Name and Address of Owner *(PRC §2772(c)(1)):*

See attached list of Owners

Contact: Howard Justus
Telephone: 619 220 8900

Name and Address of Operator (PRC §2772(c)(1)):

Sargent Ranch Management Company LLC

Agent

Freeman Associates
994 San Antonio Road
Palo Alto, CA 94303

STATEMENT OF RECLAMATION RESPONSIBILITY *(PRC §2772(c)(10))*

I certify that the information in this Sargent Quarry Mining and Reclamation Plan is correct, to the best of my knowledge, and that all of the owners of possessory interest in the property in question have been notified of the planned operation and potential uses of the land after reclamation. I also certify that I am authorized on behalf of Sargent Ranch Management Company, LLC to accept responsibility for reclaiming the mined lands described and submitted herein, with any modification required by the Santa Clara County and agreed to as Conditions of Approval.

Signed this _____ day of _____, 2016.

_____

Howard Justus
for Sargent Ranch Management Company LLC

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APPENDICES

PLAN SUMMARY

Operation Name:	Sargent Quarry
California Mine Identification Number:	California Mine ID _____.
Mine Operator:	Sargent Management Company LLC
Street Address or P.O. Box:	Old Monterey Road
City, State, Zip Code:	Gilroy, California
Telephone Number:	
Contact Person:	Howard Justus
Owner of Property Name:	See attached list
Owner of Mineral Rights:	See attached list
Street Address or P.O. Box:	1565 Hotel Cir S # 310
City, State, Zip Code:	San Diego, California 92108
Telephone Number:	619 220 8900
Contact Person:	Howard Justus
Location:	Approximately 5 miles south of the town of Gilroy off Highway 101 in Santa Clara County, CA
Assessor's Parcel Numbers:	Portions of 810-38-014, 017, and 018 Also see Appendix A, Site Legal Description
Section, Township and Range:	Sections 32 & 33 of Township 11 South, Range 4 East and Sections 5, 6 & 7 Township 12 South, Range 4 East MDB&M
Latitude and Longitude (at center of project):	36°55'01" N Latitude 121°33'47" W Longitude
Directions to the site:	From Gilroy drive approximately 4 miles south on Highway 101 to Old Monterey Road; site on the right
Total area within plan boundary	317+- acres

Total area to be mined:	Approximately 238 acres
Total area to be reclaimed:	Approximately 317 acres
Quantity and type of materials to be mined:	28 million cubic yards (approximately 40 million tons) of sand and gravel
Proposed start-up date and Termination date:	Anticipated Start-up: January 2016 Anticipated Termination: December 31, 2046
Potential land use after reclamation:	Mined lands will be reclaimed to a condition suitable for cattle ranching

1.0 PURPOSE AND OBJECTIVES

1.1 PURPOSE OF PLAN

The Sargent Quarry Mining and Reclamation Plan has been prepared in accordance with the requirements of the California Surface Mining and Reclamation Act (SMARA, or the statute) found in California Public Resources Code (PRC) Section 2710 *et seq.*, the state regulations implementing SMARA found in Title 14 of the California Code of Regulations (CCR) Section 3500 *et seq.*, and the Santa Clara County zoning ordinance 4.10.370, and Santa Clara County General Plan.

This Mining and Reclamation Plan describes the proposed mining of sand and gravel in accordance to the mining plans developed by Triad Holmes Associates. Aggregate materials (sand and gravel) are extracted from a pit and hillside deposit in the foothills of the Coast Range Mountains. The project, totaling a 317-acre area, includes four phases of mining areas on an existing cattle ranch. The Plan is prepared in a format that addresses each reclamation plan requirement found in the statute (primarily PRC §2772) and the standards that must be met in reclamation implementation, as specified in CCR §3503 and CCR §3700 through CCR §3713. Applicable PRC and CCR references are provided throughout this document.

The Mining and Reclamation Plan is intended to serve several purposes:

1. Describe the mining and reclamation process and standards as specified in PRC §2772 and CCR §3502
2. Serve as a reference manual for the mine operator to guide mining and site reclamation consistent with the approved Plan, to assist in regulatory compliance for operational activities, and to provide appended regulation and informational materials
3. Serve as a compliance document for the Lead Agency in monitoring ongoing compliance with the Mining and Reclamation Plan, as approved

This Mining and Reclamation Plan, for the mining of a new surface area, has been written to be consistent with the mining ordinances and regulations of Santa Clara County 4.10.370, and SMARA requirements found primarily in PRC §2772, and in CCR

§3502. Minimum standards to be followed (CCR §3503) and reclamation performance standards (CCR §3700 *et seq.*), as applicable to the operation and its approved plan, must be met during operations and reclamation. This Plan employs a comprehensive approach to the statute and regulations to avoid ambiguity in determining regulatory compliance during mining, on-going operations, reclamation, and post-reclamation.

1.2 SITE HISTORY, APPROVED PLANS, AND AMENDMENTS

1.2.1 History and Mining Authority

The Sargent Ranch property is owned by a number of tenants in common. A list is attached as Table 17. Sargent Ranch Management Company LLC will operate the Sargent Quarry. The operation is new and no previous mining has occurred on the site. The Sargent Ranch property encompasses 6,300 acres in both Santa Clara and Santa Cruz counties. The ranch has a long history dating back to the 1870s when it was created from Spanish land grants. The ranch has been used primarily as a cattle ranch with some portions of the property engaged in oil production. The mining operation will only occur on portions of the ranch that are in Santa Clara County.

1.2.2 Reclamation Plan Approvals

No previous Mining and Reclamation Plan has been approved for the project site. This Plan does not amend or supersede any other plans.

1.3 MINING AND RECLAMATION OBJECTIVES *(CCR §3502(a))*

The Mining and Reclamation Plan includes actions designed to meet physical reclamation treatment objectives for lands disturbed by mining activities:

- Provide for long-term stability of slopes
- Prevent wind and water erosion by stabilizing the soil surface through proper grading, erosion control, drainage, and revegetation
- Implement a revegetation program that is designed to establish self-sustaining native and naturalized vegetative cover

In enacting SMARA, the legislature clearly expressed its intent for the following in mining and reclamation:

PRC §2712(a) Adverse environmental effects are prevented or minimized and that mined lands are reclaimed to a usable condition which is readily adaptable for alternative land uses.

PRC §2712(b) The production and conservation of minerals are encouraged, while giving consideration to values relating to recreation, watershed, wildlife, range and forage, and aesthetic enjoyment.

PRC §2712(c) Residual hazards to the public health and safety are eliminated.

The mining and reclamation activities described in this Mining and Reclamation Plan are specifically developed and formatted to address these fundamental legislative objectives. The Reclamation Standards described in Section 4.6 are formatted to respond to the applicable requirements of the statute and regulations.

1.4 POTENTIAL SECOND LAND USE *(PRC §2772(c)(7))*

1.4.1 Land Use Goal

Reclamation of Sargent Quarry will prepare the surfaces to a condition suitable for subsequent cattle grazing as depicted in Figures 17 through 20.

1.4.1.1 General Plan

The County's general plan designates the site as "AR agricultural ranch lands." Mining is consistent with that designation, provided that a conditional use permit is obtained. No general plan amendments are necessary for the approval of this Mining and Reclamation Plan.

1.4.1.2 Zoning

Santa Clara County Surface Mining Ordinance, Section 4.10.370 lists requirements for all surface mining operations in the County. This Mining and Reclamation Plan conforms to all the development standards listed in the referenced zoning code. Mining is allowed under the current zoning designation of "Agricultural Rangeland".

1.4.2 Mining and Reclamation Overview

Mining is planned to be conducted in four phases, shown on Figures 9 through 16: Mine Grading Plans. During the first phase the operations area will be set up to include a office, shop and maintenance buildings, bone yard, employee and equipment parking area, scale, existing well, aggregate processing plant with stockpiles, process water pond, and sediment basin. Before mining can commence at the beginning of each phase of the quarry to be mined, the vegetation will be removed and disposed of off-site, and then the topsoil and overburden will be removed and stockpiled separately. Extraction of sand and gravel will result in temporary slopes with gradients of 2:1 and 10-foot-wide benches every 30 vertical feet, Figures 9 through 16.

Mining operations will begin in Phase 1, as shown on Figure 10, with overburden placed to create a berm adjacent to Hwy 101. For access to Phases 1 and 2 an overland conveyor with a 15 foot wide maintenance road will be constructed as shown on figure 9a and b. Generally, the road will follow the east side of the western ridge of the Sargent Valley, staying out of the Sargent Valley floor and riparian corridor and also remaining hidden from view from Highway 101.

Some of the Phase 1 overburden may be placed in a berm to the west of the plant site shown on figure 9. These berms will be landscaped and graded to resemble the surrounding topography to the greatest extent possible. Once sand and gravel excavation in Phase 1 is complete, operations will move westerly into the Phase 2 area of the quarry. Reclamation actions will begin in the Phase 1 area. Overburden from Phase 2 will be placed in the excavated area of Phase 1 and also be used to construct the permanent slope faces. Slopes will be seeded as is detailed in Chapter 4 "Reclamation Plan". At the end of Phase 2 mining operations, the conveyor belt will be removed, and its path regarded and revegetated. The maintenance road that runs parallel to the will be left in place to continue to provide access to the mined out sites, while reclamation activities are still ongoing.

Phase 3 and 4 mining operations are closer to the plant site and may use only a portion of the conveyor or remove it altogether. Access to these areas will most likely be by haul road. Mining operations will generally proceed from west to east in order to minimize visual impacts with the use of the disappearing hillside mining method. Phase 3 and 4 overburden will be stockpiled in the berm located to west of the plant site shown on figure 8. Much of the overburden will be used in the final reclamation of the Phase 3 and 4 pit area to create the final 2:1 slopes. Topsoil from Phases 3 and 4 will be also be

stored separately. Topsoil will be used to cover the finished slopes just prior to re seeding.

Reclamation will be ongoing while the site is being mined. The Operator will construct fill slopes against the cut slopes to leave the site with stable slope gradients of 3:1, which will be suitable for the designated end use (Figure 17: Final Reclamation Grading Plan). Slopes will be revegetated with plant species suitable for erosion control (Figure 20: Revegetation Plan and Planting Zones). Additional oak tree planting will further integrate the reclaimed area with the surrounding undisturbed lands. Grading will be completed in such a manner as to ensure proper surface drainage (Figure 19: Reclamation Drainage Plan). Surfaces will be graded or stabilized for erosion control. All equipment and structures associated with the mining operation will be removed.

Recoverable topsoil will be stockpiled for use in areas that are re-contoured and revegetated. The soil will be placed to enhance revegetation as surfaces are completed. The revegetated areas will be monitored after completion of final reclamation to ensure successful revegetation and erosion control.

1.5 ENVIRONMENTAL COMPLIANCE

The California Environmental Quality Act (CEQA) (California Public Resources Code, Section 21000 *et seq*.) requires the preparation of an Environmental Impact Report (EIR) for any project that a Lead Agency determines may have a significant impact on the environment. According to Section 21002.1(a) of the CEQA Statutes: "*The purpose of an environmental impact report is to identify the significant effects on the environment of a project, to identify alternatives to the project, and to indicate the manner in which those significant effects can be mitigated or avoided.*" CEQA also establishes mechanisms whereby the public and decision makers can be informed about the nature of the project being proposed, and the extent and types of impacts that the project and its alternatives would have on the environment if they were to be implemented.

The overall purpose of an EIR is to assess and disclose potential impacts to the physical environmental associated with the construction and maintenance of the proposed project. The EIR process and the information it generates will be used for the following purposes:

- To give government officials and the community the opportunity to have input into the decision-making process
- To provide agencies with information necessary to determine if they have jurisdiction over some aspect of the project and, if so, to identify project permitting requirement
- To assist the community in understanding the expected project-related environmental effects and how decision makers plan to respond to and mitigate these effects
- To develop feasible mitigation measures that reduces or eliminates significant environmental impacts

An EIR will be prepared for the proposed project in compliance with all criteria, standards, and procedures of the State CEQA guidelines (California Code of Regulations, Section 15000, *et. seq*.). The State Clearinghouse Identification Number is SCH 2014_____.

NOT TO SCALE

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BISHOP
REDWOOD CITY
SAN LUIS OBISPO

PREPARED & SUBMITTED BY:

DATE:

REVISIONS:	BY:

PREPARED FOR:

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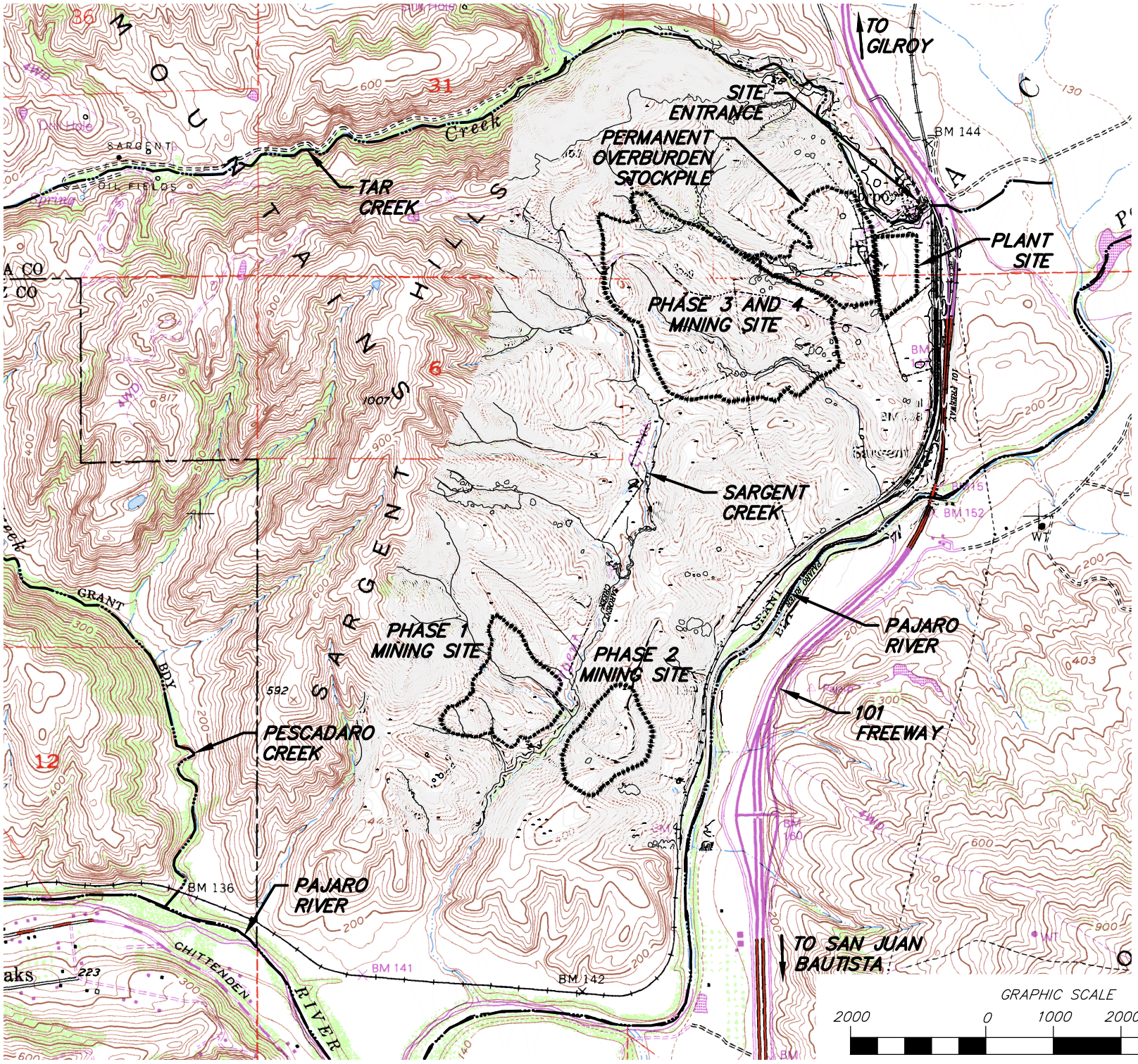
SARGENT RANCH QUARRY

REGIONAL LOCATION MAP

DATE	04/01/2016
SCALE	AS SHOWN
DRAWN	SCR
JOB NO.	01.4020
DWG	FIGURE 1

G:\01 Mammoth \4020 Sargent Ranch \Acad \Improvement Plans \Plan Set R4 \Fig 1 Regional Location Cad2014.dwg Apr 02,2016 - 7:50am, wroi



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SARGENT RANCH QUARRY

SURFACE WATER BODIES AND SITE LOCATION

DATE	04/01/2016
SCALE	AS SHOWN
DRAWN	SCR
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FIGURE 2

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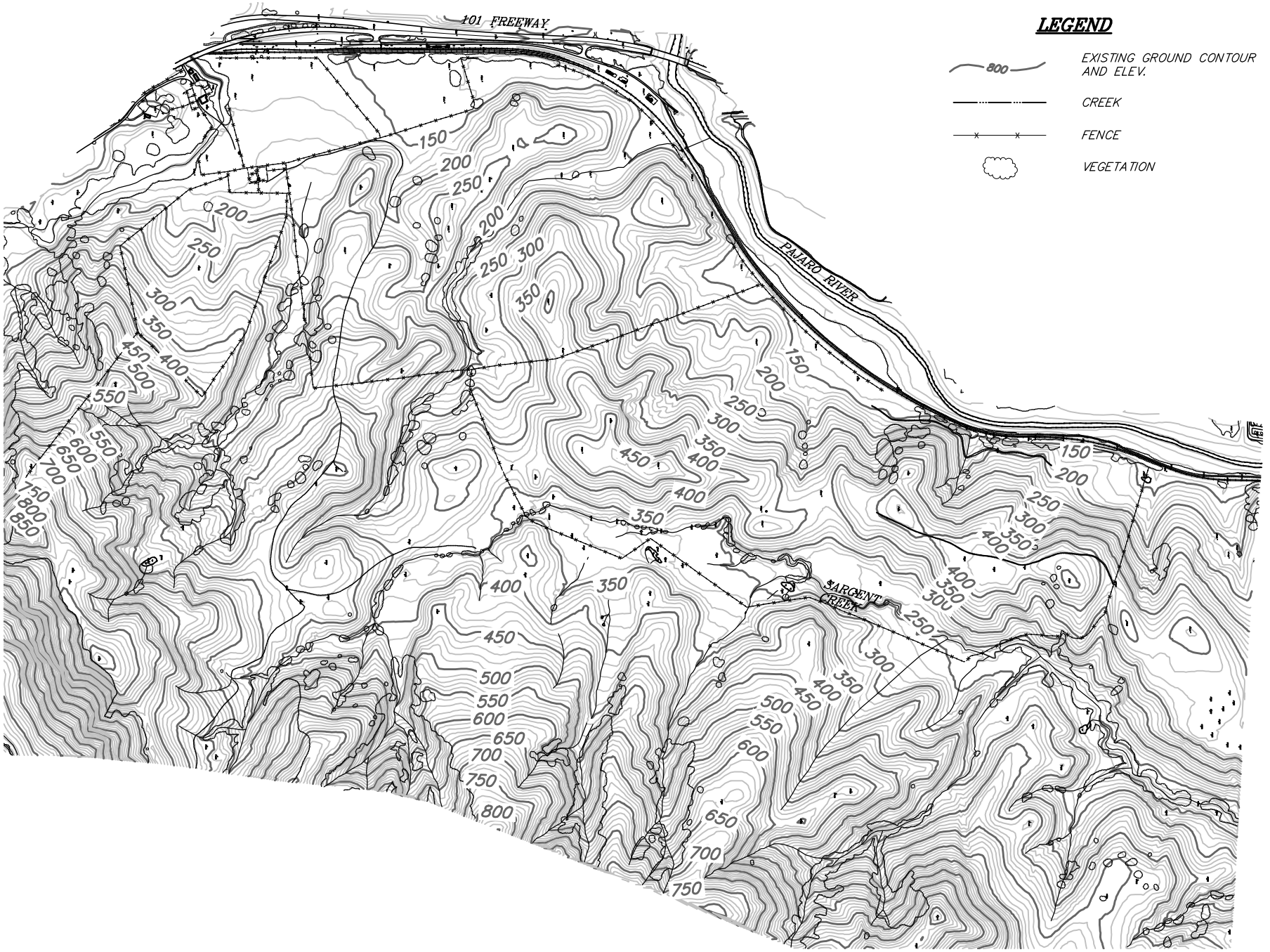

NOTES:

1. EXISTING DRAINAGE IS SHOWN ON FIGURE 4.
2. EXISTING GEOLOGY IS SHOWN ON FIGURE 6.
3. EXISTING BIOTIC HABITATS ARE SHOWN ON FIGURE 7.
4. PLANT SITE IMPROVEMENTS ARE SHOWN ON FIGURE 8.

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SARGENT RANCH QUARRY

EXISTING CONDITIONS

DATE	04/01/2016
SCALE	AS SHOWN
DRAWN	SCR
JOB No.	01.4020
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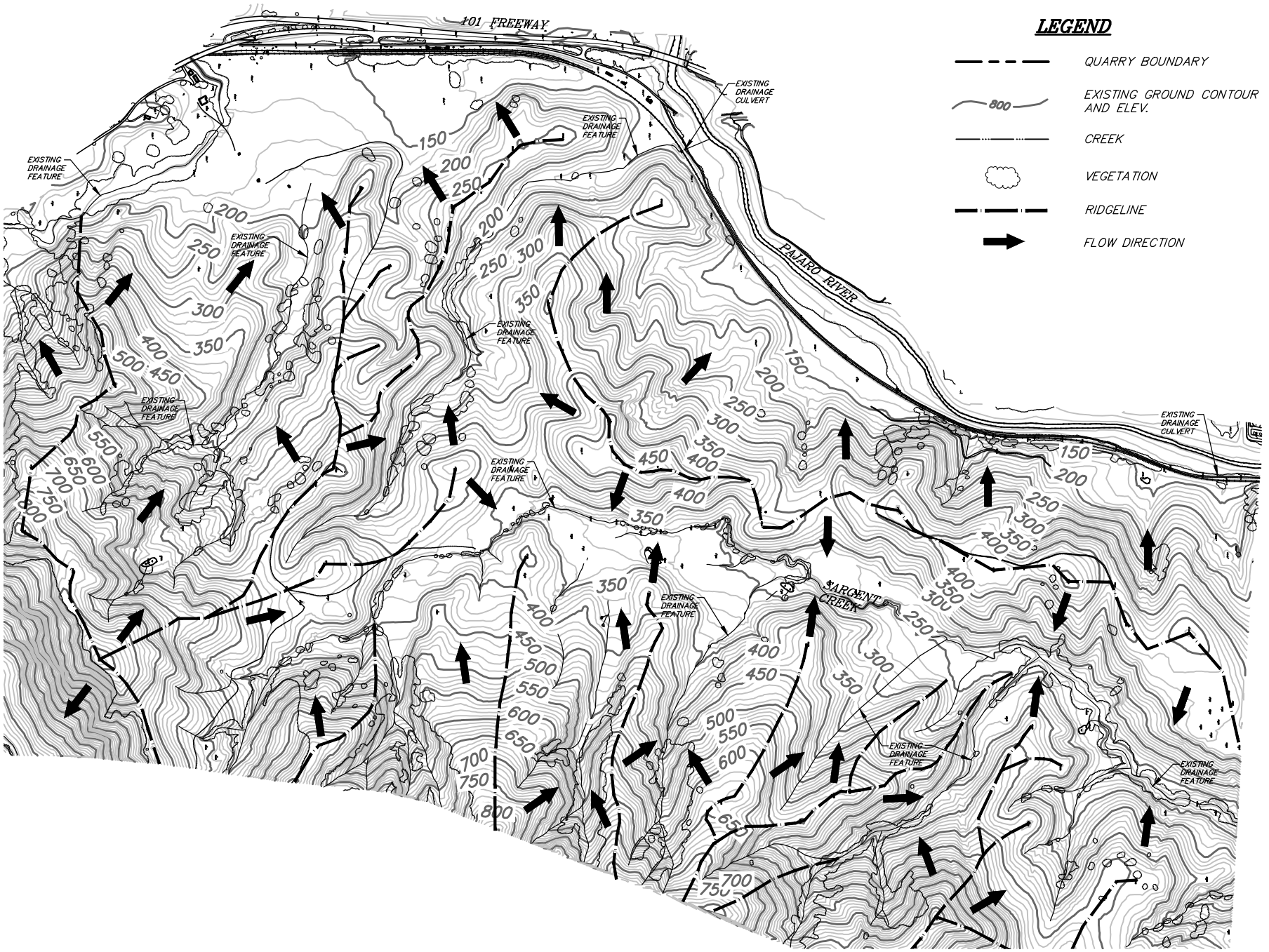

NOTES:

1. EXISTING GEOLOGY IS SHOWN ON FIGURE 6.
2. EXISTING BIOTIC HABITATS ARE SHOWN ON FIGURE 7.

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SARGENT RANCH QUARRY

EXISTING DRAINAGE PLAN

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SCALE	AS SHOWN
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DWG	

FIGURE 4

C:\01 Mammoth\4020 Sargent Ranch\Acad\Improvement Plans\Plan Set R4\Fig 4 Exist Drainage Plan Cad2014.dwg Apr 02,2016 - 8:02am, eric

2.0 SITE DESCRIPTION AND ENVIRONMENTAL SETTING *(CCR §3502(b)(1))*

This section (2.0) is intended to satisfy the requirement of section 3502, subdivision (b)(1), of Title 14 of the California Code of Regulations, as well as some of the requirements of Public Resources Code section 2772. The former provision requires that a reclamation plan include a discussion of "the environmental setting of the site of operations and the effect that possible alternative reclaimed site conditions may have upon the existing and future uses of surrounding lands." The latter provision identifies the basis of the kinds of information that by statute must be included in a reclamation plan. Much of the background information included in this section is also relevant to later portions of this document dealing with specific reclamation practices and standards. Where environmental setting information is relevant to such practices and standards, this section will identify relevant statutes and regulations setting forth the requirements for such practices and standards.

2.1 SITE LOCATION AND SIZE *(PRC §2772(c)(5))*

Sargent Quarry is located approximately five miles south of Gilroy, Calif. (see Figure 1: Regional Location, and Figure 2: Site Location), in Santa Clara County. The mine operations and processing areas occupy approximately 317 acres of a 6,400 acre site on portions of Assessor's Parcel numbers 810-38-014, 017 and 018 and is contained in the USGS 7.5' Chittenden Quadrangle. The site is further identified as being located within Sections 32 & 33 of Township 11 South, Range 4 East and Sections 5, 6 &7 Township 12 South, Range 4 East MDB&M.

2.1.1 Legal Description

The APN map of the Sargent Quarry is shown in Figure 3 and included in Appendix A. The approximately 317-acre area is located in an unincorporated section of Santa Clara County, Calif., within foothills of the Coast Range Mountains.

2.2 TOPOGRAPHY

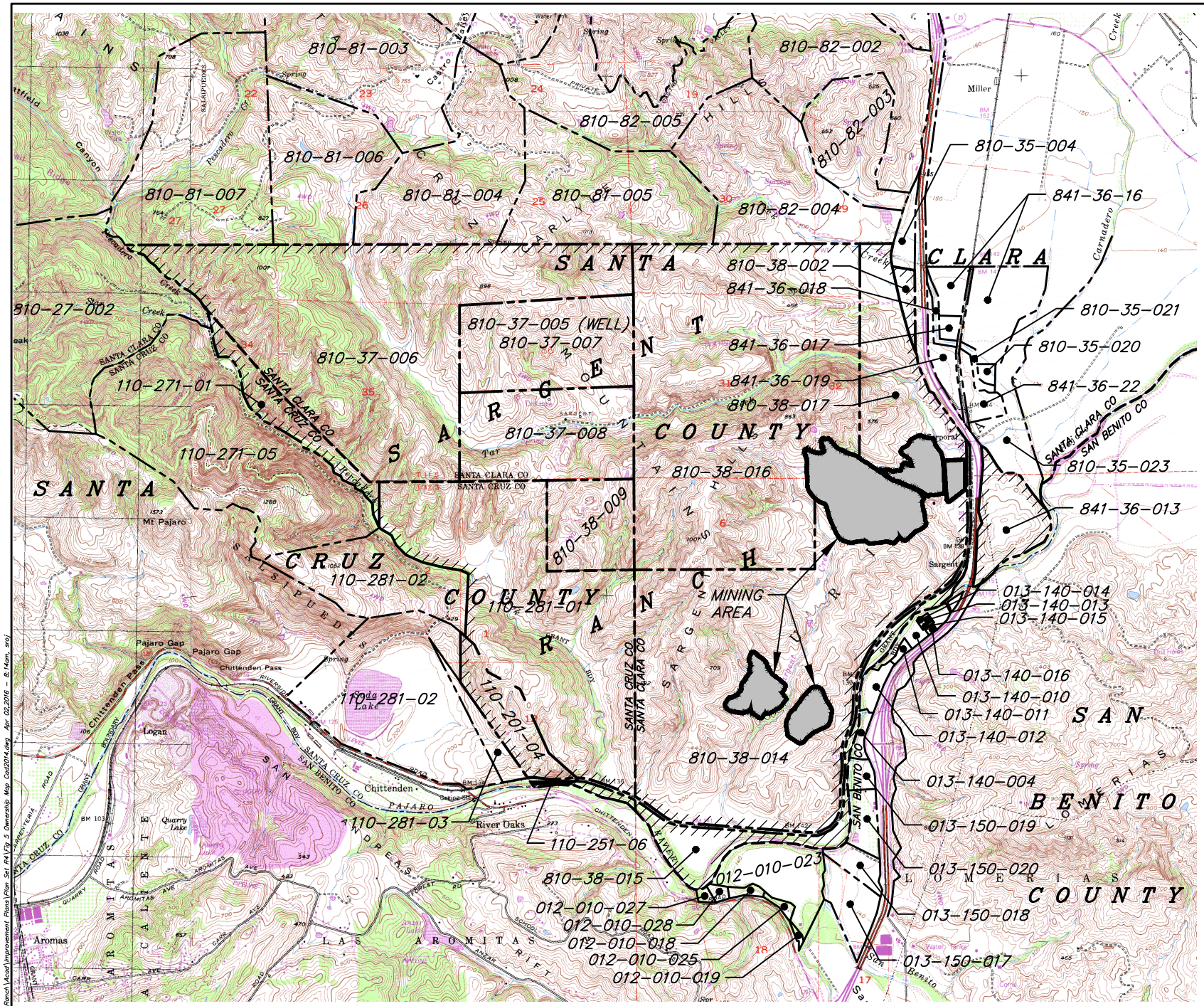
Elevations of the proposed Sargent Quarry site ranges from a high of approximately 650 feet National Geodetic Vertical Datum (NGVD) near the northwestern edge of the site boundary, to a low of approximately 120 feet NGVD at the easterly edge of the processing area.

2.3 PATTERN OF OWNERSHIP & USES ON & SURROUNDING THE SITE

The mining site consists of an irregularly shaped group of parcels, which is generally bordered by State Highway 101 to the northeast with Tar Creek on the north side of the highway, and open rangeland beyond that. Open rangeland also borders the site to the northwest and southwest. To the east are the Pajaro River, the Union Pacific rail line and Highway 101. The major land use in the immediate vicinity of the site is rangeland. Graded ranch roads and corrals and a few ranch buildings are the only improvements currently evident on the site. The parcels immediately adjacent to the quarry site and their land use are depicted in Figure 5: Ownership Map, and their ownership are shown on Table 1. The existing land use on the ranch the property is cattle grazing, some oil extraction and an undeveloped mineral reserve.

TABLE 1:
LIST OF PROPERTY OWNERS ADJACENT TO SARGENT QUARRY

ASSESSOR'S PARCEL NUMBER	LISTED OWNER
Santa Clara County	
810-81-005	**Castro Valley LLC**
810-82-004	**Castro Valley LLC**
810-35-004	**Bloomfield Ranch LLC**
810-36-018	**Santa Clara Valley Water Dist.**
810-36-019	**JB Limited**
810-36-022	**JB Limited**
810-36-023	**Santa Clara Valley Water Dist.**
San Benito County	



GRAPHIC SCALE

4000 0 2000 4000 8000

1 inch = 4000ft.

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PREPARED & SUBMITTED BY:

DATE:

REVISIONS:	BY:

PREPARED FOR:

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PALO ALTO, CA 94303

SARGENT RANCH QUARRY

OWNERSHIP MAP

DATE	04/01/2016
SCALE	AS SHOWN
DRAWN	SCR
JOB NO.	01.4020
DWG	FIGURE 5

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2.4 ACCESS *(PRC §2772(c)(5))*

The site will be accessed from Highway 101 on to Old Monterey Road serving as primary ingress to the quarry for the majority of traffic heading southbound on Highway 101. The majority of traffic exiting the site will be northbound on an unnamed paved ranch road entering onto Highway 101 approximately one-quarter mile north of the processing plant. The ranch road will need to be improved to accommodate the truck traffic. An acceleration lane will also need to be added to northbound Highway 101. A new access road will extend about 500 feet into the site, terminating at the operations area. The new access features and private driveway are shown on Figures 8 and 9. The existing unpaved ranch roads are shown on Figure 3: Existing Site Conditions.

2.5 Utilities

Utilities necessary for the mining operation are currently available at the site, and provided as follows:

1. Power is and will continue to be provided by Pacific Gas & Electric. Three-phase power is located on Highway 101 on overhead lines running parallel with the highway.
2. Water for drinking purposes is provided from a new private well or will be brought in by private vendors if well water is found to be unsuitable for drinking without treatment.
3. Water for aggregate washing will be provided by a new well as part of the project. The same well is to be used for drinking water unless the well water needs to be treated.
4. Sewage disposal will be provided by an on-site sewage disposal system designed and installed as part of the quarry operation. The on-site system will consist of a septic tank, distribution box, and leach field.
5. Mining and reclamation activities would not affect public utilities facilities or service systems. No additional extensions of public utilities or alterations to existing utility service would be necessary to carry out reclamation activities identified in this Mining and Reclamation Plan.

2.6 GEOLOGY, SEISMICITY AND SOILS *(PRC §2772(c)(5))*

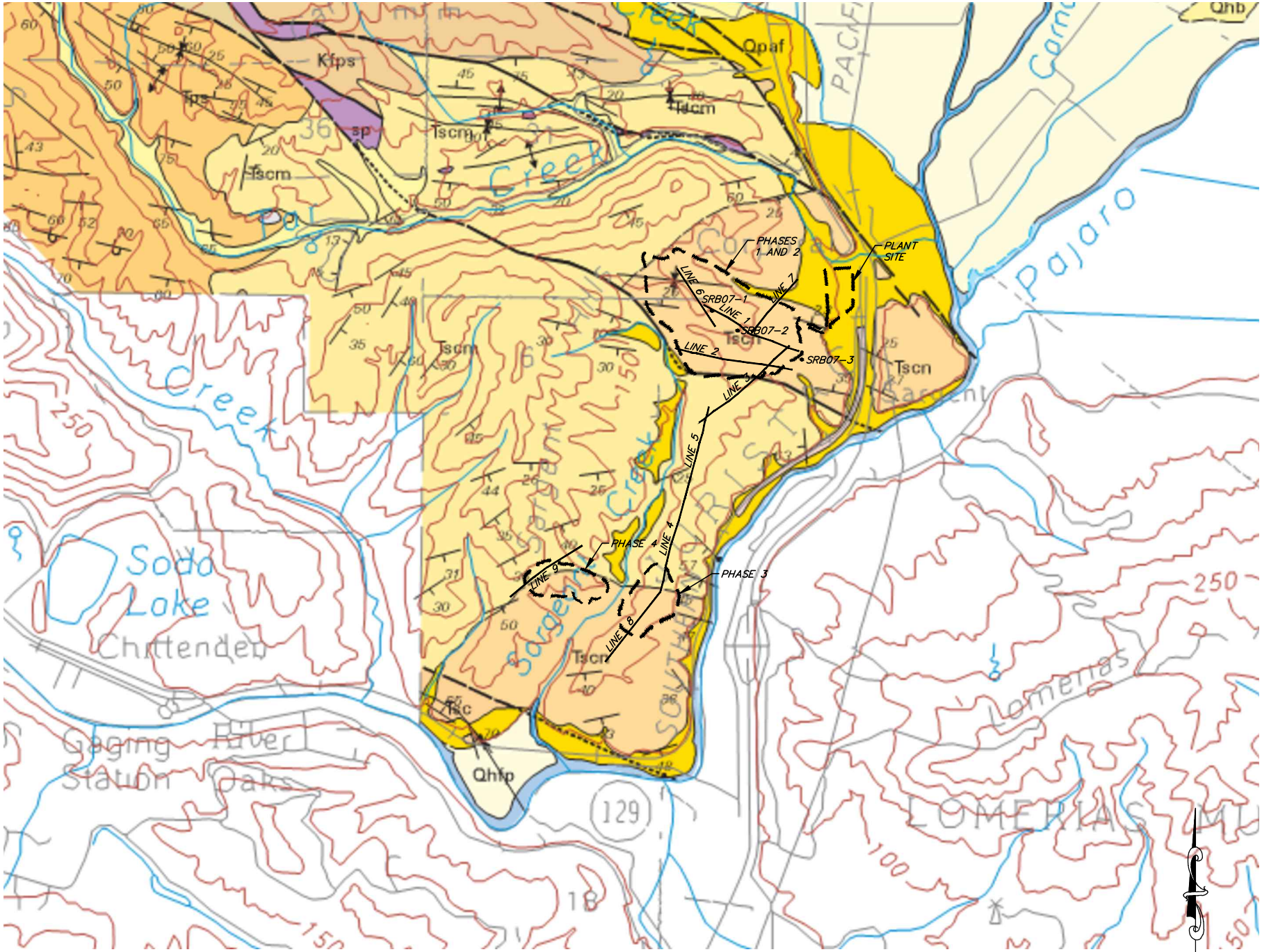
2.6.1 Geology

The Sargent Ranch lies in an unincorporated part of Santa Clara County. Geographically, the county covers approximately 1,304 square miles and ranges in elevation from sea level to over 4,200 feet. The geology of the region reflects the action of plate tectonics between the North American Plate and the Pacific Plate as well as the interaction of two major faults: the San Andreas Fault and the Sargent Fault. The Sargent Fault is located within Sargent Ranch trending from the southeast to the northwest through the site near Tar Creek. The San Andreas Fault trends in the same direction as the Sargent Fault and is located just south of the southerly boundary of Sargent Ranch.

Tertiary marine and nonmarine sediments are prevalent throughout the site. The marine and nonmarine units, denoted as TSCM and TSCN respectively, were mapped by Dibble and Brabb (1978) as deriving from the Pliocene Epoch and included as part of the Etchegoin Formation. The Etchegoin consists of siltstone, sandstone, and conglomerate. The sediments making up these rocks were deposited in shallow marine, marginal marine, and nonmarine environments.

Geologic deposits more specifically consist of conglomerate, sandstone, and siltstones (Graymer, 1997). The sediments contain interbedded pebble and cobble conglomerates; coarse- to fine-grained lithic, mica lithic, and quartz lithic sandstones; and brown siltstone and silty claystones. Clasts in the conglomerate are well rounded to subrounded, and contain the following: greenstone, greywacke, white weathered siliceous mudstone, laminated chert, red chert, metachert, laminated fine-grained white quartz sandstone, and serpentinite.

The majority of the deposits are northeast striking and dip from roughly 30 to 45 degrees to the southeast except near anticlinal and synclinal axis and the Sargent Fault zone (Graymer, 1997). The geologic conditions we observed during our reconnaissance are consistent with those represented in the literature. SGS measured some attitudes where exposed, and these verified with those noted. Figures 3 and 5 include bedding attitudes of the deposits on the site.



LEGEND

GRAPHIC SCALE

3000 0 1500 3000 6000

1 inch = 3000ft.

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SAN LUIS OBISPO

PREPARED & SUBMITTED BY:

DATE:

REVISIONS:	BY:

PREPARED FOR:

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SARGENT RANCH QUARRY

SITE GEOLOGY

DATE	02/25/2015
SCALE	AS SHOWN
DRAWN	SCR
JOB NO.	01.4020
DWG	FIGURE 6

K:\01 Mammoth\4020 Sargent Ranch\acad\Improvement Plans\Plan Set #2\Fig 6 Local Geology Cad2014.dwg Feb 25,2015 - 9:37am arc

2.6.2 Units within the Sargent Ranch Region

Tscn: Siltstone, Quartz Lithic Sandstone Marine Deposits
Tscm: Siltstone, Pebble and Quartz Conglomerate Marine Deposits
Qts: Pebble, Gravel, Sand and Clay Stream Deposits.
Qls: Landslide Rubble
Qal: Alluvial Gravel, Sand and Clay of Valley Areas

2.6.3 Soil Delineations and Map Unit Descriptions

Nine soil-mapping units have been identified on the project site and these soils are described in greater detail in Table 1 and depicted in Figure 3. None of the soils of the site are considered hydric soils, i.e. soils that under appropriate hydrological conditions may support wetlands, however, hydric inclusions may occur. All of the soil types are considered well-drained. None of these soils is a serpentine or alkaline soil, therefore, they would not be expected to support special status plant species that are endemic to serpentine or alkaline soils.

Table 2

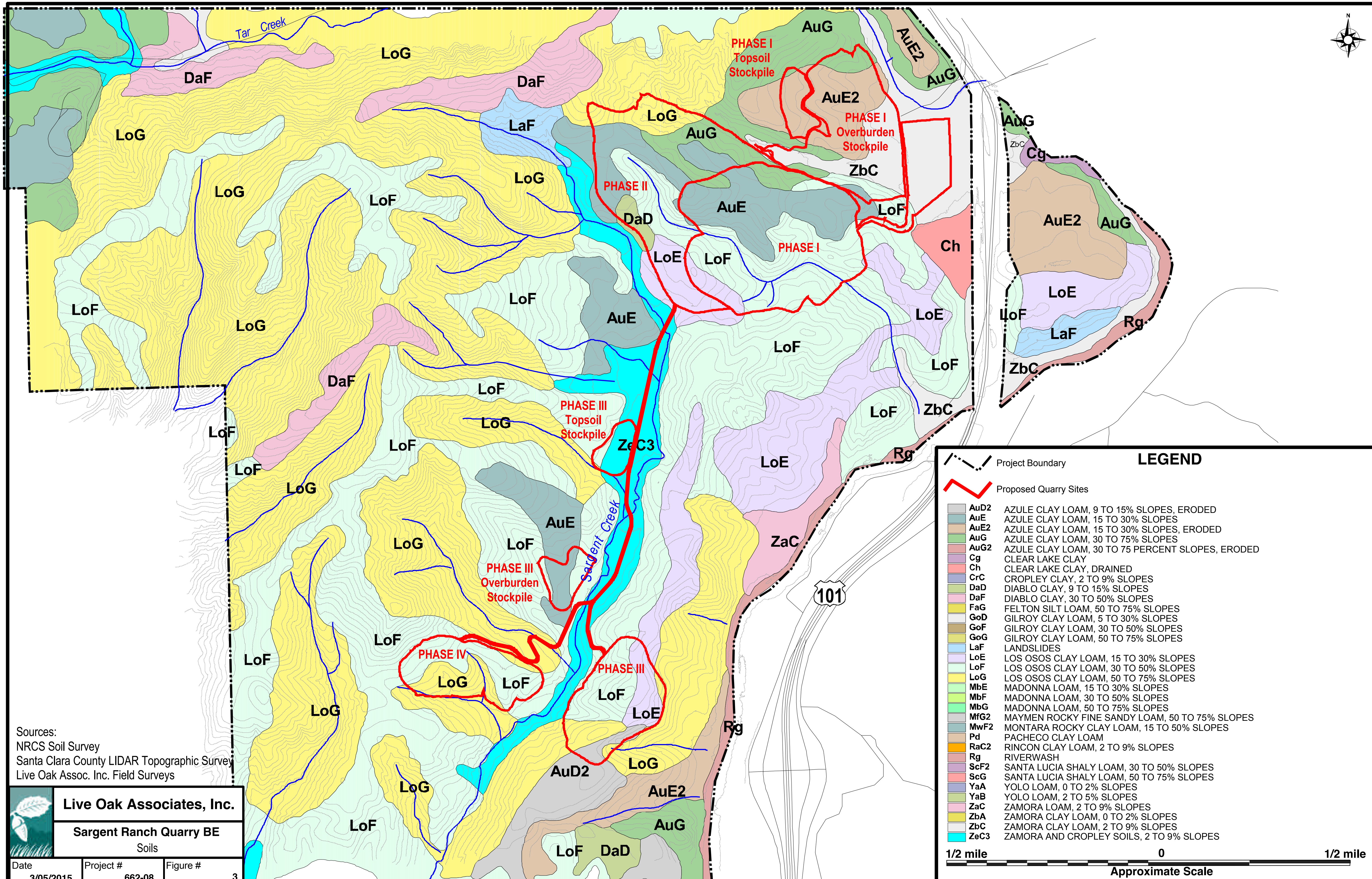
Descriptions of soil mapping units of the study area (USDA NRCS Web Soil Survey).

Soil Series/Soil	Map Unit Symbol	Parent Material	Drainage Class	% Hydric Composition
ZAMORA SERIES Zamora clay loam, 2-9% slopes	ZbC	Alluvium	Well-drained	0
AZULE SERIES Azule clay loam, 15-30% slopes, eroded	AuE2	Alluvium	Well-drained	0
Azule clay loam, 15-30% slopes	AuE	Alluvium	Well-drained	0
Azule clay loam, 9-15% slopes, eroded	AuD2	Alluvium	Well-drained	0
Azule clay loam, 30-75% slopes	AuG	Alluvium	Well-drained	0
LOS OSOS SERIES Los Osos clay loam, 15-30% slopes	LoE	Residuum weathered from sandstone and shale	Well-drained	0
Los Osos clay loam, 30-50% slopes	LoF	Residuum weathered from sandstone and shale	Well-drained	0
Los Osos clay loam, 50-75% slopes	LoG	Residuum weathered from sandstone and shale	Well-drained	0
DIABLO SERIES Diablo clay, 9-15% slopes	DaD	Residuum weathered from sandstone	Well-drained	0

See Figure 3 of the appended "Biological Evaluation" by Live Oak Associates for the Soils Map.

2.6.4 Landslides

Based on a review of the County of Santa Clara Landslide Hazard Zone Map, the site is located in an area prone to landslides. Several surficial to moderately-sized, deep-seated (backscarps of up to 40 feet in height) landslides are located in multiple areas across the property. The majority of the slides appear to be surficial and originate at the


Tar Creek
Sargent Creek
PHASE I Topsoil Stockpile
PHASE I Overburden Stockpile
PHASE I
PHASE II
PHASE III Topsoil Stockpile
PHASE III Overburden Stockpile
PHASE III
PHASE IV
101
LoG
DaF
LaF
AuG
AuE2
ZbC
AuE
LoF
DaD
LoE
Ch
Cg
Rg
ZeC3
ZaC
AuD2
Sources:
NRCS Soil Survey
Santa Clara County LIDAR Topographic Survey
Live Oak Assoc. Inc. Field Surveys
Live Oak Associates, Inc.
Sargent Ranch Quarry BE
Soils
Date 3/05/2015
Project # 662-08
Figure # 3
LEGEND
Project Boundary
Proposed Quarry Sites
AuD2 AZULE CLAY LOAM, 9 TO 15% SLOPES, ERODED
AuE AZULE CLAY LOAM, 15 TO 30% SLOPES
AuE2 AZULE CLAY LOAM, 15 TO 30% SLOPES, ERODED
AuG AZULE CLAY LOAM, 30 TO 75% SLOPES
AuG2 AZULE CLAY LOAM, 30 TO 75 PERCENT SLOPES, ERODED
Cg CLEAR LAKE CLAY
Ch CLEAR LAKE CLAY, DRAINED
CrC CROPLEY CLAY, 2 TO 9% SLOPES
DaD DIABLO CLAY, 9 TO 15% SLOPES
DaF DIABLO CLAY, 30 TO 50% SLOPES
FaG FELTON SILT LOAM, 50 TO 75% SLOPES
GoD GILROY CLAY LOAM, 5 TO 30% SLOPES
GoF GILROY CLAY LOAM, 30 TO 50% SLOPES
GoG GILROY CLAY LOAM, 50 TO 75% SLOPES
LaF LANDSLIDES
LoE LOS OSOS CLAY LOAM, 15 TO 30% SLOPES
LoF LOS OSOS CLAY LOAM, 30 TO 50% SLOPES
LoG LOS OSOS CLAY LOAM, 50 TO 75% SLOPES
MbE MADONNA LOAM, 15 TO 30% SLOPES
MbF MADONNA LOAM, 30 TO 50% SLOPES
MbG MADONNA LOAM, 50 TO 75% SLOPES
MfG2 MAYMEN ROCKY FINE SANDY LOAM, 50 TO 75% SLOPES
MwF2 MONTARA ROCKY CLAY LOAM, 15 TO 50% SLOPES
Pd PACHECO CLAY LOAM
RaC2 RINCON CLAY LOAM, 2 TO 9% SLOPES
Rg RIVERWASH
ScF2 SANTA LUCIA SHALY LOAM, 30 TO 50% SLOPES
ScG SANTA LUCIA SHALY LOAM, 50 TO 75% SLOPES
YaA YOLO LOAM, 0 TO 2% SLOPES
YaB YOLO LOAM, 2 TO 5% SLOPES
ZaC ZAMORA LOAM, 2 TO 9% SLOPES
ZbA ZAMORA CLAY LOAM, 0 TO 2% SLOPES
ZbC ZAMORA CLAY LOAM, 2 TO 9% SLOPES
ZeC3 ZAMORA AND CROPLEY SOILS, 2 TO 9% SLOPES
1/2 mile
0
1/2 mile
Approximate Scale

contact with the Topsoil/Colluvium and the underlying tertiary deposits along the sideslopes of incised drainages. In a few areas however, the landslides did extend below the surficial deposits into the underlying bedrock.

2.6.5 Faulting and Seismicity

The project site area is located in an extremely tectonically active area between the San Andreas fault approximately 2 miles to the south, and the Sargent fault that runs through the northern portion of the site. Per the Santa Clara County Fault Rupture Hazard Zone Map the northern portion of the property is located in a fault rupture hazard zone. These faults have the potential for generating strong ground motions and surface rupture at the project area.

The Sargent Fault Zone (Southeastern Section)

The Sargent fault zone is located in an extremely complex contractional system of generally northeastward-vergent thrust and reverse faults bounding the eastern side of the Santa Cruz Mountains. This thrust system has been described as an eastward-propagating structure which roots toward the larger San Andreas fault zone. The Sargent fault zone extends from its complex junction with the San Andreas fault near Lake Elsman runs southeast through the Santa Cruz Mountains, crosses the Pajaro River floodplain, and extends near the northeastern front of the Lomerias Muertas and Flint Hills. The mapped surface traces end a few kilometers east of Hollister and it is not known if the fault extends farther south-southeast to join the Calaveras fault zone.

The San Andreas Fault Zone (Santa Cruz Mountain Section):

The 1,100-kilometer-long San Andreas fault zone is the principal element of the San Andreas fault system, a network of faults with predominantly dextral strike-slip displacement that collectively accommodates the majority of relative N-S motion between the North American and Pacific plates. In the vicinity of the project site, the Santa Cruz Mountains section of the San Andreas fault extends from Black Mountain in the northern Santa Cruz Mountains and runs southeast to just south of San Juan Bautista. The northern boundary is marked by an approximately 0.6-mile (1-kilometer-wide), left-compressional bend near Black Mountain. The southern boundary with the creeping section is taken as the approximate southern termination of surface fault rupture associated with the 1906 San Francisco earthquake.

The Santa Cruz Mountains section is delineated by geomorphic features characteristic of Holocene dextral offset such as dextrally deflected and offset drainages, linear drainages, sidehill benches, closed depressions, aligned benches, linear scarps, linear troughs, aligned saddles, and linear vegetation contrasts. Local surface traces of the fault are complex and distributive and/or concealed by massive landslide deposits.

2.6.6 Regionally-Significant Mineral Reserve

Following California's mineral classification procedures, the Division of Mines and Geology (DMG)--now the California Geologic Survey--produced *Special Report 146 – Mineral Land Classification: Aggregate Materials in Monterey-Santa Clara County Production-Consumption Region*, issued in 1992. An update of that classification study was prepared in 1996.

State land classification is presented in the form of Mineral Resource Zones (MRZs) and directions for identification of MRZs are set forth in the DMG's Special Publication 51. Relevant nomenclature can be provided if requested.

The deposit, upon which Sargent Quarry is located, is not yet identified as a MRZ-2 deposit, containing Portland cement concrete (PCC)-grade aggregate. Application for State designation has been filed.

2.7 HYDROLOGY/DRAINAGE *(PRC §2772(c)(5))*

2.7.1 Climate and Rainfall

The annual average temperature in the general vicinity of the study area is 58°F (with an extreme high of 105°F and extreme low of 16°F); annual precipitation in the general vicinity of the study area averages 21 inches, almost 85% of which falls between October and March. Virtually all precipitation falls in the form of rain.

2.7.2 Drainage of Surface Waters

For the portion of the property that falls within the mining boundary of Phases 3 and 4, storm water from the higher elevations and ridges flows into two ephemeral drainages and several drainage channels which traverse across the site from the high point at the

northwestern edge of the mining area joining Tar Creek just north of the processing area. The storm water runoff readily infiltrates into the soils. However, when infiltration capacity has been reached, accumulated surface storm water runoff drains southeast down through natural swales and ravines into culverts, passing under Highway 101 and flowing into the Pajaro River, as shown on Figure 4: Existing Drainage Plan. The drainage from mining Phases 1 and 2 form sheet flows to Sargent Creek that continue south to the Pajaro River.

2.7.3 Groundwater

Ground water is not expected to be encountered at any time during the excavation of the quarry. The greatest depth of the excavation to elevation 135 feet above sea level is at least 50 feet above any known ground water levels as detected in the nearby well.

2.7.4 Project Well

Well water will be used for the operation of the quarry, providing water for operation of the plant and potable water for the buildings. An additional new well will be added to supplement water supply. The existing well is shown on Figure 3: Existing Site Conditions, within the Sargent Ranch property on the east of Highway 101.

2.8 VEGETATION AND WILDLIFE

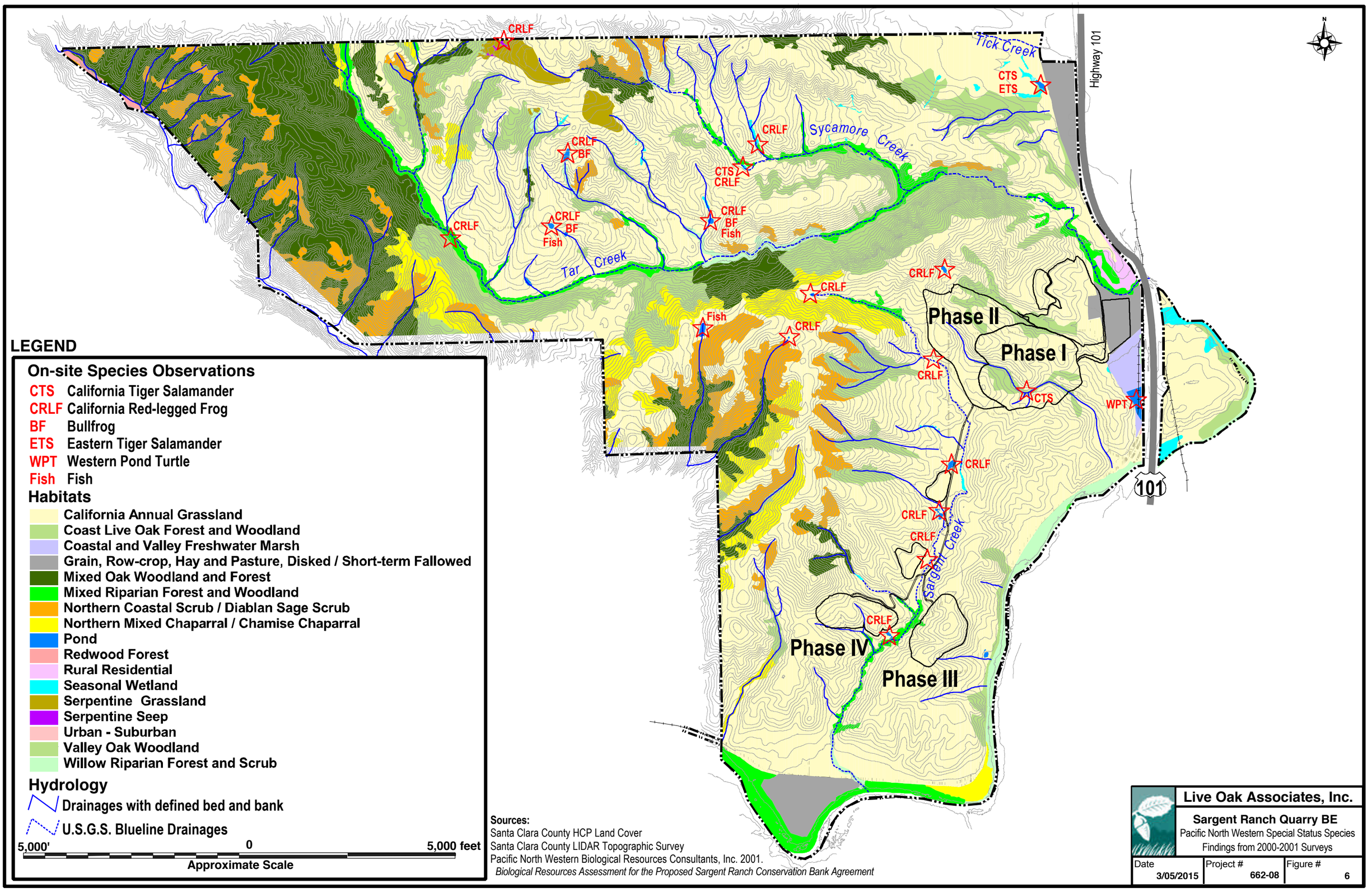
2.8.1 Vegetation *(CCR §3705(a))*

Two biotic habitats and one land use have been identified on the project site (Table 2, Figure 3); and these habitats and land uses have been named pursuant to land cover types defined in the Santa Clara Valley Habitat Conservation Plan (HCP) (ICF Int. 2012). More detailed habitat descriptions are provided below. For the purposes of this report, the natural terrestrial communities are identified as California annual grassland, coast live oak forest and woodland; and the one land use is identified as Grain, Row Crop, Hay and Pasture. Several drainages with a defined bed and bank also occur within the project site footprint, and an access road that will be constructed as part of Phase III and Phase IV will traverse Sargent Creek and associated drainages in several locations. Lists of vascular plants observed on the greater 6300-acre Sargent Ranch property during LOA's 2004 through 2014 surveys is provided in Appendix A; and a

list of terrestrial vertebrates observed on the greater ranch property and/or potentially present on the study area, based on both PNWB and LOA surveys, has been provided in Appendix B.

Table 2: Habitats and Land Uses of the Project Site by Project Phase

Habitats/Land Uses	Phase I Acreages	Phase II Acreages	Phase III Acreages	Phase IV Acreages	Total
California Annual Grassland	114.0	58.0	49.2	27.3	248.5
Coast Live Oak Forest and Woodland	22.4	10.4	0.3	0.0	33.1
Grain, Row Crop, Hay and Pasture	18.8	0.0	0.0	0.0	18.8
Total	155.2	68.4	49.5	27.3	300.4
Creeks, Streams and Drainages	**Linear Feet of Channel**	**Linear Feet of Channel**	**Linear Feet of Channel**	**Linear Feet of Channel**	**Total**
Seasonal Drainages with Defined Bed and Bank (primarily HCP Category 2 streams)	3,043	1,514	155	915	5,627



LEGEND

On-site Species Observations

- CTS California Tiger Salamander
- CRLF California Red-legged Frog
- BF Bullfrog
- ETS Eastern Tiger Salamander
- WPT Western Pond Turtle
- Fish Fish

Habitats

- California Annual Grassland
- Coast Live Oak Forest and Woodland
- Coastal and Valley Freshwater Marsh
- Grain, Row-crop, Hay and Pasture, Disked / Short-term Fallowed
- Mixed Oak Woodland and Forest
- Mixed Riparian Forest and Woodland
- Northern Coastal Scrub / Diablan Sage Scrub
- Northern Mixed Chaparral / Chamise Chaparral
- Pond
- Redwood Forest
- Rural Residential
- Seasonal Wetland
- Serpentine Grassland
- Serpentine Seep
- Urban - Suburban
- Valley Oak Woodland
- Willow Riparian Forest and Scrub

Hydrology

- Drainages with defined bed and bank
- U.S.G.S. Blueline Drainages

5,000' 0 5,000 feet

Approximate Scale

Sources:

Santa Clara County HCP Land Cover

Santa Clara County LIDAR Topographic Survey

Pacific North Western Biological Resources Consultants, Inc. 2001.
Biological Resources Assessment for the Proposed Sargent Ranch Conservation Bank Agreement

Live Oak Associates, Inc.

Sargent Ranch Quarry BE

Pacific North Western Special Status Species
Findings from 2000-2001 Surveys

Date	Project #	Figure #
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2.8.2 California Annual Grassland

California annual grassland habitat is the dominant habitat on the project site, occupying approximately 250 acres. Grasslands on the site are dominated by non-native grass species such as wild oats *(Avena barbata and A. fatua),* ripgut (*Bromus diandrus*), soft chess *(Bromus hordeaceous),* foxtail barley *(Hordeum murinum* ssp. *leporinum),* and Italian rye grass *(Festuca perennis);* and weedy non-native forb species such as filarees (*Erodium spp*.), black mustard *(Brassica nigra),* Italian thistle *(Carduus pycnocephalus),* yellow star thistle *(Centaurea solstitialis),* summer mustard *(Hirschfeldia incana)* and milk thistle (*Silybum marianum*). Native forb species encountered within grasslands of the site included California poppy (*Eschscholzia californica*), common pepperweed (*Lepidium nitidum*), common fiddleneck (*Amsinckia intermedia*), Ithuriel's spear (*Triteleia laxa*), yarrow *(Achillea millifolium),* clarkia (*Clarkia sp.),* rattlesnake weed *(Daucus pusillus),* Pacific rye grass *(Elymus glaucus ssp. virescens),* lupines *(Lupinus spp.),* California melic *(Melica californica),* purple needle-grass *(Nassella pulchra)* and gray mules ears (*Wyethia helenioides).*

The grassland is expected to support a host of common grassland animal species. California tiger salamanders (*Ambystoma californiense*) are known to breed in stock ponds in the site's vicinity and may be expected to estivate in grasslands of the site. Reptilian species observed or expected to occur onsite include western fence lizard (*Sceloporus occidentalis*), California alligator lizard (*Gerrhonotus multicarinatus*), western rattlesnake (*Crotalis viridis*), gopher snake (*Pituophis melanoleucus*), common king snake (*Lampropeltis getula*) and common garter snake (*Thamnophis sirtalis*).

This habitat provides foraging habitat for a number of birds. Bird species observed in the grassland areas and flying over the site include great blue heron (*Ardea herodias*), turkey vulture (*Cathartes aura*), red-shouldered hawk (*Buteo lineatus*), red-tailed hawk (*Buteo jamaicensis*), golden eagle (*Aquila chrysaetos*), American kestrel (*Falco sparverius*), wild turkey (*Meleagris gallopavo*), California quail (*Callipepla californica*), mourning dove (*Zenaida macroura*), great horned owl *(Bubo virginianus*), burrowing owl (*Athene cunicularia*) (observed by PNWB and the resident rancher), Anna's hummingbird (*Calypte anna*), red-breasted sapsucker (*Sphyrapicus ruber*), black phoebe (*Sayornis nigricans*), ash-throated flycatcher (*Myiarchus tuberculifer*), western kingbird (*Tyrannus verticalis*), violet-green swallow (*Tachycineta thalassina*), cliff swallow (*Petrochelidon pyrrhonota*), scrub jay (*Aphelocoma coerulescens*), yellow-billed magpie (*Pica nuttalli*), common raven (*Corvus corax*), wrentit (*Chamaea fasciata*), plain titmouse (*Parus inornatus*), chestnut-backed chickadee (*Parus rufescens*), bushtit (*Psaltriparus minimus*),

Bewick's wren (*Thryomanes bewickii*), western bluebird (*Sialia mexicana*), California thrasher (*Toxostoma redivivum*), phainopepla (*Phainopepla nitens*), spotted towhee (*Pipilo erythrophthalmus*), dark-eyed junco (*Junco hyemalis*), western meadowlark (*Sturnella neglecta*), Brewer's blackbird (*Euphagus cyanocephalus*), Bullock's oriole (*Icterus galbula*), and house finch (*Carpodacus mexicanus*). Other resident and migratory avian species expected to occur in this habitat include common poorwill (*Phalaenoptilus nuttallii*), loggerhead shrike (*Lanius ludovicianus*), American crow (*Corvus brachyrhynchos*), Say's phoebe (*Sayornis saya*), American robin (*Turdus migratorius*), savannah sparrow (*Passerculus sandwichensis*), song sparrow (*Melospiza melodia*), red-winged black bird (*Agelaius phoeniceus*), brown-headed cowbird (*Molothrus ater*), purple finch (*Carpodacus purpureus*), lesser goldfinch (*Carduelis psaltria*), American goldfinch (*Carduelis tristis*), and house sparrow (*Passer domesticus*).

Small mammalian species that are known to occur, or would be expected to occur, in the grassland habitat include the California ground squirrel (*Spermophilus beecheyi*), Botta's pocket gopher (*Thomomys bottae*), deer mouse (*Peromyscus maniculatus*), house mouse (*Mus musculus*), pocket mouse (*Chaetodipus californicus*), western harvest mouse (*Reighrodontomys megalotis*), California vole (*Microtus californicus*), and the ornate shrew (*Sorex ornatus*).

Medium-sized and larger mammals that have been observed on the site include cottontail (*Sylvilagus audubonii*), black-tailed hare (*Lepus californicus*), coyote (*Canis latrans*), native gray fox (*Urocyon cinereoargenteus*), American badger (observed by PNWB and the resident rancher), striped skunk (*Mephitis mephitis*), cougar (*Puma concolor*) (a large cougar was observed by LOA biologists in 2004), bobcat (*Felis rufus*), wild pig (*Sus scrofa*), and black-tailed deer (*Odocoileus hemionus columbianas*). Other medium-sized and larger mammals that might also be expected to occur on the site but that have not been directly observed include the Virginia opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), and introduced red fox (*Vulpes vulpes*).

2.8.3 Coast Live Oak Forest and Woodland

Oak woodlands dominated by coast live oak (*Quercus agrifolia*) occupy approximately 33 acres of the site's Phase 3 and Phase 4 areas. This habitat type is primarily associated with an ephemeral drainage in the southern portion of Phase I and with a deep ravine in the central portion of Phase 3 and northeastern portion of Phase 4. Coast live oak woodlands of the site generally have a relatively closed canopy and an understory that

is either barren or covered by dense leaf litter, with very little herbaceous vegetation present.

Oak woodlands provide extremely important foraging, denning, nesting, cover, and roosting habitat for a variety of wildlife species. Root systems and woody debris contributes to the structural complexity of the woodland floor and provide foraging areas for small mammals, as well as microclimates suitable for a variety of amphibians and reptiles. Acorns are a valuable food source for many animal species, including the acorn woodpecker *(Melanerpes formicivorus),* California quail, wild turkey, western gray squirrel (*Sciurus griseus*), and black-tailed deer. Representative animal species of oak-dominated forests include arboreal salamander *(Aneides lugubris),* southern alligator lizard, common kingsnake, ringneck snake *(Diadophis punctatus),* western screech owl *(Otus kennicottii),* scrub jay, acorn woodpecker, western bluebird, opossum, and a variety of bat species including long-legged myotis (*Myotis volans*), hoary bat (*Lasiurus cinereus*), pallid bat (*Antrozous pallidus*), and western mastiff bat (*Eumops perotis*).

2.8.4 Grain, Row-crop, Hay & Pasture, Disked/Short-term Fallowed

Dry-farmed oat hay fields occur in the footprint of the proposed plant area in the eastern portion of the main quarry site near Highway 101. Vegetation similar to that occurring in annual grasslands as described above was observed to grow along the disturbed edges of the fields. Wildlife using adjacent habitats would be expected to also use this habitat for foraging and movement activities.

2.8.5 Ephemeral Drainages and Sargent Creek

Ephemeral drainages that would be considered HCP Category 2 streams occur on all four phases of the proposed quarry project. These drainages were mapped by LOA during a delineation effort that was conducted on the greater Sargent Ranch property in 2007 but were never verified by USACE. For the most part, these ephemeral drainages were not observed to support wetland vegetation, but did exhibit a defined bad and bank and evidence of an Ordinary High Water mark on opposing banks, and, as such, would likely be considered jurisdictional by USACE, RWQCB and CDFW. Vegetation within ephemeral drainages of the site was observed to be generally similar to that found in the surrounding upland California annual grassland habitats and species utilizing drainages of the site would also be similar to those using grasslands of the site. These drainages would only have water present during and immediately after rainstorm events and would not be a significant source of seasonal water for native plants and wildlife; and they would not likely provide habitat values in excess of those provided by surrounding upland habitats.

The alignment of the access road that will be constructed for Phase 1 and 2, as currently planned, will traverse Sargent Creek in one location, as well as traverse several associated ephemeral drainages. Sargent Creek is considered a Category 1 stream under the HCP. Sargent Creek does not support significant stands of woody riparian vegetation except at the very lowest reaches near the southern boundary of the greater Sargent Ranch property; however, discrete stands of red and arroyo willows (*Salix laevigata* and *S. lasiolepis*, respectively) and mulefat (*Baccharis salicifolia*) do occur at various locations along the middle and upper reaches of the creek and the creek channel was observed to support herbaceous wetland vegetation throughout most of its reach on the Sargent Ranch property, including but not limited to, Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), slough sedge (*Carex obnupta*), spike rush (*Eleocharis macrostachya*), and tall flat sedge (*Cyperus eragrostis*).

Amphibian species observed within Sargent Creek during LOA surveys included Pacific tree frogs (*Hylla regilla*), California red-legged frogs (*Rana draytonii*) and western toads (*Anaxyrus boreas*). California red-legged frogs are known to breed in stock ponds within the creek's watershed on the greater Sargent Ranch property. Although California tiger salamanders have not been observed within the Sargent Creek watershed during surveys, they are known to breed in stock ponds to the north of Tar Creek, and stock ponds within the Sargent Creek watershed appear to support appropriate hydrology to function as breeding habitat for this species. Although western pond turtles have never been documented in Sargent Creek or nearby stock ponds, potentially western pond turtles may occur in the creek during the wet season.

Avian species observed in Sargent Creek during LOA surveys foraging for amphibian and invertebrate prey during the wet season include great blue herons (*Ardea herodias*), great egrets (*Ardea alba*), and snowy egrets (*Egretta thula*).

The creek likely functions as an important movement corridor for several mammal species that have been observed within its vicinity during LOA surveys, including but not limited to, striped skunks, gray fox, bobcat, cougar, wild pig and black-tailed deer. The creek likely also provides an important seasonal supply of water for local wildlife.

2.8.6 Movement Corridors

Ecologists and conservation biologists have expended a great deal of energy since the early 1980's advocating the protection and restoration of landscape linkages among suitable habitat patches. Movement corridors or landscape linkages are usually linear

habitats that connect two or more habitat patches (Harris and Gallager 1989), providing assumed benefits to the species by reducing inbreeding depression, and increasing the potential for recolonization of habitat patches. Some researchers have even demonstrated that poor quality corridors can still provide some benefit to the species that use them (Beier 1996).

Beier and Noss (1998) evaluated the claims of the efficacy of wildlife corridors of 32 scientific papers. In general, these authors believed that the utility of corridors was demonstrated in fewer than half of the reviewed papers, and they believed that study design played a role in whether or not given corridors were successful. Examples of well-designed studies supported the value of corridors. They believed, however, that connectivity questions make sense only in terms "of a particular focal species and landscape." For example, volant (flying) species are less affected by barriers then small, slow moving species such as frogs or snakes (Beier and Noss 1998). In addition, large mammals such as carnivores that can move long distances in a single night (e.g., cougars) are more capable of making use of poor quality or inhospitable terrain than species that move more slowly and can easily fall prey to various predators or that are less able to avoid traffic or other anthropogenic effects (Beier 1996). Therefore, it is reasonable to conclude that landscape linkages, even poor ones, can be and are useful, especially for terrestrial species.

Therefore, while the importance of landscape linkages is well demonstrated in the scientific literature, the cautionary note of Beier and Noss (1998) that consideration of context and ecological scale are also of critical importance in evaluating linkages.

Habitat corridors are vital to terrestrial animals for connectivity between core habitat areas (i.e., larger intact habitat areas where species make their living). Connections between two or more core habitat areas help ensure that genetic diversity is maintained, thereby diminishing the probability of inbreeding depression and geographic extinctions. This is especially true in fragmented landscapes and the surrounding urbanized areas as found in the rural/urban matrix along the edges of the City of San Jose.

The quality of habitat within the corridors is important: "better" habitat consists of an area with a minimum of human interference (e.g., roads, homes, etc.) and is more desirable to more species than areas with sparse vegetation and high-density roads. Movement corridors in California are typically associated with valleys, rivers and creeks supporting riparian vegetation, and ridgelines. With increasing encroachment of humans on wildlife habitats, it has become important to establish and maintain

linkages, or movement corridors, for animals to be able to access locations containing different biotic resources that are essential to maintaining their life cycles.

Healthy riparian areas (supporting structural diversity, i.e., understory species to saplings to mature riparian trees) have a high biological value as they not only support a rich and diverse wildlife community but have also been shown to facilitate regional wildlife movement. Riparian areas can vary from tributaries winding through scrubland to densely vegetated riparian forests.

A riparian zone can be defined as an area that has a source of fresh water (e.g., rill, stream, river), a defined bank, and upland areas consisting of moist soils (e.g., wetter than would be expected simply do to seasonal precipitation). These areas support a characteristic suite of vegetative species, many of which are woody, that are adapted to moister soils. Such vegetation in hills surrounding San Jose include California buckeye (*Aesculus californica*), dogwood (*Cornus* sp.), California hazelnut (*Corylus cornuta* var. *californica*), elderberry (*Sambucus* sp.), Oregon ash (*Fraxinus latifolia*), walnut (*Juglans* sp.), California laurel (*Umbellularia californica*), toyon (*Heteromeles arbutifolia*), oaks (*Quercus* sp.), and willow (*Salix* sp.).

Beier and Loe (1992) noted five functions of corridors (rather than physical traits) that are relevant when conducting an analysis regarding the value of linkages. The following five functions should be used to evaluate the suitability of a given tract of land for use as a habitat corridor:

1.) Wide ranging mammals can migrate and find mates;
2.) Plants can propagate within the corridor and beyond;
3.) Genetic integrity can be maintained;
4.) Animals can use the corridor in response to environmental changes or a catastrophic event;
5.) Individuals can recolonize areas where local extinctions have occurred.

A corridor is "wide enough" when it meets these functions for the suite of animals in the area. It is important to note that landscape linkages are used differently by different species. For instance, medium to large mammals (or some bird species) may traverse a corridor in a matter of minutes or hours, while smaller mammals or other species may take a longer period of time to move through the same corridor (e.g., measured in days, weeks and even years). For example, an individual cougar may traverse the entire length of a long narrow corridor in an hour while travel of smaller species (such as rodent or rabbit species) may best be measured as gene flow within regional populations. These examples demonstrate that landscape linkages are not simply

highways that animals use to move back and forth. While linkages may serve this purpose, they also allow for slower or more infrequent movement. Width and length must be considered in evaluating the value of a landscape linkage. A long narrow corridor would most likely only be useful to wide ranging animals such as cougars and coyotes when moving between core habitat areas.

To the extent practicable, conservation of linkages should address the needs of "passage species" (those species who typically use a corridor for the express purpose of moving from one intact area to another) *and* "corridor dwellers" (slow moving species such as plants and some amphibians and reptiles that require days or generations to move through the corridor).

While no detailed study of animal movements has been conducted for the study area, knowledge of the site, its habitats, and the ecology of the species potentially occurring onsite permits sufficient predictions about the types of movements occurring in the region and whether or not proposed development would constitute a significant impact to animal movements.

A number of reptiles, birds, and mammals may use the project site as part of their home range and dispersal movements. Creeks and drainages are known to facilitate wildlife movement, and the two creek corridors that occur in proximity to portions of the project site, i.e. Sargent Creek and Tar Creek, likely provide important movement habitat for many native wildlife species travelling north-south and east-west, respectively. Ephemeral drainages occurring within the footprints of the project, however, generally support vegetation that is undifferentiated from surrounding upland grassland habitats and are not likely to function as anything but marginal movement corridors due to lack of significant woody vegetation cover.

2.8.7 Special Status Species

Several species of plants and animals within the state of California have low populations, limited distributions, or both. Such species may be considered "rare" and are vulnerable to extirpation as the state's human population grows and the habitats these species occupy are converted to agricultural and urban uses. As described more fully in Section 3.2, state and federal laws have provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting the diversity of plant and animal species native to the state. A sizable number of native plants and animals have been formally

designated as threatened or endangered under state and federal endangered species legislation. Others have been designated as "candidates" for such listing. Still others have been designated as "species of special concern" by the CDFW. The California Native Plant Society (CNPS) has developed its own set of lists of native plants considered rare, threatened, or endangered (CNPS 2014). Collectively, these plants and animals are referred to as "special status species."

A number of special status plants and animals occur in the vicinity of the site (Figure 5). These species and their potential to occur in the study area are listed in Table 2 on the following pages. Sources of information for this table included *California's Wildlife, Volumes I, II, and III* (Zeiner et. al 1988), *California Natural Diversity Data Base* (CDFW 2014), *Endangered and Threatened Wildlife and Plants* (USFWS 2014), *State and Federally Listed Endangered and Threatened Animals of California* (CDFWCDFW 2014), and *The California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2014). This information was used to evaluate the potential for special status plant and animal species to occur onsite. Figure 5 depicts the location of special status species found by the California Natural Diversity Data Base (CNDDB) within a three mile radius of the site. It is important to note that the CNDDB is a volunteer database; therefore, it may not contain all known or gray literature records.

See the appended "Biological Evaluation" for The CNDDB map and a more detailed discussion of impacts and proposed mitigations for the biological impacts from the project.

3.0 MINING PLAN

3.1 AREA AFFECTED BY MINING

The quarry operator, Sargent Ranch Management LLC proposes to mine and perform mining operations on 317 acres of a 6,300-acre property owned by the Sargent Ranch tenants in common. The quarry property is contained in Chittenden USGS 7.5'– quadrangle; and is further identified by Santa Clara County Assessor Parcel numbers 810-38-014, 017, and 018.

The plan for mining is shown on Figure 9: Mine Grading Plan, with detailed mining plans on Figures 10 through 13 and cross-sections on Figures 14 and 15. The Plan encompasses a mining operations area eventually reaching the 317 ± acres mentioned previously. The processing, office, scales, and maintenance area covers 14 acres. Overburden and topsoil stockpile areas cover approximately 50 to 60 acres and will depend on the amount of overburden generated from mining operations. The rest of the site is intended to remain undisturbed by mining activities. Actual active surface disturbance will be kept to the minimum areas necessary for mining and processing at any time period, in accordance with the phasing plan, shown in Figure 9: Site Plan. This figure shows the maximum extent of disturbed area. Access roads may be constructed within this disturbed area and an access road from the processing plant to the Phase 1 and 2 mining sites will also be constructed along the western side of the eastern ridge of the Sargent Valley and above the Sargent Creek, as shown on figures 9a and b.

3.2 ACCESS TO THE MINING AREA

The Sargent Quarry will be accessed from the north via State Highway 101 onto Old Monterey Road. The access road will be a gated, two way road. The access route is shown on the Figure 2: Site Location Map. Northbound trucks exiting the processing area will reach Highway 101 via a new paved ranch road. An acceleration lane will be installed onto northbound 101 per Caltrans standards. All visitors must check in at the administration office, have proper safety gear, and be accompanied to any restricted areas. The property will be fenced and gated.

3.3 STARTING DATE, ESTIMATED LIFE, AND DURATION *(PRC §2772(c)(3) and PRC §2772(c)(6))*

3.3.1 Starting Date

The anticipated start date for commencing the mining operations, upon obtaining all the necessary permits, is January 1, 2018.

3.3.2 Estimated Life of the Operation

The Sargent Quarry operations are presently planned from the time of approval until approximately December 31, 2048.

3.4 OPERATION SCHEDULE AND STATE OF READINESS

3.4.1 Operating Schedule

The Sargent Quarry will be active throughout the year. The level of activity is highest during the construction season between April and October each year and lowest during the rainy season. The Quarry operation will be closed on all Sundays and holidays except for special projects that require material delivery during those times. Maintenance of equipment may be conducted on any day of the week.

3.4.2 Quarry Activities

Figure 8: Aggregate Plant Site, identifies proposed aggregate processing activity areas which includes the processing plant, shop and maintenance buildings, vehicle parking areas, bone yard (miscellaneous equipment and materials), office/scale house, stockpiles (product, overburden, and topsoil), process water pond, and storm water basins. The sand and gravel processing plant, maintenance and shop building areas are at the northeast portion of the site. The proposed well will be located in the northwesterly portion of the plant site from the quarry and is also shown on Figure 8. The vehicles used for mining will be parked near the rock processing plant and the stockpiles at the end of work hours. Aggregate stockpiles are located easterly from the processing plant and shown on Figure 8. The office/scale house is located near the entrance to the quarry.

Quarry excavation areas and overburden stockpile locations are presented on Figure 10: Mining Site Plan. Overall the quarry is anticipated to produce 40 million tons of product from the quarry mining activity areas of shown on the Plan.

3.5 DESCRIPTION OF QUARRIED MATERIAL & LEVEL OF PRODUCTION

3.5.1 Geology of the Site

The Sargent Quarry aggregate resource is a marine deposit that contains sand and gravel deposits mixed with clay and silt.

3.5.1.1 Mineral Commodity Being Mined

Sand and gravel is the primary resource being mined. The sand will be sold as various sands; and the gravel will be sold as drain rock. Clay from the overburden will also be sold as engineered fill.

3.5.1 Composition of Mined Material

The sand and gravel is mixed with clay and silt. The sand constitutes about 50%, gravel is about 25%, and the remainder is made up of clay and silt. The clay and silt materials do not meet construction aggregates specifications. These materials initially will be placed in the overburden stockpile areas and the majority subsequently will be disposed of in the quarry, either graded onto the final quarry slopes as part of reclamation activities or sold as engineered fill. Bulldozers, front-end wheel loaders, motor graders, and excavators can harvest the sand, gravel, and clay.

3.5.2 Anticipated Quantity of Materials to be Mined

The quarry is expected to yield a total of 28 million cubic yards (approximately 40 million tons) of saleable aggregate materials that will be mined over the life of the operation. Final mining grading contours are shown in Figures 9 through 15. Estimated quantities of product (sand and gravel) and overburden excavated during mining operations are tabulated as follows:

Table 3 Mining Quantities			
Mining Phase	**Product (cy)**	**Overburden (cy)**	**Excavation Total**
Phase 3	9,650,000	3,325,000	13,300,000
Phase 4	12,375,000	4,200,000	16,800,000
Phase 1	3,400,000	1,500,000	5,000,000
Phase2	2,565,000	900,000	3,565,000
Total	27,990,000	9,925,000	38,665,000

3.5.3 Production Level *(PRC §2772(c)(2))*

Annual estimates of production vary from year to year based on market demand. Rock products are excavated and processed on a daily basis to build up reserves. The maximum production level is approximately 1,500,000 tons per year and the average about 1,000,000 tons per year. Production will be increased or decreased to meet market demand.

3.5.4 Anticipated Quantity of Topsoil and Overburden

Approximately 525,000 cubic yards (cy) of topsoil and 9,925,000 million CY of overburden will be excavated over the life of the project. The topsoil and overburden will be stockpiled in the locations shown on Figures 12 and 13. Phase 3 topsoil and overburden quantities are estimated to be 333,000 CY and 2,650,000 CY, respectively. Phase 3 topsoil and overburden will be placed in a canyon near the Phase 1 excavation area. A small amount of overburden used to construct a visual screening berm as shown on Figure 8 at the processing plant site will be placed at the outset of mining.

The Phase 4 overburden quantity of 5,000,000 CY will be placed in the Phase 3 mining area. A portion of the Phase 4 overburden will be stockpiled in Phase 3 for future reclamation of Phase 2. The Phase 4 topsoil quantity of 350,000 CY will be stockpiled temporarily (shown on Figure 12) north of the Phase 3 pit.

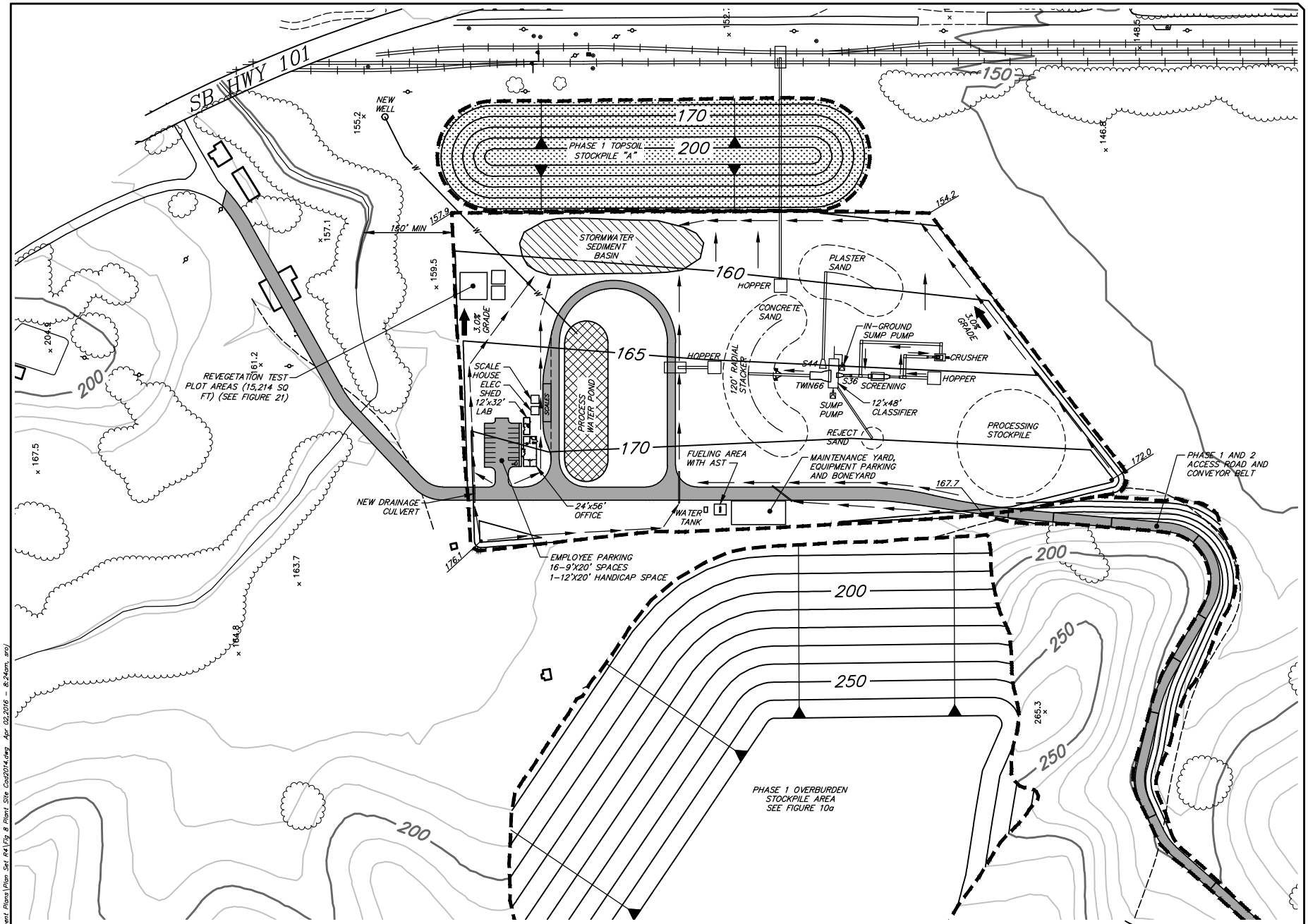
The majority of the Phase 1 overburden quantity of 1,500,000 CY will be use to build the visual screening berm and the rear berm around the processing area.

The Phase 2 overburden of will be placed in the Phase 1 pit and the Phase 2 topsoil will be used in the revegetation of the Phase 1 pit.

Final fill elevations of each of the excavated pits will be determined at the completion of reclamation when the volume of available stockpiled overburden and topsoil can be measured. Actual volume of overburden and topsoil stockpiles will vary based on geologic and market (sales of overburden) conditions. Presently it is estimated that 20% (1,000,000 cubic yards) of the overburden will be sold as fill over the life of the quarry and anticipated reclamation finish grades shown on Figures 17 and 18 reflect this. Both topsoil and the overburden will be used to resoil the areas that are revegetated, shown on Figures 23: Revegetation Plan. The designated location for topsoil and overburden stockpiles are shown on Figures 11 through 13 that depict the mining plans for the 4 phases of the project.

3.5.5 Mine Plan and Mined Topography *(PRC §2772(c)(6*

Existing topography and conditions at the site are shown on Figure 3: Existing Conditions. The planned mining and grading activities shown on Figures 10 through 16 are based on the geotechnical criteria in Appendix D. The topography of the reclaimed site (Figures 17 and 18) is designed to create a safe condition for the resumption of cattle grazing. The reclaimed site will include a maximum slope gradient of 3:1 (horizontal to vertical). The final reclaimed slopes will be the same gradient or less as the steeper slopes within Sargent Ranch.



LEGEND

- MINING LIMIT LINE
- PROPOSED GRADED ROAD WIDTH AS SHOWN
- PROPOSED STORMWATER SEDIMENT BASIN
- W — PROPOSED WATER LINE FROM OFFSITE WELL
- CREEK
- PROPOSED PROCESS WATER POND
- FLOW DIRECTION
- GRADED BROW DITCH AND DIRECTION OF FLOW
- 800 — EXISTING GROUND CONTOUR AND ELEV.
- 800 — PROPOSED GROUND CONTOUR AND ELEV.
- TOPSOIL STOCKPILE AREA

NOTE: FOR FULL SIZE PLAN REFER TO APPENDIX _.

CONTOUR INTERVAL: 10'

GRAPHIC SCALE

250 0 125 250 500

1 inch = 250 ft.

triad/holmes assoc
civil engineering
land surveying
MAMMOTH LAKES
BISHOP
REDWOOD CITY
SAN LUIS OBISPO

PREPARED & SUBMITTED BY:

DATE:

REVISIONS:	BY:

PREPARED FOR:

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894 SAN ANTONIO RD
PALO ALTO, CA 94303

SARGENT RANCH QUARRY
AGGREGATE PLANT SITE PLAN

DATE	04/01/2016
SCALE	AS SHOWN
DRAWN	SCR
JOB NO.	01.4020
DWG	FIGURE 8

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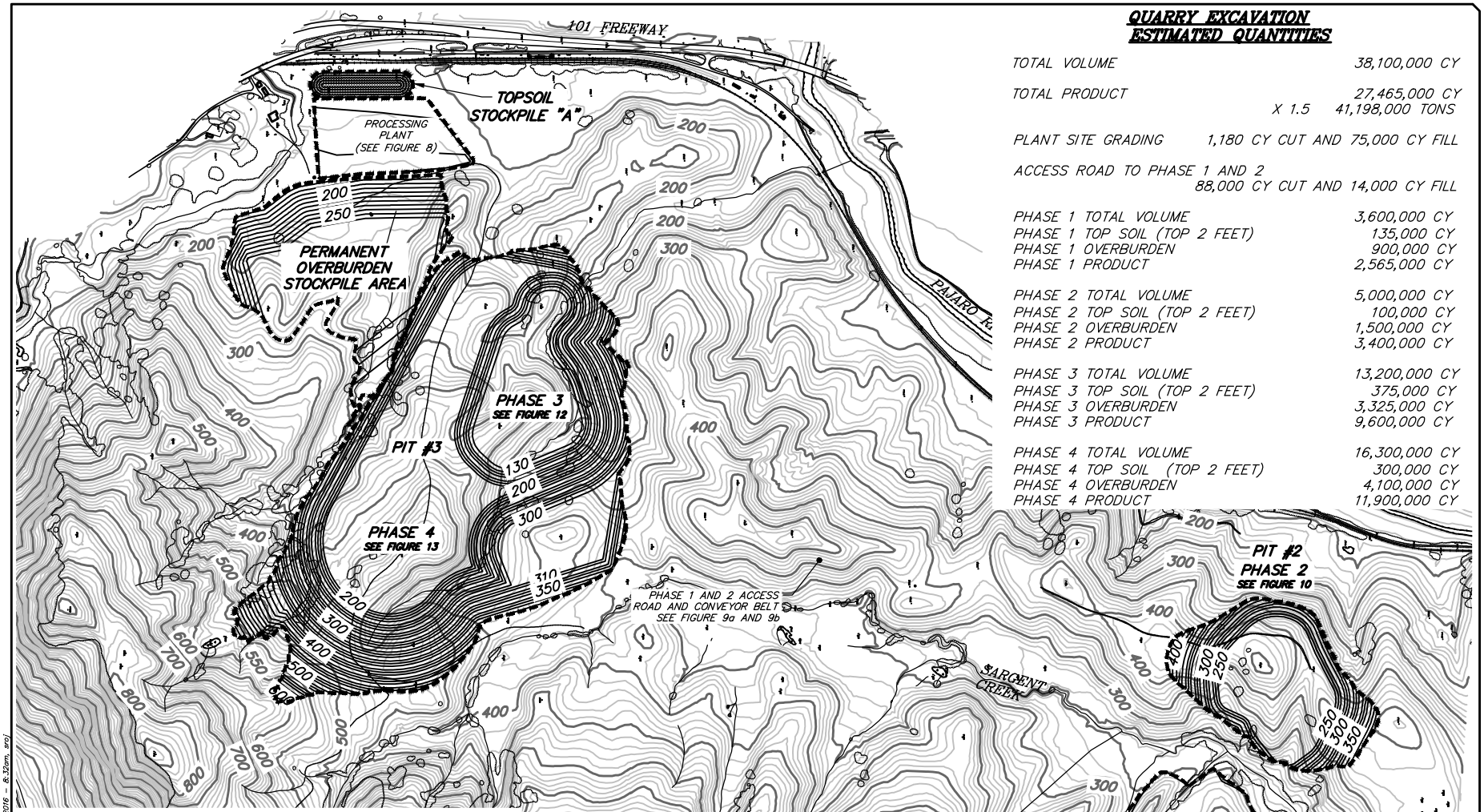

QUARRY EXCAVATION ESTIMATED QUANTITIES

TOTAL VOLUME	38,100,000 CY
TOTAL PRODUCT	27,465,000 CY
X 1.5	41,198,000 TONS
PLANT SITE GRADING	1,180 CY CUT AND 75,000 CY FILL
ACCESS ROAD TO PHASE 1 AND 2	88,000 CY CUT AND 14,000 CY FILL
PHASE 1 TOTAL VOLUME	3,600,000 CY
PHASE 1 TOP SOIL (TOP 2 FEET)	135,000 CY
PHASE 1 OVERBURDEN	900,000 CY
PHASE 1 PRODUCT	2,565,000 CY
PHASE 2 TOTAL VOLUME	5,000,000 CY
PHASE 2 TOP SOIL (TOP 2 FEET)	100,000 CY
PHASE 2 OVERBURDEN	1,500,000 CY
PHASE 2 PRODUCT	3,400,000 CY
PHASE 3 TOTAL VOLUME	13,200,000 CY
PHASE 3 TOP SOIL (TOP 2 FEET)	375,000 CY
PHASE 3 OVERBURDEN	3,325,000 CY
PHASE 3 PRODUCT	9,600,000 CY
PHASE 4 TOTAL VOLUME	16,300,000 CY
PHASE 4 TOP SOIL (TOP 2 FEET)	300,000 CY
PHASE 4 OVERBURDEN	4,100,000 CY
PHASE 4 PRODUCT	11,900,000 CY

DISTURBANCE AREAS

PIT # 1 – 76.60 ACRES (INCLUDES ROAD TO PITS 1 AND 2, PLANT SITE, AND TOPSOIL STOCKPILE "A")

PIT # 2 – 31.95 ACRES

PIT # 3 – 153.48 ACRES

PERMANENT OVERBURDEN STOCKPILE – 42.6 ACRES

NOTES:
1. FIGURES 10–13 PROVIDE MORE DETAILED INFORMATION BY MINE PHASE.
2. REFER TO FIGURES 14 AND 15 FOR MINE CROSS SECTIONS.
3. FOR FULL SIZE PLAN REFER TO APPENDIX _.

LEGEND

- MINING LIMIT LINE
- PROPOSED GRADED ROAD
- PROPOSED STORMWATER SEDIMENT BASIN
- W — PROPOSED WATER LINE FROM OFFSITE WELL
- CREEK
- PROPOSED PROCESS WATER POND
- VEGETATION
- TOPSOIL STOCKPILE AREA
- 800 EXISTING GROUND CONTOUR AND ELEV.
- 800 PROPOSED GROUND CONTOUR AND ELEV.

CONTOUR INTERVAL: 10'

GRAPHIC SCALE

1200 0 600 1200 2400

1 inch = 1200 ft.

triad/holmes assoc
civil engineering
land surveying
MAMMOTH LAKES
BISHOP
REDWOOD CITY
SAN LUIS OBISPO

PREPARED & SUBMITTED BY:

DATE:

REVISIONS:	BY:

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SARGENT RANCH QUARRY
MINING SITE PLAN

DATE	04/01/2016
SCALE	AS SHOWN
DRAWN	SCR
JOB NO.	01.4020
DWG	FIGURE 9

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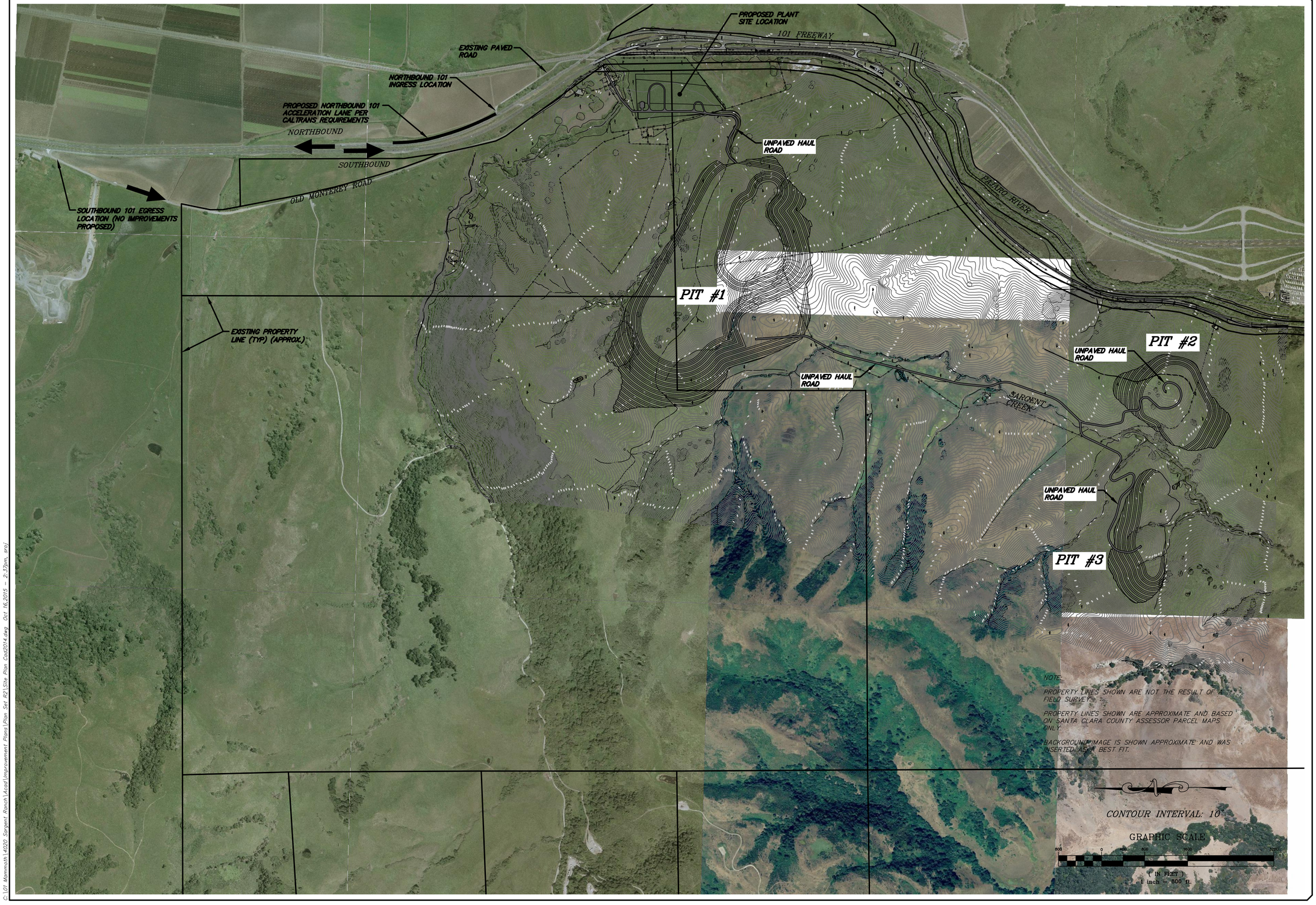

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MAMMOTH LAKES
BISHOP
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PREPARED & SUBMITTED BY:

DATE:

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SARGENT RANCH QUARRY
SITE PLAN

DATE	06/09/2015
SCALE	AS SHOWN
DRAWN	SR
JOB NO.	01.4020
DWG	C1

3.6 DESCRIPTION OF MINING METHODS AND ON-SITE PROCESSING

3.6.1 Description of Mining Plan

The Sargent quarry aggregate reserve is an alluvial deposit that has been lifted by geological force to elevations up to 625 above sea level. The primary focus of the mining plan is to excavate the sand and gravel resource from the designated quarry areas. Mining operations will occur in the site between the elevation of 625 and 130 msl. Material will be hauled from the mined hillside and pit areas by truck or conveyor to the processing plant. All processing of mined materials will be done on-site. Overburden or unsalable material for aggregate construction purposes will be stockpiled and sold as engineered fill or used in the final reclamation grading of fill slopes at mining's conclusion in each phase.

Typical mining includes the development of an open pit with 2:1 side walls and 10-foot-wide benches every 30 vertical feet. These geotechnical criteria will maximize the harvest of the mineral resource as indicated on Figures 10, 12 and 14. The final reclaimed fill slopes will have varying gradients of 3:1 or flatter (Figures 13 and 15). The mine and reclamation grading configurations are supported by the slope stability analysis in Appendix D. Surplus water, if any, will be stored on-site in a pond located in the pit area and used for dust control.

Mining of the site will occur in four phases starting with Phase 1 located at the southerly end of the Sargent Valley. Phase 1 and Phase 2 pits may be excavated at the same time depending on the mine operator. A 1.6 mile-long overland conveyor with a maintenance road will be constructed on the west side of the eastern ridge of the Sargent Valley. In general, the conveyor pathway will stay upland from the Sargent Creek will be constructed to be approximately 25 feet wide. Excavation of the pits in Phases 1 and 2 will remove the upper 200 feet that is the anticipated limit of aggregate resource and will start at the top of each hill located in each phase. The majority of overburden from Phase 3 will be used to build the visual screening berm located near the Highway 101 Sargent overcrossing. The remaining Phase 1 and all of the Phase 2 overburden will be stockpiled in the area behind the plant site. Topsoil from both Phase 1 and 2 will be stockpiled in the area shown on Figure 10a.

Phase 3 mining will consist of excavating a portion of the quarry area approximately 2,400 feet in length to a maximum depth of 250 feet. During mining operations a road

will be graded from the mining area down the southerly side of the hillside as shown on Figure 9a and b. This road will be used to access the plant and an overburden stockpile area. Operations in the Phase 3 mining area will excavate the upper 220 feet of the northeasterly trending ridge that is the anticipated limit of viable aggregate resource. To ensure that the more visible mining areas at the ridge are reclaimed as soon as possible, the easterly portion of Phase 3 will be reclaimed at the time Phase 4 is being mined. Overburden excavated from Phase 3 will be stockpiled in the northeastern corner by the plant and northwestern area as shown on the Phase 3 Mining Plan presented on Figures 10a and 11. Phase 4 mining will commence once Phase 3 mining has been completed. A mining operations road will be graded to the top of the Phase 4 mining area near an elevation of 600 feet located in the westerly most area of the Phase 4 mining disturbance. The 2:1 temporary mining operations slope will be excavated down to the Phase 4 pit level of 200 feet. Operations in the Phase 4 mining will continue excavation of the northeasterly trending ridge begun in Phase 3. Excavation of the ridge down to the pit level will remove the upper 250 feet of the ridge that is the anticipated limit of viable aggregate resource in that portion of the quarry. Phase 4 overburden will be placed onto the northern, eastern, and western temporary slopes to create the permanent slope of 3:1. The overburden will also be placed in the Phase 3 pit. The Phase 4 Mining Plan is presented on Figure 13.

3.6.2 Mining Method

The Sargent Quarry will be an open pit quarry. The areas to be excavated will be cleared of vegetation, with the topsoil and overburden removed and stockpiled separately in designated locations shown on Figure 8: Aggregate Plant Site Plan. Initial grading of any area should, when feasible, be conducted during the dry season from approximately April 16 through October 14. Should grading occur during the wet season, appropriate Best Management Practices would be utilized, including the use of coir wattles, silt fences, sediment traps, and stilling basins.

The mineral resources will be removed using bulldozers, excavators, graders, and front-end loaders. No blasting will be required. Mined slopes will be constructed with a temporary gradient no greater than 2:1 or flatter with 10-foot-wide benches every 30 vertical feet. The benches will have a longitudinal grade of no less than 4 percent and no more than 12 percent. The mining operation involves boundary staking, vegetation removal, and topsoil and overburden salvage, harvesting, processing, and shipping as described below. The northern portion of the quarry during Phase 3 and 4 will mine the ridge located between the ephemeral drainages to a depth of 400 to 450 feet and will be graded to slope at 2:1 with 10-foot-wide benches every 30 vertical feet. The

northwesterly corner of the mined area will include mining the ridge of the bluff along with the removal of a knob to a depth of 250 feet. The southern portion of the quarry will be mined to a quarry floor of approximately 900 feet in width that will be graded to have a cross slope of about 5 to 7 percent for the westerly 100 feet. The rest of the floor will be mined to slope at 4:1 to the northeast corner of the floor.

3.6.3 Grading Control

The boundaries of the mining area will be staked prior to beginning excavation in each new mining area. Staking identifies the top edge and lateral limits of the excavation. Staking also identifies areas for topsoil salvage.

3.6.4 Topsoil Salvage

Topsoil removal is done at the outset of each mining increment. As mining proceeds, topsoil will be stockpiled (as shown on Figure 8) for later use in re-soiling the final reclaimed benches, slopes, and quarry floor. About 525,000 CY of topsoil will be salvaged during the life of the quarry. The soil fines removed during the wet process at the processing plant are also an ongoing source of planting material. The soil fines and overburden will be used as soil materials to supplement the topsoil. All three soil materials will be amended if the Test Plot planting program indicates a need for amendments. The stockpiles of overburden, topsoil, and soil fines shall be managed to prevent erosion and will be clearly identified with signs.

3.6.5 Harvesting

Bulldozers and front-end wheel loaders are used to excavate the sand and gravel deposits. Scrapers or haul trucks will be used to transport the native pit material to the aggregate plant where it will be processed, washed, and sorted into product piles.

3.6.6 Contour Grading

Grading control of the mining and adherence to the mining plan will be the responsibility of the quarry manager and his direction to the quarry employees. The quarry manager will give direction to the equipment operators. The final contours will have smooth transition to existing grades, rather than abrupt, engineered transitions at the native slopes.

3.6.7 Excavation Equipment and Technique

Topsoil and overburden will be removed by bulldozers and pushed downslope. Topsoil will be stockpiled for later reuse. Bulldozers, excavators, scrapers, and front-end wheel loaders will remove overburden, sand, and gravel. Overburden will be stockpiled for use as on-site fill for the earth buttresses and in the pit and basins, for re-soiling the reclamation planting areas, and/or for sale as engineered fill. Loaders, motor graders, and trucks will be used to transport topsoil, overburden, sand, and gravel from the harvest areas using temporary access roads. Conveyors may also be used to move the excavated materials from the harvesting area to the rock processing plant.

3.6.8 Mid-Slope Benches

Runoff from the quarry slopes will be directed into interceptor ditches on the benches and then into either side collector ditches or a lined ditch that carries the water to collector ditches on the quarry pit. After final grading configuration of each bench has been achieved, runoff from the quarry slopes will be directed into interceptor ditches on the benches and proceed into drop inlets flowing into over side drain culverts. A typical section is shown on Figure 16. Ditches at the toe of the quarry slopes will carry storm water to the basins/pit. Each bench will be constructed with a minimum 4 percent back slope to prevent runoff from flowing over the quarried slopes.

The collector, interceptor ditches, drop inlets, and over side drain culverts will be constructed after the final reclamation grading configuration of each bench has been achieved. All of the benches will be a minimum of 10 feet wide. The benches will intercept loose rock that may come off the slope. The benches will minimize the chance of slope erosion or weakening of the slope resulting from runoff saturation.

3.6.9 Fill Buttresses

The mined 2:1 cut slopes will be overlain with fill buttresses using the overburden and topsoil. The buttresses will have a maximum gradient of 3:1 with 1-3 foot benches in areas where oak trees will be planted every 30 vertical feet as shown on Figures 18a and b: Reclamation Cross-Sections. The reclamation benches will be sloped inward to collect runoff with ponding areas around oak tree plantings. The fill buttresses shall consist of compacted crushed rock material, 6 inches in maximum size, placed in 8-12 inch lifts and compacted using a large self-propelled compactor to at least 95 percent relative compaction in accordance with ASTM D1557 Test Standard. The upper 12

inches may be granular soil material suitable to support plant growth, including a 6 inch layer of topsoil.

3.6.10 Drainage from the Quarry

The quarry will be graded to achieve positive drainage. Storm water falling on the quarry floor will be directed into drainage ditches and swales, and conveyed to the pit and basins (Figure 16: Mine Drainage Plan). These ditches will be maintained during mining and relocated as mining moves into new areas. Runoff from the quarried slopes and benches will always be directed down to the quarry floor through drainage ditches. Energy dissipaters will be located at the base of the slope where the runoff will flow into ditches that drain into the pit and basins. Runoff from the quarry slopes will join runoff from the quarry floor in the pit and basins. The basins will retain storm water until it percolates into the ground. In the unlikely chance that the amount of runoff exceeds the capacity of the basin then the basin will discharge. However, since the storm water was detained in the basin, the sediments will have settled before the water leaves the site. The final number and configuration of the permanent sediment basins are shown on Figures 13 and 15 and 22, Reclamation Drainage Plan.

3.6.11 Erosion Control

The combination of planned drainage, revegetation improvements, and management of stockpiles control erosion during mining and reclamation. Construction of benches, interceptor and collector ditches, and energy dissipaters at the base of slopes; installation of culverts, drop inlets, and over side drain pipes' and the use of sediment basins shown in Figure 16: Mining Drainage Plan will minimize the opportunity for runoff to concentrate and cause erosion. The long-term overburden pile will be seeded and have coir wattles placed on the slope for erosion control. During reclamation and afterwards (once mining ceases), drainage ditches and sediment basins (Figure 22: Reclamation Drainage Plan), combined with revegetation and erosion control measures, will provide appropriate sediment and erosion control. Revegetation with grassland, herbaceous species, and trees will bind the soil particles together and break up the erosion energy of raindrops. Temporary erosion control measures to be implemented in conjunction with revegetation efforts include the use of coir wattles strategically placed on the fill slopes every 20 vertical feet. Stockpiles at the processing plant will be managed for wind and erosion to control erosion and sediments that may contribute to silt build-up in the sediment basin. Temporary erosion control measures to be used on the stockpiles during the rainy season may include surrounding the stockpiles with devices such as coir wattles or silt fences. Other measures may include constructing drainage ditches that collect storm water from the stockpiles and directs the flow into

one of the sediment basins and pits. Topsoil stockpiles that are not going to be used in the near-term will be hydro seeded.

3.6.12 Final Reclamation Grading and Drainage Plan

The final reclamation grading configuration, drainage ditches, and basins are shown on the Final Reclamation Plans on Figures 13 and 15 and on the Reclamation Drainage Plan on Figure 22. Figures 19 and 20 contain representative cross sections through the site showing both mined and final reclamation grades, as well as drainage details.

3.6.13 Shipping

Front-end loaders are used for loading the rock material directly into haul trucks. Haul trucks typically have a tonnage capacity of 20 to 25 tons (average 23 tons per load). Alternatively, an overland conveyor may be used to transport material from the mining site to the plant for processing.

3.6.14 Detailed Description of Mining Phases

Mining phases are described below and shown on Figures 10 through 15. Reclamation grading, revegetation, and drainage are illustrated on Figures 13 and 15. Some mining and reclamation operations will be performed concurrently.

3.6.15 Phase 1 and 2 – Detailed Description

Setting up the new quarry operation will require installation of acceleration and deceleration lanes on Highway 101. At the new operations area, a rock processing plant with a process water pond will be set up as well as office, scale and maintenance buildings, bone yard, stockpiles, and an unpaved equipment parking area. A sediment basin will be constructed to receive all surface water from the areas disturbed by mining via drainage ditches and swales. A new well will be drilled and used as a source of water. The operations area is presented on Figure 8: Aggregate Plant Site Plan. The first phase of mining work starts with stripping away surface vegetation along with removing the topsoil and overburden in separate layers and stockpiling them separately. The locations of these stockpiles are indicated on Figure 10a. As sand and gravel are excavated from the Phase 1 area, it will be placed onto the conveyor and transported to the plant. The conveyors path is shown on figure 9a and b.

Phase 1 and 2 mining is shown on Figure 10. These deposits are in two hills on both the east and west side the Sargent Creek. An overland conveyor belt with a maintenance

road will be constructed through the Sargent Valley, primarily staying on the west side of the creek and out of the Sargent Valley. An approximate total of 7,500,000 cubic yards will be excavated from Phases 1 and 2. Mining in Phases 1 and 2 is expected to take approximately 10 – 13 years. No visual impacts will occur from these phases as they are located in a region of the mining site that is entirely hidden from view from public vantage points.

These phases of mining will commence with stripping away surface vegetation while removing topsoil and overburden in separate layers and stockpiling them separately in the from and rear berms located around the plant area. The detailed mining plan is show on figure 10. The conveyor belt will be used to transport both overburden and sand and gravel.

Revegetation Test Plots will be set up before or at the beginning of Phase 1 and will be located near the office in an area that will not be disturbed by mining activities.

3.6.16 Phase 3 - Detailed Description

Phase 3 mining is shown of figure 12. Hills to be mined will be mined from east to west creating a disappearing hillside effect. Temporary 2:1 slopes with 10 foot benches every 30 feet will be constructed as part of mining; the final slope configuration of the Phase 3 mining area will use overburden to backfill the slopes to 3:1 without benches. Once overburden placement operations are completed in Phase 3, the slopes, and overburden stockpile area will be revegetated by either hydro seeding, drill seeding, or imprint seeding except for a small area to be used as a Phase 4 stockpile area (See Figure 12 for location). The revegetation program is shown on Figure 20: Revegetation Plan, and the plants and seed mixes are described on Tables 3 through 7.

3.6.16 Phase 4 – Detailed Description

The second phase of mining will commence with stripping away surface vegetation along with removing topsoil and overburden in separate layers and stockpiling them separately. The topsoil will be placed on the overburden plateau area created during Phase 3 overburden placement. Phase 4 overburden will be placed in the Phase 3 pit and also used to create the permanent slopes of 3:1 in the easterly portion of Phase 3. Once the overburden has been placed from Phase 4, the stockpiled Phase 3 topsoil will be placed on the easterly slopes and in the pit. Any unused soil will be stockpiled in the westerly portion of the Phase 3 pit utilized later in reclaiming the Phase 4 mining area.

As rock material (sand and gravel) are excavated from Phase 4 area slopes, it will be pushed down the quarry face and placed into a truck or onto a conveyor; or the material harvested from the quarry pit will be transported to the plant by truck or conveyor. Temporary slopes and benches will be constructed as part of mining; the final slope configuration of the Phase 4 mining area will be constructed at the end of Phase 4 mining.

At the beginning of Phase 4, the final reclamation grading of Phase 3 will be completed per the grading configurations shown on Figures 10, 11, 15, and 16. In addition the final drainage ditches on the benches will be installed while these reclaimed slopes and benches are completed. A small landslide identified in the Slope Stability Report, by Sierra Geotechnical, will be removed prior to the commencement of the Phase 4 excavation. Final reclamation work in the Phase 3 area may include installation of an irrigation system to water the oak tree seedlings. However, irrigation will only be installed if the Test Plot planting program determines that supplemental water improves the survival rate of the oak trees. During Phase 4, the Phase 3 area will be revegetated after final reclamation grading; it will include hydro-seeding the slopes with a gradient of 3:1 or more, flatter slopes and benches, and planting oak tree masses in designated locations on the reclaimed benches. The revegetation program is shown on the Revegetation Plan on Figure 16, and the plants and seed mixes are described on Tables 3 through 7. All of the sediment basins, as shown on Figure 9, will remain in place during mining to provide sediment control.

When mining is completed in the Phase 3 and 4 areas, final reclamation of the quarry will commence in accordance with Figures 17 through 20. The stockpiled overburden and topsoil will be used to reclaim the Phase 3 and 4 slopes, benches, and quarry floors. The remaining balance soil materials will be used to fill the quarry pit to an elevation at or below the surrounding grade with the final elevation depending on the amount of available fill material. The final drainage ditches on the benches will be installed as these reclaimed slopes and benches are completed. Final reclamation work in the Phase 3 and 4 areas may include installation of an irrigation system to water the oak tree seedlings. All areas disturbed by mining during Phases 3 and 4 will be revegetated after final reclamation grading which will include hydro-seeding the slopes and benches, and planting oak tree masses in designated locations on the benches. The access road to phase 1 and 2 along the Sargent Creek may be left in place to access the site during reclamation. Afterward reclamation has been successful, the access road will be removed, the bridges taken out and the roadway surface revegetated. Other un-

necessary haul roads and the quarry floor will be disked, graded to have positive drainage, resoiled, and seeded.

3.6.18 Depth of Maximum Excavation *(PRC §2772(c)(4))*

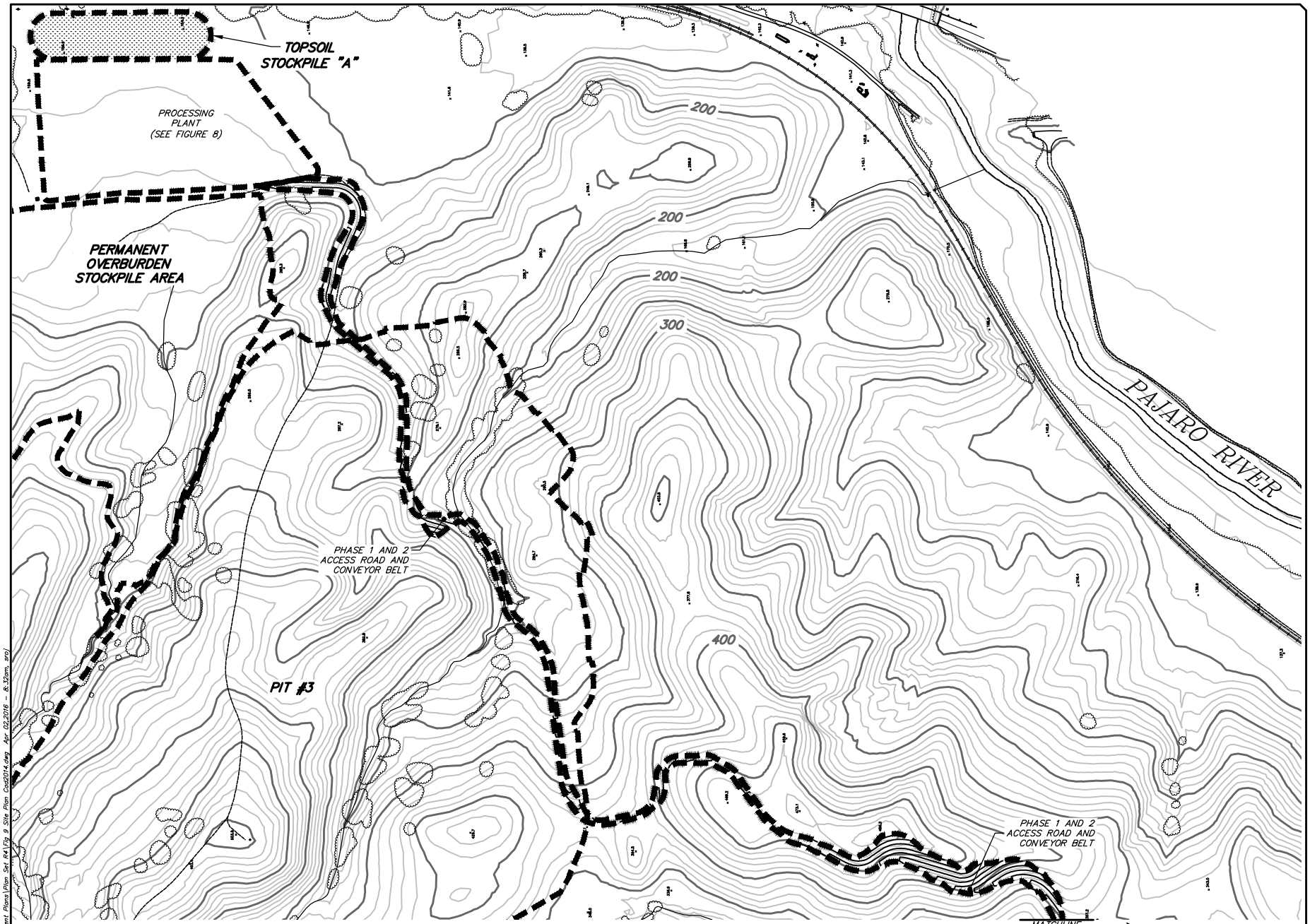
The mining depth varies, as surface elevation varies throughout the hillside site. The maximum depth of cut perpendicular to the face of the slopes is in approximately the center of the quarry, in the Phase 4 pit where the final depth of excavation is planned at a maximum depth of approximately 130 feet above mean sea level (Figure 15: Mine Cross-Sections). Final elevations of the Phase 4 pit will be revised during the final stages of mining as overburden stockpile locations are combined and relocated to the pit as indicated on Figure 17 through 21. The operation is expected to excavate to depths that are above the local groundwater table.

3.6.19 On-Site Processing

All excavated sand and gravel will be washed and screened at the rock processing plant. The rock and sand will be washed to remove fines and to produce finished products for sale.

3.6.20 Routine Maintenance Procedures

An integral part of the mining operation is the routine removal of debris from benches, removal of accumulated sediment from drainage ditches and basins, and re-grading of the haul roads. A loader, bulldozer, or bobcat may be used to remove debris from the benches if the debris impairs drainage on the bench and if removal of the debris will not impact the revegetation program on the benches. If it is necessary to remove the debris without impacting the revegetation program, then the debris will need to be removed by hand. A backhoe or an excavator is used to clean out drainage ditches and basins annually before the winter rains come and when it is observed that a ditch is impacted by accumulated debris. A road grader is used to smooth unpaved access roads. Spilled rock or soil is cleaned up by hand or by using a loader.



LEGEND

- MINING LIMIT LINE
- PROPOSED GRADED ROAD
- PROPOSED STORMWATER SEDIMENT BASIN
- W — PROPOSED WATER LINE FROM OFFSITE WELL
- CREEK
- PROPOSED PROCESS WATER POND
- VEGETATION
- TOPSOIL STOCKPILE AREA
- 800 — EXISTING GROUND CONTOUR AND ELEV.
- 800 — PROPOSED GROUND CONTOUR AND ELEV.

CONTOUR INTERVAL: 10'

GRAPHIC SCALE

600 0 300 600 1200

1 inch = 1200 ft.

C:\01 Mammoth\4020 Sargent Ranch\Acad\Improvement Plans\Plan Set #4\Fig 9 Site Plan Cad2014.dwg Apr 02,2016 - 8:12am, sroj

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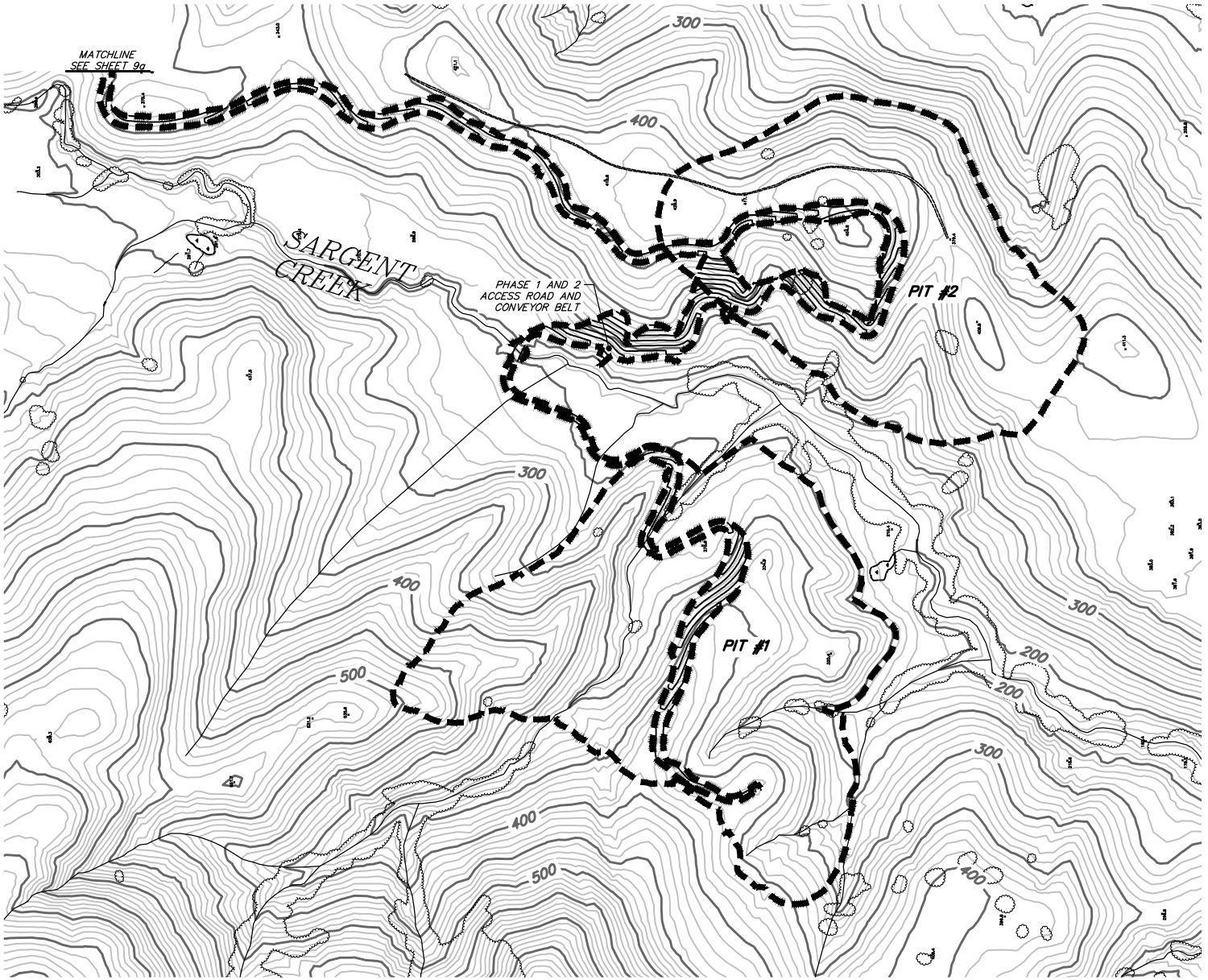
SARGENT RANCH QUARRY

PHASE 1 AND 2 ACCESS ROAD

DATE	04/01/2016
SCALE	AS SHOWN
DRAWN	SCR
JOB NO.	01.4020
DWG	FIGURE 9a



LEGEND

- MINING LIMIT LINE
- PROPOSED GRADED ROAD
- PROPOSED STORMWATER SEDIMENT BASIN
- W — PROPOSED WATER LINE FROM OFFSITE WELL
- CREEK
- PROPOSED PROCESS WATER POND
- VEGETATION
- TOPSOIL STOCKPILE AREA
- 800 — EXISTING GROUND CONTOUR AND ELEV.
- 800 — PROPOSED GROUND CONTOUR AND ELEV.

CONTOUR INTERVAL: 10'

GRAPHIC SCALE

600 0 300 600 1200

1 inch = 1200 ft.

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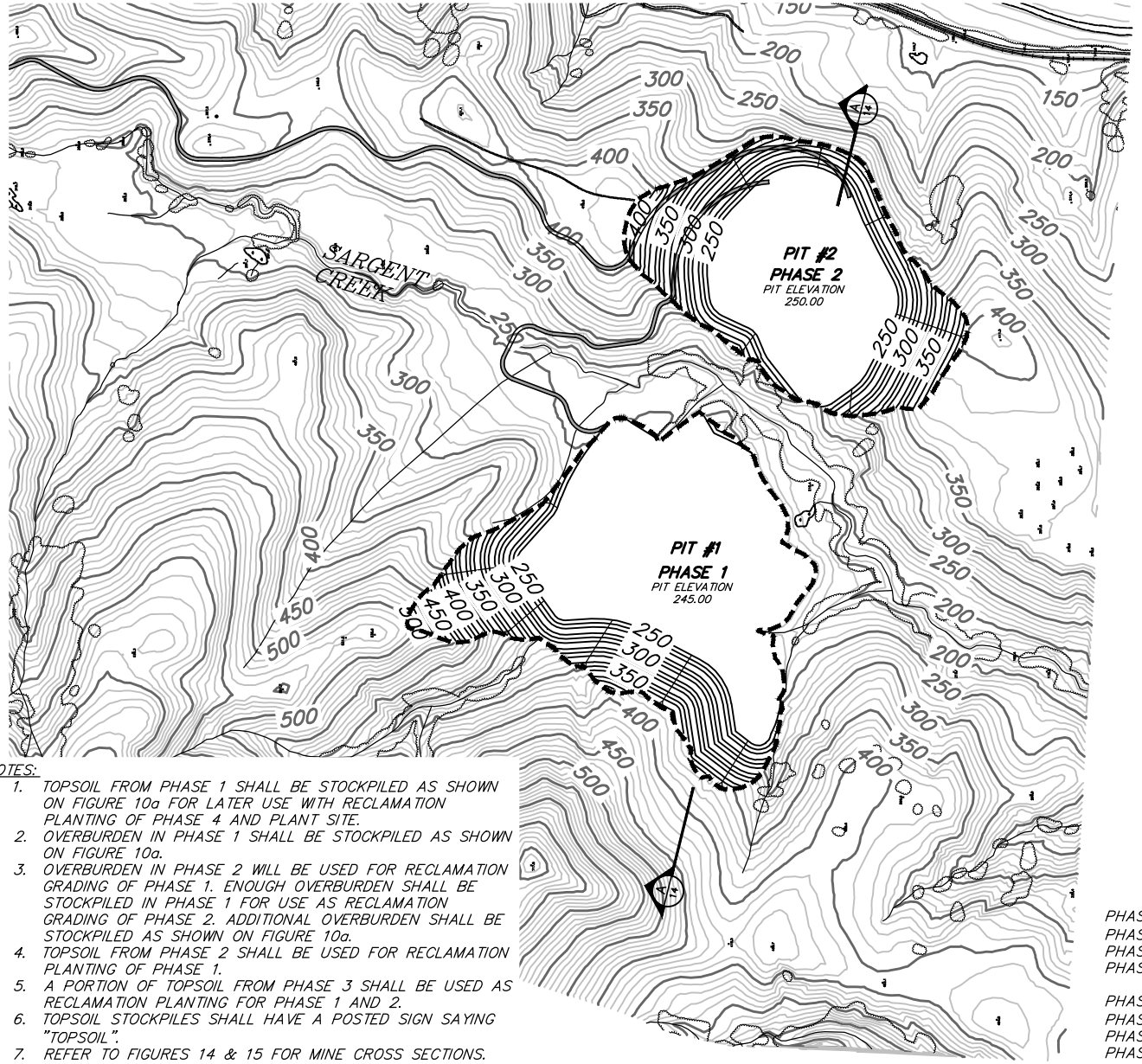
SARGENT RANCH QUARRY

PHASE 1 AND 2 ACEESS ROAD

DATE	04/01/2016
SCALE	AS SHOWN
DRAWN	SCR
JOB NO.	01.4020
DWG	FIGURE 9b



NOTES:

1. TOPSOIL FROM PHASE 1 SHALL BE STOCKPILED AS SHOWN ON FIGURE 10a FOR LATER USE WITH RECLAMATION PLANTING OF PHASE 4 AND PLANT SITE.
2. OVERBURDEN IN PHASE 1 SHALL BE STOCKPILED AS SHOWN ON FIGURE 10a.
3. OVERBURDEN IN PHASE 2 WILL BE USED FOR RECLAMATION GRADING OF PHASE 1. ENOUGH OVERBURDEN SHALL BE STOCKPILED IN PHASE 1 FOR USE AS RECLAMATION GRADING OF PHASE 2. ADDITIONAL OVERBURDEN SHALL BE STOCKPILED AS SHOWN ON FIGURE 10a.
4. TOPSOIL FROM PHASE 2 SHALL BE USED FOR RECLAMATION PLANTING OF PHASE 1.
5. A PORTION OF TOPSOIL FROM PHASE 3 SHALL BE USED AS RECLAMATION PLANTING FOR PHASE 1 AND 2.
6. TOPSOIL STOCKPILES SHALL HAVE A POSTED SIGN SAYING "TOPSOIL".
7. REFER TO FIGURES 14 & 15 FOR MINE CROSS SECTIONS.
8. REFER TO FIGURES 20–22 FOR MINE RECLAMATION CROSS SECTIONS.
9. FOR FULL SIZED PLANS REFER TO APPENDIX H.

LEGEND

- MINING LIMIT LINE
- PROPOSED GRADED ROAD WIDTH AS SHOWN
- PROPOSED STORMWATER SEDIMENT BASIN
- W — PROPOSED WATER LINE FROM OFFSITE WELL
- CREEK
- PROPOSED PROCESS WATER POND
- TOPSOIL STOCKPILE AREA
- X / XX — SECTION LINE
- 800 — EXISTING GROUND CONTOUR AND ELEV.
- 800 — PROPOSED GROUND CONTOUR AND ELEV.

QUARRY EXCAVATION ESTIMATED QUANTITIES

PHASE 1 TOTAL VOLUME	3,600,000 CY
PHASE 1 TOP SOIL (TOP 2 FEET)	135,000 CY
PHASE 1 OVERBURDEN	900,000 CY
PHASE 1 PRODUCT	2,565,000 CY
PHASE 2 TOTAL VOLUME	5,000,000 CY
PHASE 2 TOP SOIL (TOP 2 FEET)	100,000 CY
PHASE 2 OVERBURDEN	1,500,000 CY
PHASE 2 PRODUCT	3,400,000 CY

NOTE: FOR FULL SIZE PLAN REFER TO APPENDIX H.

CONTOUR INTERVAL: 10'

GRAPHIC SCALE

800 0 400 800 1600

1 inch = 800 ft.

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SARGENT RANCH QUARRY
PHASE 1 AND 2 EXCAVATION PLAN

DATE	04/01/2016
SCALE	AS SHOWN
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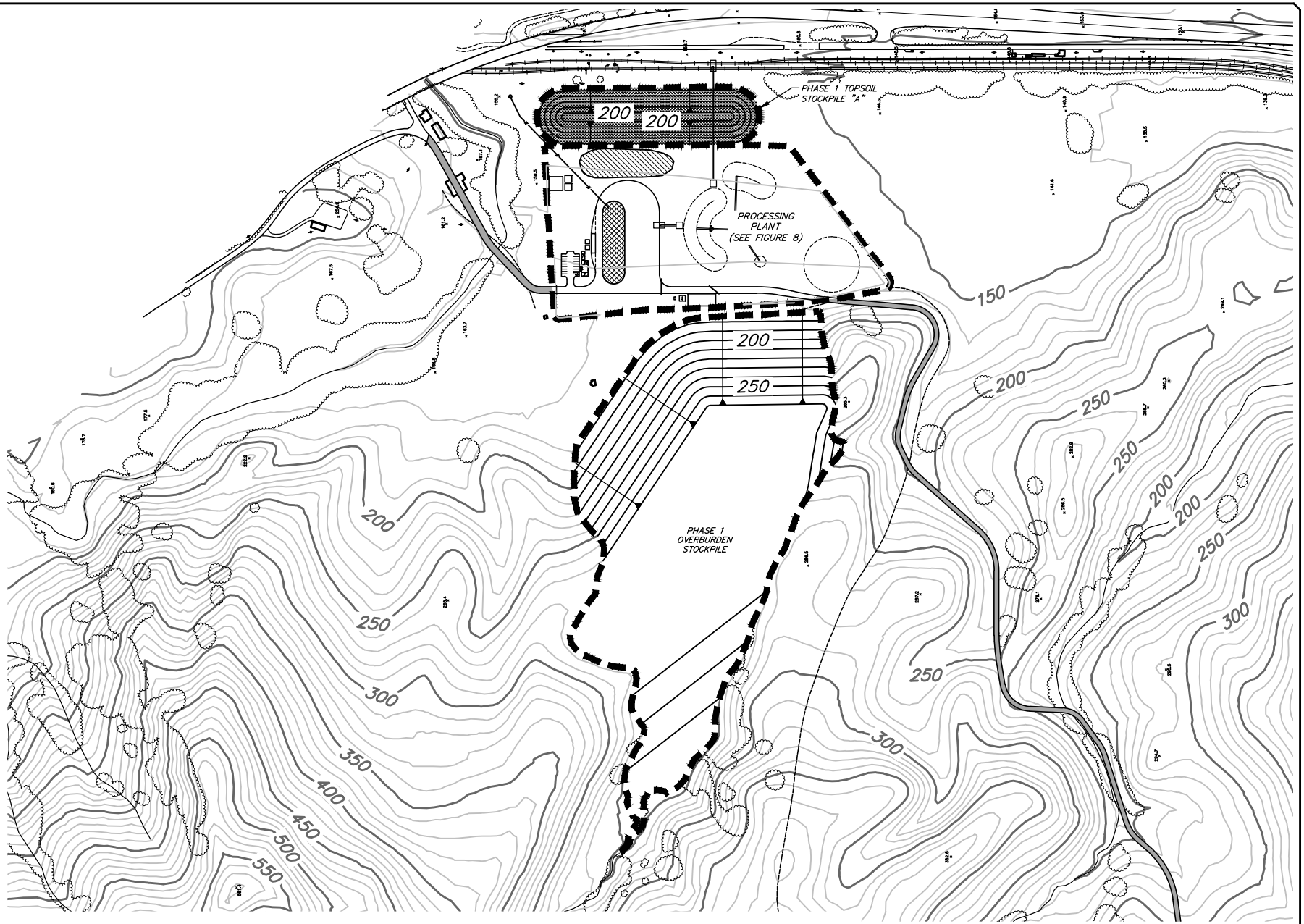
DWG	FIGURE 10

C:\01 Mammoth\4020 Sargent Ranch\Acad\Improvement Plans\Plan Set R4\Fig 10 Phase 1 and 2 Plan Cad2014.dwg Apr 02,2016 - 8:36am, srcj



LEGEND

- MINING LIMIT LINE
- PROPOSED GRADED ROAD WIDTH AS SHOWN
- PROPOSED STORMWATER SEDIMENT BASIN
- W — PROPOSED WATER LINE FROM OFFSITE WELL
- CREEK
- PROPOSED PROCESS WATER POND
- TOPSOIL STOCKPILE AREA
- X / XX — SECTION LINE
- 800 — EXISTING GROUND CONTOUR AND ELEV.
- 800 — PROPOSED GROUND CONTOUR AND ELEV.

NOTE: FOR FULL SIZE PLAN REFER TO APPENDIX H.

CONTOUR INTERVAL: 10'

GRAPHIC SCALE

1000 0 500 1000 2000

1 inch = 500 ft.

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SARGENT RANCH QUARRY

PHASE 1 AND 2 STOCKPILE AREAS

DATE	04/01/2016
SCALE	AS SHOWN
DRAWN	SCR
JOB NO.	01.4020
DWG	FIGURE 10a

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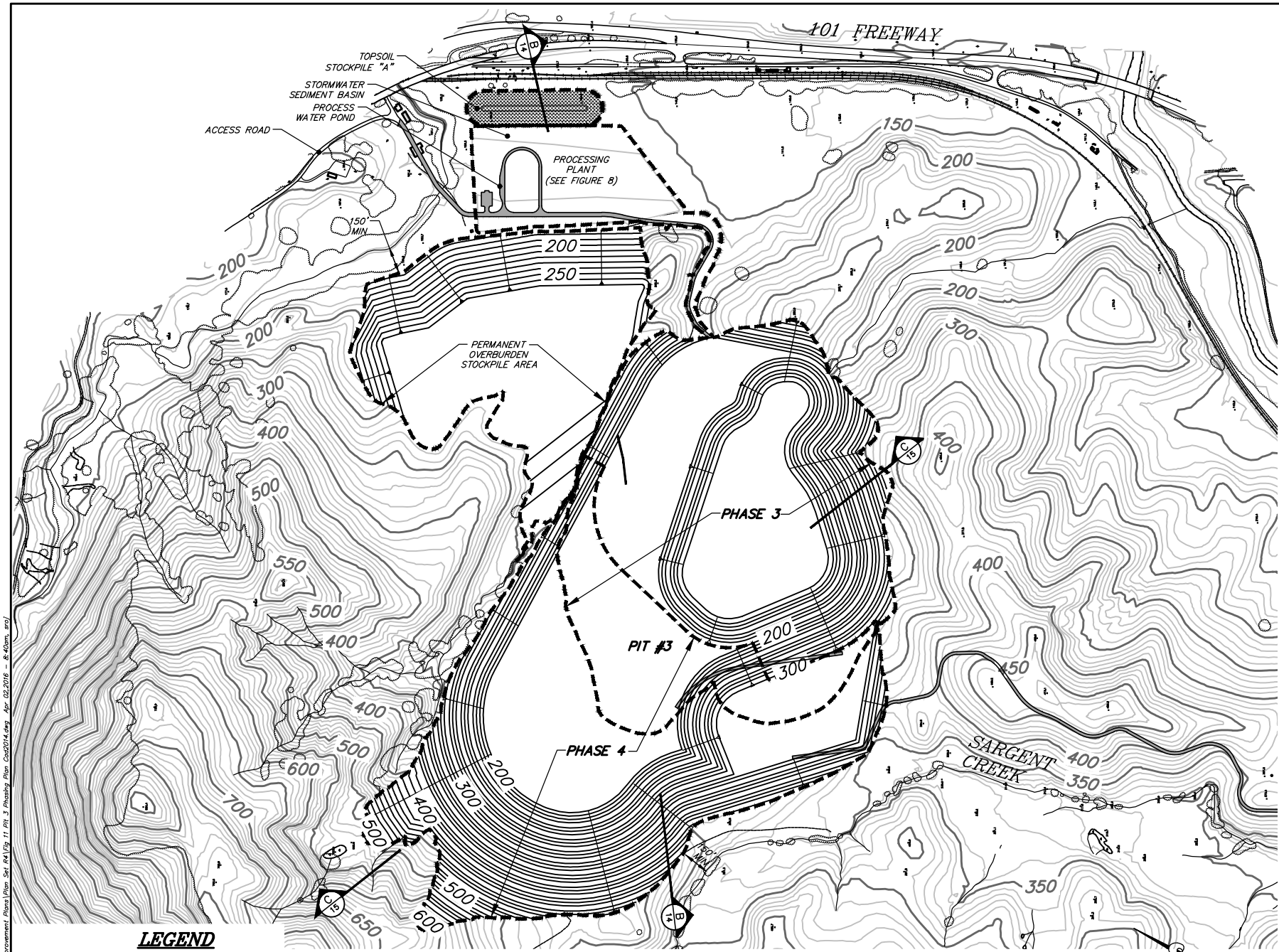

LEGEND

- MINING LIMIT LINE
- PROPOSED GRADED ROAD WIDTH AS SHOWN
- PROPOSED STORMWATER SEDIMENT BASIN
- W — PROPOSED WATER LINE FROM OFFSITE WELL
- CREEK
- PROPOSED PROCESS WATER POND
- TOPSOIL STOCKPILE AREA
- X / XX — SECTION LINE
- 800 — EXISTING GROUND CONTOUR AND ELEV.
- 800 — PROPOSED GROUND CONTOUR AND ELEV.

NOTE: FOR FULL SIZE PLAN REFER TO APPENDIX H.

CONTOUR INTERVAL: 10'

GRAPHIC SCALE

800 0 400 800 1600

1 inch = 800 ft.

SARGENT RANCH QUARRY

PIT 3 GRADING AND PHASING PLAN

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BISHOP
REDWOOD CITY
SAN LUIS OBISPO

PREPARED & SUBMITTED BY:

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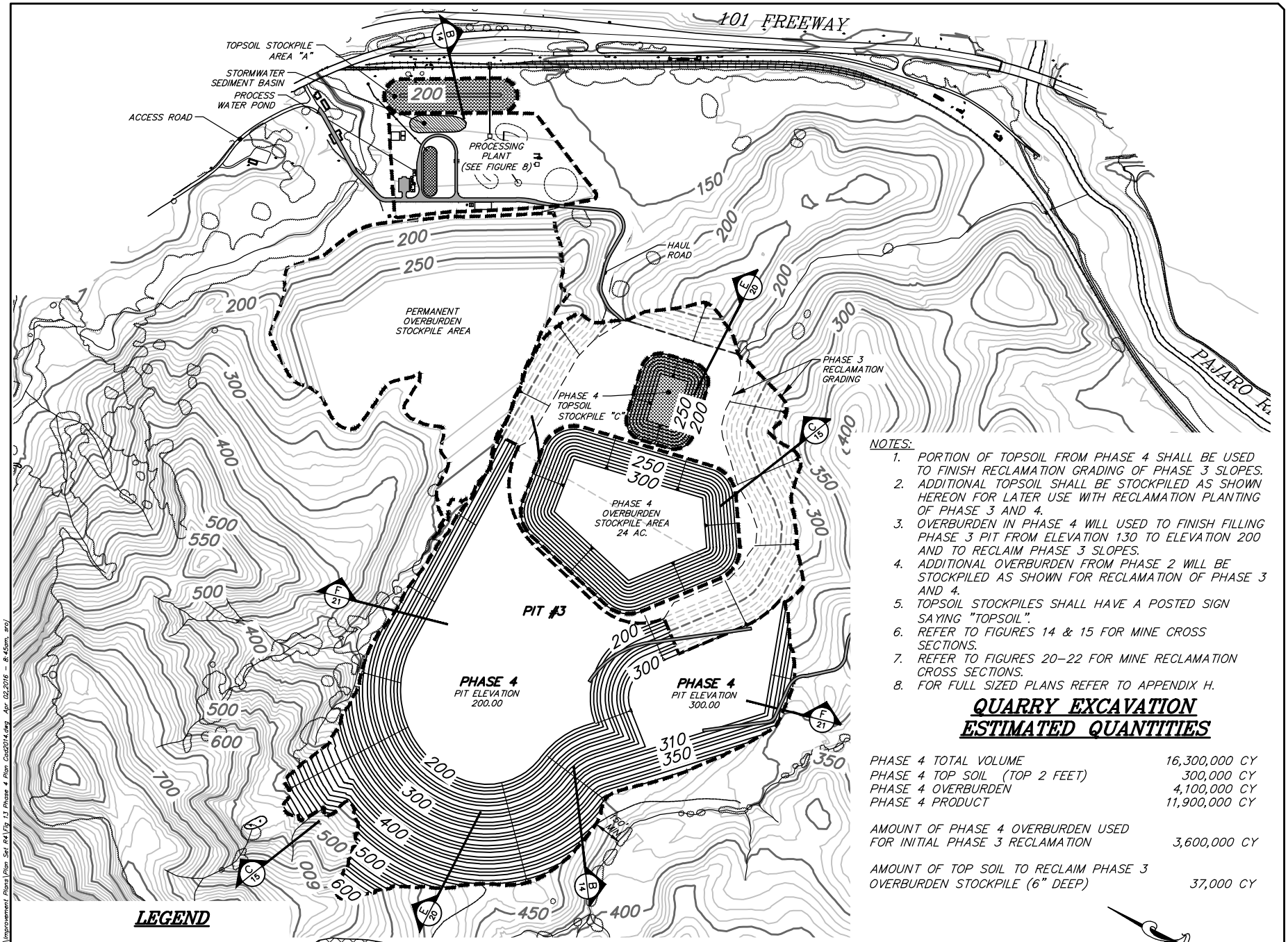
PALO ALTO, CA 94303

DATE	04/01/2016
SCALE	AS SHOWN
DRAWN	SCR
JOB No.	01.4020
DWG	FIGURE 11

C:\01 Mammoth\4020 Sargent Ranch\Acad\Improvement Plans\Plan Set #4\[Fig 11 Pit 3 Phasing Plan Col2014.dwg Apr 02,2016 - 8:40am, sro]



NOTES:

1. PORTION OF TOPSOIL FROM PHASE 4 SHALL BE USED TO FINISH RECLAMATION GRADING OF PHASE 3 SLOPES.
2. ADDITIONAL TOPSOIL SHALL BE STOCKPILED AS SHOWN HEREON FOR LATER USE WITH RECLAMATION PLANTING OF PHASE 3 AND 4.
3. OVERBURDEN IN PHASE 4 WILL USED TO FINISH FILLING PHASE 3 PIT FROM ELEVATION 130 TO ELEVATION 200 AND TO RECLAIM PHASE 3 SLOPES.
4. ADDITIONAL OVERBURDEN FROM PHASE 2 WILL BE STOCKPILED AS SHOWN FOR RECLAMATION OF PHASE 3 AND 4.
5. TOPSOIL STOCKPILES SHALL HAVE A POSTED SIGN SAYING "TOPSOIL".
6. REFER TO FIGURES 14 & 15 FOR MINE CROSS SECTIONS.
7. REFER TO FIGURES 20–22 FOR MINE RECLAMATION CROSS SECTIONS.
8. FOR FULL SIZED PLANS REFER TO APPENDIX H.

QUARRY EXCAVATION ESTIMATED QUANTITIES

PHASE 4 TOTAL VOLUME	16,300,000 CY
PHASE 4 TOP SOIL (TOP 2 FEET)	300,000 CY
PHASE 4 OVERBURDEN	4,100,000 CY
PHASE 4 PRODUCT	11,900,000 CY
AMOUNT OF PHASE 4 OVERBURDEN USED FOR INITIAL PHASE 3 RECLAMATION	3,600,000 CY
AMOUNT OF TOP SOIL TO RECLAIM PHASE 3 OVERBURDEN STOCKPILE (6" DEEP)	37,000 CY

LEGEND

- MINING LIMIT LINE
- PROPOSED GRADED ROAD
- PROPOSED STORMWATER SEDIMENT BASIN
- PROPOSED WATER LINE FROM OFFSITE WELL (W)
- CREEK
- PROPOSED PROCESS WATER POND
- VEGETATION
- TOPSOIL STOCKPILE AREA
- 800 EXISTING GROUND CONTOUR AND ELEV.
- 800 PROPOSED GROUND CONTOUR AND ELEV.
- X / XX SECTION LINE

CONTOUR INTERVAL: 10'

GRAPHIC SCALE

1200 0 600 1200 2400

1 inch = 1200 ft.

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SARGENT RANCH QUARRY

PHASE 4 EXCAVATION PLAN AND PHASE 3 RECLAMATION

DATE	04/01/2016
SCALE	AS SHOWN
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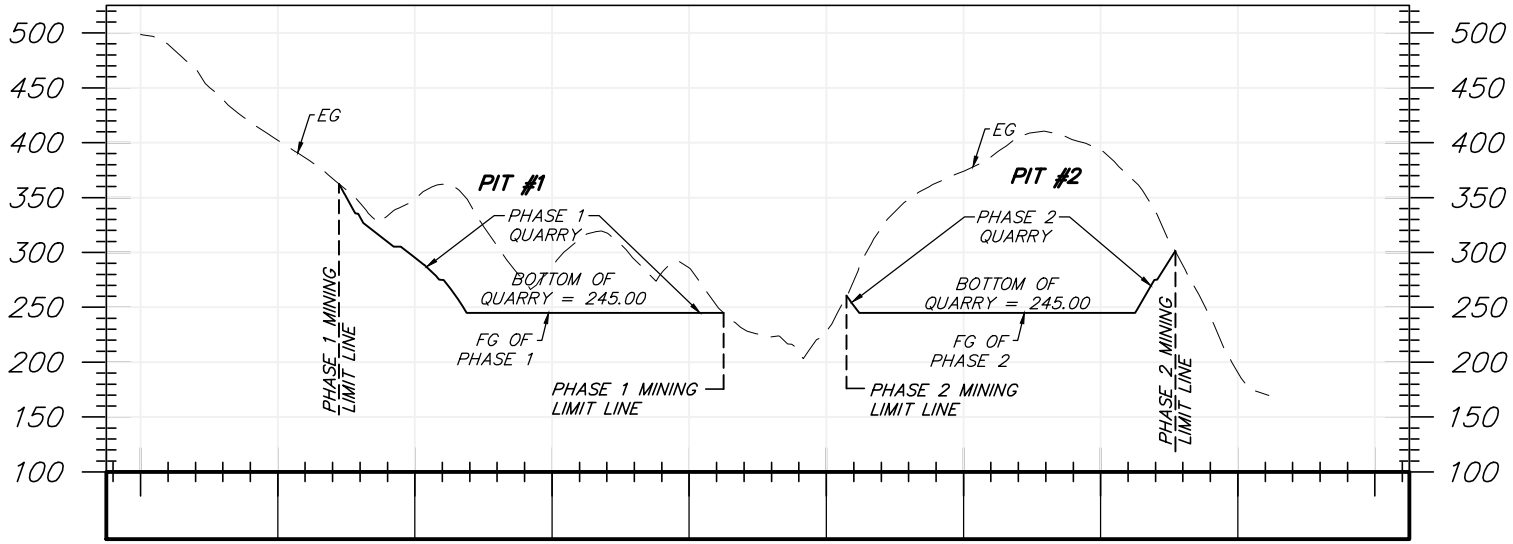
JOB NO.	01.4020
DWG	

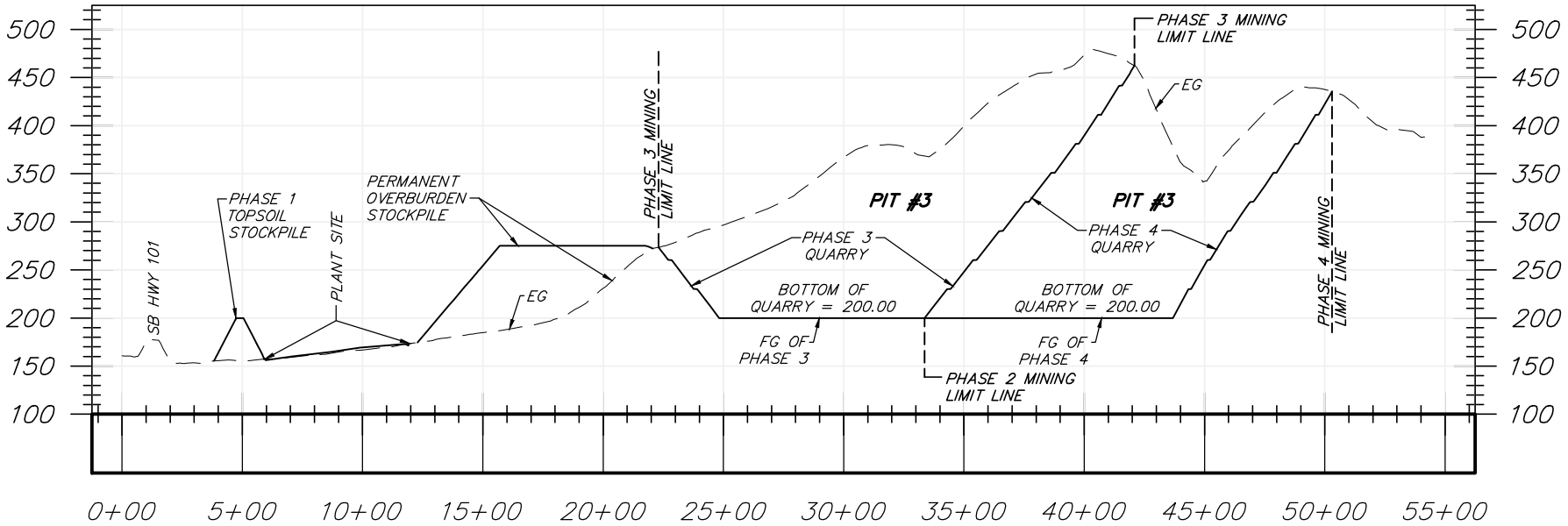
FIGURE 13

C:\01 Mammoth\4020 Sargent Ranch\Acad\Improvement Plans\Plan Set #4\Fig 13 Phase 4 Plan Cad2014.dwg Apr 02,2016 - 8:43am sro



SECTION A

SCALE: HORIZ 1"=700
VERT 1"=125'



SECTION B

SCALE: HORIZ 1"=700
VERT 1"=125'

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SARGENT RANCH QUARRY
MINE CROSS SECTIONS

DATE	04/01/2016
SCALE	AS SHOWN
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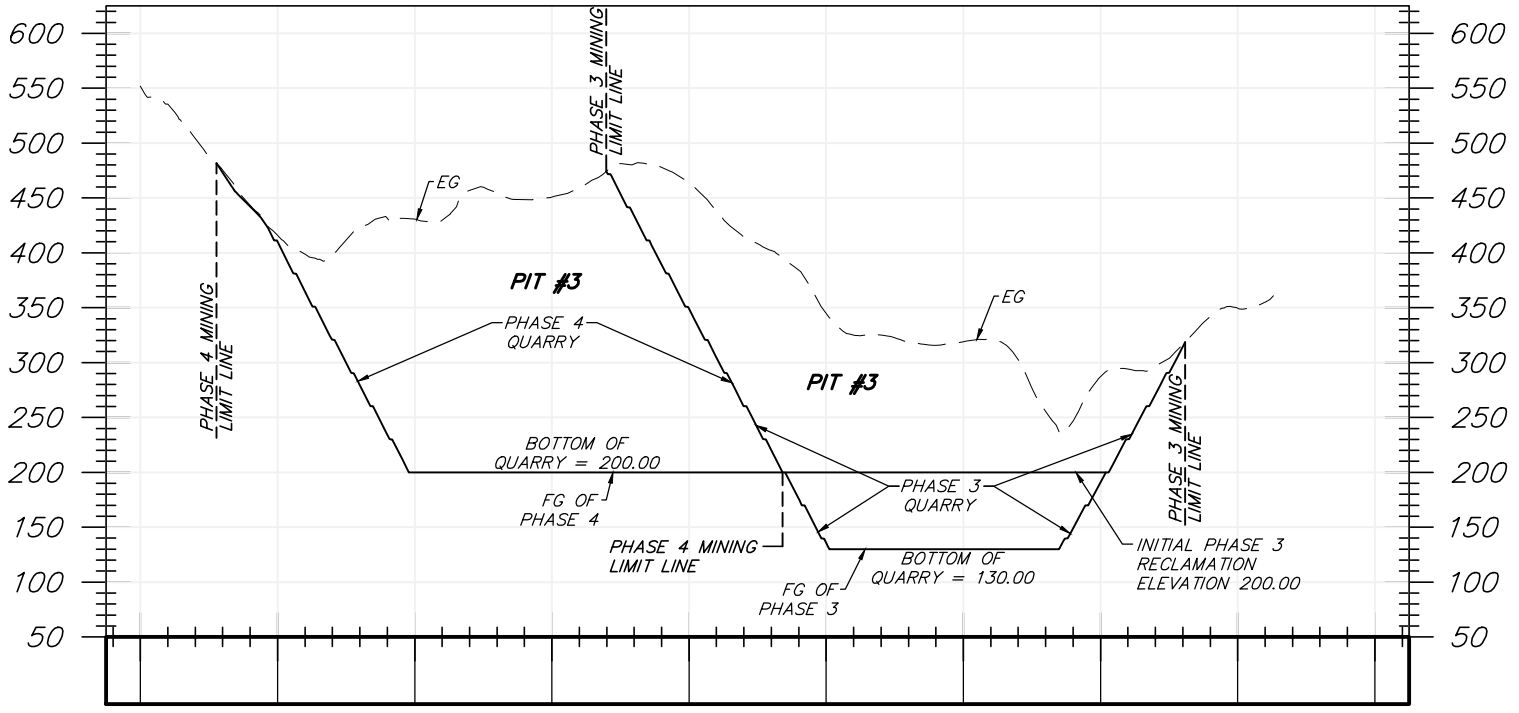
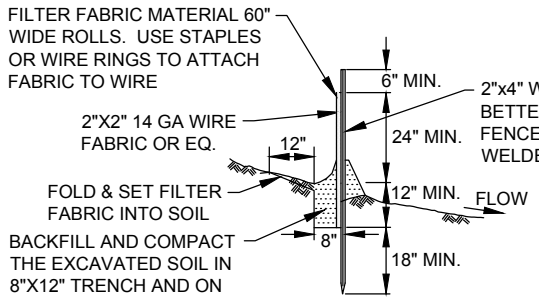
DWG	

FIGURE 14

C:\01 Mammoth\4020 Sargent Ranch\Acad\Improvement Plans\Plan Set R4\Fig 14-15 Mine Cross Sections Cad2014.dwg Apr 02,2016 - 8:48am, srai



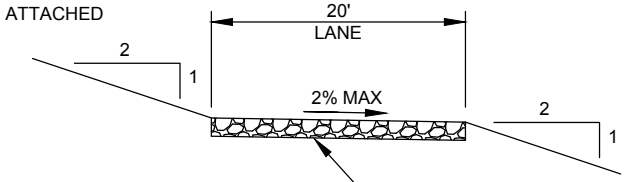


FILTER FENCE

NO SCALE

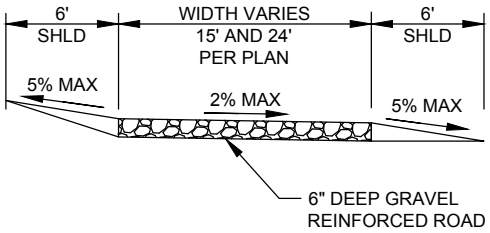
SECTION C

SCALE: HORIZ 1"=700
VERT 1"=125'



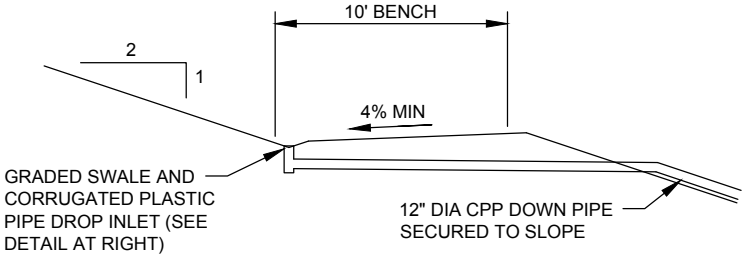
TYPICAL SECTION MINE ROAD

NO SCALE



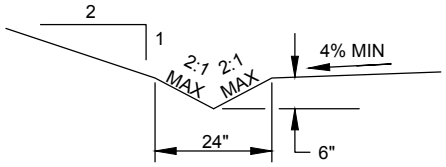
TYPICAL SECTION ENTRANCE LOOP ROAD

NO SCALE



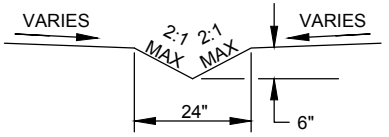
TYPICAL QUARRY SLOPE BENCHING AND DRAINAGE DETAIL

NO SCALE



GRADED SWALE AT SLOPE BENCHING

NO SCALE



GRADED DRAINAGE SWALE

NO SCALE

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SARGENT RANCH QUARRY
MINE CROSS SECTIONS

DATE	04/01/2016
SCALE	AS SHOWN
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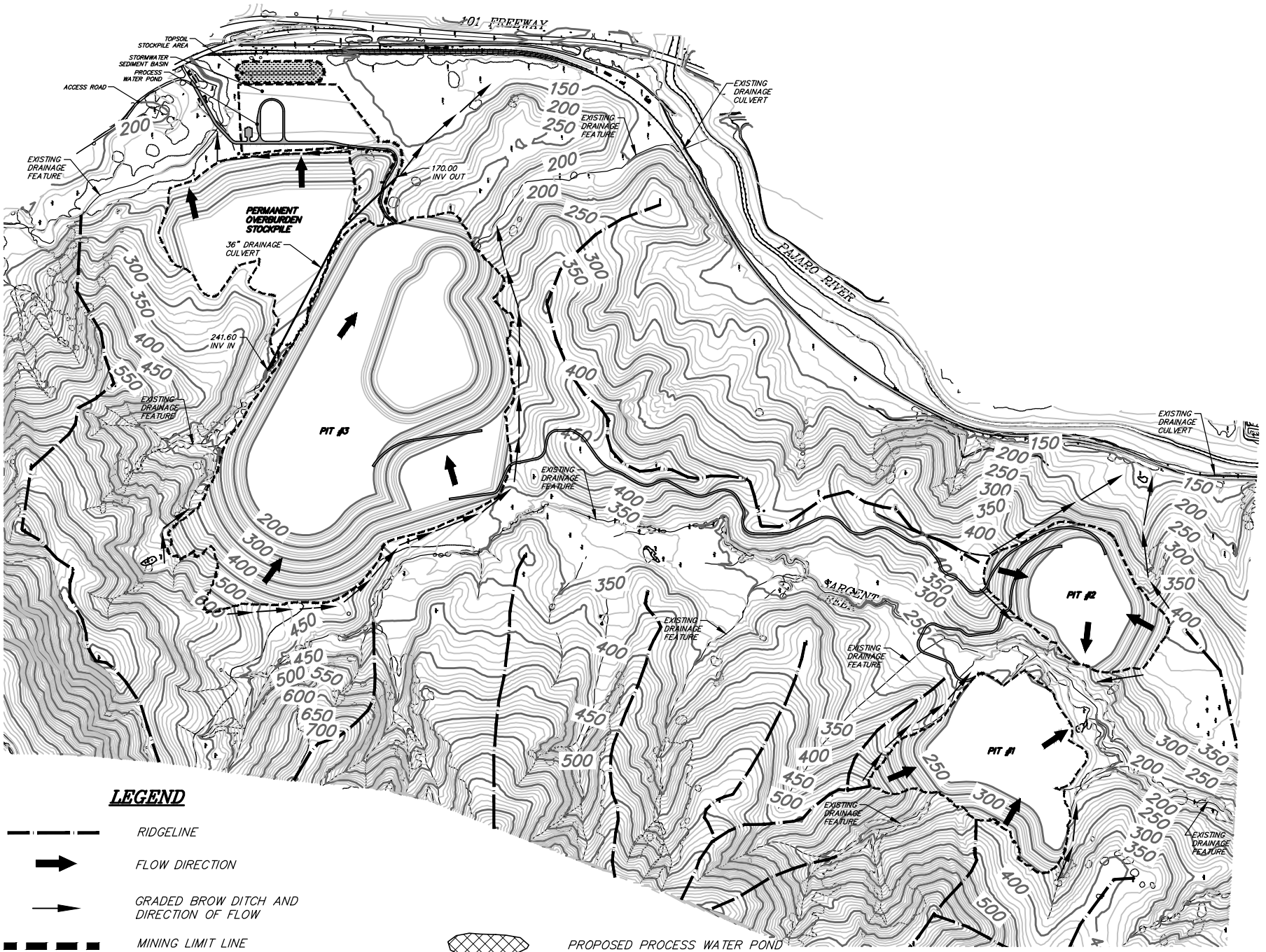
JOB NO.	01.4020
DWG	

FIGURE 15



LEGEND

- RIDGELINE
- FLOW DIRECTION
- GRADED BROW DITCH AND DIRECTION OF FLOW
- MINING LIMIT LINE
- GRADED ROAD
- PROPOSED STORMWATER SEDIMENT BASIN
- W — PROPOSED WATER LINE FROM OFFSITE WELL
- CREEK
- PROPOSED PROCESS WATER POND
- TOPSOIL STOCKPILE AREA
- C / 16 — SECTION LINE (REFER TO FIGURES 15 & 16)
- 800 — EXISTING GROUND CONTOUR AND ELEV.
- 800 — PROPOSED GROUND CONTOUR AND ELEV.

CONTOUR INTERVAL: 10'

GRAPHIC SCALE

1200 0 600 1200 2400

1 inch = 1200ft.

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civil engineering
land surveying
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BISHOP
REDWOOD CITY
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SARGENT RANCH QUARRY
MINE DRAINAGE PLAN

DATE	04/01/2016
SCALE	AS SHOWN
DRAWN	SCR
JOB No.	01.4020
DWG	

FIGURE 16

C:\01 Mammoth\4020 Sargent Ranch\Acad\Improvement Plans\Plan Set #4\Fig 16 Mine Drainage Plan Cad2014.dwg Apr 02,2016 - 8:00am src)

3.7 OPERATING CONDITIONS

3.7.1 Off-Street Parking

Parking for all customer and employee vehicles is available at the plant site. Parking is available nearby the office/scale house, as well as the maintenance shop as shown on Figure 8: Aggregate Plant Site Plan.

3.7.2 Access Roads

The quarry property will be accessed using Old Monterey road. Access within the quarry work areas will be either on new temporary unpaved, compacted roads or on existing graded, unpaved ranch roads. A new conveyor belt and maintenance road will be graded from the Phase 1 mining area north to the plant site. The road is anticipated to cross Sargent Creek one time using a temporary bridge or arch culvert.

3.7.3 Dust Control

Water for dust control will be obtained from a new on-site well. A water truck will be used for wetting internal roads and the active mining areas to minimize dust. Spray nozzles in the process plant will minimize dust by wetting the aggregate at conveyor transfer points.

3.7.4 Grading

This Plan includes two grading configurations: one for mining and the other for reclamation. The Mine Grading Plans (Figures 9 through 15) are based on the recommended slope and bench configuration set forth in the quarry geologic reports prepared by Sierra Geotechnical Services Inc. (Appendix E). The average steepest mined slope inclinations between benches are two feet horizontal to one foot vertical (2:1) and benches are 10 feet wide for most areas. The height of each mined slope between the benches is 30 feet. All of these criteria are shown on the cross-sections on Figures 15 and 16. The reclamation slopes will have a gradient of 3:1 or flatter. In areas where oak tree seedlings are planted on benches, the slopes between benches will have an inclination of three foot horizontal to one foot vertical (3:1), with benches that are a width of one to three foot as needed for planting. The reclamation slope height between benches is 30 feet. These criteria are shown on Figures 21a and 21b: Reclamation Cross-Sections and Details. The final reclamation slope and bench configuration is designed to result in safe, stable slopes that facilitate drainage, aesthetic enhancement, and revegetation.

3.7.5 Drainage and Sediment Control

There are two sets of drainage and sediment control programs in this Plan: one for mining and the other for reclamation. During mining, the drainage ditches will direct runoff to the two sediment basins and into the Phase 3 and Phase 4 pits. In Phases 1and 2, water will drain into the Phase 1 and 2 pits. At the conclusion of mining, the process water pond will be filled. The remaining soil materials will be used to restore the pre-mining condition of a gentle sloping terrain to the greatest extent possible. The reclaimed slopes and benches will drain to the former quarry floor where the surface water will be allowed to dissipate as it did in its pre-mining condition.

Sediment control requires the task of proper maintenance of the drainage facilities, shown on Figure 16: Mine Drainage Plan. The Sediment Basins will be cleaned regularly to maintain proper function. Open drainage ditches over loose, erodible soil will be lined with crushed rock. Drainage ditches on the benches have a minimum lateral slope of four percent (4%) to ensure proper drainage. Energy dissipaters will be placed where drainage ditches flow into the basins and or the pit. Energy dissipaters will be placed in appropriate locations where over side drain culverts carry storm water or collector ditches flow downslope. Unpaved areas, subject to vehicular traffic within the operations area, shall be graded and compacted for positive drainage.

3.7.6 Fencing, Posting, and Security

A five-strand barbed wire fence located around the perimeter of the property may restrict access to the mining site. A lockable gate is/will be at the entrance to the quarry. Signs will be posted at the entry driveways to identify the site as private property and warn unauthorized persons to keep out.

3.7.7 Use of Explosives

No explosives will be used at the mining site.

3.7.8 Contaminant Control

Standard fuels and oils for mobile equipment will be utilized and stored on-site during active mining operations and reclamation activities. These petroleum products will be stored in aboveground tanks and conform to the practices and requirements of the

County's Aboveground Storage Tank (AST) program, as well as those established by the Regional Water Quality Control Board while reclamation actions occur.

Procedures of the Hazardous Materials Business Plan (HMBP) and the Storm Water Pollution Prevention Plan (SWPPP) will be implemented at the site to minimize the potential for spills and leaks from material handling and storage, along with minimizing exposure of significant materials to storm water and authorized non-storm water discharges. These procedures include installing secondary containment or using double-walled ASTS, conducting regular inspections, and training employees.

In addition, all oil and chemical vendors and operators of equipment will be properly trained and instructed to comply with the on-site speed limit and to exercise caution when driving near aboveground storage tanks and associated equipment. Fuel and oils will be delivered to the facility on an as-needed basis. Drivers will be instructed to respond to any emergency situation by shutting off the pump or closing the emergency shutoff valve at the delivery truck product compartment. In the event that a spill occurs, absorbent material will be used to prevent chemicals or oils from leaving the area. For larger spills, the on-site earthmoving equipment can be used to create a berm to contain the spill.

New and waste oil, antifreeze, and hydraulic fluid will be stored in ASTs and smaller containers at defined storage sites. Containers of hazardous materials will be delivered to this location by vendor trucks or employees and offloaded by forklift or by hand. A spill containment kit will be located on employee vehicles. A properly trained facility employee performs all internal transfer operations. Used batteries, antifreeze, hydraulic fluids, and waste oil will be properly removed from the site and recycled by vendors.

In the following section, recommended actions are included as potential conditions for the County to consider for the Sargent Quarry project. These proposed actions are meant to provide methods of compliance with SMARA, County regulations, and other regulatory agency requirements.

> In order to comply with Federal, State, and local requirements for Industrial SWPPP's to minimize inadvertent contamination of groundwater during operations, fuel or other chemicals present on the mine site will be handled and stored using appropriate containment to prevent accidental spillage into open water bodies.

4.0 RECLAMATION PLAN

4.1 AREAS COVERED BY RECLAMATION

Reclamation work involves reclamation grading with earth fill buttresses against the excavated benches and slopes in the Phase 1, 2, 3, and 4 mining areas. These areas will be resoiled with topsoil and other soil materials and will be revegetated with hydro seeding, and planting of native trees. The final slopes of the reclaimed quarry vary from an elevation of 650 to 130 and the gradient will vary from 3:1 to flatter gradients. The quarry floors will be disked, leveled, re-soiled, and seeded. Quarry roads and some new internal unpaved access roads will be retained for continued general access to the site. Other unnecessary internal roads will be disked, leveled, and seeded.

4.2 Ultimate Site Condition after Reclamation

(PRC §2772(c)(7) and CCR §3502(b)(3))

The intent of the Reclamation Plan is to create a harmonious, integrated, and attractive landscape that blends both the texture and landform shapes of the reclaimed quarry into the adjacent natural landscape. Each quarry pit, once mined to the full depth as shown on Figures 9 through 15, will be configured as three large sloping depressions. The outward-facing fill slopes will vary in grade from 3:1 and flatter, much like the surrounding topography, and the areas planted with oak trees will have 1 to 3-foot-wide benches with 30-foot-high intervening slopes and a maximum gradient of 3:1. All of the reclamation slopes will have topographic variation to reduce the regular appearance of manufactured, engineered slopes and help to integrate the former quarry site into the surrounding landscape.

The selected reclamation planting palate will be composed of native and naturalized seed mixes and woody plants that are commonly found in the area. By revegetating with the same or similar plants that are growing in the area, the revegetated slopes will be visually compatible with the native landscape.

4.3 ALTERNATIVE FUTURE USES OF RECLAIMED LANDS

4.3.1 Possible Future Uses

All of the quarry area, measuring about 317 acres, will remain suitable for future mining or cattle ranching, agriculture, or any use permitted by the County General Plan and Zoning ordinance.

4.3.2 Preferred End Use

The preferred end use is restoring the property back to its prior use as a cattle range.

4.4 RECLAMATION PROCEDURES AND SEQUENCE

Reclamation work can be divided roughly into six categories having to do with re-grading, equipment and building removal, re-soiling, drainage, erosion control, and revegetation. Similar activities can occur at the same time; for example, the installation of an irrigation system along with the re-soiling and revegetation of reclaimed slopes and benches can be performed when mining of the slopes in each mining phase has been completed. Other areas or activities, such as equipment removal and internal haul roads, won't be reclaimed until mining of all phases is completed.

Grading includes construction of benched fill buttress over the excavated slopes; filling, compacting, and re-soiling of the quarry pits; ripping, disking, and re-soiling the quarry floor; and disking, contour grading, and re-soiling unnecessary internal roads. Equipment and building removal involves disassembling fixed structures; demolishing buildings; and removing movable structures, vehicles, and supplies (oil and fuel). Re-soiling work involves spreading topsoil over the reclaimed slopes and benches, the quarry floor, refilled quarry pits and pond, and re-graded roads. Drainage work includes construction of drainage ditches on the perimeter of the quarry, stockpiles, and processing area to direct storm water into the two permanent sediment basins. Drainage during the Phases will be guided to the bottom of the pits excavated during mining thru the use of interceptor ditches on the benches that flow into over side culverts. Revegetation work includes the installation of erosion-control measures (jute matting, erosion-control blankets, silt fences, hay bales, or coir wattles), as appropriate; and hydro-seeding and planting of oak tree seedling. Revegetation work may also include the installation of an irrigation system if it is deemed necessary during the Planting Test Plot program.

4.4.1 Equipment and Building Removal

During the end of Phase 4, the quarry equipment, including the processing plant, the excavation and loading vehicles, bone yard debris, the scale, and other quarry-associated equipment, will be removed from the site. Water tanks, fueling tanks, and the office may stay on-site after final reclamation to be used by the landowners for their cattle operations. The rock plant will be disassembled and the mobile items will be removed so they can be sold from on-site or taken to auction. The tanks and drums will be sold to recyclers or returned to the distributor. The bone yard debris will be recycled.

4.4.2 Reclaiming the Quarry Slopes and Benches

Stockpiled overburden and soil fines will be used to construct fill buttress slopes and benches over the excavated slopes. The new fill slopes and benches will be resoiled with 8 inches of topsoil. This activity will be done at the completion of each mining phase.

4.4.3 Reclaiming the Processing Area, Quarry Pit, and Roads

Reclamation of the pit, overburden, and processing areas will be the final phase of reclamation.

a) **Reclaiming the Material Processing Area:**
After all of the equipment and buildings have been removed work can begin to prepare the rock processing area for reclamation. The process water will be back-filled and compacted. The area will be ripped to a depth of 2 feet to loosen the compacted soil. The stockpiled overburden in the northwest corner will be used to re-grade the processing and stockpile area to a uniform finish grade as shown on Figures 13 and 15: Final Reclamation Grading. Once ripped and re-graded, topsoil will be placed over the entire area and reseeded.

b) **Re-soiling the Mining Areas**
All the mining areas will be graded with side slopes at 3:1 or flatter using overburden from the stockpile area and compacted to the estimated final grades shown on Figures 17 and 18. The final grades will be based on the volume of remaining stockpiles of overburden and soil fines. Stockpiled topsoil from all phases of mining will be used in re-soiling the quarry pits. Topsoil and

reseeding of the pit areas will be the final phase of reclamation. The topsoil and other soil materials will be amended, if the Test Plot monitoring program indicates an improved survival rate with the plantings grown in amended soils. A bulldozer will be used to spread topsoil. Topsoil will be laid over the ripped quarry pit to a depth of 6 inches as diagrammed on Figure 19: Reclamation Cross-Sections and Details.

c) Internal Roads

Quarry roads not to be used for ranch operations will be ripped to a depth of 12 inches prior to adding topsoil to accommodate root growth. Topsoil will then be placed to a depth of 8 inches and the surfaces will be seeded.

4.4.4 Reclamation of Mining Drainage Facilities

When mining operations are complete and the quarry slopes are revegetated, reclamation of the drainage facilities on the quarry floor will begin. The process water pond and mining pits will be filled to a level that can be achieved with the remaining supply of soil materials (overburden, soil fines, and topsoil). The soil materials used to backfill the pond and pit are the remaining balance of overburden and topsoil. The fill will be compacted to 90 percent density up to five feet below the surface and the upper five feet will be granular material with a layer of topsoil (the ground surface will be ripped prior to receiving the topsoil layer). Loaders will be used for transporting fill material to the basins, and bulldozers will place and compact fill. A motor grader will be used to shape the final surface area and to spread the topsoil layer as part of establishing the final quarry floor contours. Once reclamation grading is completed these areas will be revegetated.

4.4.5 Noxious Weed Removal Program

Various noxious weeds are disbursed by wind and birds, and readily reinvade disturbed areas such as a quarry where they compete with the newly planted native species. The biological survey of the site indicates that Yellow Star thistle (*Centaurea solstitialis*) and Italian thistle (*Carduus pycnocephalus*) are present on the site. These two noxious weeds, per SMARA, that are on the California Department of Food - Noxious Weeds List in Appendix G must be eradicated from the reclaimed site. The Noxious Weed Removal Program in this Reclamation Plan describes how these two weed species will be eradicated.

4.4.6 Revegetation of Disturbed Areas

Disturbed areas will be revegetated using two treatments: (1) hydro-seeding, (2) installing woody plants. The initial treatment involves hydro-seeding the reclaimed slopes and benches that have a gradient of 4:1 or less (steeper), the quarry floor, the reclaimed slopes, and benches that have a gradient of 4:1 or more (flatter). Since the site has diverse conditions, four different seed mixes have been designed as shown in Tables 3 to 7. The basic ingredients in all four seed mixes will include: native/naturalized plant seed, fertilizer, fiber, rice or clean grain straw, and tackifier (binder). The fiber, rice or straw, and binder will create a layer on top of the seed to protect the seed from being scorched by the sun, being washed away by rain, or blown away by wind. The layer of rice or straw also helps to decrease raindrop impact on the ground surface, prevents runoff concentration, and slows the velocity of runoff so that moisture can be retained in the soil. Hydro-seeding will be done during the months of October and November when the first winter rains are expected.

Specific attention will be given to the planting of the oak trees. The plants will be one-gallon or tube-stock- sized when planted. The small-sized plant materials are used because they have a better record of rooting, adjusting to climatic conditions, and surviving.

4.4.7 Soil Amendments

Soil amendments may be used as part of the amending of soil to facilitate revegetation. Use of any soil amendments, if any, shall be determined by the success of the Test Plots using native soil.

For future plantings, additional soil samples will be taken from stockpiles of topsoil, accumulated fines, and any other new soil source to determine the appropriate nutrients that are needed to support revegetation.

4.4.8 Plant Selection

Species to be planted will consist of commercially available erosion-control native and naturalized plant species that have evidenced good success on disturbed soils and are consistent with vegetation used in the region. Baseline data for oak trees described in Appendix D was collected from the existing undisturbed site. The information that was collected was used to select the planting palette. The vegetative success criteria for the oak trees are based on the baseline data reported in Appendix D. The vegetative

success criteria for all planting areas will include: coverage, density, and species-richness.

Plant materials match the native plants and habitat zones found in the surrounding hillsides and ridges. The habitat zones are described as: Non-Native/Naturalized Annual Grassland and Oak Woodland. The selected plant species associated with each habitat zone will be planted where each of these habitats currently are found. Planting density of oak trees in the Oak Woodland area will vary and appear naturalistic, reflecting the character of the surrounding native vegetation.

4.4.9 Tree Planting Specifications

One-gallon and tube-stock-sized native oak trees will be grown on-site or acquired from local commercial nursery stock. Planting locations are shown on the Revegetation Plan, (Figure 20). All tree plantings will be conducted between the months of October and February, preferably between October and December. Since hydro seeding and seeding will occur first, a lot of the preparation for planting will be done beforehand to avoid degradation of the seeded surface. Planting holes will be dug; the irrigation, if needed, will be installed; and a marker stake will be posted in each planting hole before seeding. The trees will be planted randomly and in clusters to duplicate the oak tree massing in the surrounding hills (Figure 23). The trees will be planted into planting holes as detailed on Figures 22a and b. The planting holes will be dug with a shovel or similar tool to create a hole with sides and bottom approximately 12 inches greater in diameter and 12 to 18 inches deeper than the container. Plants will be set plumb in the middle of the planting holes**.** Each planting hole will be backfilled using local soil or potting soil (one part), mulch (one part), and if needed, soil amendments (one part). Organic fertilizer will be placed in each planting hole about 6 inches from the bottom of the planting hole. The planting medium will be tamped down around the plant so that the crown of the plant is at ground surface, and a shallow water basin will be formed around each tree. A three-inch layer of mulch will be placed in each watering basin to help conserve moisture. Plants will be thoroughly watered after planting.

TABLE 4
SARGENT QUARRY
WOODY PLANT MATERIALS for OAK WOODLANDS

	Latin Name	Common Name	Plant Spacing
TREES			
	Quercus agrifolia	Coast Live Oak	-Combined goal of 20 trees/acre
	Quercus douglasii	Blue Oak	-Some stands as the only tree species; other stands mixed with Coast Live Oaks -Combined goal of 20 trees/acre

4.4.10 Seeding Locations and Specifications

The four different seed mixes recommended by Pacific Coast Seed Inc. contain native grasses, herbaceous, and woody plant materials. The different seed mixes will be used to replicate the different existing site conditions found at the quarry and the surrounding landscape; including the Non-Native/Naturalized Annual grasslands on the flat valley areas, lower and upper slopes, Oak Woodland with annual grassland around the mid-elevation slopes. Plants that are more commonly found within these three plant communities at the site will be replanted in the same general area. The locations where these different seed mixes will be applied are shown on the Revegetation Plan (Figure 20). The seed mixes are described in Tables 4, 5, 6, and 7.

Seeding is the most practical method to revegetate the reclaimed slopes while also providing erosion control. The rough surface of the graded slopes will help to catch and hold the seed; extra tackifier will be added to the seed mixture to help the mixture stick to the steeper slopes. Typically the best germination rates on non-irrigated sites are obtained when seeding occurs during the fall immediately before the rains begin. Seeding in the fall months will ensure adequate moisture and will minimize the potential for hot summer temperatures to damage the seeds.

Hydro seeding will be used to revegetate the reclaimed slopes and benches. Hydro seeding should occur in the fall or early winter months when conditions are best for seed growth.

TABLE 5
SARGENT QUARRY – RECLAMATION PLAN
HYDROSEED/SEED MIX FOR GRASSLAND

Lbs/Acre	*LATIN NAME*[1]	COMMON NAME
0.50	*Achillea millefolium*	Yarrow
0.50	*Amsinckia menziesii*	Fiddleneck
12.0	*Bromus hordeaceus*	Soft Chess
1.00	*Clarkia purpurea*	Wine Cup Clarkia
8.00	*Elymus glaucus*	Blue Wildrye
2.00	*Lupinus nanus*	Sky Lupine
2.00	*Melica californica*	California Melic
4.00	*Nassella pulchra*	Purple Needlegrass
HYDROSEED SPECIFICATIONS FOR 3:1 SLOPES& BENCHES		
Step One:		
1,000 lbs/ac	Enviro Fiber	
	Seed Mixture (above)	
100 lbs/ac	M- Binder	
60 lbs/ac	Mycorrhizal Inoculant-AM – 120/3	
Step Two:		
4,000 lbs/ac	Rice or Clean Cereal Grain Straw	
Step Three:		
150 lbs/ac	M-Binder	
500 lbs/ac	Enviro-Fiber	

TABLE 6
SARGENT QUARRY – RECLAMATION PLAN
HYDROSEED/SEED MIX FOR OAK WOODLAND

Lbs/Acre	LATIN NAME[2]	COMMON NAME
0.50	*Achillea millefolium*	Yarrow
0.50	*Amsinckia menziesii*	Fiddleneck
12.0	*Bromus hordeaceus*	Soft Chess
1.00	*Clarkia purpurea*	Wine Cup Clarkia
8.00	*Elymus glaucus*	Blue Wildrye
2.00	*Lupinus nanus*	Sky Lupine
2.00	*Melica californica*	California Melic
4.00	*Nassella pulchra*	Purple Needlegrass
HYDROSEED SPECIFICATIONS FOR 3:1 SLOPES & BENCHES[3]		
Step One:		
1,000 lbs/ac	Enviro Fiber	
	Seed Mixture (above)	
100 lbs/ac	M- Binder	
60 lbs/ac	Mycorrhizal Inoculant-AM – 120/3	
Step Two:		
4,000 lbs/ac	Rice or Clean Cereal Grain Straw	
Step Three:		
150 lbs/ac	M-Binder	
500 lbs/ac	Enviro-Fiber	

[1] The seeds are to be "Pure Live Seed," and the pounds per acre reflects this.
[2] The seeds are to be "Pure Live Seed," and the pounds per acre reflects this.
[3]

4.4.11 Irrigation

The need for an irrigation system for watering the oak seedlings will be determined by the Test Plot monitoring program. An irrigation system will be used if the quantified findings of the Test Plots monitoring program indicate that the oaks have a better survival and growth rate with supplemental watering. Should an irrigation system be required then well water will be pumped into tank(s) that then gravity feed into a drip irrigation system. Well water will be supplied by the new well. The well water will be directed to various storage tanks on the slopes above the Oak Woodland habitat zones as indicated on Figure 23: Revegetation Plan. Supply lines will be extended from the holding tanks and PVC pipes will be installed to each bench to supply the drip lines for each individual tree. The irrigation system will not be used to water the seeded areas; these areas will rely on natural rainfall.

The soil moisture level at each Test Plot with irrigated plants and at each Monitoring Plot (if used) with irrigated plants will be checked periodically throughout the first three years, after planting, by quarry personnel. Routine inspections will ensure that the plants are not over watered or under-watered thereby improving their survival rate. The first two years are critical for the survival of newly planted materials. During the first year the soil moisture in the Test and Monitoring Plots will be checked once each month during the rainy season and twice a month during the dry season and extended dry periods in the winter. During the second and third year, the soil moisture will be checked once every 6 weeks during the rainy season and once every 4 weeks during the dry season and extended periods of drought. These inspections and moisture levels will be recorded on a Watering Program Inspection Form. If installed, the irrigation system will continue to operate for 3 years after the initial planting. At that time, the plants should be sufficiently established to survive on their own.

Initially the Test Plots that are supposed to receive supplemental water will be watered by hand from a hose on the Water Truck. These plots will be watered and monitored according to the same schedule for the Monitoring Plots described above.

4.4.12 Test Plots, Monitoring Plots, Monitoring, and Inspections

Test Plots and Monitoring Plots will be used to monitor the success of the revegetation program. There will be a set of Test Plots and Monitoring Plots for each planting community at the site. The two plant communities include Non-Native/Naturalized Annual Grassland, and Oak Woodland.

The Test Plots will be installed as soon as possible after approval of this Plan because the information learned from these trial plantings will be used to refine the planting palette and methods, as needed, to ensure that the revegetation program is successful. The Test Plots will confirm the recommended use of unaltered soil materials (topsoil, overburden, and soil fines) and the use of water on woody plants versus no application of water on woody plants, as well as measuring the vigor and survival rate of the selected woody plants and seed mixes.

The Monitoring Plots will be installed when mining is completed at the end of each mining phase and after reclamation grading and when revegetation begins. The Monitoring Plots will be used to evaluate the success of the revegetation planting and ensure that the vegetative success criteria required by SMARA are achieved.

Monitoring Plots should meet the following criteria:

- Locations of Monitoring Plots should represent significant microclimates in terms of slope, aspect, and elevation
- Plot sizes should be sufficiently large to quantify success criteria

Test Plots should meet the following criteria:

- Allow evaluation of the different plant palettes presented on Table 4 to 6
- Plot sizes should be sufficiently large to be able to quantify success criteria Test plots should experience no disturbance for a minimum of 5 years after establishment
- Soil materials with topsoil should be comprised of the same materials that will be used during future reclamation (stockpiled topsoil, weathered materials or fines from processing and overburden, and soil testing to support native plants)
- Fill placement and planting preparation should follow guidelines for future reclamation presented in this Plan

The proposed locations and general design of the four Test Plots and twenty Monitoring Plots are shown on Figure 21: Test Plot and Monitoring Plot Locations and Design. The Test Plots will be located near the office which is the area that is most unlikely to be unaffected by quarry operations. There will be a Test Plot for each of the four plant communities; hence there will be a total of two Test Plots.

The Test Plots are intended to evaluate the following variables:

- Seed mixes and container plants for the planting communities listed in Tables 4 through 6.
- Soil materials with topsoil either used in "as is" condition, or amended
- Irrigation: for the container plantings, test for no irrigation versus temporary establishment of irrigation (2-3 years); seed-only areas will not have supplemental irrigation

There will be a Test Plot representing each revegetation plant community: Non-Native/Naturalized Annual Grassland and Oak Woodland, as shown on Figure 24. There will be a total of two conditions – amended or un-amended fill--evaluated for each Test Plot for the Non-Native/Naturalized Annual Grassland. There will be a total of four conditions evaluated for each Oak Woodland Test Plot, including amended or un-amended fill, and irrigation versus no irrigation.

The six conditions include:

1. Seed over unamended fill, no irrigation
2. Seed over amended fill, no irrigation
3. Seed + container plants over un-amended fill, no irrigation
4. Seed + container plants over un-amended fill, with irrigation
5. Seed + container plants over amended fill, no irrigation
6. Seed + container plants over amended fill, with irrigation

During the seed-only conditions for Non-Native/Naturalized Annual Grasslands, per conditions numbers 1 and 2 above, the recommended size of each "subplot" is 25 feet by 25 feet. Therefore, the total size of the plot for these three plant communities will be 3 times an area of 50 feet by 25 feet, plus an allowance for 4-foot aisles, for a total area of 4,698 square feet. For the Oak Woodland Test Plots that include condition numbers 3 through 6 above (container plants that supplement seed), the recommended size of each "subplot" is 50 feet by 50 feet.

Installation of Test Plots should occur during the first fall or winter following approval of the Mining and Reclamation Plan to take advantage of winter rains for germination and establishment. Irrigated plots should be located such that supplemental water will not inadvertently flow or otherwise migrate to non-irrigated plots. The Test Plots, being located near the office, will be readily accessible for ease of maintenance and monitoring (Figure 24). To minimize the likelihood of accidental damage to the Test Plots, they should be surrounded with welded wire, or similar fencing, at least 4 feet high and identified with signage.

Maintenance will be required for the irrigated subplots to inspect and repair, as needed, the drip irrigation system. Supplemental irrigation should extend two to three years after planting of woody plants in irrigated subplots.

Visual monitoring of Test Plots should be conducted monthly during the first year, quarterly the second year, and then semi-annually to evaluate and measure plant success and growth in the spring and fall. During the first two years, the Test Plots will be visually inspected for plant mortality and density. During the remaining monitoring period (3 years minimum), the Test Plots and treatment conditions for survival, density, species-richness, and cover will be measured and compared with established success criteria for the seeded areas and container plants. The success of the revegetation program demonstrated by the Test Plots will be evaluated using the success criteria. It is recommended that the Test Plot monitoring program last a minimum of 5 years, or longer, if the planting program requires adjustments.

Monitoring Plots will be used in each plant community on the reclaimed slopes and benches. The location of the proposed Monitoring Plots is shown on Figure 21._Each Monitoring Plot on the benches and quarry floor vary in size depending on the plant habitat. The Monitoring Plots will measure 2 feet by 50 feet in the grassland, habitats. The Monitoring Plots for the Oak Woodlands will be 2 feet by 100 feet and the area used to measure oak tree density will be a 100-foot diameter circular plot. The Monitoring Plots will be used to monitor the success of the reclamation program using the criteria, revegetation monitoring, and revegetation criteria.

4.4.13 Sequence of Reclamation Activities

Reclamation work is organized so that the most exposed man-made slopes are revegetated earliest. The sequence of each reclamation activity described below is designed so that previous work is not damaged.

1. Whenever a finished slope is completed, contour grading and re-soiling will follow immediately. Hydroseeding will be done and if required, the irrigation system will be installed and the area will subsequently be revegetated. Early revegetation of finished cut slopes will aid in the natural appearance of the quarry.

2. When mining is completed in any phase, installation of 3:1 fill slopes will be constructed. Hydroseeding and irrigation (if required) will be installed.

3. As reclamation of the site continues in each phase, the expansion of the irrigation system, if needed, should routinely occur immediately following grading and re-soiling, but before seeding and planting.

4. Seeding and planting of oak trees will commence on the uppermost benches and intervening slopes and work down to the lower elevations according to the Oak Tree Planting Plan.

5. Once mining is completed in the Phase 4 area, the mining equipment will be removed. The buildings may be retained by the landowner for future use in the cattle operations.

6. Final reclamation grading of Phase 4 will include using the remaining stockpiles of overburden to fill, compact, and re-soil the pit and process water basin; disk and contour-grade unnecessary internal roads, as well as rip, disk, and re-soil the quarry floor; and re-soil the reclamation slopes and benches.

7. Implementation of inspection and monitoring programs.

8. Implementation of post-reclamation maintenance.

4.5 RECLAMATION STANDARDS

4.5.1 Re-soiling, Backfilling, and Grading

All grading will comply with the applicable local codes and to the recommendations in Appendix E: Slope Stability Investigation. Grading procedures shown on Figures 9 through 16 show the mine grading concepts, and Figures 17 through 19 show the reclamation grading configurations. Backfill material from on-site stockpiles will be used for resource conservation, including placing salvaged overburden and topsoil over the areas to be revegetated, and to fill sediment basins and the pit (based on quantity of available material). The backfilling materials shall be suitable for revegetation and shall not contain any unsuitable materials such as organic materials, and rock or large lumps bigger than 6 inches in greatest dimension.

Soils from on-site stockpiles of topsoil, soil fines, and overburden will be used to re-soil the reclamation benches, slopes, and quarry floor. These soil materials used for re-soiling may or may not be amended; this will be determined by the outcome of the monitoring program of the Test Plots. The quarry pits will be backfilled with the clay materials (overburden) found at the site. The overburden materials will be used up to 5 feet below the ground surface and compacted to 90 percent relative compaction. The upper 5 feet will be granular material suitable to support plant growth and the surface will be re-soiled with a layer of topsoil.

Soil Salvage Operations *(CCR §3711(a) and CCR §3711(c))*

Action to be followed includes:

SMR-1: Soil salvage operations will be phased and completed as access into each new surface mining area is needed. It is planned that soil will generally be placed on completed surfaces as it is concurrently removed from the next mining phase. Therefore, only limited areas of overburden and topsoil stockpiles will be needed. These areas would change as mining progresses. However, in one area, the overburden will remain in place and that is on the back side of the site at the base of the bluffs, as indicated on Figure 17: Final Reclamation Grading Plan.

Topsoil Storage and Use *(CCR §3711(d))*

Actions to be followed include (for temporary stockpiles):

SMR-2: Topsoil stockpiles will be protected from inadvertent destruction, used by flagged staking or other identification, will be of sufficient distance from areas under active mining or surface disturbance, or all of the above.

SMR-3: Stockpiles will not be compacted, in order to maintain oxygen availability to soil micro-organisms. Topsoil will not be stripped or replaced during the rainy season or when soil is saturated.

SMR-4: If weeds become a problem, they will be controlled with herbicides, physical removal (mechanical or manual), or both.

Redistribution of Topsoil; Establishment of a Growth Medium *(CCR §3711(e))*

SMR-5: Redistribution of topsoil will be accomplished to establish stable, uniform thickness consistent with the need to control slope-erosion and to facilitate drainage patterns. Native topsoil or a mixture of topsoil with other soil materials (i.e., soil fines and overburden) placed on reclaimed slopes, benches, and quarry floor will be applied at depths of 8 inches.

Manage Stockpiles to Facilitate Phased Reclamation *(CCR §3704(c))*

Actions to be followed include:

SBR-1: As part of mining, topsoil and overburden material would be removed and separately stockpiled in several areas of the mining area for later use during reclamation. Stockpile locations will be limited to a maximum side slope of 2:1 to preserve slope stability and prevent erosion. Stored topsoil will be marked in the field for conservation and replacement.

SBR-2: Topsoil will not be stripped when saturated or during the rainy winter season to minimize stockpile compaction and allow gas exchange between the atmosphere and micro-organisms in the soil.

SBR-3: Where erosion is evident, soil stockpiles will be protected from such loss over the winter rainy season through the use of berms, silt fencing, or coir wattles located at the base of the stockpiles, as well as external swales to direct drainage flows to the quarry pit or sediment basins. Topsoil stockpile left in place for more than one winter season will be seeded with a cover of annual grass (from the approved seed mix) if needed to prevent further soil loss.

Soils Analysis *(CCR §3705(e) and CCR §3707(d))*

Actions to be followed include:

R-1: Soil materials, including native topsoil, overburden, and soil fines which are chemically unaltered, may be used to re-contour quarry slopes and other areas slated for revegetation, as shown on Figure 20: Revegetation Plan.

R-2 Soil materials, including native topsoil, overburden, and soil fines may be amended per the Test Plot planting program. If it is found that soil amendments improve

the success rate of the plants, then soil amendments will be used. The soil material for re-soiling will be tested at a soil laboratory for use with native plants. The type of amendments will be based on the outcome of the soil analysis of the on-site native plant soil materials for. These amended soils will be used to re-soil reclaimed slopes and other areas slated for revegetation as shown on Figure 20: Revegetation Plan.

R-3 The selection of unaltered soil materials versus amended soil materials for use in revegetation planting will be determined by the outcome of the monitoring program of the Test Plots.

Fill Slopes, Stability, and Conformity with Surrounding Topography or End Use *(CCR §3704(d)(e))*

Fill would be limited to placement along the outward-facing slopes and will vary in grade from a maximum of 3:1 or flatter (See Figures 18a and b: Reclamation Cross-Sections and Details for locations).

Actions to be followed include:

FS-1: Fill, comprised of topsoil, clay or overburden, and fines from materials processing will be placed along the outward-facing slopes of the Sargent Quarry and compacted according to Santa Clara County requirements and stability requirements, with a final slope not to exceed 3:1.

FS-2 Overburden material unused during final contour-grading activities and not sold as engineered fill shall be disposed of by placing in the quarry pit floor near the completion of mining activities.

4.5.2 Slope Stabilization *(CCR §3704(f))*

Construction of excavated slopes and final reclamation slopes shown on Figures 10 and 17 is described in detail in the geotechnical report prepared by Sierra Geotechnical Services in Appendix D.

The slope stability analyses for the planned slopes are presented in Appendix E. At the completion of all mining operations, the quarry sidewalls (vertical cuts and benches) will consist of 2:1 slopes with 10-foot-wide benches every 40 vertical feet while at the conclusion of reclamation grading the final slopes will have a maximum

gradient of 3:1. In areas with oak tree seedlings there will be 1 to 3 foot-wide benches every 40 vertical feet. The grassland areas around the oak tree clusters will have 3:1 slopes with intermittent locations of slopes flatter than 3:1 to provide variation in the uniformity of the slopes, thus providing a more natural appearance to the reclaimed quarry slopes. The geotechnical analyses indicate that the factor of safety against gross instability of the overall slopes is at least 1.5. Drainage facilities, revegetation of the reclaimed slopes and benches, and erosion control measures will also serve to stabilize the slopes.

The recommended maximum bench heights and inclinations of cut slopes for the post-reclamation condition are described below:

Actions to be followed include:

Based on the results of field evaluation and geo-technical engineering analyses (Appendix D) the following conclusions apply to the design of the Reclamation Grading and Drainage Plans (Figures 17 and 18) regarding the stability of the post-reclamation slopes and benches.

CS-1: The prominent joint sets mapped during field investigations have a low potential for creating wedge or planar failures which daylight in the assumed quarry slope cuts.

CS-2: The stability of the slopes has been evaluated with the use of the Hoek-Brown Strength Criteria. The resulting Factors of Safety exceed the generally accepted 1.5.

CS-3: The analysis is based on geologic mapping of the Slope Stability Study. As the planned slopes are excavated, additional discontinuities may become apparent which would warrant further analyses.

CS-4: This Mining and Reclamation Plan is based on the Slope Stability Analysis attached as Appendix D; should the results from future investigations indicate a variance with the current findings, then the Reclamation Plan shall be amended at that time to conform to those findings.

CS-5: Benches should be constructed with a minimum 4 percent gradient toward the slope face to reduce the potential for erosion resulting from surface water flowing over the slope face. These benches may reduce hazards relating to landslides and rock-fall. Periodic clearing of debris collected on the benches may be required to maintain their effectiveness.

CS-6: Mined benches should be constructed with a minimum 4 percent lateral slope to ensure proper drainage to the interceptor ditches on the benches that flow into drop

inlets and subsequently flow either into over side drain culverts or lined side collector ditches, directing the water down to the quarry floor.

4.5.3 Building, Structure, and Equipment Removal *(CCR §3709)*

All equipment, structures, and vehicles used in the mining operation will be removed when the mining operation ceases. The movable equipment (e.g., plant, office, and scale) and vehicles may be kept onsite by the landowner for use in the cattle operations or sold and moved offsite. The water well will be retained for the duration of the reclamation program as a source of water for the irrigation system. When mining ceases, the revegetation monitoring program will continue until all monitoring planting plots achieve the objectives of the monitoring program. If either the planting plot has achieved the vegetative success criteria or three years have passed since the last area was planted, the irrigation system, if used, will be turned off. The water wells will be retained for future use as potential water sources for the ranching operation.

4.5.4 Control of Contaminants

Contaminants and hazardous chemicals involved in the mining operation will include vehicle fueling and servicing (oils and lubricants) as described in Section 3.6.8. All vehicles refueling and servicing will take place at the maintenance shop area shown on Figure 8: Aggregate Plant Site Plan. The fueling tank and oil tanks will be set inside secondary containment structures to contain any leaks or spills. The *Hazardous Material Business Plan*, and *Spill Prevention Control Counter Measure Plan* for the quarry will describe how fuels and oil should be used and stored on-site as well as what to do during an emergency or when a spill occurs. Typically the County reviews these documents and also monitors the use of fuels and oils at the quarry. All residual fuels and oils will be removed from the site as part of reclamation.

4.5.5 Revegetation *(CCR §3705)*

The proposed revegetation is intended to stabilize areas of the mined-out quarry and blend it with the adjacent landscape and vegetation. Final revegetation is shown on Revegetation Plan (Figure 20).

4.5.6 Irrigation *(CCR §3705(j))*

It has not yet been determined if irrigation will be required to support the native oak tree plantings. The Test Plot monitoring program will determine if the oak trees will need supplemental irrigation.

4.5.7 Weed Abatement *(CCR §3705(k))*

Because of the local proximity to natural habitat areas, the Sargent Quarry has adopted established practices of the Preserve "Invasive Exotics Control and Removal," including the actions defined below.

Actions to be followed include:

R-3 A program of invasive/exotic weed abatement will be implemented to manage the Italian thistle and Yellow star thistle during operations or reclamation.

4.5.8 Erosion and Sedimentation *(CCR §3706(c)(d))*

Erosion control facilities will be constructed as required; however, the grade of the mining area will evolve such that the majority of surface stormwater is maintained within the boundaries of the mining area. Temporary measures such as silt fences, berms, coir wattles, hay bales or similar means to deter erosion may be employed as necessary at locations of identified concern over the course of operations, depending upon the particular configuration of the grading work and roadways. Such measures are to be implemented in accordance with the State and Regional Water Quality Control Board and Santa Clara County requirements for Stormwater Pollution Prevention Plan (SWPPP).

Because mining and reclamation operations require on-going grading activities, sedimentation basins are used as the primary sediment control measures. If the soil erosion continues, vegetation will be generated using a seed/spraying technique.

Actions to be followed include:

EC-1: Mining and reclamation operations employ the following erosion and sediment control measures (as necessary):

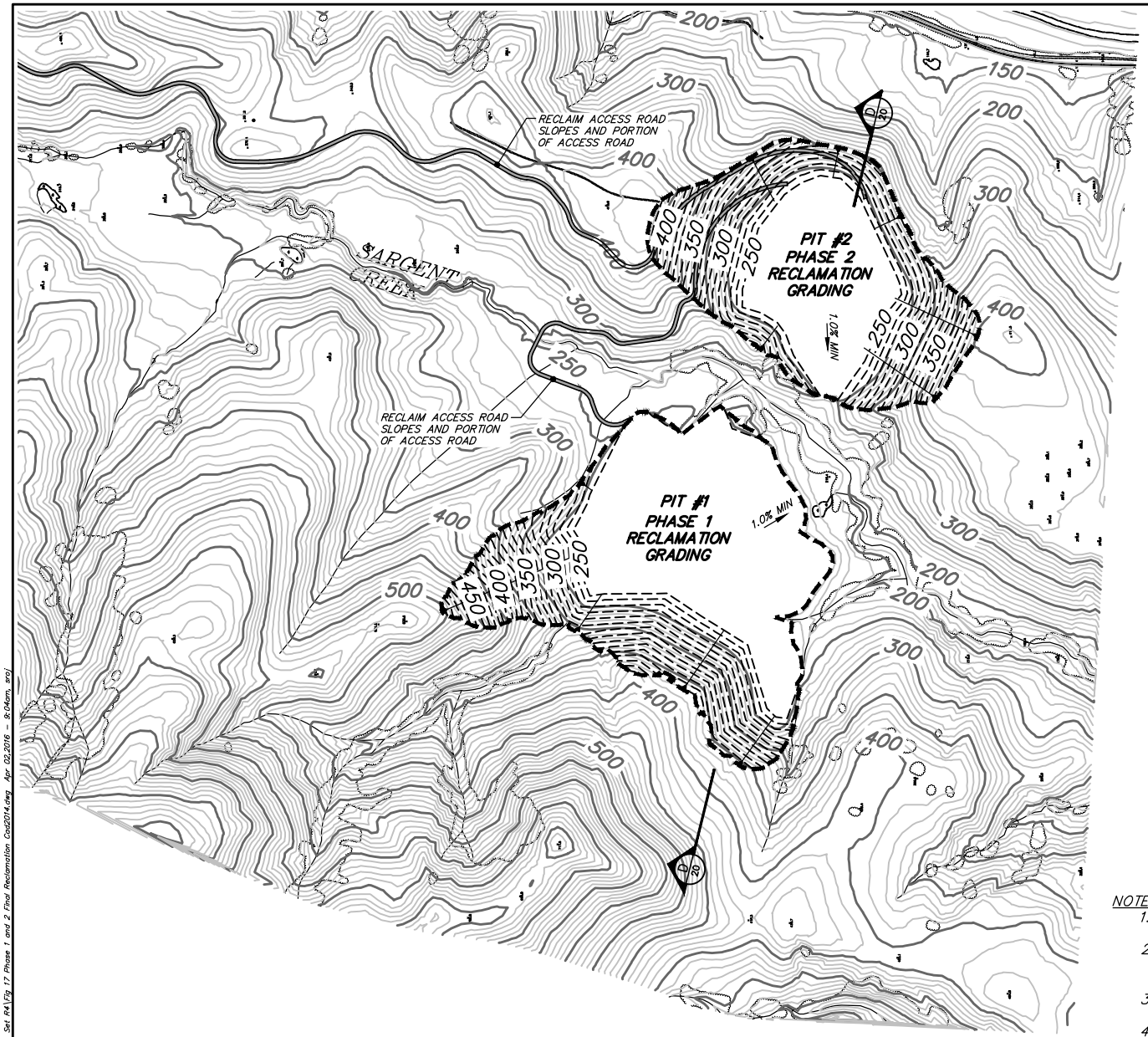
- Sedimentation basins.
- Water truck usage and soil compaction via track walking.
- Diversion of run-on and run-off through the use of drainage facilities and appropriated erosion control devices such as silt fences, wattles, slope protection, or other sediment control devices.

EC-2: Preventative maintenance activities are performed as part of an approved SWPPP program and include the following:

- Cleaning of accumulated sediment, debris, and potential contaminants from the drainage facilities is conducted as needed before the start of the rainy seasons. In addition, this cleaning is done on an as-needed basis during the rainy season.
- Clearing of debris from drain inlets and drainage pipes.

Protection of On-Site and Downstream Beneficial Uses of Water *(CCR §3706(a))*

Runoff from precipitation will generally drain into the quarry pit or sediment basins, with no stormwater within the Sargent Quarry limits being diverted off-site. Mining activities will not involve the placement of fill or dredged material in the waters of the United States. Actions in response to controlling drainage, siltation, and erosion (EC-1, above) will be effective in protecting downstream beneficial uses of surface water in accordance with the Porter-Cologne Water Quality Control Act, Water Code section 13000, *et seq.*; and the Federal Clean Water Act, 33 U.S.C. section 1251, *et seq.*



NOTES:

1. PHASE 2 OVERBURDEN WILL BE USED TO RECLAIM PHASE 1 AND 2 AS SHOWN HEREON.
2. PHASE 2 AND A PORTION OF PHASE 3 TOPSOIL SHALL BE SPREAD 6" MIN. ACROSS ALL OF PHASE 1 AND 2.
3. REFER TO FIGURES 20–22 FOR MINE RECLAMATION CROSS SECTIONS.
4. FOR FULL SIZE PLAN REFER TO APPENDIX H.

LEGEND

- MINING LIMIT LINE
- GRADED ROAD
- PROPOSED STORMWATER SEDIMENT BASIN
- W — PROPOSED WATER LINE FROM OFFSITE WELL
- CREEK
- PROPOSED PROCESS WATER POND
- TOPSOIL STOCKPILE AREA
- X / XX — SECTION LINE
- 800 — EXISTING GROUND CONTOUR AND ELEV.
- 800 — PROPOSED GROUND CONTOUR AND ELEV.

CONTOUR INTERVAL: 10'

GRAPHIC SCALE

800 0 400 800 1600

1 inch = 800 ft.

C:\01 Mammoth\4020 Sargent Ranch\Acad\Improvement Plans\Plan Set R4\Fig 17 Phase 1 and 2 Final Reclamation Cad2014.dwg Apr 02,2016 - 8:04am, srq

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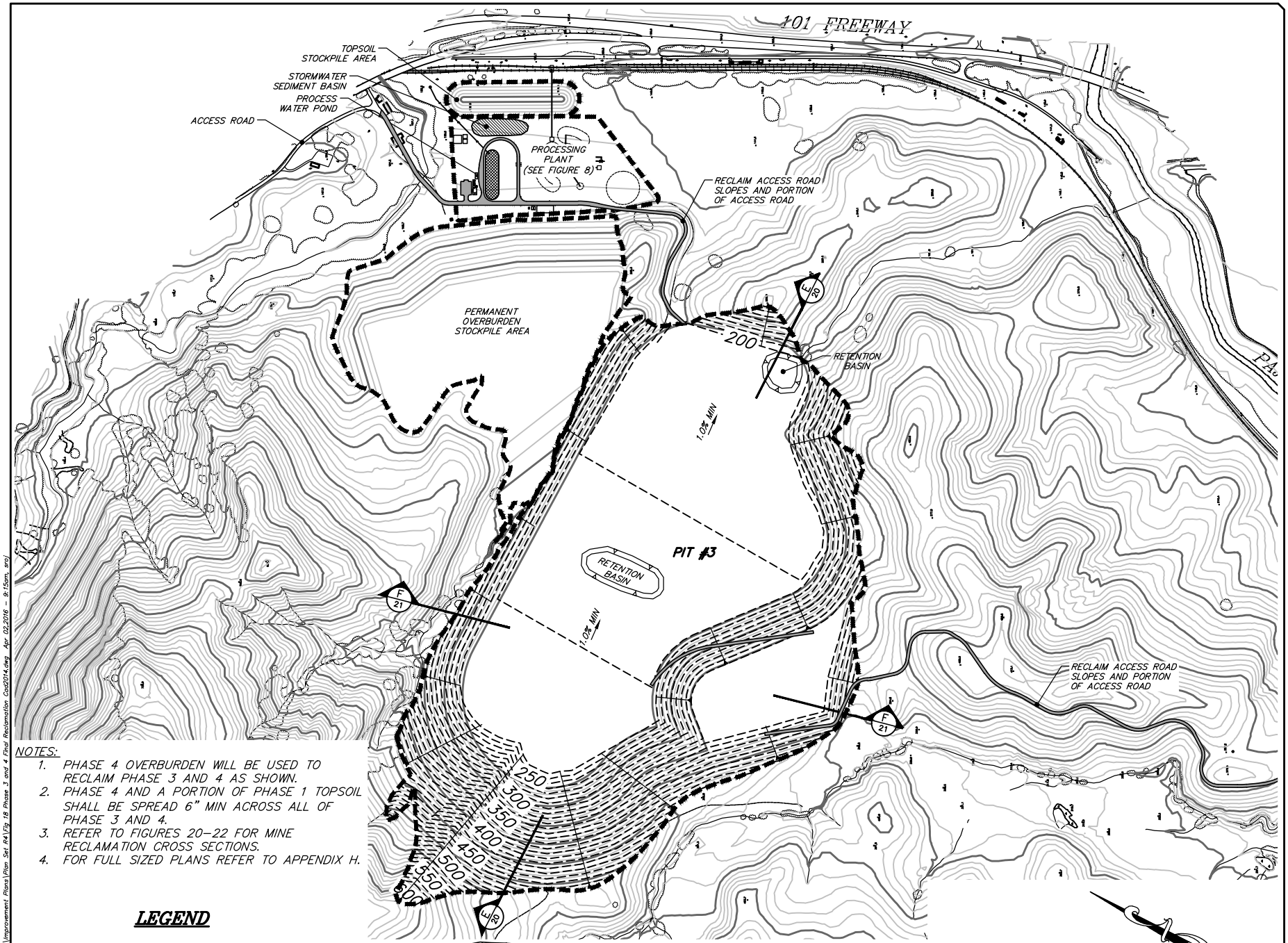
SARGENT RANCH QUARRY
PHASE 1 AND 2 FINAL RECLAMATION

DATE	04/01/2016
SCALE	AS SHOWN
DRAWN	SCR
JOB NO.	01.4020
DWG	FIGURE 17



NOTES:

1. PHASE 4 OVERBURDEN WILL BE USED TO RECLAIM PHASE 3 AND 4 AS SHOWN.
2. PHASE 4 AND A PORTION OF PHASE 1 TOPSOIL SHALL BE SPREAD 6" MIN ACROSS ALL OF PHASE 3 AND 4.
3. REFER TO FIGURES 20–22 FOR MINE RECLAMATION CROSS SECTIONS.
4. FOR FULL SIZED PLANS REFER TO APPENDIX H.

LEGEND

- MINING LIMIT LINE
- GRADED ROAD
- PROPOSED STORMWATER SEDIMENT BASIN
- W — PROPOSED WATER LINE FROM OFFSITE WELL
- CREEK
- PROPOSED PROCESS WATER POND
- TOPSOIL STOCKPILE AREA
- X / XX — SECTION LINE
- 800 — EXISTING GROUND CONTOUR AND ELEV.
- 800 — PROPOSED GROUND CONTOUR AND ELEV.

CONTOUR INTERVAL: 10'

GRAPHIC SCALE

800 0 400 800 1600

1 inch = 800 ft.

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SARGENT RANCH QUARRY

PHASE 3 AND 4 FINAL RECLAMATION

DATE	04/01/2016
SCALE	AS SHOWN
DRAWN	SCR
JOB No.	01.4020
DWG	FIGURE 18

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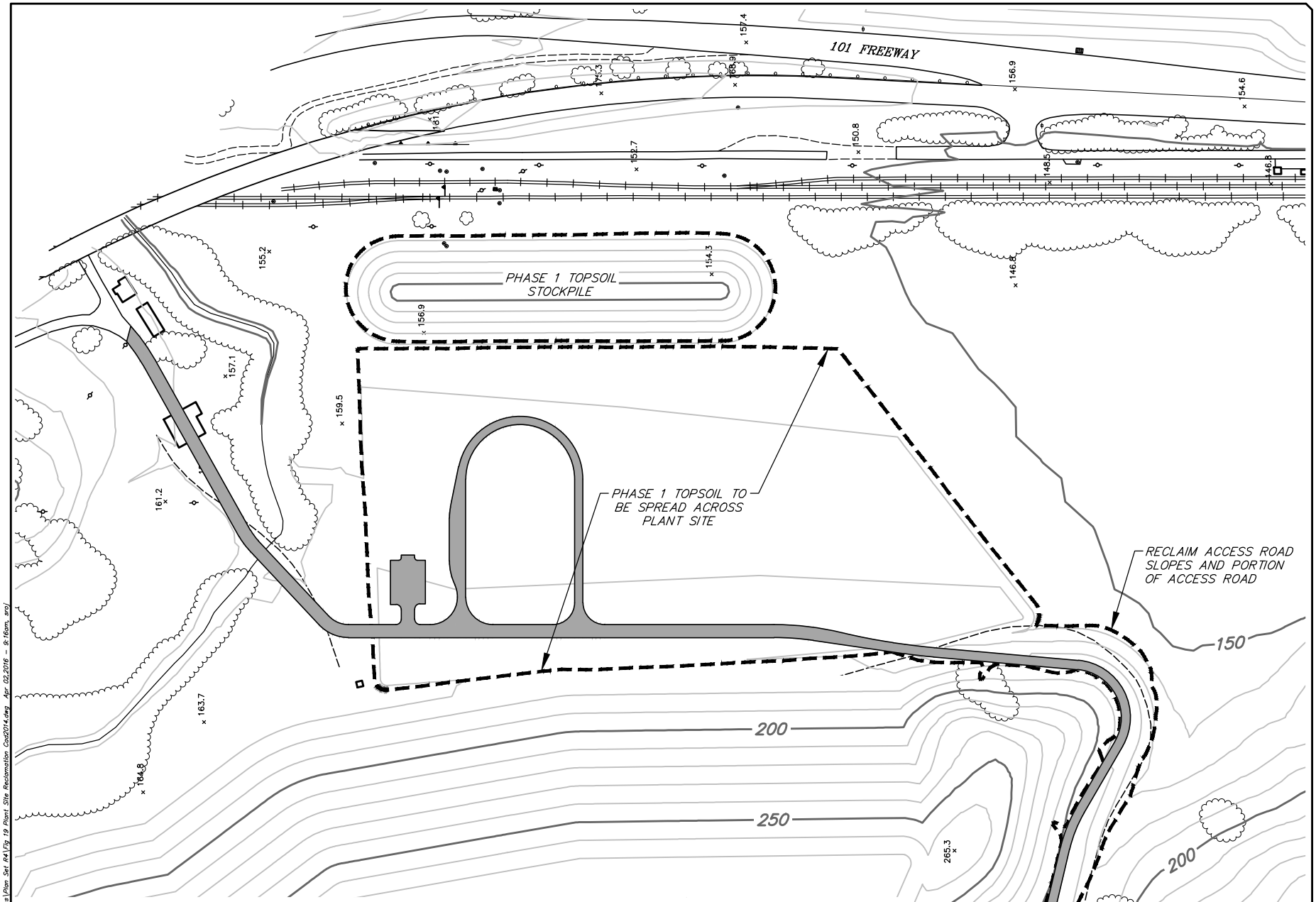

LEGEND

- BOUNDARY OF PLANT SITE TO BE RECLAIMED
- 800 — EXISTING GROUND CONTOUR AND ELEV.
- GRADED ROAD

NOTE: FOR FULL SIZE PLAN REFER TO APPENDIX H.

CONTOUR INTERVAL: 10'

GRAPHIC SCALE

250 0 125 250 500

1 inch = 250 ft.

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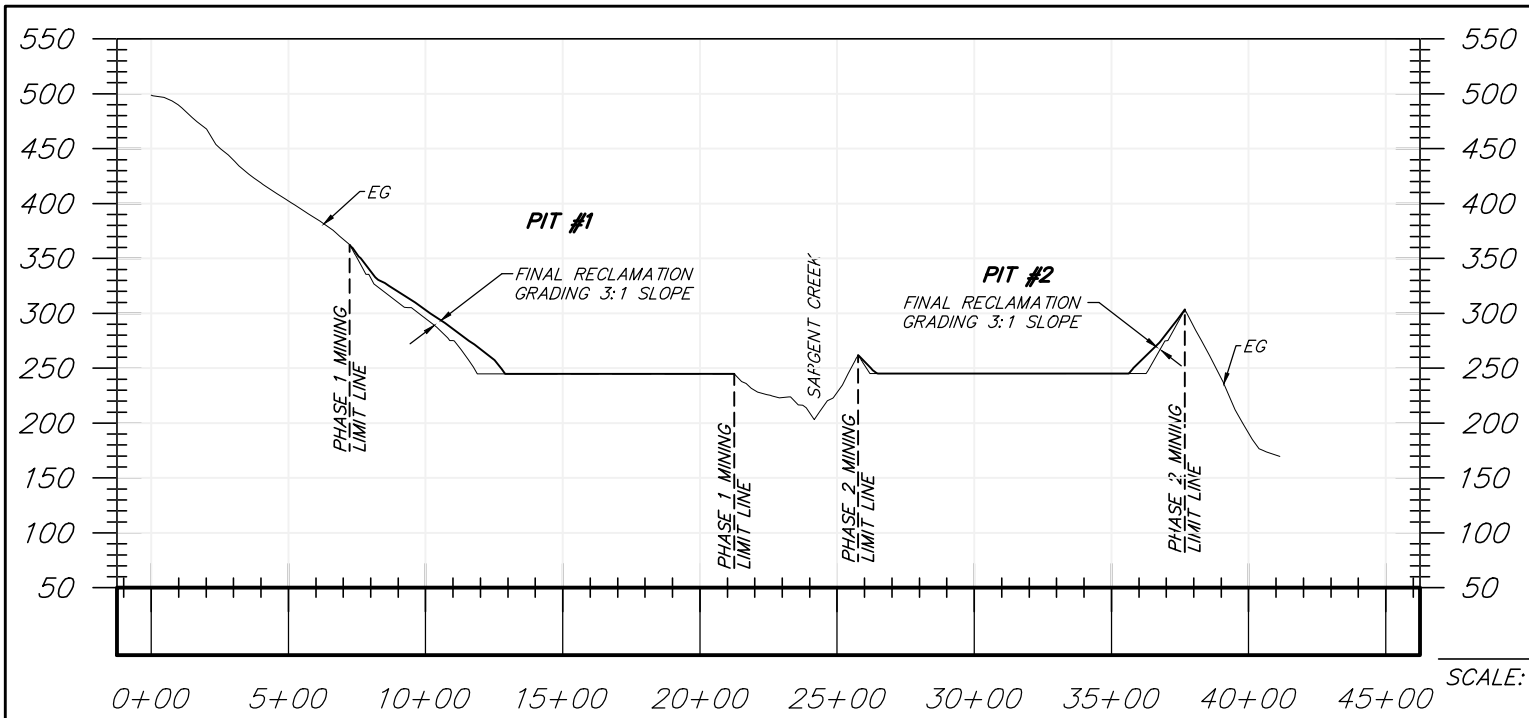
SARGENT RANCH QUARRY
AGGREGATE PLANT SITE RECLAMATION

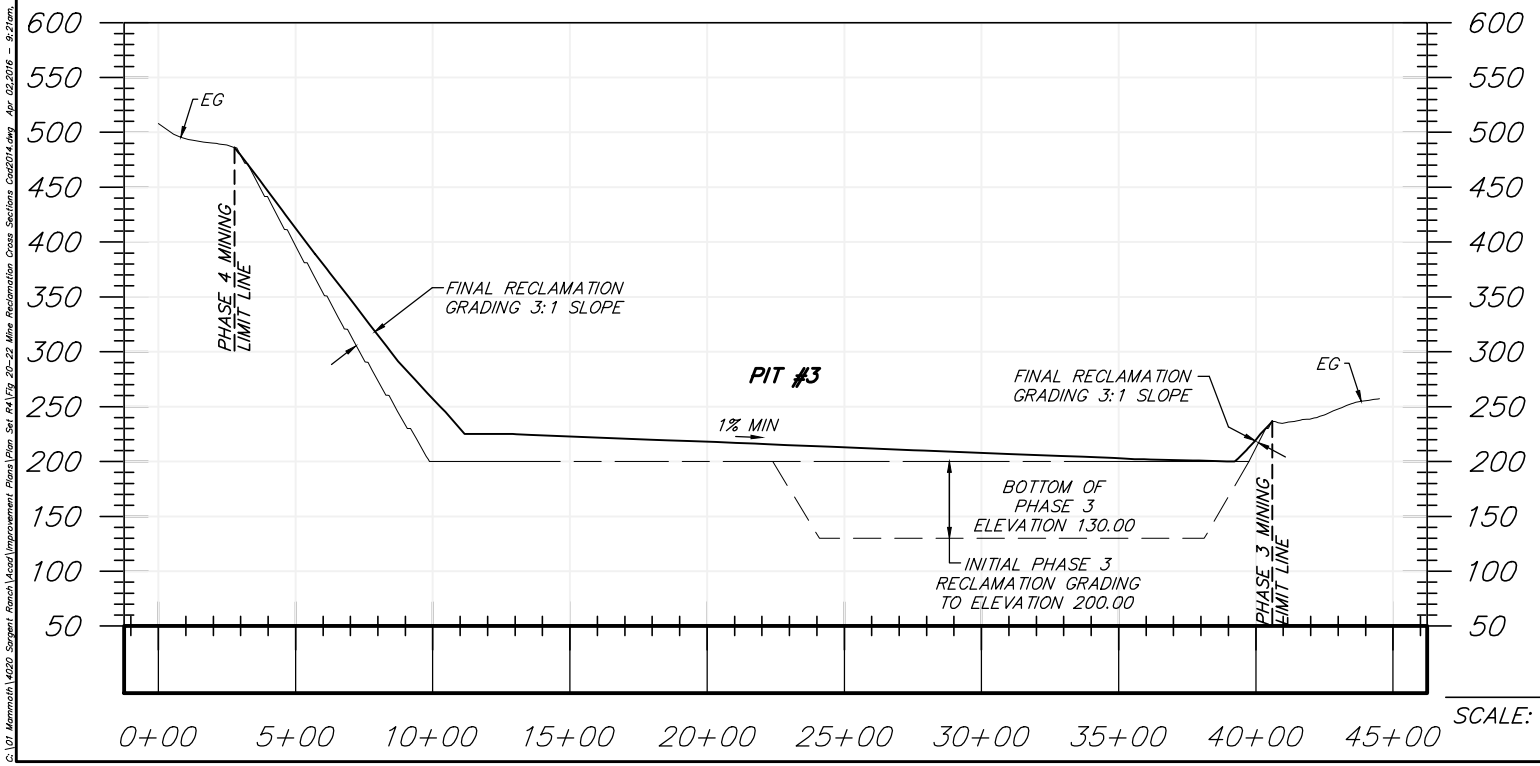
DATE 04/01/2016
SCALE AS SHOWN
DRAWN SCR
JOB NO. 01.4020
DWG

FIGURE 19



SECTION D

SCALE: HORIZ 1"=700
VERT 1"=125'



SECTION E

SCALE: HORIZ 1"=700
VERT 1"=125'

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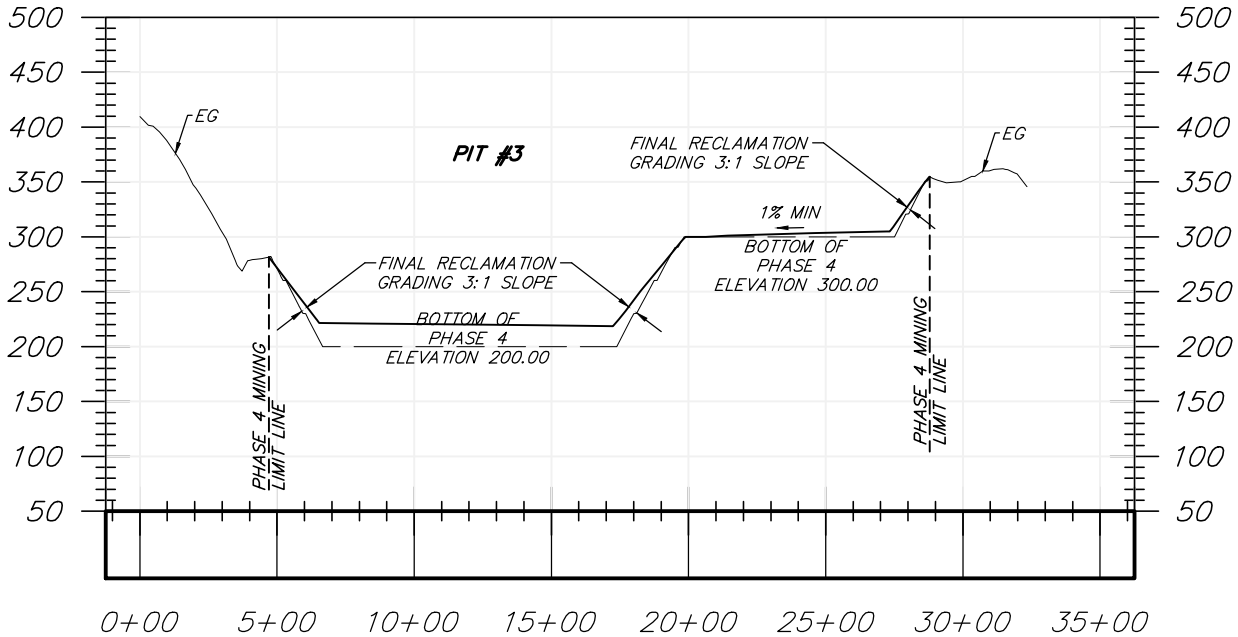
SARGENT RANCH QUARRY

MINE RECLAMATION CROSS SECTIONS

DATE	04/01/2016
SCALE	AS SHOWN
DRAWN	SCR
JOB NO.	01.4020
DWG	FIGURE 20

C:\01 Mammoth\4020 Sargent Ranch\Acad\Improvement Plans\Plan Set R4\Fig 20-22 Mine Reclamation Cross Sections Cad2014.dwg Apr 02,2016 - 9:21am sro



SECTION F

SCALE: HORIZ 1"=700
VERT 1"=125'

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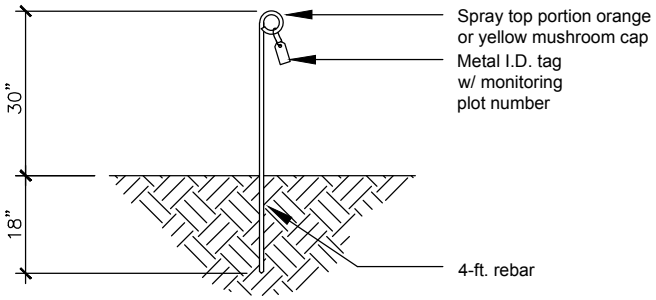
MINE RECLAMATION CROSS SECTIONS

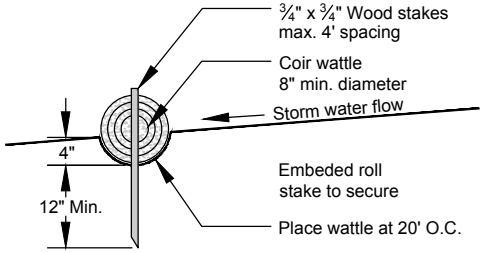
DATE: 04/01/2016
SCALE: AS SHOWN
DRAWN: SCR
JOB NO.: 01.4020
DWG:

FIGURE 21



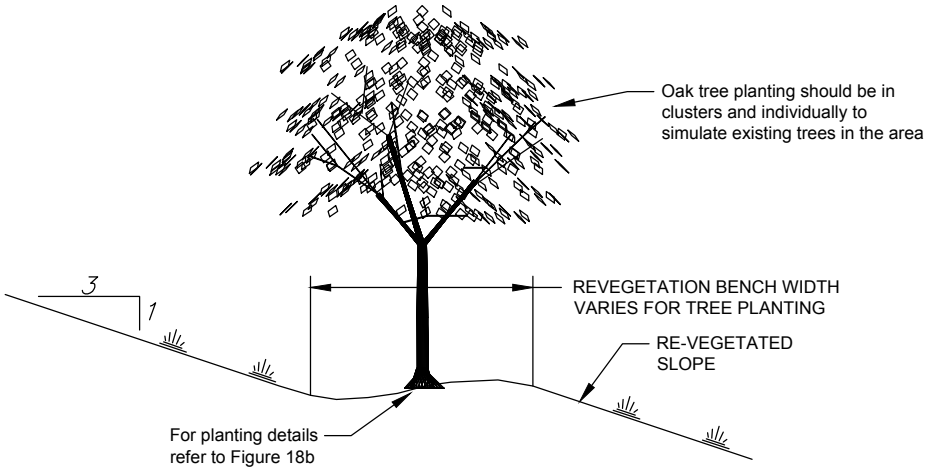
REBAR STAKING AT CORNERS OF MONITORING PLOTS

NO SCALE



COIR WATTLE SILT BARRIER

NO SCALE



TYPICAL BENCH RESTORATION AND REVEGETATION DETAIL

NO SCALE

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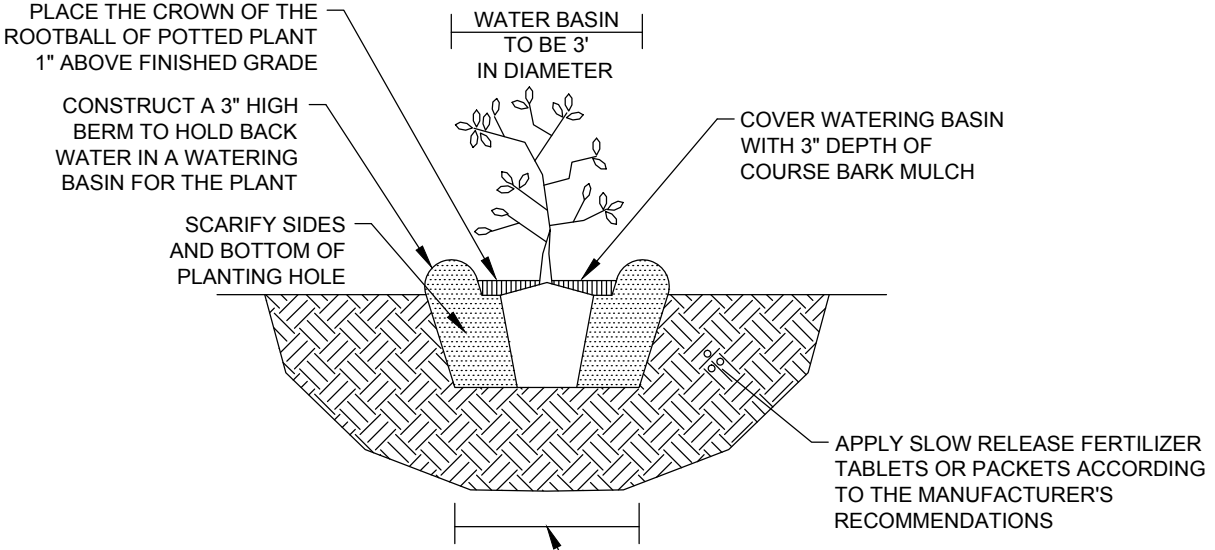
SARGENT RANCH QUARRY
MINE RECLAMATION PLANTING DETAILS

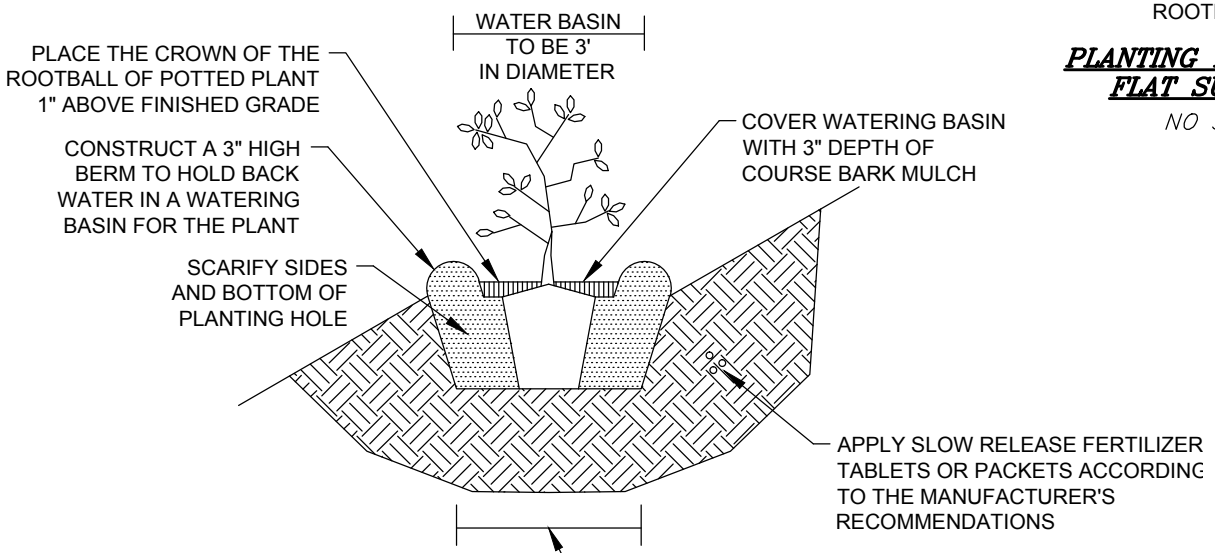
DATE: 04/01/2016
SCALE: AS SHOWN
DRAWN: SCR
JOB NO.: 01.4020
DWG:

FIGURE 22a



PLANTING DETAIL FOR FLAT SURFACES

NO SCALE



PLANTING DETAIL FOR SLOPES

NO SCALE

PLANTING NOTES:

1. TREES ARE FROM TUBE STOCK OR 1-GALLON SIZE CONTAINERS.
2. BACKFILL HOLE WITH 75% WATER-SATURATED, PULVERIZED NATIVE SOIL AND 25% ORGANIC AMENDMENT, AS REQUIRED BY LAB TESTS
3. WATER PLANTS IMMEDIATELY AFTER PLANTING.

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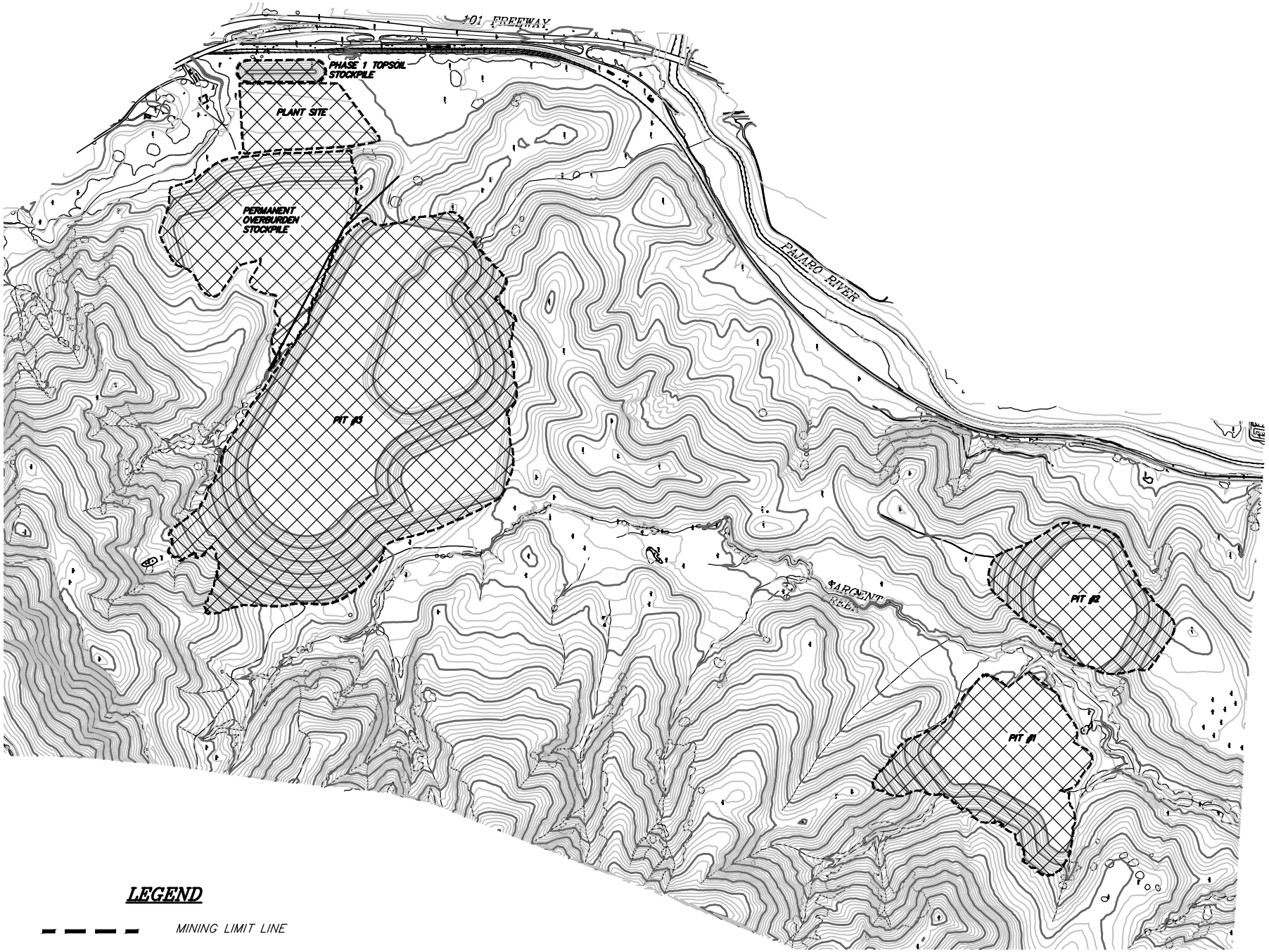
MINE RECLAMATION PLANTING DETAILS

DATE	04/01/2016
SCALE	AS SHOWN
DRAWN	SCR
JOB NO.	01.4020
DWG	FIGURE 22b



LEGEND

- MINING LIMIT LINE
- CREEK
- 800 — EXISTING GROUND CONTOUR AND ELEV.
- AREA TO BE REVEGETATED

CONTOUR INTERVAL: 10'

GRAPHIC SCALE

1200 0 600 1200 2400

1 inch = 1200ft.

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SARGENT RANCH QUARRY
REVEGETATION PLAN

DATE	04/01/2016
SCALE	AS SHOWN
DRAWN	SCR
JOB No.	01.4020
DWG	FIGURE 23

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4.6 RECLAMATION MONITORING AND MAINTENANCE

Reclamation activities will be monitored to ensure that reclamation of the site is done in compliance with the approved Mining and Reclamation Plan. The monitoring program incorporates site-specific criteria to measure compliance. Criteria are grouped into five categories: grading/topography, sediment and erosion control, revegetation, irrigation, and ongoing maintenance.

4.6.1 Final Topography

Satisfactory completion of reclamation will occur when the configuration of the site complies with the Reclamation Grading and Drainage Plans (Figure 16 and 17) and the Reclamation Cross-sections (Figures 19 and 20) as described herein. Final reclaimed slopes will have varying gradients of 3:1 or flatter to replicate the existing undisturbed slopes and in the areas with oak tree plantings, there will be 1 to 2-foot-wide benches established at 30-foot intervals unless otherwise indicated. Reclamation benches will be sloped a minimum of 4 percent to the rear (into the slope) and a minimum of 2 percent laterally for drainage. Interceptor ditches will be installed at the back of the bench which will flow either into (1) drop inlets that drain into overside drains that discharge onto energy dissipaters at the base of the slope or (2) either side collector ditches or lined ditches with energy dissipaters at the base of the slope. From the energy dissipaters at the base of the slope the water will either dissipate into the ground of the valley floor or be collected in drainage ditches that flow into the basin on the floor or into the reclaimed pit. The final valley floor will be graded to provide a 1 percent slope for sheet flow towards the drainage ditches and basin.

Following the completion of mining, the remaining soil materials, including overburden soil fines and top soils will be used (1) to fill and re-soil the quarry pit and process water pond, (2) for constructing the reclaimed fill buttress slopes and benches, and (3) for re-soiling the revegetated areas. Due to the unknown amount of overburden and soil fines available at the time of closure, this Plan allows for the use of the balance of the remaining soil materials to be used for re-soiling, and the subsequent remaining amount used to fill the pits and process water pond.

Fill placed into the pits, process water pond, and on the fill earth buttresses will be compacted up to 5 feet below the ground surface to at least a 90 percent density as determined by ASTM Test Designation D1557-78. The top 5 feet will be filled with

predominantly granular material, which is conducive to plant growth, and the surface will receive a layer of topsoil. Satisfactory reclamation will occur when test results are presented demonstrating that compaction limits have been met.

4.6.2 Erosion, Sediment, and Dust Control

A water truck will be used for wetting down work areas while filling and compacting is underway; while the ground surface is being ripped or disked; and while topsoil is being spread onto the reclaimed slopes, benches, and valley floor. Drainage ditches in loose soil will be lined with rock to reduce soil erosion. The final reclamation slopes, benches, and valley floor will be revegetated to stabilize the ground surface. The operator will inspect revegetated slopes prior to September 1 each year for 5 consecutive years after mining. Jut matting, erosion control blankets, coir wattles, silt fences, and sediment traps, will be used to mitigate areas where runoff is concentrated, so as to reduce sediment levels in the runoff. Rill erosion will be repaired whenever rills are found to be greater in cross-section than ten square inches and exceeding five feet in length. The repair will be achieved either by re-grading the area or by adding erosion control measures to reduce the concentration of water causing the erosion. Satisfactory reclamation will occur when the revegetation criteria have been met.

The two remaining sediment basins will be inspected annually while the operator is maintaining the site. The operator will continue to maintain the site until five years after mining ceases or two years after human intervention with planting, and after the planting success criteria are met, whichever is latest. After that time, the landowner will be in charge of maintaining the site. Once the landowner takes over the maintenance program, the inspection and maintenance of the basins will be reevaluated as appropriate, because it is anticipated that the site will become stabilized and that sediment will no longer be entering the drainage system.

4.6.3 Revegetation

Revegetation of the mining areas will be performed by the quarry operator. The reclamation specialist or a qualified biologist will evaluate the progress of revegetation and will recommend reseeding or replanting of any areas where vegetation has failed to achieve the vegetative success criteria 4 years after initial planting. A qualified landscape maintenance contractor with a current Qualified Applicators License (QAL) or trained quarry personnel will selectively remove targeted weeds using hand tools or managed grazing. If plants do poorly and there is excessive dieback from substandard planting techniques, inferior planting stock, or

drought, the same species will be replaced. If a species does poorly in spite of favorable stock, technique, and weather conditions, a reclamation specialist, qualified botanist, or landscape architect will be consulted and the species will be replaced by a more successful species within its plant association.
Plant vitality, in the reclaimed areas, will be visually monitored semi-annually (twice a year) for a two-year period following plant installation. If it is necessary to replant due to plant mortality, the two-year monitoring schedule will start over again when the plants are replaced. Twenty Monitoring Plots and four Test Plots are shown on Figure 24 and Table 14. The Monitoring Plots will continue to be inspected until the planting success criteria have been achieved and approval has been obtained from the County and the State Office of Mine Reclamation. The Test Plots will be monitored for 5 or more years until the planting palette and methods are confirmed and the planting success criteria are achieved.

Satisfactory reclamation of the valley floor, fill slopes, and benches will occur when the planting success criteria for plant density, coverage, and richness has been achieved in the Monitoring Plots. Vegetation diversity (species-richness) will result from the four different seed mixes with native and naturalized seed, specified in Tables 4 through 7, and from the installation of two native oak tree species specified in Table 3.

4.6.4 Irrigation Program

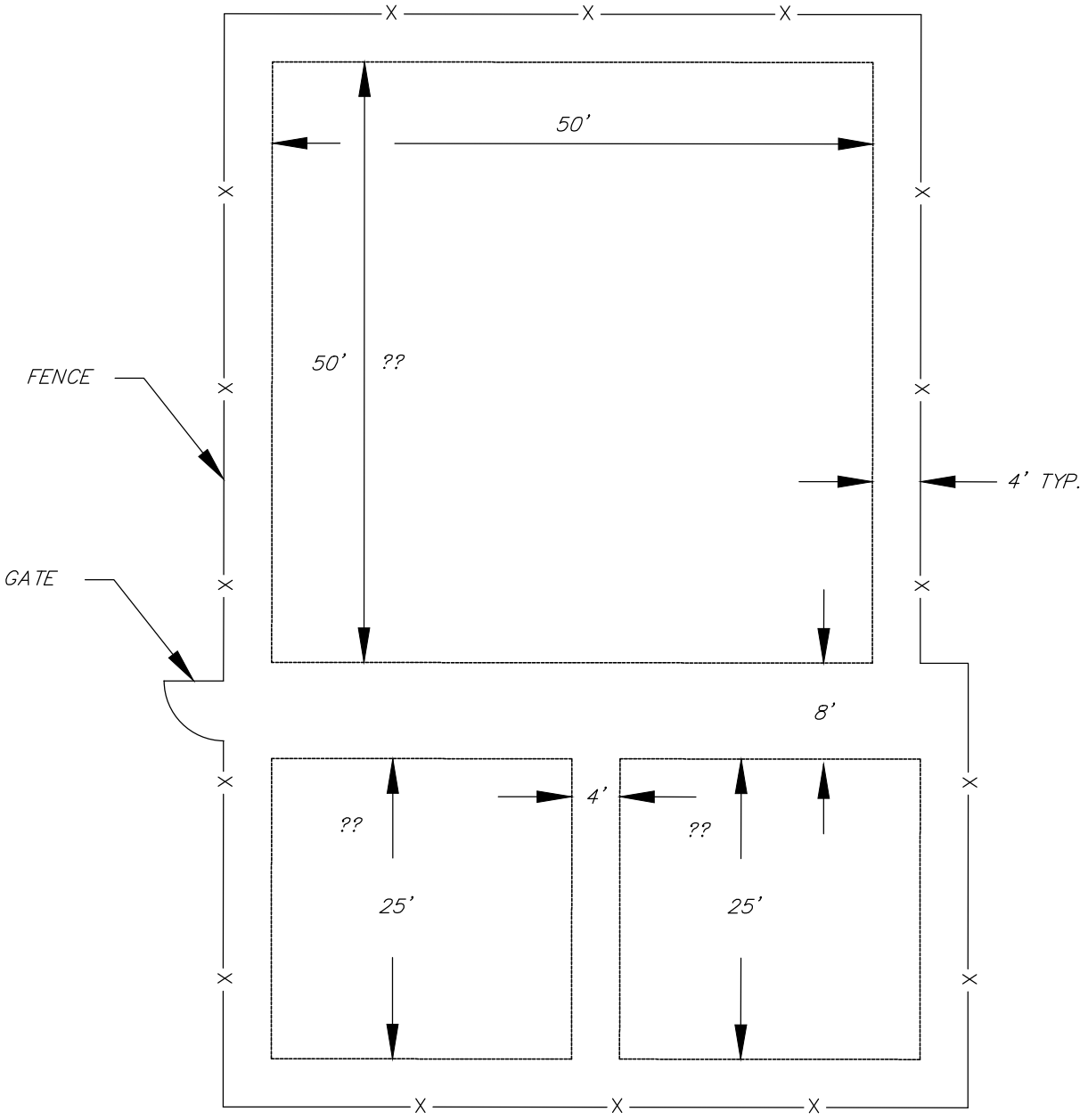
An irrigation system will be installed to assist in the revegetation effort if the Test Plot monitoring program determines that supplemental water improves the growth and survival rate of the oak tree seedlings. If an irrigation system is needed then the woody plants will be hand watered with a hose on a water truck for the first two years and then irrigated for the third year following installation to facilitate plant establishment. Plant irrigation will be discontinued at the end of the third year after planting or continued for an additional two years if replacement plants are installed. The objective is to meet the planting success criteria without ongoing irrigation. Once the irrigation system is shut off, the wells will be retained for future use in conjunction with rangeland and agricultural uses.

4.6.5 Ongoing Maintenance/Monitoring Period

As one mining phase is completed and another phase begins, the quarry operator will continue to monitor and maintain the previously completed mining and reclamation area. At the end of mining and reclamation of the Phase 4 mining area, the quarry

operator will continue to maintain all of the reclaimed areas for either a five-year period after mining ceases or a two-year period after the last human involvement with plantings, and until the planting success criteria are satisfied--whichever occurs last. Should Phases 1, 2, and 3 achieve the vegetative success criteria while Phase 4 is still being mined or reclaimed, the operator may ask the County and the State to approve these areas as reclaimed. After completion of the quarry operator's monitoring period (post-mining), ongoing maintenance will be the responsibility of the landowner.

The final reclaimed fill benches and slopes, quarry floor, drainage facilities, and plantings will be inspected prior to October 1st each year of the five-year post-mining maintenance and monitoring period. New plantings will be visually inspected semi-annually (twice a year) between April and May, and November and December of each year for the first two years after planting. The planting Test Plots will be monitored for a minimum of five years or longer if the trial planting program is modified. The Monitoring Plots, after the initial five-year period, will continue to be inspected every third year between April and May until they achieve the vegetative success criteria. Maintenance and repair work will be completed prior to November 1. The Maintenance/Monitoring Inspection Cycles are shown on Table 16 in Section 5.75. Conditions, covenants, and restrictions of any property sale during the five-year period, or anytime thereafter, will obligate the new owner to continue ongoing reclamation maintenance and monitoring.



NOTE:

1. REFER TO FIGURE 8 FOR LOCATION OF TEST PLOTS.
2. FENCE AND GATE TO BE 4 FEET HIGH AND SHALL BE WELDED WIRE OR SIMILAR.
3. FENCE PER SECTION 4.5.6.6 – TEST PLOTS, MONITOR PLOTS, MONITORING AND INSPECTION.

triad/holmes assoc
civil engineering
land surveying
MAMMOTH LAKES
BISHOP
REDWOOD CITY
SAN LUIS OBISPO

PREPARED & SUBMITTED BY:

DATE:

REVISIONS:	BY:

PREPARED FOR:

VERNE FREEMAN
894 SAN ANTONIO RD
PALO ALTO, CA 94303

SARGENT RANCH QUARRY

TEST PLOT PLAN

DATE	04/01/2016
SCALE	AS SHOWN
DRAWN	SCR
JOB NO.	01.4020
DWG	

FIGURE 24

4.7 RECLAMATION COSTS AND GUARANTEE *(PRC §2770 and PRC §2773.1)*

The reclamation cost estimate will be updated annually as required by the Surface Mining and Reclamation Act. The cost estimate in this Plan assumes that all mining activities are completed as described in the list of assumptions below.

4.7.1 Reclamation Assumptions

This reclamation cost estimate is based on the anticipated disturbance to the site during the first year of operations. Reclamation of the activities during the first year of Phase 1 are described in the task tables from Tables 8 through 11 and summarized in Table 12. Costs are based on work being performed by outside contractors and include the following assumptions:

- Work on various reclamation tasks will be done simultaneously and to the maximum extent practicable.
- Operating capacities of equipment have been obtained from the Caterpillar Company estimate production reference manual.
- Equipment rental costs have been obtained from local equipment rental companies and from *Labor Surcharge and Equipment Rental Rates*, April 1, 2013 through March 31, 2014 by the State of California, Department of Transportation, and Division of Construction.
- Labor costs are current union scale and represent fully-loaded hourly rates. The source of these costs is from the *General Prevailing Wage Determination* made by the California Department of Industrial Relations.
- Construction of new basins is considered to be mining costs. Back filling of basins following mining is considered to be a reclamation cost.
- Mining equipment will be sold at the site and removed by the buyer.
- Any stockpiled aggregate material (sand, gravel, and overburden for fill) remaining at the completion of mining will either be sold or used as fill material.
- Stockpiled overburden and soil fines will be used for re-soiling and for backfilling the planting holes. These soil materials will be amended if the monitoring program for the Test Plots indicates that soil amendments improve the vegetative success rates of the plants.

- Construction of the cut and fill slopes, mid-slope benches, and drainage facilities are done as mining proceeds and are considered to be mining costs.
- The irrigation system, if required, will remain in place and will not be removed.

4.7.2 Financial Assurance

A Financial Assurance Mechanism will be obtained and made payable to the "Santa Clara County or the Department of Conservation" and will be provided to Santa Clara County. The total cost of Reclamation is estimated to be $2,694,944. Each year the Financial Assurance Cost Estimate based upon the percentage of disturbance in the given year for reclamation will be updated and the amount of the financial assurance mechanism will be adjusted accordingly. As items of reclamation work are completed to the standards set forth in the approved Reclamation Plan and are acceptable to the County, the owner intends to retrieve the existing assurance and submit a new one with the face value reduced accordingly.

4.7.3 Financial Assurance Cost Estimate

Financial assurance estimates for the initiation of the operation are based on (1) an analysis of the physical activities necessary to implement the approved reclamation plan, (2) the lead agency's (or third party contract) unit costs for each of these activities, (3) the number of units of each of these activities, (4) an amount to cover contingency costs (not to exceed 10 percent of the above calculated reclamation cost) and actual lead agency administrative costs and (5) SMARA's costs for contingency, overhead and profit, mobility, and supervision.

Reclamation tasks are grouped into four categories of related work. Work in various categories will occur simultaneously but are listed separately in the following section.

Group 1 Tasks — Group 1 tasks include equipment and building removal.
-- Remove heavy duty equipment
-- Remove buildings and structures

Group 2 Tasks — Group 2 tasks includes Grading
-- Fill placement against slopes to reduce slope angles to 3:1 and establish proper drainage

Group 3 Tasks — Group 3 tasks includes Revegetation

1.0 PLANT STRUCTURES AND EQUIPMENT REMOVAL

TASK 1.1 - REMOVE SCALE, SCALEHOUSE, AND ALL CONCRETE FOOTINGS; REMOVE MOBILE PROCESSING EQUIPMENT FOR SALE

Method:

Remove office trailer. Remove crusher, screens, and conveyor system. Equipment could be sold, or salvaged. Since net value of equipment exceeds removal cost, no cost assumed. Disassemble equipment for sale or scrap. Break concrete and load to dispose off-site.

Miscellaneous Information:

N/A

A. Equipment List

Equipment	Quantity	$/Hr	# of Hours	Cost ($)
Cat Backhoe	1	$38.74	80	$3,099.20
Cat 436 Frontend Loader	1	$38.74	80	$3,099.20
Truck (4 axles)	1	$72.13	80	$5,770.40
		Total Equipment Cost for this Task:		**$11,968.80**

B. Labor List

Labor Category	Quantity	$/Hour	# of Hours	Cost ($)
Operating Engineer	2	$50.75	80	$8,120.00
Truck Driver	2	$20.94	80	$3,350.40
Laborer	4	$36.15	80	$11,568.00
		Total Labor Cost for this Task:		**$23,038.40**

C. Disposal

Structure/Equipment and Type	Volume (Tons)	Unit Cost Basis	Disposal Cost ($)	Cost ($)
Landfill Disposal Fee (Concrete)	40	36	$0	$1,440.00
		Total Material Cost for this Task:		**$1,440.00**

D. Direct Cost for this Task

Equipment Cost + Labor Cost + Materials Cost:	**$36,447.20**

2.0 PRIMARY RECLAMATION ACTIVITIES

TASK 2.1 - GENERAL GRADING

Method:

Approximately 292 acres of level to gently sloping land may require rough grading and any stockpiled material leveled. This task includes regrading any overburden or topsoil stockpiles to a 3:1 finished slope. The area calulated for this task includes all of quarry reclamation property outside of pit area.

Miscellaneous Information:

Quarry areas previously disturbed by mining will be backfilled and graded to rough grades. Surfaces would be ripped, graded and prepared for revegetation. Approximately 240 acres) will be graded.

D8R Dozer with a 14' blade (2 ft overlap); Avg. Speed: 2.5 mph; 50 minute hour; Production Rate: .3 Acre/Hr.

A. Equipment List

Equipment	Quantity	$/Hour	# of Hours	Cost ($)
Caterpillar D8 Dozer	3	$189.62	200	$113,772.00
Scraper	2	$192.34	200	$76,936.00
Water Truck	1	$57.83	200	$11,566.00
		Total Equipment Cost for this Task:		**$202,274.00**

B. Labor List

Labor Category	Quantity	$/Hour	# of Hours	Cost ($)
Operating Engineer	6	$50.75	200	$60,900.00
Truck Driver	1	$20.94	200	$4,188.00
		Total Labor Cost for this Task:		**$65,088.00**

C. Materials List

Item	Quantity	$/Unit	Cost ($)
N/A			$0.00
	Total Material Cost for this Task:		**$0.00**

D. Direct Cost for this Task

Equipment Cost + Labor Cost + Materials Cost:	**$267,362.00**

3.0 REVEGETATION

TASK 3.1 - REVEGETATE DISTURBED SURFACES

Methods:
Broadcast seed mixes and hydroseed slopes (per reclamation over reclaimed area) over entire site (approximately 240 acres). Container Stock to be planted according to Reclamation Plan.

Miscellaneous Information:
Approximately 214 acres will be broadcast seeded with a one of four different seed mixes depending upon location. See Reclamation Plan for detailed locations. All areas will be hyrdoseeded. Quote is inclusive of labor and materials. Or, alternatively assume ATV or tractor with seed spreader. Seed Path Width: 5 ft; Avg Speed: 3 mph; Production Rate: 1.25 acres/hr. Seed $7.00/lb.

A. Equipment List

Equipment	Quantity	$/Hour	# of Hours	Cost ($)
ATV or Tractor with Broadcast Seeder	2	$20.92	120	$5,020.80
		Total Equipment Cost for this Task:		**$5,020.80**

B. Labor List

Labor Category	Quantity	$/Hour	# of Hours	Cost ($)
Truck Driver	2	$20.94	120	$5,025.60
Landscape Laborer	2	$8.00	120	$1,920.00
		Total Labor Cost for this Task:		**$6,945.60**

C. Materials List

Item	Quantity	$/Acre	Cost ($)
Broadcast seeding	120.0	$1,500	$180,000.00
Hydroseeding	50.0	$3,600	$180,000.00
Container Stock(Oak Trees)	50.0	$350	$17,500.00
	Total Material Cost for this Task:		**$377,500.00**

D. Direct Cost for this Task

Equipment Cost + Labor Cost + Materials Cost: **$389,466.40**

4.0 MISCELLANEOUS COSTS

TASK 4.1 - MAINTAIN SEDIMENT PONDS AND ASSOCIATED DRAINAGE FACILITIES

Method:

Remove accumulated sediment.

Miscellaneous Information:

Maintain drainage ditches and sediment ponds for 2 years until regulation is established to control erosions. Haybales for first-year erosion control.

A. Equipment, Labor, and Materials

Item	Quantity	$/Hour	# of Hours	Cost ($)
Cat 330 Excavator w/ 2.9 cy bucket	1	$141.54	40	$5,661.60
	Total Cost for this Task:			**$5,661.60**

B. Labor List

Labor Category	Quantity	$/Hour	# of Hours	Cost ($)
Operating Engineer	1	$50.75	40	$2,030.00
	Total Labor Cost for this Task:			**$2,030.00**

C. Materials List

Item	Quantity	$/Unit	Cost ($)
Haybales	40	$7	$280.00
	Total Material Cost for this Task:		**$280.00**

D. Direct Cost for this Task

Equipment Cost + Labor Cost + Materials Cost:	**$7,971.60**

TASK 4.2 - INVASIVE SPECIES PREVENTION AND WEED CONTROL

Method:

Laborers to control non-native weeds if they inhibit revegetation planting. Manage invasive weeds during revegetation process .Targeted Cattle or sheep grazing will be the method used

Miscellaneous Information:

Assume 2.5 days weed control for 5-year revegetation period.
Labor:Landscape Maintenance Laborer, Truck Driver, Teamster, Group III

A. Equipment List

Equipment	Quantity	$/Hour	# of Hours	Cost ($)
Flatbed Truck (2-axle)	2	$50.46	80	$8,073.60
	Total Equipment Cost for this Task:			**$8,073.60**

B. Labor List

Labor Category	Quantity	$/Hour	# of Hours	Cost ($)
Landscape Labor	3	$8.00	80	$1,920.00
Truck Driver	1	$20.94	80	$1,675.20
	Total Labor Cost for this Task:			**$3,595.20**

C. Materials List

Item	Quantity (Gal)	$/unit	Cost ($)
			$0.00
	Total Material Cost for this Task:		**$0.00**

D. Direct Cost for this Task

Equipment Cost + Labor Cost + Materials Cost: **$11,668.80**

Five Year Total **$58,344.00**

5.0 MONITORING

TASK 5.1 - REVEGETATION SUCCESS AND GEOTECHNICAL MONITORING

Method:
Monitor for successful revegetation, slope stability, erosion control, final grading, and maintenance.

A. Monitoring - Supervision

Monitoring Task	$/Visit	Visits/ Year	Monitoring Years	Cost ($)
Geotechnical/Erosion Control Monitoring	$8,000.00	1	5	$40,000.00
Revegetation Monitoring(Biologist)	$1,600.00	4	5	$32,000.00
			Total Monitoring Cost for this Task:	**$72,000.00**

B. Monitoring - Crew

Year	Maintenance (1 crew/ day)	Visits/yr	Maintenance Costs	
1 (Installation)	$1,800.00	12	$21,600.00	
2 (Post-Installation)	$1,800.00	12	$21,600.00	
3	$1,800.00	4	$7,200.00	
4	$1,800.00	4	$7,200.00	
5	$1,800.00	4	$7,200.00	
			Total Monitoring - Crew	**$64,800.00**

B. Direct Cost for this Task

Total Monitoring Costs:	**$136,800.00**

6.0 SUMMARY OF COST

Direct Costs:

All Plant Structures and Equipment Removal Costs		$36,447.20
All Primary Reclamation Activities Costs		$1,444,043.80
All Revegetation Costs		$389,466.40
All Miscellaneous Costs		$66,315.60
All Monitoring Costs		$136,800.00
	Total of Direct Costs	*$2,073,073.00*

Indirect Costs:

Supervision *(5% of Direct Costs)*		$103,653.65
Profit/Overhead *(10%)*		$207,307.30
Contingencies *(7%)*		$145,115.11
Mobilization *(3%)*		$62,192.19
	Total of Indirect Costs	*$518,268.25*
	Total of Direct and Indirect Costs	*$2,591,341.25*

Lead Agency Administrative Cost *(4% of Costs)* *$103,653.65*

Total Estimated Cost of Reclamation: $2,694,994.90

4.8 EFFECT OF RECLAMATION ON FUTURE MINING POTENTIAL

The reclamation actions described in the Mining and Reclamation Plan will not interfere with future mining potential at the site, as described in Section 3.7. The Sargent Quarry mineral deposit is known to have a vertical extent that exceeds beyond the depth of the design in this Plan. The current mine plan provides for resource extraction to a maximum depth of about 130 feet above sea level. This is the depth that material can be extracted based primarily on quarry geometrics and haul road requirements. Access to deeper reserves would require "lay back" of quarry walls which is not currently planned due to limits of the property and surface area required.

While current economics, equipment, and property configuration do not support mining at increased depth, these limitations may or may not apply in the future. The Reclamation Plan and designated end use as rangeland specified in this document would not compromise such additional future mining. No other conditions are foreseen that could reduce the viability of additional reserve extraction beyond the current operating constraints.

5.0 POST RECLAMATION MONITORING/MAINTENANCE PROGRAM

5.1 POST RECLAMATION MAINTENANCE SCHEDULE

Several procedures will be followed to ensure that reclamation of the site is successful and that the site is appropriately maintained. All maintenance inspections will be conducted during August and September each year; maintenance work will be completed by either October 1st or November 1st each year depending on the task. These annual maintenance inspections will be performed by quarry operator's personnel, and the inspections will be recorded onto the 19 reporting forms on Figures 22 through 40. These inspections will include repair of the irrigation system (if installed) on an as needed basis; erosion control work; fence repair; and sediment removal from ditches, drop inlets, process water pond, and sediment basins. The quarry operator will manage the maintenance program until 5 years after mining ceases or 2 years after human intervention for reclamation planting, and after the planting success criteria are met, whichever is last. After that, the responsibility to maintain the site is the duty of the landowner.

5.2 DRAINAGE AND SEDIMENT CONTROL

The fill buttress slopes and benches, drainage ditches, drop inlets, over-side drain pipes, culverts, and basins will be inspected annually until the quarry operators' maintenance program ends. The final maintenance program to be administered by the landowner should include annual inspection of the fill buttress slopes and benches, drainage ditches, drop inlets, culverts, and basins.

Areas of erosion will be treated by placing coir wattles onto the area to restrict the concentration of runoff and reduce sedimentation. Erosion will be considered significant when individual rills exceed 12 inches in depth and occur more frequently than every 50 feet. Accumulated silts will be removed from the basins and drainage ditches to maintain capacity.

5.3 REVEGETATION MONITORING AND REVEGETATION CRITERIA

Revegetation consists of hydro-seeding and planting of trees, as shown on Figure 20: Revegetation Plan. At the start of mining the monitoring of Test Plots will begin. Findings will be used to modify the planting program as needed prior to the Post-Maintenance and Monitoring period. During the Post-Maintenance and Monitoring Period, revegetation monitoring will include both visual monitoring for a two-year period and then quantified monitoring for at least another 3 years of the 20 Monitoring Plots and four Test Plots until the revegetation plantings achieve the vegetative success criteria in Table 15. If more time is needed to achieve the criteria, then the Monitoring Plots will continue to be inspected at varying intervals until the vegetative success criteria is achieved.

The visual monitoring inspections of the Test Plots and the Monitoring Plots will measure plant survival rates and these will be recorded on the Visual Planting Inspection Forms for each plot on Figures 25 through 28. The Monitoring Plots will be visually inspected semi-annually for the first two years after planting and the Test Plots will be visually inspected monthly the first year and quarterly the second year. After the two-year visual observation inspection period each Test Plot and Monitoring Plot will be subject to quantified monitoring inspections. The quantified monitoring inspections of both the Test Plots and the Monitoring Plots will occur semi-annually (twice yearly) and will use the following planting success criteria and reporting forms on Figures 25 through 28:

- Plant coverage
- Plant density
- Species-richness (diversity)

The planting success criteria for plant coverage, plant density, and species-richness has been identified and described for each plant community, including Non-Native Annual Grassland and Oak Woodland, and are summarized on Table 15.

The revegetation-monitoring program will evaluate the ongoing success and failures of the reclamation program based on the planting success criteria. Modifications will be made to the planting program, if necessary, to ensure that the planting success criteria are achieved. Most modifications to the planting program will be made based on the outcome of the Test Plots. The Revegetation Monitoring program will continue for 5 years after mining ceases; 2 years after all human intervention with planting has ended; and until all of the planting success criteria for all reclamation areas have been satisfied, whichever is last.

While ongoing revegetation efforts have indicated that the viability of plants can be determined within 2 years of their installation, it is anticipated that it will take a minimum of 5 years to achieve the planting success criteria. Failed plantings will be replaced, as needed, to meet the planting success criteria shown on Table 15. Revegetation experts will inspect the newly planted areas, Test Plots, and Monitoring Plots. The revegetation-monitoring program will include the following tasks:

Visual Inspections of Monitoring Plots and Test Plots (1 to 2 years): The newly planted areas, including 20 Monitoring Plots and four Test Plots and shown on Figure 24 will be visually inspected the first two years after planting to provide an overview of the planting program. The Test Plots will be inspected monthly the first year and then quarterly the second year. The Monitoring Plots will be inspected semi-annually (twice/year). These visual inspections will measure the survival rate and dieback rate of woody plants and provide a general overview of vegetative coverage. Replanting will be required if there is less than 65% survival rate of the trees 2 years after planting. The Test Plot visual inspections will be recorded on the Visual Planting Inspection Forms; and the monitoring inspections of the Test Plots will be recorded on Figures 26 through 39. The visual inspections of the Monitoring Plots will be recorded on the Visual Planting Inspection Forms, and the monitoring inspections of the Monitoring Plots will be recorded. The visual inspections for the Monitoring Plots will examine each area of the quarry including: (1) reclaimed benches and slopes and (2) quarry floor as shown on Figure 21: Test Plot and Monitoring Plot Locations and Design. The semi-annual inspections for the Monitoring Plots will occur between April and May, and November and December each year.

Monitoring Plot (commences after Visual Inspection) and Test Plot Inspections: The 20 Monitoring Plots will be inspected semi-annually for the first three years after the Visual Inspection period (described above), and then once every third year until the planting success criteria have been achieved and approved by the County and the State Office of Mine Reclamation. Due to the time of planting and plant vitality, some Monitoring Plots may still need to be inspected during the last year of the five-year maintenance period and these quantified inspections will continue until the planting success criteria are achieved and approved by the County and the State Office of Mine Reclamation. After the two-year Visual Inspection period, the 3 Test Plots will be inspected semi-annually for 3 years between April and May and November and December, and then every other year as needed.

These quantified inspections will evaluate the planting success criteria of the Monitoring Plots and Test Plots identified on Table 14 and located on Figure 24: Test Plot and Monitoring Plot Locations and Design. Dead container plants shall be tallied annually and replaced as required to meet the success criteria. Additional desired native species established through natural recruitment also may be counted toward the criteria. These inspections will be recorded on the Revegetation Monitoring Plot Log for each planting habitat zone in the quarry including (1) Non-Native Annual Grassland and (2) Oak Woodland. These quantified inspections will occur semi-annually between April and May and November and December. Should a Monitoring Plot or Test Plot achieve the planting success criteria before the end of its designated inspection period, inspections may stop for that one plot or area since the planting criteria has been achieved.

The two inspections described above will be performed on a time schedule based on the year of planting. Table 13 presents a hypothetical schedule to illustrate how the inspection program will work over time.

TABLE 11
TYPICAL MONITORING INSPECTION SCHEDULE[4]

PHASE	MINING YEAR est. 2015-2045																														POST-MINING				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5
1	Tv	Tv	T●	T● Mv[5]	T● Mv	M●	T● M●	M●		* * Mv[6]	Mv	* * M●	M●	* * M●		* * *		* * *		* * *		* * *		* * *		* * *		* * *		* * *		* * *		* * *	
2	T	T	T●	T●	T●		T●		T●		T●									Mv	Mv	M●	M●	M●											
3	T	T	T●	T●	T●		T●		T●		T●		T●		T●		T●		T●		T●		T●		T●		T●		T●		Mv	Mv	Mv	Mv	Mv

Tv ***Visual inspection of Test Plot*** *during the 1st two years after planting; Monthly the 1st year & quarterly the 2nd year.*
T● ***Monitoring Inspections of the Test Plots*** *during years 3 through 5 after planting semi-annually; and then once every third year as needed until the criteria are achieved*

[4] This Table is meant to provide an example of the Inspection Schedule and does not represent the entire planting/inspection schedule nor the exact years that each mining phase will take.

[5] Phase 1 will be reclaimed in two stages because the mining area on the ridge will be reclaimed as soon as mining is completed in this area; approximated 4 years after mining of Phase 1 commences. The remaining portion of Phase 1 will be reclaimed at the beginning of Phase 2.

[6] After the completion of all mining in Phase 1, the remainder of Phase 1 will be reclaimed.

Mv ***Visual inspections of the Monitoring Plots*** *during years 3 through 5 after planting semi-annually; and then once every third year as needed until the criteria are achieved*
Monitoring Inspections of the Monitoring Plots *during years 3 through 5 after planting- semi-annually; and then once every third year as needed until the planting success criteria are satisfied, and are approved by the County and State Office of Mine Reclamation.*

* *On-going inspections, only if revegetative success criteria was not achieved by the end of 5 years after planting. If replanting is required then the 5-year cycle repeats: 2 years visual inspections and 3 years monitoring. If vegetation needs more time to grow, because 5 years wasn't enough, then continue with inspections every 3rd year.*

Shaded rows with green indicate the approximate duration of mining during each mining phase.

The success criteria for revegetation areas will be measured using randomly placed Test Plots and Monitoring Plots. The location of each Test Plot will be well established by placing wire fencing around the plot. The Monitoring Plot transects will include a 2-foot-wide belt transect with a line–intercept transect down the centerline, oriented down the slope gradient. The belt transect's beginning and end points will be demarcated with a 4-foot tall metal rebar set 12 inches into grade and capped with a yellow mushroom rebar cap. The rebar posts will be identified with embossed aluminum tags. The Monitoring Plots for annual grassland will be 2 feet by 50 feet transect. The transects for the Oak Woodlands will be 2 feet by 100 feet and the density of Oak Tree species will be counted using a 100-foot circular plot centered on the line intercept transect in the middle of the belt transect.

The use of rebar and GPS record will facilitate locating each transect and will also ensure that the information collected during each survey is for the exact same area (size) and location. Transect data will be analyzed to determine if the reclamation plantings are achieving the vegetative success criteria. The large number of transect Monitoring Plots in each plant community at the reclaimed quarry will provide an 80 percent confidence level in the data collected for the planting success criteria.

TABLE 12 MONITORING PLOT & TEST PLOT LOCATIONS		
PLANTING PLOT	**LOCATION**	**PLANT COMMUNITY**
PHASE 1: A1	Reclaimed Slope	Grassland
A2	Reclaimed Slope	Grassland
A3	Reclaimed Slope	Oak Trees
A4	Reclaimed Bench	Oak Trees
PHASE 2: B1	Reclaimed Slope	Grassland
B2	Reclaimed Slope	Grassland
B3	Reclaimed Bench	Oak Trees
B4	Reclaimed Slope	Oak Trees
PHASE 3: C1	Reclaimed Bench	Oak Trees
C2	Reclaimed Slope	Oak Trees
C3	Quarry Slope	Grassland
C4	Quarry Slope	Grassland
TEST PLOT[7]	**LOCATION**	**PLANT COMMUNITY**
TA 1	By Office	Grassland
TA 2	By Office	Oak Trees

[7] The Test and Monitoring plots are shown on Figure 21.

The quantifiable planting success criteria that will be used to evaluate the revegetation program are shown below in Table 15 .

TABLE 13
SARGENT QUARRY - PLANTING SUCCESS CRITERIA goal by minimum of 5 years after planting)

SITE LOCATION	PLANT COVERAGE (percent)	PLANT DENSITY Forbs or native, or locally-naturalized plants (per transect)	SPECIES-RICHNESS Native or locally-naturalized plants (per transect)
Grassland: 3:1 or flatter fill slopes	60% [8]	5[9]	2 [10]
Grassland: Quarry floor	70%[11]	4[12]	3[13]
Oak Woodland w/Grassland : Fill slope (3:1 gradient or flatter)	50% [14]	4[15]	4[16]
Badlands – fill slopes	40%[17]	4[18]	2[19]

The transects for the Monitoring Plots and the area allocated for the Test Plots that will be used to measure the planting success criteria will vary in size. The Monitoring Plot transects will include a 2-foot-wide belt transect with a line–intercept transect down the centerline, oriented down the slope gradient. The Monitoring Plot transects for annual

[8] The plant coverage of new **grassland areas on the reclaimed 3:1 fill slopes** is expected to be 60 % coverage including the native and locally-naturalized plants. Lower plant coverage is anticipated on the fill slopes due to the more difficult growing conditions.

[9] The plant density of grassland areas is not a measurement used in determining planning success criteria; however the forbs in the seed mix (4) can be counted; and any other native or locally-naturalized forbe or woody plant that volunteers can be counted.

[10] The species-richness of the grassland areas on the reclaimed 3:1 fill slopes is expected to be a little less than 50% of the number of perennial plant species (3) and forbes (4) in the seed mixture; and any other native or locally-naturalized forbe and woody plant volunteers can be counted. A lower species-richness count is expected on the cut slopes due to the harsher conditions: dry rocky surfaces and lack of soil.

[11] The plant coverage of the **grassland on the reclaimed quarry floor** is expected to be 70% from all native or locally naturalized plants.

[12] The plant density of grassland areas is not a measurement used in determining plant success criteria; however, the forbs in the seed mix (4) can be counted; in addition to any other native or locally-naturalized forbe or woody plant. Lower plant density is anticipated due to more difficult growing conditions.

[13] The species-richness of the grassland on the reclaimed quarry floor is expected to be a little less ½ of the number of perennial plant species (3) and forbes (4) in the seed mixture; and any other native or locally-naturalized forbe or woody plant that volunteers can be counted.

[14] The plant coverage of the **Oak Woodland with grassland areas on fill slopes** with a gradient of 3:1 or flatter is expected to be 50 % coverage including the native & locally-naturalized plants. Lower plant coverage is anticipated on the fill slopes due to more difficult growing conditions.

[15] The plant density of grassland areas is not a measurement used in determining plant success criteria; however, the plant density in the Oak Woodland with grassland on fill slopes considers the combination of the following assumptions: ½ of the tree species in the circular plot (4 out of 7): and any of the 4 forbs in the seed mix; and any other native or locally-naturalized forbe or woody plant can be counted.

[16] The species-richness of the Oak Woodland with grassland areas is expected to be a little less ½ of the number of perennial plant species (3) and forbes (4) in the seed mixture, and ½ of the tree species in the planting list; and any other native or locally-naturalized forbe or woody plant that volunteers can be counted. A lower species-richness count is expected on the slopes due to the harsher conditions: dry rocky sub-surface and thin soil layer.

[17] The plant coverage of new **areas on the reclaimed slopes** is expected to be less than the existing cover of 50 %. The plant coverage will include native & locally-naturalized plants. Lower plant coverage is anticipated due to the more difficult growing conditions.

[18] The plant density of on the reclaimed slopes is expected to include: 2 perennial shrubs per transect (½ of the perennial shrubs in the seed mix); and any of the 4 forbes in the seed mix; and any other native or locally-naturalized forbe or woody plant volunteer can be counted.

[19] The species-richness on the reclaimed slopes is expected to be a little less ½ of the number of perennial plant species in the seed mixture (5); and include any other native or locally-naturalized forbe or woody plant that volunteers. A lower species-richness count is expected on the slopes due to the harsher conditions: dry rocky sub-surface and thin soil layer.

grassland, habitat will be 2 feet by 50 feet. The transect for Oak Woodland will be a 2 feet by 100 feet transect and will be used to count the Density of Oak Woodlands.

There will be two Monitoring Plots for the Oak Woodland and for the Annual Grassland plant community for a total of 2 planting Monitoring Plots. The proposed location and general design of the Test Plots is shown on Figure 21.

5.4 Plant Coverage

Plant coverage, meaning the vertical projection of the plant over the ground surface in each transect, varies in the different areas of the quarry. The criteria for vegetative coverage are shown in Table 15 above. The Monitoring Plots and Test Plots that will be used to measure vegetative coverage are identified in Table 14.

5.5 Plant Density

Plant density, meaning the number of individual plants or stems of each native or locally-naturalized plant in each transect or circular plot for Oak tree species that is rooted in a given reference area. The criteria for plant densities are shown in Table 15. The Monitoring Plots and Test Plots that will be used to measure plant density are identified in Table 14 and shown on Figure 24.

Areas with grasses, such as the seeded slopes, benches, and quarry floor are not included in these criteria because the plant density criteria *"are best used on shrub and trees and are almost impossible to use on grassland."* [20] However, since there are some forbes in the seed mix, those plants will be counted as part of the plant density criteria.

5.6 Species Richness

Species – richness criteria, means the number of different plant species in each transect. The plant species included on the planting lists on Tables 3 and the seed mixes on Table 4 to 6 are representative of the surrounding natural plant communities. This calculation only includes native or locally-naturalized plants and does not include noxious weeds[21]. The species-richness criteria are shown on Table 13. All of the plants shown on Tables 3 to 7 are native plants. The Monitoring Plots and Test Plots that will be used to measure species-richness are identified in the Table xx.

[20] State Office of Mine Reclamation, Department of Conservation, and Quarterly Newsletter: SMARA Update, "Setting Revegetation Performance Standards", and page 5, April-June 1997.

[21] Noxious weeds defined by the California Department of Food and Agriculture, Appendix G

5. Revegetation Monitoring Log

Revegetation Monitoring Logs will be completed for each Monitoring Plot and Test Plot, Figures 26 to 33 identified on Table 14. The inspections of the Monitoring Plots will be conducted semi-annually between April and May, and November and December, for the first five years and then once every third year between April and May until the planting success criteria have been achieved. The inspections of the Test Plots will be conducted monthly the first year, quarterly the second year and semi-annually (between April and May, and November and December) for the remaining years, as needed. Each log will record the observations and measurements regarding plant coverage, plant density and species – richness as described above. If significant plant dieback has occurred, then adjustments will be made and additional plants will be planted, if needed to achieve the planting success criteria. The monitoring program will continue until the success criteria have been met. Should the revegetation monitoring program indicate that a certain plant species is failing, that plant species will be dropped from the planting list. The plant list will be modified by either adding another similar native plant (tree, forbe or perennial) or by planting more of a plant species already on the plant list that has survived and thrived.

5.8 Irrigation System

The irrigation system, if shown to be needed, will be inspected in March of each year prior to the end of the rainy season and before the dry season when the system is used more frequently. The inspector will check the pumps, tanks, valves, lines and emitters to be sure they are functioning and clear of debris and that the system does not have any leaks.

5.9 Site Security/ Public Safety *(CCR §3502(b)(2))*

Sargent Quarry is private property; the designated end use is cattle ranching. Final slopes have been designed to achieve the slope stability criteria recommended in the Slope Stability Investigation report, Appendix E. The reclaimed slopes will have a maximum gradient of 3:1, which should pose no safety hazard to the public. A new three strand barb wire fence placed along the perimeter of the mining area will be inspected annually. Any breaks will be repaired in order to restrict unauthorized access.

5.10 Monitoring and Reporting Program

The State Surface Mining and Reclamation Act requires that Reclamation Plans include a Monitoring Program to ensure compliance with the Plan. The Monitoring Program uses the following specific criteria related to topography, revegetation, and sediment and erosion control. The monitoring program will be conducted by the quarry operator to determine if the reclamation standards are being meet during mining and for the five year period after mining ceases.

5.1 Topography

Slopes and drainage features will be inspected and recorded on the Sediment and Erosion Control Report Form, Figures 35-37. These inspections will determine if any failures are evident and require repair.

5.2 Revegetation Success Criteria

Approximately one year after planting the revegetated areas that have less than 10 percent coverage will be reseeded. At the end of the second year after planting, the revegetated areas with exposed areas that have less than 20 percent plant coverage will be seeded. Two years after being planted the Oak trees should have a combined survival rate of 65 percent. Trees are considered to be "surviving" if they have sufficient foliage to sustain themselves. The newly planted areas will be visually inspected semi-annually for two years to evaluate the survival rate of the trees, and identify areas that require additional plants or reseeding. The newly planted Test Plots will be inspected monthly the first year and then quarterly, the second year to identify areas that require additional plants or reseeding. These visual inspections will be recorded on the Monitoring Plot and Test Plot-Visual Planting Inspection Forms. After the two year visual observation period quantified Monitoring Inspections, will be conducted for the Test Plots and Monitoring Plots. These monitoring inspections will quantify the planting success for each planting area based on the criteria described in Table 13. These quantified monitoring inspections will continue until the planting success criteria are achieved for each Test plot and Monitoring Plot and the quantified inspections have been approved by the County and the State Office of Mine Reclamation.

5.1 Sediment and Erosion Control

While mining continues and for five years after mining ceases, or when the planting success criteria in Section 6.030 are satisfied, whichever is last, the collector ditches, drop inlets, over-side drains, culverts, interceptor ditches, and basins will be inspected and cleaned out annually, or as needed, to ensure that they continue to function properly.

The reclaimed fill slopes and benches covered with a mixture of soil materials including topsoil, overburden and soil fines will be inspected quarterly between April 15 and October 15 and monthly between October 15 and April 15 each year until mining ceases. Accumulated sediments in the drainage facilities shall be removed prior to the rainy season each year. All erosion controls will continue to be used and inspected each fall before the rainy season and until such time that the vegetative cover has become established and the newly constructed slopes and benches are stable. These inspections will be recorded on the Sediment and Erosion Control Reporting Forms, Figures 35-37.

The Reclamation Specialist or a qualified SWPPP inspector (QISP) or Certified Professional in Erosion and Sediment Control (CPESC) will inspect the slopes and drainages for signs of significant erosion, and will make recommendations for erosion control measures as appropriate. Workers will make any repairs to the irrigation system if needed (including prompt repair of any broken piping, if applicable, to minimize erosion concerns), perform erosion control work, fence repair and remove sediment from ditches and ponds.

The mining site will be mined in three phases, as one phase is completed it will be reclaimed. The five-year maintenance and monitoring period may be different for each mining phase; since each Phase begins and ends at a different time period. At the end of the five-year maintenance and monitoring period for Phase three, if vegetation has properly established and sediment is no longer evident in site drainage for the whole mining area, then a closure report will be prepared and filed with the Santa Clara County and The Department of Conservation- Office of Mine Reclamation.

5.1 Noxious Weed Monitoring

The goal of the noxious weed removal program is to eradicate, over the life of the mining permit, those targeted noxious weed species that compete with the native and locally-naturalized plant species found at the quarry mining property. Targeted noxious weed species at this site include Italian thistle and Yellow star thistle. These two weeds shall be declining, and generally not in evidence and nowhere dominant at the end of the Maintenance and Monitoring Period[22]. Weed removal will commence in each mining Phase once mining in that area has begun. Ongoing weed removal will continue annually through the anticipated thirty years of this Plan and until the end of the post mining 5 year maintenance period or when the planting success criteria have been achieved, whichever is last.

[22] Targeted noxious weeds include those weeds on the State Department of Food and Agriculture list in Appendix G.

After the initial startup effort to remove the noxious weeds, the ongoing program will be to identify the presence of the two noxious weed species during annual routine inspections of quarry property. The findings of these inspections will be recorded on the Annual Noxious Weed Control Inspection forms. This Form requires follow up action by requesting the removal date of the noxious weed species to be noted on the form.

5.1 Reporting

The site will be inspected according to the inspection cycle shown on Table 14. These inspections will be documented on the appropriate form:

- Monitoring Plot and Test Plot -Visual Planting Inspection Forms (year 1 and 2 after planting)
- Test Plot - Revegetation Monitoring Log (year 3-5 minimum),
- Monitoring Plot-Revegetation Monitoring Plot Log (year 3-5 minimum)
- Watering Program Inspection Form
- Sediment and Erosion Control Report Form
- Noxious Weed Control Inspection Form
- A letter report will be submitted to the County Planning Director by November 1 each year summarizing the inspection findings and any remedial action taken.

TABLE 14
MAINTENANCE/MONITORING INSPECTION CYCLES

Inspection Tasks	Annual Inspection Cycle[23]	Semi-Annual Inspection Cycle[24]	5 Year Post-Mining Maintenance Inspection Cycle (Year) (+year, if needed)								Annually Until Cleaned Out
			1	2	3	4	5	+6	+7	+8	
Sediment Basins No. 1 by process plant	X		X	X	X	X	X	Only if needed	Only if needed	Only if needed	
Sediment Basin no. 2 at base of Swanson Bluff	X										
Process Water Pond[25]	X										
Quarry Pit	X										
Fill Slopes	X	X[26]									
Fill Benches	X	X[27]									
Finished valley floor		X[28]									
Drainage & collector ditches, and Swales	X										
Drop Inlets	X										
Culverts, Overside Drain Pipes	X										
Erosion controls	X										
Irrigation system, if installed	X										
Fencing											
Seeding (Hydroseeded & Drill/Imprint Seeded)		X									
Trees		X									
Monitoring Plots		X[29]									
Test Plots		X[30]									
Noxious Weed Control	X[31]										

[23] These annual inspections are recorded on either the Watering Program Inspection Form, Figure 34; and Sediment and Erosion Control Reporting form, Figures 35-37; unless otherwise noted.

[24] Reclaimed areas will be visually inspected semi-annually (twice a year) for two years after planting to observe for successes and failures, and evaluate the survival rate of the trees These inspections will be recorded on Figures 22-25. Should an area require replanting the inspection cycle will start over with the semi-annual visual inspections for two years.

[25] The Process Water Pond will be filled in during reclamation hence it will not require maintenance during the 5 Year post Mining Maintenance period.

[26] This includes visually inspecting the reclaimed fill benches in Phase 3 in the fall and late spring for two years, which may be during the post-mining maintenance period after mining ceases because these areas will not be excavated until the end of mining phase.

[27] This includes visually inspecting the final reclaimed quarry floor in the fall and late spring for two years, which may be during the post-mining maintenance period after mining ceases because these areas will not be excavated until the end of mining phase.

[28] This includes visually inspecting the final valley floor in the fall and late spring for two years, which may be during the post-mining maintenance period after mining ceases because these areas will not be excavated until the end of mining phase.

[29] Monitoring Plots will be visually inspected twice a year for the first two years after planting, Figures 22-25, and then quantified inspections will occur semi-annual (twice a year) until the 5th year after planting, then they will be inspected every third year and will continue until the planting success criteria has been meet and approved by the County and the State Office of Mine Reclamation. Quantified inspections will be recorded on Figures 30-33.

[30] The Test Plots for each mining phase, will be visually inspected for two years after planting; monthly the first year and quarterly the second year Figure 22 - 25, and then the Test Plots will be inspected semi-annually for the next three years; and then every third year and until the planting success criteria has been meet. Quantified inspections will be recorded on Figures 26-29.

[31] Inspections for the noxious weed control program are recorded on Figures 38-40.

FIGURE 26

MONITORING PLOT & TEST PLOT VISUAL PLANTING INSPECTION FORM for NON-NATIVE/NATURALIZED ANNUAL GRASSLAND

(Year 1 and 2 after planting)

Inspector:_____ Date:_____ (Monitoring Plot: semi-annually; between April and May & November and December; and Test Plot: Year 1: monthly; and Year 2: quarterly)

Planting Area:

- Mining Phase _____
- Bench No. _____ (Counting from top bench as number 1 down to base of slope)
- Slope between benches _____ and _____
- Monitoring Plot Number: _____
- Test Plot Number: _____

More detailed description of location (if necessary):

_____

Date of Initial Planting: _____

PLANT TYPES	QUANTITIES PLANTED	QUANTITIES FOUND TODAY
Tree Shrub Species	**Number Planted**	
▪ Not applicable: none planted in Grassland Habitat	0	
Locally Naturalized Volunteers	**Species Observed**	
Drill/Imprint Seeding, Hydroseed Mix	**Approximate Coverage on Slope %**	**Approximate Coverage on Bench %**
Achillea millefolium- Yarrow; *Amsinckia menziesii*- Fiddleneck; *Bromus hordeaceus*- Soft Chess; *Clarkia purpurea*- Wine Cup Clarkia; *Elymus glaucus*- Blue Wildrye; *Lupinus nanus*- Sky Lupine; *Melica californica*- California Melic; *Nassella pulchra*- Purple Needlegrass		

Plant dieback: Not Applicable because no woody container plants are planted in Grassland.

YEAR 1:
Plant coverage: _____ < 10% or ____> 10% (if less than 10% at end of first year then replacement planting is required)

YEAR 2 (end of year):

Plant coverage: _____ < 20% or ____> 20% (if less than 20% at end of second year then replacement planting is required)

FIGURE 27

MONITORING PLOT & TEST PLOT - VISUAL PLANTING INSPECTION FORM for OAK WOODLAND (Year 1 and 2 after planting)

Inspector:_____ Date:_____ (Monitoring Plot: semi-annually; between April and May & November and December; Test Plot: Year 1: monthly; & Year 2: quarterly)

Planting Area:

- Mining Phase _____
- Bench No. _____ (Counting from top bench as number 1 down to base of slope)
- Slope between benches _____ and _____
- Monitoring Plot Number: _____
- Test Plot Number: _____

More detailed description of location (if necessary):

_____

_____

_____

Date of Initial Planting: _____

PLANT TYPES	QUANTITIES PLANTED	QUANTITIES FOUND TODAY
Tree Species	**Number Planted**	
▪ Coast Live Oak – Quercus agrifolia		
▪		
▪		
Locally Naturalized Volunteers	**Species Observed**	
Hydroseed Mix	**Approximate Coverage on Slope %**	**Approximate Coverage on Bench %**
Achillea millefolium- Yarrow; *Amsinckia menziesii*- Fiddleneck; *Bromus hordeaceus*- Soft Chess; *Clarkia purpurea*- Wine Cup Clarkia; *Elymus glaucus*- Blue Wildrye; *Lupinus nanus*- Sky Lupine; *Melica californica*- California Melic; *Nassella pulchra*- Purple Needlegrass		

Plant dieback: _____ yes or _____ no

If yes, does it require replacement (if less than 50-70% survival of trees and shrubs replacement planting is required)? _____ yes or _____no

YEAR 1:
Plant coverage: _____ < 10% or ____> 10% (if less than 10% at end of first year then replacement planting is required)
YEAR 2 (end of year):
Plant coverage: _____ < 20% or ____> 20% (if less than 20% at end of second year then replacement planting is required)

FIGURE 28

MONITORING PLOT & TEST PLOT - VISUAL PLANTING INSPECTION FORM

(Year 1 and 2 after planting)

Inspector:_____ Date:_____ (Monitoring Plot: semi-annually; between April and May & November and December; Test Plot: Year 1: monthly; and Year 2: quarterly)

Planting Area:

- Mining Phase _____
- Bench No. _____ (Counting from top bench as number 1 down to base of slope)
- Slope between benches _____ and _____
- Monitoring Plot Number: _____
- Test Plot Number: _____

More detailed description of location (if necessary):

_____

Date of Initial Planting: _____

PLANT TYPES	QUANTITIES PLANTED	QUANTITIES FOUND TODAY
Tree Shrub Species	**Number Planted**	
▪ Not applicable: none planted in Grassland Habitat	0	
Locally Naturalized Volunteers	**Species Observed**	
Hydroseed Mix	**Approximate Coverage on Slope %**	**Approximate Coverage on Bench %**
Artemisia californica- California Sage; *Avena fatua*- Wild Oats; *Baccharis pilularis*- Coyote Brush; *Bromus hordeaceus*- Soft Chess; *Eriogonum fasciculatum*- California Buckwheat; *Lotus scoparius*- California Broom; *Salvia mellifer*-, Black Sage		

YEAR 1:
Plant coverage: _____ < 10% or ____> 10% (if less than 10% at end of first year then replacement planting is required)
YEAR 2 (end of year):

Plant coverage: _____ < 20% or ____> 20% (if less than 20% at end of second year then replacement planting is required)

FIGURE 26

TEST PLOT - REVEGETATION MONITORING LOG No. 1[32] (3-5 years after planting)

NON-NATIVE/NATURALIZED ANNUAL GRASSLAND

Inspector:_____ Date:_____(Test Plots: Semi Annually: between April and May; and November and December each year 3 thru 5)

TEST PLOT Number/Area: _____ Date of Initial Planting: _____

HERBACEOUS PLANTS IN SEED MIX		
COMMON NAME	**QUANT. PLANTED**	**NUMBER ALIVE/DEAD**

HYRDOSEEDED/SEEDED	
COMMON NAME	**STATUS/COVERAGE**
Achillea millefolium- Yarrow; *Amsinckia menziesii*- Fiddleneck; *Bromus hordeaceus*- Soft Chess; *Clarkia purpurea*- Wine Cup Clarkia; *Elymus glaucus*- Blue Wildrye; *Lupinus nanus*- Sky Lupine; *Melica californica*- California Melic; *Nassella pulchra*- Purple Needlegrass	

Monitoring Criteria (Goal 5 years after planting)*:

1. Vegetative coverage – GRASSLAND: _____ (objective = 60-70% coverage)[33]
2. Vegetative density – GRASSLAND:

(Not measured for Veg. Success Criteria, but Forbes & Woody Plant can be counted) _____ (objective = 4-5 plants/transect)[34]

[32] This Test Plot inspection form will be used to inspect the designated TEST plots shown on Figure 21. The schedule for these inspections is shown on Table 13.

[33] Grassland Vegetative Cover for 3:1 fill slopes is 60%; cover for fill benches and Quarry Floor is 70%.

[34] Grassland Vegetative Density is 5 for fill slopes and benches and is 4 for Quarry Floor.

3. Vegetative species – GRASSLAND: _____ (objective = 2-3 plant species/transect)[35]

Is replanting required: _____ yes or _____ no If yes, date replanted: _____

* Refer to Table 15.

[35] Grassland Species Richness is 2 for fill slopes and 3 for fill benches and Quarry Floor.

FIGURE 27

TEST PLOT - REVEGETATION MONITORING LOG No. 2[36] (3-5 years after planting)

OAK WOODLAND

Inspector:_____ Date:_____ (Test Plots: Semi Annually: between April and May; and November and December each year 3 thru 5)

Plot Number: _____ Date of Initial Planting: _____

TREES			
COMMON NAME	**QUANT. PLANTED**	**NUMBER ALIVE/DEAD**	**Notes:**
Coast Live Oak			

HYRDOSEEDED/SEEDED	
***LATIN NAME* - COMMON NAME**	**STATUS**
Achillea millefolium- Yarrow; *Amsinckia menziesii*- Fiddleneck; *Bromus hordeaceus*- Soft Chess; *Clarkia purpurea*- Wine Cup Clarkia; *Elymus glaucus*- Blue Wildrye; *Lupinus nanus*- Sky Lupine; *Melica californica*- California Melic; *Nassella pulchra*- Purple Needlegrass	

LOCALLY-NATURALIZED VOLUNTEERS	
Species Observed and Number (if appropriate)	

Monitoring Criteria (Goal 5 years after planting)*:

1. Vegetative coverage: _____ (objective = 50- 55 % coverage/transect)[37]
2. Vegetative density: _____ (objective = 4 plants/transect or circular plot)[38]

[36] This Test Plot inspection form will be used to inspect the designated TEST plots shown on Figure 21. The schedule for these inspections is shown on Table 13.

[37] Oak Woodland vegetative cover for fill slopes is 50% and for fill benches is 55%

[38] Oak Woodland vegetative density is 4 for fill slopes and benches

3. Vegetative species – richness: _____ (objective = 4-7 plant species/transect)[39]

- Is replanting required: _____ yes or _____ no If yes, date replanted: _____

* Refer to Table 15.

FIGURE 28

TEST PLOT - REVEGETATION MONITORING LOG No. 2[40] (3-5 years after planting)

Inspector:_____ Date:_____(Test Plots: Semi Annually: between April and May; and November and December each year 3 thru 5)

Plot Number: _____ Date of Initial Planting: _____

HYRDOSEEDED/SEEDED	
***LATIN NAME* - COMMON NAME**	**STATUS**
Artemisia californica- California Sage; *Avena fatua*- Wild Oats; *Baccharis pilularis*- Coyote Brush; *Bromus hordeaceus*- Soft Chess; *Eriogonum fasciculatum*- California Buckwheat; *Lotus scoparius*- California Broom; *Salvia mellifer*-, Black Sage	
LOCALLY-NATURALIZED VOLUNTEERS	
Species Observed and Number (if appropriate)	

Monitoring Criteria (Goal 5 years after planting)*:

1. Vegetative coverage: _____ (objective = 40-45%/transect)[41]
2. Vegetative density: _____ (objective = 4-5 plants/transect)[42]
3. Vegetative species – richness: _____ (objective = 2 plant species/transect)[43]

[39] Oak Woodland species richness criteria is 4 plants species on the fill slopes and 7 plant species on the fill benches

[40] This Test Plot inspection form will be used to inspect the designated TEST plots shown on Figure 21.. The schedule for these inspections is shown on Table 13.

[41] vegetative cover is 40% on fill slopes and 45% on fill benches

[42] vegetative density is 4 plants on fill slopes and 5 plants of fill benches/ transect

[43] species richness is 2 plants species/transect

- Is replanting required: _____ yes or _____ no If yes, date replanted: _____

* Refer to Table 15.

FIGURE 30

MONITORING PLOT - REVEGETATION MONITORING LOG No. 5[44]
(3-5 years after planting)

NON-NATIVE/NATURALIZED ANNUAL GRASSLAND

Inspector:_____ Date:_____ (Monitoring Plots: Semi Annually: between April and May; & November and December each year 3 thru 5)

Monitoring Plot Number/Area: _____ Date of Initial Planting: _____

HERBACEOUS PLANTS IN SEED MIX		
COMMON NAME	**QUANT. PLANTED**	**NUMBER ALIVE/DEAD**
HYRDOSEEDED/SEEDED		
***LATIN NAME* - COMMON NAME**		**STATUS/COVERAGE**

[44] This Monitoring Plot inspection form will be used to inspect the designated TEST plots shown on Figure 21. The schedule for these inspections is shown on Table 13.

Achillea millefolium- Yarrow; *Amsinckia menziesii*- Fiddleneck; *Bromus hordeaceus*- Soft Chess; *Clarkia purpurea*- Wine Cup Clarkia; *Elymus glaucus*- Blue Wildrye; *Lupinus nanus*- Sky Lupine; *Melica californica*- California Melic; *Nassella pulchra*- Purple Needlegrass	

Monitoring Criteria (Goal 5 years after planting)*:

1. Vegetative coverage – GRASSLAND: _____ (objective = 60-70% coverage)
2. Vegetative density – GRASSLAND:
   (Not measured for Veg. Success Criteria, but Forbes & Woody Plant can be counted)_____ (objective = 4-5 plants/transect)
3. Vegetative species – GRASSLAND: _____ (objective = 2-3 plant species/transect)

- Is replanting required: _____ yes or _____ no If yes, date replanted: _____

* Refer to Table 15.

FIGURE 31

MONITORING PLOT - REVEGETATION MONITORING LOG No. 6[45]

(3-5 years after planting)

OAK WOODLAND

Inspector:_____ Date:_____ (Monitoring Plots: Semi Annually: between April and May; & November and December each year 3 thru 5)

Monitoring Plot Number: _____ Date of Initial Planting:_____

TREES			
COMMON NAME	**QUANT. PLANTED**	**NUMBER ALIVE/DEAD**	**Notes:**
Coast Live Oak			
Blue Oak			
HYRDOSEEDED/SEEDED			

[45] This Monitoring Plot inspection form will be used to inspect the designated TEST plots shown on Figure 21. The schedule for these inspections is shown on Table 13.

COMMON NAME	STATUS
Achillea millefolium- Yarrow; *Amsinckia menziesii*- Fiddleneck; *Bromus hordeaceus*- Soft Chess; *Clarkia purpurea*- Wine Cup Clarkia; *Elymus glaucus*- Blue Wildrye; *Lupinus nanus*- Sky Lupine; *Melica californica*- California Melic; *Nassella pulchra*- Purple Needlegrass	
LOCALLY-NATURALIZED VOLUNTEERS	
Species Observed and Number (if appropriate)	

Monitoring Criteria (Goal 5 years after planting)*:

1. Vegetative coverage: _____ (objective = 50- 55 % coverage/transect)[46]
2. Vegetative density: _____ (objective = 4 plants/transect or circular plot)[47]
3. Vegetative species – richness: _____ (objective = 4-7 plant species/transect)[48]

- Is replanting required: _____ yes or _____ no If yes, date replanted: _____

* Refer to Table 15.

FIGURE 32

MONITORING PLOT - REVEGETATION MONITORING LOG No. 7[49]
(3-5 years after planting)

Inspector:_____ Date:_____ (Monitoring Plots: Semi Annually: between April and May; & November and December each year 3 thru 5)

Monitoring Plot Number: _____ Date of Initial Planting:_____

HYDROSEEDED/ SEEDED SHRUBS			
COMMON NAME	**QUANT. PLANTED**	**NUMBER ALIVE/DEAD**	**Notes:**

[46] Oak Woodland vegetative cover for fill slopes is 50% and for fill benches is 55%

[47] Oak Woodland vegetative density is 4 for fill slopes and benches

[48] Oak Woodland species richness criteria is 4 plants species on the fill slopes and 7 plant species on the fill benches

[49] This Monitoring Plot inspection form will be used to inspect the designated TEST plots shown on Figure 21. The schedule for these inspections is shown on Table 13.

HYRDOSEEDED/SEEDED			
***LATIN NAME* - COMMON NAME**			**STATUS**
Artemisia californica- California Sage; *Avena fatua*- Wild Oats; *Baccharis pilularis*- Coyote Brush; *Bromus hordeaceus*- Soft Chess; *Eriogonum fasciculatum*- California Buckwheat; *Lotus scoparius*- California Broom; *Salvia mellifer*-, Black Sage			
LOCALLY-NATURALIZED VOLUNTEERS			
Species Observed and Number (if appropriate)			

Monitoring Criteria (Goal 5 years after planting)*:

1. Vegetative coverage: _____ (objective = 40-45%/transect)[50]
2. Vegetative density: _____ (objective = 4-5 plants/transect)[51]
3. Vegetative species – richness: _____ (objective = 2 plant species/transect)[52]

- Is replanting required: _____ yes or _____ no If yes, date replanted: _____

* Refer to Table 15.

FIGURE 28

WATERING PROGRAM INSPECTION FORM[53]

(if required)

Inspector: _____

Inspection Date (varies, see "Inspection Period" below): _____

[50] vegetative cover is 40% on fill slopes and 45% on fill benches

[51] vegetative density is 4 plants on fill slopes and 5 plants of fill benches/ transect

[52] species richness is 2 plants species/transect

[53] A Watering Program will be used if the Test Plot Monitoring Program indicates a need for supplemental watering, Irrigation water, if needed, will only be provided to the reclamation Oak Trees.

Day _____and time _____area last irrigated.
Inspection should be done 24-30 hours after irrigation.

Test Plot: ❑ Grassland ❑ Oak Woodland
Mining Phase: ❑ Phase 1 ❑ Phase 2 ❑ Phase 3

Bench number: ____ (Count 1st bench at top of slope at #1 and down to the bottom of the slope)

Date this bench was last planted: _____
(only complete if planted within last 2 years, except for Monitoring Plots which should be inspected until end of reclamation program)

Inspection Period: ❑ First year: twice a month during dry season and extended dry period in winter
and once a month during wet season

❑ Second & Third year: one a month during dry season and extended dry period
in winter each 6 weeks in wet season

INSPECT EVERY 10th TREE in Oak Woodland	**SOIL MOISTURE LEVEL (check one)**
10th tree	❑ Dry ❑ Moist ❑ Wet ❑ Too Wet
20th tree	❑ Dry ❑ Moist ❑ Wet ❑ Too Wet
30th tree	❑ Dry ❑ Moist ❑ Wet ❑ Too Wet
40th tree	❑ Dry ❑ Moist ❑ Wet ❑ Too Wet
50th tree	❑ Dry ❑ Moist ❑ Wet ❑ Too Wet
60th tree	❑ Dry ❑ Moist ❑ Wet ❑ Too Wet

Note: Refer to Section 5.055.7 in the Reclamation Plan for a description of this inspection.

SEDIMENT AND EROSION CONTROL REPORT FORM

PHASE 1 AREA & QUARRY FLOOR

Inspector: _____
INSPECTION DATE: (between August 15 and October 1 each year): _____
Location where problem found:

- ❑ Processing Plant area: _____
- ❑ Mining Slope: ____
- o Reclamation Slope: ____
- ❑ Bench Number____ _(Count 1st bench at top of slope at #1 and down to the bottom of the slope)
- ❑ Intervening Slope between benches ____ and ____
- ❑ Quarry Pit : on ____ east side ___west side ___ south side ___ north side
- ❑ Basin Name and (Number) _____ (Sediment Basin No. 1 - @ Process Plant, Sediment Basins No. 2- @ base

of Swanson Bluff

❏ Process Water Pond

Drainage Facilities:

❏ Drainage Ditch – needs sediment removed or repair

❏ Interceptor Ditch – needs sediment removed or repair (only during mining phases)

❏ Collection Ditch – needs sediment removed or repair (only during mining phases)

❏ Drop Inlets - needs sediment removed or repair (only during mining phases)

❏ Overside Drain Pipe - needs to be cleared of debris or repaired (only during mining phases)

❏ Culvert – needs to be cleared of debris or repaired

❏ Basin – needs sediment removed or repairs

❏ Basin spillway – needs maintenance or repair

❏ Process Water Pond – needs maintenance or repair (only during mining phases)

Fill or Excavated Slopes:

❏ Slope – rills evident are deeper than 12" and/or occur more frequently than every 50 feet

❏ Coir wattles – need replacement or repair

❏ Seeding – needed for stabilization, cover bald spots greater than 50 square feet

Fill or Excavated Benches:

❏ Bench - rills evident are deeper than 12" and/or occur more frequently than every 50 feet

❏ Coir wattles – need replacement or repair

❏ Seeding – needed for stabilization, cover bald spots greater than 50 square feet

Other:

❏ Access Road – needs repair

❏ Irrigation System – needs repair (if installed)

❏ Other: _____

Action required: _____

_____

_____

Corrective action (MUST be completed by November 1 each year); _____

_____

_____

Date action completed: _____

SEDIMENT AND EROSION CONTROL REPORT FORM

PHASE 2 AREA

Inspector: _____

INSPECTION DATE: (between August 15 and October 1 each year): _____

Location where problem found:

- ❑ Mining Slope: ____
- ❑ Reclamation Slope: ____
- ❑ Bench Number: _____ (Count 1st bench at top of slope at #1 & down to the bottom of the slope)
- ❑ Intervening Slope between benches ____ and ____ on
- ❑ Quarry Pit: on ____ east side ___west side ___ south side ___ north side

Drainage Facilities:

- ❑ Drainage Ditch – needs sediment removed or repaired ❑
- ❑ Interceptor Ditch – needs sediment removed or repair (only during mining)
- ❑ Collection Ditch – needs sediment removed or repair (only during mining)
- ❑ Drop Inlets - needs sediment removed or repair (only during mining)
- ❑ Overside Drain Pipe - needs to be cleared of debris or repaired (only during mining)
- ❑ Culvert – needs to be cleared of debris or repaired

Fill or Excavated Slopes:

- ❑ Slope – rills evident are deeper than 12" and/or occur more frequently than every 50 feet
- ❑ Coir wattles – need replacement or repair
- ❑ Seeding – needed for stabilization, cover bald spots greater than 50 square feet

Fill or Excavated Benches:

- ❑ Bench - rills evident are deeper than 12" and/or occur more frequently than every 50 feet
- ❑ Coir wattles – need replacement or repair
- ❑ Seeding – needed for stabilization, cover bald spots greater than 50 square feet

Other:

- ❑ Access Road – needs repair
- ❑ Irrigation System – needs repair (if installed)
- ❑ Other: _____

Action required: _____

_____

Corrective action (MUST be completed by November 1 each year); _____

_____

Date action completed: _____

SEDIMENT AND EROSION CONTROL REPORT FORM

PHASE 3 and 4 AREAS

Inspector: _____

INSPECTION DATE: (between August 15 and October 1 each year): _____

Location where problem found:

- ❑ Mining Slope: ____
- ❑ Reclamation Slope: ____
- ❑ Bench Number _____ (Count 1st bench at top of slope at #1 and down to the bottom of the slope)
- ❑ Intervening Slope between benches ____ and ____
- ❑ Quarry Pit on _____ east side ____ west side _____south side _____ north side (check one)

Drainage Facilities:

- ❑ Drainage Ditch – needs sediment removed or repair
- ❑ Interceptor Ditch – needs sediment removed or repair
- ❑ Collection Ditch – needs sediment removed or repair (only during mining)
- ❑ Drop Inlets - needs sediment removed or repair (only during mining)
- ❑ Overside Drain Pipe - needs to be cleared of debris or repaired (only during mining)
- ❑ Culvert – needs to be cleared of debris or repaired

Fill or Excavated Slopes:

- ❑ Slope – rills evident are deeper than 12" and/or occur more frequently than every 50 feet
- ❑ Coir wattles – need replacement or repair
- ❑ Seeding – needed for stabilization, cover bald spots greater than 50 square feet

Fill or Excavated Benches:

- ❑ Bench - rills evident are deeper than 12" and/or occur more frequently than every 50 feet
- ❑ Coir wattles – need replacement or repair
- ❑ Seeding – needed for stabilization, cover bald spots greater than 50 square feet

Other:

- ❑ Access Road – needs repair
- ❑ Irrigation System – needs repair (if installed)
- ❑ Other: _____

Action required: _____

_____

Corrective action (MUST be completed by November 1 each year); _____

_____

Date action completed: _____

ANNUAL NOXIOUS WEED CONTROL REPORTING FORM

PHASE 1 and 2 AREAS AND QUARRY FLOOR

Inspector: _____

Date: _____(before March 1st each year)

Location where noxious weeds were found:

- ❑ Quarry Floor/ Processing Plant Area
- ❑ Mining Slope: ____
- ❑ Reclamation Slope: ____
- ❑ Bench Number _____ (Count 1st bench at top of slope at #1 and down to the bottom of the slope)
- ❑ Intervening Slope between benches ____ and ____
- ❑ Quarry Pit on _____east side ____ west side_____south side _____ north side (check one)
- ❑ Basin Number _____ (Sediment Basin No. 1 - @ Processing Plant; Sediment Basin No. 2-@ base of Swanson Bluff)
- ❑ Process Water Basin

Action required: The targeted noxious weeds, Italian Thistle *(Carduus pycnocephalus)* and Yellow Starthistle (*Centaurea solstitialis*) will be removed[54]. Weed inspections will begin at the top of the west side and work down the benches and slopes to the quarry floor; and then commence at the top of the east side and work down the benches and slopes to the quarry floor; and then inspect the quarry floor, quarry pit and access roads. Depending on their location, the targeted noxious weed species will either be removed by hand or with managed grazing.

Action taken: _____

_____

_____

_____

_____

Date action completed: _____

.

[54] Other noxious weeds on the State Department of Food and Agriculture's list in Appendix G will also be removed.

5.0 REFERENCES AND RESOURCES

REFERENCES

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APPENDIX A
SITE LEGAL DESCRIPTION

APPENDIX B
SANTA CLARA COUNTY MINING ORDINANCE

APPENDIX C
BIOLOGICAL REPORT

APPENDIX D
SLOPE STABIITY INVESTIGATION