TVCE
TRINITY VALLEY
CONSULTING ENGINEERS, INC
Joshua T. McKnight CE 60687

Engineering Geologic Report

12575 Buck Mountain Road
Dinsmore
County of Humboldt
California
APN: 210-131-021

RECEIVED
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Humboldt County
Planning Division

CLIENT:

Parker Berg and Carrie Jordan
PO Box 67
Bridgeville, California 95526

SEPTEMBER 2018
Project #1269

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ATTACHMENTS:

Date:	September 1, 2018	**Project Number:**	1269
Owner:	Parker Berg & Carrie Jordan	**Project Name:**	Engineering Geologic Report
Location:	12575 Buck Mtn Rd Dinsmore, CA	**APN:**	210-131-021

Introduction

Trinity Valley Consulting Engineers, Inc. (TVCE) was secured by Parker Berg and Carrie Jordan (client) to evaluate the existing conditions for the above referenced parcel. The client is seeking permitting for existing grading, improvements to existing grading, and proposed mitigation plan at applicable sites. The following is an outline of our findings and recommendations.

Project Site Location

The project site is located approximately 4.8 miles southeast of Dinsmore, California, where access is provided from Burr Valley Road via California Highway 36 (see **Attachment 1** for *Location Map* and **Attachment 2** for *Site Map*). Latitude and Longitude of the project site is 40.4228° N and -123.5928° W. The parcel is approximately 40 acres in size (Parcel Map Book 210 and Page 13). The project parcel is largely thick deciduous/coniferous forest and open grassy prairies with a network of roads that provide access to several landings. The parcel is zoned Residential Agriculture (RA) under the County of Humboldt zoning code. Surrounding the parcels are primarily zoned Residential Agriculture (RA). The approximate site elevation of the project site is from approximately 3,600' to 3,860' above mean sea level. Ingress/egress is provided from a private drive from Buck Mountain Road that becomes USFS Road 1N08 via Burr Valley Road.

Project Site Geology

The subject property is mostly undeveloped besides residence, pre-existing access roads, agricultural landings, and appurtenant structures. Slopes on site in general are slightly inclined (approximately less than 15% to greater than 50%), with a southwestern aspect towards the Little Van Duzen River. Dairy Creek, a Class II watercourse, amongst other Class III watercourses bisect the project parcel.

The project site is mapped within a broad headwall amphitheater Quaternary landslide (Qls) along Buck Mountain which is described (McLaughlin et al., 2000) as soils deposited from downslope movement resulting from mass wasting and is widespread. Mass movement is common in all terranes, especially in shear zones, mélange, and schistoic units. The underlying geology are of the Central Franciscan belt (cm1).

The underlying bedrock of the Central belt of the Franciscan Complex in this region is characterized as a "mélange," a chaotic mixture of heterogeneous rock blocks entrained within a highly sheared argillaceous matrix. Slope stability in this geologic environment is dictated by the distribution of rock blocks, which form resistant uplands. The intervening low-strength matrix material is highly moisture sensitive, and is frequently subject to earthflow deformation. Much of the landscape throughout the region is subject to lumpy, hummocky geomorphic conditions indicative of extensive earthflows. The extensive prairie-covered terrain in the region is typically associated with areas underlain by flowing clay-rich, mélange matrix.

Active sliding was observed within the project parcel, primarily concentrated along the steep inner gorges of Dairy Creek. In addition, extensive earthflow complexes were observed, partially persisting within the open grassy areas of the northern portion of the parcel. Small failures were observed within graded areas and will be discussed in greater detail in continuing sections. No active faulting was observed.

The project parcel is approximately 0.25 miles from the Mule Ridge fault of the Eaton Roughs fault zone (Fault ID # 17). The Mule Ridge fault is considered a Quaternary-age fault by the State of California, with the last surface rupture within the last 1,600,000 years. The Mule Ridge Fault starts one and one half miles northwest of Dinsmore and runs south east 32 miles to the Round Valley Reservation. The slip-rate of the Mule Ridge fault is less than 0.2 mm per year with a strike angle of approximately 327°.

Based on the rock units underlying the large mapped Quaternary landslide (McLaughlin et al., 2000), mapped as a fault contact, practicing geologists in this area consider these fault contacts to be inactive at present time. These fault contacts were mapped as dotted lines on a geologic map due to the fault contacts being obscured by the Quaternary-aged earthflow deposit. The Mule Ridge Fault is therefore not penetrating through these deposits, thus indicating these contacts have not moved prior to formation of the earthflow and due to the inactivity makes it unlikely that these faults have any likelihood of future activity under the present tectonic framework.

Proposed Project

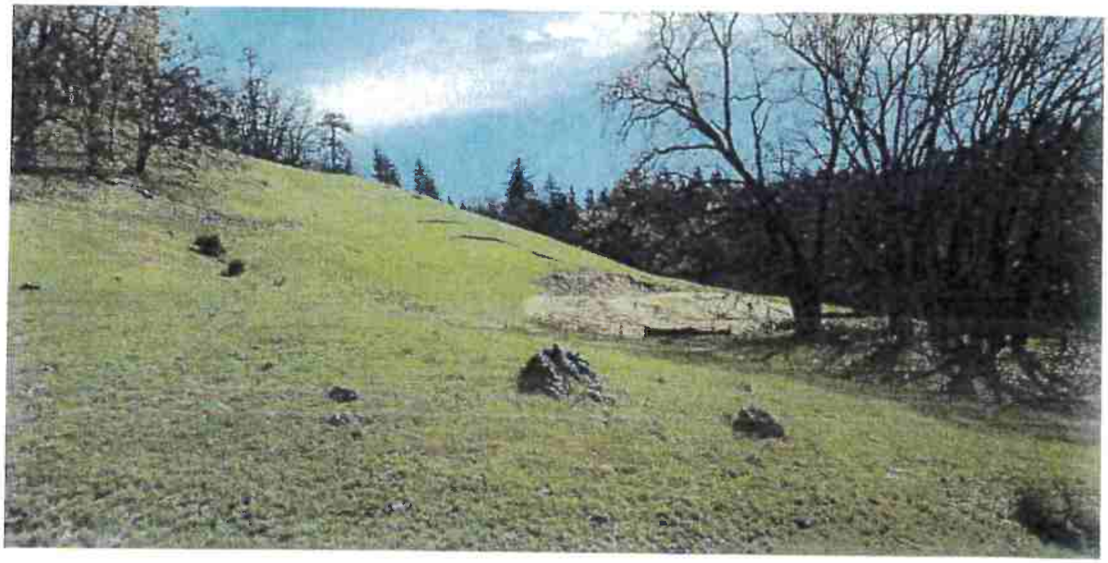
The proposed project for this site is to perform a general soils investigation as needed to provide recommendations and evaluate existing and proposed grading. All anticipated grading and erosion control features will meet the grading requirements of the County of Humboldt. Improvements where necessary to existing access roads may be warranted and will be included in the grading plan in a separate report.

Soil Conditions

A field investigation was conducted by TVCE at this site on June 13, 2018. This investigation consisted of site observations and general observations of the area of the existing development. Soil observations were field-logged and classified in general accordance with ASTM D-2488 visual-manual procedures. Cut walls and shallow hand dug excavations were utilized to infer soil and bedrock types. Soils observed within the area of the existing grading were clayey gravels (GC) and clayey sands (SC). Weathered bedrock was encountered throughout the site, primarily comprised of metasedimentary rocks.

Site Locations

Site #1 – Landing to be removed (40.424239° N, -123.590931° W)



The location of the landing is along the northeastern portion of the project parcel. Presently, this site is occupied by a terraced landing that is presently unoccupied and occupies approximately ±0.46 acres. For the development of the landing, approximately 700 cubic yards (CY) of materials had been excavated. The site was developed in the fall of 2017, without authorization.

Adjoining slopes based from the County of Humboldt GIS data are approximately 15 to 50%. Based from the topographic survey, the landing fill slopes range from 1:1 to 1.6:1 (h:v), where cut slopes range from 0.8:1 to 1:1. During the site visit, we observed multiple failure surfaces associated with the unauthorized grading. A shallow rotational-translational slide complex was observed above the upper most terrace cut bank, which is approximately 0.07 acres in size, where approximately 400 CY of materials have been mobilized. Groundwater was observed discharging from the cut bank where the toe of the slide is oriented. Adjacent to the slide mass to the east, a cut bank slump has developed where groundwater is discharging from the cut bank, where approximately 10 CY has been displaced.

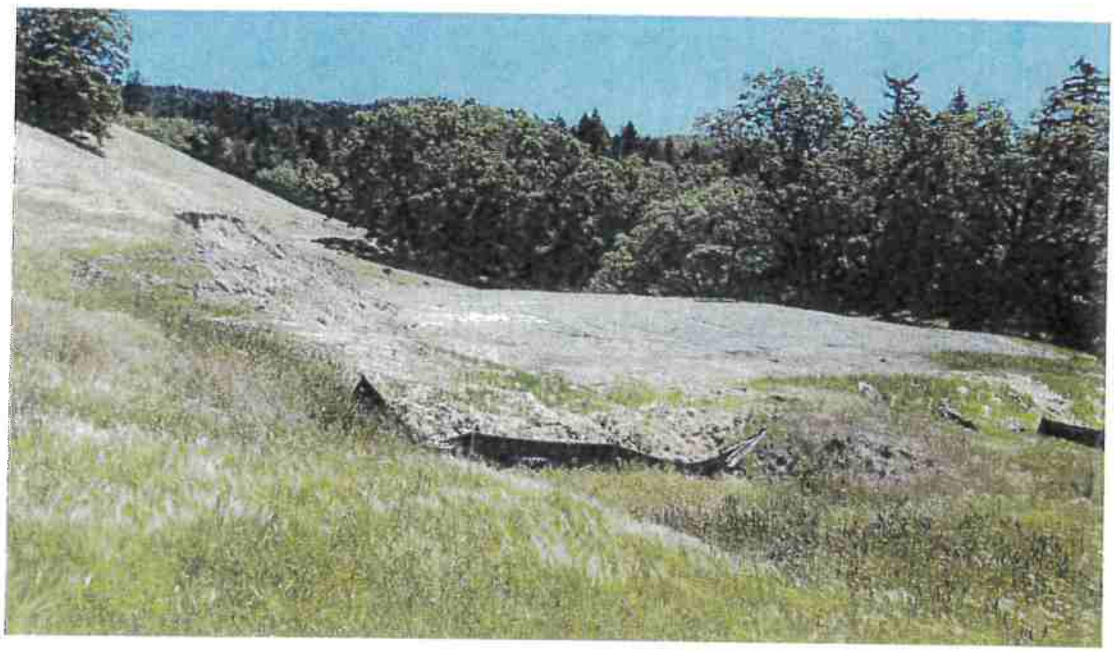
It is proposed to remediate this site by returning the existing grading to the original configuration. All fill will meet the standards outlined in the *Recommendations* section. The proposed grading activities will disturb approximately ±0.89 acres. Approximately

3,000 CY of earthwork quantities are expected. This site will also receive cut material from the adjoining pond site and are included in the previously mentioned quantities.

Any new bare earth will be covered with straw and seeded, where perimeter and erosion controls measures will be utilized as needed.

Inspection of the keyway subgrade and engineered fill by a qualified professional will be required. At the project termination, the client shall contact a qualified professional to conduct a final inspection of the grading activities and approve erosion and sediment control installation.

Site #1 – Landing to mitigated (40.423999° N, -123.592582° W)



The location of the landing is along the northern portion of the project parcel, adjacent to the previously discussed landing. Presently, this site is occupied by a two-tiered landing that is presently unoccupied and occupies approximately ±0.75 acres. For the development of the landing, approximately 2,200 cubic yards (CY) of materials had been excavated. The site was developed in the fall of 2017, without authorization. The landing is situated between the headwaters of two Class III watercourses, where grading activity has encroached into the Streamside Management Areas (SMA) of both of these watercourses.

Adjoining slopes based from the County of Humboldt GIS data are approximately 15 to 50%. Based from the topographic survey, the landing fill slopes range from 1:1 to 2:1, where cut slopes range from 0.5:1 to 1:1. During the site visit, we observed multiple failure surfaces associated with the unauthorized grading. Two slumps within the cut bank were observed with groundwater discharging from the cutbank that is discharging a top of a confining layer. A large rill was formed on the outboard slope due to overland flow and uncontrolled drainage. An unstable area was noted to the west of the landing area, where the adjoining Class III watercourse on the western edge qualified as the boundary of the unstable area.

It is proposed to mitigate the landing by reconfiguring the existing landing by recontouring the outboard edges of the landing, stabilizing the cutslope and failure surfaces with rock slope protection (RSP), and expanding the upper landing deck to encompass the lower portion and sloping (2%) the landing surface towards a drainage structure ((P) 12" Drain Pipe) that will discharge to velocity dissipater with a vegetated bioswale. Approximately 600 CY of RSP will be used to armor the cut bank to increase the factor of safety and minimize future slope failure. A four (4) inch perforated toe underdrain with non-geotextile and drain rock shall be installed the length the RSP wall. Approximately 1,300 CY of materials will be graded and 0.69 acres will be disturbed.

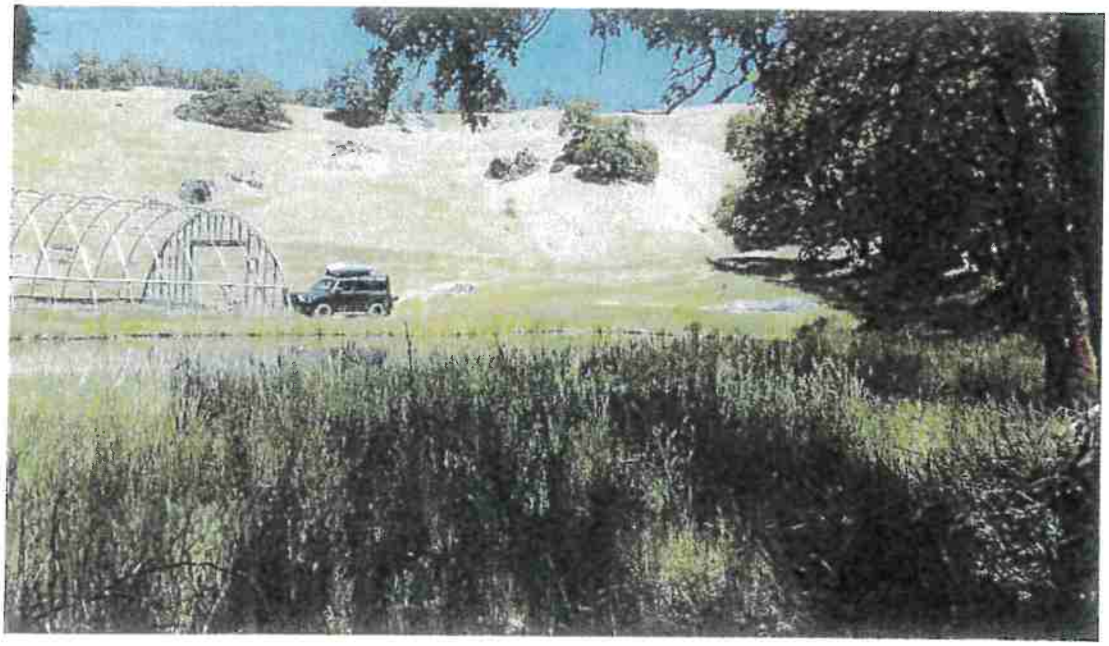
There will be a total of 5,720 SF (245 LF) of temporary and 400 SF (21 LF) of permanent riparian disturbance associated with recontouring and stabilizing the landing.

Any lake and streambed alterations will require additional permitting by local, state and federal agencies.

Any new bare earth will be covered with straw and seeded, where perimeter and erosion controls measures will be utilized as needed.

Inspection of the keyway subgrade and engineered fill by a qualified professional will be required. At the project termination, the client shall contact a qualified professional to conduct a final inspection of the grading activities and approve erosion and sediment control installation.

Site #2 – Existing Agricultural Landings and Rainwater Catchment Impoundment Structure (40.945428° N, -123.685239° W)



The location of Site #2 is within the west-southwestern portion of the project parcel. The existing clearing is comprised of a two-tiered landing, a small landing that contains a 35 foot by 75 foot greenhouse, and an approximate 155,000 gallon rainwater catchment impoundment. These features were completed without county authorization. For the development of these features, approximately 1,500 cubic yards (CY) of materials had been excavated. Approximately 1.12 acres have been disturbed relating to the development of these features. Site development based from historical imagery (Google Earth) began between 2005 and 2009, where the 2016 imagery set illustrates present-day conditions. A Class III watercourse bisects Site #2, where an access road and small two-tiered landing encroaches the SMA.

The topography within the site area range from 5 to 30% (County of Humboldt GIS).

In addition to existing site improvements, the client has agreed to re-grading the existing impoundment structure, due to uncertainty of compaction standards, embankment geometries and lack of keyway. A 280,000-gallon (0.86 acre-feet) impoundment structure is proposed to replace the existing structure and will be employed for agricultural and fire protection purposes. The footprint of the proposed structure will be approximately 150 feet by 50 feet with a depth of 10.5 feet.

All proposed inboard and outboard slopes will be 2:1, unless otherwise noted (refer to TVCE grading plan). All slopes will be mechanically compacted as outlined within the *Recommendations* section. The maximum fillslope will be approximately 7 feet and will have a keyway. Please review **Attachment 3** – *Technical Memorandum Slope Stability Analysis* for the justification of embankment design. There will be approximately 2,500 cubic yards of materials excavated, however 60 CY will be used as fill materials for the embankment and the remaining used as fill at *Site #1*. Approximately 0.34 acres will be disturbed during grading activities. A 24-mil reinforced polypropylene with non-woven fabric underlayment will be installed within the catchment structure in increase slope stability.

The proposed spillway will be a rock lined spillway with rock slope protection and will discharge into a vegetated bioswale adjacent to the proposed structure. The proposed trapezoidal geometry of the spillway will be 6 feet (L_{Top}) by 4 feet (L_{Bottom}) by 2 feet (Depth), comprised of 6 inch to 12 inch mixed angular rock with non-woven geotextile underlain. Beyond the bioswale, discharge will continue through an upgraded 18 inch culvert (replacing existing 12 inch culvert). An upland berm will be installed to eliminate the upland hydrologic connectivity, and will bifurcate sheet flow around the proposed structure.

There will be 30 SF (30 LF) of temporary disturbance and 25 SF (6 LF) of permanent riparian disturbance associated with culvert upgrade.

Any lake and streambed alterations will require additional permitting by local, state and federal agencies.

Any new bare earth will be covered with straw and seeded, where perimeter and erosion controls measures will be utilized as needed.

Inspection of the keyway subgrade and engineered fill by a qualified professional will be required. At the project termination, the client shall contact a qualified professional to conduct a final inspection of the grading activities and approve erosion and sediment control installation.

Site #3 – Existing low water crossing (40.421706° N, -123.592832° W)

The location of Site #3 is located on Dairy Creek, a Class II watercourse, along the project parcel seasonal access road to the cultivation area from the parcel residence. At this location, there is an existing rock ford low water crossing. The existing crossing does not meet the requirements outlined in Cafferata et al. (2017) for watercourse crossings for passage of 100-year flood flows.

Based on the hydraulics inferred from USGS Streamstats (2018) for this crossing, it is estimated the 100-year peak flood discharge would be 530 ft^3/sec (CFS). We utilized the California Department of Forestry and Fire Protection (2017) spreadsheet for the Rock-armored crossing riprap design (See **Attachment 4** – *Hydraulic Calculations*) to determine crossing geometry and rock type needed. The rock chute width of the rock-armored crossing was approximated at 35 feet, based on existing stream geometries. Based on chute geometry and Q_{100}, the rip rap rock size (D_{50}) that will be used will ranges from 2.75 feet to 4.1 feet in diameter. Approximately 150 CY of rip rap will be utilized as fill for the structure. Approximately 0.03 acres (38 LF) will be disturbed associated with the installation of the upgraded rock armored crossing. New permanent riparian disturbances of 800 SF (23 LF) are expected for the crossing upgrade. Minor grading will be necessary to key the RSP and placement of the rock chute within the streambed and roadway (~55 CY earthwork quantities).

In addition, rock slope protection will be utilized to armor the river-left bank (looking upstream) to protect the access road and to prevent channel diversion once the armored crossing is installed. Approximately 150 CY of rip rap will be utilized as fill for the structure. The rip rap rock size (D_{50}) that will be used will range from 1 foot to 1.5 feet in diameter. Approximately 300 SF (48 LF) will be disturbed associated with the installation of the upgraded rock armored crossing. Minor grading will be necessary to key the RSP into the stream bank.

Any lake and streambed alterations will require additional permitting by local, state and federal agencies.

Any new bare earth will be covered with straw and seeded, where perimeter and erosion controls measures will be utilized as needed. The access road shall be rocked 100 feet in either direction of the centerline of Dairy Creek with 2 inch minus base rock.

Inspection of the keyway subgrade and engineered fill by a qualified professional will be required. At the project termination, the client shall contact a qualified professional to conduct a final inspection of the grading activities and approve erosion and sediment control installation.

Site #4 – Existing pond (40.421706° N, -123.592832° W)

The location of Site #4 is located between Site #3 and the onsite residence. For the development of this structure, approximately 300 cubic yards (CY) of materials had been excavated. Approximately 0.19 acres have been disturbed relating to the development of this structure. Site development based from historical imagery (Google Earth) occurred prior to 1993. A Class III watercourse (discharge from Site #5) is adjacent to the northern portion of the pond area.

The topography within the site area range from 30 to greater than 50% (County of Humboldt GIS). Based from the topographic survey, the pond inboard geometry is sloped at approximately 1.5:1, where outboard slopes range from 1.5:1 to near flat. The depth of the pond is no greater than 4 feet deep. The approximate storage capacity of the structure is 25,000 gallons (0.08 acre-feet). Cutbank seepage from an adjoining road cut along the access road is channeled into an inboard ditch and directed toward the structure. During the site visit, we observed the southwestern portion of the pond had minimal freeboard and was allowing discharge over the fill slope. The existing spillway was found to be inadequately armored, where discharge from the pond during the wet season appeared to be causing headcut erosion.

It is proposed to regrade the outboard edge of the pond area where the water discharging over the fillslope. There will be approximately 0.02 acres (870 SF) of temporary disturbance associated with these activities, with approximately less than 50 CY of materials recontoured.

In addition, the spillway shall be upgraded, the proposed trapezoidal geometry of the spillway will be 4 feet (L_{Top}) by 2 feet (L_{Bottom}) by 2 feet (Depth), comprised of 6 inch to 12 inch mixed angular rock with non-woven geotextile underlain. The base level of the spillway will reduced by approximately one foot reducing overtopping the outboard edge. The spillway installation will relate to approximately 80 SF of permanent disturbance (20 LF) with less than 10 CY of earthwork, where 3 CY RSP will be placed.

Any lake and streambed alterations will require additional permitting by local, state and federal agencies.

Any new bare earth will be covered with straw and seeded, where perimeter and erosion controls measures will be utilized as needed.

Inspection of the grading by a qualified professional will be required. At the project termination, the client shall contact a qualified professional to conduct a final inspection of the grading activities and approve erosion and sediment control installation.

Site #5 – Existing pond (40.421732° N, -123.591860° W)

The location of Site #5 is located adjacent to the onsite residence. For the development of the structure, approximately 766 cubic yards (CY) of materials had been excavated. Approximately 0.37 acres have been disturbed relating to the development of this structure.

Site development based from historical imagery (Google Earth) occurred prior to 1993. A Class II spring is adjacent to the northeastern portion of the pond area and discharges into the pond. It appears the pond is placed within a historical logging landing.

The topography within the site area range from 30 to 50% (County of Humboldt GIS). Based from the topographic survey, the pond inboard geometry is sloped at approximately 1.5:1, where outboard slopes range from 1:1 to nearly flat. The inner geometry of the pond is "terraced", where the outboard portion of the pond is the shallowest portion, where the deeper portion of the pond cut into the hillslope, in a "swimming pool" fashion. The depth of the pond ranges from 2.5 to 8 feet deep. The approximate storage capacity of the structure is 90,000 gallons (0.28 acre-feet). Based on the age of the grading, multiple episodes of cyclic loading from historical seismic events, lack of observable instabilities and downslope springs, the heavily vegetated outboard slope leading towards Dairy Creek, the pond appears stable under static conditions.

It is proposed to upgrade the spillway, by replacing the existing 10 inch culvert with an 18 inch culvert with velocity dissipation. There will be approximately 105 SF (70 LF) of temporary disturbance associated with the culvert upgrade. There will be approximately 13.5 SF (4.5 LF) of permanent impact and placement of 3 CY of 6 inch to 12 inch mixed diameter angular rock placed for culvert velocity dissipation installation.

Any lake and streambed alterations will require additional permitting by local, state and federal agencies.

Any new bare earth will be covered with straw and seeded, where perimeter and erosion controls measures will be utilized as needed.

Inspection of the grading by a qualified professional will be required. At the project termination, the client shall contact a qualified professional to conduct a final inspection of the grading activities and approve erosion and sediment control installation.

Site Soil Evaluation

Conservatively, site soils will yield a bearing pressure of two thousand (2000) psf for vertical bearing and one hundred and fifty (150) psf/ft for lateral bearing (2016 California Building Code, Table 1806.2).

Total settlement will be less than 1 inch, and anticipated differential settlement will be less than ¾ inch.

Seismic Considerations and Flood Considerations

A segment of the Eaton Rough fault passes within 0.25 miles of the project site to the east. The site does not lie within an Alquist-Priolo zone.

The following coefficients shall be used for seismic design (See **Attachment 5** for *USGS Seismic Hazard Data*):

Site Class	C
Mapped Spectral Response Acceleration (short), S_s:	1.495 *g*
Mapped Spectral Response Acceleration (1-sec), S_1:	0.656 *g*
Site Coefficient, F_a:	1.0
Site Coefficient, F_v:	1.3
Acceleration Spectral Response (short), S_{DS}:	0.996 *g*
Acceleration Spectral Response (1-sec), S_{D1}:	0.568 *g*
Seismic Design Category:	D
Occupancy Category:	II
Importance Factor:	1.0

The project site is listed to be in an area that is *highly instable* by the County of Humboldt GIS mapping.

Based on the location and geographical setting, the project site lies outside any flood prone areas.

Due to the site soils, potentially shallow perched groundwater and distance to a known Quaternary fault, soil strength loss potential at this site is Moderate. Mitigations to hazards associated with the existing have been described in the section above. All recommendations associated with grading, fills, and compaction standards are described in the *Recommendations* Section to mitigate these risks.

Conclusion

This report documents the history, present conditions and subsurface materials, as well as the geologic hazards associated with the site. Included in this report are design and construction recommendations based on the site conditions encountered, the requirements of the 2016 CBC and County of Humboldt grading ordinance. Based on our review of historical data, site exploration and observations, it is in our opinion that if our site-specific recommendations are implemented as intended, then no further actions will be necessary.

Recommendations

The following recommendations are general recommendations for any future grading activities to be performed:

Site Preparation

- All earthwork, including but not limited to, site clearing, grubbing, and stripping should be conducted during dry weather conditions, generally mid-April through mid-October;
- Strip and remove all topsoil and vegetation from the project area, and for a minimum of three feet to the outside of the working area
- Any undocumented fill soils, fine-grained residual soils, and any other debris encountered at or below the existing ground surface shall be removed at the locations receiving any potential fills

Grading

Grading must meet compliance with the County of Humboldt grading ordinance and ASTM regulations.

All cuts and fills shall be setback at a minimum of ten (10) feet from all ascending and descending slopes greater than 30%.

Any grading or structures shall be in conformance with the most recent version of the California Building Code (CBC).

Compaction Standards

Fills shall be compacted in 8-inch loose lifts with clean native materials at optimum moisture content as determined by testing and approved by the engineer. Non-structural fills shall be compacted to a firm unyielding surface as approved by engineer.

The mechanical compaction recommendation for all grading shall be 90% utilizing the ASTM D 1557-Modified Proctor with a moisture content (percent optimum) of -1 to +3 percent.

Fills

- Fills shall be constructed as controlled and compacted engineered fills and fill slopes graded to no steeper than 2:1 (h:v) without written approval of a qualified design professional.

- Fills should be free of: 1) organics, 2) rocks larger than 3-inches in diameter, and 3) other deleterious materials.
- Fill material should be placed in loose lifts no more than 8-inches thick, at uniform moisture content at or near optimum, and compacted mechanically.
- Sufficient testing and inspection should be performed to monitor the suitability of fill materials and assure compliance with the recommended compaction standards.
- Aggregate base material may be used for pavement subgrade, placed beneath footings or floor slabs, or used as trench backfill. This material should meet the requirements in the Caltrans Standard Specifications for Class 2 Aggregate Base (3/4-inch maximum particle size).

Drainage and Landscaping

The site should be graded to provide drainage such that no water is allowed to: 1) pond anywhere on the site, 2) migrate beneath the proposed developments, or 3) pond at the base of cuts.

Erosion Control

Site-specific erosion/sediment control and stabilization recommendations are presented in the bulleted list below. As used herein, *exposed soil areas* and *disturbed areas* include all grading and excavation work performed in connection with the proposed project.

- Storm water erosion and pollution prevention measures should be taken as soon as possible prior to the onset of the winter rains.
- Humboldt County Erosion Control Standards should be viewed as *minimum* standards for erosion and sediment control at this site.
- Revegetate all disturbed areas immediately by seeding with Caltrans erosion control mix (or equivalent).
- To protect against erosion, heavily mulch all exposed soil areas with straw, or an approved alternate material.
- Poke the straw mulch into the upper 2 inches of the soil to limit loss of straw.
- Stake straw wattles parallel to slope contours into any side cast fills.
- Install silt fencing at toes of any new side cast fill slopes.
- Replant the site with trees and shrubs native to the area.
- Cover any soil stockpiles with 6-mil (min) plastic sheeting, securely anchored to prevent wind disturbance.
- Native gravel-surfaced roadways to the proposed ponds and other areas where vehicle traffic may occur; should be maintained in good condition.
- Drive and park vehicles only on gravel-paved areas during wet weather.
- Monitor the site before and after runoff-generating rainfall events to verify suitable and appropriate functioning of all erosion-control measures.
- Promptly repair all erosion-control measures as needed.

Limitations

This report, recommendations, and conclusions are solely intended for the site discussed above. The information contained in this report is only intended for use at the stated site using the stated uses. This report should not be used as justification for any other project or site, and only be used for information purposes if referenced and reviewed for other projects. TVCE recognize that the site is in a dynamically active area and conditions can and will change. TVCE has used the best professional judgment to assess the present and future risks and assist the landowner in proposing development that does not increase the risk to the resources present in the project area or subject the landowner to untenable hazards. If conditions different from those described in this report are encountered during construction, the project engineer/builder/owner should contact this office to review the new conditions and evaluate their bearing on the validity of any recommendations provided herein.

The opinions presented herein have been developed using a degree of care and skill ordinarily exercised, under similar circumstances, by reputable civil engineers and geologists practicing in this or similar localities. No other warranty, expressed or implied, is made as to the professional advice included in this report.

The analyses and recommendations contained in this reports are based on the data obtained from subsurface exploration. The methods used indicate subsurface conditions only at the specific locations where soils were observed, and only to the depths penetrated, and cannot always be relied on to accurately reflect stratigraphic heterogeneity that commonly exist between sampling locations.

Do not apply any of this report's conclusions or recommendations if the nature, design, or location of the project changes. If changes are contemplated, the author of this report should be consulted to review the impact on the applicability of the recommendations in this report. The author of this report is not responsible for any claims, damages, or liability associated with any other party's interpretation or the subsurface data or reuse this report for other projects or at other locations without written consent.

Please contact TVCE at (530) 629-3000 if any questions may arise.

12.31.18

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References

Cafferata, P., Lindsay, D., Spittler, T., Wopat, M., Bundros, G., Flanagan, S., Coe, D., and Short, W., 2017, Designing Watercourse Crossings for Passage of 100-Year Flood Flows, Wood and Sediment, California Forestry Report No. 1, California Department of Forestry and Fire Protection. Sacramento, CA. p. 137.

CBC [California Building Code], 2016, California Code of Regulations, Title 24, Part 2, Volume 2, California Building Standards Commission.

California Department of Forestry and Fire Protection (2017), 2017 California Forestry Report No. 1 (revised 8/18/17) spreadsheet, accessed 7/23/2018, from website: http://calfire.ca.gov/resource_mgt/resource_mgt_forestpractice_pubsmemos_pubs

County of Humboldt GIS Mapping (http://gis.co.humboldt.ca.us/)

McLaughlin, R.J., Ellen, S.D., Blake, M.C., Jr., Jayko, A.S., Irwin, W.P., Aalto, K.R., Carver, G.A., and Clarke, S.H., Jr., 2000, Geology of the Cape Mendocino, Eureka, Garberville, and Southwestern part of the Hayfork 30 x 60 Minute Quadrangles and Adjacent Offshore Area, Northern California: U.S. Geological Survey Miscellaneous Field Study Map MF-2336, scale 1:100,000.

U.S. Department of Agriculture, 2018, Web Soil Survey, accessed 8/14/2018, from website: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx.

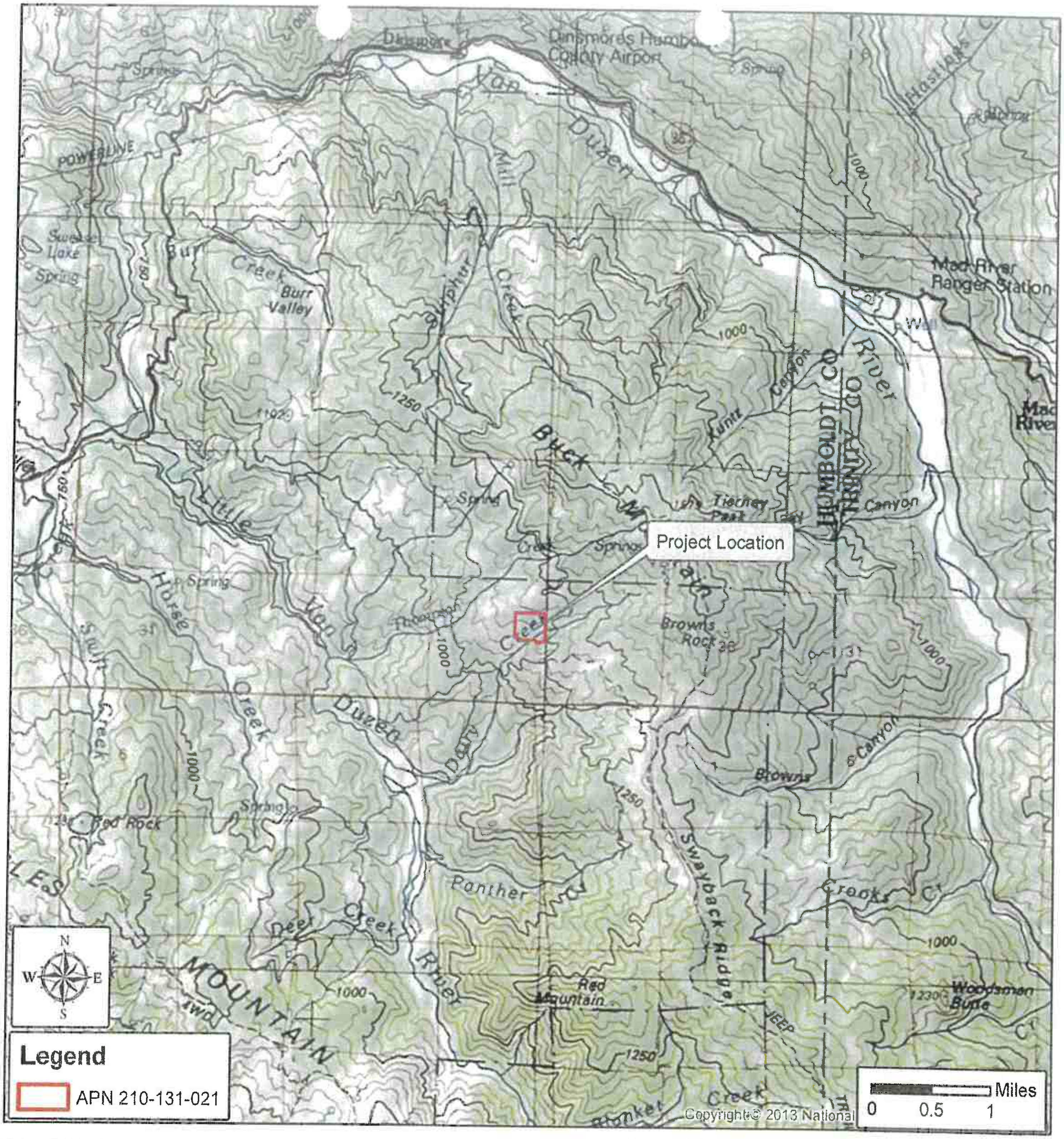
U.S. Geological Survey, 2018, StreamStats Application, accessed 7/23/2018, from the USGS website: https://water.usgs.gov/osw/streamstats/.

U.S. Geological Survey and California Geological Survey, 2018, Quaternary fault and fold database for the United States, accessed 8/24/2018, from website: http://earthquake.usgs.gov/hazards/qfaults/.

U.S. Geological Survey Earthquake Hazard Program, 2018, US Seismic Design Maps, accessed 8/24/2018, from USGS website: http://earthquake.usgs.gov/hazards/designmaps/.

ATTACHMENT 1:

Location Map



TVCE
Trinity Valley Consulting Engineers Inc

USGS SEAMLESS TOPOGRAPHIC MAP

FOR

COUNTY OF HUMBOLDT

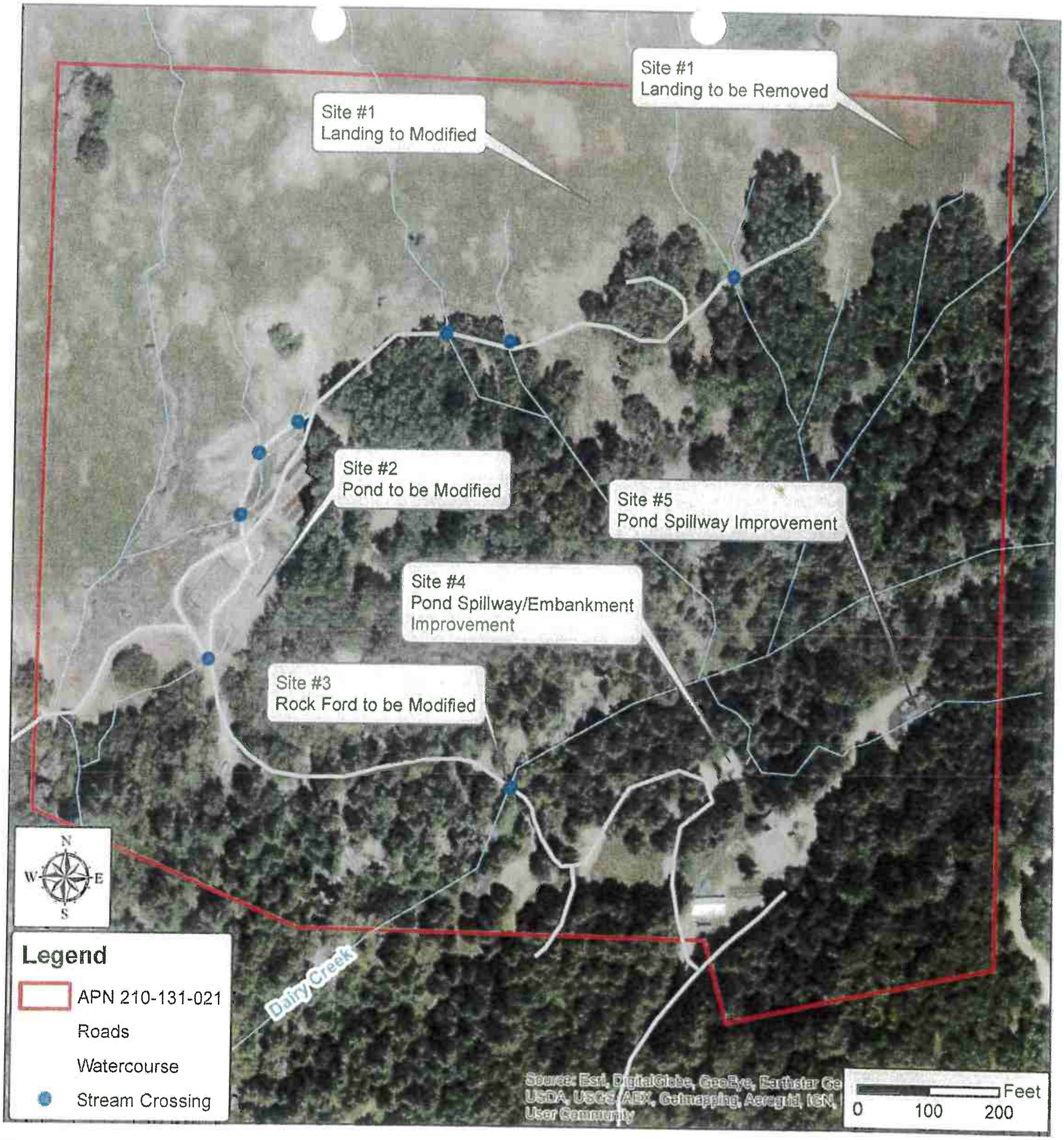
Parcel Information from Humboldt County GIS
Does not reflect exact location of property lines

Engineering Geologic Report
Parker Berg/Carrie Jordan
APN: 210-131-021
12575 Buck Mountain Road
Dinsmore , CA 95526

Location Map

ATTACHMENT 2:

Site Map



TVCE Trinity Valley Consulting Engineers Inc	USDA 2016 NAIP IMAGERY FOR COUNTY OF HUMBOLDT Parcel Information from Humboldt County GIS Does not reflect exact location of property lines	Engineering Geologic Report Parker Berg/Carrie Jordan APN: 210-131-021 12575 Buck Mountain Road Dinsmore , CA 95526
		Site Map

ATTACHMENT 3:

Technical Memorandum
Slope Stability Analysis

TECHNICAL MEMORANDUM

DATE: August 24, 2018

TO: County of Humboldt Planning and Building Department; North Coast Regional Water Quality Control Board; California Department of Fish and Wildlife

FROM: Joshua McKnight and Christian Figueroa, Trinity Valley Consulting Engineers, Inc.

SUBJECT: Slope Stability Analysis for Rainwater Impoundment Structure located at APN: 210-131-021 (Carrie Jordan/Parker Berg)

We hereby state that all work described in the attached Technical Memorandum for the Slope Stability Analysis of APN: 210-131-021 follows accepted engineering and geologic practices and was completed under our direction.

12.31.18

Joshua T. McKnight, P.E. #60687
Professional Engineer/Principal

PROFESSIONAL GEOLOGIST
CHRISTIAN X. FIGUEROA
NO. 9512
Exp 7/31/20
STATE OF CALIFORNIA

Christian X. Figueroa, P.G. #9512
Professional Geologist

Pond Embankment Slope Stability Analysis

As part of Trinity Valley Consulting Engineers, Inc. (TVCE) ongoing efforts to meet regulatory requirements we evaluated existing site conditions and are proposing the replacement of an existing non-engineering rainwater impoundment structure (pond) with a new engineering pond on the project parcel APN: 522-044-039. The slopes of the pond embankment are proposed to be graded to 2:1 (h:v) unless otherwise noted. The cross-sectional geometry of the proposed embankment with keyway is illustrated on *Site Sections E, F* and G within the *Grading and Erosion Control Plan* (See **Appendix 1**).

We evaluated the stability of the proposed pond embankment using the keyway and embankment geometry at the critical cross section (the tallest embankment cross section). TVCE performed a quantitative slope stability analyses to evaluate the stability of the pond embankment under both static and dynamic (i.e. seismic loading) conditions. We used *Slide* (version 7.0) slope stability analysis software, which assesses the stability of a slope by comparing forces resisting failure to the forces driving failure. The ratio of the two force is defined as the "factor of safety" and is reported as an F-value. In a stable slope, the force resisting failure exceed the driving forces and the resultant F-value is greater than 1.0. When the two forces are equal, F is equal to 1.0 and slope failure is imminent. The higher the F-value is above 1.0, the greater the theoretical likelihood that the slope is stable.

The stability analysis for the proposed embankment used slope geometry of the existing ground obtained from topographic survey data collected by TVCE on June 13, 2018 and an Auto Cad pond model developed for this project. A simplified three-unit stratigraphic model of the underlying soil and bedrock material was based on observations of the project area and site soils and geology. Shear strength parameters of Franciscan Complex mélange were extrapolated from Kim et al. (2004), both Block-Poor mélange (Unit 2) and Block-Rich mélange (Unit 3), respectively. These materials are representative of Quaternary landslide deposits (Qls) within the project area that originates from the mélange (cm1) of the Central Franciscan Belt (McLaughlin et al., 2000). The proposed embankment fill (Unit 1) was characterized as clayey sands (SC), due to the necessity of sorting materials to meet compaction standards. Site soil type determination was classified in general accordance with ASTM D-2488 visual-manual procedures and was supplemented by the USDA Web Soil Survey (See **Appendix 2** - *USDA Soil Web Soil Map Unit Description*).

Soil strength parameters used for the slope stability analysis were based on field investigation, published values, and professional judgement. Table 1 summarizes the soil parameters used in the stability analysis for the embankment:

Table 1: Soil and Bedrock Parameters

	Dry unit weight (lb/ft^3)	**Saturated unit weight (lb/ft^3)**	**Cohesion (lb/ft^2)**	**Internal angle of friction, phi (degrees)**
Unit 1: Compacted fill – Clayey Sands (SC)	125	130	230	31
Unit 2: Block poor mélange	130	135	100	25
Unit 3: Block rich mélange	130	135	200	35

Note: Soil parameters were assumed using published values (Hunt, 2005) and professional judgement, where mélange parameters were extrapolated utilizing published values from Kim et al. (2004).

Potential failure surfaces were modeled using the Bishop Simplified method. Groundwater levels were modeled for worst-case condition when the reservoir is at full capacity. The water table surface through the embankment was modeled to drop from the spill elevation to the toe of the slope for this scenario. For seismic slope stability analysis (pseudo-static conditions), we used a seismic coefficient "*k*" of 0.15 *g* (for a simulated magnitude 8.25 earthquake) based on the California Geological Survey (2008) Guidelines for Evaluating and Mitigating Seismic Hazards in California. An additional evaluation was used, outlined in the Anderson et al. (2008) NCRHP Report 611 for the Limit Equilibrium Approach, where the seismic coefficient is 0.5 of site specific Peak Ground Acceleration (PGA) determined by the USGS maximum horizontal spectral response acceleration (USGS, 2018) for the project site.

Generally, the minimum factor of safety (F-value) necessary to consider a slope to be stable is 1.5 for static conditions and 1.15 for dynamic (pseudo-static) conditions. Our results of modeled proposed embankment slope should be considered stable for static conditions (F = 4.715, Figure 1). The analysis under dynamic conditions with the seismic coefficient 0.15 applied (CGS), measured a factor of safety of F = 2.323 (Figure 2), and with the seismic coefficient 0.271 applied (NCHRP – 0.5*PGA), measured a factor of safety of F = 1.636 (Figure 3).

As proposed, the proposed rainwater catchment impoundment structure appears it would be stable under both static and pseudo-static conditions if constructed by the recommendations within *Grading and Erosion Control Plan.* In addition, it is recommended prior to construction of the embankment, that a qualified professional inspect and observe the subgrade of the impoundment embankment to insure the embankment is founded on, and embedded into firm undisturbed native materials.

FIGURES

Figure 1: Proposed Embankment Slope Analysis (Static Conditions)
Figure 2: Proposed Embankment Slope Analysis (Dynamic Conditions - CGS)
Figure 3: Proposed Embankment Slope Analysis (Dynamic Conditions - NCHRP)

APPENDIX

Appendix 1: TVCE Grading and Erosion Control Plan
Appendix 2: USDA Soil Web Soil Map Unit Description

REFERENCES

Anderson, D.G., Martin, G.R., Lam, I., and Wang, J.N. (2008), NCHRP Report 611 – Seismic Analysis of Retaining Walls, Buried Structures, Slopes, and Embankments, published by the US Transportation Research Board, Washington, DC, p. 148.

CGS (2008), Guidelines for Evaluating and Mitigating Seismic Hazards in California, published by California Geological Survey Special Publication 117A, p. 98.

Hunt, R.E. (2005), Geotechnical Engineering Investigation Handbook – Second Edition, Boca Raton, Florida, CRC Press.

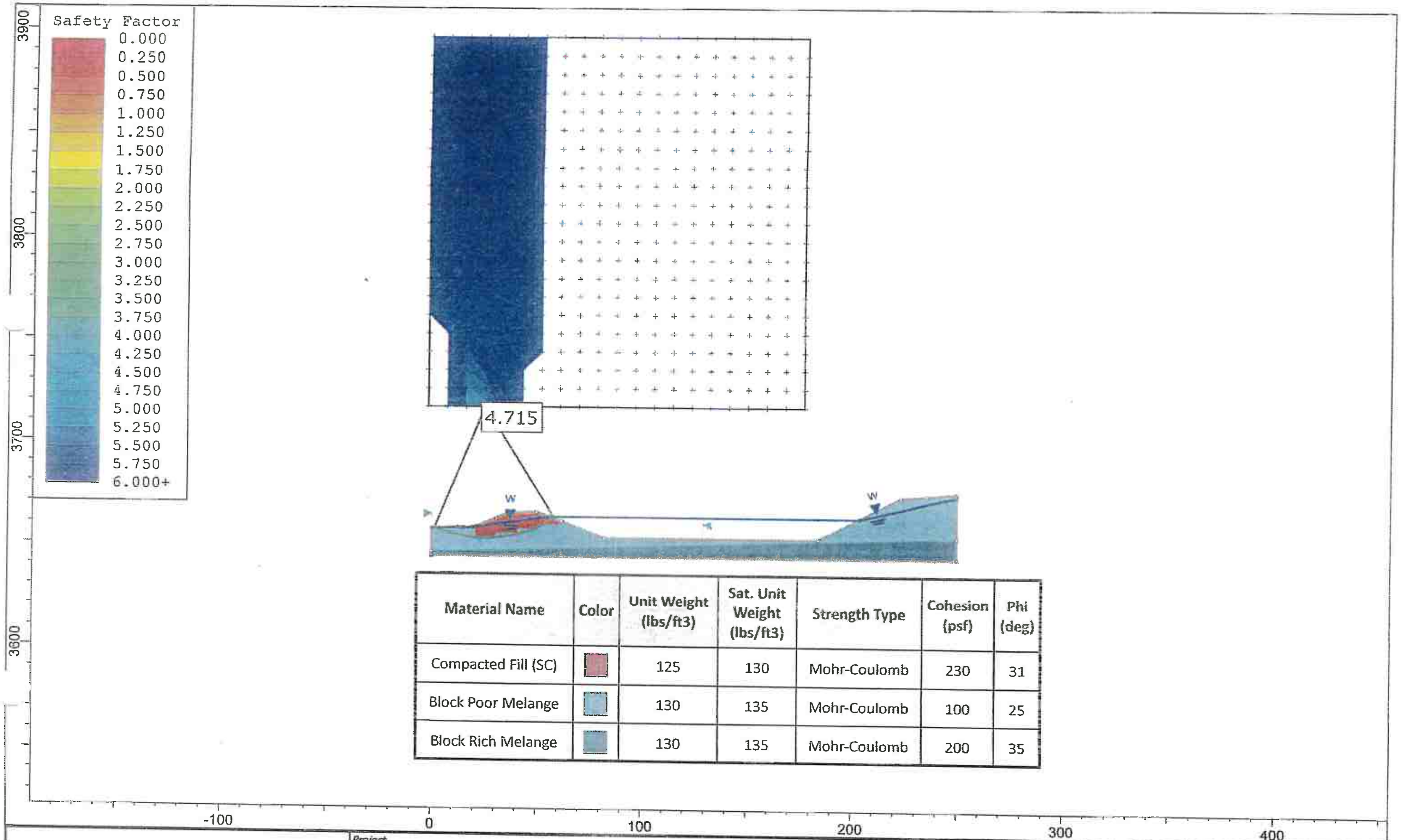
Kim, C., Snell, C., and Medley, E. (2004), "Shear Strength of Franciscan Complex Mélange as Calculated from Back Analysis of a Landslide," in Proceedings of the Fifth International Conference on Case Histories in Geotechnical Engineering, Dr. Shamsher Prakash, ed., published by the International Society for Soil Mechanics and Geotechnical Engineering, New York, NY.

McLaughlin, R.J., Ellen, S.D., Blake, M.C., Jr., Jayko, A.S., Irwin, W.P., Aalto, K.R., Carver, G.A., and Clarke, S.H., Jr., 2000, Geology of the Cape Mendocino, Eureka, Garberville, and Southwestern part of the Hayfork 30 x 60 Minute Quadrangles and Adjacent Offshore Area, Northern California: U.S. Geological Survey Miscellaneous Field Study Map MF-2336, scale 1:100,000.

United States Department of Agriculture (2018), Web Soil Survey, accessed 8/24/2018, from website: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

U.S. Geological Survey Earthquake Hazard Program, 2018, US Seismic Design Maps, accessed 8/24/2018, from USGS website: http://earthquake.usgs.gov/hazards/designmaps/.

FIGURES

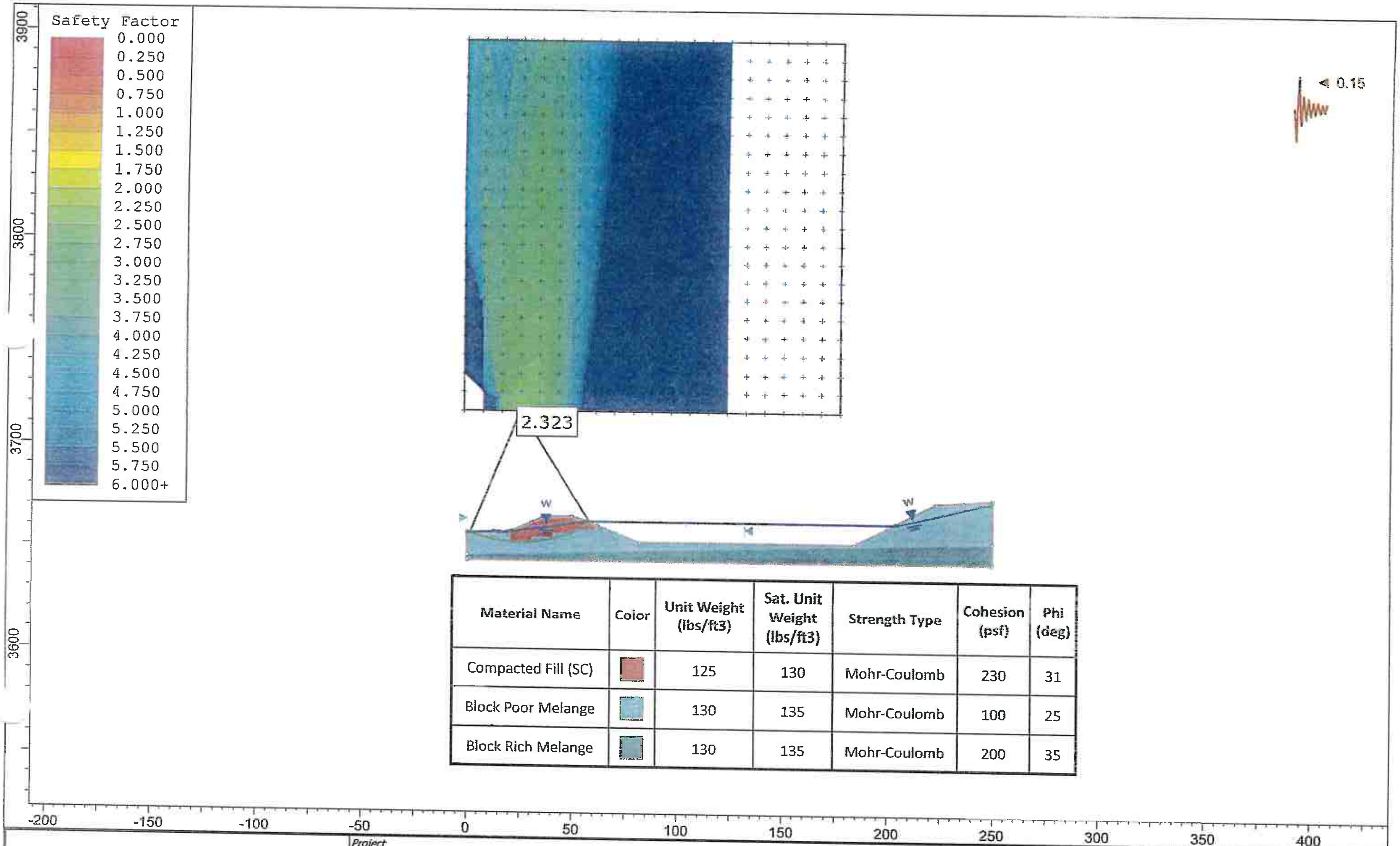


Material Name	Color	Unit Weight (lbs/ft3)	Sat. Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)
Compacted Fill (SC)		125	130	Mohr-Coulomb	230	31
Block Poor Melange		130	135	Mohr-Coulomb	100	25
Block Rich Melange		130	135	Mohr-Coulomb	200	35

TVCE

Project	#1269 - Jordan/Berg (APN: 210-131-021)
Analysis Description	Slope Stability Analysis/No Seismic Load (Static)
Drawn By	Christian Figueroa, PG
Scale	1:750
Company	Trinity Valley Consulting Engineers
Date	8/24/2018, 11:52:47 AM
File Name	SlideAnalyis_ProposedPond.slim

SLIDEINTERPRET 6.016

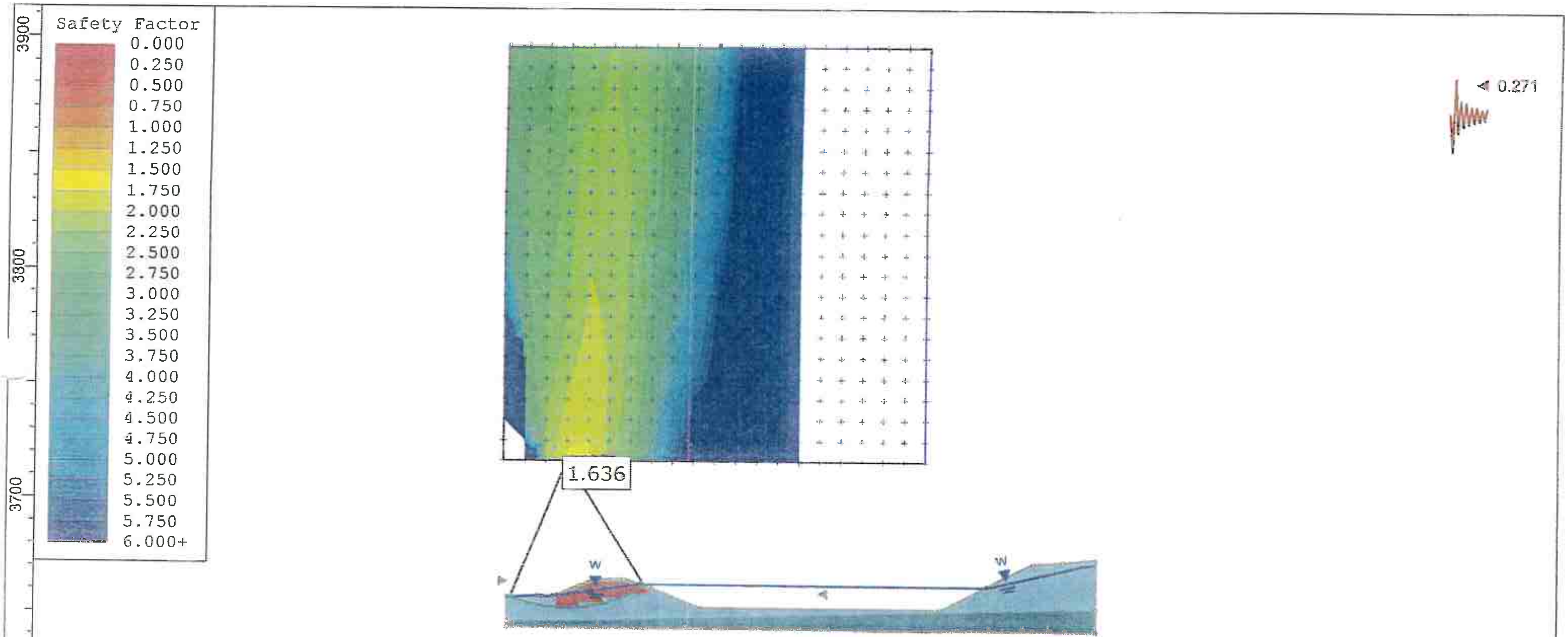


Material Name	Color	Unit Weight (lbs/ft3)	Sat. Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)
Compacted Fill (SC)		125	130	Mohr-Coulomb	230	31
Block Poor Melange		130	135	Mohr-Coulomb	100	25
Block Rich Melange		130	135	Mohr-Coulomb	200	35

TVCE

Project	#1269 - Jordan/Berg (APN: 210-131-021)		
Analysis Description	Slope Stability Analysis/Seismic Load Kh = 0.15 (CGS)		
Drawn By: Christian Figueroa, PG	Scale: 1:750	Company	Trinity Valley Consulting Engineers
Date: 8/24/2018, 11:52:47 AM		File Name	SlideAnalyis_ProposedPond.slim

SLIDEINTERPRET 8.016



Material Name	Color	Unit Weight (lbs/ft3)	Sat. Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)
Compacted Fill (SC)		125	130	Mohr-Coulomb	230	31
Block Poor Melange		130	135	Mohr-Coulomb	100	25
Block Rich Melange		130	135	Mohr-Coulomb	200	35

-200 -150 -100 -50 0 50 100 150 200 250 300 350 400

TVCE

Project	#1269 - Jordan/Berg (APN: 210-131-021)		
Analysis Description	Slope Stability Analysis/Seismic Load Kh = 0.271 (0.5*PGA)		
Drawn By	Christian Figueroa, PG	Scale 1:750	Company Trinity Valley Consulting Engineers
Date	8/24/2018, 11:52:47 AM		File Name SlideAnalyis_ProposedPond.slim

SLIDEINTERPRET 6.016

APPENDICES

APPENDIX 1

TVCE Grading and Erosion Control Plan

GRADING & EROSION CONTROL PLAN

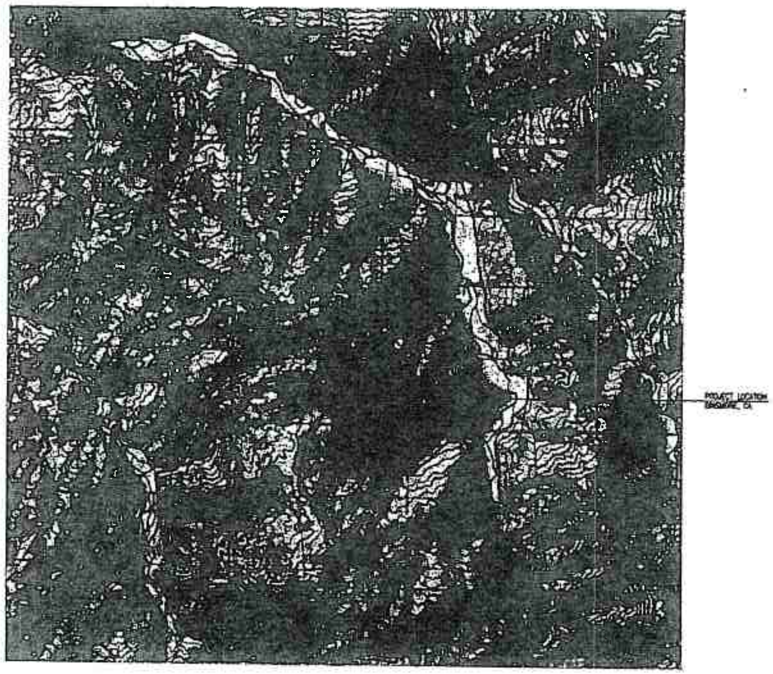
FOR:
PARKER BERG AND CARRIE JORDAN
12575 BUCK MOUNTAIN ROAD DINSMORE, CA 95526
APN: 210-131-021

LEGEND

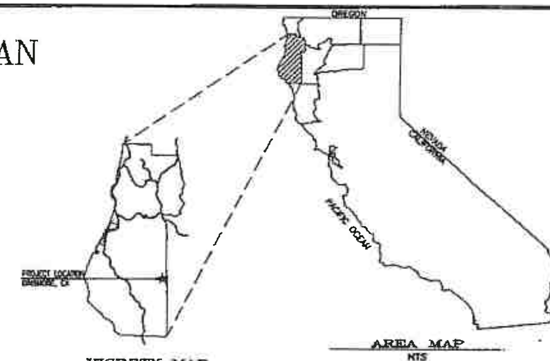
PROPOSED		EXISTING
	CABLE TV OVERHEAD	
	POWER OVERHEAD	
	TELEPHONE OVERHEAD	
	TELEPHONE UG	
	POWER (UNDERGROUND) UG	
	GAS LINE	
	ANCHOR/GUY WIRE	
	SEWER MANHOLE	
	SEWER LINE	
	FLUSHING BRANCH/CLEANOUT	
	SEWER SERVICE	
	STORM DRAIN MANHOLE	
	STORM DRAIN PIPE	
	STORM DRAIN INLET	
	WATER LINE	
	WATER VALVE	
	REDUCER	
	BLOW OFF ASSEMBLY	
	AIR RELIEF VALVE	
	FIRE HYDRANT ASSEMBLY	
	R.P. BACKFLOW PREVENTER	
	DRIVE WAY	
	SIDEWALK RAMP	
	BARRICADE	
	SURVEY MONUMENT	
	CENTERLINE	
	RIGHT OF WAY LINE	
	PROPERTY LINE	
	EASEMENT LINE	
	EDGE OF PAVEMENT	
	RIDGE LINE	
	FENCE LINE	
	CONTOUR LINE	
	SIDEWALK	
	STREET LIGHT	
	STREET NAME SIGN	
	SIGN	

ABBREVIATIONS

AC - ASPHALTIC CONCRETE
AB - AGGREGATE BASE
A.D. - ALGEBRAIC DIFFERENCE
BC, PC - BEGIN CURVE
CO - CLEAN OUT
CL - CENTER LINE
CMP - CORRUGATED METAL PIPE
CPCT. - COMPACT
Δ - DELTA
DET - DETAIL
DRN - DRAIN
<X> - EXISTING
EC - END CURVE
EG - EXISTING GROUND
EP - EDGE OF PAVEMENT
FF - FINISH FLOOR
FG - FINISH GRADE
FH - FIRE HYDRANT
FL - FLOW LINE
GA - GUY ANCHOR
GV - GATE VALVE
HC - HANDICAPPED
HDPE - HIGH DENSITY POLYETHYLENE PIPE
INV - INVERT
(INT-X) - INTERSECTION
K - SIGHT DISTANCE
LAT - LATERAL
LD - LOCAL DEPRESSION
LF. - LINEAR FEET
LF. - LEACH FIELD
LT. - LEFT
MAS. - MASONRY
MI - MILES
MSE - MECHANICALLY STABILIZED EARTH
(N) - NEW
NTS - NOT TO SCALE
O.C. - ON CENTER
PG&E - PACIFIC GAS & ELECTRIC
(P) - PROPOSED
PP - POWER POLE
PRC - POINT OF REVERSE CURVE
PT - POINT
PVI - POINT OF VERTICAL INTERSECTION
PVT - PRIVATE
RT - RIGHT
RTN - RETURN
SB - SET BACK
SDMH - STORM DRAIN MAN HOLE
SHT - SHEET
SD - STORM DRAIN
STA - STATION
STD. - STANDARD
TC - TOP OF CURB
TBC - TOP BACK OF CURB
TFC - TOP FACE OF CURB
TOB - TOP OF BANK
TEL - TELEPHONE
TP - TOP OF PAVEMENT
TVCE - TRINITY VALLEY CONSULTING ENGINEERS
TW - TOP OF WALL
(TYP) - TYPICAL
UG - UNDERGROUND
W - WATER
WV - WATER VALVE



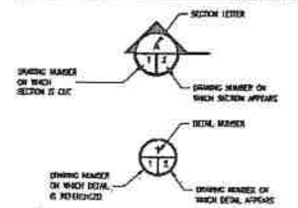
LOCATION MAP
NTS



VICINITY MAP
NTS

AREA MAP
NTS

SYMBOLS



SHEET INDEX

DRAWING #	TITLE	REVISION	DATE
T01	TITLE SHEET	0	08/31/18
C01	PLOT PLAN	0	08/31/18
C02	OVERALL GRADING & DRAINAGE PLAN	0	08/31/18
C03.1	EXISTING GRADING & DRAINAGE PLAN SITE 1	0	08/31/18
C03.2	PROPOSED GRADING & DRAINAGE PLAN SITE 1	0	08/31/18
C03.3	SITE 1 SECTIONS	0	08/31/18
C03.4	EXISTING GRADING & DRAINAGE PLAN SITE 2	0	08/31/18
C03.5	PROPOSED GRADING & DRAINAGE PLAN SITE 2	0	08/31/18
C03.6	EXISTING GRADING & DRAINAGE PLAN SITE 3	0	08/31/18
C03.7	PROPOSED GRADING & DRAINAGE PLAN SITE 3	0	08/31/18
C03.8	SITE 3 SECTIONS	0	08/31/18
C03.9	PROPOSED GRADING & DRAINAGE PLAN SITE 4	0	08/31/18
C03.10	PROPOSED GRADING & DRAINAGE PLAN SITE 5	0	08/31/18
C04.1	EROSION CONTROL PLAN & DETAILS SITE 1	0	08/31/18
C04.2	EROSION CONTROL PLAN & DETAILS SITE 2	0	08/31/18
C04.3	EROSION CONTROL PLAN & DETAILS SITE 3	0	08/31/18
C04.4	EROSION CONTROL PLAN & DETAILS SITE 4	0	08/31/18
C04.5	EROSION CONTROL PLAN & DETAILS SITE 5	0	08/31/18
C05	GRADING DETAILS	0	08/31/18
C06	TEMPORARY CLEAR WATER DIVERSION	0	08/31/18

ENGINEERING NOTES

ALL REQUIREMENTS FROM THE SOILS REPORT HAVE BEEN INCORPORATED INTO THESE PLANS.

THE ENGINEER OF RECORD SHALL INSPECT ALL SITE GRADING.

SURVEY NOTES

FIELD SURVEY FOR TOPOGRAPHIC PURPOSES WAS PERFORMED BY TVCE ON JUNE 2018

A BOUNDARY SURVEY WAS NOT CONDUCTED BY TVCE

CONTRACTOR ALERT!

CONTRACTOR MUST CONTACT USA DIG AT 800-227-2600 AT LEAST 72 HOURS BEFORE ANY EARTHWORK OR ACTIVITIES THAT MAY IMPACT EXISTING UNDERGROUND UTILITIES.

EXISTING UTILITY ALIGNMENTS BOTH HORIZONTALLY AND VERTICALLY MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO ANY CONSTRUCTION ACTIVITIES.

TVCE
87 SOLANO WAY
PO BOX 1567
WILLOW CREEK, CA 95573
PHONE (530) 629-3000
FAX (530) 629-3011

REV	DATE	DESCRIPTION	DSN BY	DRN BY	CHK BY	APP BY
			CDX	JDN	JDN	TVCE

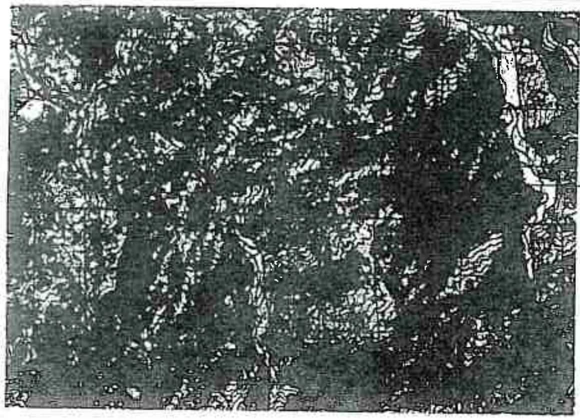
PARKER BERG AND CARRIE JORDAN
P.O. BOX 67 BRIDGEVILLE, CA 95526

TITLE SHEET

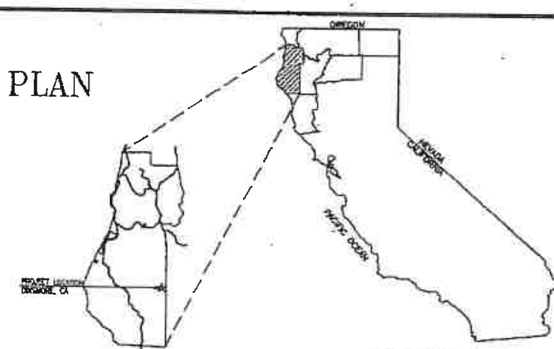
12576 BUCK MOUNTAIN ROAD DINSMORE, CA 95528
APN: 210-131-021

DRAWN BY	R. NAVARRO
DESIGNED BY	JTW
CHECKED BY	J. McKNIGHT
APPROVED BY	TVCE
DATE OF ISSUE	AUGUST 2018
SCALE	AS SHOWN
PROJECT NO.	1262
DRAWING NO.	T01

GRADING & EROSION CONTROL PLAN



FOR:
PARKER BERG AND CARRIE JORDAN
12575 BUCK MOUNTAIN ROAD DINSMORE, CA 95526
APN: 210-131-021



VICINITY MAP
NTS

AREA MAP
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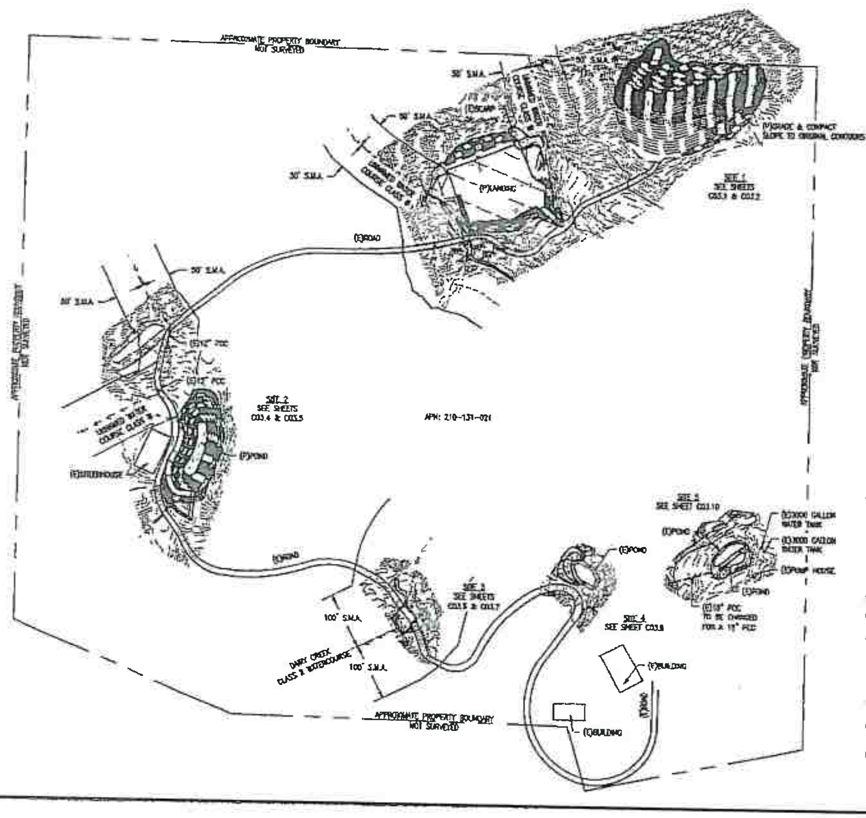

PLOT PLAN VIEW
1"=100'
0 100 200
SCALE IN FEET

GENERAL NOTES

WATER: CSD
WASTEWATER: TBD
POWER: PG&E
PHONE: VERIZON
CREEKS/STREAMS: DARY CREEK
TREES TO BE REMOVED: NONE
GRADING: SEE GRADING PLAN

SRA REQUIREMENTS

PROVIDE ADEQUATE WATER STORAGE AND DELIVERY AS OUTLINED BY SRA ORDINANCE AND CALFIRE REQUIREMENTS

PROVIDE ADEQUATE TURN AROUND AND PULLOUTS AS OUTLINED BY SRA ORDINANCE REQUIREMENTS AND CALFIRE REQUIREMENTS

DRIVEWAY AND GATES:

1. DRIVEWAYS MEET MINIMUM ROAD STANDARDS DESCRIBED ABOVE.
2. DRIVEWAYS LESS THAN 150' LONG ARE 10' WIDE AND HAVE 15' MINIMUM VERTICAL CLEARANCE AND ARE BUILT TO COUNTY ROAD CATEGORY 1 STANDARD.
3. DRIVEWAYS LONGER THAN 150' ARE 10'-12' WIDE AND HAVE 15' MINIMUM VERTICAL CLEARANCE WITH [illegible] TURNOUTS AND ARE BUILT TO COUNTY ROAD CATEGORY 2 STANDARD.
4. DRIVEWAYS EXCEEDING 150' IN LENGTH BUT LESS THAN 800' HAVE A TURNOUT NEAR THE MIDPOINT.
5. DRIVEWAYS LONGER THAN 800' HAVE TURNOUTS AT [illegible] LOCATIONS AT APPROXIMATELY 400' INTERVALS.
6. DRIVEWAYS HAVE MAXIMUM GRADE MEETING STANDARD FOR COUNTY ROAD CATEGORY 1: 7%– 12% (NORMAL); 11%– 16% (TOLERABLE). GRADE IN EXCESS OF 16% MUST DEMONSTRATE CONFORMANCE WITH COUNTY ROADWAY DESIGN MANUAL.
7. DRIVEWAYS HAVE MINIMUM CURVE RADIUS MEETING STANDARD FOR COUNTY ROAD CATEGORY 1: 120' (NORMAL; 80' (TOLERABLE). CURVE RADIUS LESS THAN 80' MUST DEMONSTRATE CONFORMANCE WITH COUNTY ROADWAY DESIGN MANUAL.
8. ALL GATES AT LEAST 2' WIDER THAN THE LANES SERVING THE GATE AND ALLOW A VEHICLE TO STOP WITHOUT BLOCKING TRAFFIC.
9. GATES PROVIDING ACCESS FROM A ROAD TO A DRIVEWAY ARE LOCATED AT LEAST 30' FROM THE ROADWAY EXCEPT AS PROVIDED BELOW.
10. GATES LESS THAN 30' FROM THE ROADWAY ARE PERMITTED WHEN TURNOUTS ARE CONSTRUCTED NEXT TO THE TRAVEL LANES WITH SAFE TURNING MOVEMENTS AND VISIBILITY WHEN APPROACHING FROM EITHER DIRECTION OF TRAVEL.
11. ONE-WAY ROADS ACCESSING GATES HAVE TURNAROUND WITH 40' RADIUS MINIMUM.

DOMESTIC EMERGENCY WATER SUPPLY SYSTEM

1. THE MINIMUM EMERGENCY WATER STORAGE VOLUME OF 2,500 GALLONS ONLY AVAILABLE FOR FIRE USE.
2. THE EMERGENCY SUPPLY MAY BE SEPARATE FROM THE DOMESTIC SUPPLY OR IT MAY BE SHARED. WHEN SHARED, AND IF THE REFILLING SUPPLY SOURCE (WELL, ETC.) CANNOT KEEP UP WITH THE DAILY DOMESTIC USE, THE AMOUNT STORED SHOULD BE INCREASED SO THAT 2,500 GALLONS ARE AVAILABLE FOR FIRE USE ANY TIME OF DAY.
3. THE WATER HYDRANT OR PLACE FOR WATER SUCTION MUST NOT BE FURTHER THAN 1/2 MILE FROM THE DWELLING, OR CLOSER THAN 50 FEET TO THE BUILDING USING ROAD MEASUREMENTS. PARCELS 15 ACRES OR LESS MUST HAVE THE HYDRANT/SUCTION WITHIN 500 FEET; AND IF THAT IS PHYSICALLY IMPOSSIBLE, WITHIN 1,000 FEET.
4. ALL HYDRANT AND WATER SUCTION LOCATIONS MUST PROVIDE A ROAD STANDARD TURNOUT OR TURNAROUND.
5. ALL WATER SUPPLY HYDRANTS AND SUCTION LOCATIONS MUST BE IDENTIFIED WITH A 3 INCH REFLECTORIZED BLUE DOT LOCATED 3 TO 5 FEET ABOVE THE GROUND ON A POST THAT IS WITHIN 3 FEET OF THE HYDRANT. IF LOCATED OFF A DRIVEWAY, ANOTHER BLUE DOT MUST BE ATTACHED TO THE DRIVEWAY ADDRESS SIGN. ROAD SIGNS STATING "FIRE WATER" ARE AN ACCEPTABLE ALTERNATIVE.
6. ALL EXPOSED PLUMBING SHOULD HAVE FREEZE PROTECTION AND CRASH BARRIERS AS NEEDED TO PREVENT DAMAGE.
7. ALL PIPES SUPPLYING WATER TO HYDRANTS MUST BE AT LEAST 3 INCHES IN DIAMETER. SMALLER DESIGNS MUST PROVE THEMSELVES ABLE TO PROVIDE A 200 GPM FLOW FROM THE HYDRANT CONNECTION.
8. ALL HYDRANTS MUST BE 18 INCHES ABOVE GROUND, AT LEAST 8 FEET FROM FLAMMABLE VEGETATION, AT LEAST 4 FEET FROM THE PARKING SURFACE WHERE THE FIRE EQUIPMENT WILL BE WHEN USING IT AND NO MORE THAN 12 FEET FROM THE PARKING SURFACE.
9. ALL HYDRANTS MUST HAVE A 2-1/2 INCH, MALE NATIONAL HOSE CONNECTION WITH CAP.
10. ALL HYDRANTS/VALVES AND CONNECTIONS MUST BE MADE OF BRASS OR OTHER CORROSION RESISTANT MATERIAL.
11. A WET HYDRANT USED WITH A GRAVITY SUPPLY OR PRESSURE SYSTEM MUST HAVE A 2-1/2 INCH VALVE.
12. A DRY HYDRANT USED FOR WATER SUCTION DOES NOT NEED A VALVE, BUT DOES REQUIRE A STRAINER (PERFORATED PIPE LENGTH) AT THE END OF THE SUCTION PIPE. THE STRAINER MUST BE AT LEAST 3 FEET LONG.
13. WHERE A PUMP IS RELIED UPON TO DELIVER WATER TO THE HYDRANT (NOT GRAVITY AND NOT SUCTION); IT MUST DELIVER 200 GALLONS PER MINUTE TO THE HYDRANT. IF IT IS AN ELECTRICALLY POWERED PUMP, IT MUST HAVE A FUELED ENGINE BACKUP (OR GENERATOR). ALSO, A STRAINER IS REQUIRED.
14. WHERE GRAVITY IS USED TO GET THE WATER TO THE HYDRANT, THE SOURCE (TANK) MUST AT LEAST BE HIGHER THAN THE HYDRANT SO THAT ALL 2,500 GALLONS CAN DRAIN OUT WITHOUT SUCTION. ALSO, THE TANK SHOULD BE NO MORE THAN 500 FEET ABOVE THE HYDRANT; OR HAVE A PRESSURE REDUCER RESTRICTING TO 250 PSI.
15. WHERE SUCTION IS NEEDED TO GET THE WATER UP OUT OF A SOURCE (BY HOSE, DRY HYDRANT OR PUMP) FROM A NATURAL POND, UNDERGROUND TANK, SWIMMING POOL, ETC., THE END OF THE HOSE OR DRY HYDRANT PIPE STRAINER MUST HAVE 2 FEET OF WATER ABOVE IT AT ALL TIMES TO PREVENT CAVITATION (A VORTEX FUNNEL THAT ALLOWS AIR TO BE SUCKED IN). ALSO, THE END OF THE SUCTION HOSE OR DRY HYDRANT PIPE STRAINER MUST BE HELD 1 FOOT OFF THE BOTTOM OF STORAGE THAT CAN ACCUMULATE DEBRIS. THIS MEANS THAT THE BOTTOM 3 FEET OF STORAGE AT THE SUCTION POINT IS UNUSABLE AND AT LEAST 2,500 GALLONS MUST BE AVAILABLE 3 FEET ABOVE THE BOTTOM WHEN THE WATER IS AT THE LOWEST LEVEL OF THE YEAR.
16. WHERE SUCTION THROUGH A DRY HYDRANT PIPE IS USED TO GET WATER UP TO A FIRE ENGINE, THE LEVEL WHERE THE SUCTION PIPE STRAINER IS MUST BE NO MORE THAN 10 FEET LOWER THAN THE HYDRANT CONNECTION.
17. WHERE A FIRE ENGINE SUCTION HOSE IS NEEDED TO GET WATER (NO DRY HYDRANT), THE LEVEL WHERE THE STRAINER END OF THE SUCTION HOSE MUST GO CAN BE NO MORE THAN 10 FEET LOWER THAN THE SURFACE WHERE THE ENGINE PARKS. ALSO, THE TOTAL REACH FROM THE EDGE OF THE PARKING SURFACE TO WHERE THE END OF THE SUCTION HOSE MUST BE CAN REQUIRE NO MORE THAN 15 FEET OF SUCTION HOSE AND NO SHARP BENDS. THIS MEANS THAT A TANK WITH NO DRY HYDRANT WILL HAVE TO BE BELOW THE PARKING AREA, OR HAVE A LOW SIDE WALL, BECAUSE IT COULD TAKE MORE THAN 15 FEET OF HOSE TO REACH UP TO THE TOP OF A TANK AND THEN BACK TO THE BOTTOM, AND COULD REQUIRE A VERY SHARP BEND.

TVCE
67 SQUIRE WAY
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REV	DATE	DESCRIPTION	DES BY	CHK BY	APP BY

PARKER BERG AND CARRIE JORDAN
P.O. BOX 67 BRIDGEVILLE, CA 95526

PLOT PLAN

12575 BUCK MOUNTAIN ROAD DINSMORE, CA 95526
APN: 210-131-021

DRAWN BY:	H. NAVARRO
DESIGNED BY:	JTM
CHECKED BY:	J. McKNIGHT
APPROVED BY:	TVCE
DATE OF ISSUE:	AUGUST 2018
SCALE:	AS SHOWN
PROJECT NO:	1282
DRAWING NO:	C01

CLEARING, GRUBBING, & DEMOLITION NOTES:

1. TREES SCHEDULED TO BE REMOVED SHALL BE REMOVED COMPLETELY INCLUDING STUMPS, ROOTS, BRANCHES, WOODY DEBRIS, BARK, AND FLESH. TREES SHALL BE REMOVED FROM THE SITE AND DEPOSITED IN LOCATIONS DESIGNATED BY THE OWNER.
2. VEGETATION AND WOODY DEBRIS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A MANNER CONSISTENT WITH APPLICABLE LAWS AND REGULATIONS.
3. ALL GENERATED AND ACCUMULATED CONSTRUCTION DEBRIS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A MANNER CONSISTENT WITH APPLICABLE LAWS AND REGULATIONS.
4. FOUNDATION CONCRETE SCHEDULED FOR REMOVAL SHALL BE COMPLETELY REMOVED INCLUDING STEM WALL AND FOOTING.
5. ALL AREAS WITH GENERATED VOIDS FROM DEMOLITION ACTIVITIES SHALL BE BACKFILLED WITH NATIVE SOIL TO FINISH GRADE IN 1' MAXIMUM VERTICAL LIFTS SUFFICIENTLY COMPACTED TO ELIMINATE SUBSIDENCE.
6. DUST CONTROL SHALL BE MAINTAINED DURING DEMOLITION PRACTICES.
7. TRACKING OF MATERIAL FROM THE SITE ONTO EXISTING ROADWAYS WILL NOT BE TOLERATED. TEMPORARY CONSTRUCTION SITE ENTRANCES SHOULD BE BUILT AT POINTS OF INTERSECTION TO EXISTING ROADWAYS AND PRACTICES SHOULD BE IMPLEMENTED TO REMOVE CONSTRUCTION MATTER FROM VEHICLES AND EQUIPMENT PRIOR TO LEAVING THE CONSTRUCTION SITE.
8. EROSION CONTROL MEASURES SHALL BE IMPLEMENTED FOR THE SITE AS SOON AS PRACTICAL AND SHALL BE IN PLACE PRIOR TO EXECUTION OF MAJOR DEMOLITION OPERATIONS.

GRADING NOTES:

1. ALL EARTHWORK, INCLUDING BUT NOT LIMITED TO, SITE CLEARING, GRUBBING, STRIPPING, AND GRADING WILL BE CONDUCTED DURING DRY WEATHER CONDITIONS. (TYPICALLY APRIL 15 TO OCTOBER 15)
2. STRIP AND REMOVE ALL TOPSOIL AND VEGETATION FROM THE PROJECT AREA AND FOR A MINIMUM OF THREE FEET TO THE OUTSIDE OF THE WORKING AREA.
3. ANY UNDOCUMENTED FILL SOILS, FINE-GRAINED RESIDUAL SOILS, AND ANY OTHER DEBRIS ENCOUNTERED AT OR BELOW THE EXISTING GROUND SURFACE SHALL BE REMOVED AT THE LOCATIONS RECEIVING ANY POTENTIAL FILLS.
4. THE SITE SHOULD BE GRADED TO PROVIDE ADEQUATE DRAINAGE SUCH THAT NO WATER IS ALLOWED TO POND ANYWHERE ON THE SITE OR MIGRATE BENEATH PROPOSED DEVELOPMENTS.
5. ALL FILL MATERIAL SHALL BE PLACED IN HORIZONTAL LIFTS NOT TO EXCEED EIGHT INCHES (8") IN DEPTH AND SHALL BE COMPACTED MECHANICALLY.
6. ALL FILL MATERIAL SHALL BE FREE OF ORGANICS, ROCKS LARGER THAN 3", WOODY DEBRIS, ROOTS, AND INORGANIC MATERIAL.
7. ALL FILL MATERIAL SHALL HAVE A UNIFORM MOISTURE CONTENT AT OR NEAR OPTIMUM MOISTURE CONTENT AS DETERMINED BY TESTING AND APPROVED BY THE ENGINEER.
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9. IT IS RECOMMENDED THAT ANY MATERIAL PROPOSED FOR STRUCTURAL FILL MATERIAL TO SUPPORT ANY FOUNDATIONS OR STRUCTURAL BUILDING ELEMENT AND ASSOCIATED UTILITIES BE COMPACTED AS OUTLINED IN THE SOILS REPORT.
10. ALL FINAL SLOPES SHALL BE TO A SMOOTH AND EVEN GRADE, SHALL BE SURFACE TRACKWALKED, AND FINAL GRADED NOT TO EXCEED 1.5:1 (h:v).
11. SUFFICIENT TESTING AND INSPECTION SHOULD BE PERFORMED TO MONITOR THE SUITABILITY OF FILL MATERIALS AND ASSURE COMPLIANCE WITH THE RECOMMENDED COMPACTION STANDARDS.
12. AGGREGATE BASE MATERIAL MAY BE USED FOR PAVEMENT SUBGRADE, PLACED BENEATH FOOTINGS OR FLOOR SLABS, OR USED AS TRENCH BACKFILL. THIS MATERIAL SHOULD MEET THE REQUIREMENTS IN THE CALTRANS STANDARD SPECIFICATIONS FOR 3/4"- CLASS 2 AGGREGATE BASE.

TOTAL EARTHWORK ACTIVITY

NUMBER	PROPOSED EARTHWORK ACTIVITY (CY)	
	CUT	FILL
SITE 1	856.20	3,454.32
SITE 2	2,547.80	57.50
SITE 3	55.13	0.12
SITE 4	3.28	0.03
SITE 5	49.80	0.09
TOTAL	3,512.20	3512.10

TOTAL GRADING ACTIVITY

NUMBER	PROPOSED GRADING ACTIVITY (AC)			
	ACRES DISTURBED	ACRES UNDISTURBED	TOTAL ACREAGE	PERCENTAGE
SITE 1	1.53	36.02		4.07
SITE 2	0.34	37.21		0.90
SITE 3	0.03	37.52		0.08
SITE 4	0.02	37.53		0.05
SITE 5	0.007	37.54		0.01
TOTAL	1.927	35.62	37.55	5.11

TOTAL ROCK QUANTITIES:

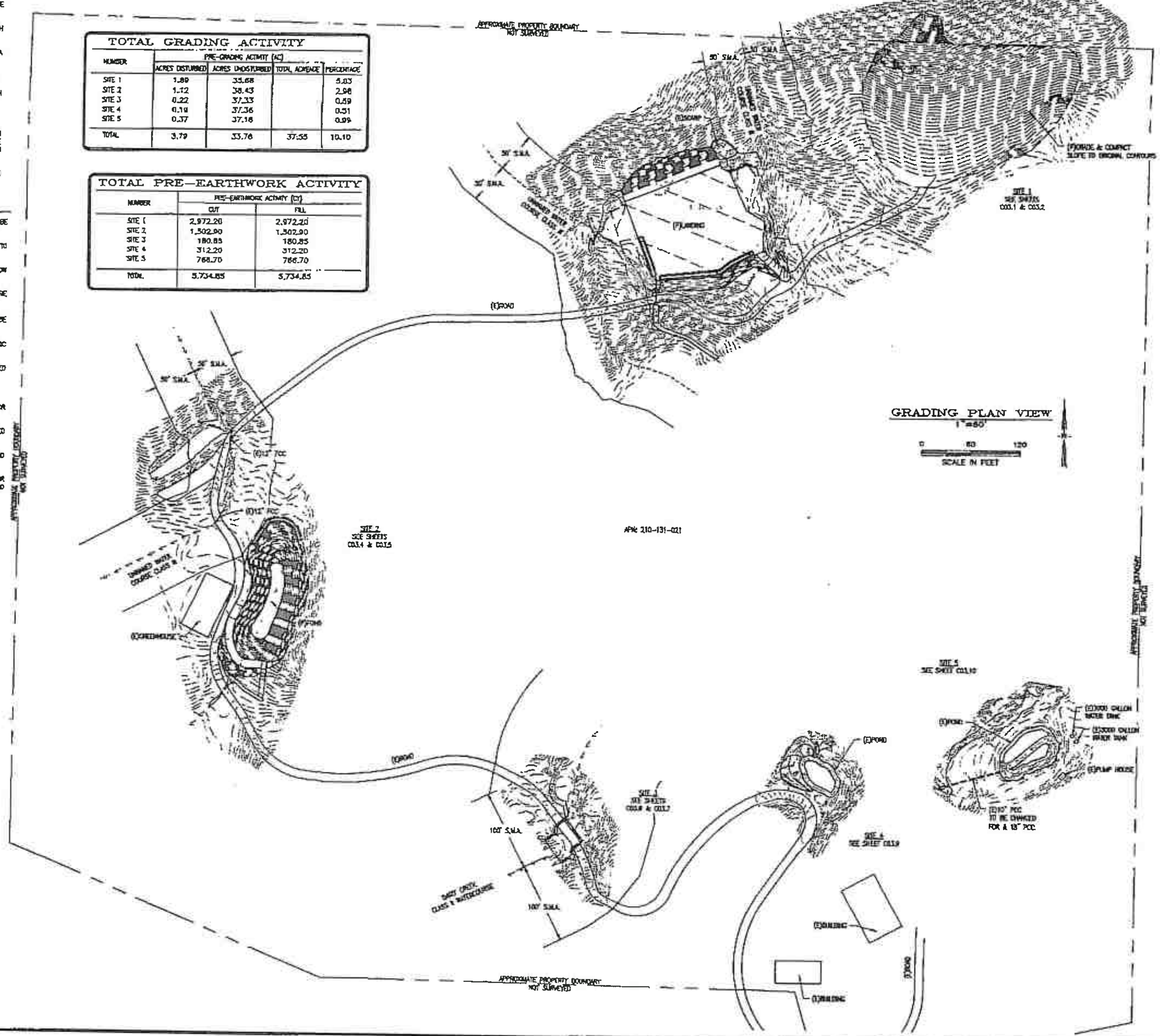
NUMBER	PROPOSED ROCK QUANTITIES (CY)
SITE 1	736.42
SITE 2	25.00
SITE 3	195.72
SITE 4	2.76
SITE 5	2.77
TOTAL	962.69

TOTAL GRADING ACTIVITY

NUMBER	PRE-GRADING ACTIVITY (AC)			
	ACRES DISTURBED	ACRES UNDISTURBED	TOTAL ACREAGE	PERCENTAGE
SITE 1	1.89	35.68		5.03
SITE 2	1.12	36.43		2.98
SITE 3	0.22	37.33		0.59
SITE 4	0.19	37.36		0.51
SITE 5	0.37	37.18		0.99
TOTAL	3.79	33.76	37.55	10.10

TOTAL PRE-EARTHWORK ACTIVITY

NUMBER	PRE-EARTHWORK ACTIVITY (CY)	
	CUT	FILL
SITE 1	2,972.20	2,972.20
SITE 2	1,502.90	1,502.90
SITE 3	180.85	180.85
SITE 4	312.20	312.20
SITE 5	766.70	766.70
TOTAL	5,734.85	5,734.85



PARKER BERG AND CARRIE JORDAN
P.O. BOX 67 BRIDGEVILLE, CA 95526

OVERALL GRADING & DRAINAGE PLAN

12575 BUCK MOUNTAIN ROAD DINSMORE, CA 95526
APN: 210-131-021

DRAWN BY: H. NAVARRO
CHECKED BY: JTM
DESIGN BY: J. McKNIGHT
APPROVED BY: TVCE

DATE OF ISSUE: AUGUST 2018
SCALE: AS SHOWN
PROJECT NO: 1289
DRAWING NO: C02

TRINITY VALLEY CONSULTING ENGINEERS, INC.

PRE-EARTHWORK QUANTITIES

(E) CUT (CY): 2,072.20
(E) FILL (CY): 2,072.20
NOTE:
CUT AND FILL QUANTITIES ONSITE TO BE PERMANENT

PRE-GRADING ACTIVITY:

TOTAL ACREAGE: 37.55± Ac

ACRES DISTURBED: 1.89± Ac

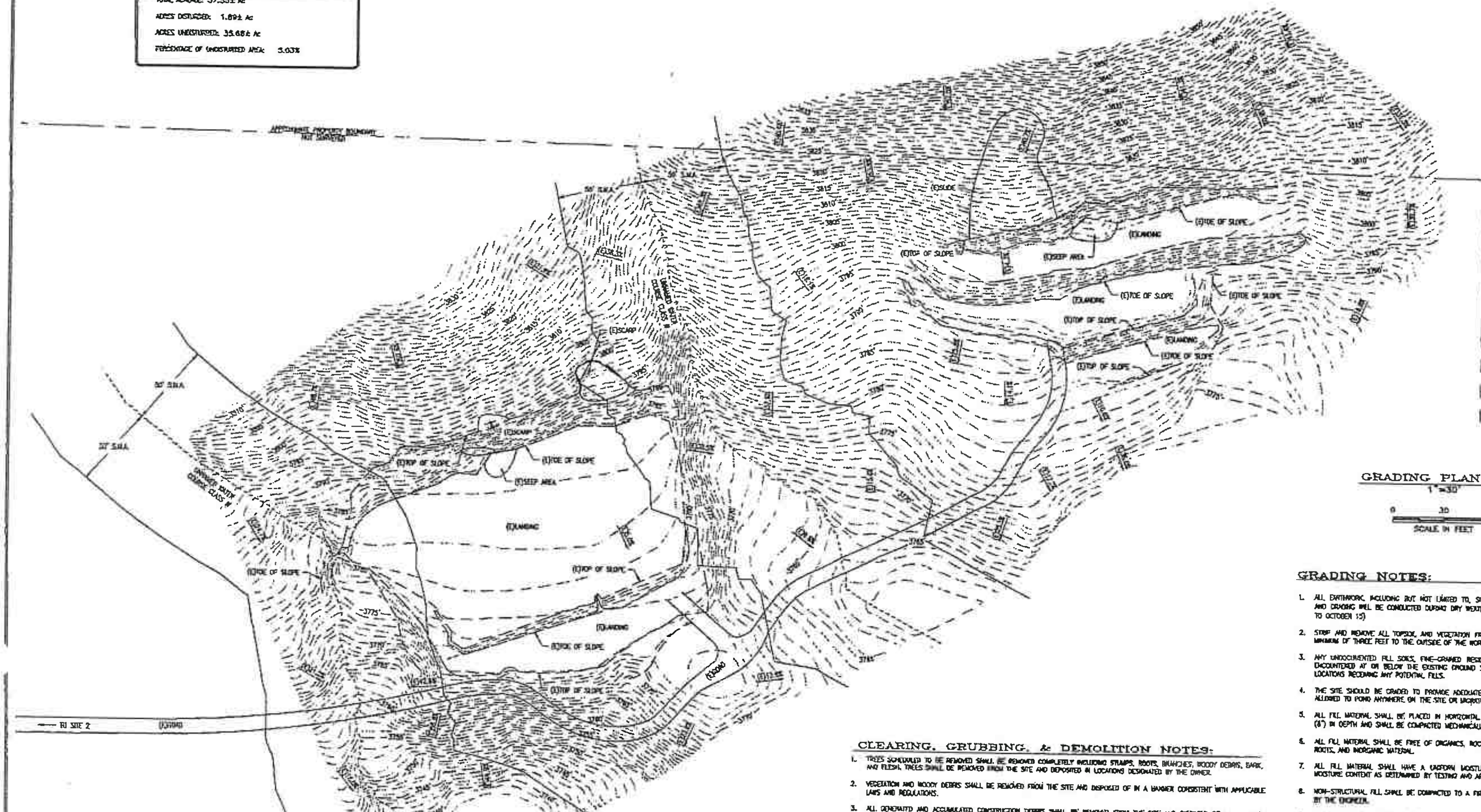
ACRES UNDISTURBED: 35.68± Ac

PERCENTAGE OF UNDISTURBED AREA: 5.03%

LEGEND:

EXISTING GREENHOUSE

EXISTING BUILDING



GRADING PLAN VIEW

1"=30'

0 30 60

SCALE IN FEET

CLEARING, GRUBBING, & DEMOLITION NOTES:

1. TREES SCHEDULED TO BE REMOVED SHALL BE REMOVED COMPLETELY INCLUDING STUMPS, ROOTS, BRANCHES, WOODY DEBRIS, BARK, AND FLESH. TREES SHALL BE REMOVED FROM THE SITE AND DEPOSITED IN LOCATIONS DESIGNATED BY THE OWNER.
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TVCE

REV	DATE	DESCRIPTION	DES BY	REV BY	CHK BY	APP BY
			CEV	JM	JM	TVCE

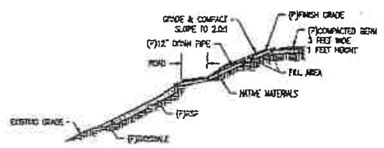
PARKER BERG AND CARRIE JORDAN
P.O. BOX 67 BRIDGEVILLE, CA 95526

EXISTING GRADING & DRAINAGE PLAN SITE 1

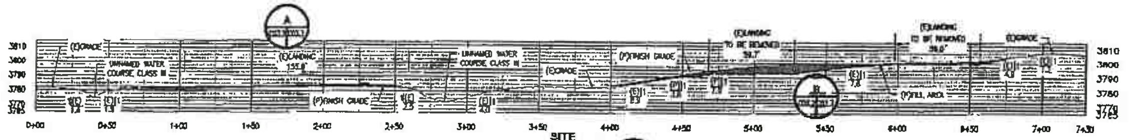
12575 BUCK MOUNTAIN ROAD DINSMORE, CA 95526
APN: 210-131-021

DRAWN BY: H. NAVARRO
DESIGNED BY: JTM
CHECKED BY: J. McKNIGHT
APPROVED BY: TVCE
DATE OF ISSUE: AUGUST 2018
SCALE: AS SHOWN
PROJECT NO: 1203
DRAWING NO: C03.1

TRINITY VALLEY CONSULTING ENGINEERS, INC.



TYPICAL
DETAIL
NTS



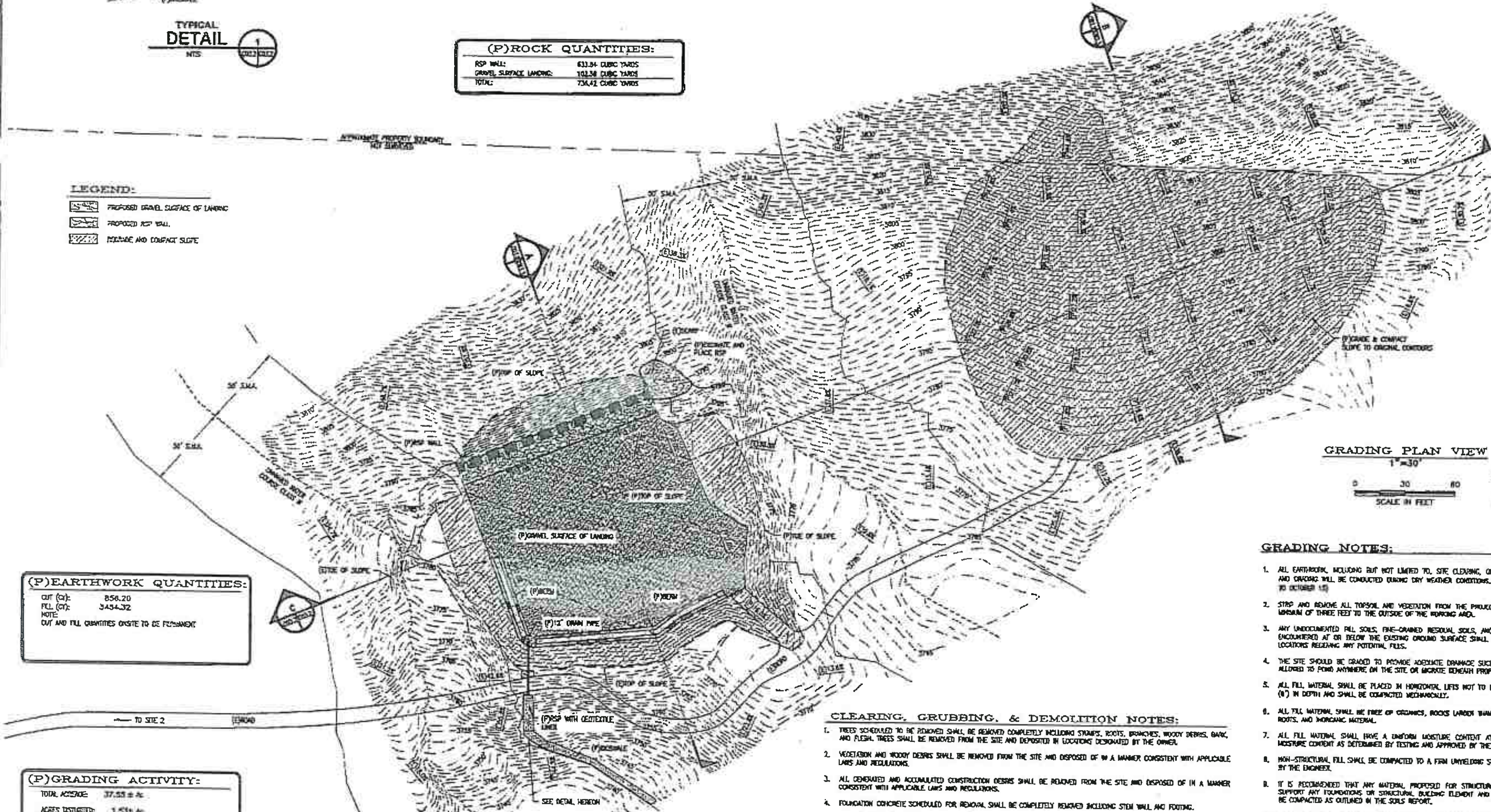
SITE
SECTION
1"=40'

(P)ROCK QUANTITIES:

RSP WALL:	633.84 CUBIC YARDS
GRAVEL SURFACE LANDING:	102.58 CUBIC YARDS
TOTAL:	736.42 CUBIC YARDS

LEGEND:

- PROPOSED GRAVEL SURFACE OF LANDING
- PROPOSED RSP WALL
- REGRADE AND COMPACT SLOPE



(P)EARTHWORK QUANTITIES:

CUT (CY): 856.20
FILL (CY): 3434.32
NOTE:
CUT AND FILL QUANTITIES ONSITE TO BE PERMANENT

(P)GRADING ACTIVITY:

TOTAL ACREAGE: 37.55 ± Ac
ACRES DISTURBED: 1.53± Ac
ACRES UNDISTURBED: 36.02± Ac
PERCENTAGE OF DISTURBED AREA: 4.07%

GRADING PLAN VIEW
1"=30'
0 30 60
SCALE IN FEET

CLEARING, GRUBBING, & DEMOLITION NOTES:

1. TREES SCHEDULED TO BE REMOVED SHALL BE REMOVED COMPLETELY INCLUDING STUMPS, ROOTS, BRANCHES, WOODY DEBRIS, BARK, AND FLESH. TREES SHALL BE REMOVED FROM THE SITE AND DEPOSITED IN LOCATIONS DESIGNATED BY THE OWNER.
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GRADING NOTES:

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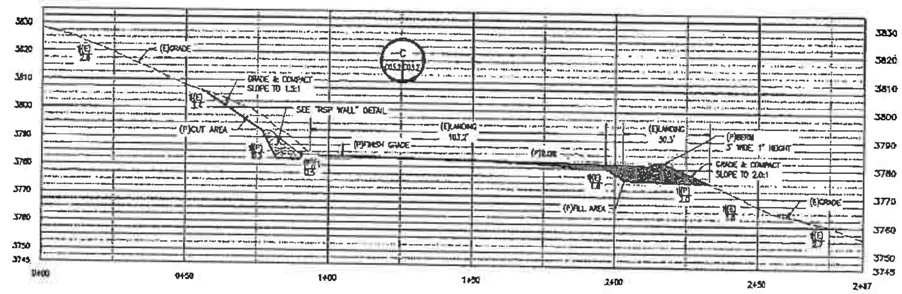
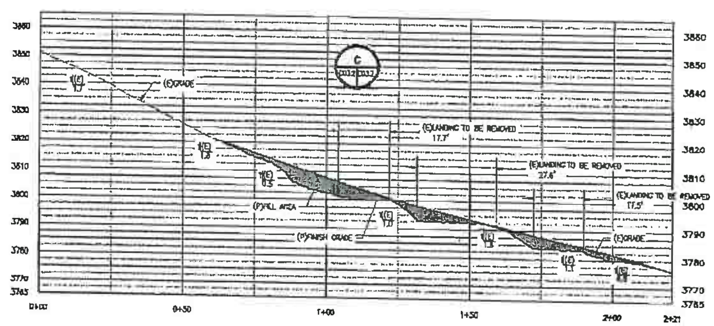
PARKER BERG AND CARRIE JORDAN
P.O. BOX 67 BRIDGEVILLE, CA 95526
PROPOSED GRADING & DRAINAGE
PLAN SITE 1
12576 BUCK MOUNTAIN ROAD DINSMORE, CA 95526
APN: 210-131-021

DRAWN BY:	H. NAVARRO
DESIGNED BY:	JTM
CHECKED BY:	J. McKNIGHT
APPROVED BY:	TVCE
DATE OF ISSUE:	AUGUST 2019
SCALE:	AS SHOWN
PROJECT NO:	1269
DRAWING NO:	C03.2

TVCE



SITE SECTION A
1"=20'



SITE SECTION B
1"=20'

TVCE

PARKER BERG AND CARRIE JORDAN
P.O. BOX 67 BRIDGEVILLE, CA 95526
SITE 1
SECTIONS
12576 BUCK MOUNTAIN ROAD DINSMORE, CA 95526
APN: 210-131-021

DRAWN BY: H. NAVARRO
DESIGNED BY: JTM
CHECKED BY: J. McKNIGHT
APPROVED BY: TVCE
DATE OF ISSUE: AUGUST 2018
SCALE: AS SHOWN
PROJECT NO: 1259
DRAWING NO: C03.3

TRINITY VALLEY CONSULTING ENGINEERS, INC.

GRADING NOTES:

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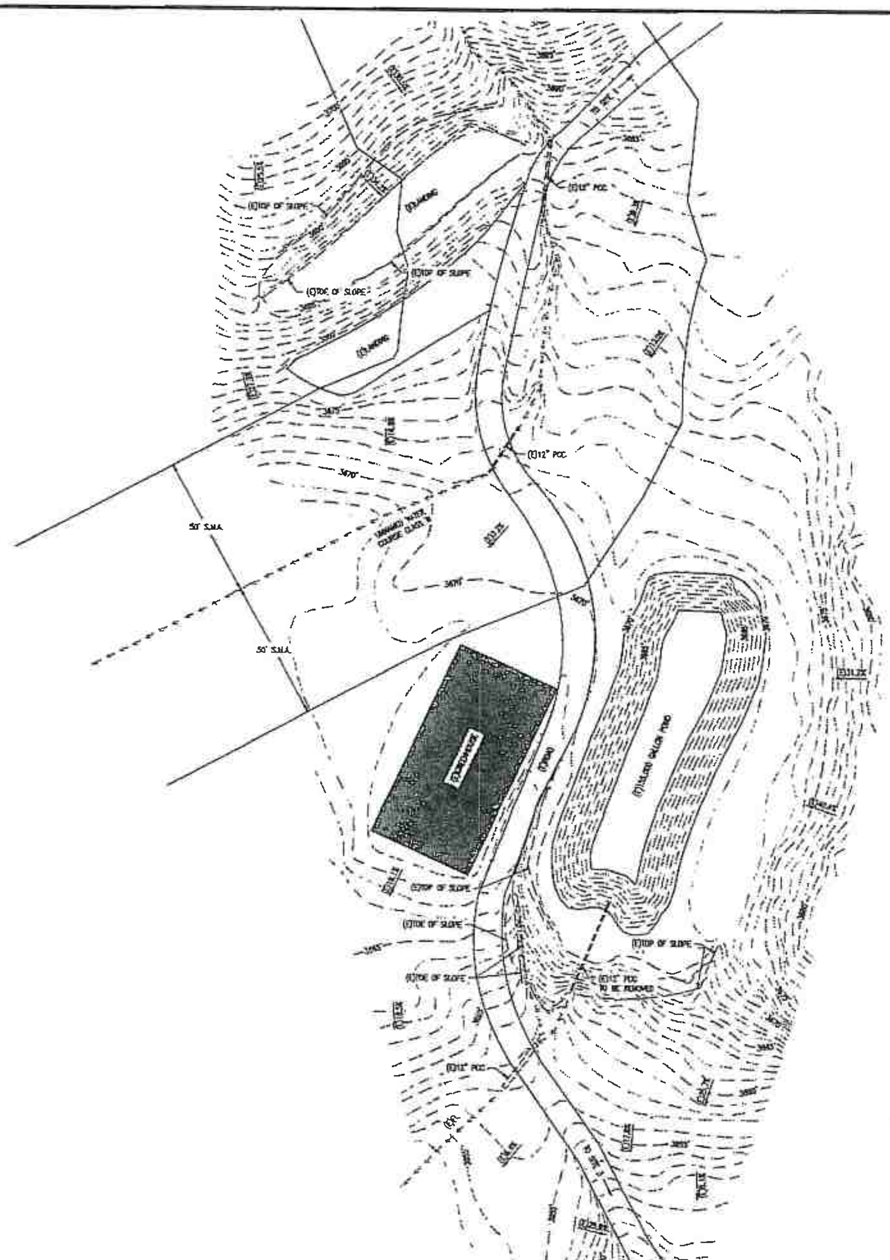
PRE-EARTHWORK QUANTITIES

(E) CUT (CY): 1,502.88
(E) FILL (CY): 1,502.88
NOTE:
CUT AND FILL QUANTITIES ONSITE TO BE PERMANENT

PRE-GRADING ACTIVITY:

TOTAL ACREAGE: 37.55± Ac
ACRES DISTURBED: 1.12± Ac
ACRES UNDISTURBED: 36.43± Ac
PERCENTAGE OF UNDISTURBED AREA: 2.98%



GRADING PLAN VIEW

1"=20'

0 20 40
SCALE IN FEET

LEGEND:

EXISTING GREENHOUSE

TVCE
67 SUNLIGHT WAY
PO BOX 1567
WILLOW CREEK, CA 95573

REV	DATE	DESCRIPTION	DSN BY	DRN BY	CHK BY	APP BY

PARKER BERO AND CARRIE JORDAN
P.O. BOX 67 BRIDGEVILLE, CA 95526

EXISTING GRADING & DRAINAGE PLAN SITE 2

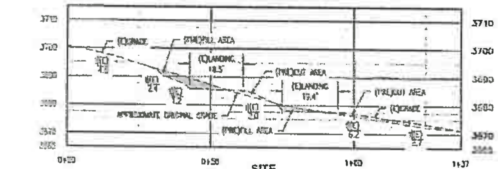
12575 BUCK MOUNTAIN ROAD DINSMORE, CA 95526
APN: 210-131-021

DESIGNED BY: H. NAVARRO
DRAWN BY: JTW
CHECKED BY: J. McKNIGHT
APPROVED BY: TVCE
DATE OF ISSUE: AUGUST 2018
SCALE: AS SHOWN
PROJECT NO: 1289
DRAWING NO: C03.4

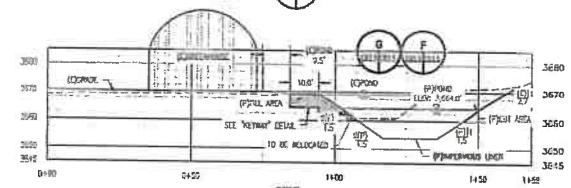
TRINITY VALLEY CONSULTING ENGINEERS, INC.

GRADING NOTES:

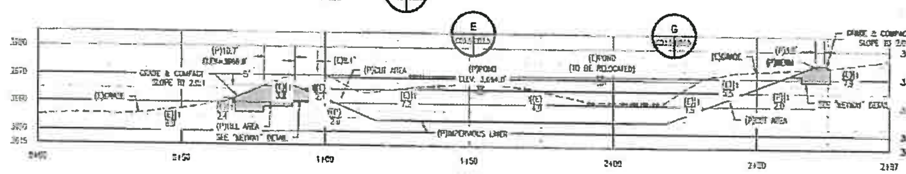
1. ALL EARTHWORK, INCLUDING BUT NOT LIMITED TO, SITE CLEARING, GRUBBING, STRIPPING, AND GRADING WILL BE CONDUCTED DURING DRY WEATHER CONDITIONS. (TYPICALLY APRIL 15 TO OCTOBER 15)
2. STRIP AND REMOVE ALL TOPSOIL AND VEGETATION FROM THE PROJECT AREA, AND FOR A MINIMUM OF THREE FEET TO THE OUTSIDE OF THE WORKING AREA.
3. ANY UNDOCUMENTED FILL SOILS, FINE-GRAINED RESIDUAL SOILS, AND ANY OTHER DEBRIS ENCOUNTERED AT OR BELOW THE EXISTING GROUND SURFACE SHALL BE REMOVED AT THE LOCATIONS RECEIVING ANY POTENTIAL FILLS.
4. THE SITE SHOULD BE GRADED TO PROVIDE ADEQUATE DRAINAGE SUCH THAT NO WATER IS ALLOWED TO POND ANYWHERE ON THE SITE OR MIGRATE BENEATH PROPOSED DEVELOPMENTS.
5. ALL FILL MATERIAL SHALL BE PLACED IN HORIZONTAL LIFTS NOT TO EXCEED EIGHT INCHES (8") IN DEPTH AND SHALL BE COMPACTED MECHANICALLY.
6. ALL FILL MATERIAL SHALL BE FREE OF ORGANICS, ROCKS LARGER THAN 3"±, WOODY DEBRIS, ROOTS, AND INORGANIC MATERIAL.
7. ALL FILL MATERIAL SHALL HAVE A UNIFORM MOISTURE CONTENT AT OR NEAR OPTIMUM MOISTURE CONTENT AS DETERMINED BY TESTING AND APPROVED BY THE ENGINEER.
8. NON-STRUCTURAL FILL SHALL BE COMPACTED TO A FIRM UNYIELDING SURFACE AS APPROVED BY THE ENGINEER.
9. IT IS RECOMMENDED THAT ANY MATERIAL PROPOSED FOR STRUCTURAL FILL MATERIAL TO SUPPORT ANY FOUNDATIONS OR STRUCTURAL BUILDING ELEMENT AND ASSOCIATED UTILITIES BE COMPACTED AS OUTLINED IN THE SOILS REPORT.
10. ALL FINAL SLOPES SHALL BE TO A SMOOTH AND EVEN GRADE, SHALL BE SURFACE TRACKWALKED, AND FINAL GRADED NOT TO EXCEED 1.5:1 (H:V).
11. SUFFICIENT TESTING AND INSPECTION SHOULD BE PERFORMED TO MONITOR THE SUITABILITY OF FILL MATERIALS AND ASSURE CONFORMANCE WITH THE RECOMMENDED COMPACTION STANDARDS.
12. AGGREGATE BASE MATERIAL MAY BE USED FOR PAVEMENT SUBGRADE, PLACED BENEATH FOOTINGS OR FLOOR SLABS, OR USED AS TRENCH BACKFILL. THIS MATERIAL SHOULD MEET THE REQUIREMENTS IN THE CALTRANS STANDARD SPECIFICATIONS FOR 3/4"- CLASS 2 AGGREGATE BASE.



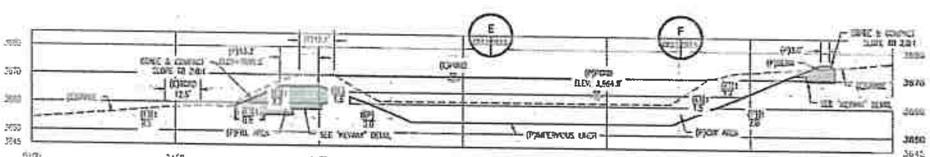
SITE SECTION D
1"=20'



SITE SECTION E
1"=20'



SITE SECTION F
1"=20'



SITE SECTION G
1"=20'

CLEARING, GRUBBING, & DEMOLITION NOTES:

1. TREES SCHEDULED TO BE REMOVED SHALL BE REMOVED COMPLETELY INCLUDING STUMPS, ROOTS, BRANCHES, WOODY DEBRIS, BARK, AND FLESH. TREES SHALL BE REMOVED FROM THE SITE AND DEPOSITED IN LOCATIONS DESIGNATED BY THE OWNER.
2. VEGETATION AND WOODY DEBRIS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A MANNER CONSISTENT WITH APPLICABLE LAWS AND REGULATIONS.
3. ALL GENERATED AND ACCUMULATED CONSTRUCTION DEBRIS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A MANNER CONSISTENT WITH APPLICABLE LAWS AND REGULATIONS.
4. FOUNDATION CONCRETE SCHEDULED FOR REMOVAL SHALL BE COMPLETELY REMOVED INCLUDING STEM WALL AND FOOTING.
5. ALL AREAS WITH GENERATED VOIDS FROM DEMOLITION ACTIVITIES SHALL BE BACKFILLED WITH NATIVE SOIL TO FINISH GRADE, IN 3" MAXIMUM VERTICAL LIFTS SUFFICIENTLY COMPACTED TO ELIMINATE SUBSIDENCE.
6. DUST CONTROL SHALL BE MAINTAINED DURING DEMOLITION PRACTICES.
7. TRACKING OF MATERIAL FROM THE SITE ONTO EXISTING ROADWAYS WILL NOT BE TOLERATED. TEMPORARY CONSTRUCTION SITE ENTRANCES SHOULD BE BUILT AT POINTS OF INTERSECTION TO EXISTING ROADWAYS AND PRACTICES SHOULD BE IMPLEMENTED TO REMOVE CONSTRUCTION MATTER FROM VEHICLES AND EQUIPMENT PRIOR TO LEAVING THE CONSTRUCTION SITE.
8. EROSION CONTROL MEASURES SHALL BE IMPLEMENTED FOR THE SITE AS SOON AS PRACTICAL AND SHALL BE IN PLACE PRIOR TO EXECUTION OF MAJOR DEMOLITION OPERATIONS.

(P)GRADING ACTIVITY:

TOTAL ACREAGE: 37.55 ± Ac
ACRES DISTURBED: 0.34 ± Ac
ACRES UNDISTURBED: 37.21 ± Ac
PERCENTAGE OF DISTURBED AREA: 0.91%

(P)EARTHWORK QUANTITIES:

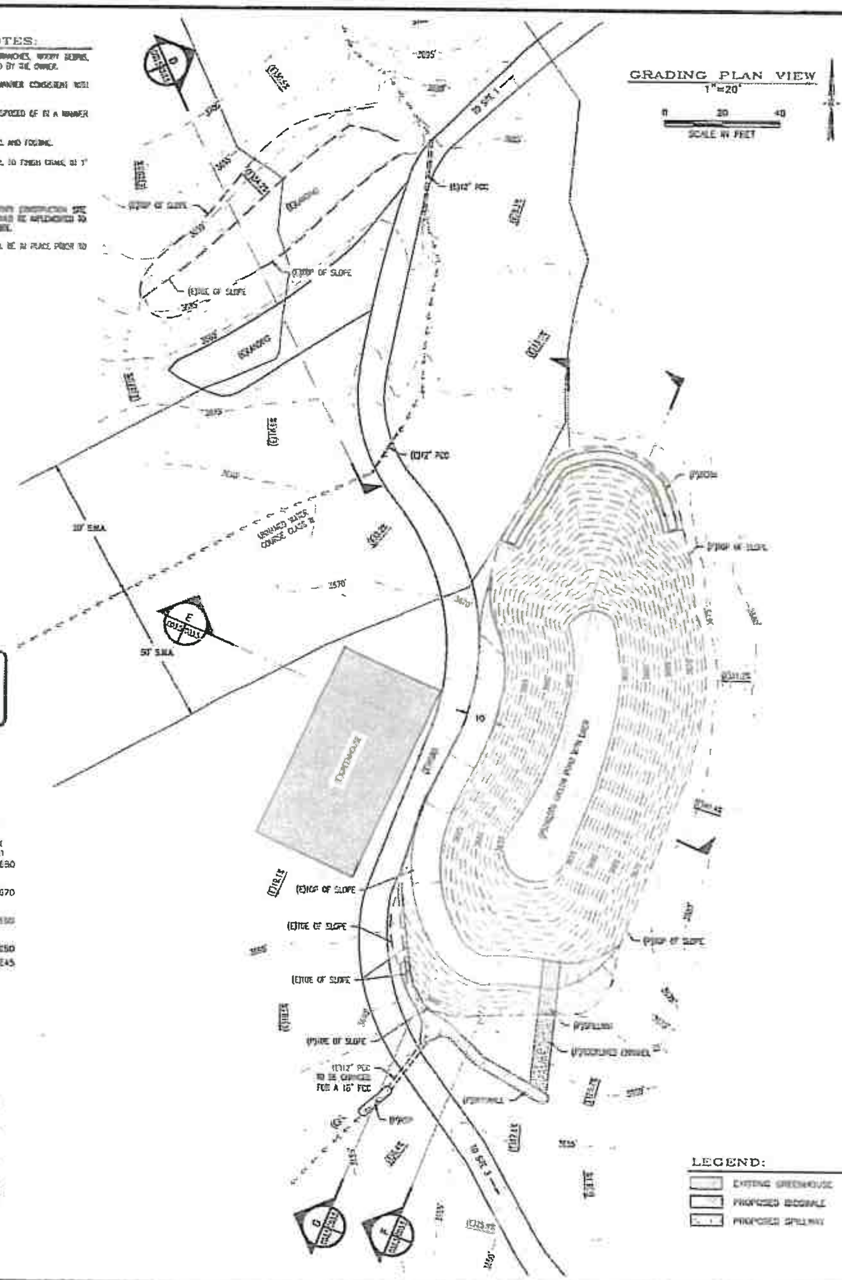
CUT (CY): 2,547.60
FILL (CY): 57.50
NOTE:
CUT AND FILL QUANTITIES ASSUMED TO BE SUBGRADE

(P)ROCK QUANTITIES:

ROCK SLOPE PROTECTION	4.22	CUBIC YARDS
SPILLWAY	[illegible]	CUBIC YARDS
ROCKLINED CHANNEL	11.78	CUBIC YARDS
TOTAL	[illegible]	CUBIC YARDS

GRADING PLAN VIEW
1"=20'

SCALE IN FEET



LEGEND:
EXISTING GREENHOUSE
PROPOSED BIOSWALE
PROPOSED SPILLWAY

TVCE

PARKER BERG AND CARRIE JORDAN
P.O. BOX 67 BRIDGEVILLE, CA 95526
PROPOSED GRADING & DRAINAGE PLAN SITE 2
12575 BUCK MOUNTAIN ROAD DINSMORE, CA 95526
APN: 210-131-021

DRAWN BY	H. NAVARRO
DESIGNED BY	JTM
ENGINEER	J. McNIGHT
APPROVED BY	TVCE
DATE OF ISSUE	AUGUST 2018
SCALE	AS SHOWN
PROJECT NO	1209
DRAWING NO	C03.5

GRADING NOTES:

1. ALL EARTHWORK, INCLUDING BUT NOT LIMITED TO, SITE CLEARING, GRUBBING, STRIPPING, AND GRADING WILL BE CONDUCTED DURING DRY WEATHER CONDITIONS. (TYPICALLY APRIL 15 TO OCTOBER 15)
2. STRIP AND REMOVE ALL TOPSOIL AND VEGETATION FROM THE PROJECT AREA, AND FOR A MINIMUM OF THREE FEET TO THE OUTSIDE OF THE WORKING AREA.
3. ANY UNDOCUMENTED FILL SOILS, FINE-GRAINED RESIDUAL SOILS, AND ANY OTHER DEBRIS ENCOUNTERED AT OR BELOW THE EXISTING GROUND SURFACE SHALL BE REMOVED AT THE LOCATIONS RECEIVING ANY POTENTIAL FILLS.
4. THE SITE SHOULD BE GRADED TO PROVIDE ADEQUATE DRAINAGE SUCH THAT NO WATER IS ALLOWED TO POND ANYWHERE ON THE SITE OR MIGRATE BENEATH PROPOSED DEVELOPMENTS.
5. ALL FILL MATERIAL SHALL BE PLACED IN HORIZONTAL LIFTS NOT TO EXCEED EIGHT INCHES (8") IN DEPTH AND SHALL BE COMPACTED MECHANICALLY.
6. ALL FILL MATERIAL SHALL BE FREE OF ORGANICS, ROCKS LARGER THAN 3"Ø, WOODY DEBRIS, ROOTS, AND INORGANIC MATERIAL.
7. ALL FILL MATERIAL SHALL HAVE A UNIFORM MOISTURE CONTENT AT OR NEAR OPTIMUM MOISTURE CONTENT AS DETERMINED BY TESTING AND APPROVED BY THE ENGINEER.
8. NON-STRUCTURAL FILL SHALL BE COMPACTED TO A FIRM UNYIELDING SURFACE AS APPROVED BY THE ENGINEER.
9. IT IS RECOMMENDED THAT ANY MATERIAL PROPOSED FOR STRUCTURAL FILL MATERIAL TO SUPPORT ANY FOUNDATIONS OR STRUCTURAL BUILDING ELEMENT AND ASSOCIATED UTILITIES BE COMPACTED AS OUTLINED IN THE SOILS REPORT.
10. ALL FINAL SLOPES SHALL BE TO A SMOOTH AND EVEN GRADE, SHALL BE SURFACE TRACKWALKED, AND FINAL GRADED NOT TO EXCEED 1.5:1 (h:v).
11. SUFFICIENT TESTING AND INSPECTION SHOULD BE PERFORMED TO MONITOR THE SUITABILITY OF FILL MATERIALS AND ASSURE COMPLIANCE WITH THE RECOMMENDED COMPACTION STANDARDS.
12. AGGREGATE BASE MATERIAL MAY BE USED FOR PAVEMENT SUBGRADE, PLACED BENEATH FOOTINGS OR FLOOR SLABS, OR USED AS TRENCH BACKFILL. THIS MATERIAL SHOULD MEET THE REQUIREMENTS IN THE CALTRANS STANDARD SPECIFICATIONS FOR 3/4"-CLASS 2 AGGREGATE BASE.

CLEARING, GRUBBING, & DEMOLITION NOTES:

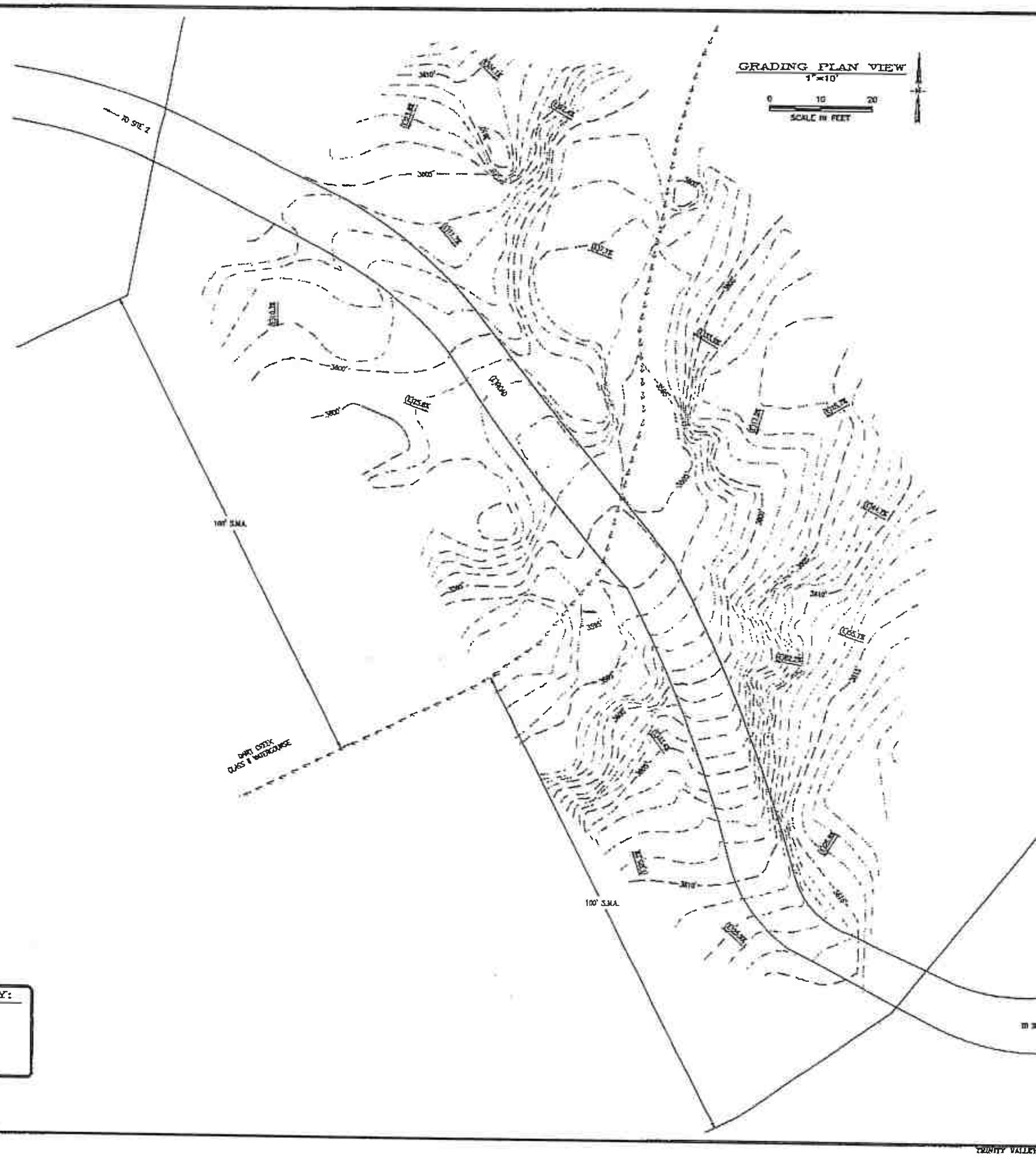
1. TREES SCHEDULED TO BE REMOVED SHALL BE REMOVED COMPLETELY INCLUDING STUMPS, ROOTS, BRANCHES, WOODY DEBRIS, BARK, AND FLESH. TREES SHALL BE REMOVED FROM THE SITE AND DEPOSITED IN LOCATIONS DESIGNATED BY THE OWNER.
2. VEGETATION AND WOODY DEBRIS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A MANNER CONSISTENT WITH APPLICABLE LAWS AND REGULATIONS.
3. ALL GENERATED AND ACCUMULATED CONSTRUCTION DEBRIS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A MANNER CONSISTENT WITH APPLICABLE LAWS AND REGULATIONS.
4. FOUNDATION CONCRETE SCHEDULED FOR REMOVAL SHALL BE COMPLETELY REMOVED INCLUDING STEM WALL AND FOOTING.
5. ALL AREAS WITH GENERATED VOIDS FROM DEMOLITION ACTIVITIES SHALL BE BACKFILLED WITH NATIVE SOIL TO FINISH GRADE IN 1' MAXIMUM VERTICAL LIFTS SUFFICIENTLY COMPACTED TO ELIMINATE SUBSIDENCE.
6. DUST CONTROL SHALL BE MAINTAINED DURING DEMOLITION PRACTICES.
7. TRACKING OF MATERIAL FROM THE SITE ONTO EXISTING ROADWAYS WILL NOT BE TOLERATED. TEMPORARY CONSTRUCTION SITE ENTRANCES SHOULD BE BUILT AT POINTS OF INTERSECTION TO EXISTING ROADWAYS AND PRACTICES SHOULD BE IMPLEMENTED TO REMOVE CONSTRUCTION MATTER FROM VEHICLES AND EQUIPMENT PRIOR TO LEAVING THE CONSTRUCTION SITE.
8. EROSION CONTROL MEASURES SHALL BE IMPLEMENTED FOR THE SITE AS SOON AS PRACTICAL AND SHALL BE IN PLACE PRIOR TO EXECUTION OF MAJOR DEMOLITION OPERATIONS.

PRE-EARTHWORK QUANTITIES

(E) CUT (CY): 180.85
(E) FILL (CY): 180.85
NOTE:
CUT AND FILL QUANTITIES ONSITE TO BE PERMANENT

PRE-GRADING ACTIVITY:

TOTAL ACREAGE: 37.55± Ac
ACRES DISTURBED: 0.22± Ac
ACRES UNDISTURBED: 37.33± Ac
PERCENTAGE OF UNDISTURBED AREA: 0.59%



PARKER BERG AND CARRIE JORDAN
P.O. BOX 67 BRIDGEVILLE, CA 95526
EXISTING GRADING & DRAINAGE
PLAN SITE 3
12575 BUCK MOUNTAIN ROAD DINSMORE, CA 95526
APN: 210-131-021

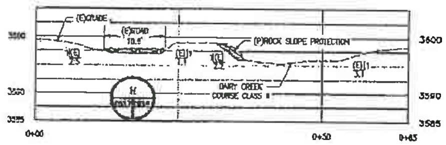
DRAWN BY: H. NAVARRO
DESIGNED BY: JTM
CHECKED BY: J. McKNIGHT
APPROVED BY: TVCE
DATE OF ISSUE: AUGUST 2018
SCALE: AS SHOWN
PROJECT NO: 1262
DRAWING NO: C03.6

TVCE
67 SHADE WAY
PO BOX 1347
WILLOW CREEK, CA 95573
PHONE (530) 629-3000
FAX (530) 629-3011

TRINITY VALLEY CONSULTING ENGINEERS, INC.

LEGEND:

- PROPOSED ROCK FORD CROSSING
- PROPOSED ROCK SLOPE
- PROPOSED ROCK SLOPE PROTECTION
- PROPOSED RSP



SITE SECTION
1"=10'

(P)EARTHWORK QUANTITIES:

CUT (CY):	35.13
FILL (CY):	0.12

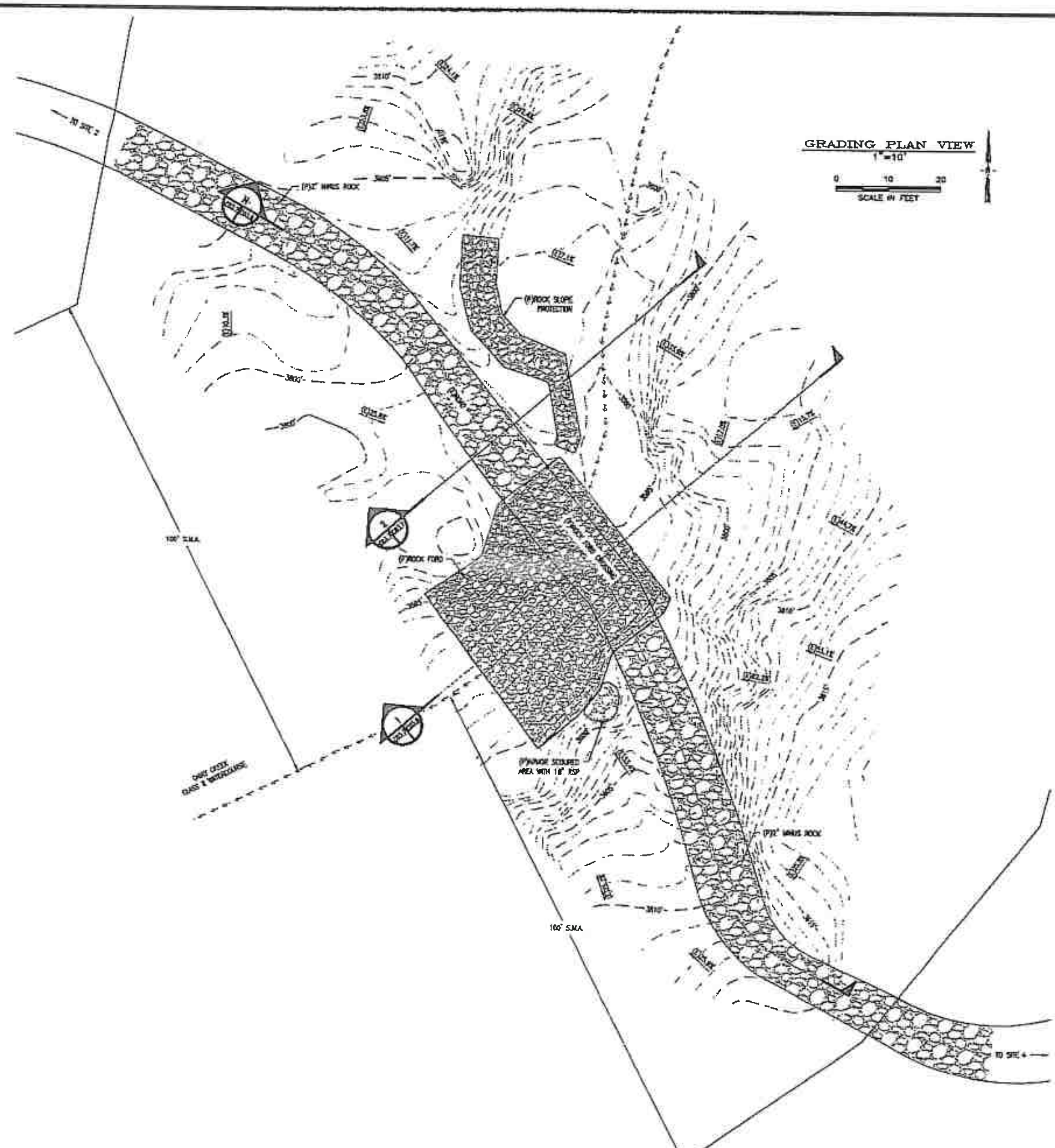
NOTE:
CUT AND FILL QUANTITIES ONSITE TO BE PERMANENT

(P)GRADING ACTIVITY:

TOTAL ACREAGE:	37.55 ± Ac
ACRES DISTURBED:	0.03 ± Ac
ACRES UNDISTURBED:	37.52 ± Ac
PERCENTAGE OF DISTURBED AREA:	0.08%

(P)ROCK QUANTITIES:

ROCK FORD CROSSING:	150.11 CUBIC YARDS
ROCK SLOPE PROTECTION:	32.45 CUBIC YARDS
ROCK APPROACHES:	13.15 CUBIC YARDS
TOTAL:	195.72 CUBIC YARDS



GRADING PLAN VIEW
1"=10'
0 10 20
SCALE IN FEET

TVCE
67 ERALNUE WAY
PO BOX 1567
WILLOW CREEK, CA 95573

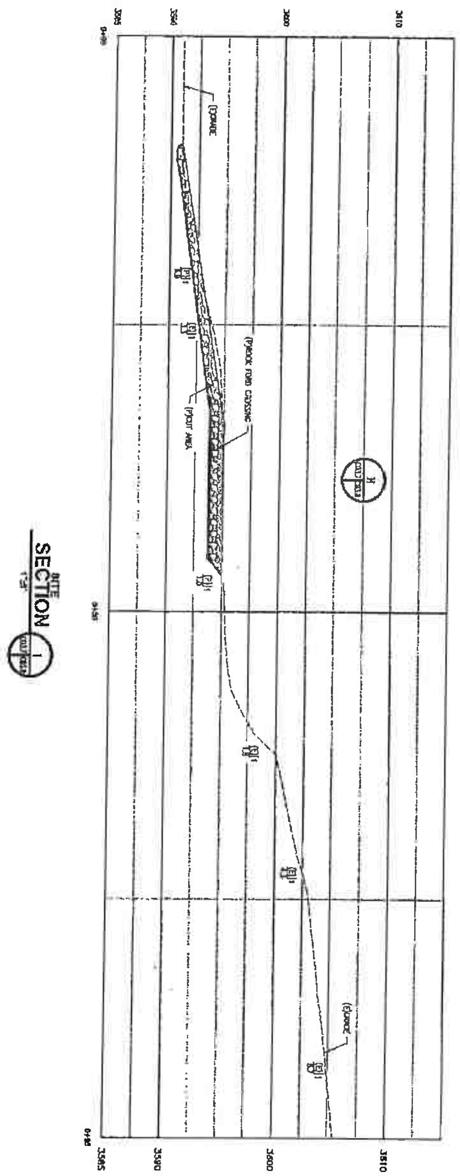
PARKER BERG AND CARRIE JORDAN
P.O. BOX 67 BRIDGEVILLE, CA 95526

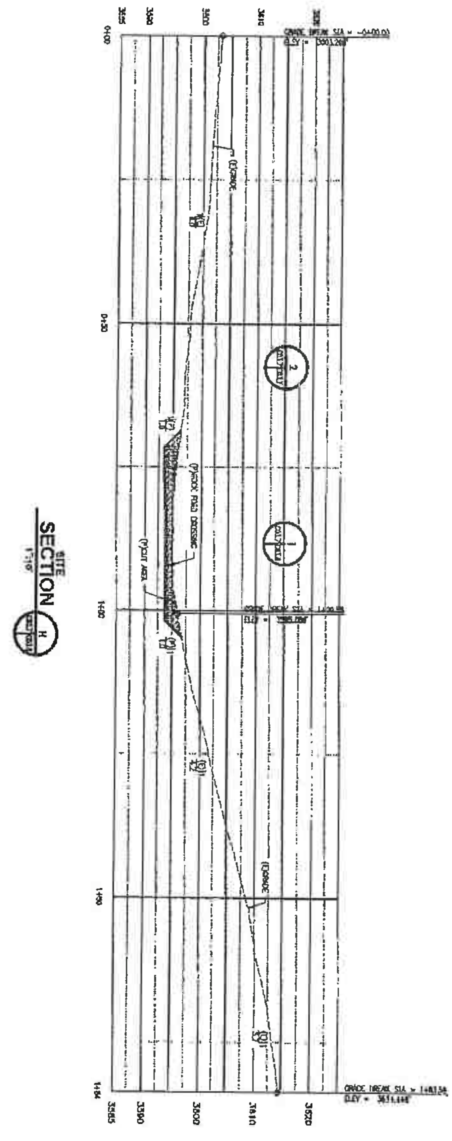
PROPOSED GRADING & DRAINAGE PLAN SITE 3

12575 BUCK MOUNTAIN ROAD DINSMORE, CA 95526
APN: 210-131-021

DRAWN BY: H. NAVARRO
DESIGNED BY: JTM
CHECKED BY: J. McKNIGHT
APPROVED BY: TVCE
DATE OF ISSUE: AUGUST 2018
SCALE: AS SHOWN
PROJECT NO. 1289
DRAWING NO. C03.7

TRINITY VALLEY CONSULTING ENGINEERS, INC.





PARKER BERG AND CARRIE JORDAN
P.O. BOX 67 BRIDGEVILLE, CA 95526

SITE 3

SECTIONS

12575 BUCK MOUNTAIN ROAD DINSMORE, CA 95526
APN: 210-131-021

DRAWN BY: H. NAVARRO
DESIGNED BY: JTM
CHECKED BY: J. McKNIGHT
APPROVED BY: TVCE
DATE OF ISSUE: AUGUST 2018
SCALE: AS SHOWN
PROJECT NO. 1263
DRAWING NO. C03.8

REV | DATE | DESCRIPTION | DSN BY | DES BY | CHK BY | APP BY

TVCE
67 WALNUT WAY
P.O. BOX 1567
WILLOW CREEK, CA 95573
PHONE (530) 629-3000
FAX (530) 629-3011

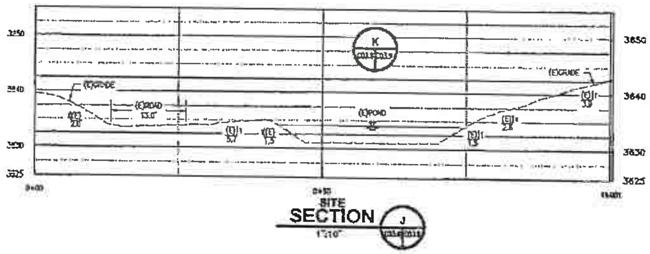
TRINITY VALLEY CONSULTING ENGINEERS, INC.

PRE-EARTHWORK QUANTITIES

(E) CUT (CY): 312.20
(E) FILL (CY): 312.20
NOTE:
CUT AND FILL QUANTITIES ONSITE TO BE PERMANENT

PRE-GRADING ACTIVITY:

TOTAL ACREAGE: 37.55± Ac
ACRES DISTURBED: 0.19± Ac
ACRES UNDISTURBED: 37.36± Ac
PERCENTAGE OF UNDISTURBED AREA: 0.51%



SITE SECTION J
1"=10'

(P)EARTHWORK QUANTITIES:

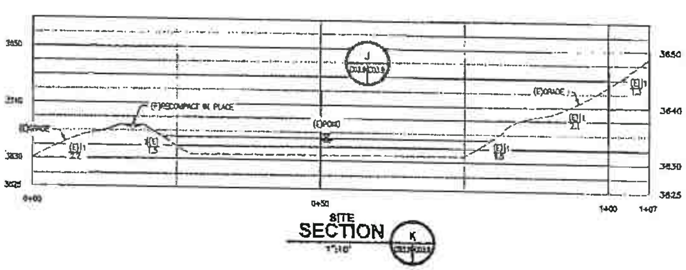
CUT (CY): 3.28
FILL (CY): 0.05
NOTE:
CUT AND FILL QUANTITIES ONSITE TO BE PERMANENT

(P)GRADING ACTIVITY:

TOTAL ACREAGE: 37.55 ± Ac
ACRES DISTURBED: 0.02 ± Ac
ACRES UNDISTURBED: 37.53 ± Ac
PERCENTAGE OF DISTURBED AREA: 0.05%

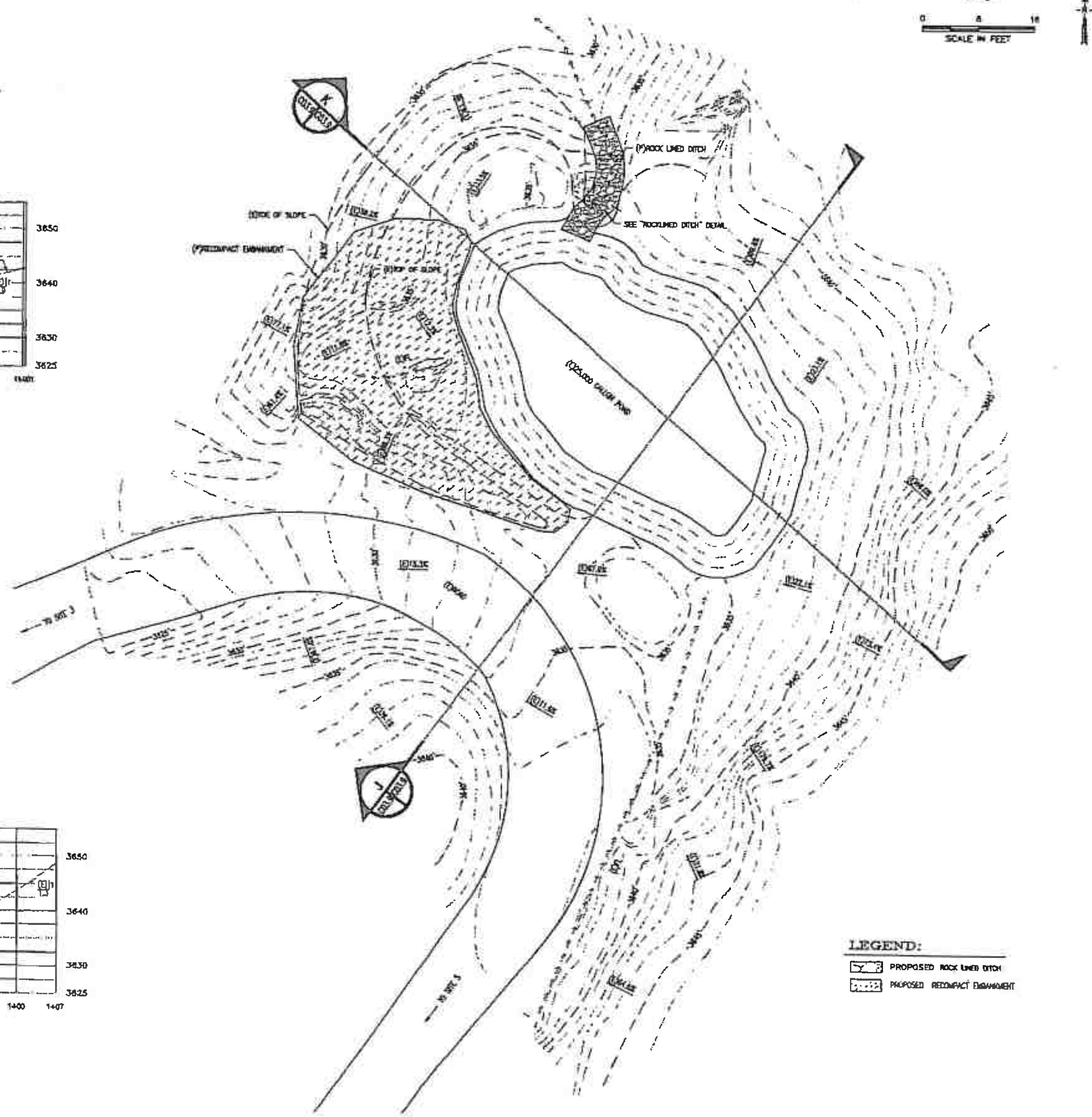
(P)ROCK QUANTITIES:

ROCK LINED DITCH: 2.78 CUBIC YARDS



SITE SECTION K
1"=10'

GRADING PLAN VIEW
1"=8'
0 8 16
SCALE IN FEET

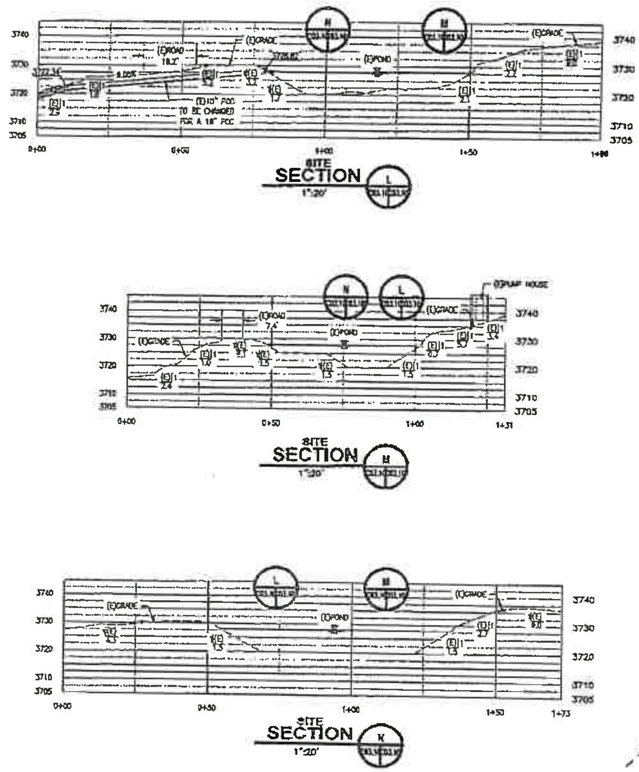


LEGEND:
PROPOSED ROCK LINED DITCH
PROPOSED RECOMPACT EMBANKMENT

TVCE
PARKER BERG AND CARRIE JORDAN
P.O. BOX 67 BRIDGEVILLE, CA 95526
PROPOSED GRADING & DRAINAGE PLAN SITE 4
12575 BUCK MOUNTAIN ROAD DINSMORE, CA 95526
APN: 210-131-021

DRAWN BY: H. NAVARRO
DESIGNED BY: JTM
CHECKED BY: J. McKNIGHT
APPROVED BY: TVCE
DATE OF ISSUE: AUGUST 2018
SCALE: AS SHOWN
PROJECT NO.: 1289
DRAWING NO.: C03.9

TRINITY VALLEY CONSULTING ENGINEERS, INC.



PRE—EARTHWORK QUANTITIES

(E) CUT (CY): 786.70
(E) FILL (CY): 786.70
NOTE:
CUT AND FILL QUANTITIES ONSITE TO BE PERMANENT

PRE—GRADING ACTIVITY:

TOTAL ACREAGE: 37.55± Ac
ACRES DISTURBED: 0.37± Ac
ACRES UNDISTURBED: 37.18± Ac
PERCENTAGE OF UNDISTURBED AREA: 0.99%

(P)EARTHWORK QUANTITIES:

CUT (CY): 49.60
FILL (CY): 0.09
NOTE:
CUT AND FILL QUANTITIES ONSITE TO BE PERMANENT

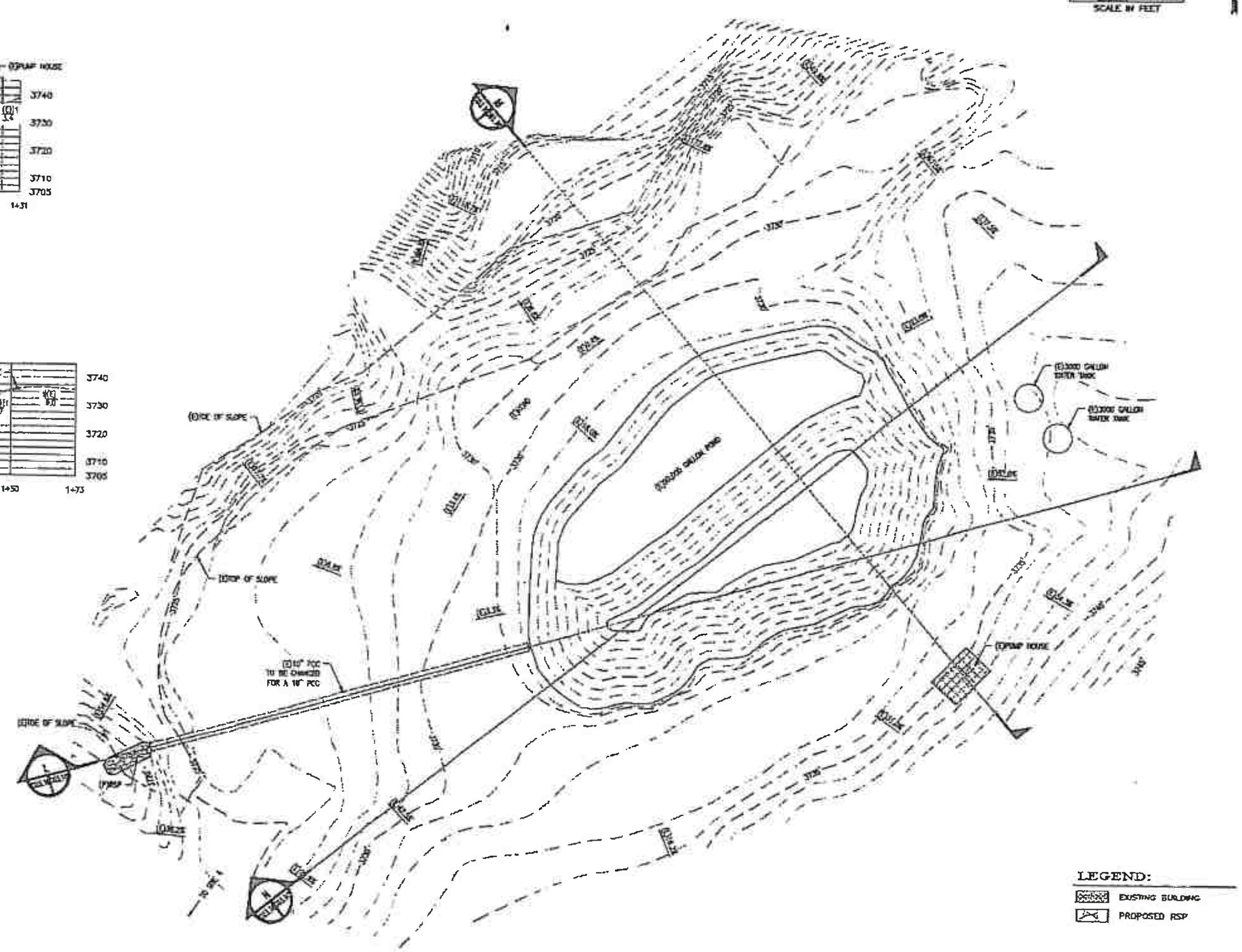
(P)GRADING ACTIVITY:

TOTAL ACREAGE: 37.55 ± Ac
ACRES DISTURBED: 0.007 ± Ac
ACRES UNDISTURBED: 37.54 ± Ac
PERCENTAGE OF DISTURBED AREA: 0.01%

(P)ROCK QUANTITIES:

ROCK SLOPE PROTECTION: 2.77 CUBIC YARDS

GRADING PLAN VIEW
1"=10'



LEGEND:

EXISTING BUILDING
PROPOSED RSP

PARKER BERG AND CARRIE JORDAN
P.O. BOX 67 BRIDGEVILLE, CA 95526

PROPOSED GRADING & DRAINAGE PLAN SITE 5

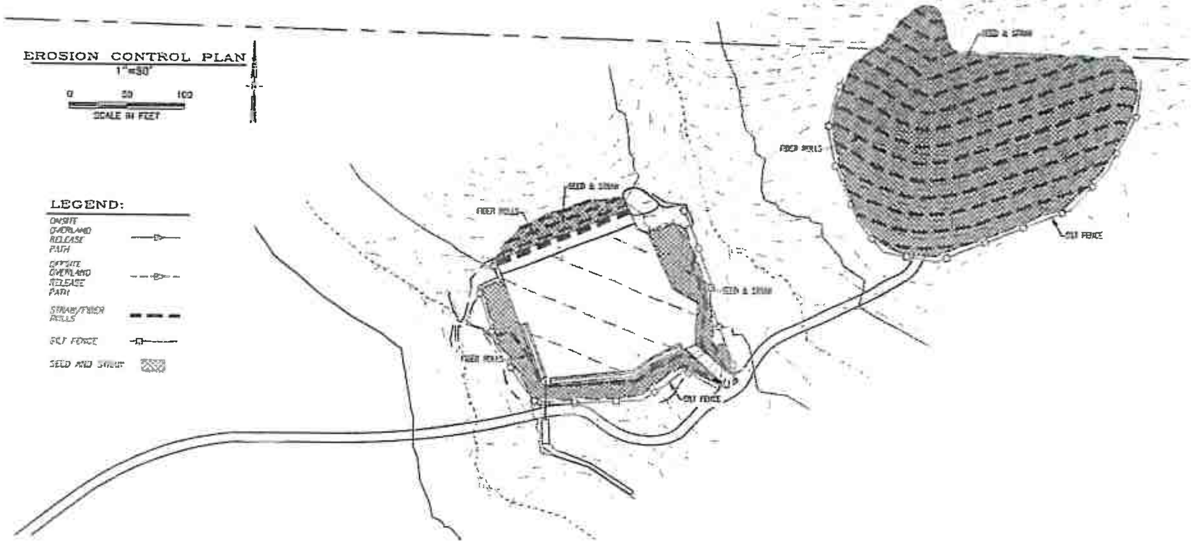
12575 BUCK MOUNTAIN ROAD DINSMORE, CA 95526
APN: 210-131-021

DRAWN BY: H. NAVARRO
DESIGNED BY: JTM
CHECKED BY: J. McKNIGHT
APPROVED BY: TVCE
DATE OF ISSUE: AUGUST 2018
SCALE: AS SHOWN
PROJECT NO: 1269
DRAWING NO: C03.10

TVCE
67 WALNUT WAY
PO BOX 1567
WILLOW CREEK, CA 95573
PHONE (530) 629-3000
FAX (530) 629-3011

EROSION CONTROL PLAN

1"=50'



STRAW MULCH NOTES

1. STRAW SHALL BE DERIVED FROM WHEAT, RICE, OR BARLEY. WHERE REQUIRED BY THE PLANS, SPECIFICATIONS, PERMITS, OR ENVIRONMENTAL DOCUMENTS, NATIVE GRASS STRAW SHALL BE USED.
2. A TACKIFIER IS THE PREFERRED METHOD FOR ANCHORING STRAW MULCH TO THE SOIL ON SLOPES.
3. CRIMPING, PUNCH ROLLER-TYPE ROLLERS, OR TRACK WALKING MAY ALSO BE USED TO INCORPORATE STRAW MULCH INTO THE SOIL ON SLOPES. TRACK WALKING SHALL ONLY BE USED WHERE OTHER METHODS ARE IMPRACTICAL.
4. AVOID PLACING STRAW ONTO ROADS, SIDEWALKS, DRAINAGE CHANNELS, SOUND WALLS, EXISTING VEGETATION, ETC.
5. STRAW MULCH WITH TACKIFIER SHALL NOT BE APPLIED DURING OR IMMEDIATELY BEFORE RAINFALL.
6. APPLY STRAW AT A MINIMUM RATE OF 4,000 LB/ACRE, EITHER BY MACHINE OR BY HAND DISTRIBUTION.
7. ROUGHEN EMBANKMENTS AND FILL RILLS BEFORE PLACING THE STRAW MULCH BY ROLLING WITH A CRIMPING OR PUNCHING TYPE ROLLER OR BY TRACK WALKING.
8. EVENLY DISTRIBUTE STRAW MULCH ON THE SOIL SURFACE.
9. ON SMALL AREAS, A SPADE OR SHOVEL CAN BE USED TO PUNCH IN STRAW MULCH.
10. ON SLOPES WITH SOILS THAT ARE STABLE ENOUGH AND OF SUFFICIENT GRADIENT TO SAFELY SUPPORT CONSTRUCTION EQUIPMENT WITHOUT CONTRIBUTING TO COMPACTION AND INSTABILITY PROBLEMS, STRAW CAN BE "PUNCHED" INTO THE GROUND USING A KNIFE BLADE ROLLER OR A STRAIGHT BLADED COULTER, KNOWN COMMERCIALLY AS A "CRIMPER".
11. ON SMALL AREAS AND/OR STEEP SLOPES, STRAW CAN ALSO BE HELD IN PLACE USING PLASTIC NETTING OR JUTE. THE NETTING SHALL BE HELD IN PLACE USING 11 GAUGE WIRE STAPLES, GEOTEXTILE PINS OR WOODEN STAKES AS DESCRIBED IN EC-7, GEOTEXTILES AND MATS.
12. TACKIFIER ACTS TO GLUE THE STRAW FIBERS TOGETHER AND TO THE SOIL SURFACE. THE TACKIFIER SHALL BE SELECTED BASED ON LONGEVITY AND ABILITY TO HOLD THE FIBERS IN PLACE. A TACKIFIER IS TYPICALLY APPLIED AT A RATE OF 125 LB/ACRE. IN WINDY CONDITIONS, THE RATES ARE TYPICALLY 180LB/ACRE.

BMP INSTALLATION SCHEDULE

PHASE OF CONSTRUCTION	EROSION AND SEDIMENT CONTROL MEASURES (WET SEASON) HYDROSEEDING/MULCHING	(WET SEASON) PRESERVATION OF EXISTING VEGETATION	(WET AND DRY SEASON) STRAW/FIBER ROLLS	SILT FENCE	CHECK DAM	STABILIZED CONSTRUCTION ENTRANCE	CONTRACTOR EQUIPMENT CONTROLS	MATERIAL & WASTE DISPOSAL LOCATION	DUST CONTROL	DEWATERING OPERATIONS	CONCRETE WASHOUT
PRE-GRADING		●	●			●	●	●	●		
CUT AND FILL ACTIVITIES				●							
UNDERGROUND WORK											
STORM DRAIN IMPROVEMENTS											
OFFSITE IMPROVEMENTS											
COMPLETION OF PAVING											
POST-GRADING	●	●									

EROSION AND SEDIMENT CONTROL NOTES

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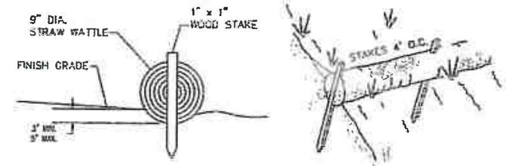
2. ALL DRAINAGE INLETS IMMEDIATELY DOWNSTREAM OF THE WORK AREA AND WITHIN THE WORK AREA SHALL BE PROTECTED WITH SEDIMENT CONTROL AND INLET FILTER BAGS, YEAR ROUND.
3. ALL STABILIZED CONSTRUCTION ACCESS LOCATIONS SHALL BE CONSTRUCTED PER STANDARD DRAWING TC-1 WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES PAVED AREAS. THE STABILIZED ACCESS SHALL BE MAINTAINED ON A YEAR-ROUND BASIS UNTIL THE COMPLETION OF CONSTRUCTION.
4. ALL AREAS DISTURBED DURING CONSTRUCTION, BY GRADING, TRENCHING, OR OTHER ACTIVITIES, SHALL BE PROTECTED FROM EROSION DURING THE WET SEASON (OCTOBER 1 THROUGH APRIL 30). HYDROSEED, IF UTILIZED, MUST BE PLACED BY SEPTEMBER 15. HYDROSEED PLACED DURING THE WET SEASON SHALL USE A SECONDARY EROSION PROTECTION METHOD.
5. SENSITIVE AREAS AND AREAS WHERE EXISTING VEGETATION IS BEING PRESERVED SHALL BE PROTECTED WITH CONSTRUCTION FENCING. SEDIMENT CONTROL BMP'S SHALL BE INSTALLED WHERE ACTIVE CONSTRUCTION AREAS DRAIN INTO SENSITIVE OR PRESERVED VEGETATION AREAS.
6. SEDIMENT CONTROL BMP'S SHALL BE PLACED ALONG THE PROJECT PERIMETER WHERE DRAINAGE LEAVES THE PROJECT. SEDIMENT CONTROL BMP'S SHALL BE MAINTAINED YEAR-ROUND UNTIL THE CONSTRUCTION IS COMPLETE OR THE DRAINAGE PATTERN HAS BEEN CHANGED AND NO LONGER LEAVES THE SITE.
7. ALL SLOPES GREATER THAN 1:1 SHALL RECEIVE SEED AND STRAW OR OTHER EROSION CONTROL.
8. ALL FENCING AND EROSION CONTROL METHODS SHALL BE MAINTAINED THROUGHOUT ALL ON-SITE CONSTRUCTION ACTIVITIES.
9. ALL BMPS SHALL BE INSTALLED AND FUNCTIONING PRIOR TO ANY ANTICIPATED STORM EVENT.



STRAW WATTLE NOTES:

1. STRAW WATTLES SHALL BE INSTALLED WITH 18 OR 24 INCH WOOD STAKES AT FOUR FEET ON CENTER. THE ENDS OF ADJACENT STRAW WATTLES SHALL BE ABUTTED TO EACH OTHER SNUGLY OR OVERLAPPED BY SIX INCHES.
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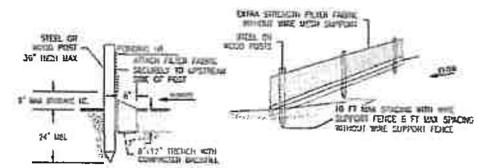
STRAW WATTLE INSTALLATION DETAIL

NTS



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3. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.

SILT FENCE DETAILS

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NOTE:

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67 SHASTA WAY
PO BOX 1567
WILLOW CREEK, CA 95573

PARKER BERG AND CARRIE JORDAN
P.O. BOX 67 BRIDGEVILLE, CA 95526
EROSION CONTROL PLAN
& DETAILS SITE 1
12575 BUCK MOUNTAIN ROAD DINSMORE, CA 95526
APN: 210-131-021

DRAWN BY: R. NAVARRO
DESIGNED BY: JTH
CHECKED BY: J. HAMMOND
APPROVED BY: TVCE
DATE OF ISSUE: AUGUST 2018
SCALE: AS SHOWN
PROJECT NO: 1201
DRAWING NO: C04.1

EROSION CONTROL PLAN

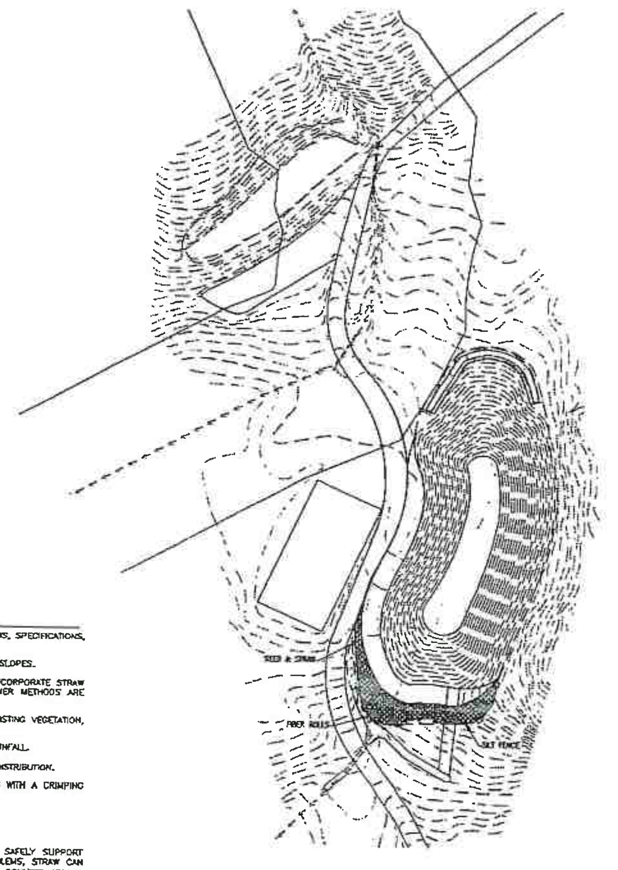
1"=30'

0 30 60

SCALE IN FEET

LEGEND:

- ONSITE OVERLAND RELEASE PATH
- OFFSITE OVERLAND RELEASE PATH
- STRAW/FIBER ROLLS
- SILT FENCE
- SEED AND STRAW



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2. A TACKIFIER IS THE PREFERRED METHOD FOR ANCHORING STRAW MULCH TO THE SOIL ON SLOPES.
3. CRIMPING, PUNCH ROLLER-TYPE ROLLERS, OR TRACK WALKING MAY ALSO BE USED TO INCORPORATE STRAW MULCH INTO THE SOIL ON SLOPES. TRACK WALKING SHALL ONLY BE USED WHERE OTHER METHODS ARE IMPRACTICAL.
4. AVOID PLACING STRAW ONTO ROADS, SIDEWALKS, DRAINAGE CHANNELS, SOUND WALLS, EXISTING VEGETATION, ETC.
5. STRAW MULCH WITH TACKIFIER SHALL NOT BE APPLIED DURING OR IMMEDIATELY BEFORE RAINFALL.
6. APPLY STRAW AT A MINIMUM RATE OF 4,000 LB/ACRE, EITHER BY MACHINE OR BY HAND DISTRIBUTION.
7. ROUGHEN EMBANKMENTS AND FILL RILLS BEFORE PLACING THE STRAW MULCH BY ROLLING WITH A CRIMPING OR PUNCHING TYPE ROLLER OR BY TRACK WALKING.
8. EVENLY DISTRIBUTE STRAW MULCH ON THE SOIL SURFACE.
9. ON SMALL AREAS, A SPADE OR SHOVEL CAN BE USED TO PUNCH IN STRAW MULCH.
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BMP INSTALLATION SCHEDULE

PHASE OF CONSTRUCTION	EROSION AND SEDIMENT CONTROL MEASURES (WET SEASON)		(WET AND DRY SEASON)								
	HYDROSEEDING/ MULCHING	PRESERVATION OF EXISTING VEGETATION	STRAW/ FIBER ROLLS	SILT FENCE	CHECK DAM	STABILIZED CONSTRUCTION ENTRANCE	CONTRACTOR EQUIPMENT CONTROLS	MATERIAL & WASTE DISPOSAL LOCATION	DUST CONTROL	DEWATERING OPERATIONS	CONCRETE WASHOUT
PRE-GRADING		⊙	⊙			⊙	⊙	⊙	⊙		
CUT AND FILL ACTIVITIES				⊙							
UNDERGROUND WORK											
STORM DRAIN IMPROVEMENTS											
OFFSITE IMPROVEMENTS											
COMPLETION OF PAVING											
POST-GRADING	⊙	⊙									

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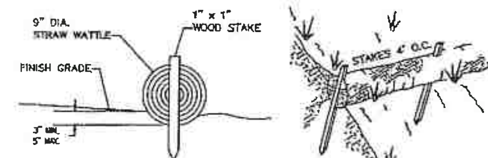

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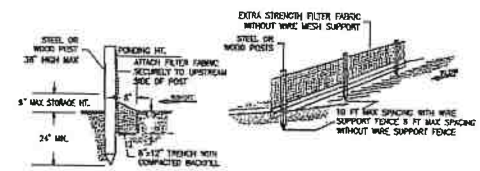
STRAW WATTLE INSTALLATION DETAIL

NTS



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TVCE

PARKER BERG AND CARRIE JORDAN
P.O. BOX 67 BRIDGEVILLE, CA 95528

EROSION CONTROL PLAN & DETAILS SITE 2

12575 BUCK MOUNTAIN ROAD DINSMORE, CA 95528
APN: 210-131-021

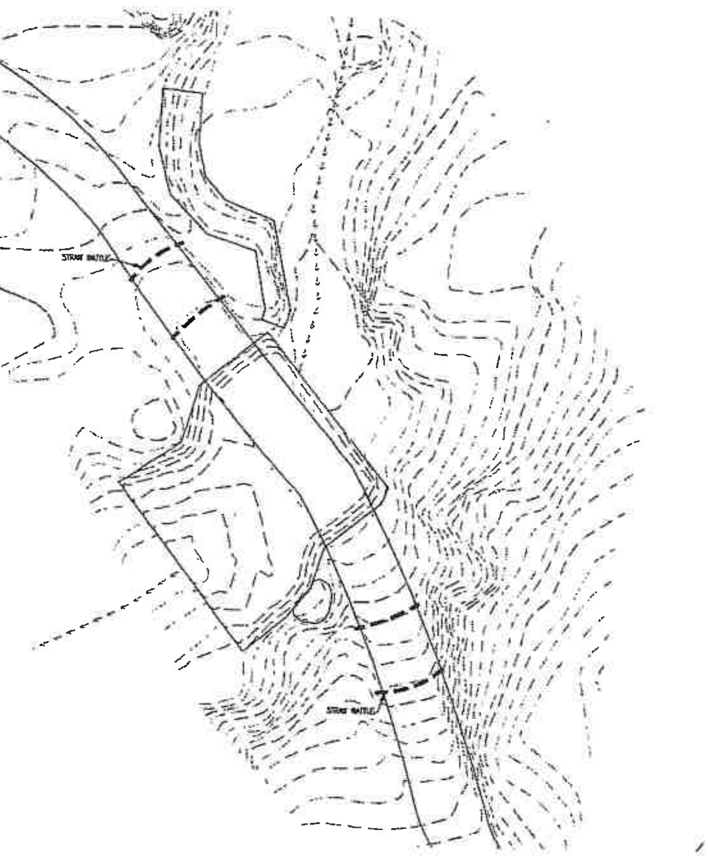
DRAWN BY: H. NAVARRO
CHECKED BY: J. McKNIGHT
DATE OF ISSUE: AUGUST 2016
SCALE: AS SHOWN
PROJECT NO. 1259
DRAWING NO. C04.2

TRINITY VALLEY CONSULTING ENGINEERS, INC.

EROSION CONTROL PLAN

1"=10'

0 10 20
SCALE IN FEET



LEGEND:

- ONSITE OVERLAND RELEASE PATH
- OFFSITE OVERLAND RELEASE PATH
- STRAW/FIBER ROLLS
- SILT FENCE
- SEED AND STRAW

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BMP INSTALLATION SCHEDULE

PHASE OF CONSTRUCTION	EROSION AND SEDIMENT CONTROL MEASURES										
	(WET SEASON)		(WET AND DRY SEASON)								
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PRE-GRADING		●	●			●	●	●	●		
CUT AND FILL ACTIVITIES				●							
UNDERGROUND WORK											
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OFFSITE IMPROVEMENTS											
COMPLETION OF PAVING											
POST-GRADING	●	●									

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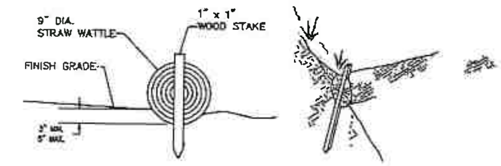

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STRAW WATTLE INSTALLATION DETAIL

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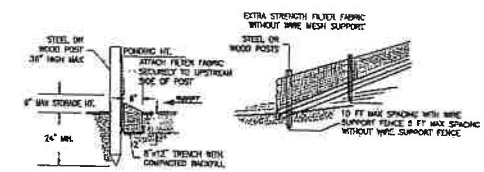

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EROSION CONTROL PLAN & DETAILS SITE 3
12675 BUCK MOUNTAIN ROAD DINSMORE, CA 95526
APN: 210-131-021

DRAWN BY: H. NAVARRO
DESIGNED BY: JTM
CHECKED BY: J. McKNIGHT
APPROVED BY: TVCE
DATE OF ISSUE: AUGUST 2018
SCALE: AS SHOWN
PROJECT NO: 1269
DRAWING NO: C04.3

TRINITY VALLEY CONSULTING ENGINEERS, INC.

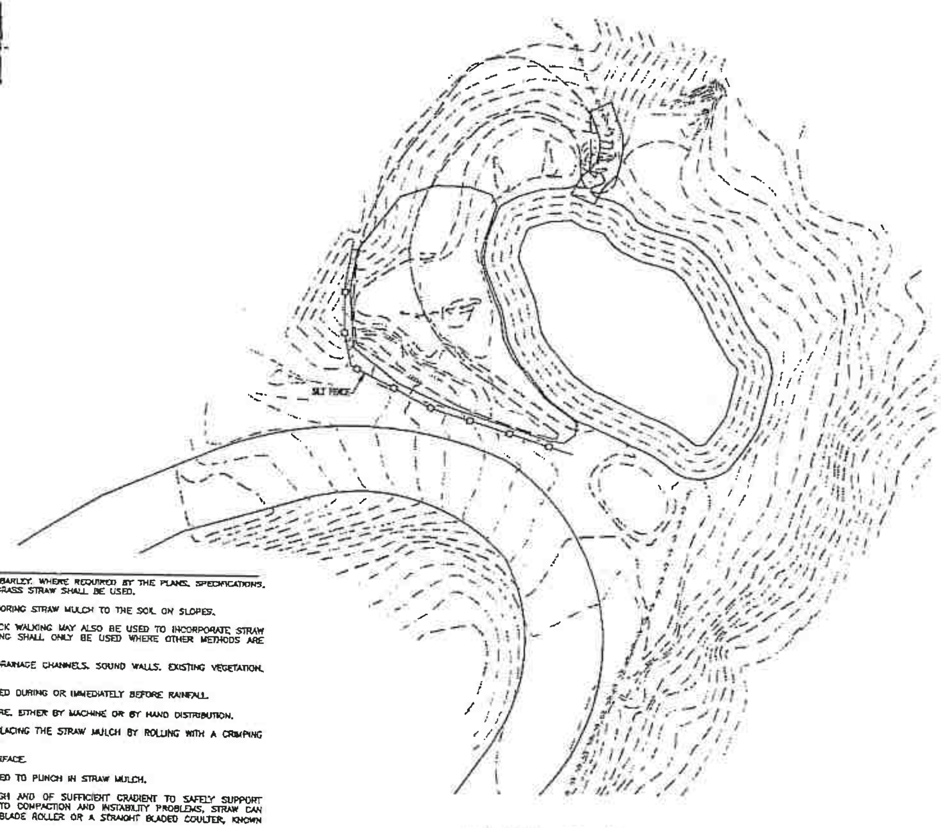
EROSION CONTROL PLAN

1"=10'

0 10 20
SCALE IN FEET

LEGEND:

- ONSITE OVERLAND RELEASE PATH
- OFFSITE OVERLAND RELEASE PATH
- STRAW/FIBER ROLLS
- SILT FENCE
- SEED AND STRAW



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PRE-GRADING		●	●			●	●	●	●		
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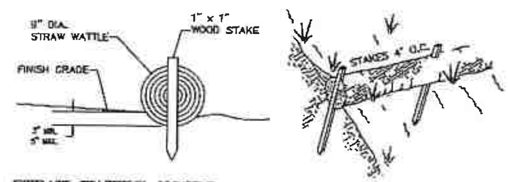
POST-GRADING	●	●									

EROSION AND SEDIMENT CONTROL NOTES:

1. EROSION CONTROL BEST MANAGEMENT PRACTICES (BMP'S) SHALL BE INSTALLED AND MAINTAINED DURING THE WET SEASON (OCTOBER 1 THROUGH APRIL 30). SEDIMENT CONTROL BMP'S SHALL BE INSTALLED AND MAINTAINED ALL YEAR.
2. ALL DRAINAGE INLETS IMMEDIATELY DOWNSTREAM OF THE WORK AREA AND WITHIN THE WORK AREA SHALL BE PROTECTED WITH SEDIMENT CONTROL AND INLET FILTER BAGS, YEAR ROUND.
3. ALL STABILIZED CONSTRUCTION ACCESS LOCATIONS SHALL BE CONSTRUCTED PER STANDARD DRAWING TC-1 WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES PAVED AREAS. THE STABILIZED ACCESS SHALL BE MAINTAINED ON A YEAR-ROUND BASIS UNTIL THE COMPLETION OF CONSTRUCTION.
4. ALL AREAS DISTURBED DURING CONSTRUCTION, BY GRADING, TRENCHING, OR OTHER ACTIVITIES, SHALL BE PROTECTED FROM EROSION DURING THE WET SEASON (OCTOBER 1 THROUGH APRIL 30). HYDROSEED, IF UTILIZED, MUST BE PLACED BY SEPTEMBER 15. HYDROSEED PLACED DURING THE WET SEASON SHALL USE A SECONDARY EROSION PROTECTION METHOD.
5. SENSITIVE AREAS AND AREAS WHERE EXISTING VEGETATION IS BEING PRESERVED SHALL BE PROTECTED WITH CONSTRUCTION FENCING. SEDIMENT CONTROL BMP'S SHALL BE INSTALLED WHERE ACTIVE CONSTRUCTION AREAS DRAIN INTO SENSITIVE OR PRESERVED VEGETATION AREAS.
6. SEDIMENT CONTROL BMP'S SHALL BE PLACED ALONG THE PROJECT PERIMETER WHERE DRAINAGE LEAVES THE PROJECT. SEDIMENT CONTROL BMP'S SHALL BE MAINTAINED YEAR-ROUND UNTIL THE CONSTRUCTION IS COMPLETE OR THE DRAINAGE PATTERN HAS BEEN CHANGED AND NO LONGER LEAVES THE SITE.
7. ALL SLOPES GREATER THAN 1:1 SHALL RECEIVE SEED AND STRAW OR OTHER EROSION CONTROL.
8. ALL FENCING AND EROSION CONTROL METHODS SHALL BE MAINTAINED THROUGHOUT ALL ON-SITE CONSTRUCTION ACTIVITIES.
9. ALL BMPS SHALL BE INSTALLED AND FUNCTIONING PRIOR TO ANY ANTICIPATED STORM EVENT.

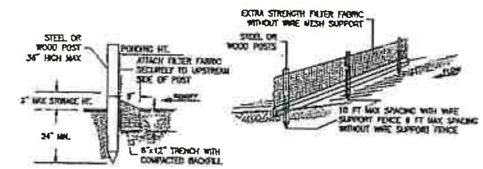


STRAW WATTLE NOTES:

1. STRAW WATTLES SHALL BE INSTALLED WITH 18 OR 24 INCH WOOD STAKES AT FOUR FEET ON CENTER. THE ENDS OF ADJACENT STRAW WATTLES SHALL BE ABUTTED TO EACH OTHER SNUGLY OR OVERLAPPED BY SIX INCHES.
2. STRAW ROLL INSTALLATION REQUIRES THE PLACEMENT AND SECURE STAKING OF THE ROLL IN A TRENCH, 3"-5" DEEP. RUNOFF MUST NOT BE ALLOWED TO RUN UNDER OR AROUND THE ROLL.

STRAW WATTLE INSTALLATION DETAIL

NTS



SILT FENCE NOTES:

1. THE CONTRACTOR SHALL INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT.
2. CONTRACTOR SHALL REMOVE SEDIMENT AS NECESSARY. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND IN AN AREA THAT CAN BE PERMANENTLY STABILIZED.
3. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.

SILT FENCE DETAILS

NTS

NOTE:

1. CONTRACTOR MAY SUBSTITUTE TEMPORARY SILT FENCES FOR STRAW AND FIBER ROLLS AND VICE VERSA

BMP MAINTENANCE NOTES:

1. ALL OF THE IMPLEMENTED BMP'S SHALL BE INSPECTED AND CORRECTED AS NOTED PRIOR TO, DURING, AND DIRECTLY FOLLOWING ANY STORM EVENT, OR WHENEVER PRACTICAL.

TVCE
47 TRINITY WAY
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WILLOW CREEK, CA 95573
PHONE (530) 629-3000
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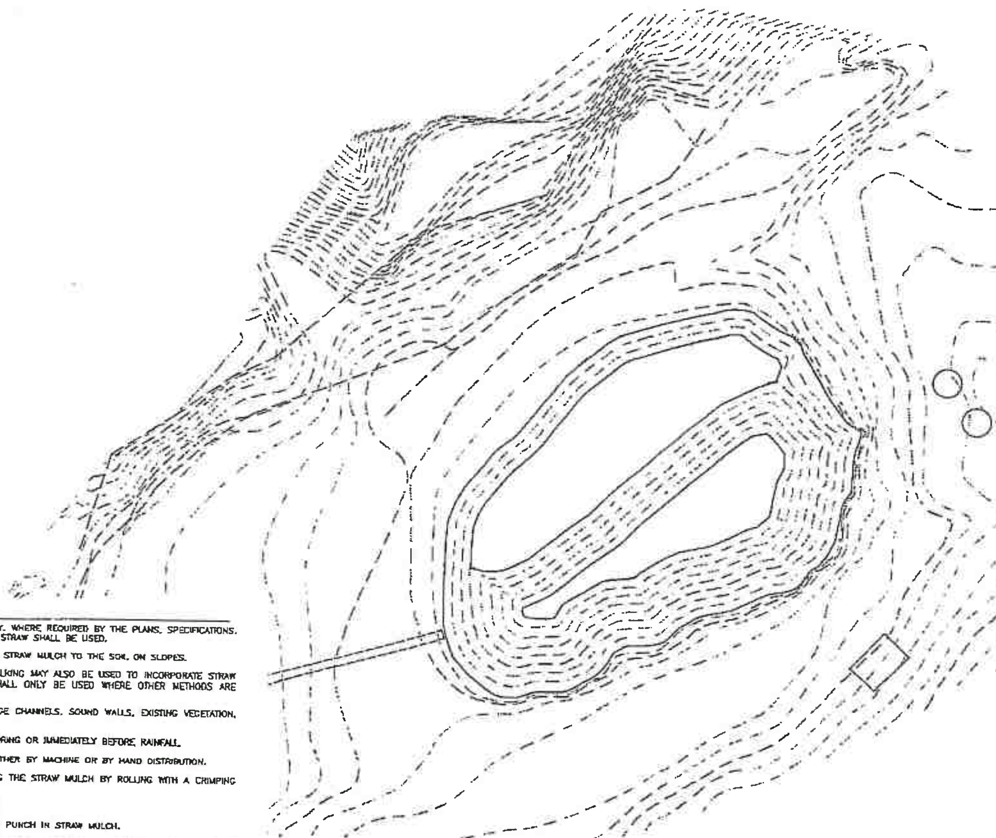
REV	DATE	DESCRIPTION	DSGN BY	DES BY	CHK BY	APP BY

PARKER BERG AND CARRIE JORDAN
P.O. BOX 67 BRIDGEVILLE, CA 95526
EROSION CONTROL PLAN & DETAILS SITE 4
12575 BUCK MOUNTAIN ROAD DINSMORE, CA 95526
APN: 210-131-021

MADE BY: H. NAVARRO
DESIGNED BY: JIM
CHECKED BY: J. McKNIGHT
APPROVED BY: TVCE
DATE OF ISSUE: AUGUST 2016
SCALE: AS SHOWN
PROJECT NO.: 1269
DRAWING NO.: C04.4

EROSION CONTROL PLAN
1"=10'

0 10 20
SCALE IN FEET



LEGEND:

ONSITE OVERLAND RELEASE PATH	—▷—
OFFSITE OVERLAND RELEASE PATH	---▷---
STRAW/FIBER ROLLS	— — —
SILT FENCE	–□––
SEED AND STRAW	▩

STRAW MULCH NOTES:

1. STRAW SHALL BE DERIVED FROM WHEAT, RICE, OR BARLEY. WHERE REQUIRED BY THE PLANS, SPECIFICATIONS, PERMITS, OR ENVIRONMENTAL DOCUMENTS, NATIVE GRASS STRAW SHALL BE USED.
2. A TACKIFIER IS THE PREFERRED METHOD FOR ANCHORING STRAW MULCH TO THE SOIL ON SLOPES.
3. CRIMPING, PUNCH ROLLER-TYPE ROLLERS, OR TRACK WALKING MAY ALSO BE USED TO INCORPORATE STRAW MULCH INTO THE SOIL ON SLOPES. TRACK WALKING SHALL ONLY BE USED WHERE OTHER METHODS ARE IMPRACTICAL.
4. AVOID PLACING STRAW ONTO ROADS, SIDEWALKS, DRAINAGE CHANNELS, SOUND WALLS, EXISTING VEGETATION, ETC.
5. STRAW MULCH WITH TACKIFIER SHALL NOT BE APPLIED DURING OR IMMEDIATELY BEFORE RAINFALL.
6. APPLY STRAW AT A MINIMUM RATE OF 4,000 LB/ACRE, EITHER BY MACHINE OR BY HAND DISTRIBUTION.
7. ROUGHEN EMBANKMENTS AND FILL RILLS BEFORE PLACING THE STRAW MULCH BY ROLLING WITH A CRIMPING OR PUNCHING TYPE ROLLER OR BY TRACK WALKING.
8. EVENLY DISTRIBUTE STRAW MULCH ON THE SOIL SURFACE.
9. ON SMALL AREAS, A SPADE OR SHOVEL CAN BE USED TO PUNCH IN STRAW MULCH.
10. ON SLOPES WITH SOILS THAT ARE STABLE ENOUGH AND OF SUFFICIENT GRADIENT TO SAFELY SUPPORT CONSTRUCTION EQUIPMENT WITHOUT CONTRIBUTING TO COMPACTION AND INSTABILITY PROBLEMS, STRAW CAN BE "PUNCHED" INTO THE GROUND USING A KNIFE BLADE ROLLER OR A STRAIGHT BLADED COULTER, KNOWN COMMERCIALLY AS A "CRIMPER".
11. ON SMALL AREAS AND/OR STEEP SLOPES, STRAW CAN ALSO BE HELD IN PLACE USING PLASTIC NETTING OR JUTE. THE NETTING SHALL BE HELD IN PLACE USING 11 GAUGE WIRE STAPLES, GEOTEXTILE PINS OR WOODEN STAKES AS DESCRIBED IN EC-7, GEOTEXTILES AND MATS.
12. TACKIFIER ACTS TO GLUE THE STRAW FIBERS TOGETHER AND TO THE SOIL SURFACE. THE TACKIFIER SHALL BE SELECTED BASED ON LONGEVITY AND ABILITY TO HOLD THE FIBERS IN PLACE. A TACKIFIER IS TYPICALLY APPLIED AT A RATE OF 125 LB/ACRE. IN WINDY CONDITIONS, THE RATES ARE TYPICALLY 180LB/ACRE.

BMP INSTALLATION SCHEDULE

PHASE OF CONSTRUCTION	EROSION AND SEDIMENT CONTROL MEASURES (WET SEASON) HYDROSEEDING/ MULCHING	(WET SEASON) PRESERVATION OF EXISTING VEGETATION	(WET AND DRY SEASON) STRAW/ FIBER ROLLS	SILT FENCE	CHECK DAM	STABILIZED CONSTRUCTION ENTRANCE	CONTRACTOR EQUIPMENT CONTROLS	MATERIAL & WASTE DISPOSAL LOCATION	DUST CONTROL	DEWATERING OPERATIONS	CONCRETE WASHOUT
PRE-GRADING		◎	◎			◎	◎	◎	◎		
CUT AND FILL ACTIVITIES				◎							
UNDERGROUND WORK											
STORM DRAIN IMPROVEMENTS											
OFFSITE IMPROVEMENTS											
COMPLETION OF PAVING											
POST-GRADING	◎	◎									

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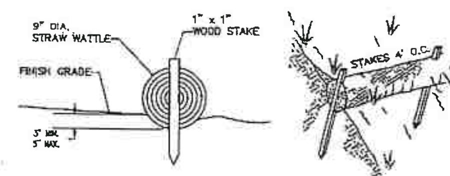

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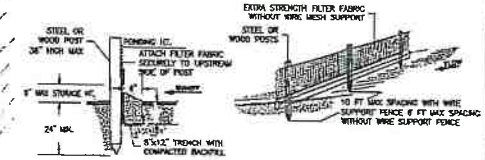
STRAW WATTLE INSTALLATION DETAIL
NTS



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SILT FENCE DETAILS
NTS

NOTE:

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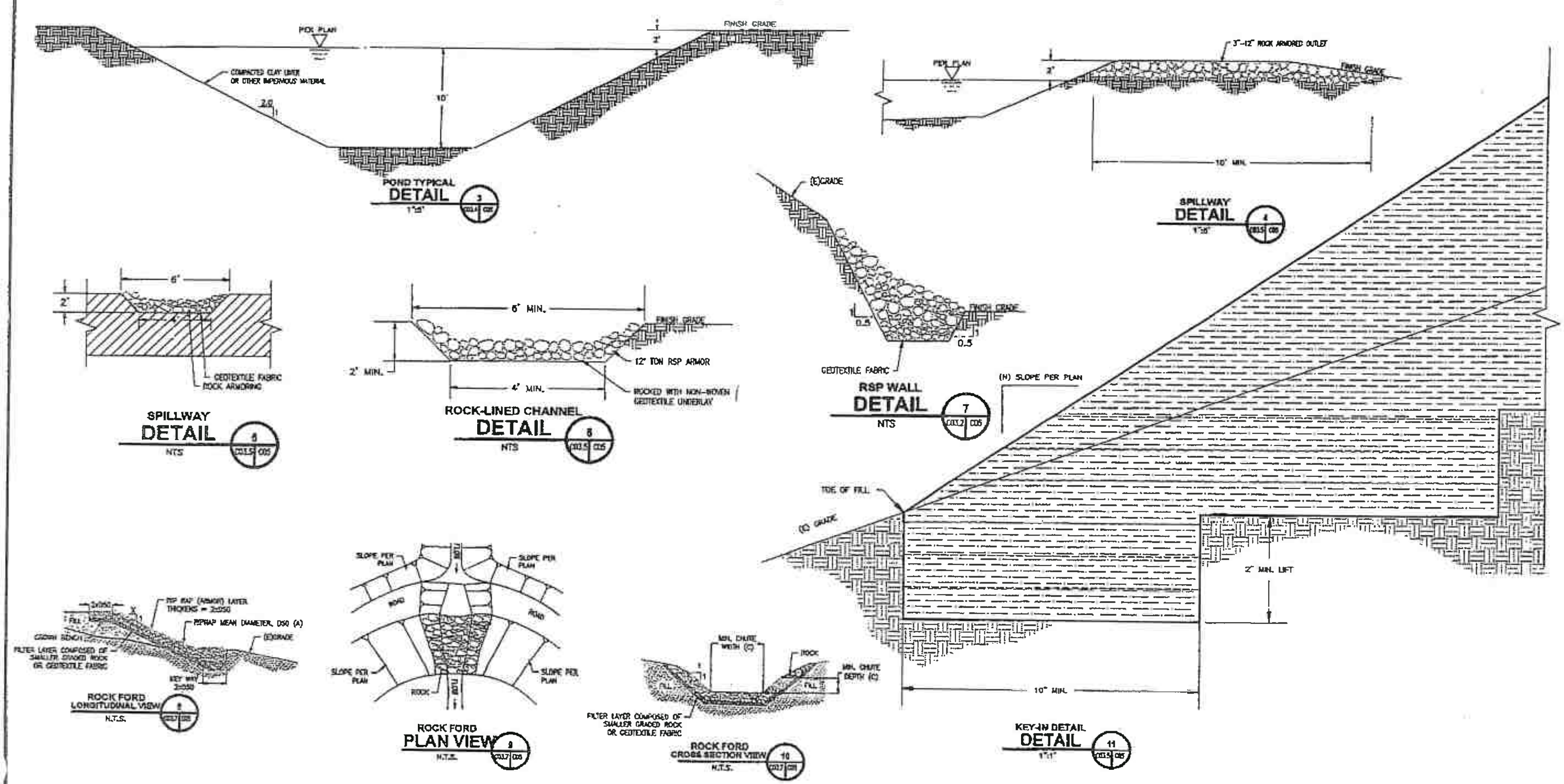
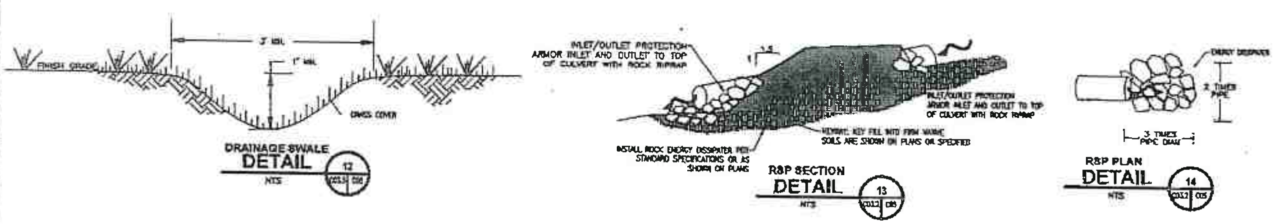
PARKER BERG AND CARRIE JORDAN
P.O. BOX 67 BRIDGEVILLE, CA 95526
EROSION CONTROL PLAN & DETAILS SITE 5
12575 BUCK MOUNTAIN ROAD DINSMORE, CA 95526
APN: 210-131-021

DRAWN BY	H. NAVARRO
DESIGNED BY	JTM
CHECKED BY	J. McKNIGHT
APPROVED BY	TVCE
DATE OF ISSUE	AUGUST 2018
SCALE	AS SHOWN
PROJECT NO.	1289
DRAWING NO.	C04.5





COMPACTION STANDARDS

FILL PLACEMENT LOCATION	COMPACTION RECOMMENDATIONS (ASTM D 1557-MODIFIED PROCTOR)	MOISTURE CONTENT (PERCENT OPTIMUM)
STRUCTURAL FILL SUPPORTING FOOTINGS	90%	-1 TO +3 PERCENT
STRUCTURAL FILL SUPPORTING FOOTINGS SLABS-ON-GRADE	90%	-1 TO +3 PERCENT
STRUCTURAL FILL PLACED WITHIN 3 FEET BEYOND THE PERIMETER OF THE BUILDING PAD	90%	-1 TO +3 PERCENT
UTILITY TRENCHES WITHIN BUILDING AND ANY PAVEMENT AREAS	95%	-1 TO +3 PERCENT
UTILITY TRENCHES BENEATH LANDSCAPE AND GRASS AREAS	90%	-1 TO +3 PERCENT
STRUCTURAL FILL FOR POND CONSTRUCTION	90%	-1 TO +3 PERCENT

TVCE

PARKER BERG AND CARRIE JORDAN
P.O. BOX 67 BRIDGEVILLE, CA 95526

GRADING DETAILS

12575 BUCK MOUNTAIN ROAD DINSMORE, CA 95526
APN: 210-131-021

DRAWN BY: H. NAVARRO
REVIEWED BY: VTM
CHECKED BY: J. McKNIGHT
APPROVED BY: TVCE
DATE OF ISSUE: AUGUST 2016
SCALE: AS SHOWN
PROJECT NO: 1209
DRAWING NO: C05

TRINITY VALLEY CONSULTING ENGINEERS, INC.

GENERAL NOTES:

1. WHERE WORKING AREAS ENCROACH ON LIVE STREAMS, BARRIERS ADEQUATE TO PREVENT THE FLOW OF MUDDY WATER INTO STREAMS SHALL BE CONSTRUCTED AND MAINTAINED BETWEEN WORKING AREAS AND STREAMS. DURING CONSTRUCTION OF THE BARRIERS, MUDDYING OF THE STREAMS SHALL BE HELD TO A MINIMUM.
2. WHEN ANY ARTIFICIAL OBSTRUCTION IS BEING CONSTRUCTED, MAINTAINED, OR PLACED IN OPERATION, SUFFICIENT WATER SHALL BE ALLOWED TO PASS DOWNSTREAM TO MAINTAIN AQUATIC LIFE DOWNSTREAM.
3. DISTURBANCE OR REMOVAL OF VEGETATION SHALL NOT EXCEED THE MINIMUM NECESSARY TO COMPLETE OPERATIONS.
4. DISTURBED VEGETATION SHALL BE REPLACED WITH THE APPROPRIATE SOIL STABILIZATION MEASURES.
5. CONSTRUCT DIVERSION STRUCTURES WITH MATERIALS FREE OF POTENTIAL POLLUTANTS SUCH AS SOIL, SILT, SAND, CLAY, GREASE, OR OIL.

INSPECTION/ MAINTENANCE NOTES:

1. INSPECT DIVERSIONS/ ENCROACHMENT STRUCTURES BEFORE AND AFTER SIGNIFICANT STORMS, AND AT LEAST ONCE PER WEEK WHILE IN SERVICE. INSPECT DAILY DURING CONSTRUCTION PRACTICES.
2. INSPECT EMBANKMENTS AND DIVERSION CHANNELS BEFORE AND AFTER SIGNIFICANT STORMS, AND AT LEAST ONCE PER WEEK WHILE IN SERVICE FOR DAMAGE TO THE LININGS, ACCUMULATING DEBRIS, SEDIMENT BUILDUP, AND ADEQUACY OF THE SLOPE PROTECTION. REMOVE DEBRIS AND REPAIR LININGS AND SLOPE PROTECTION AS REQUIRED. REPAIR HOLES, GAPS, OR SCOUR.
3. SAMPLING FOR WATER QUALITY SHALL BE PERFORMED PER THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) DATED MARCH 26,2012
4. ALL OF THE IMPLEMENTED BMPS SHALL BE INSPECTED AND CORRECTED AS NEEDED PRIOR TO, DURING, AND DIRECTLY FOLLOWING ANY STORM EVENT.

CONSTRUCTION NOTES:

1. CONSTRUCT CLEAR WATER DIVERSION BEFORE CONSTRUCTION OF NEW CULVERT CROSSING BEGINS.
2. DIVERT WATER INTO THE EXISTING CULVERT PER NS-5
3. TEMPORARY PIPE SHALL BE ADEQUATELY SIZED FOR THE ANTICIPATED WATER FLOWS (TYPICALLY 8"-24").
4. CONSTRUCT DIVERSION OUTSIDE OF THE ANTICIPATED WORK AREA, TO AVOID CONFLICTS AND UNWANTED CONTAMINANTS FROM ENTERING THE WATER COURSE.
5. CONSTRUCT NEW CULVERT PER PLAN.
6. INSTALL ALL INLET AND OUTLET RSP PER PLAN PRIOR TO DIVERTING WATER INTO THE NEW CULVERT.
7. REMOVE OR ABANDON OLD CULVERT PER THE PLANS, SPECIFICATIONS, OR AS DIRECTED.
8. INSTALL TEMPORARY DIVERSION INTO NEW CULVERT AND CONSTRUCT HEADWALL PER PLAN
9. UPON COMPLETION OF WORK, REMOVE THE DIVERSION AND ALLOW STREAM TO FLOW FREELY THROUGH THE NEW CULVERT.
10. RESTORE THE STREAM CHANNEL PER PLAN.

EROSION AND SEDIMENT CONTROL NOTES:

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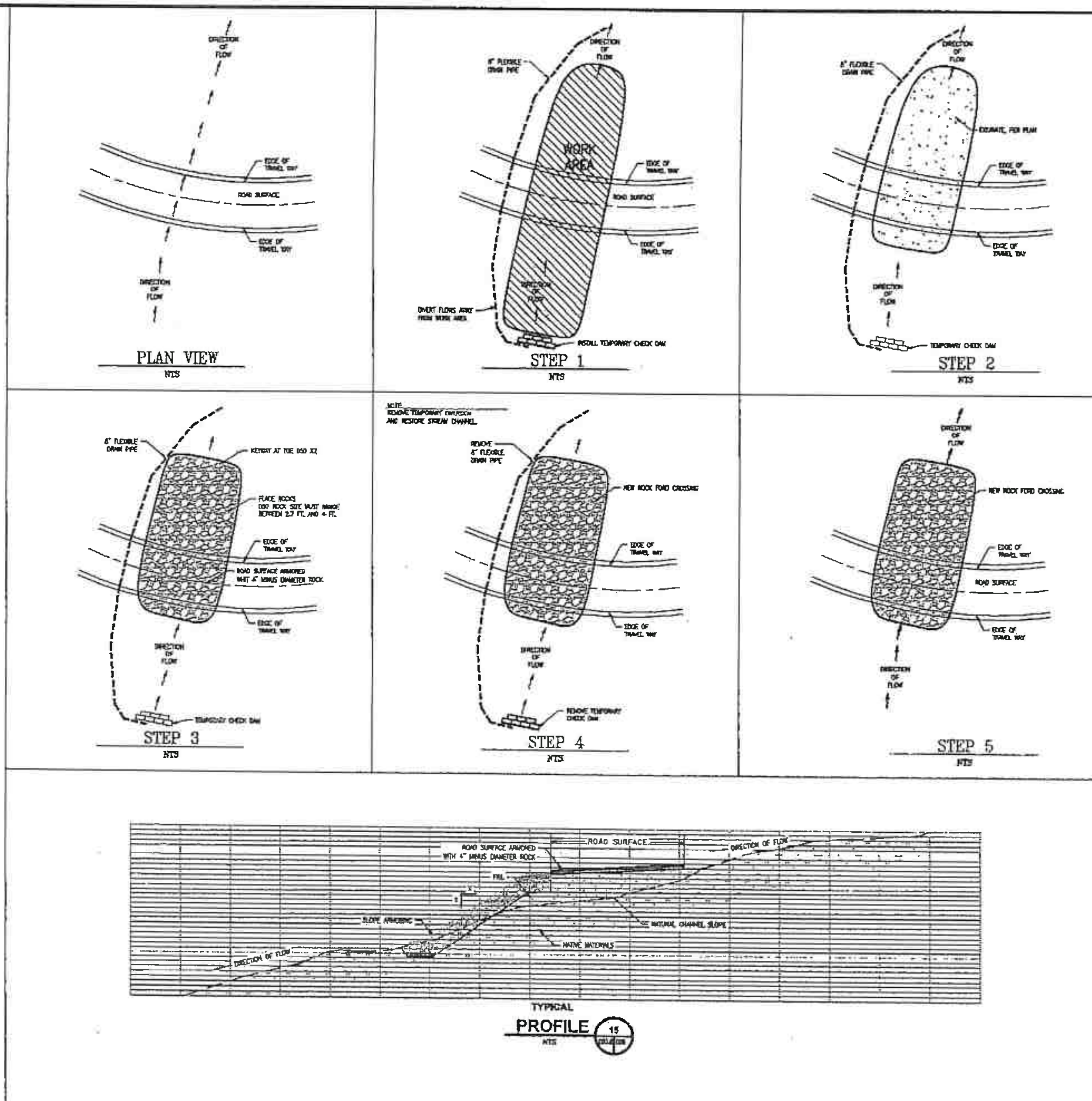


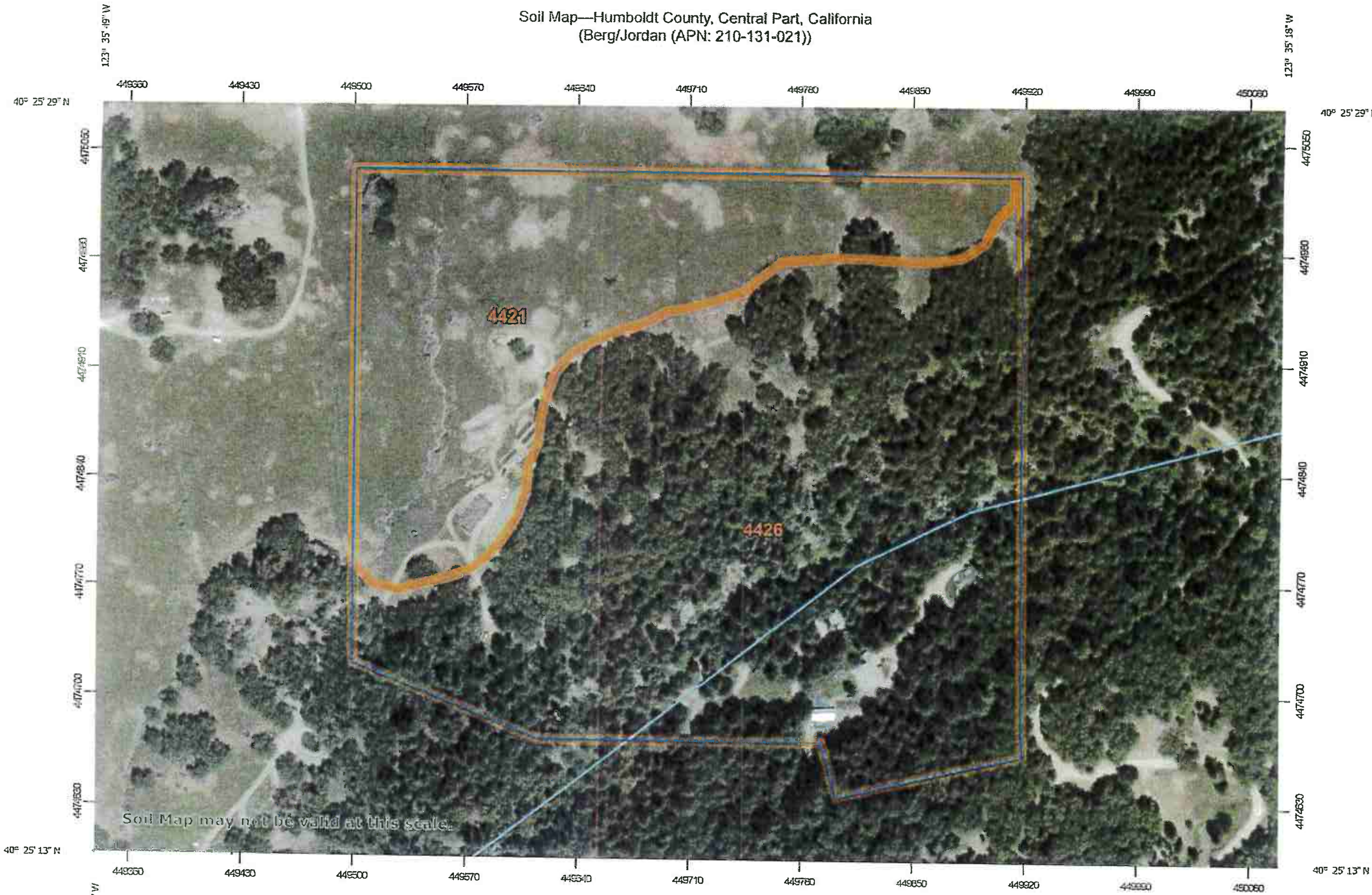
TVCE	67 WALNUT WAY, PO BOX 1567, WILLOW CREEK, CA 95573
	PARKER BERG AND CARRIE JORDAN P.O. BOX 67 BRIDGEVILLE, CA 95526
	TEMPORARY CLEAR WATER DIVERSION
	12575 BUCK MOUNTAIN ROAD DINSMORE, CA 95526 APN: 210-131-021
DRAWN BY	H. NAVARRO
DESIGNED BY	JTM
CHECKED BY	J. McKNIGHT
APPROVED BY	TVCE
DATE OF ISSUE	AUGUST 2018
SCALE	AS SHOWN
PROJECT NO.	1259
DRAWING NO.	C06

TRINITY VALLEY CONSULTING ENGINEERS, INC.

APPENDIX 2

USDA Soil Unit Description

Soil Map—Humboldt County, Central Part, California
(Berg/Jordan (APN: 210-131-021))



Map Scale: 1:3,380 if printed on A landscape (11" x 8.5") sheet.

N

0 50 100 200 300 Meters

0 150 300 600 900 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

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

Special Point Features

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

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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

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

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

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

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

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

Soil Survey Area: Humboldt County, Central Part, California
Survey Area Data: Version 3, Sep 11, 2017

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

Date(s) aerial images were photographed: Aug 16, 2015—Mar 13, 2017

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
4421	Highyork-Elkcamp-Airstrip complex, 15 to 30 percent slopes	12.6	33.5%
4426	Pasturerock-Coyoterock-Maneze complex, 15 to 50 percent slopes, dry	25.0	66.5%
Totals for Area of Interest		**37.6**	**100.0%**

Humboldt County, Central Part, California

4421—Highyork-Elkcamp-Airstrip complex, 15 to 30 percent slopes

Map Unit Setting

National map unit symbol: 2p9vk
Elevation: 1,970 to 4,000 feet
Mean annual precipitation: 60 to 90 inches
Mean annual air temperature: 46 to 55 degrees F
Frost-free period: 200 to 280 days
Farmland classification: Not prime farmland

Map Unit Composition

Highyork and similar soils: 50 percent
Elkcamp, dry, and similar soils: 25 percent
Airstrip, dry, and similar soils: 15 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Highyork

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave, linear, convex
Across-slope shape: Linear, concave
Parent material: Colluvium derived from sandstone and/or earthflow deposits derived from schist

Typical profile

A1 - 0 to 8 inches: silt loam
A2 - 8 to 16 inches: silt loam
Bt1 - 16 to 26 inches: clay
Bt2 - 26 to 37 inches: clay
Btg1 - 37 to 43 inches: clay
Btg2 - 43 to 71 inches: gravelly clay loam

Properties and qualities

Slope: 15 to 30 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 10 to 20 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water storage in profile: High (about 9.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C/D
Hydric soil rating: No

Description of Elkcamp, Dry

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Parent material: Colluvium derived from mudstone and/or colluvium derived from sandstone

Typical profile

A - 0 to 7 inches: loam
ABt - 7 to 16 inches: gravelly loam
Bt1 - 16 to 30 inches: gravelly clay loam
Bt2 - 30 to 41 inches: gravelly clay loam
Bt3 - 41 to 51 inches: gravelly clay loam
BCt - 51 to 71 inches: gravelly clay loam

Properties and qualities

Slope: 15 to 30 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: About 39 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 8.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Airstrip, Dry

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave

Parent material: Residuum weathered from sandstone

Typical profile

A1 - 0 to 6 inches: loam
A2 - 6 to 12 inches: loam
A3 - 12 to 22 inches: extremely cobbly loam
R - 22 to 79 inches: bedrock

Properties and qualities

Slope: 15 to 30 percent
Depth to restrictive feature: 20 to 39 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Kinman

Percent of map unit: 10 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave, linear, convex
Across-slope shape: Linear, concave
Hydric soil rating: No

Data Source Information

Soil Survey Area: Humboldt County, Central Part, California
Survey Area Data: Version 3, Sep 11, 2017

Humboldt County, Central Part, California

4426—Pasturerock-Coyoterock-Maneze complex, 15 to 50 percent slopes, dry

Map Unit Setting

National map unit symbol: 2pt36
Elevation: 520 to 3,160 feet
Mean annual precipitation: 56 to 80 inches
Mean annual air temperature: 50 to 59 degrees F
Frost-free period: 200 to 260 days
Farmland classification: Not prime farmland

Map Unit Composition

Pasturerock, dry, and similar soils: 40 percent
Coyoterock, dry, and similar soils: 25 percent
Maneze, dry, and similar soils: 15 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pasturerock, Dry

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium derived from sandstone and mudstone

Typical profile

A - 0 to 10 inches: gravelly loam
A2 - 10 to 24 inches: loam
Bt1 - 24 to 35 inches: clay loam
Bt2 - 35 to 47 inches: gravelly clay loam
Bt3 - 47 to 71 inches: gravelly clay loam

Properties and qualities

Slope: 15 to 50 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 9.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: Oregon white oak/perrenial and annual grasses, mountain slopes, sandstone and mudstone, clay l (F004BX114CA)
Other vegetative classification: Oak Woodland (RNPOW001CA)
Hydric soil rating: No

Description of Coyoterock, Dry

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Colluvium derived from sandstone and mudstone

Typical profile

A - 0 to 14 inches: loam
ABt - 14 to 24 inches: loam
Bt1 - 24 to 31 inches: clay
Bt2 - 31 to 37 inches: clay
Cg - 37 to 71 inches: clay

Properties and qualities

Slope: 15 to 50 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low (0.01 to 0.06 in/hr)
Depth to water table: About 28 to 39 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 8.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: D
Ecological site: Oregon white oak/perrenial and annual grasses, mountain slopes, sandstone and mudstone, clay l (F004BX114CA)
Other vegetative classification: Oak Woodland (RNPOW001CA)
Hydric soil rating: No

Description of Maneze, Dry

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium derived from sandstone and mudstone

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 11 inches: very cobbly loam
AB - 11 to 24 inches: very cobbly loam
Bw1 - 24 to 37 inches: extremely gravelly clay loam
Bw2 - 37 to 55 inches: very gravelly clay loam
Bw3 - 55 to 79 inches: very gravelly clay loam

Properties and qualities

Slope: 15 to 50 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 39 to 63 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: Oregon white oak/perrenial and annual grasses, mountain slopes, sandstone and mudstone, clay l (F004BX114CA)
Other vegetative classification: Oak Woodland (RNPOW001CA)
Hydric soil rating: No

Minor Components

Rock outcrop

Percent of map unit: 10 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Other vegetative classification: Oak Woodland (RNPOW001CA)
Hydric soil rating: No

Airstrip, dry

Percent of map unit: 10 percent
Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: Upper prairie, mountain slopes, sandstone and mudstone, clay (R004BX101CA)
Other vegetative classification: Prairie (RNPP001CA)
Hydric soil rating: No

Data Source Information

Soil Survey Area: Humboldt County, Central Part, California
Survey Area Data: Version 3, Sep 11, 2017

ATTACHMENT 4:

Hydraulic Calculations

Design of riprap for overtopping flow, Design Guideline 5 - HEC 23 - FHWA (Lagasse et al., 2006)

$$H = \left(\frac{Q_{100}}{C \cdot L}\right)^{\frac{2}{3}} \qquad \text{Eq. 3}$$

Where:

H	= Head or overtopping depth above the chute (ft)
Q_{100}	= Estimated 100-year storm flow (ft^3/s)
L	= Width of outfall or chute (ft)
C	= Weir flow coefficient ($ft^{0.5}/s$), assumed to be 2.84.

$$d50 = \frac{K_u q_f^{0.52}}{C_u^{0.25} S^{0.75}} \left(\frac{\sin\alpha}{(S_g \cos\alpha - 1)(\cos\alpha \tan\varphi - \sin\alpha)}\right)^{1.11} \qquad \text{Eq. 4}$$

Where:

d50	= Median rock size (ft)
K_u	= Riprap sizing equation coefficient, equal to $0.525s^{0.52}/ft^{0.04}$
q_f	= Unit discharge at failure ($ft^3/s/ft$)
C_u	= Coefficient of uniformity of the riprap (d60/d10)
S	= Slope of the embankment (ft/ft)
S_g	= Specific gravity of the riprap
α	= Slope of the embankment, degrees
φ	= Angle of repose of the riprap, degrees

$$V_i = 2.48\sqrt{g d50}\left(\frac{S^{0.58}}{C_u^{2.22}}\right) \qquad \text{Eq. 5}$$

Where:

V_i	= Interstitial velocity (ft/s)
g	= Acceleration due to gravity, 32.2 ft/s^2
d50	= Median rock size (ft)
C_u	= Coefficient of uniformity of the riprap (d60/d10)
S	= Slope of the embankment (ft/ft)

$$V_{ave} = \eta V_i \qquad \text{Eq. 6}$$

Where:

V_{ave}	=Average flow velocity (ft/s)
η	=Porosity of the riprap
V_i	=Interstitial flow velocity (ft/s

Aug-17

Rock-armored Crossing Riprap Design

Input parameters*

Rock riprap Parameter:			Hydrologic/hydraulic Parameters:		
Angle of repose, phi	42	degrees	Q100, cfs	530	cfs
Porosity, *n*	0.45		Minimum width of rock chute, L	35	ft.
Uniformity Coef., Cu	2				
Embankment Slope, S (not to exceed 0.5 ft/ft)	0.5	ft/ft			

Other parameters

Units constant, Ku	0.525		Unit Discharge**, qf	15.143 cfs/ft
Specific gravity, Sg	2.65			
Acceleration due to gravity, g	32.2 ft/s^2			
Embankment Slope angle	26.6 degrees			
Wier flow coefficient,C	2.840			

Design Steps with computations

Step 1: Determine the overtopping depth (Eq. 3):

Overtopping depth, H — 3.05 ft

Step 2: Compute smallest possible median rock size (Eq. 4):

D50 rock size — 2.75 ft — 2*D50 — 5.50 ft.

Step 3: Select riprap size class or source that has the correct d50 size.

Step 4: Compute the interstitial and average velocity (Eq. 5 and Eq. 6):

Interstitial velocity, Vi — 3.4 ft/s

Average velocity, Vave — 1.5 ft/s

Step 5: Compute the average flow depth (y) and test if flow is contained within the thickness, t, of the riprap (i.e. t<2d50):

Average flow depth, y (y=qf/Vave) — 10.04 ft

Test: **FAIL** — If "PASS" record d50 and riprap thickness from Step 2 above; If "FAIL", continue below.

If the test in Step 5 "FAILS", increase size of riprap and repeat Steps 2-5 until the design achieves a "PASS", see below:

Stone size increase*** (factor) — 1.5 — Increase factor above 1 in increments of 0.05 (eg. 1.05, 1.10, ...) until the design receives a "PASS"

Increased D50 rock size	4.1 ft	2*D50	8.26
Interstitial velocity, Vi.	4.1 ft/s		
Average velocity, Vave (Vave=*n* Vi)	1.8 ft/s		
Average flow depth, y (y=qf/Vave)	8.20 ft		

Test: **PASS** — If "PASS" record increased d50 and riprap thickness above.

Notes:

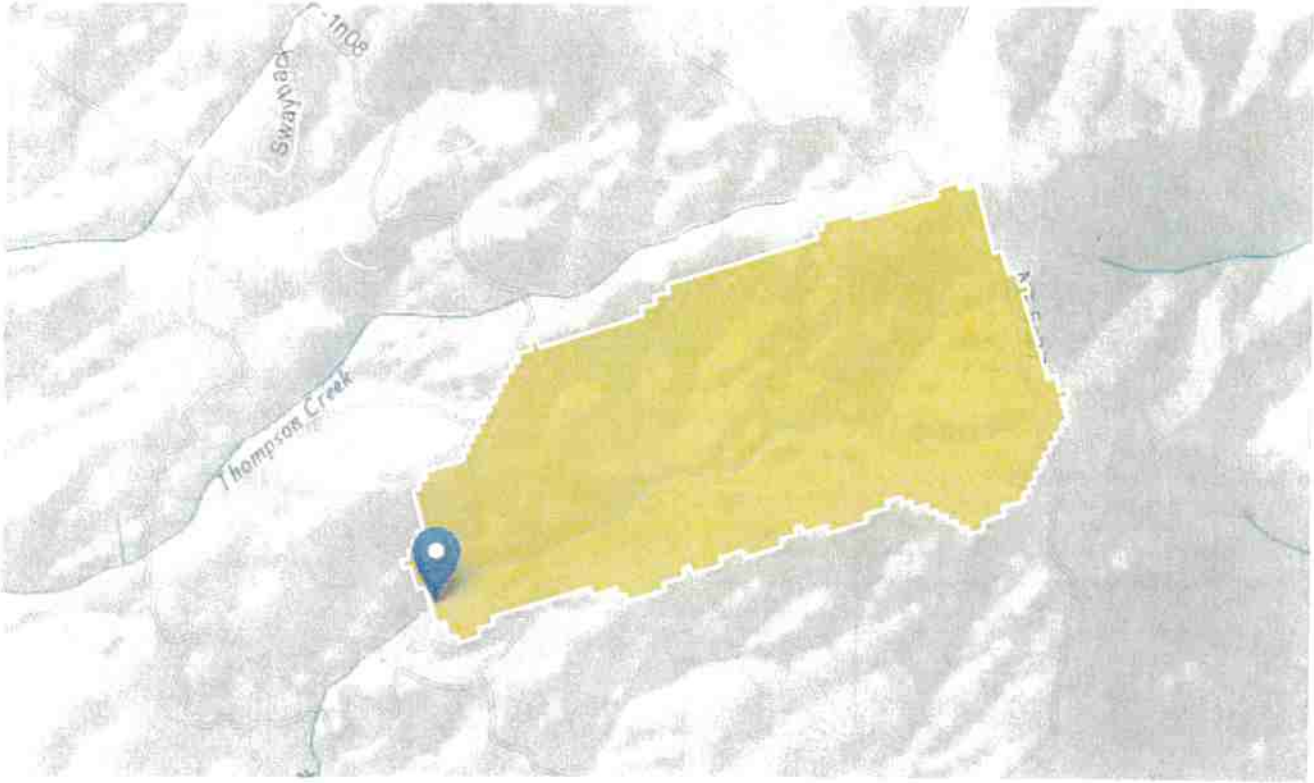
* All parameters requiring user input are highlighted in "Yellow"

**Caution should be used in the event the unit flows exceed 10 cfs/ft.

***Must increase size of riprap to ensure the water runs interstitially within the layer of riprap.

Carrie Jordan/Parker Berg APN 210-131-021

Region ID: CA
Workspace ID: CA20180723223234041000
Clicked Point (Latitude, Longitude): 40.42143, -123.59269
Time: 2018-07-23 15:32:49 -0700



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.9	square miles
PRECIP	Mean Annual Precipitation	87	inches
BASINPERIM	Perimeter of the drainage basin as defined in SIR 2004-5262	5.29	thousand feet
BSLDEM30M	Mean basin slope computed from 30 m DEM	27	percent
CENTROIDX	Basin centroid horizontal (x) location in state plane coordinates	-2287446	feet

Parameter Code	Parameter Description	Value	Unit
CENTROIDY	Basin centroid vertical (y) location in state plane units	2269150	feet
EL6000	Percent of area above 6000 ft	0	percent
ELEV	Mean Basin Elevation	4387	feet
ELEVMAX	Maximum basin elevation	5125	feet
FOREST	Percentage of area covered by forest	33.3	percent
JANMAXTMP	Mean Maximum January Temperature	47.59	degrees F
JANMINTMP	Mean Minimum January Temperature	30.15	degrees F
LAKEAREA	Percentage of Lakes and Ponds	0	percent
LC11DEV	Percentage of developed (urban) land from NLCD 2011 classes 21-24	0	percent
LC11IMP	Average percentage of impervious area determined from NLCD 2011 impervious dataset	0	percent
LFPLENGTH	Length of longest flow path	2	miles
MINBELEV	Minimum basin elevation	3626	feet
OUTLETELEV	Elevation of the stream outlet in thousands of feet above NAVD88.	3626	feet
RELIEF	Maximum - minimum elevation	1499	feet
RELRELF	Basin relief divided by basin perimeter	283	feet per mi

Peak-Flow Statistics Parameters [2012 5113 Region 1 North Coast]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.9	square miles	0.04	3200
PRECIP	Mean Annual Precipitation	87	inches	20	125

Peak-Flow Statistics Flow Report [2012 5113 Region 1 North Coast]

PIl: Prediction Interval-Lower, Plu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	PIl	Plu	SEp

Statistic	Value	Unit	PIl	PIu	SEp
2 Year Peak Flood	133	ft^3/s	54	330	58.6
5 Year Peak Flood	232	ft^3/s	110	491	47.4
10 Year Peak Flood	302	ft^3/s	148	616	44.2
25 Year Peak Flood	392	ft^3/s	198	774	42.7
50 Year Peak Flood	460	ft^3/s	232	911	42.7
100 Year Peak Flood	530	ft^3/s	261	1080	44.3
200 Year Peak Flood	597	ft^3/s	293	1220	44.4
500 Year Peak Flood	685	ft^3/s	328	1430	46

Peak-Flow Statistics Citations

Gotvald, A.J., Barth, N.A., Veilleux, A.G., and Parrett, Charles,2012, Methods for determining magnitude and frequency of floods in California, based on data through water year 2006: U.S. Geological Survey Scientific Investigations Report 2012–5113, 38 p., 1 pl. (http://pubs.usgs.gov/sir/2012/5113/)

Application Version: 4.2.1

ATTACHMENT 5:

USGS Spectral Response Accelerations

USGS Design Maps Detailed Report

ASCE 7-10 Standard (40.4228°N, 123.5928°W)

Site Class C – "Very Dense Soil and Soft Rock", Risk Category I/II/III

Section 11.4.1 — Mapped Acceleration Parameters

Note: Ground motion values provided below are for the direction of maximum horizontal spectral response acceleration. They have been converted from corresponding geometric mean ground motions computed by the USGS by applying factors of 1.1 (to obtain S_S) and 1.3 (to obtain S_1). Maps in the 2010 ASCE-7 Standard are provided for Site Class B. Adjustments for other Site Classes are made, as needed, in Section 11.4.3.

From Figure 22-1 [1]	$S_S = 1.495$ g
From Figure 22-2 [2]	$S_1 = 0.656$ g

Section 11.4.2 — Site Class

The authority having jurisdiction (not the USGS), site-specific geotechnical data, and/or the default has classified the site as Site Class C, based on the site soil properties in accordance with Chapter 20.

Table 20.3–1 Site Classification

Site Class	$\bar{v}_s$	$\bar{N}$ or $\bar{N}_{ch}$	$\bar{s}_u$
A. Hard Rock	>5,000 ft/s	N/A	N/A
B. Rock	2,500 to 5,000 ft/s	N/A	N/A
C. Very dense soil and soft rock	1,200 to 2,500 ft/s	>50	>2,000 psf
D. Stiff Soil	600 to 1,200 ft/s	15 to 50	1,000 to 2,000 psf
E. Soft clay soil	<600 ft/s	<15	<1,000 psf
	Any profile with more than 10 ft of soil having the characteristics: • Plasticity index $PI > 20$, • Moisture content $w \geq 40\%$, and • Undrained shear strength $\bar{s}_u < 500$ psf		
F. Soils requiring site response analysis in accordance with Section 21.1	See Section 20.3.1		

For SI: 1ft/s = 0.3048 m/s 1lb/ft² = 0.0479 kN/m²

Section 11.4.3 — Site Coefficients and Risk-Targeted Maximum Considered Earthquake (MCE_R) Spectral Response Acceleration Parameters

Table 11.4-1: Site Coefficient F_a

Site Class	Mapped MCE_R Spectral Response Acceleration Parameter at Short Period				
	$S_S \le 0.25$	$S_S = 0.50$	$S_S = 0.75$	$S_S = 1.00$	$S_S \ge 1.25$
A	0.8	0.8	0.8	0.8	0.8
B	1.0	1.0	1.0	1.0	1.0
C	1.2	1.2	1.1	1.0	1.0
D	1.6	1.4	1.2	1.1	1.0
E	2.5	1.7	1.2	0.9	0.9
F	See Section 11.4.7 of ASCE 7				

Note: Use straight–line interpolation for intermediate values of S_S

For Site Class = C and S_S = 1.495 g, F_a = 1.000

Table 11.4-2: Site Coefficient F_v

Site Class	Mapped MCE_R Spectral Response Acceleration Parameter at 1-s Period				
	$S_1 \le 0.10$	$S_1 = 0.20$	$S_1 = 0.30$	$S_1 = 0.40$	$S_1 \ge 0.50$
A	0.8	0.8	0.8	0.8	0.8
B	1.0	1.0	1.0	1.0	1.0
C	1.7	1.6	1.5	1.4	1.3
D	2.4	2.0	1.8	1.6	1.5
E	3.5	3.2	2.8	2.4	2.4
F	See Section 11.4.7 of ASCE 7				

Note: Use straight–line interpolation for intermediate values of S_1

For Site Class = C and S_1 = 0.656 g, F_v = 1.300

Equation (11.4-1): $S_{MS} = F_aS_S = 1.000 \times 1.495 = 1.495$ g

---

Equation (11.4-2): $S_{M1} = F_vS_1 = 1.300 \times 0.656 = 0.852$ g

---

Section 11.4.4 — Design Spectral Acceleration Parameters

Equation (11.4-3): $S_{DS} = ⅔\ S_{MS} = ⅔ \times 1.495 = 0.996$ g

---

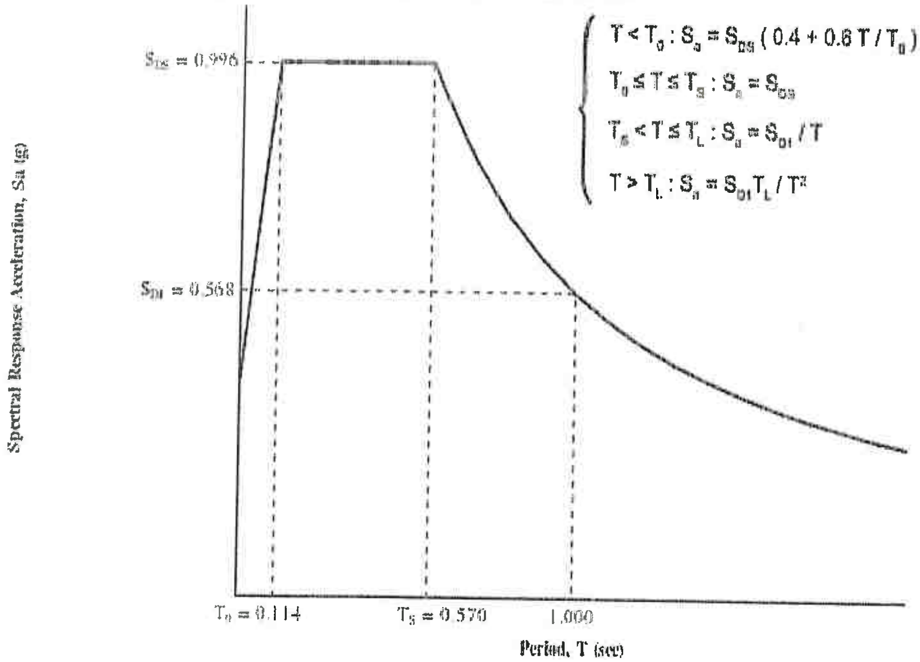
Equation (11.4-4): $S_{D1} = ⅔\ S_{M1} = ⅔ \times 0.852 = 0.568$ g

---

Section 11.4.5 — Design Response Spectrum

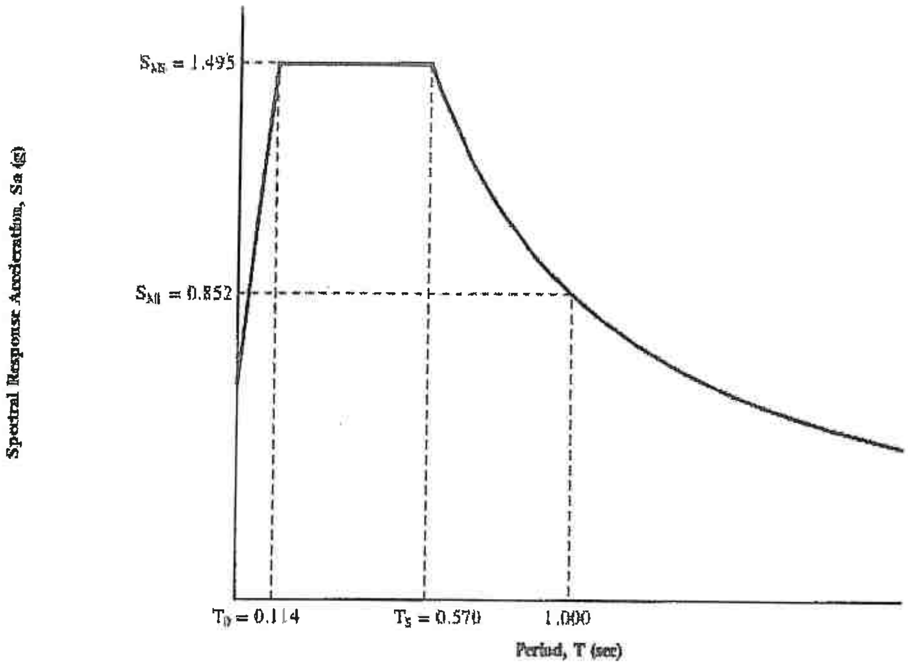
From Figure 22-12 [3] $T_L = 16$ seconds

Figure 11.4-1: Design Response Spectrum



Section 11.4.6 — Risk-Targeted Maximum Considered Earthquake (MCE_R) Response Spectrum

The MCE_R Response Spectrum is determined by multiplying the design response spectrum above by 1.5.



Section 11.8.3 — Additional Geotechnical Investigation Report Requirements for Seismic Design Categories D through F

From Figure 22-7 [4] PGA = 0.542

Equation (11.8-1): $PGA_M = F_{PGA}PGA = 1.000 \times 0.542 = 0.542$ g

Table 11.8-1: Site Coefficient F_{PGA}

Site Class	Mapped MCE Geometric Mean Peak Ground Acceleration, PGA				
	PGA ≤ 0.10	PGA = 0.20	PGA = 0.30	PGA = 0.40	PGA ≥ 0.50
A	0.8	0.8	0.8	0.8	0.8
B	1.0	1.0	1.0	1.0	1.0
C	1.2	1.2	1.1	1.0	1.0
D	1.6	1.4	1.2	1.1	1.0
E	2.5	1.7	1.2	0.9	0.9
F	See Section 11.4.7 of ASCE 7				

Note: Use straight-line interpolation for intermediate values of PGA

For Site Class = C and PGA = 0.542 g, F_{PGA} = 1.000

Section 21.2.1.1 — Method 1 (from Chapter 21 – Site-Specific Ground Motion Procedures for Seismic Design)

From Figure 22-17 [5] C_{RS} = 0.979

From Figure 22-18 [6] C_{R1} = 0.939

Section 11.6 — Seismic Design Category

Table 11.6-1 Seismic Design Category Based on Short Period Response Acceleration Parameter

VALUE OF S_{DS}	RISK CATEGORY		
	I or II	III	IV
$S_{DS} < 0.167g$	A	A	A
$0.167g \leq S_{DS} < 0.33g$	B	B	C
$0.33g \leq S_{DS} < 0.50g$	C	C	D
$0.50g \leq S_{DS}$	D	D	D

For Risk Category = I and S_{DS} = 0.996 g, Seismic Design Category = D

Table 11.6-2 Seismic Design Category Based on 1-S Period Response Acceleration Parameter

VALUE OF S_{D1}	RISK CATEGORY		
	I or II	III	IV
$S_{D1} < 0.067g$	A	A	A
$0.067g \leq S_{D1} < 0.133g$	B	B	C
$0.133g \leq S_{D1} < 0.20g$	C	C	D
$0.20g \leq S_{D1}$	D	D	D

For Risk Category = I and S_{D1} = 0.568 g, Seismic Design Category = D

Note: When S_1 is greater than or equal to 0.75g, the Seismic Design Category is E for buildings in Risk Categories I, II, and III, and F for those in Risk Category IV, irrespective of the above.

Seismic Design Category ≡ "the more severe design category in accordance with Table 11.6-1 or 11.6-2" = D

Note: See Section 11.6 for alternative approaches to calculating Seismic Design Category.

References

1. *Figure 22-1*: https://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-1.pdf
2. *Figure 22-2*: https://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-2.pdf
3. *Figure 22-12*: https://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-12.pdf
4. *Figure 22-7*: https://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-7.pdf
5. *Figure 22-17*: https://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-17.pdf
6. *Figure 22-18*: https://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-18.pdf