
**CEQA INITIAL STUDY
FOR THE
WILLOW CREEK COMMUNITY SERVICES DISTRICT
BRANNAN MOUNTAIN WATER STORAGE TANK PROJECT
WILLOW CREEK, CALIFORNIA**

OCTOBER 21, 2020

APPLICANT FOR STATE WATER REVOLVING FUNDS:

**WILLOW CREEK COMMUNITY SERVICES DISTRICT
135 WILLOW ROAD, WILLOW CREEK, CA 95573**

CEQA LEAD AGENCY:

WILLOW CREEK COMMUNITY SERVICES DISTRICT

PREPARED BY:

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GENERAL INFORMATION ABOUT THIS DOCUMENT

The Willow Creek Community Services District (CSD) has prepared this Initial Study with Mitigated Negative Declaration for the proposed project located in Willow Creek, California. The Willow Creek CSD is the lead agency under the California Environmental Quality Act (CEQA). This document describes the project, what alternatives have been considered for the project, how the existing environment could be affected by the project, the potential impacts of each of the alternatives, and any proposed avoidance, minimization, or mitigation measures. The Initial Study will be circulated to the public and governmental agencies for 30 days for comment.

The Drinking Water State Revolving Fund (DWSRF) program is a federal-state partnership to help ensure safe drinking water. Created by the 1996 Amendments to the Safe Drinking Water Act (SDWA), the program provides financial support to water systems and to State safe water programs (<https://www.epa.gov/drinkingwatersrf>). In California, the State Water Resources Control Board administers the DWSRF program.

As part of the DWSRF application process, applicants are required to submit an Environmental Package, applicable CEQA documents, and additional supporting technical reports. Typically, the applicant is the CEQA Lead Agency and the State Water Resources Control Board is a CEQA Responsible Agency. As a Responsible Agency, the State Water Resources Control Board must make its own findings using information provided by the Lead Agency before funding a project. During the environmental review process, the DWSRF Environmental Review Staff will review the documents to determine adequacy of environmental information and compliance with state and federal environmental laws and regulations. The environmental review process must be completed prior to the State Water Resources Control Board financing approval and project construction.

The DWSRF Program is partially funded by the United States Environmental Protection Agency and therefore all projects financed by the DWSRF Program must comply with the federal cross-cutting requirements. Cross cutting requirements are those that are required by any entity that receives federal money - be they states, organizations, municipalities. These regulations cut across all programs touched by the federal government. The State Water Resources Control Board has the authority to initiate consultation with the relevant federal agencies having jurisdiction over the federal environmental laws and regulations. Any issues raised by the relevant federal agencies must be resolved prior to completing the State Water Resources Control Board environmental review process and financing approval.

PERMITS AND APPROVALS NEEDED

State Water Resources Control Board

As part of the DWSRF application process, applicants are required to submit an Environmental Package, applicable California Environmental Quality Act (CEQA) documents, and additional supporting technical reports. The environmental review process must be completed prior to the State Water Board financing approval. The Division of Drinking Water will also need to approve the proposed project.

Regional Water Board

Construction General Permit

Any construction project that disturbs at least one acre of land requires enrollment in the State's construction general permitting program under the National Pollutant Discharge Elimination System and implementation of a storm water pollution prevention plan.

County

Permits may be required by Humboldt County, such as a building permit, grading permit, encroachment permit, or a traffic control plan.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a “Potentially Significant Impact” or “Potentially Significant Unless Mitigated” as indicated by the checklist on the following pages.

- | | | |
|--|--|---|
| ☐ Aesthetics | ☐ Agricultural/Forest Resources | ☐ Air Quality |
| ☒ Biological Resources | ☒ Cultural Resources | ☐ Energy |
| ☒ Geology / Soils | ☐ Greenhouse Gas Emissions | ☐ Hazards & Hazardous Materials |
| ☐ Hydrology/Water Quality | ☐ Land Use/Planning | ☐ Mineral Resources |
| ☐ Noise | ☐ Population/Housing | ☐ Public Services |
| ☐ Recreation | ☐ Transportation | ☐ Tribal Cultural Resources |
| ☐ Utilities/Service Systems | ☐ Wildfire | ☐ Mandatory Findings of Significance |

PROPOSED MITIGATED NEGATIVE DECLARATION

This proposed Mitigated Negative Declaration (MND) is included to give notice to interested agencies and the public that it is the Lead Agency's intent to adopt an MND for this project. This does not mean that the Lead Agency's decision regarding the project is final. This MND is subject to change based upon comments received by interested agencies and the public.

The Lead Agency has prepared an Initial Study for this project, and pending public review, expects to determine from this study that the proposed project would not have a significant effect on the environment

Determination. (To be completed by the Lead Agency.)

On the basis of this initial evaluation:

- ☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.



Susan O'Gorman, General Manager
Willow Creek Community Services District

12/18/2020

Date

PROJECT DESCRIPTION

The State Water Resources Control Board (SWRCB) Division of Financial Assistance (DFA) has funded planning phase activities to address drinking water system deficiencies for the Willow Creek Community Services District CSD. The work is being conducted under Proposition 1 Technical Assistance and Support Program funding through the SWRCB, Agreement No. D16-12810, Work Plan No. 5137.

California Rural Water Association (CRWA) is executing the Work Plan on behalf of the Willow Creek Community Services District CSD. The Work Plan calls for expansion of their water storage capacity by construction of a new water storage tank in Willow Creek, Humboldt County, California. Willow Creek CSD currently serves treated water to an estimated 1,743 people with approximately 934 metered connections and a maximum day water demand of 1,800,000 gallons. The distribution system currently features approximately 24 miles of pipelines ranging in diameter from 4 to 12 inches. The water system has a storage capacity of 1,008,000 gallons spread out over several tanks in 5 pressure zones.

Additional storage capacity is needed for this water distribution system to work optimally. Additional storage will move the system closer to meeting minimum storage requirements under California regulations, Title 22 Section 64554, and it will add resiliency to the system by providing the only storage west of the Trinity River and north of Willow Creek in the northwest part of the town. Additional storage capacity will also allow the District's groundwater supply pumps to operate cost-effectively primarily during non-peak hours.

Willow Creek CSD is proposing to construct and operate a tank in Pressure Zone 1. The proposed storage tank will be constructed in the middle of an unaddressed, 0.5-acre parcel (Assessor Parcel Number 522-492-011-000) that is owned by Willow Creek CSD. The tank will be constructed of bolted steel plates, and will be painted to blend with the surrounding tree colors. The steel tank will be constructed on a concrete ring wall foundation on an excavated and graded level area. In addition, the proposed project includes on-site pipelines, valves (above and below ground), drain lines, storm drain culverts, chain link fencing and gate, and asphalt pavement around the tank.

The final tank size will be determined after several factors are considered, including available funds. Two sizes of steel tank are analyzed in this Initial Study: a 72-foot diameter tank that can store 650,000 gallons of water; and a 60-foot diameter tank that can store 409,000 gallons (37% reduction in volume). The smaller tank fits on the same graded pad with similar on-site pipes and appurtenances, although the smaller tank will have a larger asphalt surface around the perimeter. The smaller tank would cost less to construct than the larger tank. The larger tank is better at achieving project goals. The reduced volume will still provide more storage capacity that moves the water system toward meeting regulatory requirements for storage, will still provide needed resiliency in the northwest part of town, and will help optimize groundwater pumping.

Earthwork is needed to construct the tank at the designed elevation. It will consist of clearing and grubbing existing vegetation, removing about 4,600 cubic yards of cut material in the hill slope, placing and compacting fill material to make a flat area, and hauling about 4,500 cubic yards of export (to an appropriate and permitted off-site disposal area). The existing access road (250 feet in length) between Brannan Mountain Road and the tank site will be widened and paved to a top width of 15 feet. The access road is located within a public utility easement and access easement that is approximately 40 feet wide and the entrance is along Brannan Mountain Road. The public utility easement is on a privately-owned 48-acre parcel (Assessor Parcel Number 522-492-012-000) that is adjacent to the parcel owned by Willow Creek CSD (the tank site).

Also proposed is a new water pipeline that connects the proposed water tank to the existing distribution system located at the intersection of Brannan Mountain Road and Stage Coach Lane. The proposed water pipeline is 12 inches in diameter and will be placed 36 inches below the existing surface of the ground. The pipeline will run for approximately 250 feet from the new tank to Brannan Mountain Road underneath the access road. Then, the pipeline will run for approximately 250 feet along the north shoulder of Brannan Mountain Road (and within the road right-of-way) to the northeast corner of the intersection of Brannan Mountain Road and Stage Coach Lane, where it will tie in to an existing 8-inch waterline. Disturbed areas will be seeded with native or ornamental vegetation, as appropriate. The total project footprint is about 0.6 acre: 0.5 acre for the tank site and 0.1 acre for the new water pipeline and widened access road.

PROJECT ALTERNATIVES

Different Tank Location

Other locations were considered for the proposed water storage tank. A different location would require the purchase or lease of land by Willow Creek CSD at a certain elevation, construction of an access road, and construction of a water pipeline to tie the new tank to the existing distribution system. In contrast, the proposed location has several advantages. Willow Creek CSD already owns the 0.5 acre project site, which was reserved for a future tank. This location already has an access road, although this road needs to be improved to conform to current access requirements. This location is conveniently close to existing pumps and waterlines in the distribution system. Finally, the 0.5-acre project site is west of the Trinity River and north of Willow Creek, providing the distribution system with storage capacity if the pipelines attached to the bridges should fail. A new tank location could have greater environmental impacts as well. Thus, this alternative is not feasible.

No-Build (No-Action) Alternative

The No-project Alternative would keep the water distribution system as it is, with no additional storage capacity. Willow Creek CSD would not receive any grant funds from the DWSRF. The existing system has inadequate capacity to comply with California regulations and has no capacity to serve a portion of the town under potential emergency conditions. The lack of additional water storage means that the electric pumps will continue to operate during peak hours, when electrical costs are higher. The No-project Alternative is not acceptable for these reasons.

ENVIRONMENTAL SETTING

The topography of the Project Area is a moderately sloping hillside that drops towards the southeast. The elevation ranges from approximately 610 feet to 760 feet above mean sea level. The Project Area is heavily forested with conifers. The tank site is obscured from public view by both the trees and the terrain. The project area is situated at the base of Brannan Mountain, which rises to 4,000 feet. Much of the surrounding land is national forest (Six Rivers National Forest). Brannan Mountain road is a paved two lane road with overhead transmission and distribution lines; this road provides access to residential estates from the Trinity River Highway (SR 96). To the east is the civic center of the town of Willow Creek, with the closest land uses being a strip mall, school, PG&E substation, and Caltrans maintenance station. Along the Trinity River is a large gravel quarry mercer (Fraser Co. Willow Creek Plant). National forest, residential estates, and open space are the land uses to the north and west.

EVALUATION OF ENVIRONMENTAL IMPACTS

This section identifies the environmental impacts of this project by answering questions from Appendix G of the CEQA Guidelines, the Environmental Checklist Form. All analyses take in to account the entire action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational, impacts.

Impacts are categorized as follows:

- **Potentially Significant Impact** is appropriate if there is substantial evidence that an effect is significant, or where the established threshold has been exceeded. If there are one or more “Potentially Significant Impact” entries when the determination is made, an Environmental Impact Report (EIR) may be required.
- **Less Than Significant with Mitigation Incorporated** applies where the incorporation of mitigation measures would reduce an effect from Potentially Significant Impact to a Less Than Significant Impact. Mitigation measures are prescribed to reduce the effect to a less than significant level.
- **Less Than Significant** applies when the project will affect or is affected by the environment, but based on sources cited in the report, the impact will not have an adverse effect. For the purpose of this report, beneficial impacts are also identified as less than significant. The benefit is identified in the discussion of impacts, which follows each checklist category.
- A **No Impact** answer is adequately supported if referenced information sources show that the impact simply does not apply to projects like the one involved. A No Impact Answer is explained where it is based on project-specific factors as well as general standards.

1. AESTHETICS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of public views of the site and its surroundings? If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

DISCUSSION

1 a-d) There is no designated scenic vista or State Scenic Highway in the vicinity of the Project. The nearest Scenic Highway is 50 miles to the north: Route 101, spanning from Del Norte Redwoods State Park to Crescent City. The nearest Wild and Scenic River is the Trinity Wild and Scenic River, which is about 2,000 feet to the east. The Project Area is 750 feet west of the Wild and Scenic corridor (which is a quarter-mile buffer from the river).

The Project Area is heavily forested with conifers and has mountainous terrain. The tank site is obscured from public view by both the trees and the terrain. The proposed waterline will be underground and will not be visible to the public. There are no applicable zoning laws. The proposed Project does not propose any new development, construction or physical change to the environment that would directly or indirectly result in any impacts to aesthetic resources. The proposed project will not include any new lighting that otherwise compromise any views.

MITIGATION

No mitigation is required.

2. AGRICULTURE AND FORESTRY RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☒	☐
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☒	☐
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☒	☐

DISCUSSION

2 a) The subject property is not identified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance on the maps prepared, pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency. The majority of the project area is located on areas that are already developed or designated for other uses. Therefore, the proposed project will not result in any significant conversion of agricultural land to non-agricultural uses.

2 b,c) The 0.5-acre parcel is zoned AG-B-5(10) which allows for non-agricultural uses and the parcel is not enrolled in a Williamson Act contract. The parcel is not zoned forest land or timberland. Therefore, the proposed project does not conflict with existing zoning or with a Williamson Act contract or zoning of forest or timberland.

2 d,e) The 0.5-acre parcel is not zoned farm land, forest land, or timberland. However, implementation of the project will require the removal of conifer trees (approximately 0.1 to 0.3 acre of land with trees). The removal of such a small amount of land with trees is less than significant, as they project area is surrounded by millions of acres of forestland/timberland.

MITIGATION

No mitigation is required.

3. AIR QUALITY

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Violate any air quality standard or result in a cumulatively considerable net increase in an existing or projected air quality violation?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in substantial emissions (such as odors or dust) adversely affecting a substantial number of people?	☐	☐	☒	☐

DISCUSSION

Construction and operational activities from any land use project can generate air pollutants and greenhouse gasses. An air quality assessment was performed for this project (Natural Investigations Co. 2020). This assessment estimated the types and quantities of air emissions associated with construction and operation of the proposed project on both the daily maximum and annual average levels. Emissions were calculated using the California Emissions Estimator Model (CalEEMod)®, Version 2016.3.2 (California Air Pollution Control Officers Association; Trinity Consultants, 2017). Model output and reports from CalEEMod® are provided in Appendix 1. This assessment then determined if project emissions would cause a significant air quality impact by comparison to established air quality thresholds.

The U.S. Environmental Protection Agency has established national ambient air quality standards, and the California Air Resources Board has established California ambient air quality standards. California Air Resources Board regulates mobile pollutant sources directly, but delegates regulation of stationary standards to local air districts. California Air Resources Board and local air districts maintain numerous air quality monitoring stations throughout California that continually measure ambient concentrations of major air pollutants. The pollutants of greatest concern are: ozone (O₃); carbon monoxide (CO); nitrogen dioxide and more generally, nitrous oxides (NO₂ and NO_x); sulfur dioxide (SO₂); and particulate matter less than 10 microns and less than 2.5 microns (PM₁₀ and PM_{2.5}).

The project is located within the North Coast Air Basin. The North Coast Air Basin is comprised of three air districts, the North Coast Unified AQMD, the Mendocino County AQMD, and the Northern Sonoma County APCD. The jurisdiction of the North Coast AQMD is Del Norte, Humboldt, and Trinity Counties.

In determining whether a project has significant air quality impacts on the environment, planners typically apply their local air district's thresholds of significance to projects in the review process. However, the District has not formally adopted significance thresholds, but rather utilizes the Best Available Control Technology (BACT) emission rates for stationary sources as defined and listed in the NCUAQMD Rules and Regulations, Rule 110 - New Source Review (NSR) And Prevention of Significant Deterioration (PSD), Section 5.1 - BACT (pages 8-9).

NCUAQMD Significance Thresholds, Best Available Control Technology (Rule 110)

Pollutant	Daily (pounds/day)	Annual (tons/year)
CO	500.0	100.0
Fluorides	15.0	3.0
Hydrogen sulfide	50.0	10.0
Lead	3.2	0.6
NOx	50.0	40.0
PM10	80.0	15.0
PM2.5	50.0	10.0
ROGs	50.0	40.0
Reduced sulfur compounds	50.0	10.0
Sulfur oxides	80.0	40.0
Sulfuric acid mist	35.0	7.0
Total reduced sulfur compounds	50.0	10.0

Comparison of Daily Construction Emissions Impacts with Thresholds of Significance

Criteria Pollutants	Project Emissions (pounds/day) (unmitigated)	Threshold (NCUAQMD) (pounds/day)	Significance of Impact
ROG (VOC)	6.05	50	Less than significant
NOx	8.49	50	Less than significant
CO	7.81	500	Less than significant
SOx	0.01	80	Less than significant
Total PM ₁₀	65.35	80	Less than significant
Total PM _{2.5}	7.01	50	Less than significant
GHG (as CO _{2e})	1,178	No threshold	Less than significant

Comparison of Daily Operational Emissions Impacts with Thresholds of Significance

Criteria Pollutants	Project Emissions (pounds/day) (unmitigated)	Threshold (NCUAQMD) (pounds/day)	Significance of Impact
ROG (VOC)	0.14	50	Less than significant
NOx	0.13	50	Less than significant
CO	0.29	500	Less than significant
SOx	> 0.01	80	Less than significant
Exhaust PM ₁₀	10.47	80	Less than significant
Exhaust PM _{2.5}	1.05	50	Less than significant
GHG (as CO _{2e})	73	No threshold	Less than significant

Comparison of Annual Operational Emissions Impacts with Thresholds of Significance

Criteria Pollutants	Project Emissions (tons/year)	Threshold (NCUAQMD) (tons/year)	Significance of Impact
ROG (VOC)	0.02	40	Less than significant
NOx	0.02	40	
CO	0.04	100	Less than significant
SOx	> 0.01	40	Less than significant
Exhaust PM ₁₀	1.44	15	Less than significant
Exhaust PM _{2.5}	0.14	10	Less than significant
GHG (MT/yr CO _{2e})	10	1,100*	Less than significant

* SMAQMD / BAAQMD threshold used because NCUAQMD has no GHG threshold.

3a) At the state level, there is California's State Implementation Plan, which is the statewide plan to achieve attainment of all federal air quality standards. A project would obstruct implementation of the State Implementation Plan if it contributed significantly to increases in regional levels of housing, population, or traffic.

The proposed project would conflict with, or obstruct implementation, the Clean Air Act if it violated, or contributed significantly to a violation of, federal ambient air quality standards. The USEPA's General Conformity Rule specifies *de minimis* thresholds for major air pollutants. As shown in Table 4, the proposed project's emissions are less than the *de minimis* thresholds. Thus, the proposed project conforms with the State Implementation Plan for attainment of federal air quality standards and would not contribute significantly to cumulative air quality impacts.

There are no adopted local air quality plans to analyze for conflicts. NCUAQMD does have a Particulate Matter PM₁₀ Attainment Plan draft report. A project would conflict with applicable air quality plans if it generated significant quantities of particulate matter (PM₁₀ or PM_{2.5}), or if it exceeded the project-level thresholds established by NCUAQMD. Air emissions modeling performed for this project demonstrates that the project, in both the construction phase and the operational phase, will not generate significant quantities of particulate matter and does not exceed the project-level thresholds established by NCUAQMD. Furthermore, the proposed project, in both the construction phase and the operational phase, will not generate any odors or toxins. Therefore, implementation of the project will have no impact upon implementation of the applicable air quality plans.

3b) NCUAQMD has established the project-level thresholds to define substantial contribution for both operational and construction emissions (see Table 1). NCUAQMD does not have adopted thresholds for other air pollutants, so we used thresholds from the nearest applicable air quality management district, primarily the Sacramento Metropolitan Air Quality Management District and Bay Area Air Pollution Control District.

NCUAQMD does not have adopted thresholds for greenhouse gas emissions, but the Sacramento Metropolitan Air Quality Management District and the Bay Area Air Quality Management District have established 1,100 metric tons of carbon dioxide equivalents (MT CO_{2e}) annually for both construction and operational phases as the threshold to determine a significant impact. This threshold was used for this assessment.

A comparison of project emissions, as modeled by CalEEMod, with the thresholds of significance indicates that project emissions are less than significant for both the construction and operational phases. The project, in both the construction and operational phases, has annual emissions of greenhouse gasses of 10 Metric Tons CO_{2e}, which is well below the threshold annual quantity of 1,100 Metric Tons CO_{2e}. Implementation of the project will have a less than significant cumulative impact upon any criteria air pollutant.

3c) Those who are sensitive to air pollution consist of children, the elderly, and persons with preexisting respiratory, immune, or cardiovascular illness. A sensitive receptor is typically a location that houses or attracts these sensitive people; examples include hospitals, day care centers, parks, residential areas, convalescent facilities, and schools.

No sensitive receptors exist in the project area. The closest sensitive receptors are residences, the closest of which are about 500 feet from the project boundary to the south. While sensitive receptors do exist in the project vicinity, the project will not emit significant concentrations of air pollutants. The project does not emit odors or toxic substances. Therefore, the project will have a less than significant impact upon sensitive receptors.

3d) Odor impacts on residential areas and other sensitive receptors, such as hospitals, day-care centers, schools, etc. warrant the closest scrutiny, but consideration should also be given to other land uses where people may congregate, such as recreational facilities, worksites, and commercial areas. Two situations create a potential for odor impact. The first occurs when a new odor source is located near an existing sensitive receptor. The second occurs when a new sensitive receptor locates near an existing source of odor.

Implementation of the proposed project will not locate sensitive receptors closer to an odor generator. No sensitive receptors exist in the project area. The closest sensitive receptors are residences, the closest of which are about 500 feet from the project boundary to the south. While sensitive receptors do exist in the project vicinity, the project will not emit significant concentrations of air pollutants. The project does not emit odors or toxic substances. Therefore, the project will have a less than significant impact of odors or other emissions affecting people.

MITIGATION

No mitigation is required.

4. BIOLOGICAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

DISCUSSION

A Biological Assessment has been conducted for the project and is provided as Appendix 2:

- Natural Investigations Co., Inc. 2019. Biological Assessment for the Willow Creek Community Services District Tank Replacement Project, Willow Creek, California. Prepared for California Rural Water Association. 43 pp.

4 a) During the field survey, no special-status species were detected within the Project Area. The California Natural Diversity Database was queried and any reported occurrences of special-status species were plotted in relation to the project area using GIS software (see Exhibits). The CNDDB reported no special-status species within the project area. In the vicinity, various special-status species were reported, primarily associated with the Trinity River corridor.

During the field survey, no federally-listed species were detected. No special-status species were detected. The CNDDB reported no special-status species occurrences within the Project Area. No regionally-occurring special-status species were determined to have a medium or high potential to occur within the project area. No impacts to listed species or special-status species are expected from implementation of the proposed project. This is due primarily to the fact that the project area is already disturbed or developed, and is not near any natural water resources.

Special-status bird species were reported by the CNDDDB or USFWS in the vicinity of the Project Area, including marbled murrelet, northern spotted owl, western snowy plover, yellow-billed cuckoo, great blue heron, osprey, and northern goshawk. The Project Area contains suitable nesting habitat for various bird species because of the presence of trees and poles. However, no nests were observed during the field survey. If construction activities are conducted during the nesting season, nesting birds could be directly impacted by tree removal and indirectly impacted by noise, vibration, and other construction-related disturbance. Therefore, Project construction is considered a potentially significant adverse impact to nesting birds before mitigation.

4 b) The Project Area is not within any designated listed species' critical habitat. The CNDDDB reported no special-status habitats within the Project Area. The CNDDDB reported 4 special-status habitats in a 10-mile radius outside of the Project Area: Klamath/North Coast Interior Headwater Fishless Stream, Klamath/North Coast Rainbow Trout Stream, Klamath/North Coast Fall/Winter Run Chinook Salmon River, and Upland Douglas Fir Forest. The project area contains the following terrestrial vegetation communities: ruderal/developed; and mixed conifer forest. The Project Area contains no special-status habitats. Project implementation will not impact any special-status habitats. Implementation of the Project would result in the loss of some mixed conifer forest and ruderal habitat, but this small amount of land conversion is not considered to be a significant impact upon protected habitats or sensitive natural communities or the movement of wildlife species. Therefore, no mitigation is required.

Because the project area is not within a critical habitat, and because no sensitive habitats will be impacted, the Project will have No Effect upon federally-designated critical habitat.

4 c) A formal assessment for the presence of potentially-jurisdictional water resources within the project area was also conducted during the field survey. The entire project area has upland features and contains no wetlands or channels (i.e., no waters of the US). The USFWS National Wetland Inventory (see Exhibits) also reported no water features within, or adjacent to, the project area. The proposed project will have no impact upon wetlands or channels. To address potential indirect impacts to receiving water bodies from pollution during construction of the proposed project, an erosion control plan and spill control plan will be implemented.

4 d) No designated wildlife corridors exist within or directly adjacent to the Project Area. However, in the vicinity there are some important wildlife corridors: the Trinity Wild and Scenic River corridor; the Willow Creek corridor; and the Six Rivers National Forest. Fishery resources exist in both Trinity River and Willow Creek. Implementation of the proposed project would necessitate erection of a security fence around the tank compound. The water line is buried and is not a barrier to animal movement. The fence will not allow animal movement and may act as a local barrier to wildlife movement. However, the fenced area is very small (circa 0.3 acre) and it is surrounded by open space, allowing wildlife to move around the fenced area. Thus, implementation of the proposed project will have a less than significant impact upon wildlife movement, corridors, and native wildlife nursery sites.

4 e,f) No relevant local policies or ordinances were identified. The project area is not within the coverage area of any adopted Habitat Conservation Plan or Natural Community Conservation Plan. No impacts to habitat plans will occur from project implementation.

MITIGATION

Bio-1: Pre-construction Special-status Species and Nesting Bird Survey.

If construction activities would occur during the nesting season (usually March to September), a pre-construction survey for the presence of special-status bird species or any nesting bird species should be conducted by a qualified biologist within 500 feet of proposed construction areas. If active nests are identified in these areas, CDFW and/or USFWS should be consulted to develop measures to avoid “take” of active nests prior to the initiation of any construction activities. Avoidance measures may include establishment of a buffer zone using construction fencing or the postponement of vegetation removal until after the nesting season, or until after a qualified biologist has determined the young have fledged and are independent of the nest site. With the implementation of this mitigation measure, adverse impacts upon special-status bird species and nesting birds would be reduced to a less-than-significant level.

Because no federally-listed species occur in the project area, and because of the avoidance measures that will be implemented, the Project will have No Effect upon federally-listed species.

5. CULTURAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

DISCUSSION

The following cultural resources assessment was prepared for this project and is bound separately due to the sensitive nature of the information:

- Natural Investigations Co., Inc. 2020. Cultural Resources Inventory for the Willow Creek Community Services District Brannan Mountain Storage Tank Project, Humboldt County, California. Prepared for Willow Creek Community Services, Willow Creek, California.

Prehistoric Setting

Two organizational schemes are used to interpret the prehistory of northwest California, one chronological and one cultural. For archaeological purposes, the cultural scheme is most relevant. This organization follows the work of Fredrickson (1974, 1984) relying on two basic units, pattern, and aspect. Due to the large size of the northwestern California region, two versions of this pattern chronology occur: one for the northern counties (Del Norte, Siskiyou, Humboldt, and Trinity) and one for the Southern Counties (Lake, Mendocino, and Sonoma). Six basic patterns are recognized: Post, Borax Lake, Berkeley, Mendocino, Gunther, and Augustine. In the North, the Berkeley pattern and Augustine Patterns are not represented in regional archaeological studies and in the South, the Gunther Pattern is not represented. (Natural Investigations Company 2020).

Ethnographic Setting

Ethnographically, this project location falls within tribal territory of the Hupa; as cited in Natural Investigations 2020. The Hupa Language is a part of the Athapaskan Language Family and was spoken by the Chilula and Whilkut peoples, to the west. It is the most geographically widespread language family on the North American continent and in California, the language family consists of the Hupa, Mattole, Wailaki (Sinkiyone/Lassik), Kato, Eyak, Tlingit and possibly the Haida peoples. The Hupa were bordered by the Karok and the Yurok to the north, the Chimariko and the Wintu to the east, the Chilula and the Whilkut to the west and the Nongatl to the south; cited in Natural Investigations Company 2020.

Historic Setting

Humboldt County was formed in 1853 from parts of Trinity County. The first recorded entry by people of European origin was a landing by the Spanish in 1775 in Trinidad. In the late 1820s, fur trappers of the Hudson's Bay Company traveling south from Fort Vancouver reached the Klamath River basin. Although Spanish explorers and Russian fur hunters had earlier touched Humboldt's coastline, it took a month-long westward expedition led by Josiah Gregg to establish a route between the Trinity gold fields and the coast. The 1850s saw discoveries of rich placer and lode gold deposits along the predominantly Shasta areas of the Klamath, Trinity, Shasta, and other rivers in northwestern California. Miners searching for gold in the

Klamath Mountains and Trinity Alps in the aftermath of the California Gold Rush first discovered gold along Salmon Creek in the spring of 1850, and additional deposits were found on the main stem by July. Gold was also discovered in great quantities in Shasta lands at French Gulch and Yreka. Humboldt County did not prove a major source of gold although to the east Willow Creek and Orleans developed mining-based economies, and beach sand under Gold Bluffs was worked with limited success. However, the coastal towns of Eureka, Arcata (originally called Union) and Trinidad grew into prosperous and notoriously rowdy ports and supply centers for the mines.

Massive redwood trees, some over 2,000 years old and as tall as 300 feet, thrived in the narrow fog belt along California's northwest coast. Felling and milling activities began almost immediately as lumbermen, used to smaller eastern trees, developed new techniques and tools to deal with the huge redwoods. Timber companies multiplied, expanding operations inland, building rail links, and scattering the area with small lumber-based towns and temporary camps. The need to ship out timber plus the ready availability of wood stimulated a local ship building industry. Fishing for crab, oysters, ocean fish and even whales grew into major industries.

Farmers from many parts of the world were drawn to the rich soils around Humboldt Bay and several river bottoms, while the hills provided good grazing. Sheep raised here produced exceptional fleece, and the dairy industry prospered. Fruit growing was also successful with the area becoming particularly known for apples. Humboldt towns grew, and the more prosperous citizens built elegant homes using local wood. The difficulties of road travel over the mountains, and the dangers and discomfort of sea travel, kept the area fairly isolated. By the beginning of the early 20th century, however, with the completion of rail connections, building the Redwood Highway and the rise of automobile use, tourism quickly joined timber and fishing as a major industry as the previous isolated nature of the region began to be opened up.

Willow Creek's first non-indigenous settlers were Chinese laborers from the mining and lumber camps, which earned the town the name China Flat (Durnham 1998:168). The China Flat post office opened in 1878, and changed its name to Willow Creek in 1915.

Results of Site Research and Survey

A cultural resources literature search was completed on January 25, 2019 by the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS) at Sonoma State University, Rohnert Park. The records search at the NWIC indicates a total of five prior cultural resources studies covered portions of the APE and eight additional studies were accomplished within a 0.50-mile radius of the APE. The records search by the NWIC indicates a total of 5 cultural resources and one bridge (#04 0135 - ineligible), Willow Creek/SR 96 have been previously recorded within the 0.5-mile search radius, none of which are mapped within the APE. The five previously recorded resources outside the APE comprise a prehistoric site with habitation debris consisting of fire cracked rock and midden soils and one isolated prehistoric basalt manuport. The three historic-era resources include two water conveyance systems and an old cabin site that encompasses a buried privy, a segment of the former Humboldt County Road, rock retaining wall, and a slab marking the location of the former Jehovah's Witness Kingdom Hall (circa 1960s) (Natural Investigations Company 2020).

A systematic survey of the project area was conducted by Natural Investigations Company archaeologist, Dylan Stapleton, on February 1, 2019. The APE is best characterized as a rural, semi-wooded environment on a mountain backslope. Intensive-level survey transects performed to identify archaeological resources were spaced apart at intervals no greater than 5 meters. No prehistoric or ethnographic sites, and no other historic-era resources were identified during survey of the APE. A modern, junked vehicle and associated modern trash is present in the northern corner of the terraced platform of the APE.

Visible ground surface within the project areas was carefully examined for cultural material (e.g., flaked stone tools, tool-making debris, stone milling tools, or fire-affected rock), soil discoloration that might indicate the presence of a cultural midden, soil depressions and features indicative of the former presence of structures or buildings (e.g., postholes, foundations), or historic-era debris (e.g., metal, glass, ceramics) (Natural Investigations Company 2020).

The sensitivity is low for discovery of archaeological deposits, materials, or features by implementation of the project.

Native American Outreach

Natural Investigations Company contacted the Native American Heritage Commission (NAHC), requesting a search of their Sacred Lands File for traditional cultural resources within or near the project areas. The reply from the NAHC, dated August 26, 2020, states that their search was negative for sacred lands or other heritage sites.

By certified letter dated August 27, 2020, Natural Investigations Company contacted each of the Native American tribes provided by the NAHC, requesting any information regarding sacred lands or other heritage sites that might be impacted by the project. If no response was received, follow-up telephone calls were made on September 11, 2020, and messages left on voice mail.

- Hoopa Valley Tribe, Ryan Jackson, Chairperson: Mr. Jackson was unavailable on September 11, 2020; a voice mail message was left.
- Shasta Nation, Roy Hall, Chairperson: Mr. Hall was unavailable on September 11, 2020; a voice mail message was left.
- Tsnugwe Council, Paul Ammon, Chairperson: Mr. Ammon was unavailable on September 11, 2020; a voice mail message was left.

5 a) No historical resources, herein referring to historic-era architectural or built-environment resources, were identified through background research or during pedestrian survey of the project areas. Therefore, **no impact** would occur to historical resources and no mitigation is necessary.

5 b) No prehistoric or historic-era archaeological sites or ethnographic sites were identified during survey of the project areas (Natural Investigations Company 2020). Although the potential for discovery of buried archaeological materials within the project areas is considered to be low, it is possible that buried or concealed archaeological resources could be present that may be discovered during ground-disturbing and other construction activities associated with the project. Inadvertent discovery or damage to archaeological resources could be a significant impact. Implementation of mitigation measure CUL-1 would reduce this impact to a **less-than-significant level**.

5 c) Based on the documentary research described above, no evidence suggests that any prehistoric or historic-era marked or unmarked human interments are present within or in the immediate vicinity of the project site (Natural Investigations Company 2020). However, there is the potential for unmarked, previously unknown Native American or other graves to be present and be uncovered during construction activities. California law recognizes the need to protect historic-era and Native American human burials, skeletal remains, and grave-associated items from vandalism and inadvertent destruction and any substantial change to or destruction of these resources would be a significant impact. Implementation of the following mitigation would reduce this impact to a **less-than significant level**.

MITIGATION

Mitigation Measure CUL-1: Inadvertent discovery of historical and archaeological resources.

In the unlikely event that buried cultural deposits (e.g., prehistoric stone tools, milling stones, historic glass bottles, foundations, cellars, privy pits) are encountered during project implementation, all ground-disturbing activity within 50 feet of the resources shall be halted and a qualified professional archaeologist (36 CFR 61) shall be notified immediately and retained to assess the significance of the find. Construction activities could continue in other areas. If the find is determined to be significant by the qualified archaeologist (i.e., because it is determined to constitute either a historical resource or a unique archaeological resource), the archaeologist shall develop appropriate procedures to protect the integrity of the resource and ensure that no additional resources are affected. Procedures could include but would not necessarily be limited to preservation in place, archival research, subsurface testing, or contiguous block unit excavation and data recovery.

Mitigation Measure CUL-2: Inadvertent discovery of human remains.

In accordance with the California Health and Safety Code (CHSC), Section 7050.5, and the Public Resources Code (PRC) 5097.98, regarding the discovery of human remains, if any such finds are encountered during project construction, all work within the vicinity of the find shall cease immediately, a 50-foot-wide buffer surrounding the discovery shall be established, and the District shall be immediately notified. The County coroner shall be contacted immediately to examine and evaluate the find. If the coroner determines that the remains are not recent and are of Native American descent, the Coroner will notify the Native American Heritage Commission, which will determine and notify a Most Likely Descendent (MLD). The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

6. ENERGY

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources, during project construction or operation?	☐	☐	☒	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

DISCUSSION

5 a,b) Implementation of the proposed project will not cause a significant increase in existing energy consumption. The only energy consumption is from pumping groundwater from District wells and from pressurizing the water supply lines. In fact, a reduction in energy consumption is expected. The proposed project would provide additional storage capacity to the system, which would also allow the electric pumps that draw groundwater from the District's wells to be run only on non-peak hours. Because the current system does not have enough storage capacity, the electric pumps run all day, every day, including during peak hours when electricity is expensive. No agency plans for renewable energy resources or energy efficiency plans would be impacted as a result of implementation of the Proposed Project. The proposed project will have a less than significant impact upon energy resources.

MITIGATION

No mitigation is required.

7. GEOLOGY AND SOILS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒

DISCUSSION

7 a-d) The Project Area is in the following physiographic province: the California Coast Ranges section of the Pacific Border Province (Fenneman and Johnson 1946). The surficial geology of the Project Area is Jurassic-age metasedimentary marine bedrock (Jennings et al. 1977). The Project Area is not on a known earthquake fault as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning. However, the nearest earthquake fault is Grogan Fault which is only 8.5 miles to the west. Thus, the Project Area carries some risk of seismic activity. Construction of the proposed project will require permitting from the County and conformance to applicable seismic building standards (e.g. California Building Code and International Building Code seismic building standards). These standards vary by zone and require structures and infrastructure to be built to withstand seismic effects such as rupture, shaking, or liquefaction. Therefore, the proposed project would have a less than significant impact regarding seismic forces and failures because of existing seismic building code requirements.

The Project Area is in a zone of landslide risk. The California Geological Survey (2006) has mapped the Highway 299 corridor between Blue Lake and Willow Creek as an area prone to landslides. Therefore, landslides are considered to be a potentially significant risk before mitigation.

According to the Natural Resources Conservation Service's soil database "SSURGO/STATSGO", there is one mapped soil unit within the Project Area: "Clallam-Hugo-Holland families association, deep, dry, 35 to 70 percent slopes." The soil is described as "residuum weathered from metasedimentary rock." The soil

is not listed as expansive, but is highly erodible. Construction of the proposed project will require implementation of a sediment and erosion control plan, which has been added as a project feature. Therefore, erosion risk will be reduced to a less than significant level. Additionally, for any project that disturbs 1 acre or more, the project proponent must enroll under the SWRCB's Construction General Permit prior to the initiation of construction. In conjunction with enrollment under this Permit, a SWPPP, Erosion Control Plan, and a Hazardous Materials Management/Spill Response Plan must be created and implemented during construction to avoid or minimize the potential for erosion, sedimentation, or accidental release of hazardous materials. No mitigation is necessary.

7 e) The Project does not involve a residence or human occupation of the site. The project does not include the use of, or construction of, new septic tanks and associated disposal facilities. Portable toilets will be available for construction workers. Therefore, the Project would have no impact upon human waste disposal.

7 f) Project plans, geologic maps of the project site, and relevant geological and paleontological literature were reviewed to determine which geologic units are present within the project site and whether fossils have been recovered within the project site or from those or similar geologic units elsewhere in the region. A search of the database maintained by the University of California Museum of Paleontology (UCMP) indicates there are no vertebrate or invertebrate localities within a 0.50-mile radius of the APE (UCMP 2019). Five known assemblages are noted within Humboldt County (Gunther Island, Mattole River, Patrick's Point, Spanish Flat, Stone Lagoon). All five assemblages contained exclusively Holocene era mammalian fossils and all are within the North Coast Ranges physiographic province located along the coastal region of Humboldt County. These localities are all associated with the Franciscan complex. The project site is within the Galice Formation. The Galice Formation has an unproven fossil record; and thus, be expected to have a low sensitivity for fossils. Additionally, the project site contains no unique geologic features.

No paleontological resources or unique geologic features are known to exist within or near the project site (Natural Investigations Company 2020). As noted, the project site is within the Galice formation and has a low sensitivity for paleontological resources. No mitigation measures for paleontological resources are required.

MITIGATION

Mitigation Measure GEO-1: Ensuring Project Design Addresses Landslide Risk

Because the Project Area is in an area of known landslide risk, a geotechnical investigation will be performed that will provide design criteria and recommendations for the final design of the foundation, side slopes, access road, and any potential retaining walls. With the incorporation of design criteria and recommendations from the geotechnical study, landslide risk will be reduced to a less than significant risk.

8. GREENHOUSE GAS EMISSIONS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

DISCUSSION

Construction and operational activities from any land use project can generate air pollutants and greenhouse gasses. An air quality assessment was performed for this project. This assessment estimated the types and quantities of air emissions associated with construction and operation of the proposed project on both the daily maximum and annual average levels. Emissions were calculated using CalEEMod® (California Air Pollution Control Officers Association; Trinity Consultants, 2017). Model output and reports from CalEEMod® are provided in Appendix 1. This assessment then determined if project emissions would cause a significant air quality impact by comparison to established air quality thresholds.

8 a) The main sources of project emissions are from construction activities: for example, the diesel exhaust from the equipment and tailpipe emissions from cars and trucks. Operation of the tank will not generate emissions, and no significant increase in existing energy consumption from groundwater pumping will occur. In fact, a reduction in energy consumption is expected.

NCUAQMD does not have adopted thresholds for greenhouse gas emissions, but the Sacramento Metropolitan Air Quality Management District and the Bay Area Air Quality Management District have established 1,100 metric tons of carbon dioxide equivalents (MT CO₂e) annually for both construction and operational phases as the threshold to determine a significant impact. This threshold was used for this assessment.

A comparison of project emissions, as modeled by CalEEMod, with the thresholds of significance indicates that project emissions are less than significant for both the construction and operational phases. The project, in both the construction and operational phases, has annual emissions of greenhouse gasses of 10 MT CO₂e, which is well below the threshold annual quantity of 1,100 MT CO₂e. Implementation of the project will have a less than significant cumulative impact upon greenhouse gas emissions.

8 b) NCUAQMD does not have adopted thresholds for greenhouse gas emissions, and no other regulatory agency limits greenhouse gas emissions in Humboldt County. Therefore, the proposed project cannot conflict with a plan or policy because none exist. The proposed project is consistent with the thresholds established by the nearest air districts because it has annual emissions of greenhouse gasses below their thresholds.

MITIGATION

No mitigation is required.

9. HAZARDS AND HAZARDOUS MATERIALS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☒	☐

DISCUSSION

9 a) During construction of the proposed projects, surface water quality has a minor potential to be degraded from the accidental release of hazardous materials or petroleum products from sources such as heavy equipment servicing or refueling. To address potential indirect impacts to receiving water bodies from pollution during construction of the proposed projects, an erosion control plan and spill control plan will be implemented. The area of disturbance for construction of proposed project is anticipated to be less than 1 acre. For any project that disturbs 1 acre or more, the project proponent must enroll under the SWRCB's Construction General Permit prior to the initiation of construction. In conjunction with enrollment under this Permit, a SWPPP, Erosion Control Plan, and a Hazardous Materials Management/Spill Response Plan must be created and implemented during construction to avoid or minimize the potential for erosion, sedimentation, or accidental release of hazardous materials. Operation of the project will not involve any significant quantities of hazardous materials. No mitigation is necessary.

9 b) The project will not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment, because any proposed use or construction activity that might use hazardous materials is subject to permit and inspection by the Hazardous Materials Division of the County Fire Department. Furthermore, operation of the project will not require the use of hazardous materials and there will be no human occupation of the project site.

9 c) The project uses will not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school, because the project does not propose the use of hazardous materials and all existing and proposed schools are more than one-quarter mile away from the project site. If such uses are proposed in the future on this site, they will be subject to permit and inspection by the Hazardous Materials Division of the County Fire Department and in some instances additional land use review.

9 d) The following hazardous materials databases were queried in September 2020:

- EnviroStor is an online search and Geographic Information System tool for identifying sites that have known contamination or sites for which there may be reasons to investigate further. The EnviroStor database includes the following site types: Federal Superfund sites (National Priority List); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites.
- GeoTracker is a geographic information system maintained by the California State Water Resources Control Board (SWRCB) that provides online access to environmental data at the Internet address (URL) = <http://geotracker.waterboards.ca.gov/>.

The project site is not included on a list of hazardous materials sites. The GeoTracker database and EnviroStor database did not report contamination cases or hazardous material usage on the 0.5-acre parcel or adjacent properties. The nearest contamination cases are closed cases that are located to the east at the Caltrans facility and the Trinity Valley Elementary School. The site survey revealed no evidence of buried storage tanks or soil contamination. There was no indication that the parcel has previously been used for an industrial purpose.

9 e) The project site is not within an airport land use plan or within two miles of a public airport or public use airport. The nearest airstrip or airport is the Hoopa Airport, which is 13 miles to the north. There is no impact from airport conflicts.

9 f) The project will not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan, because the project does not involve the construction of barriers such as walls or buildings. Although construction of the water pipeline will require a single land closure, the other traffic lane will stay open, and the duration is a few days or weeks.

9 g) The Project site is located within a state responsibility area and is within an area designated “very high fire hazard severity” (California Department of Forestry and Fire Protection, 2020). The surrounding national forestlands are in a Federal Responsibility Area. However, existing laws, such as requirements for maintenance of defensible space around structures, would reduce potential wildfire risks. The project will not expose people or structures to a significant risk of loss, injury or death involving wildland fires. No new buildings are proposed that house humans. There is no increased risk for wildfire due to operation of the proposed project. To the contrary, the proposed project will increase water storage capacity, which increases the water available to fight fires. Adherence with existing regulations and best management practices, such as requirements for maintenance of defensible space, the use of spark arrestors, and implementation of a construction fire safety plan, would mitigate any fire risk. Implementation of the proposed projects will have a less than significant impact upon the risk of wildfire.

MITIGATION

No mitigation is required.

10. HYDROLOGY AND WATER QUALITY

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: (i) result in substantial erosion or siltation on- or off-site; (ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; (iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or (iv) impede or redirect flood flows?	☐	☐	☒	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

DISCUSSION

10 a) The Project Area is in the Willow Creek subwatershed, which is in the Campbell Creek-Trinity River Watershed (HUC 12-digit code 180102111206). The project area is located within the Water Quality Control Plan for the North Coast Region (Basin Plan). The Basin Plan establishes water quality objectives. The entire project area has upland features and contains no channels or wetlands (i.e., no jurisdictional waters of the United States). Thus, Project construction cannot directly impact any surface water bodies. To address potential indirect impacts to receiving water bodies from pollution during construction of the proposed project, an erosion control plan and spill control plan will be implemented. Operation of the project does not produce waste discharge. Implementation of the proposed project will have a less than significant impact upon water quality.

10 b) The proposed project involves the storage of water that derives from groundwater. The proposed storage tank adds additional capacity and flexibility in the storage of groundwater. Such storage may allow the groundwater wells to be pumped less, which would allow better management of the aquifer. The proposed tank addresses current deficiencies in storage demand and is not being constructed for future growth of service subscribers. There will be no impacts to groundwater resources.

10 c) Implementation of the proposed project will not alter drainage patterns because grading will occur over only a small area and perimeter drainage ditches and velocity dissipation devices will be constructed. The project area is not in a floodplain. To address potential indirect impacts to receiving water bodies from pollution during construction of the proposed project, an erosion control plan and spill control plan will be implemented. The area of disturbance from project implementation is anticipated to be less than 1 acre. For any project that disturbs 1 acre or more, the project proponent must enroll under the SWRCB's

Construction General Permit prior to the initiation of construction. In conjunction with enrollment under this Permit, a SWPPP, Erosion Control Plan, and a Hazardous Materials Management/Spill Response Plan must be created and implemented during construction to avoid or minimize the potential for erosion, sedimentation, or accidental release of hazardous materials. The proposed project will have a less than significant impact upon drainage patterns.

10 d) The project will not be impacted by seiche or tsunami because the project is not adjacent to any body of water that has the potential of seiche or tsunami. The project site is not near the ocean or on a steeply sloped hill. According to the FEMA Flood Insurance Rate Map, the Project Area is in Flood Zone X, an “area of minimal flood hazard.” The proposed project will not use hazardous materials or any pollutants which could risk release into the environment. Implementation of the proposed project will have no impact on the environment from inundation from flooding, seiche, or tsunami.

10 e) For surface water, the project area is located within the Water Quality Control Plan for the North Coast Region (Basin Plan). The Basin Plan establishes water quality objectives. The US Environmental Protection Agency established two technical Total Maximum Daily Loads for sediment in the Trinity River watershed. Water quality will be protected from sediment during construction by implementation of an erosion control plan during construction. In the operational phase, the project will not discharge any water or pollutants. The project area is not in an area that is part of a groundwater management plan. The project is not within an area designated by the USEPA as a sole source aquifer (USEPA, 2019). There will be no impacts to groundwater resources as the project will not increase groundwater withdrawal. Implementation of the proposed project will have no impact upon water quality plans.

MITIGATION

No mitigation is required.

11. LAND USE AND PLANNING

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☒	☐
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

DISCUSSION

The parcel has the General Plan land use designation of RA5-20 Rural Residential Agriculture and is zoned AG-B-5(10) Agricultural General-Special Building Site. The project is not within a coastal zone.

11 a,b) The project will not physically divide an established community because the project does not involve the construction of barriers, such as new roads, and because no one will be displaced from their homes. The proposed project is the improvement of an existing, permitted water supply that is compliant with all applicable land use policies and regulations of the County Code and General Plan. Therefore, the project will have no impact upon land use and planning.

MITIGATION

No mitigation is required.

12. MINERAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

DISCUSSION

12 a, b) The Surface Mining and Reclamation Act requires that local jurisdictions enact planning procedures to guide mineral conservation and extraction at particular sites and to incorporate mineral resource management policies into their general plans. On this basis, it is presumed that counties would, as needed and as applicable, encourage the conservation (i.e., protection from incompatible land uses) of areas designated as having substantial potential for mineral extraction and discourage development that would substantially preclude the future development of mining facilities in these areas. The potential for the extraction of substantial mineral resources from lands classified by the State as areas that contain mineral resources (Mineral Resource Zone [MRZ]-3) would be considered by counties at a local level when making land use decisions. For these reasons, no significant impacts are anticipated related to the availability or use of a known, valuable mineral resource, either at a program level or cumulatively.

The following Mineral Lands Classification data portal was queried on January 15, 2019:

- The Surface Mining and Reclamation Act Mineral Lands Classification data portal is a geographic information system provided by the Department of Conservation through data maintained by the California Geological Survey. This data portal provides online access to environmental data at the Internet address (URL) = <http://maps.conservation.ca.gov/cgs/informationwarehouse/>.

The Mineral Lands Classification database does not designate the Project Area or the vicinity as a mineral resource zone. The nearest mineral resource are aggregate materials (river gravels and sand) in the Trinity River corridor. The Project would have **no impact** upon mineral resources.

MITIGATION

No mitigation is required.

13. NOISE

Would the project result in:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐

DISCUSSION

13 a, b) The project area is not adjacent to any noise-sensitive land uses (residential, daycare, school, medical, etc.). Existing noise sources consist of vehicular traffic along Highway 299 and Highway 96. Construction of the proposed project will generate temporary noise from the operation of heavy equipment and from vehicles that deliver materials or worker commutes. However, the duration of construction is just a few weeks. Furthermore, the construction contractor will comply with local noise ordinances that limit noise to acceptable times of the day. No blasting is necessary. Ground vibrations from heavy machinery will be generated, but could only be felt within a few hundred yards of the project area; there is no human occupancy / residences this close to the construction area. Therefore, construction and operation of the proposed project will have a less than significant noise or vibration impact.

MITIGATION

No mitigation is required.

14. POPULATION AND HOUSING

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

DISCUSSION

14 a,b) Willow Creek CSD currently provides water to approximately 936 service connections. The population served varies in age, household income, and ethnicity; the total population is approximately 1,710. The project will not induce population growth in the area either directly or indirectly. The project is not proposing any new residential development and the project will not significantly expand water infrastructure which might stimulate population growth. The project will not involve the removal of housing. Implementation of the proposed projects will have no impact upon population growth or people or housing.

MITIGATION

No mitigation is required.

15. PUBLIC SERVICES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
i) Fire protection?	☐	☐	☐	☒
ii) Police protection?	☐	☐	☐	☒
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☐	☐	☐	☒

DISCUSSION

15 a i-v) Willow Creek Community Services District is the local, elected government for the community of Willow Creek and provides water services, park services, recreation facilities, street lighting, and is actively involved in the creation of a commercial area wastewater system. The Proposed Project would not induce growth or otherwise substantially increase demand for public services. The project is simply the improvement of an existing water supply. Therefore, there would be **no impact** to public services.

MITIGATION

No mitigation is required.

16. RECREATION

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

DISCUSSION

16 a-b) The parks closest to the Project Area are Boise Creek Campground, several thousand feet to the west, and Veterans Park, several thousand feet to the east. The Trinity River itself is a recreational facility: Big Rock Day Use Area & River Access is the nearest access point. The Proposed Project would not involve parks or recreational facilities. The proposed project would not have any potential to cause or accelerate physical deterioration of recreational facilities, or include or require construction, expansion, or increased use of such facilities. The Proposed Project would have no impact upon recreation resources.

MITIGATION

No mitigation is required.

17. TRANSPORTATION

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with a plan, ordinance, or policy addressing the circulation system, including transit, roadways, bicycle lanes, and pedestrian paths?	☐	☐	☐	☐
b) For a land use project, would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)(1)?	☐	☐	☐	☐
c) For a transportation project, would the project conflict with or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)(2)?	☐	☐	☐	☐
d) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☒	☐

DISCUSSION

17 a-e) The tank-portion of the Project Area is accessed by a private, unpaved single-lane driveway off of Brannan Mountain Road. In the vicinity of the Project, Brannan Mountain Road is a 2-lane paved road. Brannan Mountain Road is used to access the national forest lands and private residential inholdings and becomes a gravel surface road deeper into the forest. Most regional eastbound and westbound traffic utilizes State Route 299, and northbound and southbound traffic uses State Route 96; both are a 2-lane paved roads. These roads currently operate at acceptable Levels of Service.

Construction of the proposed project is not anticipated to generate substantial numbers of vehicle trips. The daily trip estimate is 4 to 8 roundtrips per day with pickup trucks and equipment operators for up to two months, and 1 roundtrip per day for a concrete truck for 2 to 4 days and the same for material delivery. This low number of total trips resulting from construction will not lower the Level of Service on any roadway. The proposed project does not propose any new development, construction or physical change to the environment that would directly or indirectly result in any impacts to on-ground transportation and traffic, including emergency access. The driveway for the tank has sufficient room for emergency vehicle access and turnaround. Construction of the proposed waterline will result in a single lane closure for several days. Even during lane closure, the other lane can be used by emergency vehicles and public traffic. There will be a less than significant impact to circulation systems and emergency access.

MITIGATION

No mitigation is required.

18. TRIBAL CULTURAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☐	☒
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☒

DISCUSSION

Consultation Pursuant to AB 52

In 2015, the Legislature passed Assembly Bill (AB) 52 and the Governor signed it into law. The statute amended CEQA to establish tribal consultation procedures for evaluation of potential effects to tribal cultural resources. To initiate the AB 52 consultation process, tribes must submit a written request to a lead agency to be informed through formal notification of proposed projects in the geographic area that is traditionally and culturally affiliated with the tribe (PRC Section 21080.3.1[b]). No requests for consultation under the requirements of AB 52 have been received.

18 a, i, ii, c) No requests, in writing pursuant to AB 52, from geographically affiliated tribes for consultation under the requirements of AB 52 regarding the potential of the project to impact tribal cultural resources have been received prior to the date of this document. Therefore, no tribal cultural resources have been identified on the project site and the project would have **no impact**. No mitigation measures for tribal cultural resources are required.

MITIGATION

No mitigation is required.

19. UTILITIES AND SERVICE SYSTEMS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment, storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	☐	☐	☒	☐
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d) Generate solid waste in excess of State or local standards or in excess of the capacity of local infrastructure	☐	☐	☐	☒
e) Negatively impact the provision of solid waste services or impair the attainment of solid waste reduction goals?	☐	☐	☐	☒
f) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

DISCUSSION

19 a-f) Willow Creek Community Services District is the local, elected government for the community of Willow Creek and provides water services, park services, recreation facilities, street lighting, and is actively involved in the creation of a commercial area wastewater system. The source of the District's drinking water is groundwater wells in Willow Creek. The Proposed Project is the installation of a water storage tank to improve storage capacity for an existing water supply system. The Proposed Project would not significantly expand the water supply system such that it induced growth because the proposed storage tank is addressing only current deficiencies in the system, and is not designed for new service hookups. The Proposed Project does not involve any public wastewater or stormwater treatment services, natural gas, or telecommunications facilities, although electricity is used to pressurize the water system and draw water from the wells. No significant quantities of solid waste would be generated by the Proposed Project. The Project will comply with all local, state, and federal regulations regarding solid waste. Therefore, the Proposed Project will have a less than significant impact upon utilities and service systems.

MITIGATION

No mitigation is required.

20. WILDFIRE

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☒	☐
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

DISCUSSION

20 a-d) The Public Resources Code includes fire safety regulations that apply to fire hazard areas during the time of year designated as having hazardous fire conditions. During the fire hazard season, these regulations restrict the use of equipment that may produce a spark or fire, require the use of spark arrestors on engines, and specify fire-suppression equipment that must be provided on-site for various types of work in fire-prone areas. Public Resources Code section 4291 provides that a person who maintains a building or structure on land that is covered with flammable material shall at all times maintain defensible space.

The project area is a mixture of forest and ruderal habitats, and wildfire fuels are present. Fire breaks exist in the form of roads. Electrical service installations for project implementation are permitted and inspected by the County. The Project site is located within a state responsibility area and is within an area designated “very high fire hazard severity” (California Department of Forestry and Fire Protection, 2020). The surrounding national forestlands are in a Federal Responsibility Area. However, existing laws, such as requirements for maintenance of defensible space around structures, would reduce potential wildfire risks. The project will not expose people or structures to a significant risk of loss, injury or death involving wildland fires. No new buildings are proposed that house humans. There is no increased risk for wildfire due to operation of the proposed project. To the contrary, the proposed project will increase water storage capacity, which increases the water available to fight fires. Adherence with existing regulations and best management practices, such as requirements for maintenance of defensible space, the use of spark arrestors, and implementation of a construction fire safety plan, would mitigate fire risks. Implementation of the proposed projects will have a less than significant impact upon the risk of wildfire. The combination of these existing regulations and protective measures would reduce fire risk to a less-than-significant level.

MITIGATION

No mitigation is required.

21. MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

DISCUSSION

21 a) Environmental Quality. The Project would not degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, or threaten to eliminate a plant or animal community. The Project would not impact rare or endangered wildlife species, or eliminate important examples of the major periods of California history or prehistory.

21 b, c) Cumulative Impacts and Adverse Effects on Human Beings. The Project would not result in adverse impacts that are individually limited but cumulatively considerable and would not involve substantial adverse effects on human beings, either directly or indirectly. All of these potential effects would be less than significant with implementation of mitigation measures identified in this document and would not contribute in considerable levels to cumulative impacts.

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EXHIBITS

APPENDICES

APPENDIX 1. AIR QUALITY ASSESSMENT

Natural Investigations Co., Inc. 2020. Air Quality Impact Assessment for the Brannan Mountain Water Storage Tank Project, Willow Creek, California. 97 pp.

APPENDIX 2. BIOLOGICAL RESOURCES ASSESSMENT

Natural Investigations Co., Inc. 2019. Biological Assessment for the Willow Creek Community Services District Tank Replacement Project, Willow Creek, California. Prepared for California Rural Water Association. 43 pp.

AIR QUALITY IMPACT ASSESSMENT FOR THE BRANNAN MOUNTAIN WATER STORAGE TANK PROJECT

November 16, 2020

Prepared for:

State Water Resources Control Board
Division of Financial Assistance

Prepared by:

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Introduction

An air quality impact assessment was performed for the Brannan Mountain Water Storage Tank Project ("Project"). Construction and operational activities from any land use project can generate air pollutants and greenhouse gasses. During the project permitting phase, these air emissions must be analyzed for compliance with various state and federal regulations.

The objectives of this assessment were to:

- estimate the daily maximum rates and annual average rates of air pollutants generated by construction and operation of the proposed project;
- to determine if these emissions would cause a significant air quality impact by comparison to established air quality thresholds; and
- identify mitigation measures if project emissions are significant.

Project Description

Willow Creek CSD is proposing to construct and operate a water storage tank in Pressure Zone 1. The proposed storage tank will be constructed in the middle of an unaddressed, 0.5-acre parcel (Assessor Parcel Number 522-492-011-000) that is owned by Willow Creek CSD. The tank will be constructed of bolted steel plates, and will be painted to blend with the surrounding tree colors. The steel tank will be constructed on a concrete ring wall foundation on an excavated and graded level area. In addition, the proposed project includes on-site pipelines, valves (above and below ground), drain lines, storm drain culverts, chain link fencing and gate, and asphalt pavement around the tank.

The final tank size will be determined after several factors are considered, including available funds. Two sizes of steel tank are analyzed in this Initial Study: a 72-foot diameter tank that can store 650,000 gallons of water; and a 60-foot diameter tank that can store 409,000 gallons (37% reduction in volume). The smaller tank fits on the same graded pad with similar on-site pipes and appurtenances, although the smaller tank will have a larger asphalt surface around the perimeter. The smaller tank would cost less to construct than the larger tank. The larger tank is better at achieving project goals. The reduced volume will still provide more storage capacity that moves the water system toward meeting regulatory requirements for storage, will still provide needed resiliency in the northwest part of town, and will help optimize groundwater pumping.

Earthwork is needed to construct the tank at the designed elevation. It will consist of clearing and grubbing existing vegetation, removing about 4,600 cubic yards of cut material in the hill slope, placing and compacting fill material to make a flat area, and hauling about 4,500 cubic yards of export (to an appropriate and permitted off-site disposal area). The existing access road (250 feet in length) between Brannan Mountain Road and the tank site will be widened and paved to a top width of 15 feet. The access road is located within a public utility easement and access easement that is approximately 40 feet wide and the entrance is along Brannan Mountain Road. The public utility easement is on a privately-owned 48-acre parcel (Assessor Parcel Number 522-492-012-000) that is adjacent to the parcel owned by Willow Creek CSD (the tank site).

Also proposed is a new water pipeline that connects the proposed water tank to the existing distribution system located at the intersection of Brannan Mountain Road and Stage Coach Lane. The proposed water pipeline is 12 inches in diameter and will be placed 36 inches below the existing surface of the ground. The pipeline will run for approximately 250 feet from the new tank to Brannan Mountain Road underneath the access road. Then, the pipeline will run for approximately 250 feet along the north shoulder of Brannan Mountain Road (and within the road right-of-way) to the northeast corner of the

intersection of Brannan Mountain Road and Stage Coach Lane, where it will tie in to an existing 8-inch waterline. Disturbed areas will be seeded with native or ornamental vegetation, as appropriate. The total project footprint is about 0.6 acre: 0.5 acre for the tank site and 0.1 acre for the new water pipeline and widened access road.

Air Quality Setting, Regulatory Framework

The U.S. Environmental Protection Agency has established national ambient air quality standards, and the California Air Resources Board has established California ambient air quality standards. California Air Resources Board regulates mobile pollutant sources directly, but delegates regulation of stationary standards to local air districts. California Air Resources Board and local air districts maintain numerous air quality monitoring stations throughout California that continually measure ambient concentrations of major air pollutants. The pollutants of greatest concern are: ozone (O₃); carbon monoxide (CO); nitrogen dioxide and more generally, nitrous oxides (NO₂ and NO_x); sulfur dioxide (SO₂); and particulate matter less than 10 microns and less than 2.5 microns (PM₁₀ and PM_{2.5}).

The project is located within the North Coast Air Basin. The North Coast Air Basin is comprised of three air districts, the North Coast Unified AQMD, the Mendocino County AQMD, and the Northern Sonoma County APCD. The jurisdiction of the North Coast AQMD is Del Norte, Humboldt, and Trinity Counties.

In determining whether a project has significant air quality impacts on the environment, planners typically apply their local air district's thresholds of significance to projects in the review process. However, the District has not formally adopted significance thresholds, but rather utilizes the Best Available Control Technology (BACT) emission rates for stationary sources as defined and listed in the NCUAQMD Rules and Regulations, Rule 110 - New Source Review (NSR) And Prevention of Significant Deterioration (PSD), Section 5.1 - BACT (pages 8-9).

Table 1: NCUAQMD Significance Thresholds, Best Available Control Technology (Rule 110)

Pollutant	Daily (pounds/day)	Annual (tons/year)
CO	500.0	100.0
Fluorides	15.0	3.0
Hydrogen sulfide	50.0	10.0
Lead	3.2	0.6
NOx	50.0	40.0
PM10	80.0	15.0
PM2.5	50.0	10.0
ROGs	50.0	40.0
Reduced sulfur compounds	50.0	10.0
Sulfur oxides	80.0	40.0
Sulfuric acid mist	35.0	7.0
Total reduced sulfur compounds	50.0	10.0

Methodology

The NCUAQMD guidelines were followed for this analysis. Construction emissions and operational emissions were calculated using the NCUAQMD-recommended model—the California Emissions Estimator Model (CalEEMod)®, Version 2016.3.2 (California Air Pollution Control Officers Association, 2017). Model output and reports from CalEEMod are provided in the Appendix. Default values were used unless otherwise indicated. Electronic copies of the input and output files are available on request.

Where guidance was not provided, our air quality assessment methodology followed the

Our analysis also uses guidance prepared by the Sacramento Metropolitan Air Quality Management District (SMAQMD 2015).

This assessment estimated the types and quantities of air emissions associated with construction and operation of the proposed project on both the daily maximum level and annual average level. The following air pollutants are assessed in this analysis:

- Reactive organic gases (ROG)
- Nitrogen oxides (NO_x)
- Carbon monoxide (CO)
- Sulfur oxides (SO_x)
- Particulate matter less than 10 microns in diameter (PM₁₀)
- Particulate matter less than 2.5 microns in diameter (PM_{2.5})

The proposed project does not have the potential to emit toxic air contaminants, so toxic air contaminant emissions were not modeled.

Model Parameters and Assumptions

The following parameters and assumptions were entered into CalEEMod:

- estimated start date of construction = June 1, 2021
- operational year = 2022
- Since no land use category for public utilities exists in CalEEMod, the land use “light industrial” was used.
- Land Use Subtype = General Light Industry
- Lot acreage = 0.5
- Population = 0
- Phasing: no demolition; site preparation = 2 weeks; no grading; building construction = 1 month; paving = 2 days; architectural coatings = 2 days
- It was assumed that cut and fill soil volumes would be balanced on-site but that gravel would be imported
- Operational phase/Stationary Sources: no emergency generator, 200 hours per year assumed

Because specific information about construction equipment is not available at this time, the analysis used the construction equipment defaults assumed in CalEEMod.

Modeling Results / Emissions Estimates

Construction and operational emissions are summarized in the following tables. Copies of the CalEEMod model output are provided in the Appendix.

To magnify any air quality impacts, the model was run using the worst-case scenarios, and emissions estimates are reported here using the unmitigated emissions values.

Since the project does not involve significant demolition or grading activities, fugitive dust is not anticipated to be a significant air pollutant source. The main sources of construction emissions are exhaust from heavy equipment and tailpipe emissions from cars and trucks. In the operational phase, no direct emissions will occur. Electrical consumption will contribute incrementally to greenhouse gas generation.

Table 1: Comparison of Daily Construction Emissions Impacts with Thresholds of Significance

Criteria Pollutants	Project Emissions (pounds/day) (unmitigated)	Threshold (NCUAQMD) (pounds/day)	Significance of Impact
ROG (VOC)	6.05	50	Less than significant
NOx	8.49	50	Less than significant
CO	7.81	500	Less than significant
SOx	0.01	80	Less than significant
Total PM ₁₀	65.35	80	Less than significant
Total PM _{2.5}	7.01	50	Less than significant
GHG (as CO _{2e})	1,178	No threshold	Less than significant

Table 2: Comparison of Daily Operational Emissions Impacts with Thresholds of Significance

Criteria Pollutants	Project Emissions (pounds/day) (unmitigated)	Threshold (NCUAQMD) (pounds/day)	Significance of Impact
ROG (VOC)	0.14	50	Less than significant
NOx	0.13	50	Less than significant
CO	0.29	500	Less than significant
SOx	> 0.01	80	Less than significant
Exhaust PM ₁₀	10.47	80	Less than significant
Exhaust PM _{2.5}	1.05	50	Less than significant
GHG (as CO _{2e})	73	No threshold	Less than significant

Table 3: Comparison of Annual Operational Emissions Impacts with Thresholds of Significance

Criteria Pollutants	Project Emissions (tons/year)	Threshold (NCUAQMD) (tons/year)	Significance of Impact
ROG (VOC)	0.02	40	Less than significant
NOx	0.02	40	
CO	0.04	100	Less than significant
SOx	> 0.01	40	Less than significant
Exhaust PM ₁₀	1.44	15	Less than significant
Exhaust PM _{2.5}	0.14	10	Less than significant
GHG (MT/yr CO _{2e})	10	1,100*	Less than significant

* SMAQMD / BAAQMD threshold used because NCUAQMD has no GHG threshold.

Impact Analysis and Significance Determination for CEQA

This significance determination uses the checklist format in the 2019 CEQA Guidelines. Impact analysis methodology follows the NCUAQMD guidelines, such as *the NCUAQMD Rules & Regulations, Appendix A, Procedures for Environmental Impact Review*.

III. Air Quality.

a) Would the project conflict with, or obstruct implementation of, the applicable air quality plan?

At the state level, there is California's State Implementation Plan, which is the statewide plan to achieve attainment of all federal air quality standards. A project would obstruct implementation of the State Implementation Plan if it contributed significantly to increases in regional levels of housing, population, or traffic.

The proposed project would conflict with, or obstruct implementation of, the Clean Air Act if it violated, or contributed significantly to a violation of, federal ambient air quality standards. The USEPA's General Conformity Rule specifies *de minimis* thresholds for major air pollutants. As shown in Table 4, the proposed project's emissions are less than the *de minimis* thresholds. Thus, the proposed project conforms with the State Implementation Plan for attainment of federal air quality standards and would not contribute significantly to cumulative air quality impacts.

There are no adopted local air quality plans to analyze for conflicts. NCUAQMD does have a Particulate Matter PM₁₀ Attainment Plan draft report. A project would conflict with applicable air quality plans if it generated significant quantities of particulate matter (PM₁₀ or PM_{2.5}), or if it exceeded the project-level thresholds established by NCUAQMD. Air emissions modeling performed for this project demonstrates that the project, in both the construction phase and the operational phase, will not generate significant quantities of particulate matter and does not exceed the project-level thresholds established by NCUAQMD. Furthermore, the proposed project, in both the construction phase and the operational phase, will not generate any odors or toxins. Therefore, implementation of the project will have no impact upon implementation of the applicable air quality plans.

Mitigation Measures

No mitigation is required.

b) Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

NCUAQMD has established the project-level thresholds to define substantial contribution for both operational and construction emissions (see Table 1). NCUAQMD does not have adopted thresholds for other air pollutants, so we used thresholds from the nearest applicable air quality management district, primarily the Sacramento Metropolitan Air Quality Management District and Bay Area Air Pollution Control District.

NCUAQMD does not have adopted thresholds for greenhouse gas emissions, but the Sacramento Metropolitan Air Quality Management District and the Bay Area Air Quality Management District have established 1,100 metric tons of carbon dioxide equivalents (MT CO₂e) annually for both construction and operational phases as the threshold to determine a significant impact. This threshold was used for this assessment.

A comparison of project emissions, as modeled by CalEEMod, with the thresholds of significance

indicates that project emissions are less than significant for both the construction and operational phases. The project, in both the construction and operational phases, has annual emissions of greenhouse gasses of 10 Metric Tons CO₂e, which is well below the threshold annual quantity of 1,100 Metric Tons CO₂e. Implementation of the project will have a less than significant cumulative impact upon any criteria air pollutant.

Mitigation Measures

No mitigation is required.

c) Would the project expose sensitive receptors to substantial pollutant concentrations?

Those who are sensitive to air pollution consist of children, the elderly, and persons with preexisting respiratory, immune, or cardiovascular illness. A sensitive receptor is typically a location that houses or attracts these sensitive people; examples include hospitals, day care centers, parks, residential areas, convalescent facilities, and schools.

No sensitive receptors exist in the project area. The closest sensitive receptors are residences, the closest of which are about 500 feet from the project boundary to the south. While sensitive receptors do exist in the project vicinity, the project will not emit significant concentrations of air pollutants. The project does not emit odors or toxic substances. Therefore, the project will have a less than significant impact upon sensitive receptors.

Mitigation Measures

No mitigation is required

d) Would the project result in other emissions (such as those leading to odors adversely affecting a substantial number of people?)

Odor impacts on residential areas and other sensitive receptors, such as hospitals, day-care centers, schools, etc. warrant the closest scrutiny, but consideration should also be given to other land uses where people may congregate, such as recreational facilities, worksites, and commercial areas. Two situations create a potential for odor impact. The first occurs when a new odor source is located near an existing sensitive receptor. The second occurs when a new sensitive receptor locates near an existing source of odor.

Implementation of the proposed project will not locate sensitive receptors closer to an odor generator. No sensitive receptors exist in the project area. The closest sensitive receptors are residences, the closest of which are about 500 feet from the project boundary to the south. While sensitive receptors do exist in the project vicinity, the project will not emit significant concentrations of air pollutants. The project does not emit odors or toxic substances. Therefore, the project will have a less than significant impact of odors or other emissions affecting people.

Mitigation Measures

No mitigation is required

VIII. Greenhouse Gas Emissions.**a) Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?**

NCUAQMD does not have adopted thresholds for greenhouse gas emissions, but the Sacramento Metropolitan Air Quality Management District and the Bay Area Air Quality Management District have established 1,100 metric tons of carbon dioxide equivalents (CO₂e) annually for both construction and operational phases as the threshold to determine a significant impact. This threshold was used for this assessment.

A comparison of project emissions, as modeled by CalEEMod, with the thresholds of significance indicates that project emissions are less than significant for both the construction and operational phases. The project, in both the construction and operational phases, has annual emissions of greenhouse gasses of 10 MTCO₂e well below the threshold annual quantity of 1,100 MTCO₂e. Implementation of the project will have a less than significant cumulative impact upon any criteria air pollutant.

b) Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

NCUAQMD does not have adopted thresholds for greenhouse gas emissions, and no other regulatory agency limits greenhouse gas emissions in Humboldt County. Therefore, the proposed project cannot conflict with a plan or policy, because none exist. The proposed project is consistent with the thresholds established by the nearest air districts because it has annual emissions of greenhouse gasses below their thresholds.

Mitigation Measures

No mitigation is required

Federal General Conformity Determination

In accordance with the FCAA and the CCAA, CARB designates areas of the state as attainment, nonattainment, or unclassified with respect to applicable standards. An “attainment” designation for an area signifies that pollutant concentrations do not violate the applicable standard in that area. A “nonattainment” designation indicates that a pollutant concentration violated the applicable standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. The CCAA divides nonattainment status into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The USEPA and the CARB designate air basins where ambient air quality standards are exceeded as “nonattainment” areas. If standards are met, the area is designated as an “attainment” area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered “unclassified.”

The current attainment designations for Humboldt County are shown in the following table. Humboldt County is in attainment or unclassified for all federal criteria pollutants. Federal non-attainment counties are listed by the EPA on the Internet at: <https://www3.epa.gov/airquality/greenbook/ancl.html#CA>. NCUAQMD summarizes the quality of air in their jurisdiction as follows: “*The air in Humboldt, Del Norte and Trinity County is considered to be in "in attainment" of state and federal ambient air quality standards except for the State's 24-hour PM10 standard for Humboldt County only.*” (NCUAQMD website, <http://www.ncuaqmd.org/index.php?page=air.quality>). The following table compares project emissions with the federal *de minimis* and the local air basin thresholds of significance, where available. De minimis tables are provided by the EPA on the Internet: <https://www.epa.gov/general-conformity/de-minimis-tables>. Project emissions are well below the federal *de minimis* levels for all pollutants. Therefore, the project conforms to federal air quality standards.

Table 4. Conformity Determination Summary

Pollutant	Federal Status (Attainment, Nonattainment, etc.)	Non- attainment Rates (marginal, serious, etc.)	<i>De minimis</i> (tons/year)	Threshold of Significance for Project Air Basin (tons/year)	Estimated Project Construction Emissions (tons/year)	Estimated Project Operation Emissions (tons/year)
Ozone (O ₃)	Attainment	serious	50	not yet established	n/a	n/a
Carbon Monoxide (CO)	Attainment	All maintenance areas	100	100	0.29	0.04
Oxides of Nitrogen (NO _x)	Attainment	serious	50	40	0.37	0.02
Reactive Organic Gasses (ROG) or Volatile Organic Compounds (VOC)	Unclassified	serious	50	40	0.05	0.02
Lead (Pb)	Attainment	All nonattainment areas	25	0.6	n/a	n/a
Particulate Matter less than 2.5 microns (PM _{2.5})	Attainment	moderate	100	15	0.14	0.14
		serious	70			
Particulate Matter less than 10 microns (PM ₁₀)	Attainment	moderate	100	10	1.25	1.44
		serious	70			
Sulfur Dioxide (SO ₂)	Attainment	All maintenance areas	100	40	< 0.01	< 0.01

References

California Air Pollution Control Officers Association. 2017. CalEEMod® California Emissions Estimator Model User's Guide, Version 2016.3.2. November 2017. Prepared for California Air Pollution Control Officers Association. Prepared by BREEZE Software, a division of Trinity Consultants, in collaboration with South Coast Air Quality Management District and other California Air Districts.

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Sacramento Metropolitan Air Quality Management District. 2015. CEQA Guide to Air Quality Assessment. Chapter 2 Environmental Review: Thresholds of Significance. Available on the Internet at <http://www.airquality.org/ceqa/cequguideupdate/Ch6ghgFINAL.pdf>.

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United States Environmental Protection Agency. 2020. Federal de minimis levels. Available on the Internet at: <https://www.epa.gov/general-conformity/de-minimis-tables>.

Appendix

CalEEMod Emission Reports

- Daily Emissions Estimates (Summer and Winter)
- Annual Emissions Estimates

WCCSD Tank Project - North Coast Air Basin, Summer

WCCSD Tank Project
North Coast Air Basin, Summer**1.0 Project Characteristics**

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	5.00	1000sqft	0.11	5,000.00	0
Other Non-Asphalt Surfaces	0.10	1000sqft	0.00	100.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	93
Climate Zone	1			Operational Year	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	641.35	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

WCCSD Tank Project - North Coast Air Basin, Summer

Project Characteristics -

Land Use -

Construction Phase - Building construction will take less than the default time (3 months).

Grading - Tank site is only 0.5 acre in size.

Vehicle Trips - Operation will not require daily supervision.

Road Dust - Excess cut dirt will be exported by haul trucks; pipeline is partially along paved road.

Energy Use - Electric pumps are not part of this project. The only electricity demands will be for security lighting and monitoring equipment.

Land Use Change -

Stationary Sources - Emergency Generators and Fire Pumps - No emergency generators onsite.

Off-road Equipment - No existing concrete to cut.

Off-road Equipment - Minimal amounts of heavy equipment are needed because just 1 tank will be bolted/welded.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT - Site requires no real demolition activities; grading and paving are in small areas.

Architectural Coating - No interior painting required.

Area Coating - No interior painting required

Landscape Equipment -

Water And Wastewater - Operation of the project does not consume water

Solid Waste - Negligible waste is generated for water storage tank.

WCCSD Tank Project - North Coast Air Basin, Summer

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	7,500.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	0.00
tblAreaCoating	Area_Nonresidential_Interior	7500	0
tblEnergyUse	LightingElect	1.81	0.10
tblEnergyUse	NT24E	1.85	0.30
tblEnergyUse	NT24NG	0.31	0.00
tblEnergyUse	T24E	0.62	0.10
tblEnergyUse	T24NG	3.20	0.00
tblGrading	MaterialImported	0.00	25.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblRoadDust	RoadPercentPave	55	80
tblSolidWaste	SolidWasteGenerationRate	6.20	0.10
tblTripsAndVMT	WorkerTripNumber	10.00	2.00
tblTripsAndVMT	WorkerTripNumber	5.00	4.00
tblTripsAndVMT	WorkerTripNumber	18.00	4.00
tblVehicleTrips	WD_TR	6.97	1.00
tblVehicleTrips	WD_TR	0.00	1.00
tblWater	IndoorWaterUseRate	1,156,250.00	0.00

2.0 Emissions Summary

WCCSD Tank Project - North Coast Air Basin, Summer

2.1 Overall Construction (Maximum Daily Emission)**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	6.0498	8.4811	7.8033	0.0122	65.1737	0.4675	65.3456	6.8510	0.4459	7.0093	0.0000	1,172.925 ₄	1,172.925 ₄	0.3098	0.0000	1,178.394 ₄
Maximum	6.0498	8.4811	7.8033	0.0122	65.1737	0.4675	65.3456	6.8510	0.4459	7.0093	0.0000	1,172.925 ₄	1,172.925 ₄	0.3098	0.0000	1,178.394 ₄

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	6.0498	8.4811	7.8033	0.0122	0.8025	0.4675	0.9744	0.4276	0.4459	0.5859	0.0000	1,172.925 ₄	1,172.925 ₄	0.3098	0.0000	1,178.394 ₄
Maximum	6.0498	8.4811	7.8033	0.0122	0.8025	0.4675	0.9744	0.4276	0.4459	0.5859	0.0000	1,172.925 ₄	1,172.925 ₄	0.3098	0.0000	1,178.394 ₄

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	98.77	0.00	98.51	93.76	0.00	91.64	0.00	0.00	0.00	0.00	0.00	0.00

WCCSD Tank Project - North Coast Air Basin, Summer

2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1150	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1200e-003	1.1200e-003	0.0000		1.1900e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0221	0.1265	0.2697	7.2000e-004	10.4725	9.0000e-004	10.4735	1.0507	8.5000e-004	1.0515		72.5643	72.5643	3.6200e-003		72.6548
Total	0.1371	0.1265	0.2702	7.2000e-004	10.4725	9.0000e-004	10.4735	1.0507	8.5000e-004	1.0515		72.5654	72.5654	3.6200e-003	0.0000	72.6560

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1150	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1200e-003	1.1200e-003	0.0000		1.1900e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0221	0.1265	0.2697	7.2000e-004	10.4725	9.0000e-004	10.4735	1.0507	8.5000e-004	1.0515		72.5643	72.5643	3.6200e-003		72.6548
Total	0.1371	0.1265	0.2702	7.2000e-004	10.4725	9.0000e-004	10.4735	1.0507	8.5000e-004	1.0515		72.5654	72.5654	3.6200e-003	0.0000	72.6560

WCCSD Tank Project - North Coast Air Basin, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2020	6/12/2020	5	10	
2	Site Preparation	Site Preparation	6/13/2020	6/15/2020	5	1	
3	Grading	Grading	6/16/2020	6/17/2020	5	2	
4	Building Construction	Building Construction	6/18/2020	11/4/2020	5	100	
5	Paving	Paving	11/5/2020	11/11/2020	5	5	
6	Architectural Coating	Architectural Coating	11/12/2020	11/18/2020	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 2,500; Striped Parking Area: 6
(Architectural Coating – sqft)

OffRoad Equipment

WCCSD Tank Project - North Coast Air Basin, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	0	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	2.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	2	4.00	0.00	3.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	3	2.00	1.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	4.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

WCCSD Tank Project - North Coast Air Basin, Summer

3.1 Mitigation Measures Construction**3.2 Demolition - 2020****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8674	7.8729	7.6226	0.0120		0.4672	0.4672		0.4457	0.4457		1,147.235 2	1,147.235 2	0.2169		1,152.657 8
Total	0.8674	7.8729	7.6226	0.0120		0.4672	0.4672		0.4457	0.4457		1,147.235 2	1,147.235 2	0.2169		1,152.657 8

WCCSD Tank Project - North Coast Air Basin, Summer

3.2 Demolition - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0223	0.0202	0.1807	2.6000e-004	22.2673	2.6000e-004	22.2676	2.2248	2.4000e-004	2.2250		25.6902	25.6902	1.8600e-003		25.7367
Total	0.0223	0.0202	0.1807	2.6000e-004	22.2673	2.6000e-004	22.2676	2.2248	2.4000e-004	2.2250		25.6902	25.6902	1.8600e-003		25.7367

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8674	7.8729	7.6226	0.0120		0.4672	0.4672		0.4457	0.4457	0.0000	1,147.2352	1,147.2352	0.2169		1,152.6578
Total	0.8674	7.8729	7.6226	0.0120		0.4672	0.4672		0.4457	0.4457	0.0000	1,147.2352	1,147.2352	0.2169		1,152.6578

WCCSD Tank Project - North Coast Air Basin, Summer

3.2 Demolition - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0223	0.0202	0.1807	2.6000e-004	0.0156	2.6000e-004	0.0158	4.3200e-003	2.4000e-004	4.5600e-003		25.6902	25.6902	1.8600e-003		25.7367
Total	0.0223	0.0202	0.1807	2.6000e-004	0.0156	2.6000e-004	0.0158	4.3200e-003	2.4000e-004	4.5600e-003		25.6902	25.6902	1.8600e-003		25.7367

3.3 Site Preparation - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.6853	8.4307	4.0942	9.7400e-003		0.3353	0.3353		0.3085	0.3085		943.4872	943.4872	0.3051		951.1158
Total	0.6853	8.4307	4.0942	9.7400e-003	0.5303	0.3353	0.8656	0.0573	0.3085	0.3658		943.4872	943.4872	0.3051		951.1158

WCCSD Tank Project - North Coast Air Basin, Summer

3.3 Site Preparation - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0558	0.0504	0.4518	6.5000e-004	55.6683	6.5000e-004	55.6690	5.5619	6.0000e-004	5.5625		64.2254	64.2254	4.6500e-003		64.3416
Total	0.0558	0.0504	0.4518	6.5000e-004	55.6683	6.5000e-004	55.6690	5.5619	6.0000e-004	5.5625		64.2254	64.2254	4.6500e-003		64.3416

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.6853	8.4307	4.0942	9.7400e-003		0.3353	0.3353		0.3085	0.3085	0.0000	943.4872	943.4872	0.3051		951.1158
Total	0.6853	8.4307	4.0942	9.7400e-003	0.5303	0.3353	0.8656	0.0573	0.3085	0.3658	0.0000	943.4872	943.4872	0.3051		951.1158

WCCSD Tank Project - North Coast Air Basin, Summer

3.3 Site Preparation - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0558	0.0504	0.4518	6.5000e-004	0.0389	6.5000e-004	0.0395	0.0108	6.0000e-004	0.0114		64.2254	64.2254	4.6500e-003		64.3416
Total	0.0558	0.0504	0.4518	6.5000e-004	0.0389	6.5000e-004	0.0395	0.0108	6.0000e-004	0.0114		64.2254	64.2254	4.6500e-003		64.3416

3.4 Grading - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7542	0.0000	0.7542	0.4140	0.0000	0.4140			0.0000			0.0000
Off-Road	0.2921	2.9954	2.2262	3.4000e-003		0.1692	0.1692		0.1557	0.1557		328.9942	328.9942	0.1064		331.6543
Total	0.2921	2.9954	2.2262	3.4000e-003	0.7542	0.1692	0.9234	0.4140	0.1557	0.5697		328.9942	328.9942	0.1064		331.6543

WCCSD Tank Project - North Coast Air Basin, Summer

3.4 Grading - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0138	0.4650	0.0790	1.2100e-003	19.8849	2.1900e-003	19.8871	1.9875	2.0900e-003	1.9896		127.0076	127.0076	3.6300e-003		127.0984
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0446	0.0404	0.3614	5.2000e-004	44.5347	5.2000e-004	44.5352	4.4495	4.8000e-004	4.4500		51.3803	51.3803	3.7200e-003		51.4733
Total	0.0584	0.5054	0.4404	1.7300e-003	64.4196	2.7100e-003	64.4223	6.4371	2.5700e-003	6.4396		178.3879	178.3879	7.3500e-003		178.5717

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7542	0.0000	0.7542	0.4140	0.0000	0.4140			0.0000			0.0000
Off-Road	0.2921	2.9954	2.2262	3.4000e-003		0.1692	0.1692		0.1557	0.1557	0.0000	328.9942	328.9942	0.1064		331.6543
Total	0.2921	2.9954	2.2262	3.4000e-003	0.7542	0.1692	0.9234	0.4140	0.1557	0.5697	0.0000	328.9942	328.9942	0.1064		331.6543

WCCSD Tank Project - North Coast Air Basin, Summer

3.4 Grading - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0138	0.4650	0.0790	1.2100e-003	0.0172	2.1900e-003	0.0194	4.9800e-003	2.0900e-003	7.0700e-003		127.0076	127.0076	3.6300e-003		127.0984
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0446	0.0404	0.3614	5.2000e-004	0.0311	5.2000e-004	0.0316	8.6400e-003	4.8000e-004	9.1200e-003		51.3803	51.3803	3.7200e-003		51.4733
Total	0.0584	0.5054	0.4404	1.7300e-003	0.0483	2.7100e-003	0.0511	0.0136	2.5700e-003	0.0162		178.3879	178.3879	7.3500e-003		178.5717

3.5 Building Construction - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5442	5.7740	4.2226	7.1300e-003		0.3168	0.3168		0.2914	0.2914		691.1865	691.1865	0.2235		696.7750
Total	0.5442	5.7740	4.2226	7.1300e-003		0.3168	0.3168		0.2914	0.2914		691.1865	691.1865	0.2235		696.7750

WCCSD Tank Project - North Coast Air Basin, Summer

3.5 Building Construction - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.5500e-003	0.1245	0.0378	2.7000e-004	4.3750	7.9000e-004	4.3758	0.4374	7.5000e-004	0.4382		27.7264	27.7264	1.4000e-003		27.7613
Worker	0.0223	0.0202	0.1807	2.6000e-004	22.2673	2.6000e-004	22.2676	2.2248	2.4000e-004	2.2250		25.6902	25.6902	1.8600e-003		25.7367
Total	0.0279	0.1447	0.2185	5.3000e-004	26.6424	1.0500e-003	26.6434	2.6622	9.9000e-004	2.6632		53.4166	53.4166	3.2600e-003		53.4980

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5442	5.7740	4.2226	7.1300e-003		0.3168	0.3168		0.2914	0.2914	0.0000	691.1865	691.1865	0.2235		696.7750
Total	0.5442	5.7740	4.2226	7.1300e-003		0.3168	0.3168		0.2914	0.2914	0.0000	691.1865	691.1865	0.2235		696.7750

WCCSD Tank Project - North Coast Air Basin, Summer

3.5 Building Construction - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.5500e-003	0.1245	0.0378	2.7000e-004	4.1600e-003	7.9000e-004	4.9400e-003	1.2800e-003	7.5000e-004	2.0300e-003		27.7264	27.7264	1.4000e-003		27.7613
Worker	0.0223	0.0202	0.1807	2.6000e-004	0.0156	2.6000e-004	0.0158	4.3200e-003	2.4000e-004	4.5600e-003		25.6902	25.6902	1.8600e-003		25.7367
Total	0.0279	0.1447	0.2185	5.3000e-004	0.0197	1.0500e-003	0.0208	5.6000e-003	9.9000e-004	6.5900e-003		53.4166	53.4166	3.2600e-003		53.4980

3.6 Paving - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7716	7.2266	7.1128	0.0113		0.3950	0.3950		0.3669	0.3669		1,035.3926	1,035.3926	0.3016		1,042.9323
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.7716	7.2266	7.1128	0.0113		0.3950	0.3950		0.3669	0.3669		1,035.3926	1,035.3926	0.3016		1,042.9323

WCCSD Tank Project - North Coast Air Basin, Summer

3.6 Paving - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0446	0.0404	0.3614	5.2000e-004	44.5347	5.2000e-004	44.5352	4.4495	4.8000e-004	4.4500		51.3803	51.3803	3.7200e-003		51.4733
Total	0.0446	0.0404	0.3614	5.2000e-004	44.5347	5.2000e-004	44.5352	4.4495	4.8000e-004	4.4500		51.3803	51.3803	3.7200e-003		51.4733

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7716	7.2266	7.1128	0.0113		0.3950	0.3950		0.3669	0.3669	0.0000	1,035.3926	1,035.3926	0.3016		1,042.9323
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.7716	7.2266	7.1128	0.0113		0.3950	0.3950		0.3669	0.3669	0.0000	1,035.3926	1,035.3926	0.3016		1,042.9323

WCCSD Tank Project - North Coast Air Basin, Summer

3.6 Paving - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0446	0.0404	0.3614	5.2000e-004	0.0311	5.2000e-004	0.0316	8.6400e-003	4.8000e-004	9.1200e-003		51.3803	51.3803	3.7200e-003		51.4733
Total	0.0446	0.0404	0.3614	5.2000e-004	0.0311	5.2000e-004	0.0316	8.6400e-003	4.8000e-004	9.1200e-003		51.3803	51.3803	3.7200e-003		51.4733

3.7 Architectural Coating - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	5.8077					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	6.0498	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928

WCCSD Tank Project - North Coast Air Basin, Summer

3.7 Architectural Coating - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	5.8077					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	6.0498	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928

WCCSD Tank Project - North Coast Air Basin, Summer

3.7 Architectural Coating - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

WCCSD Tank Project - North Coast Air Basin, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0221	0.1265	0.2697	7.2000e-004	10.4725	9.0000e-004	10.4735	1.0507	8.5000e-004	1.0515		72.5643	72.5643	3.6200e-003		72.6548
Unmitigated	0.0221	0.1265	0.2697	7.2000e-004	10.4725	9.0000e-004	10.4735	1.0507	8.5000e-004	1.0515		72.5643	72.5643	3.6200e-003		72.6548

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	5.00	6.60	3.40	19,317	19,317
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	5.00	6.60	3.40	19,317	19,317

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
Other Non-Asphalt Surfaces	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.515667	0.042980	0.191464	0.127817	0.037823	0.006372	0.015279	0.051140	0.002502	0.001366	0.005405	0.001174	0.001011
Other Non-Asphalt Surfaces	0.515667	0.042980	0.191464	0.127817	0.037823	0.006372	0.015279	0.051140	0.002502	0.001366	0.005405	0.001174	0.001011

WCCSD Tank Project - North Coast Air Basin, Summer

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

WCCSD Tank Project - North Coast Air Basin, Summer

5.2 Energy by Land Use - NaturalGas**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail**6.1 Mitigation Measures Area**

WCCSD Tank Project - North Coast Air Basin, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1150	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1200e-003	1.1200e-003	0.0000		1.1900e-003
Unmitigated	0.1150	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1200e-003	1.1200e-003	0.0000		1.1900e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	7.9600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1070					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.0000e-005	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1200e-003	1.1200e-003	0.0000		1.1900e-003
Total	0.1151	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1200e-003	1.1200e-003	0.0000		1.1900e-003

WCCSD Tank Project - North Coast Air Basin, Summer

6.2 Area by SubCategory**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	7.9600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1070					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.0000e-005	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1200e-003	1.1200e-003	0.0000		1.1900e-003
Total	0.1151	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1200e-003	1.1200e-003	0.0000		1.1900e-003

7.0 Water Detail**7.1 Mitigation Measures Water****8.0 Waste Detail****8.1 Mitigation Measures Waste****9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment**Fire Pumps and Emergency Generators**

WCCSD Tank Project - North Coast Air Basin, Summer

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	0	0	0	100	0.73	

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

WCCSD Tank Project - North Coast Air Basin, Winter

WCCSD Tank Project

North Coast Air Basin, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	5.00	1000sqft	0.11	5,000.00	0
Other Non-Asphalt Surfaces	0.10	1000sqft	0.00	100.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	93
Climate Zone	1			Operational Year	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	641.35	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

WCCSD Tank Project - North Coast Air Basin, Winter

Project Characteristics -

Land Use -

Construction Phase - Building construction will take less than the default time (3 months).

Grading - Tank site is only 0.5 acre in size.

Vehicle Trips - Operation will not require daily supervision.

Road Dust - Excess cut dirt will be exported by haul trucks; pipeline is partially along paved road.

Energy Use - Electric pumps are not part of this project. The only electricity demands will be for security lighting and monitoring equipment.

Land Use Change -

Stationary Sources - Emergency Generators and Fire Pumps - No emergency generators onsite.

Off-road Equipment - No existing concrete to cut.

Off-road Equipment - Minimal amounts of heavy equipment are needed because just 1 tank will be bolted/welded.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT - Site requires no real demolition activities; grading and paving are in small areas.

Architectural Coating - No interior painting required.

Area Coating - No interior painting required

Landscape Equipment -

Water And Wastewater - Operation of the project does not consume water

Solid Waste - Negligible waste is generated for water storage tank.

WCCSD Tank Project - North Coast Air Basin, Winter

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	7,500.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	0.00
tblAreaCoating	Area_Nonresidential_Interior	7500	0
tblEnergyUse	LightingElect	1.81	0.10
tblEnergyUse	NT24E	1.85	0.30
tblEnergyUse	NT24NG	0.31	0.00
tblEnergyUse	T24E	0.62	0.10
tblEnergyUse	T24NG	3.20	0.00
tblGrading	MaterialImported	0.00	25.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblRoadDust	RoadPercentPave	55	80
tblSolidWaste	SolidWasteGenerationRate	6.20	0.10
tblTripsAndVMT	WorkerTripNumber	10.00	2.00
tblTripsAndVMT	WorkerTripNumber	5.00	4.00
tblTripsAndVMT	WorkerTripNumber	18.00	4.00
tblVehicleTrips	WD_TR	6.97	1.00
tblVehicleTrips	WD_TR	0.00	1.00
tblWater	IndoorWaterUseRate	1,156,250.00	0.00

2.0 Emissions Summary

WCCSD Tank Project - North Coast Air Basin, Winter

2.1 Overall Construction (Maximum Daily Emission)**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	6.0498	8.4927	7.8111	0.0122	65.1737	0.4675	65.3457	6.8510	0.4459	7.0093	0.0000	1,172.283 1	1,172.283 1	0.3098	0.0000	1,177.752 5
Maximum	6.0498	8.4927	7.8111	0.0122	65.1737	0.4675	65.3457	6.8510	0.4459	7.0093	0.0000	1,172.283 1	1,172.283 1	0.3098	0.0000	1,177.752 5

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	6.0498	8.4927	7.8111	0.0122	0.8025	0.4675	0.9745	0.4276	0.4459	0.5859	0.0000	1,172.283 1	1,172.283 1	0.3098	0.0000	1,177.752 5
Maximum	6.0498	8.4927	7.8111	0.0122	0.8025	0.4675	0.9745	0.4276	0.4459	0.5859	0.0000	1,172.283 1	1,172.283 1	0.3098	0.0000	1,177.752 5

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	98.77	0.00	98.51	93.76	0.00	91.64	0.00	0.00	0.00	0.00	0.00	0.00

WCCSD Tank Project - North Coast Air Basin, Winter

2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1150	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1200e-003	1.1200e-003	0.0000		1.1900e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0220	0.1343	0.2873	7.0000e-004	10.4725	9.1000e-004	10.4735	1.0507	8.6000e-004	1.0515		70.8143	70.8143	3.7300e-003		70.9076
Total	0.1370	0.1343	0.2878	7.0000e-004	10.4725	9.1000e-004	10.4735	1.0507	8.6000e-004	1.0515		70.8154	70.8154	3.7300e-003	0.0000	70.9088

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1150	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1200e-003	1.1200e-003	0.0000		1.1900e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0220	0.1343	0.2873	7.0000e-004	10.4725	9.1000e-004	10.4735	1.0507	8.6000e-004	1.0515		70.8143	70.8143	3.7300e-003		70.9076
Total	0.1370	0.1343	0.2878	7.0000e-004	10.4725	9.1000e-004	10.4735	1.0507	8.6000e-004	1.0515		70.8154	70.8154	3.7300e-003	0.0000	70.9088

WCCSD Tank Project - North Coast Air Basin, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2020	6/12/2020	5	10	
2	Site Preparation	Site Preparation	6/13/2020	6/15/2020	5	1	
3	Grading	Grading	6/16/2020	6/17/2020	5	2	
4	Building Construction	Building Construction	6/18/2020	11/4/2020	5	100	
5	Paving	Paving	11/5/2020	11/11/2020	5	5	
6	Architectural Coating	Architectural Coating	11/12/2020	11/18/2020	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 2,500; Striped Parking Area: 6
(Architectural Coating – sqft)

OffRoad Equipment

WCCSD Tank Project - North Coast Air Basin, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	0	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	2.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	2	4.00	0.00	3.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	3	2.00	1.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	4.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

WCCSD Tank Project - North Coast Air Basin, Winter

3.1 Mitigation Measures Construction**3.2 Demolition - 2020****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8674	7.8729	7.6226	0.0120		0.4672	0.4672		0.4457	0.4457		1,147.235 2	1,147.235 2	0.2169		1,152.657 8
Total	0.8674	7.8729	7.6226	0.0120		0.4672	0.4672		0.4457	0.4457		1,147.235 2	1,147.235 2	0.2169		1,152.657 8

WCCSD Tank Project - North Coast Air Basin, Winter

3.2 Demolition - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0271	0.0248	0.1886	2.5000e-004	22.2673	2.6000e-004	22.2676	2.2248	2.4000e-004	2.2250		25.0479	25.0479	1.8700e-003		25.0947
Total	0.0271	0.0248	0.1886	2.5000e-004	22.2673	2.6000e-004	22.2676	2.2248	2.4000e-004	2.2250		25.0479	25.0479	1.8700e-003		25.0947

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8674	7.8729	7.6226	0.0120		0.4672	0.4672		0.4457	0.4457	0.0000	1,147.2352	1,147.2352	0.2169		1,152.6578
Total	0.8674	7.8729	7.6226	0.0120		0.4672	0.4672		0.4457	0.4457	0.0000	1,147.2352	1,147.2352	0.2169		1,152.6578

WCCSD Tank Project - North Coast Air Basin, Winter

3.2 Demolition - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0271	0.0248	0.1886	2.5000e-004	0.0156	2.6000e-004	0.0158	4.3200e-003	2.4000e-004	4.5600e-003		25.0479	25.0479	1.8700e-003		25.0947
Total	0.0271	0.0248	0.1886	2.5000e-004	0.0156	2.6000e-004	0.0158	4.3200e-003	2.4000e-004	4.5600e-003		25.0479	25.0479	1.8700e-003		25.0947

3.3 Site Preparation - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.6853	8.4307	4.0942	9.7400e-003		0.3353	0.3353		0.3085	0.3085		943.4872	943.4872	0.3051		951.1158
Total	0.6853	8.4307	4.0942	9.7400e-003	0.5303	0.3353	0.8656	0.0573	0.3085	0.3658		943.4872	943.4872	0.3051		951.1158

WCCSD Tank Project - North Coast Air Basin, Winter

3.3 Site Preparation - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0676	0.0620	0.4714	6.3000e-004	55.6683	6.5000e-004	55.6690	5.5619	6.0000e-004	5.5625		62.6198	62.6198	4.6800e-003		62.7368
Total	0.0676	0.0620	0.4714	6.3000e-004	55.6683	6.5000e-004	55.6690	5.5619	6.0000e-004	5.5625		62.6198	62.6198	4.6800e-003		62.7368

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.6853	8.4307	4.0942	9.7400e-003		0.3353	0.3353		0.3085	0.3085	0.0000	943.4872	943.4872	0.3051		951.1158
Total	0.6853	8.4307	4.0942	9.7400e-003	0.5303	0.3353	0.8656	0.0573	0.3085	0.3658	0.0000	943.4872	943.4872	0.3051		951.1158

WCCSD Tank Project - North Coast Air Basin, Winter

3.3 Site Preparation - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0676	0.0620	0.4714	6.3000e-004	0.0389	6.5000e-004	0.0395	0.0108	6.0000e-004	0.0114		62.6198	62.6198	4.6800e-003		62.7368
Total	0.0676	0.0620	0.4714	6.3000e-004	0.0389	6.5000e-004	0.0395	0.0108	6.0000e-004	0.0114		62.6198	62.6198	4.6800e-003		62.7368

3.4 Grading - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7542	0.0000	0.7542	0.4140	0.0000	0.4140			0.0000			0.0000
Off-Road	0.2921	2.9954	2.2262	3.4000e-003		0.1692	0.1692		0.1557	0.1557		328.9942	328.9942	0.1064		331.6543
Total	0.2921	2.9954	2.2262	3.4000e-003	0.7542	0.1692	0.9234	0.4140	0.1557	0.5697		328.9942	328.9942	0.1064		331.6543

WCCSD Tank Project - North Coast Air Basin, Winter

3.4 Grading - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0143	0.4721	0.0879	1.1900e-003	19.8849	2.2500e-003	19.8872	1.9875	2.1500e-003	1.9897		124.4898	124.4898	4.0400e-003		124.5907
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0541	0.0496	0.3772	5.1000e-004	44.5347	5.2000e-004	44.5352	4.4495	4.8000e-004	4.4500		50.0958	50.0958	3.7500e-003		50.1894
Total	0.0684	0.5217	0.4651	1.7000e-003	64.4196	2.7700e-003	64.4223	6.4371	2.6300e-003	6.4397		174.5856	174.5856	7.7900e-003		174.7802

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7542	0.0000	0.7542	0.4140	0.0000	0.4140			0.0000			0.0000
Off-Road	0.2921	2.9954	2.2262	3.4000e-003		0.1692	0.1692		0.1557	0.1557	0.0000	328.9942	328.9942	0.1064		331.6543
Total	0.2921	2.9954	2.2262	3.4000e-003	0.7542	0.1692	0.9234	0.4140	0.1557	0.5697	0.0000	328.9942	328.9942	0.1064		331.6543

WCCSD Tank Project - North Coast Air Basin, Winter

3.4 Grading - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0143	0.4721	0.0879	1.1900e-003	0.0172	2.2500e-003	0.0195	4.9800e-003	2.1500e-003	7.1300e-003		124.4898	124.4898	4.0400e-003		124.5907
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0541	0.0496	0.3772	5.1000e-004	0.0311	5.2000e-004	0.0316	8.6400e-003	4.8000e-004	9.1200e-003		50.0958	50.0958	3.7500e-003		50.1894
Total	0.0684	0.5217	0.4651	1.7000e-003	0.0483	2.7700e-003	0.0511	0.0136	2.6300e-003	0.0163		174.5856	174.5856	7.7900e-003		174.7802

3.5 Building Construction - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5442	5.7740	4.2226	7.1300e-003		0.3168	0.3168		0.2914	0.2914		691.1865	691.1865	0.2235		696.7750
Total	0.5442	5.7740	4.2226	7.1300e-003		0.3168	0.3168		0.2914	0.2914		691.1865	691.1865	0.2235		696.7750

WCCSD Tank Project - North Coast Air Basin, Winter

3.5 Building Construction - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.9600e-003	0.1253	0.0436	2.6000e-004	4.3750	8.1000e-004	4.3759	0.4374	7.8000e-004	0.4382		26.8636	26.8636	1.5500e-003		26.9023
Worker	0.0271	0.0248	0.1886	2.5000e-004	22.2673	2.6000e-004	22.2676	2.2248	2.4000e-004	2.2250		25.0479	25.0479	1.8700e-003		25.0947
Total	0.0330	0.1501	0.2322	5.1000e-004	26.6424	1.0700e-003	26.6434	2.6622	1.0200e-003	2.6632		51.9115	51.9115	3.4200e-003		51.9970

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5442	5.7740	4.2226	7.1300e-003		0.3168	0.3168		0.2914	0.2914	0.0000	691.1865	691.1865	0.2235		696.7750
Total	0.5442	5.7740	4.2226	7.1300e-003		0.3168	0.3168		0.2914	0.2914	0.0000	691.1865	691.1865	0.2235		696.7750

WCCSD Tank Project - North Coast Air Basin, Winter

3.5 Building Construction - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.9600e-003	0.1253	0.0436	2.6000e-004	4.1600e-003	8.1000e-004	4.9700e-003	1.2800e-003	7.8000e-004	2.0600e-003		26.8636	26.8636	1.5500e-003		26.9023
Worker	0.0271	0.0248	0.1886	2.5000e-004	0.0156	2.6000e-004	0.0158	4.3200e-003	2.4000e-004	4.5600e-003		25.0479	25.0479	1.8700e-003		25.0947
Total	0.0330	0.1501	0.2322	5.1000e-004	0.0197	1.0700e-003	0.0208	5.6000e-003	1.0200e-003	6.6200e-003		51.9115	51.9115	3.4200e-003		51.9970

3.6 Paving - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7716	7.2266	7.1128	0.0113		0.3950	0.3950		0.3669	0.3669		1,035.3926	1,035.3926	0.3016		1,042.9323
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.7716	7.2266	7.1128	0.0113		0.3950	0.3950		0.3669	0.3669		1,035.3926	1,035.3926	0.3016		1,042.9323

WCCSD Tank Project - North Coast Air Basin, Winter

3.6 Paving - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0541	0.0496	0.3772	5.1000e-004	44.5347	5.2000e-004	44.5352	4.4495	4.8000e-004	4.4500		50.0958	50.0958	3.7500e-003		50.1894
Total	0.0541	0.0496	0.3772	5.1000e-004	44.5347	5.2000e-004	44.5352	4.4495	4.8000e-004	4.4500		50.0958	50.0958	3.7500e-003		50.1894

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7716	7.2266	7.1128	0.0113		0.3950	0.3950		0.3669	0.3669	0.0000	1,035.3926	1,035.3926	0.3016		1,042.9323
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.7716	7.2266	7.1128	0.0113		0.3950	0.3950		0.3669	0.3669	0.0000	1,035.3926	1,035.3926	0.3016		1,042.9323

WCCSD Tank Project - North Coast Air Basin, Winter

3.6 Paving - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0541	0.0496	0.3772	5.1000e-004	0.0311	5.2000e-004	0.0316	8.6400e-003	4.8000e-004	9.1200e-003		50.0958	50.0958	3.7500e-003		50.1894
Total	0.0541	0.0496	0.3772	5.1000e-004	0.0311	5.2000e-004	0.0316	8.6400e-003	4.8000e-004	9.1200e-003		50.0958	50.0958	3.7500e-003		50.1894

3.7 Architectural Coating - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	5.8077					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	6.0498	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928

WCCSD Tank Project - North Coast Air Basin, Winter

3.7 Architectural Coating - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	5.8077					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	6.0498	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928

WCCSD Tank Project - North Coast Air Basin, Winter

3.7 Architectural Coating - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

WCCSD Tank Project - North Coast Air Basin, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0220	0.1343	0.2873	7.0000e-004	10.4725	9.1000e-004	10.4735	1.0507	8.6000e-004	1.0515		70.8143	70.8143	3.7300e-003		70.9076
Unmitigated	0.0220	0.1343	0.2873	7.0000e-004	10.4725	9.1000e-004	10.4735	1.0507	8.6000e-004	1.0515		70.8143	70.8143	3.7300e-003		70.9076

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	5.00	6.60	3.40	19,317	19,317
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	5.00	6.60	3.40	19,317	19,317

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
Other Non-Asphalt Surfaces	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.515667	0.042980	0.191464	0.127817	0.037823	0.006372	0.015279	0.051140	0.002502	0.001366	0.005405	0.001174	0.001011
Other Non-Asphalt Surfaces	0.515667	0.042980	0.191464	0.127817	0.037823	0.006372	0.015279	0.051140	0.002502	0.001366	0.005405	0.001174	0.001011

WCCSD Tank Project - North Coast Air Basin, Winter

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

WCCSD Tank Project - North Coast Air Basin, Winter

5.2 Energy by Land Use - NaturalGas**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail**6.1 Mitigation Measures Area**

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1150	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1200e-003	1.1200e-003	0.0000		1.1900e-003
Unmitigated	0.1150	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1200e-003	1.1200e-003	0.0000		1.1900e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	7.9600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1070					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.0000e-005	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1200e-003	1.1200e-003	0.0000		1.1900e-003
Total	0.1151	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1200e-003	1.1200e-003	0.0000		1.1900e-003

WCCSD Tank Project - North Coast Air Basin, Winter

6.2 Area by SubCategory**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	7.9600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1070					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.0000e-005	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1200e-003	1.1200e-003	0.0000		1.1900e-003
Total	0.1151	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.1200e-003	1.1200e-003	0.0000		1.1900e-003

7.0 Water Detail**7.1 Mitigation Measures Water****8.0 Waste Detail****8.1 Mitigation Measures Waste****9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment**Fire Pumps and Emergency Generators**

WCCSD Tank Project - North Coast Air Basin, Winter

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	0	0	0	100	0.73	

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

WCCSD Tank Project - North Coast Air Basin, Annual

WCCSD Tank Project

North Coast Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	5.00	1000sqft	0.11	5,000.00	0
Other Non-Asphalt Surfaces	0.10	1000sqft	0.00	100.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	93
Climate Zone	1			Operational Year	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

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Project Characteristics -

Land Use -

Construction Phase - Building construction will take less than the default time (3 months).

Grading - Tank site is only 0.5 acre in size.

Vehicle Trips - Operation will not require daily supervision.

Road Dust - Excess cut dirt will be exported by haul trucks; pipeline is partially along paved road.

Energy Use - Electric pumps are not part of this project. The only electricity demands will be for security lighting and monitoring equipment.

Land Use Change -

Stationary Sources - Emergency Generators and Fire Pumps - No emergency generators onsite.

Off-road Equipment - No existing concrete to cut.

Off-road Equipment - Minimal amounts of heavy equipment are needed because just 1 tank will be bolted/welded.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT - Site requires no real demolition activities; grading and paving are in small areas.

Architectural Coating - No interior painting required.

Area Coating - No interior painting required

Landscape Equipment -

Water And Wastewater - Operation of the project does not consume water

Solid Waste - Negligible waste is generated for water storage tank.

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Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	7,500.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	0.00
tblAreaCoating	Area_Nonresidential_Interior	7500	0
tblEnergyUse	LightingElect	1.81	0.10
tblEnergyUse	NT24E	1.85	0.30
tblEnergyUse	NT24NG	0.31	0.00
tblEnergyUse	T24E	0.62	0.10
tblEnergyUse	T24NG	3.20	0.00
tblGrading	MaterialImported	0.00	25.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblRoadDust	RoadPercentPave	55	80
tblSolidWaste	SolidWasteGenerationRate	6.20	0.10
tblTripsAndVMT	WorkerTripNumber	10.00	2.00
tblTripsAndVMT	WorkerTripNumber	5.00	4.00
tblTripsAndVMT	WorkerTripNumber	18.00	4.00
tblVehicleTrips	WD_TR	6.97	1.00
tblVehicleTrips	WD_TR	0.00	1.00
tblWater	IndoorWaterUseRate	1,156,250.00	0.00

2.0 Emissions Summary

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2.1 Overall Construction**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.0511	0.3657	0.2895	4.9000e-004	1.2287	0.0198	1.2485	0.1232	0.0184	0.1415	0.0000	43.0750	43.0750	0.0123	0.0000	43.3817
Maximum	0.0511	0.3657	0.2895	4.9000e-004	1.2287	0.0198	1.2485	0.1232	0.0184	0.1415	0.0000	43.0750	43.0750	0.0123	0.0000	43.3817

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.0511	0.3657	0.2895	4.9000e-004	2.1700e-003	0.0198	0.0220	7.7000e-004	0.0184	0.0191	0.0000	43.0749	43.0749	0.0123	0.0000	43.3816
Maximum	0.0511	0.3657	0.2895	4.9000e-004	2.1700e-003	0.0198	0.0220	7.7000e-004	0.0184	0.0191	0.0000	43.0749	43.0749	0.0123	0.0000	43.3816

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	99.82	0.00	98.24	99.37	0.00	86.48	0.00	0.00	0.00	0.00	0.00	0.00

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-1-2020	8-31-2020	0.2241	0.2241
2	9-1-2020	9-30-2020	0.0695	0.0695
		Highest	0.2241	0.2241

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0210	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	1.0000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.7273	0.7273	3.0000e-005	1.0000e-005	0.7301
Mobile	3.0200e-003	0.0178	0.0380	1.0000e-004	1.4436	1.2000e-004	1.4437	0.1448	1.2000e-004	0.1449	0.0000	8.9440	8.9440	4.6000e-004	0.0000	8.9554
Waste						0.0000	0.0000		0.0000	0.0000	0.0203	0.0000	0.0203	1.2000e-003	0.0000	0.0503
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0240	0.0178	0.0381	1.0000e-004	1.4436	1.2000e-004	1.4437	0.1448	1.2000e-004	0.1449	0.0203	9.6714	9.6917	1.6900e-003	1.0000e-005	9.7359

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2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0210	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	1.0000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.7273	0.7273	3.0000e-005	1.0000e-005	0.7301
Mobile	3.0200e-003	0.0178	0.0380	1.0000e-004	1.4436	1.2000e-004	1.4437	0.1448	1.2000e-004	0.1449	0.0000	8.9440	8.9440	4.6000e-004	0.0000	8.9554
Waste						0.0000	0.0000		0.0000	0.0000	0.0203	0.0000	0.0203	1.2000e-003	0.0000	0.0503
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0240	0.0178	0.0381	1.0000e-004	1.4436	1.2000e-004	1.4437	0.1448	1.2000e-004	0.1449	0.0203	9.6714	9.6917	1.6900e-003	1.0000e-005	9.7359

[illegible]

WCCSD Tank Project - North Coast Air Basin, Annual

2.3 Vegetation**Vegetation**

	CO2e
Category	MT
Vegetation Land Change	-33.3000
Total	-33.3000

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2020	6/12/2020	5	10	
2	Site Preparation	Site Preparation	6/13/2020	6/15/2020	5	1	
3	Grading	Grading	6/16/2020	6/17/2020	5	2	
4	Building Construction	Building Construction	6/18/2020	11/4/2020	5	100	
5	Paving	Paving	11/5/2020	11/11/2020	5	5	
6	Architectural Coating	Architectural Coating	11/12/2020	11/18/2020	5	5	

Acres of Grading (Site Preparation Phase): 0.5**Acres of Grading (Grading Phase): 0****Acres of Paving: 0**

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**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 2,500; Striped Parking Area: 6
(Architectural Coating – sqft)**

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	0	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

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Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	2.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	2	4.00	0.00	3.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	3	2.00	1.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	4.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.3400e-003	0.0394	0.0381	6.0000e-005		2.3400e-003	2.3400e-003		2.2300e-003	2.2300e-003	0.0000	5.2038	5.2038	9.8000e-004	0.0000	5.2284
Total	4.3400e-003	0.0394	0.0381	6.0000e-005		2.3400e-003	2.3400e-003		2.2300e-003	2.2300e-003	0.0000	5.2038	5.2038	9.8000e-004	0.0000	5.2284

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3.2 Demolition - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-004	1.1000e-004	9.1000e-004	0.0000	0.0830	0.0000	0.0830	8.2900e-003	0.0000	8.3000e-003	0.0000	0.1147	0.1147	1.0000e-005	0.0000	0.1149
Total	1.2000e-004	1.1000e-004	9.1000e-004	0.0000	0.0830	0.0000	0.0830	8.2900e-003	0.0000	8.3000e-003	0.0000	0.1147	0.1147	1.0000e-005	0.0000	0.1149

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.3400e-003	0.0394	0.0381	6.0000e-005		2.3400e-003	2.3400e-003		2.2300e-003	2.2300e-003	0.0000	5.2038	5.2038	9.8000e-004	0.0000	5.2284
Total	4.3400e-003	0.0394	0.0381	6.0000e-005		2.3400e-003	2.3400e-003		2.2300e-003	2.2300e-003	0.0000	5.2038	5.2038	9.8000e-004	0.0000	5.2284

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3.2 Demolition - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-004	1.1000e-004	9.1000e-004	0.0000	7.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.1147	0.1147	1.0000e-005	0.0000	0.1149
Total	1.2000e-004	1.1000e-004	9.1000e-004	0.0000	7.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.1147	0.1147	1.0000e-005	0.0000	0.1149

3.3 Site Preparation - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.4000e-004	4.2200e-003	2.0500e-003	0.0000		1.7000e-004	1.7000e-004		1.5000e-004	1.5000e-004	0.0000	0.4280	0.4280	1.4000e-004	0.0000	0.4314
Total	3.4000e-004	4.2200e-003	2.0500e-003	0.0000	2.7000e-004	1.7000e-004	4.4000e-004	3.0000e-005	1.5000e-004	1.8000e-004	0.0000	0.4280	0.4280	1.4000e-004	0.0000	0.4314

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3.3 Site Preparation - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	3.0000e-005	2.3000e-004	0.0000	0.0208	0.0000	0.0208	2.0700e-003	0.0000	2.0700e-003	0.0000	0.0287	0.0287	0.0000	0.0000	0.0287
Total	3.0000e-005	3.0000e-005	2.3000e-004	0.0000	0.0208	0.0000	0.0208	2.0700e-003	0.0000	2.0700e-003	0.0000	0.0287	0.0287	0.0000	0.0000	0.0287

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.4000e-004	4.2200e-003	2.0500e-003	0.0000		1.7000e-004	1.7000e-004		1.5000e-004	1.5000e-004	0.0000	0.4280	0.4280	1.4000e-004	0.0000	0.4314
Total	3.4000e-004	4.2200e-003	2.0500e-003	0.0000	2.7000e-004	1.7000e-004	4.4000e-004	3.0000e-005	1.5000e-004	1.8000e-004	0.0000	0.4280	0.4280	1.4000e-004	0.0000	0.4314

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3.3 Site Preparation - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	3.0000e-005	2.3000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0287	0.0287	0.0000	0.0000	0.0287
Total	3.0000e-005	3.0000e-005	2.3000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0287	0.0287	0.0000	0.0000	0.0287

3.4 Grading - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9000e-004	3.0000e-003	2.2300e-003	0.0000		1.7000e-004	1.7000e-004		1.6000e-004	1.6000e-004	0.0000	0.2985	0.2985	1.0000e-004	0.0000	0.3009
Total	2.9000e-004	3.0000e-003	2.2300e-003	0.0000	7.5000e-004	1.7000e-004	9.2000e-004	4.1000e-004	1.6000e-004	5.7000e-004	0.0000	0.2985	0.2985	1.0000e-004	0.0000	0.3009

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3.4 Grading - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	4.7000e-004	8.0000e-005	0.0000	0.0148	0.0000	0.0148	1.4800e-003	0.0000	1.4800e-003	0.0000	0.1143	0.1143	0.0000	0.0000	0.1144
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	4.0000e-005	3.7000e-004	0.0000	0.0332	0.0000	0.0332	3.3200e-003	0.0000	3.3200e-003	0.0000	0.0459	0.0459	0.0000	0.0000	0.0460
Total	6.0000e-005	5.1000e-004	4.5000e-004	0.0000	0.0480	0.0000	0.0480	4.8000e-003	0.0000	4.8000e-003	0.0000	0.1601	0.1601	0.0000	0.0000	0.1603

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9000e-004	3.0000e-003	2.2300e-003	0.0000		1.7000e-004	1.7000e-004		1.6000e-004	1.6000e-004	0.0000	0.2985	0.2985	1.0000e-004	0.0000	0.3009
Total	2.9000e-004	3.0000e-003	2.2300e-003	0.0000	7.5000e-004	1.7000e-004	9.2000e-004	4.1000e-004	1.6000e-004	5.7000e-004	0.0000	0.2985	0.2985	1.0000e-004	0.0000	0.3009

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3.4 Grading - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	4.7000e-004	8.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.1143	0.1143	0.0000	0.0000	0.1144
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	4.0000e-005	3.7000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0459	0.0459	0.0000	0.0000	0.0460
Total	6.0000e-005	5.1000e-004	4.5000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.1601	0.1601	0.0000	0.0000	0.1603

3.5 Building Construction - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0272	0.2887	0.2111	3.6000e-004		0.0158	0.0158		0.0146	0.0146	0.0000	31.3517	31.3517	0.0101	0.0000	31.6052
Total	0.0272	0.2887	0.2111	3.6000e-004		0.0158	0.0158		0.0146	0.0146	0.0000	31.3517	31.3517	0.0101	0.0000	31.6052

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3.5 Building Construction - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.9000e-004	6.2300e-003	2.0200e-003	1.0000e-005	0.1631	4.0000e-005	0.1631	0.0163	4.0000e-005	0.0164	0.0000	1.2412	1.2412	7.0000e-005	0.0000	1.2429
Worker	1.2100e-003	1.1100e-003	9.1400e-003	1.0000e-005	0.8299	1.0000e-005	0.8299	0.0829	1.0000e-005	0.0830	0.0000	1.1471	1.1471	8.0000e-005	0.0000	1.1492
Total	1.5000e-003	7.3400e-003	0.0112	2.0000e-005	0.9929	5.0000e-005	0.9930	0.0993	5.0000e-005	0.0993	0.0000	2.3883	2.3883	1.5000e-004	0.0000	2.3921

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0272	0.2887	0.2111	3.6000e-004		0.0158	0.0158		0.0146	0.0146	0.0000	31.3517	31.3517	0.0101	0.0000	31.6052
Total	0.0272	0.2887	0.2111	3.6000e-004		0.0158	0.0158		0.0146	0.0146	0.0000	31.3517	31.3517	0.0101	0.0000	31.6052

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3.5 Building Construction - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.9000e-004	6.2300e-003	2.0200e-003	1.0000e-005	2.0000e-004	4.0000e-005	2.4000e-004	6.0000e-005	4.0000e-005	1.0000e-004	0.0000	1.2412	1.2412	7.0000e-005	0.0000	1.2429
Worker	1.2100e-003	1.1100e-003	9.1400e-003	1.0000e-005	7.4000e-004	1.0000e-005	7.5000e-004	2.1000e-004	1.0000e-005	2.2000e-004	0.0000	1.1471	1.1471	8.0000e-005	0.0000	1.1492
Total	1.5000e-003	7.3400e-003	0.0112	2.0000e-005	9.4000e-004	5.0000e-005	9.9000e-004	2.7000e-004	5.0000e-005	3.2000e-004	0.0000	2.3883	2.3883	1.5000e-004	0.0000	2.3921

3.6 Paving - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.9300e-003	0.0181	0.0178	3.0000e-005		9.9000e-004	9.9000e-004		9.2000e-004	9.2000e-004	0.0000	2.3482	2.3482	6.8000e-004	0.0000	2.3653
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	1.9300e-003	0.0181	0.0178	3.0000e-005		9.9000e-004	9.9000e-004		9.2000e-004	9.2000e-004	0.0000	2.3482	2.3482	6.8000e-004	0.0000	2.3653

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3.6 Paving - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-004	1.1000e-004	9.1000e-004	0.0000	0.0830	0.0000	0.0830	8.2900e-003	0.0000	8.3000e-003	0.0000	0.1147	0.1147	1.0000e-005	0.0000	0.1149
Total	1.2000e-004	1.1000e-004	9.1000e-004	0.0000	0.0830	0.0000	0.0830	8.2900e-003	0.0000	8.3000e-003	0.0000	0.1147	0.1147	1.0000e-005	0.0000	0.1149

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.9300e-003	0.0181	0.0178	3.0000e-005		9.9000e-004	9.9000e-004		9.2000e-004	9.2000e-004	0.0000	2.3482	2.3482	6.8000e-004	0.0000	2.3653
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	1.9300e-003	0.0181	0.0178	3.0000e-005		9.9000e-004	9.9000e-004		9.2000e-004	9.2000e-004	0.0000	2.3482	2.3482	6.8000e-004	0.0000	2.3653

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3.6 Paving - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-004	1.1000e-004	9.1000e-004	0.0000	7.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.1147	0.1147	1.0000e-005	0.0000	0.1149
Total	1.2000e-004	1.1000e-004	9.1000e-004	0.0000	7.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.1147	0.1147	1.0000e-005	0.0000	0.1149

3.7 Architectural Coating - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0145					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1000e-004	4.2100e-003	4.5800e-003	1.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	0.6383	0.6383	5.0000e-005	0.0000	0.6396
Total	0.0151	4.2100e-003	4.5800e-003	1.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	0.6383	0.6383	5.0000e-005	0.0000	0.6396

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3.7 Architectural Coating - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0145					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1000e-004	4.2100e-003	4.5800e-003	1.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	0.6383	0.6383	5.0000e-005	0.0000	0.6396
Total	0.0151	4.2100e-003	4.5800e-003	1.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	0.6383	0.6383	5.0000e-005	0.0000	0.6396

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3.7 Architectural Coating - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.0200e-003	0.0178	0.0380	1.0000e-004	1.4436	1.2000e-004	1.4437	0.1448	1.2000e-004	0.1449	0.0000	8.9440	8.9440	4.6000e-004	0.0000	8.9554
Unmitigated	3.0200e-003	0.0178	0.0380	1.0000e-004	1.4436	1.2000e-004	1.4437	0.1448	1.2000e-004	0.1449	0.0000	8.9440	8.9440	4.6000e-004	0.0000	8.9554

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	5.00	6.60	3.40	19,317	19,317
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	5.00	6.60	3.40	19,317	19,317

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
Other Non-Asphalt Surfaces	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.515667	0.042980	0.191464	0.127817	0.037823	0.006372	0.015279	0.051140	0.002502	0.001366	0.005405	0.001174	0.001011
Other Non-Asphalt Surfaces	0.515667	0.042980	0.191464	0.127817	0.037823	0.006372	0.015279	0.051140	0.002502	0.001366	0.005405	0.001174	0.001011

WCCSD Tank Project - North Coast Air Basin, Annual

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

[illegible]

WCCSD Tank Project - North Coast Air Basin, Annual

5.2 Energy by Land Use - NaturalGas

Unmitigated

[illegible]

Mitigated

[illegible]

WCCSD Tank Project - North Coast Air Basin, Annual

5.3 Energy by Land Use - Electricity**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	2500	0.7273	3.0000e-005	1.0000e-005	0.7301
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		0.7273	3.0000e-005	1.0000e-005	0.7301

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	2500	0.7273	3.0000e-005	1.0000e-005	0.7301
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		0.7273	3.0000e-005	1.0000e-005	0.7301

6.0 Area Detail**6.1 Mitigation Measures Area**

WCCSD Tank Project - North Coast Air Basin, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0210	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	1.0000e-004
Unmitigated	0.0210	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	1.0000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.4500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0195					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	1.0000e-004
Total	0.0210	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	1.0000e-004

WCCSD Tank Project - North Coast Air Basin, Annual

6.2 Area by SubCategory**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.4500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0195					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	1.0000e-004
Total	0.0210	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.0000e-005	9.0000e-005	0.0000	0.0000	1.0000e-004

7.0 Water Detail**7.1 Mitigation Measures Water**

WCCSD Tank Project - North Coast Air Basin, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

WCCSD Tank Project - North Coast Air Basin, Annual

7.2 Water by Land Use**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

8.0 Waste Detail**8.1 Mitigation Measures Waste****Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0203	1.2000e-003	0.0000	0.0503
Unmitigated	0.0203	1.2000e-003	0.0000	0.0503

WCCSD Tank Project - North Coast Air Basin, Annual

8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0.1	0.0203	1.2000e-003	0.0000	0.0503
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		0.0203	1.2000e-003	0.0000	0.0503

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0.1	0.0203	1.2000e-003	0.0000	0.0503
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		0.0203	1.2000e-003	0.0000	0.0503

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

WCCSD Tank Project - North Coast Air Basin, Annual

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	0	0	0	100	0.73	

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

WCCSD Tank Project - North Coast Air Basin, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	-33.3000	0.0000	0.0000	-33.3000

11.1 Vegetation Land Change**Vegetation Type**

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Trees	0.4 / 0.1	-33.3000	0.0000	0.0000	-33.3000
Total		-33.3000	0.0000	0.0000	-33.3000

**BIOLOGICAL ASSESSMENT
FOR THE WILLOW CREEK COMMUNITY SERVICES DISTRICT
BRANNAN MOUNTAIN WATER STORAGE TANK PROJECT,
WILLOW CREEK, CALIFORNIA**



October 21, 2020

Prepared for:

Willow Creek Community Services District

Prepared by:

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1. INTRODUCTION

1.1. PROJECT LOCATION AND DESCRIPTION

Willow Creek Community Services District is proposing the expansion of their water storage capacity by construction of a new water storage tank in Willow Creek, Humboldt County, California. Additional storage capacity is needed for this water distribution system to work optimally. Willow Creek CSD is proposing to construct and operate a tank in Pressure Zone 1. The proposed storage tank will be constructed in the middle of an unaddressed, 0.5-acre parcel (Assessor Parcel Number 522-492-011-000) that is owned by Willow Creek CSD. The tank will be constructed of bolted steel plates, and will be painted to blend with the surrounding tree colors. The steel tank will be constructed on a concrete ring wall foundation on an excavated and graded level area. In addition, the proposed project includes on-site pipelines, valves (above and below ground), drain lines, storm drain culverts, chain link fencing and gate, and asphalt pavement around the tank.

The final tank size will be determined after several factors are considered, including available funds. Two sizes of steel tank are analyzed in this Initial Study: a 72-foot diameter tank that can store 650,000 gallons of water; and a 60-foot diameter tank that can store 409,000 gallons (37% reduction in volume). The smaller tank fits on the same graded pad with similar on-site pipes and appurtenances, although the smaller tank will have a larger asphalt surface around the perimeter. The smaller tank would cost less to construct than the larger tank. The larger tank is better at achieving project goals. The reduced volume will still provide more storage capacity that moves the water system toward meeting regulatory requirements for storage, will still provide needed resiliency in the northwest part of town, and will help optimize groundwater pumping.

Earthwork is needed to construct the tank at the designed elevation. It will consist of clearing and grubbing existing vegetation, removing about 4,600 cubic yards of cut material in the hill slope, placing and compacting fill material to make a flat area, and hauling about 4,500 cubic yards of export (to an appropriate and permitted off-site disposal area). The existing access road (250 feet in length) between Brannan Mountain Road and the tank site will be widened and paved to a top width of 15 feet. The access road is located within a public utility easement and access easement that is approximately 40 feet wide and the entrance is along Brannan Mountain Road. The public utility easement is on a privately-owned 48-acre parcel (Assessor Parcel Number 522-492-012-000) that is adjacent to the parcel owned by Willow Creek CSD (the tank site).

Also proposed is a new water pipeline that connects the proposed water tank to the existing distribution system located at the intersection of Brannan Mountain Road and Stage Coach Lane. The proposed water pipeline is 12 inches in diameter and will be placed 36 inches below the existing surface of the ground. The pipeline will run for approximately 250 feet from the new tank to Brannan Mountain Road underneath the access road. Then, the pipeline will run for approximately 250 feet along the north shoulder of Brannan Mountain Road (and within the road right-of-way) to the northeast corner of the intersection of Brannan Mountain Road and Stage Coach Lane, where it will tie in to an existing 8-inch waterline. Disturbed areas will be seeded with native or ornamental vegetation, as appropriate. The total project footprint is about 0.6 acre: 0.5 acre for the tank site and 0.1 acre for the new water pipeline and widened access road. For this biological assessment, the Study Area was this 0.6 acre area.

1.2. PURPOSE AND SCOPE OF ASSESSMENT

In support of the environmental review process for compliance with the California Environmental Quality Act, the federal Endangered Species Act, and the National Environmental Policy Act, Natural Investigations Co. has prepared this assessment to provide information on biological resources within the Study Area. This assessment identifies the biological resources within the Study Area, the regulatory environment affecting such resources, any potential Project-related impacts upon these

resources, and identifies mitigation measures to reduce these impacts. The specific scope of services performed for this Biological Resources Assessment consisted of the following tasks:

- Compile all readily-available historical biological resource information about the Study Area;
- Spatially query state and federal databases for any historic occurrences of special-status species or habitats within the Study Area and vicinity;
- Perform a reconnaissance-level field survey of the Study Area, including photographic documentation;
- Inventory all flora and fauna observed during the field survey;
- Characterize and map the habitat types present within the Study Area, including any potentially-jurisdictional water resources;
- Evaluate the likelihood for the occurrence of any special-status species;
- Assess the potential for the Project to adversely impact any sensitive biological resources;
- Recommend mitigation measures designed to avoid or minimize Project-related impacts; and
- Prepare and submit a report summarizing all of the above tasks.

The scope of services does not include other services that are not described in this Section, such as protocol-level surveys for special-status species.

1.3. REGULATORY SETTING

The following section summarizes applicable regulations of biological resources on real property in California.

1.3.1. Special-status Species Regulations

The United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service implement the Federal Endangered Species Act of 1973 (FESA) (16 USC §1531 *et seq.*). Threatened and endangered species on the federal list (50 CFR §17.11, 17.12) are protected from “take” (direct or indirect harm), unless a FESA Section 10 Permit is granted or a FESA Section 7 Biological Opinion with incidental take provisions is rendered. Pursuant to the requirements of FESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally listed species may be present in the project area and determine whether the proposed project will have a potentially significant impact upon such species. Under FESA, habitat loss is considered to be an impact to the species. In addition, the agency is required to determine whether the project is likely to jeopardize the continued existence of any species proposed to be listed under FESA or result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC §1536[3], [4]). Therefore, project-related impacts to these species or their habitats would be considered significant and would require mitigation. Species that are candidates for listing are not protected under FESA; however, USFWS advises that a candidate species could be elevated to listed status at any time, and therefore, applicants should regard these species with special consideration.

Another federal law, the Magnuson-Stevens Fishery Conservation and Management Act of 1976, was established to conserve and manage fishery resources found off the coast, as well as anadromous species and Continental Shelf fishery resources of the United States, by exercising (A) sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish within the exclusive economic zone established by Presidential Proclamation 5030, dated March 10, 1983, and (B) exclusive fishery management authority beyond the exclusive economic zone over such anadromous species, Continental Shelf fishery resources, and fishery resources in special areas.

The California Endangered Species Act of 1970 (CESA) (California Fish and Game Code §2050 *et seq.*, and CCR Title 14, §670.2, 670.51) prohibits “take” (defined as hunt, pursue, catch, capture, or kill) of species listed under CESA. A CESA permit must be obtained if a project will result in take of listed species, either during construction or over the life of the project. Section 2081 establishes an incidental take permit program for state-listed species. Under CESA, California Department of Fish and Wildlife

(CDFW) has the responsibility for maintaining a list of threatened and endangered species designated under state law (CFG Code 2070). CDFW also maintains lists of species of special concern, which serve as “watch lists.” Pursuant to requirements of CESA, an agency reviewing proposed projects within its jurisdiction must determine whether any state-listed species may be present in the Study Area and determine whether the proposed project will have a potentially significant impact upon such species. Project-related impacts to species on the CESA list would be considered significant and would require mitigation.

California Fish and Game Code Sections 4700, 5050, and 5515 designates certain mammal, amphibian, and reptile species “fully protected”, making it unlawful to take, possess, or destroy these species except under issuance of a specific permit. The California Native Plant Protection Act of 1977 (CFG Code §1900 *et seq.*) requires CDFW to establish criteria for determining if a species or variety of native plant is endangered or rare. Section 19131 of the code requires that landowners notify CDFW at least 10 days prior to initiating activities that will destroy a listed plant to allow the salvage of plant material.

Many bird species, especially those that are breeding, migratory, or of limited distribution, are protected under federal and state regulations. Under the Migratory Bird Treaty Act of 1918 (16 USC §703-711), migratory bird species and their nests and eggs that are on the federal list (50 CFR §10.13) are protected from injury or death, and project-related disturbances must be reduced or eliminated during the nesting cycle. California Fish and Game Code (§3503, 3503.5, and 3800) prohibits the possession, incidental take, or needless destruction of any bird nests or eggs. Fish and Game Code §3511 designates certain bird species “fully protected”, making it unlawful to take, possess, or destroy these species except under issuance of a specific permit. The Bald and Golden Eagle Protection Act (16 USC §668) specifically protects bald and golden eagles from harm or from the trade of their parts.

California Environmental Quality Act (CEQA) (Public Resources Code §15380) defines “rare” in a broader sense than the definitions of threatened, endangered, or fully protected. Under the CEQA definition, CDFW can request additional consideration of species not otherwise protected. CEQA requires that the impacts of a project upon environmental resources must be analyzed and assessed using criteria determined by the lead agency. Sensitive species that would qualify for listing but are not currently listed may be afforded protection under CEQA. The CEQA Guidelines (§15065) require that a substantial reduction in numbers of a rare or endangered species be considered a significant effect. CEQA Guidelines (§15380) provide for assessment of unlisted species as rare or endangered under CEQA if the species can be shown to meet the criteria for listing. Plant species on the California Native Plant Society (CNPS) Lists 1A, 1B, or 2 are typically considered rare under CEQA. California “Species of Special Concern” is a category conferred by CDFW on those species that are indicators of regional habitat changes or are considered potential future protected species. While they do not have statutory protection, Species of Special Concern are typically considered rare under CEQA and thereby warrant specific protection measures.

1.3.2. Jurisdictional Water Resources

Real property that contains water resources are subject to various federal and state regulations and activities occurring in these water resources may require permits, licenses, variances, or similar authorization from federal, state and local agencies, as described next.

The Federal Water Pollution Control Act Amendments of 1972 (as amended), commonly known as the Clean Water Act (CWA), established the basic structure for regulating discharges of pollutants into “waters of the United States”. Waters of the US includes essentially all surface waters, all interstate waters and their tributaries, all impoundments of these waters, and all wetlands adjacent to these waters. CWA Section 404 requires approval prior to dredging or discharging fill material into any waters of the US, especially wetlands. The permitting program is designed to minimize impacts to waters of the US, and when impacts cannot be avoided, requires compensatory mitigation. The US Army Corps of Engineers (USACE) is responsible for administering Section 404 regulations.

Substantial impacts to jurisdictional wetlands may require an Individual Permit. Small-scale projects may require only a Nationwide Permit, which typically has an expedited process compared to the Individual Permit process. Mitigation of wetland impacts is required as a condition of the CWA Section 404 Permit and may include on-site preservation, restoration, or enhancement and/or off-site restoration or enhancement. The characteristics of the restored or enhanced wetlands must be equal to or better than those of the affected wetlands to achieve no net loss of wetlands.

Under CWA Section 401, every applicant for a federal permit or license for any activity which may result in a discharge to a water body must obtain State Water Quality Certification that the proposed activity will comply with State water quality standards. The California State Water Resources Control Board is responsible for administering CWA Section 401 regulations. Any construction project that disturbs at least one acre of land requires enrollment in the State's general permitting program under the National Pollutant Discharge Elimination System and implementation of a storm water pollution prevention plan.

Section 10 of the Rivers and Harbors Act of 1899 requires approval from USACE prior to the commencement of any work in or over navigable Waters of the US, or which affects the course, location, condition or capacity of such waters. Navigable waters of the United States are defined as waters that have been used in the past, are now used, or are susceptible to use as a means to transport interstate or foreign commerce up to the head of navigation. Rivers and Harbors Act Section 10 permits are required for construction activities in these waters.

California Fish and Game Code (§1601 - 1607) protects fishery resources by regulating *“any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake.”* CDFW requires notification prior to commencement, and issuance of a Lake or Streambed Alteration Agreement, if a proposed project will result in the alteration or degradation of “waters of the State”. The limit of CDFW jurisdiction is subject to the judgment of the Department; currently, this jurisdiction is interpreted to be the “stream zone”, defined as *“that portion of the stream channel that restricts lateral movement of water”* and delineated at *“the top of the bank or the outer edge of any riparian vegetation, whichever is more landward”*. CDFW reviews the proposed actions and, if necessary, submits to the applicant a proposal for measures to protect affected fish and wildlife resources. The final proposal that is mutually agreed upon by the CDFW and the applicant is the Streambed Alteration Agreement. Projects that require a Streambed Alteration Agreement may also require a CWA 404 Section Permit and/or CWA Section 401 Water Quality Certification.

2. ENVIRONMENTAL SETTING

The Study Area is located within the Outer North Coast Ranges geographic subregion, which is contained within the Northwestern California geographic subdivision of the larger California Floristic Province (Baldwin et al. 2012). This region has a Mediterranean-type climate, characterized by distinct seasons of hot, dry summers and wet, moderately- cold winters. The Study Area and vicinity is in climate Zone 14 “Northern California's Inland Areas with Some Ocean Influence”, with maritime air moderating temperatures that would otherwise be hotter in summer and colder in the winter (Brenzel 2012). The topography of the Study Area follows a moderately sloping ridgeline that drops towards the southeast. The elevation ranges from approximately 610 feet to 760 feet above mean sea level. The Study Area is located within the Trinity River watershed. The surrounding land uses are as follows: national forest and open space to the north and west; a school, PG&E substation and Caltrans maintenance station to the east; and agriculture and rural residential to the south.

3. METHODOLOGY

3.1. PRELIMINARY DATA GATHERING AND RESEARCH

Prior to conducting the field survey the following information sources were reviewed:

- Any readily-available previous biological resource studies pertaining to the Study Area or vicinity
- United States Geologic Service (USGS) 7.5 degree-minute topographic quadrangles of the Study Area and vicinity
- Aerial photography of the Study Area
- California Natural Diversity Database (CNDDDB), electronically updated monthly by subscription to CDFW
- USFWS species list (IPaC Trust Resources Report)(provided as Appendix 1).

3.2. FIELD SURVEY

Consulting biologist Kristen Ahrens, M.S., conducted a reconnaissance-level field survey on January 22, 2019. A full-coverage pedestrian survey was performed. All visible fauna and flora observed were recorded in a field notebook, and identified to the lowest possible taxon. Survey efforts emphasized the search for any special-status species that had documented occurrences in the CNDDDB within the vicinity of the Study Area. Landowner permission to visit neighboring parcels was not obtained, so surveys of lands adjacent to the Study Area were limited to binocular surveys from public places such as road rights-of-way.

When a specimen could not be identified in the field, a photograph or voucher specimen (depending upon permit requirements) was taken and identified in the laboratory using a dissecting scope where necessary. Plant specimens difficult to identify were resolved by botanist Timothy R. D. Nosal (Natural Investigations, Co.). Taxonomic determinations were facilitated by referencing museum specimens or by various texts, including the following: Powell and Hogue (1979); Pavlik (1991); (1993); Brenzel (2012); Stuart and Sawyer (2001); Lanner (2002); Sibley (2003); Baldwin et al. (2012); Calflora (2017); CDFW (2017b,c); NatureServe 2017; and University of California at Berkeley (2017a,b).

The locations of any special-status species sighted were marked on aerial photographs and/or georeferenced with a geographic positioning system (GPS) receiver. Habitat types occurring in the Study Area were mapped on aerial photographs, and information on habitat conditions and the suitability of the habitats to support special-status species was also recorded. The Study Area was also informally assessed for the presence of potentially-jurisdictional water features, including riparian zones, isolated wetlands and vernal pools, and other biologically-sensitive aquatic habitats.

3.3. MAPPING AND OTHER ANALYSES

Locations of species' occurrences and habitat boundaries within the Study Area were recorded on color aerial photographs, and then digitized to produce the final habitat maps. The boundaries of potentially jurisdictional water resources within the Study Area were identified and measured in the field, and similarly digitized to calculate acreage and to produce informal delineation maps. Geographic analyses were performed using geographical information system software (ArcGIS 10, ESRI, Inc.). Vegetation communities (assemblages of plant species growing in an area of similar biological and environmental factors), were classified by Vegetation Series (distinctive associations of plants, described by dominant species and particular environmental setting) using the CNPS Vegetation Classification system (Sawyer and Keeler-Wolf, 1995). Wetlands and other aquatic habitats were classified using USFWS National Wetlands Inventory Classification System for Wetland and Deepwater Habitats, or "Cowardin class" (Cowardin et al., 1979; USFWS 2007). Informal wetland delineation methods consisted of an abbreviated, visual assessment of the three requisite wetland parameters (hydrophytic vegetation, hydric soils, hydrologic regime) defined in the US Army Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, 1987). Wildlife habitats were classified according to the CDFW's

California Wildlife Habitat Relationships System (CDFW, 2007c). Species' habitat requirements and life histories were identified using the following sources: Baldwin et al. (2012); CNPS (2017), Calflora (2009); CDFW (2017a,b,c); and University of California at Berkeley (2017a,b).

4. RESULTS

4.1. INVENTORY OF FLORA AND FAUNA FROM FIELD SURVEY

All plants sighted during the reconnaissance-level field survey of the Study Area are listed in Appendix 2. Animal activity was limited during the field survey. The only animals observed was a hawk flyover (*Buteo* sp.).

No federally-listed species were detected. No special-status species were detected.

4.2. VEGETATION COMMUNITIES AND WILDLIFE HABITATS AND CORRIDORS

4.2.1. Terrestrial Vegetation Communities

The Study Area contains the following terrestrial vegetation communities: ruderal/developed; and mixed conifer forest. These vegetation communities are discussed here and are delineated in the Exhibits. Aquatic vegetation communities are discussed in the section on jurisdictional waters.

Ruderal/Disturbed. These areas consist of disturbed or converted natural habitat that is now either in ruderal state, graded, or urbanized with gravel roads, or structure and utility placement. Vegetation within this habitat type consists primarily of nonnative weedy or invasive species or ornamental plants lacking a consistent community structure. This habitat is classified as Holland vegetation type – “Urban” and “Urban” and “Barren” wildlife habitat types by CDFW's Wildlife Habitat Relationship System (WHR). This habitat type provides limited resources for wildlife and is utilized primarily by species tolerant of human activities. The disturbed and altered condition of these lands greatly reduces their habitat value and ability to sustain rare plants or diverse wildlife assemblages.

Mixed Conifer Forest: In the Study Area, closed-canopy, tree-dominated habitats occupy the majority of the Study Area. Areas dominated by trees can be further described as mixed conifer forest. The mixed conifer consists of Douglas-fir (*Pseudotsuga menziesii*), madrone (*Arbutus menziesii*), incense-cedar (*Calocedrus decurrens*) and oaks (*Quercus* spp.) as the dominant species with an understory of Himalayan blackberry (*Rubus armeniacus*), poison-oak (*Toxicodendron diversilobum*), snowberry (*Symphoricarpos alba*) and various herbs and grasses. This vegetation type can be classified as the Holland Type “Coast Range Mixed Conifer Forest” or as “*Pseudotsuga menziesii* Forest alliance” (Sawyer et al. 2009).

The Natural Resources Conservation Service (NRCS) has identified several soil types within the Study Area. The soils present within the Study Area are derived from metasedimentary rock. No soils derived from serpentinite or basalt are mapped within or adjacent to the Study Area (NRCS 2019).

4.2.2. Wildlife Habitat Types

The mixed conifer forest habitat is classified as “Douglas-fir” and the ruderal/developed habitat is classified as “Urban” and “Barren” wildlife habitat types by DFW's Wildlife Habitat Relationship System (WHR). No special-status habitats were detected within the Study Area. The CNDDB reported no special-status habitats within the Study Area. The CNDDB reported 4 special-status habitats in a 10-mile radius outside of the Study Area: Klamath/North Coast Interior Headwater Fishless Stream,

Klamath/North Coast Rainbow Trout Stream, Klamath/North Coast Fall/Winter Run Chinook Salmon River, and Upland Douglas Fir Forest. No critical habitat for any federally-listed species occurs within the Study Area. The Study Area is not federally designated as an Essential Fish Habitat.

4.2.3. Critical Habitat

No critical habitat for any federally-listed species occurs within the Study Area.

4.2.4. Habitat Plans and Wildlife Corridors

Wildlife movement corridors link remaining areas of functional wildlife habitat that are separated primarily by human disturbance, but natural barriers such as rugged terrain and abrupt changes in vegetation cover are also possible. Wilderness and open lands have been fragmented by urbanization, which can disrupt migratory species and separate interbreeding populations. Corridors allow migratory movements and act as links between these separated populations. No wildlife corridors exist within or directly adjacent to the Study Area. However, in the vicinity there are some important wildlife corridors: the Trinity Wild and Scenic River corridor; the Willow Creek corridor; and the Six Rivers National Forest. No fishery resources exist in or near the Study Area. Fisheries exist in Willow Creek and Trinity River. The Study Area is not located within any adopted Habitat Conservation Plan or Natural Community Conservation Plan.

4.3. SPECIAL-STATUS SPECIES

For the purposes of this assessment, “special status” is defined to be species that are of management concern to state or federal natural resource agencies, and include those species that are:

- Listed as endangered, threatened, proposed, or candidate for listing under the Federal Endangered Species Act;
- Listed as endangered, threatened, rare, or proposed for listing, under the California Endangered Species Act of 1970;
- Designated as endangered or rare, pursuant to California Fish and Game Code (§1901);
- Designated as fully protected, pursuant to California Fish and Game Code (§3511, §4700, or §5050);
- Designated as a species of special concern by CDFW; or
- Plants listed as rare under the California Native Plant Protection Act.

4.3.1. Special-status Species Observed During Field Survey

During the field survey, no special-status species were detected within the Study Area.

4.3.1. Historical Special-status Species’ Occurrences

A list of special-status plant and animal species that historically occurred within the Study Area and vicinity was compiled based upon the following:

- Any previous and readily-available biological resource studies pertaining to the Study Area;
- Informal consultation with USFWS by generating an electronic Species List (Information for Planning and Conservation website at <https://ecos.fws.gov/ipac/>);
- A spatial query of the CNDDDB.

The CNDDDB was queried and any reported occurrences of special-status species were plotted in relation to the Study Area boundary using GIS software (see Exhibits). The CNDDDB reported no special-status species occurrences within the Study Area. Within a 10-mile buffer of the Study Area boundary, the CNDDDB reported 242 special-status species occurrences from 52 different species.

A USFWS species list was generated online using the USFWS' IPaC Trust Resource Report System (see Appendix 1). The following listed species should be considered in the impact assessment:

- Listed Birds
 - Marbled Murrelet (*Brachyramphus marmoratus*)
 - Northern Spotted Owl (*Strix occidentalis caurina*)
 - Western Snowy Plover (*Charadrius nivosus nivosus*)
 - Yellow-billed Cuckoo (*Coccyzus americanus*)
- Migratory Birds (in general)

Table 1. Special-status Species Reported by CNDDDB in the Vicinity of the Study Area

Common Name Scientific Name	Status*	General Habitat**	Microhabitat**
Del Norte salamander <i>Plethodon elongatus</i>	CWL	Old-growth associated species with optimum conditions in the mixed conifer/hardwood ancient forest ecosystem.	Cool, moist, stable microclimate, a deep litter layer, closed multi-storied canopy, dominated by large, old trees.
Southern torrent salamander <i>Rhyacotriton variegatus</i>	CSSC	Coastal redwood, Douglas-fir, mixed conifer, montane riparian, and montane hardwood-conifer habitats. Old growth forest.	Cold, well-shaded, permanent streams and seepages, or within splash zone or on moss-covered rock within trickling water.
Pacific tailed frog <i>Ascaphus truei</i>	CSSC	Occurs in montane hardwood-conifer, redwood, Douglas-fir & ponderosa pine habitats.	Restricted to perennial montane streams. Tadpoles require water below 15 degrees c.
Northern red-legged frog <i>Rana aurora</i>	CSSC	Humid forests, woodlands, grasslands, & streamsides in northwestern California, usually near dense riparian cover.	Generally near permanent water, but can be found far from water, in damp woods and meadows, during non-breeding season.
Foothill yellow-legged frog <i>Rana boylei</i>	CCT/CSSC	Partly-shaded, shallow streams & riffles with a rocky substrate in a variety of habitats.	Need at least some cobble-sized substrate for egg-laying. Need at least 15 weeks to attain metamorphosis.
Great blue heron <i>Ardea herodias</i>	CSSC	Colonial nester in tall trees, cliffsides, and sequestered spots on marshes.	Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows.
Osprey <i>Pandion haliaetus</i>	CSSC/CWL	Ocean shore, bays, fresh-water lakes, and larger streams.	Large nests built in tree-tops within 15 miles of a good fish-producing body of water.
Northern goshawk <i>Accipiter gentilis</i>	CSSC	Within, and in vicinity of, coniferous forest. Uses old nests, and maintains alternate sites.	Usually nests on north slopes, near water. Red fir, lodgepole pine, jeffrey pine, and aspens are typical nest trees.
Chinook salmon - Upper Klamath and Trinity Rivers ESU. <i>Oncorhynchus tshawytscha</i> pop. 30	CSSC	Spring-run chinook in the trinity river & the Klamath River upstream of the mouth of the Trinity River.	Major limiting factor for juvenile chinook salmon is temperature, which strongly effects growth & survival.
Coast cutthroat trout <i>Oncorhynchus clarkii clarkii</i>	CSSC	Small coastal streams from the Eel River to the Oregon border.	Small, low gradient coastal streams & estuaries. Need shaded streams with water temps <18c, & small gravel for spawning
Summer-run steelhead trout <i>Oncorhynchus mykiss irideus</i> pop. 36	CSSC	No. Calif coastal streams south to Middle Fork Eel River. Within range of Klamath Mtns province DPS & No. Calif DPS.	Cool, swift, shallow water & clean loose gravel for spawning, & suitably large pools in which to spend the summer.
Yuma myotis <i>Myotis yumanensis</i>	CSSC	Optimal habitats are open forests and woodlands with sources of water over which to feed.	Distribution is closely tied to bodies of water. Maternity colonies in caves, mines, buildings or crevices.
Long-eared myotis <i>Myotis evotis</i>	CSSC	Found in all brush, woodland & forest habitats from sea level to about 9000 ft. Prefers coniferous woodlands & forests.	Nursery colonies in buildings, crevices, spaces under bark, & snags. Caves used primarily as night roosts.
Fringed myotis <i>Myotis thysanodes</i>	CSSC	In a wide variety of habitats, optimal habitats are pinyon-juniper, valley foothill hardwood & hardwood-conifer.	Uses caves, mines, buildings or crevices for maternity colonies and roosts.
Long-legged myotis <i>Myotis volans</i>	CSSC	Most common in woodland & forest habitats above 4000 ft. Trees are important day roosts; caves & mines are night roosts.	Nursery colonies usually under bark or in hollow trees, but occasionally in crevices or buildings.
Silver-haired bat <i>Lasionycteris noctivagans</i>	CSSC	Primarily a coastal & montane forest dweller feeding over streams, ponds & open brushy areas.	Roosts in hollow trees, beneath exfoliating bark, abandoned woodpecker holes & rarely under rocks. Needs drinking water.
Hoary bat <i>Lasiurus cinereus</i>	CSSC	Prefers open habitats or habitat mosaics, with access to trees for cover & open areas	Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires

Common Name Scientific Name	Status*	General Habitat**	Microhabitat**
		or habitat edges for feeding.	water.
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	CSSC	Throughout California in a wide variety of habitats. Most common in mesic sites.	Roosts in the open, hanging from walls & ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.
Sonoma tree vole <i>Arborimus pomo</i>	CSSC	North coast fog belt from Oregon border to Sonoma Co. In Douglas-fir, redwood & montane hardwood-conifer forests.	Feeds almost exclusively on Douglas-fir needles. Will occasionally take needles of grand fir, hemlock or spruce.
North American porcupine <i>Erethizon dorsatum</i>	CSSC	Most common in montane conifer, alpine dwarf-shrub, and wet meadow habitats.	Also found in hardwood, riparian, aspen and desert shrub habitats.
Humboldt marten <i>Martes caurina humboldtensis</i>	CCE/CSSC	Occurs only in the coastal redwood zone from the Oregon border south to Sonoma County.	Associated with late-successional coniferous forests, prefer forests with low, overhead cover.
Fisher - west coast DPS <i>Pekania pennanti</i>	CT/CSSC	Intermediate to large-tree stages of coniferous forests & deciduous-riparian areas with high percent canopy closure.	Uses cavities, snags, logs & rocky areas for cover & denning. Needs large areas of mature, dense forest.
California wolverine <i>Gulo gulo</i>	FPT/CT/CFP	Found in the north coast mountains and the Sierra Nevada. Found in a wide variety of high elevation habitats.	Needs water source. Uses caves, logs, burrows for cover & den area. Hunts in more open areas. Can travel long distances.
Western pond turtle <i>Emys marmorata</i>	CSSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams & irrigation ditches, usually with aquatic vegetation, be	Need basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying
Western bumble bee <i>Bombus occidentalis</i>	CSSC	Once common & widespread, species has declined precipitously from central ca to southern b.c., perhaps from disease.	
Western pearlshell <i>Margaritifera falcata</i>	CSSC	Aquatic.	Prefers lower velocity waters.
Hooded lancetooth <i>Ancotrema voyanum</i>	CSSC	Occurs mostly in the shasta-trinity national forests in the northern half of trinity county. Associated with limestone s	All known occurrences are near streams or in draws (intermittent stream channel). Needs permanent dampness. Late success
Trinity shoulderband <i>Helminthoglypta talmadgei</i>	CSSC	Limestone rockslides, litter in coniferous forests, old mine tailings, and along shaded streams in the Klamath Mountains	
Pacific fuzzwort <i>Ptilidium californicum</i>	CNPS List 4.3	Lower montane coniferous forest, upper montane coniferous forest.	Epiphytic on fallen and decaying logs and stumps. Rarely on boulders over humus. 0-1800 m.
Angel's hair lichen <i>Ramalina thrausta</i>	CNPS List 2B.1	North coast coniferous forest.	On dead twigs and other lichens. 75-430 m.
Tracy's sanicle <i>Sanicula tracyi</i>	CNPS List 4.2	Cismontane woodland, lower montane coniferous forest, upper montane coniferous forest.	Dry gravelly slopes or flats, usually in or at the margin of oak woodland with scattered trees. 100-1585 m.
Wayside aster <i>Eucephalus vialis</i>	CNPS List 1B.2	Lower montane coniferous forest, upper montane coniferous forest.	Gravelly substrates. 910-1545 m.
Bunchberry <i>Cornus canadensis</i>	CNPS List 2B.2	North coast coniferous forest, bogs and fens, meadows and seeps.	60-1920 m.
Pale yellow stonecrop <i>Sedum laxum</i> ssp. <i>flavidum</i>	CNPS List 4.3	Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, upper montane coniferous for	Serpentine or basalt outcrops. 455-2000 m.
Little-leaved huckleberry <i>Vaccinium scoparium</i>	CNPS List 2B.2	Subalpine coniferous forest.	Rocky, subalpine woods. 1035-2200 m.

Common Name Scientific Name	Status*	General Habitat**	Microhabitat**
Bald mountain milk-vetch <i>Astragalus umbraticus</i>	CNPS List 2B.3	Cismontane woodland, lower montane coniferous forest.	Dry open oak and pine woodlands; sometimes on roadsides. 150-1250 m.
California globe mallow <i>Iliamna latibracteata</i>	CNPS List 1B.2	North coast coniferous forest, chaparral, lower montane coniferous forest, riparian scrub (streambanks).	Seepage areas in silty clay loam. 60-2000 m.
Siskiyou checkerbloom <i>Sidalcea malviflora</i> ssp. <i>patula</i>	CNPS List 1B.2	Coastal prairie, broadleafed upland forest.	Open coastal forest. 15-65m.
Oregon fireweed <i>Epilobium oreganum</i>	CNPS List 1B.2	Bogs and fens, lower montane coniferous forest, upper montane coniferous forest.	In and near springs and bogs; at least sometimes on serpentine. 500-2240 m.
Wolf's evening-primrose <i>Oenothera wolfii</i>	CNPS List 1B.1	Coastal bluff scrub, coastal dunes, coastal prairie, lower montane coniferous forest.	Sandy substrates; usually mesic sites. 3-800 m.
Small groundcone <i>Kopsiopsis hookeri</i>	CNPS List 2B.3	North coast coniferous forest.	Open woods, shrubby places, generally on <i>Gaultheria shallon</i> . 90-885 m.
Pink-margined monkeyflower <i>Erythranthe trinitensis</i>	CNPS List 1B.3	Lower montane coniferous forest, upper montane coniferous forest, cismontane woodland, meadows and seeps.	Often on serpentine and roadsides. 400-2285 m.
Pacific gilia <i>Gilia capitata</i> ssp. <i>pacifica</i>	CNPS List 1B.2	Coastal bluff scrub, chaparral, coastal prairie, valley and foothill grassland.	5-1330 m.
Heckner's lewisia <i>Lewisia cotyledon</i> var. <i>heckneri</i>	CNPS List 1B.2	Lower montane coniferous forest.	Rocky places. 225-2100 m.
Howell's montia <i>Montia howellii</i>	CNPS List 2B.2	Meadows, north coast coniferous forest, vernal pools.	Vernally wet sites; Often on compacted soil. 0-835 m.
Oregon goldthread <i>Coptis laciniata</i>	CNPS List 4.2	North coast coniferous forest, meadows and seeps.	Mesic sites such as moist streambanks. 0-1000 m.
Gasquet rose <i>Rosa gymnocarpa</i> var. <i>serpentina</i>	CNPS List 1B.3	Chaparral, cismontane woodland.	Serpentine. Often on roadsides, sometime on ridges, streambanks, and in openings. 400-1500 m.
Bensoniella <i>Bensoniella oregona</i>	CR/ CNPS List 1B.1	Bogs and fens, lower montane coniferous forest, meadows and seeps.	Wet meadows and openings in forest. 915-1400 m.
Northern meadow sedge <i>Carex praticola</i>	CNPS List 2B.2	Meadows and seeps.	Moist to wet meadows. 0-3200 m.
Giant fawn lily <i>Erythronium oregonum</i>	CNPS List 2B.2	Cismontane woodland, meadows and seeps.	Openings. Sometimes on serpentine; rocky sites. 100-1150 m.
Coast fawn lily <i>Erythronium revolutum</i>	CNPS List 2B.2	Bogs and fens, broadleafed upland forest, north coast coniferous forest.	0-1065m.
White-flowered rein orchid <i>Piperia candida</i>	CNPS List 1B.2	North coast coniferous forest, lower montane coniferous forest, broadleafed upland forest.	Coast ranges from Santa Cruz County north; on serpentine. Forest duff, mossy banks, rock outcrops & muskeg. 0-1200m.

***Definitions of Status Codes:** FE = Federally listed as endangered; FT = Federally listed as threatened; FPE = Federally proposed for listing as endangered; FPT = Federally proposed for listing as threatened; FC = Candidate for Federal listing; FD = Federally delisted (threatened or endangered); MB = Migratory Bird Act; CE = California State listed as endangered; CT = California State listed as Threatened; CCT = California State Candidate for listing as Threatened; CSSC = California species of special concern; CR = California

rare species; CFP = California fully protected species; CD = California delisted (Threatened or Endangered); CFP = California Fully Protected; CWL = California watch list species; CNPS (California Rare Plant Rank) List 1A = Plants presumed extinct in California by CDFW; CNPS 1B = CDFW designated rare or endangered plants in California and elsewhere; CNPS 2 = CDFW designated rare or endangered plants in California, but more common elsewhere; CNPS 3 = CDFW designated plants about which we need more information; and CNPS 4 = CDFW designated plants of limited distribution.

****Copied verbatim from CNDDDB.**

4.3.2. Focal Species Accounts

4.3.2.1. **Sonoma Tree Vole (*Aborimus pomo*)**

The Sonoma tree vole (*Aborimus pomo*) is a small rodent associated with mature forests. This species is an important prey species of the northern spotted owl. The Sonoma tree vole is an arboreal species that is found in the North Coast fog belt from the Oregon border south to Sonoma County. This species is found in Douglas-fir, redwood and montane hardwood conifer forests, feeding almost exclusively on Douglas-fir needles although needles of grand fir, hemlock and spruce are also consumed.

The mixed conifer forest within the Study Area is composed largely of Douglas-fir. The forest habitat within the Study Area is not a mature, “old growth” stand. Mature forest stands are the preferred habitat for the Sonoma Vole. Although this species will utilize less mature stands of trees, the probability is greatly reduced. Therefore, the likelihood of this site providing suitable habitat for the Sonoma Vole is low.

4.3.2.2. **North American Porcupine (*Erethizon dorsatum*)**

The North American porcupine (*Erethizon dorsatum*) is the second largest rodent in North America. Typically weighing 9 to 13 pounds, this species is found in a variety of habitats, but is most common in montane conifer and wet meadow habitats. The North American porcupine is an herbivore that consumes a varied diet of grasses, forbs, shrubs, wetland plants and some agricultural crops. In winter, their diet consists largely of twigs, bark and the cambium of hardwood and conifer trees. Observations of girdled trees and of stems with bark that has been removed often indicate the presence of this species during the winter.

The mixed conifer forest within the Study Area is among the preferred habitats for this species. However, the north American porcupine was not observed, nor was any evidence of feeding (girdled trees, de-barked stems) during the January site visit. Therefore, the likelihood of this species being present within the Study Area is low.

4.3.2.3. **Bald Mountain Milk-Vetch (*Astragalus umbricatus*)**

Bald Mountain milk-vetch (*Astragalus umbricatus*) is a summer-blooming herb in the pea family (Fabaceae). This ascending perennial with spreading branches grows to 8 to 20 inches in height. The leaves are 2-5 inches long, and are divided into 11-23 oblong leaflets. Greenish-white flowers are borne on upright stems, in somewhat dense racemes of 10-25 flowers. Bald Mountain milk-vetch is typically found along roadsides within dry, open oak and pine woodland vegetation; at elevations between 150 and 1250 meters (450-3,800 feet).

The mixed conifer vegetation found within the Study Area could provide suitable habitat for Bald Mountain milk-vetch. However, this perennial plant was not observed in the site. Therefore, the likelihood of this species being present within the Study Area is low.

4.3.2.4. **Small Groundcone (*Kopsiopsis hookeri*)**

The small groundcone (*Kopsiopsis hookeri*) is a spring/summer-blooming perennial rhizomatous herb in the Broomrape family (Orobanchaceae). This species is parasitic on salal (*Gaultheria shallon*) and huckleberries (*Vaccinium* spp.). This species lacks chlorophyll, and appears somewhat like a small, cylindrical pine cone. Ranging in size from 3 to 8 inches tall, this species yellow to purple in color. Small groundcone is typically found in North Coast coniferous forest vegetation; at elevations between 90 and 885 meters (270-2650 feet).

The mixed conifer vegetation found within the Study Area could provide suitable habitat for small groundcone. However, the host species for this plant, salal and huckleberry, were not observed in the site. Therefore, the likelihood of this species being present within the Study Area is low.

4.3.3. Analyses of Likelihood of Occurrence of Special-status Species

The special-status species identified in database queries were further assessed for their likelihood to occur within the Study Area based upon previously documented occurrences, field surveys, their habitat requirements, and the quality and extent of any suitable habitat within the Study Area. Each species was ranked for its likelihood to occur within the Study Area: a "high" rank was given for species where current field surveys have positively identified the species within the Study Area, where there have been previously documented occurrences within the Study Area, and/or where essential habitat elements exist within the Study Area; a "moderate" rank was given for species that were not detected during current field surveys, but where there have been previously documented occurrences within the Study Area or vicinity, and where preferred habitat elements exist within the Study Area; a "low" rank was given for species with no known observations within the Study Area or vicinity, and where habitat elements exist within the Study Area or vicinity, but the quality of that habitat is degraded or of poor quality, and/or where Study Area conditions and land uses deter its use of the Study Area; and a "unlikely" rank was given for species with no known observations within the Study Area or vicinity, and where no suitable habitat exists within the Study Area.

No regionally-occurring special-status plant species were determined to have a medium or high potential to occur within the Study Area.

4.4. POTENTIALLY-JURISDICTIONAL WATER RESOURCES

An informal assessment for the presence of potentially-jurisdictional water resources within the Study Area was also conducted during the field survey.

The USFWS National Wetland Inventory (see Appendix 1) reported no water features within the Study Area. No water features were detected within the Study Area during the field survey (see Exhibits). No vernal pools or other isolated wetlands were identified within the Study Area. Roadside ditches are not expected to be jurisdictional under federal or state regulations because they have upland vegetation and lack channel indicators.

5. IMPACT ANALYSES AND MITIGATION MEASURES

This section establishes the impact criteria, then analyzes potential Project-related impacts upon the known biological resources within the Study Area, and then suggests mitigation measures to reduce these impacts to a less-than-significant level.

5.1. IMPACT SIGNIFICANCE CRITERIA

The significance of impacts to biological resources depends upon the proximity and quality of vegetation communities and wildlife habitats, the presence or absence of special-status species, and the effectiveness of measures implemented to protect these resources from Project-related impacts. As defined by CEQA Guidelines, Appendix G, IV (California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387), the Project would be considered to have a significant adverse impact on biological resources if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by California Department of Fish and Wildlife or U.S. Fish and Wildlife Service
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by California Department of Fish and Wildlife or U.S. Fish and Wildlife Service

- Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

5.2. IMPACT ANALYSIS

The Project's architectural design was overlaid upon the mapped habitats to assist in the analysis of Project-related impacts (see Exhibits). The following discussion evaluates the potential for Project-related activities to adversely affect biological resources according to the criteria set for in the previous section.

5.2.1. Potential Direct / Indirect Adverse Effects Upon Special-status Species

No special-status species were detected in the Study Area and no special-status species are likely to occur within the Study Area. No adverse impacts to special-status species are expected.

Special-status bird species were reported by the CNDDDB or USFWS in the vicinity of the Study Area, including marbled murrelet, northern spotted owl, western snowy plover, yellow-billed cuckoo, great blue heron, osprey and northern goshawk. The Study Area contains suitable nesting habitat for various bird species because of the presence of trees and poles. However, no nests were observed during field surveys. If construction activities are conducted during the nesting season, nesting birds could be directly impacted by removal of trees or utility poles, and indirectly impacted by noise, vibration, and other construction-related disturbance. Therefore, Project construction is considered a potentially significant adverse impact before mitigation.

Recommended Mitigation Measures

If construction activities would occur during the nesting season (usually March to September), a pre-construction survey for the presence of special-status bird species or any nesting bird species should be conducted by a qualified biologist within 500 feet of proposed construction areas. If active nests are identified in these areas, CDFW and/or USFWS should be consulted to develop measures to avoid "take" of active nests prior to the initiation of any construction activities. Avoidance measures may include establishment of a buffer zone using construction fencing or the postponement of vegetation removal until after the nesting season, or until after a qualified biologist has determined the young have fledged and are independent of the nest site.

With the implementation of this mitigation measure, adverse impacts upon special-status bird species and nesting birds would be reduced to a less-than-significant level.

5.2.2. Potential Direct / Indirect Adverse Effects Upon Special-status Habitats or Natural Communities

The Study Area is not within any designated listed species' critical habitat. The Study Area contains no special-status habitats. Project implementation is not expected to impact any special-status habitats. Implementation of the Project would result in the loss of some mixed conifer forest and ruderal habitat, but this small amount of land conversion is not considered to be a significant impact upon protected habitats or sensitive natural communities or the movement of wildlife species. Therefore, no mitigation is required.

Recommended Mitigation Measures

No mitigation is necessary.

5.2.3. Potential Direct / Indirect Effects On Water Resources

The entire Study Area has upland features and contains no water features and no waters of the US or waters of the State. Project construction would not directly impact any surface water bodies. Therefore, no Clean Water Act permits (or state permits) are expected to be necessary.

However, during construction of the proposed project, surface water quality has the potential to be degraded from storm water transport of sediment from disturbed soils or by accidental release of hazardous materials or petroleum products from sources such as heavy equipment servicing or refueling. This is a potentially significant impact. Construction of the proposed project will require implementation of a sediment and erosion control plan, which has been added as a project feature. Therefore, erosion risk will be reduced to a less than significant level.

For project footprints greater than 1 acre, the landowner and its designated general contractor must enroll under the State Water Quality Control Board's Construction General Permit prior to the initiation of construction. In conjunction with enrollment under this Permit, a Storm Water Pollution Prevention Plan, Erosion Control Plan, and a Hazardous Materials Management/Spill Response Plan must be created and implemented during construction to avoid or minimize the potential for erosion, sedimentation, or accidental release of hazardous materials. Implementation of these measures mandated by law would reduce potential construction-related impacts to water quality to a less-than-significant level. No mitigation is necessary.

Recommended Mitigation Measures

No significant impacts were identified, so no mitigation measures are proposed.

5.2.4. Potential Impacts to Wildlife Movement, Corridors, etc.

No wildlife corridors exist within or directly adjacent to the Study Area. However, in the vicinity there are some important wildlife corridors: the Trinity Wild and Scenic River corridor; the Willow Creek corridor; and the Six Rivers National Forest. Fishery resources exist in both Trinity River and Willow Creek. Implementation of the proposed project would necessitate erection of a security fence around the tank compound. The water line is buried and is not a barrier to animal movement. The fence will not allow animal movement and may act as a local barrier to wildlife movement. However, the fenced area is very small (circa 0.3 acre) and it is surrounded by open space, allowing wildlife to move around the fenced area. Implementation of the project will not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

Recommended Mitigation Measures

No mitigation is necessary.

5.2.5. Potential Conflicts With Ordinances, Habitat Conservation Plans, etc.

The project does not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or another approved governmental habitat conservation plan. The Study Area is not within the coverage area of any adopted Habitat Conservation Plan or Natural Community Conservation Plan.

Recommended Mitigation Measures

No mitigation is necessary.

6. REFERENCES

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7. QUALIFICATIONS OF AUTHORS

Dr. G.O. Graening

G. O. Graening holds a doctorate in Biological Sciences and a Master of Science in Biological and Agricultural Engineering. Dr. Graening is an adjunct Professor at California State University at Sacramento, and is an active researcher in the area of conservation biology and groundwater ecology. Dr. Graening is also a Certified Arborist (ISA # WE-6725A). Dr. Graening has 16 years of experience in environmental assessment, including independent contractual work as well as previous employment with *The Nature Conservancy*, Tetra Tech Inc., and CH2M Hill, Inc.

Kristen Ahrens, M.S.

Kristen Ahrens holds a B.S. and M.S. in Biological Sciences. Ms. Ahrens has experience performing sensitive plant and animal surveys with expertise in mammalian studies and is currently a part-time instructor at California State University at Sacramento in the Department of Biological Sciences. Ms. Ahrens has over 7 years of experience in environmental assessment and biology teaching with employers that include Brusca Associates, Inc., and U.S. Fish and Wildlife.

Timothy R. Nosal, M.S.

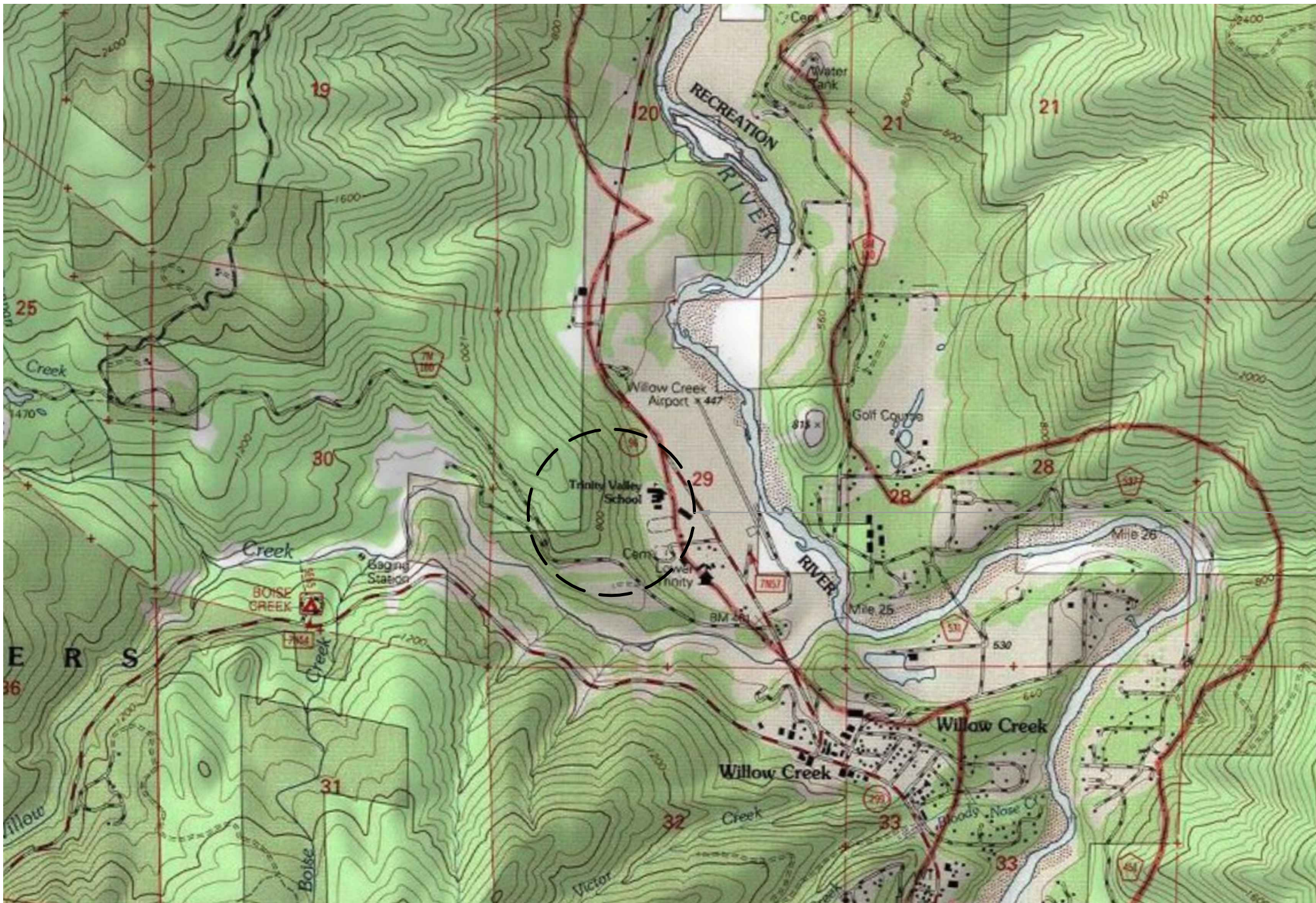
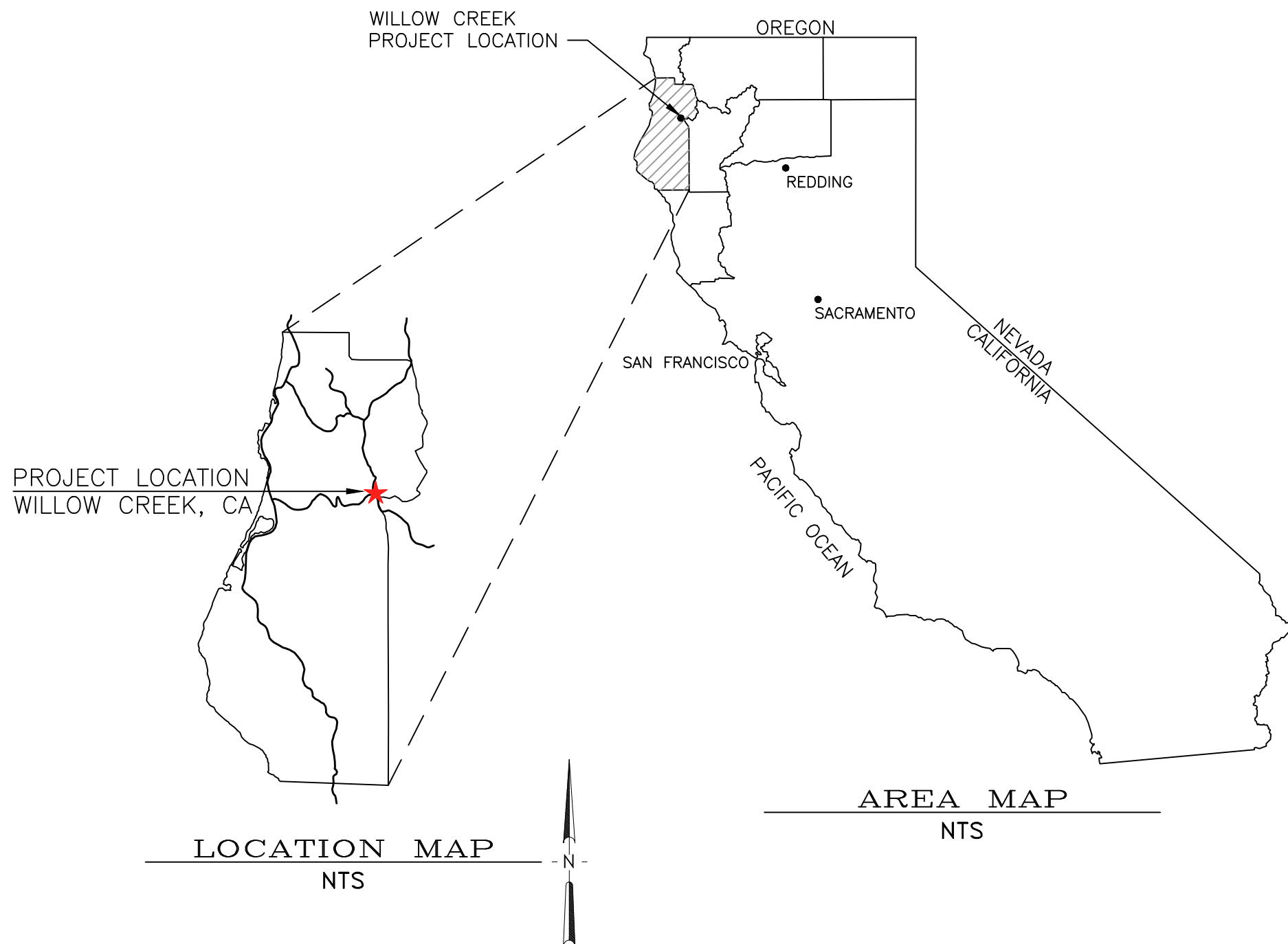
Timothy R. Nosal holds a B.S. and M.S. in Biological Sciences. Mr. Nosal has statewide experience performing sensitive plant and animal surveys in addition to terrestrial vegetation investigations. Mr. Nosal has over 25 years of experience in environmental assessment and teaching with employers that include California Department of Fish and Wildlife, State Water Resources Control Board, American River College, MTI College and Pacific Municipal Consultants.

8. EXHIBITS

BRANNAN MOUNTAIN WATER STORAGE TANK

WILLOW CREEK COMMUNITY SERVICES DISTRICT
WILLOW CREEK, CALIFORNIA 95573

AUGUST 2020

VICINITY MAP
NTS

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.

SURVEY NOTES

FIELD SURVEY FOR TOPOGRAPHIC PURPOSES WAS PERFORMED BY TVCE ON JUNE 06, 2018
(TANK SITE ONLY)

A BOUNDARY SURVEY WAS NOT CONDUCTED BY TVCE. CONTOUR LINE SHOWN WERE INTERPOLATED USING TVCE DATA AND USGS TOPOGRAPHY. A COMPLETE AERIAL OR FIELD SURVEY IS NEEDED FOR FINAL PLANS.

SHEET INDEX

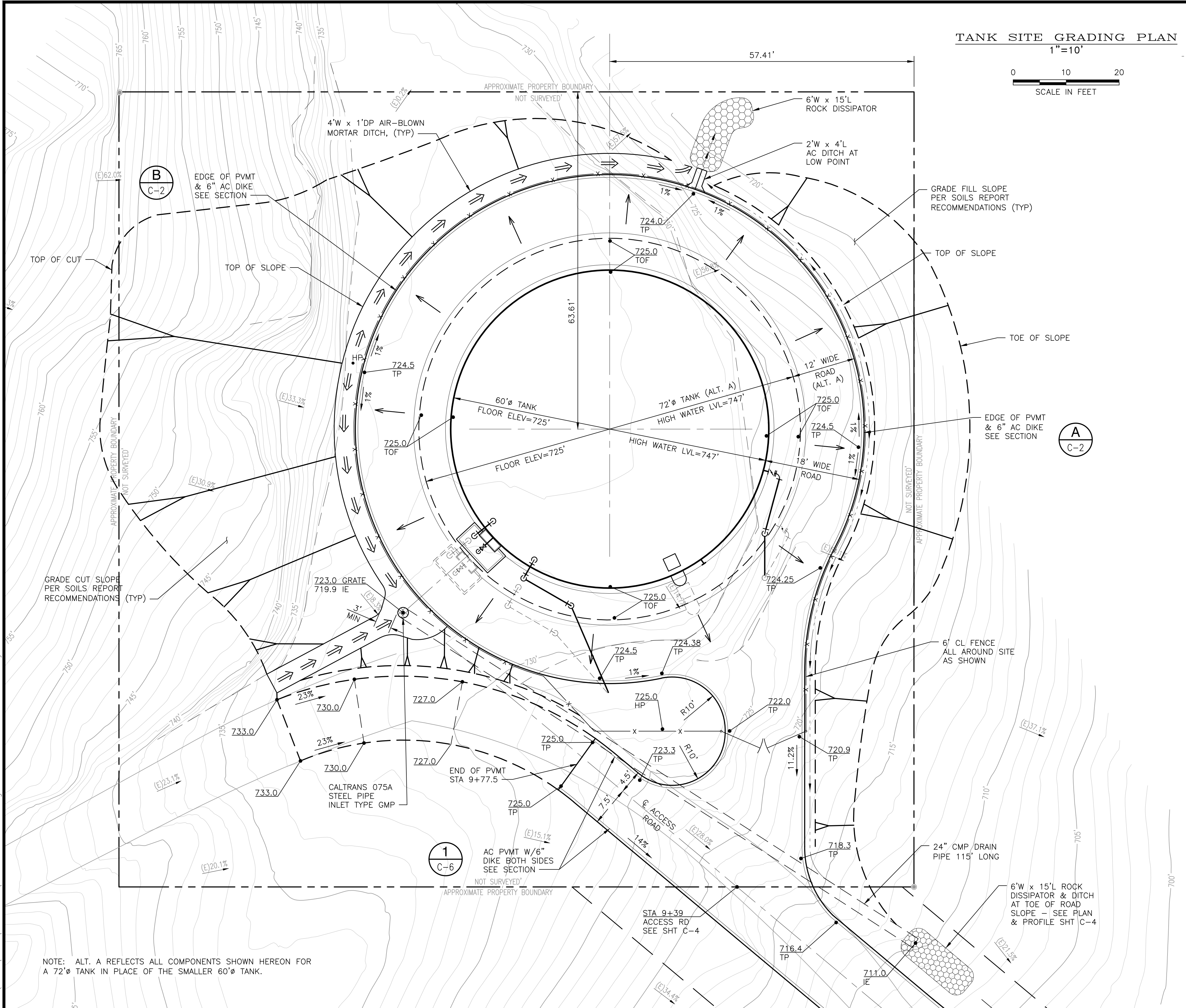
DRAWING #	TITLE	REVISION	DATE
G-1	TITLE SHEET	XX	XX
G-2	GENERAL NOTES, LEGEND & ABBREVIATIONS		
C-1	TANK SITE GRADING PLAN		
C-2	TANK GRADING CROSS SECTIONS		
C-3	TANK ACCESS & YARD PIPING		
C-4	BRANNAN MOUNTAIN WATERLINE & ACCESS ROAD PLAN & PROFILE		
C-5	EROSION CONTROL PLAN & DETAILS		
C-6	WATER STORAGE TANK DETAILS		

CONTACT/SIGNATURE BLOCKS

PRELIMINARY (NOT FOR CONSTRUCTION)

						DRAWN: MAH		PROJECT NO:		WARNING 0 1" AT FULL SCALE (IF BAR IS NOT 1" - SCALE ACCORDINGLY)		 California Rural Water Association				WILLOW CREEK COMMUNITY SERVICE DISTRICT		SHEET NO:	
						ENGINEER: JB		SCALE:								BRANNAN MOUNTAIN WATER STORAGE TANK PROJECT		G-1	
						CHECKED: JB		APPROVED:											
NO. DATE		REVISIONS		BY CHK		DATE:		DATE: AUGUST, 2020								TITLE SHEET		-	

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

GENERAL NOTES	
WATER:	WILLOW CREEK COMMUNITY SERVICE DISTRICT
WASTEWATER:	TBD
POWER:	PG&E
PHONE:	VERIZON
CREEKS/STREAMS:	NONE
TREES TO BE REMOVED:	ALL TREES WITHIN GRADING LIMITS
GRADING:	>50 CY, EXPORT BALANCE AFTER CUT & FILL

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	

- GRADING NOTES:**
- 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)
 - 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 OR AS SHOWN.
 - THE SITE SHOULD BE GRADED TO PROVIDE ADEQUATE DRAINAGE SUCH THAT NO WATER IS ALLOWED TO POND ANYWHERE ON THE SITE OR MIGRATE BENEATH STRUCTURES OR FILLS.
 - ALL FILL MATERIAL SHALL BE PLACED IN HORIZONTAL LIFTS NOT TO EXCEED EIGHT INCHES (8") IN DEPTH AND SHALL BE COMPACTED MECHANICALLY.
 - ALL FILL MATERIAL SHALL BE FREE OF ORGANICS, ROCKS LARGER THAN 3", WOODY DEBRIS, ROOTS, AND INORGANIC MATERIAL.
 - ALL FILL MATERIAL SHALL HAVE A UNIFORM MOISTURE CONTENT AT OR NEAR OPTIMUM MOISTURE CONTENT AS DETERMINED BY TESTING AND APPROVED BY THE DISTRICT.
 - NON-STRUCTURAL FILL SHALL BE COMPACTED TO A FIRM UNYIELDING SURFACE AS APPROVED BY THE DISTRICT.
 - 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.
 - ALL FINAL SLOPES SHALL BE TO A SMOOTH AND EVEN GRADE, SHALL BE SURFACE TRACKWALKED, AND FINAL GRADED PER SOILS REPORT, NOT TO EXCEED 1½:1 CUT & 2:1 FILL.
 - 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, OR USED AS TRENCH BACKFILL. THIS MATERIAL SHOULD MEET THE REQUIREMENTS IN THE CALTRANS STANDARD SPECIFICATIONS FOR 3/4"- CLASS 2 AGGREGATE BASE.

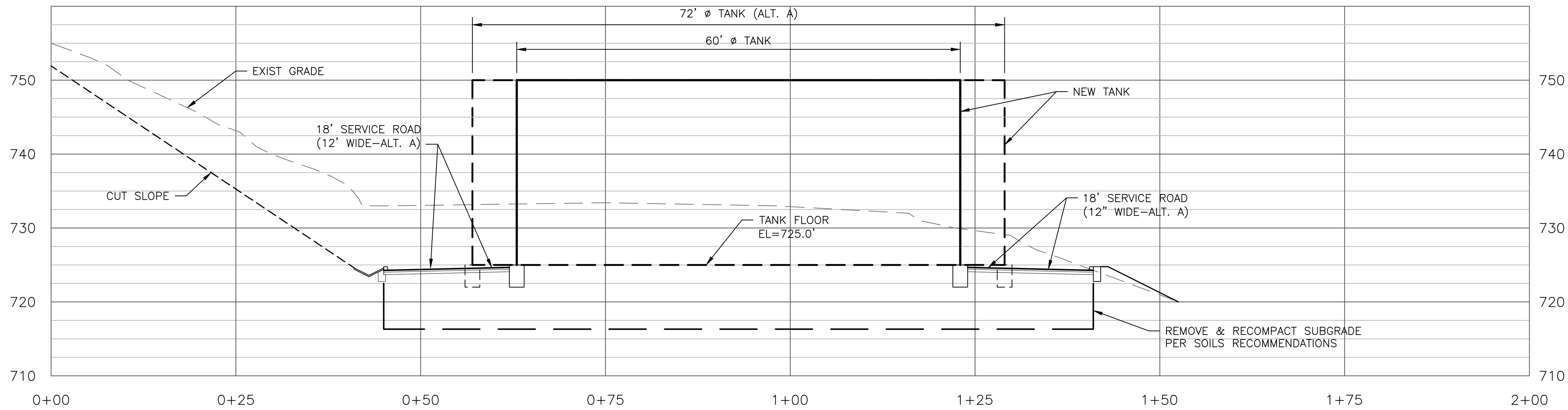
- CLEARING, GRUBBING, & DEMOLITION NOTES:**
- TREES SCHEDULED TO BE REMOVED SHALL BE REMOVED COMPLETELY INCLUDING STUMPS, ROOTS, BRANCHES, WOODY DEBRIS, BARK, AND FLESH. TREES SHALL BE REMOVED FROM THE SITE TO A LEGAL OFFSITE DISPOSAL AREA.
 - VEGETATION AND WOODY DEBRIS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A MANNER CONSISTENT WITH APPLICABLE LAWS AND REGULATIONS.
 - ALL GENERATED AND ACCUMULATED CONSTRUCTION DEBRIS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A MANNER CONSISTENT WITH APPLICABLE LAWS AND REGULATIONS.
 - 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.
 - DUST CONTROL SHALL BE MAINTAINED DURING DEMOLITION PRACTICES.
 - 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.
 - 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.

- DRIVEWAY AND GATES**
- DRIVEWAYS HAVE MAXIMUM GRADE MEETING STANDARD FOR COUNTY ROAD CATEGORY 1; 7%- 12% (NORMAL); 11%- 18% (TOLERABLE). GRADE IN EXCESS OF 16% MUST DEMONSTRATE CONFORMANCE WITH COUNTY ROADWAY DESIGN MANUAL.
 - DRIVEWAYS HAVE MINIMUM CURVE RADIUS MEETING STANDARD FOR COUNTY ROAD CATEGORY 1; 120' (NORMAL); 50' (TOLERABLE). CURVE RADIUS LESS THAN 50' MUST DEMONSTRATE CONFORMANCE WITH COUNTY ROADWAY DESIGN MANUAL.
 - ALL GATES AT LEAST 2' WIDER THAN THE LANES SERVING THE GATE AND ALLOW A VEHICLE TO STOP WITHOUT BLOCKING TRAFFIC.
 - ONE-WAY ROADS ACCESSING GATES HAVE TURNAROUND WITH 40' RADIUS MINIMUM.

PRELIMINARY (NOT FOR CONSTRUCTION)

DRAWN: MAH ENGINEER: JB CHECKED: JB DATE: AUGUST, 2020				PROJECT NO: SCALE: 1"=10' APPROVED: DATE: AUGUST, 2020		WARNING 0 1" AT FULL SCALE (IF BAR IS NOT 1" - SCALE ACCORDINGLY)		California Rural Water Association		WILLOW CREEK COMMUNITY SERVICE DISTRICT BRANNAN MOUNTAIN WATER STORAGE TANK PROJECT		SHEET NO: C-1	
NO. DATE REVISIONS BY CHK										TANK SITE GRADING PLAN		-	

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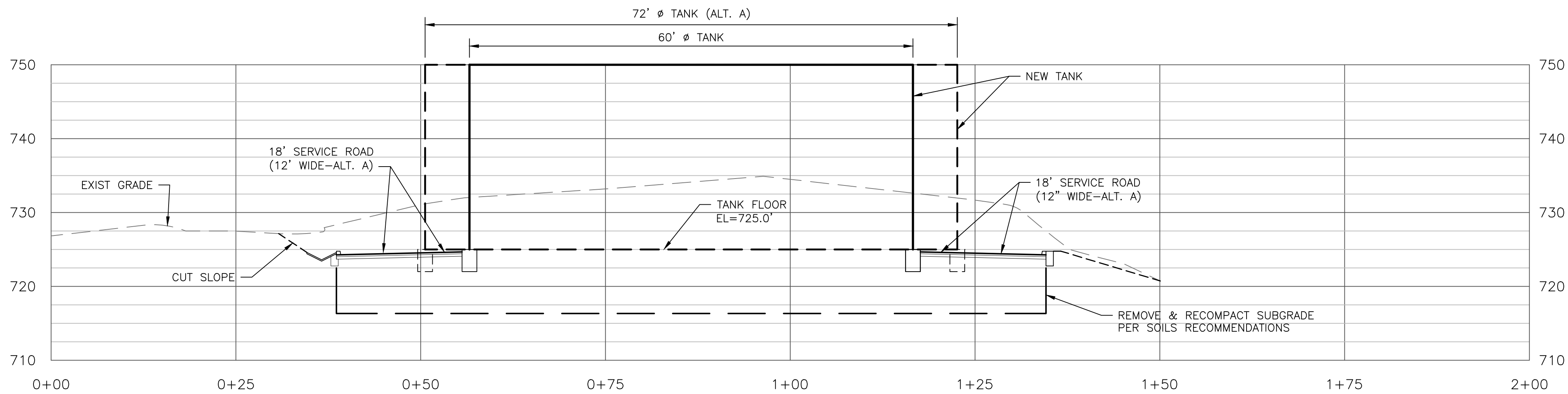


SECTION A

1"=10'

A

C-1

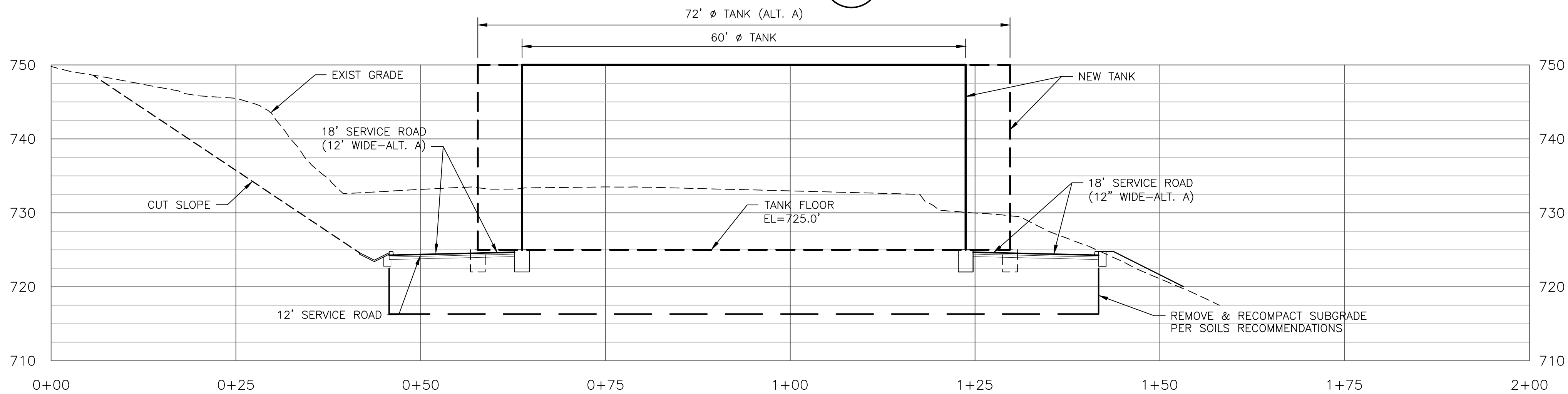


SECTION B

1"=10'

B

C-1



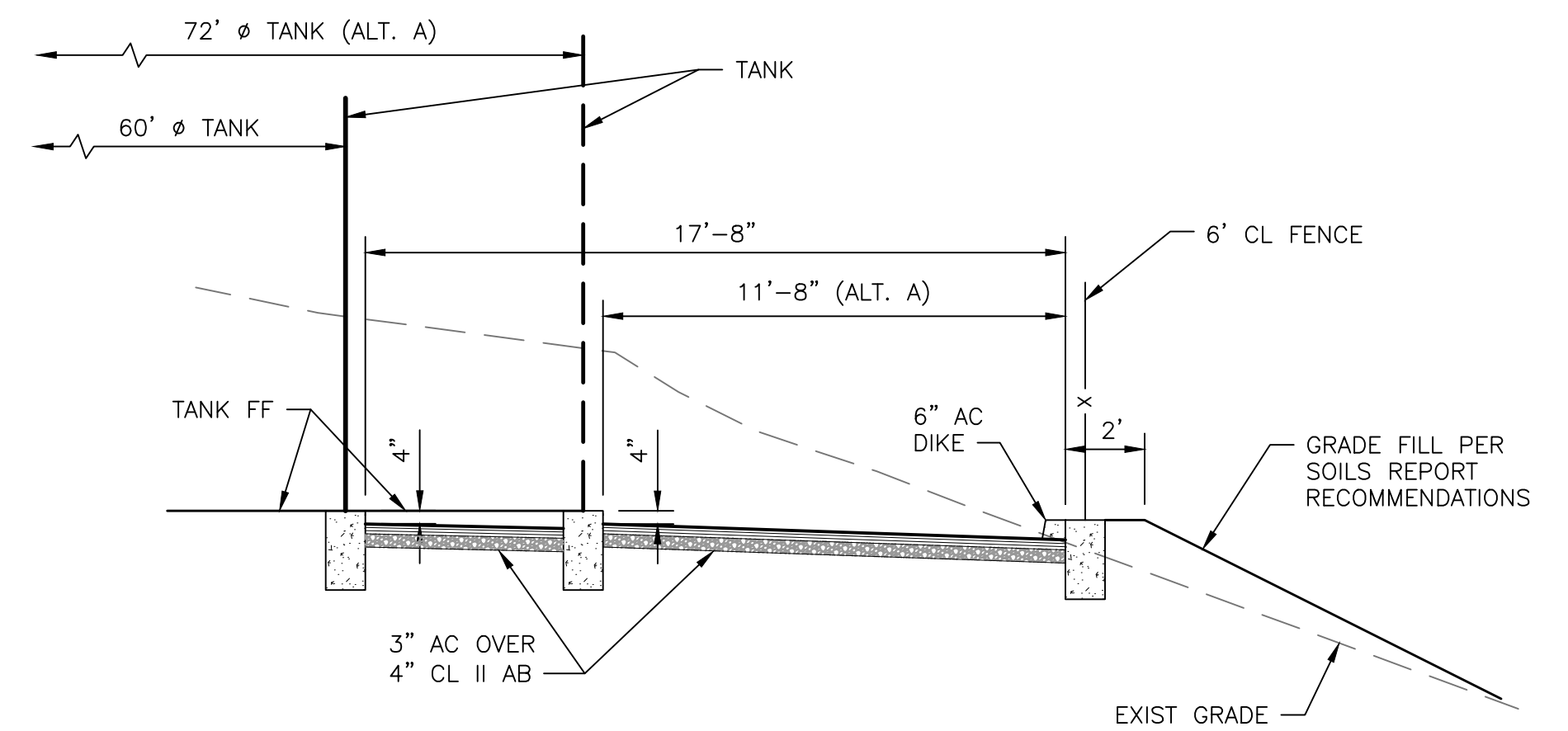
SECTION C

1"=10'

C

C-1

NOTE: ALT. A REFLECTS ALL COMPONENTS SHOWN HEREON FOR A 72' TANK IN PLACE OF THE SMALLER 60' TANK.

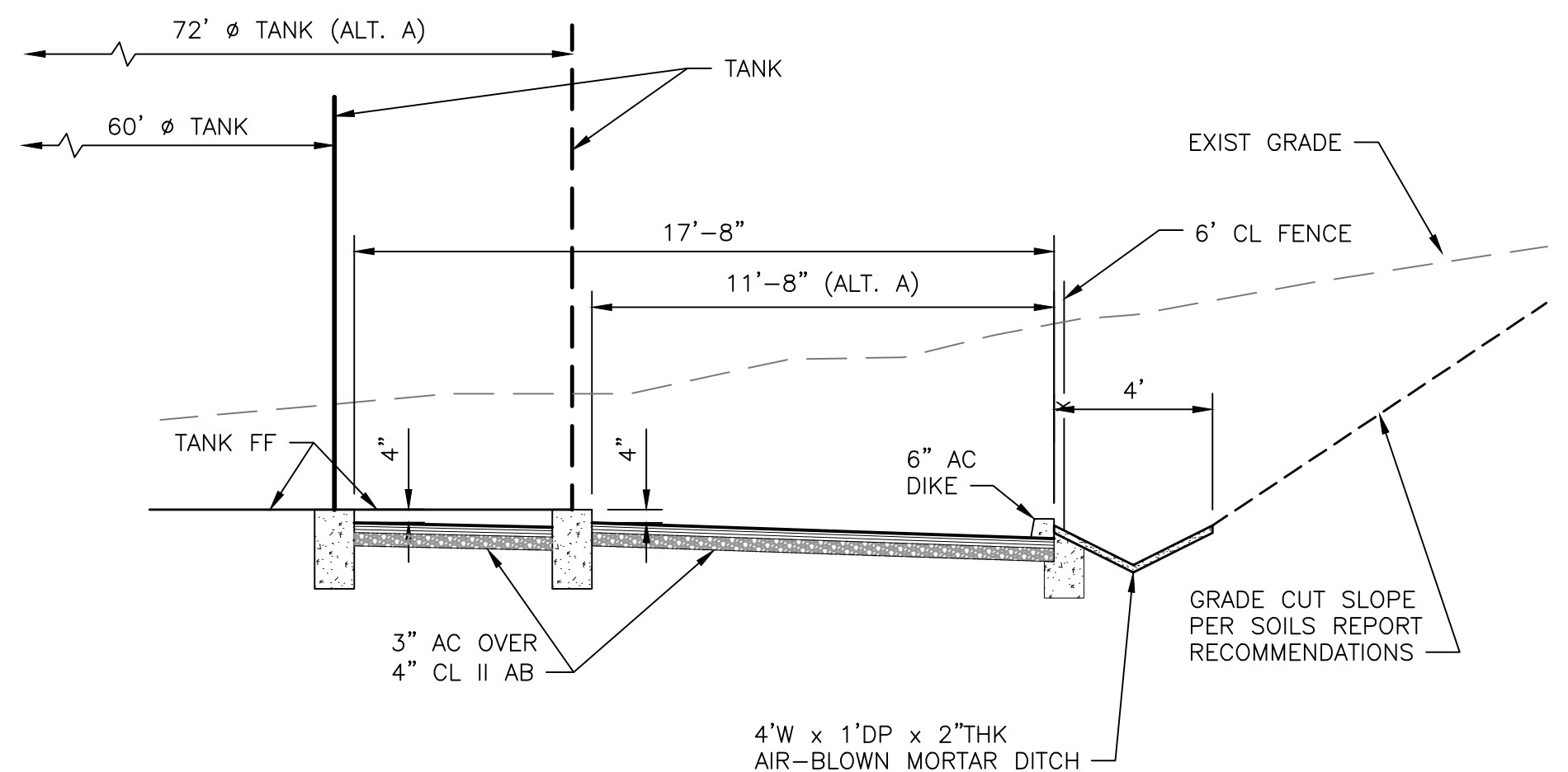


TYPICAL SERVICE ROAD DETAIL 1

1"=4'

1

C-1

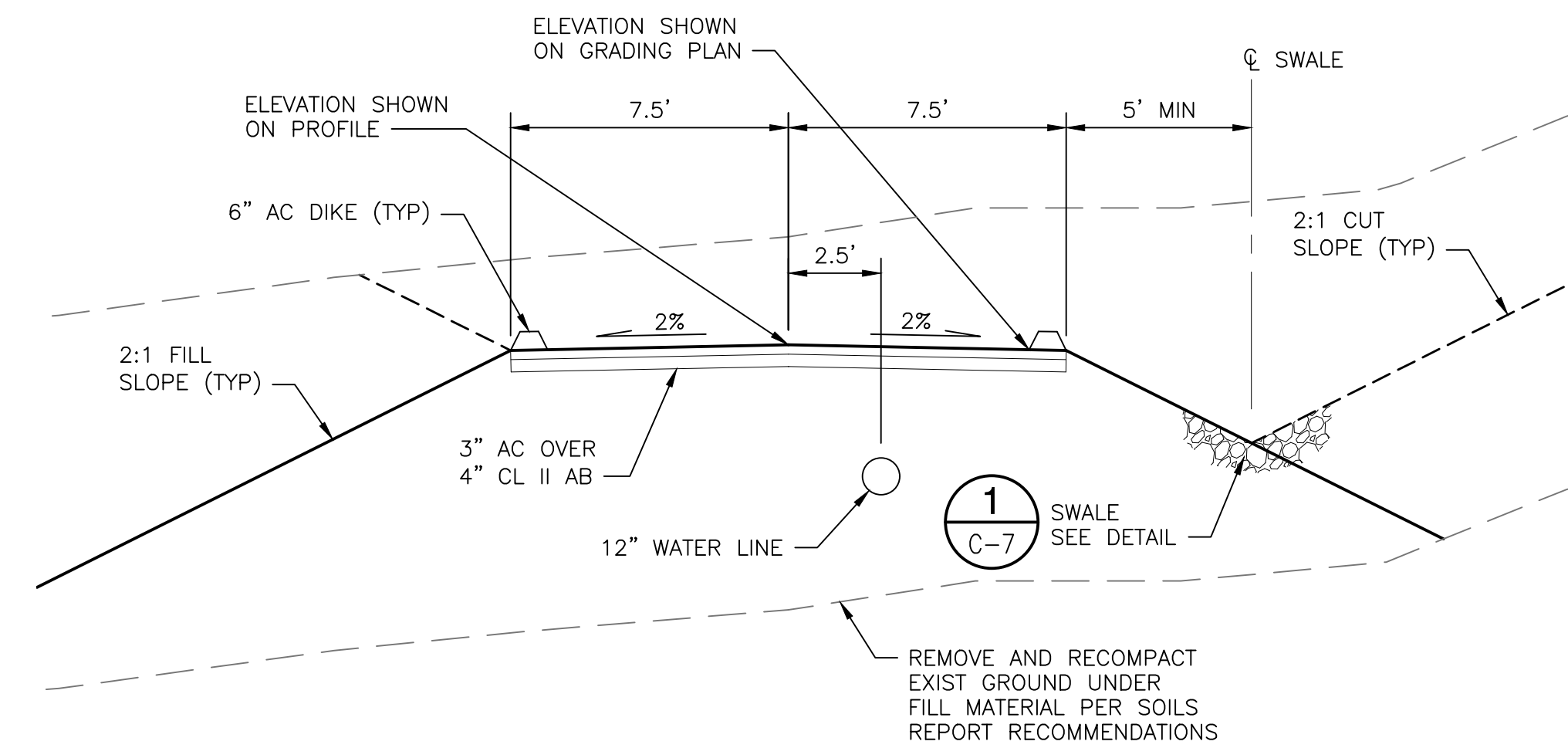


TYPICAL SERVICE ROAD DETAIL 2

1"=4'

2

C-1



TYPICAL ACCESS ROAD DETAIL 3

1"=4'

3

C-4

PRELIMINARY (NOT FOR CONSTRUCTION)

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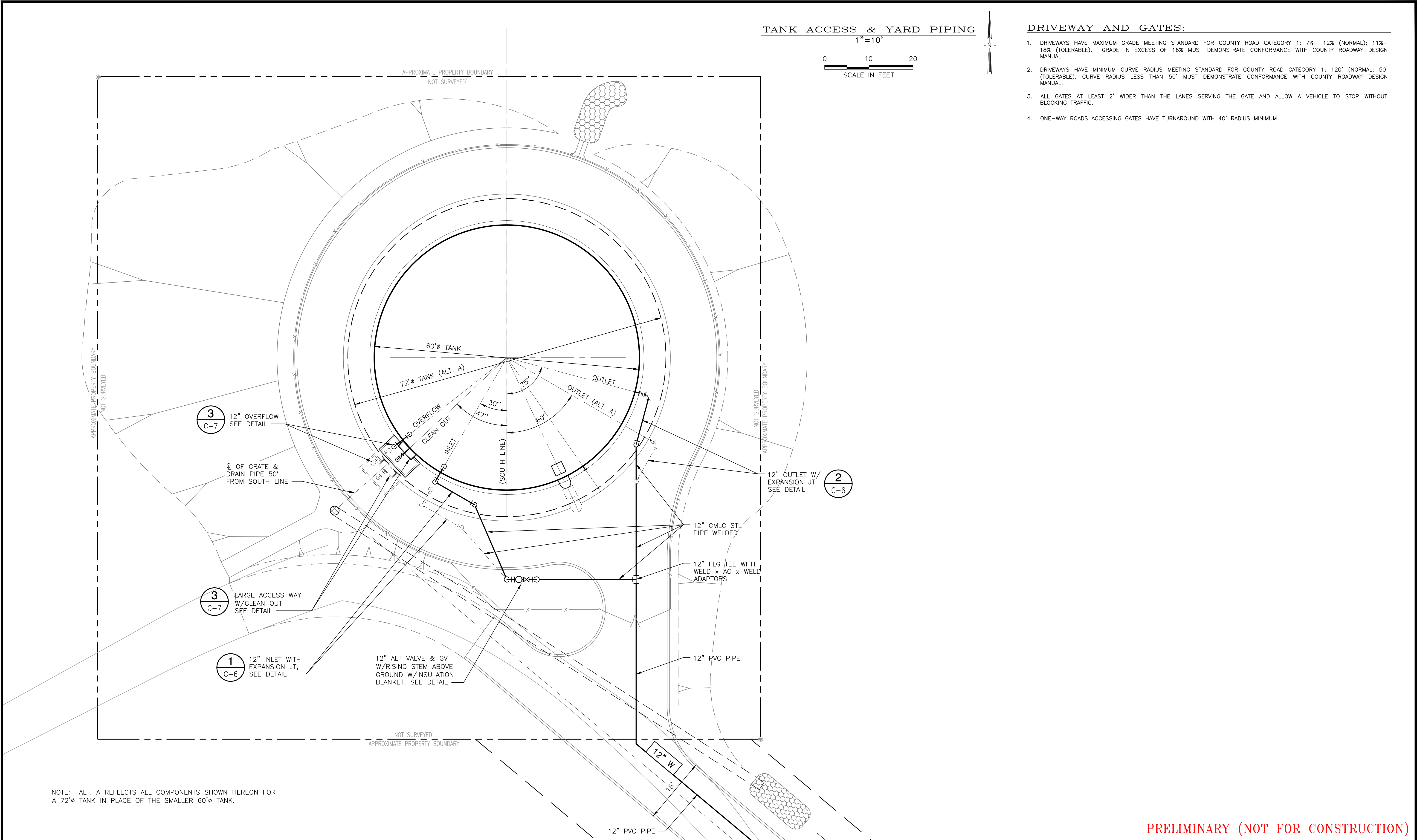
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ENGINEER:	JB	SCALE:	1"=10'
CHECKED:	JB	APPROVED:	
DATE:		DATE:	AUGUST, 2020

WARNING
0 1"
AT FULL SCALE
(IF BAR IS NOT 1" - SCALE ACCORDINGLY)



WILLOW CREEK COMMUNITY SERVICE DISTRICT BRANNAN MOUNTAIN WATER STORAGE TANK PROJECT	SHEET NO: C-2
TANK GRADING CROSS SECTIONS	

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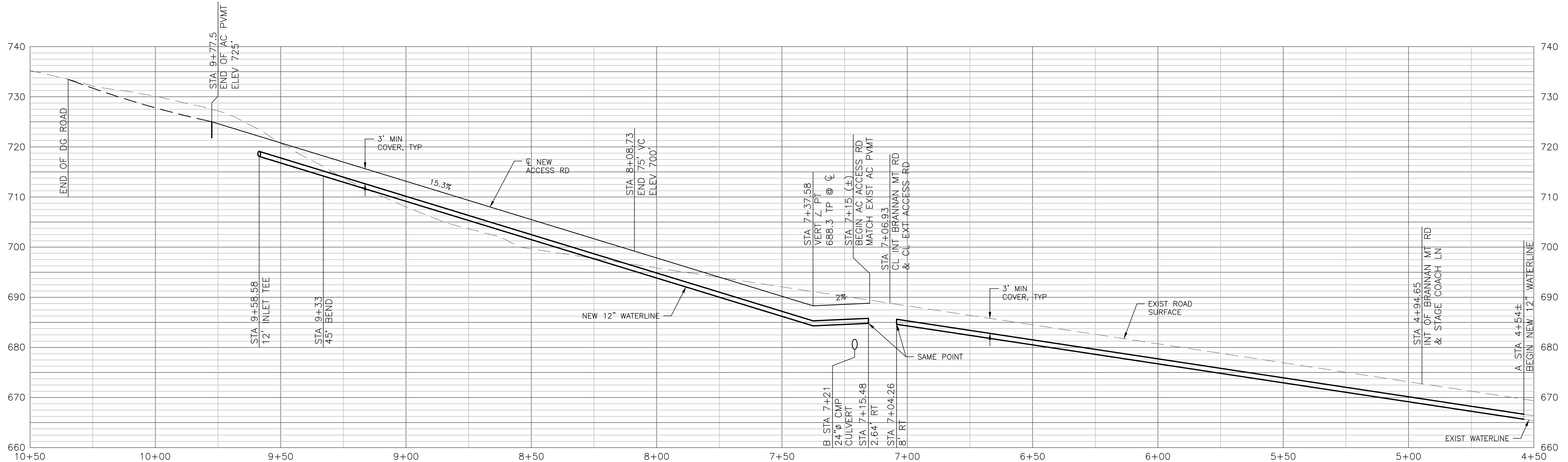
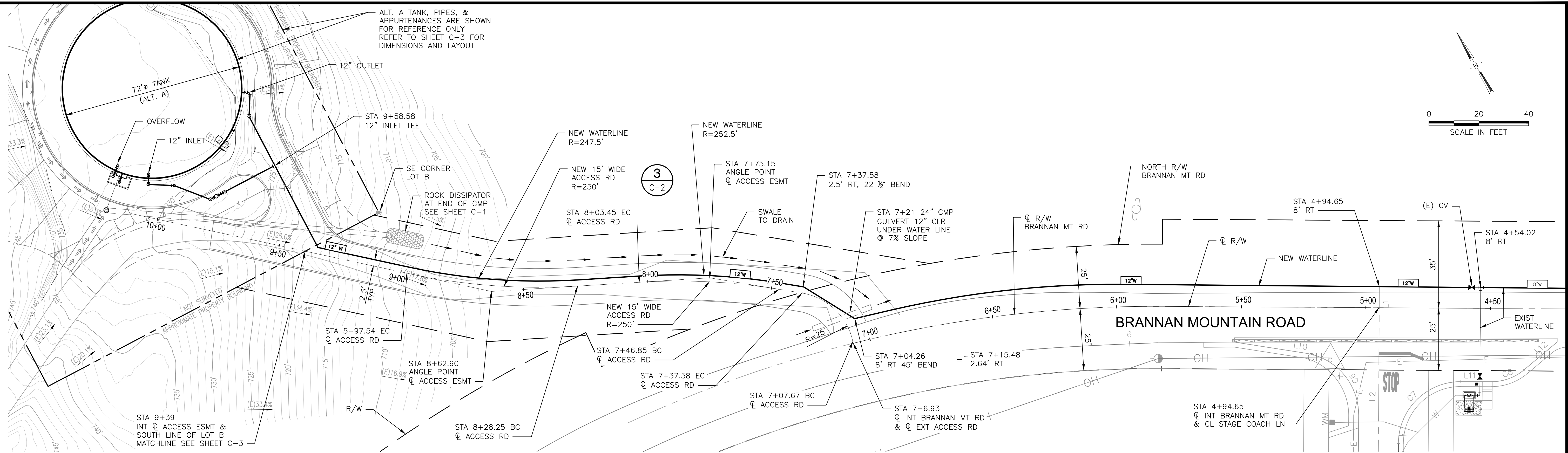
DRIVEWAY AND GATES:

1. DRIVEWAYS HAVE MAXIMUM GRADE MEETING STANDARD FOR COUNTY ROAD CATEGORY 1; 7%– 12% (NORMAL); 11%– 18% (TOLERABLE). GRADE IN EXCESS OF 16% MUST DEMONSTRATE CONFORMANCE WITH COUNTY ROADWAY DESIGN MANUAL.
2. DRIVEWAYS HAVE MINIMUM CURVE RADIUS MEETING STANDARD FOR COUNTY ROAD CATEGORY 1; 120' (NORMAL); 50' (TOLERABLE). CURVE RADIUS LESS THAN 50' MUST DEMONSTRATE CONFORMANCE WITH COUNTY ROADWAY DESIGN MANUAL.
3. ALL GATES AT LEAST 2' WIDER THAN THE LANES SERVING THE GATE AND ALLOW A VEHICLE TO STOP WITHOUT BLOCKING TRAFFIC.
4. ONE-WAY ROADS ACCESSING GATES HAVE TURNAROUND WITH 40' RADIUS MINIMUM.

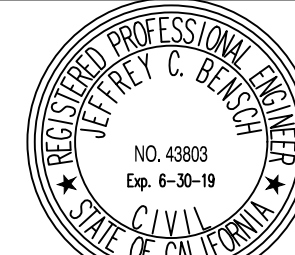
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				DRAWN: MAH	PROJECT NO:	WARNING 0 1" AT FULL SCALE (IF BAR IS NOT 1" - SCALE ACCORDINGLY)	 California Rural Water Association		WILLOW CREEK COMMUNITY SERVICE DISTRICT BRANNAN MOUNTAIN WATER STORAGE TANK PROJECT		SHEET NO: C-3
				ENGINEER: JB	SCALE: 1"=10'				TANK ACCESS & YARD PIPING	—	
				CHECKED: JB	APPROVED:						
				DATE:	DATE: AUGUST, 2020						
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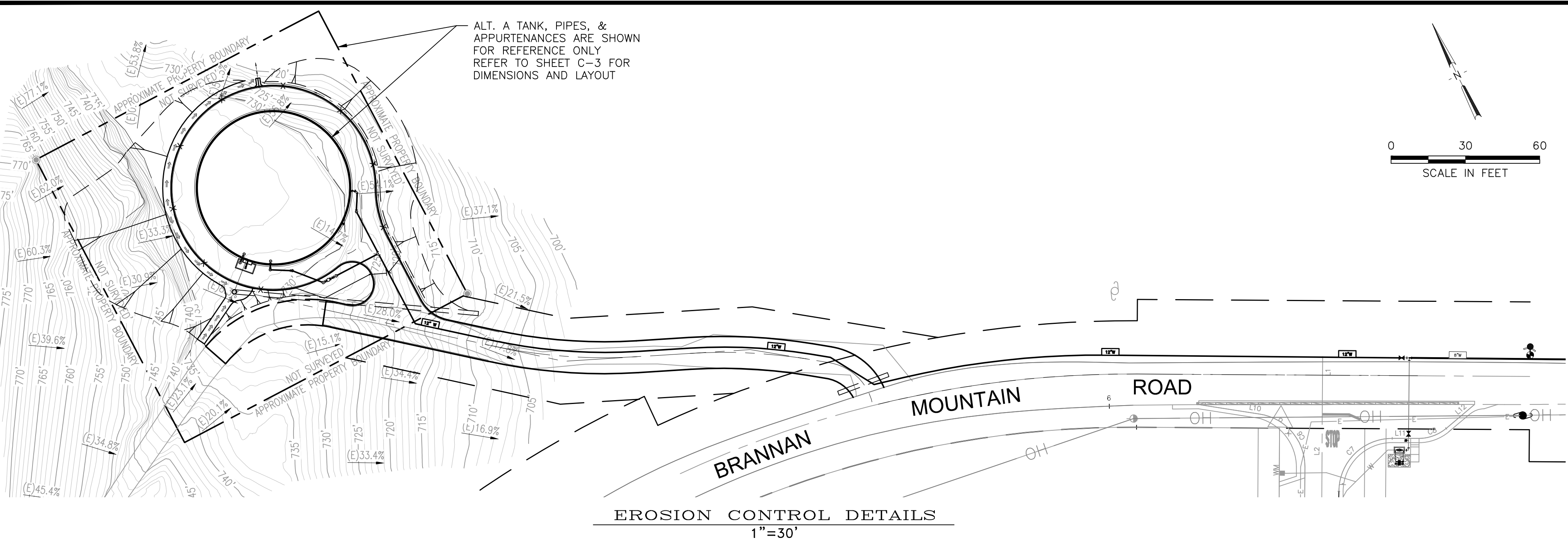
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PRELIMINARY (NOT FOR CONSTRUCTION)

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				ENGINEER: JB		SCALE: H: 1"=20' V: 1"=10'								BRANNAN MOUNTAIN WATERLINE & ACCESS ROAD PLAN & PROFILE		- / -	
NO. DATE		REVISIONS		BY CHK		DATE:		DATE: AUGUST, 2020									

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STRAW MULCH NOTES:

- 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.
- A TACKIFIER IS THE PREFERRED METHOD FOR ANCHORING STRAW MULCH TO THE SOIL ON SLOPES.
- 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.
- AVOID PLACING STRAW ONTO ROADS, SIDEWALKS, DRAINAGE CHANNELS, SOUND WALLS, EXISTING VEGETATION, ETC.
- STRAW MULCH WITH TACKIFIER SHALL NOT BE APPLIED DURING OR IMMEDIATELY BEFORE RAINFALL.
- APPLY STRAW AT A MINIMUM RATE OF 4,000 LB/ACRE, EITHER BY MACHINE OR BY HAND DISTRIBUTION.
- ROUGHEN EMBANKMENTS AND FILL RILLS BEFORE PLACING THE STRAW MULCH BY ROLLING WITH A CRIMPING OR PUNCHING TYPE ROLLER OR BY TRACK WALKING.
- EVENLY DISTRIBUTE STRAW MULCH ON THE SOIL SURFACE.
- ON SMALL AREAS, A SPADE OR SHOVEL CAN BE USED TO PUNCH IN STRAW MULCH.
- 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 COMMERCIALY AS A "CRIMPER".
- 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.
- 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.

EROSION AND SEDIMENT CONTROL NOTES:

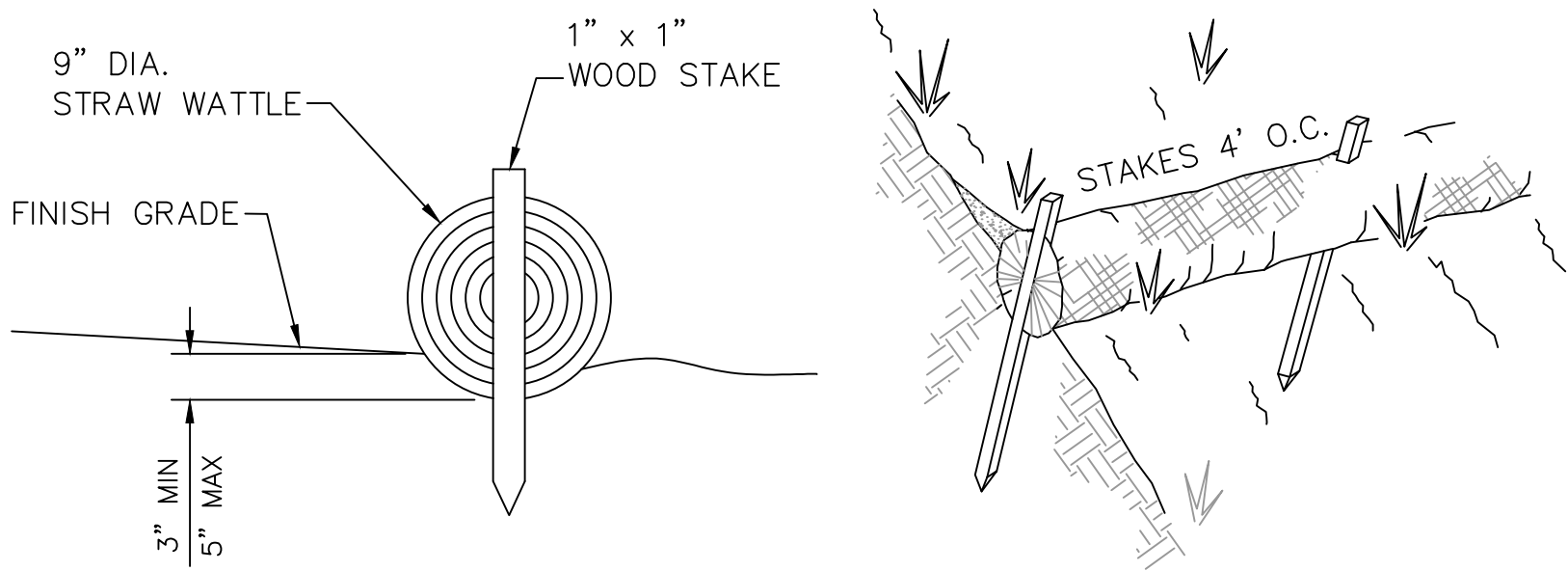
- EROSION CONTROL BEST MANAGEMENT PRACTICES (BMP'S) SHALL BE INSTALLED AND MAINTAINED DURING THE WET SEASON (OCTOBER 1 THROUGH APRIL 30). SEDIMENT CONTROL BMP'S SHALL BE INSTALLED AND MAINTAINED ALL YEAR.
- ALL DRAINAGE INLETS IMMEDIATELY DOWNSTREAM OF THE WORK AREA AND WITHIN THE WORK AREA SHALL BE PROTECTED WITH SEDIMENT CONTROL AND INLET FILTER BAGS, YEAR ROUND.
- ALL STABILIZED CONSTRUCTION ACCESS LOCATIONS SHALL BE CONSTRUCTED PER HUMBOLDT COUNTY STD WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES PAVED AREAS. THE STABILIZED ACCESS SHALL BE MAINTAINED ON A YEAR-ROUND BASIS UNTIL THE COMPLETION OF CONSTRUCTION.
- 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.
- 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.
- 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.
- ALL NEW OR DISTURBED SLOPES GREATER THAN 1:1 SHALL RECEIVE SEED AND STRAW OR OTHER EROSION CONTROL.
- ALL FENCING AND EROSION CONTROL METHODS SHALL BE MAINTAINED THROUGHOUT ACTIVITIES.
- ALL BMPS SHALL BE INSTALLED AND FUNCTIONING PRIOR TO ANY ANTICIPATED STORM EVENT.
- CONTINUOUS STRAW WATTLES OR SILT FENCES SHALL BE INSTALLED BELOW ANY DISTURBED AREA PRIOR TO SEPTEMBER 15TH AND PRIOR TO ANTICIPATED RAIN EVENTS.

NOTE:

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

BMP MAINTENANCE NOTES:

- ALL OF THE IMPLEMENTED BMPS SHALL BE INSPECTED AND CORRECTED AS NEEDED PRIOR TO, DURING, AND DIRECTLY FOLLOWING ANY STORM EVENT, OR WHENEVER PRACTICAL.

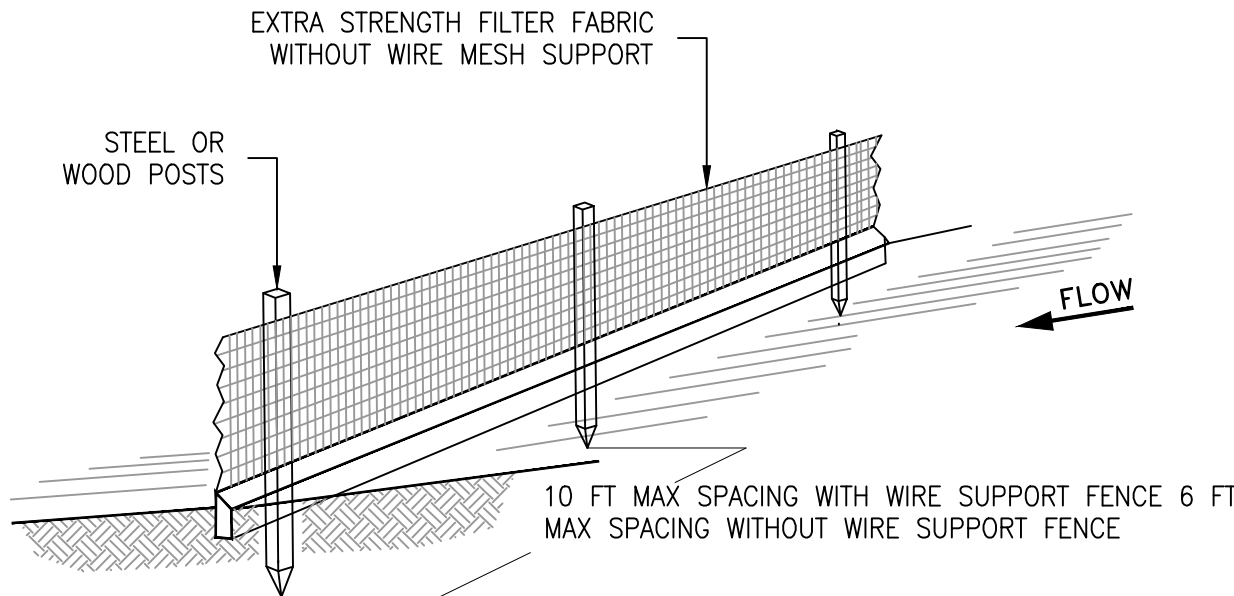
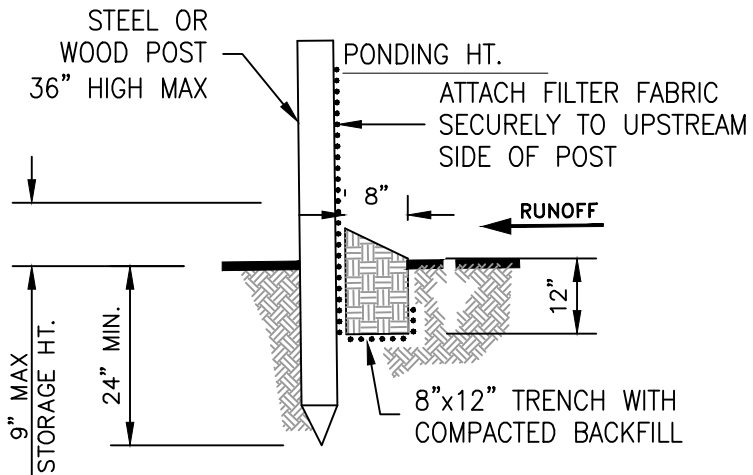


STRAW WATTLE NOTES:

- 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.
- 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:

- THE CONTRACTOR SHALL INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT.
- 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.
- SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.

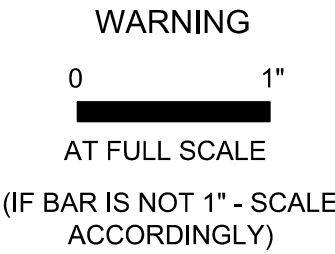
SILT FENCE DETAILS

NTS

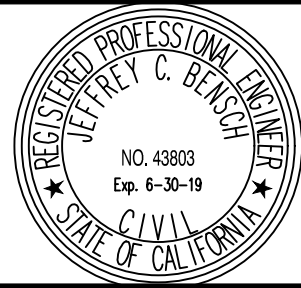
PRELIMINARY (NOT FOR CONSTRUCTION)

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	●	●									

						DRAWN: MAH	PROJECT NO:
						ENGINEER: JB	SCALE: 1"=20'
						CHECKED: JB	APPROVED:
						DATE:	DATE: AUGUST, 2020
NO.	DATE	REVISIONS			BY	CHK	



California
Rural Water Association



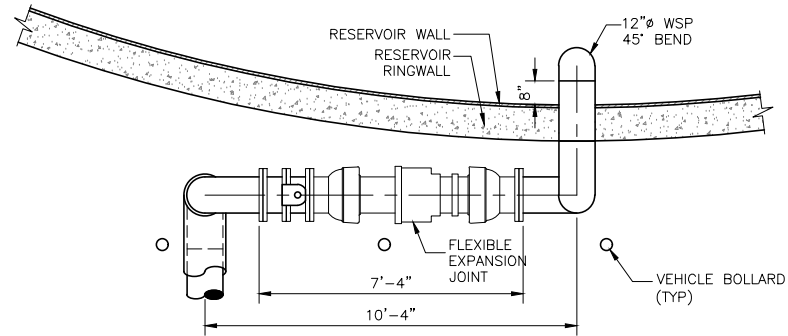
WILLOW CREEK COMMUNITY SERVICE DISTRICT
BRANNAN MOUNTAIN WATER STORAGE TANK PROJECT

EROSION CONTROL
PLAN & DETAILS

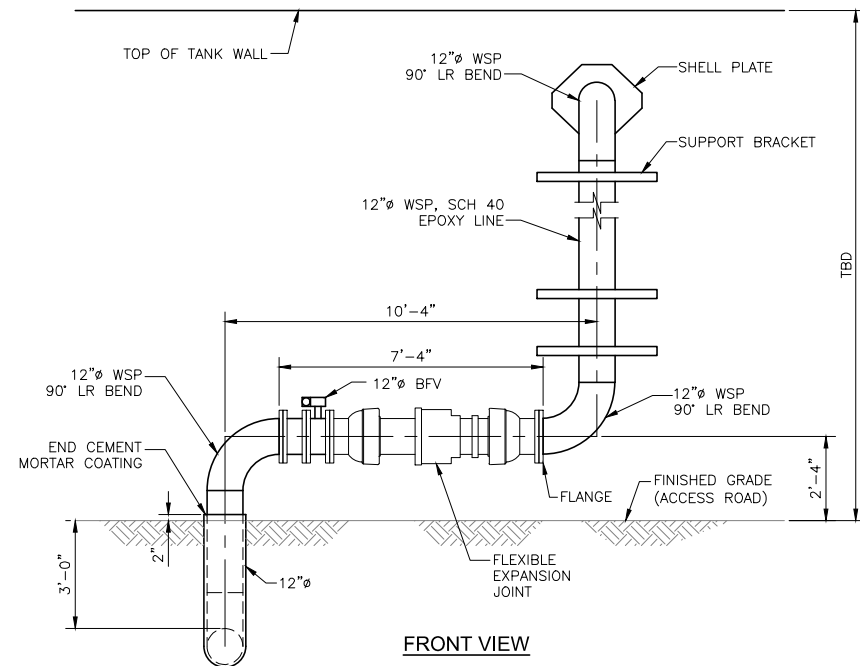
SHEET NO:
C-5

—

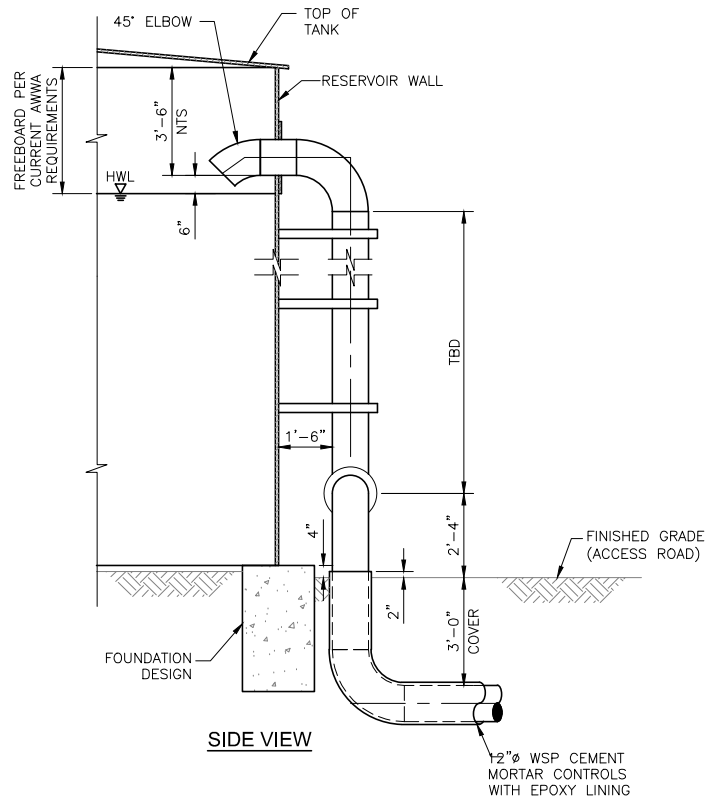
C:\Users\Mary\Dropbox\WORK\CRWA\18_WCSD\BRANNAN Mt. Tank.dwg 8-26-20 09:57:15 AM Mary



PLAN VIEW
INLET PIPING DETAIL



FRONT VIEW



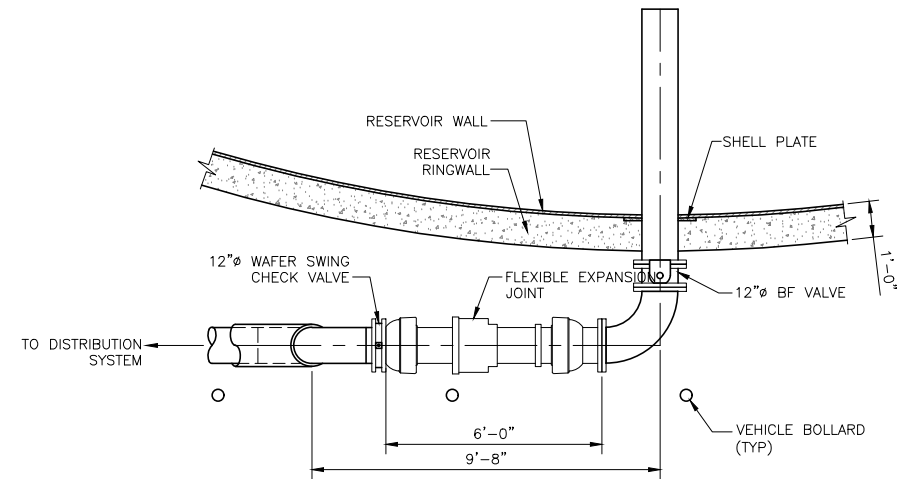
SIDE VIEW

INLET CONNECTION DETAIL
3/8"=1'-0"

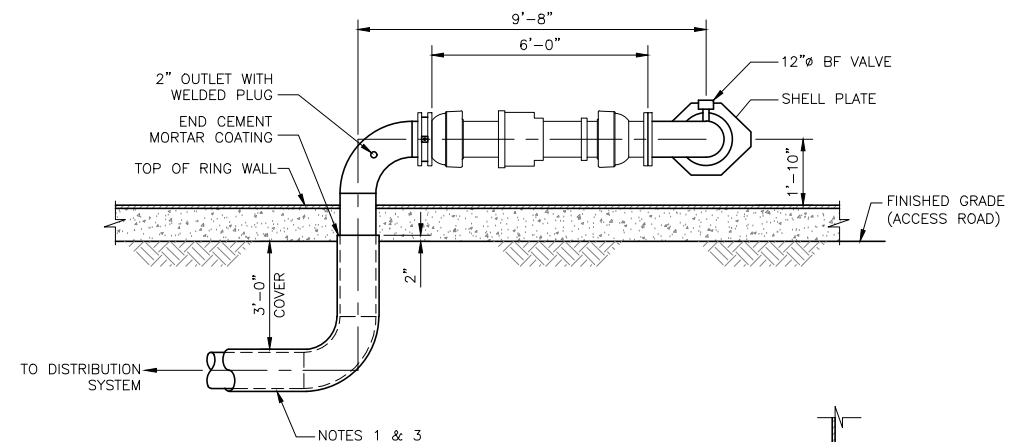
1
C-3

NOTES:

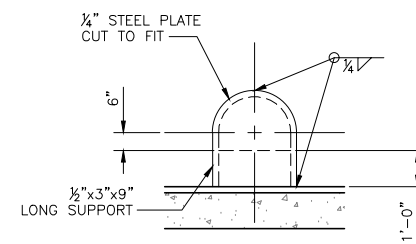
1. STEEL PIPE BELOW GRADE SHALL BE MORTAR COOLED.
2. STEEL PIPE ABOVE GRADE SHALL BE PAINTED TO MATCH TANK.
3. ALL STEEL PIPE SHALL BE EPOXY LINED.



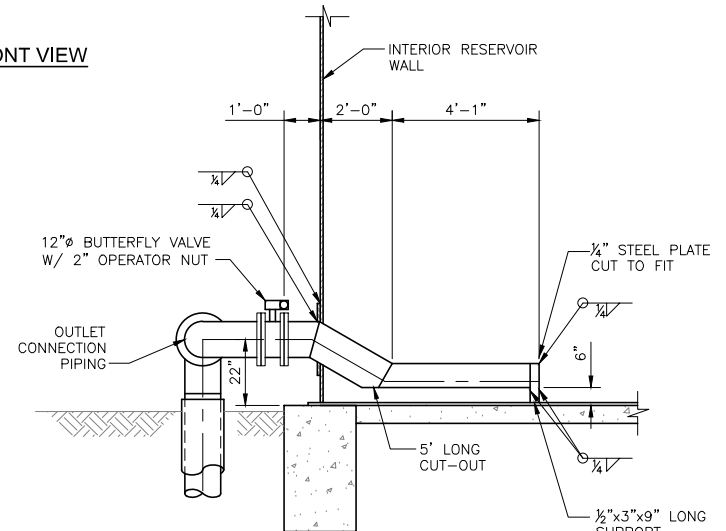
PLAN VIEW
OUTLET PIPING DETAIL



FRONT VIEW



OUTLET CONNECTION
END VIEW



SIDE VIEW

NOTES:

1. STEEL PIPE BELOW GRADE SHALL BE MORTAR COOLED.
2. STEEL PIPE ABOVE GRADE SHALL BE PAINTED TO MATCH TANK.
3. ALL STEEL PIPE SHALL BE EPOXY LINED.

OUTLET CONNECTION DETAIL
3/8"=1'-0"

2
C-3

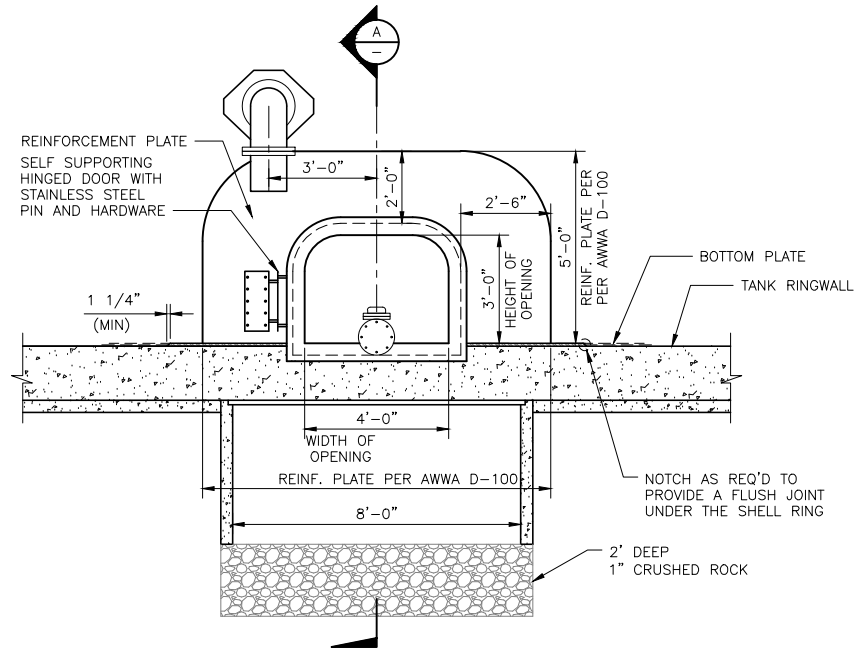
PRELIMINARY (NOT FOR CONSTRUCTION)

				DRAWN: MAH	PROJECT NO:
				ENGINEER: JB	SCALE: 3/8"=1'-0"
				CHECKED: JB	APPROVED:
				DATE:	DATE: AUGUST, 2020
NO.	DATE	REVISIONS	BY	CHK	

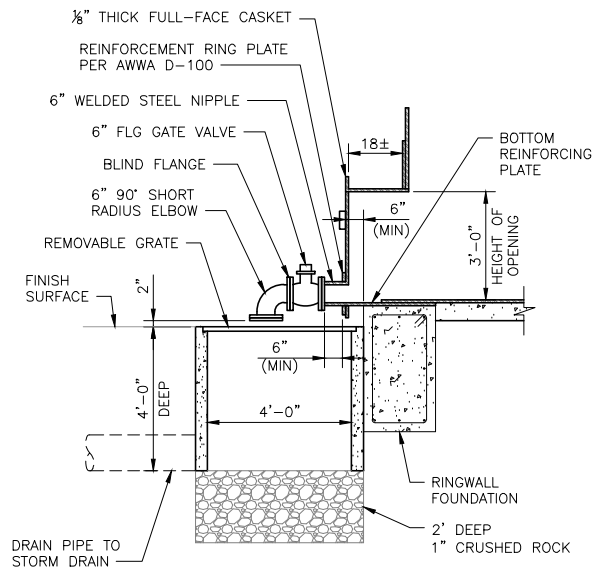
WARNING
0 1"
AT FULL SCALE
(IF BAR IS NOT 1" - SCALE ACCORDINGLY)



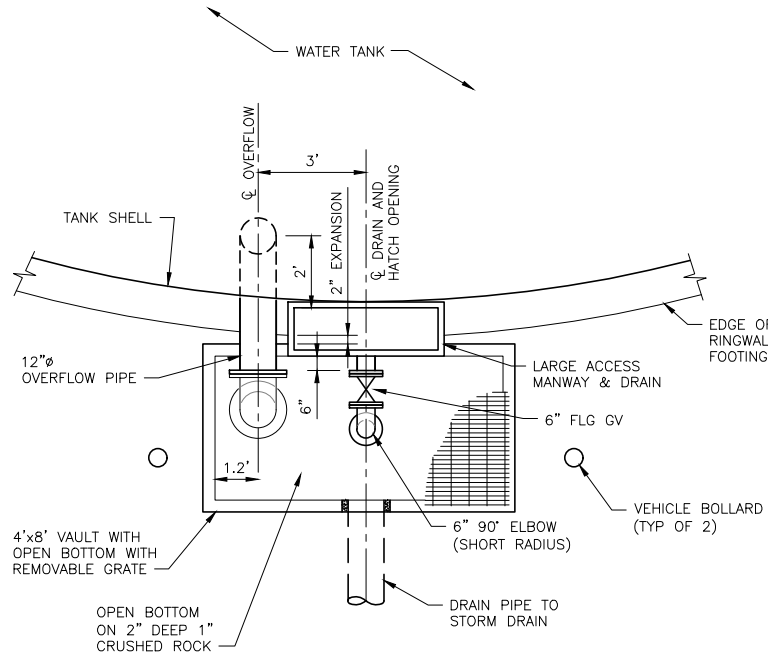
WILLOW CREEK COMMUNITY SERVICE DISTRICT BRANNAN MOUNTAIN WATER STORAGE TANK PROJECT	SHEET NO: C-6
WATER STORAGE TANK DETAILS	



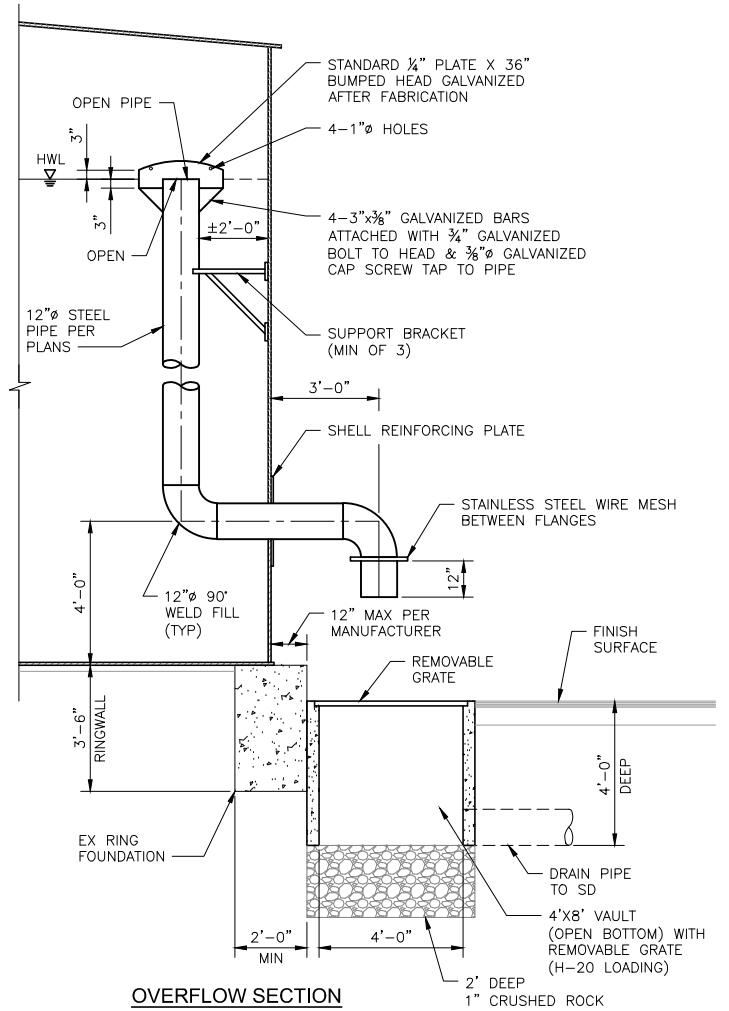
OVERFLOW AND DRAIN - FRONT



SECTION A



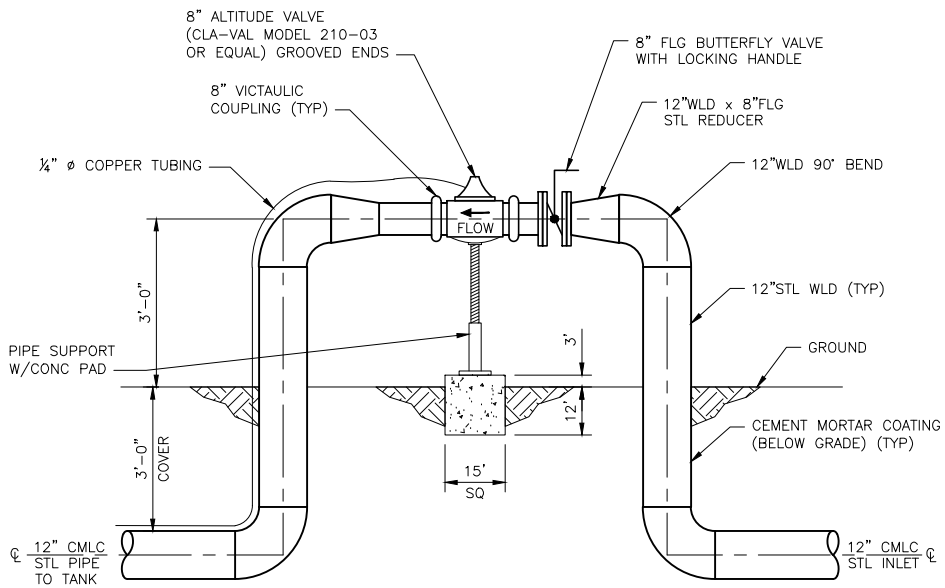
PLAN



OVERFLOW SECTION

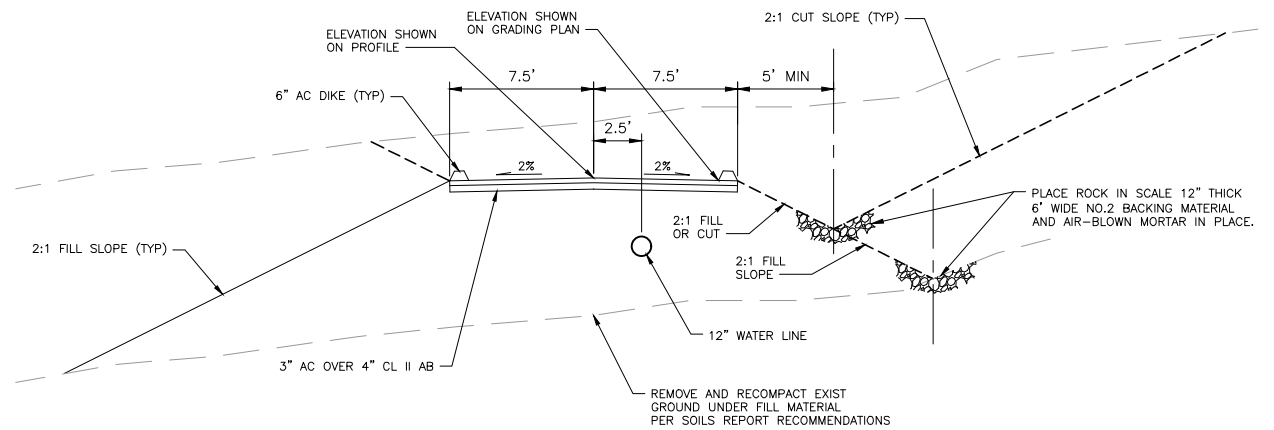
OVERFLOW & DRAIN CONNECTION DETAILS

3
C-3



ALTITUDE VALVE DETAIL

4
C-3



ACCESS ROAD & WATER LINE SECTION

1
C-1

PRELIMINARY (NOT FOR CONSTRUCTION)

C:\Users\Mary\Dropbox\WORK\CRWA\18 WCSD\BRANNAN Mt. Tank.dwg 8-26-20 09:56:53 AM Mary

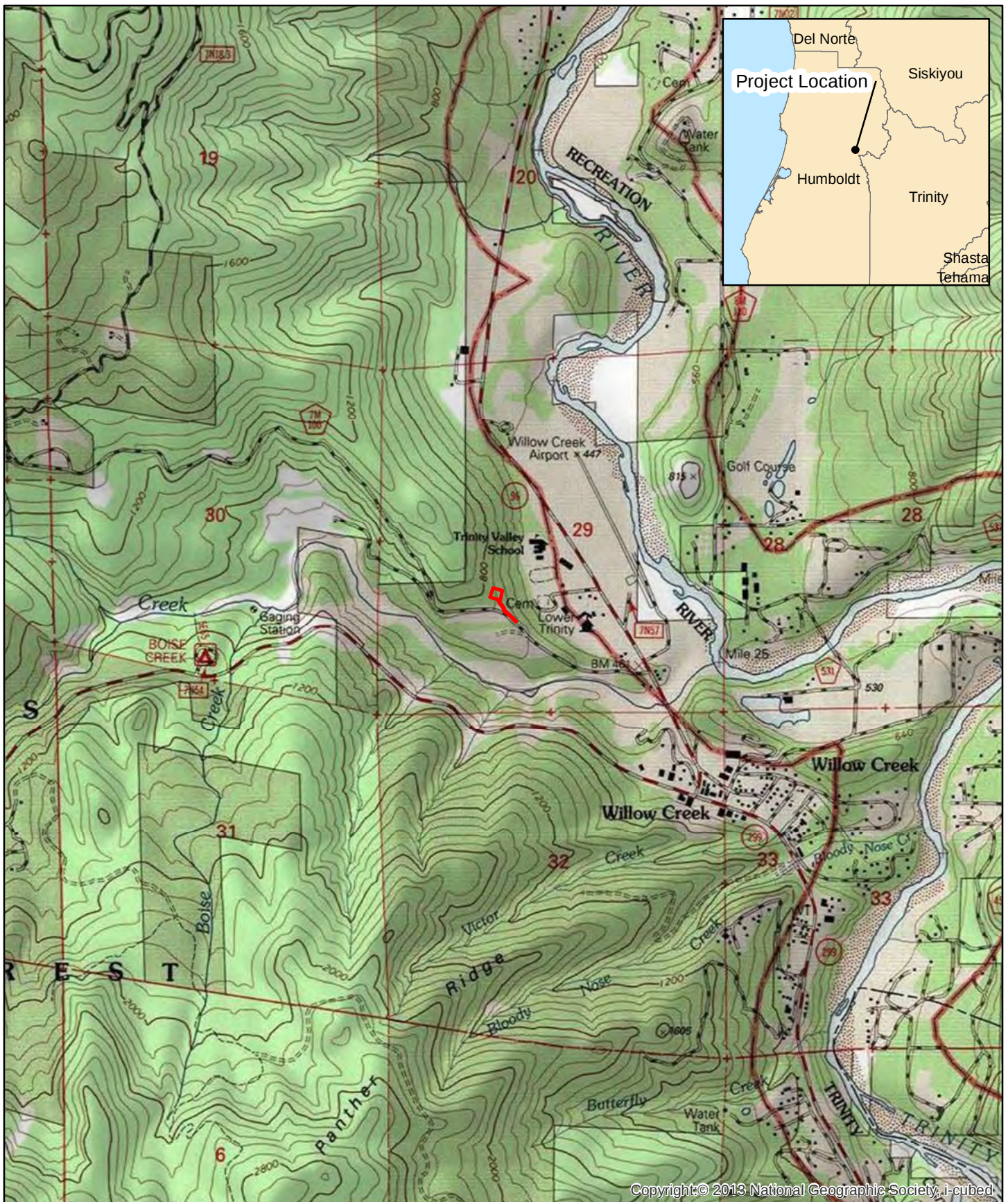
NO.	DATE	REVISIONS	BY	CHK

DRAWN: MAH	PROJECT NO:
ENGINEER: JB	SCALE: AS NOTED
CHECKED: JB	APPROVED:
DATE:	DATE: AUGUST, 2020

WARNING
0 1"
AT FULL SCALE
(IF BAR IS NOT 1" - SCALE ACCORDINGLY)



WILLOW CREEK COMMUNITY SERVICE DISTRICT BRANNAN MOUNTAIN WATER STORAGE TANK PROJECT	SHEET NO: C-7
WATER STORAGE TANK DETAILS II	



Study Area

0

0.5

1

Kilometers

0

0.5

1

Miles

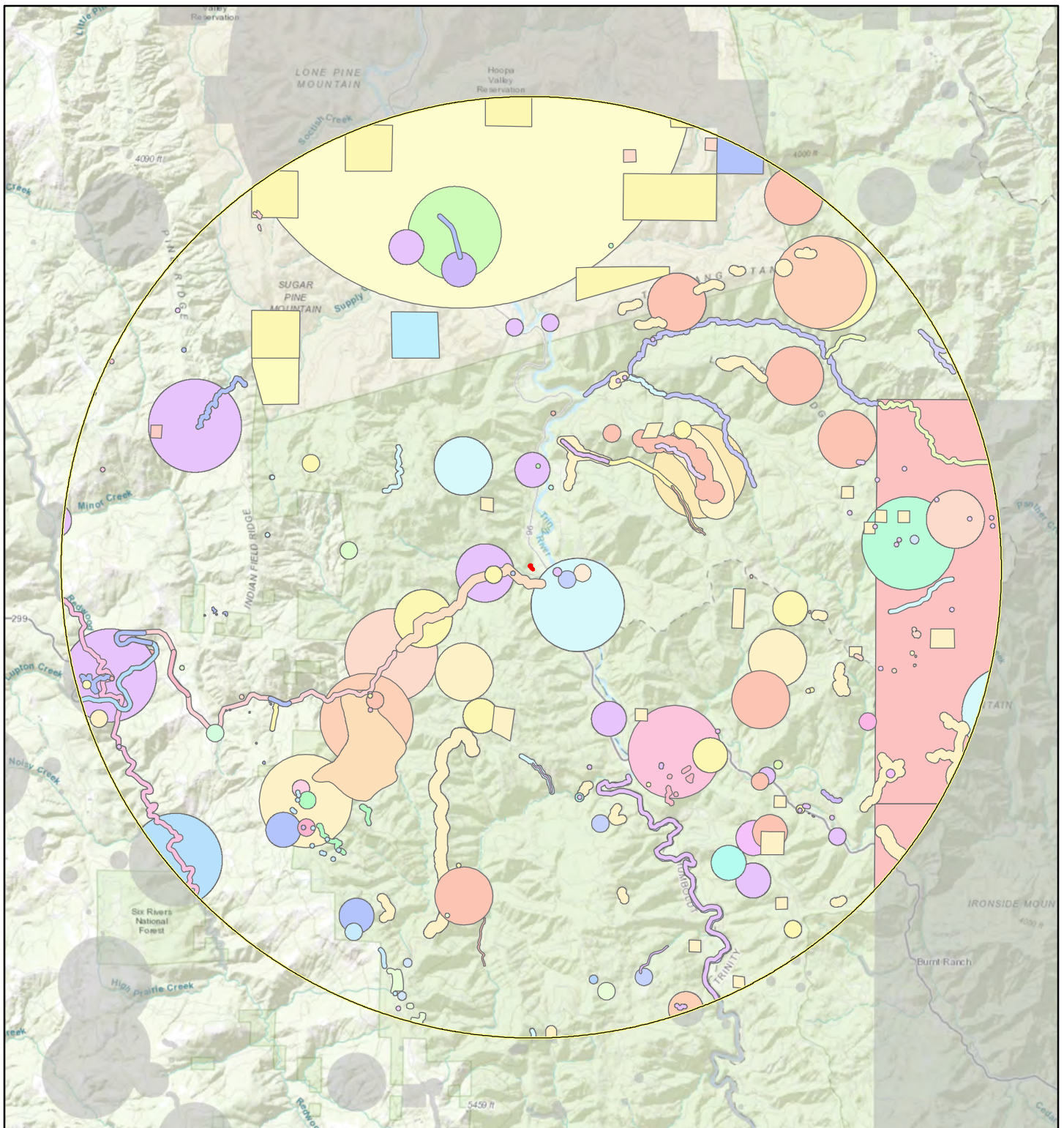


1:24,000

Willow Creek CSD
Topo Map



NATURAL
INVESTIGATIONS
COMPANY



Study Area 10 Mile Buffer

1:190,000 1 inch = 3 miles
 0 3 6
 Miles



Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. Natural Investigations Company can not guarantee the accuracy and content of electronic files. The master file is stored by Natural Investigations Company and will serve as the official record of this communication.
3. It is unlawful to copy or reproduce all or any part thereof, whether for personal use or resale, without permission. Data Sources: California Department of Fish and Wildlife. 2020. RareFind 5.x, California Natural Diversity Data Base. Biogeographic Data Branch, Sacramento, California. (updated monthly by subscription service)

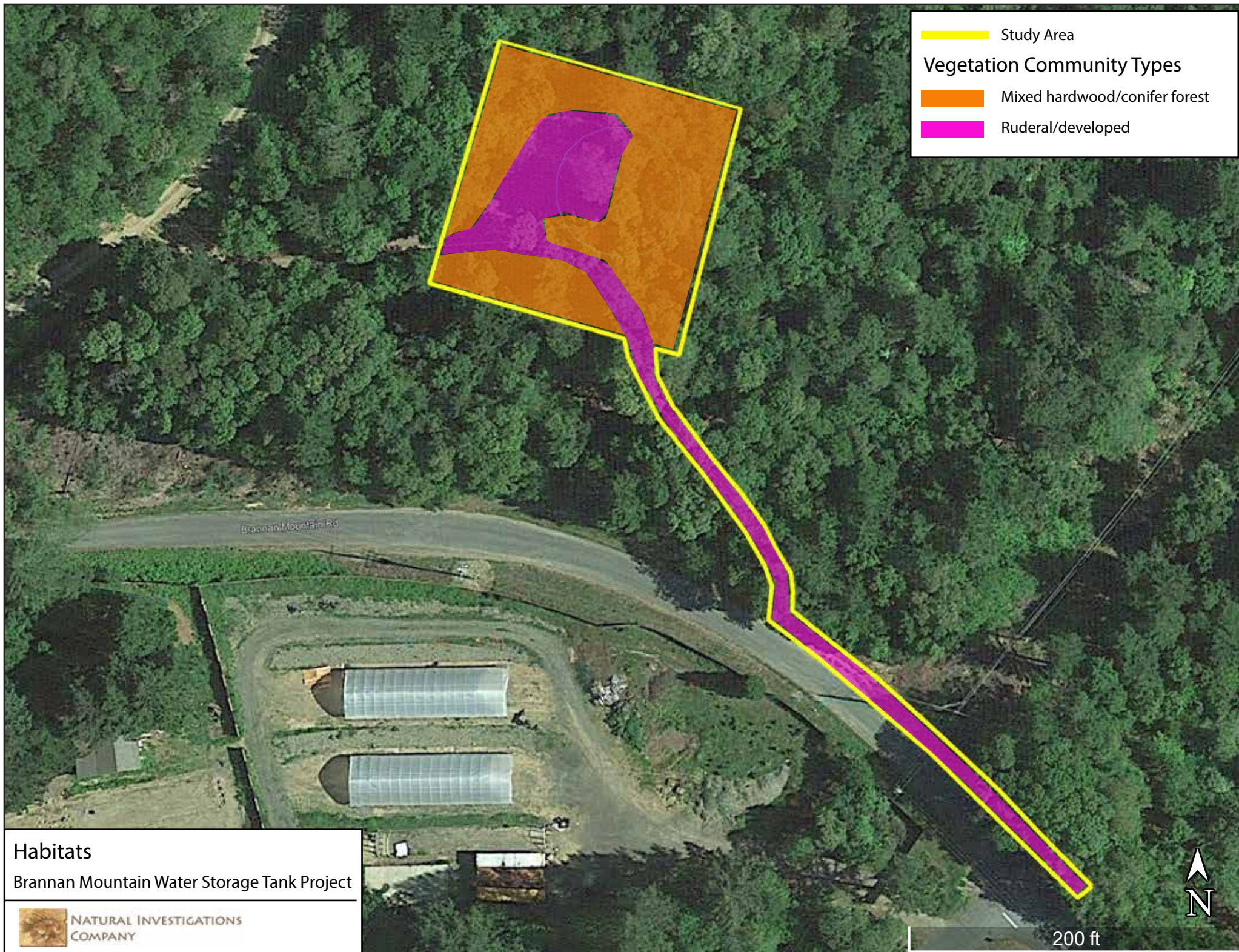
Special-Status Species Occurrences Map

Willow Creek CSD

Willow Creek 1997 Quadrangle: Township 7N, Range 5E, Section 29



NATURAL INVESTIGATIONS CO.
WWW.NATURALINVESTIGATIONS.COM





Study Area



Wetlands and Channels

0

125

250

Meters

0

500

1,000

Feet



1:5,000

Willow Creek CSD
National Wetlands Inventory
Features Map



NATURAL
INVESTIGATIONS
COMPANY

10. APPENDIX 1: USFWS SPECIES LIST



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Arcata Fish And Wildlife Office

1655 Heindon Road

Arcata, CA 95521-4573

Phone: (707) 822-7201 Fax: (707) 822-8411



In Reply Refer To:

October 21, 2020

Consultation Code: 08EACT00-2021-SLI-0019

Event Code: 08EACT00-2021-E-00057

Project Name: Brannan Mountain Water Storage Tank Project

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
-

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Arcata Fish And Wildlife Office

1655 Heindon Road

Arcata, CA 95521-4573

(707) 822-7201

Project Summary

Consultation Code: 08EACT00-2021-SLI-0019

Event Code: 08EACT00-2021-E-00057

Project Name: Brannan Mountain Water Storage Tank Project

Project Type: WATER SUPPLY / DELIVERY

Project Description: Willow Creek Community Services District proposes to build a new 650,000-gallon steel tank on an unaddressed, 0.5-acre parcel (Assessor Parcel Number 522-492-011-000) that is owned by Willow Creek CSD. Earthwork is needed to construct the tank at the designed elevation. It will consist of clearing and grubbing existing vegetation, removing about 4,600 cubic yards of cut material in the hill slope, placing and compacting fill material to make a flat area, and hauling about 4,500 cubic yards of export. In addition, the proposed project includes on-site pipelines, valves (above and below ground), drain lines, storm drain culverts, chain link fencing and gate, and asphalt pavement around the tank. The existing access road (250 feet in length) between Brannan Mountain Road and the tank site will be widened and paved to a top width of 15 feet. The access road is located within a public utility easement and access easement that is approximately 40 feet wide and the entrance is along Brannan Mountain Road. The public utility easement is on a privately-owned 48-acre parcel (Assessor Parcel Number 522-492-012-000) that is adjacent to the parcel owned by Willow Creek CSD (the tank site). Also proposed is a new water pipeline that connects the proposed water tank to the existing distribution system located at the intersection of Brannan Mountain Road and Stage Coach Lane. The proposed water pipeline is 12 inches in diameter and will be placed 36 inches below the existing surface of the ground. The pipeline will run for approximately 250 feet from the new tank to Brannan Mountain Road underneath the access road. Then, the pipeline will run for approximately 250 feet along the north shoulder of Brannan Mountain Road (and within the road right-of-way) to the northeast corner of the intersection of Brannan Mountain Road and Stage Coach Lane, where it will tie in to an existing 8-inch waterline. Disturbed areas will be seeded with native or ornamental vegetation, as appropriate. The total project footprint is about 0.6 acre: 0.5 acre for the tank site and 0.1 acre for the new water pipeline and widened access road.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/40.94723533344599N123.64203851026937W>



Counties: Humboldt, CA

Endangered Species Act Species

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Marbled Murrelet <i>Brachyramphus marmoratus</i> Population: U.S.A. (CA, OR, WA) There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4467	Threatened
Northern Spotted Owl <i>Strix occidentalis caurina</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1123	Threatened
Western Snowy Plover <i>Charadrius nivosus nivosus</i> Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8035	Threatened
Yellow-billed Cuckoo <i>Coccyzus americanus</i> Population: Western U.S. DPS There is proposed critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

11. APPENDIX 2: CHECKLIST OF PLANTS DETECTED IN THE STUDY AREA

Plants Observed at Willow Creek on January 22, 2019

Scientific name	Common name
<i>Acer macrophyllum</i>	Bigleaf maple
<i>Alnus rubra</i>	Red alder
<i>Arbutus menziesii</i>	Madrone
<i>Baccharis pilularis</i>	Coyote bush
<i>Briza maxima</i>	Rattlesnake grass
<i>Calocedrus decurrens</i>	Incense-cedar
<i>Cardamine oligosperma</i>	Western bittercress
<i>Cirsium vulgare</i>	Bull thistle
<i>Cynurus echinatus</i>	Hedgehog dogtail
<i>Cytisus scoparius</i>	Scotch broom
<i>Drymocallis lactea</i>	Sierran woodbeauty
<i>Elymus trachycaulus</i> ssp. <i>trachycaulus</i>	Slender wheat grass
<i>Frangula californica</i> ssp. <i>californica</i>	California coffeeberry
<i>Iris</i> sp.	Iris
<i>Lathyrus</i> sp. (non-native)	Sweet pea
<i>Leontodon saxitalis</i> ssp. <i>saxitalis</i>	Hawkbit
<i>Lonicera hispidula</i>	Pink honeysuckle
<i>Monardella odoratissima</i>	Coyote-mint
<i>Notholithocarpus densiflorus</i>	Tanoak
<i>Phoradendron villosum</i>	Oak mistletoe
<i>Polystichum munitum</i>	Western sword fern
<i>Prunella vulgaris</i>	Self-heal
<i>Pseudotsuga menziesii</i>	Douglas-fir
<i>Pteridium aquilinum</i> ssp. <i>pubescens</i>	Western bracken fern
<i>Quercus chrysolepis</i>	Canyon live oak
<i>Quercus garryana</i>	Oregon white oak
<i>Quercus kelloggii</i>	California black oak
<i>Rubus armeniacus</i>	Himalayan blackberry
<i>Rumex</i> sp.	Dock
<i>Symphoricarpos alba</i>	Snowberry
<i>Torilis nodosa</i>	Tall sock-destroyer
<i>Toxicodendron diversilobum</i>	Poison oak
<i>Trifolium</i> sp.	Clover
<i>Umbellularia californica</i>	California bay
<i>Vicia</i> sp.	Vetch 1
<i>Vicia</i> sp.	Vetch 2

12. APPENDIX 3: SITE PHOTOS













