

APPENDIX S MINERAL RESOURCE TECHNICAL REPORT

**MINERAL RESOURCE TECHNICAL REPORT
EL MONTE SAND MINING PROJECT
COMMUNITY OF LAKESIDE
SAN DIEGO COUNTY, CALIFORNIA**

Prepared for:

**COUNTY OF SAN DIEGO,
PLANNING AND DEVELOPMENT SERVICES**

c/o Environmental Science Associates
550 West C Street, Suite 750
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Project #: PDS2015-MUP-98-014W2/PDS2015-RP-15-001
CEQA Environmental Log #: PDS2015-MUP-98-014W2
AND PDS2015-RP-15-001

Project Proponent
El Monte Nature Preserve, LLC
1335 San Lucas Court
Solana Beach, CA 92075

Leighton Project No. 603132-002

June 21, 2018

June 21, 2018

Leighton Project No. 603132-002

County of San Diego Planning and Development Services
c/o Environmental Science Associates
550 West C Street, Suite 750
San Diego, California 92101

Attention: Ms. Trina Abbott

**Subject: Mineral Resource Technical Report
El Monte Mining Project
Community of Lakeside, San Diego County, California**

In accordance with your request, we have prepared this Mineral Resource Technical Report for the El Monte Mining Project located in the Community of Lakeside, San Diego County, California. This report has been prepared for the County of San Diego, per the County of San Diego Land Use and Environment Group's Guidelines for Mineral Resources Guidelines for Determining Significance Report Format and Content requirements.

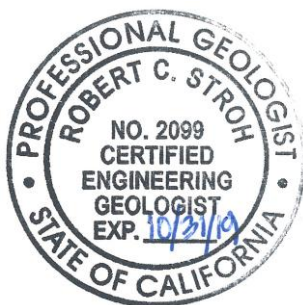
If you have any questions regarding our report, please contact this office. We appreciate this opportunity to be of service.

Respectfully submitted,

LEIGHTON CONSULTING, INC.



Robert Stroh, CEG 2099
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Distribution: (1) Addressee

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1.0 EXECUTIVE SUMMARY

In accordance with your request and authorization, this report presents the results of our review and assessment of the mineral resources for the approximately 479.5-acre El Monte Sand Mining Project in the Lakeside area San Diego County, Figure No.1. The project includes a mining area (228 acres), trails, staging areas, and fuel modification areas on a total of approximately 262-acres. This report has been prepared for the County of San Diego, per the County of San Diego Land Use and Environment Group's Guidelines for Mineral Resource Technical Report Format and Content requirements. The scope of services included review of the site location relative to the current Mineral Resource Zonation (MRZ) and designations per the California Surface Mining and Reclamation Act (SMARA) of 1975.

Topographically, the site generally consists of a flat to gently sloping valley bottom situated between El Monte Park Road on the south and the unimproved Willow Road on the north, Figure No. 2 and 3. The valley generally runs in an east-west direction and draining in a westerly direction. Granitic rock outcrops dominate the elevated areas adjacent to both the north and south sides of the site. The majority of the site includes accumulations of floodplain deposits that include loose sands and gravels, related to the San Diego River drainage area (Figure No 4). In these areas, adequate information indicates that significant mineral deposits are present or it is judged that there is a high likelihood for their presence. Accordingly, the State of California Geologist has designated the alluvial portions of the site as a MRZ-2 area. The sloping hillside areas bordering the site consist primarily of granitic bedrock. These adjacent areas have been designated as MRZ-3 areas by the State of California, Figure No. 5.

Successful sand and gravel mining operations are well documented along the San Diego River drainage with at least thirteen sites having historically been mined with one site on the western edge of the property. It is our understanding that mining operations are mostly terminated at this time. The closest previous mining operation, was the "Nelson Sloan- El Monte" pit located immediately west of the site which has ceased operations.

Currently, it is our understanding that a Major Use Permit (PDS2015-MUP 98-014W2)

covers the entire site and is being amended to change proposed use from a golf course to a sand mining and habitat restoration project. Furthermore, we understand that almost the entire site is zoned S-82. Surrounding land uses, although limited, have slowly evolved to include large undeveloped areas, agricultural areas, scattered single family residences, and small residential developments. Residential construction on the northern side of the development is rural and includes widely spaced single family homes set back from the road. County documents state that very low density residential development may be a compatible use with mining. On El Monte Park Road along the south side of the site, development is also generally relatively sparse and widely spaced with the exception of a small cluster of homes opposite Miss Ellie Lane. In this area the impacts that will need to be mitigated will include potential noise, traffic, air quality, and visual impacts.

The proposed project will include the removal and processing of the upper approximately 36 to 41 feet of material across the site with the establishment of a bottom of pit elevation of approximately ranging from 399 to 434 feet (from west to east) above msl, Figure No. 6 and 7. Mining will proceed in four phases starting from the east with Phase 1 and proceeding westerly and ending with Phase 4. Following the completion of each phase of mining, reclamation will begin on the area previously mined. Each phase will then be restored to an end use of open space.

The primary conclusions of this report are that the site includes a quantity of potentially recoverable and marketable supply of aggregate material located to the east of the proposed pit. It should be noted that one localized area east of the proposed pit is within close proximity to a small cluster of existing homes and the impacts noted above may require mitigation during the removal of the resource. In addition, the establishment of open space areas after the planned removal of some of the available resources will eliminate the ability to extract the remainder of the resource and that remaining resource will effectively be lost as a result. However, the removal of aggregate materials in the western portion of the site potentially mitigates the overall impact of leaving the eastern portion of the site for open-space use.

2.0 INTRODUCTION

2.1 Purpose and Scope

In accordance with your request and authorization, this report presents the results of our review and assessment of the mineral resources for the approximately 479.5-acre El Monte Sand Mining Project in the Lakeside area of San Diego County. The scope of services included:

- A review of in-house geotechnical reports and aerial photographs pertinent to the area (Section 5).
- A reconnaissance of the site.
- Review of the site location relative to the current Mineral Resource Zonation (MRZ) and designations per the California Surface Mining and Reclamation Act (SMARA) of 1975.
- Preparation of this report summarizing the results of our technical study, including:
 - A discussion of the MRZ's located on, adjacent, and within the vicinity of the project site.
 - A review of all mine; quarries, and gemstone deposits (both historic and existing) within the vicinity of the project.
 - A discussion of the regional and local geologic setting as it pertains to any mineral resources identified.
 - Analysis of on-site and off-site impacts to the mineral resource, including indication of whether any mineral resources on the project would be minable, processable, and marketable in the near future.

- A discussion of the economic value and significance of any impacts (if present) considering land use compatibility with the proposed project.
- A discussion of any appropriate mitigation measures and project design considerations.

2.2 Project Location and Description

The property is generally located north of El Monte Park Road and east of Ashwood Street in the Community of Lakeside, San Diego County California (Figure No. 1). The project plans call for the removal of up to 12.5 million tons of construction sand and aggregate over a 12 year period (subject to market conditions) and progressive rehabilitation of the mining site land during the extraction period after extraction has concluded. Reclamation will commence 4 years after the start of mining and will continue over a 12 year period, so that when completed in 16 years, the project will contain stable slopes, be readily adaptable for alternate land uses, and be free of derelict machinery, waste materials and scrap. Specifically, the project will include mining and reclamation, trails, staging areas, and fuel modification areas on approximately 262 acres of land located in El Monte Valley on approximately 479.5 acres of land currently owned by El Monte Nature Preserve, LLC.

The project is also proposed to provide a drop structure across the San Diego River channel on the eastern side of the project located approximately 300 feet west of Dairy Road to prevent eastward migration and head cutting of the San Diego River channel. The site will be re-vegetated as a depression with a single 20-foot wide bench located 20 feet above the bottom of the excavated plain. The middle of the depression will contain a 25-foot wide and 5-foot deep low-flow channel to direct water during storm events through the depression. Approximately 450,000 tons of wash fines will be used as backfill in the bottom of the depression which will promote vegetation growth. In addition, a top dressing consisting of salvaged fines and topsoils from the project will also be placed on the surface of the slopes to promote vegetation growth. The attached Figure No. 3 shows the proposed site development. Figure No. 6 illustrates the

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phasing of the mining operations and the conceptual mining limits. Figure No. 7 shows proposed topographic sections across the site.

3.0 EXISTING CONDITIONS

3.1 Topographic Setting

The site is located within the coastal subprovince of the Peninsular Ranges Geomorphic Province, near the western edge of the southern California batholith. The topography at the edge of the batholith changes from the rugged landforms developed on the batholith to the more subdued landforms, which typify the softer sedimentary formations of the coastal plain. Primarily, the site is underlain by the Cretaceous-aged granitic rock of the southern California batholith. Erosion and regional tectonic uplift created the valleys and ridges of the area.

Topographically, the site generally consists of a flat to gently sloping valley bottom with drainage towards the west (Figure No. 2). Granitic rock outcrops dominate the elevated areas surrounding the site is locally exposed within the site boundaries.

Vegetation on the site ranges from native grasses and weeds in the relatively flat areas canyon bottoms to moderate to thick chaparral in localized areas. The attached Figure No. 3, Proposed Project Area shows the current site conditions.

3.2 Geology

Based on our site visit and review of published geologic maps, the primary bedrock unit onsite is Cretaceous-aged granitic rocks. The slope areas north and south are comprised of granodiorite, tonalite, and gabbro, with some meta-volcanic units. Alluvial (floodplain) and colluvial (slopewash) deposits are mapped in the lower lying valley bottom that makes up the majority of the site overlying this geologic unit (Figure No. 4). As shown on Figure No. 5 these younger alluvial deposits roughly correspond to the MRZ-2 area identified by the DMG.

The extent of minable aggregate material is in the form of younger alluvial deposits which generally underlie the entire site. The generalized phasing of the proposed mining is shown on the attached Figure No. 6.

3.3 Mineral Resource Potential

As mandated by the Surface Mining and Reclamation Act of 1975, the California State Mining and Geology Board classify California mineral resources with the Mineral Resource Zones (MRZs) system. These zones have been established based on the presence or absence of significant sand and gravel deposits and crushed rock source area, e.g., products used in the production of cement. The classification system emphasizes Portland Cement Concrete (PCC) aggregate, which is subject to a series of specifications to ensure the manufacture of strong durable concrete. The following guidelines are presented in the mineral land classification for the region (CGS, 1982 and 1996b).

- MRZ-1 - Areas where adequate geologic information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.
- MRZ-2 - Areas where adequate information indicates that significant mineral deposits are present or where it is judged that there is a high likelihood for their presence.
- MRZ-3 - Areas containing mineral deposits, the significance of which cannot be evaluated from available data.
- MRZ-4 - Areas where available information is inadequate for assignment to any other MRZ zone.

The extent of zones classified as MRZ-2 on the site and vicinity are identified on the Figure No. 5. It generally corresponds to the San Diego River drainage area, which includes a relatively thick accumulation of younger alluvial deposits, with an irregular, organic boundary defined by the low-lying topographic drainage margin. Geologically, this area is generally characterized by the presence of younger (Quaternary-aged) river channel, floodplain that have been eroded from the older (Cretaceous-aged) bedrock units, transported, and re-deposited. They consist of naturally loose mixtures of sands and rounded gravels. The Upper San Diego River Resource area has been identified as a resource area that contains an estimated 63 Million tons of sand (CGS, 1982). The site and vicinity fall within Sector M of the Upper San Diego River Resource area (Figure No. 5).

Specifically, Sector M is designated as an aggregate resource sector as defined by the State (CGS, 1982). Numerous other aggregate sectors are identified across Western San Diego County which are given different designation letters for the purpose of identification.

The boundary (higher elevation) areas surrounding the site are mapped as a MRZ-3 area. Generally, this area geologically consists of the older bedrock units, including the crystalline and metavolcanic rocks that are mapped over nearly two thirds of the San Diego County.

Site-specific laboratory testing has been performed between approximately 2010 and 2015 to confirm that the physical and chemical characteristics of the on-site alluvial deposits are appropriate for PCC-grade aggregate. In addition, it should be noted that successful sand and gravel mining operations are also well documented in the site area and evidenced by prior mining operations in the area. Previous studies by the State of California (DMG Open File Report 96-04) present prior borings which indicate the thickness of the resource to be on the order of 100 to 200 feet in depth. Documented historical aggregate extraction operations adjacent to the site are identified on Figure No. 2, 3 and 5, but are no longer active.

4.0 MINERAL RESOURCE IMPACT ANALYSES

4.1 Methodology for Determination of Significance

Considering the site characteristics described above, their significance is measured against the County of San Diego Department of Land Use Guidelines (DPLU, 2007). These are based on the State CEQA Guidelines, and establish a measurable standard for determining when an impact will be considered significant pursuant to CEQA.

4.1.1 Marketability and Minimum Dollar Value

The 479.5 acre El Monte Valley site is almost completely within an area classified as MRZ-2, specifically a tributary to the San Diego River drainage. This area corresponds to the unit mapped as Alluvium (Qya) on the published geologic map (Figure No. 4). Approximately 228 acres of this site are proposed to have resource removal conducted. Published state maps indicate a depth of the resource to be in excess of 100 feet. Assuming a price of \$20.00 per ton, a density of 0.055 tons per cubic foot and a waste factor of approximately 20 percent a hypothetical mining operation would easily exceed the threshold (\$12,500,000.00) for a significant impact.

Beneath the site we estimate that the mapped MRZ-2 resource could be removed to a depth of roughly 90 feet below the ground surface. The total amount of potentially available aggregate material beneath the site within the mapped MRZ-2 resource zone at the site is roughly 30 million tons. Based on the above referenced resource prices for sand and aggregate material (\$20.00 per ton) and assuming a 20 percent waste factor, the value of material available beneath the site is roughly \$480,000,000.00

Currently, approximately 228 acres of the resource is proposed to be mined to an average depth of approximately 36 to 41 feet, amounting to

roughly 12.5 million tons of sand and aggregate. Therefore, approximately 17.5 million tons of sand and aggregate would be effectively left in place following mitigation of mining at the site. Based on the above referenced resource prices (Hanson 2016 – Slaughterhouse Canyon Soils; and Vulcan verbal communication, 2016 – Carrol Canyon) for sand and aggregate material (\$20.00 per ton) and assuming a 20 percent waste factor, the value of material left at the site will be roughly \$280,000,000.00.

4.1.2 Land Use Compatibility

The remaining guideline for significance determination involves whether or not the deposit is minable or compatible under the present conditions, or conditions estimated to exist within a 50 year time-frame. In order to be minable, it must be considered compatible with existing land uses, and land uses projected along the 50-year future time line.

The property is primarily surrounded by rural residential developments and undeveloped land and bordered by El Monte Park Road on the south. With the exception of the small (roughly ten home) development near Miss Ellie Lane the adjacent developments are considered to be generally compatible with the proposed mining operation. However, current plans indicate that mining will not occur adjacent to the small development near Miss Ellie Lane. Nevertheless, project plans include placement of earthen berms combined with lowering the processing area to 10-feet below current ground surface elevation. Therefore, adequate measures to mitigate noise, dust, and visual issues are included in the proposed project plan.

4.2 Conclusions

4.2.1 Significance of Impacts

With its generally rural nature and adjacent site uses, the site deposits would be considered minable processable and marketable as a source of

aggregate. Although the quantity would depend on numerous factors, such as the actual rock quality and purity (waste factor) it would not be difficult to exceed the DMG's minimum \$12,500,000.00 value for construction materials. Based on the above referenced resource prices for sand and aggregate material (\$20.00 per ton) and assuming a 20 percent waste factor, the value of material mined at the site will be roughly \$200,000,000.00

Specifically, we estimate that roughly 17.5 million tons of sand and aggregate would be effectively lost following mitigation of mining at the site. Based on the above referenced resource prices for sand and aggregate material (\$20.00 per ton) and assuming a 20 percent waste factor, the value of material left at the site will be roughly \$280,000,000.00

4.2.2 Mitigation Measures and Design Considerations

Based on our analysis, it appears that the alluvial materials that are of MRZ-2 quality on the site are a potentially significant resource that currently could be recovered if the County were to approve the modification of the existing MUP (PDS2015-MUP-98-014W2) for their extraction. However, with the extraction of only the western portion of the available resource followed by site restoration, the remainder of this resource may effectively be lost once the pit excavation and habitat restoration is complete.

The planned removal of 12.5 million tons of sand and aggregate provides only a partial mitigation for this resource. Specifically, we estimate that roughly 17.5 million tons of sand and aggregate would be effectively lost following mitigation of mining at the site.

5.0 REFERENCES AND COMMUNICATIONS

California Geological Survey (CGS) (previously Division of Mines and Geology), 1982, Mineral Land Classification: Aggregate Materials in the Western San Diego County Production-Consumption Region, California, Kohler, S.L. and Miller, R.V. authors, CDMG Special Report 153.

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EnviroMine, Inc., 2016, Project Description for the El Monte Sand Mining and Nature Preserve Project, Lakeside, California, PDS2015-P98-014W2; PDS2015-RP-15-001, dated January.

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United States Geological Survey (USGS), 2002, The Mineral Industry of California:
2002 Minerals Yearbook.

Weber, Harold Jr., 1958-59, Geology and Mineral Resources of San Diego County,
California, Plate 1, Scale 1"=2 miles, dated 1958-59.

Aerial Photographs

Date	Source	Flight/Scale	Photo No(s)
4-14-53	USDA	AXN-9M	40 and 39
4-2-53	USDA	AXN-5M	174 and 175
5/17/2006	Aerials Express	Digital Files	N/A

TRANSMITTAL

To: County of San Diego
Planning and Development Services
c/o Environmental Science Associates
550 West C Street, Suite 750
San Diego, California 92101

Date: June 21, 2018
Project No. 603132-002

Attention: Ms. Trina Abbott

Transmitted:

☐ Mail
☐ Courier
☐ Pick Up

The Following:

☐ Draft Report
☐ Final Report
☐ Extra Report
☐ Proposal
☒ 1 Electronic Copy

For:

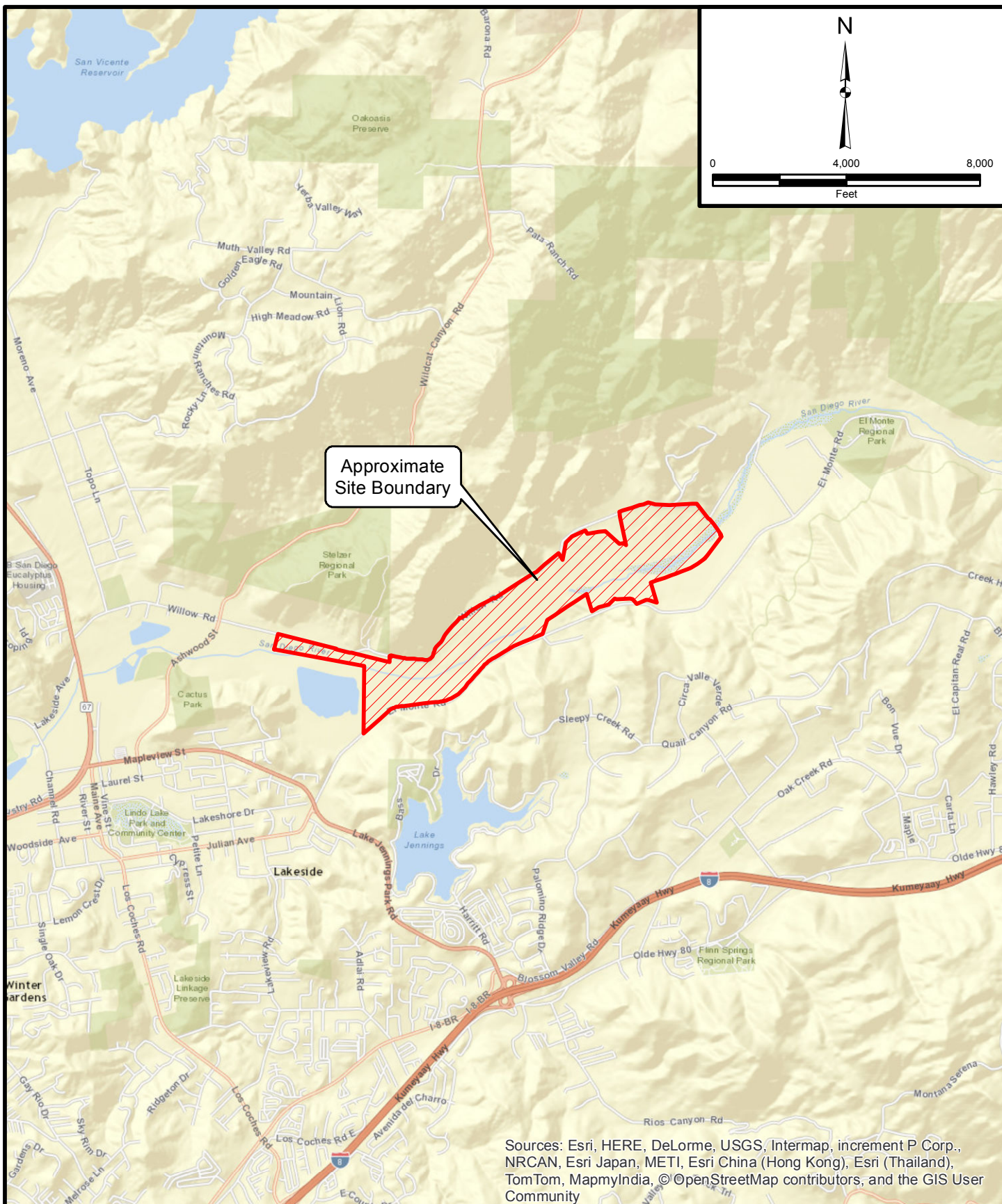
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By Bob Stroh

Figures



Project: 603132-002 Eng/Geol: RCS

Scale: 1" = 4,000' Date: February 2016

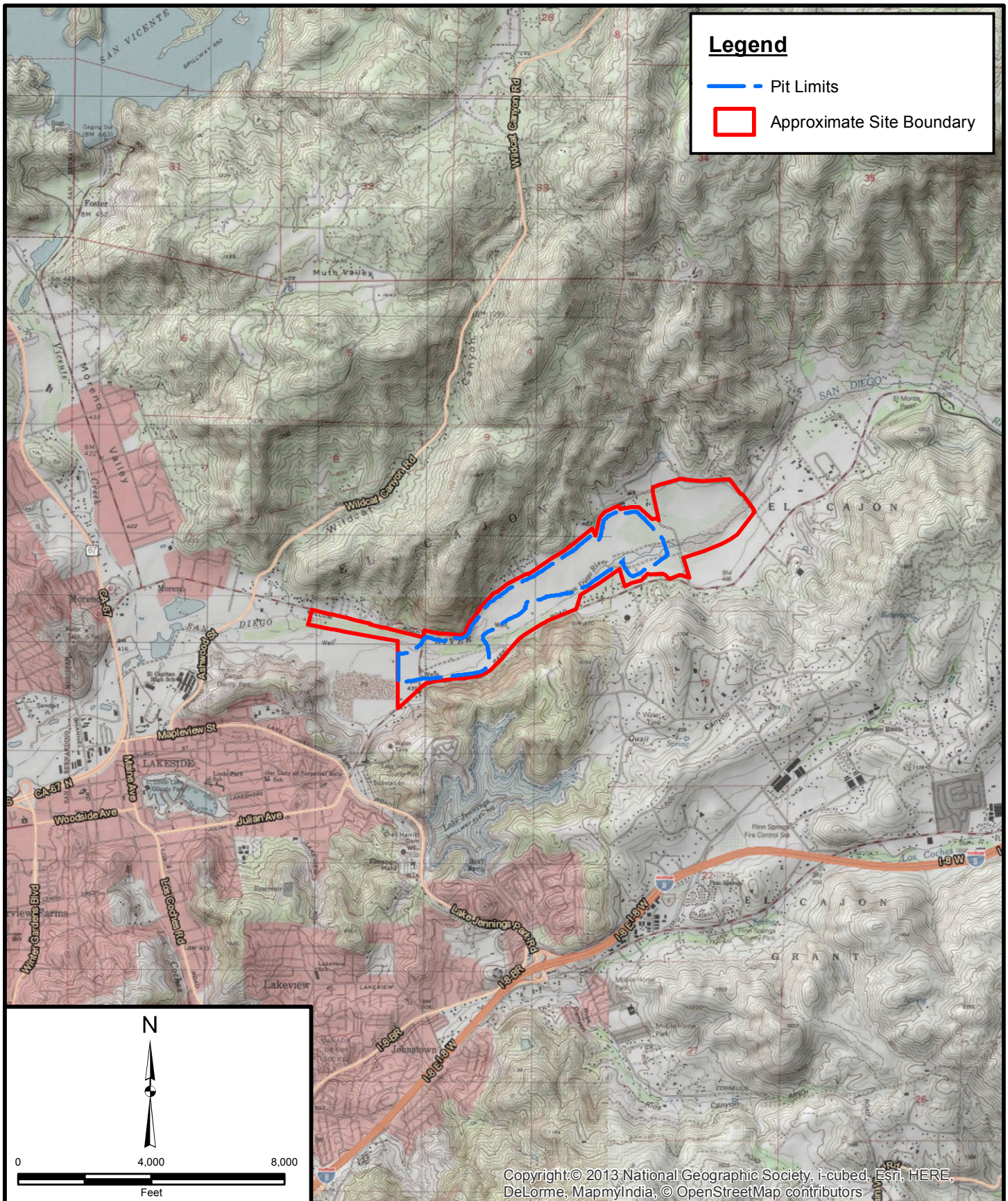
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Thematic Information: Leighton
Author: (mmurphy)

SITE LOCATION MAP El Monte Sand Mining and Nature Preserve Project San Diego, California

Figure 1



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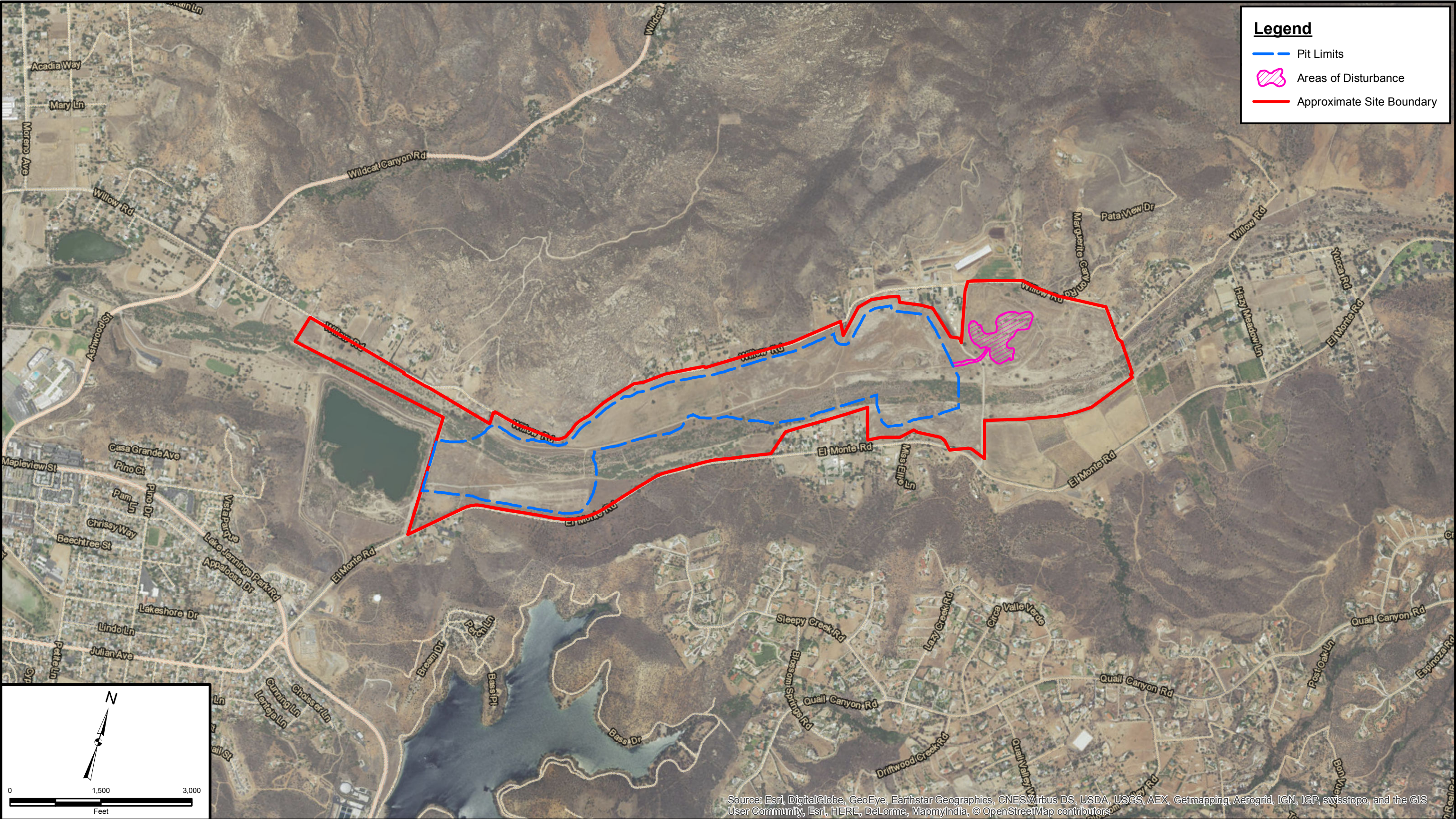
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Thematic Information: Leighton	
Author: (mmurphy)	

USGS TOPO MAP El Monte Sand Mining and Nature Preserve Project San Diego, California

Figure 2




Leighton



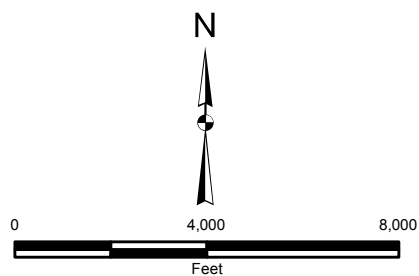
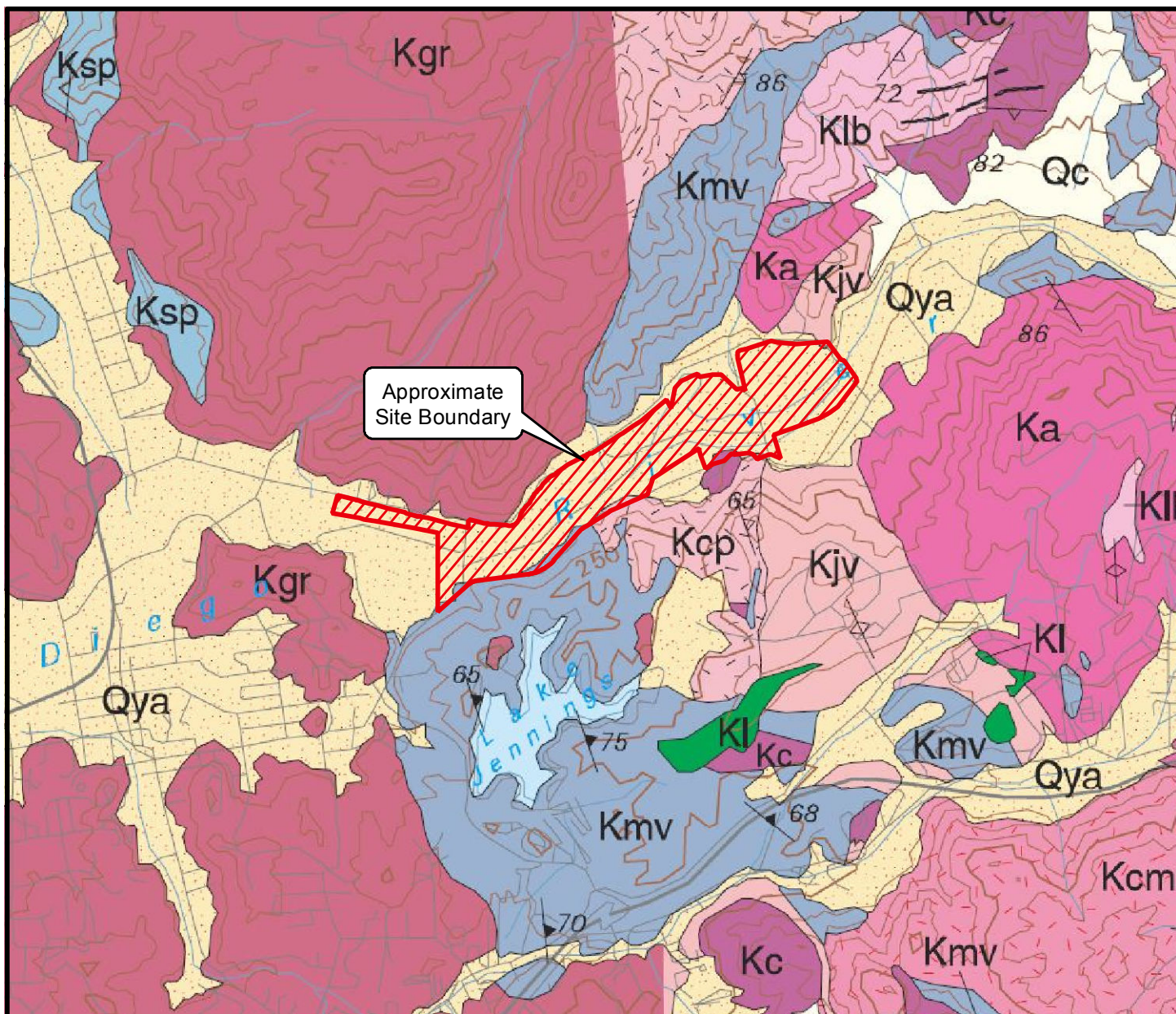
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PROPOSED PROJECT AREA
El Monte Sand Mining and Nature Preserve Project
San Diego, California

Figure 3



Leighton



LEGEND

- Qya** Younger Alluvium
- Kgr** Granatoid Rocks
- Kmv** Metavolcanic Rocks
- Kcp** Chiquito Peak Monizogranite
- Kvj** Japatul Valley Tonalite
- Ka** Tonalite of Alpine
- KI** Lusardi Formation

Project: 603132-002 Eng/Geol: RCS
 Scale: 1" = 4,000' Date: February 2016
 Base Map: ESRI ArcGIS Online 2016
 Thematic Information: Leighton
 Author: (mmurphy)

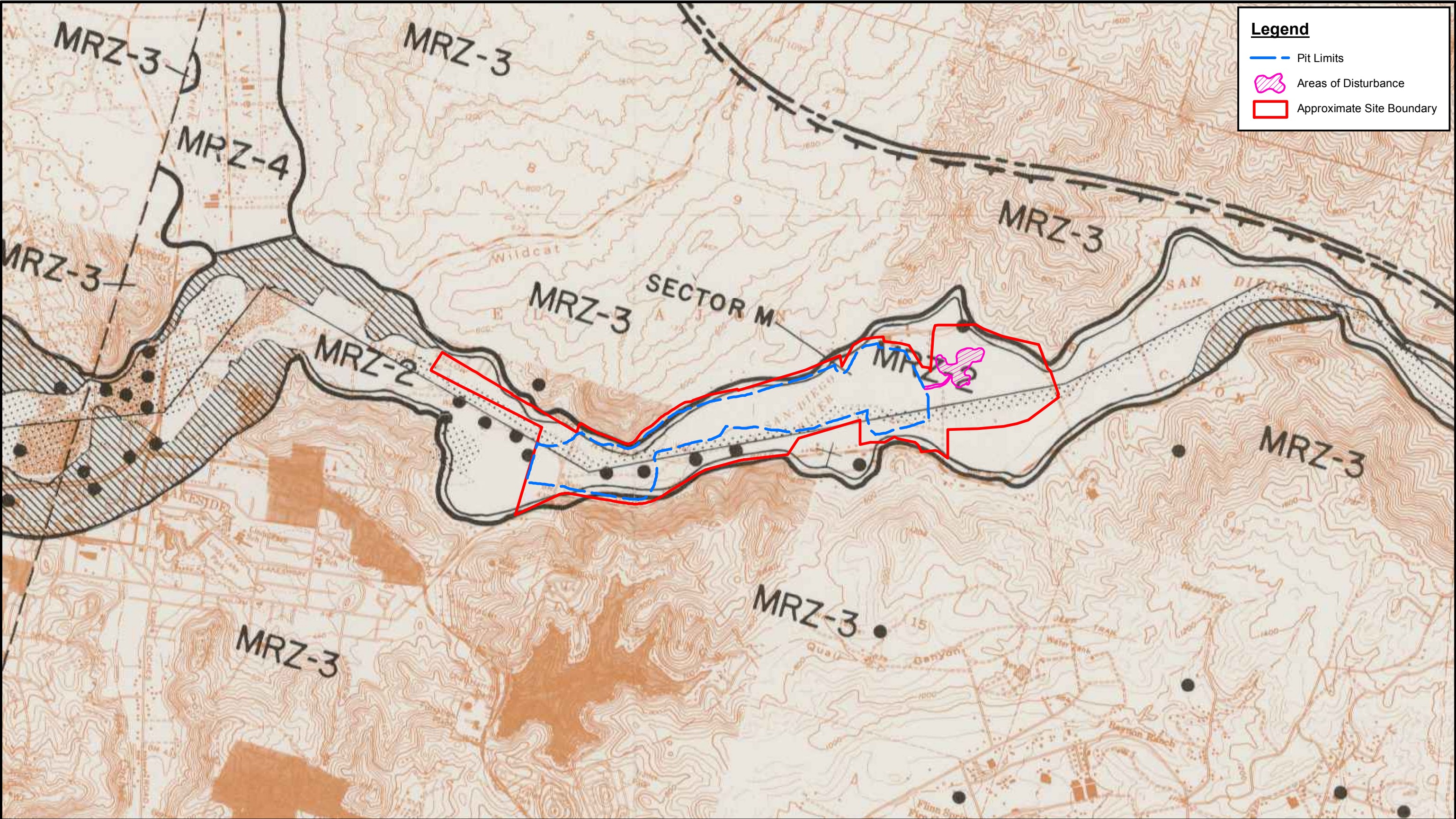
REGIONAL GEOLOGY MAP

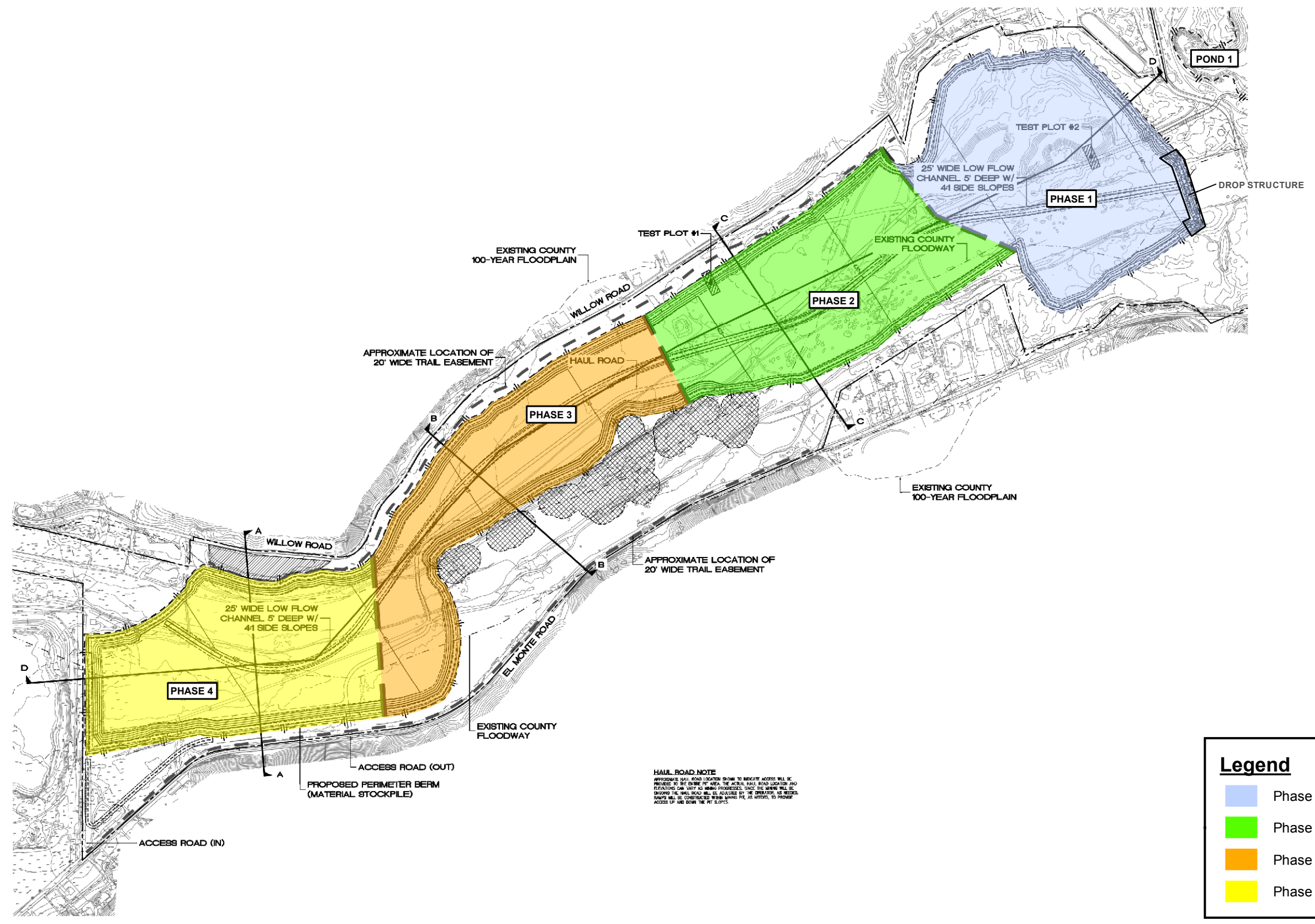
El Monte Sand Mining and Nature Preserve Project
 San Diego, California

Figure 4



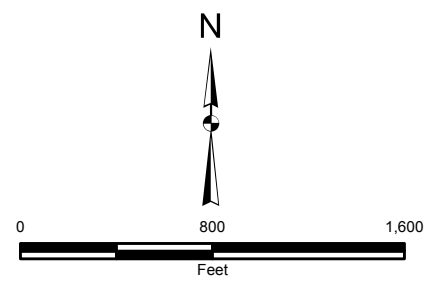
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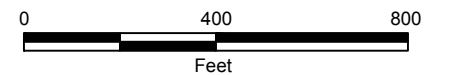
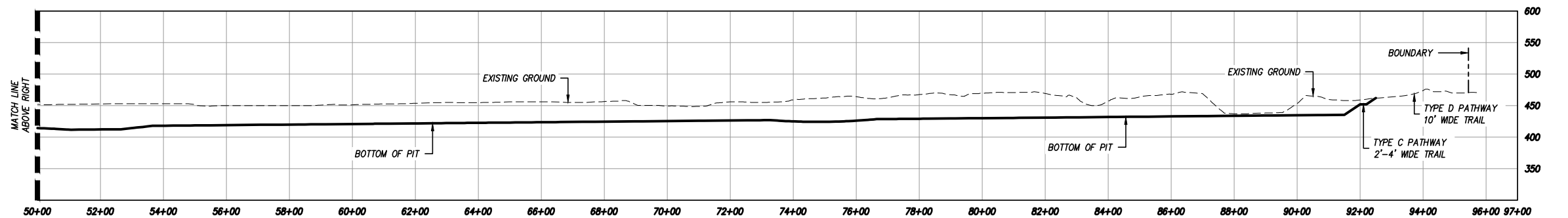
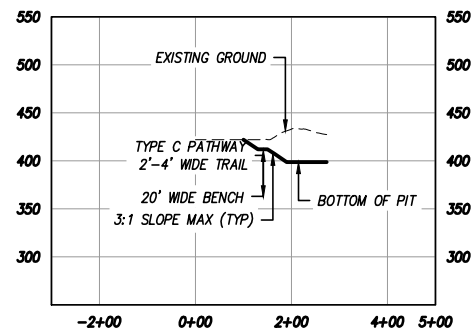
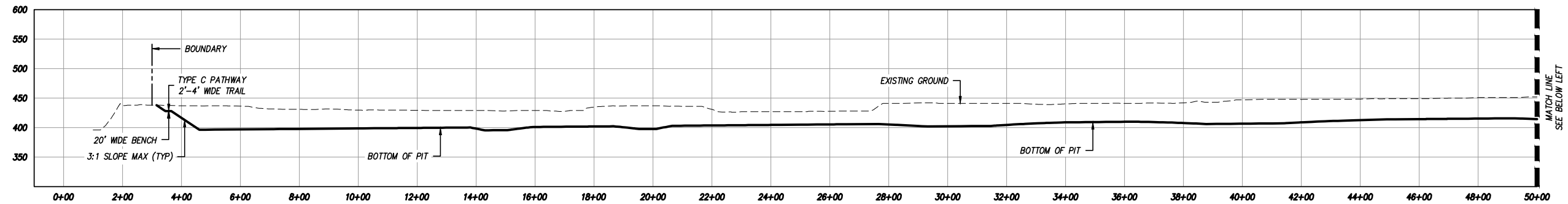
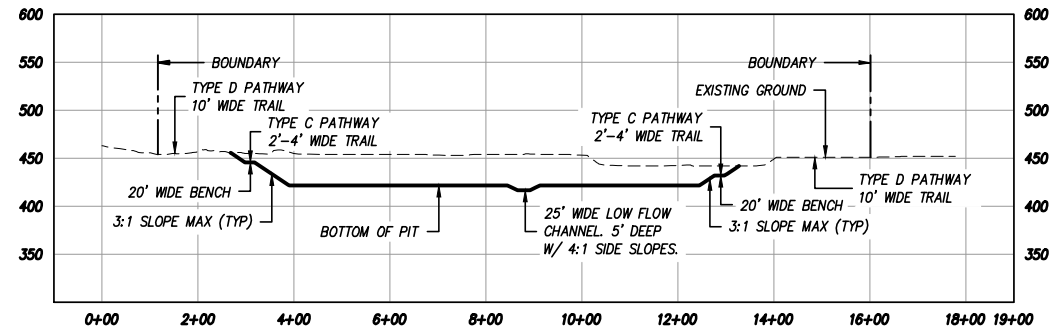
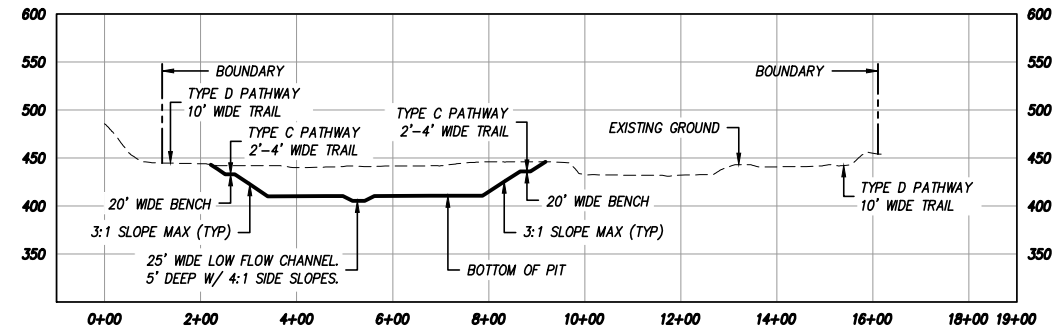
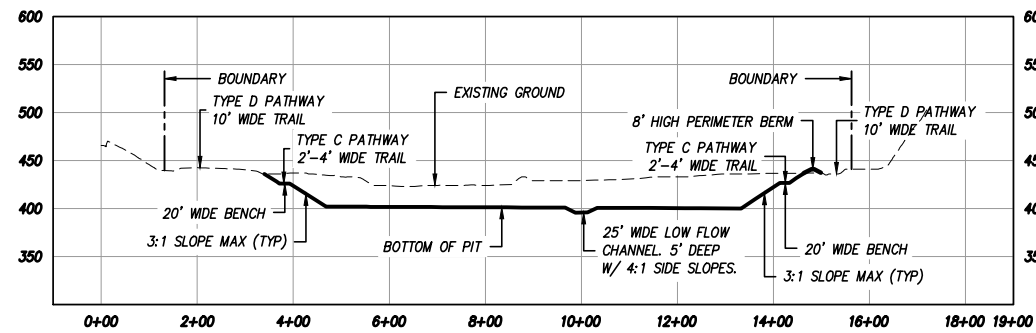




Legend

- Phase 1
- Phase 2
- Phase 3
- Phase 4





Project: 603132-002	Eng/Geol: RCS
Scale: 1"=400'	Date: June 2018
Reference: Chang Consultants, June 19, 2018.	
Author: MAM	

CROSS-SECTIONS

El Monte Sand Mining and Nature Preserve Project
San Diego, California

Figure 7

