

Reclamation Plan
For the
Lone Pine Canyon Road Quarry

Submitted to:

San Bernardino County
Land Use Services Department
Geology and Mining Division
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- A. Plot Plan & Reclamation Plan Drawings
- B. Habitat and Jurisdictional Assessment
- C. Slope Stability Study Report

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Content Requirement	Location Reference	
	Section/ Appendix	Page(s) No.
PRC 2772 (c)		
Operator Name and address.	3.1.4	21
Names and addresses of persons designated as an agent for the service of process.	3.1.5	21
Quantity and type of minerals to be mined.	3.2	21
Proposed dates of mine initiation and termination.	3.2.2, 3.2.3	21
Maximum anticipated depth of the surface mining.	3.2.6	22
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Time schedule that provides for the completion of surface mining on each segment of the mined lands so that reclamation can be initiated at the earliest possible time on portions of the mined lands not subject to further disturbance by mining.	4.1	28
Proposed use or potential uses of the mined lands.	4.2	29
Evidence that all owners of a possessory interest in the land have been notified of the proposed use or potential uses.	3.1	21
Assessment of the effect of implementation of the reclamation plan on future mining in the area.	4.10	38
Statement that the person submitting the reclamation plan accepts responsibility for reclaiming the mined lands in accordance with the reclamation plan.	6.0	42

Description of the way reclamation, adequate for the proposed use or potential uses, will be accomplished. To include:		
a. Description of how known contaminants will be controlled, and mining waste will be disposed.	3.5	24
b. Description of the way affected streambed channels and streambanks will be rehabilitated to minimize erosion and sedimentation.	4.3	29
	4.4	30
Description of the general geology in the project area and the specific geology of the project.	2.4	8
Other information required.		
PRC 2772.1		
Information, document, or component of a document prepared as part of a permit application for the surface mining operation or as part of an environmental document prepared for the project shall be incorporated into the reclamation plan or amendment used to satisfy the requirements shall be referenced by Appendix and page number.	N/A	
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(1) The environmental setting of the site of operations and the effect that possible alternate reclaimed site conditions may have upon the existing and future uses of surrounding lands.	2.0	3
(2) The public health and safety, considering the degree and type of present and probable future exposure of the public to the site.	4.9	38
(3) The designed steepness and proposed treatment of the mined lands' final slopes shall take into consideration the physical properties of the slope material, its probable maximum water content, landscaping requirements, and other factors. In all cases, reclamation plans shall specify slope angles flatter than the critical gradient for the type of material involved. Whenever final slopes approach the critical gradient for the type of material involved, regulatory agencies shall require an engineering analysis of the slope stability. Special emphasis on slope stability and design shall be necessary when public safety or adjacent property may be affected.	Appendix C	
(4) Areas mined to produce additional materials for backfilling and grading, as well as settlement of filled areas, shall be considered in the reclamation plan. Where ultimate site uses include roads, building sites, or other improvements sensitive to settlement, the reclamation plans shall include compaction of the fill materials in conformance with good engineering practice.	N/A	
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§ 3707. Performance Standards for Prime Agricultural Land Reclamation	N/A	
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1.0 Introduction

This Reclamation Plan has been prepared in compliance with the requirements of the State of California Surface Mining and Reclamation Act of 1975 (SMARA), Public Resources Code §2770 *et seq*, as amended and County Ordinance 4011, Chapters 82.17 and 88.03 of the County Development Code. SMARA was enacted by the California Legislature to [1] address the need for a continuing supply of mineral resources, and to [2] prevent or minimize the negative impacts of surface mining to public health, property and the environment.

Under SMARA, all extractive operations are required to have a Reclamation Plan approved by the Lead Agency. A reclamation plan defines the activities to be carried out when extraction has been completed at a particular site. The extracted land must be returned to a useful, approved alternative purpose. Lead agencies are certified by the State Board of Mining and Geology after the adoption of ordinances that embody the requirements of SMARA. Through the adoption of Ordinance 4011 and as further clarified in Division 8, Chapter 88.03 of the County Development Code, San Bernardino County has been recognized as Lead Agency for the implementation of SMARA.

1.1 General Background and Information

The Lone Pine Canyon Road Quarry, formerly known as the El Cajon Property, is located in Lone Pine Canyon in San Bernardino County, California, and encompasses approximately 420 acres of patented mining and millsite claims. These claims were originally acquired by Cajon Lime Products in the 1920s and patented in 1926. Mining operations began in 1924 with the production of plaster, stucco, lime, and hydrated lime and a 125-ton-per-day lime processing facility was constructed in 1927. The property was acquired by Michael P. Hannin in 1931 and remained under family ownership or management until 2023.

Extensive geological investigations conducted over the years, including those by Harvey Sill (1933), Richard Ganong (1997), Donald L. Fife & Associates (1997), and Sims Geological Services (2017), have confirmed the presence of ultra-high purity calcium carbonate (CaCo₃), typically exceeding 99 percent, as well as dolomite. Historical assessments estimated up to 268 million tons of ultra-high purity calcium carbonate on the property, with proven commercial quality. Mining and processing occurred intermittently through the 1960s, with continued management by the Hannin family. The property was transferred to El Cajon Associates, LLC, a Nevada limited liability company wholly owned by descendants of Michael P. Hannin.

On March 7, 2019, the San Bernardino County Planning Commission officially recognized and confirmed vested mining rights for the El Cajon Property at a public hearing (Project No. P201800609). This recognition acknowledges the site's historical mining use as a legal nonconforming land use that runs with the land. The confirmation includes the right to produce materials as necessary to meet market

demand and utilize customary equipment and methods to mine, process, and transport ultra-high purity limestone and dolomite products. The vested right also allows surface mining operations across the entire property, subject to an approved reclamation plan and financial assurances as required under SMARA.

Ownership of the property was later transferred to Grand Lone Pine Canyon Enterprises, LLC. on August 1, 2023, which now holds the rights and responsibilities associated with the vested mining interest.

1.2 Purpose and Scope

The purpose of this Reclamation Plan is to identify the activities that will be implemented to return the site to a stable condition suitable for future use upon completion of extraction. The plan establishes the procedures for topsoil management, slope stabilization, drainage control, and revegetation to meet SMARA's performance standards and achieve a beneficial post-mining land use. In accordance with SMARA, the project is also required to provide Financial Assurances to ensure completion of reclamation in the event of operator default.

The Lone Pine Canyon Road Quarry proposes to resume surface mining operations on an approximately 285-acre portion of the 420-acre property for the commercial production of ultra-high purity calcium carbonate (CaCo₃). Operations will include extraction, on-site material processing, stockpiling of finished products and may include drilling and blasting as necessary. Due to the existence of vested mining rights, the project does not require a Conditional Use Permit (CUP), however, an approved Reclamation Plan and associated Financial Assurance are required prior to the commencement of surface mining operations.

Mining activities will occur using conventional hard rock quarrying methods, including drilling, blasting, excavation, hauling, and on-site material processing. The operation will include crushing, screening, and stockpiling of products, along with the use of support infrastructure such as scale equipment, storage areas, and portable facilities. It is estimated that the project will produce approximately 148 million cubic yards of material over the life of the quarry, with an average annual production rate of approximately 1 million cubic yards per year. The maximum depth of excavation is expected to reach approximately 3,400 feet AMSL and 1,600 feet below existing grade.

Reclamation will be implemented progressively as areas become available and will include grading to final slope configurations, topsoil replacement where feasible, and revegetation using native species. At the conclusion of mining, all disturbed areas will be stabilized to ensure public safety and long-term erosion control, consistent with the approved post-mining land use.

The Reclamation Plan is comprised of five sections.

Section 1.0, the **Introduction**, summarizes the purpose and content of the report.

Section 2.0, the **Environmental Setting**, provides a description of the existing human and natural environment.

Section 3.0, the **Extraction Plan**, describes proposed mineral extraction methods and schedules.

Section 4.0, the **Reclamation Plan**, outlines the measures that will be implemented by the project to return the extracted land to an alternative useful purpose. It prescribes verifiable standards that will be used to determine the adequacy of the reclamation measures, including monitoring objectives and schedules.

Section 5.0, **Compliance with Reclamation Standards**, demonstrates how the proposed reclamation activities comply with the applicable performance standards outlined in California Code of Regulations, Title 14, Article 9, sections 3700 *et seq.*

2.0 Environmental Setting

2.1 Project Location

The site is located in Lone Pine Canyon, northwest of the Cajon Pass, approximately 4.5 miles southeast of the community of Wrightwood and 20 miles southwest of the City of Hesperia. The property is situated on the north side of Lone Pine Canyon Road, approximately 3 miles west of its intersection with State Highway 138 (see Figures 2.1-1 and 2.1-2).

Regional access to the site is provided via Interstate 15 and State Highway 138. Local access is provided from Lone Pine Canyon Road, which intersects with a private access road leading into the site. The project area is generally characterized by hilly terrain and is surrounded by a mix of undeveloped land, open space, and dispersed rural residential uses.

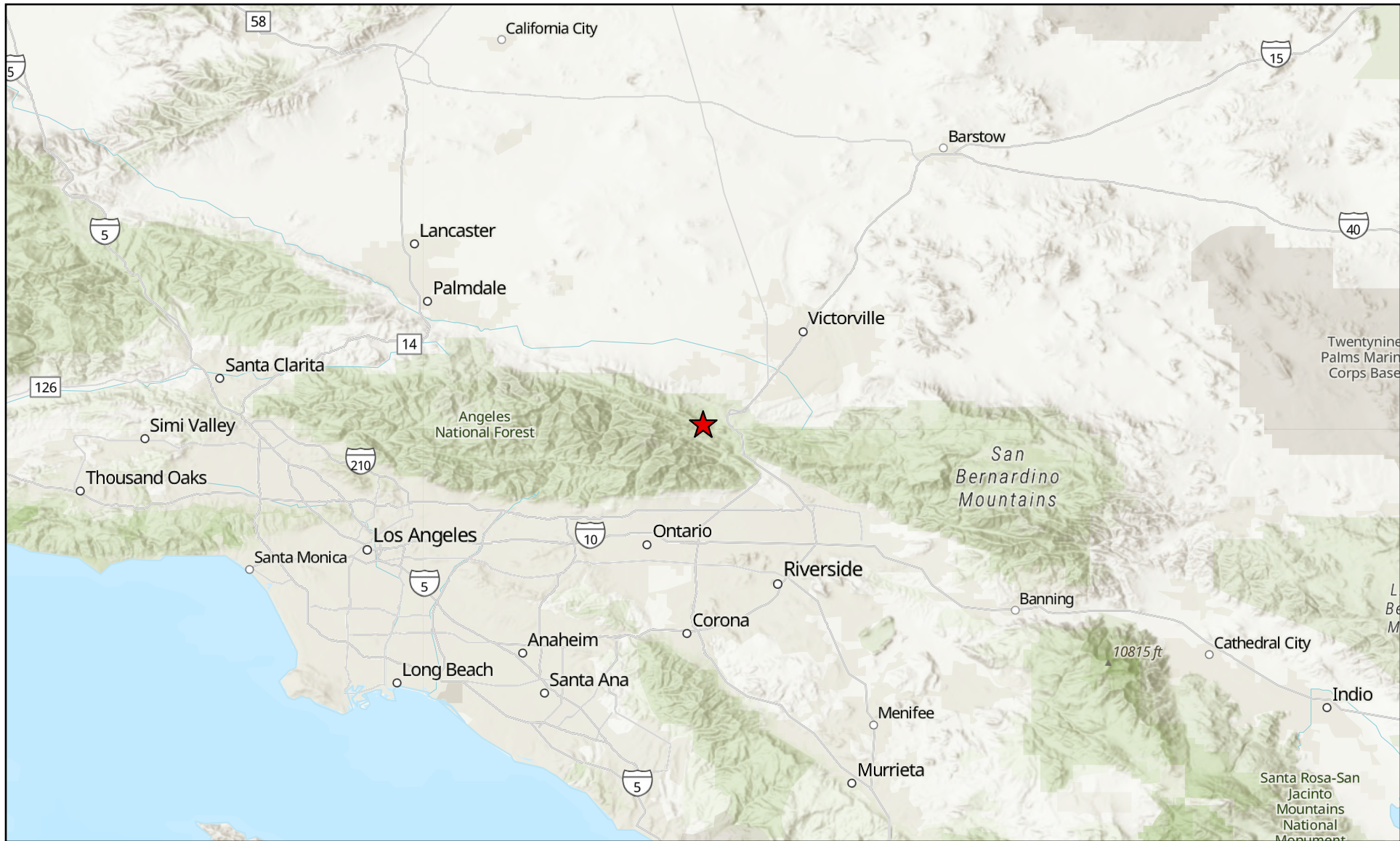
2.2 Legal Description

The Lone Pine properties are located in portions of Sections 27, 29, 30, and 32 of Township 3 North, Range 6 West, as depicted on the Telegraph Peak quadrangle of the United States Geological Survey's (USGS) 7.5-minute map series (see Figure 2.2-1).

The property includes the following Assessor's Parcel Numbers (APNs): 0356-231-02, 0356-241-02, 0356-241-03, and 0351-161-03 (see Figure 2.2-2). The site consists of approximately 420 acres of patented mining and millsite claims originally patented in 1926.

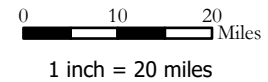
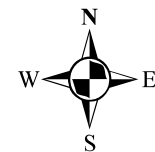
2.3 Land Use and Zoning

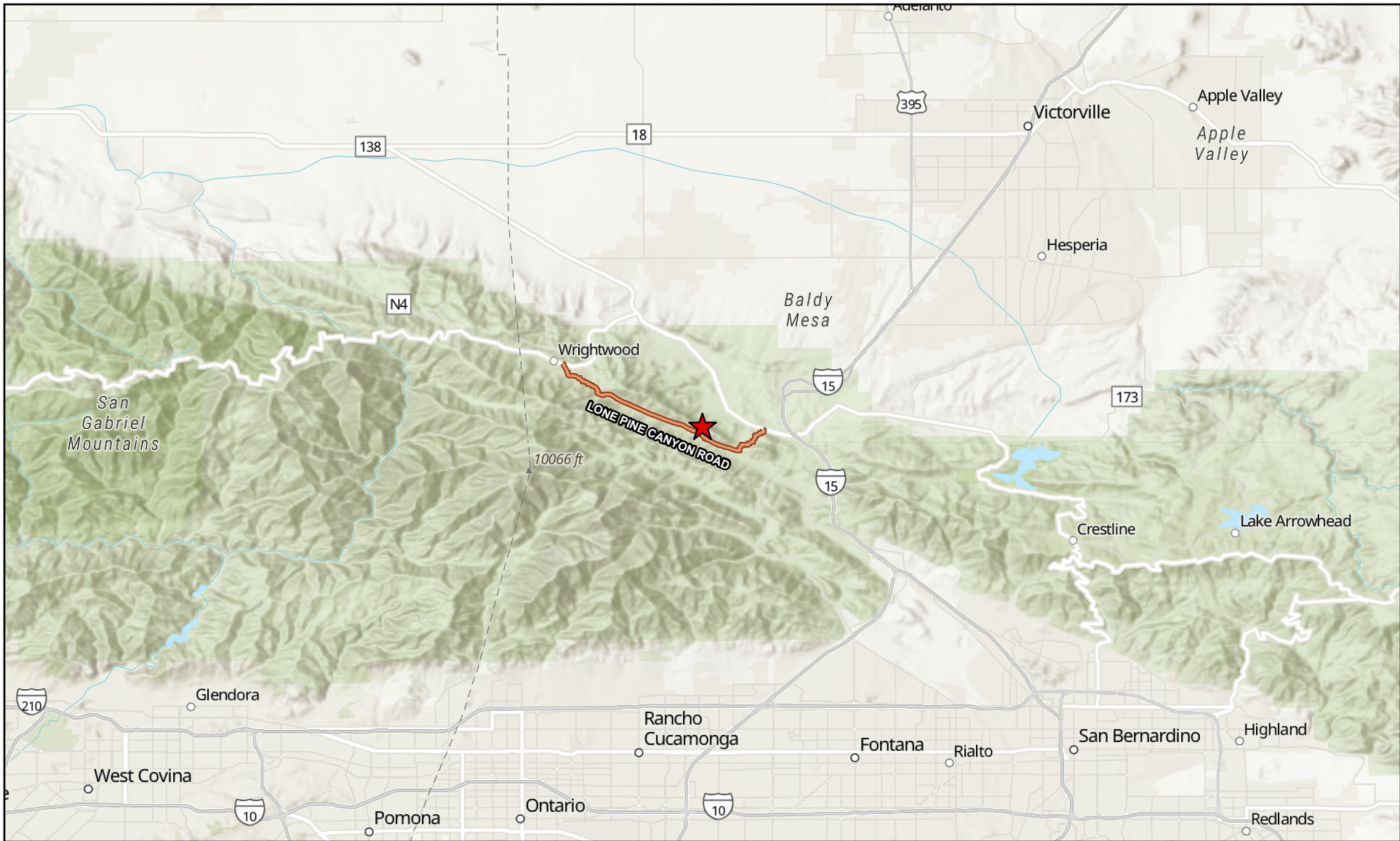
The project site is located on privately owned land within the unincorporated San Bernardino County. The site is entirely zoned RC (Resource Conservation) under the San Bernardino County General Plan and Zoning Ordinance (see Figure 2.3-1). The RC land use zoning district provides sites for open space, recreational activities, single-family homes on very large parcels and similar or compatible uses.





Project Location

 Project Location

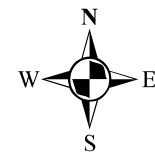




Project Vicinity

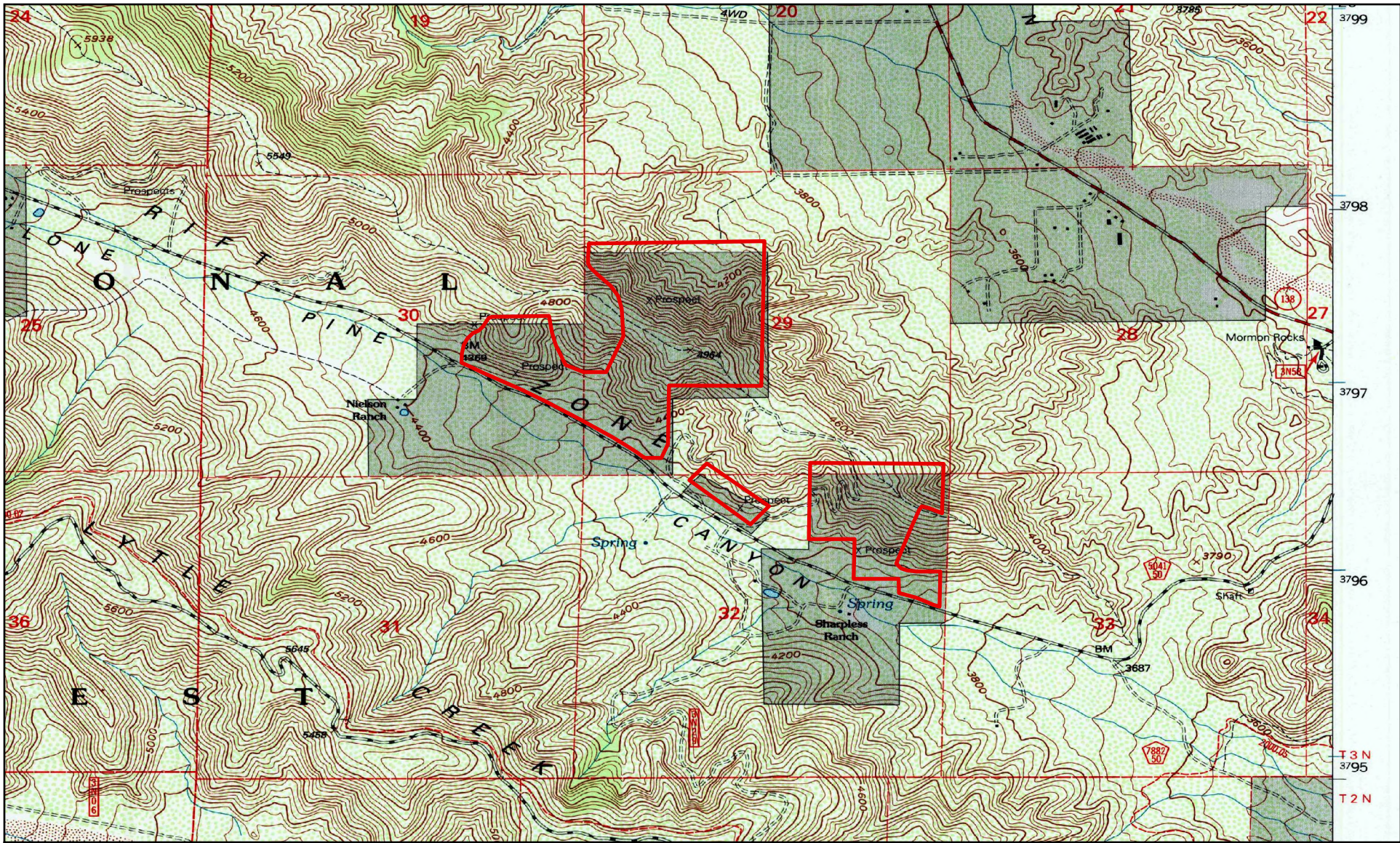
-  Project Location
-  Access Route

*Enviro***MINE**, Inc.



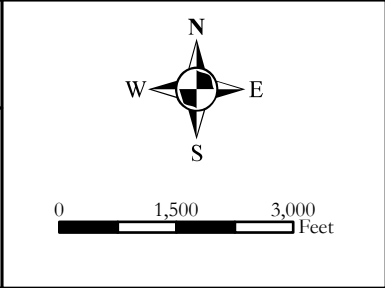
0 2.5 5 Miles

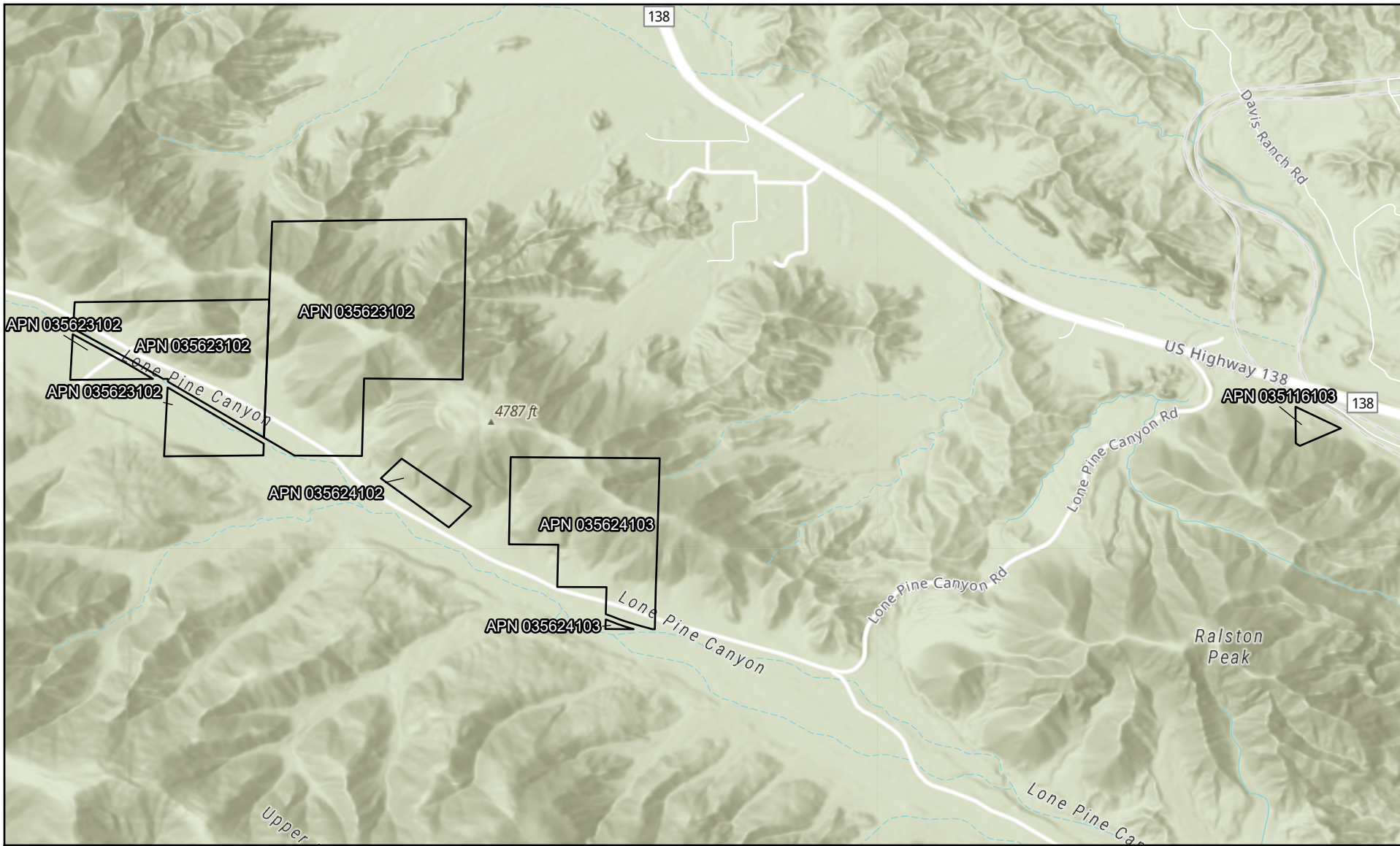
1 inch = 6.25 miles



USGS Quadrangle Series

 Project Boundary

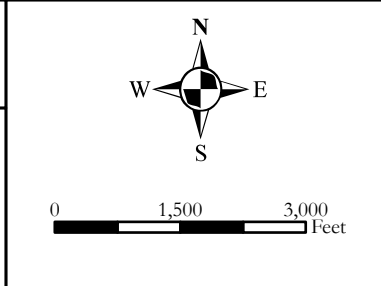




Assessor's Parcel Numbers

San Bernardino County Parcel Dataset





Surface mining is a use allowed by a Conditional Use Permit in the RC zone. However, since the site has been recognized by the County as having vested mining rights, mineral extraction is allowed as a legal nonconforming use. As such, mining activities may proceed without a CUP, subject to compliance with SMARA and the County's reclamation requirements.

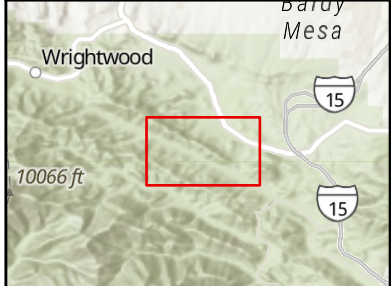
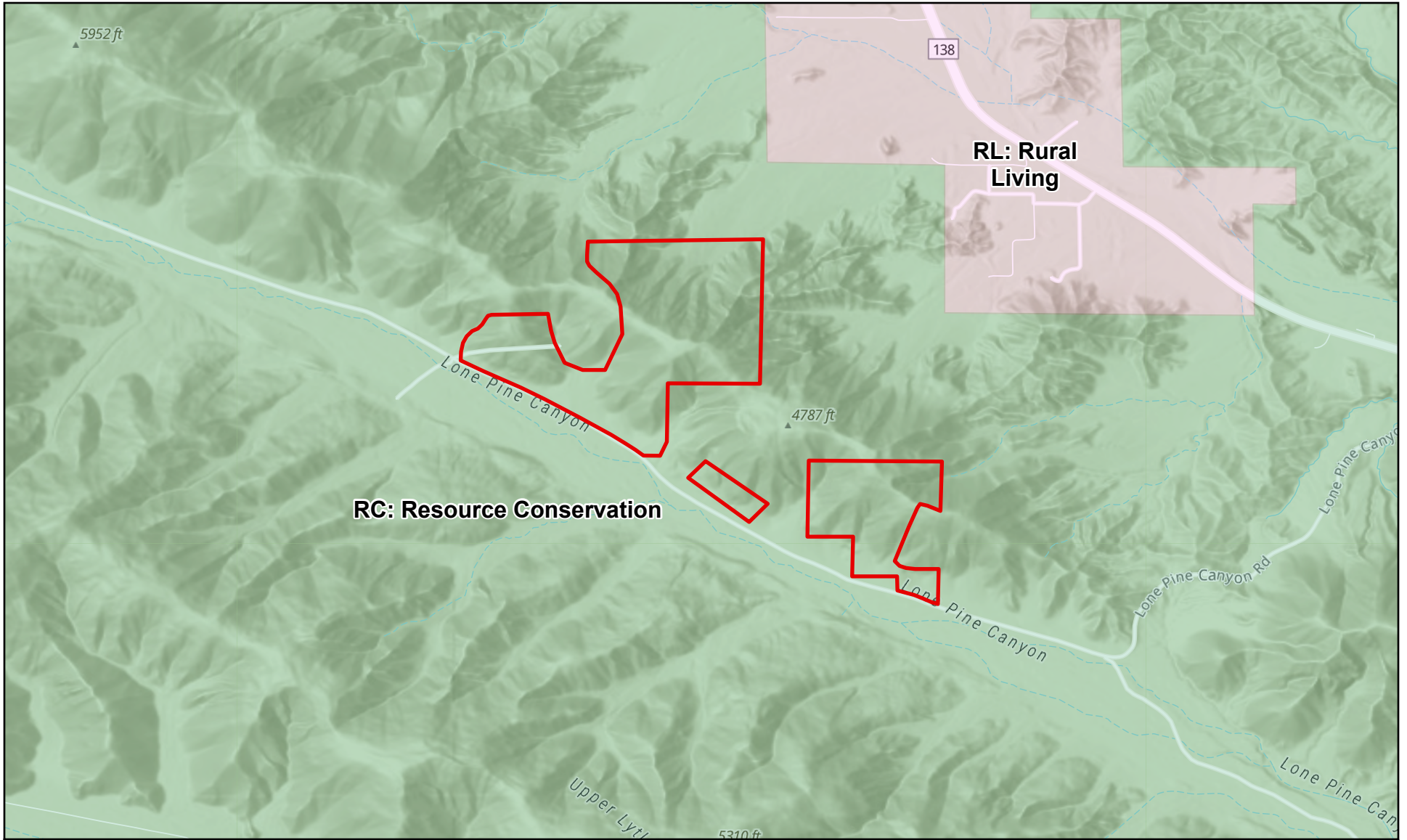
The surrounding area consists primarily of undeveloped hillside terrain, public lands, and scattered residential properties. Lands to the north and east are largely managed by the United States Forest Service (USFS) and Bureau of Land Management (BLM). Lone Pine Canyon Road runs along the southern edge of the site, providing access to the property.

The site is not located within any adopted Specific Plan, Habitat Conservation Plan, or other special land use overlay.

2.4 Topography and Geology

The site is located within part of the Transverse Ranges Geomorphic Province of Southern California. The Transverse Ranges are a unique east-west trending mountain system in Southern California that includes the San Gabriel and San Bernardino Mountains. This province is shaped by faulting, folding, and uplift associated with the San Andreas Fault system. The region contains large differences in geologic ages and rock compositions. The eastern ranges, including the San Gabriel and San Bernardino Mountains, are composed mainly of Precambrian and Mesozoic metamorphic and igneous rocks. Scattered patches of Paleozoic sedimentary rocks also occur in both ranges. In contrast, the western portion of the province, including the Channel Islands, is characterized by younger volcanic and sedimentary formations, with Quaternary deposits found along the southern margins and in isolated areas throughout the region.

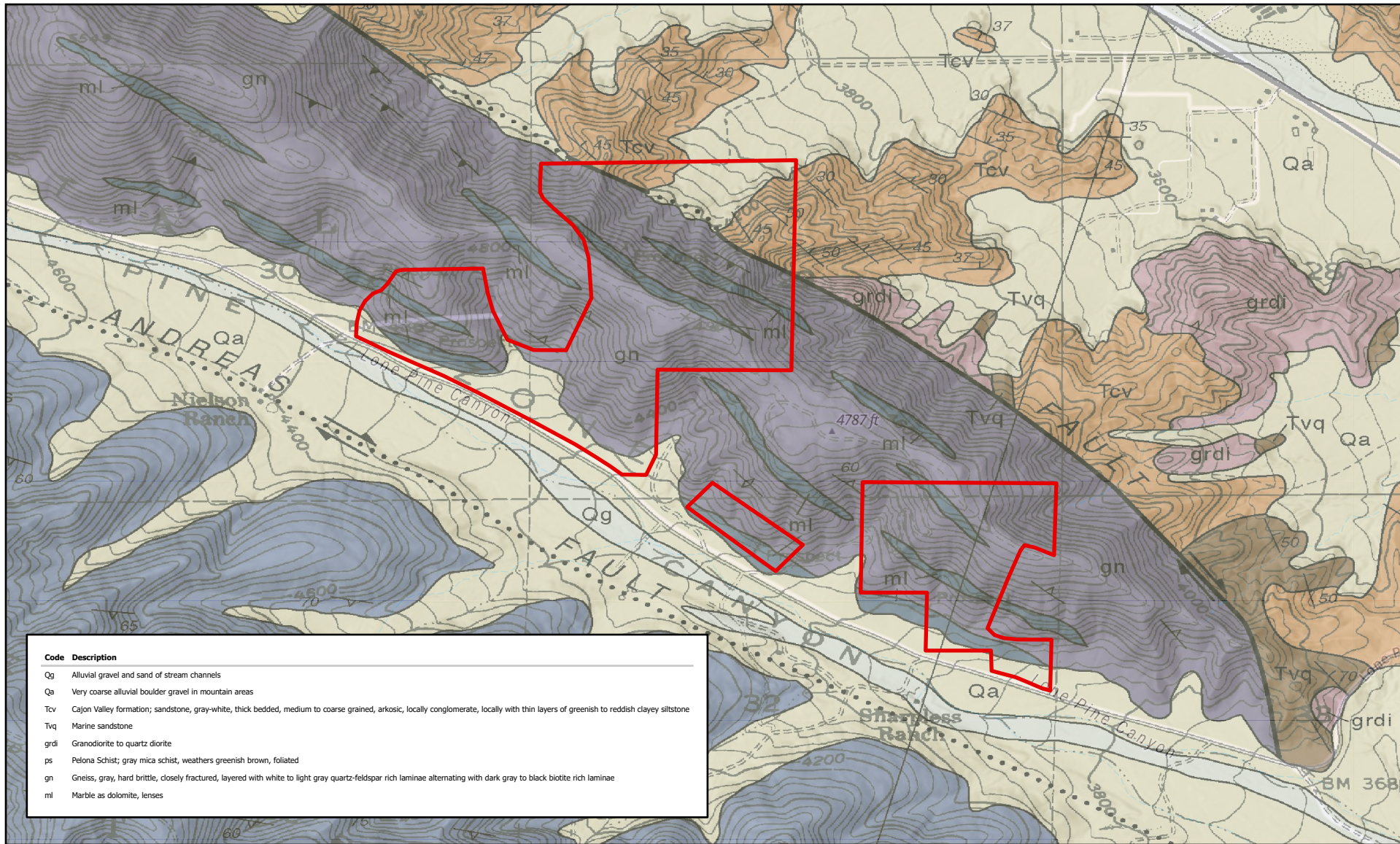
The project site lies along the northeastern flank of the San Gabriel Mountains, just west of Cajon Pass in San Bernardino County. Site geology is influenced by the nearby San Andreas and Cajon Valley Fault Zones. The primary bedrock unit across most of the property is a Gneiss (gn), which includes local lenses of white ultra-high purity calcium carbonate ($\text{CaCo}_3 > 99\%$), with dolomite present as well (ml) (see Figure 2.4-1). These marble bodies are erosion-resistant and have been historically mined in the area. Unconsolidated colluvium derived from the gneiss and carbonate rock units covers many of the slopes, while a small portion of sandstone formation are found on north facing slopes (Tcv). Along the southern boundary, near Lone Pine Canyon Road, the site transitions to younger alluvial fan deposits (Qa). This geologic framework is consistent with prior geologic mapping (Sims Geological Services, 2017; Dibblee and Minch, 2003) and confirmed by field investigations in the 2025 Slope Stability Study Report prepared by Terracon (Appendix C). Elevations on the property range from 3,865 feet AMSL near Lone Pine Canyon Road to over 5,000 feet AMSL along the ridgeline at the northwestern boundary.



Land Use and Zoning

- Project Boundary
- RC: Resource Conservation
- RL: Rural Living





Code Description

Qg	Alluvial gravel and sand of stream channels
Qa	Very coarse alluvial boulder gravel in mountain areas
Tcv	Cajon Valley formation; sandstone, gray-white, thick bedded, medium to coarse grained, arkosic, locally conglomerate, locally with thin layers of greenish to reddish clayey siltstone
Tvq	Marine sandstone
grdi	Granodiorite to quartz diorite
ps	Pelona Schist; gray mica schist, weathers greenish brown, foliated
gn	Gneiss, gray, hard brittle, closely fractured, layered with white to light gray quartz-feldspar rich laminae alternating with dark gray to black biotite rich laminae
ml	Marble as dolomite, lenses



Geology

Project Boundary



2.5 Surface and Groundwater

The site is located within the 1,700 square mile Cajon Subbasin, part of the larger Santa Ana Basin Hydrologic Unit, as defined by the U.S. Geological Survey Watershed Boundary Dataset (USGS, 2025). A drainage feature runs from west to east through the southern portion of the project site, south of Line Pine Canyon Road, and the proposed limits of disturbance completely avoid the drainage feature.

Surface water drainage is conveyed through a network of ephemeral drainage features that traverse the site and flow southward during precipitation events. Several ephemeral drainage features were observed onsite during the 2025 biological assessment. These features were dry at the time of the site visit and are described as relic swales or braided channels lacking a distinguishable ordinary high water mark or consolidated banks (Appendix B). No inundated areas or wetlands were observed within the project site during the assessment.

The Cajon Subbasin (DWR Basin 8-02.05) is a subunit of the Upper Santa Ana Valley Groundwater Basin as defined in *California Department of Water Resources Bulletin 118* (CDWR, 2004). The subbasin underlies Cajon Valley and Lone Pine Canyon in Cajon Pass and is bounded by the San Gabriel Mountains to the west and San Bernardino Mountains to the east. The basin is bordered by the Upper Mojave River Valley Groundwater Basin to the north and Bunker Hill Subbasin to the south. It is primarily recharged by infiltration from rain events and subsurface flow from the adjacent foothills.

Aquifers in the Cajon Subbasin generally form an unconfined aquifer system, with groundwater occurring at differing depths depending on local topography and proximity to surface drainages, which drain southward toward the Santa Ana River. The basin experiences seasonal groundwater fluctuations from several feet to hundreds of feet under prolonged drought or intensive groundwater extraction. Historical data taken from the closest well in the California Department of Water Resources Water Data Library (Kenwood 2), located approximately 7 miles southeast of the site, have shown to fluctuate between 225' and 45' below ground surface (CDWR, 2025).

Due to the industrial nature of the proposed project, both a Stormwater Pollution Prevention Plan (SWPPP) and a General Industrial Storm Water Permit will be required for the implementation of the project. These permits will ensure compliance with all regulations relating to stormwater runoff enforced by the Regional Water Quality Control Board (RWQCB) and the County of San Bernardino.

2.6 Soils

Seven soil series, complexes, associations, and inclusions are found within the project boundary as identified in the United States Department of Agriculture Web Soil Survey (USDA, 2016). These include the Soboba-Hanford families association, Typic

Xerorthents–Haploxeralfs–Badland complex, Springdale–lithic Xerorthents association, Wilshire–Oak Glen families association, Springdale–Olete families complex, Rock Outcrop, and Olete–Goulding families–Rubble Land association (see Figure 2.6-1). The soil mapping units are described as follows:

Soboba-Hanford families association, 2 to 15 percent slopes (AbD). This soil mapping unit occurs on flood plains and alluvial fans at elevations ranging from 1,600 to 4,000 feet. This unit is not considered prime farmland.

The Soboba series consists of very deep, excessively drained soils formed in granitic alluvium. These soils typically occur on flood plains and toeslopes and are characterized by a representative profile of very cobbly loamy sand in the upper layers, about 24 inches thick. The next layer becomes stratified with cobbly sand and loamy fine sand to depths greater than 60 inches. These soils have a very low available water capacity (approximately 2.4 inches over 60 inches), with high to very high infiltration rates. Runoff is very low, and flooding or ponding does not occur. The soils are used mostly for pasture. The native vegetation is annual grasses and forbs and chaparral shrubs.

The Hanford series is found on alluvial fans and toeslopes and consists of deep, well-drained sandy loams formed in granitic alluvium. The soil profile includes sandy loam throughout the upper 60 inches, with moderate available water capacity (about 7.8 inches) and high permeability. These soils are not subject to flooding or ponding and have a low runoff potential. Hanford soils are used for growing a wide range of fruits, vegetables, and general farm crops. They are also used for urban development and dairies. Vegetation in uncultivated areas is mainly annual grasses and associated herbaceous plants.

Typic Xerorthents, warm-typic Haploxeralfs-Badland complex, 30 to 100 percent slopes (ChFG). This soil mapping unit occurs on steep terraces and dissected slopes at elevations ranging from 2,000 to 4,000 feet. This unit is not considered prime farmland.

The Typic Xerorthents are somewhat excessively drained soils that formed in residuum weathered from sedimentary rock. These soils occur on steep foot slopes and risers and are characterized by a representative profile of sandy loam to a depth of about 30 inches, underlain by weathered bedrock at approximately 34 inches. These soils are shallow, with low available water capacity (approximately 3.9 inches), and high infiltration rates. Flooding or ponding does not occur. Vegetation is typically sparse and includes drought-tolerant grasses, forbs, and shrubs.

The Typic Haploxeralfs are well-drained soils that also formed in sedimentary residuum on foot slopes and risers. The profile includes gravelly sandy loam and sandy clay loam over gravelly loam, with weathered bedrock reached at about 43 inches. These soils have low water-holding capacity (approximately 3.8 inches) and moderately high permeability. They occur on very steep slopes, are not subject to

flooding or ponding, and exhibit low runoff. Native vegetation includes a mix of sparse herbaceous plants and woody shrubs adapted to dry conditions.

The Badland component of this mapping unit consists of highly eroded, barren terrain with little to no soil development. These areas form on steep sedimentary slopes and support very limited vegetation.

Springdale family-lithic Xerorthents association, 50 to 75 percent slopes; dry (FLG). This soil mapping unit occurs on steep mountainous terrain at elevations ranging from 3,000 to 7,000 feet. This unit is not considered prime farmland.

The Springdale series consists of somewhat excessively drained soils that formed in granitic residuum on mountain backslopes and flanks. A representative profile includes gravelly loamy coarse sand in the surface layer, underlain by very gravelly loamy sand and coarse sand to a depth of about 45 inches, where unweathered bedrock is encountered up to 49 inches. These soils have a very low available water capacity (approximately 2.5 inches over 60 inches) and high to very high infiltration rates. Runoff is low, and flooding or ponding does not occur. Vegetation is sparse and typically includes drought-tolerant grasses, forbs, and shrubs on steep, exposed slopes.

The Lithic Xerorthents are excessively drained soils that also formed in granitic residuum on similar landforms. These soils are shallower, with very gravelly loamy sand over bedrock at depths up to 22 inches. They exhibit very low water-holding capacity (approximately 1.1 inches) and high to very high permeability. These soils occur on steep slopes ranging from 60 to 75 percent, are not subject to flooding or ponding, and are generally occupied by scattered herbaceous cover and low shrubs.

Wilshire-oak glen, dry families association, 2 to 15 percent slopes (FsD). This soil mapping unit occurs on alluvial fans and floodplains at elevations ranging from 3,800 to 6,000 feet. This unit is not considered prime farmland.

The Wilshire series consists of very deep, somewhat excessively drained soils formed in granitic alluvium. These soils typically occur on toe slopes and floodplains. A representative profile consists of very gravelly coarse sand in the surface layer, underlain by extremely cobbly coarse sand and stratified loamy fine sand to depths greater than 60 inches. These soils have a very low available water capacity (approximately 1.8 inches over 60 inches) and extremely high infiltration rates. Runoff is very low, and flooding or ponding does not occur. Native vegetation is limited, typically consisting of sparse grasses and drought-tolerant shrubs adapted to dry, coarse soils.

The Oak Glen series is well-drained and forms in alluvium on alluvial fans and risers. The soil profile includes sandy loam and coarse sandy loam to a depth of 60 inches. These soils have moderate water-holding capacity (about 7.8 inches), high permeability, and occur on slopes ranging from 5 to 15 percent. Runoff is low, and

the soils are not subject to flooding or ponding. Vegetation in uncultivated areas is generally composed of annual grasses, scattered shrubs, and herbaceous species tolerant of dry, well-drained soils.

Springdale, dry-Olete families complex, 50 to 75 percent slopes (JoG). This soil mapping unit occurs on steep mountain slopes at elevations ranging from 4,000 to 6,200 feet. This unit is not considered prime farmland.

The Springdale series consists of somewhat excessively drained soils formed in granitic residuum on mountain backslopes and flanks. A representative profile includes gravelly loamy coarse sand in the surface layer, underlain by very gravelly loamy sand and coarse sand to a depth of about 45 inches, where unweathered bedrock is encountered. These soils have a very low available water capacity (approximately 2.5 inches over 60 inches) and high to very high infiltration rates. Runoff is low, and flooding or ponding does not occur. Vegetation is sparse and typically includes a mix of drought-tolerant grasses, forbs, and low shrubs.

The Olete series is well-drained and formed in residuum weathered from gneiss. These soils also occur on mountain backslopes and have a shallower profile, with very cobbly sandy loam extending to about 26 inches and unweathered bedrock at approximately 30 inches. Available water capacity is very low (about 2.6 inches), and permeability ranges from moderately high to high. These soils are found on steep, convex slopes, have high runoff potential, and are not subject to flooding or ponding. Vegetation includes scattered herbaceous cover and shrub species adapted to dry, rocky conditions.

Rock outcrop, 30 to 100 percent slopes (Rs). This mapping unit occurs on mountainous terrain at elevations ranging from 2,000 to 10,000 feet. This unit is not considered prime farmland.

The Rock outcrop unit consists of exposed bedrock occurring on steep backslopes and mountain flanks. The surface profile is typically shallow or absent, with unweathered bedrock encountered within the upper 4 inches. These areas are excessively drained and lack soil development. Slopes range from 30 to 100 percent, and the terrain is often rugged and highly variable. Vegetation is extremely limited, generally confined to small pockets of soil in fractures or depressions, where hardy grasses or shrubs may occur. Most of the surface is barren.

Olete-Goulding families-rubble land association, 50 to 100 percent slopes (SgG). This soil mapping unit occurs on steep mountain slopes and talus at elevations ranging from 5,000 to 9,310 feet. This unit is not considered prime farmland.

The Olete series consists of well-drained soils that formed in residuum weathered from gneiss. These soils typically occur on concave backslopes and mountain flanks. A representative profile includes very cobbly sandy loam in the upper 26 inches, underlain by unweathered bedrock at approximately 30 inches. These soils have very

low available water capacity (approximately 2.6 inches over 60 inches) and moderately high to high permeability. Slopes range from 50 to 65 percent, runoff is high, and there is no flooding or ponding. Vegetation is sparse and typically consists of drought-tolerant shrubs and herbaceous species in scattered pockets.

The Goulding series also formed in gneissic residuum and occurs on convex mountain backslopes. These soils are very shallow, with gravelly sandy loam and very gravelly loam extending only to about 12 inches, underlain by bedrock at approximately 16 inches. They have very low available water capacity (about 1.2 inches) and high runoff potential. These soils are well drained and not subject to flooding or ponding. Vegetation is very limited due to the shallow profile and steep slopes, and is typically restricted to low, drought-adapted shrubs and forbs.

The Rubble land component consists of steep talus slopes covered in coarse, angular rock fragments derived from gneiss. These areas have little or no soil development and are generally barren, with minimal vegetation limited to scattered hardy plants rooted in accumulated debris pockets.

2.7 Climate

The eastern San Gabriel Mountains experience a semi-arid mountain climate influenced by its elevation and proximity to both the Mojave Desert and Southern California's inland valleys. The site lies near the transition between Mediterranean and desert regions, resulting in hot, dry summers and mild, dry winters with occasional snowfall. The area receives approximately 12 inches of precipitation annually, with the majority falling between December and March. Precipitation typically occurs as rainfall at lower elevations and snow at higher elevations on site.

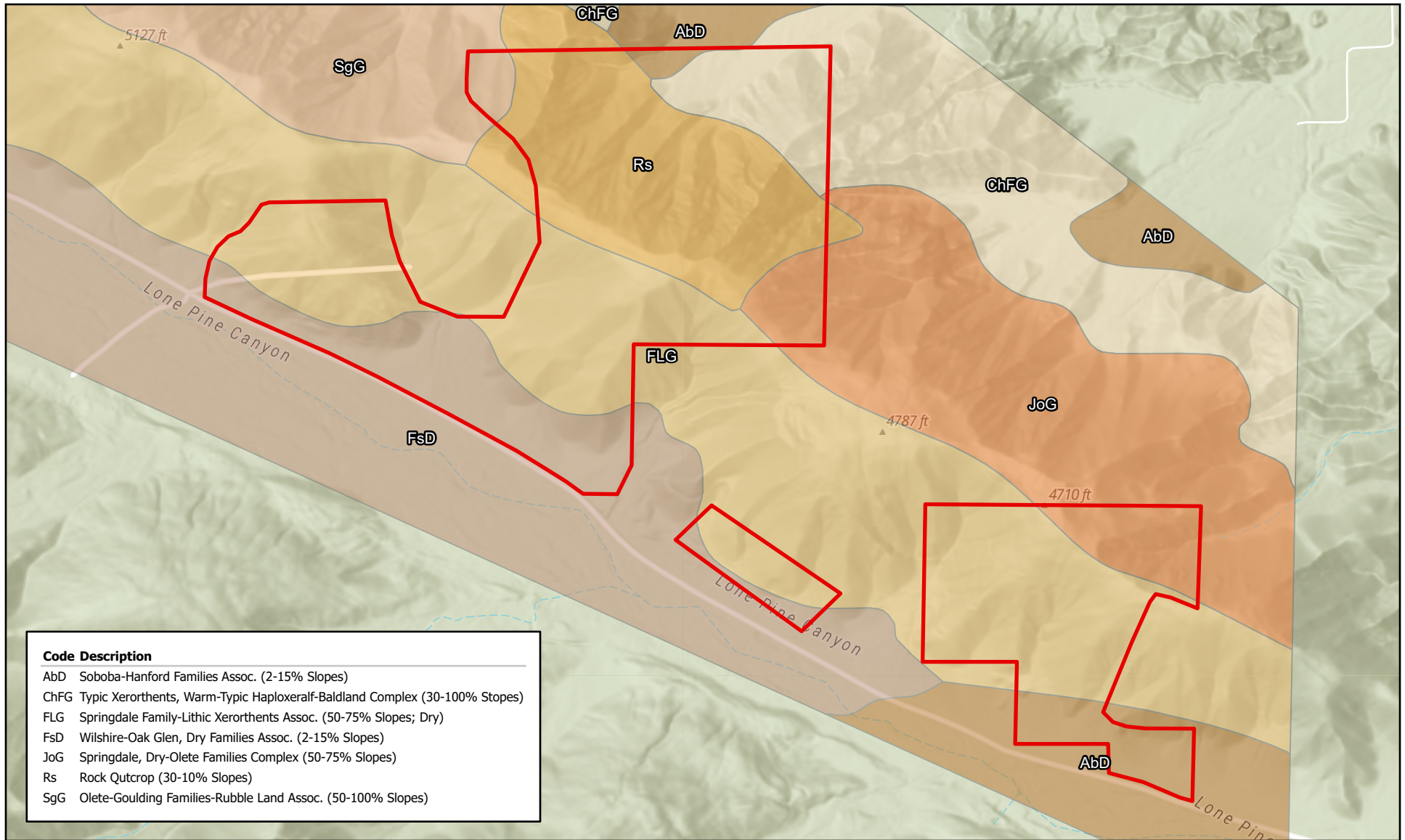
Temperatures in the area vary seasonally, with summer daytime highs commonly reaching the mid-80s to low 90s (°F), while winter nighttime lows can dip below freezing. The site also experiences strong seasonal wind patterns, particularly during Santa Ana events in the fall and winter months.

2.8 Biological Resources

The biological setting of the project site was documented in the *Lone Pine Canyon Habitat and Jurisdictional Assessment* prepared by ELMT Consulting in June 2025 (Appendix B). The site was surveyed on April 22, 2025, to document vegetation communities, wildlife use, and potential jurisdictional features or sensitive habitats.

Vegetation

Two natural vegetation communities were observed within the project boundaries: chamise-chaparral and mixed chaparral (see Figure 2.8-1). Chamise-chaparral, the dominant community onsite, is primarily composed of chamise (*Adenostoma fasciculatum*) along with associated native species such as yerba santa (*Eriodictyon californicum*), California buckwheat (*Erigeron fasciculatum*), chia sage (*Salvia*



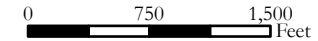
Code Description

- AbD Soboba-Hanford Families Assoc. (2-15% Slopes)
- ChFG Typic Xerorthents, Warm-Typic Haploxeralf-Baldland Complex (30-100% Slopes)
- FLG Springdale Family-Lithic Xerorthents Assoc. (50-75% Slopes; Dry)
- FsD Wilshire-Oak Glen, Dry Families Assoc. (2-15% Slopes)
- JoG Springdale, Dry-Olete Families Complex (50-75% Slopes)
- Rs Rock Outcrop (30-10% Slopes)
- SgG Olete-Goulding Families-Rubble Land Assoc. (50-100% Slopes)



Soils Resources

Project Boundary	FLG	Rs
AbD	FsD	SgG
ChFG	JoG	



columbariae), bush poppy (*Dendromecon rigida*), scale broom (*Lepidospartum squamatum*), black mustard (*Brassica nigra*), sugarbush (*Rhus ovata*), black sage (*Salvia mellifera*), elderberry (*Sambucus mexicanus*), big berry manzanita (*Arcostaphylos glauca*), short-joint beavertail (*Opuntia basilaris*), red-stemmed filaree (*Erodium cicutarium*), desert needlegrass (*Pappostipa speciosa*), and scrub oak (*Quercus ilicifolia*).

Mixed chaparral is present south of Lone Pine Canyon Road and includes white sage (*Salva apiana*), mountain mahogany (*Cercocarpus betuloides*), chaparral yucca (*Hesperoyucca whipplei*), Mojave yucca (*Yucca schidigera*), scarlet bugler (*Penstemon centranthifolius*), California buckwheat, yerba santa, and bush poppy. Areas disturbed by past human activity and existing infrastructure were classified as disturbed or developed and include non-native species such as black mustard, Mediterranean mustard (*Hirschfeldia incana*), and red brome (*Bromus rubens*).

Wildlife

The site supports habitat for a variety of wildlife species adapted to chaparral and desert-mountain environments. Reptiles observed include common side-blotched lizard (*Uta stansburiana elegans*), coast horned lizard (*Phrynosoma blainvillii*), Great Basin fence lizard (*Sceloporus occidentalis longipes*) and coachwhip (*Masticophis flagellum*). Avian species observed during the survey included red-tailed hawk (*Buteo jamaicensis*), Costa's hummingbird (*Calypte costae*), California scrub jay (*Aphelocoma californica*), spotted towhee (*Pipilo maculatus*), California quail (*Callipepla californica*), mountain quail (*Oreortyx pictus*), turkey vulture (*Cathartes aura*), California thrasher (*Melospiza crissalis*), blue-grey gnatcatcher (*Poliophtila caerulea*), black-chinned sparrow (*Spizella atrogularis*), Bewick's wren (*Thryomanes bewickii*), wrentit (*Chamaea fasciata*), California towhee (*Melospiza crissalis*). Mammals documented included black-tailed jackrabbit (*Lepus californicus*), California ground squirrel (*Otospermophilus beecheyi*), and desert cottontail (*Otospermophilus beecheyi*), domestic dog (*Canis lupus familiaris*).

No fish or amphibians were observed or expected due to the absence of perennial aquatic features.

Special-Status Species

One special-status plant species, short-joint beavertail (*Opuntia basilaris*), was observed onsite during the April 2025 survey (see Figure 2.8-2). The survey was conducted during the blooming period for most special-status species known from the region. Based on habitat conditions and species distributions, the site was found to have high potential to support Plummer's mariposa-lily and woolly mountain parsley, and moderate potential to support Parish's oxytheca, white-bracted spineflower, and Jokerst's monardella. Other sensitive plant species known from the broader area are assumed absent due to lack of suitable habitat. In addition to short-joint beavertail, chaparral yucca and Mojave yucca were also documented onsite.

Two special-status wildlife species were observed onsite during the April 2025 field survey: coast horned lizard and Costa's hummingbird. Based on habitat suitability and known species distributions, the project site was determined to have high potential to support desert bighorn sheep, moderate potential for Crotch's bumble bee, coast patch-nosed snake, and rufous hummingbird, and low potential for Bell's sparrow, coastal whiptail, and prairie falcon. All other special-status species known from the region are considered unlikely to occur due to lack of suitable habitat. Areas that could support Crotch's bumble bee have been excluded from the proposed limits of disturbance. Therefore, no impacts to this species are anticipated and no focused surveys are needed.

Jurisdictional Features and Wildlife Corridors

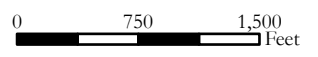
Several ephemeral drainages were observed within the project area, but none meet the criteria for jurisdiction under the Clean Water Act due to the absence of ordinary high water marks or sustained flow. However, these features are considered Waters of the State and may be regulated by the California Department of Fish and Wildlife (CDFW) and the Regional Water Quality Control Board (RWQCB). No federally protected wetlands or sensitive natural communities were identified on site. The southern portion of the property falls within the Lone Pine Canyon Major Open Space Area, a designated wildlife corridor, although the majority of the project area does not serve as a primary linkage. Areas within the corridor are expected to be avoided entirely.

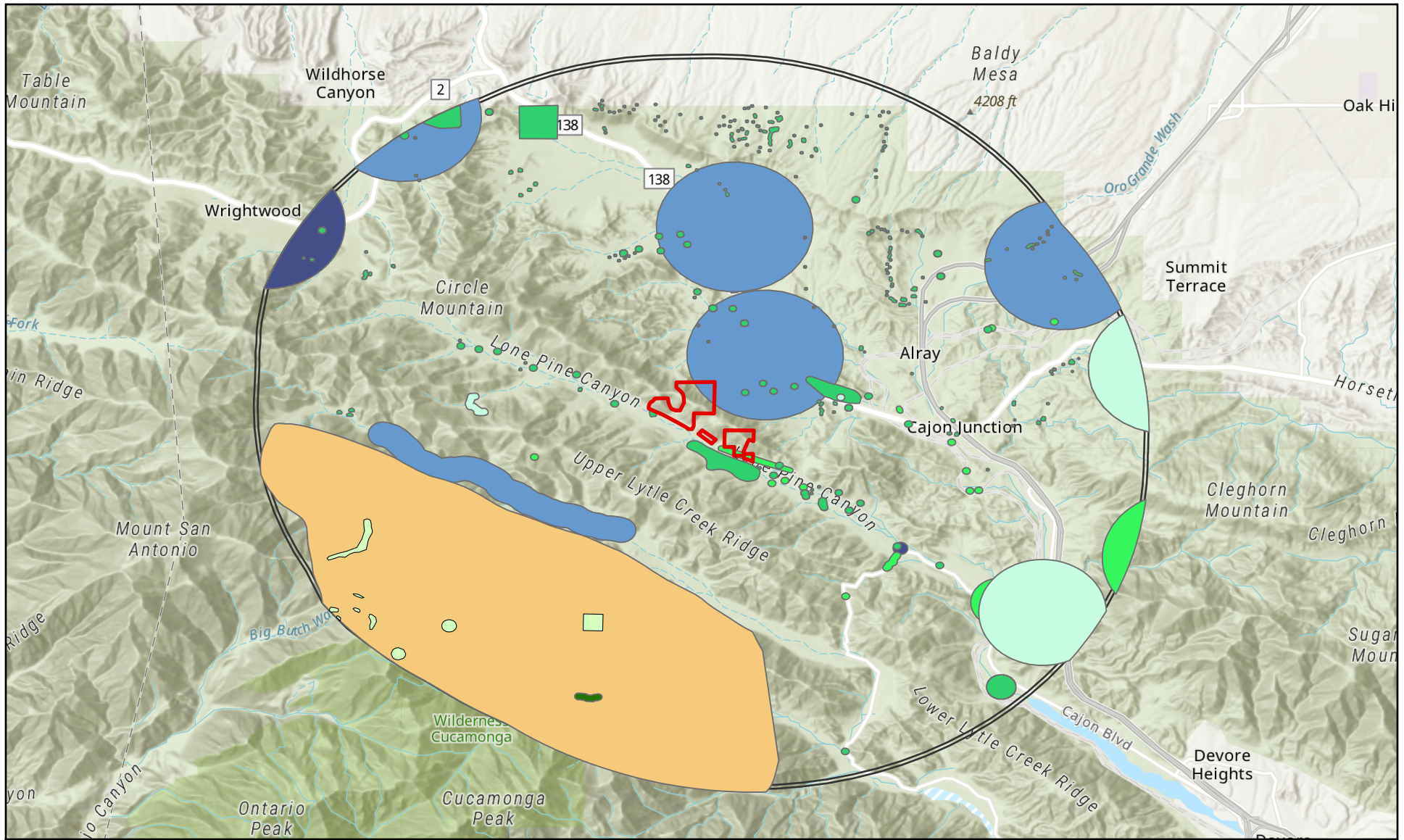
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Vegetation Communities

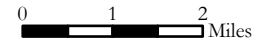
- Project Boundary
- Disturbed
- Developed
- Mixed Chaparral
- Chamise-Chaparral





Special Status Species Occurrences

- | | | |
|-------------------------|---------------------------|----------------------|
| Project Boundary | short-joint beavertail | Crotch's bumble bee |
| 5 Mile Buffer | white-bracted spineflower | coast horned lizard |
| Plants | woolly mountain-parsley | coastal whiptail |
| Jokerst's monardella | Wildlife | desert bighorn sheep |
| Plummer's mariposa-lily | Bell's sparrow | |



3.0 Extraction Plan

3.1 Owner/Operator/Agent

3.1.1 Applicant

Name: Grand Lone Pine Canyon Enterprises, LLC.
Address: 216 S. Citrus St., #315
West Covina, CA 91791
Telephone: (626) 831-1478

3.1.2 Name of Mineral Property

Lone Pine Canyon Road Quarry

3.1.3 Property and Mineral Rights Owner

Name: Grand Lone Pine Canyon Enterprises, LLC.
Address: 216 S. Citrus St., #315
West Covina, CA 91791
Telephone: (626) 831-1478

3.1.4 Operator

Name: Michael Dickens, Owner
California Carbonates, Inc.
Address: P.O. Box 12915
Newport Beach, CA 92658
Telephone: (760) 535-5550

3.1.5 Agent

Name: Michael Dickens, Owner
California Carbonates, Inc.
Address: P.O. Box 12915
Newport Beach, CA 92658
Telephone: (760) 535-5550

3.2 Operations Data

3.2.1 Mineral Commodity

Ultra-High Purity Calcium Carbonate (CaCo3)

3.2.2 Starting Date of Operations

January 1, 2026 (estimated)

3.2.3 Estimated Life of Operation

148 years or until resource depletion, operations are expected to last until 2174 or longer dependent upon market demand. The anticipated end date is January 1, 2175.

3.2.4 Estimated Annual Production

Approximately 1 million cubic yards

3.2.5 Total Anticipated Production

Approximately 148,236,100 cubic yards

3.2.6 Maximum Anticipated Depth of Surface Mining

Range: 5,000 feet to 3,400 feet AMSL (up to 1,600 feet below existing ground surface)

3.3 Operational Characteristics

The proposed project is a hard rock mining operation designed to extract and process the ultra-high purity calcium carbonate resources onsite. The site will be mined through conventional hard rock quarrying methods, which may include drilling and blasting, followed by excavation, transport, and processing of the raw material. The project area includes previously disturbed lands and historical areas of extraction, all located within a vested mining site.

Mining will proceed across the site in a manner responsive to material availability, geologic conditions, and market conditions. Extraction areas will be mined to final reclamation slopes during active operations, consistent with the geotechnical constraints identified in the Slope Stability Study Report and shown on the Plot Plan (see Appendix A). Reclamation will occur progressively as areas become available and are no longer needed for ongoing mining activities.

The current slope stability analysis supports slope configurations to a vertical height of approximately 740 feet (see Appendix C). The quarry design may ultimately exceed this depth. Therefore, a site-specific geotechnical analysis will be conducted prior to reaching depths greater than 740 feet to confirm slope stability and appropriate design measures. This supplemental evaluation will be prepared by a qualified professional and made available to the County for review in accordance with applicable SMARA and County oversight procedures.

Materials will be extracted using heavy equipment such as excavators, dozers, and loaders. Blasting may be conducted intermittently to fracture competent rock and facilitate extraction, subject to applicable safety and regulatory requirements. Excavated rock will be transported by haul trucks, conveyors, or other appropriate means to an on-site processing area.

Processing activities may include crushing, screening, and stockpiling of products. While specific equipment types may vary over time, typical processing infrastructure may include jaw crushers, cone crushers, screens, conveyors, and associated support equipment. The processing plant and related equipment will be located within a small operational area that moves as extraction progresses across the site. Original conceptual locations for these portable plant areas are shown on the Plot Plan (Appendix A). These are provided for general reference and actual plant locations will shift over time based on operational needs. Processed materials will be stockpiled on site and loaded into over-the-road trucks for offsite transport.

Support facilities may include scale equipment, portable buildings for equipment maintenance and office use, and staging areas for materials or equipment. Utilities and structures will be added to the site as needed to support active operations, and will be removed at the conclusion of mining. All structures and equipment will be portable and no permanent structures will be installed at any time.

The site will create access roads connecting to Lone Pine Canyon Road, which may remain in place following the completion of mining if consistent with the final land use. All site operations will be conducted in compliance with applicable safety standards and environmental regulations.

3.4 Topsoil Removal and Stockpiles

A general description of the soil on the project site is discussed in Section 2.6 Soils. In general, the site contains a mix of gneissic and marble bedrock with limited topsoil resources due to extensive rock outcrops and colluvial cover. In order to improve the effectiveness of revegetation, native topsoil will be utilized where appropriate and feasible. This will ensure that seeding and natural revegetation reproduces the prevailing distribution of species.

The primary practice will be to strip topsoil for direct placement on reclaimed sites. Where direct placement is not possible, topsoil is to be stripped and stockpiled for later reuse with revegetation. Topsoil salvage will be conducted in a manner that is consistent with SMARA Section 3711. This will include maintaining topsoil and suitable growth media in separate stockpiles. These stockpiles will be clearly identified, with signage or by other means, to distinguish them from mine waste or other stockpiled materials. Topsoil will generally be stockpiled near the areas from which it was removed. As mining progresses across the site, the location of future topsoil stockpiles will shift accordingly. Due to this dynamic nature, specific topsoil stockpile locations are not shown on the Plot Plan and will instead be sited in the field in coordination with operational needs. Relocation or disturbance of salvaged topsoil will be kept to a minimum. Stockpiles will be stabilized with appropriate erosion control measures and monitored for weed growth.

Due to the variable geologic conditions encountered on the site, it is estimated that an average of six inches of topsoil will be reapplied to slope and benches/buffer areas for

revegetation purposes. Topsoil will not be reapplied to slope areas where substantial rock faces would prohibit vegetative establishment.

3.5 Extraction Waste

Domestic refuse will be collected in approved trash bins and hauled to the nearest approved landfill for disposal. Equipment will be maintained on site and all used oils, fuels and solvents collected in accordance with the Department of Toxic Substances Control regulations and picked up by an approved hauler for recycling.

Overburden, fines, and other non-saleable earthen materials generated during excavation will be utilized as backfill and grading material to construct the final reclaimed landform. These materials will be stockpiled to facilitate reclamation and kept separate from topsoil stockpiles or other growth media. No permanent waste piles or refuse stockpiles will remain on-site following the conclusion of mining activities.

3.6 Traffic

There will be relatively minor and temporary traffic associated with reclamation activities at the site. The majority of reclamation will occur during the extractive phasing. Traffic associated with reclamation will consist of 5 to 10 personal vehicles that are used by equipment operators to access the site. Other traffic will include a limited number of trips to and from the site for removing plant equipment and by a seeding contractor that will be used to revegetate the reclamation areas. It is not anticipated that any trucks will be used to haul material to and from the site for reclamation.

Processed materials will be loaded into over-the-road trucks and hauled from the site via the access roads to Lone Pine Canyon Road. Truck traffic volume will vary based on market demand and production rates. All export hauling will occur using designated haul routes and in compliance with applicable County and Caltrans requirements.

Site access will occur from Lone Pine Canyon Road via ingress/egress points used throughout the operational life of the site. These access points will remain unchanged during the reclamation phase. All internal traffic will be limited to haul routes and service roads created during the mining phases within the project boundary. No new roads will be constructed for reclamation purposes.

Reclamation-related traffic will comply with all applicable County road standards, and erosion control BMPs will be implemented where needed to stabilize disturbed roadways and prevent offsite sedimentation. All on- and off- road equipment will meet the requirements of the Mojave Desert Air Quality Management District (MDAQMD) and the California Air Resources Board's (CARB) diesel vehicles regulations to reduce diesel pollutants.

3.7 Blasting

Blasting may be conducted intermittently to help fracture competent rock for extraction. All blasting operations will be performed by licensed and qualified personnel in compliance with applicable federal, state, and county regulations.

Explosives will not be permanently stored onsite. Instead, they will be transported to the site on an as-needed basis by a licensed vendor and handled only during the active blasting process.

Two residences are located across Lone Pine Canyon Road from the project site. The blasting professional will ensure that blasting activities do not result in adverse effects to off-site structures or residents and will implement any necessary measures to maintain safety, regulatory compliance, and minimize offsite impacts.

3.8 Stormwater and Erosion Control

A Notice of Intent (NOI) and Storm Water Pollution Prevention Plan (SWPPP) will be prepared and submitted to the State Water Resources Board for the project site prior to construction in accordance with the Industrial General Permit Order 2018-0028-DWQ, effective July 1, 2020. It will reflect the conditions expected to be encountered on the project site. Industrial Best Management Practices (BMPs) and post-extraction BMPs will be designed to protect water quality and in compliance with CCR section 3706, the Federal Clean Water Act, and the Porter–Cologne Water Quality Control Act. A copy of the SWPPP will also be maintained at the Project site. The SWPPP will include an erosion control plan prepared per State and County guidelines.

The SWPPP and erosion control plan will define best management practices (BMPs) to prevent erosion and the discharge of sediment to surface waters. BMPs will be specified for soil stabilization, sediment control, vehicle track out, and transport of soil by wind (e.g., dust control and wind erosion BMPs). Typical soil stabilization BMPs include preservation of existing vegetation, mulch, hydroseeding, soil binders, geotextiles, lining of drainage ditches and/or velocity control structures if needed. Vehicular track out and dust related BMPs may include stabilized roadway surfaces, tire washes, use of grates at vehicle entrances or exits, soil stabilizers, and water spray. The final plan may incorporate these or additional BMPs as appropriate on the site.

Reclamation slopes will be stabilized through grading and revegetation using native species common to the plant communities found in the project area. Temporary erosion control measures will remain in place until vegetation is established and functioning as an effective erosion control mechanism.

Erosion control measures will be implemented consistent with SMARA Section 3706 and 3710, and designed to prevent offsite sedimentation and slope instability under typical storm conditions expected for the region.

Erosion control measures will be implemented in accordance with the following criteria, unless otherwise specified in the SWPPP:

Class 1: No soil loss or erosion; topsoil layer intact; well-dispersed accumulation of litter from past year's growth plus smaller amounts of older litter.

NO ACTION NECESSARY

Class 2: Soil movement slight and difficult to recognize; small deposits of soil in form of fans or cones at end of small gullies or fills, or as accumulations back of plant crowns or behind litter; litter not well dispersed or no accumulation from past year's growth.

ACTION: Monitor to see if any further deterioration and action is required.

Class 3: Soil movement or loss more noticeable; topsoil loss evident, with some plants on pedestals or in hummocks; rill marks evident, poorly dispersed litter and bare spots not protected by litter.

ACTION: Any rills or gullies exceeding 8 square inches in cross sectional area and more than 10 linear feet located on finished slopes shall be arrested using straw mulch and hay bales

Class 4: Soil movement and loss readily recognizable; topsoil remnants with vertical sides and exposed plant roots; roots frequently exposed; litter in relatively small amounts and washed into erosion protected patches.

ACTION: Replant via hydroseeding or spread seed and cover with straw mulch. Regrade, compact with equipment, and install silt fences if necessary.

3.9 Utilities

3.9.1 Water and Wastewater

All operational water will be trucked in from off-site by a licensed water hauler. Water use will be limited to essential dust suppression activities and minimal support needs. A water truck will be used to periodically apply water along internal haul roads, loading areas, and other active surfaces to control fugitive dust emissions. In addition, a small amount of water may be applied at the processing plant and stockpile areas to reduce airborne dust during material handling and processing.

The processing plant will operate as a dry processing system and will not require water for materials washing. As such, no settling ponds, recycled water systems, or permanent water infrastructure are planned as part of the operation.

Potable (drinking) water for onsite personnel will be supplied by a third-party vendor and stored in appropriate portable containers.

3.9.2 Electricity and Telephone

No connection to public utility lines is proposed for electrical or communication services. All necessary electricity for operations will be provided through self-contained power systems in mobile equipment and portable structures. No portable generators will be used, and no permanent or temporary utility poles, electrical lines, or wired telephone infrastructure will be installed on the site.

Communication needs will be met using cellular or satellite phones, radios, or other wireless devices, as appropriate for site conditions and safety coordination.

3.9.3 Equipment Fuel

All fuel required for onsite equipment will be delivered by a third-party vendor using mobile fuel trucks. No fuel will be stored onsite, and no permanent fueling stations or tanks will be constructed or installed as part of the operation.

Refueling will occur directly at the equipment as needed, and all fueling activities will comply with applicable safety and environmental regulations to prevent spills or contamination.

3.10 Safety and Security

The site will be operated in accordance with applicable local, state, and federal safety regulations. All personnel will be required to follow standard safety protocols, including the use of personal protective equipment (PPE), equipment safety procedures, and hazard communication standards.

To restrict unauthorized access and reduce potential hazards to the public, an 8-foot earthen berm will be constructed by the operator along the edge of the project disturbance limits where the site borders Lone Pine Canyon Road or other areas of potential public access. This berm will serve as a visual and physical barrier, helping to prevent accidental entry while also providing a buffer from site activity. Gates will be installed at the ingress/egress roads to restrict public vehicular access. These gates will be closed and locked during periods of non-operation. Fire Department locks will be placed on all gates.

Signs will be posted at entrance points and around the site perimeter identifying the name of the operation, permit number and emergency contact information. The site will be patrolled on a regular basis to discourage trespass.

3.11 Biological Resource Avoidance

As part of the extraction operations, the operator will comply with all applicable state and federal environmental regulations regarding the protection of biological resources. The biological assessment prepared by ELMT Consulting (Appendix B) identified native plant species onsite that are protected under the California Desert Native Plant Act (CDNPA), including short-joint beavertail (*Opuntia basilaris*), Mojave yucca (*Yucca*

schidigera), and chaparral yucca (*Yucca whipplei*). Prior to vegetation clearing or ground disturbance, a CDNPA compliance inventory will be conducted. If avoidance of these species is not feasible, coordination with San Bernardino County will be initiated and applicable permitting procedures followed.

The site also supports habitat with moderate potential to support Crotch's bumble bee (*Bombus crotchii*), a candidate for listing under the California Endangered Species Act. The project has been designed to exclude this potential habitat from the limits of disturbance, and no impacts to this species are anticipated. As a result, focused surveys are not required under current guidance.

In compliance with the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code, vegetation clearing during the nesting bird season (February 1 – August 31) will be preceded by a nesting bird survey conducted by a qualified biologist. If active nests are observed, appropriate no-disturbance buffers will be implemented and maintained until nesting is complete.

Several ephemeral drainage features were identified on-site and may be subject to regulation as Waters of the State. While complete avoidance of these features is not anticipated, efforts will be made to minimize disturbance where feasible. Where impacts to these features do occur, the operator will coordinate with the Regional Water Quality Control Board (RWQCB) and the California Department of Fish and Wildlife (CDFW) to obtain any necessary permits or authorizations prior to disturbance.

The project site does not support any federally protected wetlands, riparian habitat, or sensitive natural communities. No vernal pools, critical habitat areas, or other federally regulated aquatic resources were identified within the proposed limits of disturbance during the habitat assessment.

Additional details on all biological resource avoidance and compliance measures are provided in the Conclusion and Recommendation section of Appendix B.

4.0 Reclamation and Revegetation

4.1 Reclamation Phasing

Reclamation will be implemented progressively as mining operations advance across the site. In general, reclamation will occur in extraction areas as soon as possible, once those areas are no longer subject to further disturbance. This includes completion of any necessary final grading, although in most cases the site will be mined to final reclamation slopes during active extraction. Revegetation will be implemented where feasible, such as on accessible benches or slope surfaces capable of supporting vegetation.

Reclamation of support areas, such as internal haul roads, processing areas, and storage areas, will occur either at the end of the mining operation or earlier if those

areas are no longer required for active operations. Structures, equipment, and plant facilities will be removed following the cessation of mining, and any roadways that will not be incorporated into the post-mining land use will be graded and reclaimed, including revegetation where appropriate.

All reclamation activities will comply with the performance standards of SMARA and will be conducted in accordance with the methods described in this plan. Reclamation will be initiated as soon as practicable on areas where additional disturbance is not anticipated, consistent with PRC §2772(c)(6).

4.2 Post-Extractive Land Use

Upon completion of resource extraction, the extraction area site will be open space or other uses allowed under the General Plan and County Zoning Ordinance. After reclamation is complete and financial assurances mechanisms released, other uses will require separate entitlements. Reclamation of the site will be considered complete when all approved reclamation measures are met on the areas disturbed by the mining operation. Although this reclamation plan applies only to the proposed extraction area, additional mining could occur elsewhere on the vested property in the future, subject to an amendment to this reclamation plan and approval by the lead agency in accordance with SMARA.

4.3 Post-Extractive Drainage and Erosion Control

Following completion of mining, the site will be reclaimed to a stable final landform that generally maintains the existing drainage patterns across the broader landscape. The site currently contains multiple ephemeral drainages that likely qualify as waters of the State. These features traverse the site from north to south and are expected to be disturbed as part of the mining operation, which will result in the creation of a large excavation or pit within the project footprint.

To protect water quality and minimize erosion following cessation of mining, the final reclaimed topography will be graded to direct overland flow away from the pit and toward existing or reestablished drainage features located along the perimeter of the excavation. These drainage control measures will include brow ditches and berms designed to intercept runoff and convey it toward stabilized discharge points, where it can reconnect with natural surface flow paths. In certain areas, the final pit geometry will function as a local topographic low, limiting the ability to redirect stormwater away from the pit. Where topography prevents redirecting flow away from the pit, stormwater will be retained within the pit as a result of these conditions.

All drainage control measures will be described in the Industrial Stormwater Pollution Prevention Plan (SWPPP) that is required for the project. Revegetation of all affected lands is designed to result in a self-sustaining vegetative cover that will stabilize the site against erosion and sedimentation. When combined with active drainage control measures, site reclamation will render the site suitable for future land uses.

All reclamation activities will be conducted in a manner designed to protect onsite and downstream beneficial uses of water in accordance with the Porter-Cologne Water Quality Control Act and the Federal Clean Water Act.

4.4 Post-Extractive Slopes and Slope Treatment

Final slopes will be configured based on the findings of the 2025 Slope Stability Study Report prepared by Terracon (Appendix C). According to the report, the site is underlain primarily by gneiss and marble bedrock which are generally hard and capable of forming stable slopes. The final reclaimed slopes will not exceed an overall gradient of 50 degrees, which corresponds to an approximately 0.84:1 (h:v) slope. Based on Terracon's analysis, these slopes will maintain a factor of safety greater than 1.5 under static conditions and greater than 1.1 under seismic conditions, consistent with SMARA and County standards. In areas where slopes are underlain by unconsolidated alluvium or highly weathered material, final slopes will be graded to no steeper than 2:1 (h:v).

Typical reclaimed slopes will be developed in 40-foot height intervals with 20-foot wide benches, consistent with common hard rock mine configurations and the geotechnical recommendations provided by Terracon. Wider benches may be incorporated at intervals to accommodate ramp placement or access needs during operations. The final slope geometry may require local adjustments based on the type and condition of materials encountered during excavation. The project mining engineer will evaluate slope performance and geologic conditions throughout mining and may modify slope height, bench width, or overall slope angle as needed to maintain safe and stable working conditions consistent with the approved plan.

Terracon's analysis supports the proposed slope configurations for slope heights up to approximately 740 feet. When mining extends beyond this vertical depth, additional site-specific geotechnical evaluations will be required to determine suitable slope-specific configurations. This geotechnical review will be conducted prior to excavation beyond that threshold.

Scaling of loose or dislodged rock will be performed on bench faces as needed, particularly in areas with weathered material or shear zones, while safe equipment access is available. Berms may be constructed along pit margins and benches where necessary to prevent overland flow from concentrating on final reclaimed slopes and to reduce potential erosion or slope degradation during and after mining. Brow ditches will be installed at the top of final slopes to control runoff and reduce erosion risk. Revegetation of final slopes will occur progressively as areas become available and topsoil may be placed as needed to support vegetation establishment where feasible.

4.5 Topsoil Management

Salvaged topsoil and other suitable growth media will be used during reclamation to support the successful establishment of vegetation on reclaimed surfaces. Where

feasible, topsoil will be directly placed on prepared final slopes, benches, and buffer areas. Where direct placement is not possible, stockpiled topsoil will be redistributed during final reclamation activities. Topsoil will generally be stockpiled near its source area, however, stockpile locations will shift over time based on mining progression.

An average of six inches of topsoil will be applied to areas identified for revegetation, excluding locations where exposed rock surfaces or steep slopes make vegetative establishment impractical. Prior to placement, stockpiled topsoil will be evaluated to confirm its suitability as a growth medium. If soil has been altered or consists of material other than native topsoil, soil analysis will be conducted, and fertilizers or soil amendments will be applied as necessary to support plant establishment. If resoiling occurs over mine waste or backfill, the underlying material will first be leveled and covered with a layer of finer-textured material prior to placement of topsoil. The use of soil conditioners, mulches, or imported topsoil will also be considered if it is determined they are necessary for successful revegetation.

Topsoil will be placed in a way that avoids compaction and promotes revegetation, including placement over roughened or irregular surfaces where possible.

4.6 SMARA Revegetation Plan

This Revegetation Plan was prepared to comply with the Reclamation Standards identified in the Public Resources Code, Article 9, Section 3705. The purpose of the plan is to identify the following:

- Goals of the revegetation program,
- Important site characteristics which would influence revegetation,
- Cultural methods,
- Seed mixes,
- Success criteria, and
- Monitoring objectives.

Revegetation efforts will be focused primarily on stabilizing final reclamation slopes, benches, and accessible pad areas, where vegetation can be successfully established. Areas composed of exposed hard rock or steep quarry faces may not support vegetation and are not expected to be revegetated. Native species adapted to the site's elevation, soil, and climate will be used to promote erosion control, habitat value, and visual integration with surrounding undisturbed lands.

4.6.1 Physical Features Important to Revegetation

4.6.1.1 Soils

A detailed description of the soils present on the project site is provided in Section 2.6 Soils of this Reclamation Plan. In summary, the site is underlain primarily by gneiss and marble bedrock, with surface soils consisting of colluvium and alluvium derived from surrounding hillslopes. Soils across the site are generally shallow, well-drained, and low in fertility, with a likely limited availability of topsoil suitable for reuse. In

many areas, surface conditions are dominated by exposed rock outcrops, rubble, or thin rocky soils.

4.6.1.2 Climatic Conditions

The project site lies within a semi-arid mountain climate zone influenced by both the Mojave Desert and Southern California's inland valleys. The area experiences hot, dry summers and cool to cold winters, with precipitation occurring primarily between December and March. Average annual precipitation is approximately 12 inches, though year-to-year variability is common. Under this xeric climatic regime, the late fall through early spring months (November through January) are generally the most favorable for seeding and revegetation efforts.

4.6.1.3 Vegetation

Natural vegetative communities represented on the project site include Chamise Chaparral and Mixed Chaparral plant communities. Species found in these vegetative complexes are drought tolerant and are capable of withstanding periods of extended drought. Special-status species were observed onsite, including short-joint beavertail (*Opuntia basilaris*), Mojave yucca (*Yucca schidigera*), and chaparral yucca (*Yucca whipplei*). These species are protected under the California Desert Native Plant Act (CDNPA) and harvesting or removal will require a permit in compliance with County of San Bernardino Development Code 88.01.060. The habitat assessment recommends conducting a CDNPA compliance inventory prior to any vegetation clearing to identify and properly manage protected plant species.

4.6.2 Revegetation Objectives

The objective of the revegetation plan is to provide vegetative cover for final slopes controlling erosion and stabilizing slopes, using plant materials capable of self-regeneration without continued dependence on irrigation, soil amendments or fertilizer. Revegetation will be sufficient to stabilize the surface against the effects of long-term erosion and is designed to meet the post extractive land use objectives of the site. Two seed mixes composed of native species will be used to revegetate the site. These seed mixes are designed to meet the variety of physical characteristics that will be present on the post extraction land form. The revegetation plan sets forth planting, temporary irrigation, and verifiable monitoring standards to assure vegetative success.

4.6.2.1 Soil Preparation

Where feasible, native topsoil will be salvaged for use with revegetation of slope areas and benches. Topsoil will be reapplied on reclaimed slopes, benches, and accessible buffer areas, except in locations where steep slopes or exposed bedrock make revegetation impractical. Topsoil will not be placed on hard rock faces or other areas that cannot support vegetation.

Final slope areas will be established throughout the extractive process as the upper elevations are reduced within the working areas. As final slopes become available, topsoil will be removed from future working areas for direct placement as slope areas

are created. Direct placement of salvaged topsoil provides the greatest revegetation benefit by preserving and utilizing the micro organisms found in the topsoil and also improves revegetation success by taking advantage of viable plant root stock and seeds found within the native topsoil. Direct placement also eliminates the need to stockpile topsoil materials for long periods of time.

Direct placement of salvaged topsoil will not always be possible, however. Topsoil material will need to be salvaged and stockpiled until all resources have been recovered and final slopes are established. At this time, topsoil that has been salvaged and stockpiled for revegetation will be placed on final slopes.

Prior to seeding, topsoil will be analyzed to determine the presence of elements essential for plant growth. If the soils analysis shows that fertility levels or soil constituents are inadequate to successfully implement the revegetation program, fertilizer or other soil amendments may be incorporated into the soil through direct broadcasting, hydroseeding, and/or a rangeland drill.

4.6.2.2 Seeding

Slope and bench areas will be reseeded by means of hydroseeding. Hydroseeding is the hydraulic application of a homogeneous slurry mixture consisting of water, seed mix, cellulose fiber and a binding agent such as “M” Binder. Fertilizer can be added if a soil analysis shows the need for addition of amendments. Hydroseeding application shall be performed only at times when winds are relatively calm.

Application rates shown on seed mixes list reflect a minimum to maximum amount of each seed species that will be used in the hydromulch slurry.

The hydroseed mixture shall consist of the following materials:

2,000	lbs/acre cellulose fiber
140	lbs/acre “M” Binder (gluing agent)
200	lbs/acre Milogranite (fertilizer if required)
	Seed mix as listed

The hydroseeding of gentle slopes and flat areas will apply Seed Mix “A” as described in the table “Seed Mixes” below. These seed mixes have been developed in coordination with the project biologist based on species that are most dominant within the Chamise-Chaparral communities onsite (ELMT 2025) and are most appropriate for restoration of quarry slopes as proposed by this plan. Seed Mix “B” will be applied on steep slope areas and will aid in erosion control and support slope stabilization.

Seed Mixes

Table 1: Seed Mix “A” – Gentle Slopes/Flat Areas

SPECIES		POUNDS PER ACRE
SCIENTIFIC NAME	COMMON NAME	
<i>Adenostoma fasciculatum</i>	Chamise	5.00
<i>Eriodictyon californicum</i>	Yerba Santa	4.25
<i>Eriogonum fasciculatum</i>	California buckwheat	4.00
<i>Lepidospartum squamatum</i>	Scale broom	2.25
<i>Dendromecon rigida</i>	Bush poppy	1.50
<i>Salvia apia</i>	White sage	1.00
<i>Opuntia basilaris</i>	Beavertail pricklypear	.25
<i>Salvia coumbariae</i>	Chia	1.50
<i>Artemisia tridentata</i>	Big sagebrush	0.75
<i>Salvia mellifera</i>	Black sage	0.25
<i>Ericameria linearifolia</i>	Interior goldenbush	0.50
<i>Pappostipa speciosa</i>	Desert needlegrass	1.25
<i>Hesperoyucca whipplei</i>	Chaparral yucca	0.75
<i>Rhus ovata</i>	Sugarbush	0.50
<i>Sambucus mexicanus</i>	Mexican Elderberry	0.50
<i>Cercocarpus betuloides</i>	Mountain mahogany	0.25
<i>Arctostaphylos glauca</i>	Big berry manzanita	0.50
TOTAL pounds per acre		25

Table 2: Seed Mix “B” – Steep Slopes

SPECIES		POUNDS PER ACRE
SCIENTIFIC NAME	COMMON NAME	
<i>Adenostoma fasciculatum</i>	Chamise	5.75
<i>Eriogonum fasciculatum</i>	California buckwheat	2.50
<i>Pappostipa speciosa</i>	Desert needlegrass	6.50
<i>Arctostaphylos glauca</i>	Big berry manzanita	1.25
TOTAL pounds per acre		16

Area of Seed Mix “A” = Level or slight-gradient slopes (i.e., pads that are not subject to immediate use), topsoil piles, interim slopes; applied by hydroseeding.

Area of Seed Mix “B” = Cut slopes suitable for revegetation where slope conditions allow for successful establishment; applied by hydroseeding.

4.6.2.3 Interim Seeding

Slope areas that are not yet available for revegetation may be graded and seeded for interim erosion control. Interim seeding will consist of the Seed Mix “A” (as listed above). Additional areas where this seed mixture may be used are primarily areas of nearly level pads, or in instances where topsoil would be salvaged and stockpiled.

4.6.2.4 Timing

All hydroseeding should be performed and completed between November 15 and January 15. All efforts shall be made to plant during this time period since beneficial temperatures and anticipated rainfall will aid in germination, establishment and growth of seeds.

4.6.2.5 Ripping of Soil

Where project operations result in compaction of the soil, ripping of the soil will be used in areas to be revegetated to eliminate compaction and to establish a suitable root zone in preparation for planting.

4.6.2.6 Revegetation of Roads

Prior to closure, all access roads and haul roads that are designated for reclamation will be stripped of any remaining road base materials and revegetated.

4.6.2.7 Maintenance

Maintenance of the revegetation areas shall consist of weed eradication to limit and control invasive noxious weeds and for repair of erosion damage. The site will be monitored periodically (at least annually for five years) by means of visual observation to identify the potential for uncontrolled weed propagation. Should weed control be necessary, cultural methods will be implemented to eliminate the spread of these species.

All slopes shall be repaired due to erosion if necessary. Where surface erosion produces rills or gullies in excess of one foot in depth, the surface will be repaired and the source of runoff water will be rerouted to enter the established drainage control system for the site.

4.6.2.8 Test Plots

It is recommended that test plot areas be conducted as extraction progresses to determine the most appropriate seeding procedures to be followed in order to ensure successful implementation of the revegetation plan. The lead agency may waive any requirement to conduct test plots when the success of the proposed revegetation plan can be documented from experience with similar species and conditions or by relying on competent professional advice based on experience with the species to be hydroseeded.

Success of these revegetated areas shall be judged based upon the effectiveness of the vegetation for the approved end use and by comparing the quantified measures of vegetative cover, density and species richness of the reclaimed mined-lands similar to that of the surrounding area. Comparisons will be made by a qualified individual and recommendations for revegetation shall be developed.

Should performance standards not be met after two years, remedial measures will be taken. These measures may include soil amendments, irrigation, and/or other plant species.

4.6.3 Monitoring

4.6.3.1 Performance Standards for Vegetation

Following seeding and before release of financial assurance the revegetated slopes must meet performance criteria. The most meaningful performance criteria for erosion control and visual mitigation are based on vegetative cover and species-richness.

Performance standards have been developed in coordination with the project biologist (ELMT) based on site-specific conditions documented during their habitat assessment. Approximately 164 acres of the site will be revegetated with Seed Mix "A", and 4.7 acres with Seed Mix "B". Steep hard rock cut slopes between benches will not be actively revegetated due to their limited potential for supporting plant growth. It is important to note that the primary objective of the revegetation effort is not to replicate pre-disturbance habitat exactly, but to establish a stable and self-sustaining vegetative cover that will help control erosion and integrate the site with the surrounding environment.

The performance standards that are listed below may be reevaluated, at a later time, in terms of this baseline data. Therefore, it is possible that minor adjustments will be made to the performance standards that are proposed herein. Plant density shall be consistent with surrounding areas.

Revegetated areas will be monitored once per year during July by a County approved Biologist. Monitoring records will compare the actual plant success rates with the success criteria. The following minimum standards must be achieved:

Seed Mix "A"

Species richness	4 native perennial species per 10 x 10 meter plot
Cover	35% of area covered (outside of bedrock zones) per 10 x 10 meter plot
Density	2 - 3 native perennial stems per square meter plot

Seed Mix "B"

Species richness	100% of the most prevalent species shall be native species per 12 randomly placed 50 x 1 meter transects
Cover	40% covered per 12 randomly placed 50 x 1 meter transects
Density	No target density on erosion control seeding areas

Prior to reclamation, test plots will be established (using the different soil compositions that are anticipated) to determine optimal seeding mixtures, seeding methods, seeding rates, mulch types and application procedures to be used to ensure species success and diversity. Success criteria may be adjusted based on the results of the test plot program.

4.6.3.2 Installation Monitoring

To ensure that the revegetation plan is followed all implementation activities shall be monitored by a County-approved Biologist. Records shall be kept of soil preparation, including the addition of amendments as determined to be necessary, and hydroseeding. Hydroseeding will further be detailed to identify the date of application and the location where various seed mixes are applied. This will require the preparation of a map to show the location of the revegetation sites and date of seed application.

4.6.3.3 Vegetation Monitoring

Monitoring must be performed to document revegetation success. Following seeding operations and prior to requesting the release of financial assurances, individual revegetation sites will be monitored for a minimum of five years (or until performance criteria has been met). Monitoring will be performed to document that the revegetation areas achieve the success standards for vegetative cover. Sample sizes must be sufficient to produce at least an 80% confidence level. When the revegetated areas meet success criteria for two consecutive years without human intervention, no further monitoring will be required and the operator will apply for release of financial assurances.

4.7 Post-Extractive Surface Conditions and Roads

The primary entrance roads will remain for access at the discretion of the landowner unless it is determined unnecessary for future uses. Other roads will be eliminated, or where they serve the post extraction land use, retained. Those to be eliminated will also be scarified to a depth necessary to promote water infiltration, topsoiled, and revegetated with an appropriate seed mix (where revegetation is feasible).

A final step will involve the removal of equipment and refuse. These areas will be graded, scarified, and revegetated as well.

4.8 Removal of Buildings, Equipment, and Structures

Operations will typically include mobile equipment such as excavators, bulldozers, front-end loaders, and haul trucks. Support facilities will be completely portable and may include a portable processing plant, maintenance trailers, offices, scale house, and scale. When mining has ceased, all structures, equipment, and refuse will be removed from the site.

4.9 Post-Extractive Public Safety

No mining equipment, tailings, waste piles, refuse or dangerous material will remain onsite. Final slopes will be constructed consistent with the recommendations of the Slope Stability Study Report (Appendix C), with static and seismic factors of safety exceeding applicable thresholds.

The berm constructed along Lone Pine Canyon Road and gates will remain in place following reclamation to continue to deny unauthorized entry. Where appropriate, signage will be maintained to warn of potential hazards and identify the site as a former mining area. Roads not intended for the final land use will be closed and revegetated to prevent future vehicle use and discourage trespassing.

4.10 Effect of Reclamation on Future Recovery of Mineral Resources

The extraction plan has been designed to maximize recovery of all of the economically obtainable mineral resources known to occur on the project site, within the extraction limits. The design reflects a balance between resource recovery and long-term stability, public safety, and site configuration suitable for the post-mining end use.

The extraction limits defined in this plan represent the extent of feasible recovery based on current geotechnical design constraints, including slope stability and safety recommendations outlined in the 2025 Slope Stability Study Report prepared by Terracon (Appendix C). While the site is known to contain additional mineral resources beyond the currently proposed limits of disturbance, full extraction of these areas is not included in the current plan due to geologic, engineering, and site design limitations. However, future mining of additional portions of the property may be possible and such activities would require an amendment to this reclamation plan and appropriate agency review. The reclamation activities described in this plan will not preclude the future recovery of remaining resources. Prior to final closure of mining operations, the operator may evaluate the remaining resource potential and determine whether additional extraction is warranted.

Nothing in this plan shall be interpreted as a waiver or relinquishment of the property owner's vested mining rights on other portions of the property.

4.11 Reclamation Monitoring and Maintenance

Reclamation efforts will be monitored pursuant to SMARA requirements and according to the approved Reclamation Plan. The project is required, under SMARA (Public Resources Code §2207), to submit an annual status report on forms provided by the Department of Conservation and directs the lead agency to conduct an inspection of the operations within six months of receipt of the required Annual Report.

4.12 Financial Assurances

In addition to annual monitoring, all SMARA regulated sites are required to provide financial assurances that reclamation of the site will be conducted in accordance with

the approved Reclamation Plan. The financial assurance may be in the form of surety bonds, irrevocable letter of credit, trust funds, or other forms of financial assurances approved by the Lead Agency. The financial assurance is reviewed annually by the operator and lead agency to determine if operations or reclamation during the past year and planned operations during the upcoming year would require adjustments to the amount of the estimate.

5.0 Reclamation Standards

The Surface Mining and Reclamation Act requires all newly approved Reclamation Plans incorporate verifiable standards to ensure adequate completion of Reclamation Plan objectives. The verifiable standards were adopted by the State Mining and Geology Board as regulations to implement these requirements. These regulations are known as the “Reclamation Standards” (PRC Article 9, Sections 3700 *et seq.*). The following discussion addresses compliance with these standards as outlined in the Lone Pine Canyon Road Quarry Reclamation Plan.

5.1 Financial Assurances (§3702)

The project will be subject to a required financial assurance to ensure reclamation is performed in accordance with the reclamation plan. Financial assurances are reviewed annually by the County of San Bernardino and adjusted as necessary. Financial assurances must be in place prior to commencement of operations.

5.2 Wildlife Habitat (§3703)

No state or federally listed threatened or endangered species were observed onsite during the biological survey, and no USFWS-designated critical habitat or sensitive natural communities are present within the project boundaries. The site consists of upland chaparral habitat, including chamise and mixed chaparral, which are common to the region and provide potential habitat for a range of native wildlife species.

Short-joint beavertail, Mojave yucca, and chaparral yucca, all protected under the California Desert Native Plant Act (CDNPA), were observed onsite and will be avoided. In the even that avoidance is not possible, the operator will coordinate with San Bernardino County and acquire any necessary permits, as required. Crotch’s bumble bee, a candidate species under the California Endangered Species Act, has moderate potential to occur onsite. However, the project has been designed to avoid suitable habitat, and no impacts to this species are anticipated. Coast horned lizard and Costa’s hummingbird, both special-status species, were observed onsite but do not require species-specific mitigation under their current listing. General revegetation and habitat restoration measures will support their continued use of the site.

The reclamation plan proposes revegetation of benches, buffer areas, and accessible slopes using native, non-irrigated seed mixes appropriate to the surrounding habitat. These revegetated areas will be consistent with the post-mining land use and with surrounding wildlife habitat.

5.3 Backfilling, Regrading, Slope Stability, and Recontouring (§3704)

The reclamation plan calls for continued resource extraction and reclamation over an area of about 285 acres; and will result in stable slopes with an overall angle of 50 degrees. All slopes shall have a minimum slope stability factor of safety greater than 1.5 under static conditions and greater than 1.1 under seismic conditions. All reclaimed slopes shall follow the recommendations of the Slope Stability Study Report (Appendix C).

Final slopes will be established through cut operations in competent bedrock and will be benched in accordance with industry standards and site-specific geotechnical recommendations. In areas of unconsolidated or colluvial material, slopes will be graded at 2:1 (H:V) or flatter, as recommended. Slope geometry has been designed to reflect the natural topographic character of the surrounding terrain to the extent feasible, and no manufactured slopes will be left in a condition that poses a public safety hazard. No engineered fill slopes are proposed for final reclamation surfaces, and no backfilling is currently planned as part of the reclamation strategy.

5.4 Revegetation (§3705)

The objective of revegetation is to provide vegetative cover on final slopes that will visually integrate the site with surrounding areas and stabilize the site against erosion and sedimentation. If necessary, surfaces will be ripped or disced to relieve compaction. Native plant species will be used for revegetation. Section 4.6 of this Reclamation Plan sets forth planting and maintenance practices, as well as verifiable monitoring standards to assure vegetative success. Examples of maintenance practices and verifiable monitoring standards include, but are not limited to managing noxious weeds, planting during appropriate seasons, planting methods, and soil fertility analysis. Test plots are required to assist with determination of successful revegetation measures.

5.5 Drainage, Diversion Structures, Waterways, and Erosion Control (§3706)

The quality of water, recharge potential, and storage capacity of groundwater aquifers is not expected to be diminished as a result of reclamation of this extraction operation. Final slopes will be stabilized through proper grading, benching, and the use of erosion control measures such as brow ditches and surface roughening. Operational erosion control methods are designed in compliance with storm water regulations. Erosion and sedimentation control will be implemented during all phases of operations. Per Industrial General Permit Order 2018-0028-DWQ Effective July 1, 2020, requirements an NOI will be filed, a SWPPP prepared and BMPs implemented to mitigate erosion and sediment transport.

5.6 Prime Agricultural Land Reclamation (§3707)

Not Applicable.

5.7 Other Agricultural Land (§3708)

Not Applicable.

5.8 Building, Structure and Equipment Removal (§3709)

All structures and equipment will be removed upon completion of mining and final reclamation activities.

5.9 Stream Protection, Including Surface Groundwater (§3710)

A series of ephemeral drainages traverse the property, primarily conveying runoff during storm events. If disturbance occurs, the operator will coordinate with the appropriate agencies, including the Regional Water Quality Control Board (RWQCB) and the California Department of Fish and Wildlife (CDFW), to comply with applicable regulatory requirements.

Reclamation will be designed to prevent accelerated erosion, offsite sedimentation, or alteration of natural drainage patterns. Industrial Best Management Practices (BMPs) and post-extraction BMPs will be designed to protect water quality and in compliance with CCR section 3706, the Federal Clean Water Act, and the Porter–Cologne Water Quality Control Act.

There are no in-stream mining operations proposed as part of this plan.

5.10 Topsoil Management (§3711)

Topsoil will be salvaged to aid in reclamation. It is expected that topsoil will be stripped in advance of the pit and directly placed on previously disturbed surfaces immediately prior to revegetation. This will limit damage to soil structure and preserve soil biological processes. Topsoil stockpiles will be clearly identified with signage.

5.11 Tailing and Extraction Waste Management (§3712)

No stockpiles will be left on site post reclamation. Mine waste and tailings and mine waste disposal units are governed by SWRCB waste disposal regulations and shall be reclaimed in accordance with CCR Article 1. Surface Mining and Reclamation Practice. Section 3500 et seq." and "All waste shall be disposed of in accordance with State and local health and safety ordinances."

5.12 Closure of Surface Openings (§3713)

Not Applicable.

6.0 Statement of Responsibility

I, the undersigned, hereby agree to accept full responsibility for reclamation of all mined lands as described and submitted herein and in conformance with the applicable requirements of Articles 1 and 9 (commencing with Sections 3500 et seq. and 3700 et seq., respectively) of Chapter 8 of Division 2 of Title 14 of the California Code of Regulations, the Surface Mining and Reclamation Act commencing with Section 2710 et seq., and with any modifications requested by the administering agency as conditions of approval.

Grand Lone Pine Canyon Enterprises, LLC:

Signature: _____

Title: _____

Date: _____

(final version of the Reclamation Plan will be signed)

7.0 References

- California Department of Water Resources. (2004). California's Groundwater Bulletin 118. In *Hydrologic Region South Coast, Upper Santa Ana Valley Groundwater Basin*. https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/2003-Basin-Descriptions/8_002_05_CajonSubbasin.pdf
- California Department of Water Resources. (2025, June 25). *Groundwater Browse Data for Station 46654 (Local Well Number 02N05W19R005S, Site Code 342390N1174350W001)*. Water Data Library. <https://wdl.water.ca.gov/WaterDataLibrary/GroundwaterBrowseData.aspx?LocalWellNumber=&StationId=46654&StateWellNumber=02N05W19R005S&SelectedCounties=&SiteCode=342390N1174350W001&SelectedGWBasins=>
- U.S. Department of Agriculture, Natural Resources Conservation Service. (2016). *Web Soil Survey*. <http://websoilsurvey.nrcs.usda.gov/app>
- U.S. Geological Survey. (2025, January 7). *Staged Products directory – The National Map: National Watershed Boundary Dataset (Hydrography/WBD/National/GDB)*. <https://prd-tnm.s3.amazonaws.com/index.html?prefix=StagedProducts/Hydrography/WBD/National/GDB/>

Appendix A
Plot Plan & Reclamation Plan Drawings

LONE PINE CANYON ROAD QUARRY RECLAMATION PLAN

MINE NAME
LONE PINE CANYON QUARRY

MINE OPERATOR
CALIFORNIA CARBONATES, INC.
P.O. BOX 12915
NEWPORT BEACH, CA 92658
760-535-5550

LAND OWNER
GRAND LONE PINE CANYON ENTERPRISES, LLC
216 S. CITRUS STREET, #315
WEST COVINA, CA 91791
(626) 831-1478

APPLICANT
SAME AS MINE OPERATOR

OWNER OF MINERAL RIGHTS
SAME AS LAND OWNER

REPRESENTATIVE
ENVIROMINE, INC.
4711 VIEWROCK AVENUE, SUITE 270
SAN DIEGO, CA 92123
619-284-8515

MAP PREPARER
CHANG CONSULTANTS
WAYNE CHANG, PE
P.O. BOX 9496
RANCHO SANTA FE, CA 92067-4496
MOBILE: 858-692-0760
FAX: 858-832-1402

DATE OF MAP UPDATE
JANUARY 27, 2026

UTILITIES
ELECTRICITY: SELF-POWERED EQUIPMENT
GAS: NOT APPLICABLE
WATER: TRUCKED ONSITE
SEWER: PORTABLE SANITATION STATIONS
TELEPHONE: MOBILE SERVICE

SOURCE OF EXISTING TOPOGRAPHY
ENVIROMINE, INC., 3/25/2025
GROUND CONTROL PROVIDED BY:
ACTION SURVEYS, INC.

EARTHWORK
148,236,100 CY EXPORT
OPEN SPACE

RECLAIMED END USE
RC - RESOURCE CONSERVATION

LAND USE DISTRICT
RC - RESOURCE CONSERVATION

LEGAL DESCRIPTION

ASSESSOR PARCEL NUMBER 356-231-02;
GOVERNMENT PATENT 975917, MARCH 15, 1926
MINING CLAIM WARNER NO. 1, WARNER NO. 2, WARNER NO. 4
ALIQUOT PARTS OF SECTIONS 29 AND 30, TOWNSHIP 3 NORTH,
RANGE 6 WEST
GOVERNMENT PLAT DATED NOVEMBER 13, 1885

ASSESSOR PARCEL NUMBER 356-241-03;
GOVERNMENT PATENT 975918, MARCH 15, 1926
MINING CLAIM WARNER NO. 3,
ALIQUOT PARTS OF SECTION 32, TOWNSHIP 3 NORTH, RANGE 6 WEST
GOVERNMENT PLAT DATED NOVEMBER 13, 1885

ASSESSOR PARCEL NUMBER 356-241-02;
GOVERNMENT PATENT 989905, NOVEMBER 13, 1926
CAJON NO. 2 LODE, MINERAL SURVEY NO. 5849-A
SECTION 32, TOWNSHIP 3 NORTH, RANGE 6 WEST
GOVERNMENT PLAT DATED NOVEMBER 13, 1885

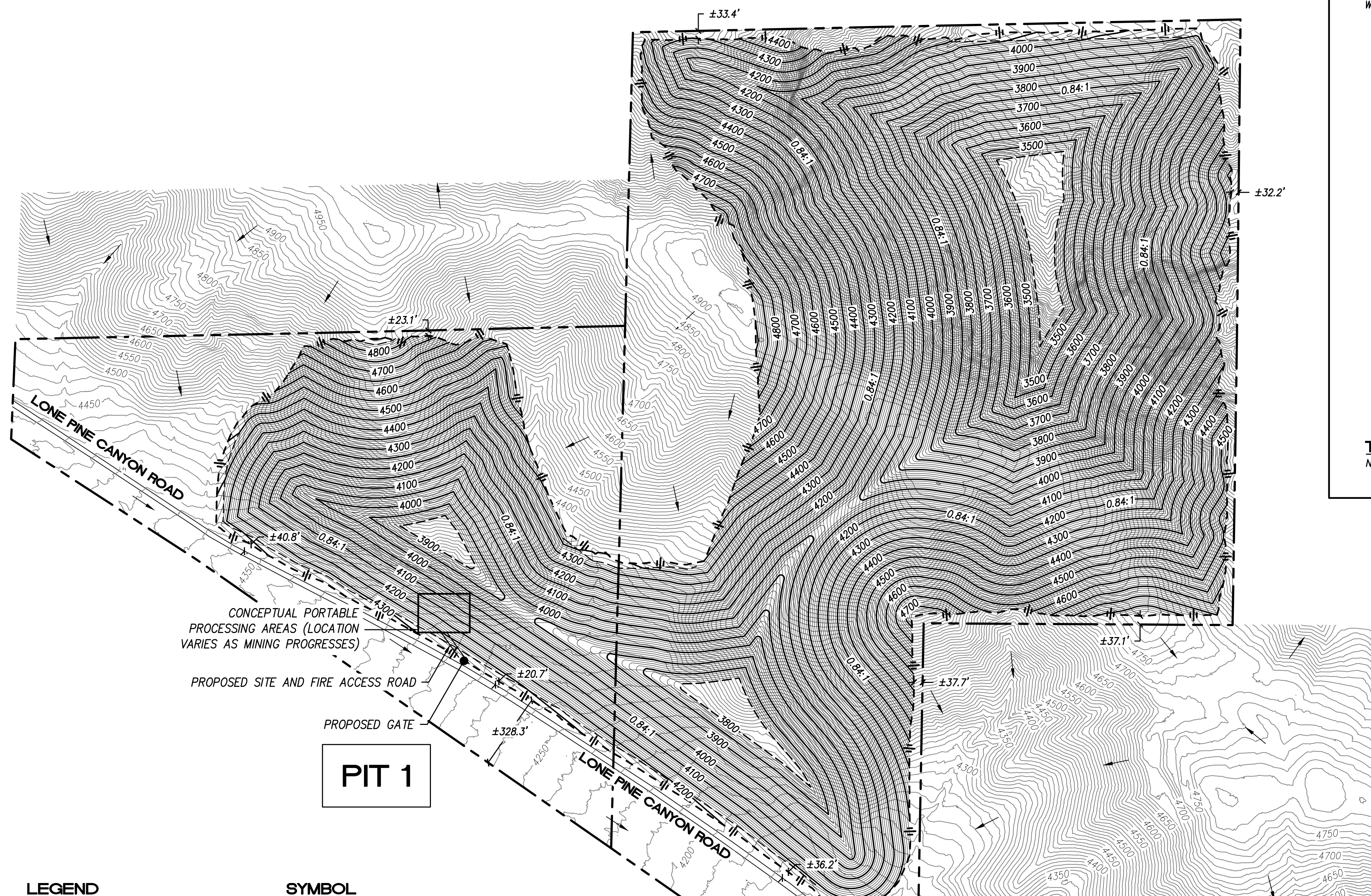
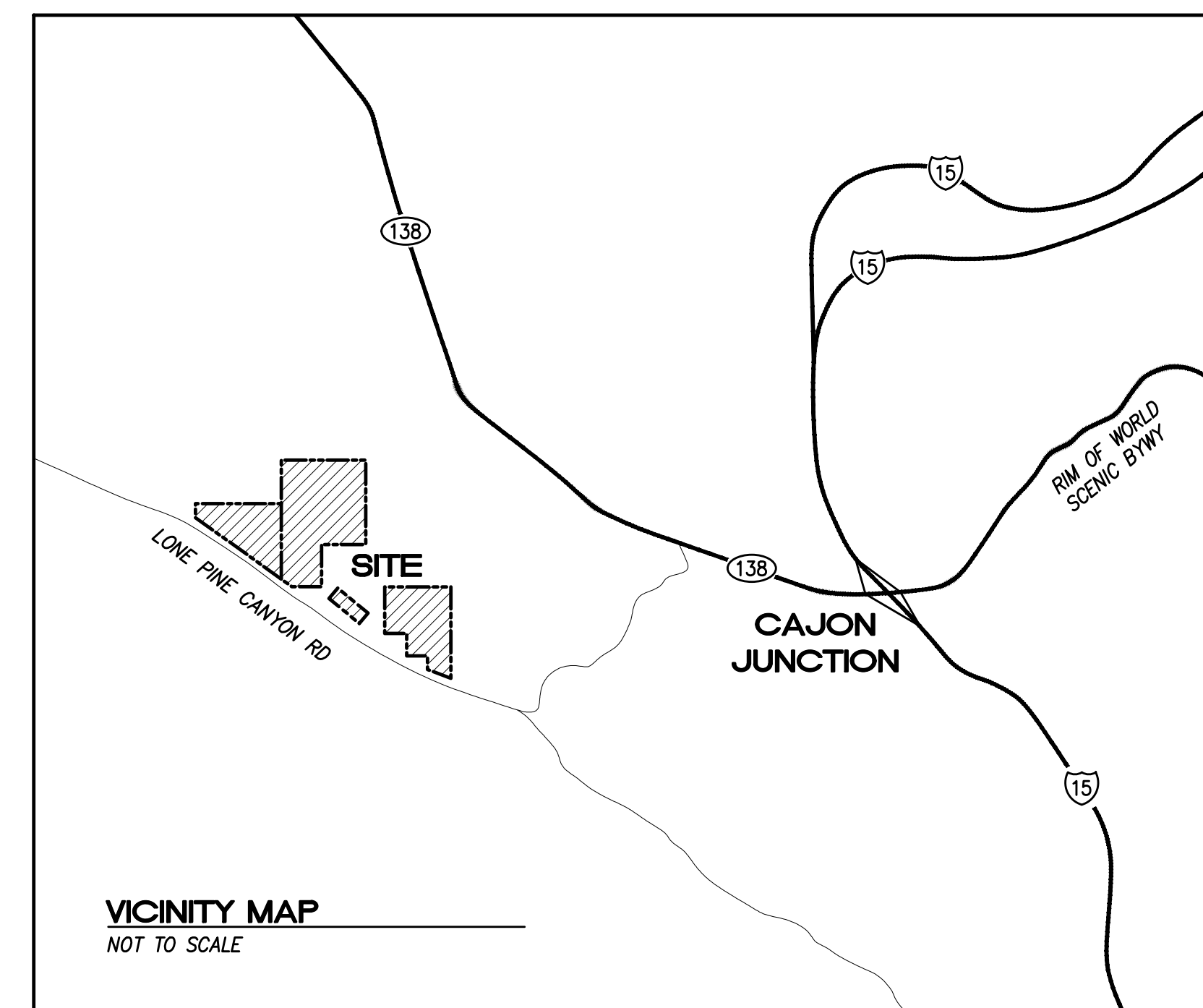
ASSESSOR PARCEL NUMBER 0351-161-03;
GOVERNMENT PATENT 989905, NOVEMBER 13, 1926
CAJON NO. 2 MILL SITE, MINERAL SURVEY NO. 5849-B
SECTION 27, TOWNSHIP 3 NORTH, RANGE 6 WEST
GOVERNMENT PLAT DATED NOVEMBER 13, 1885

THE MINING CLAIM SECTION CORNERS AND SECTION LINES ARE ALSO SHOWN ON THE FOLLOWING
SAN BERNARDINO COUNTY SURVEY RECORDS:

CORNER RECORD 001-0163, RECORD OF SURVEY 8-19 AND COUNTY SURVEYOR FIELD BOOK 4117, PAGE 5.

TIME FRAME

148 YEARS OR UNTIL RESOURCE DEPLETION. OPERATIONS ARE EXPECTED TO LAST UNTIL 2174 OR LONGER DEPENDENT UPON MARKET DEMAND. THE ANTICIPATED END DATE IS JANUARY 1, 2175.



LEGEND

PROPERTY LINE	SYMBOL
DAYLIGHT LINE	---
PROPOSED CONTOUR	—4000—
EXISTING CONTOUR	—4000—
EXISTING FLOW DIRECTION	→

TABLE 1: SEED MIX 'A' GENTLE SLOPES / FLAT AREAS

Scientific Name	Common Name	Pounds Per Acre
<i>Adenostoma fasciculatum</i>	Chamise	5.00
<i>Eriodictyon californicum</i>	Yerba Santa	4.25
<i>Eriogonum fasciculatum</i>	California buckwheat	4.00
<i>Lepidospartum squamatum</i>	Scale broom	2.25
<i>Dendromecon rigida</i>	Bush poppy	1.50
<i>Salvia apia</i>	White sage	1.00
<i>Opuntia basilaris</i>	Beavertail pricklypear	.25
<i>Salvia columbariae</i>	Chia	1.50
<i>Artemisia tridentata</i>	Big sagebrush	0.75
<i>Salvia mellifera</i>	Black sage	0.25
<i>Ericameria linearifolia</i>	Interior goldenbush	0.50
<i>Pappostipa speciosa</i>	Desert needlegrass	1.25
<i>Hesperoyucca whipplei</i>	Chaparral yucca	0.75
<i>Rhus ovata</i>	Sugarbush	0.50
<i>Sambucus mexicana</i>	Mexican Elderberry	0.50
<i>Cercocarpus betuloides</i>	Mountain mahogany	0.25
<i>Arctostaphylos glauca</i>	Big berry manzanita	0.50
TOTAL pounds per acre		25

TABLE 2: SEED MIX 'B' - STEEP SLOPES

Scientific Name	Common Name	Pounds Per Acre
<i>Adenostoma fasciculatum</i>	Chamise	5.75
<i>Eriogonum fasciculatum</i>	California buckwheat	2.50
<i>Pappostipa speciosa</i>	Desert needlegrass	6.50
<i>Arctostaphylos glauca</i>	Big berry manzanita	1.25
TOTAL pounds per acre		16

METHOD OF PLANTING: HYDROSEED

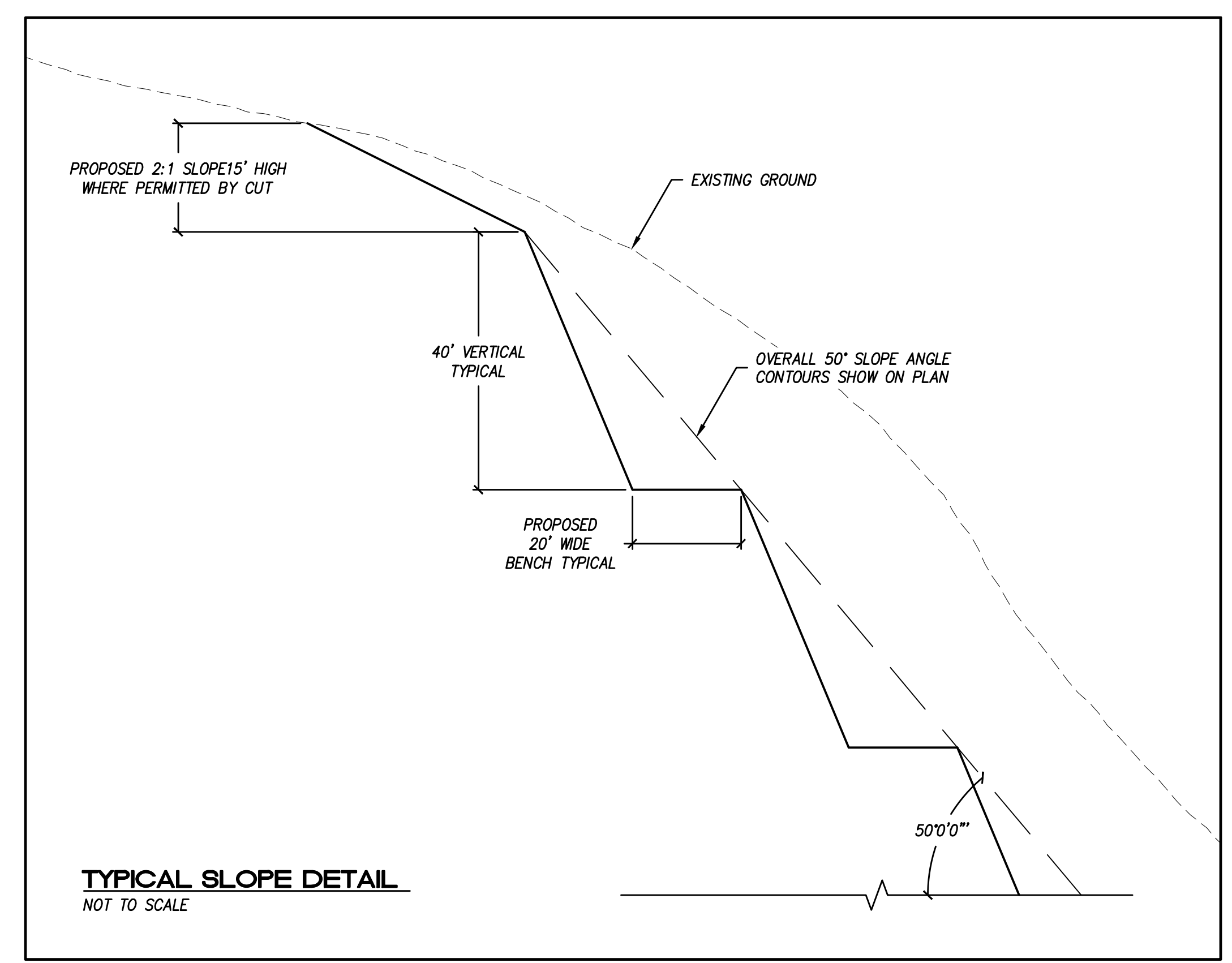
MINING INFORMATION

PIT NUMBER	DISTURBANCE AREA	MINED VOLUMES
1	198.0 ACRES	119,849,000 CUBIC YARDS
2	10.7 ACRES	1,201,600 CUBIC YARDS
3	70.1 ACRES	27,185,500 CUBIC YARDS
TOTALS	278.8 ACRES	148,236,100 CUBIC YARDS

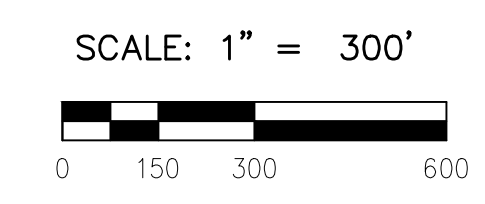
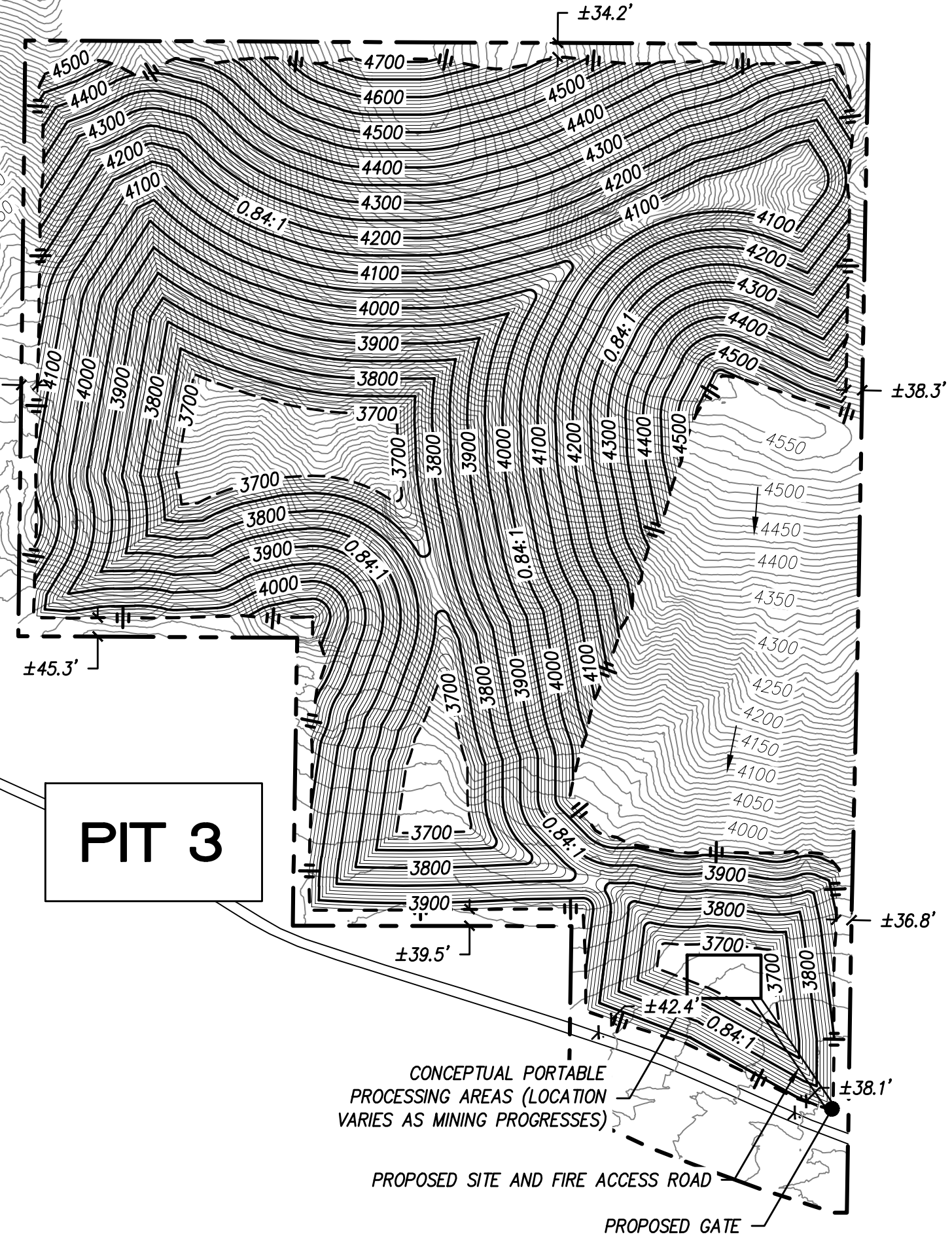
GEOLOGIC DESCRIPTION
PROJECT TERRAIN IS GENERALLY STEEP, RUGGED, AND IS FORMED IN GNEISSIC BEDROCK THAT CONTAINS LENSES OF MARBLE. THE GNEISS VARIES FROM WHITISH TO GRAY AND WEATHERS TO A BROWN TO GRAY SOIL. FOLIATION IS VISIBLE WHERE LAMINAE ARE CLOSELY SPACED AND/OR WHERE COMPOSITION IS INTERLAYERED. THICK CHAPARRAL VEGETATION COVERS THE SITE. THE SITE IS GENERALLY BOUNDED BY THE CAJON VALLEY FAULT ALONG THE NORTHEAST AND SAN ANDREAS FAULT ALONG THE SOUTHWEST. NORTHEAST OF THE CAJON VALLEY FAULT ARE BEDDED SANDSTONES OF THE CAJON VALLEY FORMATION. GEOLOGIC MAPS THAT INCLUDE THE SITE AREA REGION INCLUDE MORTON AND WOODBURN (1991), DIBBLEE AND MINCH (2003), MORTON AND MILLER (2006), KENNEY (1999) MAPPED ELEMENTS OF THE CAJON VALLEY FAULT IN AN AREA NORTHWEST OF THE SITE. DUE TO RELATIVE PROXIMITY OF THE SAN ANDREAS FAULT ZONE TO THE PROJECT, SEVERE SEISMIC SHAKING OF THE SITE CAN BE EXPECTED TO OCCUR DURING THE LIFETIME OF THE PROPOSED MINING AND RECLAMATION. LANDSLIDES ARE MAPPED BY OTHERS WITHIN THE PARCEL BOUNDARIES. MINING IS PLANNED TO AVOID THESE AREAS. ALTERNATIVELY, ADDITIONAL ANALYSIS MAY DETERMINE THAT THEY DO NOT EXIST OR DETERMINE THAT THEY CAN BE MITIGATED BY REMOVAL. IF GEOLOGIC CONDITIONS THAT ARE INCONSISTENT WITH CONDITIONS DESCRIBED IN THIS REPORT, OR THAT WARRANT FURTHER ANALYSIS, ARE EXPOSED DURING FUTURE MINING, SUCH CONDITIONS SHOULD BE EVALUATED. THE DESIGN OF FINAL RECLAIMED SLOPES, INCLUDING SLOPE ANGLES AND BENCHING, IS THE RESPONSIBILITY OF THE MINE ENGINEER/OWNER AND SHOULD ACCOMMODATE THE CONDITIONS PRESENT WITHIN THE ROCK MASS AT RECLAMATION DEPTHS AND LOCATIONS. PERIODIC GEOLOGIC MAPPING OF THE RECLAMATION SLOPES SHOULD BE PERFORMED DURING SLOPE CONSTRUCTION (ANNUAL INSPECTIONS DURING MINING) TO IDENTIFY CONDITIONS THAT MAY PRECLUDE RECLAMATION OF THE SITE IN ACCORDANCE WITH THE APPROVED RECLAMATION PLAN.

LONE PINE CANYON PROJECT, SLOPE STABILITY REPORT, BY TERRACON CONSULTANTS, JUNE 17, 2025

JOHN S. MCKEOWN, E.G. P.E. DATE



DRAINAGE NOTE
STORMWATER WILL GENERALLY BE DIRECTED TOWARD EXISTING DRAINAGES ALTHOUGH LOCALIZED RETENTION MAY OCCUR WITHIN PROPOSED PITS WHERE FINAL GRADING FORMS TOPOGRAPHIC LOWS.



PRELIMINARY - FOR REVIEW PURPOSES ONLY

<p>Underground Service Alert Call: TOLL FREE 1-800-227-2600 TWO WORKING DAYS BEFORE YOU DIG</p>	<p>BENCHMARK 1/2" REBAR SET FLUSH IN THE GROUND BY ACTION SURVEYS WITH A METAL T-POST SET ADJACENT FOR VISIBILITY. COORDINATES: EASTING: 6702617.517, NORTHING: 1935826.915; ELEVATION: 4,168.616 FT (NAVD83, GEOID18) HORIZONTAL DATUM: CALIFORNIA COORDINATE SYSTEM OF 1983 (CCS83), ZONE 5, NSRS2011, EPOCH 2010.00 VERTICAL DATUM: NAVD83 USING GEOID18 MODEL; UNITS: US SURVEY FEET.</p>	<p>PREPARED BY: ChangConsultants Civil Engineering-Hydrology-Hydraulics-Sedimentation P.O. Box 9496 Rancho Santa Fe, CA 92067-4496 T: (858) 692-0760 F: (858) 832-1402 wayne@changconsultants.com • www.changconsultants.com</p>		<p>MARK</p>	<p>REVISIONS</p>	<p>APPR. DATE</p>	<p>COUNTY OF SAN BERNARDINO DEPARTMENT LAND USE SERVICES</p>	<p>RECOMMENDED BY:</p>	<p>RECLAMATION PLAN</p>	<p>FILE NO.</p>
				<p>APPROVED BY:</p>	<p>DATE</p>	<p>SAN BERNARDINO COUNTY</p>	<p>LONE PINE CANYON ROAD QUARRY</p>	<p>SHEET 1 OF 1</p>		

Appendix B
Habitat and Jurisdictional Assessment

LONE PINE CANYON PROJECT SITE-PHELAN

SAN BERNARDINO COUNTY, CALIFORNIA

Habitat and Jurisdictional Assessment

Prepared For:

EnviroMINE Inc.

4711 Viewridge Avenue, Suite 270

San Diego, CA 92123

Contact: *Travis Jokerst*

Prepared By:

ELMT Consulting, Inc.

2201 N. Grand Avenue #10098

Santa Ana, California 92711

Contact: *Travis J. McGill*

June 2025

LONE PINE CANYON PROJECT SITE-PHELAN

SAN BERNARDINO COUNTY, CALIFORNIA

Habitat and Jurisdictional Assessment

The undersigned certify that the statements furnished in this report and exhibits present data and information required for this biological evaluation, and the facts, statements, and information presented is a complete and accurate account of the findings and conclusions to the best of our knowledge and beliefs.



Travis J. McGill
Director/Biologist



Rachael A. Lyons
Associate Biologist

June 2025

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APPENDIX

Appendix A Site Photographs
Appendix B Potentially Occurring Special-Status Biological Resources
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Section 1 Introduction

This report contains the findings of ELMT Consulting’s (ELMT) biological resources assessment prepared for the Proposed Project site located on Lone Pine Canyon Road (Project site or site) in San Bernardino County, California. ELMT biologists Rachael A. Lyons, Megan E. Peukert, and Andrew M. Mestas conducted field surveys and evaluated the condition of the habitat within the project site on April 22, 2025.

The habitat assessment was conducted to characterize existing site conditions and to assess the probability of occurrence of special-status¹ plant and wildlife species that could pose a constraint to project implementation. Special attention was given to the suitability of the project site to support Crotch’s bumble bee (*Bombus crotchii*) and other special-status plant and wildlife species identified by the California Department of Fish and Wildlife’s (CDFW) California Natural Diversity Database (CNDDDB), and other electronic databases as potentially occurring in the general vicinity of the project site.

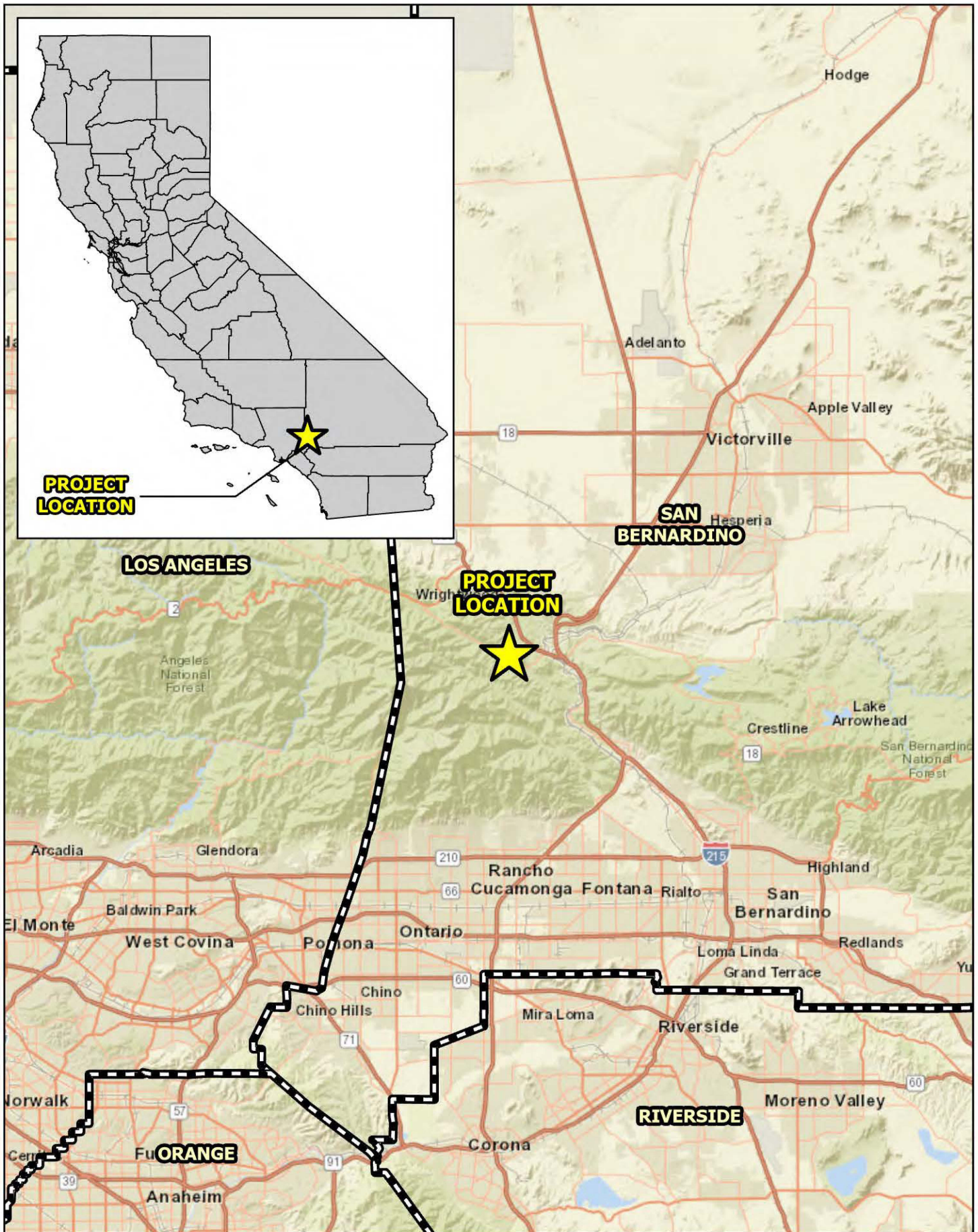
Additionally, the report also addresses resources protected under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (FGC), federal Clean Water Act (CWA) regulated by the United States Army Corps of Engineers (Corps) and Regional Water Quality Control Board (Regional Board) respectively, and Section 1602 of the FGC administered by CDFW.

The site was also evaluated for its potential to support natural drainage features, ponded areas, and/or water bodies that have the potential to fall under the regulatory authority of the of the United States Army Corps of Engineers (Corps), Regional Water Quality Control Board (Regional Board), or California Department of Fish and Wildlife (CDFW) pursuant to Sections 401 and 404 of the Federal Clean Water Act (CWA), the California Porter-Cologne Water Quality Control Act, and Section 1600 *et seq.* of the Fish and Game Code.

1.1 PROJECT LOCATION

The project site is generally located north and east of the San Gabriel Mountains, west of Interstate 15, and south of State Route 138. (refer to Exhibit 1, Regional Vicinity). The site is depicted on the Telegraph Peak quadrangle of the United States Geological Survey’s (USGS) 7.5-minute map series within Sections 29, 30, 31, and 32 of Township 3 North, Range 6 West (Exhibit 2, Site Vicinity). Specifically, the site straddles Lone Pine Canyon Road to the southwest and lies approximately 0.50 mile to the northwest of the intersection of Swarthout Rd and Lone Pine Canyon Road within Assessor Parcel Numbers (APNs) 035-623-102; 035-624-102, and -103 (Exhibit 3, Project Site).

¹ As used in this report, “special-status” refers to plant and wildlife species that are federally or State listed, proposed, or candidates; plant species that have been designated a California Native Plant Society (CNPS) Rare Plant Rank; and wildlife species that are designated by the California Department of Fish and Wildlife (CDFW) as fully protected, species of special concern, or watch list species.



PROJECT LOCATION

PROJECT LOCATION

LOS ANGELES

SAN BERNARDINO

RIVERSIDE

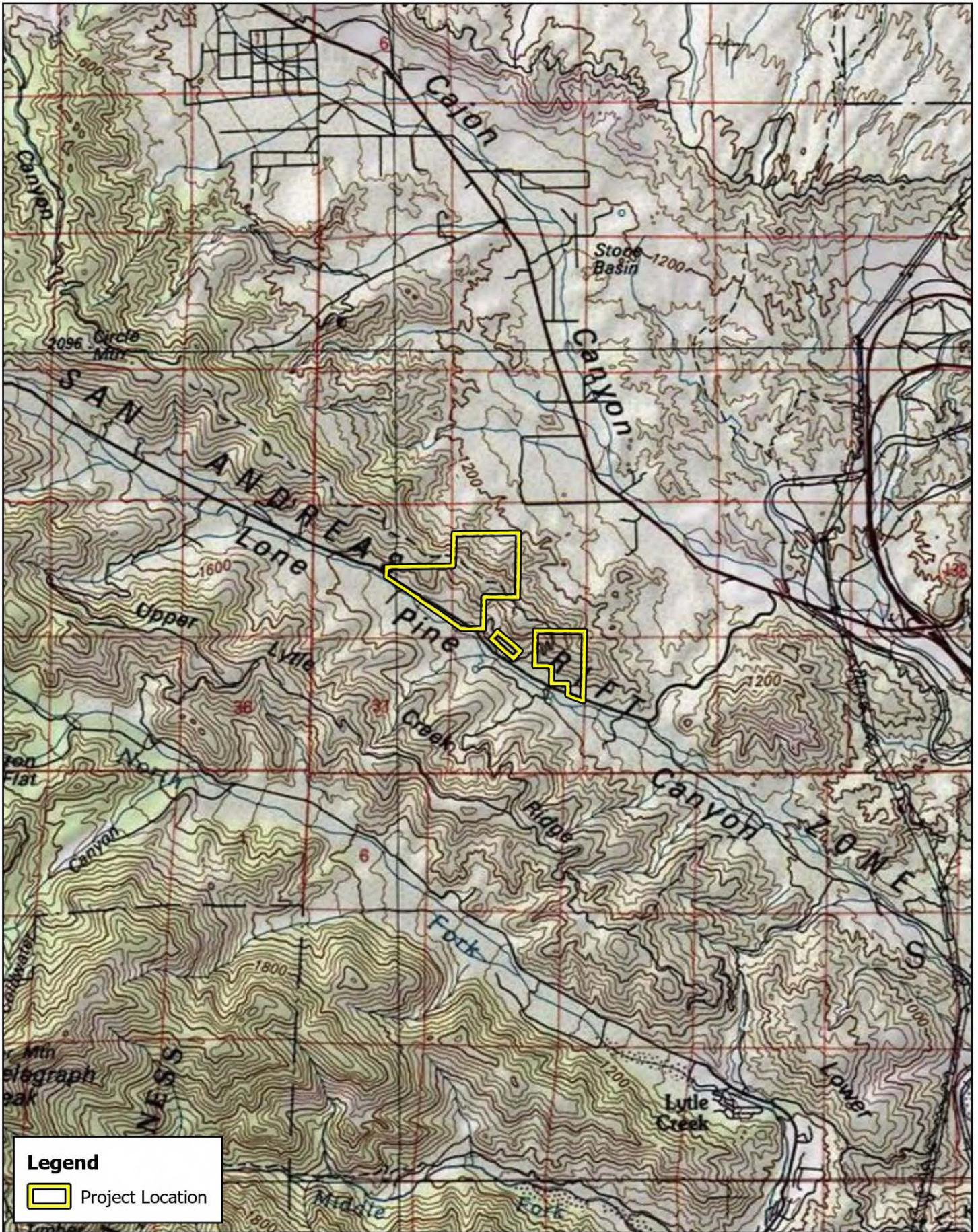
ORANGE



Source: World Street Maps; County of San Bernardino

LONE PINE CANYON ROAD
HABITAT & JURISDICTIONAL ASSESSMENT

Regional Vicinity



Legend

 Project Location



LONE PINE CANYON ROAD
HABITAT & JURISDICTIONAL ASSESSMENT

Site Vicinity



Source: USGS Topographic Map; County of San Bernardino



Section 2 Methodology

A literature review and records search were conducted to determine which special-status biological resources have the potential to occur on or within the general vicinity of the project site. In addition to the literature review, a general habitat assessment or field investigation of the project site was conducted. The field investigation was conducted to document existing conditions within the project site and assess the potential for special-status biological resources to occur.

2.1 LITERATURE REVIEW

Prior to conducting the field investigation, a literature review and records search was conducted for special-status biological resources potentially occurring on or within the vicinity of the project site. Previously recorded occurrences of special-status plant and wildlife species and their proximity to the project site were determined through a query of the CDFW QuickView Tool in the Biogeographic Information and Observation System (BIOS), CNDDDB Rarefind 5, the California Native Plant Society's (CNPS) Electronic Inventory of Rare and Endangered Vascular Plants of California, Calflora Database, compendia of special-status species published by CDFW, and the United States Fish and Wildlife Service (USFWS) species listings.

All available reports, survey results, and literature detailing the biological resources previously observed on or within the vicinity of the project site were reviewed to understand existing site conditions and note the extent of any disturbances that have occurred on the project site that would otherwise limit the distribution of special-status biological resources. Standard field guides and texts were reviewed for specific habitat requirements of special-status and non-special-status biological resources, as well as the following resources:

- Google Earth Pro historic aerial imagery (1994-2025);
- San Bernardino County General Plan;
- United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS), Soil Survey²;
- USFWS Critical Habitat designations for Threatened and Endangered Species; and
- USFWS National Wetlands Inventory (NWI).

The literature review provided a baseline from which to inventory the biological resources potentially occurring on the subject property. The CNDDDB database was used, in conjunction with ArcGIS software, to locate the nearest recorded occurrences of special-status species and determine the distance from the project site.

² A soil series is defined as a group of soils with similar profiles developed from similar parent materials under comparable climatic and vegetation conditions. These profiles include major horizons with similar thickness, arrangement, and other important characteristics, which may promote favorable conditions for certain biological resources.

2.2 FIELD INVESTIGATION

ELMT biologists Rachael A. Lyons, Megan E. Peukert, and Andrew M. Mestas evaluated the extent and conditions of the plant communities found within the boundaries of the project site on April 22, 2025. Plant communities identified on aerial photographs during the literature review were verified in the field by walking meandering transects through the on-site plant communities and along boundaries between plant communities. The plant communities were evaluated for their potential to support special-status plant and wildlife species. In addition, field staff identified any natural corridors and linkages that may support the movement of wildlife through the area. Special attention was given to special-status habitats and/or undeveloped areas, which have higher potentials to support special-status plant and wildlife species.

All plant and wildlife species observed, as well as dominant plant species within each plant community, were recorded. Wildlife detections were made through observation of scat, trails, tracks, burrows, nests, and/or visual and aural observation. In addition, site characteristics such as soil condition, topography, hydrology, anthropogenic disturbances, indicator species, condition of on-site plant communities, and presence of potential jurisdictional drainage and/or wetland features were noted.

2.3 SOIL SERIES ASSESSMENT

On-site and adjoining soils were researched prior to the field survey using the USDA NRCS Soil Survey for San Bernardino County. In addition, a review of the local geological conditions and historical aerial photographs was conducted to assess the ecological changes that the project site has undergone.

2.4 PLANT COMMUNITIES

Plant communities were mapped using 7.5-minute USGS topographic base maps and aerial photography. The plant communities were classified in accordance with Sawyer, Keeler-Wolf and Evens (2009), CDFW (2010) and Holland (1986), delineated on an aerial photograph, and then digitized into ArcGIS. The ArcGIS application was used to compute the area of each plant community in acres.

2.5 PLANTS

Common plant species observed during the field survey were identified by visual characteristics and morphology in the field and recorded in a field notebook. Unusual and less familiar plants were photographed in the field and identified in the laboratory using taxonomic guides. Taxonomic nomenclature used in this study follows the 2012 Jepson Manual (Hickman 2012). In this report, scientific names are provided immediately following common names of plant species (first reference only).

2.6 WILDLIFE

Wildlife species detected during field surveys by sight, calls, tracks, scat, or other sign were recorded during surveys in a field notebook. Field guides were used to assist with identification of wildlife species during the survey included *The Sibley Field Guide to the Birds of Western North America* (Sibley 2003), *A Field Guide to Western Reptiles and Amphibians* (Stebbins 2003), and *A Field Guide to Mammals of North*

America (Reid 2006). Although common names of wildlife species are fairly well standardized, scientific names are provided immediately following common names in this report (first reference only).

2.7 JURISDICTIONAL DRAINAGES AND WETLANDS

Aerial photography was reviewed prior to conducting a field investigation in order to locate and inspect any potential natural drainage features, ponded areas, or water bodies that may fall under the jurisdiction of the Corps, Regional Board, and/or CDFW. In general, surface drainage features indicated as blue-line streams on USGS maps that are observed or expected to exhibit evidence of flow are considered potential riparian/riverine habitat and are also subject to state and federal regulatory jurisdiction. In addition, ELMT reviewed jurisdictional waters information through examining historical aerial photographs to gain an understanding of the impact of land-use on natural drainage patterns in the area. The USFWS NWI and Environmental Protection Agency (EPA) Water Program “My Waters” data layers were also reviewed to determine whether any hydrologic features and wetland areas have been documented on or within the vicinity of the Project site.

Section 3 Existing Conditions

3.1 LOCAL CLIMATE

The Cajon Pass has a desert climate characterized by hot, dry summers, and mild, dry winters. Climatological data obtained for the City of Phelan indicates the annual precipitation averages 12.3 inches per year. Almost all of the precipitation in the form of rain occurs in the months between December through March, with hardly any occurring between the months of May and September. The wettest month is February, with a monthly average total precipitation of 2.3 inches. The average minimum and maximum temperatures for the region 53 and 88 degrees Fahrenheit (°F) respectively with January (monthly average 42° F) being the coldest month and July and August (monthly average 90° F) being the hottest months. Temperatures during the site visit were in the high-60s to mid-70s (° F) with scattered clouds and mild, intermittent wind.

3.2 TOPOGRAPHY AND SOILS

According to the topographic map, the project site occurs within the Telegraph Peak 7.5-minute quadrangle. Onsite topography is highly variable with significant topographic depressions along the southern areas of the project site in association with Lytle Creek, and in the northwest portion of the project site in association with several ephemeral drainages that generally run through the site from north to south. Additionally, significant topographic relief occurs throughout the central area of the site in conjunction with the mountains and foothills representative of the San Andreas Rift. On site elevation ranges from approximately 4,171 to 4,977 feet above mean sea level and slopes drastically from northeast to southwest.

Based on the NRCS USDA Web Soil Survey, the project site is historically underlain by the following soils:

- Soboba-Hanford families association (2 to 15 percent slopes)
- Typic Xerorthents, warm-typic Haploxeralfs-Badland complex (30 to 100 percent slopes)
- Springdale family-lithic Xerorthents association (50 to 75 percent slopes; dry)
- Wilshire-oak glen, dry families association (2 to 15 percent slopes)
- Springdale, dry-Olete families complex (50 to 75 percent slopes)
- Rock outcrop (30 to 100 percent slopes)
- Olete-Goulding families-rubble land association (50 to 100 percent slopes)

Soils underlying the majority of the project site are relatively undisturbed, with portions of moderately-to-highly disturbed and compacted soils occurring in association with Lone Pine Canyon Road, and several historic unpaved access roads occurring throughout the project site. Refer to Exhibit 4, *Soils*.

3.3 SURROUNDING LAND USES

The project site is located in a predominantly undeveloped area within Lone Pine Canyon, at the base of the San Gabriel Mountains. Development in the vicinity of the site consists of rural residential development

and remnant structures associated with historic ranching practices. The project site straddles Lone Pine Canyon Road in the southwest and occurs approximately 0.5 mile to the northwest of the intersection of Lone Pine Canyon Road and Swarthout Canyon Road. The project site is bounded to the south by undeveloped, vacant land with the San Gabriel Mountains beyond; and to the west, north, and east by undeveloped, vacant land with additional undeveloped, vacant land beyond.



Source: ESRI Aerial Imagery; County of San Bernardino

Section 4 Discussion

4.1 SITE CONDITIONS

The site is entirely comprised of vacant, undeveloped land which has been subject to anthropogenic disturbances associated with historic mining practices. Lone Pine Canyon Road transects the project site from northwest to southeast. The majority of the project site supports a chamise-chaparral plant community with a network of unpaved access roads and remnant drainages consolidated in the area to the north of Lone Pine Canyon Road. The area to the south of the road is comprised of undeveloped, vacant land, which supports a riverine feature and a mixed chaparral plant community.

4.2 VEGETATION

During the field investigation two (2) natural plant communities were observed within the boundary of the project site: chamise-chaparral and mixed chaparral (Exhibit 5, *Vegetation*). In addition, two (2) land cover types that would be classified as disturbed were observed on-site. These areas are not vegetation classifications, but rather land cover types. The vegetation communities and land cover types are described in further detail below.

4.2.1 Chamise-Chaparral

The chamise-chaparral plant community is the dominant plant community within the boundaries of the project site. This community is dominated by chamise (*Adenostoma fasciculatum*). Additional plant species found within this community include yerba santa (*Eriodictyon californicum*), California buckwheat (*Erigonium fasciculatum*), chia sage (*Salvia columbariae*), bush poppy (*Dendromecon rigida*), scale broom (*Lepidospartum squamatum*), black mustard (*Brassica nigra*), sugarbush (*Rhus ovata*), black sage (*Salvia mellifera*), elderberry (*Sambucus mexicanus*), big berry manzanita (*Arcostaphylos glauca*), short-joint beavertail (*Opuntia basilaris*), red-stemmed filaree (*Erodium cicutarium*), desert needlegrass (*Pappostipa speciosa*), and scrub oak (*Quercus ilicifolia*).

4.2.2 Mixed Chaparral

The mixed chaparral plant community occurs to the south of Lone Pine Canyon Road. Common plant species present within the mixed chaparral plant community onsite include white sage (*Salva apiana*), mountain mahogany (*Cercocarpus betuloides*), chaparral yucca (*Hesperoyucca whipplei*), Mojave yucca (*Yucca schidigera*), scarlet bugler (*Penstemon centranthifolius*), California buckwheat, yerba santa, and bush poppy.

4.2.3 Disturbed

Disturbed areas are generally areas that have been subject to a high level of human disturbances from anthropogenic activities and no longer comprise a native plant community. These areas are unpaved and are primarily or entirely devoid of vegetation, or support ruderal/weedy plant species. Within the boundaries of the project site, disturbed areas occur along the shoulders of Lone Pine Canyon Road and in association

with historic access roads that occur throughout the site. Plant species occurring within the disturbed areas onsite include black mustard, Mediterranean mustard (*Hirschfeldia incana*), and red brome (*Bromus rubens*)

4.2.4 Developed

Developed areas generally encompass all buildings/structures, parks, and paved, impervious surfaces. Within the boundaries of the project site, developed areas include Lone Pine Canyon Road which transects the southern portion of the project site from northwest to southeast. This area is void of vegetation.

4.3 WILDLIFE

Plant communities provide foraging habitat, nesting and denning sites, and shelter from adverse weather or predation. This section provides a discussion of those wildlife species that were observed during the field survey or that are expected to occur within the project site. The discussion is to be used as a general reference and is limited by the season, time of day, and weather condition in which the field survey was conducted. Wildlife detections were based on calls, songs, scat, tracks, burrows, and direct observation.

4.3.1 Fish

No fish or hydrogeomorphic features (e.g., perennial creeks, ponds, lakes, reservoirs) with frequent sources of water that would provide suitable habitat for fish were observed on or immediately adjacent to the project site. Therefore, no fish are expected to occur and are presumed absent from the project site.

4.3.2 Amphibians

No amphibians or hydrogeomorphic features (e.g., perennial creeks, ponds, lakes, reservoirs) that would provide suitable habitat for amphibian species were observed on or immediately adjacent to the project site. Therefore, no amphibians are expected to occur on the project site and are presumed absent.

4.3.3 Reptiles

The plant communities supported by the project site provide suitable foraging and cover habitat for a variety of reptilian species adapted to conditions within Lone Pine Canyon. Reptilian species observed during the field investigation were common side-blotched lizard (*Uta stansburiana elegans*), coast horned lizard (*Phrynosoma blainvillii*), Great Basin fence lizard (*Sceloporus occidentalis longipes*) and coachwhip (*Masticophis flagellum*). Additional reptile species which may be expected to occur onsite include western whiptail (*Aspidoscelis tigris*), Great Basin gopher snake (*Pituophis catenifer deserticola*), and southern Pacific rattlesnake (*Crotalus oreganus ssp. helleri*).

4.3.4 Birds

The plant communities supported by the project site provide suitable foraging and nesting habitat for a variety of resident and migrant bird species adapted to conditions within the Cajon Pass and the Lone Pine Canyon area. Avian species detected during the survey included red-tailed hawk (*Buteo jamaicensis*), Costa's hummingbird (*Calypte costae*), California scrub jay (*Aphelocoma californica*), spotted towhee

(*Pipilo maculatus*), California quail (*Callipepla californica*), mountain quail (*Oreortyx pictus*), turkey vulture (*Cathartes aura*), California thrasher (*Melospiza crissalis*), blue-grey gnatcatcher (*Poliophtila caerulea*), black-chinned sparrow (*Spizella atrogularis*), Bewick's wren (*Thryomanes bewickii*), wren-tit (*Chamaea fasciata*), California towhee (*Melospiza crissalis*).

4.3.5 Mammals

The plant communities supported by the project site provide suitable foraging and denning habitat for a variety of mammalian species adapted to conditions within the Cajon Pass and Lone Pine area. Common mammalian species observed on-site at the time of the investigation include black-tailed jackrabbit (*Lepus californicus*), California ground squirrel (*Otospermophilus beecheyi*), and desert cottontail (*Otospermophilus beecheyi*), domestic dog (*Canis lupus familiaris*). Additional mammalian species which may be expected to occur onsite include desert bighorn sheep (*Ovis canadensis nelsoni*). No bat species are expected to occur due to a lack of suitable roosting habitat (i.e., trees, crevices, abandoned structures) within and surrounding the project site.

4.4 NESTING BIRDS

No active nests were observed during the field survey, which was conducted during the nesting season. Costa's hummingbird was observed exhibiting nesting behavior at the time of the investigation, but no nest was observed. The plant communities on-site provide suitable foraging and nesting habitat for year-round and seasonal avian residents, as well as migrating songbirds that have adapted to conditions in the Cajon Pass and surrounding areas.

Nesting birds are protected pursuant to the federal Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (Sections 3503, 3503.5, 3511, and 3513 prohibit the take, possession, or destruction of birds, their nests or eggs). If construction occurs between February 1st and August 31st, a pre-construction clearance survey for nesting birds will be conducted prior to the start of any vegetation removal or ground disturbing activities to ensure that no nesting birds will be disturbed during construction.

4.5 WILDLIFE CORRIDORS AND LINKAGES

Habitat linkages provide links between larger undeveloped habitat areas that are separated by development. Wildlife corridors are similar to linkages but provide specific opportunities for animals to disperse or migrate between areas. A corridor can be defined as a linear landscape feature of sufficient width to allow animal movement between two comparatively undisturbed habitat fragments. Adequate cover is essential for a corridor to function as a wildlife movement area. It is possible for a habitat corridor to be adequate for one species yet inadequate for others. Wildlife corridors are significant features for dispersal, seasonal migration, breeding, and foraging. Additionally, open space can provide a buffer against both human disturbance and natural fluctuations in resources.

The open and natural habitats within and surrounding the project site allow for local wildlife to move through the project site into the undeveloped areas surrounding the project site in search of food, shelter, or nesting habitat. According to the San Bernardino County General Plan, the southern portion of the project

site has been identified as occurring within the Lone Pine Canyon Major Open Space Area, a designated Wildlife Corridor.

The drainage feature which runs through the southern portion of the project site lies within the Lone Pine Canyon Major Open Space Area. Most of the project site is located on the slopes of the canyon above this drainage feature. While the undeveloped land within and surrounding the project site has the potential to provide local wildlife movement opportunities, the majority of the project site does not function as a major wildlife movement corridor or linkage. Further the proposed limits of disturbance for the project avoid the drainage feature to the south of Lone Pine Canyon Road entirely. As such, implementation of the proposed project is not expected to have a significant impact to wildlife movement opportunities or prevent local wildlife movement through the area since areas encompassing the wildlife corridor onsite are expected to be avoided and there is ample habitat adjacent to the project site to support wildlife movement opportunities.

4.6 STATE AND FEDERAL JURISDICTIONAL AREAS

There are three key agencies that regulate activities within inland streams, wetlands, and riparian areas in California. The Corps Regulatory Branch regulates discharge of dredge and/or fill materials into “waters of the United States” pursuant to Section 404 of the Federal Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. Of the State agencies, the Regional Board regulates discharges into surface waters pursuant to Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act and the CDFW regulates alterations to streambed and associated plant communities pursuant to Section 1602 of the California Fish and Game Code.

The USFWS NWI and the USGS National Hydrography Dataset were reviewed to determine if any blueline streams or riverine resources have been documented within or immediate surrounding the project site. Based on a review of historic aerials 1938 to 2024, several unnamed blueline streams are historically mapped as occurring within the boundaries of the project site. Additionally, Freshwater Forested/Shrub Wetland habitat is mapped as occurring onsite. No surface water was present within any of the drainages onsite at the time of the investigation. Most of the features observed within the project site are relic swales or braided channels which have no distinguishable ordinary high water mark (OHWM) or consolidated banks. Refer to Exhibit 6, *Jurisdictional Areas*.

The onsite ephemeral drainage features are not relatively permanent, standing, or continuously flowing bodies of water and, therefore, will not qualify as waters of the United States under the regulatory authority of the Corps (*Sackett v. EPA* (2022) 143 S. Ct. 1322, 1336). However, the onsite drainage features will qualify as waters of the State and fall under the regulatory authority of the Regional Board and CDFW.

4.7 SPECIAL-STATUS BIOLOGICAL RESOURCES

The CNDDDB Rarefind 5, CNDDDB Quickview Tool in BIOS and the CNPS Electronic Inventory of Rare and Endangered Vascular Plants of California were queried for reported locations of special-status plant and wildlife species as well as special-status natural plant communities in the Telegraph Peak and Cajon USGS 7.5-minute quadrangles. Two quadrangles were queried due to the proximity of the project site to quadrangle boundaries and regional topography. The habitat assessment evaluated the conditions of the habitat(s) within the boundaries of the project site to determine if the existing plant communities, at the

time of the survey, have the potential to provide suitable habitat(s) for special-status plant and wildlife species. Exhibit 7 show the CNDDDB occurrences of special-status species documented in the area.

The literature search identified forty-four (44) special-status plant species and thirty-four (34) special-status wildlife species as having the potential to occur within Telegraph Peak and Cajon quadrangles. No special-status plant communities were identified within these quadrangles. Special-status plant and wildlife species were evaluated for their potential to occur within the project boundaries based on habitat requirements, availability and quality of suitable habitat, and known distributions. Species determined to have the potential to occur within the general vicinity are presented in *Table B-1: Potentially Occurring Special-Status Biological Resources*, provide in Appendix B. Refer to Table B-1 for a determination regarding the potential occurrence of special-status plant and wildlife species within the project site.

4.7.1 Special-Status Plants

According to the CNDDDB and CNPS, forty-four (44) special-status plant species have been recorded in the Telegraph Peak and Cajon quadrangles (refer to Appendix B). The only special status plant species observed onsite was short-joint beavertail (*opuntia basilaris* var. *brachyclada*; CNPS 1B.2). No other special-status plant species were observed on-site during the field investigation, which was conducted during the blooming period for most of the special-status plant species known to occur in the vicinity of the site. Based on habitat requirements for the identified special-status species, and known distributions, it was determined that project site has a high potential to support Plummer's mariposa-lily (*Calochortus palmeri* var. *palmeri*) and woolly mountain-parsley (*Oreonana vestita*); and a moderate potential to support Parish's oxytheca (*Acanthoscyphus parishii* var. *parishii*), white-bracted spineflower (*Chorizanthe xanti* var. *leucotheca*), and Jokerst's monardella (*Monardella australis* ssp. *jokerstii*).

Due to regional significance and the presence of and/or potential to occur within the boundaries of the project site, the aforementioned species are described in further detail below.

Short-joint beavertail

Short-joint beavertail is designated as a CNPS Rare Plant Rank 1B.2 species (plants considered rare, threatened or endangered in California and elsewhere). Several short-joint beavertail were observed within the boundaries of the project site. Short-joint beavertail is a protected species under the California Desert Native Plant Act (CDNPA). Therefore, harvesting of short-joint beavertail will require a permit in compliance with County of San Bernardino Development Code 88.01.060.

In order to provide more detailed information on the occurrence of short-joint beavertail and other protected plant species within the boundaries of the project site, a California Desert Native Plant Act species inventory (census) is recommended ahead of vegetation clearing in an area to determine the impacts of proposed project implementation to protected plant species.

Plummer's mariposa-lily

Plummer's mariposa-lily is designated as a CNPS Rare Plant Rank 4.2 species (plants of limited distribution and moderately threatened in California). It is not federally or state listed as threatened or endangered. A records search was conducted for Plummer's mariposa-lily within a 5-miles radius of the project site. The

nearest CNDDDB occurrence, recorded in 2011, is located within the boundaries of the project site. The closest observation posted to iNaturalist was made on June 3, 2022 and was recorded adjacent to project site boundaries.

Plummer's mariposa-lily was not observed onsite at the time of the investigation. The field investigation was conducted outside the blooming period for Plummer's mariposa-lily, which is typically from May to June.

Since Plummer's mariposa-lily is a watch-list species and populations onsite would be isolated, they are not expected to contribute to the long-term conservation of the value for the species. No further surveys related to this species are recommended.

Woolly mountain parsley

Woolly mountain parsley is a perennial herb that is endemic to California. It is designated as a CNPS Rare Plant Rank 1B.3 species (rare, endangered, or threatened in California and elsewhere; moderately threatened). A records search was conducted for woolly mountain parsley within a 5-mile radius of the project site. The nearest CNDDDB occurrence, recorded in 1997, is located 3.58 miles to the southwest of the project site. The closest observation posted to iNaturalist was made in June, 2020 and was recorded in the southeast area of the project site.

The investigation was conducted during the blooming period for woolly mountain parsley (typically March through September), but the species was not observed onsite. Since Pwoolly mountain parsley is only a CNPS rare plant rank species, populations onsite would be isolated, and would not expected to contribute to the long-term conservation of the value for the species. No further surveys related to this species are recommended.

4.7.2 Special-Status Wildlife

According to the CNDDDB, thirty-four (34) special-status wildlife species have been reported in the Telegraph Peak and Cajon quadrangles (refer to Appendix B). Special status wildlife species observed onsite at the time of the investigation include Costa's hummingbird and coast horned lizard. Based on habitat requirements for specific species and the availability and quality of on-site habitats, it was determined that the project site has a high potential to support desert bighorn sheep; a moderate potential to support Crotch's bumble bee (*Bombus crotchii*), coast patch-nosed snake (*Salvadora hexalepis virgultea*), and rufous hummingbird (*Selasphorus rufus*); and a low potential to support Bell's sparrow (*Artemisospiza belli belli*), coastal whiptail (*Aspidoscelis tigris stejnegeri*), prairie falcon (*Falco mexicanus*), and Brewer's sparrow (*Spizella breweri*). Refer

Crotch's bumble bee is a candidate species for Endangered listing status in the State of California. Based on the regional significance and potential occurrence of the species, the potential occurrence of Crotch's bumble bee is described in further detail below.

Crotch's Bumble Bee

Crotch's bumble bee is a candidate species for listing status by the CESA. It is a colonial species that lives almost exclusively from coastal California east towards the Sierra-Cascade Crest and can be found uncommonly in western Nevada and south through Baja California. Crotch's bumble bee inhabits grassland and scrub habitats in hotter and drier climates than most other bumblebee species and is only capable of tolerating a narrow range of climatic conditions. This species feeds on a variety of annual and perennial plant species, classifying it as a dietary generalist. It usually nests underground, often in abandoned rodent dens. Queens are active from March to May, with peak activity occurring in April; workers are active from April to August, with peak activity occurring between May and June; and males are active from May to September, with peak activity occurring in July.

A records search was conducted for Crotch's bumble bee occurrences within a 5-mile radius of the project site. The nearest CNDDDB occurrence, recorded in 1951, is located approximately 5.34 miles northwest of the site. The closest observation posted to iNaturalist was made on June 27, 2017, approximately 3.98 miles northwest of the site.

The mixed chaparral plant community, south of Lone Pine Canyon Road onsite supports enough diversity to provide nectaring/foraging habitat for Crotch's bumble bee as this species is a dietary generalist. In addition, rodent burrows observed onsite provide suitable denning opportunities for the species. Therefore, it was determined that the project site has a moderate potential to support Crotch's bumble bee. However, this area of the project site lies outside the proposed limits of disturbance for the project.

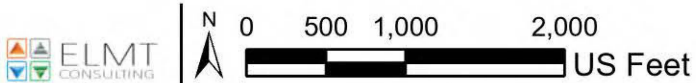
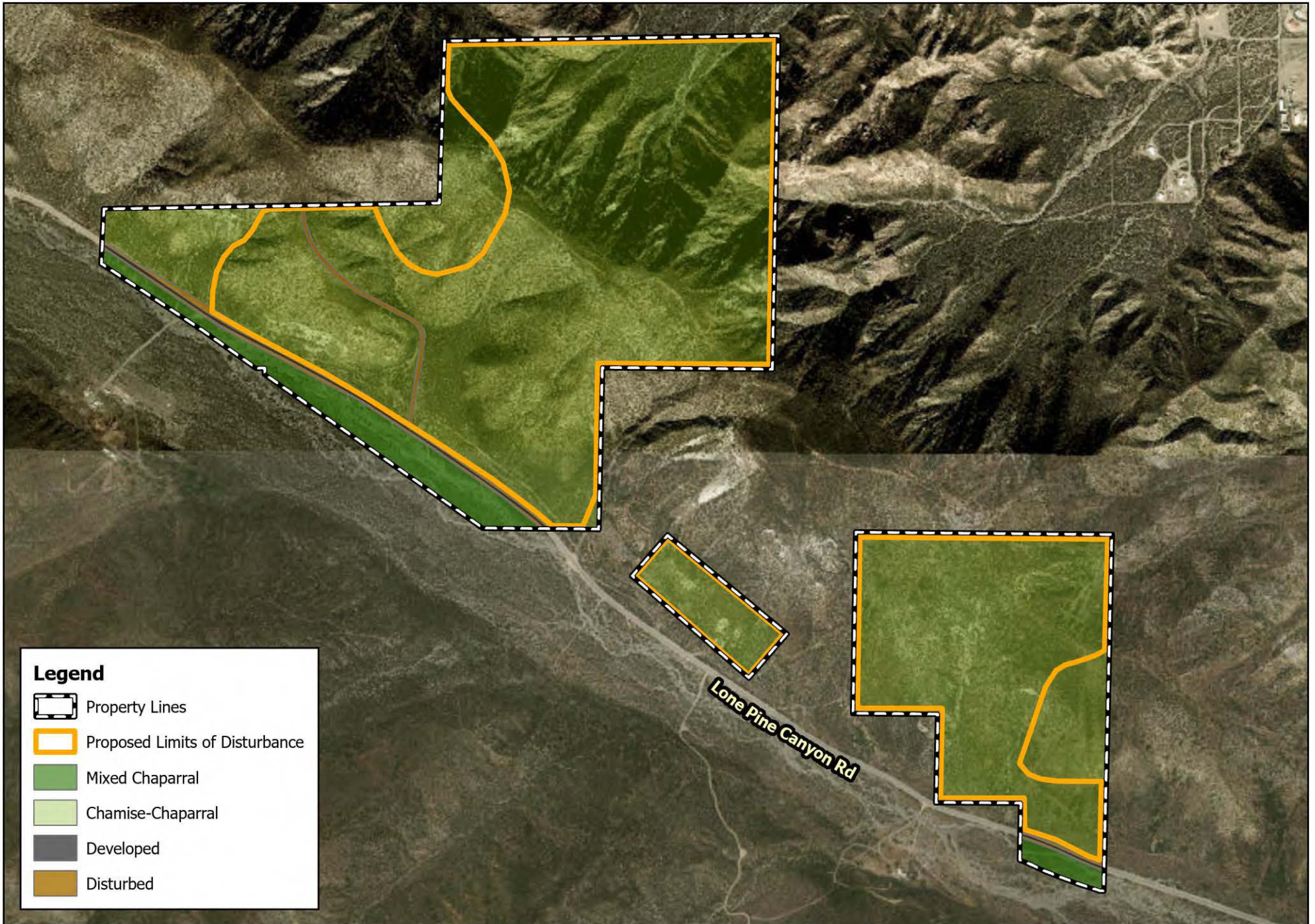
Generally, for all bumble bee species, high-quality habitat has three major components: a diverse supply of flowers for nectar and pollen, nesting locations, and subterranean spaces for overwintering queens (Hatfield et al. 2012). Based on the results of this assessment, the project site and immediately surrounding areas were determined to provide moderate plant diversity for nectar sources. Additionally, bumble bees have been recorded in the vicinity of the project site. No bumble bees were observed onsite during the field investigation. Further, the area of the project site which has the potential to support Crotch's bumble bee lies outside the proposed limits of disturbance for the project. Therefore, impacts to the mixed chaparral plant community (i.e. Crotch's bumble bee suitable habitat) are not expected to occur through proposed project implementation and no further surveys are recommended.

4.8 CRITICAL HABITAT

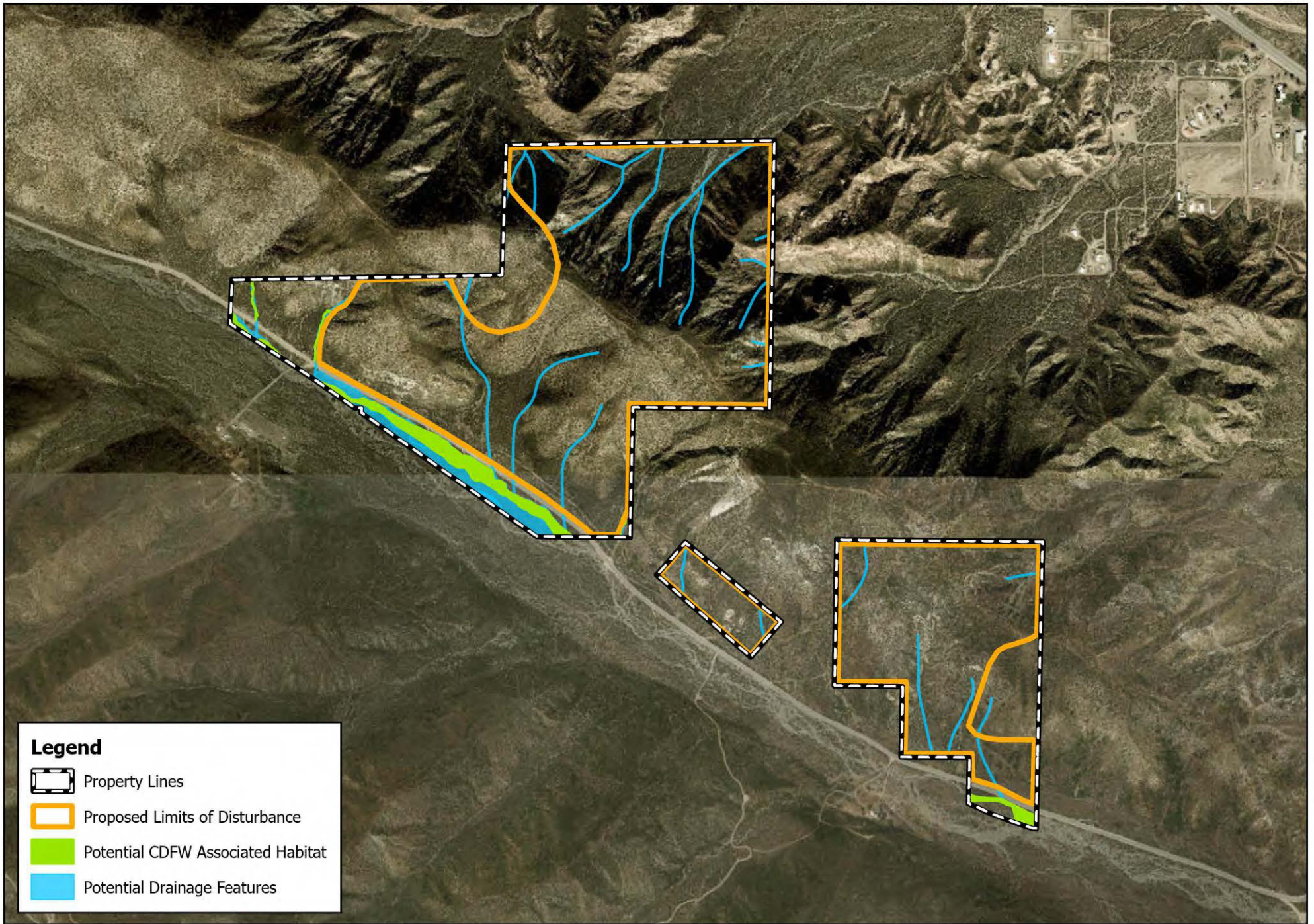
Under the federal Endangered Species Act, "Critical Habitat" is designated at the time of listing of a species or within one year of listing. Critical Habitat refers to specific areas within the geographical range of a species at the time it is listed that include the physical or biological features that are essential to the survival and eventual recovery of that species. Maintenance of these physical and biological features requires special management considerations or protection, regardless of whether individuals or the species are present or not. All federal agencies are required to consult with the United States Fish and Wildlife Service (USFWS) regarding activities they authorize, fund, or permit which may affect a federally listed species or its designated Critical Habitat. The purpose of the consultation is to ensure that projects will not jeopardize the continued existence of the listed species or adversely modify or destroy its designated Critical Habitat. The designation of Critical Habitat does not affect private landowners, unless a project they are proposing is on federal lands, uses federal funds, or requires federal authorization or permits (e.g., funding from the

Federal Highways Administration or a CWA Permit from the Corps). If there is a federal nexus, then the federal agency that is responsible for providing the funding or permit would consult with the USFWS.





The project site is not located within federally designated Critical Habitat. Further, the closest Critical Habitat designation is located approximately 8.7 miles southeast of the project site for mountain yellow legged frog (*Rana muscosa*) (Exhibit 8, *Critical Habitat*). Therefore, no impacts to federally designated Critical Habitat will occur from implementation of the proposed project.

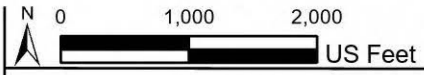


Source: ESRI Aerial Imagery; County of San Bernardino

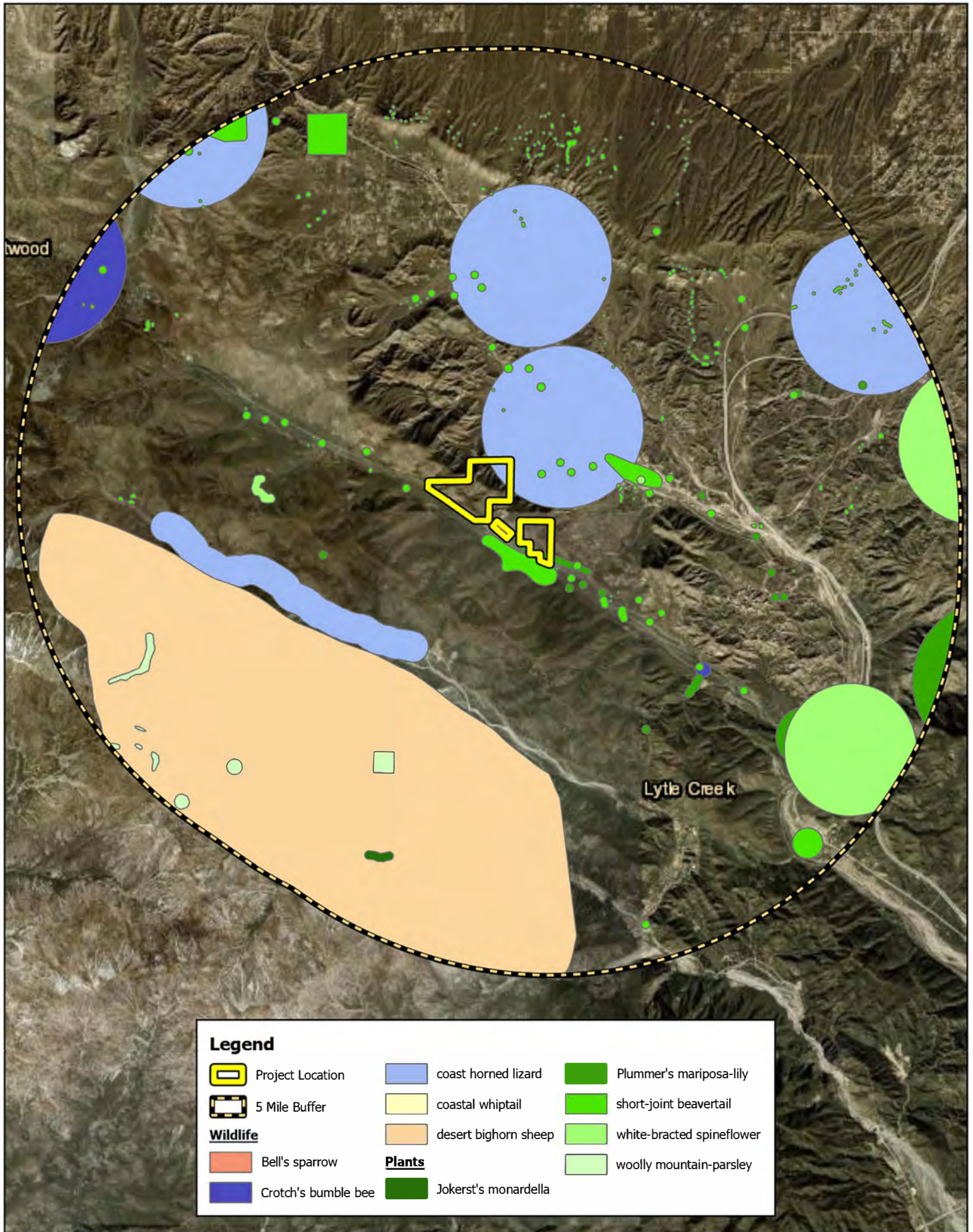


Legend

-  Property Lines
-  Proposed Limits of Disturbance
-  Potential CDFW Associated Habitat
-  Potential Drainage Features

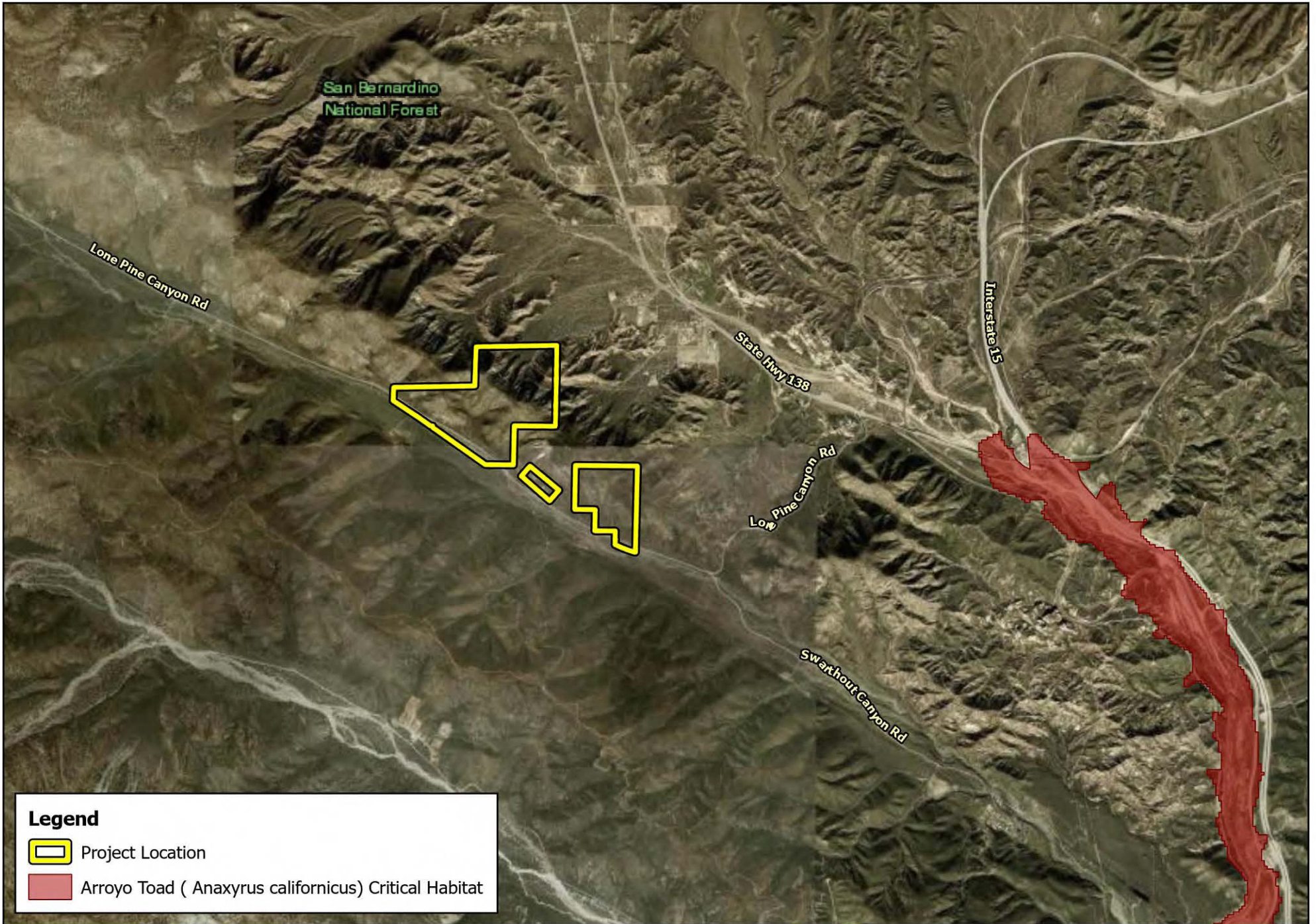


Source: ESRI Aerial Imagery, County of San Bernardino




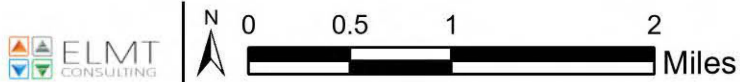
Legend

Project Location	coast horned lizard	Plummer's mariposa-lily
5 Mile Buffer	coastal whiptail	short-joint beavertail
Wildlife		
Bell's sparrow	desert bighorn sheep	white-bracted spineflower
Crotch's bumble bee	Plants	
	Jokerst's monardella	woolly mountain-parsley



Legend

-  Project Location
-  Arroyo Toad (*Anaxyrus californicus*) Critical Habitat



Source: ESRI Aerial Imagery; County of San Bernardino

Section 5 Conclusion and Recommendations

The project site is located in a predominantly undeveloped area within Lone Pine Canyon, at the base of the San Gabriel Mountains. The site is entirely surrounded by undeveloped, vacant land within the exception of Lone Pine Canyon Road, which transects the southern portion of the project site from northwest to southeast. Land uses in the vicinity of the project site are primarily rural residential and recreational, with the Mormon Rocks Interpretive Trail occurring approximately 1.14 miles to the northeast of the project site. During the field investigation, two (2) plant communities were observed within the boundary of the project site: chamise-chaparral and mixed chaparral. In addition, two (2) land cover types that would be classified as developed and disturbed were observed on-site.

Special-Status Plant Species

The only special-status plant species observed on-site was short-joint beavertail. No other special-status plant species were observed on-site during the field investigation, which was conducted during the blooming period for most of the special-status plant species known to occur in the vicinity of the site. Based on habitat requirements for the identified special-status species, and known distributions, it was determined that the project site has a high potential to support Plummer's mariposa-lily and woolly mountain parsley; and a moderate potential to support Parish's oxytheca, white-bracted spineflower, and Jokerst's monardella. It was further determined that the plant communities supported by the project site do not have the potential to support any of the other special-status plant communities documented as occurring within the vicinity of the site and are presumed absent.

In addition to short-joint beavertail, several other desert native plants such as chparral yucca, and mojave yucca were observed within the boundaries of the project site. These species are protected species under the California Desert Native Plant Act. Therefore, the take or harvesting of these species is subject to approval and a permit is required.

Special-Status Wildlife Species

Special status wildlife species observed on-site during the investigation include coast horned lizard and Costa's hummingbird. Based on habitat requirements for specific species and the availability and quality of on-site habitats, it was determined that the proposed project site has a high potential to support desert bighorn sheep; a moderate potential to support Crotch's bumble bee, coast patch-nosed snake, and rufous hummingbird; and a low potential to support Bell's sparrow, coastal whiptail, and prairie falcon. It was further determined that the project site does not provide suitable habitat for any of the other special-status wildlife species known to occur in the vicinity of the site and all are presumed to be absent.

Areas of the project site which have the potential to support Crotch's bumble bee have been excluded from the proposed limits of disturbance in order to avoid impacts to this species. Therefore, focused surveys for this species will not be required prior to proposed project implementation.

Pre-Construction Nesting Bird Clearance Survey

All construction activities shall comply with the federal Migratory Bird Treaty Act of 1918 (MBTA) and California Fish and Game Code Sections 3503, 3511 and 3513. The MBTA governs the taking and killing

of migratory birds, their eggs, parts, and nests and prohibits the take of any migratory bird, their eggs, parts, and nests. Compliance with the MBTA shall be accomplished by completing the following:

Construction activities involving vegetation removal shall be conducted between September 1 and January 31. If construction occurs inside the peak nesting season (between February 1 and August 31), a pre-construction survey by a qualified Biologist shall be conducted within 72 hours prior to construction activities to identify any active nesting locations. If the Biologist does not find any active nests, the construction work shall be allowed to proceed. The biologist conducting the clearance survey shall document a negative survey with a report indicating that no impacts to active avian nests shall occur.

If the Biologist finds an active nest within the pre-construction survey area and determines that the nest may be impacted, the Biologist shall delineate an appropriate buffer zone around the nest. The size of the buffer shall be determined by the Biologist and shall be based on the nesting species, its sensitivity to disturbance, expected types of disturbance, and location in relation to the construction activities. These buffers are typically 300 feet from the nests of non-listed species and 500 feet from the nests of raptors and listed species. Any active nests observed during the survey shall be mapped on an aerial photograph. Only construction activities (if any) that have been approved by a Biological Monitor shall take place within the buffer zone until the nest is vacated. The Biologist shall serve as a Construction Monitor when construction activities take place near active nest areas to ensure that no inadvertent impacts on these nests occur. Results of the pre-construction survey and any subsequent monitoring shall be provided to the Property Owner/Developer and the City. The monitoring report shall summarize the results of the nest monitoring, describe construction restrictions currently in place, and confirm that construction activities can proceed within the buffer area without jeopardizing the survival of the young birds.

Crotch's bumble bee Focused Surveys

On June 12, 2019, the California Fish and Game Commission (Commission) voted to accept a petition from the Xerces Society (2018) to consider listing four subspecies of bumble bee, including the Crotch bumble bee (*Bombus crotchii*), under the California Endangered Species Act (CESA). As a result of this decision, the Crotch bumble bee is a state candidate endangered species; as such, it is temporarily afforded the same protection as state-listed threatened or endangered species. Crotch's bumble bee was observed in the vicinity of the project site. Additionally, it was determined that the mixed chaparral on the south side of Lone Pine Canyon Road has a moderate potential to provide suitable habitat for Crotch's bumble bee. However, this area lies outside the proposed limits of disturbance for the project. Therefore, no impacts to suitable Crotch's bumble bee habitat are expected to occur through project implementation and focused surveys will not be required. If impacts to Crotch's bumblebee cannot be avoided, an Incidental Take Permit would be required from the CDFW.

Riparian Habitat and Special-Status Natural Communities

Several ephemeral drainage features were observed onsite. The onsite ephemeral drainage features are not relatively permanent, standing, or continuously flowing bodies of water and, therefore, will not qualify as waters of the United States under the regulatory authority of the Corps (*Sackett v. EPA* (2022) 143 S. Ct.

1322, 1336). However, the onsite drainage features will qualify as waters of the State and fall under the regulatory authority of the Regional Board and CDFW. The proposed limits of disturbance for the project are expected to avoid jurisdictional habitat entirely. Therefore, no impacts to CDFW associated habitat are expected to occur through proposed project implementation.

Any impacts to jurisdictional features will require a Corps Approved Jurisdictional Determination or Waiver, Regional Board CWA Section Report of Waste Discharge, and a CDFW Section 1602 Lake and Streambed Alteration Agreement prior to Project implementation.

Additionally, no sensitive habitats were identified within the Project site. Thus, no sensitive natural communities will be impacted from Project implementation.

Federally Protected Wetlands

No inundated areas, wetland features, or wetland plant species that would be considered wetlands as defined by Section 404 of the Clean Water Act occur within the proposed Project footprint. As a result, implementation of the proposed Project would not result in any impacts or have substantial adverse effect on federally protected wetlands..

Wildlife Corridors

Areas of the project site are identified as occurring within the Lone Pine Canyon Major Open Space Area, a designated wildlife corridor. These areas provide wildlife movement opportunities within the project site and surrounding areas. Therefore, impacts to these areas through proposed project implementation could affect wildlife movement through the area. However, the areas within the project site which function as a wildlife corridor lie outside of the proposed limits of disturbance and these areas are expected to be avoided entirely. If avoidance to these areas is not feasible, mitigation measures will be required.

Local, Regional, and State Plans

Certain desert plant species are regulated pursuant to Section 88.01.060 of the San Bernardino County Development Code and Section 80073 of the California Desert Native Plant Act. Chapter 3, Section 80072 states that the following native plants, or any parts thereof, may not be harvested except for scientific or educational purposes under a permit issued by the commissioner of the county in which the native plants are growing:

- (a) All species of Burseraceae family (elephant tree)
- (b) *Carnegiea gigantea* (sahuaro cactus)
- (c) *Ferocactus acanthodes* (barrel cactus)
- (d) *Castela emoryi* (crucifixion thorn)
- (e) *Dudleya saxosa* (panamint dudleya)
- (f) *Pinus longaeva* (bristlecone pine)
- (g) *Washingtonia filifera* (fan palm)

Section 80073 within the same code, states the following native plants*, or any part thereof, may not be harvested except under a permit issued by the commissioner or the sheriff of the county in which the native plants are growing:

- (a) All species of the family Agavaceae (century plants, nolin, yuccas).
- (b) All species of the family Cactaceae (cacti), except for the plants listed in subdivisions (b) and (c) of Section 80072 which may be harvested under a permit obtained pursuant to that section.
- (c) All species of the family Fouquieriaceae (ocotillo, candlewood).
- (d) All species of the genus Prosopis (mesquites).
- (e) All species of the genus Cercidium (palos verdes).
- (f) *Acacia greggii* (catclaw).
- (g) *Atriplex hymenelytra* (desert-holly).
- (h) *Dalea spinosa* (smoke tree).
- (i) *Olneya tesota* (desert ironwood), including both dead and live desert ironwood.

In the event that avoidance is not feasible, the project applicant will be required to obtain a Tree or Plant Removal Permit from the County of San Bernardino. A California Desert Native Plant inventory survey is recommended to identify relevant plant species identified as protected under the CDNPA within the proposed limits of disturbance.

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Appendix A Site Photographs



Photograph 1: From the lower southeast corner of the project site, looking north along the eastern boundary.



Photograph 2: From the lower southeast corner of the project site, looking northwest through the project site along the northern shoulder of Lone Pine Canyon Road.



Photograph 3: From the lower southeast corner of the project site.



Photograph 4: From the middle of the southern portion of the project site, looking northwest through the chamise-chaparral plant community onsite.



Photograph 5: Depicting the mixed chaparral plant community present onsite.



Photograph 6: From the central portion of the project site, looking northwest.



Photograph 7: From the inside of Drainage 2, looking north through the project site.



Photograph 8: From the upper northwest corner of the project site, looking south along the far-west boundary.



Photograph 9: From the upper northwest corner of the project site, looking east along the northern boundary.

**Appendix B Potentially Occurring Special-Status
Biological Resources**

Table B-1: Potentially Occurring Special-Status Biological Resources

Scientific Name Common Name	Status	Habitat Description	Observed On-site	Potential to Occur
SPECIAL-STATUS WILDLIFE SPECIES				
<i>Accipiter atricapillus</i> American goshawk	Fed: None CA: SSC	Primarily inhabits mature or old-growth forests, including conifer, mixed conifer-hardwood, and birch or aspen forests	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.
<i>Anaxyrus californicus</i> arroyo toad	Fed: END CA: SSC	Typically found in sandy and/or gravelly washes and creeks with moderate in-stream vegetation dominated by willows (<i>Salix</i> sp.) and mulefat (<i>Baccharis salicifolia</i>). Forages along the bases of in-stream vegetation or trees, including California sycamore (<i>Platanus racemosa</i>), Fremont cottonwood (<i>Populus fremontii</i>), or oaks (<i>Quercus</i> spp.). Breeds in still or slowly moving waters, generally around six to eight inches in depth. Burrows along sandy terraces but may burrow directly in streambeds.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.
<i>Aquila chrysaetos</i> golden eagle	Fed: FP CA: WL	Hunts over marshes and along rivers. Generally found in open mountain areas, foothills, plains, and open country like tundra, prairie, rangeland, and desert.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.
<i>Artemisospiza belli belli</i> Bell's sparrow	Fed: None CA: WL	Generally prefers semi-open habitats with evenly spaced shrubs 1 to 2 meters in height. Dry chaparral and coastal sage scrub. Less common in tall dense, old chaparral.	No	Low Marginal habitat present in the southern area of the project site.
<i>Asio otus</i> long-eared owl	Fed: None CA: SSC	Hunts mostly at night over grasslands and other open habitats. Nesting occurs in dense trees such as oaks and willows where it occupies stick nests of other species, particularly raptors or corvids.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.
<i>Aspidoscelis tigris stejnegeri</i> coastal whiptail	Fed: None CA: SSC	Found in a variety of ecosystems, primarily hot and dry open areas with sparse foliage such as chaparral, woodland, and riparian areas.	No	Low Marginal habitat present in the southern area of the project site.
<i>Bassariscus astutus octavus</i> southern California ringtail	Fed: FP CA: None	Can be found at elevations of up to 9,500 feet but are most common at elevations ranging from sea level to 4,600 feet. Found in a variety of habitats, but prefer rocky outcroppings, canyons, or talus slopes in semi-arid country, deserts, chaparral, oak woodlands, pinyon pine woodlands, juniper woodlands, montane conifer forests, and riparian habitats.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.

Scientific Name Common Name	Status	Habitat Description	Observed On-site	Potential to Occur
<i>Batrachoseps gabrieli</i> San Gabriel slender salamander	Fed: None CA: None	Known from select localities in the San Gabriel Mountains and the Mt. Baldy area of Los Angeles County and the western end of the San Bernardino Mountains in San Bernardino Co., with an elevation range of 1,200 - 5,085 feet. Occurs on talus slopes surrounded by a variety of conifer and montane hardwood species, including bigcone spruce, pine, white fir, incense cedar, canyon live oak, black oak, and California laurel.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.
<i>Bombus crotchii</i> Crotch bumble bee	Fed: None CA: CE	Colonial species that lives almost exclusively from coastal California east towards the Sierra-Cascade Crest and can be found uncommonly in western Nevada and south through Baja California. Inhabits grassland and scrub habitats in hotter and drier climates than most other bumblebee species and is only capable of tolerating a narrow range of climatic conditions. Feeds on a variety of annual and perennial plant species, classifying it as a dietary generalist. This species usually nests underground, often in abandoned rodent dens.	No	Moderate Suitable habitat present in the southern portion of the project site. In the flatter areas onsite. Species has been observed as occurring in the vicinity of the site.
<i>Calypte costae</i> Costa's hummingbird	Fed: None CA: None	Desert and semi-desert, arid brushy foothills and chaparral. A desert hummingbird that breeds in the Sonoran and Mojave Deserts. Departs desert heat moving into chaparral, scrub, and woodland habitats.	Yes	Present Observed foraging onsite.
<i>Chaetodipus fallax fallax</i> northwestern San Diego pocket mouse	Fed: None CA: None	Occurs in desert and coastal habitats in southern California, Mexico, and northern Baja California, from sea level to at least 4,600 feet above msl. Found in a variety of temperate habitats ranging from chaparral and grasslands to scrub forests and deserts. Requires low growing vegetation or rocky outcroppings, as well as sandy soils for burrowing.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.
<i>Dipodomys simulans</i> Dulzura kangaroo rat	Fed: None CA: None	Relatively common in chaparral, coastal sage scrub, Riversidean alluvial fan sage scrub, and peninsular juniper woodland habitats.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.
<i>Empidonax traillii extimus</i> southwestern willow flycatcher	Fed: END CA: END	Occurs in riparian woodlands in southern California. Typically requires large areas of willow thickets in broad valleys, canyon bottoms, or around ponds and lakes. These areas typically have standing or running water, or are at least moist.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.
<i>Falco mexicanus</i> prairie falcon	Fed: None CA: WL	Commonly occur in arid and semiarid shrubland and grassland community types. Also occasionally found in open parklands within coniferous forests. During the breeding season, they are found commonly in foothills and mountains which provide cliffs and escarpments suitable for nest sites.	No	Low Marginal habitat present in the southern area of the project site.

Scientific Name Common Name	Status	Habitat Description	Observed On-site	Potential to Occur
<i>Glaucomys oregonensis californicus</i> San Bernardino flying squirrel	Fed: None CA: SSC	Occurs in white fir (<i>Abies concolor</i>) and Jeffrey pine (<i>Pinus jeffreyi</i>) mixed conifer forests with black oak (<i>Quercus kelloggii</i>) components at higher elevations. Use cavities in large trees, snags, and logs for cover. Habitats are typically mature, dense conifer forest in close proximity to riparian areas.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.
<i>Icaricia saepiolus aureoles</i> San Gabriel Mountains blue butterfly	Fed: None CA: None	This species is presumed to be extinct. Known only from a single population in the wet meadows of the Big Pine Recreation Area in the San Gabriel mountains.	No	Presumed Absent This species is presumed to be extinct
<i>Neotamias speciosus speciosus</i> lodgepole chipmunk	Fed: None CA: None	Occurs in open-canopy forests of mixed conifer and pine, and occasionally in chaparral.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.
<i>Neotoma lepida intermedia</i> San Diego desert woodrat	Fed: None CA: SSC	Occurs in coastal scrub communities between San Luis Obispo and San Diego Counties. Prefers moderate to dense canopies, and especially rocky outcrops.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.
<i>Ovis canadensis nelsoni</i> Desert bighorn sheep	Fed: FP CA: None, FP	Inhabits rocky mountainous regions in the Mojave, Sonoran, and Great Basin Deserts. Favors steep, rocky slopes and cliffs. Utilizes canyons, washes and alluvial fans. Requires accessible water sources.	No	High The project site and surrounding area provide suitable habitat for the species. Species has been observed in the vicinity of the project site.
<i>Perognathus longimembris brevinasus</i> Los Angeles pocket mouse	Fed: None CA: SSC	Occurs in lower elevation grasslands and coastal sage scrub communities in and around the Los Angeles Basin. Prefers open ground with fine sandy soils. May not dig extensive burrows, instead seeking refuge beneath weeds and dead leaves.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.
<i>Phrynosoma blainvillii</i> coast horned lizard	Fed: None CA: SSC	Occurs in a wide variety of vegetation types including coastal sage scrub, annual grassland, chaparral, oak woodland, riparian woodland and coniferous forest. In inland areas, this species is restricted to areas with pockets of open microhabitat, created by disturbance (i.e. fire, floods, roads, grazing, fire breaks). Require loose, fine soils with a high sand fraction; an abundance of native ants or other insects; and open areas with limited overstory for basking and low, but relatively dense shrubs for refuge.	Yes	Present Observed foraging onsite.
<i>Plebulina emigdionis</i> San Emigdio blue butterfly	Fed: None CA: None	Inhabits shadscale scrub in desert canyons and washes from Inyo County south through the Mojave Desert, and in the San Joaquin Valley, and Bouquet and Mint Canyons as well as Los Angeles County.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.

Scientific Name Common Name	Status	Habitat Description	Observed On-site	Potential to Occur
<i>Rana draytonii</i> California red-legged frog	Fed: THR CA: SSC	Inhabits quiet pools of streams, marshes, and occasionally ponds. Occurs along the coast ranges from Mendocino County south and in portions of the Sierra Nevada and Cascades ranges.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.
<i>Rhinichthys Gabrielino</i> Santa Ana speckled dace	Fed: THR CA: SSC	Inhabits small, perennial streams with cool, flowing water. Typically found in the headwaters of the Santa Ana and San Gabriel Rivers. Thrives in shallow riffles with gravel and cobble substrates, often in areas with overhanging vegetation for cover.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.
<i>Salvadora hexalepis virgulata</i> coast patch-nosed snake	Fed: None CA: SSC	Inhabits semi-arid brushy areas and chaparral in canyons, rocky hillsides, and plains. Requires friable soils for burrowing.	No	Moderate Suitable habitat within and surrounding the project site.
<i>Selasphorus rufus</i> rufous hummingbird	Fed: None CA: None	Breed in open or shrubby areas, forest openings, yards, and parks. During migration they are commonly found in disturbed areas where its food flowers are in bloom. Breeds in the northeastern United States and Canada.	No	Moderate Marginal habitat present within the project site. Species has been observed in the vicinity of the site.
<i>Setophaga petechia</i> yellow warbler	Fed: None CA: SSC	Nests over all of California except the Central Valley, the Mojave Desert region, and high altitudes and the eastern side of the Sierra Nevada. Winters along the Colorado River and in parts of Imperial and Riverside Counties. Nests in riparian areas dominated by willows, cottonwoods, sycamores, or alders or in mature chaparral. May also use oaks, conifers, and urban areas near stream courses.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.
<i>Siphateles bicolor mohavensis</i> Mohave tui chub	Fed: None CA: SSC	The only fish native to the Mojave River. Restricted from the base of the San Bernadino Mountains to Soda Dry Lake. Requires slow-moving alkali waters with an abundance of aquatic vegetation. Can be found in deep pools or shallower out-flow streams.	No	Presumed Absent No suitable habitat is present within or adjacent to the project site.
<i>Spinus lawrencei</i> Lawrence's goldfinch	Fed: None CA: None	Open woodlands, chaparral, and weedy fields. Closely associated with oaks. Nests in open oak or other arid woodland and chaparral near water.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.
<i>Spizella breweri</i> Brewer's sparrow	Fed: None CA: None	Habitats include sagebrush and brushy plains.	No	Low Marginal habitat present within and adjacent to the project site.
<i>Strix occidentalis occidentalis</i> California spotted owl	Fed: None CA: SSC	Breeds and roosts in forests and woodland with large old trees and snags, high basal areas of trees and snags, dense canopies, multiple canopy layers, and downed woody debris. Large old trees are key as they provide nest sites and cover from weather.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.
<i>Taxidea taxus</i> American badger	Fed: None CA: SSC	Primarily occupy grasslands, parklands, farms, tallgrass and shortgrass prairies, meadows, shrub-steppe communities and other treeless areas with sandy loam soils where it can dig more easily for its prey. Occasionally found in open chaparral (with less than 50% plant cover) and riparian zones.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.

Scientific Name Common Name	Status	Habitat Description	Observed On-site	Potential to Occur
<i>Thamnophis hammondi</i> two-striped garter snake	Fed: None CA: SSC	Occurs in or near permanent fresh water, often along streams with rocky beds and riparian growth up to 7,000 feet in elevation.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.
<i>Vireo bellii pusillus</i> least Bell's vireo	Fed: END CA: END	Primarily occupies riparian habitat that typically features dense cover within 1-2 meters of the ground and a dense, stratified canopy. Typically associated with southern willow scrub, cottonwood-willow forest, mule fat scrub, sycamore alluvial woodlands, coast live oak riparian forest, arroyo willow riparian forest, or mesquite communities in desert localities. Uses habitat which is limited to the immediate vicinity of water courses, 2,000 feet elevation in the interior.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.
SPECIAL-STATUS PLANT SPECIES				
<i>Acanthoscyphus parishii</i> var. <i>parishii</i> Parish's oxytheca	Fed: None CA: None CNPS: 4.2	Found in dry, rocky mountain soil, primarily in the Transverse and Central Coast Ranges. Prefers sandy and gravelly soils in dry granite slopes and flats at elevations between 4,000 and 8,500 feet above mean sea level. Blooms from June through September	No	Moderate Suitable habitat present within and adjacent to the project site. Survey was conducted outside of the typical blooming period for this species.
<i>Aphyllon validum</i> ssp. <i>Validum</i> Rock creek broomrape	Fed: None CA: None CNPS: 1B.2	Found primarily in the Transverse and North Coast Ranges. Thrives in decomposed granite, volcanic and serpentine slopes, within open chaparral and yellow pine forests. Parasitizes Garrya and other shrub species.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.
<i>Asclepias nyctaginifolia</i> Mojave milkweed	Fed: None CA: None CNPS: 2B.1	Thrives in dry, sandy soils in washes, slopes, and roadsides within deserts of the southwestern United States. Blooms from May to June.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.
<i>Astragalus bicristatus</i> crested milk-vetch	Fed: None CA: None CNPS: 4.3	Grows in sandy or rocky, mostly carbonate soils within lower montane coniferous forest and upper montane coniferous forest habitats. Found at elevations ranging from 5,577 to 9,006 feet. Blooming period is from May to August.	No	Presumed Absent No suitable habitat is present within or adjacent to the project site.
<i>Astragalus lentiginosus</i> var. <i>Antonius</i> San Antonio milk-vetch	Fed: None CA: None CNPS: 1B.3	Grows within lower montane coniferous forest and upper montane coniferous forest habitats. Found at elevations ranging from 4,921 to 8,530 feet. Blooming period is from April to July.	No	Presumed Absent No suitable habitat is present within or adjacent to the project site.

Scientific Name Common Name	Status	Habitat Description	Observed On-site	Potential to Occur
<i>Botrychium ascendens</i> upswept moonwort	Fed: None CA: None CNPS: 2B.2	Rare, but widely scattered throughout North America. Most common between meadows and forests or between lakeshores and forests. Blooms from June to August.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.
<i>Botrychium crenulatum</i> scalloped moonwort	Fed: None CA: None CNPS: 2B.2	Grows in moist, saturated soils near streams, fens and seeps in mid-montane to subalpine elevations from 3,900 to 6,900 feet. Blooms from June to September	No	Presumed Absent There is no suitable habitat within or adjacent to the project site.
<i>Calochortus palmeri</i> var. <i>palmeri</i> Palmer's mariposa-lily	Fed: None CA: None CNPS: 1B.2	Occurs in meadows and seeps, chaparral, and lower montane coniferous forest in vernal moist places. From 3,281 to 7,841 feet in elevation. Blooming period is from April to July.	No	Presumed Absent. No suitable habitat is present within or adjacent to the project site.
<i>Calochortus plummerae</i> Plummer's mariposa-lily	Fed: None CA: None CNPS: 4.2	Prefers openings in chaparral, foothill woodland, coastal sage scrub, valley foothill grasslands, cismontane woodland, lower montane coniferous forest and yellow pine forest. Often found on dry, rocky slopes and soils and brushy areas. Can be very common after a fire. Found at elevations ranging from 330 to 5,580 feet. Blooming period is from May to July.	No	High The project site and surrounding area provide suitable habitat for this species. Species has been observed in the vicinity of the project site. Survey was conducted outside the typical blooming period for this species.
<i>Canbya candida</i> white pygmy-poppy	Fed: None CA: None CNPS: 4.2	Occurs on gravelly, sandy, granitic soils in Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland. Found at elevations ranging from 2,297 to 5,249 feet above mean sea level (msl). Blooming period is from March to June.	No	Presumed Absent. No suitable habitat is present within or adjacent to the project site.
<i>Castilleja plagiotoma</i> Mojave paintbrush	Fed: None CA: None CNPS: 4.3	Grows within Great Basin scrub (alluvial), Joshua tree woodland, lower montane coniferous forest, and pinyon and juniper woodland habitats. Found at elevations ranging from 984 to 8,202 feet. Blooming period is from April to June.	No	Presumed Absent. No suitable habitat is present within or adjacent to the project site.
<i>Chorizanthe xanti</i> var. <i>leucotheca</i> white-bracted spineflower	Fed: None CA: None CNPS: 1B.2	Found in sandy or gravelly soils within coastal scrub (alluvial fans), Mojavean desert scrub, pinyon and juniper woodland habitats. Found at elevations ranging from 984 to 3,937 feet. Blooming period is from April to June.	No	Moderate Suitable habitat present within and adjacent to the project site. Species has been observed in the vicinity of the project site.
<i>Claytonia peirsonii</i> ssp. <i>peirsonii</i> Peirson's spring beauty	Fed: None CA: None CNPS: 1B.2	Grows in granitic, metamorphic scree and talus within subalpine coniferous forest and upper montane coniferous forest habitats. Found at elevations ranging from 4,955 to 9,005 feet. Blooming period is from (March) May to June.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.
<i>Diplacus johnstonii</i> Johnston's monkeyflower	Fed: None CA: None CNPS: 4.3	Grows within lower montane coniferous forest (scree, disturbed areas, rocky or gravelly, roadside) habitat. Found at elevations ranging from 3,199 to 9,580 feet. Blooming period is typically from May to August and can begin as early as April.	No	Presumed Absent. No suitable habitat is present within or adjacent to the project site.

Scientific Name Common Name	Status	Habitat Description	Observed On-site	Potential to Occur
<i>Erigeron breweri</i> var. <i>jacinteus</i> San Jacinto Mountains daisy	Fed: None CA: None CNPS: 4.3	Rocky microhabitats within Subalpine coniferous forest, Upper montane coniferous forest. Elevation range is unknown; known from 8860 feet. Blooms in June-September.	No	Presumed Absent There is no suitable habitat within or adjacent to the project site.
<i>Eriogonum umbellatum</i> var. <i>minus</i> alpine sulphur-flowered buckwheat	Fed: None CA: None CNPS: 4.3	Occurs in gravelly soils within subalpine coniferous forest and upper montane coniferous forests. Found at elevations ranging from 5,906 to 10,066 feet above msl. Blooming period is from June to September.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site. The site occurs outside of the known elevation range for this species.
<i>Frasera neglecta</i> pine green-gentian	Fed: None CA: None CNPS: 4.3	Grows within lower montane coniferous forest, pinyon and juniper woodland, and upper montane coniferous forest habitats. Found at elevations ranging from 4,593 to 8,202 feet. Blooming period is from May to July.	No	Presumed Absent No suitable habitat is present within or adjacent to the project site.
<i>Fritillaria pinetorum</i> pine fritillary	Fed: None CA: None CNPS: 4.3	Associated with granitic and metamorphic soils within chaparral, lower montane coniferous forest, upper montane coniferous forest, subalpine coniferous forest, pinyon and juniper woodland. Found at elevations ranging from 5,692 to 10,826 feet above msl. Blooming period is from May to September.	No	Presumed Absent. No suitable habitat is present within or adjacent to the project site.
<i>Galium angustifolium</i> ssp. <i>Gabrielense</i> San Antonio canyon bedstraw	Fed: None CA: None CNPS: 4.3	Grows in dry, rocky areas including slopes, ridges and canons, and is commonly found in montane coniferous forests as well. Blooms from April to August.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.
<i>Galium johnstonii</i> Johnston's bedstraw	Fed: None CA: None CNPS: 4.3	Preferred habitats include chaparral, riparian woodland, lower montane coniferous forest, pinyon and juniper woodland. Found at elevations ranging from 4,003 to 7,546 feet above msl. Blooming period is from June to July.	No	Presumed Absent No suitable habitat is present within or adjacent to the project site.
<i>Helianthus nuttallii</i> ssp. <i>parishii</i> Los Angeles sunflower	Fed: None CA: None CNPS: 1A	Occurs in marshes, swamps, and on damp river banks. Found at elevations ranging from 16 to 5,495 feet. Blooming period is from August to October.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.
<i>Heuchera caespitosa</i> urn-flowered alumroot	Fed: None CA: None CNPS: 4.3	Grows in rocky soils within cismontane woodland, lower montane coniferous forest, riparian forest, and upper montane coniferous forest. Found at elevations ranging from 3,789 to 8,694 feet above msl. Blooming period is from May to August.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.
<i>Heuchera parishii</i> Parish's alumroot	Fed: None CA: None CNPS: 1B.3	Carbonate (sometimes), Rocky microhabitats within Alpine boulder and rock field, Lower montane coniferous forest, Subalpine coniferous forest, Upper montane coniferous forest. Elevation range is unknown; known from 4920 feet. Blooms in June-August.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.

Scientific Name Common Name	Status	Habitat Description	Observed On-site	Potential to Occur
<i>Hulsea vestita ssp. Gabriellensis</i> San Gabriel Mountains hulsea	Fed: None CA: None CNPS: 4.3	Found in montane coniferous forests and chaparral communities primarily on talus slopes and open, gravelly areas in the western Transverse Ranges and San Gabriel Mountains. Blooms from May to July.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.
<i>Juglans californica</i> southern California black walnut	Fed: None CA: None CNPS: 4.2	Found in chaparral, cismontane woodland, coastal scrub, and riparian woodland habitats. Found at elevations ranging from 164 to 2,953 feet. Blooming period is from March to August.	No	Presumed Absent. No suitable habitat is present within or adjacent to the project site.
<i>Juncus duranii</i> Duran's rush	Fed: None CA: None CNPS: 4.3	Habitats include lower and upper montane coniferous forests, meadows and seeps. Found at elevations ranging from 5,801 to 9,199 feet above msl. Blooming period is from July to August.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.
<i>Lepechinia fragrans</i> fragrant pitcher sage	Fed: None CA: None CNPS: 4.2	Occurs in chaparral habitat. Found at elevations ranging from 66 to 4,298 feet above msl. Blooming period is from March to October.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.
<i>Lilium humboldtii ssp. ocellatum</i> ocellated humboldt lily	Fed: None CA: None CNPS: 4.2	Found in openings within chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and riparian woodland habitats. Found at elevations ranging from 98 to 5,906 feet in elevation. Blooming period is from March to August.	No	Presumed Absent There is no suitable habitat present within the project site.
<i>Lilium parryi</i> lemon lily	Fed: None CA: None CNPS: 1B.2	Prefers lower montane coniferous forest, riparian forests, upper montane coniferous forests, meadows and seeps. Found at elevations ranging from 4,003 to 9,006 feet. Blooming period is from July to August.	No	Presumed Absent There is no suitable habitat present within the project site.
<i>Linanthus concinnus</i> San Gabriel linanthus	Fed: None CA: None CNPS: 1B.2	Occurs in rocky, openings within chaparral, lower montane and upper montane coniferous forests. Found at elevations ranging from 4,987 to 9,186 feet above msl. Blooming period is from April to July.	No	Presumed Absent No suitable habitat is present within or adjacent to the project site.
<i>Monardella australis ssp. jokerstii</i> Jokerst's monardella	Fed: None CA: None CNPS: 1B.1	Habitat includes chaparral and lower montane coniferous forest. Found on steep or talus slopes between breccia, secondary alluvial benches along drainages and washes. Found at elevations ranging from 4,429 to 5,741 feet above msl. Blooming period is from July to September.	No	Moderate The project site and surrounding area provide suitable habitat for this species. Species has been observed in the vicinity of the project site.
<i>Monardella exilis</i> Mojave monardella	Fed: None CA: None CNPS: 4.2	Endemic to the Mojave Desert and the southern Sierra Nevada. Grows at 2,000 to 6,900 feet in elevation. Found in desert scrub and Joshua tree woodland habitats as well as pinyon pine woodlands. Blooming period is April to September.	No	Presumed Absent No suitable habitat is present within the project site.
<i>Muhlenbergia californica</i> California muhly	Fed: None CA: None CNPS: 4.3	Found in mesic, seeps, and streambanks within chaparral, coastal scrub, lower montane coniferous forest, and meadows and seeps. Found at elevations ranging from 328 to 6,562 feet. Blooming period is from June to September.	No	Presumed Absent No suitable habitat is present within or adjacent to the project site.

Scientific Name Common Name	Status	Habitat Description	Observed On-site	Potential to Occur
<i>Opuntia basilaris</i> var. <i>brachyclada</i> short-joint beavertail	Fed: None CA: None CNPS: 1B.2	Habitats include chaparral, Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodlands. Found at elevations ranging from 1,394 to 5,906 feet. Blooming period is from April to August.	No	Present
<i>Oreonana vestita</i> woolly mountain-parsley	Fed: None CA: None CNPS: 1B.3	Associated with gravel and talus soils within lower montane coniferous forest, subalpine coniferous forest, and upper montane coniferous forest. Found at elevations ranging from 5,299 to 11,483 feet above msl. Blooming period is from March to September.	No	High Suitable habitat is present within and adjacent to project site. Species has been previously observed within site boundaries.
<i>Phacelia mohavensis</i> Mojave phacelia	Fed: None CA: None CNPS: 4.3	Occurs in sandy or gravelly soils within cismontane woodland, lower montane coniferous forest, meadows and seeps, pinyon and juniper woodland. Found at elevations ranging from 4,593 to 8,202 feet above msl. Blooming period is from April to August.	No	Presumed Absent. No suitable habitat is present within or adjacent to the project site.
<i>Romneya coulteri</i> Coulter's matilija poppy	Fed: None CA: None CNPS: 4.2	Found in recently burned areas within chaparral and coastal scrub habitats. Found at elevations ranging from 66 to 3,937 feet. Blooming period is from March to July.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.
<i>Saltugilia latimeri</i> Latimer's woodland gilia	Fed: None CA: None CNPS: 1B.2	Found in dry, rocky, and sandy desert canyons. Inhabits areas with dry slopes and coarse sandy or rocky soils often in the Transverse and Peninsular Ranges and other desert areas. Blooming period is March through June.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.
<i>Schoenus nigricans</i> Black bog-rush	Fed: None CA: None CNPS: 2B.2	Marshes and swamps (often alkaline); Elevation range: 490 to 6560 feet; Blooming period: Aug-Sep.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.
<i>Selaginella asprella</i> bluish spike-moss	Fed: None CA: None CNPS: 4.3	Typically grows in rocky mountain habitats including cliffs of limestone rock substrate and forest ridges. Usually on dry slopes, igneous rock surfaces and exposed cliffs with gravelly soils.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.
<i>Streptanthus bernardinus</i> Laguna mountains jewelflower	Fed: None CA: None CNPS: 4.2	Found in openings within chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and riparian woodland habitats. Found at elevations ranging from 98 to 5,906 feet in elevation. Blooming period is from March to August.	No	Presumed Absent There is no suitable habitat present within the project site.

Scientific Name Common Name	Status	Habitat Description	Observed On-site	Potential to Occur
<i>Symphotrichum defoliatum</i> San Bernardino aster	Fed: None CA: None CNPS: 1B.2	Prefers lower montane coniferous forest, riparian forests, upper montane coniferous forests, meadows and seeps. Found at elevations ranging from 4,003 to 9,006 feet. Blooming period is from July to August.	No	Presumed Absent There is no suitable habitat present within the project site. The project site occurs outside of the known elevation range for this species.
<i>Symphotrichum greatae</i> Greatas aster	Fed: None CA: None CNPS: 1B.3	Mesic microhabitats within Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Riparian woodland. Elevation range is unknown; known from 985 feet. Blooms in June-October.	No	Presumed Absent The project site occurs outside of the known elevation range for this species.
<i>Syntrichopappus lemmonii</i> Lemmons syntrichopappus	Fed: None CA: None CNPS: 4.3	Occurs in chaparral, Joshua tree woodland, and pinyon and juniper woodland communities. Grows in sandy and gravelly soils from 1,600 to 6,000 feet above mean sea level.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.
<i>Yucca brevifolia</i> western Joshua tree	Fed: None CA: CE CNPS: N/A	Occurs in a variety of arid habitats within the Mojave Desert. Found at elevations ranging from 1,600 to 6,600 feet. Blooming period is from March to June.	No	Presumed Absent There is no suitable habitat present within or adjacent to the project site.

U.S. Fish and Wildlife Service (Fed) - Federal
 END – Federal Endangered
 THR – Federal Threatened
 DL - Delisted

California Department of Fish and Wildlife (CA) - California
 END – California Endangered
 THR – California Threatened
 CTHR – California Candidate Threatened
 DL - Delisted
 FP – California Fully Protected
 SSC – California Species of Special Concern
 WL – California Watch List
 CE – Candidate Endangered

California Native Plant Society (CNPS) - California Rare Plant Rank
 1B Plants Rare, Threatened, or Endangered in California and Elsewhere
 2B Plants Rare, Threatened, or Endangered in California, but More Common Elsewhere
 4 Plants of Limited Distribution – A Watch List

Threat Ranks
 0.2- Moderately threatened in California
 0.3- Not very threatened in California

Appendix C Regulations

Special status species are native species that have been afforded special legal or management protection because of concern for their continued existence. There are several categories of protection at both federal and state levels, depending on the magnitude of threat to continued existence and existing knowledge of population levels.

Federal Regulations

Endangered Species Act of 1973

Federally listed threatened and endangered species and their habitats are protected under provisions of the Federal Endangered Species Act (ESA). Section 9 of the ESA prohibits “take” of threatened or endangered species. “Take” under the ESA is defined as to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any of the specifically enumerated conduct.” The presence of any federally threatened or endangered species that are in a project area generally imposes severe constraints on development, particularly if development would result in “take” of the species or its habitat. Under the regulations of the ESA, the United States Fish and Wildlife Service (USFWS) may authorize “take” when it is incidental to, but not the purpose of, an otherwise lawful act.

Critical Habitat is designated for the survival and recovery of species listed as threatened or endangered under the ESA. Critical Habitat includes those areas occupied by the species, in which are found physical and biological features that are essential to the conservation of an ESA listed species and which may require special management considerations or protection. Critical Habitat may also include unoccupied habitat if it is determined that the unoccupied habitat is essential for the conservation of the species.

Whenever federal agencies authorize, fund, or carry out actions that may adversely modify or destroy Critical Habitat, they must consult with USFWS under Section 7 of the ESA. The designation of Critical Habitat does not affect private landowners, unless a project they are proposing uses federal funds, or requires federal authorization or permits (e.g., funding from the Federal Highway Administration or a permit from the U.S. Army Corps of Engineers (Corps)).

If USFWS determines that Critical Habitat will be adversely modified or destroyed from a proposed action, the USFWS will develop reasonable and prudent alternatives in cooperation with the federal institution to ensure the purpose of the proposed action can be achieved without loss of Critical Habitat. If the action is not likely to adversely modify or destroy Critical Habitat, USFWS will include a statement in its biological opinion concerning any incidental take that may be authorized and specify terms and conditions to ensure the agency is in compliance with the opinion.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 U.S. Government Code [USC] 703) makes it unlawful to pursue, capture, kill, possess, or attempt to do the same to any migratory bird or part, nest, or egg of any such bird listed in wildlife protection treaties between the United States, Great Britain, Mexico, Japan, and the countries of the former Soviet Union, and authorizes the U.S. Secretary of the Interior to protect and regulate the taking of migratory birds. It establishes seasons and bag limits for hunted species and protects migratory birds, their occupied nests, and their eggs (16 USC 703; 50 CFR 10, 21).

The MBTA covers the taking of any nests or eggs of migratory birds, except as allowed by permit pursuant to 50 CFR, Part 21. Disturbances causing nest abandonment and/or loss of reproductive effort (i.e., killing or abandonment of eggs or young) may also be considered “take.” This regulation seeks to protect migratory birds and active nests.

In 1972, the MBTA was amended to include protection for migratory birds of prey (e.g., raptors). Six families of raptors occurring in North America were included in the amendment: Accipitridae (kites, hawks, and eagles); Cathartidae (New World vultures); Falconidae (falcons and caracaras); Pandionidae (ospreys); Strigidae (typical owls); and Tytonidae (barn owls). The provisions of the 1972 amendment to the MBTA protects all species and subspecies of the families listed above. The MBTA protects over 800 species including geese, ducks, shorebirds, raptors, songbirds and many relatively common species.

State Regulations

California Environmental Quality Act (CEQA)

The California Environmental Quality Act (CEQA) provides for the protection of the environment within the State of California by establishing State policy to prevent significant, avoidable damage to the environment through the use of alternatives or mitigation measures for projects. It applies to actions directly undertaken, financed, or permitted by State lead agencies. If a project is determined to be subject to CEQA, the lead agency will be required to conduct an Initial Study (IS); if the IS determines that the project may have significant impacts on the environment, the lead agency will subsequently be required to write an Environmental Impact Report (EIR). A finding of non-significant effects will require either a Negative Declaration or a Mitigated Negative Declaration instead of an EIR. Section 15380 of the CEQA Guidelines independently defines “endangered” and “rare” species separately from the definitions of the California Endangered Species Act (CESA). Under CEQA, “endangered” species of plants or animals are defined as those whose survival and reproduction in the wild are in immediate jeopardy, while “rare” species are defined as those who are in such low numbers that they could become endangered if their environment worsens.

California Endangered Species Act (CESA)

In addition to federal laws, the state of California implements the CESA which is enforced by CDFW. The CESA program maintains a separate listing of species beyond the FESA, although the provisions of each act are similar.

State-listed threatened and endangered species are protected under provisions of the CESA. Activities that may result in “take” of individuals (defined in CESA as; “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill”) are regulated by CDFW. Habitat degradation or modification is not included in the definition of “take” under CESA. Nonetheless, CDFW has interpreted “take” to include the destruction of nesting, denning, or foraging habitat necessary to maintain a viable breeding population of protected species.

The State of California considers an endangered species as one whose prospects of survival and reproduction are in immediate jeopardy. A threatened species is considered as one present in such small numbers throughout its range that it is likely to become an endangered species in the near future in the

absence of special protection or management. A rare species is one that is considered present in such small numbers throughout its range that it may become endangered if its present environment worsens. State threatened and endangered species are fully protected against take, as defined above.

The CDFW has also produced a species of special concern list to serve as a species watch list. Species on this list are either of limited distribution or their habitats have been reduced substantially, such that a threat to their populations may be imminent. Species of special concern may receive special attention during environmental review, but they do not have formal statutory protection. At the federal level, USFWS also uses the label species of concern, as an informal term that refers to species which might be in need of concentrated conservation actions. As the Species of Concern designated by USFWS do not receive formal legal protection, the use of the term does not necessarily ensure that the species will be proposed for listing as a threatened or endangered species.

Fish and Game Code

Fish and Game Code Sections 3503, 3503.5, 3511, and 3513 are applicable to natural resource management. For example, Section 3503 of the Code makes it unlawful to destroy any birds' nest or any birds' eggs that are protected under the MBTA. Further, any birds in the orders Falconiformes or Strigiformes (Birds of Prey, such as hawks, eagles, and owls) are protected under Section 3503.5 of the Fish and Game Code which makes it unlawful to take, possess, or destroy their nest or eggs. A consultation with CDFW may be required prior to the removal of any bird of prey nest that may occur on a project site. Section 3511 of the Fish and Game Code lists fully protected bird species, where the CDFW is unable to authorize the issuance of permits or licenses to take these species. Pertinent species that are State fully protected by the State include golden eagle (*Aquila chrysaetos*) and white-tailed kite (*Elanus leucurus*). Section 3513 of the Fish and Game Code makes it unlawful to take or possess any migratory nongame bird as designated in the MBTA or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA.

Native Plant Protection Act

Sections 1900–1913 of the Fish and Game Code were developed to preserve, protect, and enhance Rare and Endangered plants in the state of California. The act requires all state agencies to use their authority to carry out programs to conserve Endangered and Rare native plants. Provisions of the Native Plant Protection Act prohibit the taking of listed plants from the wild and require notification of the CDFW at least ten days in advance of any change in land use which would adversely impact listed plants. This allows the CDFW to salvage listed plant species that would otherwise be destroyed.

California Native Plant Society Rare and Endangered Plant Species

Vascular plants listed as rare or endangered by the CNPS, but which have no designated status under FESA or CESA are defined as follows:

California Rare Plant Rank

- 1A- Plants Presumed Extirpated in California and either Rare or Extinct Elsewhere
- 1B- Plants Rare, Threatened, or Endangered in California and Elsewhere

- 2A- Plants Presumed Extirpated in California, But More Common Elsewhere
- 2B- Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
- 3- Plants about Which More Information is Needed - A Review List
- 4- Plants of Limited Distribution - A Watch List

Threat Ranks

- .1- Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
- .2- Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
- .3- Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known).

Local Regulations

San Bernardino County Development Code

Section 88.01.060 of the County of San Bernardino Development Code provides regulations for the removal or harvesting of specified desert native plants in order to preserve and protect the plants and to provide for the conservation and wise use of desert resources. The provisions are intended to coincide with the Desert Native Plants Act (Food and Agricultural Code Section 8001 et seq.) and the State Department of Food and Agriculture to implement and enforce the Act.

Pursuant to Section 88.01.060 of the Development Code, the following desert native plants or any part of them, except the fruit, shall not be removed except under a Tree or Plant Removal Permit:

- 1) The following desert native plants with stems two inches or greater in diameter or six feet or greater in height:
 - (A) *Dalea spinosa* (smoke tree)
 - (B) All species of the genus *Prosopis* (mesquites)
- 2) All species of the family *Agavaceae* (century plants, nolinias, yuccas)
- 3) Creosote Rings, 10 feet or greater in diameter
- 4) All Joshua trees
- 5) Any part of any of the following species, whether living or dead:
 - (A) *Olneya tesota* (desert ironwood)
 - (B) All species of the genus *Prosopis* (mesquites)
 - (C) All species of the genus *Cercidium* (palos verdes)

There are three key agencies that regulate activities within inland streams, wetlands, and riparian areas in California. The Corps Regulatory Branch regulates activities pursuant to Section 404 of the Federal Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. Of the State agencies, the CDFG regulates activities under the Fish and Game Code Section 1600-1616, and the Regional Board regulates activities pursuant to Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act.

Federal Regulations

Section 404 of the Clean Water Act

In accordance with the Revised Definition of “Waters of the United States”; Conforming (September 8, 2023), “waters of the United States” are defined as follows:

(a) ***Waters of the United States*** means:

(1) Waters which are:

- (i) Currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- (ii) The territorial seas; or
- (iii) Interstate waters;

(2) Impoundments of waters otherwise defined as waters of the United States under this definition, other than impoundments of waters identified under [paragraph \(a\)\(5\)](#) of this section;

(3) Tributaries of waters identified in paragraph (a)(1) or (2) of this section that are relatively permanent, standing or continuously flowing bodies of water;

(4) Wetlands adjacent to the following waters:

- (i) Waters identified in [paragraph \(a\)\(1\)](#) of this section; or
- (ii) Relatively permanent, standing or continuously flowing bodies of water identified in paragraph (a)(2) or (a)(3) of this section and with a continuous surface connection to those waters;

(5) Intrastate lakes and ponds not identified in paragraphs (a)(1) through (4) of this section that are relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection to the waters identified in paragraph (a)(1) or (a)(3) of this section

(b) The following are not “waters of the United States” even where they otherwise meet the terms of [paragraphs \(a\)\(2\)](#) through [\(5\)](#) of this section:

(1) Waste treatment systems, including treatment ponds or lagoons, designed to meet the requirements of the Clean Water Act;

(2) Prior converted cropland designated by the Secretary of Agriculture. The exclusion would cease upon a change of use, which means that the area is no longer available for the production of agricultural commodities. Notwithstanding the determination of an area's status as prior converted

cropland by any other Federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA;

(3) Ditches (including roadside ditches) excavated wholly in and draining only dry land and that do not carry a relatively permanent flow of water;

(4) Artificially irrigated areas that would revert to dry land if the irrigation ceased;

(5) Artificial lakes or ponds created by excavating or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing;

(6) Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating or diking dry land to retain water for primarily aesthetic reasons;

(7) Waterfilled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States; and

(8) Swales and erosional features (*e.g.*, gullies, small washes) characterized by low volume, infrequent, or short duration flow.

(c) In this section, the following definitions apply:

(1) **Wetlands** means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

(2) **Adjacent** means having a continuous surface connection

(3) **High tide line** means the line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.

(4) **Ordinary high water mark** means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

(5) ***Tidal waters*** means those waters that rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by hydrologic, wind, or other effects.

Section 401 of the Clean Water Act

Pursuant to Section 401 of the CWA, any applicant for a federal license or permit to conduct any activity which may result in any discharge to waters of the United States must provide certification from the State or Indian tribe in which the discharge originates. This certification provides for the protection of the physical, chemical, and biological integrity of waters, addresses impacts to water quality that may result from issuance of federal permits, and helps insure that federal actions will not violate water quality standards of the State or Indian tribe. In California, there are nine Regional Water Quality Control Boards (Regional Board) that issue or deny certification for discharges to waters of the United States and waters of the State, including wetlands, within their geographical jurisdiction. The State Water Resources Control Board assumed this responsibility when a project has the potential to result in the discharge to waters within multiple Regional Boards.

State Regulations

Fish and Game Code

Fish and Game Code Sections 1600 et. seq. establishes a fee-based process to ensure that projects conducted in and around lakes, rivers, or streams do not adversely impact fish and wildlife resources, or, when adverse impacts cannot be avoided, ensures that adequate mitigation and/or compensation is provided.

Fish and Game Code Section 1602 requires any person, state, or local governmental agency or public utility to notify the CDFW before beginning any activity that will do one or more of the following:

- (1) substantially obstruct or divert the natural flow of a river, stream, or lake;
- (2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake;
or
- (3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake.

Fish and Game Code Section 1602 applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the State. CDFW's regulatory authority extends to include riparian habitat (including wetlands) supported by a river, stream, or lake regardless of the presence or absence of hydric soils and saturated soil conditions. Generally, the CDFW takes jurisdiction to the top of bank of the stream or to the outer limit of the adjacent riparian vegetation (outer drip line), whichever is greater. Notification is generally required for any project that will take place in or in the vicinity of a river, stream, lake, or their tributaries. This includes rivers or streams that flow at least periodically or permanently through a bed or channel with banks that support fish or other aquatic life and watercourses having a surface or subsurface flow that support or have supported riparian vegetation. A Section 1602 Streambed Alteration Agreement would be required if impacts to identified CDFW jurisdictional areas occur.

Porter Cologne Act

The California *Porter-Cologne Water Quality Control Act* gives the State very broad authority to regulate waters of the State, which are defined as any surface water or groundwater, including saline waters. The Porter-Cologne Act has become an important tool in the post SWANCC and Rapanos regulatory environment, with respect to the state’s authority over isolated and insignificant waters. Generally, any person proposing to discharge waste into a water body that could affect its water quality must file a Report of Waste Discharge in the event that there is no Section 404/401 nexus. Although “waste” is partially defined as any waste substance associated with human habitation, the Regional Board also interprets this to include fill discharged into water bodies.

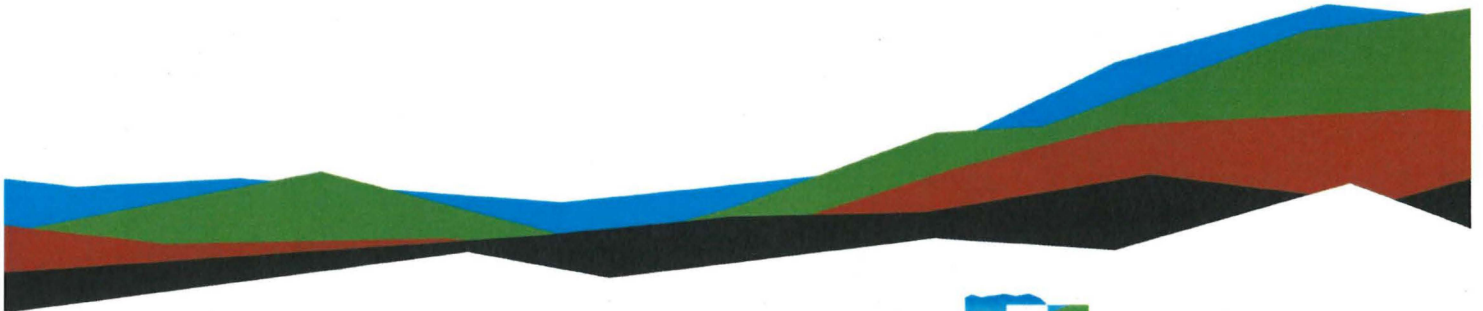
Appendix C
Slope Stability Study Report

Lone Pine Canyon Project Slope Stability Study Report

June 17, 2025 | Terracon Project No. CB245063

Prepared for:

EnviroMINE, Inc.
4711 Viewridge Avenue, Suite 270
San Diego, CA 92123



Nationwide
[Terracon.com](https://www.terracon.com)

- Facilities
- Environmental
- Geotechnical
- Materials



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June 17, 2025

EnviroMINE, Inc.
4711 Viewridge Avenue, Suite 270
San Diego, CA 92123

Attn: Travis Jokerst
P: (619) 284-8515
E: travisj@enviromineinc.com

Re: Slope Stability Study Report
Lone Pine Canyon Project
San Bernardino County, California
Terracon Project No. CB245063

Dear Mr. Jokerst:

We have completed the Slope Stability Study report for the above referenced project to provide site geologic mapping and planning level concepts for future mine slopes in accordance with your authorization dated March 27, 2025. This report presents information for planning of future mining.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further service, please contact us.

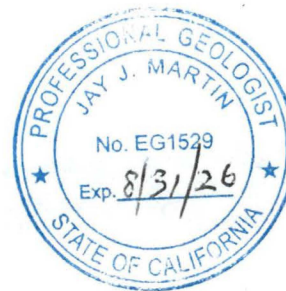
Sincerely,

Terracon

John S. McKeown, E.G.
Senior Geologist



Jay J. Martin, E.G.
Principal



Slope Stability Study Report


Lone Pine Canyon Project | San Bernardino County, California
June 17, 2025 | Terracon Project No. CB245063

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Attachments

Global Stability Concepts
Kinematic Concepts

Note: This report was originally delivered in a web-based format. **Blue Bold** text in the report indicates a referenced section heading. The PDF version also includes hyperlinks which direct the reader to that section and clicking on the  Terracon logo will bring you back to this page. For more interactive features, please view your project online at client.terracon.com.

Refer to each individual Attachment for a listing of contents.

Slope Stability Study Report

Lone Pine Canyon Project | San Bernardino County, California
June 17, 2025 | Terracon Project No. CB245063

Introduction

As authorized by a signed agreement dated March 27, 2025, this firm performed field geologic mapping and limited sampling, and evaluated slope configuration concepts for mine planning. A mine concept or reclamation is not available for the project at this time. The original agreement included sampling and testing the country rock (gneiss) for aggregate suitability. The client requested that the aggregate testing be eliminated from the scope. Project parcels and overall footprint were adjusted to preclude the areas of mapped landslides.

A laboratory test on sampled limestone collected from the existing mine area was utilized in this evaluation to guide selection of rock mass strength in calculations.

The proposed project area includes several parcels within an historic mining area along the northeast side of Lone Pine Canyon Road approximately 6 miles southeast of Wrightwood, San Bernardino County, California. Lone Pine Canyon Road trends along the southwest side of the project parcels. Terrain in the project area is formed by the northwest trend of a linear canyon along the San Andreas Fault Zone located approximately 0.1 mile southwest of Lone Pine Canyon Road. The project parcels are shown on the attached [Geologic Map – Dibblee and Minch](#).

Recent topographic mapping was provided by the client. Elevations along Lone Pine Canyon Road near the project parcels vary from approximately 3,865 feet to 4,450 feet. A ridgeline trends parallel to the road at elevations ranging from 4,525 feet to 4,865 feet within the northeastern project parcels limits. Site terrain is formed in gneissic bedrock that includes screens and lenses of marble. Excavations and roads are present locally where past mining accessed marble lenses for extraction. Northeast of the site ridgeline, the Cajon Valley Fault separates the gneissic rocks from younger Cajon Valley formation sandstones and related rocks within a steep escarpment terrain. The resource of interest is the marble and potentially the gneissic units within the project parcels. Colluvium derived from site hillsides mantles site slopes and flats. along the southwest side of the project.

The evaluation of environmental or groundwater conditions is not included in the scope of this study.

Slope Stability Study Report

Lone Pine Canyon Project | San Bernardino County, California

June 17, 2025 | Terracon Project No. CB245063

Scope of Services

The scope of services provided during this evaluation included the following:

- Geologic mapping of project parcels.
- Limited sampling of marble resource at several locations within the parcels.
- Development of slope concepts based on global stability calculation of estimated slope heights and feasible angles.
- Kinematic discussion based on field data collected during geologic mapping.
- Preparation of this letter report summarizing the findings of our evaluation.

Site Geology

The linear trend of Lone Pine Canyon and associated geographic features are strongly influenced by the northwest-trending San Andreas Rift Zone located within approximately 0.25 mile from the project boundary. Project terrain is generally steep, rugged, and is formed in gneissic bedrock that contains lenses of marble. The gneiss varies from whitish to gray and weathers to a brown to gray soil. Foliation is visible where laminae are closely spaced and/or where composition is interlayered. Thick chaparral vegetation covers the site. The site is generally bounded by the Cajon Valley Fault along the northeast and San Andreas Fault along the southwest. Northeast of the Cajon Valley Fault are bedded sandstones of the Cajon Valley Formation.

Geologic maps that include the site area region include Morton and Woodburne (1991), Dibblee and Minch (2003), Morton and Miller (2006). Kenney (1999) mapped elements of the Cajon Valley Fault in an area northwest of the site.

Site mapping included on-foot traverse of selected drainages and ridgelines and observations of unit outcrop as visible from Lone Pine Canyon Road. Examination of aerial imagery and ground-based photographs assisted in outlining marble bodies. A [Geologic Map](#) with our interpretation of unit boundaries is attached.

The geologic units observed during site mapping conducted for this study are described below.

Geologic Units

Marble: White marble occurs as thick lenses within gneissic bedrock forming erosion resistant outcrop and surface trends. The marble varies from fine to very coarse grained, produces rough weathering surfaces, and is generally hard and randomly fractured. Foliation or relict bedding is locally defined by discontinuous lenses of light

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brown, rough-weathering dolomite. Marble is exposed in several excavations and prospects within the project parcels.

Gneiss: Light brown, gray, and mottled whitish-brown foliated gneiss forms the majority of bedrock exposure across the project parcels. Soils developed on gneiss tend toward dark brown and locally red-brown. Outcrop exposures of the gneiss are rare and generally occur where excavations in the marble reveal surrounding gneiss. Near surface gneiss is soft to a geologic hammer, highly weathered and weak. The gneiss includes laminae of feldspathic and mafic composition with the mafic forming the more weathered material as platy mineral grains.

Cajon Valley Sedimentary Beds: Sandstone occurs northeast of the steep escarpment of the Cajon Valley Fault on the northeast flank of the site ridgeline. The sandstone is arkosic, medium grained and locally conglomerate. Color is gray to whitish and thickly bedded. Bedding dips to the northeast at steep angles near the Cajon Valley Fault decreasing to lower angles with farther distance from the fault.

Unconsolidated Sediments: Colluvium derived from gneiss and marble occur as slope mantling debris and soils throughout site hillsides. Colluvium is thicker near the toe of slopes where terrain becomes less steep. Alluvium is present along the valley bottom southwest of Lone Pine Canyon Road and includes cobble and boulder size clasts of resistant rock types. These deposits are generally outside of the parcel boundaries.

Landslides: Landslide mapping by Morton and others (2001) includes the areas of project parcels (see [Landslide Map](#)). Landscape features consistent with very old landslides are visible in aerial imagery where Morton and others depict landslides. The proposed project footprint avoids mapped landslide areas.

Slope Stability and Geometry

To assess potential overall slope angles for the project, we evaluated typical mine slopes in hard rock mines in the site region. Reclamation slopes angles are designed to efficiently access resource, provide safe working slope conditions during the mining phase, and provide a stable condition post-reclamation. Mine slopes are subject to adjustments based on conditions and geologic structure exposed during mining, resulting in greater or lesser slope angles at the reclamation stage. The presence of haul roads (ramps) in benched slope designs may result in lower slope angles. Terms related to mine slope geometry are shown on [Pit Geometry Terms](#).

Most hard rock reclamation slopes in the site region are designed with interramp slope angles between approximately 48 and 65 degrees. Bench face angles may vary from 45 to 80 degrees and are strongly controlled by material strength, geologic structure and

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blasting/excavation methods and practices. Overall slope angles may vary from approximately 45 to 55 degrees.

We measured unconfined compressive strength (UCS) of a marble block sample. After coring to produce a test cylinder, it was noted that the sample exhibited a closed fracture along the long axis; therefore, the UCS value of 2,050 psi.

We estimated materials strengths for the gneissic and marble geologic units based on the available surface exposures and our database of test samples. Values of materials strength properties listed in the SLIDE slope stability program for Generalized Hoek-Brown criteria (Hoek and Karzulovic, 2000; Hoek, Carranza-Torres and Corkum, 2002) are provided for consideration. Additional sampling and testing may be performed for final designs of project slopes. The estimated strength parameter values for the marble and gneissic units are presented in the following tables, along with the values used in the slope stability calculations (SLIDE program).

Marble			
	Lab Specimen	Comment	SLIDE
Specific Gravity	2.688		
Unit Weight	168 pcf	Sampled from site	--
Unit weight (pcf)	150 to 168	Lab specimens from other locations	--
Intact UCS¹	1.5 x10 ⁶ psf	Lab test on Monte Cristo/Bird Spring sample	1000 to 5000 ksf
Geological Strength Index	--	Varies with surface conditions and geologic structure	45 to 65
Intact Rock Constant (mi)	--	marble	9 ± 3
Disturbance Factor	--	Production blasting	1
		Mechanical excavation	0.7

¹ uniaxial compressive strength
 pcf = pounds per cubic foot
 psf = pounds per square foot
 ksf = 1,000 pounds per square foot
 mi = unitless constant

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Gneiss			
	Lab Specimen	Comment	SLIDE
Unit weight (pcf)	150 to 162	Lab specimens	--
Intact UCS¹	1.85 x 10 ⁶ to 3.00 x 10 ⁵ psf	Lab test on foliated and fresh gneiss	100 to 1000 ksf
Mohr Coulomb	Cohesion = 250 psf Phi = 37 degrees	Weathered specimen	--
Geological Strength Index	--	Varies with surface conditions and geologic structure	45 to 65
Intact Rock Constant (mi)	--	Gneiss (fresh)	28 ± 5
Disturbance Factor	--	Production blasting Mechanical excavation	1 0.7

¹ uniaxial compressive strength
 pcf = pounds per cubic foot
 psf = pounds per square foot
 ksf = 1,000 pounds per square foot
 mi = unitless constant

Static and seismic factors of safety (1.5 and 1.1, respectively) in conformance with State of California, Department of Conservation, Division of Mine Reclamation and County of San Bernardino criteria—are anticipated to be achievable for the estimated range of rock slope configurations described above for the anticipated slope maximum slope height and angle based on application of sound evaluation and design practice during slope design. Slope design may be based on site-specific explorations.

Kinematic Considerations

Kinematic analysis uses geologic structural data to evaluate the potential for rock mass discontinuities to form planar, wedge, or topple type failures. It considers geometry and friction along potential slip planes. It does not consider block size or mass as in global stability models. The data are typically represented as poles-to-planes and dip vectors in kinematic diagrams.

Planar sliding analysis considers dip vectors of measured data points. Wedge sliding analysis generates dip vectors for the intersections of all data points; therefore, wedge analysis generates a larger number of vectors to evaluate. Topple analysis identifies the potential for columns to form along steeply dipping joint systems and to tilt out of the excavated face on low-angle separation surfaces. The stereonet data plots and a sensitivity graph are attached to illustrate kinematic concepts.

For the kinematic concepts, we considered slope azimuths (facing directions) based on expected reclamation slopes for the site topography. Assuming a mine pit opening

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toward Lone Pine Canyon Road, slope azimuths from approximately 125 to 305 degrees are estimated for the project.

An overall pit wall angle at 50 degrees is presented to illustrate slope kinematic concepts. Limited geological structure data (see [Geologic Structure Map](#)) were collected at existing prospects within the project parcels and are considered to represent the marble unit. Exposures of the gneissic unit with opportunity for structural measurements were generally lacking in the areas traversed during mapping. Foliation was measured in the gneissic unit at one location within the southern-most parcel to dip between 74 and 87 degrees toward the south-southwest. Foliation in the gneissic unit is depicted on prior mapping as dipping northeast on the southwest side of the site ridgeline and southwest on the northeast side of the site ridgeline with a flat-lying foliation locally.

Relict bedding within the marble unit, defined by thin dolomite laminae, were noted locally and may mimic the orientation of foliation in the adjacent gneissic body. However, the marble unit does not exhibit a preference for partings or discontinuities along bedding. Rather, joints in the marble unit appear randomly oriented within blocky structure. We anticipate a potential for planar and wedge failure modes formed or from on foliation planes in the gneiss on southwest-dipping slopes.

The dataset collected during this evaluation is limited; therefore, a more accurate evaluation of kinematics related to the project is not available based on the dataset. Additional kinematic failure potentials may exist that are not expressed in surface outcrop.

Conclusions

It is the opinion of this firm that mine rock slopes for the proposed project parcels are feasible with respect to slope stability from a geotechnical standpoint.

Based upon our evaluation, an overall 50-degree slope up to approximately 740 feet in height may be suitably stable against gross failure for the anticipated long-term conditions, including the effects of seismic shaking. A flatter slope angle will be required near tops of slopes that expose the weathered soil/rock profile. The weathered profile is estimated to be approximately 5 to 15 feet thick on slope areas with deeper weathering on lower gradient areas estimated to be up to approximately 30 feet. A more accurate determination of the weathering profile can be made with subsurface explorations.

Inclusion of safety benches and access ramps in the overall slope profiles, together with scaling of finished bench faces, is anticipated to mitigate raveling or rockfall.

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A potential for planar and wedge failure is indicated by kinematic evaluation for slopes having southwest facing aspects. These failure types are mitigatable with proper excavation, scaling and benching techniques.

Recommendations

Severe seismic shaking of the site can be expected to occur during the lifetime of the proposed mining and reclamation. This potential has been considered in our analyses and evaluation of slope stability.

Landslides are mapped by others within the parcel boundaries. Mining is planned to avoid these areas. Alternatively, additional analysis may determine that they do not exist or determine that they can be mitigated by removal.

The configuration of final quarry slopes, including wall height, wall angle and bench width, is controlled primarily by the type of mining equipment used and bench face angles that can be achieved (Ryan and Pryor, 2000). Typical wall heights in hard rock mines range from 40 to 50 feet.

Individual bench face angles and widths should be adjusted locally, if necessary, to accommodate the geologic structure exposed in future rock excavations and to produce stable working and final slope configurations. The adjustment of slope configuration during mining is the responsibility of the mine operator. A typical bench width of 20 feet, subject to adjustment based on site conditions, may be suitable for the proposed mining and reclamation. The design width should be adjusted by the project mining engineer to be consistent with the conditions encountered during mining. In addition, scaling of loose or dislodged blocks from bench face cuts should be performed as necessary at any working level while access for equipment is available.

The rock mass within the proposed mine area is generally hard, competent and capable of forming stable slopes at typical gradients for reclamation. The dominant geologic structure is foliation in the gneissic unit that exhibits continuity and potentially adverse geometry with regard to planned southwest-facing slope aspects. Where highly weathered/shear zones are exposed, scaling should be performed to expose a stable rock surface to mitigate potential instability.

If geologic conditions that are inconsistent with conditions described in this report, or that warrant further analysis, are exposed during future mining, such conditions should be evaluated.

Portions of the project area that are mantled by alluvium should be planned with cut slopes at a ratio of 2 (horizontal) to 1 (vertical) or flatter.

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Slopes may be protected with berms along the pit margins and benches as necessary to prevent slope erosion in areas where overland flow is directed toward slopes.

Periodic geologic mapping of the reclamation slopes should be performed during slope construction (annual inspections during mining) to identify conditions that may preclude reclamation of the site in accordance with the approved reclamation plan.

General Comments

Our analysis and opinions are based upon our understanding of the project, the geotechnical conditions in the area, and the data obtained from our site exploration. Variations will occur between exploration point locations or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. Terracon should be retained as the Geotechnical Engineer, where noted in this report, to provide observation and testing services during pertinent construction phases. If variations appear, we can provide further evaluation and supplemental recommendations. If variations are noted in the absence of our observation and testing services on-site, we should be immediately notified so that we can provide evaluation and supplemental recommendations.

Our Scope of Services does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

Our services and any correspondence are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and are accomplished in accordance with generally accepted geotechnical engineering practices with no third-party beneficiaries intended. Any third-party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

Site characteristics as provided are for design purposes and not to estimate excavation cost. Any use of our report in that regard is done at the sole risk of the excavating cost estimator as there may be variations on the site that are not apparent in the data that could significantly affect excavation cost. Any parties charged with estimating excavation costs should seek their own site characterization for specific purposes to obtain the specific level of detail necessary for costing. Site safety and cost estimating including excavation support and dewatering requirements/design are the responsibility of others.

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Construction and site development have the potential to affect adjacent properties. Such impacts can include damages due to vibration, modification of groundwater/surface water flow during construction, foundation movement due to undermining or subsidence from excavation, as well as noise or air quality concerns. Evaluation of these items on nearby properties are commonly associated with contractor means and methods and are not addressed in this report. The owner and contractor should consider a preconstruction/precondition survey of surrounding development. If changes in the nature, design, or location of the project are planned, our conclusions and recommendations shall not be considered valid unless we review the changes and either verify or modify our conclusions in writing.

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References

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Site Plans

Contents:

Site Location
Geologic Map – Dibblee and Minch
Geologic Map
Geologic Structure Map
Landslide Map
Pit Geometry Terms

Note: All attachments are one page unless noted above.

Site Location

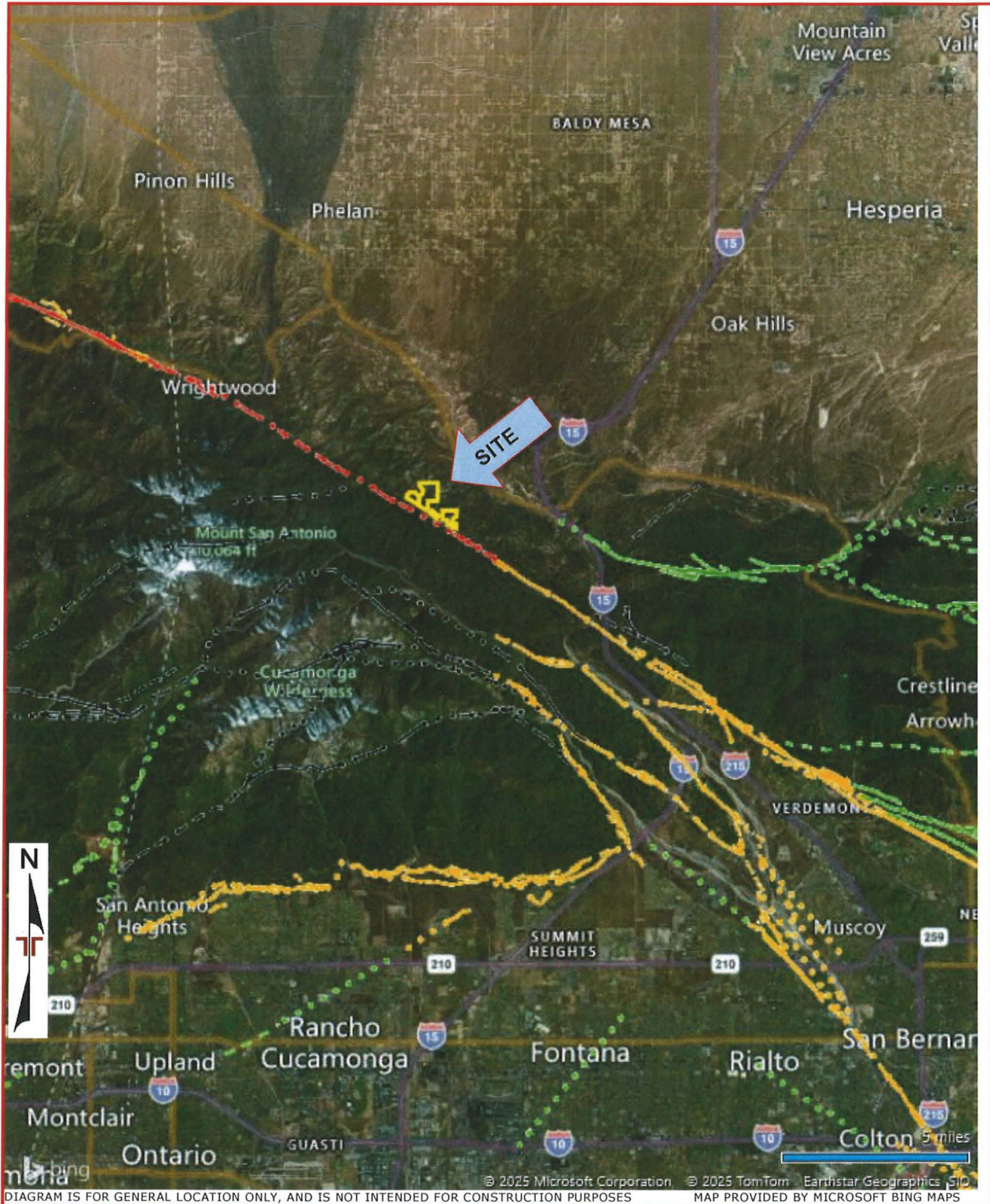


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES MAP PROVIDED BY MICROSOFT BING MAPS

Geologic Map – Dibblee and Minch

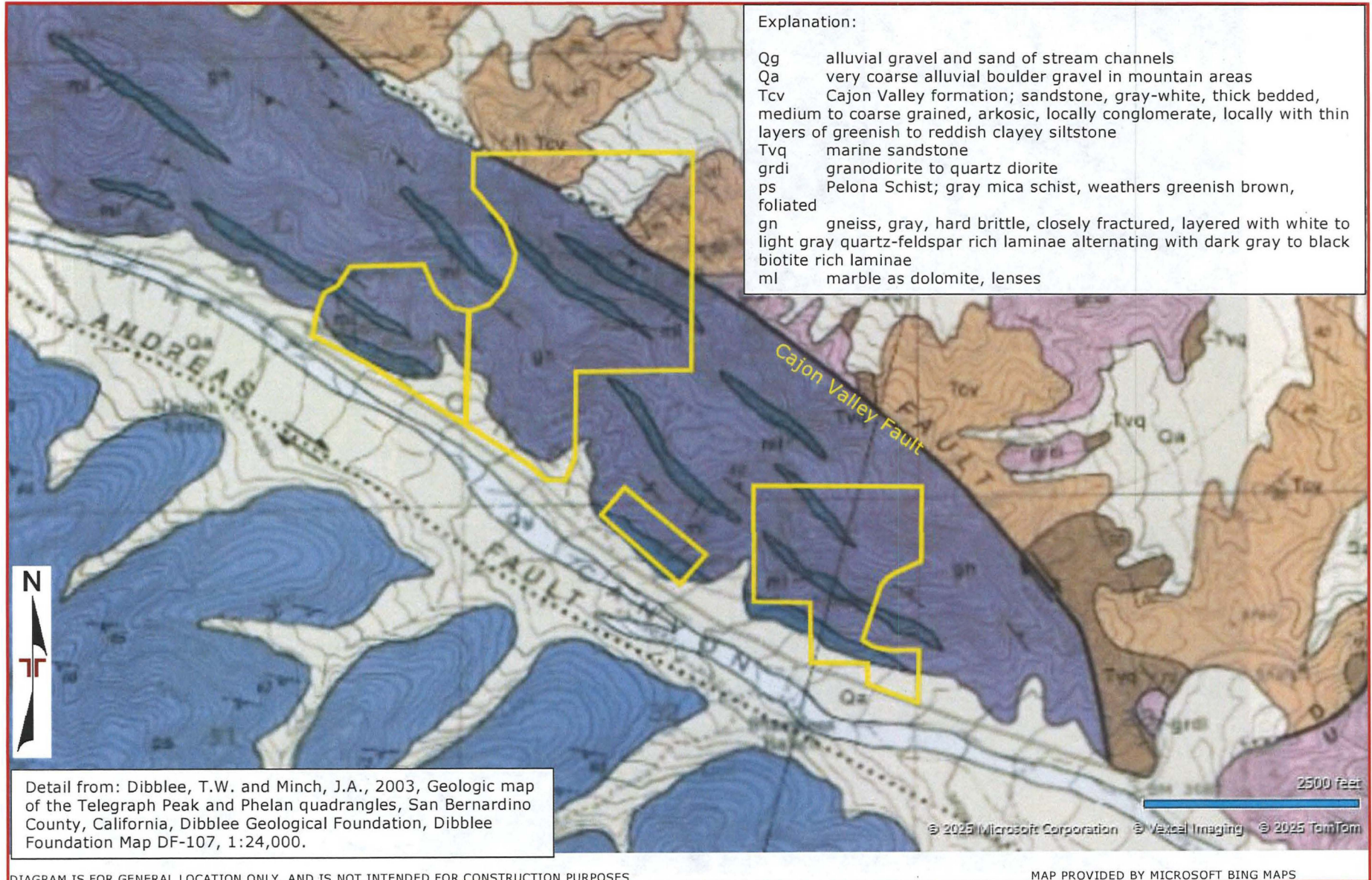
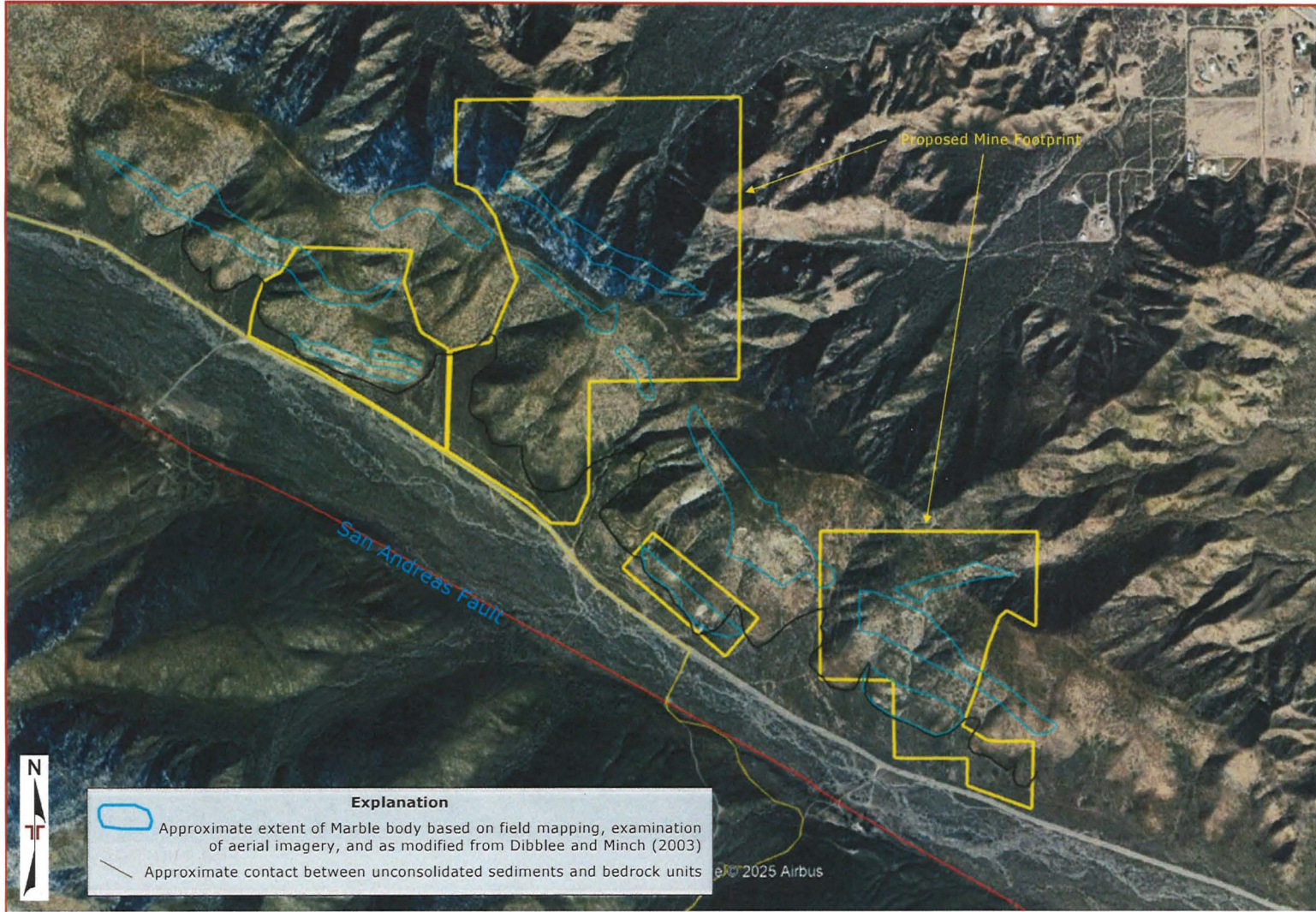


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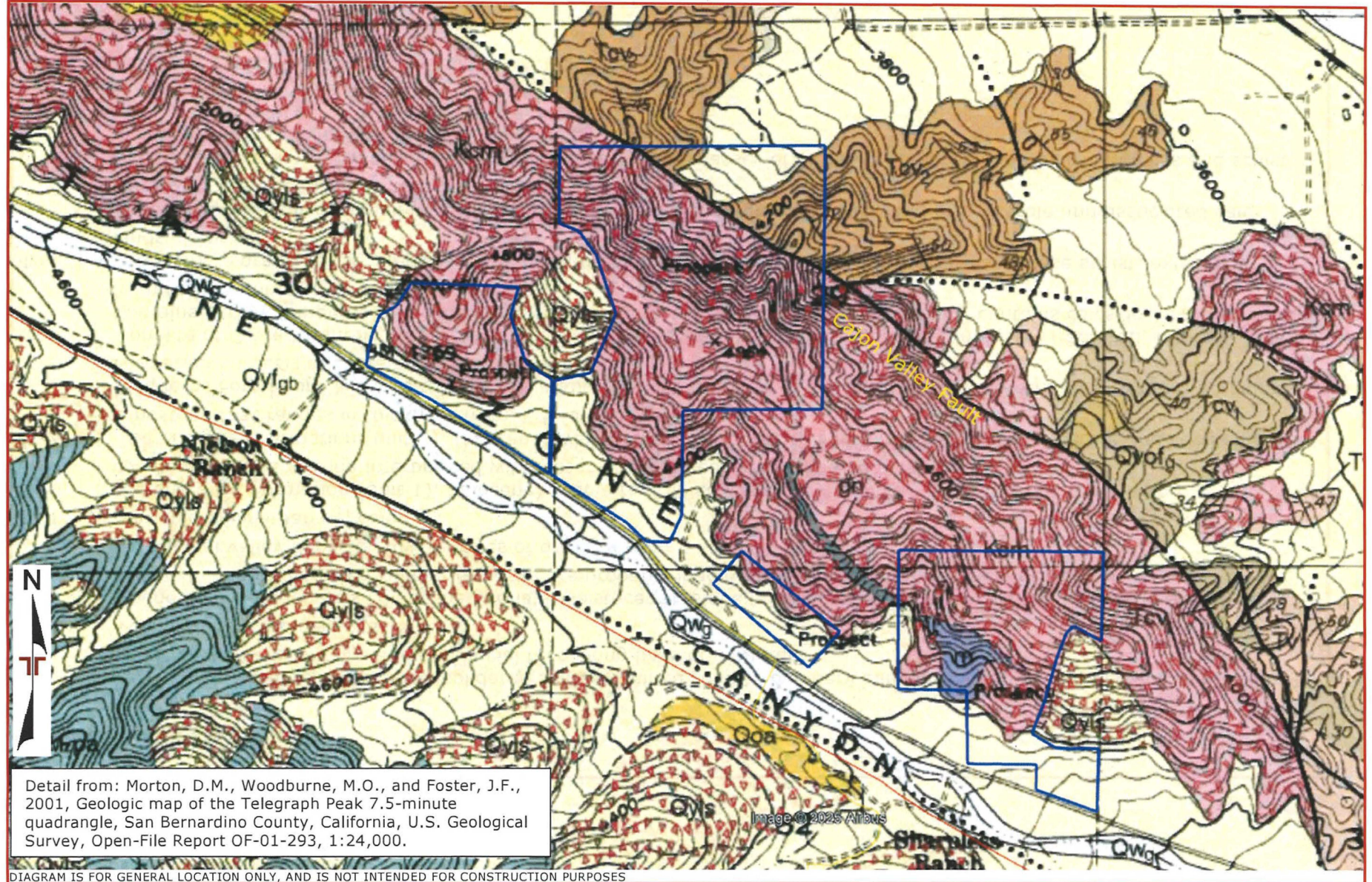
Geologic Map



Geologic Structure Map



Landslide Map



Landslide Map

Landslide Map Explanation

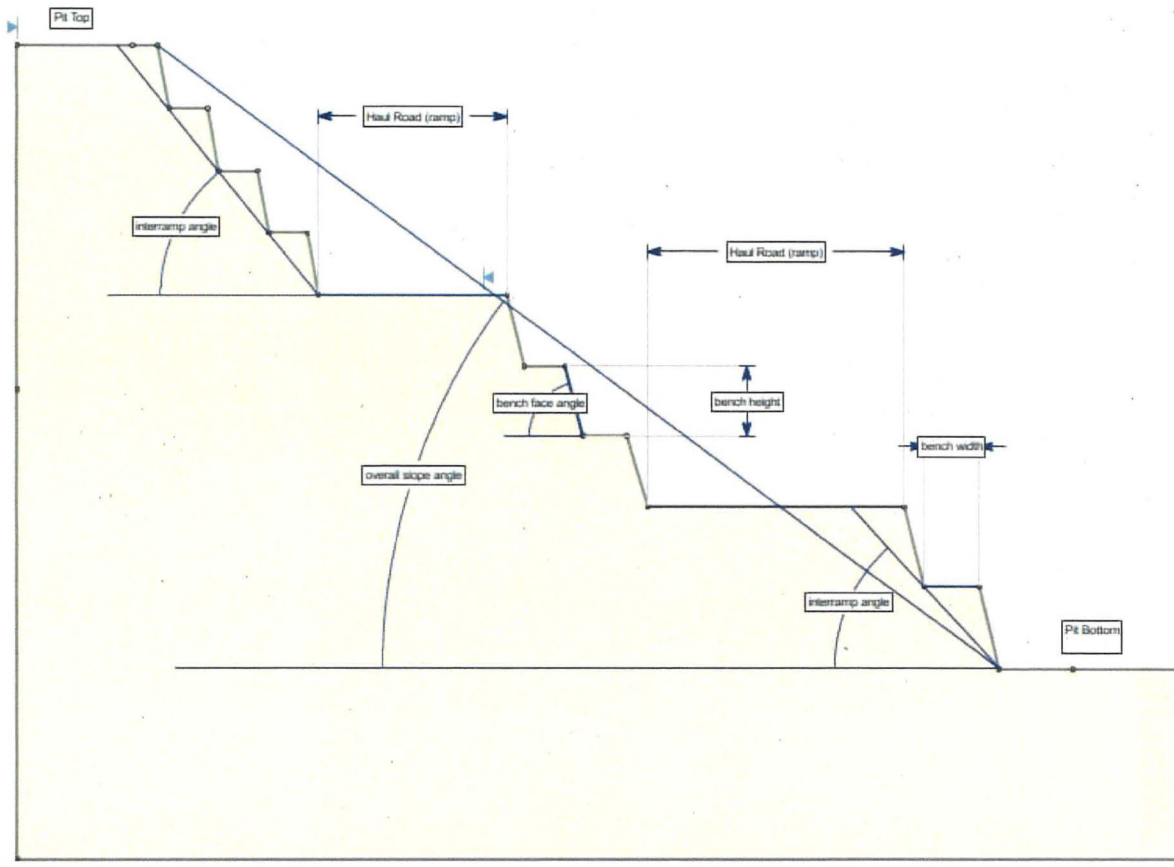
Qw	very young wash deposits, unconsolidated coarse-grained sand to bouldery alluvium of active channels flooring drainage bottoms within mountains and on alluvial fans along base of mountain
Qyf	young alluvial fan deposits
Qyls	young landslide deposits (Holocene and late Pleistocene), slope failure deposits that consist of displaced bedrock blocks and (or) chaotically mixed rubble. Deposits are probably inactive under current climatic conditions
Qoa	old alluvial valley deposits, low terraces of gravelly sand
Qvof	very old alluvial fan deposits
Tcv1	Cajon Valley Formation (unit 1), (Miocene) friable to lithified, pale-gray to white, arkosic conglomerate and conglomeratic sandstone interbedded with lesser fine-grained sandstone and siltstone
Tcv2	Cajon Valley Formation (unit 2), (Miocene) well lithified, light gray to light pinkish-tan conglomerate and conglomeratic sandstone that ranges in thickness from 425 to 550 meters
Tv	Vaqueros Formation (Miocene to Eocene), arkosic sandstone, sandstone, and siltstone, correlated with marine Vaqueros Formation on basis of contained fossil assemblage
Kcm	Tonalite of Circle Mountain (Cretaceous), biotite-hornblende tonalite. Heterogeneous, intensely fractured, typically foliated. Contains varying amounts of included gneissic rock and coarse-grained marble. Locally contains calcsilicate rocks resulting from reaction of tonalite and marble.
Mzpa	amphibolite grade schist, predominantly gray, medium- to coarse-grained muscovite-plagioclase schist, extremely landslide prone
m	Marble (age unknown), small masses of coarse- to very coarse-grained, white and gray marble and associated calc-silicate rock included within tonalite of Circle Mountain
gn	gneiss (age unknown), gneiss and schist, small ill-defined masses of biotite- and hornblende-bearing gneiss and schist included within tonalite of Circle Mountain

Reference: Morton, D.M., Woodburne, M.O., and Foster, J.F., 2001, Geologic map of the Telegraph Peak 7.5-minute quadrangle, San Bernardino County, California, U.S. Geological Survey, Open-File Report OF-01-293, 1:24,000.

Pit Geometry Terms

Terminology in this report includes the following as depicted below.

- Bench height – vertical distance between benches
- Bench width – lateral distance from the toe of the bench face to the top of the next bench face
- Bench face angle – the inclination of the slope between two benches
- Haul road (access ramp) – road (ramp) provided for access by mining equipment to selected pit levels and/or pit bottom
- Interramp angle – the slope angle formed by a series of uninterrupted benches
- Overall slope angle – the angle formed by a series of interramp slopes separated by haul roads or the pit top/bottom

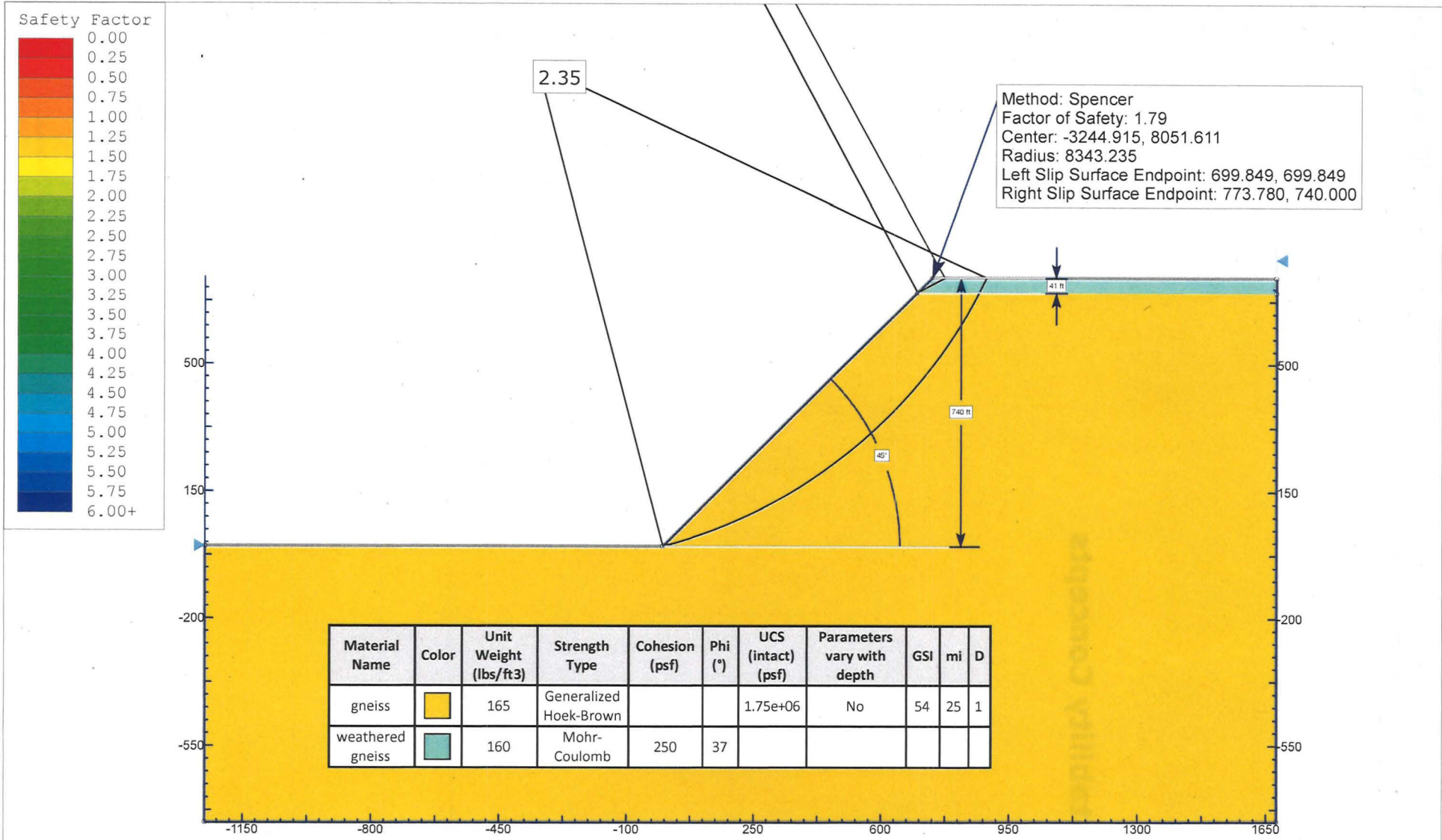


Attachments



Contents:

Global Stability Concepts
Kinematic Concepts

Global Stability Concepts



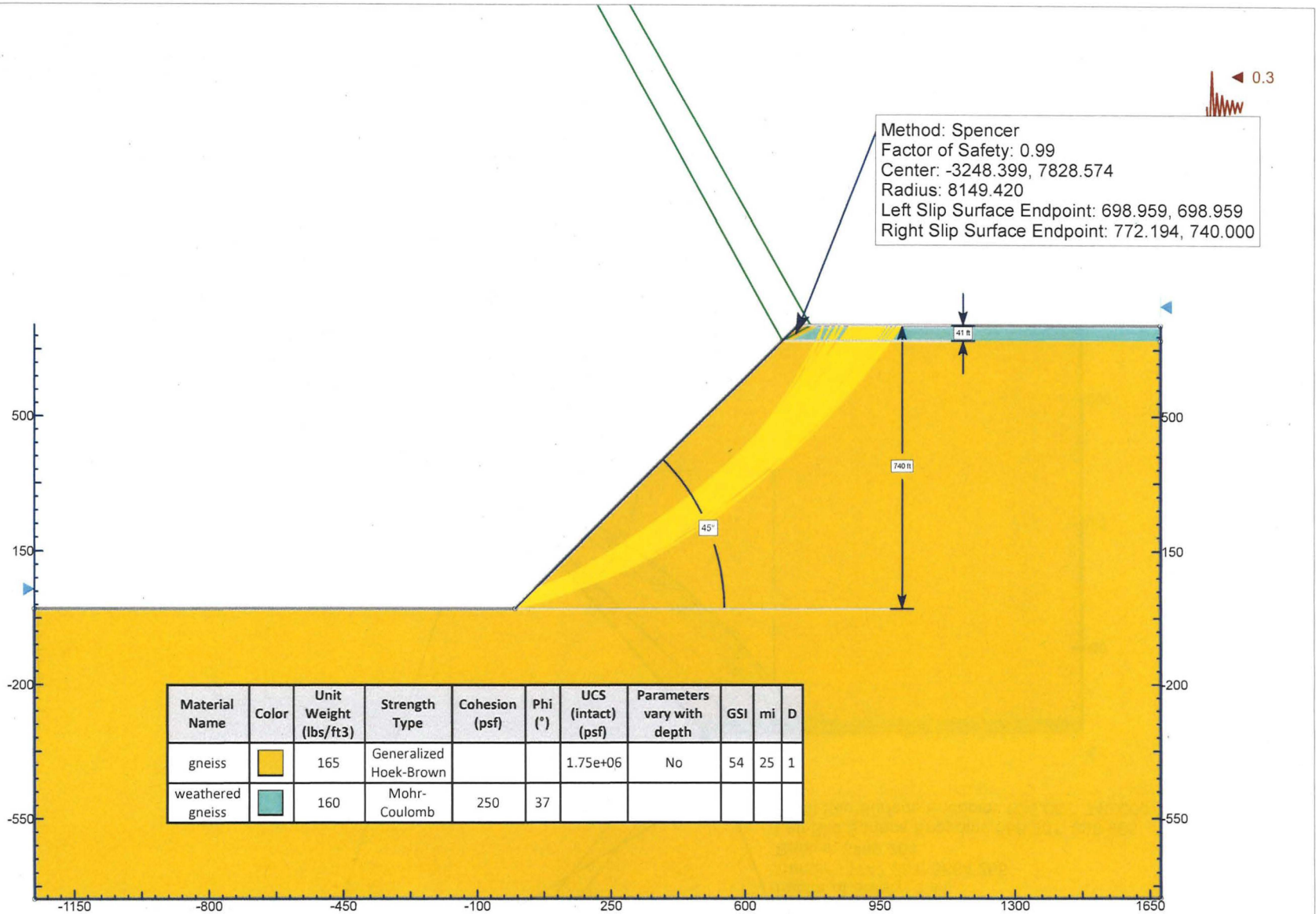
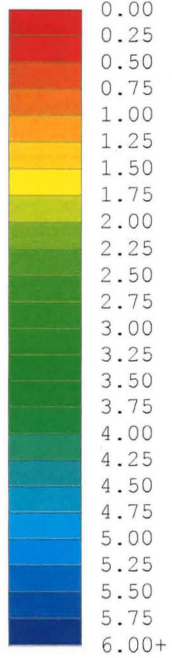
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gneiss		165	Generalized Hoek-Brown			1.75e+06	No	54	25	1
weathered gneiss		160	Mohr-Coulomb	250	37					



Project	Lone Pine Canyon		
Sect	Model gneiss	Scenario	static
Drawn By	JMc	Company	Terracon
Date	May 2025	File Name	Gn weath 740H 45d.slmd

Safety Factor



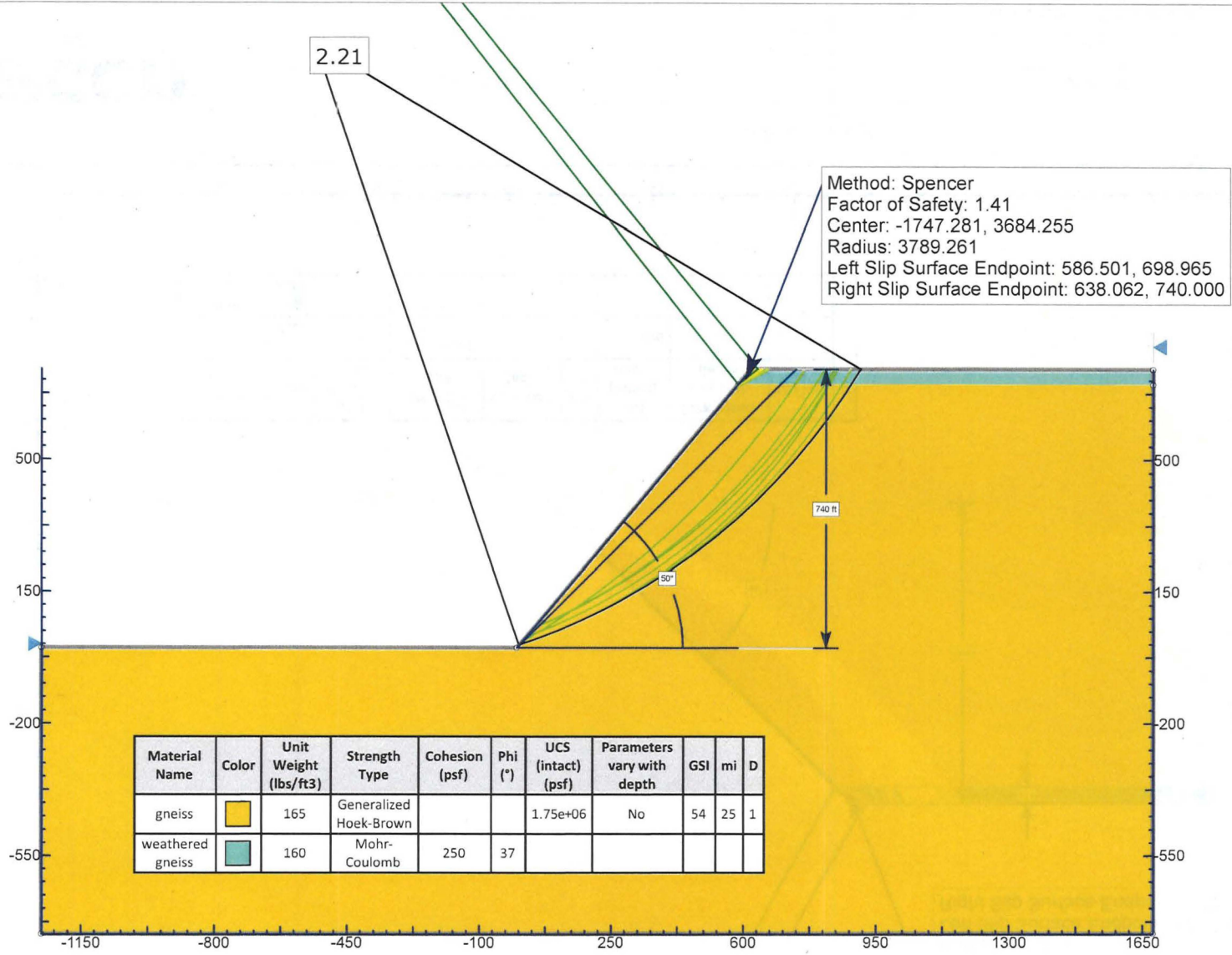
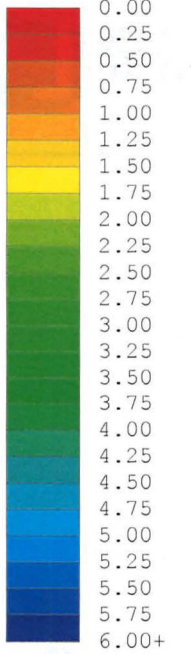
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weathered gneiss		160	Mohr-Coulomb	250	37					



Project	Lone Pine Canyon		
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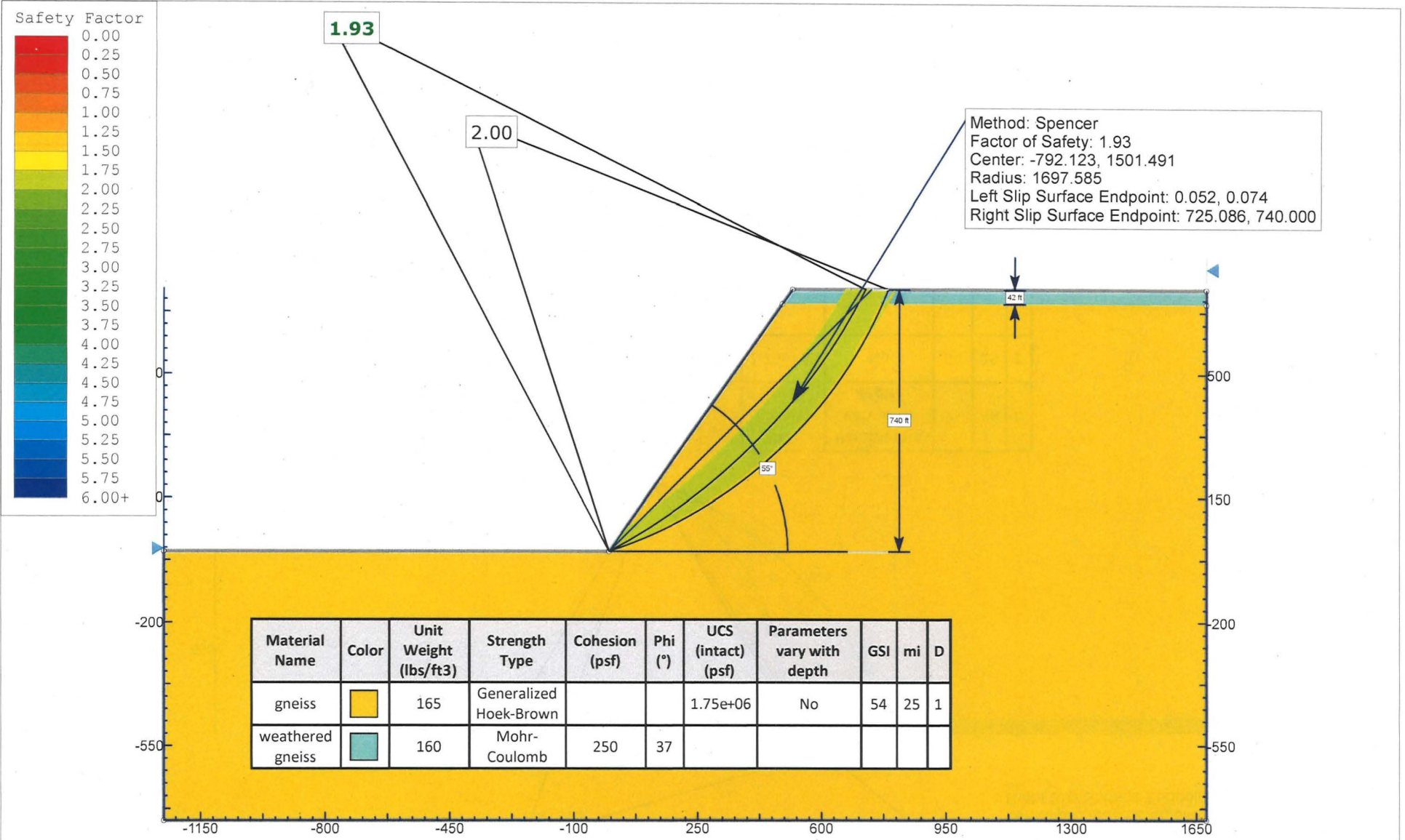
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Material Name	Color	Unit Weight (lbs/ft ³)	Strength Type	Cohesion (psf)	Phi (°)	UCS (intact) (psf)	Parameters vary with depth	GSI	mi	D
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weathered gneiss		160	Mohr-Coulomb	250	37					

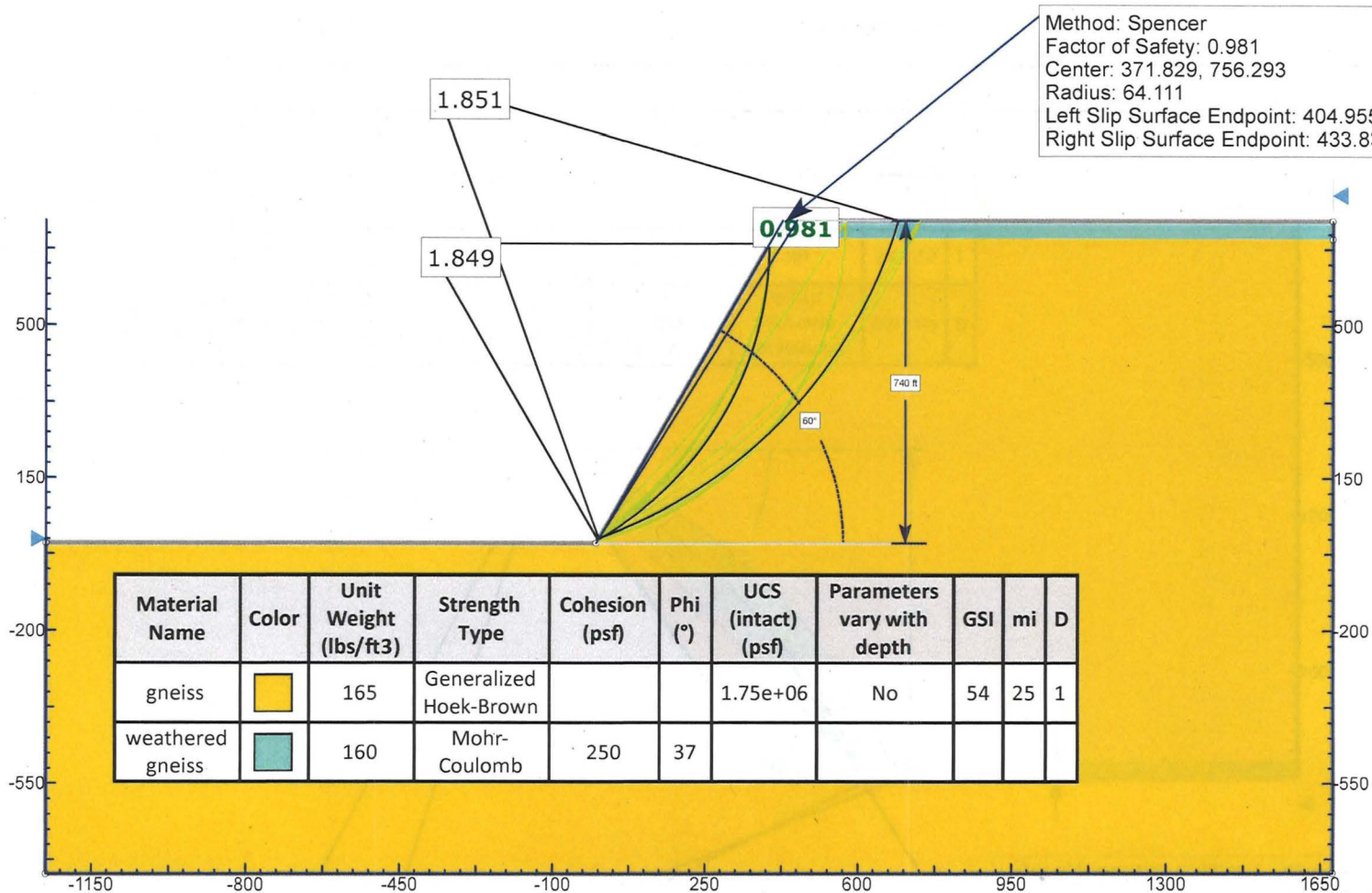
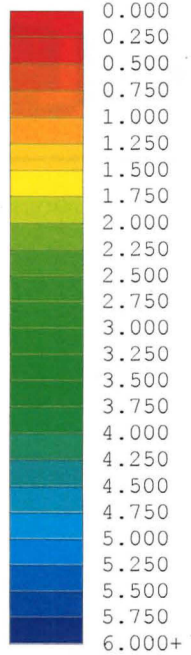


Project	Lone Pine Canyon		
Sect	Model gneiss	Scenario	static
Drawn By	JMc	Company	Terracon
Date	May 2025	File Name	Gn weath 740H 45d.slm



<p>Terracon Explore with us</p>	Project	Lone Pine Canyon	
	Sect	Model gneiss	Scenario static
	Drawn By	JMc	Company Terracon
	Date	May 2025	File Name Gn weath 740H 45d.slmd

Safety Factor

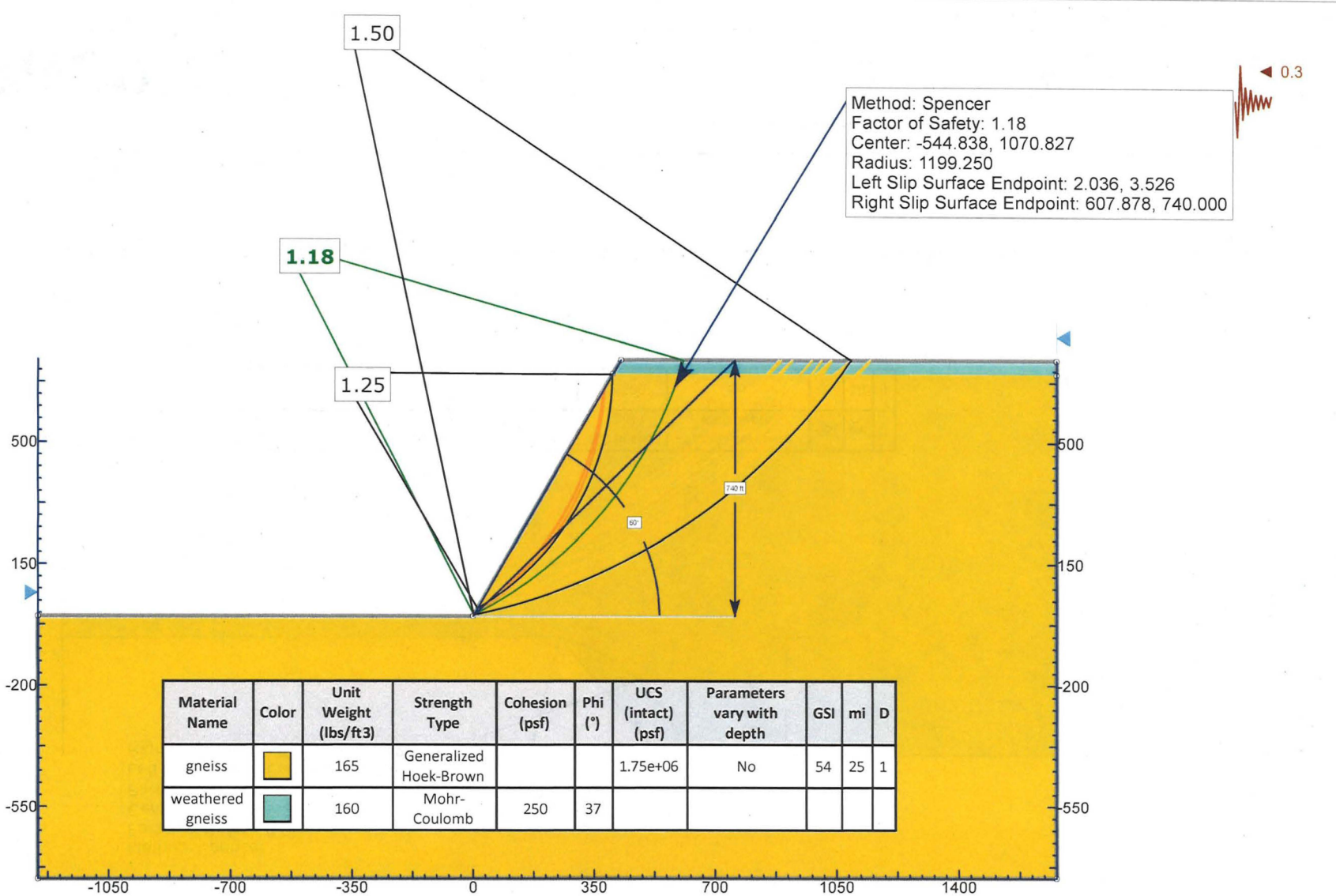
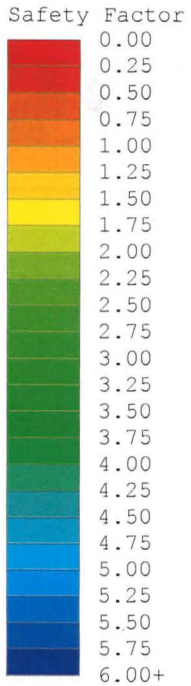


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Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (°)	UCS (intact) (psf)	Parameters vary with depth	GSI	mi	D
gneiss		165	Generalized Hoek-Brown			1.75e+06	No	54	25	1
weathered gneiss		160	Mohr-Coulomb	250	37					

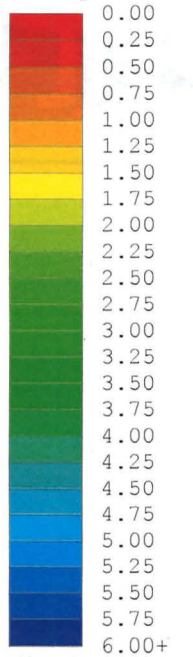


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Drawn By	JMc	Company	Terracon
Date	May 2025	File Name	Gn weath 740H 45d.slmd

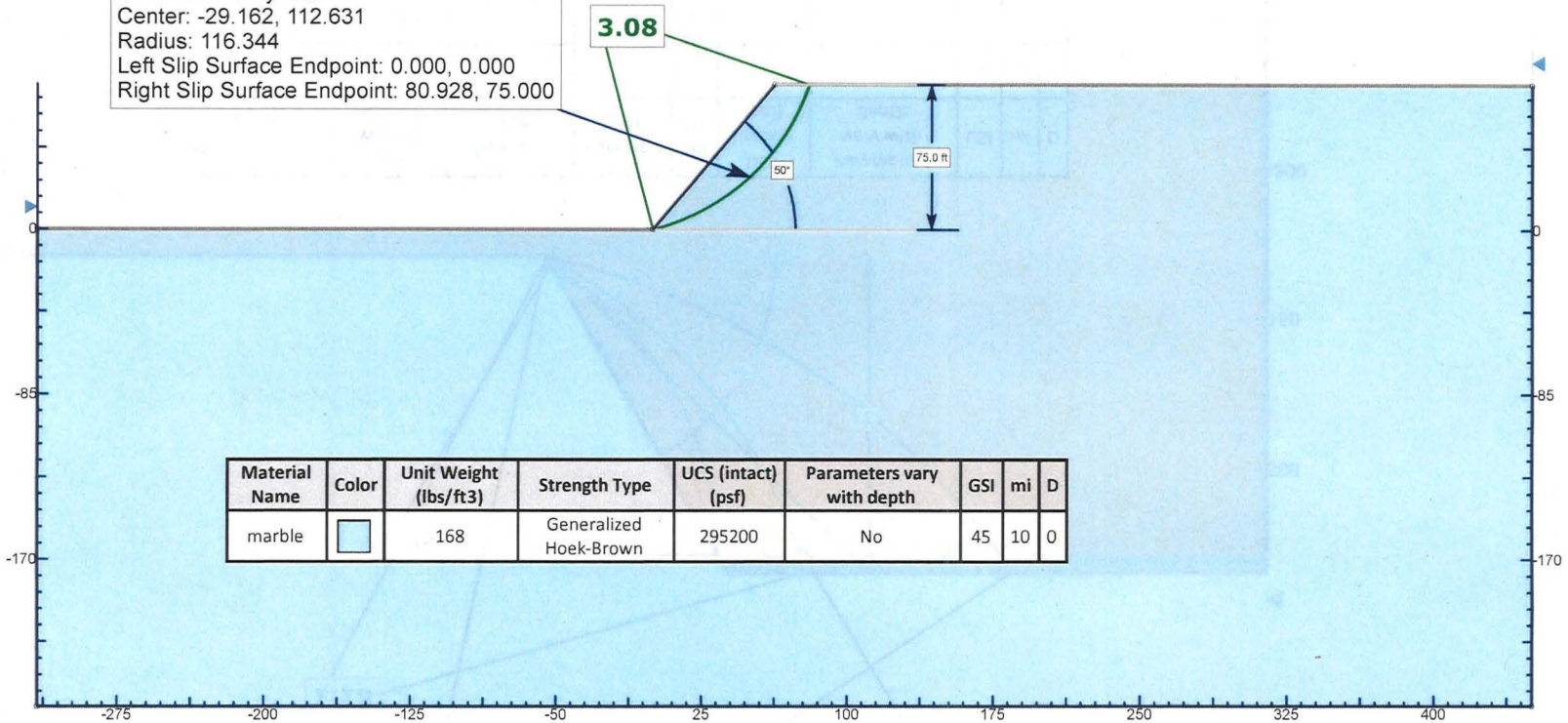


Project	Lone Pine Canyon		
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Date	May 2025	File Name	Gn weath 740H 45d.slm

Safety Factor

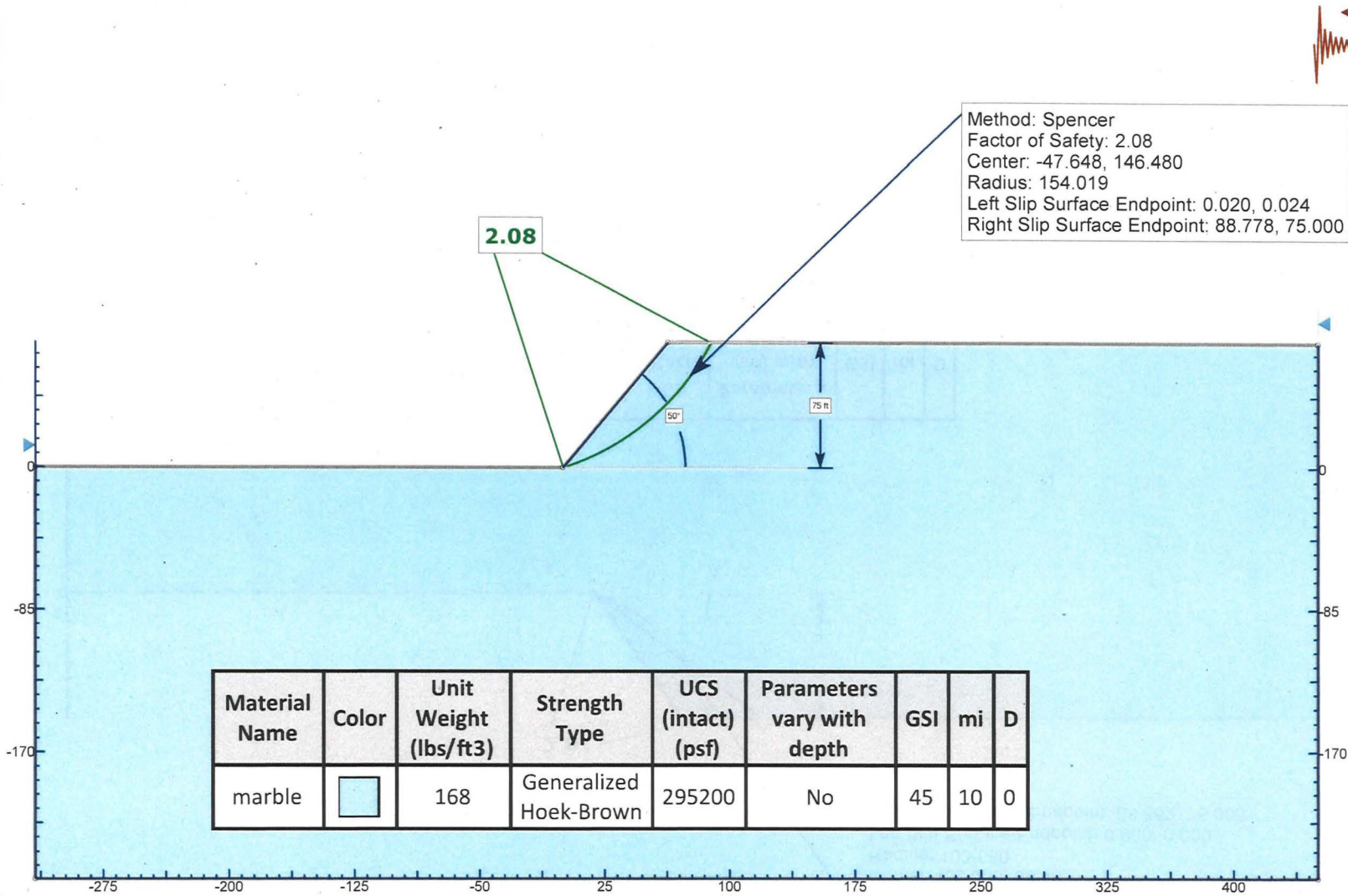
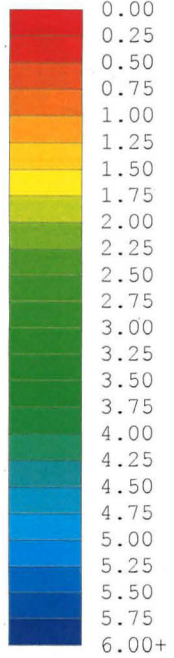


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 Radius: 116.344
 Left Slip Surface Endpoint: 0.000, 0.000
 Right Slip Surface Endpoint: 80.928, 75.000



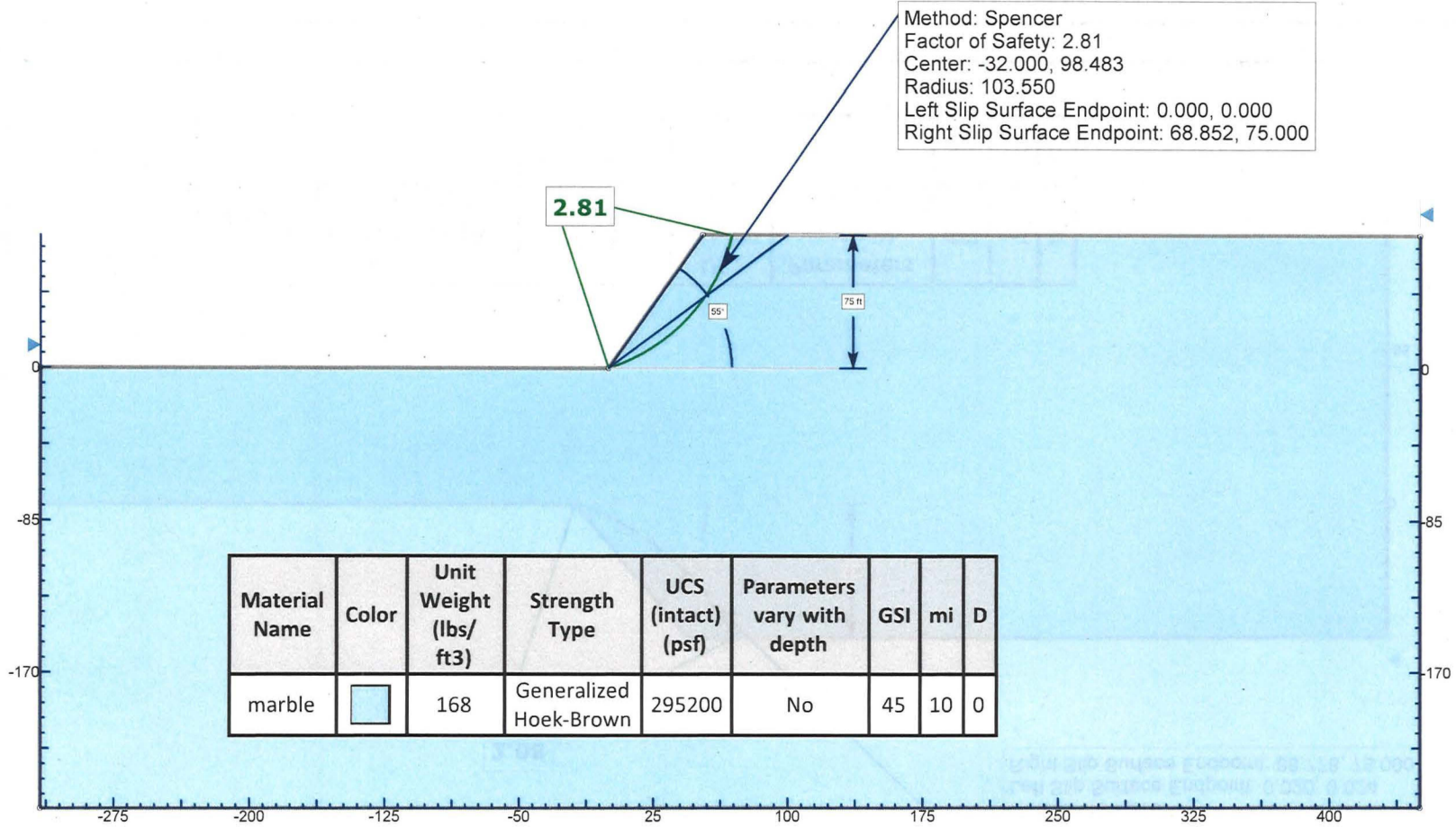
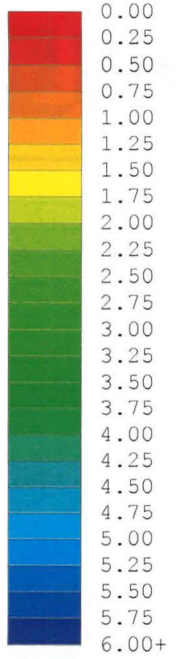
Project	Lone Pine Canyon		
Sect	Model marble	Scenario	static
Drawn By	JMc	Company	Terracon
Date	May 2025	File Name	marble 75H 45d to 55d.slmd

Safety Factor

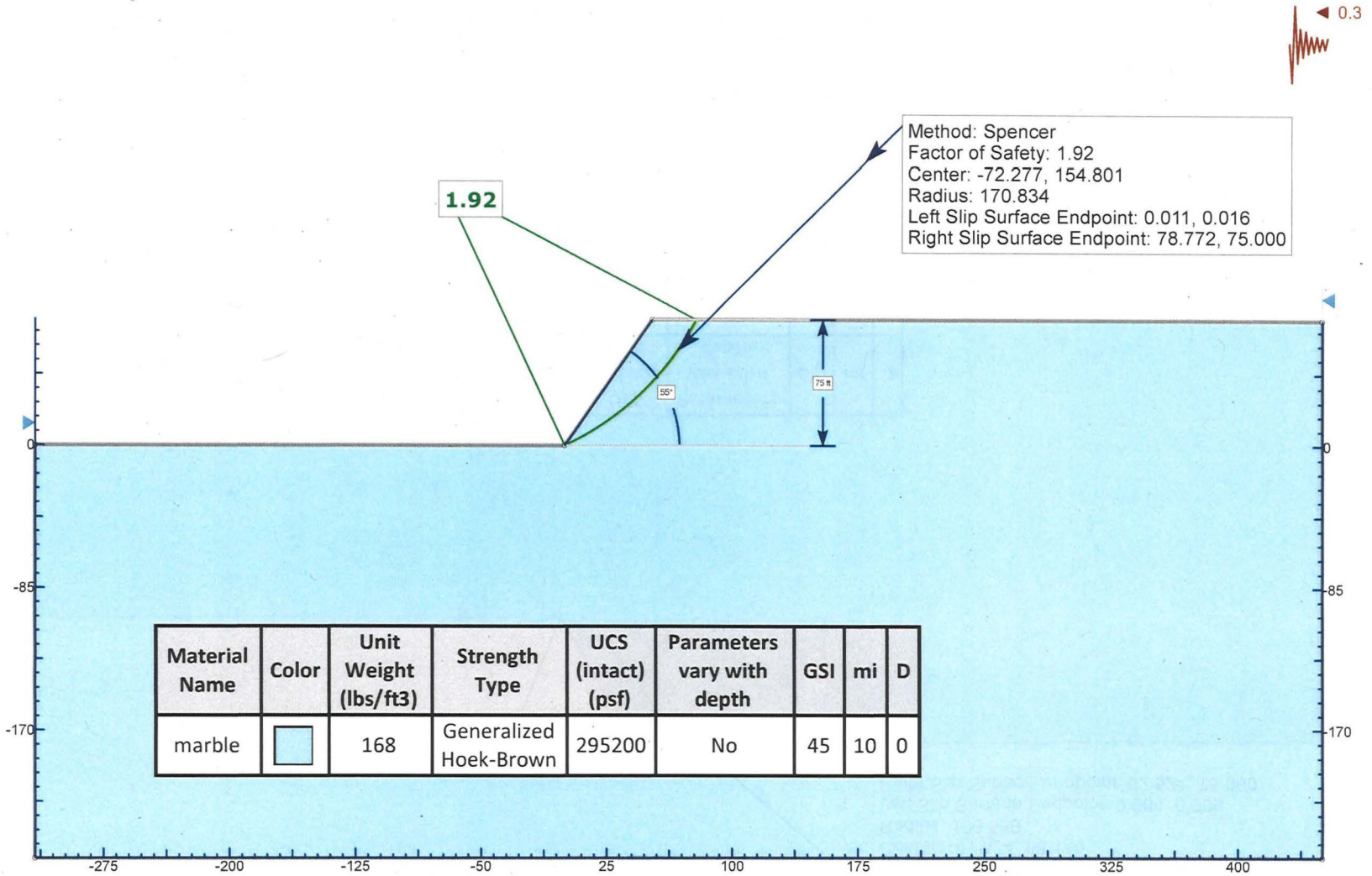
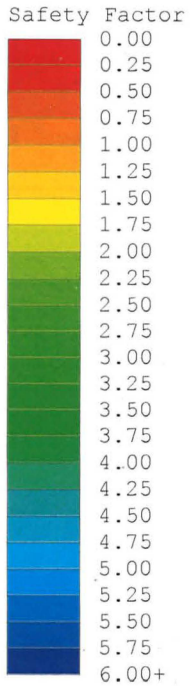


Project	Lone Pine Canyon		
Sect	Model marble	Scenario	seismic
Drawn By	JMc	Company	Terracon
Date	May 2025	File Name	marble 75H 45d to 55d.slmd

Safety Factor

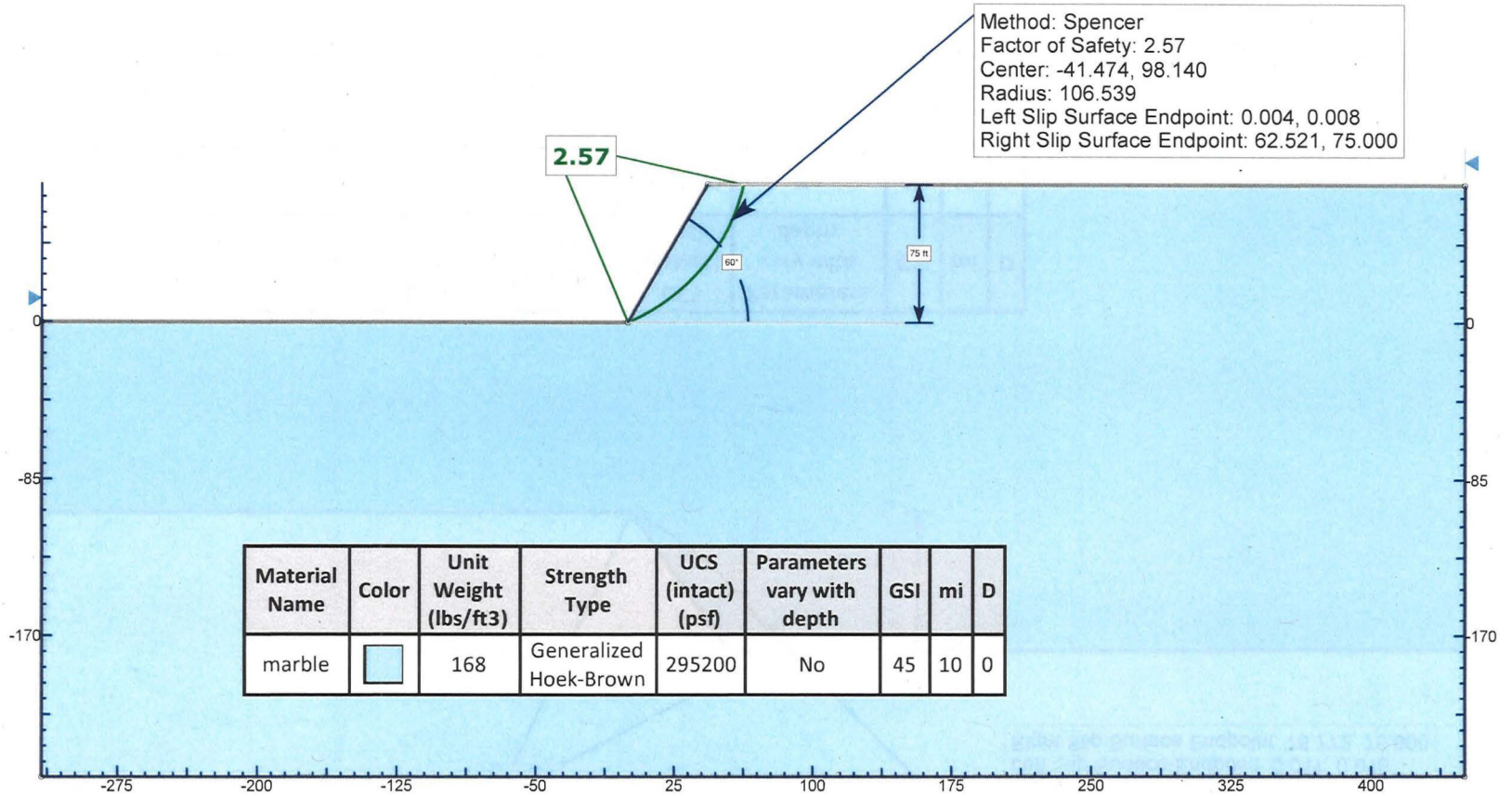
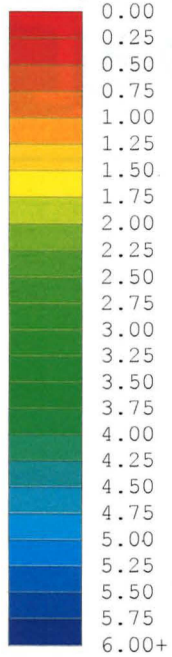


Project	Lone Pine Canyon		
Sect	Model marble	Scenario	static
Drawn By	JMc	Company	Terracon
Date	May 2025	File Name	marble 75H 45d to 55d.slmd

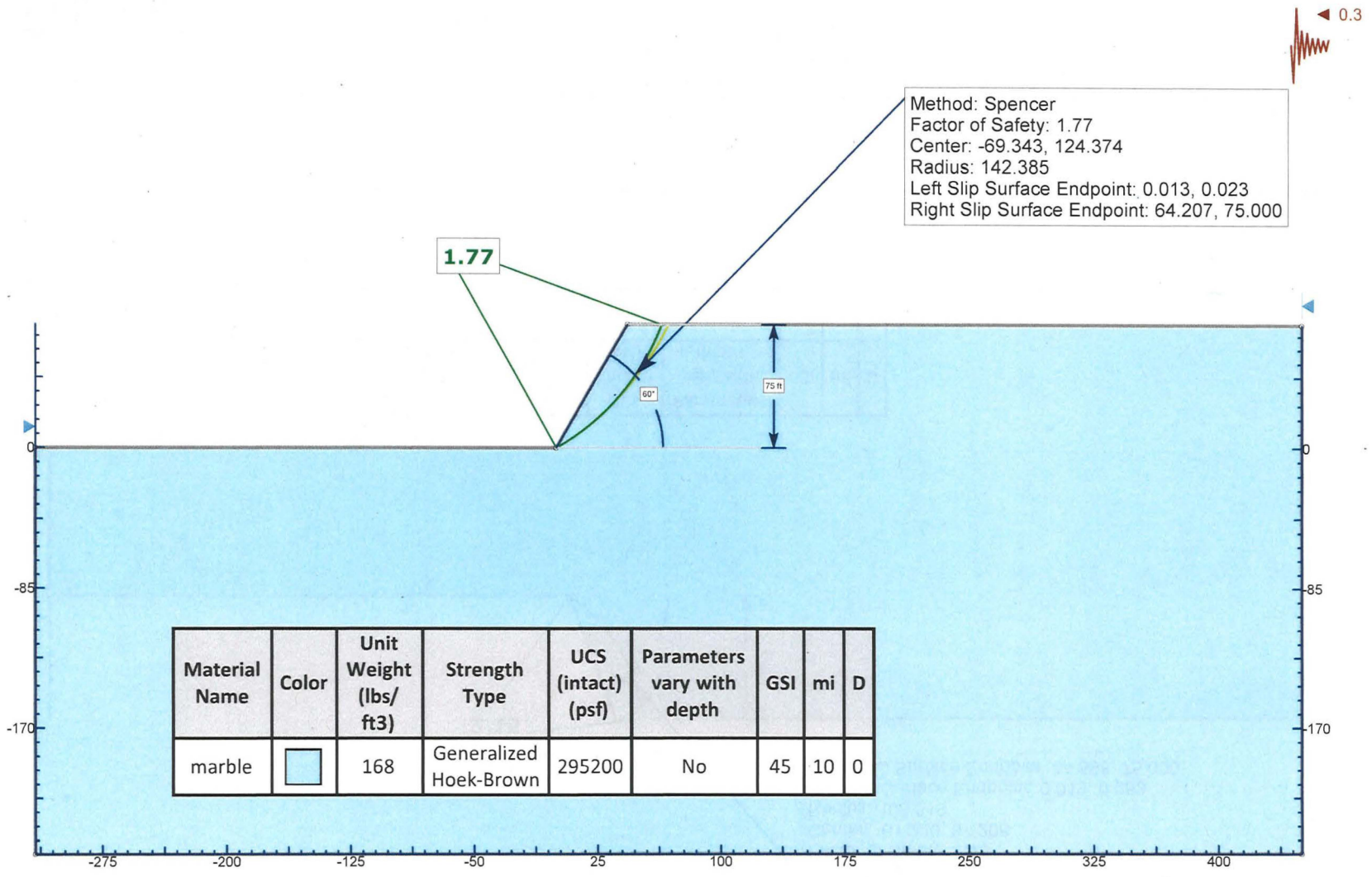
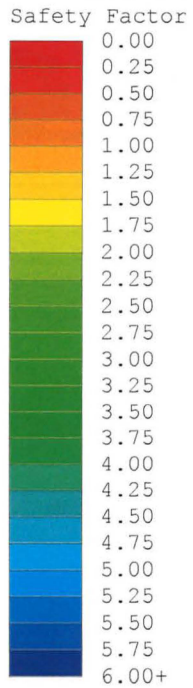


Project	Lone Pine Canyon		
Sect	Model marble	Scenario	seismic
Drawn By	JMc	Company	Terracon
Date	May 2025	File Name	marble 75H 45d to 55d.slmd

Safety Factor



Project	Lone Pine Canyon		
Sect	Model marble	Scenario	static
Drawn By	JMc	Company	Terracon
Date	May 2025	File Name	marble 75H 45d to 55d.slmd

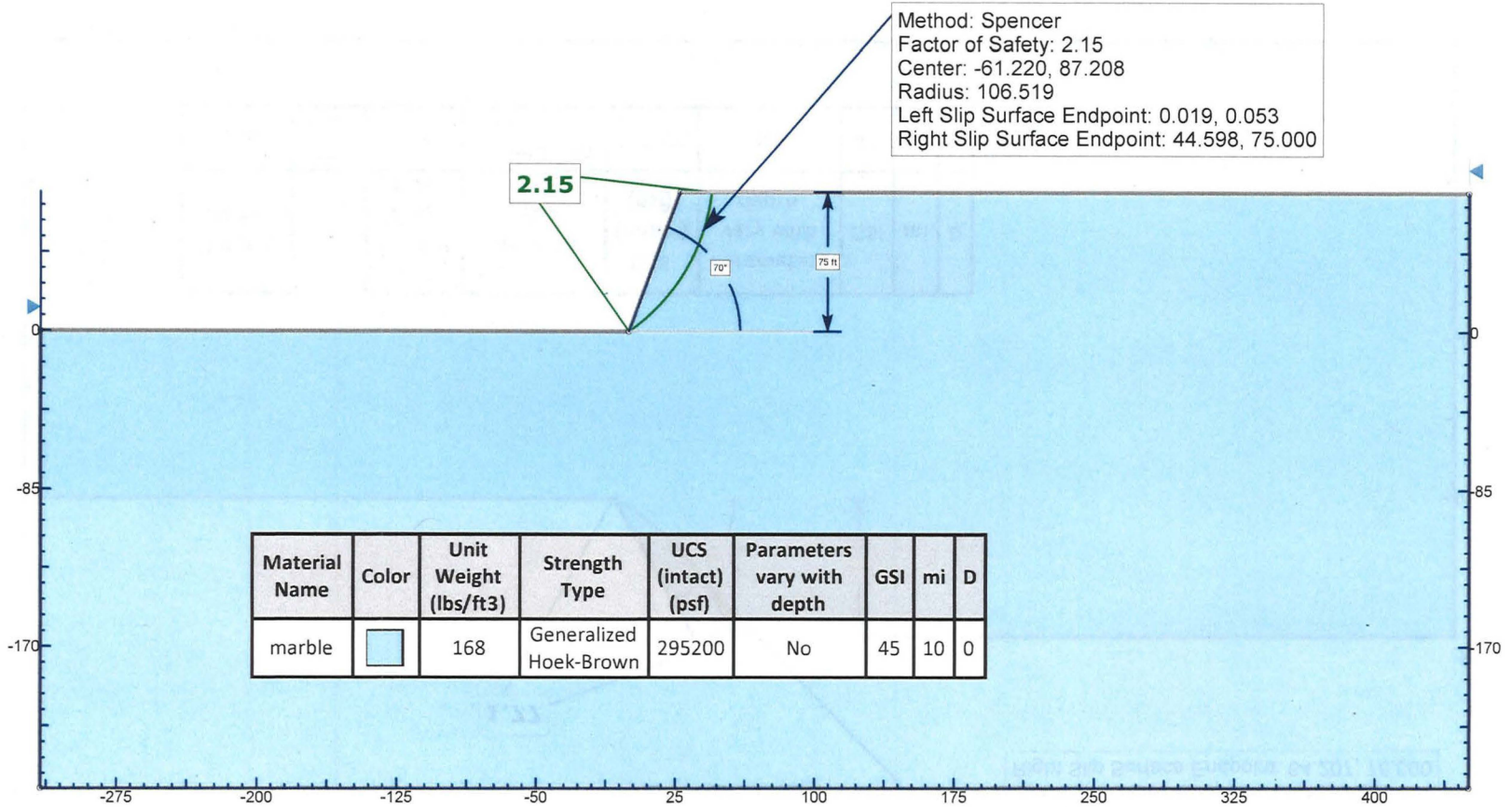
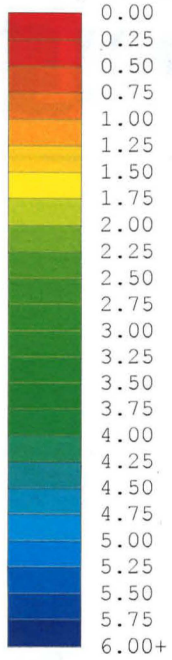


Material Name	Color	Unit Weight (lbs/ft ³)	Strength Type	UCS (intact) (psf)	Parameters vary with depth	GSI	mi	D
marble		168	Generalized Hoek-Brown	295200	No	45	10	0



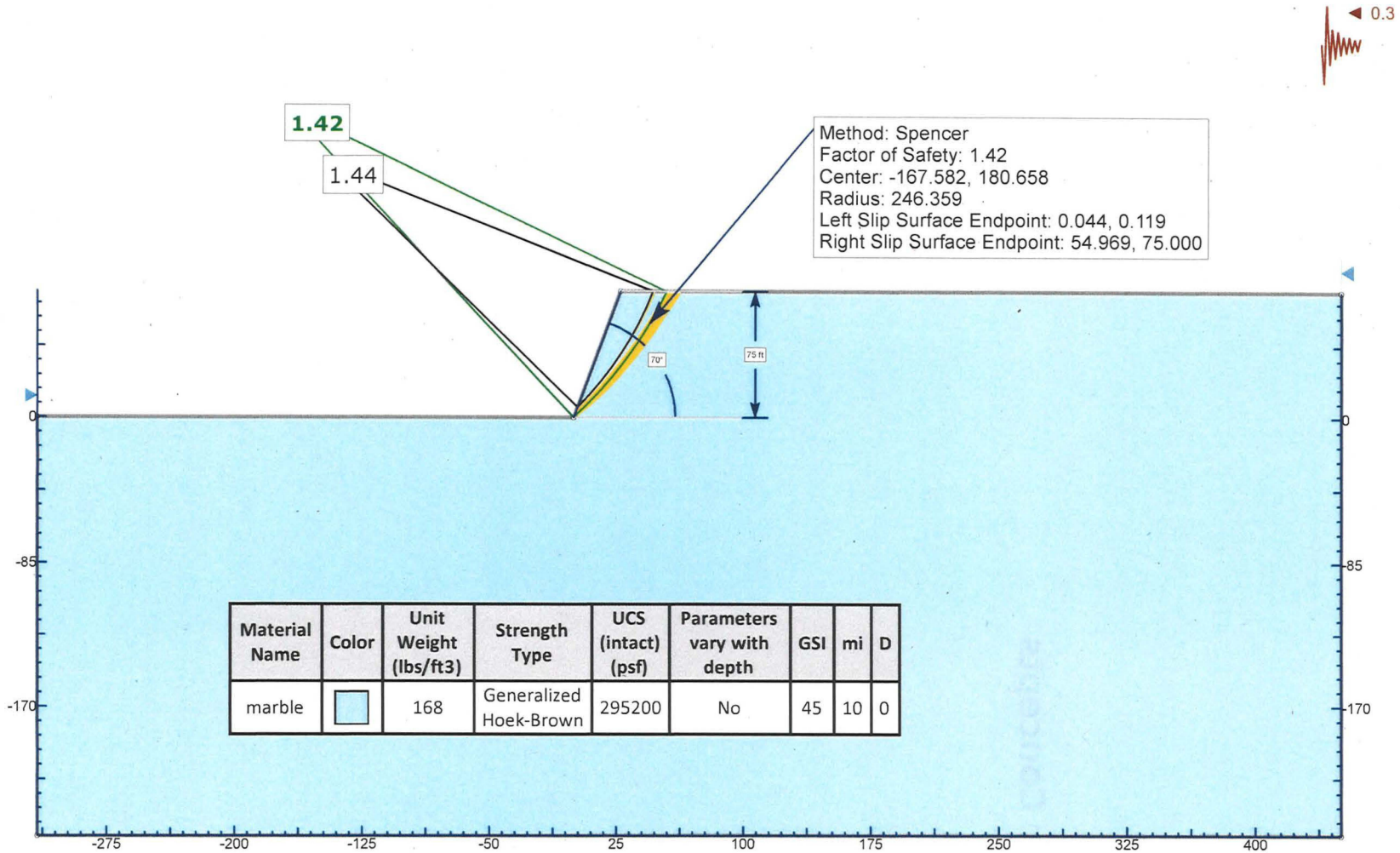
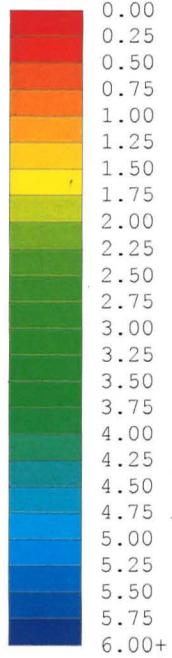
<i>Project</i>	Lone Pine Canyon		
<i>Sect</i>	Model marble	<i>Scenario</i>	seismic
<i>Drawn By</i>	JMc	<i>Company</i>	Terracon
<i>Date</i>	May 2025	<i>File Name</i>	marble 75H 45d to 55d.slmd

Safety Factor



<i>Project</i>	Lone Pine Canyon		
<i>Sect</i>	Model marble	<i>Scenario</i>	static
<i>Drawn By</i>	JMc	<i>Company</i>	Terracon
<i>Date</i>	May 2025	<i>File Name</i>	marble 75H 45d to 55d.slmd

Safety Factor



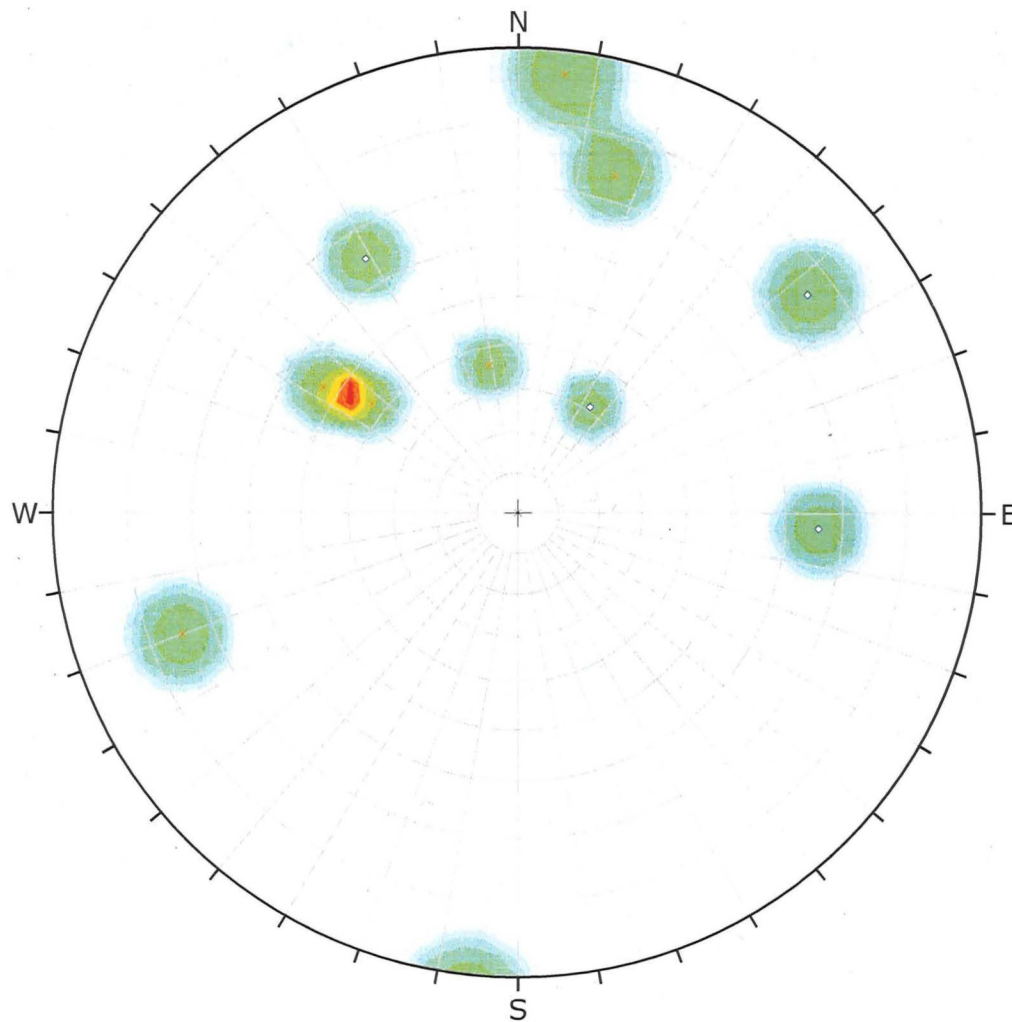
<i>Project</i>	Lone Pine Canyon		
<i>Sect</i>	Model marble	<i>Scenario</i>	seismic
<i>Drawn By</i>	JMc	<i>Company</i>	Terracon
<i>Date</i>	May 2025	<i>File Name</i>	marble 75H 45d to 55d.slmd

Slope Stability Study Report

Lone Pine Canyon Project | San Bernardino County, California
June 17, 2025 | Terracon Project No. CB245063



Kinematic Concepts



Symbol	TYPE	Quantity
○	Joint	4
×	foliation	6

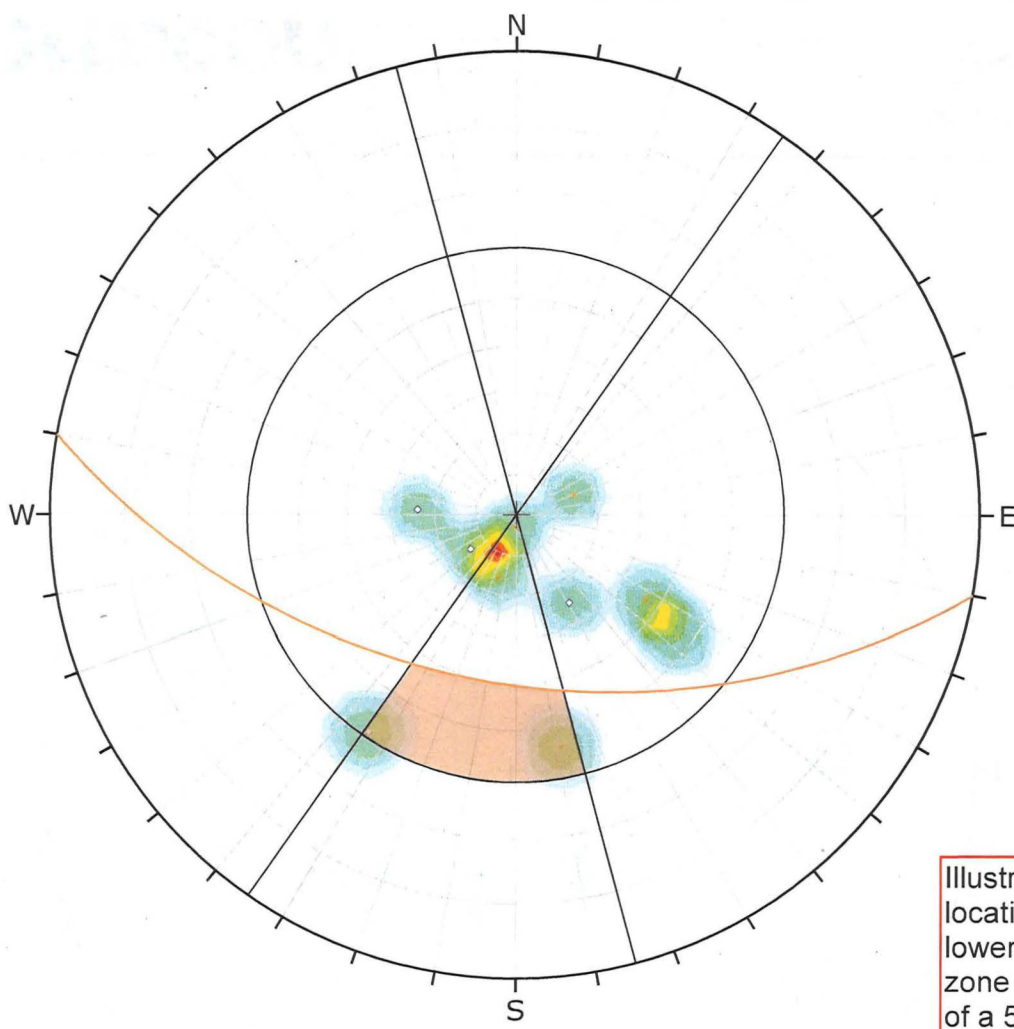
Color	Density Concentrations
	0.00 - 1.80
	1.80 - 3.60
	3.60 - 5.40
	5.40 - 7.20
	7.20 - 9.00
	9.00 - 10.80
	10.80 - 12.60
	12.60 - 14.40
	14.40 - 16.20
	16.20 - 18.00

Contour Data	Pole Vectors
Maximum Density	17.03%
Contour Distribution	Fisher
Counting Circle Size	1.0%

Plot Mode	Pole Vectors
Vector Count	10 (10 Entries)
Hemisphere	Lower
Projection	Equal Angle



Project	Lone Pine Canyon Project		
Analysis Description	Kinematic Concepts		
Drawn By	JMc	Company	Terracon
Date	May 2025	File Name	kin concepts.dips8



Symbol	TYPE	Quantity
◇	Joint	4
×	foliation	6

Color	Density Concentrations
	0.00 - 2.20
	2.20 - 4.40
	4.40 - 6.60
	6.60 - 8.80
	8.80 - 11.00
	11.00 - 13.20
	13.20 - 15.40
	15.40 - 17.60
	17.60 - 19.80
	19.80 - 22.00

Contour Data	Dip Vectors
Maximum Density	21.44%
Contour Distribution	Fisher
Counting Circle Size	1.0%

Kinematic Analysis	Planar Sliding
Slope Dip	50
Slope Dip Direction	190
Friction Angle	30°
Lateral Limits	25°

	Critical	Total	%
Planar Sliding (All)	2	10	20.00%

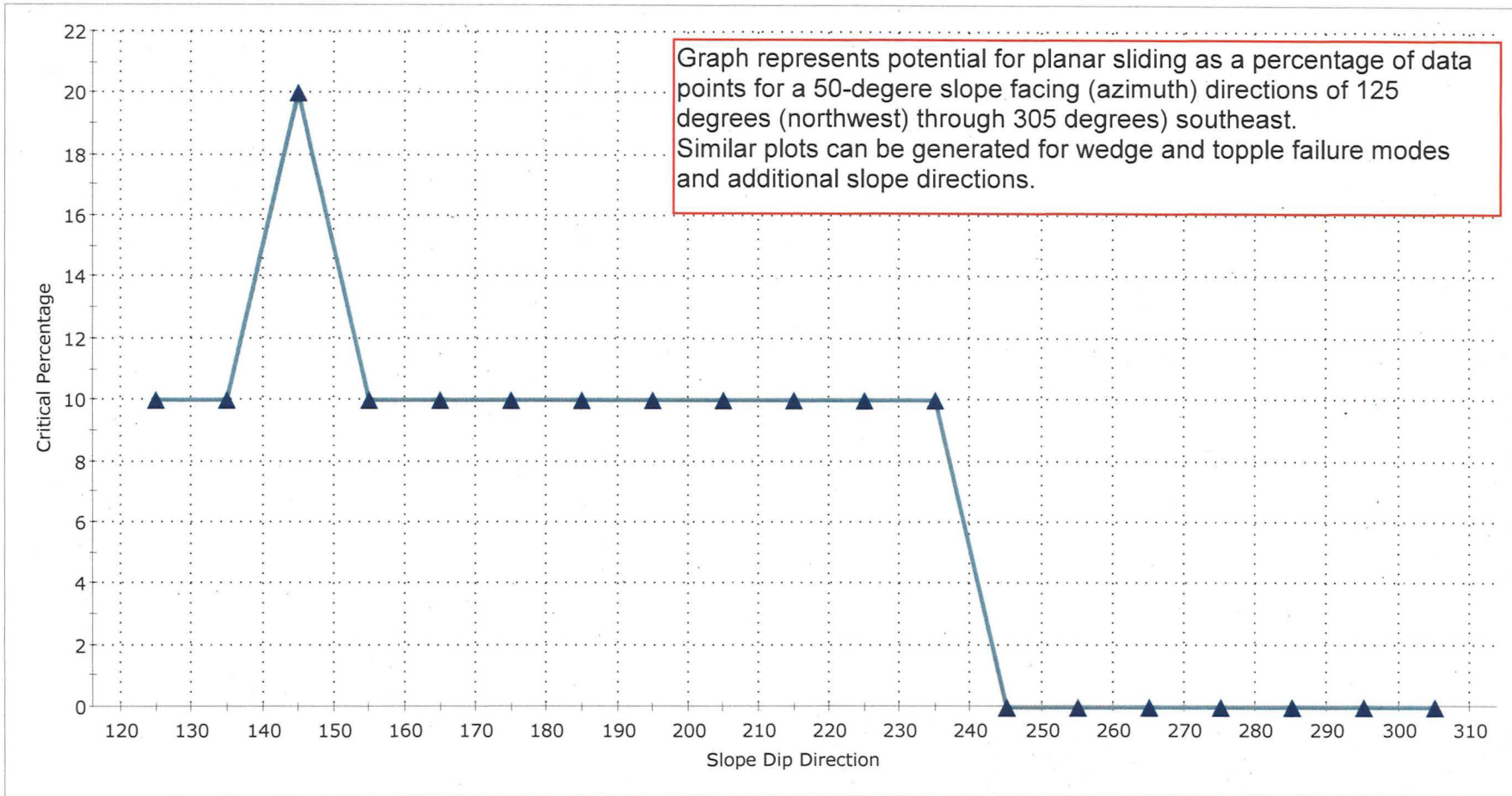
Plot Mode	Dip Vectors
Vector Count	10 (10 Entries)
Hemisphere	Lower
Projection	Equal Angle

Illustration of planar sliding analysis concept. Symbol location represents dip and direction of feature in lower hemisphere space. Shaded area represents zone of potential planar sliding for the given direction of a 50 degree slope.



Project	Lone Pine Canyon Project		
Analysis Description	Kinematic Concepts		
Drawn By	JMc	Company	Terracon
Date	May 2025	File Name	kin concepts.dips8

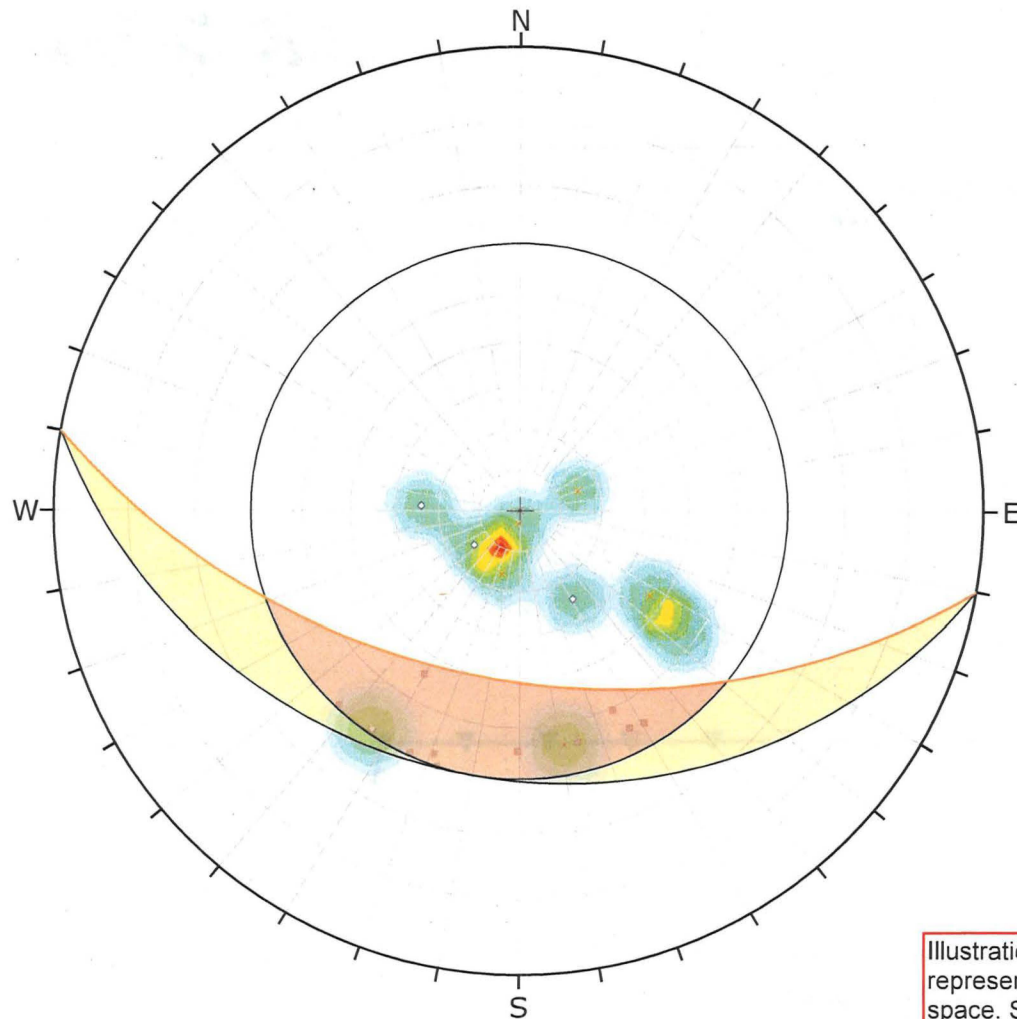
Planar Sliding: Critical Percentage vs. Slope Dip Direction



Mean Values
Slope Dip = 50 Slope Dip Direction = 190 Friction Angle = 30 Lateral Limit = 25



<i>Project</i>	Lone Pine Canyon Project		
<i>Analysis Description</i>	Kinematic Concepts		
<i>Drawn By</i>	JMc	<i>Company</i>	Terracon
<i>Date</i>	May 2025	<i>File Name</i>	kin concepts.dips8



Symbol	TYPE	Quantity
◇	Joint	4
×	foliation	6
Symbol	Feature	
■	Critical Intersection	

Color	Density Concentrations
	0.00 - 2.20
	2.20 - 4.40
	4.40 - 6.60
	6.60 - 8.80
	8.80 - 11.00
	11.00 - 13.20
	13.20 - 15.40
	15.40 - 17.60
	17.60 - 19.80
	19.80 - 22.00

Contour Data		Dip Vectors
Maximum Density	21.44%	
Contour Distribution	Fisher	
Counting Circle Size	1.0%	

Kinematic Analysis		Wedge Sliding
Slope Dip	50	
Slope Dip Direction	190	
Friction Angle	30°	

	Critical	Total	%
Wedge Sliding	10	45	22.22%

Plot Mode		Dip Vectors
Vector Count	10 (10 Entries)	
Intersection Mode	Grid Data Planes	
Intersections Count	45	
Hemisphere	Lower	
Projection	Equal Angle	

Illustration of wedge sliding analysis concept. Symbol location represents dip and direction of feature in lower hemisphere space. Shaded area represents zone of potential planar sliding for the given direction of a 50 degree slope. Wedge analysis considers intersections of planes defined in data set.



Project	Lone Pine Canyon Project		
Analysis Description	Kinematic Concepts		
Drawn By	JMc	Company	Terracon
Date	May 2025	File Name	kin concepts.dips8

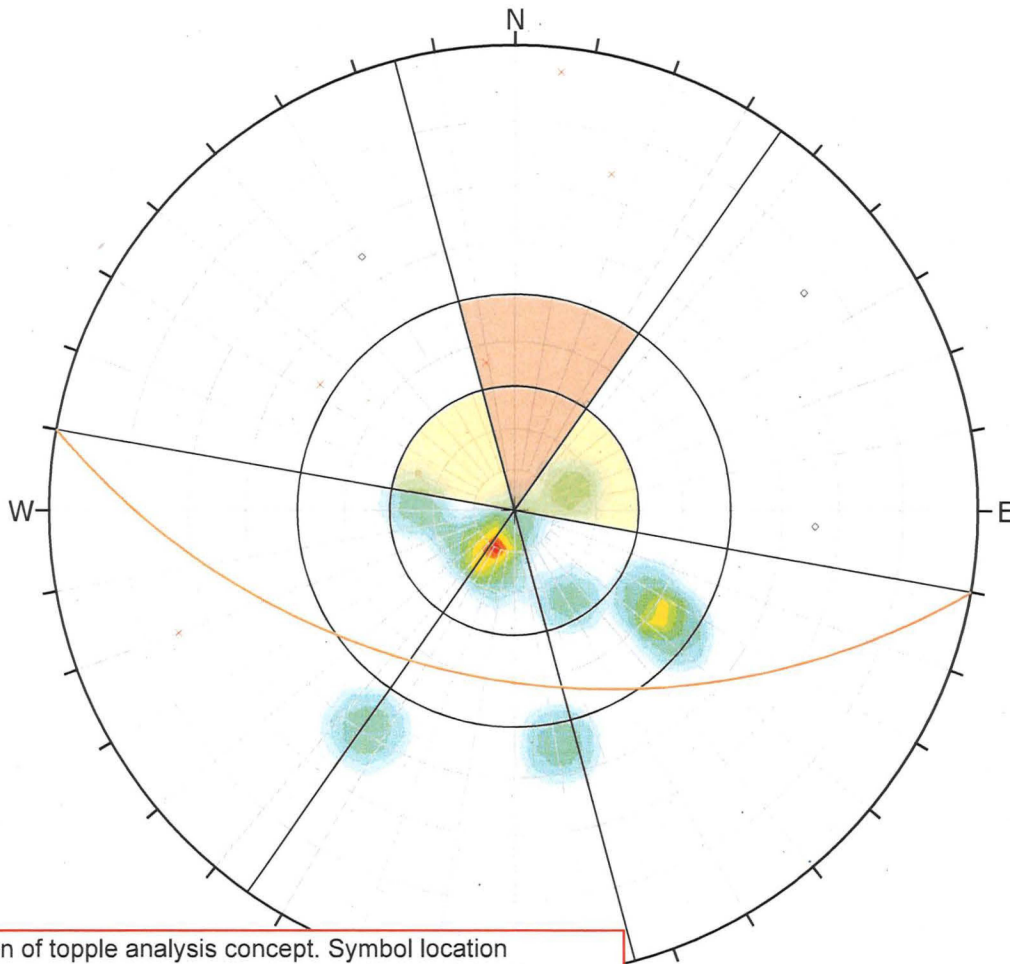


Illustration of topple analysis concept. Symbol location represents dip and direction of feature in lower hemisphere space. Shaded area represents zone of potential topple feature formation for the given direction of a 50 degree slope.

Symbol	TYPE	Quantity
◇	Joint	4
×	foliation	6
Symbol	Feature	
■	Critical Intersection	

Color	Density Concentrations
	0.00 - 2.20
	2.20 - 4.40
	4.40 - 6.60
	6.60 - 8.80
	8.80 - 11.00
	11.00 - 13.20
	13.20 - 15.40
	15.40 - 17.60
	17.60 - 19.80
	19.80 - 22.00

Contour Data	Pole Vectors
Maximum Density	21.44%
Contour Distribution	Fisher
Counting Circle Size	1.0%

Kinematic Analysis	Direct Toppling
Slope Dip	50
Slope Dip Direction	190
Friction Angle	30°
Lateral Limits	25°

	Critical	Total	%
Direct Toppling (Intersection)	0	45	0.00%
Oblique Toppling (Intersection)	1	45	2.22%
Base Plane (All)	2	10	20.00%

Plot Mode	Pole Vectors
Vector Count	10 (10 Entries)
Intersection Mode	Grid Data Planes
Intersections Count	45
Hemisphere	Lower
Projection	Equal Angle



DIPS 8.028

Project	Lone Pine Canyon Project		
Analysis Description	Kinematic Concepts		
Drawn By	JMc	Company	Terracon
Date	May 2025	File Name	kin concepts.dips8