUGATED POLETHYLENE)	8
TRANSITE UNDERDRAIN	20
PVC OR ABS: SDR 35	35
SDR 21	100

SCHEMATIC ONLY
NOT TO SCALE

CANYON SUBDRAIN DETAIL

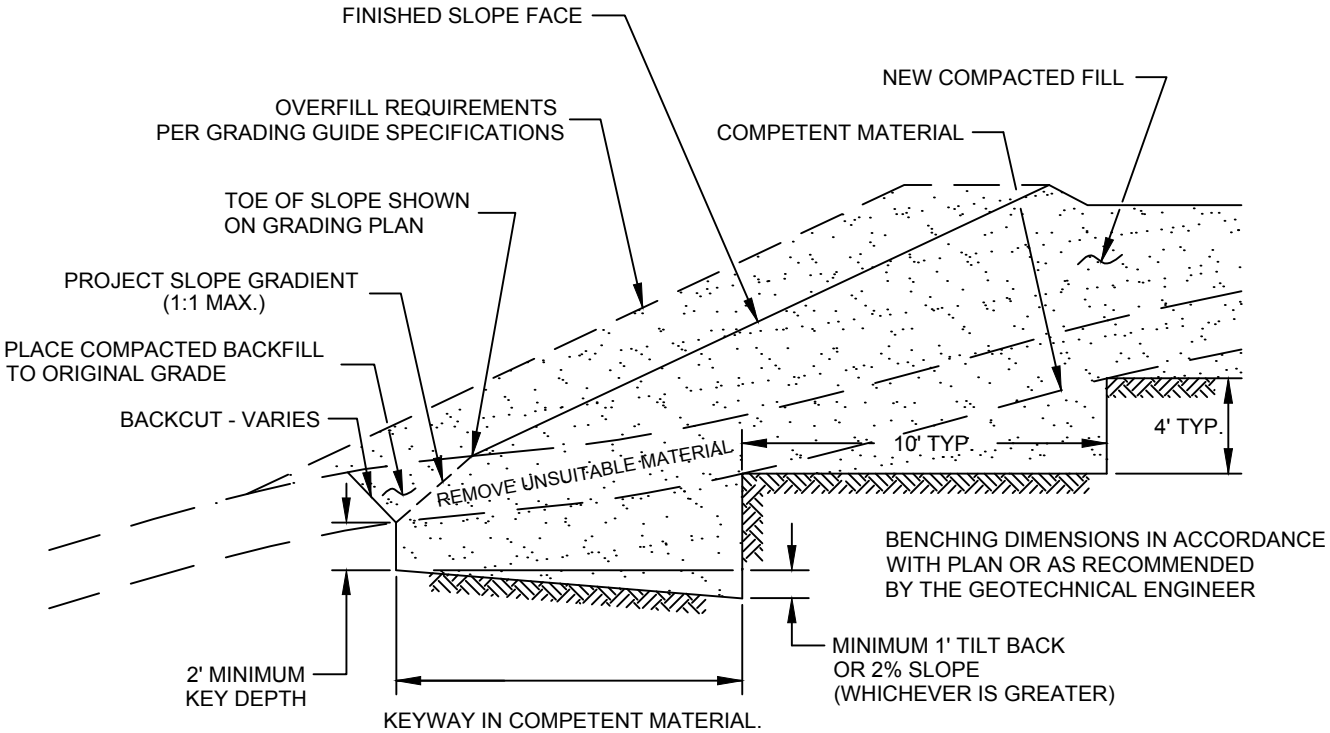
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-3

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



NOTE:
BENCHING SHALL BE REQUIRED WHEN NATURAL SLOPES ARE EQUAL TO OR STEEPER THAN 5:1 OR WHEN RECOMMENDED BY THE GEOTECHNICAL ENGINEER.

FILL ABOVE NATURAL SLOPE DETAIL

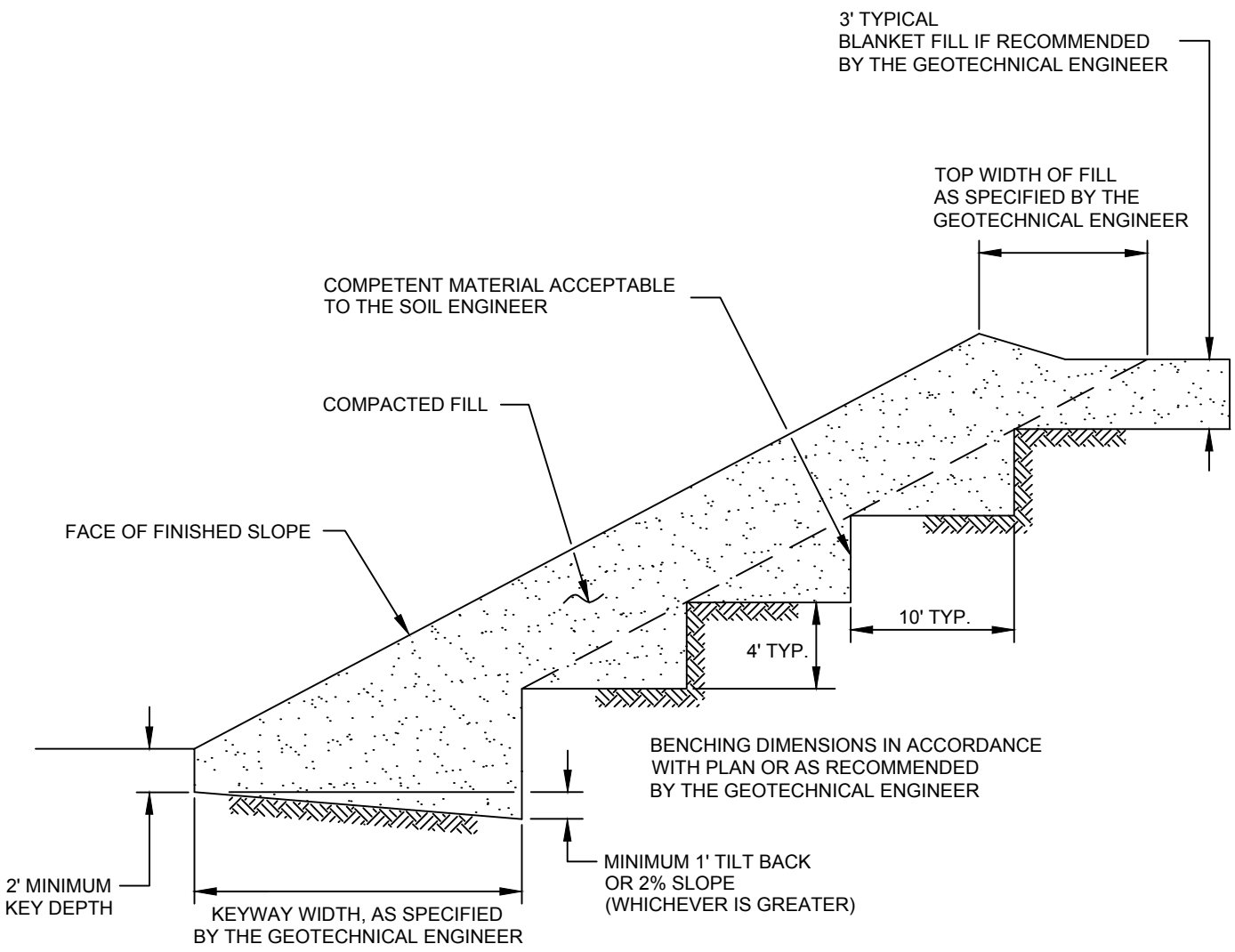
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-4

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



STABILIZATION FILL DETAIL

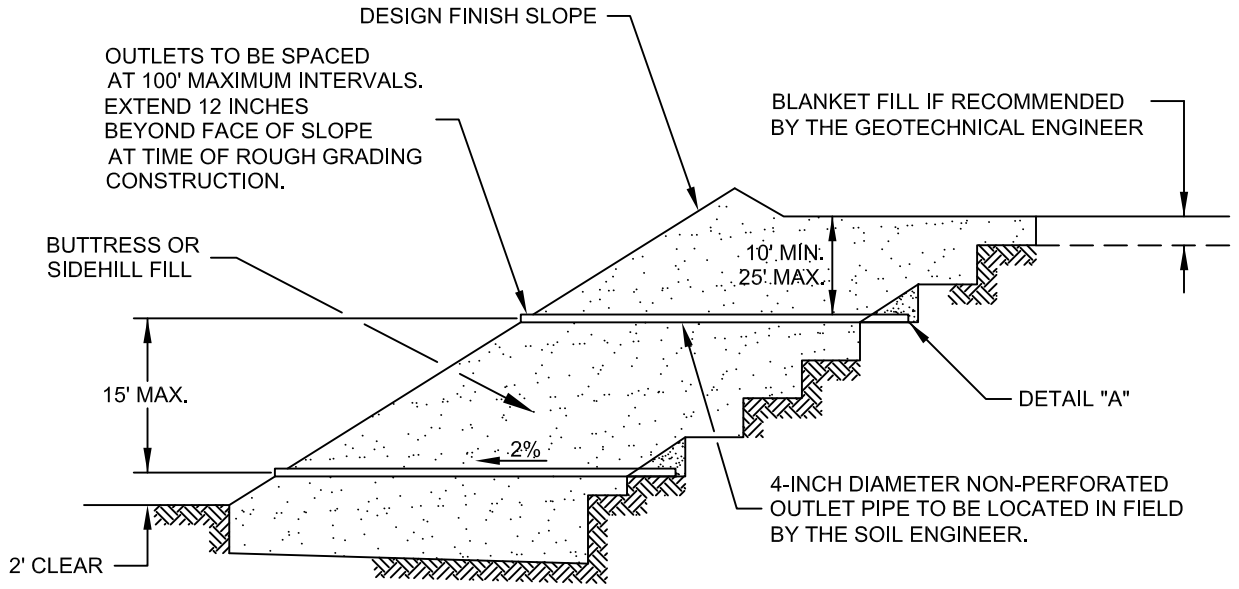
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-5

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



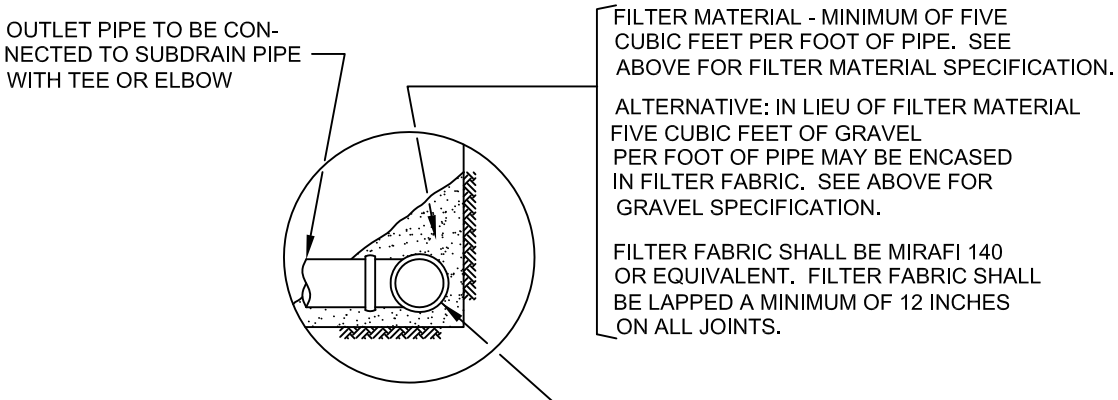
"FILTER MATERIAL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT: (CONFORMS TO EMA STD. PLAN 323)

SIEVE SIZE	PERCENTAGE PASSING
1"	100
3/4"	90-100
3/8"	40-100
NO. 4	25-40
NO. 8	18-33
NO. 30	5-15
NO. 50	0-7
NO. 200	0-3

"GRAVEL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT:

SIEVE SIZE	MAXIMUM PERCENTAGE PASSING
1 1/2"	100
NO. 4	50
NO. 200	8

SAND EQUIVALENT = MINIMUM OF 50



DETAIL "A"

NOTES:
1. TRENCH FOR OUTLET PIPES TO BE BACKFILLED WITH ON-SITE SOIL.

SLOPE FILL SUBDRAINS

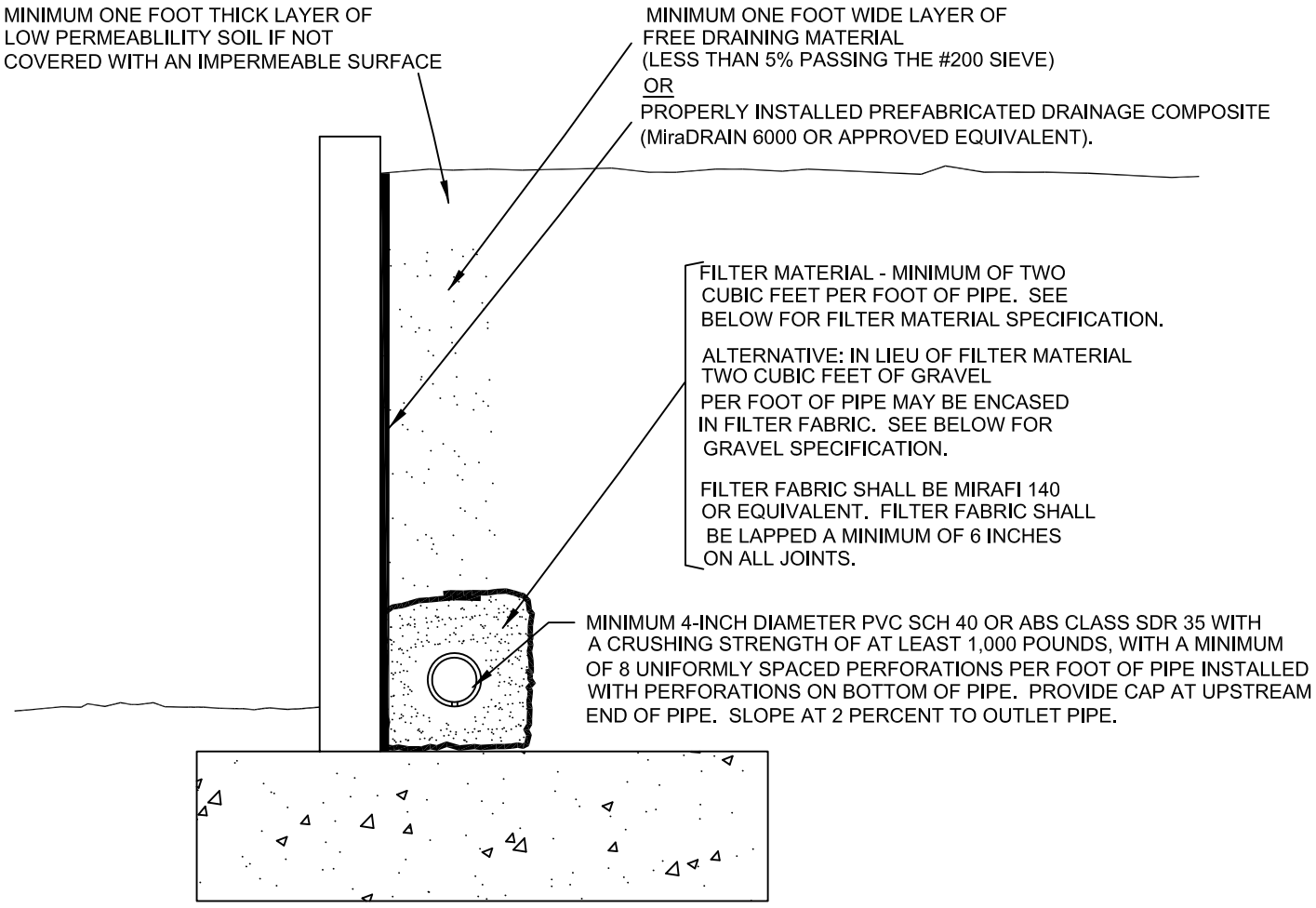
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-6

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



"FILTER MATERIAL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT: (CONFORMS TO EMA STD. PLAN 323)

SIEVE SIZE	PERCENTAGE PASSING
1"	100
3/4"	90-100
3/8"	40-100
NO. 4	25-40
NO. 8	18-33
NO. 30	5-15
NO. 50	0-7
NO. 200	0-3

"GRAVEL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT:

SIEVE SIZE	MAXIMUM PERCENTAGE PASSING
1 1/2"	100
NO. 4	50
NO. 200	8

SAND EQUIVALENT = MINIMUM OF 50

RETAINING WALL BACKDRAINS

GRADING GUIDE SPECIFICATIONS

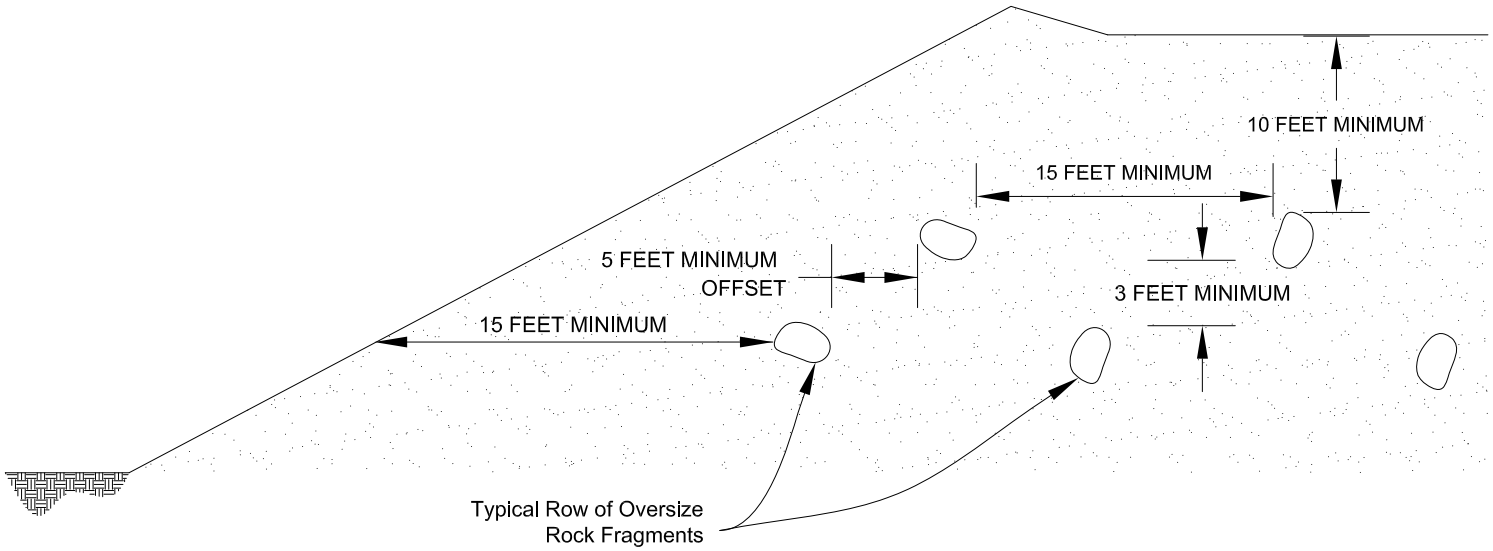
NOT TO SCALE

DRAWN: JAS
CHKD: GKM

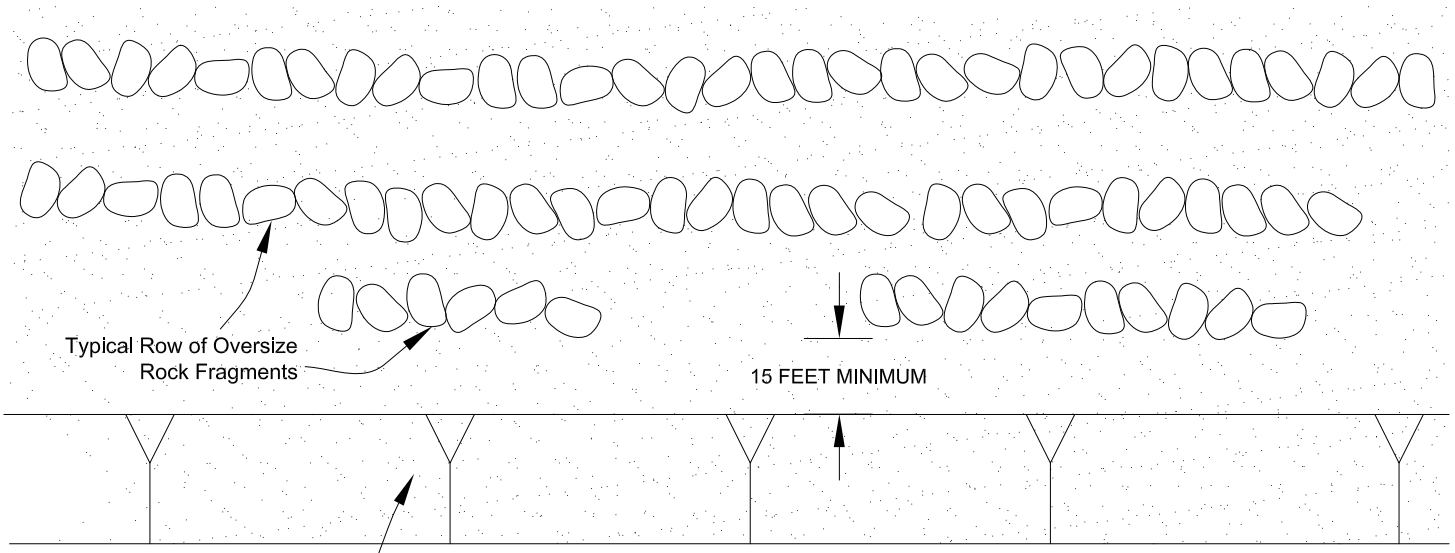
PLATE D-7

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL



Section View



Plan View

PLACEMENT OF OVERSIZED MATERIAL

GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: PM
CHKD: GKM

PLATE D-8

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL

INITIAL STUDY - APPENDIX C

Hazards and Hazardous Materials

GCI

Phase I Environmental Site Assessment

Geosyntec consultants

2365 Northside Drive, Suite 150
San Diego, CA 92108
PH 619.297.1530
www.geosyntec.com

April 2023

VIA E-MAIL

Industrial VI Enterprises, LLC,
c/o Hillwood
901 Via Piemonte, Suite 175
Ontario, California 91764
c/o Alissa Welch
Attn: Alissa.welch@hillwood.com

Subject: **Phase I Environmental Site Assessment Update**
Site: Ethanac Land Assemblage
1892 Ethanac Road, Perris, California 92585

Dear Ms. Welch:

In accordance with your authorization of Geosyntec Consultants, Inc.'s (Geosyntec's) proposal dated 15 March 2023, Geosyntec has prepared the enclosed Updated Phase I Environmental Site Assessment report for Industrial VI Enterprises, LLC, c/o Hillwood for the above-referenced property. Enclosed is an electronic copy of the report.

Should you have questions regarding this submittal or need additional information, please do not hesitate to contact us. We appreciate the opportunity to be of service to you.

Sincerely,

DRAFT

_____

Veryl Wittig
Senior Principal

Encl.

Geosyntec consultants

engineers | scientists | innovators

PHASE I ENVIRONMENTAL SITE ASSESSMENT UPDATE

Site: 1892 Ethanac Road, Perris, California 92585

Prepared for

Industrial VI Enterprises, LLC,
c/o Hillwood
901 Via Piemonte, Suite 175
Ontario, California 91764

Prepared by

Geosyntec Consultants, Inc.
2365 Northside Drive, Suite 150
San Diego, CA 92108

Project SC1229

April 2023

EXECUTIVE SUMMARY

This Executive Summary presents the results of the Phase I Environmental Site Assessment (ESA) conducted by Geosyntec Consultants, Inc. (Geosyntec) for the property located at 1892 Ethanac Road in Perris, California 92585 ("Site"). The Site is composed of ten (10) contiguous parcels, more specifically identified as Riverside County Assessor Parcel Numbers 329240016, 329240017, 329240018, 329240019, 329240020, 329240023, 329240024, 329240025, 329240026, and 329240027. In addition, the Site includes portions of the adjoining roadways Trumble Road, Sherman Road, Ethanac Road and Illinois Road to the northwest. This Phase I ESA was updated in accordance with the scope of work, terms, and conditions described in Geosyntec's proposal dated 15 March 2023. This Phase I ESA and update were conducted in accordance with ASTM International (ASTM) Standard E1527-13[1] to identify, to the extent feasible, "recognized environmental conditions" (RECs) at the Site as the term REC is defined by ASTM E1527-13.

The Site comprises ten (10) parcels totaling approximately 21.52-acres and is accessed from its eastern Site boundary via Sherman Road, the southern Site boundary via Ethanac Road and the western Site boundary via Trumble Road. The Site is presently owned by Carnegie Land Company (APNs: 329240016, 329240017, 329240018, 329240019, 329240020, 329240025, 329240026, and 329240027), and John Dietrich Kroencke (APNs: 329240023 and 329240024). At the time of Geosyntec's site reconnaissance, the Site was vacant, tilled land with an internal dirt road and scattered debris piles containing used tires, fencing materials, concrete, asphalt, and general plastic/glass trash. There are currently no buildings at the Site.

Based on the information set forth in this Phase I ESA, Geosyntec has concluded the following:

Recognized Environmental Conditions

- No recognized environmental conditions (RECs) were identified during this Phase I ESA.

Controlled Recognized Environmental Conditions

- No controlled recognized environmental conditions (CRECs) were identified during this Phase I ESA.

Historical Recognized Environmental Conditions

- No historical recognized environmental conditions (HRECs) were identified during this Phase I ESA.

[1] ASTM Standard E-1527-13, "*Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process"*

De Minimis Conditions

- **Solid Waste/Debris:** Solid waste (presumed non-hazardous) was observed scattered throughout the Site during the February 2022 and November 2022 Site visits. Scattered debris piles containing one compressed natural gas (CNG) cannister, used tires, fencing materials (lumber posts and wire mesh), concrete, asphalt, and general plastic/glass trash were observed throughout the Site. Areas in the southern portion of the Site in the approximate location of a former residence appear to have been filled in. There was no indication of releases, ground surface staining, or other impacts from the solid waste/debris listed here; therefore, we do not consider this finding to be a REC, but we do consider this finding to be a *de minimis* condition.

- **Historical Agricultural Land Use:** Aerial photographs indicated that the Site and adjoining properties were used as agricultural land since at least the late 1930s for what appeared to be crop lands and/or pastures. Based on the timeframe of the observed clearings, it is possible that pesticides or herbicides (considered hazardous substances) or petroleum products were used on-site; however, no indication of pesticide/herbicide usage was found as part of this Phase I ESA. Therefore, this finding is considered a *de minimis* condition.

Data Gaps

Our assessment revealed the following data gaps, as defined by ASTM:

- ASTM E1527-13 states that "*interviews with past owners, operators, and occupants of the property who are likely to have material information regarding the potential for contamination at the property shall be conducted to the extent that they have been identified."* Geosyntec was not provided with and did not identify owner contact information prior to the current Site owner. However, since relevant historical documents were obtained, this limitation is not considered to be significant.

The above data gaps are not considered to be significant with respect to identifying RECs for the Site.

Geosyntec consultants

TABLE OF CONTENTS

TABLE OF CONTENTS
(Continued)

Geosyntec consultants

TABLE OF CONTENTS
(Continued)

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

1. INTRODUCTION

Geosyntec Consultants, Inc. (Geosyntec) was retained by Industrial VI Enterprises, LLC c/o Hillwood (Hillwood) to conduct a Phase I Environmental Site Assessment (ESA) for the property located at 1892 Ethanac Road in Perris, California 92585 ("Site"). The Site is more specifically identified as Riverside County Assessor Parcel Numbers (APNs) 329240016, 329240017, 329240018, 329240019, 329240020, 329240023, 329240024, 329240025, 329240026, and 329240027. In addition, the Site includes portions of the adjoining roadways Trumble Road, Sherman Road, Ethanac Road and Illinois Road to the northwest. The Site location is depicted on **Figure 1** (Site Location Map). A recent site and vicinity property layout are shown on **Figure 2** (Site Layout Map).

1.1 Objective

This Phase I ESA and update were conducted in general accordance with the scope and limitations of the guidance contained within the ASTM International (ASTM) Practice E1527-13. The objective of performing this Phase I ESA and update in accordance with ASTM Standard E1527-13 was to identify, to the extent feasible, "recognized environmental conditions" [2] (RECs) at the Site as the term REC is defined by ASTM E1527-13. Deviations or exceptions to the guidance contained in the ASTM E1527-13 standard of practice are described in Section 1.4.

Geosyntec's effort is to provide the User with a Phase I ESA that includes a search for the existence of potential or known surface or subsurface environmental impacts at the Site. For the purposes of this Phase I ESA report, Hillwood is the "User," defined as "*the party seeking to use Practice E 1527-13 to complete an environmental site assessment of the property…*" in partial fulfillment of the requirements of the All Appropriate Inquiry Rule under 40 CFR 312.

1.2 Scope of Services

The Phase I ESA scope of work included the following:

- Reviewing pertinent information/documents
- Reviewing environmental databases regarding the Site itself as well sites in the vicinity of the Site pursuant to the ASTM E1527-13 Practice
- Reviewing historical land usage via available historical aerial photographs, fire insurance maps, city directories, property tax files, and topographic maps

[2] As defined by ASTM E1527-13, a Recognized Environmental Condition is: "the presence or likely presence of any hazardous substances or petroleum products in, on or at a property (1) due to [a] release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment." The definition further states that "*de minimis* conditions are not recognized environmental conditions."

- Visiting the Site for a visual reconnaissance of the major interior and exterior Site features and use of adjoining properties
- Preparing a Phase I ESA report

In accordance with Geosyntec's scope of work for this project, "non-scope considerations", as defined in ASTM E1527-13, were not evaluated as part of this Phase I ESA.

Geosyntec's authorization and conduct to complete the scope of work are as follows:

Table 1. Scope of Services Details

Scope Item	Detailed Information
Site Name or Reference	Ethanac Land Assemblage
Site Address	1892 Ethanac Road, Perris, California 92585
City, State, and Zip Code	Perris, California 92585
Assessor Parcel Numbers APNs	Riverside County 329240016, 329240017, 329240018, 329240019, 329240020, 329240023, 329240024, 329240025, 329240026, and 329240027
Proposal Date	15 March 2023
Authorization Date	15 March 2023
Database Report Date	03 November 2022
Site Visit Date	09 November 2022
Geosyntec Site Personnel	Ms. Jackie Hyman
Facility Personnel and Role	N/A
Report Preparer(s)	Ms. Hyman
Report Reviewer(s)	Mr. Veryl Wittig
Environmental Professional[1]	Mr. Wittig

Note 1: The Environmental Professional meets the requirements as stated in ASTM Practice E1527-13.

The professional qualifications of the senior reviewers, including the signatory Environmental Professional are presented in Section 10.

1.3 Significant Assumptions

Geosyntec took no significant assumptions into account as part of this project, except as noted in the proposal.

1.4 Limitations, Deviations, and Exceptions

This Phase I ESA was conducted according to the agreed upon scope of work consistent with the ASTM Practice E1527-13, except as follows:

- ASTM E1527-13 states that "*interviews with past owners, operators, and occupants of the property who are likely to have material information regarding the potential for contamination at the property shall be conducted to the extent that they have been identified*." Geosyntec was not provided with and did not identify owner contact information prior to the current Site owners. However, since relevant historical documents were obtained, this limitation is not considered to be significant.

This Phase I ESA contains a property description and history, an environmental database review, a summary of observations made during the site reconnaissance, and descriptions of information obtained during interview(s) of person(s) knowledgeable about the Site. This Phase I ESA did not include sampling rock, soil, groundwater, surface water, soil vapor, air, or on-site substances or materials. Therefore, it is not possible to confirm the presence or absence of hazardous substances or petroleum products in the environments associated with the property.

The findings and conclusions presented in this Phase I ESA are the result of professional interpretation of the information collected at the time of this study. Specified information contained in this report has been obtained from publicly available sources and other secondary sources of information. Although care has been taken in compiling this information, Geosyntec has not independently validated this information and provides no warranty as to its accuracy or completeness. The Phase I ESA does not necessarily include an exhaustive search of all available records, nor does it include detailed assessment of all Phase I ESA findings. Therefore, Geosyntec cannot "certify" or guarantee that any property is free of environmental impairment; no warranties regarding the environmental quality of the property are expressed or implied.

1.5 Special Terms and Conditions

No special contractual terms or conditions were taken into account as part of this project, except as noted in the proposal.

1.6 User Reliance

This Phase I ESA report has been prepared solely for the benefit of Hillwood.

Geosyntec has issued the Phase I ESA report to Hillwood and grants Hillwood the right to rely on the report contents. Except as specifically set forth in Geosyntec's proposal to Hillwood to perform this work, no third party shall have the right to rely on Geosyntec opinions rendered in connection with the Services without Geosyntec's written consent which may be conditioned on the third party's agreement to be bound to acceptable conditions and limitations similar to those agreed to

by Hillwood. Please note that Geosyntec's consent to provide a right-to-rely on the Phase I ESA report is subject to Hillwood approval and to agreement to Geosyntec's terms and conditions associated with Geosyntec's performance of this specific Phase I ESA.

2. SITE DESCRIPTION

The site description presented herein is derived from information provided by the User, Hillwood, and information gathered during the research of historical records and the reconnaissance unless referenced otherwise.

2.1 Site Location and General Characteristics

The Site is located northwest of the intersection of Ethanac Road and Sherman Road, Perris, California and is surrounded by a mix of commercial and residential properties, and vacant land. The approximately 21.52-acre Site comprises ten (10) parcels (**Table 2)**. The location of the Site is depicted on **Figure 1,** and a recent site layout is depicted on **Figure 2**. Ownership information, where available, is provided in **Appendix A**.

Table 2. Parcel Information

Parcel APN	Zoning	Approximate Area (Acres)	Land Use/Description
329240016	Commercial Community (CC)	2.91	Vacant Commercial Land
329240017	CC	1.00	Vacant Commercial Land
329240018	CC	0.98	Vacant Commercial Land
329240019	CC	1.94	Vacant Commercial Land
329240020	CC	0.96	Vacant Commercial Land
329240023	CC	0.90	Vacant Commercial Land
329240024	CC	0.89	Vacant Commercial Land
329240025	CC	4.37	Vacant Commercial Land
329240026	CC	4.80	Vacant Commercial Land
329240027	CC	2.88	Vacant Commercial Land

Source: https://rivcoview.rivcoacr.org/#/Property-Search

2.2 Current and Former Uses of the Site

The Site is presently owned by Carnegie Land Company (APNs: 329240016, 329240017, 329240018, 329240019, 329240020, 329240025, 329240026, and 329240027) and John Dietrich Kroencke (APNs: 329240023 and 329240024). At the time of Geosyntec's site reconnaissance, the Site was vacant, tilled land with an internal dirt road and scattered debris piles containing used tires, fencing materials, concrete, asphalt, and general plastic/glass trash. There are currently no buildings at the Site.

The Site was used as agricultural land (row crops and/or pastures) beginning in at least the late 1930s. Between the late 1940s and late 1990s, residences and farm structures were developed along the southern property boundary adjoining Ethanac Road. The Site appears to have been tilled most recently in the mid-2000s and has remained vacant land since.

2.3 Description of Structures, Roads, Other Improvements on the Site

No buildings are located on the Site (**Figure 2**). There was one moderately sized area of imported fill material in the approximate location of a former residence in the southern portion of the Site. Scattered debris piles containing used tires, fencing materials, and general plastic/glass trash were observed throughout the Site. Small piles of aggregate (concrete and asphalt) were observed near the Site boundaries. Additional improvements include several pedestals along the east Site boundary marking the location of a buried Eastern Municipal Water District (EMWD) Telemetry cable. In addition, a potential abandoned well consisting of a damaged 12-inch diameter steel pipe was observed in the southeast corner of the Site.

2.4 Current and Prior Use of Adjoining Properties

Since the late 1930s, the vicinity surrounding the Site has consisted primarily agricultural land and rural residences. Increased residential development occurred at adjoining properties to the east between the late 1940s to mid-1980s. Adjoining properties to the south were developed commercially in the late 1970s. The adjoining property to the northeast was developed commercially in the late 2000s. Properties to the north and west appear to be vacant land since the 2000s. The land use immediately surrounding the Site is noted in **Table 3** below.

Table 3. Site Vicinity Land Use

Direction	Current Geosyntec-Observed Use[1]	Identified Prior Use	Considered to be More Likely to Result in Surface/Subsurface Quality Impacts to the Site (Yes/No)
North	Vacant land to the northwest and Cass Arrieta, a general engineering contractor to the northeast of the Site Parcels Multi-tenant commercial properties and vacant land north of Illinois Avenue	Agricultural	No
East	Sherman Road, followed by residential properties along Sherman Road and Ethanac Road	Agricultural; Residential	No

Direction	Current Geosyntec-Observed Use[1]	Identified Prior Use	Considered to be More Likely to Result in Surface/Subsurface Quality Impacts to the Site (Yes/No)
South	Ethanac Road, followed by Miranda Tires & Wheels, Long's Automotive, Top Tech Auto & Sons, Eastern Municipal Water District (EMWD) municipal well facility, Summit Equipment Rentals, North County Sand & Gravel supplier, residential properties, and vacant land south of the Site parcels Shell gasoline station and vacant land southwest of the Ethanac and Trumble Road intersections A commercial property and vacant land southeast of the Ethanac Road and Sherman	Agricultural; Industrial/Commercial	No
West	Trumble Road, followed by vacant land	Agricultural	No

Note 1: Observations from Geosyntec's site visit.

The adjoining properties were briefly inspected during the site reconnaissance (from vantage point of the Site or public rights-of-way) to observe the associated land use practices (e.g., condition, housekeeping, evidence of chemical usage/spills). Observations made for the adjoining sites are described later in this report (Section 5).

2.5 Physical Setting

A summary of the physical setting of the Site and vicinity including topography, geology/ hydrogeology, and water resources is presented in **Table 4**. Environmental Data Resources (EDR) provided Geosyntec with a Radius Map Report (RMR) for the area including the Site which serves as a source of certain information. Other sources of information in **Table 4** are noted accordingly.

Table 4. Physical Setting

Topic	Information	Source
Topography		
USGS 7.5-Minute Quadrangle Map	Romoland, CA; Perris, CA	U.S. Geological Survey (USGS)
Elevation	1,431 feet above mean sea level (ft MSL)	EDR RMR
General Topographic Gradient	There is a slight topographic slope to the west.	USGS Quadrangle Map and Site Reconnaissance
Soils & Geology		
Site Soils	The Site is comprised of Madera fine sandy loam, Monserate sandy loam and Exeter sandy loam. Soils are moderate to well drained, with slow to very slow infiltration rates and are within the Class C and D hydrologic groups.	EDR RMR
Area Geology	The Site vicinity is underlain by Mesozoic plutonic rocks and Pleistocene-aged marine and nonmarine sedimentary rocks.	EDR RMR; USGS, 1994
Water Resources		
Nearest Water Body	An ephemeral pond is located approximately 1,970 east of the Site. Small agricultural reservoirs are located in the general vicinity.	US Fish & Wildlife Wetland Map, EDR RMR and USGS Quadrangle Map
Estimated Groundwater Flow Direction[3]	Groundwater flow was projected by others to be east-southeast based on groundwater elevation data presented in a 2011 Closure Summary for a site within 0.5 mile of the Site.	GeoTracker, 2011[4]
Depth of Groundwater	Based on the 2011 Closure Summary report for a property within 0.5 mile of the Site, groundwater was observed between approximately 61 and 63 feet below ground surface (ft bgs).	GeoTracker, 2011
Wetlands (on - site)	No wetlands were identified at the Site.	NWI, US Fish & Wildlife Wetland Map
Wells (on-site)	A potential former agricultural well was observed in the southeast corner of the Site during the Site reconnaissance.	Site Reconnaissance (see Section 5)

[3] Local groundwater flow direction may vary depending on area groundwater pumping, surface water bodies, land use and development, localized topography, and other macro and micro features.

[4] https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T10000009963

Table 4. Physical Setting

Topic	Information	Source
Nearby[5] Groundwater Supply and Monitoring Wells	• 29 wells were listed in the State Wells database as municipal water supply wells, observation wells and desalter supply wells located within 1 mile from the Site. The closest well is a desalter supply well (Well 89) located past Ethanac Road to the south. • 10 wells were identified in the USGS National Water Information System database within 1 mile. These wells are not typically monitored for water quality.	EDR RMR

[5] EDR searched federal and state water well databases within one mile of the Site boundary.

3. USER-PROVIDED INFORMATION

This section describes the information provided to Geosyntec by Hillwood (the User of this Phase I ESA). This includes information that was provided in the User Questionnaire (**Appendix C**).

3.1 Title Records

Geosyntec was not provided with and did not review title records for the Site. A property title search was not included in the scope of Geosyntec's services.

3.2 Environmental Liens or Activity and Use Limitations

The User did not supply Geosyntec with information regarding environmental liens or activity and land use limitations associated with the Site property.

3.3 Specialized Knowledge

The User does not have specialized knowledge of environmental conditions at the Site.

3.4 Knowledge of Hazardous Substances or Petroleum Products

The User is not aware of any hazardous substances or petroleum products in, on, or under the Site.

3.5 Commonly Known or Reasonably Ascertainable Information

The User is not aware of any commonly known or reasonably ascertainable information within the local community about the Site that is material to RECs in connection with the Site.

3.6 Valuation Reduction for Environmental Issues

The User has not informed Geosyntec regarding whether or not the valuation of the Site has been reduced or otherwise impacted by environmental issues (as defined in AAI[6]).

3.7 Degree of Obviousness

The User has considered the degree of obviousness of the presence or likely presence of releases or threatened releases at the Site and the ability to detect releases or threatened releases by appropriate investigation. The User has not observed any conditions indicating the presence or likely presence of releases or threatened releases at the Site.

[6] The "All Appropriate Inquiry Rule", enacted under the 2002 Brownfields Amendments to the Comprehensive Environmental Response, Compensation, and Liability Act; 40 CFR 312

3.8 Litigation, Administrative Proceedings, and Notices

The User is not aware of (i) any pending, threatened, or past litigation relevant to hazardous substances or petroleum products in, on, or from the Site; (ii) any pending, threatened, or past administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the Site; or (iii) any notices from any governmental entity regarding any possible violations of environmental laws or possible liability relating to hazardous substances or petroleum products.

3.9 Reason for Performing This Phase I ESA

Geosyntec understands that Hillwood engaged Geosyntec to perform this Phase I ESA for the Site to identify RECs (as defined in ASTM E1527-13) in order to help identify potential environmental liabilities associated with the Site.

3.10 Pertinent Documents

The User did not supply Geosyntec with environmental reports for the Site.

4. RECORDS REVIEW

Geosyntec reviewed the following records, to the extent we found these to be available and reasonably ascertainable:

- Federal, state, and local environmental databases
- Historical aerial photographs
- Historical topographic maps
- Fire insurance maps
- City directories
- Local authority permits and records
- Available property tax information

In addition to the standard sources above, Geosyntec reviewed environmental files obtained from regulatory agencies.

4.1 Standard Environmental Records Sources

4.1.1 Database Search Approach

Geosyntec contracted EDR to provide the records reviewed as described below. EDR conducted the environmental database search in an attempt to ascertain whether the Site or neighboring properties were suspected of having environmental conditions that could have impacted the surface or subsurface at the Site. EDR reported specific records and search distances (from the approximate Site boundaries) for the environmental databases to be consistent with ASTM Practice E1527-13 and are discussed in the EDR Database Report (EDR, 2022f) presented in **Appendix B**. Database descriptions are included in the EDR report.

The following sections discuss listings that are projected to be located upgradient of the Site and have reported (or suspected) contamination or that have the potential for significant contamination that could have impacted the Site (such as National Priorities List [NPL] or Resource Conservation and Recovery Act [RCRA] Corrective Action sites). The locations of these listed sites are shown on the Overview Map and Detail Map in the EDR Database Report (**Appendix B**).

4.1.2 Database Search Results – Site

EDR did not identify any database listings for the Site.

4.1.3 Database Search Results – Vicinity Properties

The search of environmental databases identified 45 site listings for properties within 1.00-mile of the Site, some of which were in databases indicative of releases. Other than select sites discussed below based on their database listing, listed sites located greater than 0.25 miles from the Site were not evaluated because they are not anticipated to adversely affect the Site based on their location and proximity. A summary of pertinent database listings is included below:

- **Trimline Automotive Interiors / Top Tech Auto & Sons / Gencorp Auto Body Shop** at 27271 Ethanac Road, Suite 104 (adjoining south across Ethanac Road, hydraulically down to cross-gradient from the Site). The property is listed in the EDR HIST AUTO database from 1985 to 2014 as an auto supply store, automotive repair shop, and automotive transmission repair shop. This property was also listed in the CERS and CERS HAZ WASTE databases and other non-release databases. Multiple notices of violation (NOVs) were issued for administrative issues (failure to maintain copies of manifests, submit emergency response plans, submit business plans, employee training, etc.). Other than an NOV for oil spilled on the ground or pooled on top of drums, no violations or reported releases were identified at the property. Based on the available information, it is considered unlikely that this property has adversely impacted the Site.

- **Chaney's Automotive / Longs Enterprises DBA Longs Automotive / Ethanac Smog** at 27411 Ethanac Road (adjoining south across Ethanac Road, hydraulically down to cross-gradient from the Site). The property is listed in the EDR HIST AUTO, Leaking Underground Storage Tanks (LUST), CERS HAZ WASTE and other non-release databases. The facility was issued various administrative violations during compliance inspections by the Riverside County Department of Environmental Health. No violations associated with a spill or release were reported. A LUST case was opened in 1992 for a release of waste oil affecting soil. The case was closed and issued No Further Action (NFA) in 2000. The Case Closure Summary report indicates groundwater is located approximately 112 to 200 feet bgs. Based on the case closure status, distance and hydraulic direction from the Site, and lack of groundwater impact, it is considered unlikely that this property has adversely impacted the Site.

- **Arco Celestino** at 27391 Ethanac Road (adjoining south across Ethanac Road, hydraulically down- to cross-gradient from the Site). The property is listed on the EDR HIST AUTO database in 2002 as a gasoline service station. This property is not listed on any databases indicative of a spill or release. Based on the lack of a documented release, it is considered unlikely that this property has adversely impacted the Site.

- **Richard Whitaker dba Chute Systems, Earth Systems Southwest, Amanda Langston and Top Promotional Products** at 1622-1794 Illinois Avenue (adjoining north across

Illinois Avenue, hydraulically down- to crossgradient from the Site) were listed in the RCRA - Non Generators / No Longer Regulated (RCRA NONGEN/NLR) database as non-hazardous waste generators. No violations were found. Based on the nature of these listings, it is considered unlikely that this property has adversely impacted the Site.

- **West Coast Yamaha Inc. dba Langston Motorsport** at 1622 Illinois Avenue, Suite 1 (adjoining north across Illinois Avenue, hydraulically down- to crossgradient from the Site) was listed in the CERS HAZ WASTE, CERS, Facility and Manifest Data (HAZNET), Hazardous Waste Tracking System (HWTS), and RCRA NONGEN/NLR databases. The facility generated hazardous materials and petroleum products associated with vehicle maintenance. No violations were reported for a spill or release. Based on the nature of these listings, it is considered unlikely that this property has adversely impacted the Site.

- **Pro Structural and Summit Equipment Rentals** at 26105 Sherman Road (adjoining south across Sherman Road, hydraulically crossgradient from the Site) were listed in the RCRA NONGEN/NLR database as non-hazardous waste generators. No violations were found. Based on the nature of these listings, it is considered unlikely that these properties have adversely impacted the Site.

- **North County Sand & Gravel** at 26227 Sherman Road (adjoining south across Sherman Road, hydraulically crossgradient from the Site) was listed in the CERS HAZ WASTE, CERS TANKS, CERS, and RCRA NONGEN/NLR databases. The facility is a truck maintenance/storage yard. Hazardous materials used at the property include diesel and oils stored in aboveground storage tanks. A violation was issued for minor staining beneath new oil and waste oil secondary containment pallets. Absorbent was applied to the spill. The facility cleaned the absorbent and returned to the compliance. Based on the minor nature of the release, it is considered unlikely that this property has adversely impacted the Site.

- **Caltrans** at 27644 Highway 74 is located approximately 1,150 feet northeast, hydraulically cross-gradient of the Site and was listed in the LUST database. EDR reports a LUST case was opened for a gasoline release affecting soil in 1989. The case was closed and No Further Action (NFA) was issued in 1994. Based on the case closure status, distance and hydraulic direction from the Site, and lack of groundwater impact, it is considered unlikely that this property has adversely impacted the Site.

- Six abandoned mines were reported within a 0.25 mile radius of the Site. The mines were used for construction sand and gravel.

Details of the sites are summarized in the EDR Database Report (**Appendix B**).

4.1.4 Unplottable Sites

EDR identified two "unplottable sites" which were not mapped by EDR due to the lack of sufficient address information. One LUST listing was reported at the address 180 East 4th Street, Perris, which is located approximately 4.5 miles northwest of the Site. The property at 28023 Ethanac Road, approximate 0.5 mile west of the Site, was reported on the CIWQS database for a terminated stormwater permit. Based on the regulatory status and distance from the Site, it is Geosyntec's opinion that the unplottable properties are unlikely to have impacted the Site.

4.2 Historical Use Information

Geosyntec contracted EDR to provide standard historical records, including aerial photographs, topographic maps, city directories, and fire insurance maps (EDR, 2022a-e). The sections below identify and summarize the historical information sources reviewed for the Site and vicinity. A summary of the findings from the review of the historical sources is provided in **Table 5**. Copies of the historical records reports are included in **Appendix B**.

4.2.1 Historic Aerial Photographs

EDR provided aerial photographs from 1938, 1949, 1953, 1961, 1967, 1978, 1985, 1989, 1996, 1997, 2002, 2006, 2009, 2012, and 2016.

Geosyntec reviewed the aerial photographs provided by GoogleEarth for the years 1996, 2002, 2003, 2005, 2006, 2009, 2011, 2012, 2013, 2014, 2016, 2018, 2019, 2021 and 2022.

4.2.2 Historical Topographic Maps

EDR supplied portions of USGS topographical maps of the Site and vicinity for 1901, 1942, 1943, 1947, 1953, 1967, 1973, 1979, 2012, 2015 and 2018.

4.2.3 City Directories

Available business directories, including cross reference and telephone directories, were reviewed for 27491 to 27271 Ethanac Road and 25632 to 26026 Sherman Road for 1976, 1980, 1985, 1990, 1992, 1995, 2000, 2005, 2010, 2014, 2017, and 2018.

4.2.4 Fire Insurance Maps

Based on EDR's search of fire insurance maps, there was no coverage for the Site.

4.2.5 Property Tax Files

Geosyntec researched publicly available online tax records through Riverside County records. The information retrieved included property boundary information and property size. The retrieved tax map parcel information is provided in **Appendix A.**

Table 5. Historical Records Review

Aerial Photographs[7]	Topographic Maps	City Directory (CD)
Site: In 1938, the Site appears to be agricultural land (pastures and row crops). Dirt roads are visible in the locations of Sherman Road, Trumble Road, Ethanac Road. By 1949, a homestead with small farm and/or residential structures is visible in the southern portion of the Site. The Site remained relatively unchanged until 2002, when all structures were demolished and removed from the Site. By 2009, Illinois Avenue is developed northwest of the Site parcels. The Site continued to be vacant/agricultural land through 2022. **Vicinity**: In 1938, the Site vicinity appears to be agricultural land (pastures and row crops) with homesteads and farm structures visible to the north and east. Increased residential development occurred at adjoining properties to the east past Sherman Road and at limited areas south of Ethanac Road between the late 1940s to mid-1980s. Adjoining properties to the south were developed commercially between the late 1960s and late 1970s. The adjoining property to the northeast was developed commercially in the early 2000s. Properties to the north and west appear to be vacant land since the 2000s. By 2006, commercial properties are developed west of Sherman Road. By 2009, commercial properties are developed north of	**Site**: The Site is depicted as vacant land from 1901 to 1947. In 1901, roads are depicted in the position of Ethanac Road and Sherman Road. By 1942, Trumble Road is depicted. From 1953 to 1979, a small single structure is depicted in the southern portion of the Site. The Site is not shown on the 1967 map due to incomplete map coverage. From 2012 to 2018, no building footprints are depicted at the Site or surrounding area. By 2015, Illinois Avenue is depicted northwest of the Site parcels. **Vicinity**: In 1901, the Site vicinity is depicted as undeveloped land. Several unnamed roads, a railroad, and buildings are depicted in the area. By 1942, a residential neighborhoods are depicted to the east and north. Roads are depicted in the position of Sherman Road and Trumble Road to the east and west, respectively. By 1953, adjoining properties south of Ethanac Road are depicted as agricultural land. The Site vicinity is not shown on the 1967 map due to incomplete map coverage. By 1973, small structures interpreted to be residences are depicted within an agricultural field to the south. Increased residential building footprints are depicted to the north and east. By 1979, the adjoining properties to the south are no longer depicted as agricultural	**Site**: The Site address 1892 Ethanac Road was not listed in the City Directory. **Vicinity**: Nearby properties were identified in the 1976 to 1980 directories as residential listings along Ethanac and Sherman Road. From 1980 to 1992 properties along Ethanac Road are occupied by residential and commercial tenants, including tire repair/supply shops, automotive repair shops, and a Phillips Exxon facility/likely gasoline service station (listed in 1980 only). Between 1995 and 2014 , automotive repair shops, a tire supply shop, and various commercial service companies are listed along Ethanac Road. Listings along Sherman Road remain largely residential through 2017, with the exception of a building supply, plumbers, fabricators, grease service companies.

[7] Additional aerial photography review was completed using Google Earth when available.

Table 5. Historical Records Review

Aerial Photographs[7]	Topographic Maps	City Directory (CD)
Illinois Avenue. No significant changes are visible in the surrounding area since the early 2010s.	land. From 2012 to 2018, no building footprints are depicted in the surrounding area.	

4.3 Local, County, State, and Federal Files

Geosyntec contracted with Environmental Support Services (ESS) to contact local, county, and state agencies via telephone and electronic mail to inquire as to whether they possessed relevant records regarding the Site. Relevant information is summarized below. Excerpts of relevant regulatory agency documents are presented in **Appendix D**.

4.3.1 Local Fire Department Records

ESS contacted the City of Perris Fire Department to inquire about hazardous materials, aboveground tanks and/or underground tank permitting, inspections, and incidents at the Site. No records were identified for the Site.

4.3.2 City or County Records

ESS contacted the Riverside County Building Department for building permits and certificates of occupancy issued to the Site. No records were identified for the Site.

ESS contacted the Riverside County Fire Department for records regarding building permits, hazardous materials/waste, aboveground tanks, and underground tanks. The Riverside County Fire Department indicated that these records would be kept with the Riverside County Department of Environmental Health.

ESS contacted the Riverside County Department of Environmental Health (RCDEH) regarding emergency response, spill records, and information on septic systems and supply wells available for the Site. No records were identified for the Site.

ESS contacted the South Coast Air Quality Management District (SCAQMD) for information about regulated facilities, permitted equipment, and compliance records for the Site. In addition, Geosyntec reviewed the SCAQMD online Facility Information Detail (FIND) database. No records were identified for the Site.

4.3.3 State Records

ESS contacted the Department of Toxic Substances Control (DTSC) and Regional Water Quality Control Board (RWQCB) for records relevant to the environmental conditions of the Site. No records were identified for the Site.

Geosyntec searched the Regional Board GeoTracker[8] online database. The GeoTracker database is used to track and manage compliance data for sites which are known or suspected to have impacted the subsurface environment. No cases were identified at the Site or immediate adjoining

[8] https://geotracker.waterboards.ca.gov/

sites, with the exception of Chaney's Automotive at 27411 Ethanac Road located to the adjoining south. The Chaney's Automotive case is discussed in Section 4.1.3. Multiple listings were identified in the vicinity for closed Leaking Underground Storage Tank (LUST) cases, Spill, Leak, Investigation and Cleanup (SLIC) cases, and landfills located between ¼- and ½-mile from the Site. Based on the distance from the Site and regulatory status, it is unlikely that these sites have adversely impacted the site.

The Department of Toxic Substances Control (DTSC) Envirostor[9] database was searched for documents pertaining to the Site and vicinity. No listings for the Site or immediate vicinity were identified. The Envirostor database is used to track DTSC's permitting, enforcement, and investigation efforts at hazardous waste facilities and sites with known or suspected contamination.

The DTSC Hazardous Waste Tracking System[10] database was searched for information pertaining to hazardous waste at the Site and vicinity. No listings were identified for the Site. Eight listings were identified at the adjoining properties to the south located at 27271 to 27491 Ethanac Road. Long's Automotive is reported as an active hazardous waste generator from 2015 to 2021 for generating organic solids. The following facilities were reported as inactive hazardous waste generators: Top Tech Automotive / Top Tech Auto & Sons, Cowl's Custom Car Center & Training Center, City Transmissions, Realistic Automotive, C D Services and Tire Stop & Recycling.

The California Department of Conservation Geologic Energy Management Division (CalGEM)[11] online database was searched for information pertaining to oil and gas wells on the Site and vicinity. No wells were identified on the Site or in the immediate vicinity of the Site.

ESS requested records from the Cal Fire - Office of the State Fire Marshal concerning the storage of hazardous materials/waste, pipelines and underground storage tanks. No records were identified for the Site.

4.3.4 Federal Records

Review of the USEPA Enforcement and Compliance History Online (ECHO)[12] database did not reveal records in connection with the Site. This database is used to track compliance, releases, and other information for facilities handling hazardous materials.

Review of the USEPA National Priorities List (NPL)[13] database did not reveal records in connection with the Site or within a three mile radius of the Site. This database lists sites of

9 https://www.envirostor.dtsc.ca.gov/public/
10 https://hwts.dtsc.ca.gov/
11 https://maps.conservation.ca.gov/doggr/wellfinder/#openModal/-118.94276/37.12009/6
12 https://echo.epa.gov
13 https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=33cebcdfdd1b4c3a8b51d416956c41f1

national priority among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories.

Review of the Air Force Civil Engineer Center website[14] and Base Realignment and Closures Sites website[15] did not reveal records in connection with the Site or within a three mile radius of the Site.

[14] https://ar.afcec-cloud.af.mil/Search.aspx

[15] https://www.epa.gov/fedfac/base-realignment-and-closure-brac-sites-state

5. SITE RECONNAISSANCE

A reconnaissance of the Site was conducted in accordance with the information provided in **Table 1**. Geosyntec personnel was unescorted during the Site reconnaissance. Photographs taken during the reconnaissance are included in **Appendix E**. Adjoining properties were observed from their perimeters.

As part of the reconnaissance, Geosyntec looked for evidence of hazardous substances used, stored, or discarded and inspected the Site for areas of disturbed or discolored soil, suspect equipment, and building materials that may contain hazardous substances; areas of distressed vegetation; wastewater discharge areas; storage tanks/septic systems; waste management and disposal areas; lagoons; pits; sumps; surface water management areas; and stained surfaces.

5.1 Utility Service and Materials Management Provider Information

The utility service and materials management providers and practices at the Site are summarized (**Table 6**) from information supplied during Geosyntec's site reconnaissance.

5.2 Interior and Exterior Observations

Observations made during the site reconnaissance for the Site are documented in **Table 7**.

5.3 Adjoining Property Reconnaissance

During the site reconnaissance, Geosyntec observed the adjoining properties from the Site or public vantage points in an attempt to identify possible sources of obvious environmental impairment that could affect soil and groundwater quality at or result in vapor migration into the Site as a result of surface water runoff, groundwater transport, or similar pathways. Geosyntec saw no obvious evidence of chemical storage or releases to the ground at adjoining properties.

Table 6. Site Utilities and Materials Management

Utility Service/Materials Management	Service Provider
Electricity	None identified
Natural Gas	None identified
Sanitary wastewater disposal	None identified
Industrial wastewater disposal	None identified
Drinking water supply	None identified
Irrigation water supply	None identified
Stormwater disposal	Stormwater flows to low-lying areas on-site. No stormwater management system was observed.
Solid (non-hazardous) waste disposal	None identified
Hazardous waste disposal	Not identified
Universal waste	Not identified

Table 7. Interior and Exterior Observations

ASTM Section	Feature or Condition	Description
Interior and Exterior Observations		
9.4.2.3	General Usage of Hazardous Substances and Petroleum Products	No evidence of hazardous materials use was observed.
9.4.2.4	Aboveground Storage Tanks (ASTs)	No evidence of ASTs was observed.
9.4.2.4	Underground Storage Tanks (USTs)	No evidence of USTs was observed.
9.4.2.5	Odors	No notable odors were identified.
9.4.2.6	Pools of Liquids	Pools of standing water due to a recent rain event were observed in low-lying areas along the east and southeast Site boundary.
9.4.2.7	Drums ≥ 5 Gallons	No drums were observed during the Site visit.
9.4.2.8	Hazardous Substances and Petroleum Products Containers	One discarded compressed natural gas (CNG) cylinder was observed near the south Site boundary.
9.4.2.9	Unidentified Substances/Containers	No unidentified containers were observed.
9.4.2.10	Indication of PCBs	No indication of PCBs were observed.

Table 7. Interior and Exterior Observations

ASTM Section	Feature or Condition	Description
Interior Observations		
9.4.3.1	Heating and Cooling Systems	No buildings are currently developed at the Site.
9.4.3.2	Stains/Corrosion	No buildings are currently developed at the Site.
9.4.3.3	Drains and Sumps	No buildings are currently developed at the Site.
Exterior Observations		
9.4.4.1	Pits, Ponds, or Lagoons	No pits, ponds, or lagoons were observed.
9.4.4.2	Stained Soil or Pavement	Based on wet soil conditions from a recent rain event, it was difficult to identify areas with potential staining.
9.4.4.3	Stressed Vegetation	No obviously stressed vegetation indicative of a chemical discharge or application was observed.
9.4.4.4	Solid Waste	Scattered debris piles containing one compressed natural gas (CNG) cannister, used tires, fencing materials (lumber posts and wire mesh), concrete, asphalt, and general plastic/glass trash were observed throughout the Site, but were largely concentrated along the south Site boundary. An area in the southern portion of the Site in the approximate location of a former homestead appear to have been filled in.
9.4.4.5	Wastewater and Stormwater Discharge	Stormwater infiltrates through the unpaved areas of the Site.

Table 7. Interior and Exterior Observations

ASTM Section	Feature or Condition	Description
9.4.4.6	Wells	A potential former agricultural well was observed near the southeast corner of the Site. A damaged 12-inch steel pipe was observed at ground level and was surrounded by broken and degraded concrete.
9.4.4.7	Septic Systems	Geosyntec did not observe evidence of an existing or former septic system.

6. INTERVIEWS

6.1 Interview with Current Owner/Occupant

Geosyntec requested but was not provided with contact information for current owners/operators of the Site. Interviews with current owners were not conducted as part of this assessment. This is considered a data gap (see Section 7).

6.2 Interview with Previous Owner/Occupant

Geosyntec requested but was not provided with contact information for previous owners/operators of the Site Interviews with prior owners and occupants were not conducted as part of this assessment. This is considered a data gap (see Section 7).

6.3 Interview with Local Agencies

Geosyntec contacted local, county, and state agencies via telephone or electronic mail to ask whether they possessed relevant records regarding the Site, as discussed in Section 4.3.

7. FINDINGS AND CONCLUSIONS

Geosyntec has conducted a Phase I ESA in conformance with the scope and limitations of ASTM Practice E1527-13 of the Site located at the northwest intersection of Ethanac Road and Sherman Road, Perris, California. Any exceptions to, or deletions from, this practice are described in Section 1.4 of this report.

Following the Findings and Opinions section (Section 7.1), we present identified data gaps and conclusions (Sections 7.2 and 7.3) regarding any identified RECs, Controlled (CRECs), Historical RECs (HRECs), or de *minimis conditions* associated with the Site.

7.1 Findings and Opinions

This assessment has revealed no evidence of RECs, CRECs or HRECs in connection with the Site. This assessment has revealed evidence of *de minimis* conditions in connection with the Site. Each identified condition is described below

Recognized Environmental Conditions (RECs)

As defined by ASTM E1527-13, a recognized environmental condition is: *"the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. De minimis conditions are not recognized environmental conditions."*

- No RECs were identified during this Phase I ESA.

Controlled Recognized Environmental Conditions

A CREC is "*a recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls)*."

- No CRECs were identified during this Phase I ESA.

Historical Recognized Environmental Conditions

An HREC is "*a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable*

regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls).”

- No HRECs were identified during this Phase I ESA.

De Minimis Conditions

A *de minimis* condition is a condition 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*”.

Based on the information Geosyntec obtained, Geosyntec has concluded that the following findings do not meet the definition of a REC, CREC or HREC and are therefore *de minimis* conditions:

- **Solid Waste/Debris:** Solid waste (presumed non-hazardous) was observed scattered throughout the Site during the February 2022 and November 2022 Site visits. Scattered debris piles containing one compressed natural gas (CNG) cannister, used tires, fencing materials (lumber posts and wire mesh), concrete, asphalt, and general plastic/glass trash were observed throughout the Site. Areas in the southern portion of the Site in the approximate location of a former residence appear to have been filled in. There was no indication of releases, ground surface staining, or other impacts from the solid waste/debris listed here; therefore, we do not consider this finding to be a REC, but we do consider this finding to be a *de minimis* condition.

- **Historical Agricultural Land Use:** Aerial photographs indicated that the Site and adjoining properties were used as agricultural land since at least the late 1930s for what appeared to be crop lands and/or pastures. Based on the timeframe of the observed clearings, it is possible that pesticides or herbicides (considered hazardous substances) or petroleum products were used on-site; however, no indication of pesticide/herbicide usage was found as part of this Phase I ESA. Therefore, this finding is considered a *de minimis* condition.

7.2 Data Gaps

In accordance with ASTM E1527-13, this section documents data gaps in the information obtained and reviewed as part of this Phase I ESA and discusses the associated significance. A data gap is defined as being “*a lack of or inability to obtain information required by this practice [ASTM E1527-13] despite good faith efforts by the environmental professional to gather such information*”.

Identified data gaps are presented below:

- ASTM E1527-13 states that "*interviews with past owners, operators, and occupants of the property who are likely to have material information regarding the potential for contamination at the property shall be conducted to the extent that they have been identified."* Geosyntec was not provided with and did not identify owner contact information prior to the current Site owner. However, since relevant historical documents were obtained, this limitation is not considered to be significant.

Collectively, these data gaps are not considered to be significant to the Findings or the identification of RECs given the fact that information was identified related to the Site from alternative sources.

7.3 Conclusions

Geosyntec has conducted a Phase I ESA in conformance with the scope and limitations of ASTM Practice E1527-13 of the Site located at 1892 Ethanac Road in Perris, California 92585. Any exceptions to, or deviations from, this practice are described in Section 1.4 of this report. This assessment has revealed no evidence of RECs in connection with the Site. No *significant* data gaps were identified.

8. REFERENCES

ASTM. 2013. *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment*. ASTM International.

EDR. 2022a. *Certified Sanborn Map Report.* Environmental Data Resources (EDR). November 03.

ERIS. 2022b. *Aerial Photo Decade Package.* November 04.

ERIS. 2022c. *Historical Topographic Map Report*. November 03.

ERIS. 2022e. *City Directory Image Report*. November 22.

ERIS. 2022f. *Radius Map Report.* November 03.

9. ENVIRONMENTAL PROFESSIONAL STATEMENT

I declare that, to the best of my professional knowledge and belief, I meet the definition of an Environmental professional as defined in §312.10 of 40 CFR Part 312. I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the Site. I have developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

DRAFT

_____

Signed by Veryl Wittig - Geosyntec Consultants

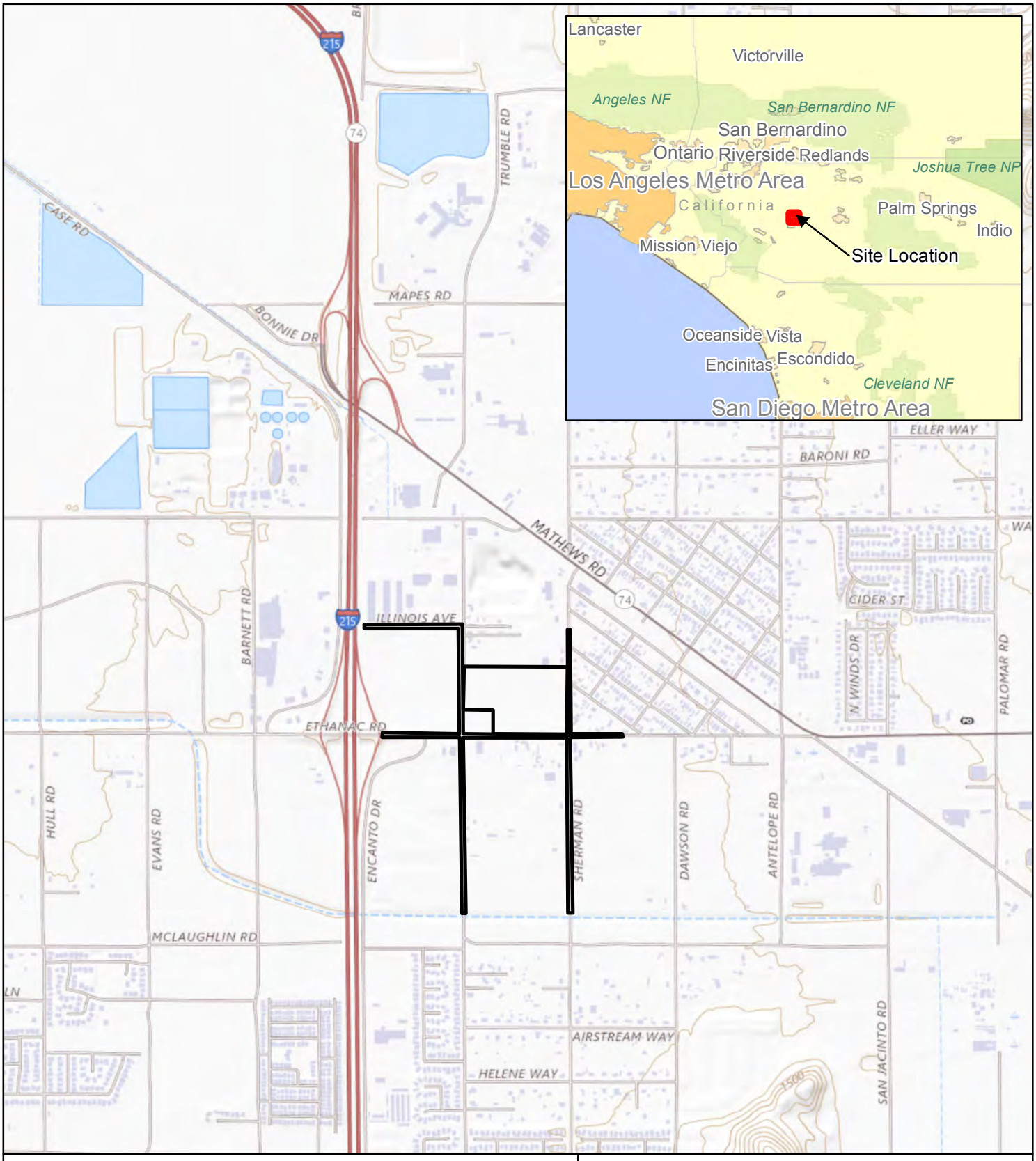
The qualifications of the above-signed professional are included in Section 10.

10. QUALIFICATIONS OF STAFF

Veryl Wittig, PG, CHG

Mr. Wittig is a Senior Principal Hydrogeologist with more than 30 years of diverse experience in planning, conducting, and managing multi-disciplinary due diligence projects involving Phase I Environmental Site Assessments (ESAs), contaminant investigations, vapor intrusion studies, human health risk assessments, engineering feasibility studies, environmental liability evaluations, mitigation of environmentally impaired properties, regulatory coordination, and litigation support for a variety of private and public sector clients. Mr. Wittig has conducted and/or managed more than 300 Phase I ESAs throughout the USA and northern Mexico between 1992 and the present in accordance with ASTM standards to evaluate the presence of Recognized Environmental Conditions (RECs) associated with the subject properties. The Phase I ESAs have involved a variety of complexities and property usages ranging from rural native land to highly-impacted industrial properties with more than a century of historical activity. Mr. Wittig earned a Bachelor's degree in Geological Sciences (Hydrogeology Emphasis) from San Diego State University in 1991.

FIGURES



Legend

Site Location

N

0 500 1,000 2,000 Feet

USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS

Site Location Map

1892 Ethanac Road,
Perris, California 92585

Geosyntec consultants

SC1229	April 2023

Figure 1

P:\CAD_GIS\Projects\SC1229_Perris\MXDs\Figure 1 Site Location Map.mxd 4/13/2023 7:30:37 AM

Legend

- Approximate Site boundary
- Roads Included in Site boundary
- Historical Rural Residence Areas
- Dirt Road
- Concrete Debris
- Fill dirt
- Used tires, discarded CNG cannister and fencing debris
- Location of abandoned 12-inch pipe (potential former well)

All locations are approximate.
Source:© 2023 Microsoft Corporation © 2023 Maxar ©CNES (2023) Distribution Airbus DS © 2023 TomTom

N

225 112.5 0 225
Feet

Site Layout Map

1892 Ethanac Road,
Perris, California 92585

Geosyntec consultants

SC1229 | April 2023

Figure 2

P:\CAD_GIS\Projects\SC1229_Perris\MXDs\Figure 2 Site Layout Map.mxd 4/13/2023 7:28:36 AM

APPENDICES

APPENDIX A
Parcel Details

Assessor - County Clerk - Recorder
Riverside County, CA

Property Detail

Assessment No.	329240023
APN	329240023
Property Type	Vacant Commercial Land
Neighborhood	Land - Banning, Beaumont, Lake Elsinore, Perris, Moreno Valley,
Acreage	0.90

Legal Description

POR LOT 735 MB 014/063 ROMOLA FARMS 6A Lot 735 SubdivisionName ROMOLA FARMS 6A LotType Lot RecMapType Map Book MapPlatB 014 MapPlatP 063 PortionLot Portion

Value History (Part 1)

Year	Reason Date	Market Value				Factored Base Year Value			
		Land	Improvement	Living Improvement	Total	Land	Improvement	Living Improvement	Total
2019	01/01/2019								
2020	01/01/2020								
2021	01/01/2021								
2022	01/01/2022								

Value History (Part 2)

Year	Restricted Value				Assessed Value				Penalty	Exemption	Net Taxable Value
	Land	Improvement	Living Improvement	Total	Land	Improvement	Living Improvement	Total			
2019					$68,614			$68,614			$68,614
2020					$69,986			$69,986			$69,986
2021					$70,711			$70,711			$70,711
2022					$72,125			$72,125			$72,125

Transfer History

Doc #	Sales Price	Date	Vacant Land
2017-0369036	$0	9/6/2017	True
1988-0179194	$40,000	6/29/1988	True
1988-0174068	$28,000	6/24/1988	True
1976-0018644	$6,640	2/13/1976	True

Features

Land Details

Primary Use	Land Type	Acres	Eff. Frontage	Eff. Depth
Commercial	LandLine 01 / 329240023 / Commercial	0.90	128.00	300.00

Date Printed: 4/12/2023

Assessor - County Clerk - Recorder
Riverside County, CA

Property Detail

1892 E ETHANAC RD MENIFEE CA 92585

Assessment No.	329240024
APN	329240024
Property Type	Vacant Commercial Land
Neighborhood	Land - Banning, Beaumont, Lake Elsinore, Perris, Moreno Valley,
Acreage	0.89

Legal Description

POR LOT 735 MB 014/063 ROMOLA FARMS 6A Lot 735 SubdivisionName ROMOLA FARMS 6A LotType Lot RecMapType Map Book MapPlatB 014 MapPlatP 063 PortionLot Portion

Value History (Part 1)

Year	Reason Date	Market Value				Factored Base Year Value			
		Land	Improvement	Living Improvement	Total	Land	Improvement	Living Improvement	Total
2019	01/01/2019								
2020	01/01/2020								
2021	01/01/2021								
2022	01/01/2022								

Value History (Part 2)

Year	Restricted Value				Assessed Value				Penalty	Exemption	Net Taxable Value
	Land	Improvement	Living Improvement	Total	Land	Improvement	Living Improvement	Total			
2019					$36,486			$36,486			$36,486
2020					$37,215			$37,215			$37,215
2021					$37,600			$37,600			$37,600
2022					$38,352			$38,352			$38,352

Transfer History

Doc #	Sales Price	Date	Vacant Land
1997-0138410	$25,000	4/24/1997	True
1996-9980317-UC	$0	8/23/1996	True
1994-0130225	$0	3/29/1994	True
1977-0103068	$0	6/6/1977	True
1975-0115866	$0	9/22/1975	True

Features

Land Details

Primary Use	Land Type	Acres	Eff. Frontage	Eff. Depth
Commercial	LandLine 01 / 329240024 / Commercial	0.88	128.00	300.00

Building 1 - Building Details

Address 1892 E ETHANAC RD
Type Vacant Commercial Land
Year Built 1776

Image: Sketch Image

Date Printed: 4/12/2023

Assessor - County Clerk - Recorder
Riverside County, CA

Property Detail

Assessment No.	329240025
APN	329240025
Property Type	Vacant Commercial Land
Neighborhood	Land - Banning, Beaumont, Lake Elsinore, Perris, Moreno Valley,
Acreage	4.37

Legal Description

4.37 ACRES IN LOT 736 MB 014/063 ROMOLA FARMS 6A Lot 736 SubdivisionName ROMOLA FARMS 6A Acres 004.37 LotType Lot RecMapType Map Book MapPlatB 014 MapPlatP 063

Value History (Part 1)

Year	Reason Date	Market Value				Factored Base Year Value			
		Land	Improvement	Living Improvement	Total	Land	Improvement	Living Improvement	Total
2019	01/01/2019								
2020	01/01/2020								
2021	01/01/2021								
2022	01/01/2022								

Value History (Part 2)

Year	Restricted Value				Assessed Value				Penalty	Exemption	Net Taxable Value
	Land	Improvement	Living Improvement	Total	Land	Improvement	Living Improvement	Total			
2019					$482,403			$482,403			$482,403
2020					$492,051			$492,051			$492,051
2021					$497,148			$497,148			$497,148
2022					$507,090			$507,090			$507,090

Transfer History

Doc #	Sales Price	Date	Vacant Land
2021-0718294	$0	12/6/2021	True
2013-0295523	$0	6/20/2013	True
2005-1081168	$200,000	12/30/2005	True
2000-0728644	$0	1/26/2000	True
2000-0028644	$0	1/26/2000	True
1991-0235462	$2,344,300	7/11/1991	True
1978-0031102	$0	2/16/1978	True
1978-0031101	$0	2/16/1978	True
1978-0001328	$0	1/4/1978	True

Features

Land Details

Primary Use	Land Type	Acres	Eff. Frontage	Eff. Depth
Commercial	LandLine 01 / 329240025 / Commercial	4.37	300.00	635.00

Date Printed: 4/12/2023

Assessor - County Clerk - Recorder

Riverside County, CA

Property Detail

Assessment No.	329240026
APN	329240026
Property Type	Vacant Commercial Land
Neighborhood	Land - Banning, Beaumont, Lake Elsinore, Perris, Moreno Valley,
Acreage	4.80

Legal Description

4.80 ACRES IN LOT 737 MB 014/063 ROMOLA FARMS 6A Lot 737 SubdivisionName ROMOLA FARMS 6A Acres 004.80 LotType Lot RecMapType Map Book MapPlatB 014 MapPlatP 063

Value History (Part 1)

Year	Reason Date	Market Value				Factored Base Year Value			
		Land	Improvement	Living Improvement	Total	Land	Improvement	Living Improvement	Total
2019	01/01/2019								
2020	01/01/2020								
2021	01/01/2021								
2022	01/01/2022								

Value History (Part 2)

Year	Restricted Value				Assessed Value				Penalty	Exemption	Net Taxable Value
	Land	Improvement	Living Improvement	Total	Land	Improvement	Living Improvement	Total			
2019					$529,871			$529,871			$529,871
2020					$540,468			$540,468			$540,468
2021					$546,067			$546,067			$546,067
2022					$556,988			$556,988			$556,988

Transfer History

Doc #	Sales Price	Date	Vacant Land
2021-0718294	$0	12/6/2021	True
2013-0295523	$0	6/20/2013	True
2005-1081168	$200,000	12/30/2005	True
2000-0728644	$0	1/26/2000	True
2000-0028644	$0	1/26/2000	True
1991-0235462	$2,344,300	7/11/1991	True
1978-0031102	$0	2/16/1978	True
1978-0031101	$0	2/16/1978	True
1978-0001328	$0	1/4/1978	True

Features

Land Details

Primary Use	Land Type	Acres	Eff. Frontage	Eff. Depth
Commercial	LandLine 01 / 329240026 / Commercial	4.80	330.00	634.00

Date Printed: 4/12/2023

Assessor - County Clerk - Recorder
Riverside County, CA

Property Detail

Assessment No.	329240027
APN	329240027
Property Type	Vacant Commercial Land
Neighborhood	Land - Banning, Beaumont, Lake Elsinore, Perris, Moreno Valley,
Acreage	2.88

Legal Description

2.88 ACRES IN POR LOT 738 MB 014/063 ROMOLA FARMS 6A Lot 738 SubdivisionName ROMOLA FARMS 6A Acres 002.88 LotType Lot RecMapType Map Book MapPlatB 014 MapPlatP 063 PortionLot Portion

Value History (Part 1)

Year	Reason Date	Market Value				Factored Base Year Value			
		Land	Improvement	Living Improvement	Total	Land	Improvement	Living Improvement	Total
2019	01/01/2019								
2020	01/01/2020								
2021	01/01/2021								
2022	01/01/2022								

Value History (Part 2)

Year	Restricted Value				Assessed Value				Penalty	Exemption	Net Taxable Value
	Land	Improvement	Living Improvement	Total	Land	Improvement	Living Improvement	Total			
2019					$317,921			$317,921			$317,921
2020					$324,279			$324,279			$324,279
2021					$327,638			$327,638			$327,638
2022					$334,190			$334,190			$334,190

Transfer History

Doc #	Sales Price	Date	Vacant Land
2021-0718294	$0	12/6/2021	True
2013-0295523	$0	6/20/2013	True
2005-1081168	$200,000	12/30/2005	True
2000-0728644	$0	1/26/2000	True
2000-0028644	$0	1/26/2000	True
1978-0031102	$0	2/16/1978	True
1978-0031101	$0	2/16/1978	True
1978-0001328	$0	1/4/1978	True

Features

Land Details

Primary Use	Land Type	Acres	Eff. Frontage	Eff. Depth
Commercial	LandLine 01 / 329240027 / Commercial	2.88	198.00	634.00

Date Printed: 4/12/2023

Assessor - County Clerk - Recorder
Riverside County, CA

Property Detail

Assessment No.	329240020
APN	329240020
Property Type	Vacant Commercial Land
Neighborhood	Land - Banning, Beaumont, Lake Elsinore, Perris, Moreno Valley,
Acreage	0.96

Legal Description

POR LOT 734 MB 014/063 ROMOLA FARMS 6A Lot 734 SubdivisionName ROMOLA FARMS 6A LotType Lot RecMapType Map Book MapPlatB 014 MapPlatP 063 PortionLot Portion

Value History (Part 1)

Year	Reason Date	Market Value				Factored Base Year Value			
		Land	Improvement	Living Improvement	Total	Land	Improvement	Living Improvement	Total
2019	01/01/2019								
2020	01/01/2020								
2021	01/01/2021								
2022	01/01/2022								

Value History (Part 2)

Year	Restricted Value				Assessed Value				Penalty	Exemption	Net Taxable Value
	Land	Improvement	Living Improvement	Total	Land	Improvement	Living Improvement	Total			
2019					$105,971			$105,971			$105,971
2020					$108,090			$108,090			$108,090
2021					$109,209			$109,209			$109,209
2022					$111,393			$111,393			$111,393

Transfer History

Doc #	Sales Price	Date	Vacant Land
2021-0718294	$0	12/6/2021	True
2013-0295523	$0	6/20/2013	True
2005-1081168	$200,000	12/30/2005	True
2000-0728644	$0	1/26/2000	True
2000-0028644	$0	1/26/2000	True
1991-0235462	$2,344,300	7/11/1991	True
1978-0031102	$0	2/16/1978	True
1978-0031101	$0	2/16/1978	True
1978-0001328	$0	1/4/1978	True

Features

Land Details

Primary Use	Land Type	Acres	Eff. Frontage	Eff. Depth
Commercial	LandLine 01 / 329240020 / Commercial	0.96	66.00	640.00

Date Printed: 4/12/2023

Assessor - County Clerk - Recorder
Riverside County, CA

Property Detail

Assessment No.	329240019
APN	329240019
Property Type	Vacant Commercial Land
Neighborhood	Land - Banning, Beaumont, Lake Elsinore, Perris, Moreno Valley,
Acreage	1.94

Legal Description

1.94 ACRES IN POR LOT 734 MB 014/063 ROMOLA FARMS 6A Lot 734 SubdivisionName ROMOLA FARMS 6A Acres 001.94 LotType Lot RecMapType Map Book MapPlatB 014 MapPlatP 063 PortionLot Portion

Value History (Part 1)

Year	Reason Date	Market Value				Factored Base Year Value			
		Land	Improvement	Living Improvement	Total	Land	Improvement	Living Improvement	Total
2019	01/01/2019								
2020	01/01/2020								
2021	01/01/2021								
2022	01/01/2022								

Value History (Part 2)

Year	Restricted Value				Assessed Value				Penalty	Exemption	Net Taxable Value
	Land	Improvement	Living Improvement	Total	Land	Improvement	Living Improvement	Total			
2019					$214,154			$214,154			$214,154
2020					$218,437			$218,437			$218,437
2021					$220,700			$220,700			$220,700
2022					$225,114			$225,114			$225,114

Transfer History

Doc #	Sales Price	Date	Vacant Land
2021-0718294	$0	12/6/2021	True
2013-0295523	$0	6/20/2013	True
2005-1081168	$200,000	12/30/2005	True
2000-0728644	$0	1/26/2000	True
2000-0028644	$0	1/26/2000	True
1991-0235462	$2,344,300	7/11/1991	True
1978-0031102	$0	2/16/1978	True
1978-0031101	$0	2/16/1978	True
1978-0001328	$0	1/4/1978	True

Features

Land Details

Primary Use	Land Type	Acres	Eff. Frontage	Eff. Depth
Commercial	LandLine 01 / 329240019 / Commercial	1.94	132.00	640.00

Date Printed: 4/12/2023

Assessor - County Clerk - Recorder
Riverside County, CA

Property Detail

Assessment No.	329240018
APN	329240018
Property Type	Vacant Commercial Land
Neighborhood	Land - Banning, Beaumont, Lake Elsinore, Perris, Moreno Valley,
Acreage	0.98

Legal Description

POR LOT 734 MB 014/063 ROMOLA FARMS 6A Lot 734 SubdivisionName ROMOLA FARMS 6A LotType Lot RecMapType Map Book MapPlatB 014 MapPlatP 063 PortionLot Portion

Value History (Part 1)

Year	Reason Date	Market Value				Factored Base Year Value			
		Land	Improvement	Living Improvement	Total	Land	Improvement	Living Improvement	Total
2019	01/01/2019								
2020	01/01/2020								
2021	01/01/2021								
2022	01/01/2022								

Value History (Part 2)

Year	Restricted Value				Assessed Value				Penalty	Exemption	Net Taxable Value
	Land	Improvement	Living Improvement	Total	Land	Improvement	Living Improvement	Total			
2019					$108,179			$108,179			$108,179
2020					$110,342			$110,342			$110,342
2021					$111,485			$111,485			$111,485
2022					$113,714			$113,714			$113,714

Transfer History

Doc #	Sales Price	Date	Vacant Land
2021-0718294	$0	12/6/2021	True
2013-0295523	$0	6/20/2013	True
2005-1081168	$200,000	12/30/2005	True
2000-0728644	$0	1/26/2000	True
2000-0028644	$0	1/26/2000	True
1991-0235462	$2,344,300	7/11/1991	True
1978-0031102	$0	2/16/1978	True
1978-0031101	$0	2/16/1978	True
1978-0001328	$0	1/4/1978	True

Features

Land Details

Primary Use	Land Type	Acres	Eff. Frontage	Eff. Depth
Commercial	LandLine 01 / 329240018 / Commercial	0.98	66.00	640.00

Date Printed: 4/12/2023

Assessor - County Clerk - Recorder
Riverside County, CA

Property Detail

Assessment No.	329240017
APN	329240017
Property Type	Vacant Commercial Land
Neighborhood	Land - Banning, Beaumont, Lake Elsinore, Perris, Moreno Valley,
Acreage	1.00

Legal Description

POR LOT 734 MB 014/063 ROMOLA FARMS 6A Lot 734 SubdivisionName ROMOLA FARMS 6A LotType Lot RecMapType Map Book MapPlatB 014 MapPlatP 063 PortionLot Portion

Value History (Part 1)

Year	Reason Date	Market Value				Factored Base Year Value			
		Land	Improvement	Living Improvement	Total	Land	Improvement	Living Improvement	Total
2019	01/01/2019								
2020	01/01/2020								
2021	01/01/2021								
2022	01/01/2022								

Value History (Part 2)

Year	Restricted Value				Assessed Value				Penalty	Exemption	Net Taxable Value
	Land	Improvement	Living Improvement	Total	Land	Improvement	Living Improvement	Total			
2019					$110,388			$110,388			$110,388
2020					$112,595			$112,595			$112,595
2021					$113,761			$113,761			$113,761
2022					$116,036			$116,036			$116,036

Transfer History

Doc #	Sales Price	Date	Vacant Land
2021-0718294	$0	12/6/2021	True
2013-0295523	$0	6/20/2013	True
2005-1081168	$200,000	12/30/2005	True
2000-0728644	$0	1/26/2000	True
2000-0028644	$0	1/26/2000	True
1991-0235462	$2,344,300	7/11/1991	True
1978-0031102	$0	2/16/1978	True
1978-0031101	$0	2/16/1978	True
1978-0001328	$0	1/4/1978	True

Features

Land Details

Primary Use	Land Type	Acres	Eff. Frontage	Eff. Depth
Commercial	LandLine 01 / 329240017 / Commercial	1.00	66.00	640.00

Date Printed: 4/12/2023

Assessor - County Clerk - Recorder
Riverside County, CA

Property Detail

Assessment No.	329240016
APN	329240016
Property Type	Vacant Commercial Land
Neighborhood	Land - Banning, Beaumont, Lake Elsinore, Perris, Moreno Valley,
Acreage	2.91

Legal Description

2.91 ACRES M/L IN POR LOT 733 MB 014/063 ROMOLA FARMS 6A Lot 733 SubdivisionName ROMOLA FARMS 6A Acres 002.91 M/L LotType Lot RecMapType Map Book MapPlatB 014 MapPlatP 063 PortionLot Portion

Value History (Part 1)

Year	Reason Date	Market Value				Factored Base Year Value			
		Land	Improvement	Living Improvement	Total	Land	Improvement	Living Improvement	Total
2019	01/01/2019								
2020	01/01/2020								
2021	01/01/2021								
2022	01/01/2022								

Value History (Part 2)

Year	Restricted Value				Assessed Value				Penalty	Exemption	Net Taxable Value
	Land	Improvement	Living Improvement	Total	Land	Improvement	Living Improvement	Total			
2019					$321,234			$321,234			$321,234
2020					$327,658			$327,658			$327,658
2021					$331,052			$331,052			$331,052
2022					$337,673			$337,673			$337,673

Transfer History

Doc #	Sales Price	Date	Vacant Land
2021-0718294	$0	12/6/2021	True
2013-0295523	$0	6/20/2013	True
2005-1081168	$200,000	12/30/2005	True
2000-0728644	$0	1/26/2000	True
2000-0028644	$0	1/26/2000	True
1978-0031102	$0	2/16/1978	True
1978-0031101	$0	2/16/1978	True
1978-0001328	$0	1/4/1978	True

Features

Land Details

Primary Use	Land Type	Acres	Eff. Frontage	Eff. Depth
Commercial	LandLine 01 / 329240016 / Commercial	2.91	198.00	640.00

Date Printed: 4/12/2023

THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSES ONLY. NO LIABILITY IS ASSUMED FOR THE ACCURACY OF THE DATA SHOWN. ASSESSOR'S PARCEL MAY NOT COMPLY WITH LOCAL LOT-SPLIT OR BUILDING SITE ORDINANCES.

POR. SW 10 T.5S., R.3W.

CITY OF PERRIS

T.R.A. 008-096
026-208
026-209
026-294

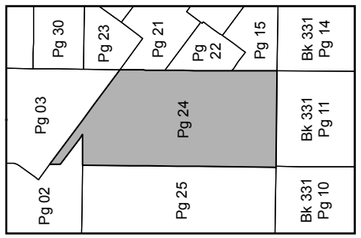
329-24

22-38

Legend
- Lot Lines
- Right-Of-Way
- Old Lot Lines
- Reference R.O.W
- Other Easements
- Lease Area
- Subdivision Tic Mark

N E S W

1 " = 200 '



Date	Old Number	New Number
5/1/1985	1	34,35
7/1/1985	2,3,33,34	36
7/1/1985	36	37-39
1/1/1986	35	40
1/1/1986	38	41
1/1/1986	41	42,43
1/1/1986	5,6,43	44
9/1/1986	40	45,ST
4/1/1988	43	46,ST
8/1/1992	44	47,48
8/1/1997	4	49,50
8/1/1997	47	51,52
5/1/2004	32	53,ST
1/1/2007	29	54,ST
11/29/2010	030-30	55

SHERMAN ROAD
W.H.
30'
L=113.73
524.53
50'
230
N00-10-00E
100
132
39
198
330
300
30'
R.F. 6A
130
30
PERRIS
CITY
LIMITS
54
53
8.22 AC M/L
469.04
30'
100'
74 R.R.
TRA 026-208
TRA 026-209
R.F. 6A
221.51
LOT 1
TRA 026-209
TRA 026-294
828.53
607.02
LOT 8
632.23
TRA 026-209
TRA 008-096
739 31 4.49 AC
633
738
633
27 2.88 AC M/L
633.77
737 26 4.80 AC
634.54
736 25 4.37 AC
LIMITS
635.30
ROAD
37
2.90 AC M/L
335.48
508.58
281
TRA 026-294
W.H.
R.F. 6A
109.42
156.35
W.H.
R.F. 6A
330
28 1.00 AC
132
198
330
300
N89-37-00W
55 2.73 AC
PU
253.78
TRA 026-294
114
84
66
66
264
66
66
198
66
128
24
CITY
128
SBE 604-33-19D PAR. 20A
A.T & S.F.
HWY
728
159.03
729 48 15.43 AC
730
731
732 14 3.22 AC
640
733
734
640
735 23
128
300
128
204
496.19
496.09
51 1.29 AC
08
09
10
640
640
15 1.94 AC M/L
16 2.91 AC M/L
17
18
19 1.94 AC
20
TRA 008-096
60
60
TRA 026-294
WATSON RD
30'
172.79
026-294
39
173.48
190
TRA
45
148.35
91.35
35.54
182
25
81
81
500
46
132
56
64
145
49
50
52
07
145
50.5
84.7
55
120
20
246
246
60
60
60
60
11
12
13
TRA 008-096
84
132
198
66
66
198
66
256
22 1.67 AC
PERRIS
256
ETHANAC
30'
126
21
128
300
R.F. 6A
20'
TRUMBLE ROAD
217.54
30'
100'

Data
MB 14/681 S.D. WATERS HOMESTEAD
RS 77/40, 77/51
L.L.A. 2169

Map Reference *
MB 14/681 - 0 S.D. WATERS HOMESTEAD
MB 14/63 - 65 ROMOLA FARMS NO. 6A

ASSESSOR'S MAP BK329 PG.24
Riverside County, Calif.

JHernandez

November 2010

APPENDIX B
Historical Records and EDR Reports

Hillwood Ethanac

Ethanac Road and Sherman Road

Sun City, CA 92585

Inquiry Number: 7169074.3

November 03, 2022

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

11/03/22

Site Name:

Hillwood Ethanac
Ethanac Road and Sherman R
Sun City, CA 92585
EDR Inquiry # 7169074.3

Client Name:

GeoSyntec Consultants
16644 West Bernardo Drive SUITE 301
SAN DIEGO, CA 92127
Contact: Jackie Hyman

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by GeoSyntec Consultants 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 # 1A1A-40AD-8FC9

PO # NA

Project SC1229

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 #: 1A1A-40AD-8FC9

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

GeoSyntec Consultants (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.

Hillwood Ethanac

Ethanac Road and Sherman Road

Sun City, CA 92585

Inquiry Number: 7169074.8

November 04, 2022

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

11/04/22

Site Name:

Hillwood Ethanac
Ethanac Road and Sherman R
Sun City, CA 92585
EDR Inquiry # 7169074.8

Client Name:

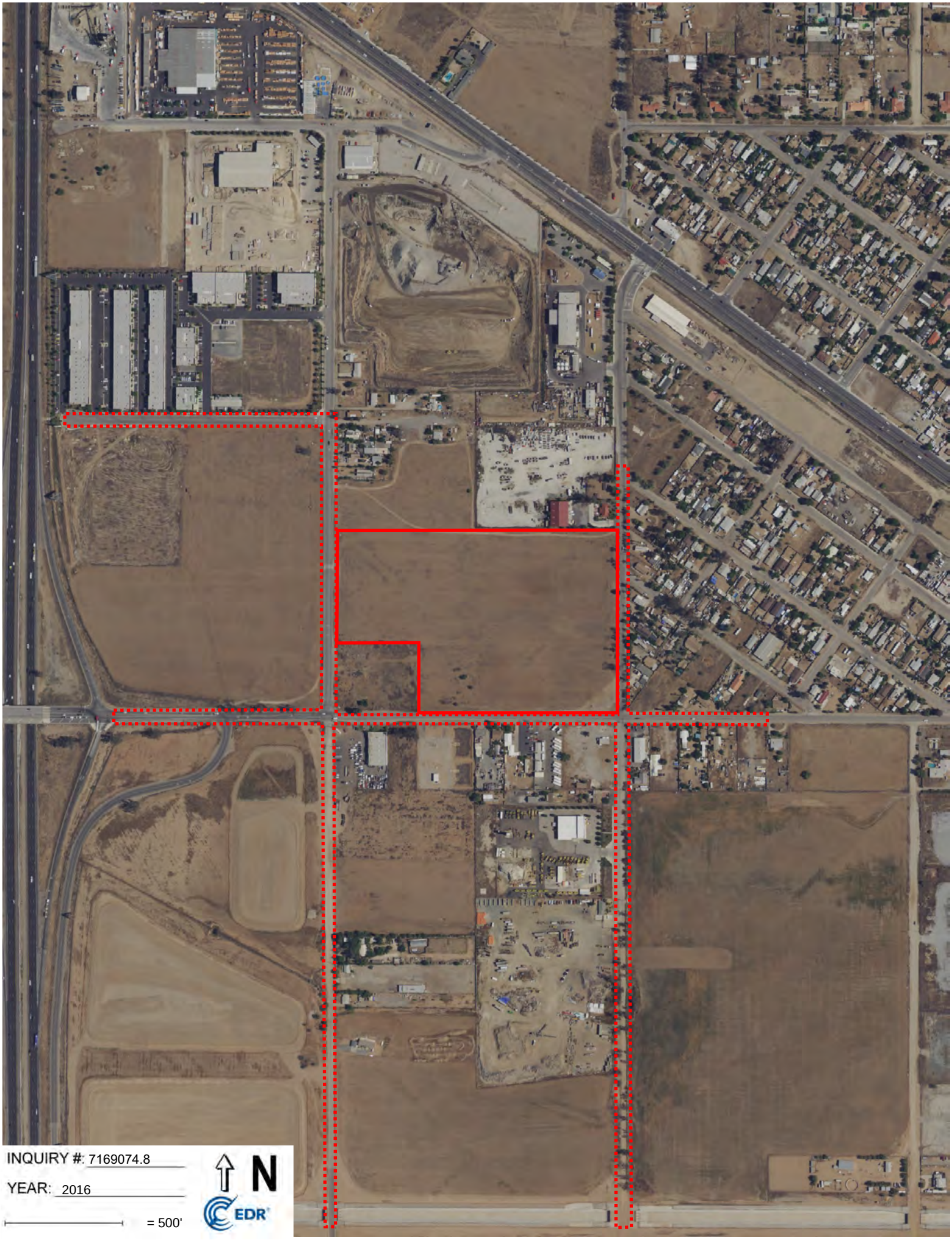
GeoSyntec Consultants
16644 West Bernardo Drive SUITE 301
SAN DIEGO, CA 92127
Contact: Jackie Hyman

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:

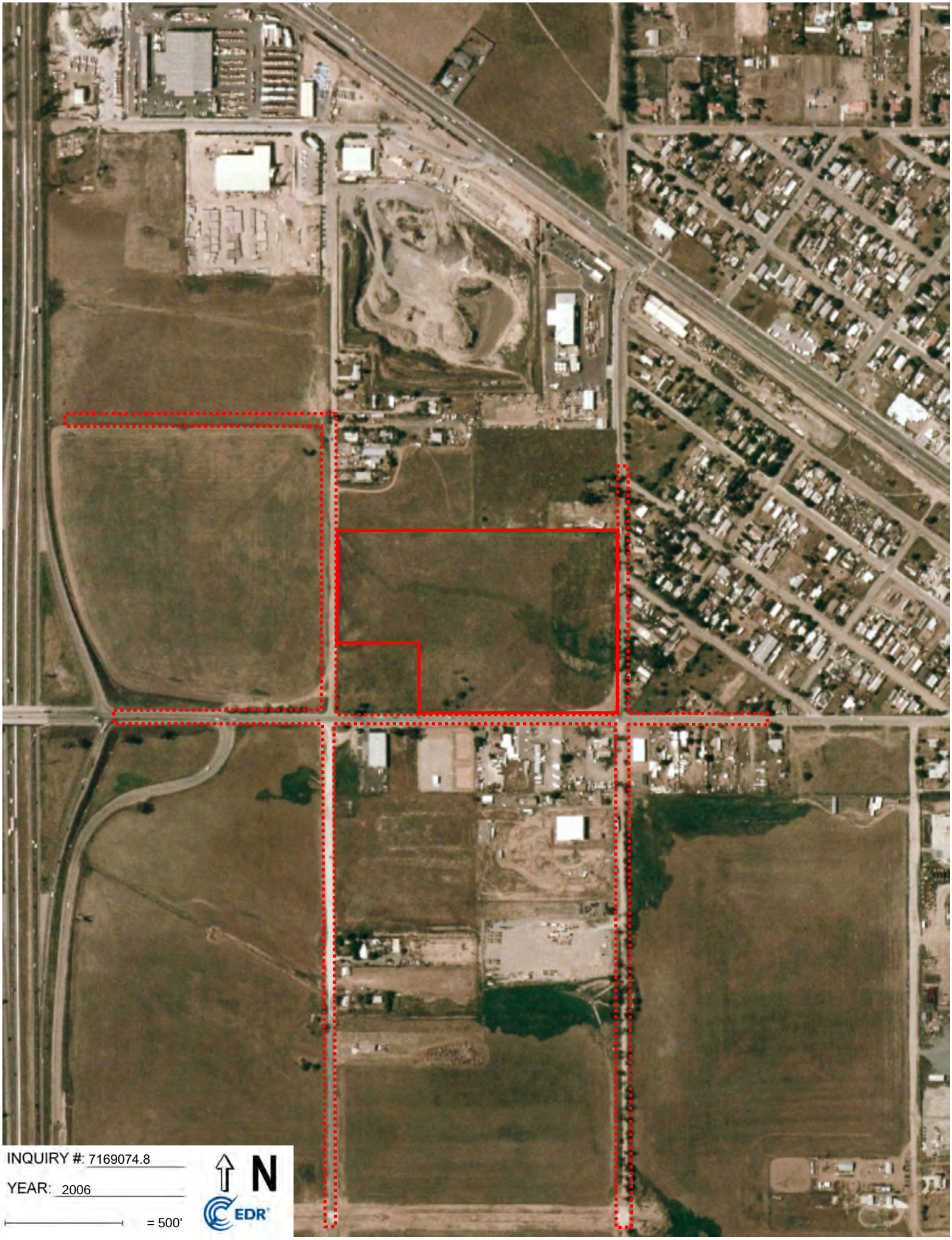
Year	Scale	Details	Source
2016	1"=500'	Flight Year: 2016	USDA/NAIP
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2006	1"=500'	Flight Year: 2006	USDA/NAIP
2002	1"=500'	Acquisition Date: January 01, 2002	USGS/DOQQ
1997	1"=500'	Flight Date: October 16, 1997	USGS
1996	1"=500'	Acquisition Date: January 01, 1996	USGS/DOQQ
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
1967	1"=500'	Flight Date: May 15, 1967	USDA
1961	1"=500'	Flight Date: August 18, 1961	USDA
1953	1"=500'	Flight Date: August 28, 1953	USDA
1949	1"=500'	Flight Date: May 23, 1949	USDA
1938	1"=500'	Flight Date: June 14, 1938	USDA

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.

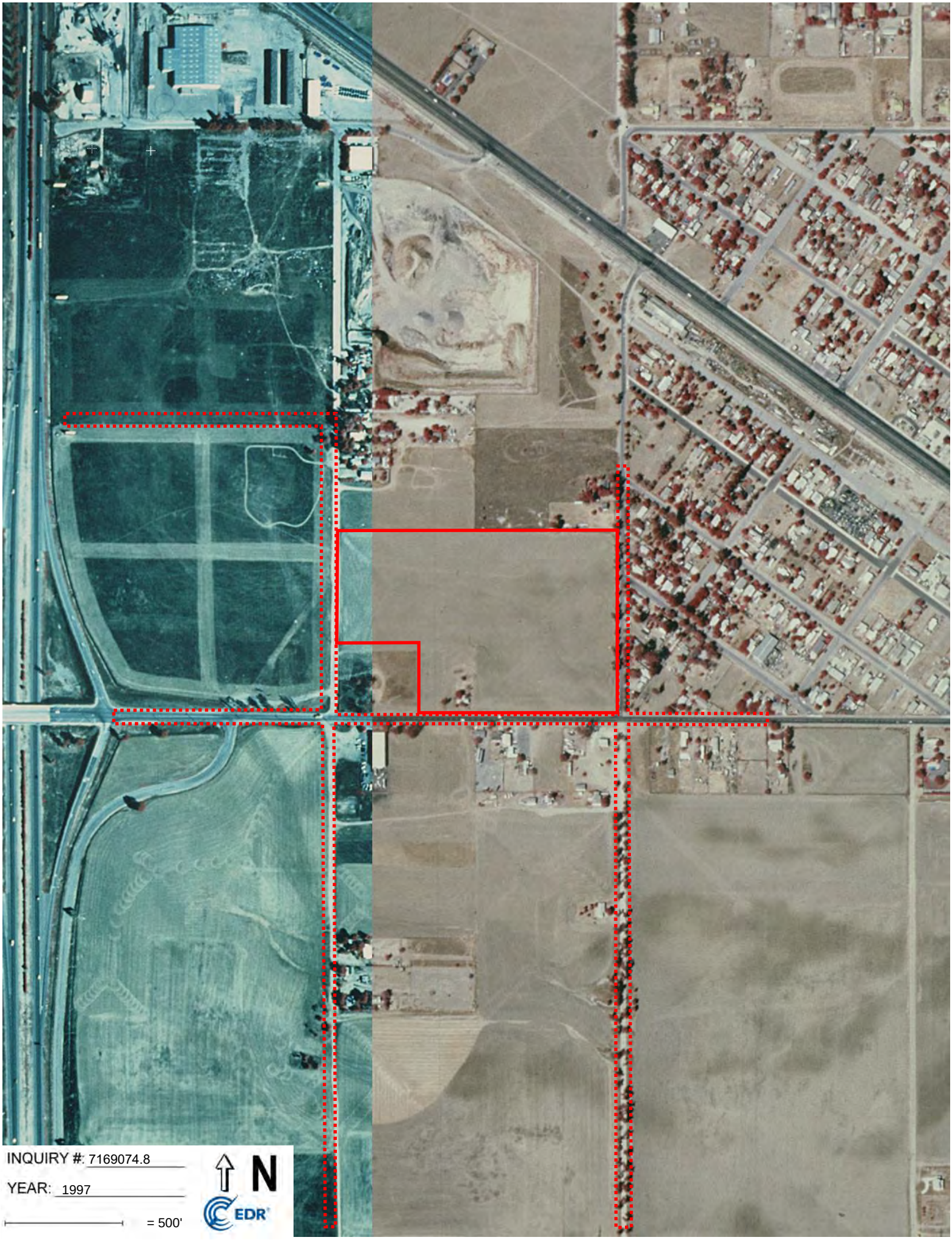

INQUIRY #: 7169074.8
YEAR: 2016
= 500'
N
EDR

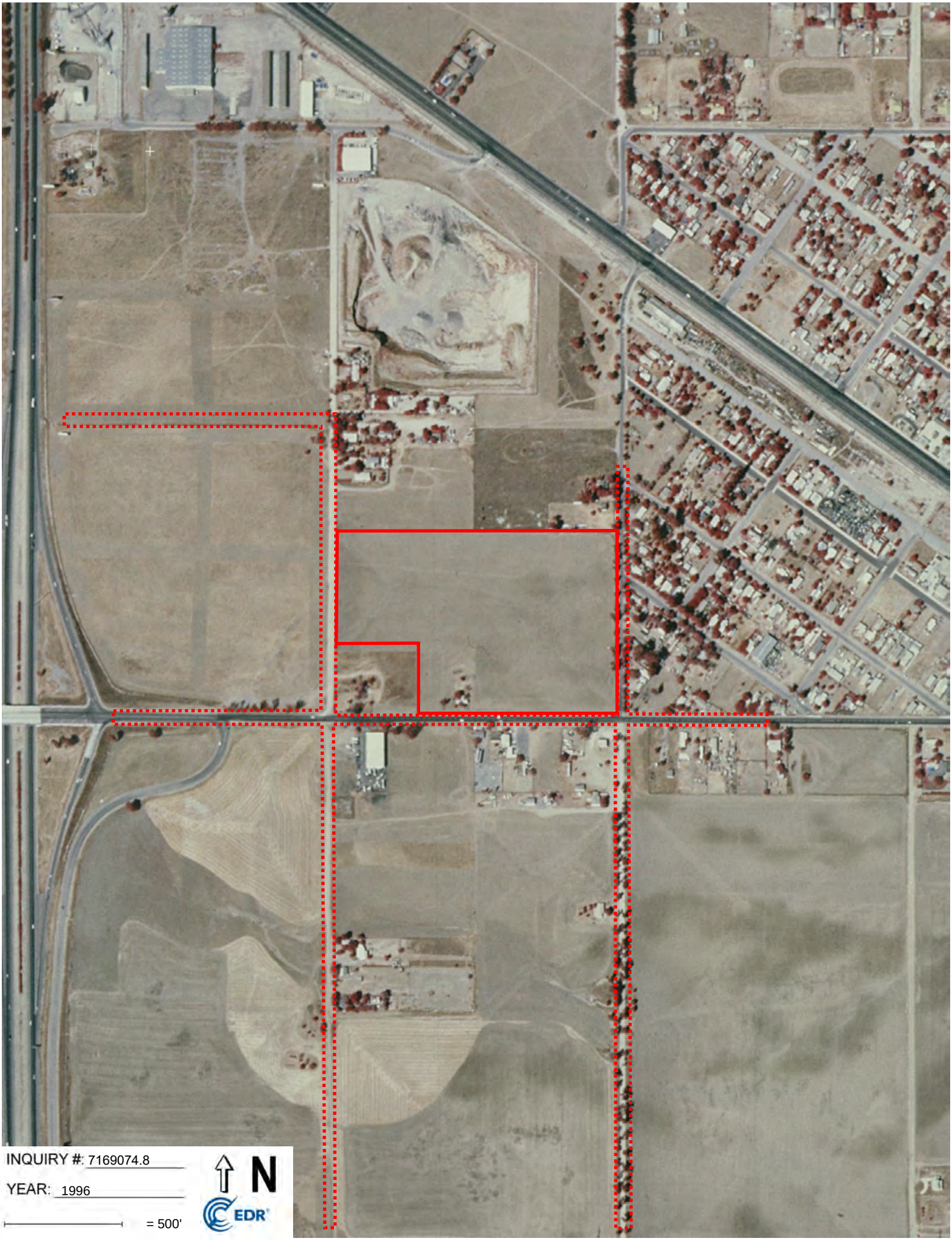

INQUIRY #: 7169074.8
YEAR: 2012
= 500'
N
EDR


INQUIRY #: 7169074.8
YEAR: 2009
= 500'
N
EDR


INQUIRY #: 7169074.8
YEAR: 2006
= 500'
N
EDR


INQUIRY #: 7169074.8
YEAR: 2002
= 500'
N
EDR


INQUIRY #: 7169074.8
YEAR: 1997
= 500'
N
EDR


INQUIRY #: 7169074.8
YEAR: 1996
= 500'
N
EDR


INQUIRY #: 7169074.8
YEAR: 1989
= 500'
N
EDR

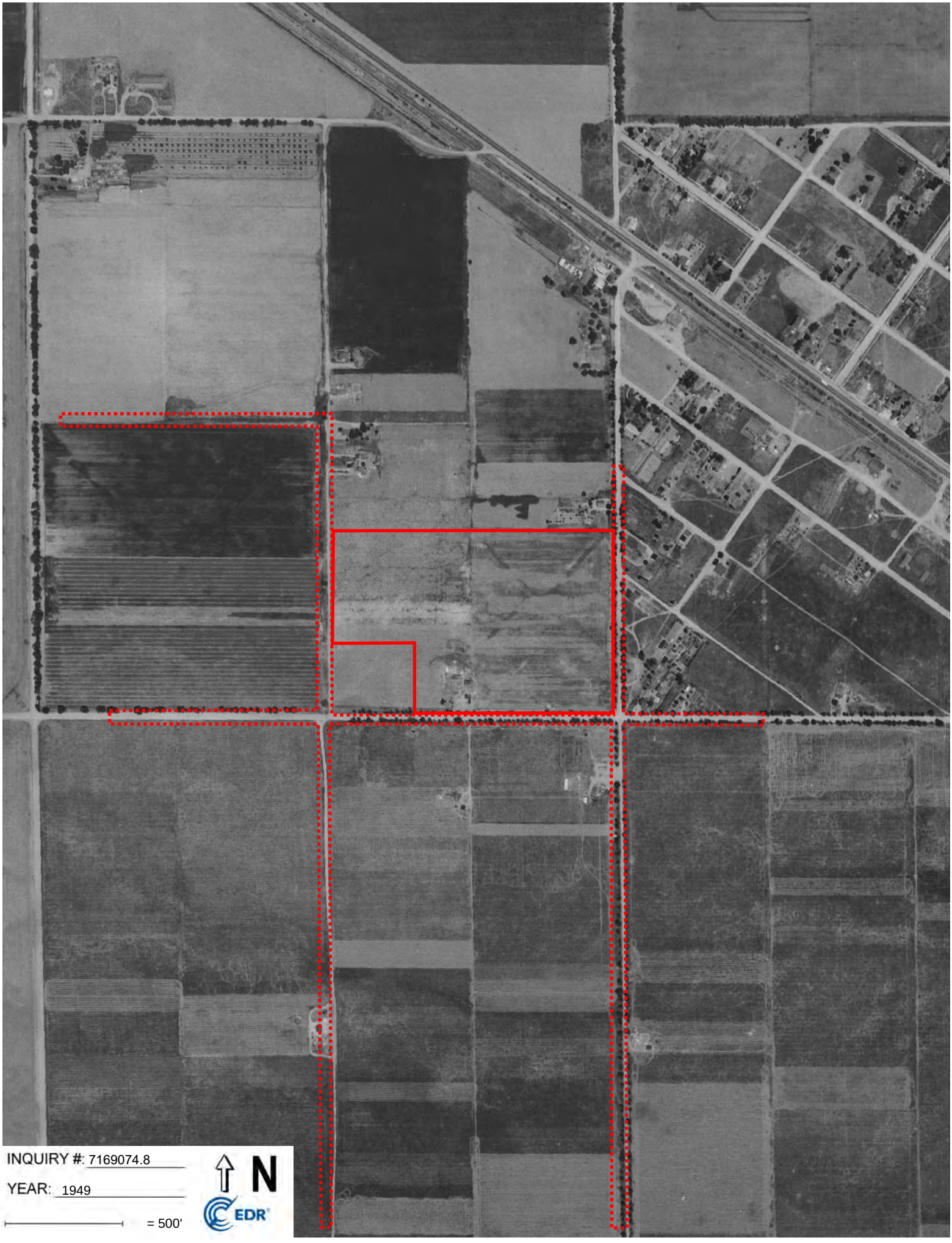

INQUIRY #: 7169074.8
YEAR: 1985
= 500'
N
EDR


INQUIRY #: 7169074.8
YEAR: 1978
= 500'
N
EDR


INQUIRY #: 7169074.8
YEAR: 1967
= 500'
N
EDR


INQUIRY #: 7169074.8
YEAR: 1961
= 500'
N
EDR


INQUIRY #: 7169074.8
YEAR: 1953
= 500'
N
EDR


INQUIRY #: 7169074.8
YEAR: 1949
= 500'
N
EDR


INQUIRY #: 7169074.8
YEAR: 1938
= 500'
N
EDR

Hillwood Ethanac

Ethanac Road and Sherman Road

Sun City, CA 92585

Inquiry Number: 7169074.4

November 03, 2022

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

11/03/22

Site Name:

Hillwood Ethanac
Ethanac Road and Sherman R
Sun City, CA 92585
EDR Inquiry # 7169074.4

Client Name:

GeoSyntec Consultants
16644 West Bernardo Drive SUITE 301
SAN DIEGO, CA 92127
Contact: Jackie Hyman

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by GeoSyntec Consultants 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: SC1229

Coordinates:

Latitude:	33.744313 33° 44' 40" North
Longitude:	-117.182634 -117° 10' 57" West
UTM Zone:	Zone 11 North
UTM X Meters:	483083.77
UTM Y Meters:	3733821.48
Elevation:	1431.00' above sea level

Maps Provided:

2018	1943
2015	1942
2012	1901
1979	
1973	
1967	
1953	
1947	

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2018 Source Sheets

Romoland
2018
7.5-minute, 24000

Perris
2018
7.5-minute, 24000

2015 Source Sheets

Romoland
2015
7.5-minute, 24000

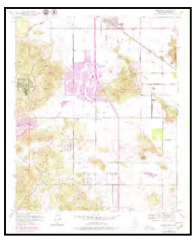
Perris
2015
7.5-minute, 24000

2012 Source Sheets

Romoland
2012
7.5-minute, 24000

Perris
2012
7.5-minute, 24000

1979 Source Sheets



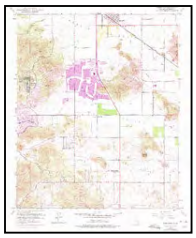
Romoland
1979
7.5-minute, 24000
Aerial Photo Revised 1976

Perris
1979
7.5-minute, 24000
Aerial Photo Revised 1978

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

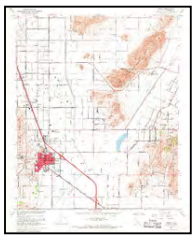
1973 Source Sheets



Romoland
1973
7.5-minute, 24000
Aerial Photo Revised 1973

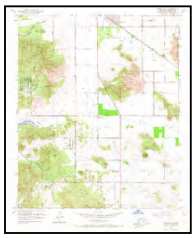
Perris
1973
7.5-minute, 24000
Aerial Photo Revised 1973

1967 Source Sheets



Perris
1967
7.5-minute, 24000
Aerial Photo Revised 1966

1953 Source Sheets



Romoland
1953
7.5-minute, 24000
Aerial Photo Revised 1951

Perris
1953
7.5-minute, 24000
Aerial Photo Revised 1951

1947 Source Sheets

MURRIETA
1947
15-minute, 50000

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1943 Source Sheets

Murrieta
1943
15-minute, 62500
Aerial Photo Revised 1939

PERRIS
1943
15-minute, 62500

1942 Source Sheets

Perris
1942
15-minute, 62500
Aerial Photo Revised 1939

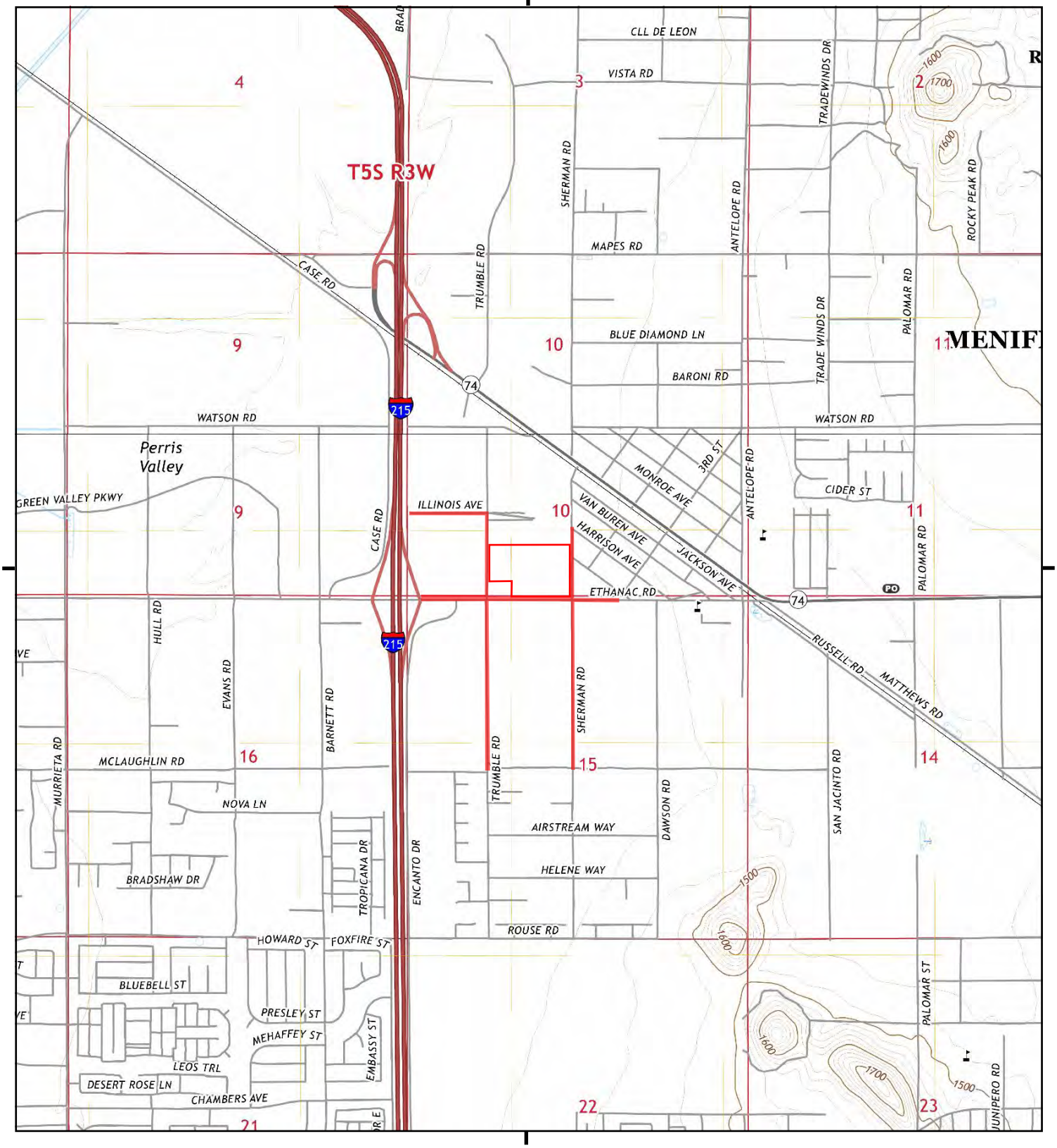
Murrieta
1942
15-minute, 62500
Aerial Photo Revised 1939

1901 Source Sheets

Elsinore
1901
30-minute, 125000

Historical Topo Map

2018



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

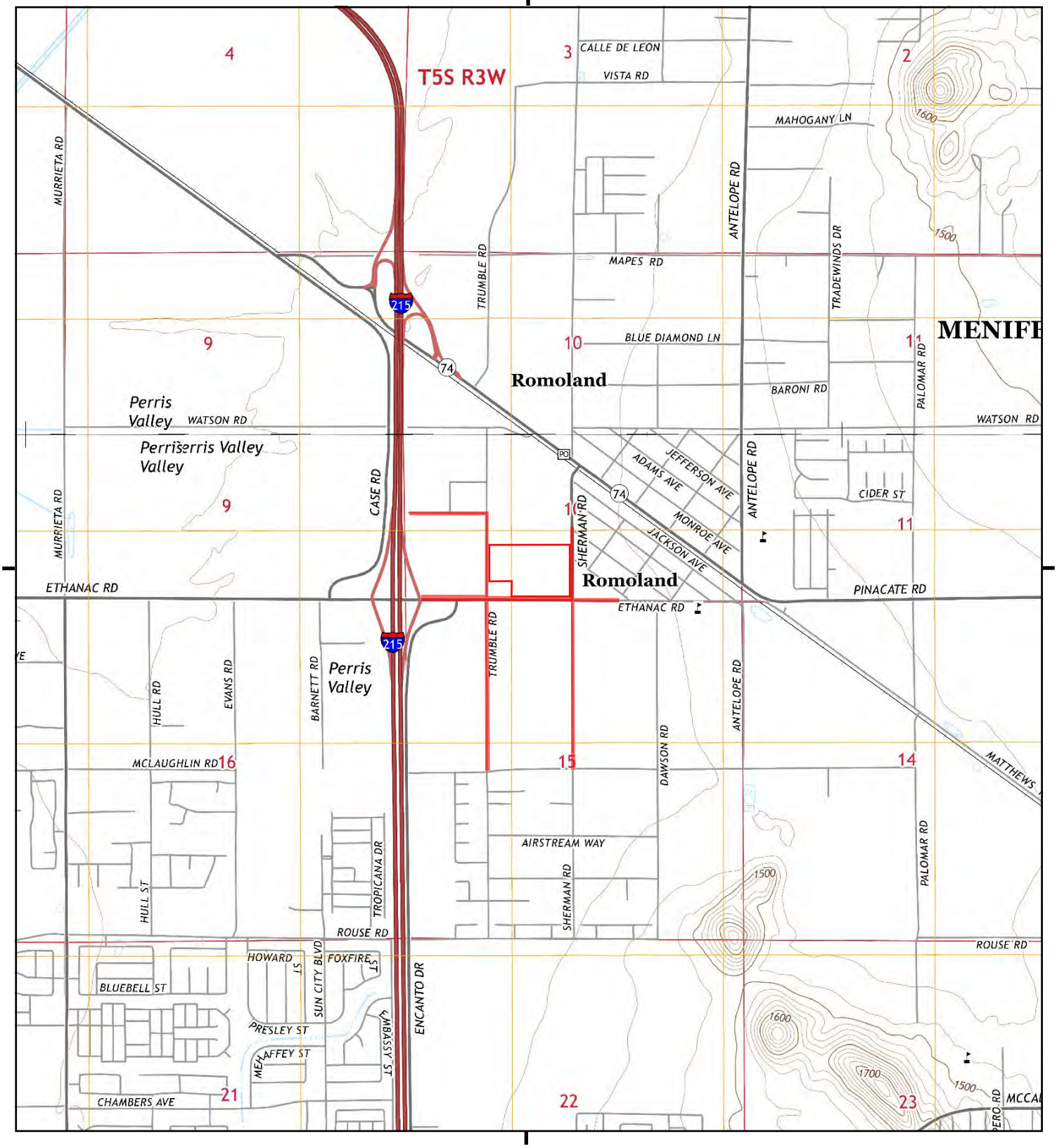
TP, Romoland, 2018, 7.5-minute
N, Perris, 2018, 7.5-minute

SITE NAME: Hillwood Ethanac
ADDRESS: Ethanac Road and Sherman Road
Sun City, CA 92585
CLIENT: GeoSyntec Consultants

N

Historical Topo Map

2015



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

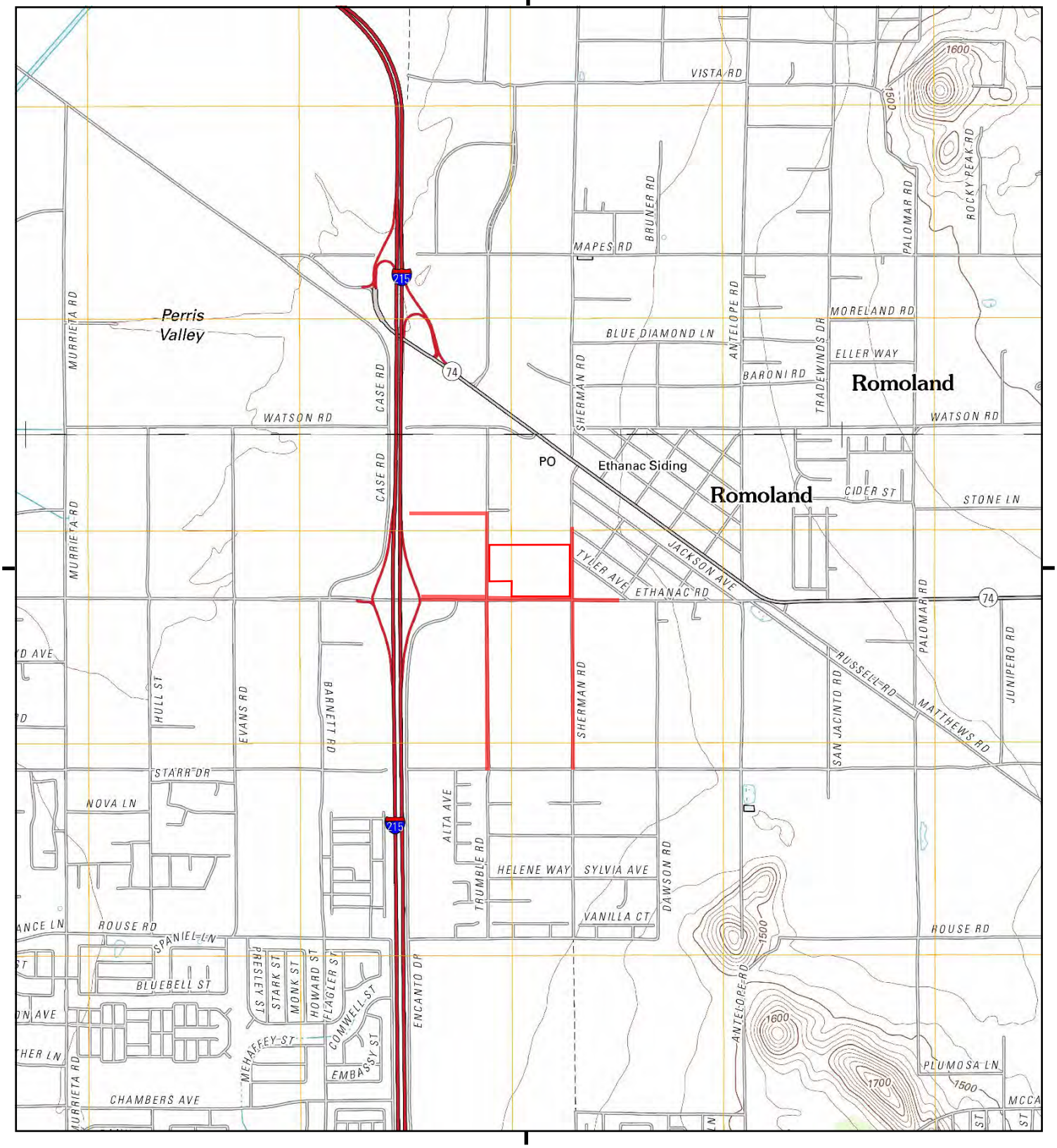
TP, Romoland, 2015, 7.5-minute
N, Perris, 2015, 7.5-minute

SITE NAME: Hillwood Ethanac
ADDRESS: Ethanac Road and Sherman Road
Sun City, CA 92585
CLIENT: GeoSyntec Consultants

N

Historical Topo Map

2012



This report includes information from the following map sheet(s).

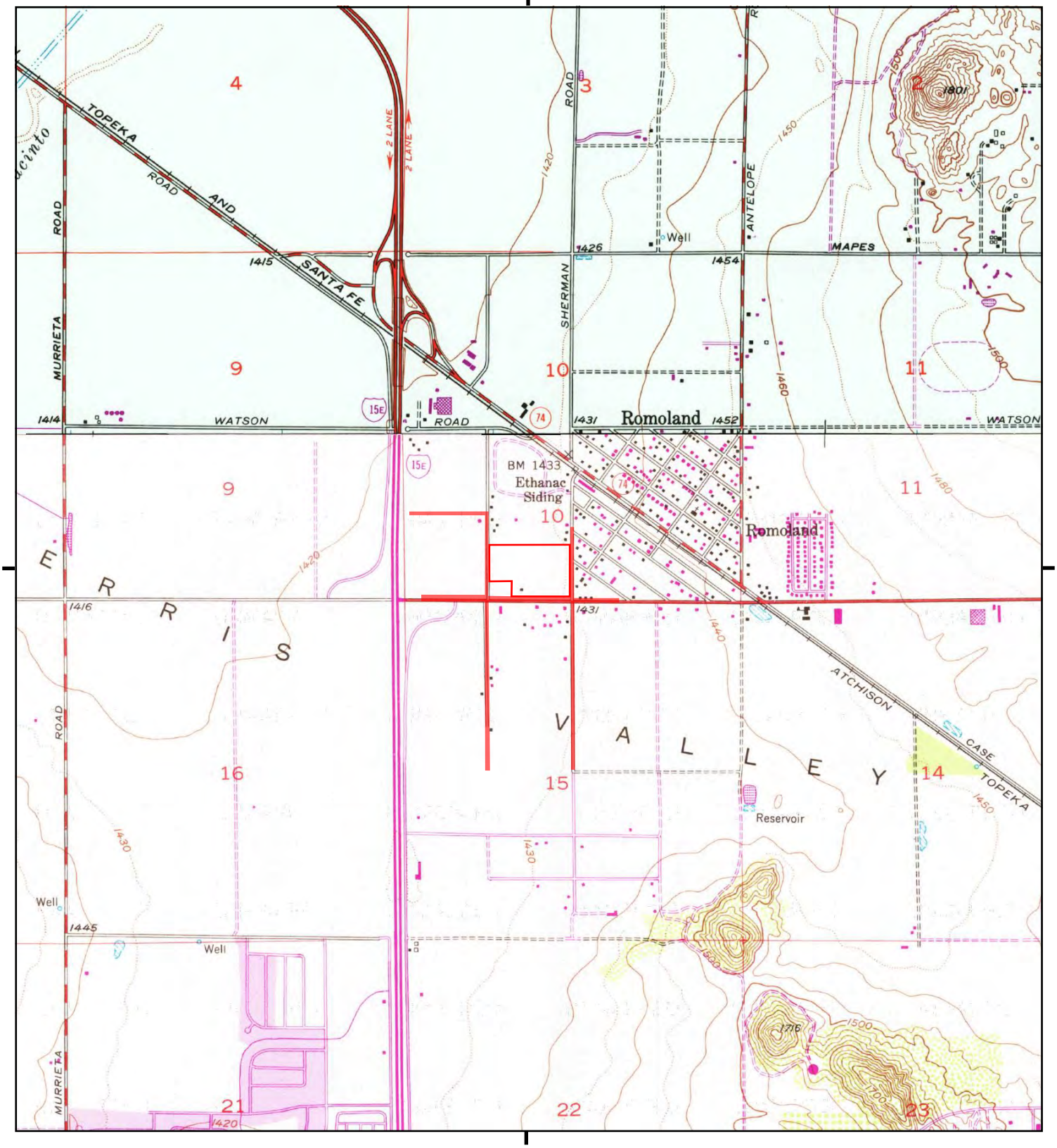
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Romoland, 2012, 7.5-minute
N, Perris, 2012, 7.5-minute

SITE NAME: Hillwood Ethanac
ADDRESS: Ethanac Road and Sherman Road
Sun City, CA 92585
CLIENT: GeoSyntec Consultants

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

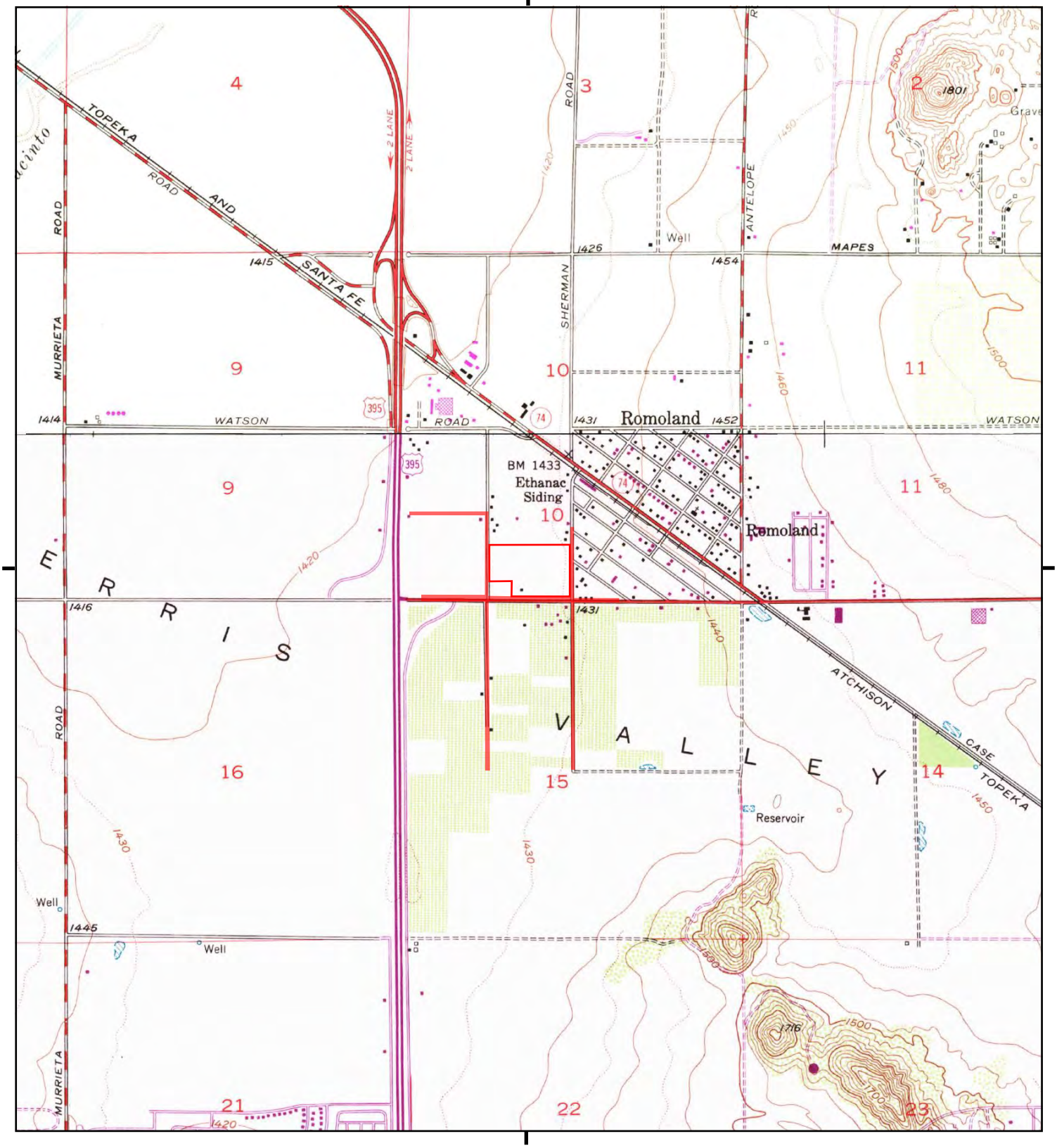
TP, Romoland, 1979, 7.5-minute
N, Perris, 1979, 7.5-minute

SITE NAME: Hillwood Ethanac
ADDRESS: Ethanac Road and Sherman Road
Sun City, CA 92585
CLIENT: GeoSyntec Consultants

N

Historical Topo Map

1973



This report includes information from the following map sheet(s).

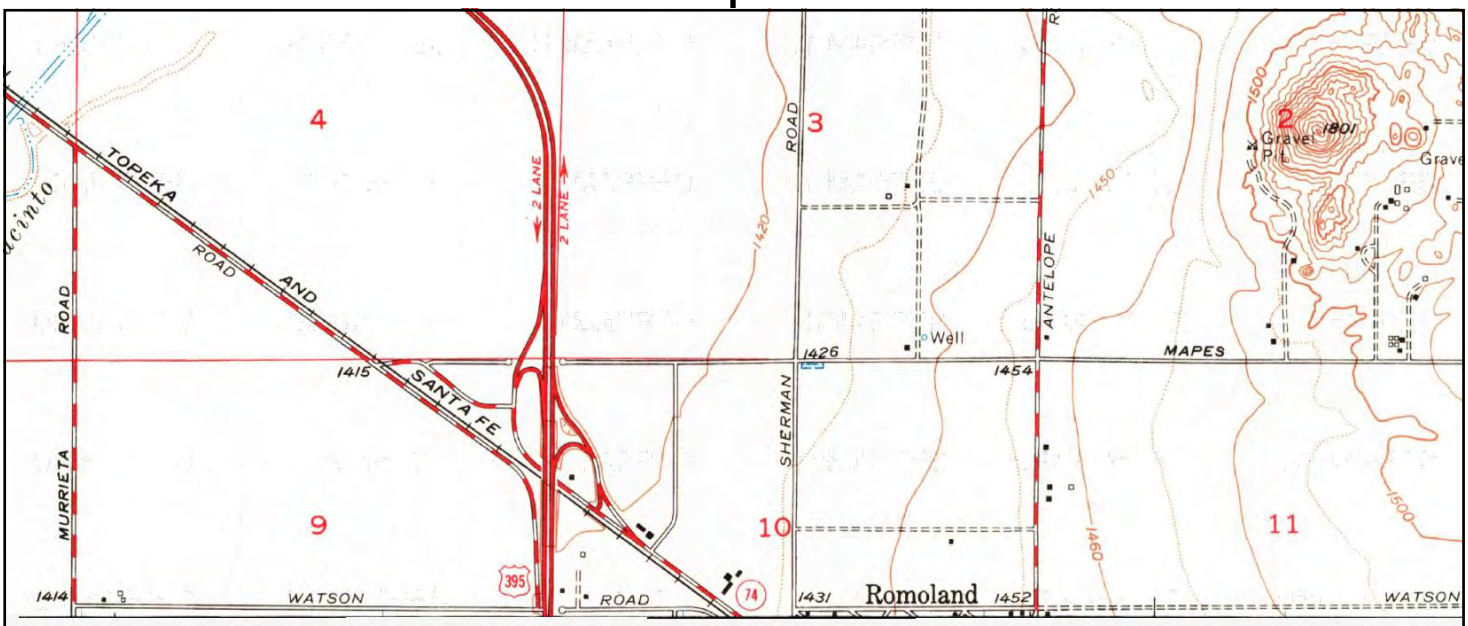
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Romoland, 1973, 7.5-minute
N, Perris, 1973, 7.5-minute

SITE NAME: Hillwood Ethanac
ADDRESS: Ethanac Road and Sherman Road
Sun City, CA 92585
CLIENT: GeoSyntec Consultants

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

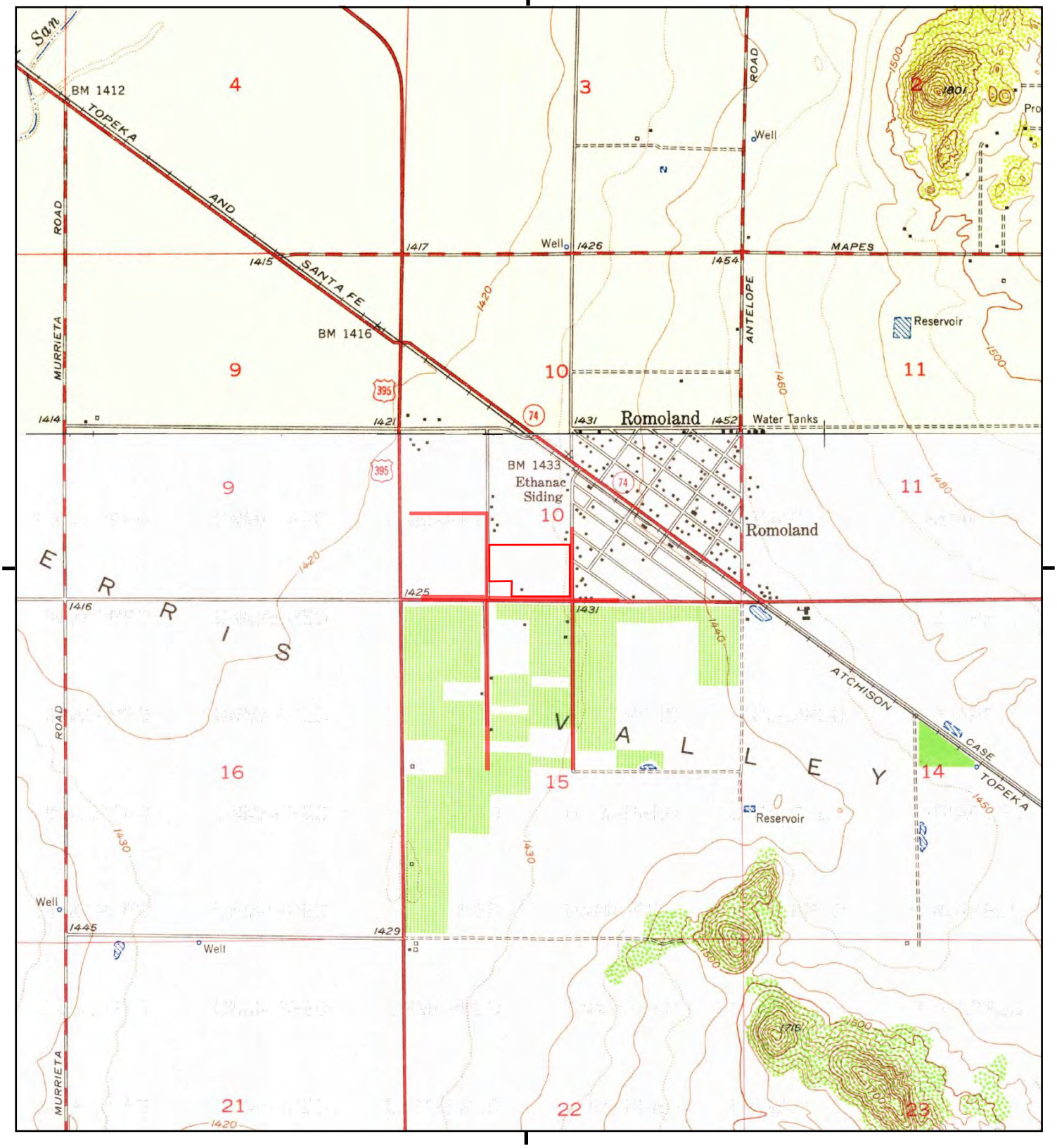
N, Perris, 1967, 7.5-minute

SITE NAME: Hillwood Ethanac
ADDRESS: Ethanac Road and Sherman Road
Sun City, CA 92585
CLIENT: GeoSyntec Consultants

N

Historical Topo Map

1953



This report includes information from the following map sheet(s).

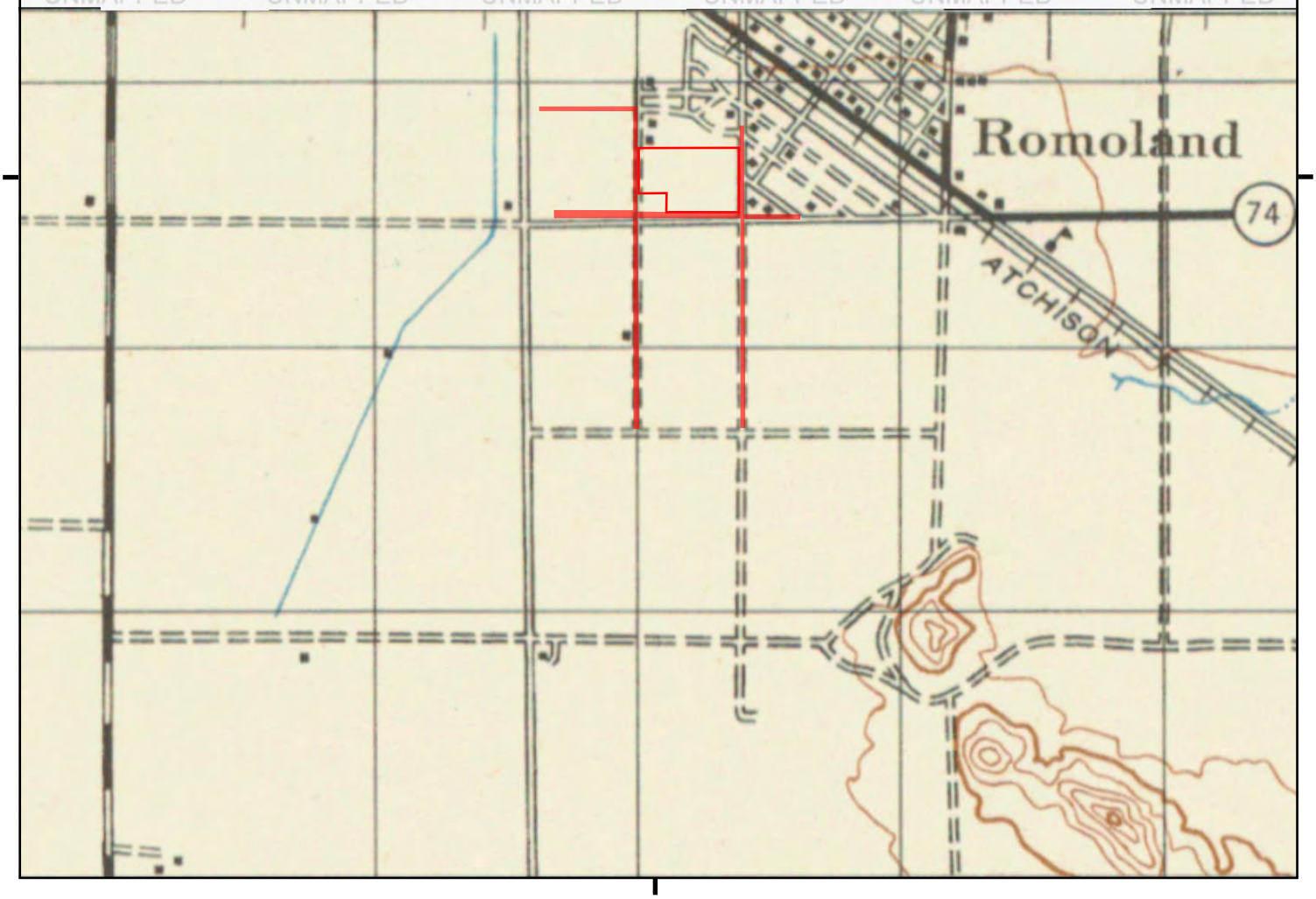
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Romoland, 1953, 7.5-minute
N, Perris, 1953, 7.5-minute

SITE NAME: Hillwood Ethanac
ADDRESS: Ethanac Road and Sherman Road
Sun City, CA 92585
CLIENT: GeoSyntec Consultants

N



This report includes information from the following map sheet(s).

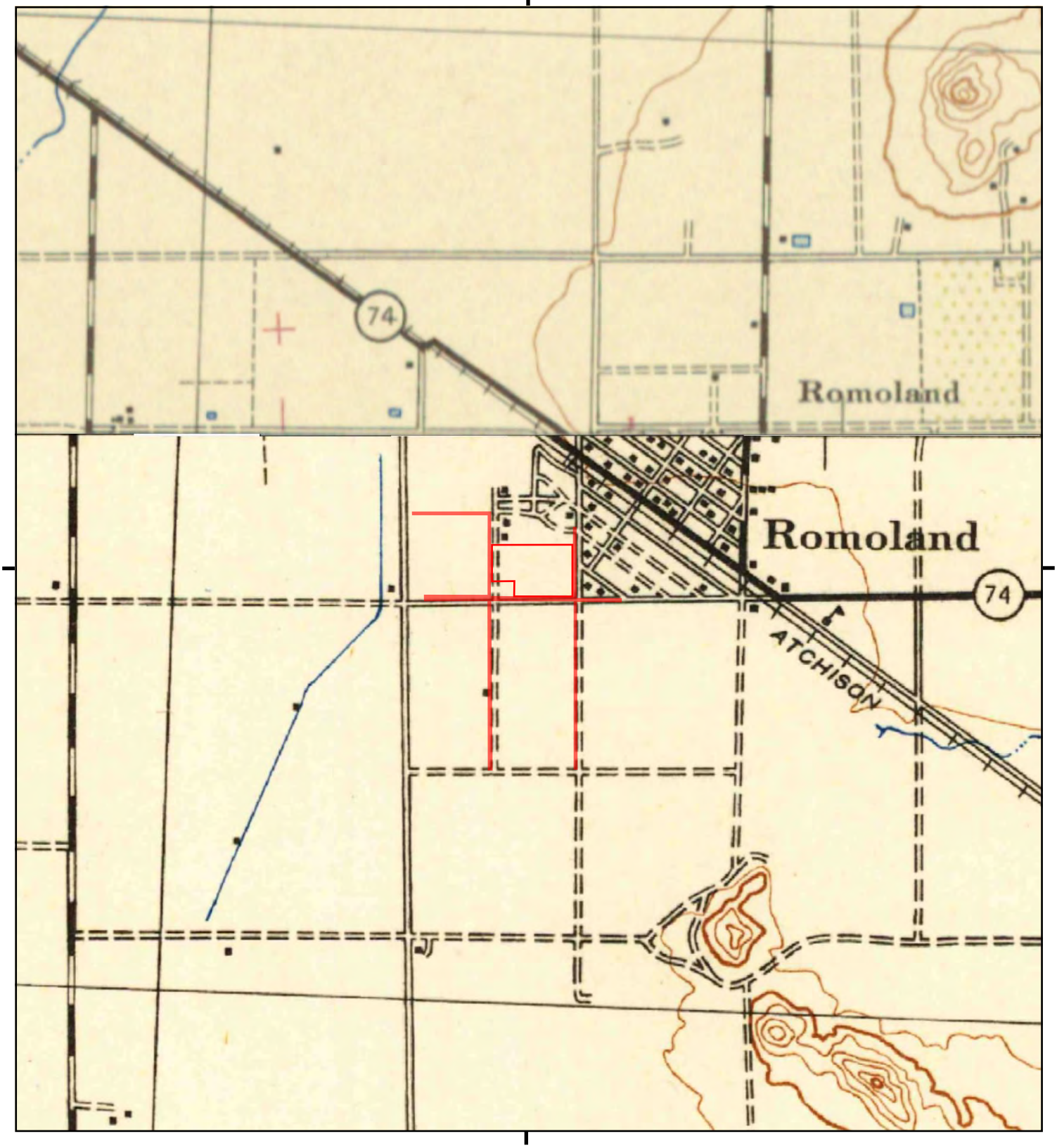
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, MURRIETA, 1947, 15-minute

SITE NAME: Hillwood Ethanac
ADDRESS: Ethanac Road and Sherman Road
Sun City, CA 92585
CLIENT: GeoSyntec Consultants

N



This report includes information from the following map sheet(s).

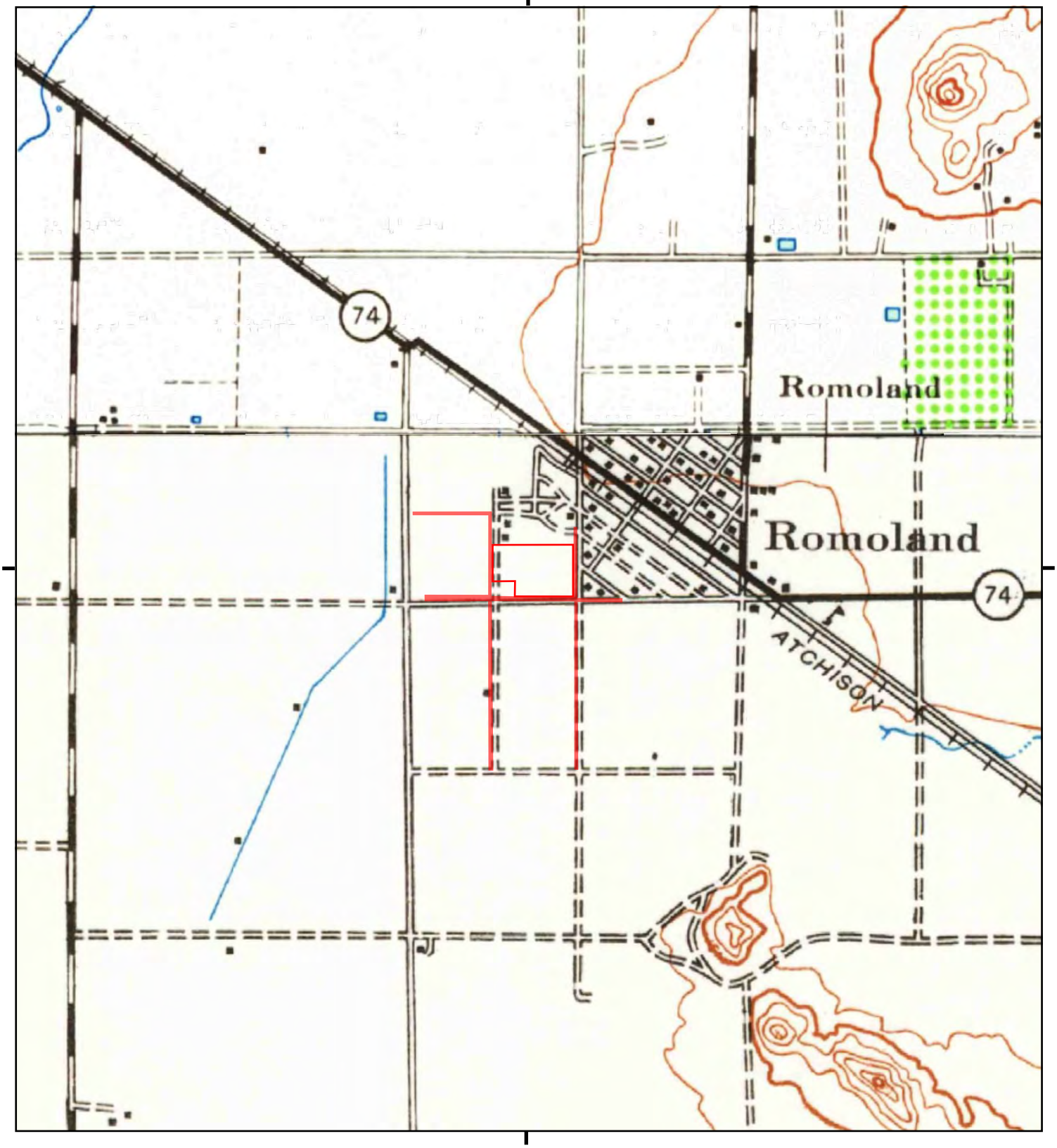
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Murrieta, 1943, 15-minute
N, PERRIS, 1943, 15-minute

SITE NAME: Hillwood Ethanac
ADDRESS: Ethanac Road and Sherman Road
Sun City, CA 92585
CLIENT: GeoSyntec Consultants

N



This report includes information from the following map sheet(s).

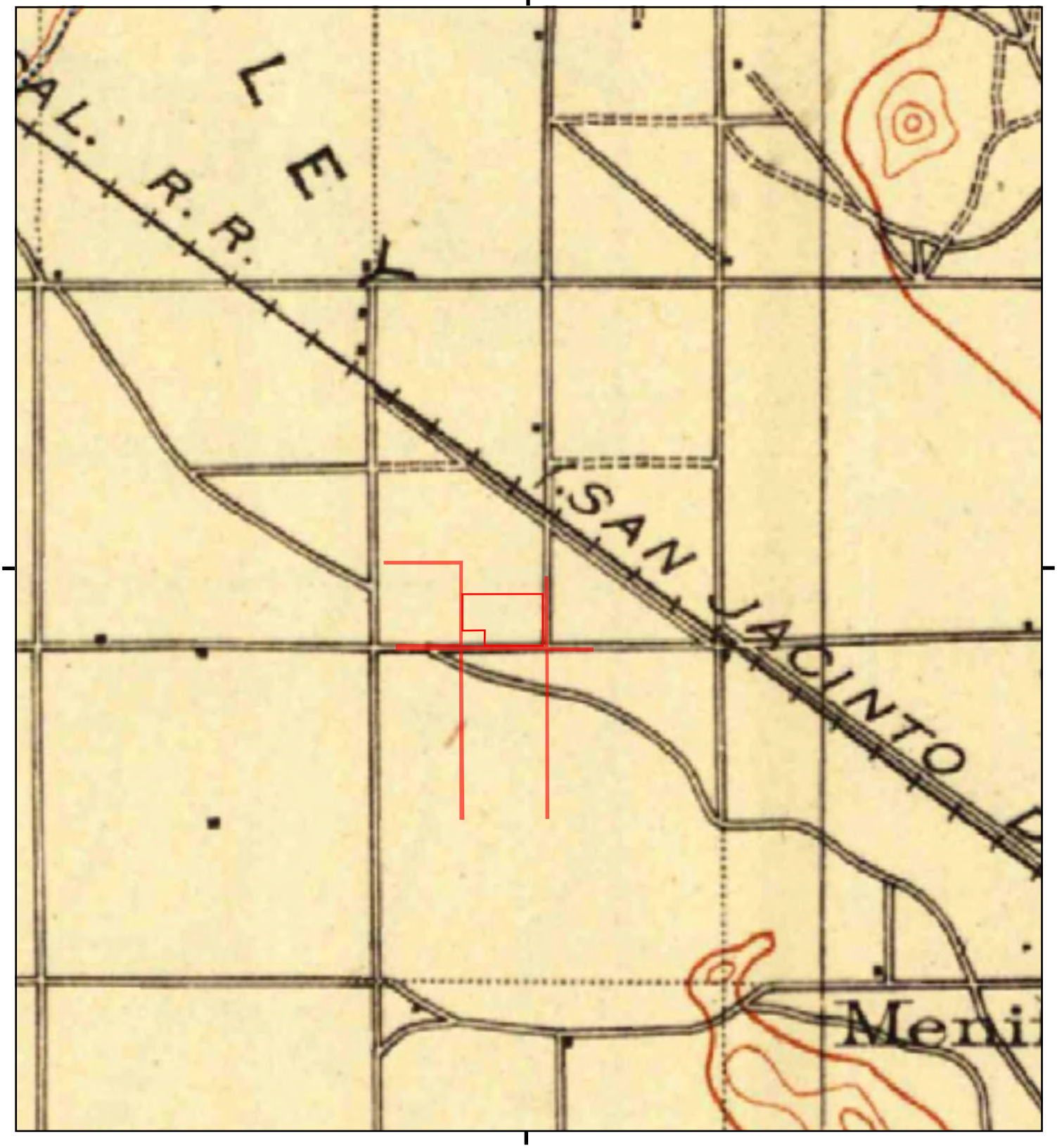
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Murrieta, 1942, 15-minute
N, Perris, 1942, 15-minute

SITE NAME: Hillwood Ethanac
ADDRESS: Ethanac Road and Sherman Road
Sun City, CA 92585
CLIENT: GeoSyntec Consultants

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Elsinore, 1901, 30-minute

SITE NAME: Hillwood Ethanac
ADDRESS: Ethanac Road and Sherman Road
Sun City, CA 92585
CLIENT: GeoSyntec Consultants

N

Hillwood Ethanac
Ethanac Road and Sherman Road
Sun City, CA 92585

Inquiry Number: 7169074.5
November 22, 2022

The EDR-City Directory Image Report

EDR® Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report 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 Report includes a search of available city directory data at 5 year intervals.

RECORD SOURCES

EDR's Digital Archive combines historical directory listings from sources such as Cole Information and Dun & Bradstreet. These standard sources of property information complement and enhance each other to provide a more comprehensive 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. Reproduction of City Directories without permission of the publisher or licensed vendor may be a violation of copyright.

Data by infoUSA®

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	Target Street	Cross Street	Source
2017	☑	☐	EDR Digital Archive
2014	☑	☐	EDR Digital Archive
2010	☑	☐	EDR Digital Archive
2005	☑	☐	EDR Digital Archive
2000	☑	☐	EDR Digital Archive
1995	☑	☐	EDR Digital Archive
1992	☑	☐	EDR Digital Archive
1990	☑	☐	Haines Criss-Cross Directory
1985	☑	☐	Haines Criss-Cross Directory
1980	☑	☐	Haines Criss-Cross Directory
1976	☑	☐	Haines Criss-Cross Directory
1971	☐	☐	Haines Criss-Cross Directory

FINDINGS

TARGET PROPERTY STREET

Ethanac Road and Sherman Road
Sun City, CA 92585

Year	*CD Image*	*Source*	
ETHANAC RD			
2017	pg A1	EDR Digital Archive	
2014	pg A3	EDR Digital Archive	
2010	pg A6	EDR Digital Archive	
2005	pg A9	EDR Digital Archive	
2000	pg A12	EDR Digital Archive	
1995	pg A14	EDR Digital Archive	
1992	pg A16	EDR Digital Archive	
1990	pg A18	Haines Criss-Cross Directory	
1985	pg A20	Haines Criss-Cross Directory	
1980	pg A22	Haines Criss-Cross Directory	
1976	pg A25	Haines Criss-Cross Directory	
1976	pg A26	Haines Criss-Cross Directory	
1971	-	Haines Criss-Cross Directory	Street not listed in Source
SHERMAN RD			
2017	pg A2	EDR Digital Archive	
2014	pg A4	EDR Digital Archive	
2010	pg A7	EDR Digital Archive	
2005	pg A10	EDR Digital Archive	
2000	pg A13	EDR Digital Archive	
1995	pg A15	EDR Digital Archive	
1992	pg A17	EDR Digital Archive	
1990	pg A19	Haines Criss-Cross Directory	
1985	pg A21	Haines Criss-Cross Directory	
1980	pg A23	Haines Criss-Cross Directory	
1980	pg A24	Haines Criss-Cross Directory	
1976	pg A27	Haines Criss-Cross Directory	

FINDINGS

Year	***CD Image***	***Source***	
1971	-	Haines Criss-Cross Directory	Street not listed in Source

FINDINGS

CROSS STREETS

No Cross Streets Identified

City Directory Images

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

ETHANAC RD 2017

26481	RUIZ, ROBERTO
27271	AGAPE AUTOBODY & PAINT
	AIR & HOSE SOURCE
	TOP TECH AUTO & SONS
	UHAUL
27381	SAFWAY SERVICES
27391	ARCOS, CELESTINO
27411	CAMBEROS SMOG
	CHANEYS CERTIFIED AUTO
	CHANEYS CERTIFIED AUTO REPAIR
27451	DERAS, VERONICA
27546	VALDIVIA, MARVIN
27555	GODINA, ALEJO
27556	BLACKWOOD, GEORGE F
27575	JONES, LINDA S
27625	TUTTLE, PEGGY J
27686	POSTEL, EUGENE
27765	SMITH, RUSSELL T
27775	ADAMCEWICZ, MARJORIE T
27789	COWL, DAVID F
27805	CAMPOS, VANESSA
27812	HOUCHIN, VELMA M
27861	E & E DRYWALL
	PEREZ, ELISEO
27912	GONZALEZ, TERESA
27915	GARIBAY, HECTOR C

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

SHERMAN RD 2017

23751	REED, JAMIE R
23761	CORDOVA, JAIME M
24448	SANDOVAL, JESUS
25020	COLEMAN, WADE A
25040	SEVILLA, JOSE
25100	DUNCAN, SCOTT L
25146	PATRICK, JAMES
25186	ANGUIANO, L
25210	MORA, ALEJANDRO
25250	SANDERS, JAMES L
25283	UPS
25290	BARNETT, LOURNA L
25340	LICEA, JOSE A
25450	SANDOVAL, MARIA
25676	PALMA, ADELA P
25685	JN GREASE SERVICE
25698	LEON, SAMUEL L
25870	HUFF, JOHN
25898	MIRELES, MINERVA M
25908	WAUGH, JACOB
25930	SALAZAR, MAXIMILIAN
25940	SHARP, JEANETTE J
25962	LACSON, RODOLFO G
26061	TEJADA, SAMUEL I
26105	PACIFIC READY MIX
26227	NORTH COUNTY SAND & GRAVEL
26510	NUTTER, ARNOLD G
26520	HOGANSON, ALVIN L
26551	HOOSON, JOSEPH L
26580	INGOLD, HARLEY E
26590	INGOLD, HUBERT H
26610	PARSON, LEROY L
26680	RHYNARD, ADAM
26730	OROZCO, SALVADOR
26860	MCCOY, KATHLEEN A
26865	CRAIG, ELEANOR G
26880	MULLANEY, MIRIAM A
26900	GARDINER, WAYNE A
27625	MENIFEE UNION SD

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

ETHANAC RD 2014

26481	RUIZ, ROBERTO
27271	AIR & HOSE SOURCE
	AIR & HOSE SOURCE INC
	TOP TECH AUTO & SONS
	TOP TECH AUTO REPAIR CENTER
	UHAUL
27381	RILEY, DAN
	SAFWAY SERVICES
27391	ARCOS, CELESTINO
27411	CHANEYS CERTIFIED AUTO REPAIR
27451	CARDENAS, JOSE A
	SHELTONS GOLF CARS
	VILLANUEVA, MARIA
27471	OCCUPANT UNKNOWN,
27491	TIRE STOP & RECYCLING
27546	PENUNURI, JACK
27555	GODINA, ALEJO
	PONCE, MIRIAM
27556	BLACKWOOD, GEORGE F
27575	LINDA, JONES
27625	TUTTLE, PEGGY J
27636	DZIEDZICKIE, CHAD
27686	WOODS, THOMAS R
27765	CONNORS, MEREDITH J
27775	ADAMCEWICZ, MARJORIE T
27789	WILLIAMS, ADRIAN
27793	OCCUPANT UNKNOWN,
27805	OCCUPANT UNKNOWN,
27812	HOUCHIN, VELMA M
27861	E & E DRYWALL
	PEREZ, ELISEO
27912	QUEZADA, MIRSLA
27915	VELASQUEZ, JUAN M

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

SHERMAN RD 2014

23751 REED, JAMIE R
23761 CORDOVA, JAIME M
23781 OCCUPANT UNKNOWN,
24448 SANDOVAL, JESUS
24964 OCCUPANT UNKNOWN,
25020 COLEMAN, WADE A
25040 DAY, JOHN J
25080 OCCUPANT UNKNOWN,
25100 DUNCAN, SCOTT L
25146 PATRICK, JAMES
25186 OCCUPANT UNKNOWN,
25210 PACHECO, TELESFORO
25250 OCCUPANT UNKNOWN,
25340 LICEA, JOSE A
25450 SANDOVAL, M
25676 LOYA, A P
25685 JN GREASE SERVICE
25688 OCCUPANT UNKNOWN,
25698 MUNOZ, OSCAR
25809 PEPIN, MARYELLEN
25846 OCCUPANT UNKNOWN,
25870 HUFF, DOROTHY A
25898 OCCUPANT UNKNOWN,
SANCHEZ, LUIS A
25908 OCCUPANT UNKNOWN,
25920 OCCUPANT UNKNOWN,
25930 SALAZAR, MAXIMILIAN
25940 OCCUPANT UNKNOWN,
25962 OCCUPANT UNKNOWN,
26061 TEJADA, SAMUEL I
26105 PACIFIC READY MIX
26227 NORTH COUNTY SAND & GRAVEL
26500 SERRANO, AMPARO
26510 NUTTER, ARNOLD G
26520 HOGANSON, ALVIN L
26551 HOOSON, JOSEPH L
26580 INGOLD, HARLEY E
26590 INGOLD, HUBERT H
26610 PARSON, LEROY L
26640 OCCUPANT UNKNOWN,
26680 RHYNARD, ADAM
26730 LEY, SHIRLEY E
26805 LARSON, JAMES O
26860 MCCOY, KATHLEEN A
26865 CRAIG, ELEANOR G
26880 OCCUPANT UNKNOWN,
26900 SMIT, WARREN C
26911 SANCHEZ, DIAOMI
27530 OCCUPANT UNKNOWN,
27625 MENIFEE UNION SD

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

SHERMAN RD 2014 (Cont'd)

27990 LOMA LINDA UNIVERSITY RADIATION MEDI
LOMA LINDA UNIVERSITY RADIOLOGY MEDI

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

ETHANAC RD 2010

26481 RUIZ, ROBERTO
27271 ALICIAS TRUCK & TIRE SUPPLY
REALISTIC AUTOMOTIVE
TOP TECH AUTO & SONS
27381 BURNS, CHRISTINE A
THYSSENKRUPP SAFWAY INC
27391 ARCOS, CELESTINO
27411 CHANEYS CERTIFIED AUTO REPAIR
27451 SHELTONS GOLF CARS
27471 OCCUPANT UNKNOWN,
27491 TIRE SHOP
UHAUL CO
27531 QUICKCOVERSCOM
27555 PONCE, MIRIAM
27556 BLACKWOOD, CHARLIE L
27575 JONES, STEPHEN H
27625 TUTTLE, ROY E
27636 DZIEDZICKIE, TONY J
27686 POSTEL, EUGENE
27765 CONNORS, MICHAEL
27775 OCCUPANT UNKNOWN,
27789 COWL, DAVID F
GARGES TOWING
27793 GAGLIARDI, MICHAEL L
27805 FLAKE, HARVEY A
27812 HOUCHIN, DONALD W
27861 GONZALEZ, ANABEL
27912 GARDNER, TERESA G
27915 OCCUPANT UNKNOWN,

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

SHERMAN RD 2010

23751 REED, JAMIE R
23761 CORDOVA, JAIME
23781 OCCUPANT UNKNOWN,
24448 SANDOVAL, JESUS
24964 OCCUPANT UNKNOWN,
25020 GLORIA COLEMEN MOBIL PET GROMI
OCCUPANT UNKNOWN,
25040 OCCUPANT UNKNOWN,
25080 TATE, DAVID P
25100 GRAFF, ERIC
25146 PATRICK, LAWANA N
25186 VASQUEZ, RENE
25210 ALVAREZ, MARTHA
25250 DOCHERTY, DANIEL J
25283 UPS
25290 RIVERA, FEY C
25340 OCCUPANT UNKNOWN,
25450 OUTLAW GUNITE
TAYLOR, SHAWN
25632 ICHIHASHI, YOSHISUKE
25685 C W COLE FABRICATORS
25698 PERRY, ANN
25809 KARNES, ERIN
25846 OCCUPANT UNKNOWN,
25898 HERNANDEZ, VERONICA
OCCUPANT UNKNOWN,
25908 CANCHOLA, CARLOS
25920 TODORAN, VASILE
25930 SALAZAR, MAXIMILIAN
25940 OCCUPANT UNKNOWN,
25962 BYLER, GARY W
26026 MCMILLEN, CATHY L
NEILLS CONTRACTING
26061 MALDONADO, JOSEFINA
PERALTA, MARIA E
26105 PACIFIC GUNITE INC
PACIFIC READY MIX
PRESTIGE GUNITE OF CALIFORNIA
26227 NORTH COUNTY SAND & GRAVEL
26500 SERRANO, AMPARO
26510 BURNETT, GENE A
PACIFIC MADISON LUMBER CO
26520 HOGANSON, ALVIN L
26551 MEJIA, RAMIRO A
26580 INGOLD, HARLEY E
26590 INGOLD, HUBERT H
26610 PARSON, LEROY L
26680 HITCHENS, GEORGE D
26730 SCHMID, JERRY D
26805 OCCUPANT UNKNOWN,

SHERMAN RD 2010 (Cont'd)

26860 ORME, RONALD
26865 CRAIG, ELEANOR G
26880 COFFMAN, JUDITH
26900 OCCUPANT UNKNOWN,
W G LANDSCAPING
26911 SERRANO, FABIAN
27530 OCCUPANT UNKNOWN,
27625 K L NEFF INC
27990 LOMA LINDA FACULTY MEDICAL
LOMA LINDA UNIVERSITY MED CTR
LOMA LINDA UNIVERSITY RDLGY
MONTE VISTA MEDICAL

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

ETHANAC RD 2005

26481	RUIZ, ROBERTO
27271	PARADISE POOLS & SPAS
27381	BURNS, CHRISTINE
27391	ARCOS, CELESTINO
27411	CHANEYS CERTIFIED GENERAL AUTO REPAI
27471	JACKSON SERVICES
	JACKSON TIRE
	OCCUPANT UNKNOWN,
27531	QUICK COVERS
	RUBEN GONZALEZ
27546	ANTUNA, LUIS A
27555	GODINA, ALEJO
27556	BLACKWOOD, GEORGE F
27575	JONES, RAYMOND F
27606	OCCUPANT UNKNOWN,
27614	OCCUPANT UNKNOWN,
27625	TUTTLE, ROY E
27636	DZIEDZICKIE, TONY J
27686	EUBANKS, LEE E
27765	CONNORS, MICHAEL
27789	COWL, DAVID F
	CUSTOM STORAGE SHEDS
	KONTRACT INTERIORS
	R C CUSTOM SHEDS
27793	OCCUPANT UNKNOWN,
27805	FLAKE, HARVEY A
27812	HOUCHIN, DONALD W
27861	TRAVELERS REST INC
27912	JARAMILLO, MISAEL
27915	OCCUPANT UNKNOWN,

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

SHERMAN RD 2005

23761 CORDOVA, JAIME
23781 OCCUPANT UNKNOWN,
24448 PATINO, ESTEBAN C
24964 GROTE, ORVILLE W
25020 COLEMAN, WADE A
25040 OCCUPANT UNKNOWN,
25080 TATE, DAVID
25100 OCCUPANT UNKNOWN,
25146 OCCUPANT UNKNOWN,
25186 WOODS, THOMAS A
25210 FOGLEMAN, LOYD A
25250 DOCHERTY, DANIEL A
25283 US PARCEL SERVICE
25290 RIVERA, JOE M
25340 LICEA, JOSE A
25450 OUTLAW GUNITE
WESSELL, STEVEN R
25632 ICHIHASHI, MARIKO M
25676 OCCUPANT UNKNOWN,
25685 RYAN, JEFFERY A
25698 PERRY, ANN
25809 PRIORITY ONE PLUMBING
25846 OCCUPANT UNKNOWN,
25870 OCCUPANT UNKNOWN,
25898 OCCUPANT UNKNOWN,
TORRES, PETE
25920 TODORAN, VASILE
25930 MILLER, R D
25940 ROJO, NORBERTO R
25962 BYLER, GARY W
26061 PERALTA, MARIA
26227 PHILLIPS, LELAND A
PRO WASH CLEANING SYSTEMS
26500 SERRANO, AMPARO
26510 NUTTER, ARNOLD G
PACIFIC MADISON LUMBER CO
26520 HOGANSON, ALVIN L
26551 MEJIA, RAMIRO A
26580 INGOLD, HARLEY E
26590 INGOLD, HUBERT H
26610 PARSON, LEROY
26640 HESS, ROBERT L
26680 HITCHENS, GEORGE D
26730 SCHMID, JERRY D
26805 OCCUPANT UNKNOWN,
26860 BAYT, MICHAEL J
26865 CRAIG, ELEANOR G
26880 COFFMAN, ROBERT C
26900 OCCUPANT UNKNOWN,
26911 SERRANO, HECTOR M

SHERMAN RD 2005 (Cont'd)

27530 OCCUPANT UNKNOWN,
27990 HAYTON BRUCE MD
LOMA LINDA UNIVERSITY HEALTH CARE
QUEST DIAGNOSTICS INC

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

ETHANAC RD 2000

27271	FAMILY AUTO CENTER
	KOHLHAUER JIM FAMILY AUTO CENTER
27411	CHANEYS CERTIFIED AUTO REPAIR
27471	LEE PHILLIPS TIRE SALES
27546	ANTUNA, LUIS A
27555	GODINA, ALEJO
27556	BLACKWOOD, GEORGE F
27606	OCCUPANT UNKNOWN,
27625	TUTTLE, ROY
27636	DZIEDZICKIE, TONY
27686	EUBANKS, LEE
27789	BROWN, M G
	TURNING POINT CHRISTIAN CENTER
27793	YOUNG, CLYDE
27861	EVANS, ROBERT
27912	OCCUPANT UNKNOWN,
27915	CERVANTES, JOSE D

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

SHERMAN RD 2000

23751	BRANDON, DAVID
23761	OCCUPANT UNKNOWN,
24448	RITTER, ERIC C
24964	GROTE, ORVILLE W
25020	COLEMAN, WADE A
25040	DAY, JOHN
25080	BAZE, LARRY F
25100	DUNCAN, SCOTT L
25146	PATRICK, BOYD
25632	ICHIHASHI, MARIKO
25930	SALAZAR, M
25940	ROJO, N
25962	BYLER, WAYNE
	SOUTHWEST CITY COACH
26021	LOPEZ, LEO
26061	LOPEZ, AURELIO
26227	PHILLIPS, LELAND
26510	NUTTER, ARNOLD
26520	HOGANSON, ALVIN L
26580	INGOLD, HELEN E
26590	INGOLD, HARLEY
26610	VELASCO, JOSE
26640	LAND, JEROME L
26680	HITCHENS, GEORGE
26730	GREEN, LENA E
27990	GIBSON THOMAS E MD
	LOMA LINDA FACULTY MEDICAL GROUP SUN CITY CANCER CARE CENTE
	LOMA LINDA UNIVERSITY RADIATION MEDICINE
	RACINE HAROLD V MD
	SMITHKLINE BEECHAM CLINICAL LABORATORIES
	SUN CITY CANCER CARE CENTER
	UNITED STATES GOVERNMENT VETERANS AFFAIRS DEPARTMENT OF

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

ETHANAC RD 1995

27271 TOPTECH AUTOMOTIVE
27381 PIONEER PLASTERING INC
27411 CHANEYS CERTIFIED AUTO REPAIR
27477 LEE PHILLIPS TIRE SALES
27606 OCCUPANT UNKNOWNN
27614 JONES, DONALD
27625 TUTTLE, ROY
27636 DZIEDZICKIE, TONY
27686 EUBANKS, LEE
27765 ERICKSON, JOLITA

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

SHERMAN RD 1995

23751	JORGENSEN, JOHN
24964	MCKINNEY, VIRGIL P
25080	BLACKBURN, M
25100	CROWE, G R
25146	PATRICK TOOL & MOLD CO
25186	WOODS, THOMAS
25250	DOCHERTY, DANIEL
25290	RIVERA, JOE M
25340	OCCUPANT UNKNOWNN
25846	GUZMAN, MYNOR
25870	THOMAS, SHELLY
25920	OCCUPANT UNKNOWNN
25930	WHITE, HELEN V
26061	KLUS, PAUL
26227	OCCUPANT UNKNOWNN
26510	GLASS, WILBERT E
26520	HOGANSON, ALVIN L
26580	SCROGGINS, JAMES D
26590	DOMENGUEZ, CASEANO
26610	VELASCO, JOSE
26640	THOMAS, SALLY
26680	ELLIS, S
26730	GREEN, LENA E
26805	LARSON, J O
26860	STEFFEY, GEORGE
26865	CRAIG, SHIRLEY E
26880	COFFMAN, MA
26900	SMIT, F D
26911	HORAN, MIKE
27990	LOMA LINDA FACULTY MEDICAL GRP
	SMITH KLINE BEECHAM CLINICAL

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

ETHANAC RD 1992

27271 RELIABLE TIRE&SERV
27381 SHAVER, CURTIS A
27411 CHANEYS AUTO REPAIR
27477 LEE PHILLIPS TIRE

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

SHERMAN RD 1992

25146 PATRICK TOOL&MOLD
26510 GLASS, WILBERT E
26580 INGOLD, HARLEY H
26610 VELASCO, JOSE
26680 ELLIS, S
26730 GREEN, RALPH
26860 STEFFEY, G
26900 SMIT, F D
26911 HORAN, MIKE
27990 SUN CTY CANCER CARE

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

ETHANAC RD 1990

ETHANAC RD 92380
ROMOLAND

RURAL ROUTE 1

25160	★N P I C A	657-1755	9
25245	XXXX	00	
26481	CHAPMAN Mel	657-8644	6
27271	CONTOS Goodyear	929-1615	6
	★GOODYEAR TIRE CNTOS	657-2183	6
27278	BYRNS Robt	657-5384	
27351	MASLOWSKI Lorraine	657-0416	9
	MASLOWSKI Matthew	657-0416	
27364	XXXX	00	
27381	MUSE Carolyn	657-8734	+0
27391	HADLEY Mark	943-0673	9
27411	★CHANEYS GN AUTO RPR	657-3466	
27471	XXXX	00	
27512	XXXX	00	
27514	XXXX	00	
27516	XXXX	00	
27536	SMITH Carrie	657-5854	+0
27546	DEWITT Floyd F	657-6051	
27556	XXXX	00	
27606	BLACKWELL G H	657-1046	
27614	XXXX	00	
27625	TUTTLE Roy	657-4181	
27636	XXXX	00	
27686	EUBANKS Lee	657-4920	1
27765	XXXX	00	
27789	CRATERCLAYTON D	657-1933	+0
27793	HAWKINS John	943-3832	+0
	ROUSSELL J A Rav	657-6736	+0
27812	XXXX	00	
27861	KEARNEY Barbara	657-2093	6
	KEARNEY Jas	657-2093	
27912	WILLIAMS P	657-2471	
27995	SHAFFER J D	657-5039	

★ 3 BUS 30 RES 5 NEW

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

SHERMAN RD 1990

SHERMAN RD 92380
ROMOLAND

RURAL ROUTE 4

23751	SIMONS Emily	943-2255 5
	SIMONS Geo Wm	943-2255
23758	XXXX	00
23761	HARDING Otis	657-1744 9
23781	XXXX	00
24964	XXXX	00
25040	MARSHALL Dawna	657-9794
	MARSHALL Robt	657-9794
25080	BLACKBURN M Gene	657-3697 6
25146	XXXX	00
25340	FREDERICK Jeanette	943-0036 9
	PERRY Judith	943-8640 9
25450	XXXX	00
25632	ICHIHASHI Mariko	657-3751
25641	XXXX	00
25685	XXXX	00
25698	XXXX	00
25775	**★SUN CTY BL SPLY INC**	**657-6089 +0**
25809	ODONNELL Liz	943-1690 +0
25846	XXXX	00
25898	MATOTT K	943-2059 +0
25908	XXXX	00
25920	GREWER Gary	943-1415
	GREWER Laura	943-1415
25930	WHITE Helen	657-9495 2
25940	BOSCHE Donna	657-0457 7
25962	GILBREATH Geo	943-1904 +0
26061	DALLMAN Lowell D	657-7774
	DALLMAN M	657-0022 2
	WHITE Theresa	943-2604 9
26227	XXXX	00
26510	GLASS W E	679-9568 2
26580	INGOLD H E	679-7512
	INGOLD H H	679-7512
26610	VELASCO Jose	672-2665 9
26640	XXXX	00
26680	HORNSVELD Paul	672-2270 9
	HORNSVELD Shelley	672-2270
26730	GREEN Lena	672-1369 9
26805	ABEL Eleanor M	679-3856 +0
	FLORES Kathy	679-6995
	FLORES Ralph	679-6995
26860	STEFFEY E	672-4482
	STEFFEY G	672-4482
26865	XXXX	00
26900	SMIT Frederick D	672-3034 7
26911	YARBER Nicholas	679-5311
27990	**★GODFREY THOMAS E MD**	**672-1931 +0**
	★HILLIARD DENNIS MD	**672-1931 +0**
	★LOMA LND FCLTY MDCL	**672-1931 9**
	★SUN CTY CANCER CARE	**672-1931 +0**

ZIP CODE 92355
SUN CITY

30665	BOTTOMLEY Wm	672-1393 5
30731	CROOM Michael	672-2478 5
32165	XXXX	00

★ 5 BUS 49 RES 8 NEW

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

ETHANAC RD 1985

ETHANAC RD 92380
ROMOLAND

RURAL ROUTE 1

25160	RODEFFER INVSTMNTS	657-1755	+5
	RODEFFER WHOLESALE	657-1881	2
25245	XXXX	00	
27271	XXXX	00	
27278	BYRNS ROBT	657-5384	
27351	XXXX	00	
27364	XXXX	00	
27391	XXXX	00	
27411	CHANEYS GN AUTO RPR	657-3466	8
27471	LEE PHILLIPS TIRE	657-0425	+5
27512	XXXX	00	
27516	XXXX	00	
27524	XXXX	00	
27531	XXXX	00	
27536	LOEFFLER ED	657-2646	+5
27546	DEWITT FLOYD F	657-6051	9
27556	XXXX	00	
27606	BLACKWELL G H	657-1046	0
27614	XXXX	00	
27625	TUTTLE ROY	657-4181	
27636	BIERWORTH CHAS	657-9457	3
27686	EUBANKS LEE	657-4920	1
27765	XXXX	00	
27789	ROUSSELL J A REV	657-6736	2
27812	XXXX	00	
27861	XXXX	00	
27912	WILLIAMS P	657-2471	
27995	SHAFFER J D	657-5039	8

★ 4 BUS 24 RES 3 NEW

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

SHERMAN RD 1985

SHERMAN RD 92380
ROMOLAND

RURAL ROUTE 1

23751	SIMONS GEO WM	943-2255	+5
23758	XXXX	00	
23781	XXXX	00	
25210	FOGLEMAN RAY	657-4308	+5
25250	FLYGT CORP	943-1668	+5
25340	HARRIS RICHARD A	657-1074	4
	HARRIS RICHARD J	657-1030	+5
25450	MURDOCK ARLIE	657-1395	4
25632	ICHIHASHI MARIKO	657-3751	
25846	BERGINE MATTHEW	657-0444	+5
25870	XXXX	00	
25898	STERLING GEO T	657-2969	
25908	ARMSTRONG PERRY	657-7709	+5
25920	GREWER GARY	943-1415	+5
25930	WHITE HELEN	657-9495	2
25940	WHITE DAVID	657-8103	2
25962	XXXX	00	
26061	DALLMAN LOWELL D	657-7774	
	DALLMAN M	657-0022	2
	MEADOWS DENISE	657-8750	+5
	TENORIO FRED	657-3074	+5
26227	XXXX	00	

★ 1 BUS 21 RES 9 NEW

SHERMAN RD 92381
SUN CITY

26510	GLASS W E	679-9568	2
26580	INGOLD H H	679-7512	2
26640	YOUNG JERRY	679-8945	2
26730	GALLENTINE CONWAY D	679-3308	9
26805	ABEL JOHN	679-0771	+5
	FLORES RALPH	679-6995	+5
26860	LINKER A E	679-6700	9
26900	SAUNDERS MARK R	679-9455	0
26911	YARBER NICHOLAS	679-5311	9
30665	BOTTOMLEY WM	672-1393	+5
30731	CROOM MICHAEL	672-2478	+5
32165	GIBBENS EDGAR B	672-2429	+5

★ 0 BUS 12 RES 5 NEW

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

ETHANAC RD 1980

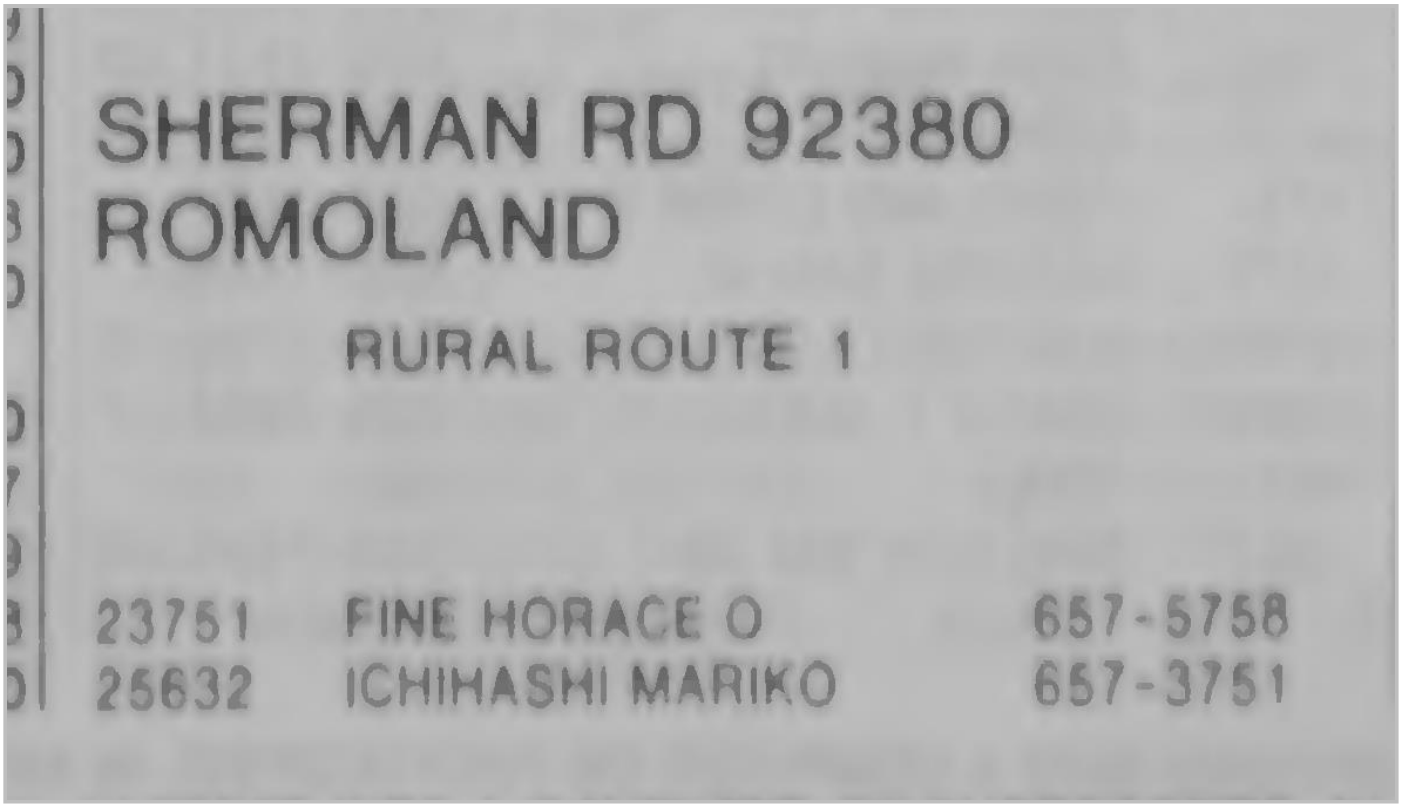
ETHANAC RD 92380
ROMOLAND

RURAL ROUTE 1

25245	LYDON JEAN	657-8340	9
27271★	**SUN CITY TIRE REPR**	**657-2183**	**8**
★	**WHOLESALE TIRE SPLY**	**657-1113**	**+0**
27278	BYRNS ROBT	657-5384	5
27364	XXXX	00	
27391	JONES OLICE E REV	657-3549	
27411★	**CHANEYS GN AUTO RPR**	**657-3466**	**8**
	OWEN FLOYD P	657-4451	8
27471★	**BERTS AUTO REPAIR**	**657-8032**	**+0**
★	**ECOLOGY TIRE SERV**	**657-8032**	**+0**
★	**PHILLIPS L EXXON**	**657-8032**	**+0**
27512	SPICHER S	657-9639	+0
27516	BLAIR EVELYN	657-4977	
27524	NUNEZ JOE JR	657-1382	+0
27531	XXXX	00	
27546	DEWITT FLOYD F	657-6051	9
27556	BLACKWOOD GEO F	657-7142	6
27606	BLACKWELL G H	657-1046	+0
27625	TUTTLE ROY	657-4181	
27765★	**BOBS BODY SHOP**	**657-5536**	**8**
	SEWARD MICKEY	657-6666	9
27789	PAYNE R M	657-6736	6
27812	XXXX	00	
27861	XXXX	00	
27912	WILLIAMS P	657-2471	
27995	SHAFFER J D	657-5039	8
★	7 BUS 19 RES	7 NEW	

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

SHERMAN RD 1980

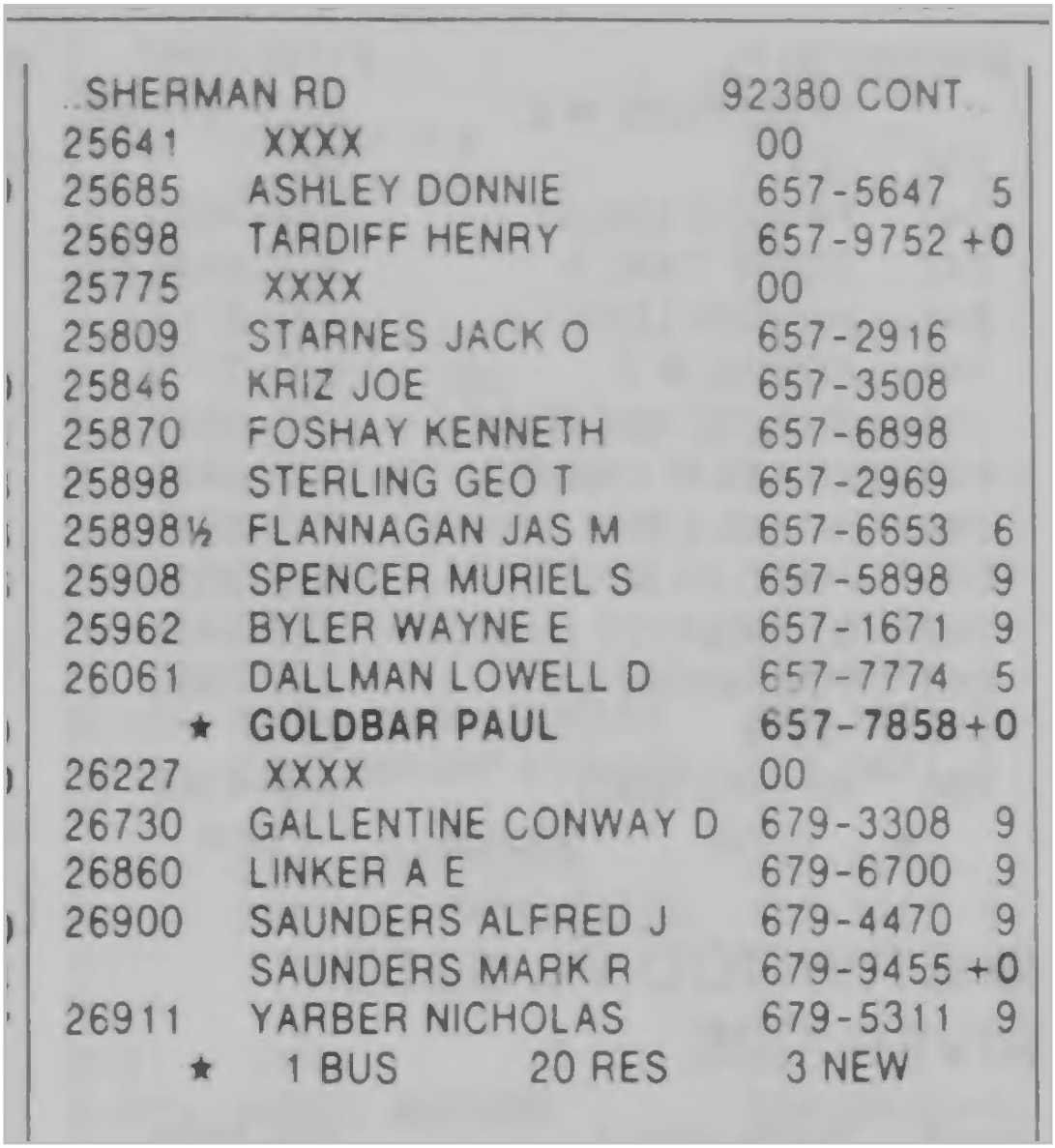

SHERMAN RD 92380
ROMOLAND

RURAL ROUTE 1

23751 FINE HORACE O 657-5758
25632 ICHIHASHI MARIKO 657-3751

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

SHERMAN RD 1980



..SHERMAN RD		92380 CONT..	
25641	XXXX	00	
25685	ASHLEY DONNIE	657-5647	5
25698	TARDIFF HENRY	657-9752	+0
25775	XXXX	00	
25809	STARNES JACK O	657-2916	
25846	KRIZ JOE	657-3508	
25870	FOSHAY KENNETH	657-6898	
25898	STERLING GEO T	657-2969	
25898½	FLANNAGAN JAS M	657-6653	6
25908	SPENCER MURIEL S	657-5898	9
25962	BYLER WAYNE E	657-1671	9
26061	DALLMAN LOWELL D	657-7774	5
★	GOLDBAR PAUL	657-7858	+0
26227	XXXX	00	
26730	GALLENTINE CONWAY D	679-3308	9
26860	LINKER A E	679-6700	9
26900	SAUNDERS ALFRED J	679-4470	9
	SAUNDERS MARK R	679-9455	+0
26911	YARBER NICHOLAS	679-5311	9
★	1 BUS 20 RES	3 NEW	