

Notice of Exemption**Appendix E**

To: Office of Planning and Research
P.O. Box 3044, Room 113
Sacramento, CA 95812-3044

County Clerk

County of: Calaveras

891 MOUNTAIN RANCH ROAD

San Andreas, CA 95249

From: (Public Agency): Calaveras County Water District
120 Toma Court

San Andreas, CA 95249

(Address)

Project Title: Lift Stations 6, 8, 15 & 18 Renovations and Lift Stations 12 & 13 Force Main Bypass

Project Applicant: Calaveras County Water District

Project Location - Specific:

Near Lake Tulloch, Kiva Dr., Lakeshore Dr., O'Byrnes Ferry Rd., Conner Estates Dr.,

Project Location - City: Copperopolis, CA

Project Location - County: Calaveras

Description of Nature, Purpose and Beneficiaries of Project:

Replacement and reconstruction of four (4) existing lift stations and construction of a one mile 6-inch diameter sewer force main. By re-routing the force main along O'Byrnes Ferry Road and Conner Estates Drive, an existing sewer pipeline beneath Lake Tulloch is eliminated reducing the risk of sewer spills into the lake. Also, the project improves worker safety by eliminating dry-pits that are confined spaces and replacing old electrical systems. Replacing old generators will reduce exhaust emissions. (See detailed description attached)

Name of Public Agency Approving Project: Calaveras County Water District

Name of Person or Agency Carrying Out Project: Calaveras County Water District

Exempt Status: (check one):

- ☐ Ministerial (Sec. 21080(b)(1); 15268);
- ☐ Declared Emergency (Sec. 21080(b)(3); 15269(a));
- ☐ Emergency Project (Sec. 21080(b)(4); 15269(b)(c));
- ☒ Categorical Exemption. State type and section number: Class 1 (§15301) and Class 2 (§15302)
- ☐ Statutory Exemptions. State code number: §21080.21

Reasons why project is exempt:

The lift station improvements are for the replacement and reconstruction of existing facilities which are exempt under §15301 and §15302. There are no cumulative impacts, significant effects on the environment, impacts to historic resources, hazardous waste sites, nor any other exceptions. A statutory exemption (§21080.21) also applies for replacement or relocation of pipelines one mile in length constructed within public streets, highways, or any other public right-of-way. (See attached Supporting Documentation)

Lead Agency

Contact Person: Michael J. Minkler

Area Code/Telephone/Extension: 209-754-3001

If filed by applicant:

1. Attach certified document of exemption finding.
2. Has a Notice of Exemption been filed by the public agency approving the project? ☒ Yes ☐ No

Signature:  Date: July 28, 2022 Title: General Manager

☒ Signed by Lead Agency ☐ Signed by Applicant

Authority cited: Sections 21083 and 21110, Public Resources Code.
Reference: Sections 21108, 21152, and 21152.1, Public Resources Code.

Date Received for filing at OPR: _____

NOTICE OF EXEMPTION
SUPPORTING DOCUMENTATION

Calaveras County Water District
Lift Station 12 & 13 Force Main Bypass and Lift Station 6, 8, 15 & 18 Renovations
(CIP #15076 / #15080)

Exemption:

This project as described and incorporated features presented herein has been determined by the lead agency to qualify for categorical and statutory exemptions in conformance with California Environmental Quality Act (CEQA). There are no cumulative impacts, significant effects on the environment, impacts to historic resources, work occurring within hazardous waste sites, nor any other exceptions noted.

The following Categorical Exemptions are identified:

- Existing Facilities (§15301/Class 1). This exemption consists of the operation, repair, maintenance, permitting, leasing, licensing or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of use beyond that existing at the time of the lead agency's determination. It specifically includes existing facilities for publicly-owned utilities used to provide electric power, sewerage, or other public utility services; existing highways, streets, gutters, and similar facilities.
- Replacement or Reconstruction (§15302/Class 2). This exemption consists of replacement or reconstruction of existing structures and facilities where the new structure will be located on the same site as the structure replaced and will have substantially the same purpose and capacity as the structure replaced. It specifically includes replacement or reconstruction of existing utility systems and/or facilities involving negligible or no expansion of capacity.

The following Statutory Exemption is identified:

- Other Statutory Exemptions (§15302). Any project of less than one mile in length within a public street or highway or any other public right-of-way for the installation of a new pipeline or the maintenance, repair, restoration, reconditioning, relocation, replacement, removal, or demolition of an existing pipeline. For purposes of this section, "pipeline" includes subsurface facilities but does not include any surface facility related to the operation of the underground facility.

Project Description:

The goal of the of the project is to upgrade the existing lift stations (LS) and reduce risk by routing sewer flows away from lift stations located near Lake Tulloch (Figure 1) by:

1. Eliminating the existing 6-inch force main used to convey wastewater beneath Lake Tulloch between LS-8 and LS-12.
2. Reducing the risk of potential sewer spills by conveying wastewater flows away from stations located adjacent to and/or near Lake Tulloch, and

3. Reducing operations and maintenance requirements and potential hazards associated with existing lift station dry pits and electrical systems.

Specific project elements including replacing Lift Station 6, 8, 15 and 18 and installing two force mains. The longer force main will be 6-Inch PVC and used to pump wastewater from LS-6 to L-40 (including along a portion of O'Byrnes Ferry Road). The shorter force main will be 4-inch PVC and used to pump wastewater from LS-8 to LS-6.

Location:

Easements along portions of those roadways illustrated in **Figures 1-5** in Copper Cove, Connor Estates and Poker Flat subdivisions and along O'Byrnes Ferry Road. The project encompasses areas within Copper Cove Association, Lake Tulloch Shores at Poker Flat Property Owners Association, Connor Estates Master Association, Calypso Bay Property Owners Association and utility companies including the Central Valley Independent Network (CVIN) and Calaveras Telephone Company (Cal-Tel).

Portions of Section 25, T1N, R12E and Portions of Section 30, 31 T1N, E13E, and a portion of the Rancheria Del Rio Estanislao Land Grant - Melones Dam USGS 7.5 minutes Quadrangle.

Incorporation by Reference:

A biological survey, cultural resources survey and geotechnical analysis were undertaken for the proposed project and are hereby incorporated by reference. All recommendations of those reports are incorporated into the project description and requirements for project implementation (**Attachment A**):

Augustine, Amy. February 22, 2020. *Technical Memorandum: Biological Analysis of the Lift Station 12 & 13 Force Main Bypass and Lift Station 6, 8, 15 & 18 Renovations (District CIP #151076 / #15080)*. Augustine Planning Associates, Inc.

Condor Earth. September 5, 2019. *Geotechnical Investigation Calaveras County Water District Copper Cove Force Main and Lift Stations Project*.

Lee & Ro, Inc. November 2019. *Final Preliminary Design Report: Lift Station 12 & 13 Force Main Bypass and Lift Station 6, 8, 15 & 18 Renovations (District CIP #151076 / #15080)*

Patrick, Ian. July 2, 2019. *Technical Memorandum Cultural Resources Investigation: Lift Station 12 & 13 Force Main Bypass and Lift Station 6, 8, 15 & 18 Renovations (District CIP #151076 / #15080)*. Patrick GIS Group, Inc.

Cultural Resources:

The Area of Potential Effects (APE) studied for the project are included in **Figures 4-5**. The study scope of work included a Central California Information Center of the California Historical Resources Information System records search, archival research, pedestrian survey and a letter report. Archival and records searches identified 8 cultural resources within 1/3 miles of the APE with none identified within the APE.

The California Native American Heritage Commission was notified and responded on to a request for a Sacred Lands File search. Results were negative. E-mails describing the proposed project were sent to individuals on the NAHC Native American Contacts list. Sara Dutschke Setchwaelo (lone Band Miwok) notified Patrick that the Cultural Committee would be reviewing the project map and details were forwarded. She requested a copy of the letter

report generated by the study. Debra Grimes, Calaveras Band of Mi-Wuk Indians, responded that she would share information directly with CCWD. Darrel Cruz (Washoe Tribe of Nevada and California) responded that the tribe had no concerns. Lawrence Wilson (Sheep Ranch California Valley Miwok) informed the surveyors as an interested party, but that he would not be consulting in an official capacity.

Surveys encompassed an area of 50 feet surrounding the identified pipelines and lift stations. All areas were surveyed expect that portion of the sewer line running beneath Tulloch Reservoir. All visible ground was inspected with emphasis on areas exposed by animal activity, human activity and environmental processes. No archaeological sites were identified and no further archaeological work is recommended at this time.

Despite efforts to identify cultural resources, there remains a possibility that resources may be uncovered during earth disturbing activities; therefore, the project consultants have recommended a preconstruction/tailgate training for construction personnel and the protocol for responding in the event of an inadvertent discovery of cultural resources or human remains. These conditions have been incorporated into the conditions of project approval.

Geotechnical Resources: Recommendations of the geotechnical report are summarized in Attachment B included in the conditions of project approval.

Biological Resources: Natural resources were identified through a review of databases and species lists from the United States Fish and Wildlife Service (USFWS), California Natural Diversity Database (CNDDDB), California Native Plant Society (CNPS) and CalFlora databases. Site surveys were conducted by foot on the following dates: 5/15/19 and 5/27/19, Surveys were conducted using q Canon Image Stabilizer 10 X 30 binoculars, Nikon D3300 digital camera (18-55mm and 70-300mm lens), and standard field and collection supplies.

The Project site, access areas and staging areas were surveyed for nests, whitewash, and droppings. All accessible tree cavities and burrows were investigated for signs of use. Trees were surveyed for nests (whether currently active or with potential to become active). Surveys were conducted on foot. Photos of representative vegetation were taken throughout the surveys. Where species were not readily identified in the field, plant specimens were inspected with a hand lens, sketched and, if necessary, collected and preserved then keyed in-house using a dissecting microscope and Jepson Manual.

Based on an analysis of the site and species lists, it was determined that the potential exists for nesting birds to occupy the site prior to construction, common and special status species could become trapped in stored materials and open trenches and measures to avoid such incidents should be taken, root zones of native oak trees are located within the proposed excavation areas and minimization measures to minimize destruction are proposed. Due to the proximity of the lake, measures also are included to protect water quality.

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Figure 1: Project Setting: **Subject Projects - Near-Term Force Main Improvements**

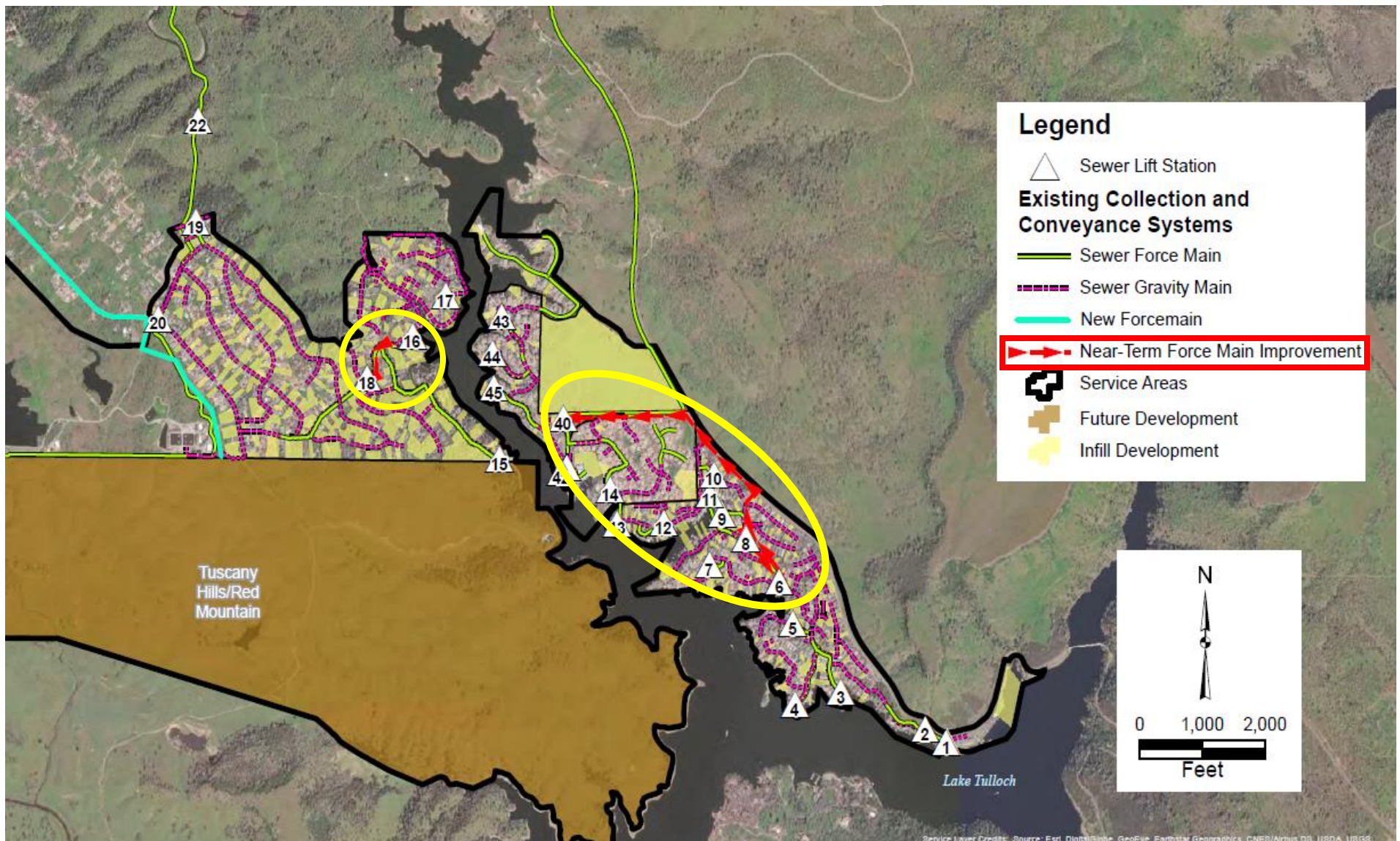


Figure 2: Close-Up Lift Stations 16, 18 - Copper Cove

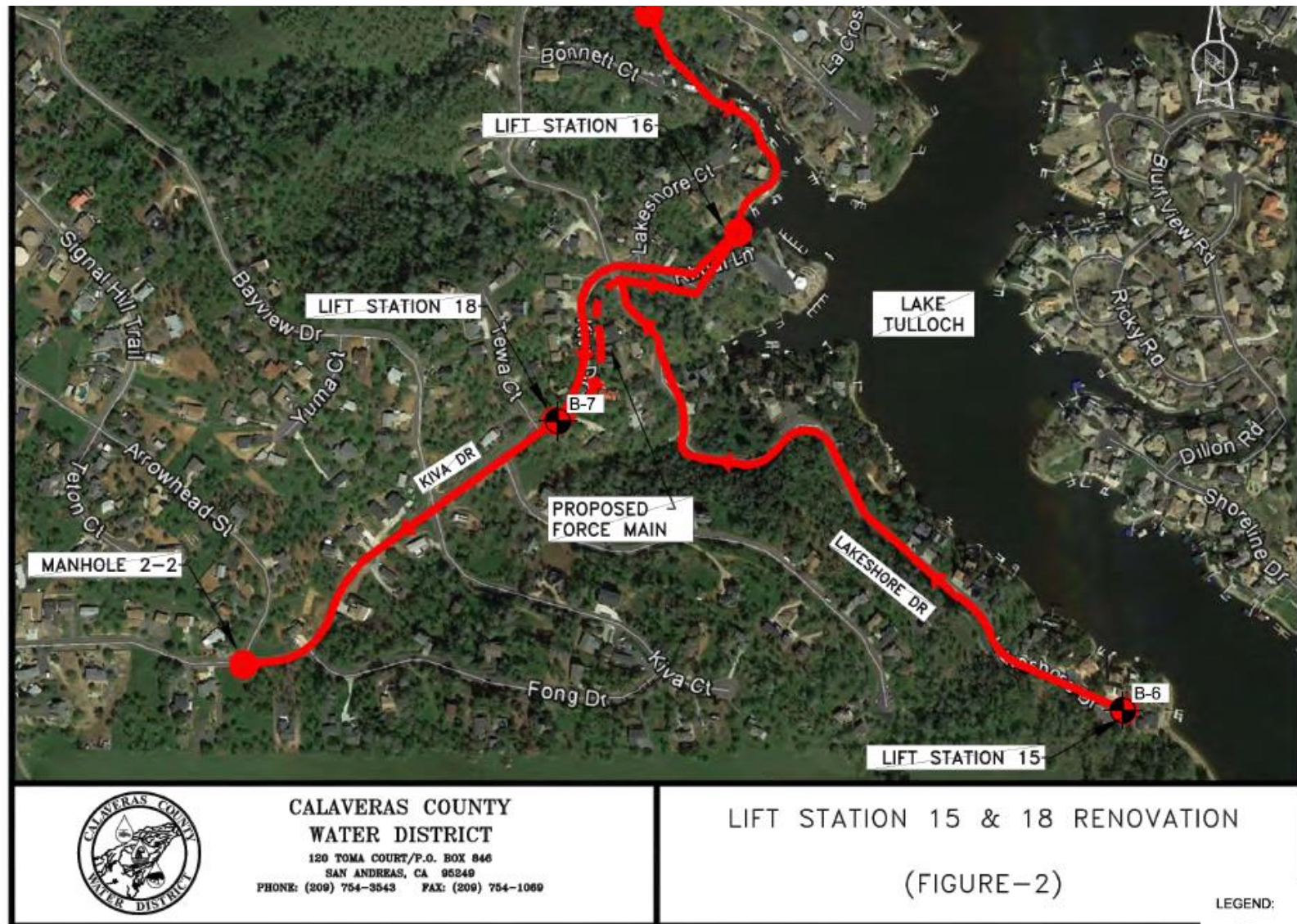


Figure 3: Lift Stations 6, 8, 12, 13 & 40 and Force Mains, O'Byrnes Ferry : Connor Estates, Calypso Bay, Poker Flat

Solid Line = Existing Mains Dotted Line = Proposed Relocated Force Main



Figure 4: Project Close-Up -Copper Cove – Lift Stations 16, 18



Figure 5: Project Close-Up – Connor Estates, Calypso Bay, Poker Flat Lift Stations 6, 8, 12, 13, 40; Force Mains and O’Byrnes Ferry Road





Figure 6: Area of Potential Effects Map - Cultural Resources

Attachment A

Conditions of Project Approval

Calaveras County Water District
Lift Station 12 & 13 Force Main Bypass and Lift Station 6, 8, 15 & 18 Renovations
(CIP #15076 / #15080)

The following features are hereby incorporated into the project description and conditions of the project approval

1. The project shall comply substantially with the Project Description. Substantial deviations may trigger additional environmental review.
2. Actual construction and excavation activities undertaken in conjunction with the project shall not be undertaken over a length of more than ½ miles at any time (PRC 21080.23)
3. Contractors undertaking excavations shall immediately inform CCWD of the discovery of contaminated soils.
4. Prior to commencing work within the public roadways, the Contractor shall prepare a Traffic Access Management Plan to the Calaveras County Department of Public Works and the District's satisfaction and will, throughout project construction, implement a traffic access management plan to maintain emergency ingress, egress, and daily traffic flows throughout the Project boundaries. The access management plan should address public notification of upcoming construction, anticipated road closures, and detours (e.g., publication in local newspaper, electronic message boards, coordination with schools, fire houses). The District will coordinate road closures with affected Fire Departments and schools to ensure that emergency ingress and egress is addressed prior to and during land closures.
5. Rights-of-way shall be restored to pre-project conditions upon project completion.
6. CCWD agrees to comply with all conditions otherwise authorized by law imposed by the County Encroachment Permit as part of any applicable permitting process and required to mitigate potential impacts of the proposed project.
7. **Geotechnical.** All provisions of the geotechnical report prepared for this project (Condor. September 5, 2019. *Geotechnical Investigation Calaveras County Water District Copper Cove Force Main and Lift Stations Project*), as summarized in **Attachment B**, shall be implemented in accordance with the study.
8. **Environmental Awareness/Pre-Construction Training**
Construction bid packages and contractual requirements shall include a requirement for tail-gate training by the project's designated qualified biologist and cultural resource professionals. All contractors involved in site development and environmental specialists will attend a mandatory Environmental Awareness Training prior to any site disturbances. The program will address proper implementation of minimization and avoidance measures contained herein including, but not limited to:

- Nesting birds
- Avoiding inadvertent animal trapping
- Site maintenance
- Controlling invasive species
- Handling leaks and spills
- Fencing environmentally sensitive areas
- Native Oak Tree Protection measures (avoiding driplines, no equipment or materials storage in driplines, avoid cutting oak roots, avoid equipment damage to limbs, trunks, and roots of oaks trees; do not attach signs, ropes, cables or other items to trees)
- Cultural resources training to inform construction personnel of the types of cultural resources they may encounter, the laws protecting those resources, and the standard protocols to be implemented.
- Hazardous materials response

9. Unanticipated Cultural Resource Discoveries

If a cultural resource is discovered during construction activities, the construction contractor shall comply with the following provisions:

- A. The person discovering the cultural resource shall notify the District or the project's designated qualified cultural resource professional by telephone within 4 hours of the discovery or the next working day if the department is closed.
- B. When the cultural resource is located outside the area of disturbance, the project's designated qualified cultural resource professional shall be allowed to photodocument and record the resource and construction activities may continue during this process. On parcels of two or more gross acres, the area of disturbance includes building pads, driveways or utility lines, grading and vegetation removal areas, plus 100 feet.
- C. When the cultural resource is located within the area of disturbance, all activities that may impact the resource shall cease immediately upon discovery of the resource. All activity that does not affect the cultural resource as determined by site's designated qualified cultural resource professional may continue. The project's designated qualified cultural resource professional shall be allowed to conduct an evaluative survey to evaluate the significance of the cultural resource.
- D. When the cultural resource is determined to be not significant, the project's designated qualified cultural resource professional shall be allowed to photodocument and record the resource. Construction activities may resume after authorization from the project's designated qualified professional.
- E. When a resource is determined to be significant, the resource shall be avoided with said resource having boundaries established around its perimeter by the project's designated qualified cultural resource professional or a cultural resource management plan shall be prepared by the project's designated qualified professional to establish measures formulated and implemented in accordance with Sections 21083.2 and 21084.1 of the

California Environmental Quality Act (CEQA) to address the effects of construction on the resource. The project's designated qualified cultural resource professional shall be allowed to photodocument and record the resource. Construction activities may resume after authorization from the project's designated qualified cultural resource professional. All further activity authorized by this permit shall comply with the cultural resources management plan.

For the purposes of implementing this measure, a "qualified cultural resource professional" is an individual (e.g., historian or archaeologist) meeting the Secretary of the Interior's Qualification Standards.

A "cultural resource" is any building, structure, object, site, district, or other item of cultural, social, religious, economic, political, scientific, agricultural, educational, military, engineering or architectural significance to the citizens of Tuolumne County, the State of California, or the nation which is 50 years of age or older or has been listed on or is eligible for listing on the National Register of Historic Places, the California Register of Cultural Resources, or any local register. Examples of prehistoric resources may include stone tools and manufacturing debris; milling equipment such as bedrock mortars, portable mortars, and pestles; darkened or stained soils (midden) that may contain dietary remains such as shell and bone; as well as human remains. Historic resources may include burial plots; structural foundations; mining spoils piles and prospecting pits; cabin pads; and trash scatters consisting of cans with soldered seams or tops, bottles, cut (square) nails, and ceramics

10. Human Remains

If human remains, burial, cremation or other mortuary features are uncovered during construction activities; upon discovery, secure the location, do not touch or remove remains and associated artifacts; do not remove associated spoils or go through them; document the location and keep notes of activity and correspondence. All work within 100 feet of the discovery shall stop until the County Coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the California Native American Heritage Commission to obtain the Most Likely Descendent (MLD) and follow state law (PRC 5097.9 et seq. and Health and Safety Code 7050.5(c)-7054.1 and 8100 et seq.). No further work or disturbance shall occur within 100 feet until all of the preceding actions, as applicable to the discovery, are implemented and completed. Preserve associated spoils without further disturbance, do not touch or remove remains or associated artifacts, document the location and maintain notes of activity and correspondence. Preservation *in situ* is the preferred treatment of human remains and associated burial artifacts. [Public Resources Code Sections 5097.94, 5097.98 and Health and Safety Code Section 7050.5(c) and Section 15064.5 of the California Code of Regulations implementing the California Public Resources Code, Sections 21000-21177

11. Avoid Inadvertent Animal Trapping During Construction

To avoid inadvertently trapping special status or common animal species during construction, all excavated steep-walled holes or trenches more than two feet deep shall be covered at the end of each working day with plywood or similar material, or provided with one or more escape ramps constructed of earth fill or wooden planks, or equivalent, at each end of the trench. Before such holes or trenches are filled, they will be thoroughly inspected for trapped animals. If at any time a trapped animal is discovered, the contractor shall place an escape ramp or other appropriate structure to allow the animal to escape. Alternatively, the contractor shall contact the project biologist or California Department of

Fish and Wildlife for assistance. Similarly, stored pipes or other materials providing potential cover for animals will be inspected prior to installation or use to ensure that they are unoccupied.

12. Food and Trash Disposal

All food and food-related trash will be enclosed in sealed trash containers at the end of each workday and removed completely from the construction site every day to avoid attracting wildlife.

13. Construction Hours

Project construction shall be limited to 7:00 a.m. to 7:00 p.m. unless an emergency exists

14. Pre-Construction Bird/Raptor Survey

Prior to construction occurring between February 1st and August 30th (e.g., excavation, ground disturbance, or vegetation removal) a preconstruction survey for nesting birds will be conducted in accordance with the CDFW guidelines and a no-disturbance buffer will be established, if necessary.

If equipment staging, site preparation, vegetation removal, grading, excavation or other project-related construction activities are scheduled during the avian nesting season (generally February 1 through August 30), a focused survey for active nests would be conducted by a qualified biologist within 15 days prior to the beginning of project-related activities.

Surveys shall be conducted in all suitable habitat in the Biological Study Area.

If an active nest is found, the bird shall be identified to species and the approximate distance from the closest work site to the nest estimated. No additional measures need be implemented if active nests are more than the following distances from the nearest work site: (a) 300± feet for raptors; or (b) 75± feet for other non-special-status bird species. Disturbance of active nests shall be avoided to the extent possible until it is determined that nesting is complete and the young have fledged. For species protected under the California Fish and Game Code (CFGF), if active nests are closer than those distances to the nearest work site and there is the potential for bird disturbance, CDFW will be contacted for approval to work within 300± feet of raptors, or 75± feet of other non-special-status bird species.

15. Native Oak Protection

Throughout project construction, for native oak trees greater than 5" diameter at breast height (DBH), to be retained, to the maximum extent feasible:

- Limit ground-disturbing activities to outside the dripline of native oaks and preferably outside 1-1/2 times the dripline;
- No storage equipment, supplies, vehicles, debris, construction wastewater, paint, stucco, concrete or any other clean-up waste, and temporary or permanent structures shall be placed within the driplines;
- Use boring, rather than trenching, within driplines

- Avoid equipment damage to limbs, trunks, and roots of oaks trees
- Do not attach signs, ropes, cables or other items to trees

17. Best Management Practices (BMPs) to Protect Water Quality (Including NOI/NPDES/SWPPP)

- The Contractor shall prepare an Erosion Control Plan for implementation for any construction to take place between October 15 and May 15 of any year. In the absence of such an approved plan, all construction shall cease on or before October 15, except that necessary to implement erosion control measures. If necessary, the plan shall be submitted to the County Public Works Department (or District) for review and approval.
- Submit to the State Water Resources Control Board Storm Water Permitting Unit, a Notice of Intent (NOI) to obtain coverage under the General Construction Activity Storm Water Permit - California's National Pollution Discharge Elimination System (NPDES) general permit for construction related storm water discharges for the disturbance of one acre or more. Disturbances of less than one acre may also require an NOI for coverage under the NPDES General Permit for construction-related storm water discharge and the State Water Resources Control Board Permitting Unit shall be contacted for determination of permit requirements. Commercial and Industrial developments may require an NOI even if less than one acre is to be disturbed. Obtain coverage or an exemption from these requirements. [Federal Water Pollution Control Act, Section 401, California Clean Water Act]. The permit may include preparation of a Stormwater Pollution Prevention Plan (SWPPP).
- Prior to implementing staging, construction, or ground disturbing activities: Install temporary silt fencing, fiber rolls, or equivalent erosion and sediment control devices as necessary to protect water quality. Silt fencing or other materials, as required, will be installed consistent with the applicable water quality requirements specified in the Project's Storm Water Pollution Prevention Plan (SWPPP) or Water Pollution Control Plan (WPCP). Fencing or other erosion control materials or devices shall be shown on the final construction documents. These areas will be monitored by the project manager throughout construction.
- No construction-related materials, equipment, trash or other related debris shall be allowed, stored or staged within 50 feet of the lake. Only equipment and materials actively in use shall be allowed within 50 feet of the lake unless otherwise approved by the District.

18. Minimize the Spread of Invasive Plant Species

Throughout project construction:

- All hay, straw, hay bales, straw bales, seed, mulch or other material used for erosion control on the project site shall be free of noxious weed¹ seeds and propagules (Food and Agriculture Code Sections 6305, 6341 and 6461).
- All equipment brought to the project site shall be thoroughly cleaned of all dirt and vegetation prior to entering the site to prevent importing noxious weeds and shall be cleaned of all dirt and vegetation prior to exiting the site to prevent exporting noxious weeds. (Food and Agriculture Code Section 5401).

All material brought to the site, including rock, gravel, road base, sand, and topsoil, shall be free of noxious weeds² and propagules. (Food and Agriculture Code Sections 6305, 6341 and 6461).

19. Access to private property. In the case of private rights-of-way over private property, receive from underlying property owner(s) permission for access to the property. *CCWD will obtain permission to access all private rights-of-way over private property prior to accessing the property*

¹ Noxious weeds are as defined in Title 3, Division 4, Chapter 6, Section 4500 of the California Code of Regulations and the California Quarantine Policy – Weeds (Food and Agriculture Code, Sections 6305, 6341, and 6461).

² Ibid.

Attachment B

Geotechnical Report Conclusions and Recommendations

**GEOTECHNICAL INVESTIGATION
CALAVERAS COUNTY WATER DISTRICT
COPPER COVE FORCE MAIN AND
LIFT STATIONS PROJECT**

Prepared for
**Calaveras County Water District
c/o Mr. James Pollock
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Sacramento, CA 95826
916.631.0111**

Prepared by
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188 Frank West Circle, Suite I
Stockton, California 95206
209.234.0518**

**September 5, 2019
Condor Project No. 7596**

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7.0 CONCLUSIONS AND RECOMMENDATIONS

Condor concludes that the improvements described in Section 3.0 may be constructed as proposed when the general intent of the recommendations that follow are implemented for design and during construction.

7.1 SEISMIC AND GEOLOGIC HAZARDS

Condor concludes that there are no significant seismic and geologic hazards for this project that require remediation.

The site is not located in an Alquist-Priolo Earthquake Fault Zone (Bryant and Hart, 2007). Therefore, ground displacement from surface rupture and the associated potential for structural damage and unsafe conditions is not considered a significant hazard for the project, and no mitigation is warranted.

The potential for significant ground shaking from earthquakes is low. We used the internet based Probabilistic Seismic Hazards Assessment (USGS 2012/2015 IBC) to evaluate the Site Class C, Very Dense Soil and Soft Rock, which best represents the site conditions. A copy of the seismic evaluation output for two (2) locations near the project is provided in Appendix C for design of above-ground structures.

Because the peak ground acceleration (PGA) is less than 0.3g, Condor concludes that no seismic increment in addition to active (or at-rest) pressures is required to design retaining walls or buried structures.

Based on our site investigation and evaluation, Condor concludes that the potential for liquefaction occurring at the site is negligible.

Based on our observations and evaluation, Condor concludes that there is low expansive soil at the site, and that the potential for movements to the proposed foundations and pipe systems from shrink and swell of expansive soil is negligible, and does not warrant specific remedial actions.



7.2 EARTHWORK

7.2.1 Site Preparation

Site preparation should be performed for all areas to be excavated, areas to receive fill, and areas to receive improvements. Site preparation includes stripping the ground surface of vegetation or waste debris and demolition/removal of existing surface and subsurface improvements. Site preparation operations should extend at least 5 feet beyond the limits of new fill or improvements (where possible). Any vegetation and organic topsoil with more than 2 percent organic material by dry weight should be removed. The exposed ends of pipes removed (if encountered) should be capped. Condor anticipates that stripping vegetation to a depth of 3 inches should be adequate in native areas, plus additional depth where roots over 1/2-inch in diameter are encountered. Site preparation may also include mechanical or manual separation of tree roots from material to be used as backfill or engineered fill.

The Geotechnical Engineer or qualified inspector should observe and approve the prepared site prior to any excavation, subgrade preparation, and placement of fill or improvements.

7.2.2 Excavations

The Contractor shall be responsible for the stability of all temporary excavations and should comply with applicable CalOSHA regulations (California Construction Safety Orders). A competent person shall determine the soil type and requirements for temporary cutslope inclinations during excavation. All open cuts should be regularly monitored for evidence of incipient stability failures.

A detailed excavation plan should be developed by the contractor based on the data provided in this report.

7.2.3 Subgrade Preparation

Soil loosened during site preparation and excavation, or any other soft or loose soil remaining after excavation and beneath proposed fills and improvements, should be removed and replaced with properly compacted engineered fill. Soft ground conditions are not anticipated, but may occur along the proposed improvements where there is a natural depression in the ground surface. Subgrade preparation in these areas should include over-excavation and recompaction of at least the top 1 foot of existing soil. Subgrades should be approved by the Geotechnical Engineer prior to compacting and covering them.

Following approval by the Geotechnical Engineer, subgrades or excavated surfaces beneath fill or improvements should be scarified to a depth of 6 inches, and compacted to at least 90 percent compaction (based on ASTM Test Method D-1557). Subgrades beneath vehicular pavement areas should be compacted to at least 95 percent compaction. Scarification is not required in the bottom of pipe trenches.

Scarification, moisture conditioning, and recompaction of subgrades that become dry and/or disturbed should be performed. The Geotechnical Engineer should approve all subgrades before they are covered by fill or improvements.

Subgrades that expose weathered, competent, bedrock that is firm and stable does not require scarification and compaction. However, where excavation has loosened the surface or left loose materials, the materials should be removed, or where loose material does not exceed 6 inches in thickness, compacted in-place.



7.2.4 Engineered Fill

Engineered fill should have less than 2 percent by dry weight of vegetation and deleterious material and should meet the gradation requirements presented in the following table:

Sieve Designation	Minimum Percent Passing by Dry Weight
6-inch square	100
4-inch square	90
0.75-inch square	70
US No. 4	60

The existing material excavated from the project site may be used as engineered fill and trench backfill. See Section 8.0, Construction Considerations for recommendations on re-use of excavated materials. The Geotechnical Engineer should approve all fill material for use prior to placement.

Engineered fill meeting the requirements given in the preceding paragraphs should be uniformly moisture conditioned and compacted to at least 90 percent compaction (ASTM Test Method D-1557). All permanent fill slopes should have a maximum inclination of 2H:1V if they are no higher than 10 feet. The Geotechnical Engineer should be contacted for recommendations if fill slopes higher than 10 feet are required.

Engineered fill is suitable to construct the access driveway slope on a slope of 4:1 from LS-18 to Tewa Court. An all-weather surface should be considered if year round access is desirable.

7.3 SURFACE DRAINAGE AND EROSION CONTROL

Surface drainage should be provided to reduce ponding and drain surface water away from buried structures, foundations, slabs-on-grade, and edges of pavements. Surface runoff should be directed toward suitable collection or discharge facilities. We recommend surface gradients of at least 2 to 4 percent be used for paved and unpaved surfaces, respectively. Gradients of 1.5 percent may be used for paved surfaces where horizontal drainage distances are less than 20 feet.

We recommend that approved temporary and permanent erosion control measures be implemented to reduce erosion and comply with applicable State, County and/or agency requirements. Soil on graded or cut slopes should be fertilized, mulched, and planted as soon as possible after grading with erosion-resistant vegetation. These plants should be watered lightly at appropriate intervals until growth is established.

7.4 FOOTINGS AND THRUST BLOCKS

Conventional shallow spread footings should be embedded at least 18 inches below the lowest adjacent soil subgrade. We define soil subgrade as the prepared subgrade beneath floor slabs, pavement, aggregate layers, and landscape soil. Footings supporting proposed near-surface and at-grade improvement may be designed using a net allowable vertical bearing capacity of 3,000 pounds per square foot (psf) for dead plus normal duration live load for footings that lie a minimum of 3 feet below existing grade. Shallower footings may be designed for 2,000 psf. Matt foundations (including structural slab-on-grade) with a minimum embedment depth of 18 inches may be designed for 1,500 psf for a maximum length dimension of 15 feet. The allowable bearing values may be increased by 1/3 for total conditions, including wind and seismic.



We assume that buried lift station structures would be buried at least five feet below grade or deeper, and founded in weathered bedrock. If so, net allowable vertical bearing pressure may be increased to 4,000 psf. We would also expect that such structures may have flat, slab-on-grade footprints, which is acceptable.

Concrete for foundations, including mat foundations and buried lift station structures, may be poured directly on native ground or engineered fill prepared in accordance with Section 7.2. A leveling course of sand or aggregate base rock may be used for construction convenience without any reduction to the provided vertical bearing capacities. The above allowable bearing capacities have a factor of safety of 2, and ultimate values may be calculated using the factor of 2.

Thrust blocks may be designed for a lateral bearing capacity of 1,000 psf when the top of block is a minimum of 3 feet below existing or final grade. The above allowable bearing capacities have a factor of safety of 2, and ultimate values may be calculated using the factor of 2.

For resistance to lateral loads, base friction resistance may be calculated using a friction coefficient of 0.35 for footings and thrust blocks. Passive resistance may be calculated using an equivalent fluid unit weight of 300 pounds per cubic foot for shallow footings founded a minimum of 18 inches below existing or final grade. This friction coefficient and equivalent fluid unit weight may be used together without reduction. Gaps between the footing thrust blocks, or keyway and the adjacent ground, should be completely backfilled using engineered fill, concrete or lean cement slurry. Passive resistance contributed by the top 12 inches of soil should be neglected unless a concrete slab-on-grade or pavement covers the ground. The passive equivalent fluid weight values assume a 1/2 inch maximum deflection at the top of the retaining walls and buried thrust blocks. The above allowable bearing capacities have a factor of safety of 2, and ultimate values may be calculated using the factor of 2.

The Geotechnical Engineer or qualified inspector should check all footing excavations prior to placing steel and casting concrete. Any unsuitable, loose, or soft soil encountered at footing bottoms, as determined by the Geotechnical Engineer during construction, should be removed and replaced by concrete or lean cement slurry.

7.5 RETAINING WALLS, BURIED VAULTS, AND LIFT STATIONS

We understand retaining walls are currently not planned. The following section may be used if they are included at a later date.

Vertical walls should be designed to resist static, lateral earth pressures, and surcharge pressures. Active earth pressures may be used for design of unrestrained retaining walls where the top of the wall is free to translate or rotate. Rigid walls should be designed for restrained conditions. We recommend using the table that follows to calculate static lateral earth pressures for various back slope inclinations.

Maximum Backslope Inclination	Unrestricted Equivalent Fluid Unit Weight (pounds per cubic foot)		Restrained Equivalent Fluid Unit Weight (pounds per cubic foot)	
	Drained Conditions	Undrained Conditions	Drained Conditions	Undrained Conditions
Level	35	80	50	90
3:1	45	85	60	95
2:1	55	90	70	100



The equivalent fluid unit weights should extend from the ground surface down to the bottom of the footing to calculate pressures. Subsurface drainage systems should be provided behind walls where walls are designed for drained conditions. Subsurface drainage may consist of permeable granular materials, including 3/8-inch “chip” rock, or manufactured drainage system.

Surcharge loads imposed by stockpiles or other sources within a distance of H of the back of the wall, or from heavy compaction equipment operating within a distance of one-third the backfill height should be considered on a case-by-case basis. The above values do not include loading from temporary earthwork or compaction equipment.

7.6 UNDERGROUND UTILITY TRENCHES

Unless concrete bedding is required around utilities, pipe bedding should consist of sand with a sand equivalent of at least 30 or the pipe manufacturer’s requirements, or permitting agency standards, whichever is more restrictive. The pipe bedding should extend from 6 inches below the invert of the pipe to 1 foot above the crown of the pipe. The pipe bedding material should be compacted to a minimum of 90 percent relative compaction or the manufacturer’s recommendations if more stringent.

Trench backfill above the pipe bedding zone should be placed in the same manner as required in Section 7.2.4, Engineered Fill Placement. On-site fill soils and “non-organic” native soils may be used as backfill in trenches above the pipe bedding. Utility trench backfill should be placed in layers not exceeding a loose lift thickness of 8 inches, uniformly moisture conditioned, and compacted to a minimum of 90 percent relative compaction.

Compaction criteria for trench backfill above the bedding zone may be decreased to 85 percent relative compaction in landscape areas that are at least 5 feet beyond structural improvements, except in areas overlain by pavements, sidewalks, or other hardscapes. In landscape areas overlain by pavements, sidewalks, or other hardscapes, we recommend that the trench backfill be compacted to a minimum of 90 percent relative compaction.

8.0 CONSTRUCTION CONSIDERATIONS

Condor concludes that the proposed improvements described in Section 2.0, Project Description, may be constructed as proposed with the following considerations:

- The excavatability of the ground should be correlated with the conditions described in Sections 5.0 and 6.0.
- Hard bedrock that is difficult to excavate with a backhoe, and that may require a hydraulic hammer for excavation, may be encountered. While hard rock is generally not anticipated within the anticipated excavation depths for pipelines, it remains a potential condition. If footings require a keyway where hard bedrock is encountered, the Geotechnical Engineer may provide recommendations for doweling of footings into bedrock as an alternative design. In these cases, minimum footing embedment may be reduced per the Engineer.
- Excavated material in cut ground (not previously engineered fill) may need to be processed in order to meet the engineered fill requirements described in Section 7.2.4, Engineered Fill. Rock fragments, and moderately weathered bedrock that is strong, hard, and difficult to crush may be encountered. Therefore, it is not uncommon for materials that are excavatable to require processing to comply with Engineered Fill criteria. The contractor should be prepared to remove hard rock particles larger than 4 to 6 inches. The amount of the material that will exceed the 4 to 6 inches is undeterminable. Additional information regarding our opinions is provided in Section 6.1.



9.0 ADDITIONAL SERVICES

The geotechnical recommendations and design criteria given in this report are sensitive to the location, design details, and any special requirements of the new construction. Condor should review the geotechnical elements of project grading, plans, and specifications prior to construction bidding to check that the intent of our recommendations has been incorporated into these project documents. If Condor does not review the geotechnical elements of the plans and specifications, the reviewing geotechnical engineer should thoroughly review this report and concur with its conclusions and recommendations or provide alternative recommendations.

Because surface conditions vary across the site, geotechnical recommendations used as a basis for construction contracting are sensitive to the possible need for adjustment in the field. The adjustments are dependent upon conditions revealed during construction that could previously only be assumed based upon limited site exploration. Since the intent of the recommendations given in this report are best understood by a Condor representative, we recommend that field observations and testing during earthwork and construction be performed by Condor. If Condor does not provide the field observations and testing, the geotechnical engineer of record should thoroughly review this report and concur with its conclusions and recommendations or provide alternative recommendations.

The geotechnical engineer or qualified representative should be on-site to observe and advise during site preparation, grading and earthwork, paving, and construction of foundations and slabs-on-grade. These observations should be supplemented with periodic density and compaction testing of subgrade and engineered fills to evaluate conformance with the recommendations contained in this report. It is important that foundation excavations be checked after cleaning and immediately prior to concrete placement to verify their suitability.

10.0 LIMITATIONS

The geotechnical conclusions and recommendations presented in this report are intended for planning, design, and construction of the planned CCWD Copper Cove Force Main and Lift Stations Project as described in this report. These conclusions and recommendations may be invalid if:

- the design assumptions change;
- the report is used for another site or project;
- the encountered soil or groundwater conditions are different than those anticipated in this report;
- the recommendations contained in this report are not followed; or
- any other change is implemented that materially alters the project.

This report was prepared in accordance with the generally accepted standards of geotechnical engineering practice existing in Calaveras County at the time it was written. No other warranty, express or implied, is made. It is the owner's responsibility to see that all parties to the project, including the designer, contractors, subcontractors, etc., are made aware of this report in its entirety.

The analyses and recommendations submitted herein are based upon subsurface and surface soil data provided in this report, and on general field observations made during site visits and geologic mapping. Subsurface exploration of any site is necessarily confined to selected locations and conditions may, and often do, vary between and around these locations. Should varied conditions come to light during construction on the project site, additional exploration, testing, or analysis may be required. Any person concerned with this project who observes conditions or features of the site or its surrounding areas that are different from those described in this report, should report them immediately to Condor for evaluation.

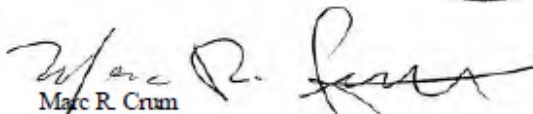


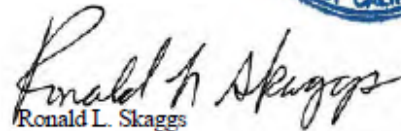
It should be noted that changes in the standards of practice in the field of geotechnical engineering, changes in site conditions (such as new excavations or fills), new agency regulations, or modifications to the proposed project are grounds for this report to be professionally reviewed. In light of this, there is a practical limit to the usefulness of this report without critical professional review. It is suggested that two years be considered a reasonable time for the usefulness of this report.

We trust this report provides the information required at this time. Please call with any questions.

Respectfully submitted,
CONDOR EARTH




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