

***Mammoth Pacific
MP-1 Power Plant***

Reclamation Plan

Project 3030.2

December 2010

Prepared for:
Mono County Energy Management Department
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Submitted By:



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Date

Mammoth Pacific MP1 Reclamation Plan

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1. Introduction

Mammoth Pacific, LP (MPLP) is currently operating the MP1 power plant (also called G-1) which is located in the southeast portion of the “Magma” private property in the northwest quarter of Section 32, Township 3 South, Range 28 East of the Mount Diablo Meridian. The MP-I plant was the first geothermal power plant to be built at the Mammoth Pacific Complex, commencing operation in 1984 under a Conditional Use Permit issued by Mono County. Ormat Nevada, Inc., the owner of MPLP, proposes to replace the existing MP-1 plant with a new, modern, efficient, and more advanced generation plant. MPLP will build the new plant slightly to the east of the existing plant, and keep the existing MP-1 plant operating until the new plant becomes commercial. MPLP will close and decommission the old plant after the new plant becomes commercial. At that time the MP1 plant site will be reclaimed through the removal of the existing power plant facilities within the MP-1 site. The site will be reused as an equipment yard to support the Mammoth Pacific operations as it is adjacent to the Mammoth Pacific offices and existing maintenance yard. The existing offices, maintenance yard, and warehouse next to the MP-1 site will remain.

This Reclamation Plan (Plan) is prepared in compliance with Mono County General Plan requirements (Chapter 35) and is designed to meet the reclamation requirements of the MP1 plant site. The reclamation techniques and methods in this Reclamation Plan are based on successful revegetation/reclamation programs initiated at the existing Casa Diablo Power Plants.

2. Reclamation Plan

a) Removals:

The reclamation plan addresses all surface disturbance within the MP1 plant site. In general, the reclamation plan includes measures for minimizing erosion; demolishing structures; regrading cut-and-fill slopes; and revegetation of slopes and establishing the majority of the site for use as an equipment yard.

Removal, disposal or utilization of residual equipment, structures, refuse, etc. At project decommissioning, all buildings and ancillary facilities will be reclaimed by having all structures removed and taken off-site. The on-site electric systems, geothermal and fire suppression water pipelines will be removed. The foundations for the plant, retaining walls, and asphalt pavement will be removed. All above ground pipeline structures will be removed including the pipe and supports. Plate A provides an orthophoto of the existing site and identifies the facilities to be removed. The liner at the bottom of the existing retention pond will be removed and soil will be tested for possible hydrocarbon contamination. All contaminated soils will be removed and disposed of in accordance with state and local health and

safety ordinances. All other waste to be disposed of will also be done in accordance with state and local health safety ordinances.

b) Revegetation/Slopes/Erosion:

A site reclamation plan is provided on Plate B attached. Once facilities have been removed from the plant site minor grading to shape the existing pad to slope to the southeast and backfill of the existing retention pond will be completed. The pad, upon completion of regarding, will be covered with gravel to provide an all weather pervious surface for vehicles that will significantly reduce erosion and runoff through percolation of rainfall and snowmelt. As part of the reclamation plan grading the existing slope on the west and south sides of the plant site will be extended down to the reshaped pad. The majority of the existing slope on the west and south will be disturbed during removal of the fire suppression mains. Final reclaimed slopes, will not exceed 2:1 (horizontal:vertical). The slopes will be revegetated and protected with an erosion control blanket.

The natural revegetation and planted vegetation that has already occurred on previously disturbed areas for the existing Casa Diablo Power Plants serve as a basis for determining the plant species and topographic features necessary for successful reclamation. These methods in use already include the design and construction of stable slopes, minor regrading, ripping or sub-soiling to de-compact and loosen compacted soil, topsoiling, surface preparation through fine grading, reseeding and revegetation (or natural revegetation). Stable topographic surface and drainage conditions will be established to control erosion, prevent sedimentation, and to blend with the surrounding landscape.

Surface runoff and drainage will be controlled by silt fencing or straw wattles until the gravel has been placed on the pad and new vegetation has developed to a point of controlling erosion. Erosion control methods will be designed to handle runoff from not less than the 20-year/ 1-hour intensity storm event.

Seeding of disturbed areas would be completed using the following seed mixture and application rate.

Species	Pure Live Seed (Pounds per Ac.)
Big sagebrush (<i>Artemisia tridentata</i>)	0.5
Antelope bitterbrush (<i>Purshia tridentata</i>)	4
Desert peach (<i>Prunus andersonii</i>)	2
Indian ricegrass (<i>Achnatherum hymenoides</i>)	2
Western needlegrass (<i>Achnatherum occidentale</i>)	2
Squirreltail (<i>Elymus elytnoides</i>)	3

Spurred lupine (<i>Lupinus argenteus</i> var. <i>heteranthus</i>)	2
Chicalote, prickly poppy (<i>Argemone munita</i>)	1
Total:	16.5

Preferably, seeds for this project would be collected within the immediate vicinity of the project area. If this is not possible due to poor seed availability, seed from the following ecological subsections or sections the area borders on would be acceptable:

Eastern Slopes Subsection of the Sierra Nevada Section; and Mono Section (Miles and Goudey 1997 — map available). If availability still presents a problem, the seed mix may be modified in consultation with the Forest Service. Planting will be done during the most favorable part of the year to establish vegetation.

c) Wildlife Habitat.

No federal- or state-listed threatened or endangered species are known to occupy or frequent the Project area; however, there are five species of special concern to the Forest Service and CDFG associated with this habitat: mule deer, pine marten, northern goshawk, California spotted owl, and sage grouse. With removal of surface facilities and revegetation there would be no residual impacts to these species.

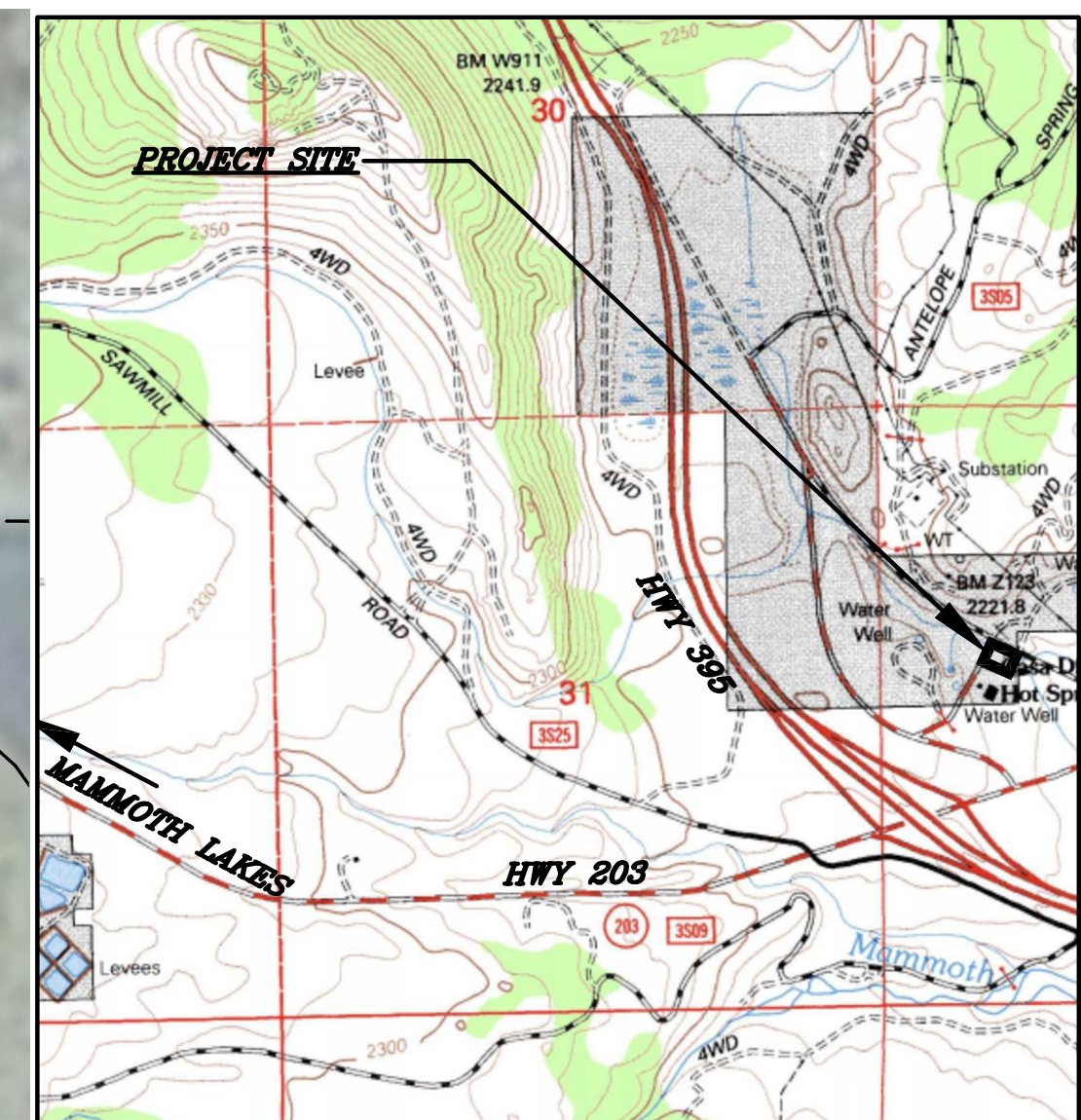
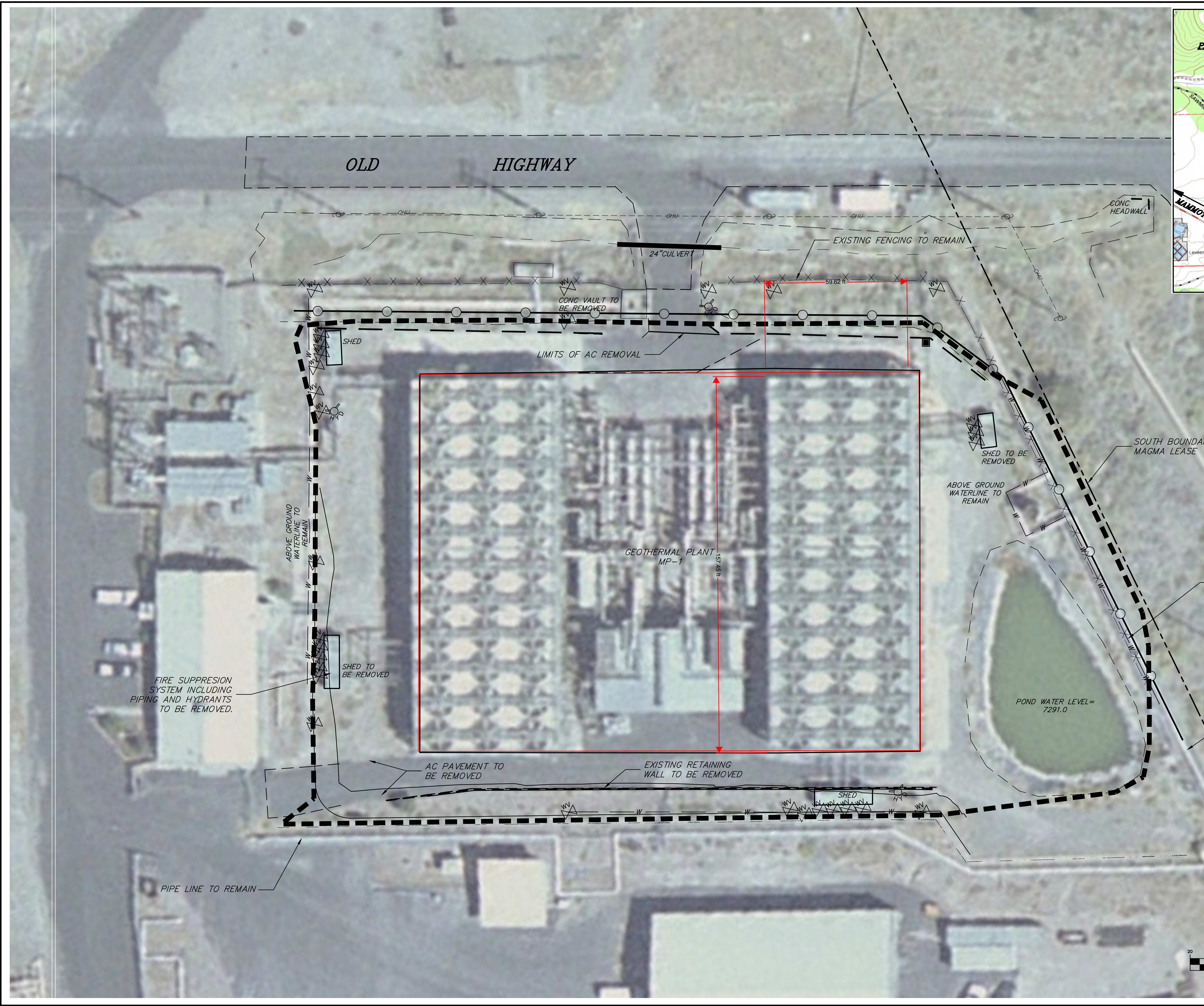
d) Wetland habitat

There are no perennial streams or other surface waters located within the Project area. A “blue line” streams is identified adjacent to the MP1 site along the northerly boundary on the U.S. Geological Survey (USGS) topographic map (“Old Mammoth” quadrangle, 1:24000 series). The blueline stream is an ephemeral/intermittent identified as a stream “riparian conservation area” (RCA) by the USFS under the SNFPA ROD (USDA, Forest Service 2004). The stream flows southeast through the Casa Diablo geothermal development area emergency spill containment basin then draining into Mammoth Creek approximately 0.8 miles from the site.

3. Inspections

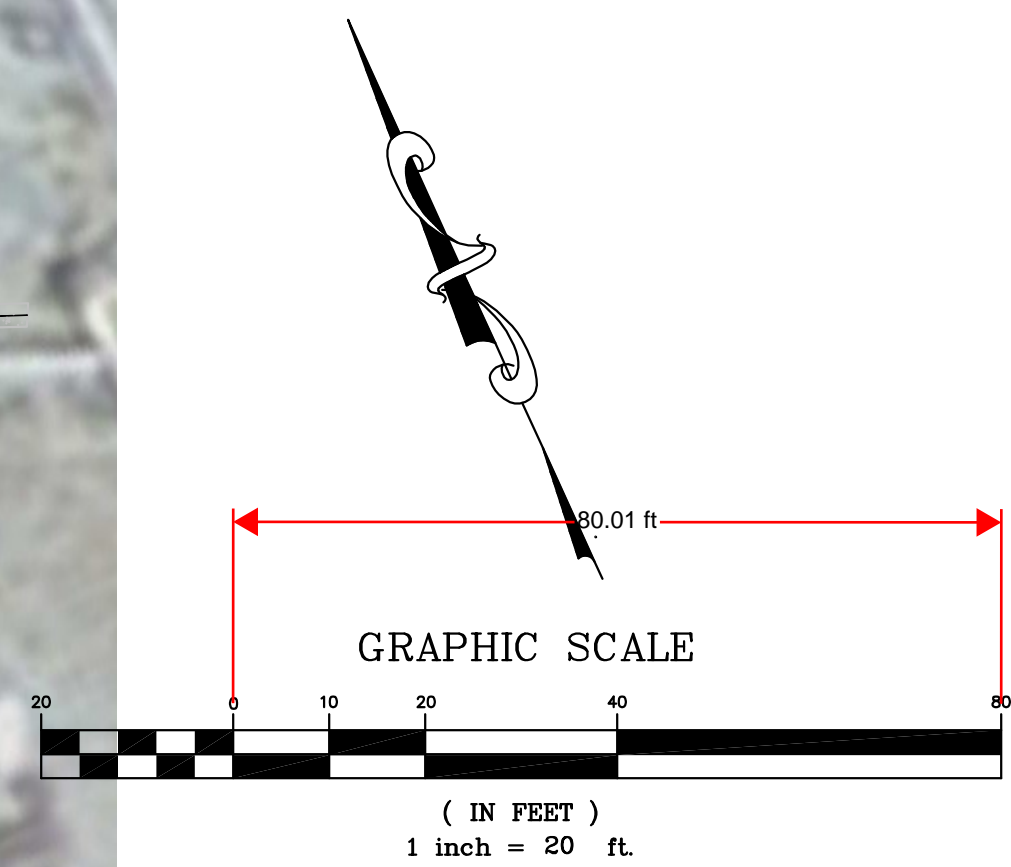
A request for annual inspection will be submitted to Mono County Energy Management Department once each calendar year until construction activities are completed, resuming again once abandonment activities commence. Requests for annual inspections will be accompanied by a written report prepared by a qualified professional which identifies to what extent the reclamation at the site conforms or deviates from the approved reclamation plan.

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VICINITY MAP
NOT TO SCALE

NOTE:
EXISTING PLANT
STRUCTURES AND
PIPING TO BE
REMOVED



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

PREPARED & SUBMITTED BY:

DATE:

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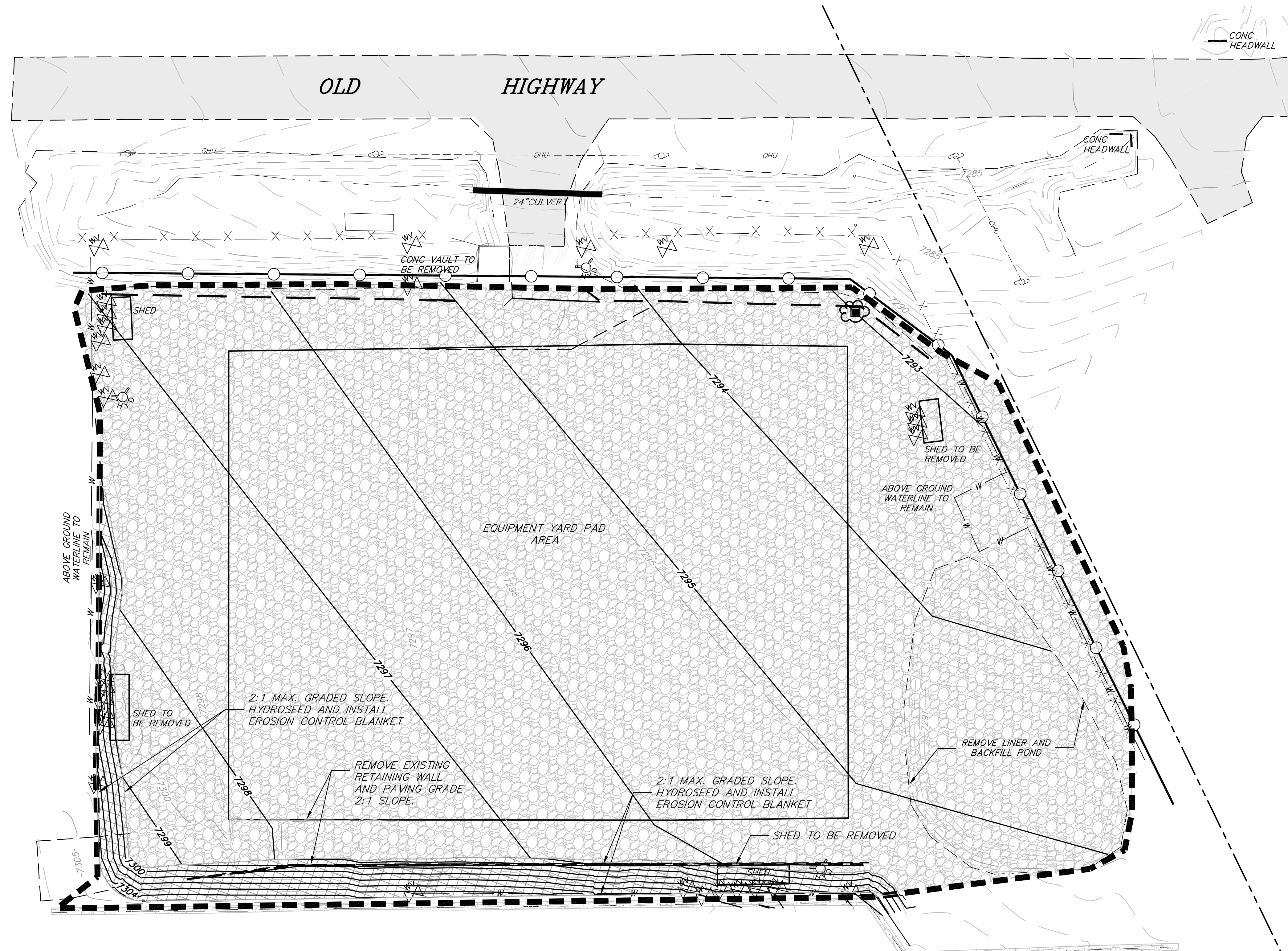
PREPARED FOR:
ORMAT

MAMMOTH GEOTHERMAL PLANT MP-1
RECLAMATION SITE PLAN
MAMMOTH LAKES, CA.

DATE 12/08/10
SCALE AS SHOWN
DRAWN TP / GP
JOB NO. 3030.2
PLATE
A
SHEET 1 OF 2

GRADING AND SITEWORK SPECIFICATIONS:

- CONTRACTOR SHALL TAKE ALL SUCH MEASURES NECESSARY TO CONTROL DUST IN CONSTRUCTION AREAS OR ON ACCESS ROADS. SUFFICIENT WATER TRUCKS SHALL BE MADE AVAILABLE FOR DUST CONTROL PURPOSES. ALL EXPOSED SOIL SURFACES SHALL BE MOISTENED AS REQUIRED TO AVOID NUISANCE CONDITIONS AND INCONVENIENCES FOR LOCAL RESIDENTS AND TRAVELERS OF NEARBY ROADWAYS.
- ANY EVIDENCE OF THE HISTORICAL PRESENCE OF MAN FOUND DURING CONSTRUCTION SHALL BE BROUGHT TO THE ATTENTION OF THE UNITED STATES FOREST SERVICE AND/OR BUREAU OF LAND MANAGEMENT AND CONSTRUCTION SHALL STOP UNTIL FURTHER NOTICE.
- ONE SET OF SURVEY STAKES SHALL BE PROVIDED FOR EACH PHASE OF THE WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR AND SHALL BEAR THE COST OF RESETTling STAKES DESTROYED BY CONSTRUCTION OPERATIONS.
- THE LIMITS OF CONSTRUCTION SHALL BE CAREFULLY AND FULLY FLAGGED PRIOR TO START OF CONSTRUCTION, AND POSTED SO AS TO PREVENT DAMAGE TO VEGETATION AND DISTURBANCE TO SOILS OUTSIDE OF THE AREA OF CONSTRUCTION.
- CONTRACTOR SHALL CONDUCT ALL GRADING OPERATIONS IN CONFORMANCE WITH THE CONSTRUCTION SAFETY ORDERS OF THE STATE OF CALIFORNIA, DEPARTMENT OF INDUSTRIAL RELATIONS, DIVISION OF INDUSTRIAL SAFETY. IN ADDITION, CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF GENERAL OSHA STANDARDS FOR THE PROTECTION OF WORKMEN AND THE GENERAL PUBLIC. OSHA PERMITS REQUIRED FOR DEEP TRENCHES.
- FINISHED GRADES IN ALL AREAS SHALL COMPLY WITH PLAN ELEVATIONS. NO AREAS SHALL BE LEFT SUCH THAT A PONDING CONDITION OCCURS.
- ANY EARTH MATERIAL IMPORTED OR EXCAVATED ON THE PROPERTY MAY BE UTILIZED IN THE FILL, PROVIDED THAT EACH MATERIAL HAS BEEN DETERMINED TO BE SUITABLE BY THE GEOTECHNICAL ENGINEER. ALL FILL SHALL BE FREE OF ORGANIC AND OTHER DELETERIOUS MATERIAL. SOILS OF POOR GRADATION, EXPANSION POTENTIAL, OR STRENGTH CHARACTERISTICS SHALL BE PLACED IN AREAS DESIGNATED BY THE CONSULTANT OR SHALL BE MIXED WITH OTHER SOILS TO SERVICE AS SATISFACTORY SOIL MATERIAL.
- THE CONTRACTOR SHALL CONSTRUCT THE INTERIM EROSION CONTROL AND ADHERE TO THE LAHONTAN GUIDELINES FOR EROSION CONTROL FOR THE TOWN OF MAMMOTH LAKES AS SPECIFIED ON PLANS AND SPECIFICATIONS.
- ALL SITE WORK SHALL BE COMPLETED PRIOR TO OCT 15 OF EACH YEAR. ANY WORK PROPOSED AFTER THIS DATE REQUIRES WRITTEN APPROVAL BY THE ENGINEER.
- SOILS TESTING SHALL BE PERFORMED BY AN APPROVED INDEPENDENT TESTING LABORATORY. SHOULD ANY COMPACTION TEST FAIL TO MEET THE MINIMUM REQUIRED DENSITY AS SPECIFIED ON THE PLANS OR IN THE GEOTECHNICAL REPORT, THE DEFICIENCY SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE SOILS ENGINEER. THE EXPENSE OF RE-TESTING SUCH AN AREA SHALL BE BORNE BY THE CONTRACTOR, AT NO COST TO THE TOWN.
- CONTRACTOR SHALL NOT WORK DURING TIMES THAT RAINSTORMS ARE EXPECTED.
- NO TREES SHALL BE REMOVED UNTIL APPROVED AND MARKED BY THE OWNER AND/OR ENGINEER. ALL TREES TO REMAIN SHALL BE PROTECTED IN PLACE.
- WITH THE EXCEPTION OF TEMPORARY EXCAVATION FOR MASS GRADING AND AREAS SHOWN TO BE LANDSCAPED, CUT AND FILL SLOPES SHALL NOT EXCEED A STEEPNESS OF 2:1, UNLESS OTHERWISE NOTED, AND SHALL BE REVEGETATED TO CONTROL EROSION. STOCKPILED TOPSOIL WILL BE SPREAD EVENLY TO A DEPTH OF 6" MINIMUM OVER SLOPES. SEEDED SLOPES SHALL BE STABILIZED BY INSTALLATION OF AN EROSION CONTROL BLANKET, "NORTH AMERICAN GREEN SC150" OR APPROVED EQUAL, SECURED PER MANUFACTURER'S RECOMMENDATIONS.
- SOIL STOCKPILES SHALL BE PLACED IN LOCATIONS APPROVED BY THE AUTHORIZED BLM / USFS OFFICER AND SHALL NOT BE MORE THAN TWO FEET HIGH TO ENCOURAGE THE CONTINUED VIABILITY OF LIVING ORGANISMS IN THE SOIL.
- AGGREGATE BASE SHALL BE CLASS 2, 19mm MAXIMUM GRADING, AND SHALL CONFORM TO THE PROVISIONS OF SECTION 26, "AGGREGATE BASES," OF THE CALTRANS SPECIFICATIONS AND SHALL BE COMPACTED TO A MINIMUM OF 95% OF THE MATERIAL'S MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557-00 (OR LATEST EDITION).
- FILL MATERIAL SHALL BE PLACED IN LIFTS SUCH THAT ALL FILL IS COMPACTED TO A MINIMUM OF 90% OF THE MATERIAL'S MAXIMUM DRY DENSITY. EXISTING SLOPES OF 5:1 OR STEEPER TO RECEIVE FILL SHALL BE KEYED WITH EQUIPMENT-WIDTH BENCHES PRIOR TO COMPACTION AND FILL PLACEMENT.



CONSTRUCTION LEGEND

(PROPERTY LINE)	(RETAINING WALL)	FILTER FENCE PER DETAIL SHT 2.
(EDGE OF PAVEMENT)	(CONCRETE VALLEY GUTTER)	FINISHED GROUND CONTOUR & ELEV.
(FENCE)	(CONCRETE CURB WALL)	2" GRAVEL OVER COMPACTED NATIVE MATERIAL - TO BE PLACED AFTER DEMO
(EXISTING GROUND CONTOUR & ELEV.)	(DRAIN INLET) w/ INLET PROTECTION PER DETAIL SHT 2	HYDROSEED AND INSTALL EROSION CONTROL BLANKET
(FIRE HYDRANT)	(WATERLINE)	LIMITS OF DISTURBANCE--ALL EXISTING ITEMS WITHIN L.O.D. ARE TO BE REMOVED (UNLESS OTHERWISE NOTED)
(WATER VALVE RISER)	(OVERHEAD UTILITIES)	
(AC PAVEMENT)	(POWER POLE)	

