INITIAL STUDY

for the

South Tahoe Public Utility District
Pioneer Trail Waterline and PRV Upgrade Project

PROJECT NAME

South Tahoe Public Utility District Pioneer Trail Waterline and PRV Upgrade Project

LEAD AGENCY

The South Tahoe Public Utility District (District), located in South Lake Tahoe, California, will serve as the Lead Agency for the Pioneer Trail Waterline and PRV Upgrade Project for this Initial Study in accordance with the California Environmental Quality Act (CEQA).

This Initial Study was prepared under contract with the District by:

Sierra Ecotone Solutions LLC
PO Box 1297
Zephyr Cove, NV 89448.

PROJECT CONTACT INFORMATION

If you have further questions or require additional information regarding this matter, please contact Julie Ryan, Engineering Department Manager at (530) 544-6474.

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ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

If environmental factors are checked below, there would be at least one impact that is a "Potentially Significant Impact" as indicated by the checklist in Chapter 2 of this Initial Study.

☐ Aesthetics	☐ Agricultural Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology Resources
☐ Greenhouse Gas Emissions	☐ Hazards and Hazardous Materials	☐ Hydrology/Water Quality
☐ Land Use Planning	☐ Mineral Resources	☐ Noise
☐ Population/Housing	☐ Public Services	☐ Recreation
☐ Transportation/Traffic	☐ Utilities/Service Systems	☐ Mandatory Findings of Significance

Chapter 1. PROJECT DESCRIPTION

1.1 INTRODUCTION AND PROJECT BACKGROUND

1.1. A Purpose and Need

The South Tahoe Public Utility District (District) owns and operates the water distribution system and waste water collection and treatment system within its Service Area in the City of South Lake Tahoe and unincorporated areas of El Dorado County (**Figure 1**). The District regularly conducts condition assessments of existing water facilities to identify opportunities to optimize the system to better provide reliable water services safely, efficiently and cost effectively. The Pioneer Trail Waterline and PRV Upgrade Project (Project) would install new water pipeline, nine new and two replacement fire hydrants, and replace/relocate two existing pressure regulating stations to improve capacity and reliability, enhance fire protection, and provide an increased level of service within the surrounding community.

The Project Area is located along Pioneer Trail from Marshall Trail west to Washoan Blvd (**Figure 2).** Pioneer Trail is an important travel route between Meyers and Stateline, Nevada that bypasses central South Lake Tahoe. The proposed new waterline in Pioneer Trail is approximately 1.5 miles in length and would become an important backbone of the water system. The 16-inch pipeline would significantly improve fire flows to multiple neighborhoods and increase overall water system efficiency and capacity to certain neighborhoods. The new waterline also allows for the proposed installation of nine new fire hydrants along the important urban-wildland interface of Pioneer Trail. The hydrants would be installed to meet fire standards that require developed properties to be no more than 250 feet from a fire hydrant and undeveloped properties to be no more than 500 feet from a fire hydrant.

Also in conjunction with the waterline installation, two new pressure regulating valve (PRV) stations would be installed. PRVs have a critical role in water delivery systems because the valve reduces incoming high pressure to a level that is suitable for downstream delivery. Proposed new PRV Station #1 would be located at the intersection of Pioneer Trail and Jicarilla and would provide a second feed from the Montgomery Estates Zone to both the Susquehana Zone and the Pine Valley Zone to mitigate existing fire flow deficiencies. Proposed PRV Station #2 would re-locate two existing PRVs (PT/Kokanee and PT/Marshall) located in below-grade vaults on a curve in the traffic lanes Pioneer Trail would into a single above-ground station on Marshall Trail, which is a much lower traffic side street. The existing PRVs were constructed in the late 1980's in a dangerous location and are currently nearing the end of their useful lives. A new PRV is needed in the same location at Marshall Trail to provide a secondary feed to over 100 customers from the Montgomery Estates Zone to the Stateline Zone in the Meadow Lakes Neighborhood.

1.1. B Project Background

In 2015, the District completed an assessment of its water system service that serves over 16,000 residential and commercial customers to determine how the system could be optimized to provide reliable water services more safely, efficiently and cost effectively. The result was the 2016 Water

System Optimization Plan (WSOP) that is used by the District to guide its operations and capital investments to meet the goal of maintaining a reliable potable water service.

The WSOP included a comprehensive condition assessment of existing water facilities that identified deficiencies within the water system. The District used the results of the assessment to develop a prioritized Capital Improvement Program (CIP) to correct deficiencies in water system condition, capacity, and Level of Service (LOS). On an annual basis, the District presents an Annual Plan Update to the CIP that identifies and prioritizes capital projects based on current needs and the adopted budget. The annual plan document is intended to be a desktop resource for basic information regarding the scope, cost, and need for proposed projects. The 2021 annual update identified the proposed Pioneer Trail Waterline and Facilities Upgrade Project as a high priority project for implementation in 2024.

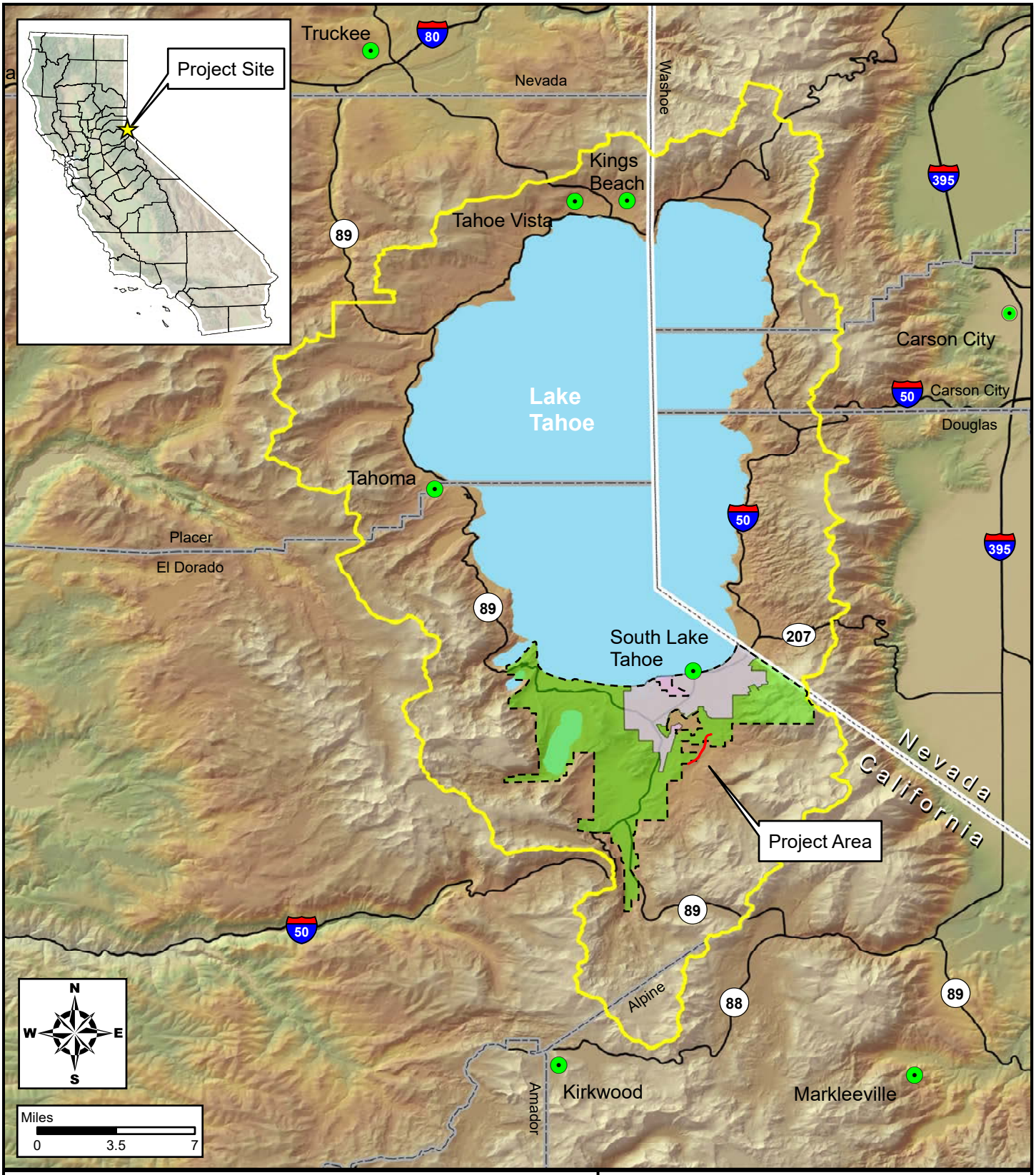
1.1.C Project Location

The Project is located on the south shore of Lake Tahoe in the within unincorporated areas of El Dorado County (**Figure 1)**. The Project Area (**Figure 2**) is located along Pioneer Trail from Marshall Trail west to Washoan Blvd. Pioneer Trail is an important travel route between Meyers and Stateline, Nevada that bypasses central South Lake Tahoe. The route is through residential neighborhoods and open forest. Trout Creek passes under Pioneer Trail via culvert just east of Golden Bear Trail.

The Project Area is contained within the South Lake Tahoe United State Geological Society (USGS) 7.5 Minute Quadrangle Topographic Map and occurs within Township 12N Range 18E in Sections 10 and 15 on the Mt Diablo Meridian.

1.1.D General Plan Designation, Zoning and Surrounding Land Use

Land use within the Project Area is primarily residential with surrounding National Forest land. There are 3 relevant TRPA Plan Area Statements in effect within the Project Area for the neighborhoods of Tahoe Paradise Washoan, Golden Bear, and Montgomery Estates. Lake Valley Fire Protection District Station 6 is located at the corner of Golden Bear and Pioneer Trail and Sierra House Elementary School is located to the east of Marshall Trail, just outside of the Project Area.



Legend

- Project Area
- STPUD Service Area
- City of South Lake Tahoe
- TRPA Boundary
- State Boundry
- County Boundary

Pioneer Waterline Replacement Project

Figure 1.
Project Vicinity

SIERRA ECOTONE SOLUTIONS

Sources: STPUD, TRPA, USGS. Map date: March 2, 2022

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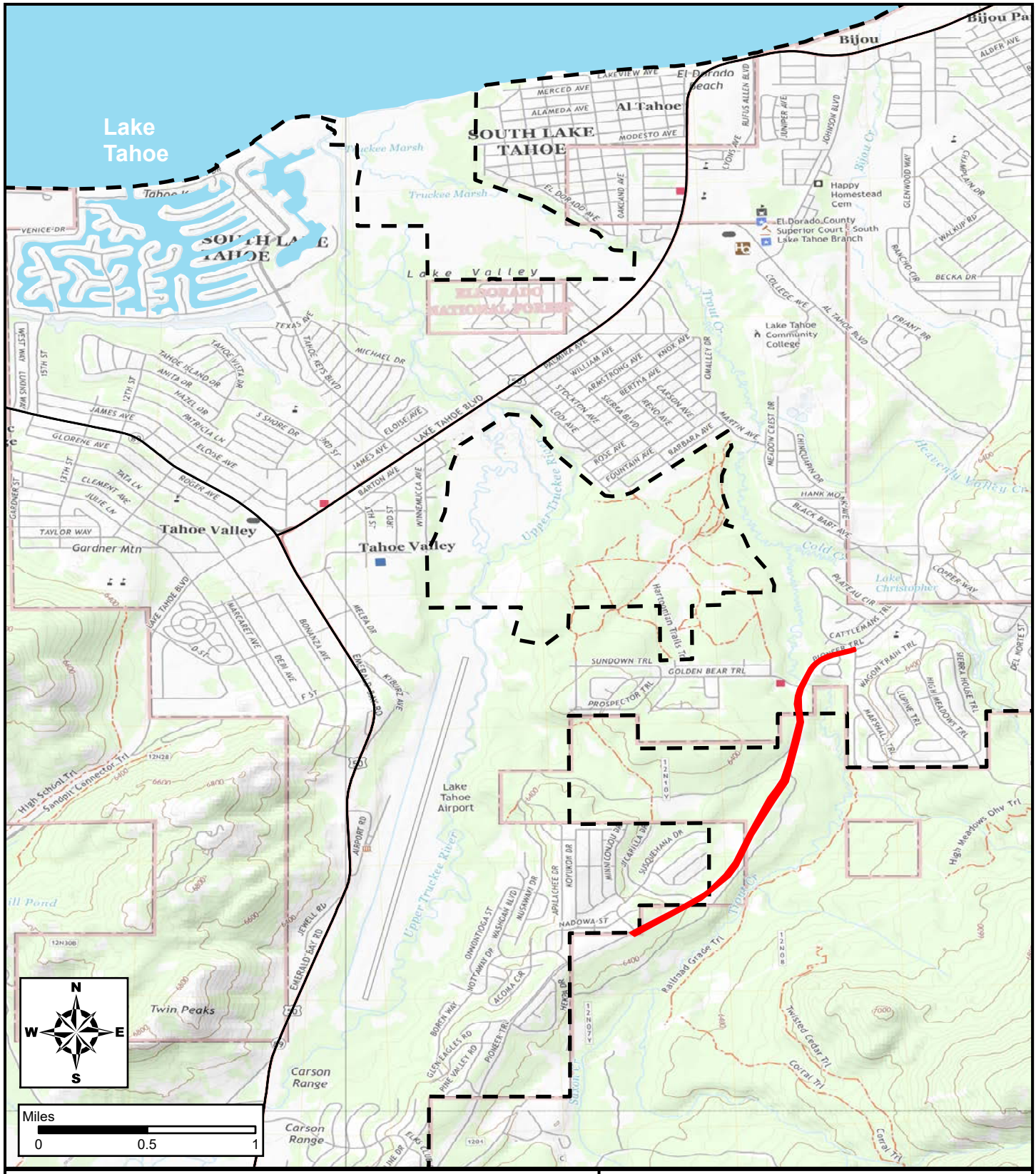

Legend

- STPUD Service Area
- Project Area

Pioneer Waterline Replacement Project

Figure 2.
Project Area

SIERRA ECOTONE SOLUTIONS

Sources: STPUD, TRPA, USGS. Map date: March 2, 2022

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1.2 DESCRIPTION OF PROJECT

The purpose of the Pioneer Trail Waterline and Facilities Upgrade Project (Project) is to provide an increased level of service and enhanced fire protection capability. The District proposes to install new water pipeline in Pioneer Trail to increase water system reliability and improve fire flows. Pioneer Trail is an important urban-wildland interface and new fire hydrants would also be installed to meet current fire standards. In conjunction with the new waterline installation, two new pressure regulating valve (PRV) stations would be installed. The new PRV stations are needed to mitigate existing fire flow deficiencies and to provide several isolated neighborhoods with improved flows and supplemental feeds. Each of these components are described in further detail below.

1.2.A Project Components

Pioneer Trail Waterline

This portion of the Project proposes installation of approximately 1.5 miles of new 16-inch waterline within Pioneer Trail from Susquehana Drive (Pine Valley Zone) east to Marshall Trail (Montgomery Estates Zone). This project will loop the distribution system and improve fire flow to approximately 1,000 customers in the Pine Valley and Susquehana Zones. The proposed main waterline would be 16” ductile iron pipe (DIP) that would connect to an existing 8-inch steel water main on Susquehana Drive. The pipeline would be installed within the roadway at a minimum depth of 42-inches. In addition to the pipeline, a total of 5 residential water customers will have water services replaced.

In addition, approximately 1,500 linear feet of 10-inch aging steel waterline will be replaced with a new 12-inch C900 PVC waterline on Pioneer Trail between Golden Bear Trail and Marshall Trail. A new 12-inch C900 PVC waterline of 460 feet would be installed to connect the new proposed PRV Station #2 on Marshall Trail (see below) to Kokanee Trail. This new waterline would also replace approximately 280 feet of existing 8 and 10-inch steel pipe on both streets.

The contractor will comply with California Division of Drinking Water standards for installation of new water mains. Each completed section would be pressure tested for leakage and all of the new pipe will be disinfected per AWWA (American Water Works Association) Standards.

New sections of waterline would be tied into the existing system only after testing and disinfection. Upon completion of the install, the trenches would be backfilled and the roadway replaced. Existing guardrail and signage would be protected throughout construction along with any existing curb and gutter.

New Fire Hydrant Installation

The installation of new fire hydrants within the Service Area is necessary to meet fire standards that require developed properties to be no more than 250 feet from a fire hydrant and undeveloped properties to be no more than 500 feet from a fire hydrant. A total of nine new fire hydrants would be installed along Pioneer Trail between Susquehana Drive and Marshall Trail. An existing hydrant at Marshall Trail and Cattleman’s Trail would also be replaced as well as a hydrant at

Marshall Trail and Pioneer Trail. Each hydrant would be connected to the new waterline via a 6-inch fire hydrant lateral and gate valve off of the hydrant tee.

Pressure regulating stations

Two new pressure regulating stations equipped with pressure regulating valves (PRVs) are proposed to be installed. PRVs have a critical role in water delivery systems because the valve reduces incoming high pressure to a level that is suitable for downstream delivery.

Proposed new PRV Station #1 would be located at the intersection of Pioneer Trail and Jicarilla. The proposed Pine Valley PRV would have a 2-inch domestic and 12-inch fire PRV and the new Susquehana PRV would have a 2-inch domestic and 6-inch fire PRV. The PRV station would regulate flows coming from the Montgomery Estates Zone to the Susquehana Zone and the Pine Valley Zone via the new Pioneer Trail waterline and would provide a secondary feed that mitigates existing fire flow deficiencies. The PRVs would be installed on a concrete pad and enclosed in a pre-fabricated aluminum box.

Proposed PRV Station #2 is located on Marshall Trail and would house the Kokanee, Marshall, and Stateline PRVs each equipped with a 2-inch domestic PRV and an 8-inch fire PRV The existing Kokanee and Marshall PRVs are the sole source of water supply to approximately 330 customers in the Kokanee and Golden Bear Zones. However, the PRVs were constructed in the late 1980's and are currently nearing the end of their useful lives. They are located in below-grade vaults on a curve in the high traffic lanes of Pioneer Trail and these would be abandoned in place and the new PRVs installed in the proposed above-ground Station #2 on Marshall Trail, which is a much lower traffic side street. The new Stateline PRV is proposed to connect the Montgomery Estates Zone and provide a secondary feed to over 100 customers located in the Meadow Lakes Neighborhood. The proposed PRVs would be installed on a concrete pad and enclosed in a pre-fabricated aluminum box.

At the proposed locations the site would be cleared and grubbed to accommodate the concrete pad for the new stations. The new stations are proposed to be pre-fabricated insulated and heated enclosures construction of marine grade aluminum in a dark green color. The enclosures are designed to provide protection from freezing and vandalism and also easy access for maintenance and testing. Instrumentation and communication panels with an antenna would also be installed on the concrete pads at each of the stations. The portion of the system being replaced would generally remain in service until the new system has been tied in and then the old system would be abandoned in place.

1.2.B Construction Phasing, Schedule and Equipment

Construction is planned for 2024 and is anticipated to occur within one TRPA grading season between May 1st to October 15th. The PRV stations would be built in conjunction with the water pipeline installations and all new components would be pressure tested and disinfected at the same time. When testing is complete, the new components would be tied in with the existing system.

The contractor shall comply with the TRPA standard conditions of approval. Construction that is not completed during the TRPA construction season for earth moving activities between May 1st and October 15th would require a TRPA Grading Season Exception. On-site work would be performed from 8 am to 6 pm Monday through Friday. Work outside these hours would be approved by the District a minimum of 48-hours before the abnormal working hours are scheduled to begin.

General construction equipment that would be utilized for waterline projects include excavator, mini-excavator, loader, water truck, service vehicles, small remote sheep's-foot compactor, vacuum truck, sweeper, milling machine, smooth drum compactor, and a paving machine. All but the paving equipment (the last 3 on the list) are used every day.

1.2.C Earthwork and Excavations

Earthwork and excavations that result in temporary disturbance will be necessary for Project implementation. Excavation is defined as being 18 or more inches of depth below the existing surface. Water pipeline trenches are expected to be 3 to 5 feet wide and generally require excavations of 5 feet deep. Excavations will primarily occur within the El Dorado County ROW. If excavation is required on private property for PRV Station #2, the District would request an easement. If no easement is granted, then the District will look to acquire land to build the aboveground station on or it would be placed in an underground vault within the ROW. A TRPA pre-grade inspection shall be completed prior to any excavation or saw-cutting activities.

1.2.C.2 Pipeline and Utility Trenching and Excavations

The contractor shall be responsible for contacting all utility companies, local agencies and/or utility districts as to the location of all underground facilities. Location and depth of existing utilities where shown on plans are based on best available information. No guarantee is made as to the accuracy of this information or that all utilities are shown. It shall be the contractor's responsibility to locate, protect, and maintain all existing utilities. The contractor or any subcontractor for this contractor shall notify members of underground service alert 48 hours in advance of performing excavation work by calling underground service alert #811. Excavation is defined as being 18 or more inches of depth below the existing surface.

The contractor shall pothole all utility and storm drain crossings along the pipeline alignment in advance of installation. The contractor shall report the results of the pothole in writing to the engineer 48 hours (not to include weekends or holidays) prior to undertaking any corrective action. Should any corrective work be done prior to notification, the District assumes no liability for the costs incurred for this work.

All interties between new water mains and the existing water system, including new water service connections, and fire hydrant installations and transfers, shall only be made after all pressure testing and disinfection requirements are satisfactorily met. The contractor shall be responsible to provide all blow offs necessary for flushing and sampling of all new water mains as required by the California State Water Resources Control Board and project specifications.

Where new water mains are being installed in paved sections the asphalt replacement shall be the clear trench width for the pipeline size being installed plus twenty-four inches (24") in County of El Dorado right of way, as provided in the contract specifications. The contractor shall replace all traffic striping that is disturbed during construction.

The thickness of replacement pavement is 3 inches or to match the existing depth in the El Dorado ROW as specified in the project plans.

The contractor shall protect and be responsible for any disturbance or contamination to any dry wells, storm water collection or retainage systems including storm drain pipe, curb & gutter, valley gutters and horizontal drains through-out the project area. Any damage shall be repaired at no additional cost to District. The contractor shall not stock pile any material upon any drainage facilities. All sewer pipes damaged during the execution of the project shall be repaired per plan details.

1.2.C.3 Fill Materials and Placement

All excavations shall be backfilled or trench plated at the end of each day's work per the plan specifications. Within paved areas, trenches will be backfilled with a combination of sand, native material, Class II aggregate base and slurry. Excavations within existing paved areas shall be cold patched or covered with steel plates as required per specifications to match the existing pavement at the end of each day’s work. All trench plates shall be non- skid type and have cold patch applied to the edge for traffic approach and departure.

After the new main is placed into service, the existing water mains, where shown on the project drawings, are to be abandoned in place by cutting out a section of pipe and installing a cap or plug on the end of the pipeline. Existing fire hydrants to be abandoned will be removed and capped below grade.

Only new water service connections where shown on the project plans shall be installed per the Districts standard details and project drawings. After Project completion, the locations of all existing water services shall be verified and marked in the field.

1.2.C.4 Disposal of Excess Excavated Material

All excess material from the project is to be removed from the site and disposed of at a site approved by the TRPA. For this Project, excess spoil may be temporarily stored at the Contractor staging area at the District Wastewater Treatment Plant. No material shall be stored in any stream environment zone or wet area. The contractor shall not stock pile any material upon any drainage facilities. Contractor shall remove all material generated by any asphalt saw cutting operation during or immediately after saw cutting by using adequately sized vacuuming equipment to accommodate the removal process.

1.2.D Site Clean Up and Restoration

All disturbed areas shall be restored to match pre-existing conditions. Unimproved areas and areas not landscaped shall be revegetated with native species in accordance with the TRPA handbook of best management practices. Existing vegetation removed during construction shall be chipped and mulched on site and stored for use during revegetation. Application of a mulch may enhance vegetative establishment. Any disturbance of private property shall be restored by the contractor at their expense. All traffic striping that is disturbed during construction shall be replaced by the contractor.

1.2.E Site Access, Staging Areas, and Parking

The District would likely provide a Contractor staging area at the Wastewater Treatment Facility located off of Al Tahoe Blvd. Additional staging may occur within compacted shoulder areas of Pioneer Trail if allowed by El Dorado County. Contractors equipment and employee vehicles shall park on existing paved surfaces or existing compacted road shoulders. Contractor shall provide crushed rock in areas of temporary construction access to minimize migration of sediment.

1.3 PROJECT DESIGN FEATURES AND BEST MANAGEMENT PRACTICES

The design features and best management practices (BMPs) that are detailed in Section 1.3 below are proposed as part of the Project to avoid, reduce and minimize potential direct and indirect effects of water meter installations.

1.3.A Construction Dewatering Plan

Within the Project area, Pioneer Trail is elevated above the surrounding terrain and therefore the District does not expect to encounter groundwater during excavations. In the vicinity of the Trout Creek crossing, the waterline would be installed approximately 14 feet above the surface of the creek and so groundwater is also not expected. The most probable location for groundwater interception in the Project area is the low point of Pioneer Trail where there is a 36" culvert crossing. If groundwater is intercepted during some excavations, dewatering may need to be implemented onsite.

The contractor shall be responsible for the handling and proper disposal of distribution system water encountered during system tie-ins. The water that would be encountered would come from dewatering of the pipes and not from groundwater. This water would be captured with a Vacuum truck or a sump pump to the sewer system in accordance with the plan specifications. For this Project, the contractor shall assume that up to 1,250 gallons could be encountered at each tie-in.

1.3.B Construction Equipment Emissions Control Plan

To ensure that air quality effects will be minimized, the following best management practices will be implemented to reduce emissions from construction equipment exhaust:

- Only equipment of a size and type that will do the least amount of damage, under prevailing site conditions and considering the nature of the work will be used.
- Minimize idling time (e.g., 5-minute maximum).
- Maintain properly tuned equipment according to equipment manufacturer's guidelines.
- Limit the hours of operation of heavy equipment and noise generating activities to 8AM to 6PM.

1.3.C Fugitive Dust Control Plan

The District's contractor will take the necessary steps, procedures, or means as required to prevent its operations in connection with the execution of the Work from causing abnormal dust conditions. The District's contractor will prevent dust from construction activities from being produced in amounts that may be harmful or cause a nuisance to persons living nearby or occupying buildings in the vicinity of the Project.

To ensure compliance with El Dorado County Air Quality Management District's (EDCAQMD) Rule 223 to minimize the amount of particulate matter entrained in the ambient air as a result of man-made fugitive dust sources, the following feasible Particulate Matter (PM10) control measures for construction activities will be implemented:

- The contractor shall provide a water truck to water areas as necessary for dust control. The contractor shall apply either water or a dust palliative, or both, as required to alleviate or prevent dust nuisance.
- During construction, environmental protection devices, such as erosion control, dust control and vegetation protection devices shall be maintained at all times.
- The contractor shall provide a vacuum sweeper truck for cleaning of the site during and after construction each day as required to prevent sediment run off and to aid in dust control.

1.3.D Best Management Practices to Protect Surface and Ground Water/Sediment and Erosion Control Plan

The Contractor shall comply with the State Water Resource Control Board waste water discharge requirements for the project and the County of El Dorado encroachment permit. Portions of this Project are likely to qualify as Exempt or Qualified Exempt under TRPA regulations and therefore, would not require a pre-grade inspection. However, new construction requires a TRPA pre-grade inspection be completed prior to any saw cutting or excavation activities. To ensure that potential impacts to surface water and ground water are avoided, reduced and minimized, the following measures and BMPs will be implemented as necessary based on site conditions at individual work sites:

- During construction, environmental protection devices, such as erosion control, dust control and vegetation protection devices shall be maintained at all times.

- Soil and construction material shall not be tracked off the construction site. Grading operations shall cease in the event that this condition is in danger of being violated.

- Loose soil mounds or surface shall be protection from wind or water erosion by being appropriately covered at the end of each work day or when required by TRPA.

- The contractor shall not stock pile any material upon any drainage facilities. Excavated material shall be stored upgrade from the excavated area whenever possible. No material shall be stored in any stream environment zone or wet area.

- All excess material from the project is to be removed from the site and disposed of at a site approved by the TRPA. No excess material shall be stored on site after hours. Contractor shall remove all material generated by any asphalt saw cutting operation during or immediately after saw cutting by using adequately sized vacuuming equipment to accommodate the removal process.

- No equipment or vehicles shall be placed outside the state, city, or county right of way.

- No washing of vehicles or heavy equipment shall be permitted except when authorized by TRPA in writing.

- Contractor shall provide crushed rock in areas of temporary construction access to minimize migration of sediment.

- The contractor shall protect and be responsible for any disturbance or contamination to any dry wells, storm water collection or retainage systems including storm drain pipe, curb & gutter, valley gutters and horizontal drains throughout the project area. Any damage shall be repaired at no additional cost to the District.

1.3.E Prevent and Control Invasive Species

To prevent the spread of invasive plant species, the following measures and BMPs will be implemented:

- Construction vehicles, including off-road vehicles, will be cleaned when they come into the Basin or come from a known invasive plant infested area. Equipment will be considered clean when visual inspection does not reveal soil, seeds, plant material, or other such debris.
- Equipment will be staged in weed-free areas to prevent vehicles from introducing or spreading invasive species.
- Earth-moving equipment, gravel, fills, or other materials are required to be weed-free. Onsite sand, gravel, rock, or organic matter will be used when possible or weed-free materials from gravel pits and fill sources that have been surveyed and approved will be used.
- Minimize the amount of ground and vegetation disturbance in the construction areas. Upon completion of construction, vegetation will be reestablished in the footprint to minimize weed establishment after the removal.

1.3.F Construction Noise Reduction

To reduce construction related noise, the following measures will be implemented:

- Noise shall be reduced by mandatory use of mufflers on all construction vehicles and equipment. Where feasible solenoid pavement breakers will be used in lieu of air powered jack hammers.
- Construction activities will be limited to the hours of 8:00 AM and 6:00 PM, pursuant to TRPA Code of Ordinances Chapter 68, Noise Limitations.

1.3.G Cultural Resources Protection

Although the Project Area has been subject to systematic surface archaeological investigations, it is possible that buried or concealed cultural resources could be present and detected during Project ground disturbance activities. In accordance with the National Historic Preservation Act of 1966, (16 U.S.C. 470), the following procedures will be implemented to ensure historic preservation. In the event previously unknown potential historical, architectural, archeological, or cultural resources (herein after cultural resources) are discovered during subsurface excavations the following procedures will be instituted:

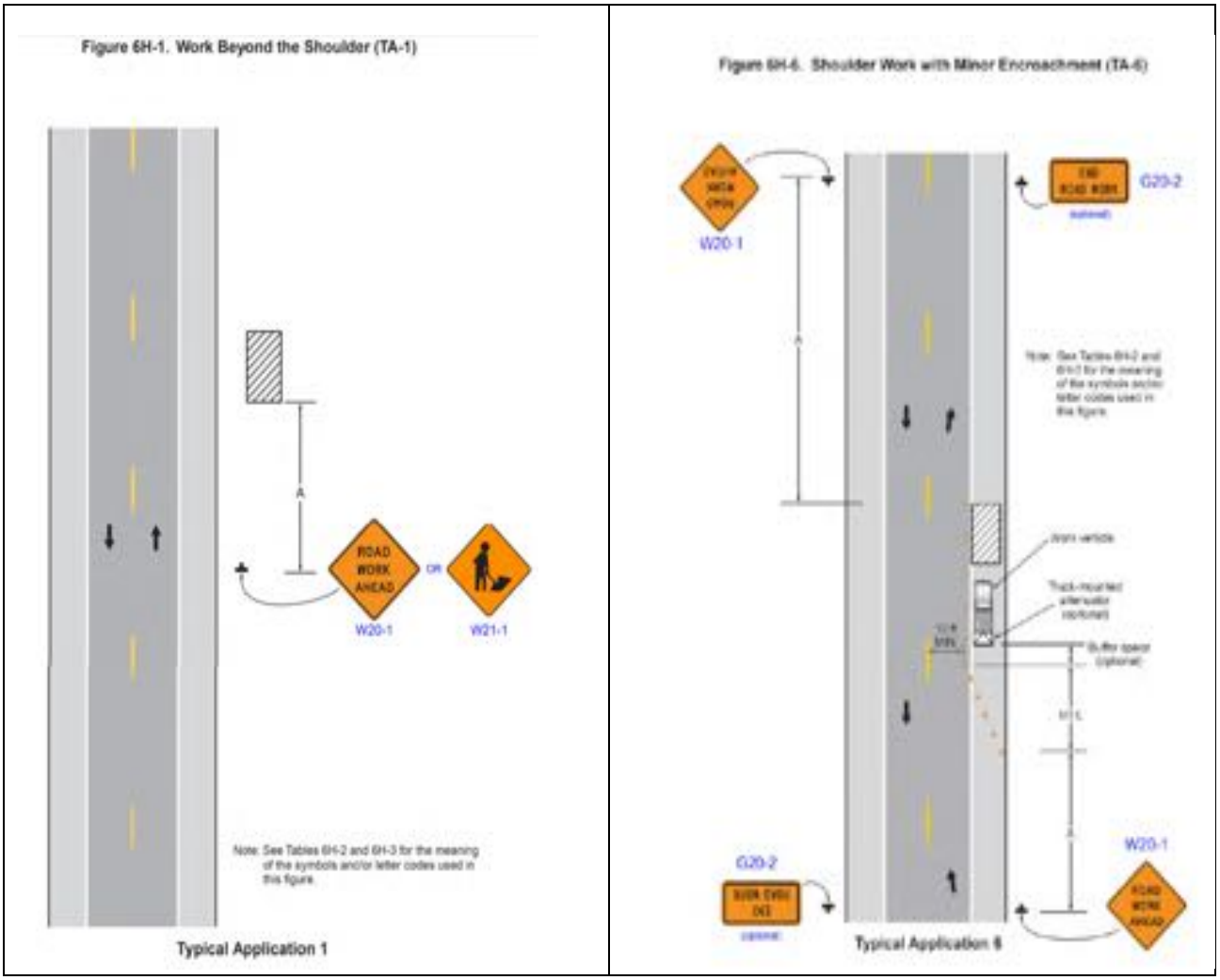
- If archaeological features or materials are unearthed during any phase of project activities, all work in the immediate vicinity of the find shall halt until the District has contacted the State and the significance of the resource has been evaluated. Any mitigation measures that may be deemed necessary must have the approval of the State, and shall be implemented, pursuant to the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation, 48 CFR 44716, by a qualified archaeologist representing the District prior to the resumption of construction activities. Consistent with this, the Engineer will issue a “Stop Work Order” directing the District’s contractor to cease all construction operations at the location of such potential cultural resources find.
- Such “Stop Work Order” will be effective until such time as a qualified archeologist can be called to assess the value of these potential cultural resources and make recommendations to the State Office of Historic Preservation.
- If the archeologist determines that the potential find qualifies for inclusion in the National Register of Historic Places and the California Register of Historic Resources, at the direction of the State Office of Historic Preservation, the Engineer will extend the duration of the “Stop Work Order” in writing, and the District’s contractor will suspend work at the location of the find.
- In the unlikely event that human remains are encountered, all activities should be stopped immediately and the El Dorado County Coroner’s Office should be contacted. This is in compliance with California State Health and Safety Code, Section 7050.5, which states that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to California Public Resources Code, Section 5097.98.

1.3.H Traffic Control Plan

Prior to construction activity the contractor shall submit to the District for acceptance a project specific Traffic Control Plan. The Traffic Control Plan will include signage advising road users of construction activities and right of way work in accordance with the current edition of the California Manual on Uniform Traffic Control Devices (CMUTCD), which is the version of the Federal Highway Administration's MUTCD that is amended for use in California. The contractor shall maintain the continuous flow of traffic at all times. Local traffic, in addition to emergency response vehicles, will be allowed to pass though at all times. After working hours, all traffic control devices will be removed and traffic returned to normal.

According to the CMUTCD, when construction activities Occur outside of the roadway, **Figure 3A**, Work Beyond the Shoulder (TA-1), and **Figure 3B**, Shoulder Work with Minor Encroachment (TA-6), are the most commonly used traffic control configurations that are used to allow for the free flow of traffic and ensure a safe work zone for both construction workers and the traveling public.

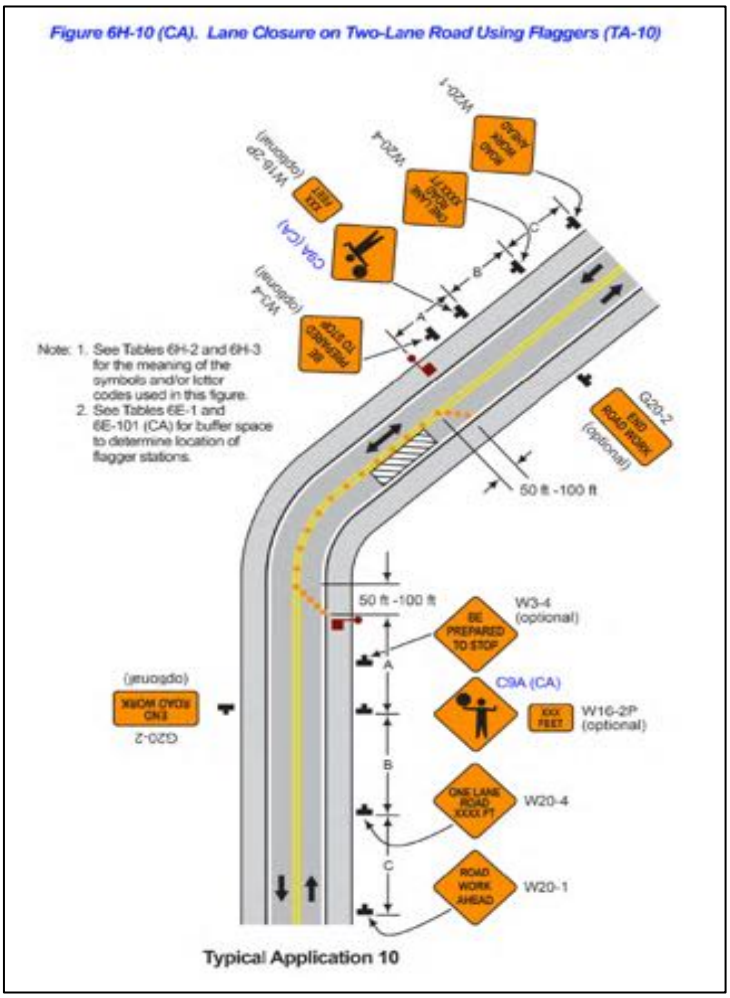
FIGURE 3A AND 3B. TRAFFIC CONTROL CONFIGURATIONS – CONSTRUCTION OUTSIDE OF ROADWAY



SOURCE: CA MUTCD

A majority of the construction for the Project will occur in or in close proximity to the roadway. The Lane Closure on Two-Lane Road Using Flaggers (TA-10) illustrated in **Figure 4** from the CA MUTCD is used for temporary lane closures. This traffic control layout allows the flaggers to maintain the continuous flow of traffic with minimal delays (less than five minutes) while maximizing both worker and public safety.

FIGURE 4. TRAFFIC CONTROL CONFIGURATION – CONSTRUCTION IN OR IN CLOSE PROXIMITY OF ROADWAY



SOURCE: CA MUTCD

1.3.I Hazard and Safety Control Plan

The District maintains a Local Hazard Mitigation Plan that satisfies federal legislation (Disaster Mitigation Act of 2000) and the California requirement for local governments to formulate and enact a pre-disaster mitigation program in order "to identify the natural hazards that impact them, to identify actions and activities to reduce any losses from those hazards, and to establish a coordinated process to take advantage of the plan, taking advantage of a wide range of resources." (44 CFR, sec. 201.1)

To ensure the protection of persons and property and to safeguard the environment the following actions, measures and BMPs will be implemented:

- Excavation on project sites from which the public is excluded will be marked or guarded in a manner appropriate to the degree of hazard.
- The District's contractor will provide suitable and adequate sanitary conveniences for the use of all persons at the site of the Work. Such conveniences will include chemical toilets or water closets and will be located at appropriate locations at the site of the Work. All sanitary conveniences will conform to the regulations of the governmental entities having jurisdiction over such matters. At the completion of the Work, all such sanitary conveniences will be removed and the site left in a sanitary condition.
- First-Aid facilities and information posters conforming, at a minimum, to the requirements of the Occupational Safety and Health Administration (OSHA) will be provided in a readily accessible location or locations.
- Construction hoists, elevators, scaffolds, stages, shoring and similar temporary facilities will be of ample size and capacity to adequately support and move the loads to which they will be subjected. Railings, enclosures, safety devices, and controls required by law or for adequate protection of life and property will be provided.
- Temporary supports will be designed with sufficient safety considerations to assure adequate load bearing capability. The District's contractor will submit design calculations by a professional registered engineer for sheeting, shoring and bracing prior to application of loads.
- The District's contractor will adequately identify and guard all hazardous areas and conditions by visual warning devices and, where necessary, physical barriers. Such devices will, at a minimum, conform to the requirements of Cal/OSHA.
- A sufficient number of fire extinguishers of the type and capacity required to protect the work and ancillary facilities will be provided in readily accessible locations.
- The District's contractor will provide labor and equipment to protect the surrounding property from fire damage resulting from construction operations.

1.3.J Migratory Bird Nest Site Protection Program

For construction activities proposed to occur during the nesting season (March 15 through August 15), and outside of paved areas, the contractor and District shall review the Project Area to identify any migratory bird nest sites that may be present. If a nest is present in the immediate vicinity, a qualified biological monitor shall be contacted to evaluate whether any migratory birds are impacted by the project. The biological monitor shall have the authority to stop construction near occupied sites if it appears to be having a negative impact on nesting migratory birds or their young. If construction must be stopped, the monitor must consult with USFWS and CDFW staff within 24 hours to determine appropriate actions to restart construction while reducing impacts to identified migratory bird nests.

1.4 PROJECT PERMITTING AND APPROVALS

For work performed within the Right-of-Way, the District is allowed access for maintenance and construction based on an annual project specific Encroachment Permit with El Dorado County. Each property owner/customer will be notified prior to work that may interrupt water service for

their respective property. Minor periods of water shut-off will occur during the installation process, which is anticipated to last less than four hours each day on a limited number of occasions during major project activities.

Tahoe Regional Planning Agency

The Tahoe Regional Planning Agency (TRPA) enters into agreements with local agencies to streamline the permitting process. These agreements allow local agencies to perform environmental review on projects for conformance with TRPA standards. The agreements are in the form of Memorandum of Understanding (MOU) that are signed by each partner. The District currently has a Memorandum of Understanding with the Tahoe Regional Planning Agency dated 23 March 2012. The District's MOU with TRPA is an MOU for Public Works Providers that allows for repair and maintenance of underground facilities without TRPA's review. This allows for increased efficiency and provides for increased protection of local and natural resources as agreed to in the MOU. The Memorandum of Understanding between Tahoe Regional Planning Agency and South Tahoe Public Utility District can be located here:

https://www.trpa.gov/wp-content/uploads/documents/archive/FINAL_Public_Works_MOU.pdf

Attachment A, identifying STPUD on page 5 of 9 can be found here:

https://www.trpa.gov/wp-content/uploads/documents/archive/FINAL-Public-Works-MOU-Attachment-A.pdf

The listing of Exempt and Qualified Exempt Activities can be found here:

https://www.trpa.gov/wp-content/uploads/documents/archive/FINAL_Public_Works_MOU_Attachment_B.pdf

While some components of the proposed Project include repair and maintenance activities that would be covered under the MOU, the installation of new facilities are subject to TRPA review. All construction projects, except for work that is exempt or qualified exempt, require a pre-grade inspection. The inspection is an on-site meeting between the TRPA Compliance Inspector and contractor to review the installation of construction BMPs, go over permit conditions, and discuss general construction practices. Information on public service projects can be found here:

https://www.trpa.gov/applications-forms/#public

The standard information and application packet for public service projects can be found here:

https://www.trpa.gov/wp-content/uploads/documents/archive/2/Public_Service_Application.pdf

The TRPA findings document for public services can be found here:

https://www.trpa.gov/wp-content/uploads/documents/archive/PUBLIC-SERVICE-FINDINGS-DOCUMENT.pdf

Encroachment Permits

The District must apply for a Right-of-Way Encroachment, Excavation and Grading Permit from El Dorado County. The Public Works Department will issue the permit after review and will require a BMP Plan and Traffic Control Plan to be implemented at all times during construction.

Water Quality Control Board

The Municipal Storm Water Program regulates storm water discharges from municipal separate storm sewer systems (MS4s) throughout California. The Phase II Permit Program serves municipalities with less than 100,000 customers. The State Water Resources Control Board (State Water Board) and Regional Water Quality Control Boards (Lahontan for this region) implement and enforce the Municipal Storm Water Program. The State Water Resources Control Board issued a General Permit for the Discharge of Storm Water from Small MS4s (Order 2003-0005-DWQ) to provide permit coverage for smaller municipalities, The Phase II Small MS4 General Permit covers Phase II permittees statewide. On February 5, 2013 the Phase II Small MS4 General Permit was re-adopted (Order 2013-0001-DWQ) and the new requirements became effective on July 1, 2013.

Chapter 2. Environmental Checklist

The evaluation of environmental impacts is based upon the completion of the checklist portion of the Environmental Checklist Form, and consists of the analysis of each impact issue area required under CEQA. The analysis of each checklist item identifies any significance criteria or thresholds used to evaluate each impact question, and any mitigation measure(s) identified to reduce the impact to a less-than-significant level.

This checklist identifies physical, biological, social and economic factors that might be affected by the Project. In some cases, background studies performed in connection with the Project indicate no impacts. A “No Impact” answer in the last column reflects this determination. Where there is a need for clarifying discussion, the discussion is included either following the applicable section of the checklist or is within the body of the environmental document itself. The words "significant" and "significance" used throughout the following checklist are related to CEQA, not NEPA, impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts.

2.1 AESTHETICS & SCENIC RESOURCES/COMMUNITY DESIGN, LIGHT AND GLARE

2.1.A Environmental and Regulatory Settings

TRPA maintains a rating system for scenic resources along travel routes. For each roadway unit, the travel route rating considers views of man-made features, roadway distractions, road structure, lake views, landscape views, and variety. The scenic quality ratings include an inventory of visual subcomponents and specific scenic resources within each roadway unit. This rating system provides an assessment of the natural landscape based on four qualities: intactness, unity, vividness, and variety. The primary goal of both the travel route and scenic quality rating systems is to maintain or upgrade the scenic quality of the view from the road. TRPA Scenic Quality Threshold standards require roadway travel routes to attain a minimum travel route rating of 15.5 out of a possible 30 and to maintain the original scenic quality rating assigned in 1982.

The Project Area includes the central travel route of Pioneer Trail and side streets in developed residential neighborhoods. Pioneer Trail was identified as a Scenic Corridor in the 1982 TRPA Lake Tahoe Basin Scenic Resource Inventory. The Project is located in unincorporated El Dorado County along the Pioneer Trail South Unit (the Pioneer Trail North Unit is located within the urban core in the City of South Lake Tahoe). Pioneer Trail South was assigned a Threshold composite rating of 20 out of a possible 30 in 1982 and a rating of 21 has been maintained in subsequent Threshold Evaluations.

2.1.B Checklist

CEQA Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Would the project:				
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 building within a state scenic highway?	☐	☐	☐	☒
C) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☒
D) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

2.1.C Discussion

A) No Impact

Scenic vistas are defined by CEQA as a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public defined by local plans or policies. Adverse effects to scenic vistas present within the Project Area would constitute a significant impact. Views from within the Project Area consist of residential neighborhoods and public forest lands, but no scenic vistas. Therefore, the Project would have no impact on scenic vistas.

The

B) No Impact

The Project will not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway. Pioneer Trail is identified as a TRPA Scenic Corridor. The proposed Pioneer Trail waterline would be installed within the roadway below ground surface and have no impact on scenic resources. Proposed new PRV Station #1 would be located at the intersection of Pioneer Trail and Jicarilla and would be visible in the Scenic Corridor. The proposed structure for the station is a pre-fabricated aluminum box in dark green that would be attached to a 10 x 12-foot concrete pad that is only 6-inches thick. The box is designed to blend in a forested landscape with its small size, low and slim profile, and dark green color that would have little or no effect on scenic resources. Proposed PRV Station # 2 would be located on Marshall Trail, a much lower traffic side street, and the above ground structure would not be visible from Pioneer Trail. A total of 10 new fire hydrants would be visible along Pioneer Trail but would not change existing scenic conditions. Therefore, the Project would have no impact on scenic resources associated with scenic highways.

C) No Impact

Substantial degradation of the existing visual character or quality of the Project Area would constitute a significant impact. Project construction would have temporary impacts along the Scenic Corridor of Pioneer Trail, but the new water lines would be installed underground. The small above-ground structures associated with the PRV stations would not significantly degrade the existing visual character or quality of the site and its surroundings.

D) No Impact

Interference with nighttime skies from ground-level light and glare or interference with vision due to reflective glare would constitute a significant impact. The Project involves no nighttime work or lighting and would not result in a substantial source of nighttime light or glare.

2.2 AGRICULTURAL RESOURCES & FARM LANDS

2.2.A Environmental and Regulatory Settings

The State of California identifies Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), on the Important Farmlands Map prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency. Prime Farmland is defined as land with the best combination of physical and chemical features for the production of agricultural crops as based on:

- United States Department of Agriculture (USDA) Natural Resources Conservation Service Land Use Capability classifications (i.e., Class I and II);
- A rating of 80-100 on the Storie Index;
- Support of livestock used for the production of food and fiber and that has an annual carrying capacity of at least one animal unit per acre;
- Presence of fruit or nut bearing trees, vines, bushes, or crops that have a non-bearing period of less than five years and an annual commercial return not less than $200 per acre; or
- A return from the production of unprocessed agricultural plant products at an annual gross value of not less than $200 per acre for three of the previous 5 years.

Unique Farmland is land of lesser quality soils used for the production of the state's leading agricultural cash crops. Farmland of Statewide Importance is land with a good combination of physical and chemical features for the production of agricultural crops.

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments, which are much lower than normal because they are based upon farming and open space uses as opposed to full market

value. The Open Space Subvention Act of 1971 provided local governments an annual subvention of forgone property tax revenues from the state through the year 2009; however, these payments have been suspended in more recent years due to revenue shortfalls.

Forest Land, as defined by Public Resources Code section 12220(g), is land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits.

Timberland, as defined by Public Resources Code section 4526, means land, other than land owned by the federal government and land designated by the board as experimental forest land, which is available for, and capable of, growing a crop of trees of a commercial species used to produce lumber and other forest products, including Christmas trees.

Government Code section 51104(g)), which can be cited as the California Timberland Productivity Act of 1982, defines Timberland as privately owned land, or land acquired for state forest purposes, which is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, and which is capable of growing an average annual volume of wood fiber of at least 15 cubic feet per acre.

Timberland zoned for Timberland Production, or Timberland production zone or "TPZ" means an area which has been zoned pursuant to Section 51112 or 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, as defined in subdivision (h). With respect to the general plans of cities and counties "timberland preserve zone" means "timberland production zone."

The TRPA Initial Environmental Checklist does not directly address agricultural resources and farmland, but does address potential effects to wildlife habitat, trees, and vegetation, which are addressed in Section 2.6, Biological Resources.

2.2.B Checklist

CEQA Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
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. *Would the project:*				

CEQA Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	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?	☐	☐	☐	☒

2.2.C Discussion

A) No Impact

A significant impact on agricultural resources may result from a project that involves the conversion of Prime Farmland, Unique Farmland or Farmland of Statewide importance, as defined by the State of California on the Important Farmlands Map, to a non-agricultural use.

The Project Area does not contain 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. Because no lands designated Prime Farmland, Unique Farmland or Farmland of Statewide Importance exist within the Project Area, the Project would result in no impact to these resources.

B) No Impact

The Project Area is not zoned for agricultural use, and does not contain Williamson Act contracts. Because no such zoning exists within the Project Area, the Project would result in no impact to these resources.

C) No Impact

The Project will not conflict with existing zoning, or result in re-zoning 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)). The Project components would be installed within the ROW of Pioneer Trail and side streets and is consist with existing zoning.

D) No Impact

The Project will not result in the loss of forest land or conversion of forest land to non-forest use. The Project components would be installed within the ROW of Pioneer Trail and side streets and would have no impact to this resource.

E) No Impact

Because designated Farmland does not exist within the Project Area, the Project would create no impact to this resource.

2.3 AIR QUALITY

2.3.A Environmental and Regulatory Settings

Air quality within the Lake Tahoe Basin is regulated by several jurisdictions including the United States Environmental Protection Agency (USEPA), California Air Resources Board (CARB), the TRPA, and the El Dorado County Air Quality Management District (EDCAQMD). These jurisdictions develop rules, regulations, policies, and/or plans to achieve the goals and directives imposed through legislation.

The Project Area is located within the Lake Tahoe Air Basin (LTAB) and EDCAQMD's jurisdictional area. The LTAB includes portions of El Dorado County and Placer County in California and Washoe County, Douglas County, and Carson City Rural District in Nevada. The LTAB is affected by both the rate and location of pollutant emissions and by meteorological conditions that influence movement and dispersal of pollutants. Atmospheric conditions such as wind speed, wind direction, air temperature gradients, and existing air pollutant sources coupled with local topography affect the dispersion of air pollution and air quality.

Airborne pollutants in the Tahoe Basin generally originate from three areas:

- Populated areas of the Basin that generate airborne anthropogenic materials such as road dust, vehicle exhaust, and chimney smoke;

- Undeveloped areas in the Basin that produce airborne dust and smoke, some of which is natural and some which results from the direct and indirect effects of land management practices; and
- Airborne materials generated in upwind areas, including the San Francisco Bay area and the Central Valley, that are carried into the Basin by the region's prevailing winds.

As a result of the various potential emission sources, air quality regulations focus on the following air pollutants: ozone (O_3); carbon monoxide (CO); nitrogen dioxide (N02); sulfur dioxide (S02); fine particulate matter (PM 10 and PM2.5); and lead. These pollutants are commonly referred to as "criteria air pollutants".

Construction phase emissions were calculated using the Road Construction Emissions Model Version 8.10 (Model) released in June 2016 by the Sacramento Air Quality Management District (SAQMD). Due to the small size of the project, the Road Construction Emissions Model was best suited for the proposed Project instead of either CalEEMod or the Offroad Simulation Model. The SAQMD Model uses Sacramento Valley Air Basin Fleet Average Emission Factors, representative of the equipment used on STPUD projects, as projects are frequently bid and constructed by Sacramento-area construction contractors.

The model calculates both the daily maximum and total for criteria pollutants as well as annual greenhouse gas (GHG) emissions. Specifically, the model conducts short-term construction emissions associated with the grubbing, grading, draining/utilities/sub-grade, and paving and operational emissions for built-out land use development from a suite of sources, including but not limited to off-road construction equipment, on-road mobile equipment, fugitive dust associated with paved and unpaved roads, staging and storage areas, and emergency generators.

The model was run for the STPUD District Wide Water and Sewer Facilities Upgrade Project Initial Study that was finalized in September 2021 (Sierra Ecotone Solutions 2021). This analysis included replacement of water and sewer lines that the District would be able to implement in one construction season. These model results are directly applicable to this project as equipment and construction measures are equivalent. A copy of the RCE Model results can be reviewed in Chapter 6 Appendix D.

The calculation of GHG emissions was for each year of water and sewer pipe replacement by the District was found to be equivalent to 168.27 metric tons of carbon (MT CO2e) emissions annually. For comparison, July 2019, the City of South Lake Tahoe released an estimate for community-wide GHG emissions by sources and activities from 2015 that estimated total emissions as 248,225 MT CO2e. Off-road transportation, which includes construction equipment emissions, accounted for 4% of community emissions, totaling the equivalent of 10,925 metric tons of carbon (MT CO2e) emissions annually.

Table 2.3-1 below outlines the pollutants generated from the RCE Model for the proposed project (See Chapter 6, Appendix D for full report).

Table 2.3-1 Project Emissions		
Construction		
	Annual (tons/year) max	Daily (lbs./day) max
Carbon monoxide	0.62	11.48
Nitrogen oxides	0.65	12.31
Reactive Organic Gasses	0.07	1.35
Volatile Organic Compounds	See discussion in Section 2.8.C	See discussion in Section 2.8.C
Lead	N/A*	N/A*
PM less than 2.5 microns	0.03	0.59
PM less than 10 microns	0.04	0.80
Sulfur Dioxide	0,00	0.04
Ozone	See discussion in Section 2.3.C	See discussion in Section 2.3.C

SOURCE: CHAPTER 6, APPENDIX D, RCE MODEL 8.10 MODEL REPORTS

2.3.B Checklist

CEQA Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
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:*				
A) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
B) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐

CEQA Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
C) 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 (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
D) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
E) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

2.3.C Discussion

A) No Impact

The Project will implement improvements across the STPUD water supply distribution system to reduce the risk of pipe and valve rupture for improved water conservation and a corresponding reduction in emissions that may result from water supply production and distribution. The Project would support existing and proposed air quality and greenhouse gas (GHG) reduction efforts and would not conflict with or obstruct implementation of the Lake Tahoe Air Quality Management Plan.

B) Less than Significant Impact

Within Section 5.1, "Significance Criteria for Project Operation Emissions" of *the El Dorado County Air Protection Control District (APCD) – CEQA Guide*, the EDCAQMD has established quantitative operation emission thresholds of 82 pounds per day for both Reactive Organic Gases (ROG) and Oxides of Nitrogen (NOx) for determining if a project has a significant impact. For the Lake Tahoe Air Basin portion of the EDCAQMD, the TRPA has designated an air quality "significance threshold" of 0.08 ppm over one hour for ozone, which is slightly more stringent than the state AAQS for ozone of 0.09 ppm for one hour.

Construction phase emissions were calculated using the Road Construction Emissions (RCE) Model Version 8.10 (Model) released in June 2016 by the Sacramento Air Quality Management District (SAQMD). Chapter 6, Appendix D contains the model assumptions, output, and reporting produced for the Project and for comparison, the construction and operation of a single family home. The model calculates both the daily maximum and project totals for criteria pollutants.

The following inputs were used when setting up the Model to calculate annual emissions:

- Emissions from the construction work occurring five (5) months per year (May through October), working 22 days per month.
- Sand Gravel was identified as the primary soil type being encountered.
- Water and sewer projects will occur at the same time at a rate of 200 linear feet per day, totaling 400 linear feet per day. Based on an assumed trench width of three feet, the daily disturbed area is 1,200 square feet (0.009 acres) for estimating PM10 emissions.
- For the project length, over the course of the assumed season (five months, 22 days per month) of 110 days, a total of 23,100 linear feet or 4.375 miles per year of pipe is anticipated to be replaced. This is based on the District's current ten-year sewer and waterline replacement plans that identity 140,000 linear feet of waterline and 91,000 linear feet of sewer line to be replaced, totaling 231,000 linear feet over ten years.
- Based on an assumed trench width of three feet, the overall project disturbance area is 69,300 square feet (1.59 acres) per season. Due to stabilization requirements in the Tahoe basin, it is anticipated that only one week's worth of work would be disturbed at a time, totaling 3,000 square feet or 0.07 acres.
- Water trucks will be used, per the Fugitive Dust Control Plan, consistent with the Particulate Matter (PM10) control measures required for compliance with El Dorado County Air Quality Management District's (EDCAQMD) Rule 223. A heavy duty diesel truck, T7 Single Unit Construction Truck was assumed for the water truck emissions.
- For calculating soil hauling, the default haul truck capacity of 20 cubic yards was assumed, with an estimated average trench depth of five feet for waterline projects and six feet for sewer projects. In calculating the import and export required per project, it was also assumed that half of the native material would be re-used onsite, resulting in annual import-export totals of 6,922 cubic yards or 63 cubic yards per working day.
- To maintain conservative assumptions, no On-Road Fleet or Off-Road Equipment emission mitigation measures were assumed; the emissions levels are based on the fleet averages as calculated by SMAQMD.
- The five (five) month annual project duration was assumed to start in May. The model was not used for Grading/Excavation as these are either minimal or non-existent phases for the replacement of water and sewer lines in developed areas. Three days of Grubbing/Land Clearing was accounted for, but is rare for District pipe projects that typically occur within public streets.
- The asphalt paving section was calculated assuming a total of 12 paving days per project. The trucking volume was calculated based on pave-back requirements that the District is subject due to local city and county encroachment requirements that require a full (12-foot-wide) lane of paving following trenching in the right-of-way. The equipment listed is based on observed paving operations during 2020 on the District's sewer and water projects. Paving back a lane width of 12 feet that is four (4) inches

thick results in an overall volume of 3,422 cubic yards of asphalt, split over 12 days, results in a daily import-export volume of 285 cubic yards.

- Soil hauling emissions were calculated using a Round Trip distance of 10 (ten) miles, reflecting the distance from STPUD's designated contractor staging area to the local soil disposal and aggregate supply site most frequently used by contractors. This trip was estimated to occur once per day, consistent with a balanced off-haul and backfill volume requirements. The same distance was assumed for
- Worker commute emissions were estimated using a one-way trip length of five (5) miles occurring twice (2) per day for 10 employees on each project, totaling a daily vehicle miles traveled (VMT) of 200. A light duty truck was assumed for worker commute emissions.
- One (1) water truck was assumed for each project, and that it would remain onsite, adjacent to the work, traveling two (2) miles per day.

TABLE 2.3-2
Construction Equipment, Horsepower, Hours per Day of Operation

Equipment Type	Count	Average HP	Hours/day/Per Piece
Air Compressors	2	25	1
Concrete/Industrial Saws	2	3	1
Excavators	4	204	6
Off-Highway Tractors	2	89	4
Pavers	1	188	6
Plate Compactors	2	7	4
Rollers	3	130	8
Rubber Tired Loaders	2	235	3
Skid Steer Loaders	2	80	4
Sweepers/Scrubbers	2	24	1
Tractors/Loaders/Backhoes	2	98	5

The active construction phase of the Project would result in maximum daily ROG emissions of 1.35 pounds per day (summer) and NOx emissions of 12.31 pounds per day (summer), which are well below the threshold established for determining a significant impact. Annual final construction emissions are calculated at 0.07 tons per year ROG and 0.65 tons per year NOx.

The Project would not result in any long-term emissions from stationary sources, as no new sources will be built as part of the proposed Project. The Project would have a less than significant contribution towards construction emissions and would not contribute substantially to an existing or projected air quality violation.

C) Less than Significant Impact

The primary ozone precursors identified within the modeled construction emissions (ROG and NOx) are below the significance threshold and do not result in a cumulatively considerable net increase of any nonattainment pollutant. De minimus levels of Sulphur Oxides (0.04 pounds per day), and inhalable particulates (PM_{10} – 0.80 pounds per day in comparison to 122 tons per day produced throughout El Dorado County) will occur only during construction. Of the noted pollutants, PM_{10} is the only pollutant designated in nonattainment in the Lake Tahoe Air Basin. The Project construction phase would not represent a cumulatively considerable net increase for the region and ongoing project operations would not result in a cumulatively considerable net increase of any criteria pollutant for which the Lake Tahoe Air Basin is in non-attainment under applicable federal or state ambient air quality standards.

D) Less than Significant Impact

A sensitive receptor is generally defined as a person in the population who is particularly susceptible to health effects due to exposure to an air contaminant than is the population at large. Sensitive receptors (and the facilities that house them) in proximity to localized CO sources, toxic air contaminants or odors are of particular concern.

Project construction would not emit pollutant concentrations at substantial levels, would be temporary in nature, and would not be concentrated in close proximity to sensitive receptors, such as medical facilities or schools. Project operations would be performed underground primarily and within a closed water supply system and would not create a waste stream, which minimizes the creation of air borne pollutants and protects sensitive receptors to result in less than significant impacts.

E) Less than Significant Impact

A project that generates odorous emissions of a type or quantity that could meet the statutory definition for nuisance (i.e., odors “which cause detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which may endanger the comfort, repose, health, or safety of any such person or the public, or which may cause, or have a natural tendency to cause, injury or damage to business or property”) would result in a significant impact, as based on the distance and frequency at of odor complaints from the public, specifically sensitive receptors.

Construction equipment and machinery will generate diesel odors during construction. The generation of odors during the construction period would be temporary, would occur within

specific periods of time, and would tend to be dispersed within a short distance from the active work area. Therefore, the Project would result in less than significant impacts to residents and construction workers.

No objectionable odors would be generated from the Project following construction. Project operations would not create objectionable odors affecting a substantial number of people because project operations will occur in a closed, underground water supply system that contains and/or neutralizes objectionable odors.

2.4 BIOLOGICAL RESOURCES (STREAM ENVIRONMENT ZONES, WETLANDS, WILDLIFE AND VEGETATION)

2.4.A Environmental and Regulatory Settings

The Tahoe Basin contains a broad diversity of montane vegetation associations. The current distribution of conifer forest associations and other vegetation associations within the Basin is determined largely by the local physical environment. Vegetation associations range from grassland and montane riparian associations to Jeffrey pine and alpine dwarf shrub. The Basin also contains a number of special-status and rare plant species, including threatened and endangered species. These species are protected through TRPA, Endangered Species Act of 1973 (ESA), California Endangered Species Act (CESA), California Department of Fish and Wildlife (CDFW), and/or the California Native Plant Society (CNPS). Land use or activity restrictions occur in areas inhabited by these species.

The Tahoe Basin provides habitat for over 250 species of resident and migratory vertebrate wildlife species including mammals (64), birds (168), and reptiles and amphibians (23). The quality and size of these species' habitats generally determine the abundance of any one species or animal population. The Basin also contains a number of special-status wildlife, including threatened and endangered species. These species are protected through TRPA, ESA, CESA, and/or CDFW.

The proposed waterlines and facilities are located within the El Dorado County Right-of-Way along Pioneer Trail or immediately adjacent The proposed Project locations contain existing disturbance in the form of road shoulder, road base, and pavement. The Project Area includes residential neighborhoods and National Forest land

Database Searches - The California Natural Diversity Data Base (CNDDB; accessed December 10, 2021) and the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (accessed December 10, 2021) were searched and reviewed in order to identify sensitive species and habitats that may be within the Project Area. In addition, a species list was generated for the Project Area by the US Fish and Wildlife Service Information for Planning and Consultation (USFWS IPaC https://ecos.fws.gov/ipac/ accessed December 12, 2021).

Species Occurrences - A one-mile buffer surrounding the Project Area was searched for recorded occurrences in the BIOS database (CNDDB 2021). A CNDDB occurrence report

was generated for the following 7.5 Minute Quadrangles: Caples Lake, Carson Pass, Echo Lake, Emerald Bay, Freel Peak, Homewood, Meeks Bay, Pyramid Peak, Rockbound Valley, and South Lake Tahoe Quad. The species lists generated in these database searches are included in Chapter 6 (Appendices) of this document. The USFWS letter and associated list is also included in Chapter 6.

The USFWS identified 4 species as having the potential to exist within the Project Area: Sierra Nevada yellow-legged frog (SNYLF; *Rana sierrae*), Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi*), monarch butterfly (*Danaus plexippus*) and whitebark pine (Pinus albicaulis). The CNDDB list identified 5 additional special status wildlife species (western bumble bee, *Bombus occidentalis*; bald eagle *Haliaeetus leucocephalus*; bank swallow *Riparia riparia;* North American wolverine (*Gulo gulo luscus*); and willow flycatcher *Empidonax traillii*) and one California endangered plant (Tahoe yellowcress, *Rorippa subumbellata*) (CDFW 2020). **Figure 5** shows the known occurrences of the sensitive species identified within the 1-mile buffer of the Project Area grouped by taxonomic categories. **Figure 6** shows the known occurrences and habitat of SNYLF. **Figure 7** identifies stream environment zones (SEZ) located near the Project Area. The map is a TRPA GIS layer based on mapping by Bailey (1974).

Table 2.4-1 identifies the 8 wildlife species with the potential to occur in the Project Area based on the database searches described above. **Table 2.4-2** identifies the 21 plant species with the potential to occur in the Project Area (HP = Habitat Present, SP = Species Present).

TABLE 2.4-1
WILDLIFE SPECIES OF CONCERN

Species	Status	Habitat	HP	SP	Comments
Fish:					
Oncorhynchus clarkii henshawi Lahontan cutthroat trout	Federally Threatened TRPA Special Interest Species	Historically occurred in all accessible cold waters of the Lahontan Basin in a wide variety of water temps and conditions. Cannot tolerate presence of other salmonids. Gravel riffles in streams required for breeding.	No	No	Project activities are limited to the Right-of-Way of paved roads in the residential neighborhoods. There is no suitable fish habitat .
Wildlife:					

TABLE 2.4-1

WILDLIFE SPECIES OF CONCERN

Species	Status	Habitat	HP	SP	Comments
Haliaeetus leucocephalus bald eagle	Federally Delisted California Endangered	Bald eagle are known to forage and nest adjacent to large bodies of water in mid to late successional types of forest with standing dead trees or snags	No	No	Project activities are limited to the Right-of-Way of paved roads in the residential neighborhoods. There is no suitable roosting habitat.
Empidonax traillii willow flycatcher	California Endangered	In the central and southern Sierra Nevada, this species typically breeds in willow-dominated riparian vegetation among perennial streams in moist meadows or spring-fed or boggy areas.	No	No	Project activities are limited to the Right-of-Way of paved roads in the residential neighborhoods. There is no suitable riparian habitat.
Riparia riparia bank swallow	California Threatened	Species requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, to dig nesting hole.	No	No	The Project area does not contain suitable habitat for the species due to the lack of vertical banks and/or cliffs to dig nesting hole.
Gulo gulo luscus North American wolverine	Federally Proposed Threatened	Habitats used in the southern Sierra Nevada include red fir, mixed conifer, lodgepole, subalpine conifer, alpine dwarf-shrub, barren, and probably wet meadows, montane chaparral, and Jeffrey pine. (CDFG 1980)	No	No	There are no records of detections in the Lake Tahoe Basin and this species is thought to be extirpated from the vicinity. High levels of existing human presence and activity are not suitable for wolverine.
Danaus plexippus monarch butterfly	Federal Candidate	During the breeding season, monarchs lay their eggs on their obligate milkweed host plant (primarily Asclepias spp.), and	No	No	There is no potential habitat for monarch within the project area as work will be performed in the road right-of-way

TABLE 2.4-1

WILDLIFE SPECIES OF CONCERN

Species	Status	Habitat	HP	SP	Comments
		larvae emerge after two to five days. Larvae develop through five larval instars (intervals between molts) over a period of 9 to 18 days, feeding on milkweed and sequestering toxic chemicals (cardenolides) as a defense against predators. The larva then pupates into a chrysalis before emerging 6 to 14 days later as an adult butterfly.			and will not impact any milkweed or flowering plants.
Bombus occidentalis western bumble bee	California Candidate Endangered	Flowering plants. Once common & widespread, species has declined precipitously from central CA to southern B.C., perhaps from disease.	No	No	There are no flowering plants in the Project area or adjacent that could be impacted.
Rana sierrae Sierra Nevada yellow-legged frog (SNYLF)	Federally Endangered California Threatened	The SNYLF is strongly associated with montane riparian habitats in lodgepole pine, yellow pine sugar pine, white fir whitebark pine and wet meadow vegetation types (Zeiner et al. 1988). Typically, SNYLFs prefer well illuminated, sloping banks of meadow streams, riverbanks, isolated pools, and lake borders with vegetation	Yes	No	Project activities are limited to the Right-of-Way of paved roads in the residential neighborhoods. A portion of the Project Area buffer overlaps with suitable habitat of the Upper Truckee River and Trout Creek, however these riparian zones would not be impacted.

TABLE 2.4-1

WILDLIFE SPECIES OF CONCERN

Species	Status	Habitat	HP	SP	Comments
		that is continuous to the water's edge.			

SOURCE: SIERRA ECOTONE SOLUTIONS 2022

Table 2.4-2 Plant Species of Concern								
Scientific Name	**Common Name**	**CA Rare Plant Rank**	**CESA**	**FESA**	**Blooming Period**	**Habitat**	**Micro Habitat**	**Suitable Habitat in Project Area?**
Boechera tularensis	Tulare rockcress	1B.3	None	None	(May)Jun-Jul(Aug)	Subalpine coniferous forest, Upper montane coniferous forest	Rocky slopes	No rocky slopes in project area.
Botrychium ascendens	upswept moonwort	2B.3	None	None	(Jun)Jul-Aug	Lower montane coniferous forest, Meadows and seeps	mesic	No meadows and seeps in project area.
Botrychium crenulatum	scalloped moonwort	2B.2	None	None	Jun-Sep	Bogs and fens, Lower montane coniferous forest, Meadows and seeps, Marshes and swamps (freshwater), Upper montane coniferous forest		No meadows, seeps, bogs or fens in project area.
Botrychium minganense	Mingan moonwort	2B.2	None	None	Jul-Sep	Bogs and fens, Lower montane coniferous forest, Meadows and seeps (edges), Upper montane coniferous forest	Mesic	No meadows, seeps, bogs or fens in project area.
Brasenia schreberi	watershield	2B.3	None	None	Jun-Sep	Marshes and swamps (freshwater)		No marshes and swamps in project area.

Table 2.4-2 Plant Species of Concern								
Scientific Name	**Common Name**	**CA Rare Plant Rank**	**CESA**	**FESA**	**Blooming Period**	**Habitat**	**Micro Habitat**	**Suitable Habitat in Project Area?**
Carex davyi	Davy's sedge	1B.3	None	None	May-Aug	Subalpine coniferous forest, Upper montane coniferous forest		No forest in project area. Project area only contains disturbed paved areas.
Carex limosa	mud sedge	2B.2	None	None	Jun-Aug	Bogs and fens, Lower montane coniferous forest, Meadows and seeps, Marshes and swamps, Upper montane coniferous forest		No meadows, seeps, bogs or fens in project area.
Epilobium oreganum	Oregon fireweed	1B.2	None	None	Jun-Sep	Bogs and fens, Lower montane coniferous forest, Meadows and seeps, Upper montane coniferous forest	mesic	No meadows, seeps, bogs or fens in project area.
Eriogonum luteolum var. saltuarium	Jack's wild buckwheat	1B.2	None	None	Jul-Sep	Great Basin scrub, Upper montane coniferous forest	sandy, granitic	No forest in project area. Project area only contains disturbed paved areas.

Table 2.4-2 Plant Species of Concern								
Scientific Name	**Common Name**	**CA Rare Plant Rank**	**CESA**	**FESA**	**Blooming Period**	**Habitat**	**Micro Habitat**	**Suitable Habitat in Project Area?**
Glyceria grandis	American manna grass	2B.3	None	None	Jun-Aug	Bogs and fens, Meadows and seeps, Marshes and swamps (streambanks and lake margins)		No meadows, seeps, bogs or fens in project area.
Helodium blandowii	Blandow's bog moss	2B.3	None	None		Meadows and seeps, Subalpine coniferous forest	Damp soil	No meadows and seeps within the project area.
Meesia uliginosa	broad-nerved hump moss	2B.2	None	None	Jul, Oct	Bogs and fens, Meadows and seeps, Subalpine coniferous forest, Upper montane coniferous forest	damp soil	No meadows, seeps, bogs or fens in project area.
Phacelia stebbinsii	Stebbins' phacelia	1B.2	None	None	May-Jul	Cismontane woodland, Lower montane coniferous forest, Meadows and seeps		No meadows, seeps, bogs or fens in project area.
Pinus albicaulis	Whitebark pine	None	None	PT	May-Jun	Subalpine to timberline zones.		No subalpine or timberline habitat is within project area.
Potamogeton robbinsii	Robbins' pondweed	2B.3	None	None	Jul-Aug	Marshes and swamps (deep water, lakes)		No marshes and swamps

Table 2.4-2 Plant Species of Concern								
Scientific Name	**Common Name**	**CA Rare Plant Rank**	**CESA**	**FESA**	**Blooming Period**	**Habitat**	**Micro Habitat**	**Suitable Habitat in Project Area?**
								within the project area.
Rhamnus alnifolia	alder buckthorn	2B.2	None	None	May-Jul	Lower montane coniferous forest, Meadows and seeps, Riparian scrub, Upper montane coniferous forest		No meadows, seeps, marshes or swamps in project area.
Rorippa subumbellata	Tahoe yellow cress	1B.1	CE	None	May-Sep	Lower montane coniferous forest, Meadows and seeps, beaches and lake margin of Lake Tahoe (Stanton 2015)	decomposed granitic beaches	Project area does not include beaches of Lake Tahoe.
Schoenoplectus subterminalis	water bulrush	2B.3	None	None	Jun-Aug(Sep)	Bogs and fens, Marshes and swamps (montane lake margins)		No bogs, fens, marshes, or swamps in the project area.
Scutellaria galericulata	marsh skullcap	2B.2	None	None	Jun-Sep	Lower montane coniferous forest, Meadows and seeps (mesic), Marshes and swamps		No meadows, seeps, marshes or swamps in project area.

Table 2.4-2 Plant Species of Concern								
Scientific Name	**Common Name**	**CA Rare Plant Rank**	**CESA**	**FESA**	**Blooming Period**	**Habitat**	**Micro Habitat**	**Suitable Habitat in Project Area?**
Stuckenia filiformis ssp. alpina	slender-leaved pondweed	2B.2	None	None	May-Jul	Marshes and swamps (assorted shallow freshwater)		No marshes or swamps in project area.
Viola purpurea ssp. aurea	golden violet	2B.2	None	None	Apr-Jun	Great Basin scrub, Pinyon and juniper woodland	sandy	No great basin scrub, pinyon and juniper woodland in project area.

CE: CA Endangered

PT: Proposed Threatened

Source: CNPS 2021

2.4.B Checklist

CEQA Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Would the project:				
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 Game 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, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
C) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (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 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?	☐	☐	☐	☒

2.4.C Discussion

A) No Impact

As shown in Figure 5, the known occurrences of sensitive species are located Suitable habitat is mapped within the Project Area for Sierra Nevada yellow-legged frog (SNYLF). **Figure 6** identifies potentially suitable SNYLF habitat around the Project Area.

Project activities near potential SNYLF habitat would occur within the ROW of Pioneer Trail and would not pose any direct impact to the habitat. The inclusion of Best Management Practices to control erosion would limit the potential for sediments to drain into suitable habitat. No impacts to stream banks, riparian vegetation or bodies of water will occur as a result of implementation of the proposed Project, and therefore no impacts to SNYLF will occur.

The proposed project is not located in any essential fish habitat as defined by the Magnuson-Stevens Act. The closest essential fish habitat is located in the Pacific Ocean along the coast of California.

The USFWS species list (see Chapter 6) includes bird species that are protected under the Migratory Bird Treaty Act of 1918 and have potentially suitable habitat in the area surrounding the Project Area. The Project will not result in the removal of any foraging or nesting habitat for the migratory bird species listed; however, indirect impacts to migratory bird species could result because of construction noise and activities associated with the proposed Project. To ensure no impacts to migratory bird species occurs, the Migratory Bird Nest Site Protection Program (design feature 1.3.J) is included in the project description. Through implementation of the above measure, no impacts to nesting migratory bird species will result.

As shown in **Table 2.4-2** 21 plant species that have the potential to occur in within the Project Area based on the database searches. However, suitable habitat is not present for any of the plant species within the Project Area because all work will occur in paved areas or areas previously disturbed immediately adjacent to paved surfaces within the Right-of-Way. Therefore, the Project will not have a substantial adverse effect, either directly or through habitat modifications, on any identified plant or wildlife species.

B) No Impact

Project activities for the waterline and PRV installations would create temporary disturbance in the El Dorado County ROW of Pioneer Trail. As shown in **Figure 8** Stream Environment Zone (SEZ) is located within the project area where the proposed pipeline crosses above Trout Creek. While the area is designated as SEZ no impact to the sensitive area will occur as the pipeline will be within the road prism above the culvert that contains Trout Creek and the SEZ

The inclusion of Best Management Practices to control erosion will limit the potential for sediments to drain into SEZ. Therefore, no impact to SEZs will occur as a result of the proposed Project.

C) No Impact

The National Wetlands Inventory (USFWS) was searched for the presence of federally protected wetlands within the Project Area. The resulting map is located in Chapter 6, Appendix C. Project activities will occur exclusively within the ROW and will not directly impact any wetlands present within the Project Area. Therefore, there is no impact as a result of the proposed Project.

D) No Impact

The Project will not interfere or impede the movement of any wildlife species or migratory fish species as Project components would be installed underground or in Right of Ways. No waterways, known migratory wildlife corridors, or wildlife nursery sites will be impeded. Therefore, there is no impact as a result of the proposed Project.

E) No Impact

The Project will not conflict with TRPA or El Dorado County policies and ordinances aimed at protecting biological resources because all Project activities will occur within the ROW and the Project components provide essential public utility services

F) No Impact

The Project does not conflict with the provisions of an adopted Habitat Conservation Plan or Natural Community Conservation Plan, because no such plans exist for the Project Area.

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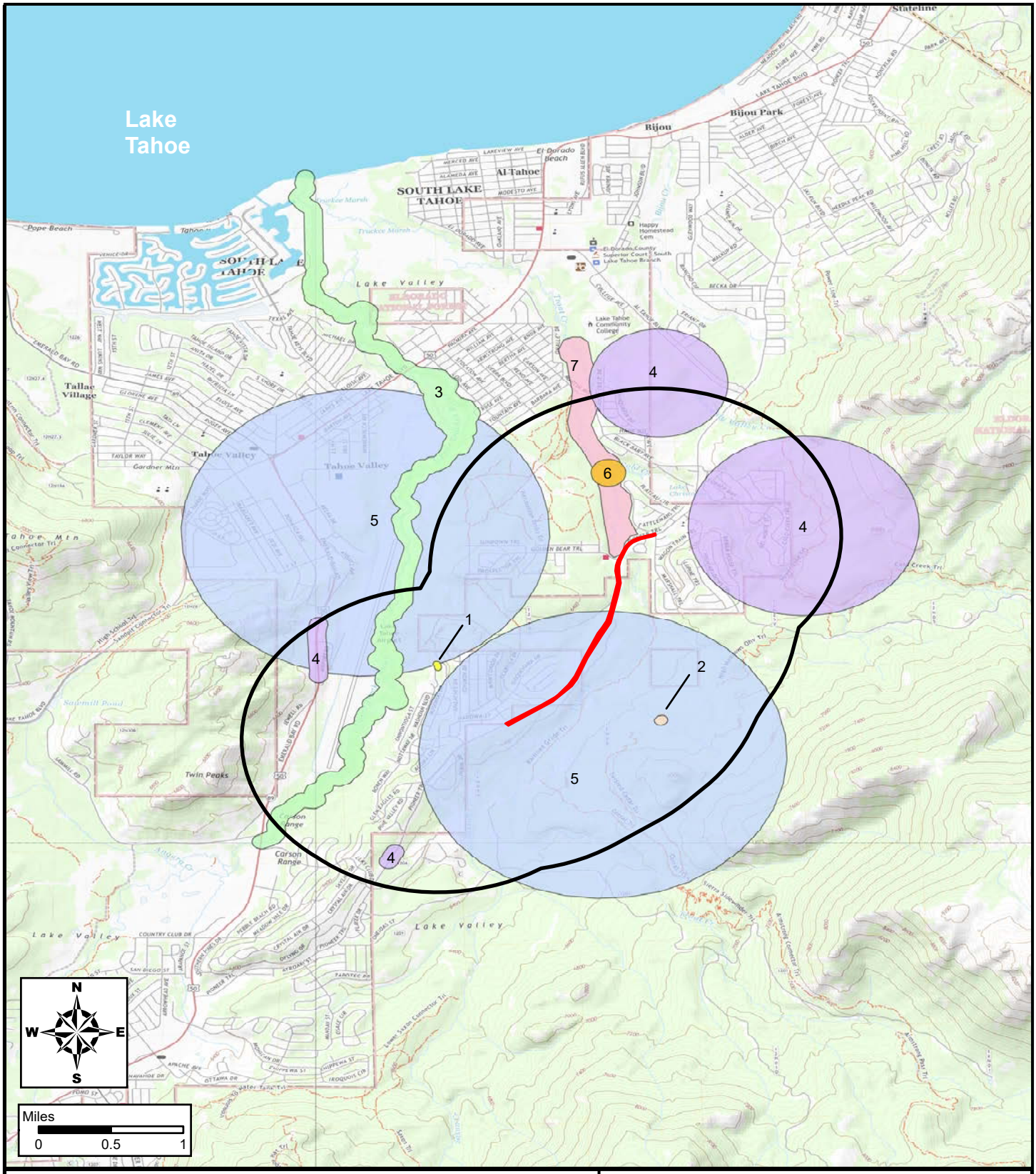

Legend

- 1-mile Radius of Project
- Project Area
- Mingan moonwort
- North American porcupine
- mountain whitefish
- northern goshawk
- northern leopard frog
- willow flycatcher
- broad-nerved hump moss

Pioneer Waterline Replacement Project

Figure 5.
California Natural Diversity Database

SIERRA ECOTONE SOLUTIONS

Sources: STPUD; CNDDB, USGS. Map date: March 2, 2022

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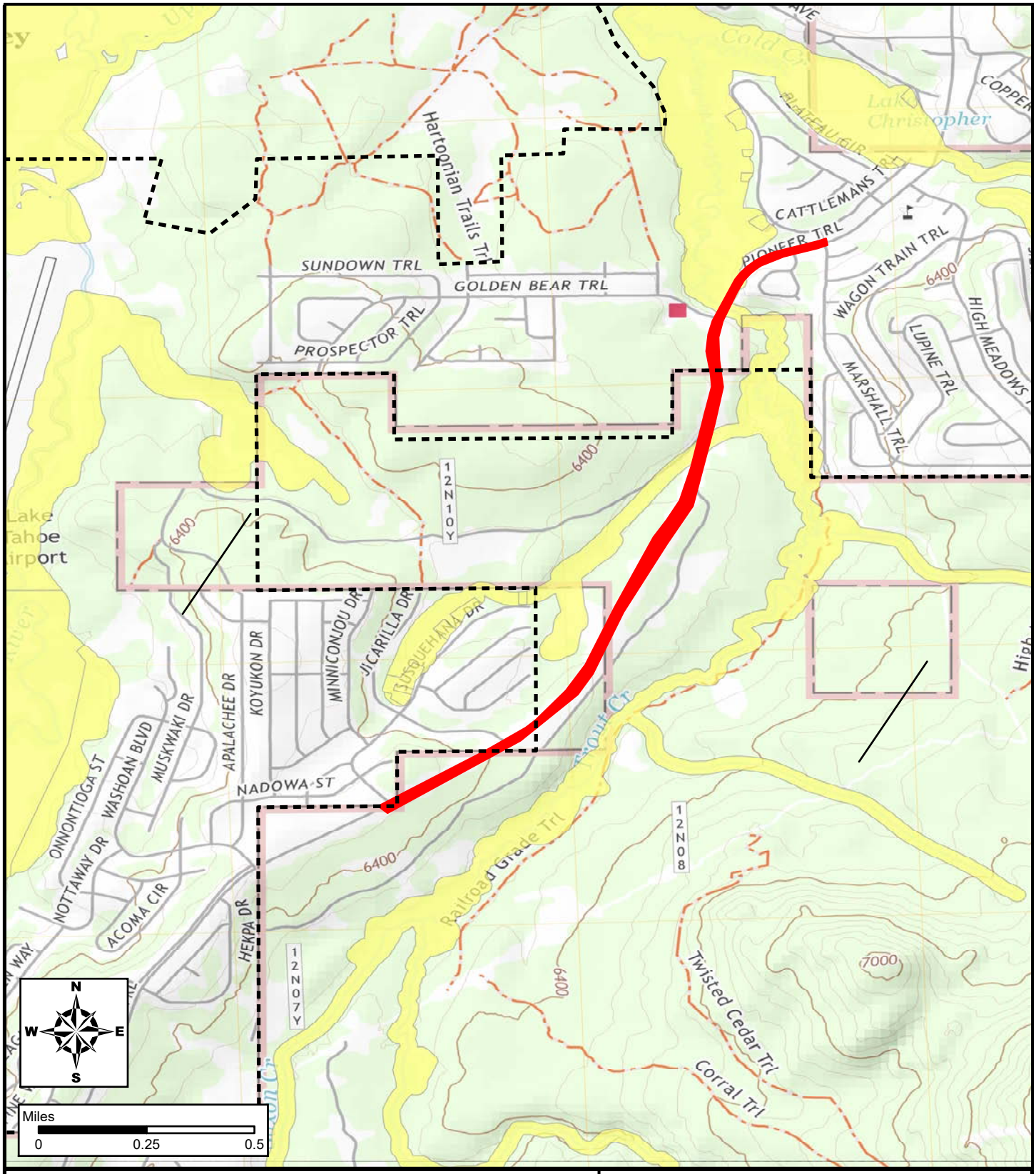

Legend

- STPUD Service Area
- Project Area in Frog Habitat
- Sierra Nevada Yellow-Legged Frog Suitable Habitat

Pioneer Waterline Replacement Project

Figure 6.
Sierra Nevada Yellow-Legged Frog Habitat

SIERRA ECOTONE SOLUTIONS

Sources: STPUD, TRPA, USGS. Map date: March 2, 2022

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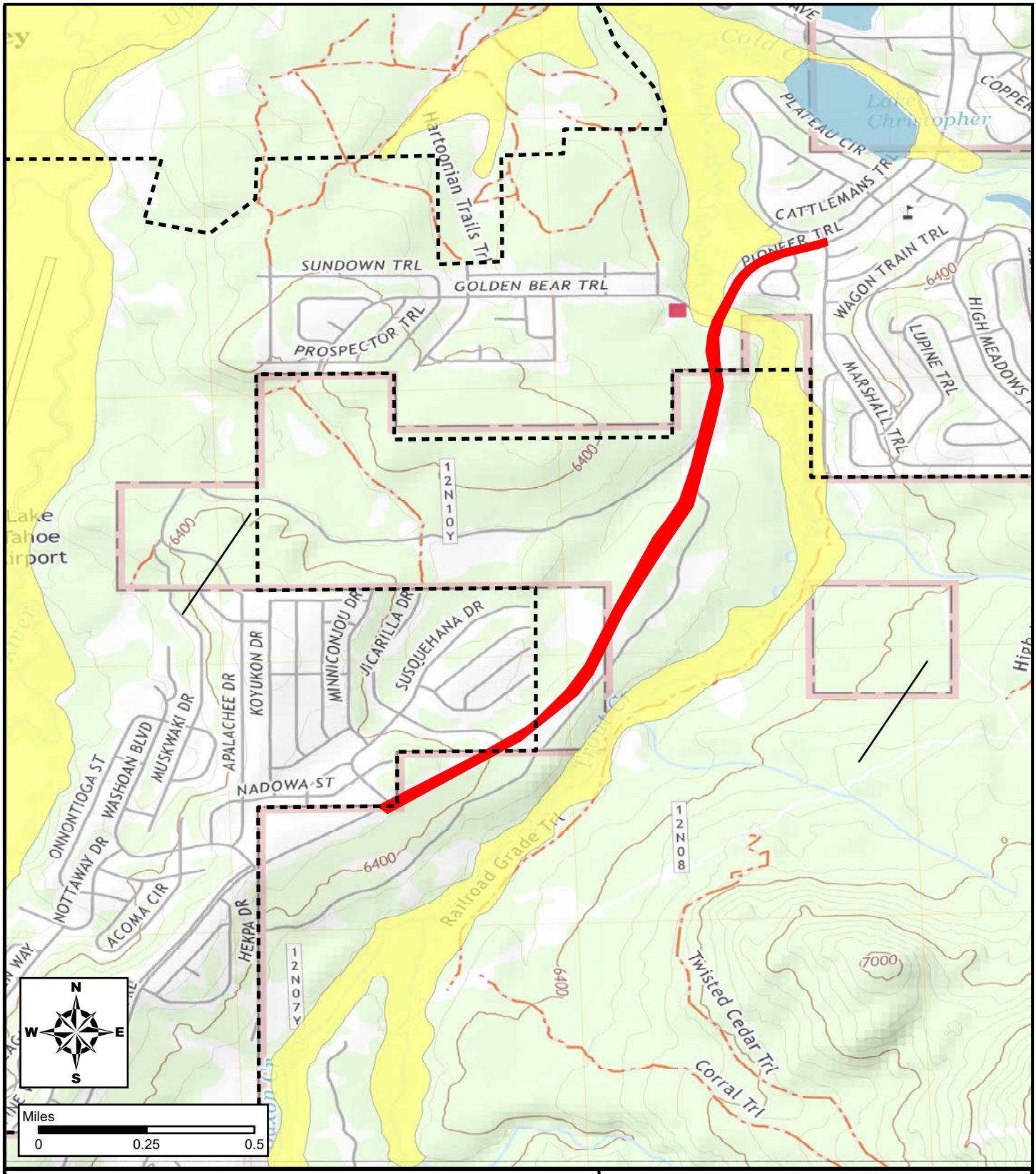

Legend

- STPUD Service Area
- Project Area
- Stream Environment Zone

Pioneer Waterline Replacement Project

Figure 7.
Stream Environment Zones

SIERRA ECOTONE SOLUTIONS

Sources: STPUD, TRPA, USGS. Map date: March 2, 2022

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2.5 CULTURAL RESOURCES

2.5.A Environmental and Regulatory Settings

The National Historic Preservation Act (NHPA) of 1966, as amended (16 USC§ 470 et seq.), is the primary federal legislation that outlines the federal government's responsibility to cultural resources. A cultural resource is a broad term that includes prehistoric, historic, architectural, and traditional cultural properties. Section 106 of the NHPA requires the federal government to take into consideration the effects of an undertaking on cultural resources listed on or eligible for inclusion in the National Register of Historic Places. Those resources that are on or eligible for inclusion on the National Register are referred to as historic properties. The Section 106 process is outlined in the federal regulations at 36 Code of Federal Regulations (CFR) Part 800. If the District utilizes federal funding for the Project, the environmental review must comply with Section 106 of the National Historic Preservation Act.

The applicable CEQA process is outlined in CEQA Guidelines Section 15060-15065. For the purposes of CEQA, significant "historical resources" and "unique archaeological resources" are defined as (Section 15064.5[a]):

1. A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (Pub. Res. Code SS5024.1, Title 14 CCR, Section 4850 et seq.).
2. A resource included in a local register of historical resources, as defined in section 5020.1(k) of the Public Resources Code or identified as significant in an historical resource survey meeting the requirements section 5024.1(g) of the Public Resources Code, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
3. Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record.

The cultural resource report must comply with El Dorado County cultural resources guidelines under the California Environmental Quality Act (CEQA Section 5024, Public Resource Code) and Tahoe Regional Planning Agency procedures (Chapter 67 of the TRPA Code of Ordinances).

Cultural studies are customarily performed in a series of phases, each one building upon information gained from the prior study. The inventory phase (Phase 1) involves a pre-field records search and Native American contact (Phase 1A), field reconnaissance/resource discovery (Phase 1B), and documentation of any cultural resources located within the project area (Phase 1C). If cultural properties are present

and/or it they may be subject to project impacts, their significance is evaluated according to eligibility criteria established in the National Register of Historic Places and/or California Register of Historical Resources (Phase 2). If project redesign to avoid impacts to significant resources is unfeasible, then mitigation measures are implemented (Phase 3). Mitigation (or data recovery) typically involves supplemental archival research, field excavation, photo documentation, mapping, archaeological monitoring, interpretation, etc. The scope of work for this cultural study is designed to satisfy regulations pertaining to aspects of Phase 1A work.

To complete the cultural study for the Project, the District contracted with Susan Lindström, Ph.D., a Consulting Archaeologist who meets the Secretary of Interior's Professional Qualifications Standards (48 FR 44738-44739). She has over four decades of professional experience in regional prehistory and history, holds a doctoral degree in anthropology/archaeology and has maintained certification by the Register of Professional Archaeologists (RPA, former Society of Professional Archaeologists) since 1982. The tasks completed include:

- review historical and archaeological background research of the project area
- review and apply 2020 record search results from the California Historical Resources Information System, North Central Information Center at California State University Sacramento
- as per CEQA guidelines and mandates under California Assembly Bill 52, request a records search of the Sacred Lands File by the Native American Heritage Commission and initiate contacts with local tribal organizations identified by the Commission (accomplished by the STPUD)
- conduct systematic reconnaissance level cultural resource field survey of the project APE
- present findings in a technical report.

The cultural contextual background for the current study draws heavily from comprehensive cultural studies conducted in 2015 and 2016 when the District embarked on a District- wide program to install water meters and fire hydrants throughout their service area and tiers off the 2020 Baseline Report (Lindstrom 2020). This work has now been updated in December 2021 with a new records search by the North Central Information Center. The addendum to the 2020 report also outlines a set of cultural resource management protocols to be implemented as part of the necessary agency permitting process.

Native American outreach was performed as a part of the updated addendum report prepared for this project. Consultations with the Native American Heritage Commission (NAHC) to request an updated search of the Sacred Land Files were initiated by the STPUD on August 27, 2021. When no response was received, a second request was sent

on September 8th, followed by an email on October 22nd and two phone calls in which the NAHC stated that although they had received the STPUD requests, short staffing was delaying a response. The STPUD then proceeded to contact individual Tribes on the Commission's contact list in a prior records search provided on November 19, 2018 to the following tribes:

- Clyde Prout, Chairperson and Pamela Cubbler, Treasurer of the Colfax-Todds Valley Consolidated Tribe
- Sara Dutschke Setchwaelo, Chairperson of the Ione Band of Miwok Indians
- Cosme A. Valdez, Chairperson of the Nashville Enterprise Miwok-Maidu-Nishinam Tribe
- Regina Cuellar, Chairperson of the Shingle Springs Band of Miwok Indians
- Don Ryberg, Chairperson, and Grayson Coney, Cultural Director for the Tsi Akim Maidu
- Gene Whitehouse, Chairperson of the United Auburn Indian Community of the Auburn Rancheria
- Darrel Cruz, Tribal Historic Preservation Officer for the Washoe Tribe of Nevada and California

Certified letters containing a project description and map were mailed on October 29, 2021, with follow-up emails/fax sent on December 16th. No response was received.

Neither prefield research nor archaeological field survey identified any cultural resources within the project APE (Lindstrom 2021). Although multiple residences over 50 years old were identified within viewshed of the project APE, ones that meet the National and California Register age criteria and are treated as historic properties for the purposes of this project, these historic buildings will not be physically and directly impacted by project activities, nor will visual components introduced by the project have an indirect impact on the viewshed of the APE. Replacement of an existing buried pipeline will not alter the current neighborhood landscape character and any potential impacts associated with project activities (e.g., audible, air quality, etc.) would be temporary and limited to the duration of construction activities (Lindstrom 2021)

2.5.B Checklist

CEQA Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Would the project:				
A) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☒	☐

B) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☒	☐
C) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐
D) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

2.5.C Discussion

A) Less than Significant Impact

As reported in the South Tahoe Public Utility District Water Line Replacement Project 2021 (Pioneer Trail/Bijou/Herbert-Walkup Areas) Cultural Resource Inventory (Lindström 2021), the Project will not result in a negative impact on historical resources in the Project Area. The Project Area has been disturbed by past road installation, and associated service connections. If historic resources are discovered during installation of the project, construction activity will be immediately stopped and a qualified archeologist will be contacted.

Because no historical resources as defined in PRC section 15064.5 will be disturbed, the Project would not cause substantial adverse change in the significance of a historical resource. The potential impact is less than significant.

B) Less than Significant Impact

Due to the fact the time when previous excavation and disturbance of the area last occurred is unknown, there is a remote potential to unearth undiscovered archeological resources. Requirements for protection of unknown resources, as described in Section 1.3.G, will be included in construction contracts to ensure that there will be no impacts to previously undiscovered resources. Should previously undiscovered resources be unearthed, ground disturbance activities will cease until consultation with a qualified archaeologist occurs and recommended procedures are implemented. The Project will not cause a substantial adverse change in the significance of a previously unknown archaeological resource because avoidance of such resources will occur during Project construction and long-term operations. The level of impact would be less than significant.

C) Less than Significant Impact

There are no mapped paleontological resources or known unique geologic features within the Project Area, and unique paleontological or unique geologic features are not expected to occur on Project Area parcels. The existing environments do not usually contain intact fossils. The Project requires excavation and disturbance in areas that have been previously disturbed for water tank and residential development and that are not mapped as a high or moderate resource potential geologic deposit, formation or rock unit. Additionally, in the unlikely event that paleontological resources are discovered during construction, section 1.3.G, Cultural Protection Measures, requires that ground

disturbance activities cease and until consultation with a qualified archaeologist occurs. As a result, the Project will avoid and protect encountered resources and would result in less than significant impacts to paleontological resources.

D) Less than Significant Impact

No known burial sites exist within the Project Area, and during prior projects performed by STPUD, no human remains were encountered. If human remains are unearthed, the El Eldorado County Coroner will be contacted in compliance with CEQA Guidelines Section 15064.5(e) and 43 CFR 10, Native American Graves Protection and Repatriation Regulations.

2.6 GEOLOGY, SOILS, SEISMIC & LAND COVERAGE

2.6.A Environmental and Regulatory Settings

The Lake Tahoe basin is bounded by the Sierra Nevada Mountain Range to the west and the Carson Mountain Range to the east and is part of the Walker Lane fault complex that includes many normal and strike-slip faults (Seitz 2015). The Lake Tahoe basin was formed by the same normal faulting that created the Basin and Range physiographic province to the east of the Tahoe Basin in Nevada. The region is seismically complex containing three major faults within the area: the West Tahoe Fault; the Stateline Fault; and the Incline Village Fault. There are no active faults within the Project Area, but the West Tahoe Fault lies several miles to the west.

The topography of the Lake Tahoe Basin is varied with at times complex terrain and elevations ranging from 6,220 feet at lake level to 10,000 feet at Monument and Freel Peaks outside of South Lake Tahoe, California. The Project Area consists of relatively flat slopes within the El Dorado County ROW.

The Alquist-Priolo Earthquake Fault Zoning Act (1972; PRC Section 2621-2630) regulates construction in active fault corridors and prohibits the location of most types of structures intended for human occupancy across the traces of active faults. The act defines criteria for identifying active faults, giving legal support to terms such as active and inactive and establishes a process for reviewing building proposals in Earthquake Fault Zones. An active fault is one that has had surface displacement within Holocene time or the last 11,000 years, as defined by the Alquist-Priolo Earthquake Fault Zoning Act.

The Seismic Hazards Mapping Act (1990 PRC Section 2690-2699.6) directs the State Geologist to delineate “Zones of Required Investigation”. A Seismic Hazard Zone is a regulatory zone that encompasses areas prone to ground failure and other earthquake-related hazards including soil liquefaction, earthquake-induced landslides, surface fault rupture, and tsunami inundation. Cities and Counties located within the zones must regulate certain projects for purposes of reducing the risk to life and property from surface fault rupture during earthquakes. The California Geological Survey produces official maps that delineate the required zones. The official maps for the Emerald Bay and Echo Lake quadrangles depict the West Tahoe Fault approximately 4 miles to the east of the Project

Area. The California Earthquake Hazards Zone Application ("EQ Zapp") shows this same information (https://maps.conservation.ca.gov/cgs/EQZApp/app/; accessed December 6, 2021)

According to the California Division of Mines and Geology and California Geological Survey mapping, the District's service area overlies Quaternary period non-marine alluvium, lake, playa and terrace deposits, both unconsolidated and semi- consolidated. Results from the NRCS Web Soils Survey of the Project Area may be found in Appendix 6. (NRCS 2007; http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm, Accessed 10 January 2022). A total of nine soil map units from the Tahoe Soil Survey are contained within the Project Area. Four soil types occur in less than 10% of the AQI; Tahoe Complex (0-2% slopes), Christopher loamy coarse sand (9-30% slopes), Oneidas coarse sandy loam (0-5% slopes) and Oneidas coarse sandy loam (5-15% slopes). Four soil types occur less than 20% of the AQI; Christopher gravelly loamy coarse sand (9-30% slopes), Christopher loamy coarse sand (0-9% slopes), Geffo gravelly loamy coarse sand (2-9% slopes), Jabu coarse sandy loam (0-9% slopes). One soil type occurs in 35% of the AQI; Ubaj sandy loam (0-9% slopes).

2.6.B Checklist

CEQA Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Would the project:				
A) Expose people or structures to 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 risks to life or property?	☐	☐	☐	☒
E) Have soils incapable of adequately supporting the use?	☐	☐	☐	☒

2.6.C Discussion

A i-iv) No Impact

The West Tahoe Fault stretches from Dollar Point south to Emerald Bay and then skirts the southwestern edges of both Cascade and Fallen Leaf Lakes. The Project Area is approximately 4 miles to the east of the West Tahoe Fault, as delineated on the 2016 map for the Emerald Bay Quadrangle issued by the State Geologist, (https://www.edcgov.us/government/planning/public%20notices/2016/documents/20160610_ReleaseofOfficialMapsTahoeEarthquakeFaultZones.pdf; accessed December 6, 2021.)

Although the Seismic Hazard Zones for soil liquefaction and earthquake induces landslides have not been officially evaluated for the Project Area, the Project components would be installed within the existing El Dorado County ROW that is highly disturbed. Therefore, the Project would not result in exposure of people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving the i) rupture of the existing fault, ii) seismic ground shaking, iii) seismic-related ground failure, including liquefaction, or iv) landslides.

B) No Impact

The Project will not result in substantial soil erosion or the loss of topsoil because all Project components will result in temporary impacts within the existing disturbed ROW. After completion of the Project, the ROW will be re-paved. Therefore, the Project has no impact on soil erosion or topsoil.

C) Less than Significant Impact

The Project would have no impact on the potential for on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse because the Project Area within the ROW is primarily flat and no unstable soil conditions exist that would lead to these events.

D) No Impact

The Project will not be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), and therefore, would not pose substantial risks to life or property from unstable soil conditions.

E) No Impact

The Project will not require the use of new septic tanks or alternative on-site wastewater disposal systems. Therefore, no impacts from the installation and use of septic tanks or alternative wastewater disposal systems would occur as a result of the Project.

2.7 GREENHOUSE GASES & CLIMATE CHANGE

2.7.A Environmental and Regulatory Settings

The State of California has implemented emissions reduction targets through Assembly Bill (AB) 32 and Senate Bill (SB) 32 and has set a goal of carbon neutrality by 2045. The City of South Lake Tahoe (City) has built on these goals and has developed its first Climate Action Plan (CAP), which was adopted by City Council on October 20th, 2020.The CAP outlines strategies for reducing greenhouse gas (GHG) emissions in various sectors, including transportation, building energy, land use, carbon sequestration and watershed health, and water and solid waste. It also includes adaptation strategies.

Becoming the 26th city in the nation to do so, the City adopted Resolution 2017-26, Establishing Renewable Energy and Carbon Emissions Reduction Goals. These goals include 50% municipal renewable energy by 2025, 100% municipal renewable energy by 2032, and 100% community renewable electricity by 2032. The resolution additionally outlines the emissions reduction targets of a 50% reduction in community-wide emissions by 2030 and an 80% reduction in community-wide emissions by 2040. The CAP provides the guidance to reach these goals.

The District adopted a Climate Action Plan for the Capital Improvement Program in December 2019. This CAP utilizes the following framework to address the causes and effects of climate change that affect the District:

- Explore historical and future climate hazards that may affect the District
- Evaluate climate vulnerabilities for the District facilities and assets
- Begin a Greenhouse Gas (GHG) Inventory of major district facilities and assets based
- on available data
- Conduct a qualitative risk analysis for major District facilities and assets
- Identify and weigh potential actions to mitigate climate hazard vulnerability, assigning
- qualitative cost of implementation.

Using this framework, the District will identify a series of specific actions in its authority that it intends to take to address the causes and effects of climate change.

In El Dorado County, the primary source of GHG is fossil fuel combustion mainly in the transportation sector (estimated at 70% of countywide GHG emissions). A distant second are residential sources (approximately 20%), and commercial/industrial sources are third (approximately 7%). The remaining sources are waste/landfill (approximately 3%) and agricultural (<1%). In 2008, the El Dorado County adopted the "Environmental Vision for El Dorado County" Resolution No. 29-2008, which sets forth goals and calls for implementation of positive environmental changes to reduce global impact, improve air quality and reduce dependence on landfills, promote alternative energies, increase recycling, and encourage local governments to adopt green and sustainable practices.

The El Dorado County Air Quality Management District (EDCAQMD), in association with a committee of air districts in the Sacramento region, has developed GHG thresholds that are intended to evaluate a project for consistency with GHG targets established in AB 32, particularly for emissions occurring by 2020. For the evaluation of construction-related emissions, the EDCAQMD recommends using the mass emission threshold of 1,100 metric tons (MT) of carbon dioxide equivalents (CO2e) per year. For the evaluation of operational emission, the EDCAQMD recommends a two-tier approach:

- Tier I. Operational emissions of a project would not have a significant impact on the environment if they are less than 1,100 metric tons of CO2e per year.
- Tier II (Performance-based threshold). Projects with operational emissions that exceed 1,100 metric tons of CO2e per year, but are able to demonstrate a 21.7 percent reduction from a "No Action Taken" scenario compared to the proposed project operating in 2020 would not conflict with California Air Quality Board CARB's Scoping Plan.

2.7.B Checklist

CEQA Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Would the project:				
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?	☐	☐	☐	☒

2.7.C Discussion

A) Less than Significant Impact

The assessment of GHG emissions is based on guidance from the El Dorado County Air Quality Management District (EDCAQMD). The EDCAQMD has established an emission threshold of 1,100 MT of CO2e per year for construction and operational emissions in the County. During the construction phase of the Project, construction activities will generate GHG emissions. These emissions are associated with workers commuting to the construction site and the operation of construction equipment and tools. Implementation of the Construction Emissions Control Plan detailed in Section 1.3B will reduce emissions associated the construction. The Project will not result in any operational emissions because the pipelines are located underground and the PRVs do not make any emissions

The Road Construction Emissions Model V 8.1.0 (RCE Model) estimates total construction phase GHG emissions of 3,475 tons/day CO2e. The model over-estimates emissions because it is not possible to eliminate operational emissions in the calculations. Estimated Project emissions of 185 tons CO2e are far below the EDCAMD threshold and would not have a significant impact on the environment.

B) No Impact

The Project will not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHG because such plans do not place specific thresholds on construction emissions.

2.8 HAZARDS & HAZARDOUS MATERIALS

2.8.A Environmental and Regulatory Settings

Projects that require the use of construction equipment always have an associated risk of accidental spill of hazardous materials. Hazardous materials can be a liquid, a solid, or a gas. Examples of hazardous materials are explosives, flammables, corrosives, radioactive materials, and poisons. Transportation of such materials is highly regulated to ensure the safety of the motoring public.

The Resource Conservation and Recovery Act (RCRA) gives the United States Environmental Protection Agency (USEPA) the authority to control the generation, transportation, treatment, storage, and disposal of hazardous waste. A search of the USEPA Envirofacts Database revealed no RCRA sites located within the Project Area (accessed December 8, 2021):

https://geopub.epa.gov/myem/efmap/index.html?ve=8,38.921664,-119.983000&pText=96150,%20South%20Lake%20Tahoe,%20California

Most of California's hazardous material safety regulations are found in Title 13 of the California Code of Regulations, Division 2, Chapter 6. The Hazardous Waste Tracking

System (HWTS) is the California Department of Toxic Substances Control's (DTSC) data repository for hazardous waste manifest and ID Number information. The system generates reports from 1993 to the present on hazardous waste shipments for generators, transporters, and treatment, storage and disposal facilities (TSDFs). A search of HWTS Geotracker Database (accessed December 8, 2021) revealed no hazardous material sites located within the Project Area:

https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=south+lake+tahoe

The El Dorado County Department of Environmental Management, Hazardous Materials Division is the Cal-EPA certified Unified Program Agency for El Dorado County and is responsible for implementing the hazardous materials and household hazardous waste programs to ensure that hazardous materials and hazardous waste are properly managed. The Unified Program streamlines the administrative requirements, permits, inspections, and enforcement activities for a variety of environmental and emergency management programs related to hazardous waste. El Dorado County also maintains a Hazardous Materials Emergency Area Plan.

Under the California Fire Code Hazardous Materials Management Plan, local fire departments screen Hazardous Materials Inventory Statements and inspect sites. The El Dorado County Air Quality Management District evaluates projects for possible toxic emissions and also issues permits, as necessary.

2.8.B Checklist

CEQA Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Would the project:				
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 likely 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 for people residing or working in the Project Area?	☐	☐	☒	☐
F) For a Project within the vicinity of a private airstrip, would the Project result in a safety hazard for people residing or working in the project site?	☐	☐	☐	☒
G) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
H) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

2.8.C Discussion

A) Less than Significant Impact

The Project would require the transportation, use, storage, and handling of minor amounts of hazardous materials needed for the waterlines and fire hydrant installations and asphalt cutting and re-paving.

The proposed project will utilize products that contain volatile organic compounds (VOC): Carboguard 890 (1.81 lbs/gal), Carbothane 134 (1.58 lbs/gal), Bar-Rust 223H (1.41 lbs/gal) and Enviroline 230 (0.13 lbs/gal). The above products will be handled in accordance with existing rules and regulations. All materials used will meet El Dorado County Air Quality Management District Rule 215 -VOC Content Limits for Industrial Maintenance Coatings.

The Project will not involve the transportation of explosives, inhalation hazards or radioactive materials. The amount of hazardous materials necessary for the Project would not be substantial enough to create a significant hazard to the public or environment from the routine transport, use or disposal of hazardous materials during project implementation. The District will ensure that the risk is maintained at less than significant

levels by requiring the selected contractor to comply with all federal, State, and local regulations and implement the Hazard and Safety Control Plan detailed in Section 1.3.I.

B) Less than Significant Impact

The quantities of hazardous substances utilized for Project construction are relatively small and would not be substantial enough to create a significant hazard to the public or environment from accidental release during project implementation. The risk of accidental exposure will be reduced to less than significant levels through the implementation of the Hazard and Safety Control Plan detailed in Section 1.3.I and BMPs for safe handling and use. The Project contractor will be required to comply with all federal, State, and local regulations regarding the use, transportation, and disposal of hazardous materials. Therefore, the risk from accidental release of hazardous materials during construction would be less than significant.

C) Less than Significant Impact

The Sierra House Elementary School is located within one quarter of a mile of the Project Area. The Project does not involve the use of acutely hazardous materials. Implementation of the Hazard and Safety Control Plan detailed in Section 1.3.I will minimize the risk of hazardous emissions during construction. The Project contractor will be required to comply with all federal, State, and local regulations regarding the use and handling of hazardous materials on the construction site. Therefore, the risk from accidental emissions or release of hazardous materials during construction would be less than significant.

D) No Impact

The California Department of Toxic Substances has compiled a special list of hazardous materials sites pursuant to Government Code Section 65962.5 called the “Cortese” list. A search of this list on the EnviroStor database did not find any sites located in El Dorado County.https://www.envirostor.dtsc.ca.gov/public/search.asp?cmd=search&reporttype=CORTESE&site_type Accessed December 9, 2021. Therefore, the Project has no impact.

E) Less than Significant Impact

A portion of the Project will be implemented in residential neighborhoods within two miles of the airport. The risk of accidental exposure of hazardous substances to persons residing or working in the area will be reduced to less than significant levels through the implementation of the Hazard and Safety Control Plan detailed in Section 1.3.I and BMPs for safe handling and use. The Project contractor will be required to comply with all federal, State, and local regulations regarding the use, transportation, and disposal of hazardous materials. Therefore, the risk from accidental release of hazardous materials during construction would be less than significant.

F) No Impact

The Project is not located in the vicinity of a private airstrip, and therefore, creates no impact to human safety hazards in designated airstrip influence areas.

G) No Impact

Project-related activities will not interfere with an emergency response plan or emergency evacuation plan, including but not limited to the El Dorado County Emergency Operations Plan, the City of South Lake Tahoe Emergency Operations Plan, and the South Lake Tahoe Fire Department Fire Planning Process. Where temporary lanes closures are needed during Project construction, local traffic and emergency response vehicles will be allowed to pass though at all times. Therefore, the Project will result in no impacts to emergency response or evacuation plans.

H) No Impact

Catastrophic wildfire poses an imminent threat to South Lake Tahoe and surrounding areas. The Project includes new waterline and fire hydrant installation to increase flows for fire-fighting. Therefore, the Project will have a beneficial impact on fire suppression capacity. The Project will not increase risk involving wildfires because the Project would not increase residential land use densities in the wildland urban interface. Therefore, the Project has no impact.

2.9 HYDROLOGY AND WATER QUALITY

2.9.A Environmental and Regulatory Settings

The Lake Tahoe watershed (USGS HUC 18100200) is 505 sq. miles (1,310 km^2) and includes the land area of the Lake Tahoe Basin in California and Nevada that drains to the lake. A total of 63 tributaries drain an area about the same size as the lake and produce half its water, with the balance entering as rain or snow falling directly on it. The Truckee River is the lake's only outlet, flowing northeast through Reno, Nevada, into Pyramid Lake. The river carries one third of the water that leaves the lake, with the balance evaporating from the lake's surface. The flow of the Truckee River and the height of the lake are controlled by the Lake Tahoe Dam at the outlet in Tahoe City. The natural rim of the lake is at 6,223 ft. above sea level. A spillway at the dam controls overflow and allows the lake to fill with an additional 6 feet of water storage to a maximum legal limit of 6,229.1 ft.

Lake Tahoe is oligotrophic, meaning it is nutrient limited, largely because of the high proportion of nutrient poor granitic rock in the basin. This nutrient limitation is what gives the lake its famed clarity. However, the lake is becoming increasingly eutrophic (having an excessive richness of nutrients), with primary productivity increasing every year and clarity decreasing. Suspended particulate matter from urban stormwater runoff is the dominant cause of the loss of clarity. Historic clarity was around 100 feet in depth. Clarity depth in 2019 averaged only 62.7 feet. The lowest average value recorded was 60 feet in 2017.

The State of California Lahontan Regional Water Quality Control Board (Lahontan) is directed by the federal Clean Water Act, the Porter-Cologne Water Quality Control Act, and other federal and state laws to set water quality standards and to regulate activities in the Lahontan Region of California, which includes the California portion of the Lake Tahoe Basin. Water quality management plans are required for certain areas under Section 208 of the Clean Water Act. The Lake Tahoe (208) Water Quality Management Plan outlines water quality standards and non-point source management and control in the Lake Tahoe Basin in both the California and Nevada.

In California, Regional Water Quality Control Boards maintain Water Quality Control Plans (Basin Plans) for each major hydrologic basin within the state. Lake Tahoe is within the North Lahontan Basin which includes parts of Modoc County in the north and south to Bridgeport in Mono County. The Lahontan Basin Plan outlines water quality conditions, designates beneficial uses for water bodies, identifies water quality problems associated with human activities, and establishes water quality objectives and measures to protect beneficial uses. The Basin Plan sets forth water quality standards, waste discharge prohibitions and control measures for surface and ground waters of the entire Lahontan Region. Chapter 5 of the plan is specific to the Lake Tahoe Basin and specifies water quality standards and control measures.

The TRPA Regional Plan establishes a number of goals and policies that address water quality in the Lake Tahoe Region, as implemented through the Code of Ordinances Chapter 33, Grading and Construction, Chapter 35, Natural Hazard Standards, Chapter 36, Design Standards, and Chapter 60, Water Quality, which detail the requirements for soil and water protection, water quality controls, and BMPs. The District's MOU with TRPA for Public Works Providers allows for repair and maintenance of underground facilities without TRPA's review.

2.9.B Checklist

CEQA Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Would the project:				
A) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
B) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing	☐	☐	☐	☒

nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?				
C) Substantially alter the existing drainage pattern of the area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☒
D) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?	☐	☐	☐	☒
E) Create or contribute runoff water which would exceed the capability of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
F) Otherwise substantially degrade water quality?	☐	☐	☐	☒
G) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
H) Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?	☐	☐	☐	☒
I) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
J) Cause inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

2.9.C Discussion

A) Less than Significant Impact

A violation of any federal, regional or State of California water quality standards or waste discharge requirements would constitute a significant impact. Project activities are limited to the ROW within El Dorado County. Project operation would not result in direct or indirect impacts to surface water quality that would violate standards because the waterlines are located underground and the PRVs are very small structures located in the ROW.

During construction, storm water runoff could occur through existing storm water drainage systems, including curb and gutter systems and drop inlets along the road ROW. Best Management Practices (BMPs) to limit storm water runoff (1.3.D BMPs to Protect Surface and Ground Water/Sediment and Erosion Control Plan) will be installed and maintained

throughout the construction period. The Project design also includes measures to limit emissions (1.3.B Construction Emission Control Plan) and control dust (1.3.C Fugitive Dust Control Plan) from construction. In addition, the Project contractor will be required to identify methods and techniques to minimize the potential for spill and implement approved containment and spill-control practices (1.3. I Hazard and Safety Control Plan spill control) during construction. Following excavation and trenching, paved areas will be returned to existing grade and repaved. Unpaved areas will be revegetated to minimize the potential for erosion from wind and surface water.

The District will require the selected contractor to comply with all federal, State, and local water quality regulations and implement specified Project design measures. Therefore, Project construction would not result in a violation of water quality standards or waste discharge requirements and the risk to water quality is less than significant.

B) No Impact

Project activities that substantially deplete groundwater supplies or interfere with aquifer recharge or existing hydrologic conditions would constitute a significant impact. The proposed Project does not involve new extraction of groundwater and would not create new or additional impervious surfaces that could significantly alter groundwater recharge. Therefore, the Project has no impact on groundwater supplies.

C) No Impact

If a project substantially alters the existing drainage pattern of an area in a manner that results in substantial erosion or siltation on or off-site, the impacts would be considered significant.

Project activities are limited to the ROW and construction will not result in new or additional disturbance outside of the ROW. Project operation would not alter existing drainage patterns or alter the course of a stream or river because the waterlines are below ground and the small concrete pads for the PRVs are in the road shoulder Therefore, the Project will not that would result in substantial erosion or siltation on-or off-site and the Project has no impact.

D) No Impact

If a project substantially alters the existing drainage pattern of an area or alters the course of a stream or river that would result in substantial flooding on-or off-site, the impacts would be considered significant.

Project activities are limited to the ROW and construction will not result in new or additional disturbance outside of the ROW. Project operation would not alter existing drainage patterns or alter the course of a stream or river because the components are primarily

below ground. Therefore, the Project would not result in substantial flooding on-or off-site and the Project has no impact.

E) Less than Significant Impact

If a project creates or contributes runoff water that would exceed the capability of existing or planned stormwater drainage systems or substantially increases polluted runoff, the impacts would be considered significant.

Storm water runoff could occur through existing storm water drainage systems, including curb and gutter systems and drop inlets along the road ROW. The Project design includes Best Management Practices (BMPs) to limit storm water runoff (1.3.D BMPs to Protect Surface and Ground Water/Sediment and Erosion Control Plan) that will be installed and maintained throughout the construction period. The District will require the selected contractor to implement specified Project design measures to limit storm water runoff during construction. Following excavation and trenching, paved areas will be returned to existing grade and repaved. Unpaved areas will be revegetated to minimize the potential for erosion from wind and surface water. Project operation would not result in storm runoff because the components are primarily below ground or are very small (fire hydrants and PRVs). Therefore, the Project would have a less than significant impact on source of polluted runoff.

F) No Impact

Project activities are limited to the ROW within El Dorado County. Other than potential storm runoff, construction activities in paved areas would not be expected to result in substantial direct or indirect other impacts that degrade water quality because Project components are below ground. Therefore, the Project would have no impact on water quality.

G) No Impact

Significant impacts may result if the Project would place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map. **Figure 8** depicts the Project Area FEMA floodplains. The Project does not involve the installation of housing and therefore, no impacts to property flood risk would result.

H) No Impact

Significant impacts may result if the Project would place structures within a 100-year flood hazard area that would impede or redirect flood flows. The Project does not involve any structure that could impede flows because the pipelines are below ground surface. Therefore, no impacts to flood risk would result.

I) No Impact

A project that would expose people or structures to a new significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam, would result in significant impacts.

The installation of water pipelines would have no impact on flood risk because the Project components are located below ground or have an insignificant footprint. No Project activities would occur in the vicinity of a levee or dam. Therefore, the Project has no impact on flood risk.

J) No Impact

A Project that would cause inundation by seiche, tsunami, or mudflow would constitute a significant impact. The installation of water pipelines and fire hydrants would not increase the risk of large waves occurring on Lake Tahoe or increase the potential for mudflows because the Project components are located below ground. Therefore, the Project would have no impact on the inundation risk from these natural disasters.

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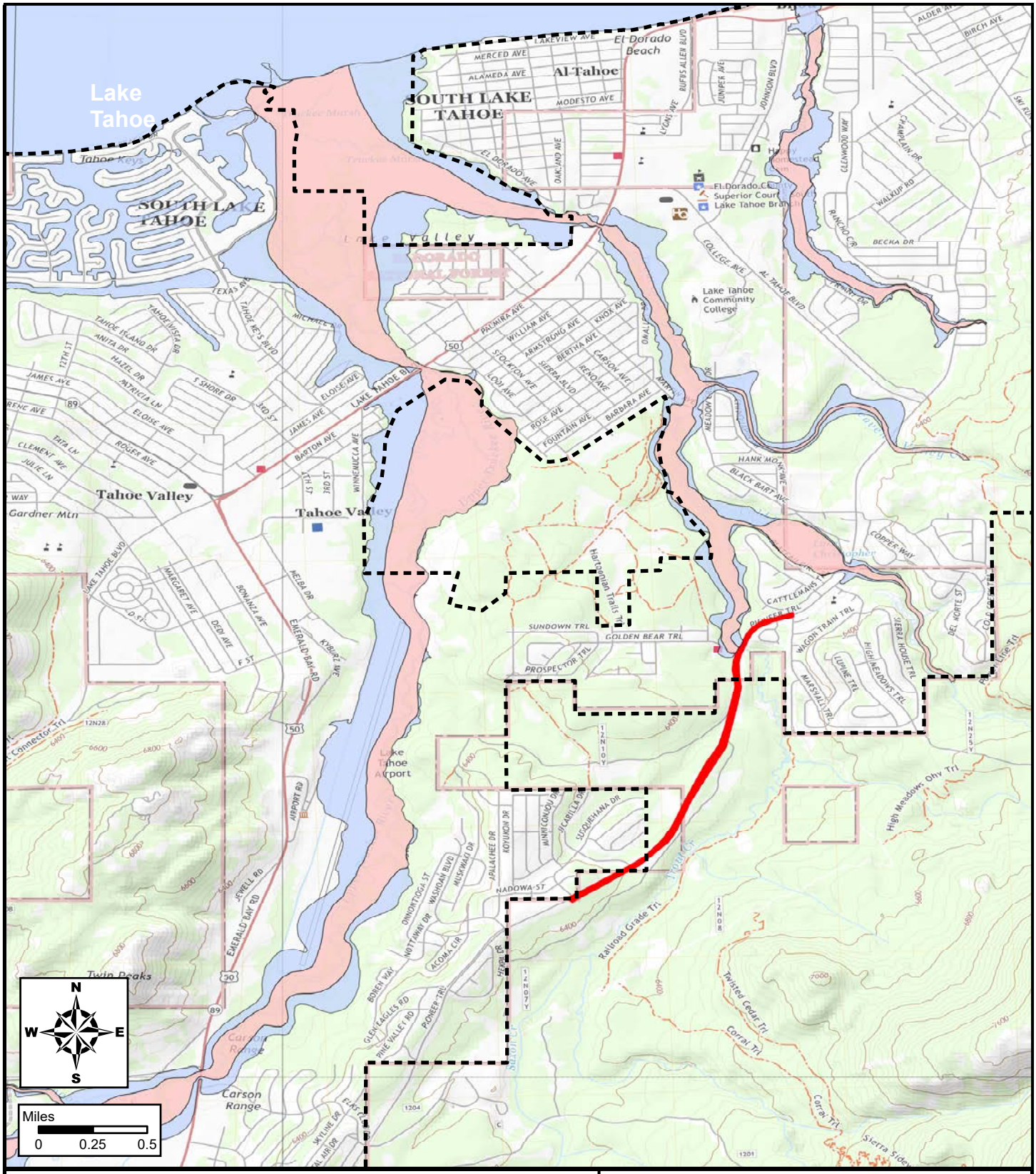

Legend

- STPUD Service Area
- Project Area
- 100-year Floddplain
- Regulatory Floodway

Pioneer Waterline Replacement Project

Figure 8.
FEMA Floodplains

SIERRA ECOTONE SOLUTIONS

Sources: STPUD, FEMA, USGS. Map date: March 2, 2022

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2.10 LAND USE AND PLANNING

2.10.A Environmental and Regulatory Settings

The Tahoe Basin contains a wide range of land use including commercial uses, residences, tourist accommodations, recreational uses, and wilderness areas. The Pioneer Trail Waterline and Facilities Upgrade Project will occur entirely within the El Dorado County ROW. Under the TRPA Regional Plan, a total of 4 Plan Area Statements (PAS) apply to the residential neighborhoods adjacent to the ROW within the Project Area as listed in **Table 2.10-1** below. These Plans specify public utilities as a Permissible Use and pipelines and associated facilities are listed as Special Uses. Although the Truckee Marsh PAS is designated for Conservation, pipelines are an acceptable use with the following special policy: "*the expansion, maintenance and upgrade of Transmission and Receiving Facilities shall be limited to existing infrastructure corridors."* The proposed new waterline would be located within the existing infrastructure corridor of Pioneer Trail.

TABLE 2.10-1
PLAN AREAS WITHIN THE PROJECT AREA

PLAN AREA NUMBER - NAME	TYPE	LAND USE CLASSIFICATION	MAX CNEL
115-Golden Bear	Plan Area Statement	Residential (single family)	50
106-Montogemery Estates	Plan Area Statement	Residential (single family)	50
117- Tahoe Paradise Washoan	Plan Area Statement	Residential (single family)	50*
100-Truckee Marsh	Plan Area Statement	Conservation	50

Notes: Max CNEL = Maximum Community Nose Equivalent Level * the CNEL in the adjacent airport corridor is 60 **Source: Sierra Ecotone Solutions LLC 2021**

The District currently has a Memorandum of Understanding (MOU) with TRPA (2012) that gives public works providers authority to review their own projects for conformance with TRPA standards. While some components of the proposed Project include repair and maintenance activities that would be covered under the MOU, the installation of new facilities are subject to TRPA review. Information on the TRPA planning and review process for public service projects can be found in Section 1.4.

2.10.B Checklist

CEQA Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Would the project:				
A) Physically divide an established community?	☐	☐	☐	☒
B) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
C) Conflict with any applicable habitat conservation plan or natural communities conservation plan?	☐	☐	☐	☒

2.10.C Discussion

A) No Impact

Installation of the Project will not physically divide an established community because it will occur entirely within the developed ROW and result in very short term temporary impacts.

B) No Impact

The Pioneer Trail Waterline and Facilities Upgrade Project will occur entirely underground within the ROW. Water systems are essential infrastructure and upgrades to the system would not conflict with any goal or policy under the TRPA Regional Plan, TRPA Code of Ordinances, or El Dorado County policies adopted for the purpose of avoiding or mitigating an environmental effect. The Project also complies with the TRPA Plan Area Statements within the Project Area because pipelines and associated facilities are listed as Special Uses. Therefore, the Project complies with local and regional applicable land use plans, policies, and regulations.

C) No Impact

No habitat conservation plan or natural community conservation plan are applicable to the Project Area, and therefore, the Project would have no impact on such plans.

2.11 MINERAL RESOURCES

2.11.A Environmental and Regulatory Settings

For the purpose of CEQA analysis, “mineral resources” refers to aggregate resources. Aggregate consists of sand, gravel, and crushed rock. Aggregate provides bulk and strength in some construction materials such as asphalt, concrete and Portland cement concrete. The State Mining and Geology Board establishes guidelines for mineral deposits and classifies Mineral Resource Zones or MRZs.

There are no mapped mineral resources within the Project Area. Additionally, a review of the TRPA Regional Plan, the 4 relevant Plan Area Statements, and El Dorado County General Plan identifies no mineral recovery sites within the Project Area.

2.11.B Checklist

CEQA Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Would the project:				
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?	☐	☐	☐	☒

2.11.C Discussion

A-B) No Impact

A project would cause a potentially significant impact to mineral resource if project actions resulted in the loss of availability of a known mineral resource that would be of value to the region and the residents of California. The Project Area is not located in Mineral Resource Zones 1 through 4 classification areas and there are no economically feasible extraction operations within the Project Area. Applicable Plans do not identify any mineral recovery sites within the Project Area. Therefore, no impacts to mineral resources would occur from the Project.

2.12 NOISE

2.12.A Environmental and Regulatory Settings

The TRPA Code of Ordinances Chapter 68 establishes noise standards for single noise events (i.e. for watercraft or off-road vehicles) and cumulative noise levels. Cumulative noise is addressed in the standards of individual area plans, plan area statements (PAS), and community plans and is expressed as a Community Noise Equivalency Level (CNEL)

The CNEL is expressed as an A-weighted decibel (dBA) and is the average sound level over a 24-hour period on a scale adjusted to human hearing. For each type of area Plan, the noise produced by any activity or combination of activities may not exceed the established CNEL standard. However, these established noise limitations do not apply to noise from TRPA-approved construction or maintenance projects, or the demolition of structures, provided that such activities are limited to the hours between 8:00 a.m. and 6:30 p.m. Monday through Friday.

The Project will occur in the ROW of Pioneer Trail adjacent to residential neighborhoods and open forest land. Automobile traffic on Pioneer Trail is the primary source of existing noise in the area. Within the Region, wilderness and roadless areas and areas with critical wildlife habitats have the most restrictive noise standard (CNEL of 45 dBA). Low-density residential areas and rural outdoor recreation areas have a slightly less restrictive CNEL standard of 50 dBA. The 4 Plan Areas in effect in the Project Area (Montgomery Estates, Golden Bear, Tahoe Washoan, and Truckee Marsh) all have a CNEL of 50dBA. However, because these neighborhoods are all adjacent to the airport where the CNEL is 60dBA, the PAS state that the allowed CNEL may be exceeded at times Higher density and mixed use areas have CNEL standards up to 65 dBA.

The Project construction activities would be limited to the hours between 8:00 a.m. and 6:30 p.m., Monday- Friday. General construction equipment that would be utilized for waterline and sewer line projects include excavator, mini-excavator, loader, water truck, service vehicles, small remote sheeps-foot compactor, vacuum truck, sweeper, milling machine, smooth drum compactor, and a paving machine. All but the paving equipment (the last 3 on the list) are used every day within the District's Service Area. This construction equipment may generate intermittent noise levels up to 75 dBA.

The Public Health, Safety, and Noise Element of the El Dorado County General Plan addresses community noise problems, in accordance with Government Code Section 65302(f). The acceptable noise level standards do not apply to those activities associated with actual construction of a project as long as such construction occurs between the hours of 7 a.m. and 7 p.m., Monday through Friday, and 8 a.m. and 5 p.m. on weekends, and on federally, recognized holidays.

2.12.B Checklist

CEQA Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Would the Project result in:				
A) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☒

CEQA Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
B) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
C) A substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the project?	☐	☐	☐	☒
D) A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the project?	☐	☐	☐	☒
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 expose people residing or working in the project site to excessive noise levels?	☐	☐	☐	☒
F) For a Project within the vicinity of a private airstrip, would the Project expose people residing or working in the project site to excessive noise levels?	☐	☐	☐	☒

2.12.C Discussion

A) No Impact

Noise generation from the Project during construction activities for the waterline installation and facilities upgrades in the ROW will be temporary and short-term in nature. Construction noise generation that is proposed is similar to trash removal, lawn mowing, and other maintenance noise. The Project construction activities are limited to the hours between 8:00 a.m. and 6:30 p.m., Monday- Friday. TRPA established noise limitations do not apply to noise from TRPA-approved construction or maintenance projects, provided construction is limited to those hours. The acceptable noise level standards in the Public Health, Safety, and Noise Element of the El Dorado County General Plan do not apply to construction activities as long as the construction occurs between the hours of 7 a.m. and 7 p.m., Monday through Friday, and 8 a.m. and 5 p.m. on weekends. Therefore, the Project complies with applicable plans, noise ordinances and standards and will have no impact.

B) No Impact

Ground-borne vibration is generally defined as an oscillatory motion through a solid medium. A primary source of ground borne vibrations is vehicle traffic. Construction equipment used in trenching and excavation of the water lines would not result in ground-

borne vibrations because the District does not use vibratory rollers in re-paving. Therefore, the Project would not expose persons to ground-borne vibration or ground-borne noise levels and would result in no impact.

C) No Impact

The Project involves temporary construction in the ROW and would not generate any source of noise following completion of construction. Therefore, the Project will not create any permanent increase in ambient noise levels in the Project vicinity above existing levels.

D) No Impact

The Project construction activities will not include the use of explosives or other materials that would cause a significant single event noise. Construction activities are limited to the hours between 8:00 a.m. and 6:30 p.m., Monday- Friday and would result in a temporary and intermittent increase in ambient noise levels during these hours. However, TRPA Code Section 68 exempts approved construction projects from established noise limitations when construction is limited to those hours. Therefore, the temporary increase in ambient noise levels in the Project vicinity are not considered substantial and would result in no impact.

E) No Impact

The Project Area is not located within the Airport Plan Area Statement (PAS) that includes the Lake Tahoe Airport (KTVL) and surrounding area along Highway 50. The portions of Pioneer Trail where the work would occur is located within 2 miles to the east of the airport. Project construction activities include temporary increases in noise between 8:00 a.m. and 6:30 p.m., Monday- Friday but will not include the use of explosives or other materials that would cause a significant single event noise. Therefore, the Project will not expose people residing or working in the area to excessive noise and the Project has no impact.

F) No Impact

The Project would not be located within the vicinity of a private airstrip, and therefore, would not expose people working in the Project site to excessive noise levels from air traffic.

2.13 POPULATION & HOUSING

2.13.A Environmental and Regulatory Settings

Population growth in the Lake Tahoe Region has been slow because of basin-wide growth-control measures, ongoing conversion of resident homes to second homes,

urbanization outside the area, and increased employee commuting to communities outside of the Basin in Placerville, California and western Nevada.

The population in the South Lake Tahoe area was 21,403 persons in the 2010 Census (US Census Bureau). The estimated population in July, 2019 was 22,197 which represents a growth rate of 3.7% and an annual growth rate of 0.4%. Population growth in South Lake Tahoe and the surrounding region occurs at a low rate due to stringent constraints on new housing development in the TRPA Regional Plan and Code of Ordinances.

Housing in the South Tahoe Region ranges from low-income rental units, single family dwellings, timeshares, to million-dollar resort homes. According to the 2010 U.S. Census, there were approximately 15,087 housing units in the South Lake Tahoe area, many of which are second homes. From 2014-2018 the owner-occupied housing rate was an estimated 44% (https://www.census.gov/quickfacts/southlaketahoecitycalifornia).

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2.13.B Checklist

CEQA Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Would the project:				
A) Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	☐	☒
B) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
C) Displace substantial numbers of people necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

2.13.C Discussion

A) No Impact

The upgrades proposed in the Project apply to the existing municipal water system. The new waterline and associated PRVs on Pioneer Trail, and the 9 new fire hydrants would result in improved water efficiency and enhanced fire protection capability within the community the District serves. The new 1.5 miles of water pipeline and addition of fire hydrants do not represent a significant expansion of infrastructure that would indirectly

increase population because no additional water supply is required. Therefore, the Project would not induce substantial population growth in the area and would have no impact.

B) No Impact

The Project displaces no existing housing and thus would not necessitate the construction of replacement housing.

C) No Impact

The Project displaces no people and thus would not necessitate the construction of replacement housing.

2.14 PUBLIC SERVICES

2.14.A Environmental and Regulatory Settings

The Project Area is located within unincorporated parts of El Dorado County. Fire Protection is provided by the Lake Valley Fire Department Station 6 located near the intersection of Golden Bear Trail and Pioneer Trail with support from the US Forest Service and CalFire, as necessary. Police protection is provided by the El Dorado County Sheriff's Department. Sierra House elementary is part of the Lake Tahoe Unified School District. There are no parks in the Project Area but there is National Forest Land. The South Tahoe Public Utility District is the sole provider of water and sewer in the Project Area.

2.14.B Checklist

CEQA Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Would the Project 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:				
A) Fire Protection?	☐	☐	☐	☒
B) Police Protection?	☐	☐	☐	☒
C) Schools?	☐	☐	☐	☒
D) Parks?	☐	☐	☐	☒
E) Other public facilities?	☐	☐	☐	☒

2.14.C Discussion

A-E) No Impact

The Project will not require additional public services and thus creates no impact to acceptable service ratios, response times or other performance objectives. Existing fire, police, and other governmental services are sufficient to accommodate the service needs of the Project. The Project will not necessitate the expansion of the equipment, facilities, or manpower of responsible fire, police, health, or school services in order to maintain current service ratios and response times. The Project also will not result in substantial adverse physical impacts associated with the provision of new or altered fire, police, health, or school facilities. There will be no need for new or physically altered governmental facilities. The Project would not result in negative impacts to public services.

2.15 RECREATION

2.15.A Environmental and Regulatory Settings

The Project Area includes recreation opportunities available on National Forest System land but there are no developed recreation facilities or public parks.

Several components of the TRPA Regional Plan address policies and regulations pertaining to recreation. These components include: Environmental Carrying Capacities (i.e., Resolution 82-11); Goals and Policies; and Code of Ordinances Chapters 11 and 12. The TRPA Threshold Evaluation Report (TRPA 2015) reports that recreation thresholds are in attainment.

The TRPA transportation map identifies a bicycle lane along Pioneer Trail. Bicycle and vehicle travel within the Project Area may be temporarily disturbed during the water line installation. The Lake Tahoe Bicycle and Pedestrian Plan (TMPO 2010) guides the planning, construction and maintenance of the regional bicycle and pedestrian network and support facilities and programs. The existing and planned network can be viewed at http://gis.trpa.org/bikemap/.

2.15.B Checklist

CEQA Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Would/Does the project:				
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?	☐	☐	☐	☒

CEQA Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
B) Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	☐	☐	☐	☒

2.15.C Discussion

A-B) No Impact

The Project Area does not include neighborhood or regional parks or other recreational facilities. Therefore, the Project would not result in impacts to these facilities or create adverse physical effects on the environment.

2.16 TRANSPORTATION & TRAFFIC

2.16.A Environmental and Regulatory Settings

The Project Area encompasses unincorporated parts of El Dorado County. Regional access to the Project Area is provided by US Highway 50. Local access is via Elks Club Drive to the west and Black Bart Ave or Al Tahoe Blvd to the east. The Maintenance and Operations Division of the El Dorado County Transportation Department manages repair, maintenance and replacement of existing County roadway and drainage infrastructure.

TRPA is designated as the Tahoe Metropolitan Planning Organization (TMPO) for state and federal transportation planning. In addition to fulfilling the Bi-State Compact's directives, as the TMPO, TRPA must develop a long-range Regional Transportation Plan (RTP) consistent with federal transportation laws. The RTP must also meet statutory requirements in California through the adoption of a "Sustainable Communities Strategy" (SCS). The SCS lays out a plan for reducing passenger vehicle related greenhouse gas (GHG) emissions in California. The goals and policies of the RTP are identical to those in the Regional Plan Transportation Element. In addition to goals and policies, the RTP also includes a detailed transportation improvement strategy, predicated on received or forecasted funding. The bi-state Tahoe Transportation District, implements projects and operates transit services throughout the Tahoe Region. Learn more about this partnership at www.linkingtahoe.com/about-us/.

Table 2.16-1 provides an overview of the local and regional transportation and circulation standards in the Project Area.

TABLE 2.16-1
LOCAL AND REGIONAL TRANSPORTATION AND CIRCULATION STANDARDS

Plan/Policy	Standard/Criteria
2020 Linking Tahoe: Regional Transportation Plan	The Regional Transportation Plan (RTP) focuses on 4 areas: transit, technology, trails, and communities and corridors. The vision of the Plan is that Tahoe's transportation system is interconnected, inter-regional, and sustainable, connecting people and places in ways that reduce reliance on cars. The goals and policies of the 2020 RTP are identical to those in the Regional Plan Transportation Element.
TRPA Regional Plan Transportation Element	Goal 4 Operations and Congestion Management: Provide an efficient transportation network through coordinated operations, system management, technology, monitoring, and targeted investments. Policy 4.6 establishes level of service (LOS) criteria for various roadway categories and signalized intersections during peak periods as follows: -LOS C on rural recreational/scenic roads; - LOS D on rural developed area roads; - LOS D on urban developed area roads; - LOS D for signalized intersections; - LOS E may be acceptable during peak periods in urban areas, not to exceed four hours/ day. There is no LOS for intersections with no signals.
El Dorado County General Plan	The General Plan states that LOS for County-maintained roads and state highways within the unincorporated areas of the county shall not be worse than LOS E in the Community Regions or LOS D in the Rural Centers and Rural Regions.

SOURCE: SIERRA ECOTONE SOLUTIONS 2021

2.16.B Checklist

CEQA Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Would the project:				
A) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☒

CEQA Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
B) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
C) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
D) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
E) Result in inadequate emergency access?	☐	☐	☐	☒
F) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒

2.16.C Discussion

A) No Impact

Since Project activities would occur within the ROW of Pioneer Trail and primarily be contained underground, the Project would not have an impact on the effectiveness or performance of the circulation system in the Project Area. Therefore, the Project would not conflict with applicable plans, ordinances, or policies related to the operation of the transportation system or mass transit including the TRPA 2020 Regional Transportation Plan or the Transportation Element of the Regional Plan.

B) No Impact

The proposed Project will not conflict with a congestion management program. The Traffic Control Plan outlined in Section 1.3.H will include signage advising road users of road work. Flaggers will be stationed when lane closures are necessary. Minor delays (5 minutes wait time maximum) on Pioneer Trail or minor residential streets may occur when the Traffic Control Plan determines lane closures are necessary. Traffic control devices will be removed when active work is not occurring. Temporary delays on roadways within the Project Area will not result in permanent or long-term impacts to level of service standards or have an impact on congestion on local or regional roads or highways. The

Project will not result in any increase in travel demand. Therefore, the Project will have no impact.

C) No Impact

The Project will not have an effect on air traffic patterns or result in the increase in air traffic levels or have any impact on the Lake Tahoe Airport (KTVL) located west of the Project Area Therefore, the project will have no impact.

D) No Impact

The design of the Project would not result in permanent physical alterations of Pioneer Trail or incompatible use of the roadway that would create additional hazards within the Project Area Therefore, the Project will have no impact.

E) No Impact

During Project construction, local traffic and emergency response vehicles will be allowed to pass though at all times. Therefore, adequate emergency access will be maintained during construction. Long-term operations of the Project would result in no impact to emergency access and response.

F) No Impact

The Project Activities are limited to the ROW and underground facilities. The Project will not conflict with any of the pedestrian, bicycle or public transit policies outlined in the 2020 Regional Traffic Plan or have any negative impact on the performance of any of the existing or proposed programs of the Plan.

2.17 UTILITIES & SERVICE SYSTEMS

2.17.A Environmental and Regulatory Settings

Public utilities and service systems include the water distribution system, sewer services, waste water collection and treatment system water, and solid waste disposal. Within the Project Area, the South Tahoe Public Utility District (District) owns and operates the water distribution system and the waste water collection and treatment system within its Service Area. Solid waste collection, recycling and disposal is carried out by South Tahoe Refuse and Recycling. Solid waste is transported to landfill sites in Nevada. Electrical power is supplied by Liberty Utilities and natural gas by Southwest Gas.

Relevant regulation of public utilities includes the following:

- As described in Section 1.4, the District has an MOU with TRPA for Public Works Providers that allows for repair and maintenance of underground facilities without TRPA's review (TRPA 2012).

- The District must comply with General Waste Discharge Requirements specified by the Regional Water Quality Control Board and the Water Quality Control Plan for the Lahontan Region (Basin Plan).
- The Lahontan Regional Water Quality Control Tahoe General Construction Permit (Board Order R6T-2016-0010) regulates discharges of pollutants in storm water associated with construction activity (storm water discharges). and requires an approved NPDES Storm Water Management Plan.
- The South Lake Tahoe Basin Waste Management Authority is a Joint Powers Authority (JPA) consisting of three (3) jurisdictions; City of South Lake Tahoe, El Dorado County and Douglas County. The South Lake Tahoe Basin Waste Management JPA was created to encourage construction of a materials recovery facility and other solid waste handling facilities in the Tahoe Basin.

The City of South Lake Tahoe General Plan contains the following policies that are applicable to water supply and services:

- Policy PQP-2.2 Coordination with Urban Water Management Plan. The City should coordinate with and support the planning efforts of the South Tahoe Public Utility District (District), including all measures contained in the Urban Water Management Plan.
- Policy PQP-2.4 Sustainable Water Use. The City shall encourage efficient practices that ensure water is used in a sustainable manner.
- Policy PQP-2.5 Sustainable Water Distribution. The City shall support local water supply agencies in upgrading public water systems, as needed, to ensure efficient and sustainable water distribution.
- Policy PQP-2.7 Water and Wastewater Management Strategy. The City shall support water and wastewater agencies in developing an innovative water and wastewater management strategy that considers water supply and treatment systems.

2.17.B Checklist

CEQA Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Would the project:				
A) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒

CEQA Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
B) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
C) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
D) Have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
E) Result in a determination by the wastewater treatment provider, which serves or may serve the Project that it has adequate capability to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
F) Be served by a landfill with sufficient permitted capability to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
G) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

2.17.C Discussion

A) No Impact

The District must comply with General Waste Discharge Requirements specified by the Regional Water Quality Control Board and the Water Quality Control Plan for the Lahontan Region (Basin Plan). A project that would cause Lahontan regional wastewater treatment requirements to be exceeded would constitute a significant impact.

The Project includes the installation of new waterlines and connections, but no additional connections to the existing municipal wastewater treatment plant are proposed. Therefore, the Project will not result in the generation of wastewater or the exceedance of waste water treatment requirements. Therefore, the Project will have no impact.

B) No Impact

A project that would result in adverse environmental effects from the construction of new water or wastewater treatment facilities or expansion of existing facilities that would be necessary to serve and increase capacity would constitute a significant impact.

The Project includes the installation of new water pipelines and fire hydrants that would expand existing water facilities in order to increase capacity for fire protection. The Project components are primarily located underground and the temporary disturbances related to construction would result in no adverse environmental effect.

C) No Impact

A project that would necessitate construction of new storm water drainage facilities or the expansion of existing facilities would constitute a significant impact on public services and utilities.

Project construction is temporary and limited in area to the Pioneer Trail ROW and would generate little to no storm water. Therefore, the Project would not necessitate the expansion or construction of new storm water drainage facilities and would have no impact to this public utility.

D) No Impact

A project would have a significant effect on public services and utilities if it would result in the need to expand existing entitlements or establish new water rights to meet increased water supply demands.

The installation of new water pipelines and fire hydrants would expand existing water facilities in order to increase capacity for fire protection. This small expansion of the water system infrastructure is also critical for service redundancy and reliability and is well within the capacity of the existing water supply. Therefore, the Project would not result in the need for new or expanded water entitlements and would have no impact.

E) No Impact

A project would result in a significant impact if the District's wastewater treatment capacity would be exceeded.

The District is the wastewater treatment provider for the Project Area. The Project does not propose new sewer lines or new connections to the existing municipal wastewater treatment plant. Therefore, the Project will not generate additional wastewater or exceed the District's wastewater treatment capacity and will result in no impact.

F) No Impact

A project that creates solid waste at volumes that would cause exceedance of the permitted capacity of a regional landfill would constitute a significant impact.

Project construction is expected to generate minimal solid waste. Old water lines will be abandoned in place and excess material from the project will be removed from the site and disposed of at a site approved by the TRPA. The small volume of waste that would be generated is not expected to cause exceedance of the permitted capacity of a regional landfill. Therefore, the Project would have no impact.

G) No Impact

A project that would result in non-compliance with state, federal, regional and local policies related to solid waste would constitute a significant impact.

The District's contractor would be required to comply with State, federal, regional and local policies related to solid waste. Therefore, the Project would have no impact.

2.18 MANDATORY FINDINGS OF SIGNIFICANCE

2.18.A Checklist

CEQA Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Does the project:				
a) Have the potential to 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, 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) 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) Have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

2.18.B Discussion

A) No Impact

The Project is very small scale and of short duration and the construction impacts are temporary and limited to the existing ROW. The Project will not substantially degrade the quality of the environment. The Project proposal does not have the potential to degrade the quality of the environment substantially; reduce the habitat of fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate

a plant or animal community; 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) No Impact

The Project will not result in impacts that are individually limited but would be cumulatively considerable when viewed in connection with the effects of past projects, the effects of other current projects and the effects of probable future projects in the vicinity of the project site. Other projects may occur in City of South Lake Tahoe and El Dorado County; however, impacts would not be cumulatively considerable when evaluated in the context of the proposed Project's negligible environmental effects and the short duration of construction activities within the ROW.

C) No Impact

The Project will not result in environmental effects, that will cause substantial adverse direct or indirect effects on human beings. The Project will result in benefits to humans through the conservation of water resources, reduced energy consumption, hazard mitigation, and improved water supply for firefighting and suppression.

Chapter 3. Determination

CEQA Determination

On the basis of the evaluation presented in this document, the South Tahoe Public Utility District concludes that:

_____ The proposed project is exempt from CEQA pursuant to the general exemption, a statutory exemption, and/or a categorical exemption. If the project is categorically exempt, none of the exceptions to the exemption apply. A NOTICE OF EXEMPTION will be prepared.

X_____ On the basis of the Initial Study, there is no substantial evidence that the project will have a significant effect on the environment. A NEGATIVE DECLARATION will be prepared.

_____ On the basis of the Initial Study and implementation of all proposed mitigation measures, there is no substantial evidence that the project as mitigated may have a significant effect on the environment. A MITIGATED NEGATIVE DECLARATION will be prepared.

_____ There is substantial evidence that the project may result in a significant environmental impact. An ENVIRONMENTAL IMPACT REPORT will be prepared.

Chapter 4 List of Preparers

Garth Alling – Principal, Sierra Ecotone Solutions LLC

Alison E Stanton – Sierra Ecotone Solutions LLC

Aaron Souza – 3dfx Design

Adrian Combes – South Tahoe Public Utility District

Chapter 5 References

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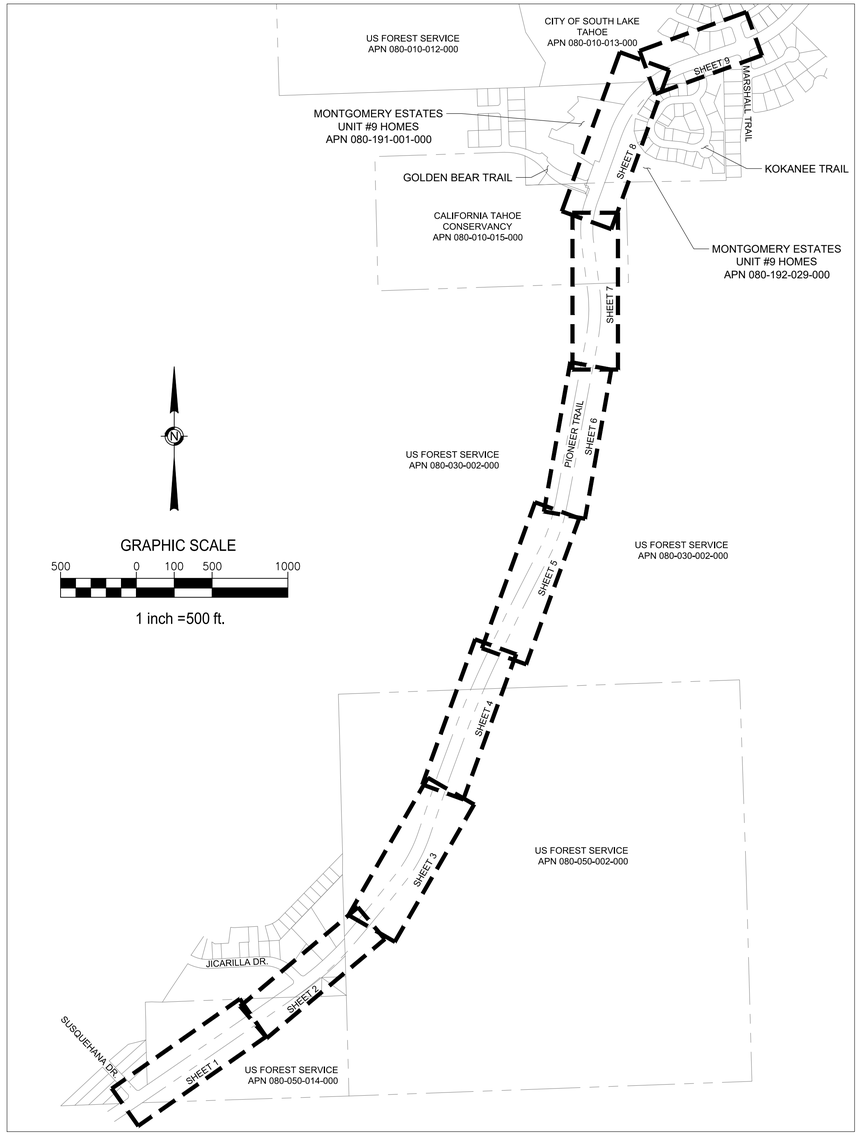
Chapter 6. Appendices

Appendix A: Relevant Plan and Specification Sheets

PIONEER TRAIL WATERLINE IMPROVEMENTS PROJECT
SOUTH TAHOE PUBLIC UTILITY DISTRICT



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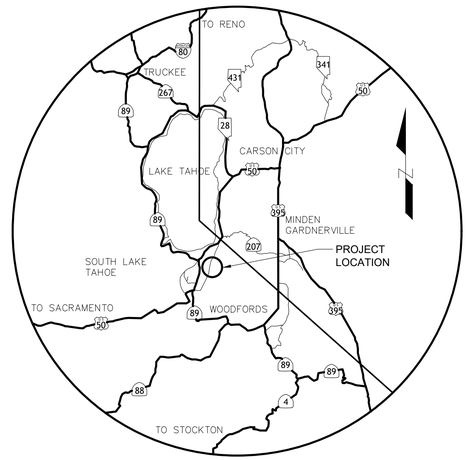

VICINITY MAP

BOARD OF DIRECTORS
SOUTH TAHOE PUBLIC UTILITY DISTRICT

DIRECTORS

CHRIS CEFALU
DAVID PETERSON
KELLY SHEEHAN
SHANE ROSMOS
NICK EXLINE

GENERAL MANAGER

JOHN THIEL, P.E.

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G2	GENERAL NOTES
G3	STAGING AREA
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P2	PLAN SHEET - STA 10+00 TO 20+00
P3	PLAN SHEET - STA 20+00 TO 30+00
P4	PLAN SHEET - STA 30+00 TO 40+00
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P6	PLAN SHEET - STA 50+00 TO 60+00
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P8	PLAN SHEET - STA 70+00 TO 80+00
P9	PLAN SHEET - STA 80+00 TO 90+00
D1	DETAILS
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D3	DETAILS
GE1	ELECTRICAL LEGEND
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E1	ELECTRICAL & INSTRUMENTATION
E2	ELECTRICAL & INSTRUMENTATION

PRELIMINARY - NOT FOR CONSTRUCTION

SOUTH TAHOE PUBLIC UTILITY DISTRICT
Sewer . 1950 . Water
A PUBLIC AGENCY
1275 Meadow Crest Drive South Lake Tahoe, California 96150
Phone (530) 544-6474 Fax (530) 541-4319
WWW.STPUD.US

PIONEER TRAIL WATERLINE IMPROVEMENTS PROJECT
COVER SHEET

DATE: 10-11-2021
SCALE: AS SHOWN
DRAWN: AZ
DESIGN: AC/AZ
AS BUILT:

G1
1 OF 22 SHEETS

ABBREVIATIONS

AB	AGGREGATE BASE
AC	ASPHALT CONCRETE
APPX	APPROXIMATELY
AVE	AVENUE
C&G	CURB AND GUTTER
CF	CUBIC FEET
CL	CENTERLINE
CPLG	COUPLING
CPS	COPPER PIPE SIZE
CSLT	CITY OF SOUTH LAKE TAHOE
DI	DRAINAGE INLET
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DW	DRIVE WAY
E	EXISTING
EA	EACH
ELEC	ELECTRIC
ELEV	ELEVATION
ELL	ELBOW
EOP	EDGE OF PAVEMENT
FG	FINISHED GRADE
FH	FIRE HYDRANT
FL	FLOW LINE
FLG	FLANGE
FM	FORCE MAIN
G	GAS
GA	GAUGE
GALV	GALVANIZED
GB	GRADE BREAK
GPM	GALLONS PER MINUTE
GS	GAS SERVICE, GROUND SHOT
H	HEIGHT
HORZ , HO	HORIZONTAL, HORIZONTAL OFFSET
HWY	HIGHWAY
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
INV	INVERT
IPS	IRON PIPE SIZE
JT	JOINT
L	LENGTH
LF	LINEAR FEET
LN	LANE
LOC	LOCATION
LT	LEFT
MAX	MAXIMUM
MECH	MECHANICAL
MFR	MANUFACTURER
MH	MANHOLE
MJ	MECHANICAL JOINT
MIN	MINIMUM
N	NORTH/NEW
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
PCC	PORTLAND CEMENT CONCRETE
PE, POLY	POLYETHYLENE
PL	PROPERTY LINE
PP	POWER POLE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PTW	PIPE TRACER WIRE
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
REF	REFERENCE
REQ'D	REQUIRED
REVEG	REVEGETATION
RJ	RESTRAINED JOINT
RT	RIGHT
ROW	RIGHT-OF-WAY
SCH	SCHEDULE
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
SQ FT	SQUARE FOOT
SHT	SHEET
SPEC	SPECIFICATIONS
SQ	SQUARE
SS	SANITARY SEWER, STAINLESS STEEL
SSL	SANITARY SEWER LATERAL
SSMH	SANITARY SEWER MANHOLE
ST	STREET
STA	STATION
STD	STANDARD
STL	STEEL
STPUD	SOUTH TAHOE PUBLIC UTILITY DISTRICT
STR	STRUCTURE
TEL	TELEPHONE
TAN	TANGENT
TBC	TOP BACK CURB
TBD	TO BE DETERMINED
TEMP	TEMPORARY
TG	TOP OF GRATE
TR	TOP OF RIM
TRPA	TAHOE REGIONAL PLANNING AGENCY
TYP	TYPICAL
UG	UNDERGROUND
USFS	U.S. FOREST SERVICE
UTIL	UTILITY
V, VO	VERTICAL, VERTICAL OFFSET
VAR	VARIES
W	WATER
W/	WITH
WM	WATER METER
WS	WATER SERVICE
WV	WATER VALVE
YD	YARD

AGENCY/UTILITY

CALTRANS 24 HOUR EMERGENCY
(530) 426-7690
(916) 859-7900

EL DORADO COUNTY SHERIFF'S OFFICE
NON EMERGENCY
(530) 573-3000

EL DORADO COUNTY DEPARTMENT OF TRANSPORTATION
(530) 642-4909

SOUTH TAHOE PUBLIC UTILITY DISTRICT
(530) 544-6474

EL DORADO COUNTY ENVIRONMENTAL MANAGEMENT
(530) 573-3450

TAHOE REGIONAL PLANNING AGENCY
(775) 588-4547

SOUTHWEST GAS (NATURAL GAS)
(800) 772-4555

CHARTER COMMUNICATIONS INC. (CABLE TV)
(775) 588-1077

LIBERTY ENERGY (ELECTRIC)
(530) 541-1628
(775) 689-4100 COLLECT

ATT/SBC (TELEPHONE)
611 (PRESS "0" FOUR TIMES)
(800) 310-2355 OPTION #2

LAKE VALLEY FIRE PROTECTION DISTRICT
(530) 577-3737

811
Know what's **below.**
Call before you dig.

LEGEND

EXISTING:

EDGE OF PAVEMENT:	EOP EOP
SEWER FORCE MAIN:	16" STEEL FM
SEWER:	SS SS
WATER:	W W
GAS:	GAS GAS
OVERHEAD UTILITY:	OHU OHU
TELEPHONE:	TEL TEL
CABLE TV	CATV CATV
STORM DRAIN:	SD SD
PROPERTY LINE:	
RIGHT-OF-WAY:	R/W R/W
WATER & GAS VALVE:	
WATER METER PIT:	
FIRE HYDRANT:	
MANHOLE:	
UTILITY VAULT:	
DROP INLET:	
SIGN:	
LIGHT:	
TREE:	

PROPOSED:

WATER MAIN LINE:	
SVC & FH LINES:	
90° ELBOW:	
45° ELBOW:	
TEE:	
CROSS:	
REDUCER:	
WATER VALVE:	
FIRE HYDRANT:	
THRUST BLOCK:	
BLOW OFF:	
FLEX COUPLING:	
WATER SERVICE & METER PIT:	
DOUBLE WATER SERVICE & 2 METER PITS:	

GENERAL NOTES

1) CONTRACTOR SHALL HAVE SIGNED PLANS, SPECIFICATION AND PERMITS IN THEIR POSSESSION PRIOR TO COMMENCEMENT OF WORK.

2) THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES, LOCAL AGENCIES AND/OR UTILITY DISTRICTS AS TO THE LOCATION OF ALL UNDERGROUND FACILITIES. LOCATION AND DEPTH OF EXISTING UTILITIES WHERE SHOWN ON PLANS ARE BASED ON BEST AVAILABLE INFORMATION. NO GUARANTEE IS MADE AS TO THE ACCURACY OF THIS INFORMATION OR THAT ALL UTILITIES ARE SHOWN. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO LOCATE, PROTECT, AND MAINTAIN ALL EXISTING UTILITIES. THE CONTRACTOR OR ANY SUBCONTRACTOR FOR THIS CONTRACTOR SHALL NOTIFY MEMBERS OF UNDERGROUND SERVICE ALERT 48 HOURS IN ADVANCE OF PERFORMING EXCAVATION WORK BY CALLING UNDERGROUND SERVICE ALERT 811. EXCAVATION IS DEFINED AS BEING 18 OR MORE INCHES OF DEPTH BELOW THE EXISTING SURFACE.

3) THE CONTRACTOR SHALL POTHOLE ALL UTILITY AND STORM DRAIN CROSSINGS ALONG THE PIPELINE ALIGNMENT IN ADVANCE OF INSTALLATION. THE CONTRACTOR SHALL REPORT THE RESULTS OF THE POTHOLE IN WRITING TO THE ENGINEER 48 HOURS (NOT TO INCLUDE WEEKENDS OR HOLIDAYS) PRIOR TO UNDERTAKING ANY CORRECTIVE ACTION BY THE CONTRACTOR REGARDING FACILITY LOCATION OR ALIGNMENT, THE CONTRACTOR SHALL NOTIFY THE ENGINEER. SHOULD ANY CORRECTIVE WORK BE DONE PRIOR TO NOTIFICATION, THE DISTRICT ASSUMES NO LIABILITY FOR THE COSTS INCURRED FOR THIS WORK.

4) CONTRACTOR TO BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING MONUMENTS AND ANY OTHER SURVEY MARKERS DURING CONSTRUCTION. ALL SUCH MONUMENTS OR MARKERS DISTURBED OR DESTROYED DURING CONSTRUCTION SHALL BE REPLACED BY A CALIFORNIA LICENSED SURVEYOR AT CONTRACTOR'S EXPENSE.

5) THE CONTRACTOR SHALL APPLY EITHER WATER OR DUST PALLIATIVE ON BOTH, AS REQUIRED AT THE OPTION OF THE OWNER OR HIS REPRESENTATIVE, FOR THE ALLEVIATION OR PREVENTION OF DUST NUISANCE.

6) THE CONTRACTOR SHALL COMPLY WITH THE TAHOE REGIONAL PLANNING AGENCY STANDARD CONDITIONS OF APPROVAL. A PRE-GRADE INSPECTION SHALL BE COMPLETED PRIOR TO ANY SAWCUTTING OR EXCAVATION ACTIVITY.

7) THE CONTRACTOR SHALL COMPLY WITH THE STATE WATER QUALITY CONTROL BOARD WASTE DISCHARGE REQUIREMENTS FOR THIS PROJECT AND THE CITY OF SOUTH LAKE TAHOE'S ENCROACHMENT PERMIT.

8) ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITY SHALL BE REVEGETATED BY THE CONTRACTOR IN ACCORDANCE WITH THE TAHOE REGIONAL PLANNING AGENCY HANDBOOK OF BEST MANAGEMENT PRACTICES. REVEGETATION BY A MULCH MAY ENHANCE VEGETATIVE ESTABLISHMENT. NO EQUIPMENT OR VEHICLES SHALL BE PLACED OUTSIDE THE STATE, CITY, OR COUNTY RIGHT OF WAY. ANY DISTURBANCE OF PRIVATE PROPERTY SHALL BE RESTORED BY THE CONTRACTOR AT THEIR EXPENSE.

9) ALL EXCESS MATERIAL FROM THIS PROJECT IS TO BE REMOVED FROM THE SITE AND DISPOSED OF AT A SITE APPROVED BY THE TAHOE REGIONAL PLANNING AGENCY. NO EXCESS MATERIAL SHALL BE STORED ON SITE AFTER HOURS.

10) ALL INTERTIES BETWEEN NEW WATER MAINS AND THE EXISTING WATER SYSTEM, INCLUDING NEW WATER SERVICE CONNECTIONS, AND FIRE HYDRANT INSTALLATIONS AND TRANSFERS, SHALL ONLY BE MADE AFTER ALL PRESSURE TESTING AND DISINFECTION REQUIREMENTS ARE SATISFACTORILY MET. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TEMPORARY SHUT-OFFS NECESSARY FOR FLUSHING AND SAMPLING OF ALL NEW WATER MAINS AS REQUIRED BY THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD AND PROJECT SPECIFICATIONS.

11) WHERE NEW WATER MAINS ARE BEING INSTALLED IN PAVED SECTIONS THE MAXIMUM WIDTH FOR ASPHALT REPLACEMENT THE CONTRACTOR SHALL BE COMPENSATED FOR IS THE MAXIMUM CLEAR TRENCH WIDTH FOR THE PIPELINE SIZE BEING INSTALLED PLUS TWELVE INCHES (12") IN COUNTY OF EL DORADO RIGHT OF WAY, TWENTY FOUR INCHES (24") IN CITY OF SOUTH LAKE TAHOE RIGHT OF WAY, AS PROVIDED IN THE CONTRACT SPECIFICATIONS. THE CONTRACTOR SHALL REPLACE ALL TRAFFIC STRIPING THAT IS DISTURBED DURING CONSTRUCTION.

12) ALL EXCAVATIONS SHALL BE BACKFILLED OR TRENCH PLATED AT THE END OF EACH DAY'S WORK PER THE SPECIFICATIONS. EXCAVATIONS WITHIN EXISTING PAVED AREAS SHALL BE HOT PATCHED AS REQUIRED PER SPECIFICATIONS TO MATCH THE EXISTING PAVEMENT AT THE END OF EACH DAY'S WORK. ALL TRENCH PLATES SHALL BE NON-SKID TYPE AND HAVE COLD PATCH APPLIED TO THE EDGE FOR TRAFFIC APPROACH AND DEPARTURE.

13) THE CONTRACTOR SHALL PROVIDE, ON ALL NON-CONDUCTIVE PIPING, CONTINUOUS INSULATED TRACER WIRE RATED FOR DIRECT BURY (#10 SOLID COPPER OR #12 COPPER CLAD STEEL WIRE ALONG THE PIPELINE AND PROVIDE ACCESS TO TRACER WIRE AT ALL VALVE BOX INSTALLATIONS WITH A MINIMUM OF 1 FT EXCESS TRACER WIRE FOR FUTURE SERVICE CONNECTIONS. THIS SHALL ALSO APPLY TO ALL CONDUCTIVE PIPING UNLESS PERMANENTLY BONDED AT EACH JOINT. ALL TRACER WIRE CONNECTIONS SHALL BE MADE USING 3M DBR-6 SPLICE KIT OR APPROVED EQUAL.

14) THE CONTRACTOR SHALL PROTECT AND BE RESPONSIBLE FOR ANY DISTURBANCE OR CONTAMINATION TO ANY DRY WELLS, STORM WATER COLLECTION OR RETAINAGE SYSTEMS INCLUDING STORM DRAIN PIPE, CURB & GUTTER, VALLEY GUTTERS AND HORIZONTAL DRAINS THROUGH OUT THE PROJECT AREA. ANY DAMAGE SHALL BE REPAIRED AT NO ADDITIONAL COST TO DISTRICT. THE CONTRACTOR SHALL NOT STOCK PILE ANY MATERIAL UPON ANY DRAINAGE FACILITIES.

15) PRIOR TO CONSTRUCTION ACTIVITY THE CONTRACTOR SHALL SUBMIT TO THE DISTRICT FOR ACCEPTANCE A PROJECT SPECIFIC TRAFFIC CONTROL PLAN.

16) CONTRACTOR SHALL MAINTAIN THE CONTINUOUS FLOW OF TRAFFIC AT ALL TIMES DURING CONSTRUCTION ACTIVITY. AFTER WORKING HOURS ALL TRAFFIC BARRIERS SHALL BE REMOVED AND TRAFFIC RETURNED TO NORMAL.

17) CONTRACTOR SHALL REMOVE ALL MATERIAL GENERATED BY ANY ASPHALT SAW CUTTING OPERATION DURING OR IMMEDIATELY AFTER SAWCUTTING BY USING ADEQUATELY SIZED VACUUMING EQUIPMENT TO ACCOMMODATE THE REMOVAL PROCESS.

18) WHEN HOT TAPPING A WATER MAIN: CONTRACTOR SHALL EXCAVATE, SHORE AND SHIELD EXISTING WATER MAIN. CONTRACTOR SHALL PRESSURE TEST, SADDLE AND GATE VALVE PRIOR TO HOT TAP. CONTRACTOR SHALL PROVIDE ACCESS AND TRAFFIC CONTROL FOR DISTRICT CREWS TO HOT TAP WATER MAIN. ALL HOT TAPS SHALL BE DONE TUESDAYS THRU THURSDAYS. CONTRACTOR SHALL REQUEST IN WRITING FORTY EIGHT (48) HOURS IN ADVANCED FOR DISTRICT CREWS TO PERFORM HOT TAP.

19) CONTRACTORS EQUIPMENT AND EMPLOYEE VEHICLES SHALL PARK ON EXISTING PAVED SURFACES OR EXISTING COMPACTED ROAD SHOULDERS. NO EQUIPMENT OR VEHICLES SHALL BE PLACED OUTSIDE THE STATE, CITY, OR COUNTY RIGHT OF WAY. ANY DISTURBANCE OF PRIVATE PROPERTY SHALL BE RESTORED BY THE CONTRACTOR AT THEIR EXPENSE.

20) ALL SEWER PIPES DAMAGED DURING THE EXECUTION OF THE PROJECT SHALL BE REPAIRED PER DETAILS.

21) AFTER THE NEW MAIN IS PLACED INTO SERVICE, THE EXISTING WATER MAINS, WHERE SHOWN ON THE PROJECT DRAWINGS, ARE TO BE ABANDONED IN PLACE BY CUTTING OUT A SECTION OF PIPE AND WELDING A CAP ON THE END OF THE PIPELINE, OR OTHER APPROVED METHOD OF CAPPING. BLIND-FLANGE CAPPING SHALL BE UTILIZED WHERE POSSIBLE. ALL EXPOSED CORPORATION STOPS ON THE EXISTING WATER MAINS ARE TO BE LEFT IN PLACE IN THE CLOSED POSITION. FOR CORPORATION STOPS THAT HAVE NOT BEEN EXPOSED, THE CAPPING OF THE END OF THE SERVICE LINE USING AN APPROVED COMPRESSION FITTING SHALL BE ACCEPTABLE. EXISTING FIRE HYDRANTS TO BE ABANDONED AT THE ISOLATION VALVE, REMOVED FROM THE PROJECT AREA AND RETURNED TO THE DISTRICT, BY THE CONTRACTOR. THE ISOLATION VALVE IS TO BE BLIND FLANGED OR CAPPED BY OTHER APPROVED METHOD.

22) ALL EXISTING WATER SERVICES FOR THIS PROJECT SHALL BE ABANDONED PER NOTE #21. ONLY NEW WATER SERVICE CONNECTIONS WHERE SHOWN ON THE PROJECT PLANS SHALL BE INSTALLED PER THE DISTRICTS STANDARD DETAILS AND PROJECT DRAWINGS. THE LOCATIONS OF ALL EXISTING WATER SERVICES SHALL BE VERIFIED AND MARKED IN THE FIELD.

23) THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE HANDLING AND PROPER DISPOSAL OF DISTRIBUTION SYSTEM WATER ENCOUNTERED DURING SYSTEM TIE-INS IN ACCORDANCE WITH THE SPECIFICATIONS. FOR THIS PROJECT, THE CONTRACTOR SHALL ASSUME THAT UP TO 1,250 GALLONS WILL BE ENCOUNTERED AT EACH TIE-IN.

SOUTH TAHOE PUBLIC UTILITY DISTRICT
Sewer . Water . A PUBLIC AGENCY
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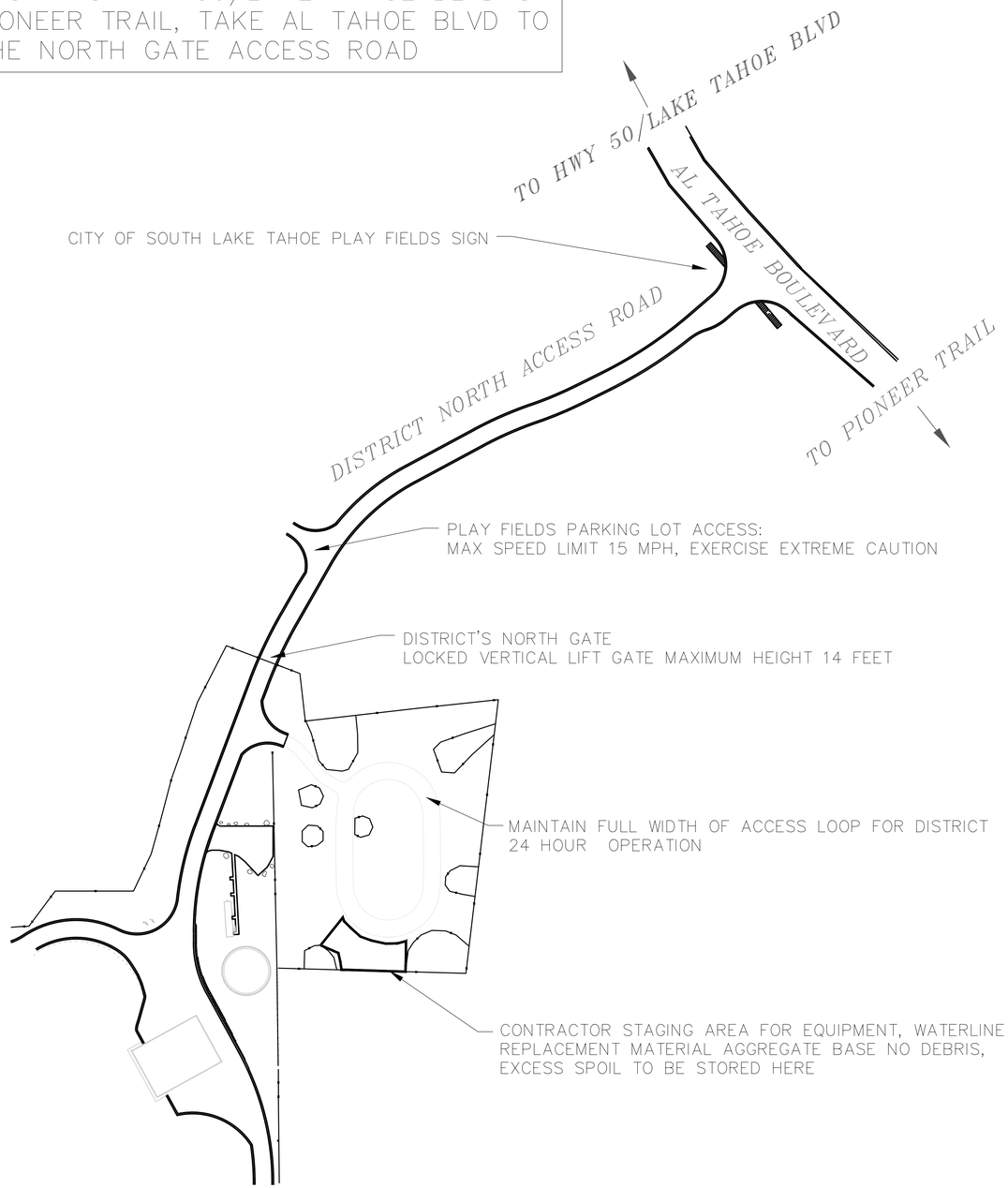
PIONEER TRAIL WATERLINE IMPROVEMENTS PROJECT
GENERAL NOTES

DATE: 10-11-2021
SCALE: AS SHOWN
DRAWN: AZ
DESIGN: AC/AZ
AS BUILT:

G2
2 OF 22 SHEETS

DIRECTIONS:
FROM HIGHWAY 50/LAKE TAHOE BLVD OR PIONEER TRAIL, TAKE AL TAHOE BLVD TO THE NORTH GATE ACCESS ROAD



NOTE:

1) CONTRACTOR SHALL PROVIDE TEMPORARY SANITARY CONVENIENCES AT ALL STAGING AREAS PER STPUD SPECS

BMP GENERAL NOTES:

1) ON-SITE WORK SHALL BE PERFORMED FROM 8 AM TO 6 PM, MONDAY THROUGH FRIDAY. WORK OUTSIDE THESE HOURS MUST BE APPROVED BY THE DISTRICT A MINIMUM OF 48-HOURS BEFORE THE ABNORMAL WORKING HOURS ARE SCHEDULED TO BEGIN.

2) NOISE SHALL BE REDUCED BY MANDATORY USE OF MUFFLERS ON ALL CONSTRUCTION VEHICLES AND EQUIPMENT. WHERE FEASIBLE, SOLENOID PAVEMENT BREAKERS WILL BE USED IN LIEU OF AIR POWERED JACK HAMMERS.

3) NOISE GENERATING ACTIVITIES WILL BE LIMITED TO THE HOURS OF 8:00 AM TO 6:00 PM.

4) THE CONTRACTOR SHALL PROVIDE A WATER TRUCK TO WATER AREAS AS NECESSARY TO CONTROL DUST.

5) CONTRACTOR SHALL PROVIDE A VACUUM SWEEPER TRUCK FOR CLEANING OF THE SITE DURING AND AFTER CONSTRUCTION EACH DAY AS REQUIRED TO PREVENT SEDIMENT RUN OFF AND TO AID IN DUST CONTROL.

6) CONTRACTOR SHALL PROVIDE CRUSHED ROCK IN AREAS OF TEMPORARY CONSTRUCTION ACCESS TO MINIMIZE MIGRATION OF SEDIMENT.

7) ALL DISTURBED AREAS SHALL BE RESTORED TO MATCH PRE-EXISTING CONDITIONS. UNIMPROVED AREAS AND AREAS NOT LANDSCAPED SHALL BE REVEGETATED WITH NATIVE SPECIES PER TRPA BEST MANAGEMENT PRACTICES (BMP). EXISTING VEGETATION REMOVED DURING CONSTRUCTION SHALL BE CHIPPED AND MULCHED ON SITE AND STORED FOR USE DURING REVEGETATION.

8) ALL TREES IN JEOPARDY OF DAMAGE BY CONSTRUCTION ACTIVITIES AS DETERMINED BY THE DISTRICT SHALL BE PROTECTED PER DETAIL 6 ON PAGE D4.

9) SOIL AND CONSTRUCTION MATERIAL SHALL NOT BE TRACKED OFF THE CONSTRUCTION SITE. GRADING OPERATIONS SHALL CEASE IN THE EVENT THAT DANGER OF VIOLATING THIS CONDITION EXISTS.

10) DURING CONSTRUCTION, ENVIRONMENTAL PROTECTION DEVICES, SUCH AS EROSION CONTROL, DUST CONTROL AND VEGETATION PROTECTION DEVICES SHALL BE MAINTAINED AT ALL TIMES.

11) LOOSE SOIL MOUNDS OR SURFACES SHALL BE PROTECTED FROM WIND OR WATER EROSION BY BEING APPROPRIATELY COVERED AT THE END OF EACH WORK DAY OR WHEN REQUIRED BY TRPA.

12) EXCAVATED MATERIAL SHALL BE STORED UPGRADE FROM THE EXCAVATED AREA WHENEVER POSSIBLE. NO MATERIAL SHALL BE STORED IN ANY STREAM ENVIRONMENT ZONE (SEZ) OR WET AREA.

13) ONLY EQUIPMENT OF A SIZE AND TYPE THAT WILL DO THE LEAST AMOUNT OF DAMAGE, UNDER PREVAILING SITE CONDITIONS AND CONSIDERING THE NATURE OF THE WORK TO BE PERFORMED, WILL BE USED.

14) NO WASHING OF VEHICLES OR HEAVY EQUIPMENT, INCLUDING CEMENT MIXERS, SHALL BE PERMITTED ANYWHERE ON THE SUBJECT PROPERTY UNLESS AUTHORIZED BY TRPA IN WRITING.

PRELIMINARY - NOT FOR CONSTRUCTION

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A PUBLIC AGENCY
Sewer . 1950 . Water
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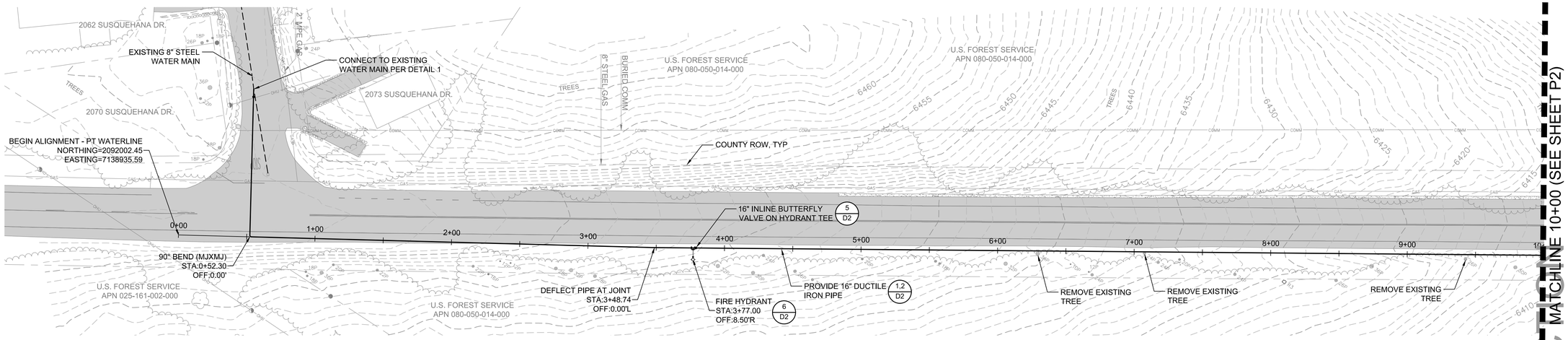
WWW.STPUD.US

PIONEER TRAIL WATERLINE IMPROVEMENTS PROJECT
STAGING AREA

DATE: 10-11-2021
SCALE: AS SHOWN
DRAWN: AZ
DESIGN: AC/AZ
AS BUILT:

G3
3 OF 22 SHEETS

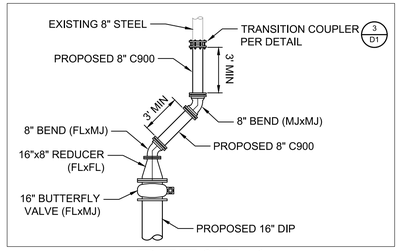


PLAN

SCALE: 1" = 40'

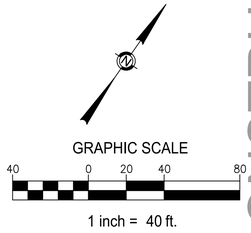
NOTES:

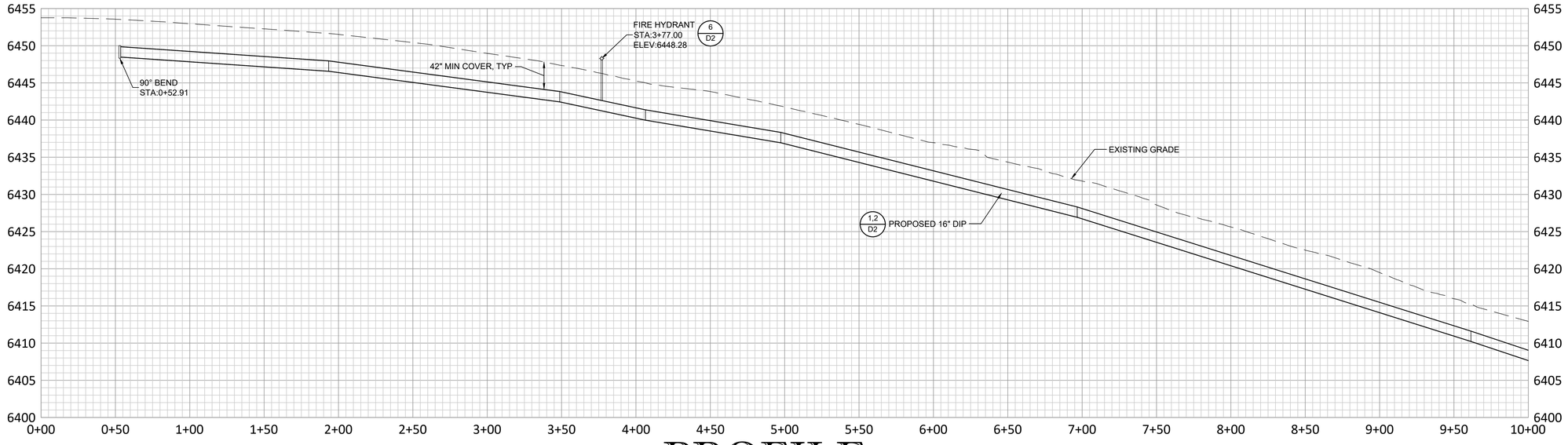
1. ACTUAL LOCATION AND DEPTH OF EXISTING UTILITIES SHOWN ON PLANS ARE APPROXIMATE. CONTRACTOR SHALL POTHOLE AND VERIFY EXISTING UTILITIES PRIOR TO CONSTRUCTION.
2. CONTRACTOR SHALL PROVIDE SAMPLE PORTS PER DETAIL 2 OF SHEET D3 AT A MINIMUM OF EVERY 600' FOR PIPELINE DISINFECTION AND TESTING.
3. CONTRACTOR SHALL PROTECT EXISTING CURB AND GUTTER THROUGHOUT CONSTRUCTION. ANY CURB AND GUTTER THAT IS REMOVED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED PER EL DORADO COUNTY STANDARDS AS SHOWN BY DETAIL 3 OF SHEET D3.
4. CONTRACTOR SHALL COMPLY WITH CALIFORNIA DEPARTMENT OF DRINKING WATER STANDARDS FOR INSTALLATION OF NEW WATER MAINS. A FULL UNCUT STICK OF PIPE SHALL BE CENTERED ON ALL SEWER AND STORM DRAIN CROSSINGS.



DETAIL 1

SCALE: 1" = 5'





PROFILE

SCALE: 1" = 40' (H)
1" = 8' (V)

PRELIMINARY - NOT FOR CONSTRUCTION

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Sewer . 1950 . Water
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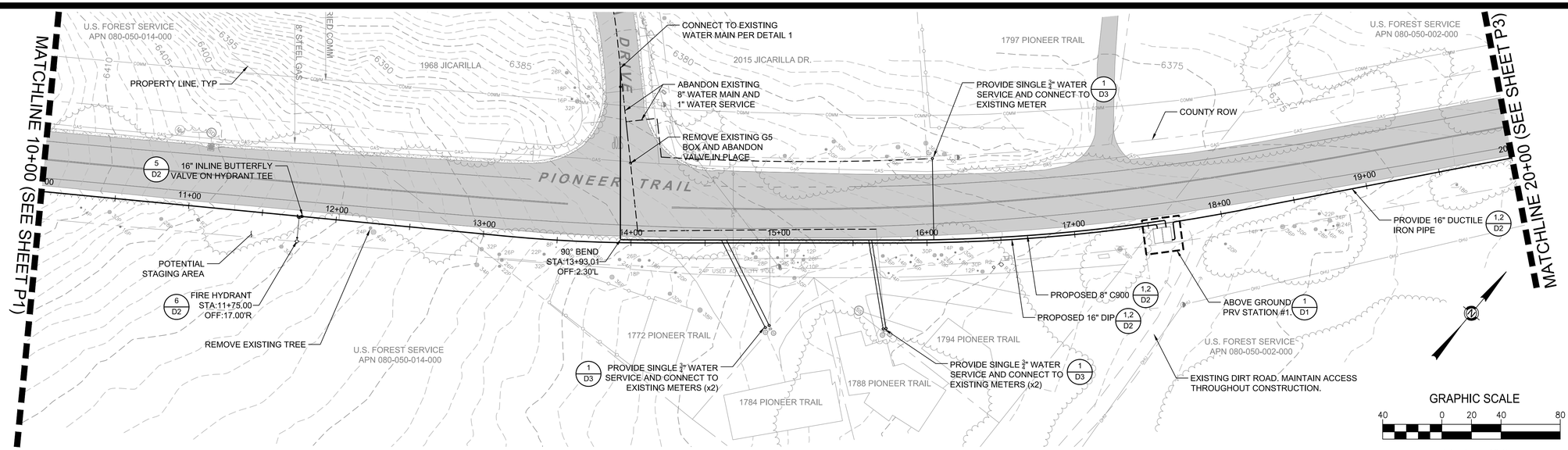
WWW.STPUD.US

PIONEER TRAIL WATERLINE IMPROVEMENTS PROJECT
STA 0+00 TO 10+00

DATE: 10-11-2021
SCALE: AS SHOWN
DRAWN: AZ
DESIGN: AC/AZ
AS BUILT:

P1
4 OF 22 SHEETS



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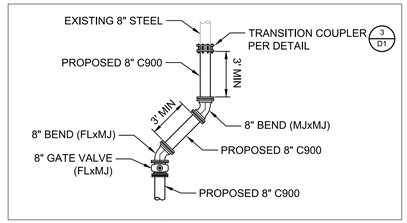
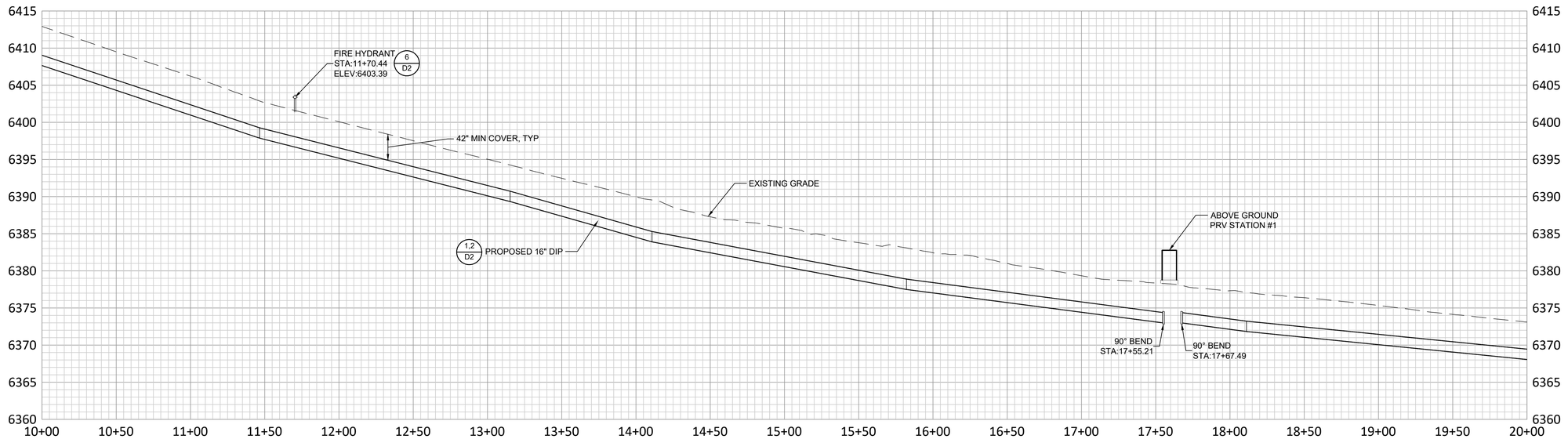


DETAIL 1

SCALE: 1" = 5'

PROFILE PT Waterline 10+00 to 20+00



PROFILE

SCALE: 1" = 40' (H)
1" = 8' (V)

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STA 10+00 TO 20+00

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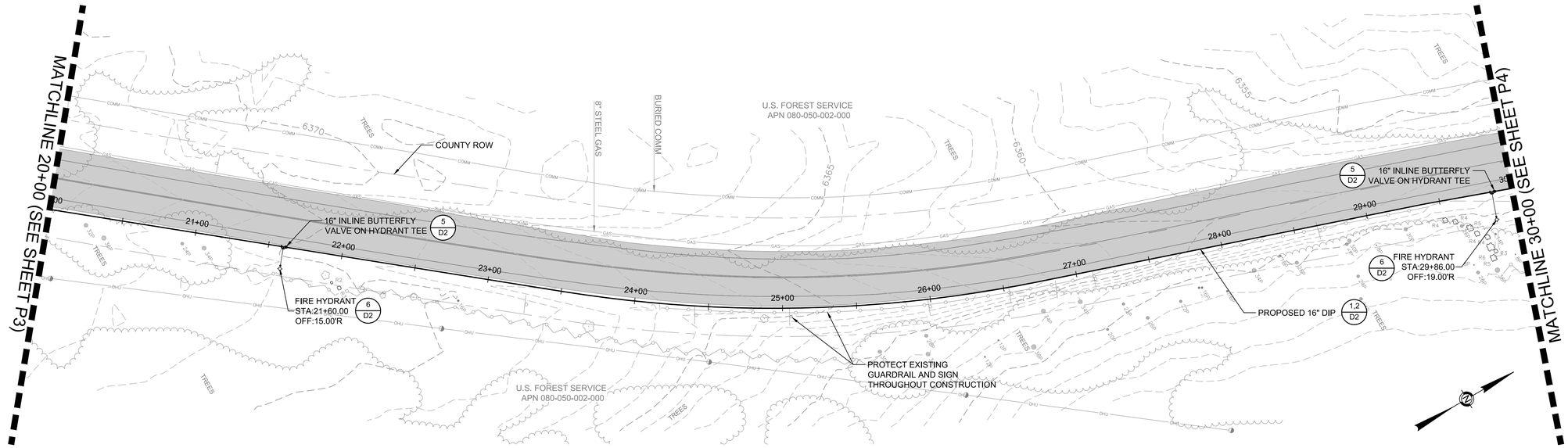
P2
5 OF 22 SHEETS



PLAN

SCALE: 1" = 40'

GRAPHIC SCALE

40 0 20 40 80

1 inch = 40 ft.

NOTES:

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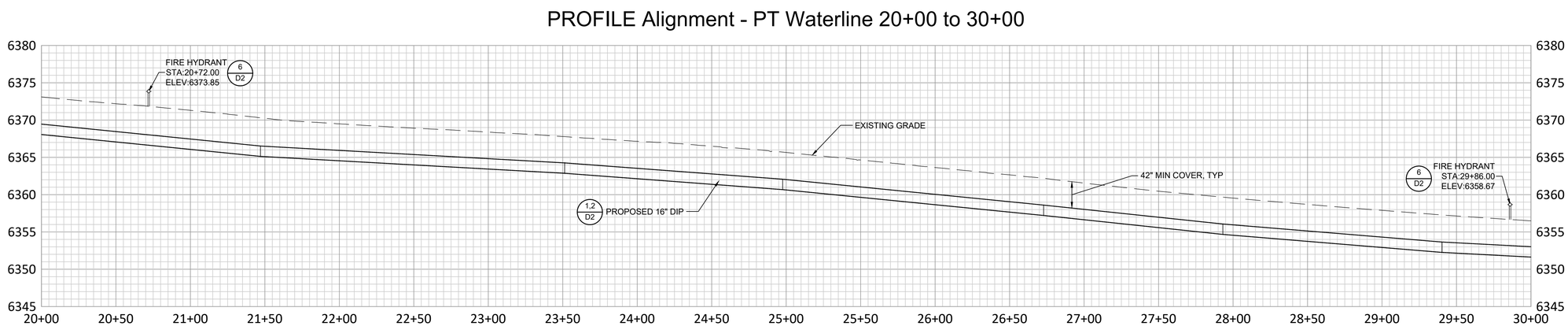


PROFILE

SCALE: 1" = 40' (H)
1" = 8' (V)

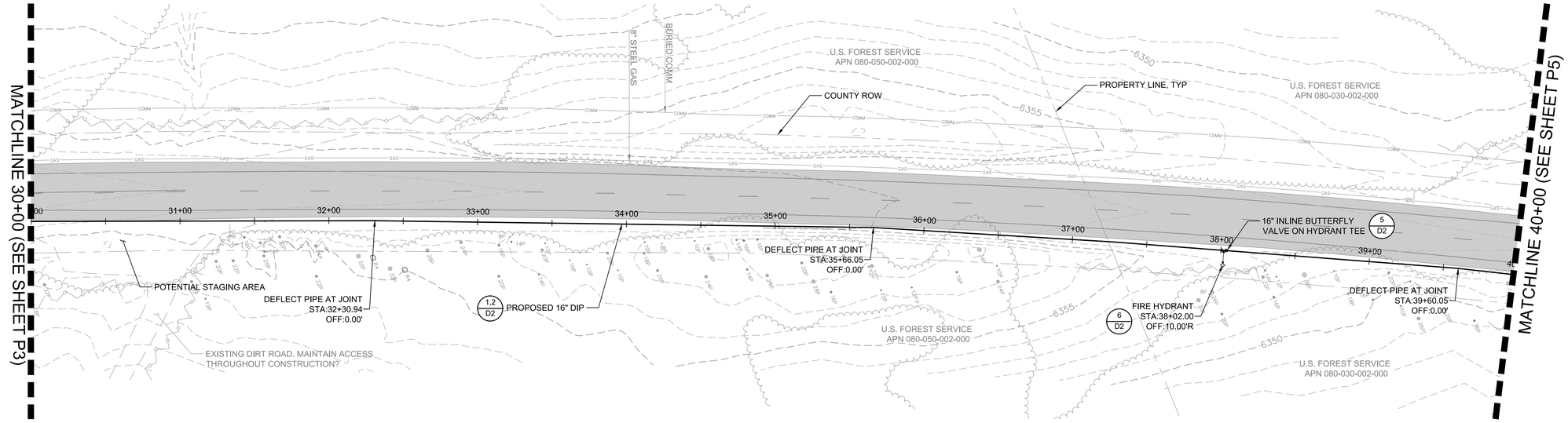
PRELIMINARY - NOT FOR CONSTRUCTION

SOUTH TAHOE PUBLIC UTILITY DISTRICT
A PUBLIC AGENCY
Sewer . 1950 . Water
1275 Meadow Crest Drive South Lake Tahoe, California 96150
Phone (530) 544-6474 Fax (530) 541-4319
WWW.STPUD.US

PIONEER TRAIL WATERLINE IMPROVEMENTS PROJECT STA 20+00 TO 30+00

DATE: 10-11-2021
SCALE: AS SHOWN
DRAWN: AZ
DESIGN: AC/AZ
AS BUILT:

P3
6 OF 22 SHEETS



PLAN

SCALE: 1" = 40'

GRAPHIC SCALE

40 0 20 40 80

1 inch = 40 ft.

NOTES:

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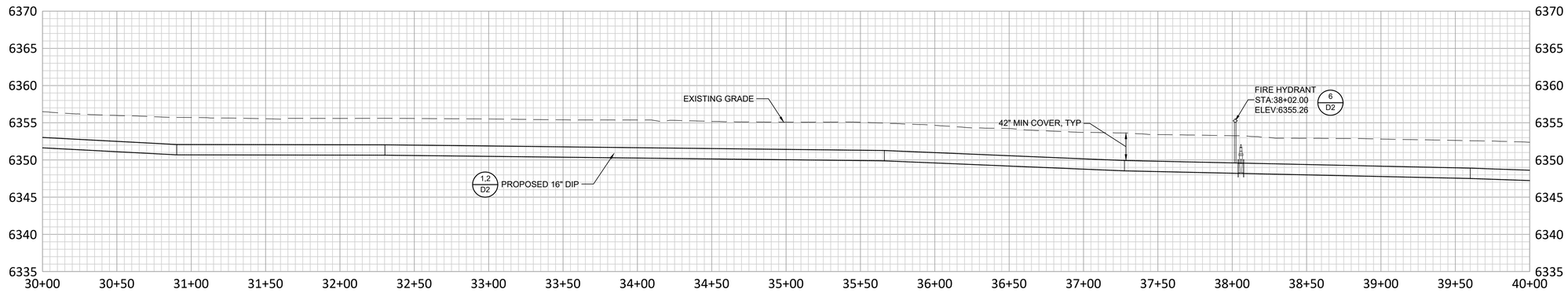


PROFILE

SCALE: 1" = 40' (H)
1" = 8' (V)

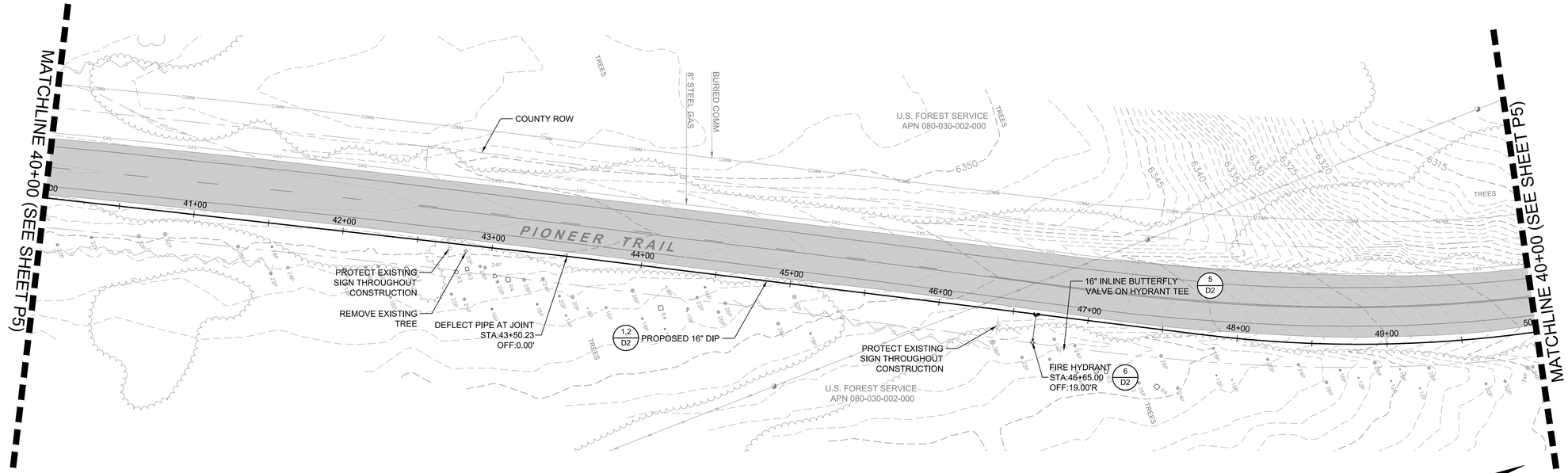
PRELIMINARY - NOT FOR CONSTRUCTION

PIONEER TRAIL WATERLINE
IMPROVEMENTS PROJECT
STA 30+00 TO 40+00

SOUTH TAHOE PUBLIC UTILITY DISTRICT
A PUBLIC AGENCY
Sewer . 1950 . Water
1275 Meadow Crest Drive South Lake Tahoe, California 96150
Phone (530) 544-6474 Fax (530) 541-4319
WWW.STPUD.US

DATE: 10-11-2021
SCALE: AS SHOWN
DRAWN: AZ
DESIGN: AC/AZ
AS BUILT:

P4
7 OF 22
SHEETS



PLAN

SCALE: 1" = 40'

GRAPHIC SCALE

40 0 20 40 80

1 inch = 40 ft.

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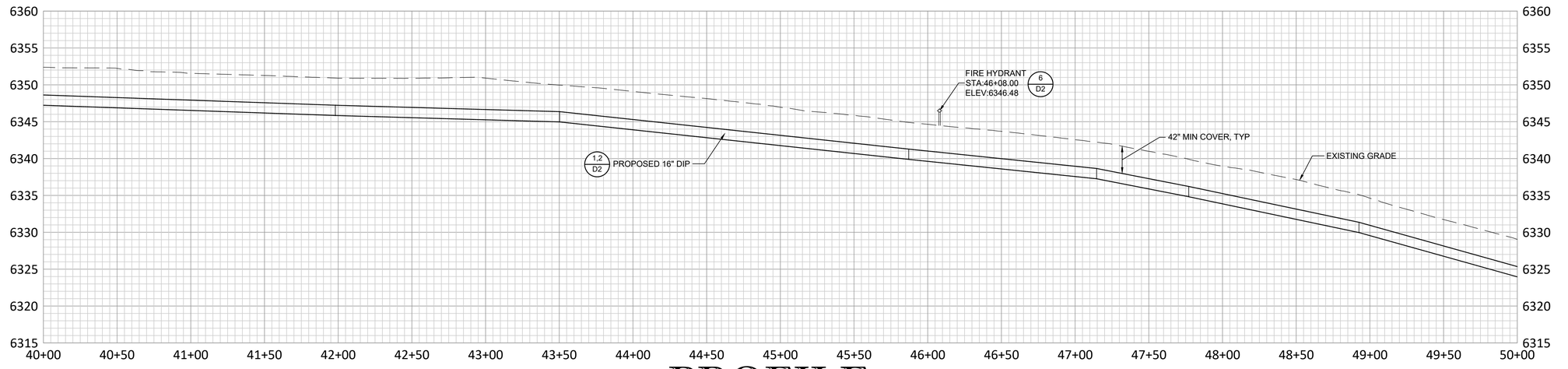

PROFILE

SCALE: 1" = 40' (H)
1" = 8' (V)

PRELIMINARY - NOT FOR CONSTRUCTION

SOUTH TAHOE PUBLIC UTILITY DISTRICT
Sewer . 1950 . Water A PUBLIC AGENCY
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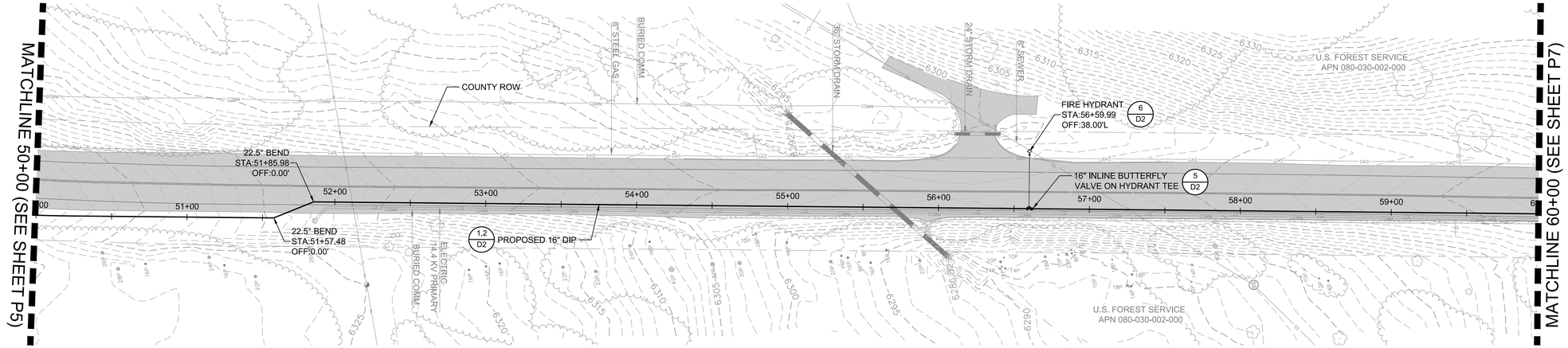
PIONEER TRAIL WATERLINE
IMPROVEMENTS PROJECT
STA 40+00 TO 50+00

DATE: 10-11-2021
SCALE: AS SHOWN
DRAWN: AZ
DESIGN: AC/AZ
AS BUILT:

P5
8 OF 22
SHEETS



PLAN

SCALE: 1" = 40'

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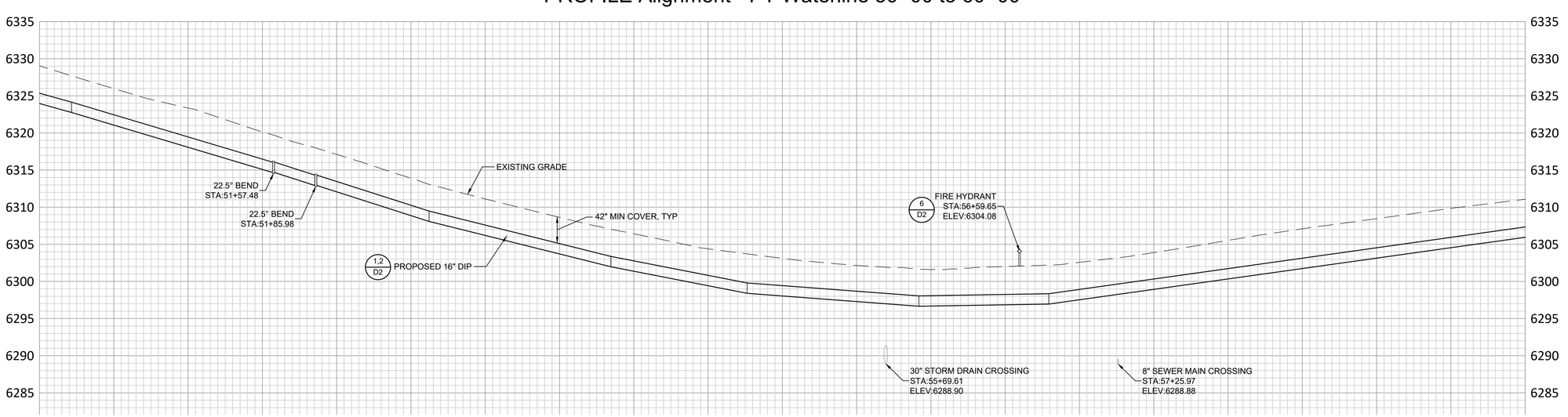
GRAPHIC SCALE

40 0 20 40 80

1 inch = 40 ft.

PRELIMINARY - NOT FOR CONSTRUCTION



PROFILE

SCALE: 1" = 40' (H)
1" = 8' (V)

SOUTH TAHOE PUBLIC UTILITY DISTRICT
Sewer . Water . A PUBLIC AGENCY
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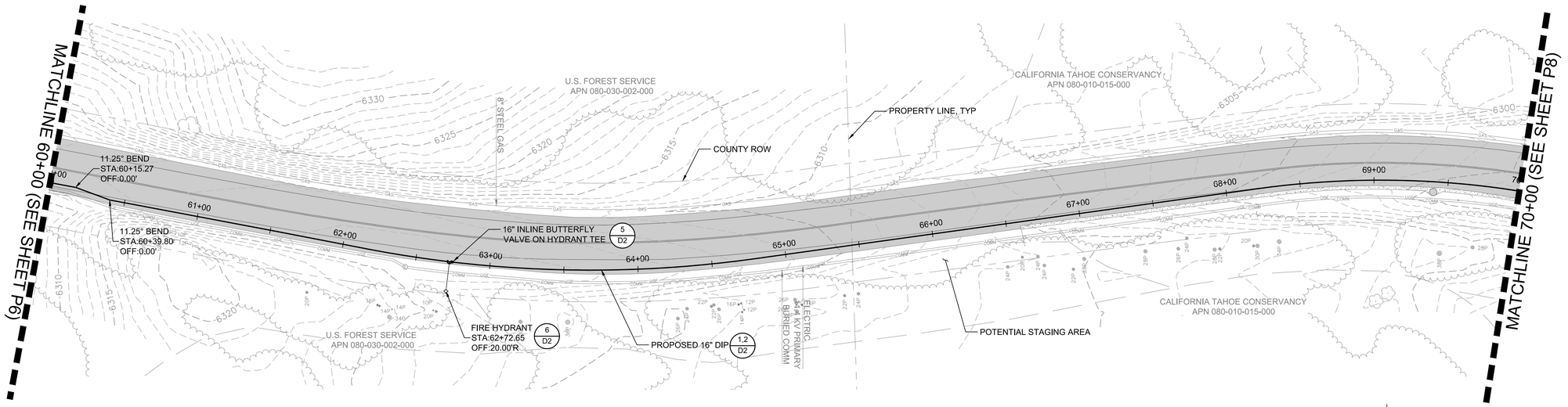
WWW.STPUD.US

PIONEER TRAIL WATERLINE
IMPROVEMENTS PROJECT
STA 50+00 TO 60+00

DATE: 10-11-2021
SCALE: AS SHOWN
DRAWN: AZ
DESIGN: AC/AZ
AS BUILT:

P6
9 OF 22
SHEETS



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PLAN

SCALE: 1" = 40'

GRAPHIC SCALE

40 0 20 40 80

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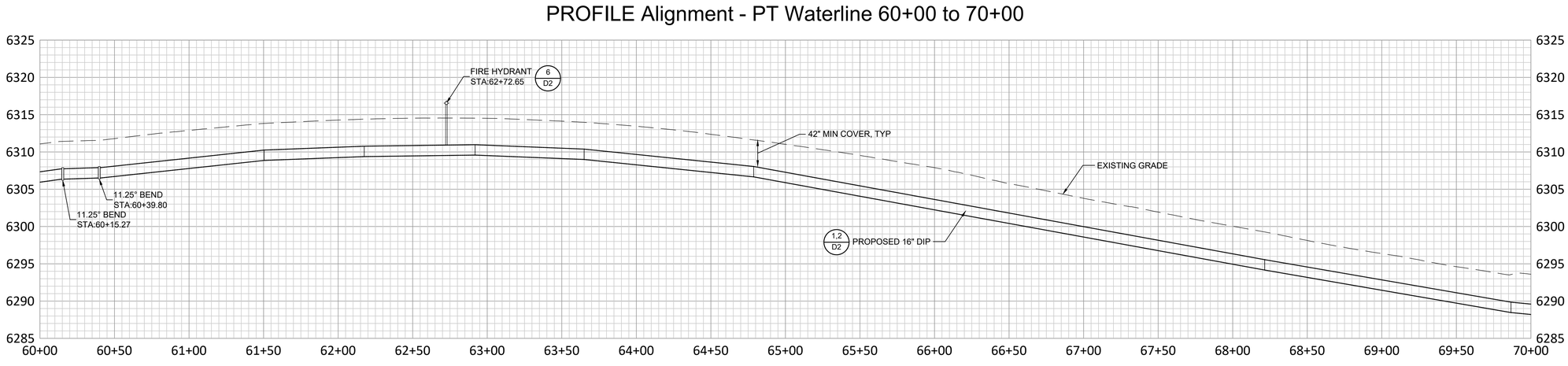

PROFILE

SCALE: 1" = 40' (H)
1" = 8' (V)

PRELIMINARY - NOT FOR CONSTRUCTION

SOUTH TAHOE PUBLIC UTILITY DISTRICT
A PUBLIC AGENCY
Sewer . Water
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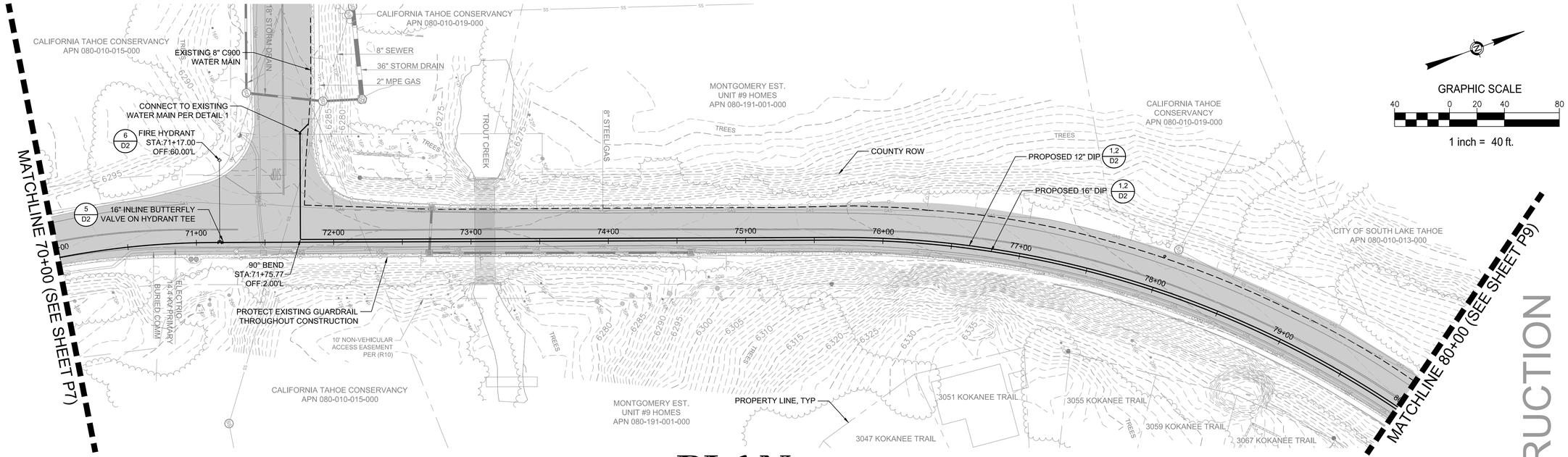
WWW.STPUD.US

PIONEER TRAIL WATERLINE
IMPROVEMENTS PROJECT
STA 60+00 TO 70+00

DATE: 10-11-2021
SCALE: AS SHOWN
DRAWN: AZ
DESIGN: AC/AZ
AS BUILT:

P7
10 OF 22
SHEETS



PLAN

SCALE: 1" = 40'

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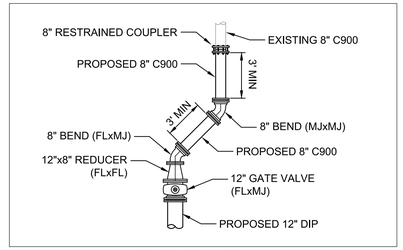
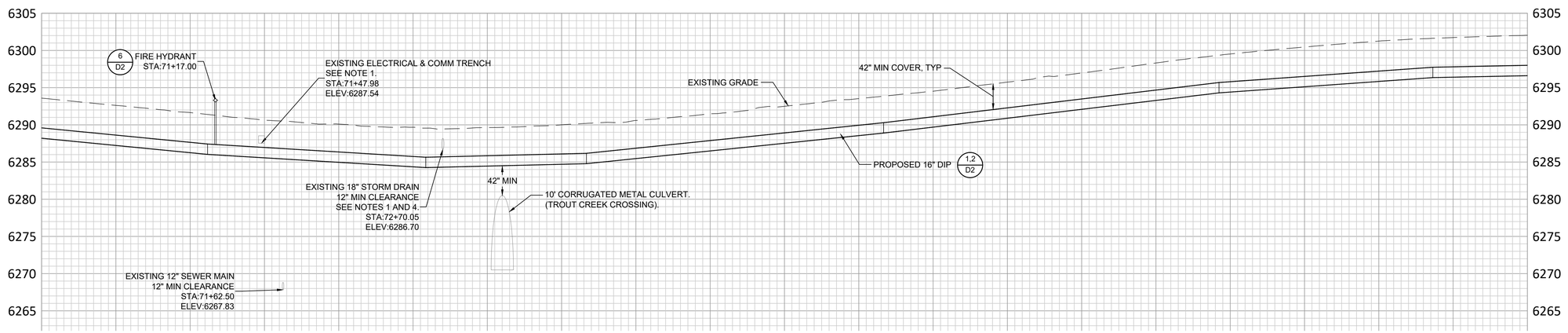


DETAIL 1

SCALE: 1" = 5'

PROFILE Alignment - PT Waterline 70+00 to 80+00



PROFILE

SCALE: 1" = 40' (H)
1" = 8' (V)

PRELIMINARY - NOT FOR CONSTRUCTION

SOUTH TAHOE PUBLIC UTILITY DISTRICT
Sewer . 1950 Water A PUBLIC AGENCY
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WWW.STPUD.US

PIONEER TRAIL WATERLINE
IMPROVEMENTS PROJECT
STA 70+00 TO 80+00

DATE: 10-11-2021
SCALE: AS SHOWN
DRAWN: AZ
DESIGN: AC/AZ
AS BUILT:

P8
11 OF 22
SHEETS

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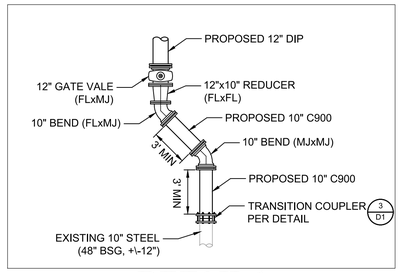
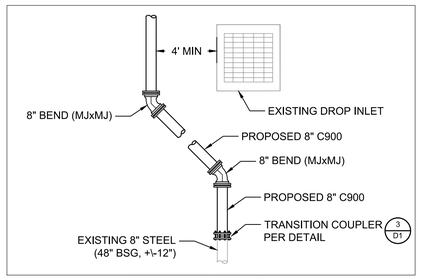


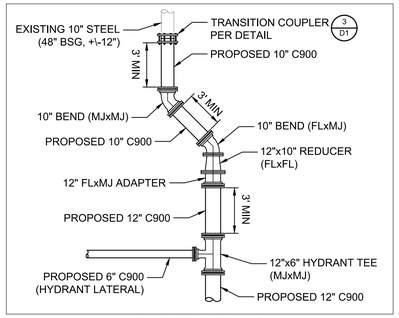
DETAIL 1

SCALE: 1" = 5'



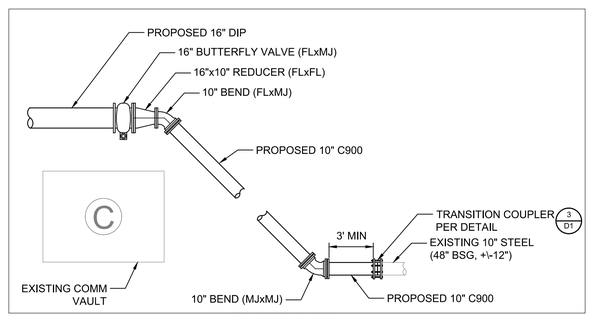
DETAIL 2

SCALE: 1" = 5'



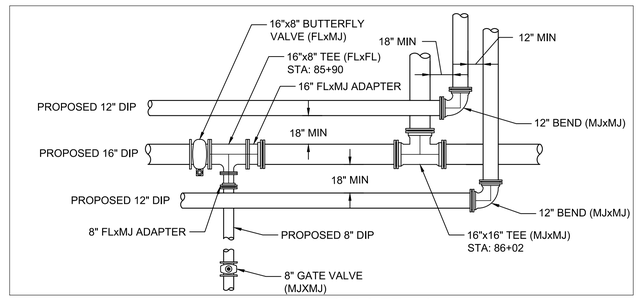
DETAIL 3

SCALE: 1" = 5'



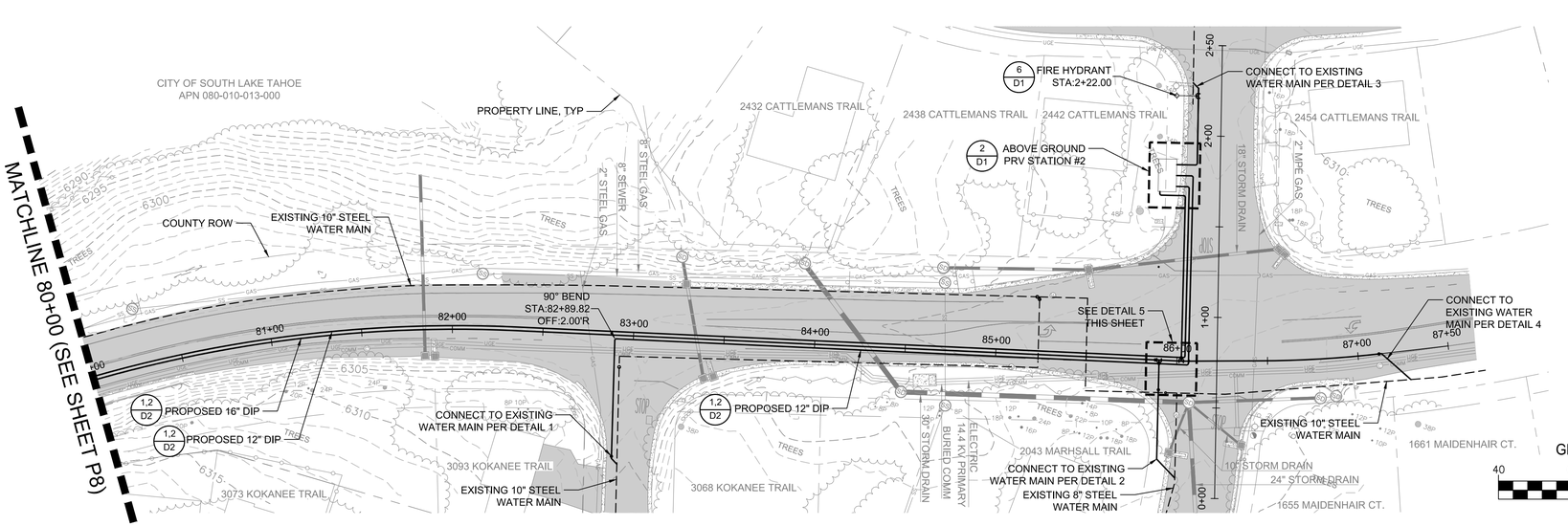
DETAIL 4

SCALE: 1" = 5'



DETAIL 5

SCALE: 1" = 5'



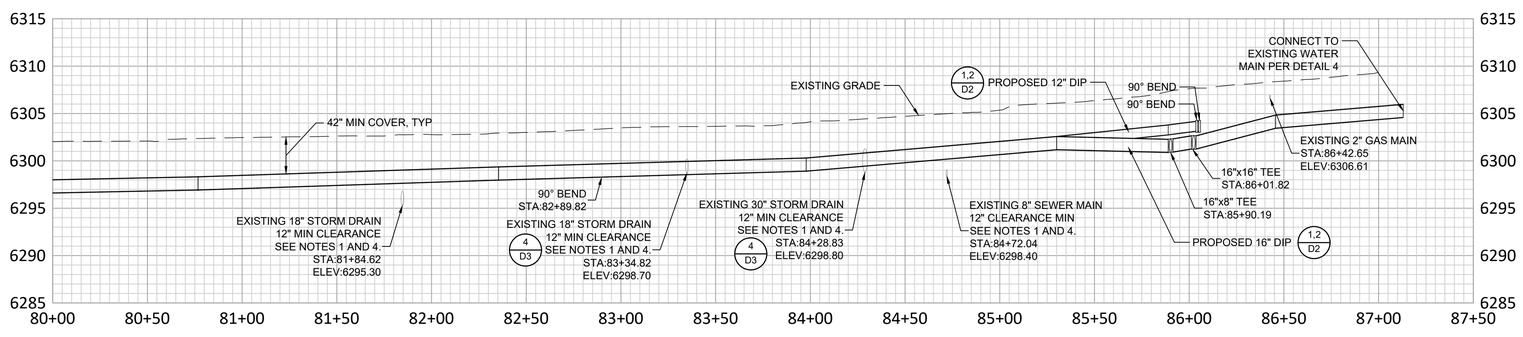
PLAN

SCALE: 1" = 40'

GRAPHIC SCALE

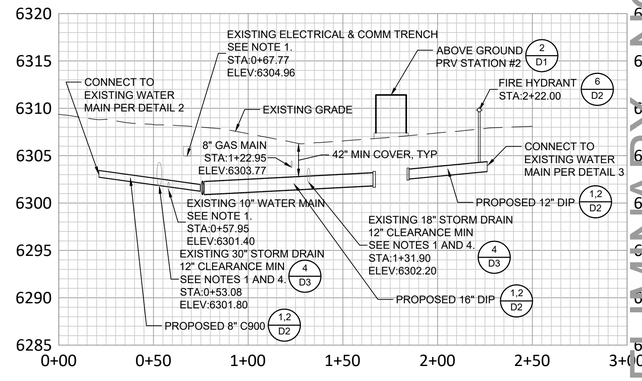
40 0 20 40 80

1 inch = 40 ft.



PROFILE

SCALE: 1" = 40' (H)
1" = 8' (V)



PROFILE

SCALE: 1" = 40' (H)
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PRELIMINARY - NOT FOR CONSTRUCTION

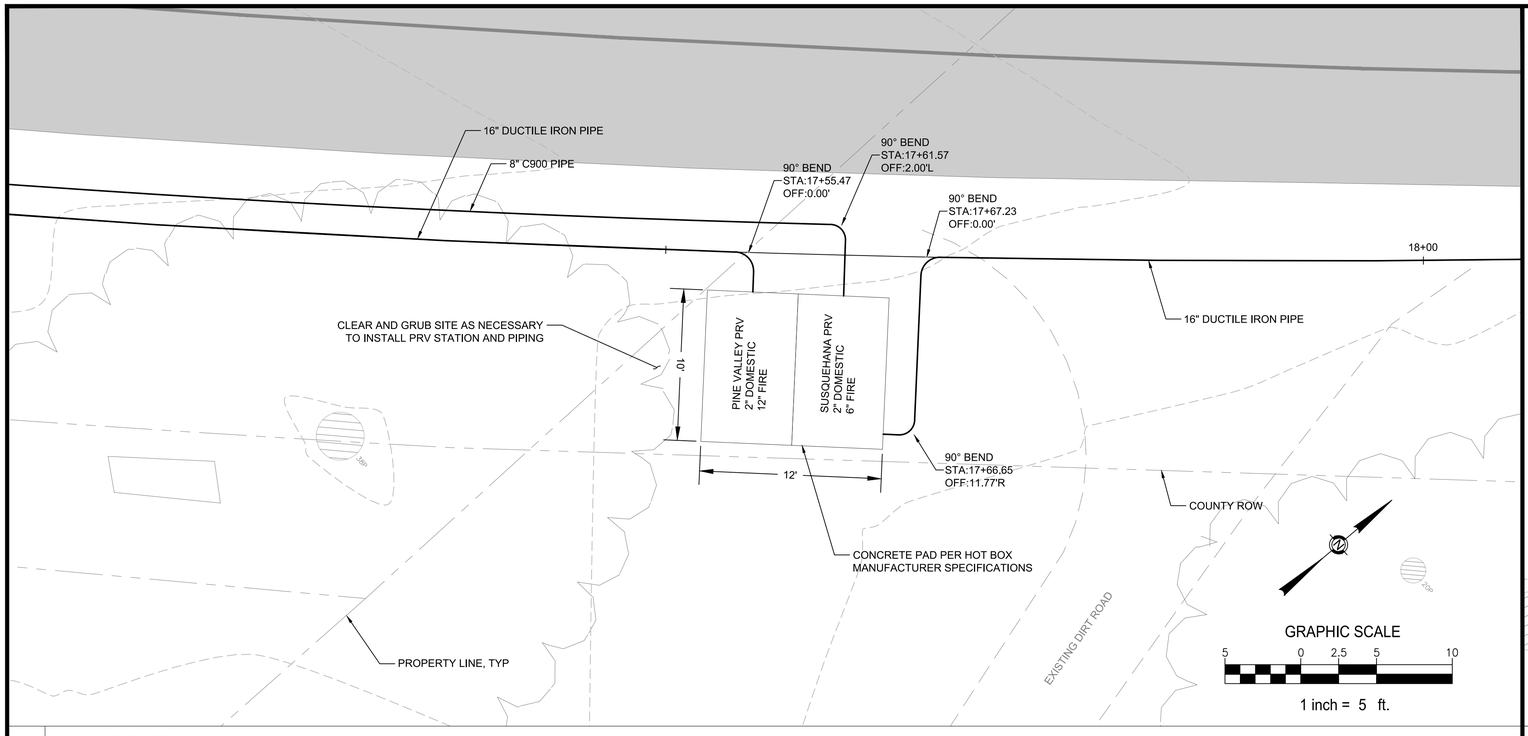
SOUTH TAHOE PUBLIC UTILITY DISTRICT

Sewer . Water . A PUBLIC AGENCY
1275 Meadow Crest Drive South Lake Tahoe, California 96150
Phone (530) 544-6474 Fax (530) 541-4319
WWW.STPUD.US

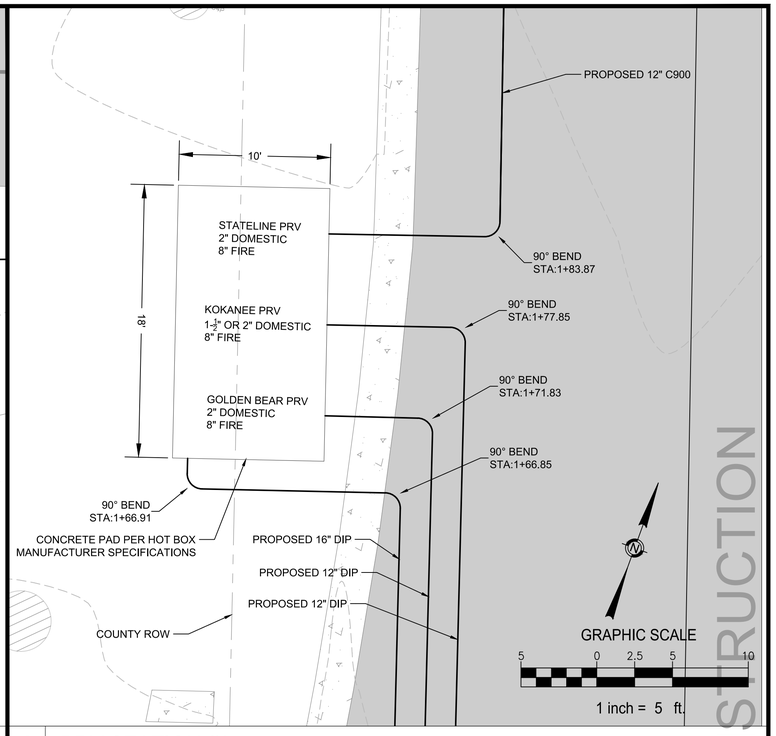
PIONEER TRAIL WATERLINE IMPROVEMENTS PROJECT
STA 80+00 TO 90+00

DATE: 10-11-2021
SCALE: AS SHOWN
DRAWN: AZ
DESIGN: AC/AZ
AS BUILT:

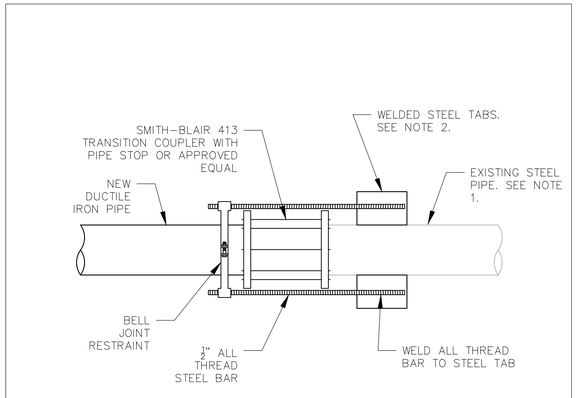
P9
12 OF 22 SHEETS



1 PRV STATION #1



2 PRV STATION #2



NOTES:

1) CONTRACTOR SHALL VERIFY SIZE OF EXISTING STEEL PIPE PRIOR TO PROCURING TRANSITION COUPLER.

2) STEEL TABS TO BE WELDED TO EXISTING STEEL PIPE BY DISTRICT STAFF. COORDINATE WORK WITH DISTRICT HEAVY MAINTENANCE DEPARTMENT. PROVIDE 72 HOURS NOTICE.

3 TRANSITION COUPLER DETAIL

4 NOT USED

5 NOT USED

PRELIMINARY - NOT FOR CONSTRUCTION

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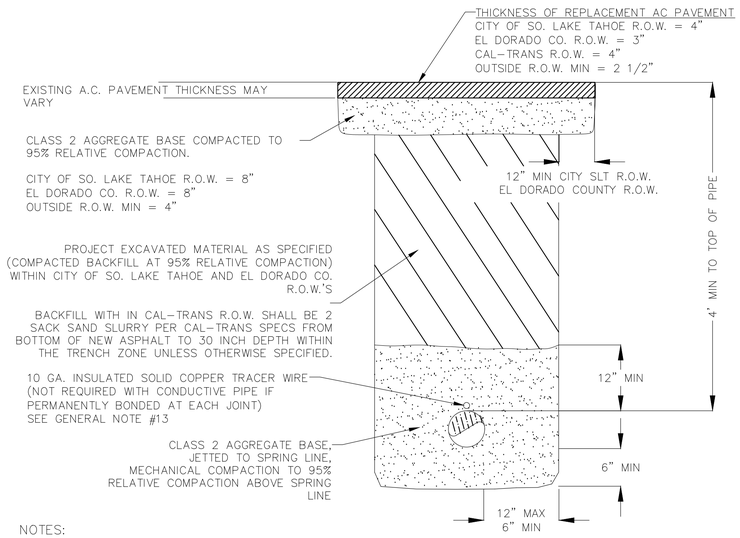
PIONEER TRAIL WATERLINE IMPROVEMENTS PROJECT
DETAILS

DATE: 10-11-2021
SCALE: AS SHOWN
DRAWN: AZ
DESIGN: AC/AZ
AS BUILT:

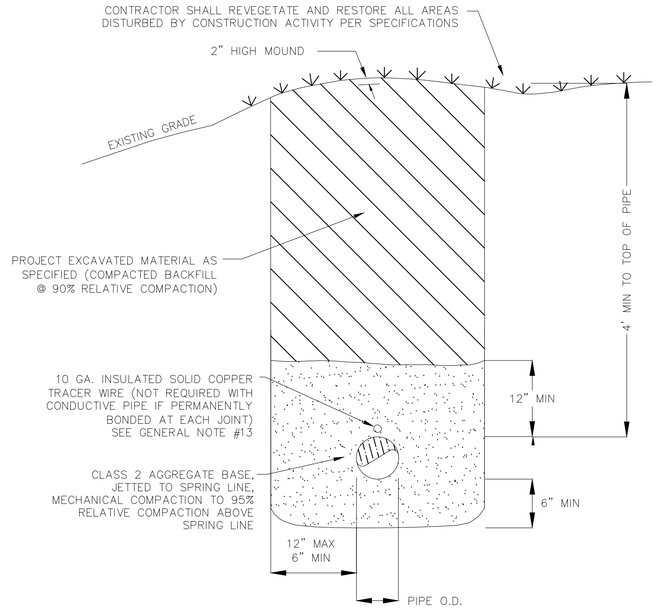
D1
13 OF 22 SHEETS



NOTES:

1) CONTRACTOR PAY ITEM FOR TRENCH WIDTH PLUS TWENTY FOUR INCHES (24") IN CITY OF SOUTH LAKE TAHOE AND EL DORADO COUNTY RIGHT OF WAY. TRENCH WIDTH AND TRENCH PAVEMENT REPLACEMENT EXCEEDING MAXIMUM AS DESCRIBED HERE IN AND IN THE SPECIFICATIONS SHALL BE COMPLETED AT NO ADDITIONAL EXPENSE TO THE DISTRICT.
2) CONTRACTOR SHALL REPLACE ALL TRAFFIC STRIPING DISTURBED BY CONSTRUCTION.
3) NO RECYCLED MATERIAL TO BE USED IN PIPE ZONE.

1 TRENCH DETAIL - WITHIN PAVED AREAS



NOTE:

1) NO RECYCLED MATERIAL TO BE USED IN PIPE ZONE.

2 TRENCH DETAIL - OUTSIDE PAVED AREAS

FITTING AND PIPE RESTRAINT LENGTH REQUIREMENTS

SIZE OF PIPE		TYPE OF FITTING	90° ELBOW	45° ELBOW	22.5° ELBOW	11.25° ELBOW	TEE BRANCH*	TEE W/ PLUG	REDUCER**	VALVE INLINE	VALVE AT END	DEAD END
		TYPICAL INSTALLATION										
6"	PVC		14'	6'	3'	2'	10'*	14'	41'	42'	42'	42'
	DIP		16'	7'	4'	2'	10'*	16'	61'	63'	63'	63'
8"	PVC		18'	8'	4'	2'	10'*	18'	41'	55'	55'	55'
	DIP		21'	9'	5'	2'	10'*	21'	62'	82'	82'	82'
10"	PVC		22'	6'	5'	3'	10'*	22'	43'	66'	66'	66'
	DIP		25'	10'	5'	3'	10'*	25'	63'	99'	99'	99'
12"	PVC		26'	11'	6'	3'	15'	26'	43'	78'	78'	78'
	DIP		29'	12'	6'	3'	23'	29'	64'	117'	117'	117'
14"	PVC		29'	12'	6'	3'	25'	29'	43'	90'	90'	90'
	DIP		33'	14'	7'	4'	39'	33'	64'	133'	133'	133'
16"	PVC		33'	14'	7'	4'	36'	33'	44'	101'	101'	101'
	DIP		36'	15'	8'	4'	55'	36'	65'	150'	150'	150'
18"	PVC		36'	15'	8'	4'	46'	36'	62'	112'	112'	112'
	DIP		40'	17'	8'	4'	71'	40'	92'	167'	167'	167'
24"	PVC		45'	19'	9'	4'	76'	45'	62'	144'	144'	144'
	DIP		51'	21'	10'	4'	116'	51'	92'	214'	214'	214'

* MINIMUM 10' RESTRAINED LENGTH ON EACH RUN ON BOTH SIDES OF BRANCH
** LENGTHS GIVEN ARE VALID FOR UP TO 4" INCREASE IN NOMINAL DIAMETER FROM SIZE SHOWN

NOTES:

1) ALL MINIMUM RESTRAINT LENGTH CALCULATIONS BASED ON MINIMUM 10' PIPE LENGTH'S. MINIMUM PIPE LENGTH FOR DUCTILE IRON PIPE FITTINGS BASED ON POLYETHYLENE ENCASEMENT.
2) NUTS AND BOLTS ON ALL MJ FITTINGS SHALL BE PAINTED WITH TWO COATS OF KOPPERS 505, TNEMEC 46-450', AMERON OR EQUAL, 15 MILS EACH COAT.
3) ALL FLANGES TO BE BURIED, COAT ENTIRE ASSEMBLY WITH PETROLATUM SATURATED FABRIC TAPE. WRAP SYSTEM IN ACCORDANCE WITH SPECIFICATIONS.
4) CONCRETE THRUST BLOCKING MAY BE REQUIRED IN CONJUNCTION WITH MECHANICAL THRUST RESTRAINT SYSTEMS IF DETERMINED NECESSARY BY THE ENGINEER.
5) VALVES PLACED IN A RUN OF PIPE OR AT A DEAD END TO BE RESTRAINED PER DEAD END RESTRAINT LENGTHS.
4) ALL VALVE CLUSTERS (CROSS OR TEE) USE THE RESTRAINT LENGTHS FOR THE 90° ELBOW.

3 RESTRAINT LENGTH SCHEDULE

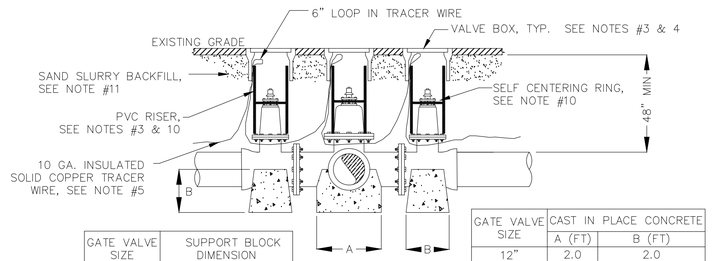
THRUST BLOCK AREA REQUIRED - SQUARE FEET

SIZE OF PIPE	TYPE OF FITTING	90° ELBOW	45° ELBOW	22.5° ELBOW	11.25° ELBOW	TEE BRANCH	TEE W/ PLUG	CROSS W/ PLUG	CROSS W/ PLUGS
	TYPICAL INSTALLATION								
6"		4	4	2	2	4	4	4	4
8"		10	6	3	3	10	10	10	10
10"		12	8	4	4	15	15	15	15
12"		16	10	6	6	20	20	20	20
14"		21	12	6	6	22	21	22	21
16"		27	15	8	8	22	27	27	27
18"		45	25	13	13	32	45	45	45
24"		65	35	18	18	45	65	65	65

NOTES:

1) JOINTS, FLANGE BOLTS AND FACE OF PLUGS TO BE KEPT CLEAR OF CONCRETE.
2) BLOCKS MUST BE POURED AGAINST UNDISTURBED SOIL.
3) THRUST BLOCKS TO BE CONSTRUCTED OF CLASS 423-C-2500 OR BETTER P.C.C.
4) THRUST BLOCKS AREA IS BASED ON TEST PRESSURE OF 150 PSI AND A HORIZONTAL SOIL BEARING STRENGTH OF 1500 PSI.
5) NUTS AND BOLTS ON ALL MJ FITTINGS SHALL BE PAINTED WITH TWO COATS OF KOPPERS 505, TNEMEC 46-450', AMERON OR EQUAL, 15 MILS EACH COAT.

4 TYPICAL THRUST BLOCK



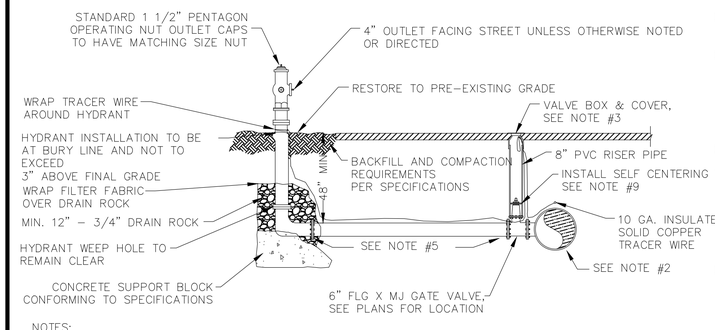
GATE VALVE SIZE	SUPPORT BLOCK DIMENSION
6"	USE 1- 4"X8"X16" PRECAST STRUCTURAL SUPPORT BLOCK
8"	
10"	

GATE VALVE SIZE	CAST IN PLACE CONCRETE	
	A (FT)	B (FT)
12"	2.0	2.0
14"	2.5	2.5
16"	3.0	3.0
18"	3.0	3.0

NOTES:

1) GATE VALVES FOURTEEN INCH (14") DIAMETER AND SMALLER SHALL BE MUELLER OR APPROVED EQUAL AS PER AWWA C-509, RESILIENT RUBBER SEAT RING, WEDGE DISC, NON-RISING STEM. BRONZE STEM NUT AND O-RING SEALS ABOVE AND BELOW THE THRUST COLLAR, WITH TWO INCH (2") SQUARE OPERATING NUT. VALVES SIXTEEN INCH (16") AND LARGER SHALL BE BUTTERFLY VALVES AS SPECIFIED AND SUBMITTED FOR APPROVAL.
2) THE MAIN LINE VALVE CLUSTER SHALL CONSIST OF A FLANGED TEE AND FLANGED X MECHANICAL JOINT VALVES OR FLANGED COUPLING ADAPTERS.
3) VALVE BOX RISER PIPE TO BE EIGHT INCH (8") PVC, SDR-35 AND INSTALLED PERPENDICULARLY CENTERED AROUND AND COVERING THE UPPER VALVE BONNET AND OPERATOR.
4) VALVE BOX SHALL BE CHRISTY G5 BOX WITH METAL LID MARKED "WATER"
5) THE 10 GA. TRACER WIRE SHALL BE ROUTED FROM THE NEW MAIN, LOOPED THROUGH THE VALVE BOXES AND CLAMPED TO THE EXISTING WATER MAIN
6) USING STAINLESS STEEL CLAMPS. CONTINUITY BETWEEN ALL NEW AND EXISTING PIPELINES SHALL BE MAINTAINED.
7) EXPOSED NUTS AND BOLTS ON MJ FITTINGS TO BE PAINTED WITH TWO COATS OF KOPPERS 505, TNEMEC 46-450, AMERON OR EQUAL 15 MILS EACH COAT.
8) ALL FLANGES TO BE BURIED, COAT ENTIRE ASSEMBLY WITH PETROLATUM SATURATED FABRIC TAPE WRAP SYSTEM IN ACCORDANCE WITH DISTRICT REQUIREMENTS.
9) CONCRETE FOR SUPPORT BLOCKS SHALL BE FORMED TO MAINTAIN MINIMUM TWO INCH (2") CLEARANCE FROM FLANGE BOLTS.
10) PRE CAST STRUCTURAL SUPPORT BLOCKS SHALL BE SOLID AND CONFORM TO ASTM C90.
11) PROVIDE AND INSTALL SELF CENTERING ALIGNMENT RING WITH SLIDING ADJUSTER AS MANUFACTURED BY THE AMERICAN FLOW CONTROL CORP. AND SUPPLIED FOR A TRENCH ADAPTER VALVE BOX ASSEMBLY.
12) THE REQUIREMENTS FOR TRENCH BACK FILL AT ALL INTER TIE VALVE CLUSTERS SHALL INCLUDE THE PLACEMENT OF TWO SACK SAND SLURRY WITHIN 3' OF ALL VALVE BOXES BETWEEN THE AB PIPE ZONE MATERIAL AND BOTTOM OF AC PAVEMENT. THIS REQUIREMENT SHALL NOT APPLY TO SINGLE VALVE INSTALLATIONS.
13) FOR ALL VALVE OPERATING NUTS EXCEEDING FORTY EIGHT INCHES (48") BURY THE CONTRACTOR SHALL PROVIDE VALVE OPERATOR EXTENSIONS WITH TRASH RINGS TO A MINIMUM DEPTH OF THIRTY SIX INCHES (36").

5 WATER VALVE ASSEMBLY



NOTES:

1) FIRE HYDRANT SHALL BE MUELLER A-423 "CENTURION" WITH 2-2 1/2" HOSE NOZZLES AND 1-4" PUMPER NOZZLE AND CONFORM TO AWWA C-502-80. HYDRANTS WITHIN THE CITY OF SOUTH LAKE TAHOE SHALL BE PAINTED WITH A MINIMUM OF THREE COATS OF SPRAY MATE "ALUMINUM METALLIC", COLOR CODE 0180 OR APPROVED EQUAL.
2) FIRE LINE TEE ON NEW MAIN SHALL BE DUCTILE IRON MJ X MJ WITH 6" FLANGED BRANCH THE SAME PRESSURE RATING AS THE PIPELINE BEING INSTALLED.
3) GATE VALVE SHALL BE MJ X FLANGED RESILIENT WEDGE GATE VALVE EPOXY LINED AND COATED. WITH CHRISTY G5 VALVE BOX AND METAL LID STAMPED "WATER".
4) HYDRANT THRUST BLOCK SHALL HAVE A MINIMUM BEARING SURFACE OF 6 SQ. FEET. ALL FLANGES TO BE BURIED, COAT ENTIRE ASSEMBLY WITH PETROLATUM SATURATED FABRIC TAPE WRAP SYSTEM IN ACCORDANCE WITH DISTRICT REQUIREMENTS, CONCRETE FOR THRUST BLOCKS SHALL BE FORMED TO MAINTAIN A MINIMUM CLEARANCE OF TWO INCHES (2") FROM FLANGE BOLTS.
5) THE ENTIRE HYDRANT ASSEMBLY FROM THE MAIN TO THE HYDRANT SHALL BE RESTRAINED. FIRE LINE, GATE VALVE AND HYDRANT MECHANICAL JOINTS TO BE INSTALLED WITH US PIPE MJ GRIPPER GLAND, EBAA-IRON MEGALUG 1100SD SERIES FOR DUCTILE IRON PIPE. RESTRAINED JOINTS FOR PVC PIPE SHALL BE EBAA-IRON MEGALUG SERIES 2000 OR 1100PV OR APPROVED EQUAL.
6) HYDRANT ASSEMBLY SHALL PASS HYDROSTATIC PRESSURE AND DISINFECTION TESTING AS SPECIFIED ALONG WITH NEW PIPELINE PRIOR TO BEING PLACED INTO SERVICE.
7) HYDRANTS SHALL BE LOCATED AS SHOWN ON THE PROJECT DRAWINGS, TWO FEET (2') INSIDE R.O.W. OR AS DIRECTED BY THE DISTRICT ENGINEER AND MUST HAVE A MINIMUM OF TEN FEET (10') CLEARANCE FROM ANY DRIVEWAY. THE EXACT LOCATIONS FOR THE FIRE HYDRANT INSTALLATIONS WILL BE DETERMINED IN THE FIELD. IN THE CITY OF SLT HYDRANTS SHALL BE AT LEAST 6' BEYOND EOP, 2' BEHIND BACK OF CURB, AND AT LEAST 50' FROM
8) THE CENTERLINE OF INTERSECTIONS.
9) HYDRANTS SHALL BE INSTALLED WITH THE BOTTOM OF THE PUMPER NOZZLE A MINIMUM OF EIGHTEEN INCHES (18") ABOVE THE GROUND.
10) PROVIDE AND INSTALL SELF-CENTERING ALIGNMENT RING WITH SLIDING ADJUSTER AS MANUFACTURED BY THE AMERICAN FLOW CONTROL CORP. AND SUPPLIED FOR A TRENCH ADAPTER VALVE BOX ASSEMBLY.
11) FOR ALL VALVE OPERATING NUTS EXCEEDING 48" BURY THE CONTRACTOR SHALL PROVIDE VALVE OPERATOR EXTENSIONS WITH TRASH RINGS TO A MINIMUM DEPTH OF THIRTY SIX INCHES (36").

6 FIRE HYDRANT ASSEMBLY

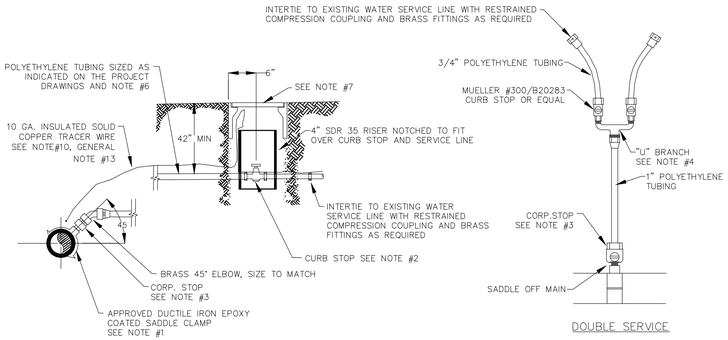
PRELIMINARY - NOT FOR CONSTRUCTION

SOUTH TAHOE PUBLIC UTILITY DISTRICT
Sewer . 1950 . Water
A PUBLIC AGENCY
1275 Meadow Crest Drive South Lake Tahoe, California 96150
Phone (530) 544-6474 Fax (530) 541-4319
WWW.STPUD.US

PIONEER TRAIL WATERLINE IMPROVEMENTS PROJECT
DETAILS

DATE: 10-11-2021
SCALE: AS SHOWN
DRAWN: AZ
DESIGN: AC/AZ
AS BUILT:

D2
14 OF 22 SHEETS



NOTES:

1) ALL SERVICE CONNECTIONS SHALL CONFORM TO AWWA C-800-84 AND BE INSTALLED FROM THE NEW MAIN TO EACH EXISTING SERVICE LINE. SERVICE SADDLE SHALL BE DOUBLE STAINLESS STEEL STRAP, FUSION BONDED EPOXY COATED SMITH BLAIR #317 OR APPROVED EQUAL.

2) NEW CURB-STOP SHALL BE SIZED AS INDICATED ON PLANS AND BE MUELLER #300/B20283 OR APPROVED EQUAL.

3) CORPORATION STOP SHALL BE SIZED AS INDICATED ON PLANS AND BE MUELLER #300/B20013 OR APPROVED EQUAL FOR 3/4" TO 1" USE MUELLER #300/2969 OR APPROVED EQUAL FOR 1 1/2" TO 2".

4) SINGLE HOUSE SERVICE SHALL BE 3/4" POLYETHYLENE WITH 3/4" FITTINGS. DOUBLE HOUSE SERVICE SHALL BE 1" POLYETHYLENE TO FORD #U68-43 SPACING "U" BRANCH OR EQUAL WITH TWO 3/4" CURB-STOPS AND SERVICE CONNECTIONS.

5) ALL WATER SERVICES SHALL HAVE A HAND-TAMPED SAND BEDDING NINE INCHES (9") ABOVE AND BENEATH THE TUBING AND SHALL HAVE SIX INCHES (6") MINIMUM CLEARANCE ON EACH SIDE.

6) ALL WATER SERVICE SHALL BE POLYETHYLENE 200 PSI CLASS IRON PIPE SIZE FOR 3/4" TO 1". COPPER TUBE SIZE FOR 1 1/2" TO 2". PIPE STIFFENER INSERTS TO BE USED AT ALL CONNECTIONS.

7) WATER VALVE BOX SHALL BE CHRISTY G5 FOR SINGLE SERVICE, AND CHRISTY B1017 FOR DOUBLE SERVICE OR APPROVED EQUAL WITH A METAL LID MARKED "WATER". WATER VALVE BOX INSTALLED IN ASPHALT SHALL BE 1/4" TO 1/2" BELOW FINISH GRADE.

8) ALL CORP-STOPS, CURB-STOPS AND POLYETHYLENE SERVICE LINES SHALL BE DISINFECTED AND HYDROSTATIC TESTED ALONG WITH THE NEW MAIN PRIOR TO BEING PLACED INTO SERVICE.

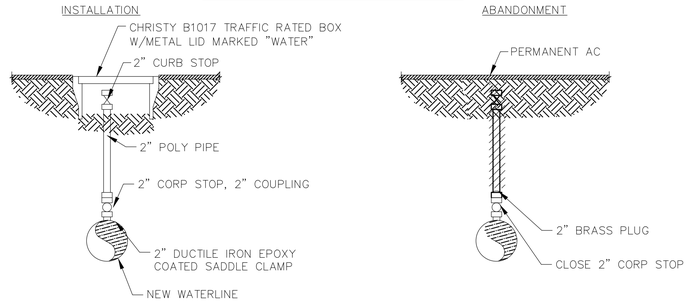
9) ALL TUBING CONNECTIONS SHALL BE THE COMPRESSION TYPE; MUELLER OR APPROVED EQUAL.

10) 10 GA. SOLID COPPER TRACER WIRE SHALL BE INSTALLED FROM THE NEW MAIN ALONG NEW SERVICE LINE TO THE EXISTING WATER SERVICE LINE WITH A SIX INCH (6") MINIMUM LOOP AT THE TOP OF THE RISER PIPE.

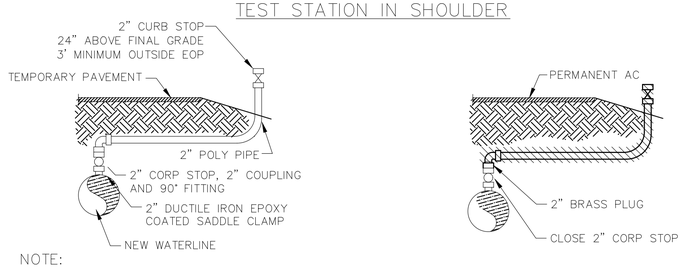
11) WATER SERVICE CONNECTIONS INSTALLED ON THE OPPOSITE SIDE OF THE STREET FROM WATER MAIN SHALL UTILIZE TRENCHLESS TECHNOLOGY (I.E. PNEUMATIC RAM OR MOLE) OR OTHER METHOD APPROVED BY DISTRICT ENGINEER.

1 WATER SERVICE

TEST STATION IN ASPHALT



TEST STATION IN SHOULDER



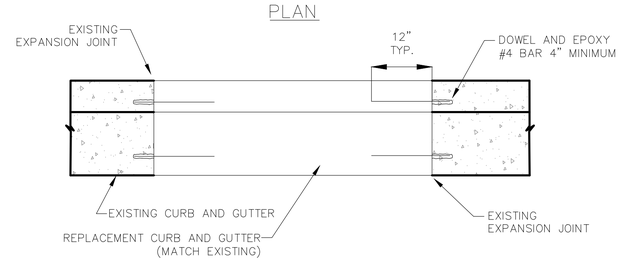
NOTE:

1) CORPORATION STOP SHALL BE MUELLER #300/2969 OR APPROVED EQUAL.

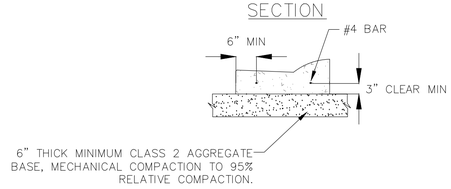
2) CONTRACTOR TO DEMOLISH PIPING AFTER ALL DISINFECTION TESTING IS COMPLETE.

2 TEST STATION

PLAN



SECTION

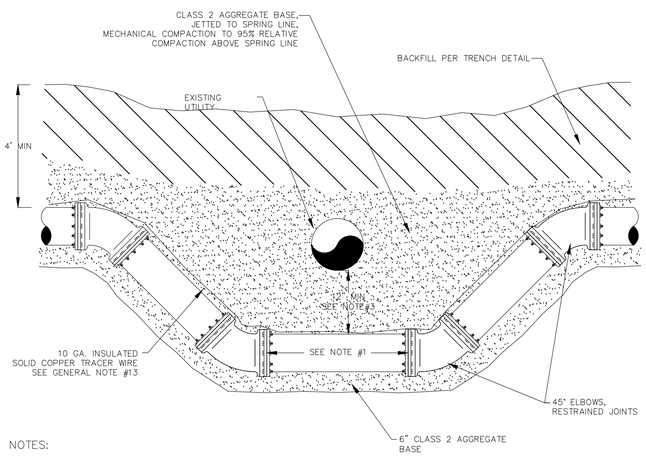


NOTES:

1) WHERE REQUIRED FOR WATERLINE AND SERVICE INSTALLATIONS, CURB AND GUTTER REPLACEMENT SHALL BE COMPLETELY REPLACED BETWEEN EXISTING EXPANSION JOINTS. CURB AND GUTTER REPLACEMENT EXCEEDING MAXIMUM AS DESCRIBED HERE IN AND IN THE SPECIFICATIONS SHALL BE COMPLETED AT NO ADDITIONAL EXPENSE TO THE DISTRICT.

2) CONCRETE FOR CURB AND GUTTER SHALL BE CLASS A (4,000 PSI) PER THE SPECIFICATIONS.

3 CURB AND GUTTER REPLACEMENT



NOTES:

1) CONSTRUCT WATERLINE USING ONE OF THE FOLLOWING METHODS:

   A) THE WATER MAIN SHALL BE CONSTRUCTED PLACING A FULL STICK OF PIPE CENTER ON THE CROSSING, WITH NO PIPE JOINTS IN THAT SECTION, OR;
   B) THE WATER MAIN IS TOTALLY ENCASED IN AT LEAST FOUR INCHES (4") OF TWO (2) SACK DRY SAND CEMENT SLURRY FOR A DISTANCE OF AT LEAST TEN FEET (10') ON EACH SIDE OF THE POINT OF CROSSING, OR;
   C) THE WATER MAIN IS INSTALLED IN A PIPE SLEEVE THAT EXTENDS, WITHOUT JOINTS, AT LEAST TEN FEET (10') ON EACH SIDE OF THE POINT OF CROSSING.

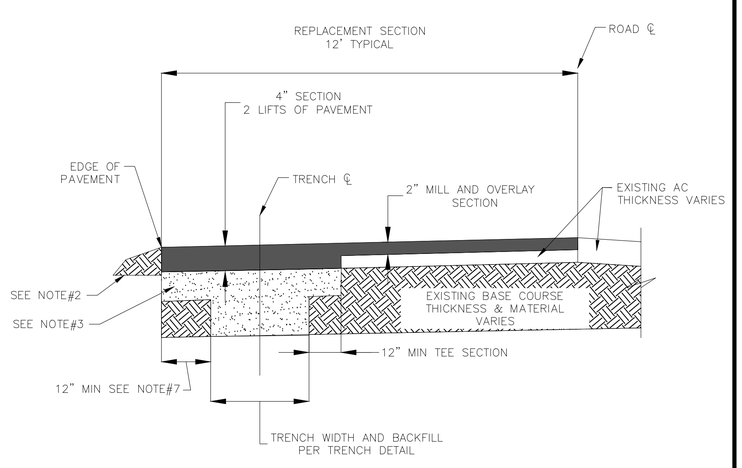
2) ALL JOINTS SHALL BE RESTRAINED.

3) IF COMPACTION UNDER EXISTING UTILITY CAN NOT BE ACCOMPLISHED, USE TWO (2) SACK SAND SLURRY TO FILL THE VOID UNDER THE UTILITY.

4) NO RECYCLED BASE IN PIPE ZONE BACKFILL OF NEW WATER MAIN OR EXISTING UTILITY.

5) DUE TO FIELD CONDITIONS ONE OR MORE 45° ELBOWS MAY BE EXCHANGED FOR 90° ELBOWS AS REQUIRED TO MAKE OFFSET.

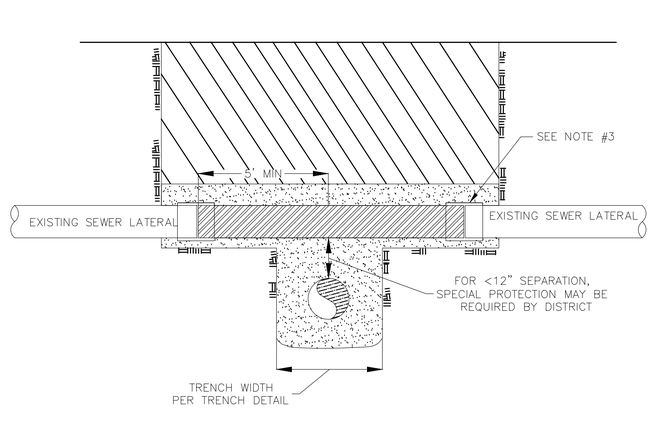
4 WATER MAIN VERTICAL OFFSET



NOTE:

1) APPLY TACK COAT ON ALL EDGES SAWCUT OR GROUND OUT
2) CONTRACTOR TO BACK FINISHED PAVING WITH 12" MINIMUM GRANULAR MATERIAL (NATIVE/GRINDINGS/TYPE II) AND WHEEL ROLL TO STABILIZE
3) TYPE II AGG BASE 8" MINIMUM THICKNESS COMPACTED TO 95% RELATIVE COMPACTION
4) CONTRACTOR TO REPLACE ALL STRIPPING DAMAGED OR REMOVED DURING CONSTRUCTION
5) CONTRACTOR TO REMOVE ANY LOOSE ASPHALT IN GRIND OUT SECTION PRIOR TO INSTALL OF NEW ASPHALT
6) ALL PAVING REPLACEMENT LIMITS TO FIELD VERIFIED WITH ENGINEER
7) IF TRENCH EDGE IS WITHIN 36" OF EDGE OF PAVING CONTINUE TEE TO EDGE, IF THE DISTANCE IS GREATER THAN 36" STOP TEE AT 12"

5 SINGLE LANE PAVEMENT REPLACEMENT



NOTES:

1) WHERE SEWER LATERAL IS DAMAGED DURING CONSTRUCTION, THE LATERAL SHALL BE CUT AND REPLACED FOR A DISTANCE OF AT LEAST FIVE FEET (5') ON EACH SIDE OF THE POINT OF CROSSING.

2) ALL SEWER LATERAL REPLACEMENT PIPING SHALL BE PVC SDR 26 UNLESS NOTED OR APPROVED BY THE DISTRICT.

3) ALL COUPLING, ADAPTERS AND MATERIALS USED TO CONNECT PVC SDR 26 PIPING TO OTHER PIPE MATERIALS SHALL BE APPROVED BY THE DISTRICT.

4) ALL SEWER LATERAL REPAIRS SHALL BE BACKFILLED WITH COMPACTED OR JETTED CLASS 2 AGGREGATE BASE MATERIAL AS REQUIRED BY THE DISTRICT PER TRENCH DETAIL.

6 NOT USED

PRELIMINARY - NOT FOR CONSTRUCTION

SOUTH TAHOE PUBLIC UTILITY DISTRICT
Sewer . 1950 Water A PUBLIC AGENCY
1275 Meadow Crest Drive South Lake Tahoe, California 96150
Phone (530) 544-6474 Fax (530) 541-4319
WWW.STPUD.US

PIONEER TRAIL WATERLINE IMPROVEMENTS PROJECT
DETAILS

DATE: 10-11-2021
SCALE: AS SHOWN
DRAWN: AZ
DESIGN: AC/AZ
AS BUILT:

D3
15 OF 22 SHEETS

Appendix B: STPUD – TRPA Memorandum of Understanding

TAHOE REGIONAL PLANNING AGENCY

Mail
PO Box 5310
Stateline, NV 89449-5310

Location
128 Market Street
Stateline, NV 89449

Contact
Phone: 775-588-4547
Fax: 775-588-4527
www.trpa.org

MEMORANDUM OF UNDERSTANDING
for
PUBLIC WORKS PROVIDERS

This Memorandum of Understanding (MOU) is entered between the Tahoe Regional Planning Agency (TRPA) and the public works provider(s) listed in Attachment "A," herein referred to as "MOU Partner." TRPA's authority to enter into this MOU with local governmental authorities rests in Article VI (m) of the TRPA Compact (Public Law 96-551) and Section 2.6 of the TRPA Code of Ordinances ("Code"). The authority of the MOU Partner to enter into this MOU is described in Attachment "A." This MOU shall become part of the TRPA Code under Section 2.6 upon signing by TRPA and the MOU Partner.

PART 1 – GENERAL PROVISIONS

COMMON OBJECTIVES	TRPA and the MOU Partner (the "Parties) have a common objective to wisely use and conserve the waters and resources in the Lake Tahoe Region, and enhance the effectiveness of government through the efficient implementation of the TRPA Regional Plan.
TERM OF AGREEMENT	This MOU is effective upon the signing of Attachment "A" by the Parties and shall remain in effect until terminated by either party following a 60-day notice in writing.
DEFINITION OF TERMS	Terms in this MOU shall be defined in accordance with the TRPA Code.
INTERPRETATION AND SEVERABILITY	The provisions of this MOU are subject to the interpretation and severability provisions of Section 1.6 of the TRPA Code.
DISTRIBUTION OF FUNCTIONS	Activities authorized by TRPA under this MOU are described in Attachment B (Table of Exempt (E) and Qualified Exempt (QE) Activities). These activities are designated as either "Exempt" or "Qualified Exempt." Attachment B modifies the scope of Exempt and Qualified Exempt activities otherwise allowed in Section 2.3 of the TRPA Code. Activities that are not Exempt or Qualified Exempt are subject to the project review requirements of Section 2.2 of the Code and are subject to TRPA review and approval.
LOSS OF EXEMPTION	Any "exempt" or "qualified exempt" activity set forth herein shall be considered a "project" outside the scope and authorities granted under this MOU if the TRPA Executive Director, or his/her designee, determines that the activity may have a substantial effect on natural resources in the TRPA Region as defined in the TRPA Code.

COMMUNICATION	The Parties shall each designate a liaison for direct communication of matters related to this MOU. The MOU Partner liaison and the TRPA MOU Coordinator shall meet at least once per year to review this MOU and to establish policy directives, training needs, and renew communications.
TRAINING	TRPA shall provide initial training to the MOU Partner regarding the provisions of this MOU. Subsequent training shall be provided for matters affecting this MOU, including but not limited to: changes to the TRPA Code or other provisions of the Regional Plan; policy or procedural changes; and training needed for corrective actions or to clarify MOU provisions.
EXAMINATION OF RECORDS	Every record of activity under this MOU shall be open for examination in accordance with Article VI (o) of the TRPA Compact.
PROCEDURES FOR RESOLVING DISPUTES	In the event of a dispute, difference of interpretation, or appeal of a decision regarding the terms or conditions of this MOU, settlement shall first be pursued by the MOU liaisons, and if the liaisons are unable to resolve the dispute then by the executive officers of the Parties. If the executive officers are unable to resolve a dispute, the TRPA Executive Director may terminate the MOU or recommend that the matter be heard by the TRPA Governing Board.
EMERGENCIES	TRPA may issue an emergency permit for a situation or circumstance which poses immediate danger to life, property or the environment and demands immediate action in order to comply with the Compact, Regional Plan, Code and/or Rules of Procedure. Emergency permit requests may be made by letter, if time allows, or by telephone or in person, if time does not allow. Requests shall include a description of the nature and location of the emergency and the work to be performed. Upon TRPA determination that an emergency does exist, initial permit approval may be given orally. In the event an emergency exists and the TRPA offices are closed, or a means of communication is not readily available, the MOU Partner may proceed to take necessary action while diligently continuing to contact TRPA.
ENVIRONMENTAL DOCUMENTATION	The MOU Partner shall certify that a Qualified Exempt Activity allowed under this MOU shall not have a negative impact on the environment by completing a TRPA Initial Environmental Checklist (IEC) for the activity. Activities requiring a TRPA Environmental Assessment (EA) or Environmental Impact Statement (EIS) are not covered by this MOU.
RECORD KEEPING AND REPORTING	The MOU Partner shall keep records of Exempt activities commenced pursuant to this MOU for a period of thirteen months following the cessation of the activity. The MOU Partner shall also report Qualified Exempt (QE) activities to the TRPA MOU Coordinator on a TRPA reporting form at least three business days prior to commencement of the activity. Activities allowed under this MOU may be subject to an annual audit by TRPA.

AMENDMENT	This MOU may be amended from time to time by mutual agreement of the Parties in writing. Proposed amendments shall be presented to the liaisons (for approval by their respective agencies) as soon as possible to facilitate timely consideration of proposed amendments.
ASSIGNMENT	None of the authorities, duties or responsibilities set forth in this MOU shall be assigned, transferred or subcontracted to a party other than that named in Attachment A, without written consent by TRPA.

PART 2 – PERFORMANCE STANDARDS

The following standards shall apply to activities authorized under this MOU. The Parties shall consult with each other regarding any uncertainties about these standards. Alternative standards may be approved by the TRPA MOU Coordinator when the results are determined to be equal or superior to these standards.

GENERAL STANDARDS

1. Project Area

   Project area shall be calculated for Qualified Exempt activities in accordance with Subparagraph 30.4.1.C.2 of the TRPA Code. Project areas shall not overlap except for activities that do not involve land coverage or land use.

2. Land Coverage

   The following land coverage calculations shall be made for Qualified Exempt activities subject to the land coverage provisions of Chapter 30 of the TRPA Code:

   - Project Area
   - Allowable land coverage by project area and land capability district
   - Existing land coverage by project area and land capability district
   - Existing excess land coverage by project area and land capability district
   - Relocated land coverage by project area and land capability district
   - New land coverage by project area and land capability district
   - Transferred land coverage by project area and land capability district

3. Findings

   The MOU Partner shall keep, as part of their Exempt Activity records, all written findings required in the TRPA Code for the activities allowed under this MOU.

4. Work in State and Federal Highways

Activities requiring the closure of a traffic lane or intersection of a state or federal highway for more than one hour, or the closure of U.S. Highway 50 at any point between the South Wye and Kingsbury Grade for any period of time are not exempt under this MOU.

CONSTRUCTION AND GRADING STANDARDS

1. Sediment and Erosion Control

Appropriate measures shall be taken to control sediment and prevent erosion from graded or unstable ground. Erosion control structures shall be installed and maintained in an operable condition for ground disturbing activities. Sediment and erosion control measures shall, at minimum, conform to the following provisions of the TRPA Code of Ordinances:

- Chapter 33, Grading and Construction
- Section 60.1, Water Quality Control
- Section 60.3, Source Water Protection
- Section 60.4 , Best Management Practice Requirements

Erosion control structures shall be installed before activities commence and shall remain in place until disturbed sites are stabilized or winterized (see Subparagraph 33.3.1D of the TRPA Code for winterization requirements). Erosion control measures shall include revegetation with TRPA approved plant species and soil mulching with composted organic materials when necessary to increase soil moisture holding capacity of soils. Revegetated areas shall be protected from future disturbance and irrigated as necessary to ensure plant growth during the first growing season.

2. Vegetation Protection

Vegetation within, or adjacent to, construction areas shall be protected in accordance with Chapter 61 and other applicable provisions of the TRPA Code. All trees and native vegetation to remain on or adjacent to a construction site shall be fenced for protection in accordance with all applicable provisions of the TRPA Regional Plan, including but not limited to Section 33.8 of the TRPA Code. No equipment shall enter into, and no materials shall be placed within, areas protected by fencing.

3. Dust Control

Appropriate measures shall be taken to prevent the transport of fugitive dust from ground disturbing activities in accordance with all applicable provisions of the TRPA Regional Plan, including but not limited to Subsection 33.3.3 of the TRPA Code. These measures shall be employed when activities commence and shall continue until disturbed sites are stabilized.

4. Noise and Hours of Operation

Construction, maintenance, and demolition activities creating noise in excess of the TRPA single event noise or community noise level standards in Section 68.9 of the TRPA Code shall be considered exempt provided that such work is conducted between the hours of 8:00 a.m. and 6:30 p.m. Emergency work to protect life or property is also exempt from the TRPA noise standards.

MEMORANDUM OF UNDERSTANDING
for
PUBLIC WORKS PROVIDERS

ATTACHMENT "A"

Between Tahoe Regional Planning Agency
and South Tahoe Public Utility District

TRPA's authority to enter into this Memorandum of Understanding (MOU) with local entities rests in Article VI (m) of the TRPA Compact (Public Law 96-551) and Section 2.6 of the TRPA Code of Ordinances. The authority of the MOU Partner to enter into this MOU rests in Section 9g the Public Utility District Act of 1921.

This MOU shall become effective when signed by the parties listed below.

TAHOE REGIONAL PLANNING AGENCY

Date: 3/6/2012

By: Joanne Marchetta
Executive Director

SOUTH TAHOE PUBLIC UTILITY DISTRICT

Date: 3/23/2012

By: Richard Solbrig
District Manager

MEMORANDUM OF UNDERSTANDING

for

PUBLIC UTILITY DISTRICTS

ATTACHMENT "B"

Table of Exempt (E) and Qualified Exempt (QE) Activities

Note: The activities described in this table expand upon the Exempt (E) and Qualified Exempt (QE) activities otherwise allowed in Subsection 2.3 and Subparagraph 2.3.7 of the TRPA Code of Ordinances, provided the activities are consistent with Part 1 (General Provisions) and Part 2 (Performance Standards) of this Memorandum of Understanding.

Line No.	Activity Level	Activity
		Roadways, Trails, Sidewalks & Parking Facilities
1	E	**Routine non-structural maintenance** provided the activities do not modify the shape or location of the facility, create or relocate land coverage, add new structural appurtenances or modify existing drainage.
2	E	**Structural maintenance, repair and replacement** of existing facilities (such as pavement, curb and gutter, compacted shoulders, culverts, pipes, vaults, and similar structures), provided no new land coverage is created and any relocated land coverage and/or disturbance is limited to 120 square feet in low capability land (Classes 1a, 1b, 1c, 2, and 3) and 500 square feet in high capability land (Classes 4, 5, 6 and 7).
3	E	**Installation of vehicle barriers** (such as bollards, fencing and boulders) along travel ways provided the barriers conform to applicable highway standards and boulders are placed partially in the ground to prevent rolling and to give a natural appearance.
4	QE	**Modifications** to existing facilities to improve public safety and/or environmental protection provided any new or relocated land coverage or disturbance is limited to 240 square feet in low capability land (Classes 1a, 1b, 1c, 2, and 3) and 1,000 square feet in high capability land (Classes 4, 5, 6 and 7).

		Erosion Control & Water Quality Protection Facilities
5	E	**Routine non-structural maintenance** of existing storm water treatment facilities (such as dry wells, infiltration trenches, drop inlets, and vaults), including removal of sediment, vegetative overgrowth and organic material, without limit on material volume or land capability, provided removed materials are deposited outside of the Tahoe Basin or at a TRPA-approved disposal site.
6	E	**Structural maintenance, repair, and in-kind replacement** of existing facilities, provided no new land coverage is created and relocated land coverage or disturbance is limited to 120 square feet in low capability land (Classes 1a, 1b, 1c, 2, and 3)and 500 square feet in high capability land (Classes 4, 5, 6 and 7).
7	QE	**Modifications to existing facilities** to improve effectiveness, meet new regulatory standards, or correct system inefficiencies, provided new structures such as rock slope protection and retaining walls are not visible from any TRPA-designated scenic roadway or shorezone travel unit, Class I bicycle paths, or recreation areas designated in the TRPA Scenic Quality Improvement Program (SQIP).
		Water Distribution and Wastewater Collection & Treatment Facilities
8	E	**Testing, locating, and maintenance** of existing facilities (such as mechanical and electrical equipment, piping and plumbing, pumps and similar devices).
9	E	**Structural maintenance, repair, in-kind replacement** of facilities, provided excavation is limited to areas under existing pavement, road shoulder, or compacted soil; no new land coverage is created, and relocated land coverage or disturbance is limited to 120 square feet in low capability land (Classes 1a, 1b, 1c, 2, and 3) and 500 square feet in high capability land (Classes 4, 5, 6 and 7).
10	QE	**Modifications to existing facilities** provided the modifications do not result in any increases in water or sewer treatment capacity or growth inducing activity, and any new or relocated land coverage or disturbance is limited to 240 square feet in low capability land (Classes 1a, 1b, 1c, 2 or 3) and 1,000 square feet in high capability land (Classes 4, 5, 6 and 7).
		Public Service and Recreation Buildings
11	E	**Interior remodeling** of existing buildings in accordance with Subparagraph 2.3.2.A of the TRPA Code, except that the allowable structural cost of the remodel allowed is increased to $80,000.
12	E	**Demolition** of structures, improvements or facilities **less than 50 years of age** in accordance with Subparagraph 2.3.2.G of the TRPA Code, except that the excavation and backfill limits are increased to the grading limits in this MOU.
13	QE	**Demolition** of structures, improvements or facilities **greater than 50 years of age** that are not designated, or pending designation, on the TRPA Historic Resource Map in accordance with Subparagraph 2.3.7.A.6 of the TRPA Code if the MOU Partner determines that the structure does not qualify for historic protection in accordance with Chapter 67 based on a report prepared by a qualified professional acceptable to the appropriate State Historic Preservation Officer (SHPO).
		Public Service and Recreation Buildings (continued)

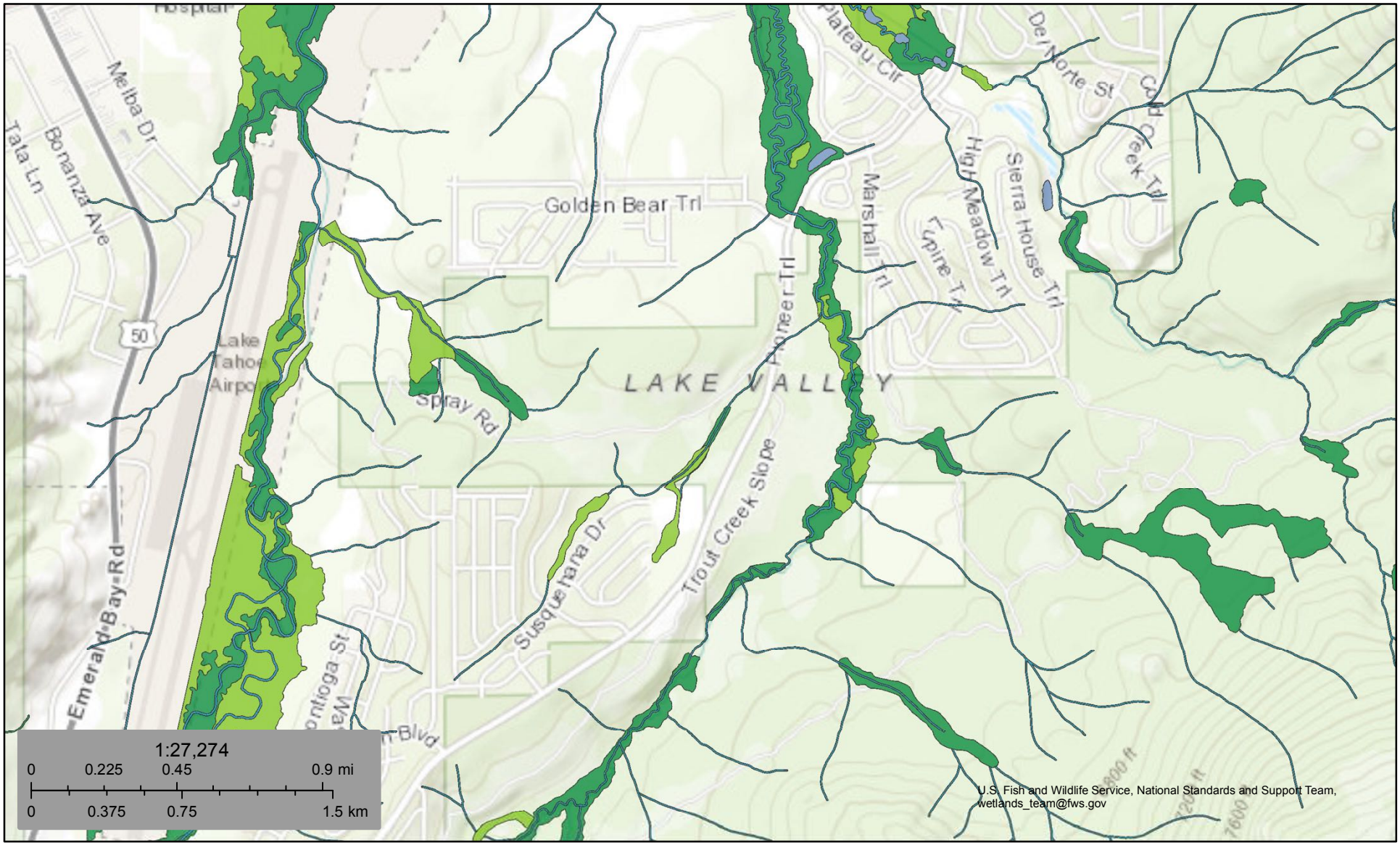
14	QE	**Structural repair** to existing buildings in accordance with Subparagraph 2.3.7.A of the TRPA Code, except that the structural repair cost in 2.3.7.A.1 is increased to $42,000 per year and excavation and backfilling limits in 2.3.7.A.1.a are increased to the grading limits in this MOU.
15	QE	**Structural modifications** to existing buildings in accordance with Subparagraph 2.3.7.A.2 of the TRPA Code, except that the grading limits in 2.3.7.A.2.c (i) are increased to the grading limits of this MOU.
16	QE	**Structural remodeling or additions** to existing buildings in accordance with Subparagraph 2.3.7.A.3 of the TRPA Code, except that the grading limits in 2.3.7.A.3.a (i) are increased to the limits of this MOU, and the BMP retrofit plan required in 2.3.7.A.a (b) is consistent with the requirements of this MOU.
		Vegetation Management and Soil Preparation for Vegetation Planting
17	E	**Pruning of vegetation**, including hazardous tree limb removal, beyond the limits allowed in Subparagraph 2.3.2.H of the TRPA Code to maintain adequate sight distance along roadways and other travel routes.
18	QE	**Scarification of disturbed high capability soils** (Classes 4, 5, 6 and 7) as preparation for revegetation with native plant species in accordance with Subparagraph 2.3.2.H of the TRPA Code provided the scarification is less than one acre in area and does not exceed six inches in depth.
19	QE	**Hazardous tree removal** around MOU Partner facilities in accordance with Subparagraph 61.1.7.A of the TRPA Code, except that TRPA approval is not required unless the tree was planted as a scenic mitigation measure pursuant to a TRPA permit (including permits issued by local government in accordance with Section 2.5).
		Grading (Including Grading in Combination with Other Activities)
20	E	**Excavations under existing hard land coverage** to an amount that can be backfilled, stabilized and swept clean within a 24-hour period.
21	E	**Excavations otherwise allowed in Subparagraph 2.3.2.D of the TRPA Code**, except that the volume limit of the excavation is increased to 15 cubic yards in all land capability districts.
22	QE	**Excavations otherwise allowed in Subparagraph 2.3.7.A.5 of the TRPA Code**, except that the volume limit of the excavation is increased to 50 cubic yards.

Appendix C: Biological Species Lists (CNDDB, CNPS, USFWS)

U.S. Fish and Wildlife Service

National Wetlands Inventory

Pioneer Trail Waterline Improvements Proje



January 18, 2022

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Reno Fish And Wildlife Office
1340 Financial Boulevard, Suite 234
Reno, NV 89502-7147
Phone: (775) 861-6300 Fax: (775) 861-6301
http://www.fws.gov/reno/

In Reply Refer To: January 17, 2022
Consultation Code: 08ENVD00-2022-SLI-0154
Event Code: 08ENVD00-2022-E-00398
Project Name: South Tahoe Public Utility District - Pioneer Trail Waterline and Facilities Upgrade Project

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

To Whom It May Concern:

The attached species list indicates threatened, endangered, proposed, and candidate species and designated or proposed 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 of 1973, as amended (ESA, 16 U.S.C. 1531 *et seq.*), for projects that are authorized, funded, or carried out by a Federal agency. Candidate species have no protection under the ESA but are included for consideration because they could be listed prior to the completion of your project. Consideration of these species during project planning may assist species conservation efforts and may prevent the need for future listing actions. For additional information regarding species that may be found in the proposed project area, visit http://www.fws.gov/nevada/es/ipac.html.

The purpose of the ESA 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 ESA 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 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. Guidelines for preparing a Biological Assessment can be found at: http://www.fws.gov/midwest/endangered/section7/ba_guide.html.

If a Federal action 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.

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this species list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally listed, proposed, 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 ESA, 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 attached list.

The Nevada Fish and Wildlife Office (NFWO) no longer provides species of concern lists. Most of these species for which we have concern are also on the Animal and Plant At-Risk Tracking List for Nevada (At-Risk list) maintained by the State of Nevada’s Natural Heritage Program (Heritage). Instead of maintaining our own list, we adopted Heritage's At-Risk list and are partnering with them to provide distribution data and information on the conservation needs for at-risk species to agencies or project proponents. The mission of Heritage is to continually evaluate the conservation priorities of native plants, animals, and their habitats, particularly those most vulnerable to extinction or in serious decline. In addition, in order to avoid future conflicts, we ask that you consider these at-risk species early in your project planning and explore management alternatives that provide for their long-term conservation.

For a list of at-risk species by county, visit Heritage's website (http://heritage.nv.gov). For a specific list of at-risk species that may occur in the project area, you can obtain a data request form from the website (http://heritage.nv.gov/get_data) or by contacting the Administrator of Heritage at 901 South Stewart Street, Suite 5002, Carson City, Nevada 89701-5245, (775) 684-2900. Please indicate on the form that your request is being obtained as part of your coordination with the Service under the ESA. During your project analysis, if you obtain new information or data for any Nevada sensitive species, we request that you provide the information to Heritage at the above address.

Furthermore, certain species of fish and wildlife are classified as protected by the State of Nevada (http://www.leg.state.nv.us/NAC/NAC-503.html). You must first obtain the appropriate license, permit, or written authorization from the Nevada Department of Wildlife (NDOW) to

take, or possess any parts of protected fish and wildlife species. Please visit http://www.ndow.org or contact NDOW in northern Nevada (775) 688-1500, in southern Nevada (702) 486-5127, or in eastern Nevada (775) 777-2300.

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 Service's wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

The Service's Pacific Southwest Region developed the *Interim Guidelines for the Development of a Project Specific Avian and Bat Protection Plan for Wind Energy Facilities* (Interim Guidelines). This document provides energy facility developers with a tool for assessing the risk of potential impacts to wildlife resources and delineates how best to design and operate a bird- and bat-friendly wind facility. These Interim Guidelines are available upon request from the NFWO. The intent of a Bird and Bat Conservation Strategy is to conserve wildlife resources while supporting project developers through: (1) establishing project development in an adaptive management framework; (2) identifying proper siting and project design strategies; (3) designing and implementing pre-construction surveys; (4) implementing appropriate conservation measures for each development phase; (5) designing and implementing appropriate post-construction monitoring strategies; (6) using post-construction studies to better understand the dynamics of mortality reduction (*e.g.*, changes in blade cut-in speed, assessments of blade "feathering" success, and studies on the effects of visual and acoustic deterrents) including efforts tied into Before-After/Control-Impact analysis; and (7) conducting a thorough risk assessment and validation leading to adjustments in management and mitigation actions.

The template and recommendations set forth in the Interim Guidelines were based upon the Avian Powerline Interaction Committee's Avian Protection Plan template (http://www.aplic.org/) developed for electric utilities and modified accordingly to address the unique concerns of wind energy facilities. These recommendations are also consistent with the Service's wind energy guidelines. We recommend contacting us as early as possible in the planning process to discuss the need and process for developing a site-specific Bird and Bat Conservation Strategy.

The Service has also developed guidance regarding wind power development in relation to prairie grouse leks (sage-grouse are included in this). This document can be found at: http://www.fws.gov/southwest/es/Oklahoma/documents/te_species/wind%20power/prairie%20grouse%20lek%205%20mile%20public.pdf.

Migratory Birds are a Service Trust Resource. Based on the Service's conservation responsibilities and management authority for migratory birds under the Migratory Bird Treaty Act of 1918, as amended (MBTA; 16 U.S.C. 703 *et seq*.), we recommend that any land clearing or other surface disturbance associated with proposed actions within the project area be timed to avoid potential destruction of bird nests or young, or birds that breed in the area. Such destruction may be in violation of the MBTA. Under the MBTA, nests with eggs or young of migratory birds may not be harmed, nor may migratory birds be killed. Therefore, we recommend land clearing be conducted outside the avian breeding season. If this is not feasible,

we recommend a qualified biologist survey the area prior to land clearing. If nests are located, or if other evidence of nesting (*i.e.*, mated pairs, territorial defense, carrying nesting material, transporting food) is observed, a protective buffer (the size depending on the habitat requirements of the species) should be delineated and the entire area avoided to prevent destruction or disturbance to nests until they are no longer active.

Guidance for minimizing impacts to migratory birds for projects involving 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.

If wetlands, springs, or streams are are known to occur in the project area or are present in the vicinity of the project area, we ask that you be aware of potential impacts project activities may have on these habitats. Discharge of fill material into wetlands or waters of the United States is regulated by the U.S. Army Corps of Engineers (ACOE) pursuant to section 404 of the Clean Water Act of 1972, as amended. We recommend you contact the ACOE's Regulatory Section regarding the possible need for a permit. For projects located in northern Nevada (Carson City, Churchill, Douglas, Elko, Esmeralda, Eureka, Humboldt, Lander, Lyon, Mineral, Pershing, Storey, and Washoe Counties) contact the Reno Regulatory Office at 300 Booth Street, Room 3060, Reno, Nevada 89509, (775) 784-5304; in southern Nevada (Clark, Lincoln, Nye, and White Pine Counties) contact the St. George Regulatory Office at 321 North Mall Drive, Suite L-101, St. George, Utah 84790-7314, (435) 986-3979; or in California along the eastern Sierra contact the Sacramento Regulatory Office at 650 Capitol Mall, Suite 5-200, Sacramento, California 95814, (916) 557-5250.

We appreciate your concern for threatened and endangered species. 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.

The table below outlines lead FWS field offices by county and land ownership/project type. Please refer to this table when you are ready to coordinate (including requests for section 7 consultation) with the field office corresponding to your project, and send any documentation regarding your project to that corresponding office. Therefore, the lead FWS field office may not be the office listed above in the letterhead.

Lead FWS offices by County and Ownership/Program

County	Ownership/Program	Species	Office Lead*
Alameda	Tidal wetlands/marsh adjacent to Bays	Salt marsh species, delta smelt	BDFWO
Alameda	All ownerships but tidal/estuarine	All	SFWO
Alpine	Humboldt Toiyabe National Forest	All	RFWO

Alpine	Lake Tahoe Basin Management Unit	All	RFWO
Alpine	Stanislaus National Forest	All	SFWO
Alpine	El Dorado National Forest	All	SFWO
Colusa	Mendocino National Forest	All	AFWO
Colusa	Other	All	By jurisdiction (see map)
Contra Costa	Legal Delta (Excluding ECCHCP)	All	BDFWO
Contra Costa	Antioch Dunes NWR	All	BDFWO
Contra Costa	Tidal wetlands/marsh adjacent to Bays	Salt marsh species, delta smelt	BDFWO
Contra Costa	All ownerships but tidal/estuarine	All	SFWO
Del Norte	All	All	AFWO
El Dorado	El Dorado National Forest	All	SFWO
El Dorado	LakeTahoe Basin Management Unit		RFWO
Glenn	Mendocino National Forest	All	AFWO
Glenn	Other	All	By jurisdiction (see map)
Humboldt	All except Shasta Trinity National Forest	All	AFWO
Humboldt	Shasta Trinity National Forest	All	YFWO
Lake	Mendocino National Forest	All	AFWO
Lake	Other	All	By jurisdiction (see map)
Lassen	Modoc National Forest	All	KFWO
Lassen	Lassen National Forest	All	SFWO
Lassen	Toiyabe National Forest	All	RFWO
Lassen	BLM Surprise and Eagle Lake Resource Areas	All	RFWO

Lassen	BLM Alturas Resource Area	All	KFWO
Lassen	Lassen Volcanic National Park	All (includes Eagle Lake trout on all ownerships)	SFWO
Lassen	All other ownerships	All	By jurisdiction (see map)
Marin	Tidal wetlands/marsh adjacent to Bays	Salt marsh species, delta smelt	BDFWO
Marin	All ownerships but tidal/estuarine	All	SFWO
Mendocino	Russian River watershed	All	SFWO
Mendocino	All except Russian River watershed	All	AFWO
Modoc	Modoc National Forest	All	KFWO
Modoc	BLM Alturas Resource Area	All	KFWO
Modoc	Klamath Basin National Wildlife Refuge Complex	All	KFWO
Modoc	BLM Surprise and Eagle Lake Resource Areas	All	RFWO
Modoc	All other ownerships	All	By jurisdiction (See map)
Mono	Inyo National Forest	All	RFWO
Mono	Humboldt Toiyabe National Forest	All	RFWO
	All ownerships but tidal/estuarine	All	SFWO
Napa			
Napa	Tidal wetlands/marsh adjacent to San Pablo Bay	Salt marsh species, delta smelt	BDFWO
Nevada	Humboldt Toiyabe National Forest	All	RFWO
Nevada	All other ownerships	All	By jurisdiction (See map)

Placer	Lake Tahoe Basin Management Unit	All	RFWO
Placer	All other ownerships	All	SFWO
Sacramento	Legal Delta	Delta Smelt	BDFWO
Sacramento	Other	All	By jurisdiction (see map)
San Francisco	Tidal wetlands/marsh adjacent to San Francisco Bay	Salt marsh species, delta smelt	BDFWO
San Francisco	All ownerships but tidal/estuarine	All	SFWO
San Mateo	Tidal wetlands/marsh adjacent to San Francisco Bay	Salt marsh species, delta smelt	BDFWO
San Mateo	All ownerships but tidal/estuarine	All	SFWO
San Joaquin	Legal Delta excluding San Joaquin HCP	All	BDFWO
San Joaquin	Other	All	SFWO
Santa Clara	Tidal wetlands/marsh adjacent to San Francisco Bay	Salt marsh species, delta smelt	BDFWO
Santa Clara	All ownerships but tidal/estuarine	All	SFWO
Shasta	Shasta Trinity National Forest except Hat Creek Ranger District (administered by Lassen National Forest)	All	YFWO
Shasta	Hat Creek Ranger District	All	SFWO
Shasta	Bureau of Reclamation (Central Valley Project)	All	BDFWO
Shasta	Whiskeytown National Recreation Area	All	YFWO

Shasta	BLM Alturas Resource Area	All	KFWO
Shasta	Caltrans	By jurisdiction	SFWO/AFWO
Shasta	Ahjumawi Lava Springs State Park	Shasta crayfish	SFWO
Shasta	All other ownerships	All	By jurisdiction (see map)
Shasta	Natural Resource Damage Assessment, all lands	All	SFWO/BDFWO
Sierra	Humboldt Toiyabe National Forest	All	RFWO
Sierra	All other ownerships	All	SFWO
Siskiyou	Klamath National Forest (except Ukonom District)	All	YFWO
Siskiyou	Six Rivers National Forest and Ukonom District	All	AFWO
Siskiyou	Shasta Trinity National Forest	All	YFWO
Siskiyou	Lassen National Forest	All	SFWO
Siskiyou	Modoc National Forest	All	KFWO
Siskiyou	Lava Beds National Volcanic Monument	All	KFWO
Siskiyou	BLM Alturas Resource Area	All	KFWO
Siskiyou	Klamath Basin National Wildlife Refuge Complex	All	KFWO
Siskiyou	All other ownerships	All	By jurisdiction (see map)
Solano	Suisun Marsh	All	BDFWO
Solano	Tidal wetlands/marsh adjacent to San Pablo Bay	Salt marsh species, delta smelt	BDFWO
Solano	All ownerships but tidal/estuarine	All	SFWO
Solano	Other	All	By jurisdiction (see map)

Sonoma	Tidal wetlands/marsh adjacent to San Pablo Bay	Salt marsh species, delta smelt	BDFWO
Sonoma	All ownerships but tidal/estuarine	All	SFWO
Tehama	Mendocino National Forest	All	AFWO
Tehama	Shasta Trinity National Forest except Hat Creek Ranger District (administered by Lassen National Forest)	All	YFWO
Tehama	All other ownerships	All	By jurisdiction (see map)
Trinity	BLM	All	AFWO
Trinity	Six Rivers National Forest	All	AFWO
Trinity	Shasta Trinity National Forest	All	YFWO
Trinity	Mendocino National Forest	All	AFWO
Trinity	BIA (Tribal Trust Lands)	All	AFWO
Trinity	County Government	All	AFWO
Trinity	All other ownerships	All	By jurisdiction (See map)
Yolo	Yolo Bypass	All	BDFWO
Yolo	Other	All	By jurisdiction (see map)
All	FERC-ESA	All	By jurisdiction (see map)
All	FERC-ESA	Shasta crayfish	SFWO
All	FERC-Relicensing (non-ESA)	All	BDFWO

***Office Leads:**

AFWO=Arcata Fish and Wildlife Office

BDFWO=Bay Delta Fish and Wildlife Office

KFWO=Klamath Falls Fish and Wildlife Office

RFWO=Reno Fish and Wildlife Office

YFWO=Yreka Fish and Wildlife Office

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

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:

Reno Fish And Wildlife Office
1340 Financial Boulevard, Suite 234
Reno, NV 89502-7147
(775) 861-6300

Project Summary

Consultation Code: 08ENVD00-2022-SLI-0154
Event Code: Some(08ENVD00-2022-E-00398)
Project Name: South Tahoe Public Utility District - Pioneer Trail Waterline and Facilities Upgrade Project
Project Type: WATER SUPPLY / DELIVERY
Project Description: STPUD is to replace and upgrade existing waterlines in the right-of-way of Pioneer Trail and install pressure reducing valves for residential water distribution lines in South Lake Tahoe, CA. A total of 1.5 miles of new water line will be installed to allow for redundancy in water distribution and to increase fire-flows to the adjacent residential areas. Project implementation will occur over the course of one year likely in 2023.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@38.8950402,-119.9721520603801,14z

Counties: El Dorado County, California

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 Fisheries[1], 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.

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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.

Amphibians

NAME	STATUS
Sierra Nevada Yellow-legged Frog *Rana sierrae* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/9529	Endangered

Fishes

NAME	STATUS
Lahontan Cutthroat Trout *Oncorhynchus clarkii henshawi* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3964	Threatened

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Conifers and Cycads

NAME	STATUS
Whitebark Pine *Pinus albicaulis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1748	Proposed Threatened

Critical habitats

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

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Aug 31
Black-throated Gray Warbler *Dendroica nigrescens* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds May 1 to Jul 20

NAME	BREEDING SEASON
Cassin's Finch *Carpodacus cassinii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9462	Breeds May 15 to Jul 15
Clark's Grebe *Aechmophorus clarkii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jun 1 to Aug 31
Evening Grosbeak *Coccothraustes vespertinus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 15 to Aug 10
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Dec 1 to Aug 31
Long-eared Owl *asio otus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3631	Breeds Mar 1 to Jul 15
Olive-sided Flycatcher *Contopus cooperi* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3914	Breeds May 20 to Aug 31
Willet *Tringa semipalmata* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 5

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

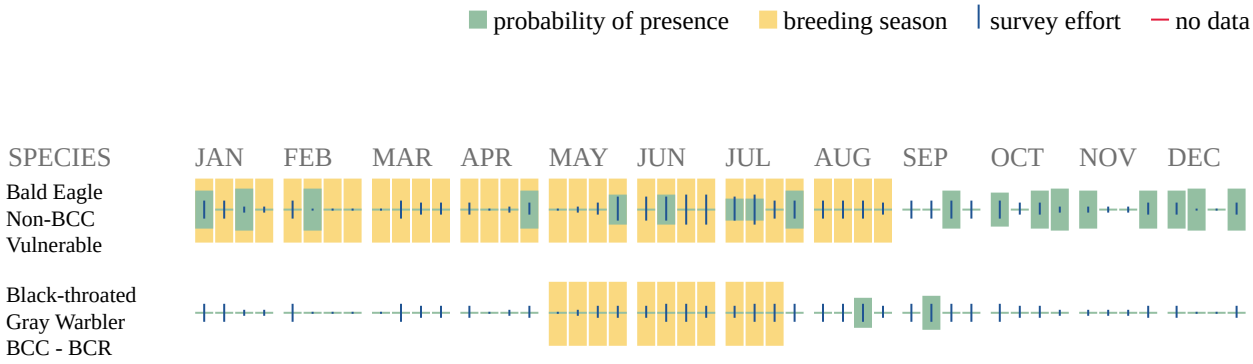
1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

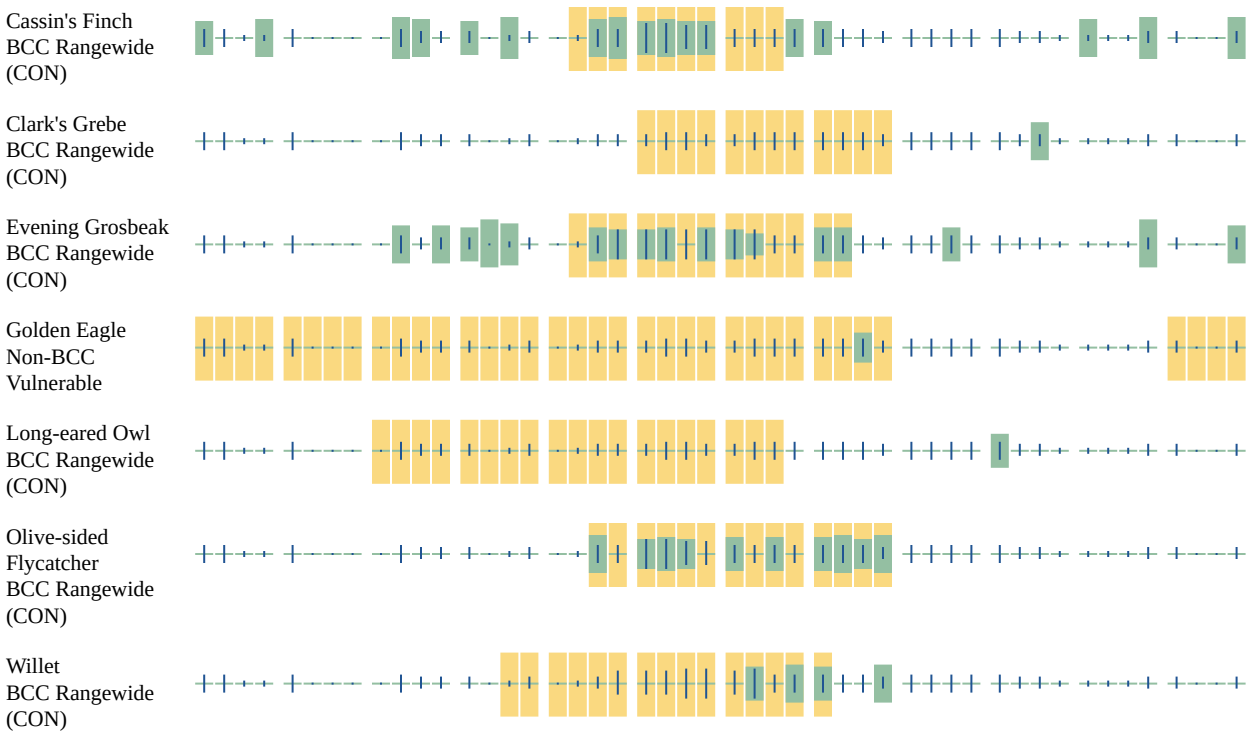
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?
The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles)

potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE VISIT HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

Multiple Occurrences per Page

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (South Lake Tahoe (3811988))
 AND (Federal Listing Status IS (Endangered OR Threatened OR Proposed Endangered OR Proposed Threatened OR Candidate OR Delisted) OR State Listing Status IS (Endangered OR Threatened OR Rare OR Delisted OR Candidate Endangered OR Candidate Threatened))

Rana sierrae **Element Code:** AAABH01340

Sierra Nevada yellow-legged frog

Listing Status:	**Federal:**	Endangered	**CNDDB Element Ranks:**	**Global:**	G1
	State:	Threatened		**State:**	S1
	Other:	CDFW_WL-Watch List, IUCN_EN-Endangered, USFS_S-Sensitive			
Habitat:	**General:**	ALWAYS ENCOUNTERED WITHIN A FEW FEET OF WATER. TADPOLES MAY REQUIRE 2 - 4 YRS TO COMPLETE THEIR AQUATIC DEVELOPMENT.			
	Micro:	□			

Occurrence No.	243	**Map Index:** 70205	**EO Index:**	71086	**Element Last Seen:**	1935-08-18
Occ. Rank:	Unknown		**Presence:**	Presumed Extant	**Site Last Seen:**	1935-08-18
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown	**Record Last Updated:**	2014-12-18

Quad Summary: Woodfords (3811977), Freel Peak (3811978), Minden (3811987), South Lake Tahoe (3811988)

County Summary: Alpine, El Dorado

Lat/Long:	38.87994 / -119.88147	**Accuracy:**	4/5 mile
UTM:	Zone-11 N4307401 E250044	**Elevation (ft):**	9000
PLSS:	T12N, R19E, Sec. 29 (M)	**Acres:**	0.0

Location: 0.5 MILE NE OF STAR LAKE, SE OF LAKE TAHOE.

Detailed Location: COLLECTION LOCALITY DESCRIBED AS "0.5 MI NE STAR LAKE" IN EL DORADO COUNTY. THE DRAINAGE NEAREST TO 0.5 MILE NE OF STAR LAKE IS THE HEAD OF STUTLER CANYON, JUST OVER THE COUNTY LINE INTO ALPINE COUNTY. UNCERTAIN IF NW WAS MEANT.

Ecological:

General: COLLECTION MADE BY R. SMITH ON 18 AUG 1935.

Owner/Manager: USFS-TOIYABE NF

Empidonax traillii

Element Code: ABPAE33040

willow flycatcher

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G5
	State:	Endangered		**State:**	S1S2
	Other:	IUCN_LC-Least Concern, USFS_S-Sensitive, USFWS_BCC-Birds of Conservation Concern			
Habitat:	**General:**	INHABITS EXTENSIVE THICKETS OF LOW, DENSE WILLOWS ON EDGE OF WET MEADOWS, PONDS, OR BACKWATERS; 2000-8000 FT ELEVATION.			
	Micro:	REQUIRES DENSE WILLOW THICKETS FOR NESTING/ROOSTING. LOW, EXPOSED BRANCHES ARE USED FOR SINGING POSTS/HUNTING PERCHES.			

Occurrence No.	124	**Map Index:** 59165	**EO Index:** 59201	**Element Last Seen:**	1935-06-29
Occ. Rank:	Unknown		**Presence:** Presumed Extant	**Site Last Seen:**	1935-06-29
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	2005-01-07

Quad Summary: South Lake Tahoe (3811988)

County Summary: El Dorado

Lat/Long:	38.91453 / -119.97244	**Accuracy:**	non-specific area
UTM:	Zone-11 N4311493 E242276	**Elevation (ft):**	6250
PLSS:	T12N, R18E, Sec. 03 (M)	**Acres:**	135.3

Location: VICINITY OF TROUT CREEK IN LAKE VALLEY NEAR SIERRA HOUSE.

Detailed Location: 11 EGG SET COLLECTIONS FROM "LAKE VALLEY, NEAR SIERRA HOUSE" AND 1 EGG SET COLLECTION FROM "TROUT CREEK, NEAR SIERRA HOUSE".

Ecological:

General: MVZ #9088 - #9099. ALL COLLECTIONS BY MILTON RAY. 3 COLLECTIONS FROM 30 JUN 1910, 3 FROM 1 JUL 1910. 4 COLLECTIONS FROM 26-28 JUN 1912. 1 COLLECTION FROM 5 JUL 1922 & 1 COLLECTION FROM 29 JUN 1935.

Owner/Manager: UNKNOWN

Rorippa subumbellata

Element Code: PDBRA270M0

Tahoe yellow cress

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G1
	State:	Endangered		**State:**	S1
	Other:	Rare Plant Rank - 1B.1, SB_BerrySB-Berry Seed Bank, SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden, USFS_S-Sensitive			
Habitat:	**General:**	LOWER MONTANE CONIFEROUS FOREST, MEADOWS AND SEEPS.			
	Micro:	SANDY BEACHES, ON LAKESIDE MARGINS AND IN RIPARIAN COMMUNITIES; ON DECOMPOSED GRANITE SAND. 1895-2410 M.			

Occurrence No.	1	**Map Index:**	14462	**EO Index:**	8257	**Element Last Seen:**	2017-09-28
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2017-09-28
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2021-04-08

Quad Summary:	South Lake Tahoe (3811988)
County Summary:	El Dorado

Lat/Long:	38.95461 / -119.95451	**Accuracy:**	specific area
UTM:	Zone-11 N4315892 E243976	**Elevation (ft):**	6232
PLSS:	T13N, R18E, Sec. 28, SE (M)	**Acres:**	19.0

Location:	FROM STATELINE SW TO BIJOU PARK, LAKE TAHOE.
Detailed Location:	OCCURRENCE EXTENDS UP INTO NV. INCLUDES EDGEWOOD SITE (PORTIONS OF THIS SITE IN NEVADA NOT MAPPED), TAHOE MEADOES SITE, AND BIJOU PARK SITE. MAPPED AS 3 POLYGONS ACCORDING TO A 1979 KNAPP MAP, 1981 FERREIRA MAP, AND 2017 TYC DIGITAL DATA.
Ecological:	IN BEACH SAND WITH PHACELIA FRIGIDA AND PHLOX SP. ALONG BEACH AND IN BANKS OF DITCH ENTERING LAKE. LAKE INUNDATED IN 1979 AND 1982.
General:	DETAILED POP INFO AVAILABLE AT CNDDB. PORTIONS OF SITE WERE SEEN IN 1979-1981, NO PLANTS IN 1982, SEEN IN 1990 & 1993, NO PLANTS IN 1994-1997, SEEN IN 1998-2009 AND 2017. INCLUDES FORMER EO #2 & #3.
Owner/Manager:	PVT

Occurrence No.	4	**Map Index:**	14433	**EO Index:**	8255	**Element Last Seen:**	2015-06-09
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	2015-06-09
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2017-09-21

Quad Summary:	South Lake Tahoe (3811988)
County Summary:	El Dorado

Lat/Long:	38.94771 / -119.96571	**Accuracy:**	specific area
UTM:	Zone-11 N4315157 E242981	**Elevation (ft):**	6230
PLSS:	T13N, R18E, Sec. 33, NW (M)	**Acres:**	6.0

Location:	TAHOE LAKESHORE LODGE, BETWEEN TIMBER COVE MARINA AND THE TAHOE MARINA INN, SOUTH LAKE TAHOE.
Detailed Location:	TIMBER COVE SITE. ON THE PROPERTY OF TAHOE LAKESHORE LODGE AND SPA, 930 BALBIJOU RD. 2013 OBSERVATION AT ELEVATION 6242' IS HIGHER THAN PREVIOUS POPULATIONS FOUND BETWEEN 6223' & 6230'; PLANTS TRANSPLANTED TO TYC MITIGATION SITE.
Ecological:	ON DECOMPOSED GRANITE BEACH WITH SCATTERING OF GRASSES AND FORBS. COARSE SAND. ASSOCIATED WITH ACHILLEA MILLEFOLIUM, CAREX DOUGLASII, CHAMOMILLA SUAVEOLENS, ERIOGONUM NUDUM, GAYOPHYTUM DIFFUSUM, LEYMUS TRITICOIDES, LUPINUS LEPIDUS, ETC.
General:	PLANTS SEEN IN 1981-1988 AND 1990, NO PLANTS FOUND IN 1993-2001, PLANTS SEEN IN 2002-2005, NO PLANTS IN 2006, PLANTS SEEN IN 2007-2009, 2013 (214 PLANTS) & 2015 (304 PLANTS). ADDITIONAL POPULATION INFORMATION IS AVAILABLE AT CNDDB.
Owner/Manager:	PVT

Occurrence No.	5	**Map Index:**	14397	**EO Index:**	8251	**Element Last Seen:**	2019-06-12
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	2019-06-12
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2021-04-08

Quad Summary: South Lake Tahoe (3811988), Emerald Bay (3812081)

County Summary: El Dorado

Lat/Long:	38.94022 / -120.00389	**Accuracy:**	specific area
UTM:	Zone-10 N4314412 E759682	**Elevation (ft):**	6233
PLSS:	T12N, R18E, Sec. 5, N (M)	**Acres:**	42.0

Location: FROM REGAN BEACH WEST TO THE EAST END OF POPE BEACH, SOUTH LAKE TAHOE.

Detailed Location: INCLUDES THE FOLLOWING SITE NAMES: TAHOE KEYS, UPPER TRUCKEE WEST, UPPER TRUCKEE EAST, REGAN/AL TAHOE, POPE BEACH, LIGHTHOUSE. PORTIONS OF OCCURRENCE MAY BE EXTIRPATED. MAPPED AS SEVERAL POLYGONS BY CNDDB.

Ecological: ON DECOMPOSED GRANITE BEACH, DENSE GROWTH OF RUSHES/GRASSES ABOVE BEACH, AND IN MOIST BACKSHORE AREAS. WITH PHACELIA FRIGIDA, LEPIDIUM, SALIX, LUPINUS, AND GRASSES.

General: DETAILED POP INFO AVAILABLE AT CNDDB. PORTIONS OF SITE WERE SEEN IN 1979-1983, 1985, 1986, 1988, 1990-2010, 2017, 2019. INCLUDES FORMER EO #7, 8, 9, & 23.

Owner/Manager: PVT, CTC, USFS

Occurrence No.	6	**Map Index:**	14422	**EO Index:**	8254	**Element Last Seen:**	1979-XX-XX
Occ. Rank:	None			**Presence:**	Extirpated	**Site Last Seen:**	2009-09-10
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2021-04-08

Quad Summary: South Lake Tahoe (3811988)

County Summary: El Dorado

Lat/Long:	38.94545 / -119.97324	**Accuracy:**	80 meters
UTM:	Zone-11 N4314928 E242319	**Elevation (ft):**	6229
PLSS:	T13N, R18E, Sec. 32, SE (M)	**Acres:**	0.0

Location: EL DORADO BEACH, BETWEEN BIJOU AND AL TAHOE, LAKE TAHOE.

Detailed Location: FOUND IN A HEAVILY USED PORTION OF THE BEACH, NEAR THE SECTION LINE BETWEEN SECTIONS 32 AND 33, APPROXIMATELY 50 FT EAST OF A DRAINAGE CULVERT DISCHARGE ON THE BEACH. PLANT WAS WEDGED BETWEEN TWO ROCKS IN AN AREA OF HEAVY FOOT TRAFFIC.

Ecological: ON BEACH WEDGED BETWEEN ROCKS.

General: 1 PLANT SEEN IN 1979. NO PLANTS FOUND DURING SURVEYS IN 1980-1983, 1985, 1986, 1988, 1990, 1993-2009. SITE WAS EXTENSIVELY DISTURBED IN THE EARLY 1980'S BY A BANK STABILIZATION PROJECT.

Owner/Manager: PVT, CITY OF SOUTH LAKE TAHOE

Search Results

0 matches found. Click on scientific name for details

Search Criteria: CRPR is one of [1B:2B] Fed List is one of [None] and State List is one of [None] , Quad is one of [3811988], Elevation above 6223 feet, Elevation below 7000 feet

Scientific Name | Common Name | Family | Lifeform | Blooming Period | Fed List | State List | Global Rank | State Rank | CA Rare Plant Rank | General Habitats | Micro Habitats | Lowest Elevation (m) | Highest Elevation (m) | Lowest Elevation (ft) | Highest Elevation (ft) | CA Endemic | Date Added | Photo

Filter Results:

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	PHOTO
No data available in table										

Showing 0 to 0 of 0 entries

Suggested Citation:

California Native Plant Society, Rare Plant Program. 2022. Rare Plant Inventory (online edition, v9-01 1.5). Website https://www.rareplants.cnps.org [accessed 15 March 2022].

Appendix D: Construction Phase Air Quality and Greenhouse Gas Emissions Summary

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> STPUD Water and Sewer Main Replacement				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust					
Project Phases (Pounds)	**ROG (lbs/day)**	**CO (lbs/day)**	**NOx (lbs/day)**	**PM10 (lbs/day)**	**PM10 (lbs/day)**	**PM10 (lbs/day)**	**PM2.5 (lbs/day)**	**PM2.5 (lbs/day)**	**PM2.5 (lbs/day)**	**SOx (lbs/day)**	**CO2 (lbs/day)**	**CH4 (lbs/day)**	**N2O (lbs/day)**	**CO2e (lbs/day)**
Grubbing/Land Clearing	0.65	4.14	5.76	1.01	0.21	0.80	0.35	0.18	0.17	0.02	1,647.60	0.49	0.02	1,664.85
Grading/Excavation	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
Drainage/Utilities/Sub-Grade	1.35	11.48	12.31	1.27	0.48	0.79	0.59	0.43	0.16	0.04	3,439.27	1.02	0.03	3,475.02
Paving	0.79	11.10	8.46	0.37	0.37	0.00	0.32	0.32	0.00	0.03	2,618.51	0.65	0.04	2,645.60
Maximum (pounds/day)	1.35	11.48	12.31	1.27	0.48	0.80	0.59	0.43	0.17	0.04	3,439.27	1.02	0.04	3,475.02
Total (tons/construction project)	0.07	0.62	0.65	0.07	0.03	0.04	0.03	0.02	0.01	0.00	183.58	0.05	0.00	185.49

Notes:

Project Start Year ->	2022
Project Length (months) ->	5
Total Project Area (acres) ->	2
Maximum Area Disturbed/Day (acres) ->	0
Water Truck Used? ->	Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	20	0	10	0	100	4
Grading/Excavation	0	0	0	0	0	0
Drainage/Utilities/Sub-Grade	126	0	30	0	200	4
Paving	0	570	0	150	100	2

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> STPUD Water and Sewer Main Replacement				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust					
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	**ROG (tons/phase)**	**CO (tons/phase)**	**NOx (tons/phase)**	**PM10 (tons/phase)**	**PM10 (tons/phase)**	**PM10 (tons/phase)**	**PM2.5 (tons/phase)**	**PM2.5 (tons/phase)**	**PM2.5 (tons/phase)**	**SOx (tons/phase)**	**CO2 (tons/phase)**	**CH4 (tons/phase)**	**N2O (tons/phase)**	**CO2e (MT/phase)**
Grubbing/Land Clearing	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.81	0.00	0.00	1.66
Grading/Excavation	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
Drainage/Utilities/Sub-Grade	0.07	0.57	0.61	0.06	0.02	0.04	0.03	0.02	0.01	0.00	170.24	0.05	0.00	156.05
Paving	0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.52	0.00	0.00	10.56
Maximum (tons/phase)	0.07	0.57	0.61	0.06	0.02	0.04	0.03	0.02	0.01	0.00	170.24	0.05	0.00	156.05
Total (tons/construction project)	0.07	0.62	0.65	0.07	0.03	0.04	0.03	0.02	0.01	0.00	183.58	0.05	0.00	168.27

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model **Version 8.1.0**
Data Entry Worksheet

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	STPUD Water and Sewer Main Replacement	
Construction Start Year	2022	Enter a Year between 2014 and 2025 (inclusive)
Project Type For 4: Other Linear Project Type, please provide project specific off-road equipment population and vehicle trip data	4	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	5.00	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	1	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the Ione formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	4.38	miles
Total Project Area	1.59	acres
Maximum Area Disturbed/Day	0.08	acres
Water Trucks Used?	1	1. Yes 2. No

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd^3) (assume 20 if unknown)	Import Volume (yd^3/day)	Export Volume (yd^3/day)
Soil	Grubbing/Land Clearing	20.00		20.00
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade	20.00	63.00	63.00
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade			
	Paving	20.00	285.00	285.00

Mitigation Options

On-road Fleet Emissions Mitigation		Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Off-road Equipment Emissions Mitigation		Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/ceqa/mitigation.shtml). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selected.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing	0.10	0.50	5/1/2022	1/1/2022
Grading/Excavation	0.00	2.00	5/7/2022	1/5/2022
Drainage/Utilities/Sub-Grade	4.50	1.75	5/8/2022	1/5/2022
Paving	0.40	0.75	10/1/2022	5/22/2022
Totals (Months)		5		

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing	10.00		1	1	10.00
Miles/round trip: Grading/Excavation				0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade	10.00		3	7	30.00
Miles/round trip: Paving	0.00			0	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.07	0.37	1.39	0.10	0.04	0.01	1,548.71	0.00	0.05	1,563.97
Grading/Excavation (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/mile)	0.07	0.37	1.39	0.10	0.04	0.01	1,548.71	0.00	0.05	1,563.97
Paving (grams/mile)	0.07	0.37	1.39	0.10	0.04	0.01	1,548.71	0.00	0.05	1,563.97
Hauling Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.01	0.03	0.00	0.00	0.00	34.14	0.00	0.00	34.48
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.04
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.02	0.09	0.01	0.00	0.00	102.43	0.00	0.00	103.44
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	5.07	0.00	0.00	5.12
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	5.11	0.00	0.00	5.16

Note: Asphalt Hauling emission default values can be overridden in cells D87 through D90, and F87 through F90.

Asphalt Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing				0	0.00
Miles/round trip: Grading/Excavation				0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00
Miles/round trip: Paving	10.00		15	29	150.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.07	0.37	1.39	0.10	0.04	0.01	1,548.71	0.00	0.05	1,563.97
Grading/Excavation (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/mile)	0.07	0.37	1.39	0.10	0.04	0.01	1,548.71	0.00	0.05	1,563.97
Paving (grams/mile)	0.07	0.37	1.39	0.10	0.04	0.01	1,548.71	0.00	0.05	1,563.97
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.02	0.12	0.46	0.03	0.01	0.00	512.15	0.00	0.02	517.20
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	2.25	0.00	0.00	2.28
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	2.25	0.00	0.00	2.28

Note: Worker commute default values can be overridden in cells D113 through D118.

Worker Commute Emissions User Input	User Override of Worker Commute Default Values	Default Values	Calculated Daily Trips	Calculated Daily VMT
Miles/ one-way trip	5			
One-way trips/day	2			
No. of employees: Grubbing/Land Clearing	10		20	100.00
No. of employees: Grading/Excavation			0	0.00
No. of employees: Drainage/Utilities/Sub-Grade	20		40	200.00
No. of employees: Paving	10		20	100.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.02	0.92	0.09	0.05	0.02	0.00	348.29	0.01	0.00	349.59
Grading/Excavation (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/mile)	0.02	0.92	0.09	0.05	0.02	0.00	348.29	0.01	0.00	349.59
Paving (grams/mile)	0.02	0.92	0.09	0.05	0.02	0.00	348.29	0.01	0.00	349.59
Grubbing/Land Clearing (grams/trip)	0.87	2.06	0.16	0.00	0.00	0.00	79.59	0.01	0.01	81.77
Grading/Excavation (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.87	2.06	0.16	0.00	0.00	0.00	79.59	0.01	0.01	81.77
Paving (grams/trip)	0.87	2.06	0.16	0.00	0.00	0.00	79.59	0.01	0.01	81.77
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.04	0.29	0.03	0.01	0.00	0.00	80.29	0.00	0.00	80.68
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.09
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.08	0.59	0.05	0.02	0.01	0.00	160.59	0.00	0.00	161.36
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.03	0.00	0.00	0.00	0.00	7.95	0.00	0.00	7.99
Pounds per day - Paving	0.04	0.29	0.03	0.01	0.00	0.00	80.29	0.00	0.00	80.68
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.35	0.00	0.00	0.35
Total tons per construction project	0.00	0.03	0.00	0.00	0.00	0.00	8.39	0.00	0.00	8.43

Note: Water Truck default values can be overridden in cells D145 through D148, and F145 through F148.

Water Truck Emissions User Input	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Miles Traveled/Vehicle/Day	Default Values Miles Traveled/Vehicle/Day	Calculated Daily VMT
Grubbing/Land Clearing - Exhaust	2		2.00		4.00
Grading/Excavation - Exhaust					0.00
Drainage/Utilities/Subgrade	2		2.00		4.00
Paving	1		2.00		2.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.07	0.37	1.39	0.10	0.04	0.01	1,548.71	0.00	0.05	1,563.97
Grading/Excavation (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/mile)	0.07	0.37	1.39	0.10	0.04	0.01	1,548.71	0.00	0.05	1,563.97
Paving (grams/mile)	0.07	0.37	1.39	0.10	0.04	0.01	1,548.71	0.00	0.05	1,563.97
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.01	0.00	0.00	0.00	13.66	0.00	0.00	13.79
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.01	0.00	0.00	0.00	13.66	0.00	0.00	13.79
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.68	0.00	0.00	0.68
Pounds per day - Paving	0.00	0.00	0.01	0.00	0.00	0.00	6.83	0.00	0.00	6.90
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.03
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.72	0.00	0.00	0.73

Note: Fugitive dust default values can be overridden in cells D171 through D173.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing	0.08		0.80	0.00	0.17	0.00
Fugitive Dust - Grading/Excavation			0.00	0.00	0.00	0.00
Fugitive Dust - Drainage/Utilities/Subgrade	0.08		0.79	0.04	0.16	0.01

Values in cells D183 through D216, D234 through D267, D285 through D318, and D336 through D369 are required when 'Other Project Type' is selected.

Off-Road Equipment Emissions

Grubbing/Land Clearing Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Excavators	0.30	2.24	2.84	0.09	0.08	0.01	968.08	0.31	0.01	978.52
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Rubber Tired Loaders	0.25	1.33	2.63	0.09	0.08	0.01	525.85	0.17	0.00	531.53
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Sweepers/Scrubbers	0.05	0.27	0.22	0.02	0.01	0.00	25.57	0.01	0.00	25.85
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing	pounds per day	0.61	3.83	5.69	0.19	0.18	0.02	1,519.50	0.49	0.01	1,535.90
Grubbing/Land Clearing	tons per phase	0.00	0.00	0.01	0.00	0.00	0.00	1.67	0.00	0.00	1.69

Grading/Excavation Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment — If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grading/Excavation	pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Drainage/Utilities/Subgrade Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Air Compressors	0.02	0.06	0.12	0.01	0.01	0.00	15.03	0.00	0.00	15.12
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.01	0.02	0.00	0.00	0.00	2.74	0.00	0.00	2.76
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00			Model Default Tier	Excavators	0.61	4.48	5.69	0.18	0.16	0.02	1,936.15	0.63	0.02	1,957.03
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Plate Compactors	0.04	0.18	0.22	0.01	0.01	0.00	30.17	0.00	0.00	30.32
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Rubber Tired Loaders	0.25	1.33	2.63	0.09	0.08	0.01	525.85	0.17	0.00	531.53
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Skid Steer Loaders	0.09	1.71	1.14	0.04	0.04	0.00	246.64	0.08	0.00	249.29
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Sweepers/Scrubbers	0.05	0.27	0.22	0.02	0.01	0.00	25.57	0.01	0.00	25.85
2.00			Model Default Tier	Tractors/Loaders/Backhoes	0.21	2.83	2.12	0.11	0.10	0.00	380.43	0.12	0.00	384.52
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Drainage/Utilities/Sub-Grade	pounds per day	1.26	10.87	12.15	0.45	0.42	0.03	3,162.59	1.01	0.03	3,196.43
Drainage/Utilities/Sub-Grade	tons per phase	0.06	0.54	0.60	0.02	0.02	0.00	156.55	0.05	0.00	158.22

Paving Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Air Compressors	0.02	0.06	0.12	0.01	0.01	0.00	15.03	0.00	0.00	15.12
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.01	0.02	0.00	0.00	0.00	2.74	0.00	0.00	2.76
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Pavers	0.15	1.06	1.98	0.06	0.05	0.01	493.37	0.16	0.00	498.69
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Plate Compactors	0.02	0.09	0.11	0.00	0.00	0.00	15.08	0.00	0.00	15.16
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.00			Model Default Tier	Rollers	0.43	7.61	4.48	0.21	0.19	0.01	1,233.58	0.40	0.01	1,246.88
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Skid Steer Loaders	0.09	1.71	1.14	0.04	0.04	0.00	246.64	0.08	0.00	249.29
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Sweepers/Scrubbers	0.02	0.13	0.11	0.01	0.01	0.00	12.79	0.00	0.00	12.92
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Paving	pounds per day	0.73	10.68	7.97	0.32	0.30	0.02	2,019.24	0.65	0.02	2,040.83
Paving	tons per phase	0.00	0.05	0.04	0.00	0.00	0.00	8.88	0.00	0.00	8.98
Total Emissions all Phases (tons per construction period) =>		0.07	0.59	0.64	0.02	0.02	0.00	167.10	0.05	0.00	168.89

Equipment default values for horsepower and hours/day can be overridden in cells D391 through D424 and F391 through F424.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors	25.00	78	1.00	8
Bore/Drill Rigs		206		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws	3.00	81	1.00	8
Cranes		226		8
Crawler Tractors		208		8
Crushing/Proc. Equipment		85		8
Excavators	204.00	163	6.00	8
Forklifts		89		8
Generator Sets		84		8
Graders		175		8
Off-Highway Tractors	89.00	123	4.00	8
Off-Highway Trucks		400		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		167		8
Pavers	188.00	126	6.00	8
Paving Equipment		131		8
Plate Compactors	7.00	8	4.00	8
Pressure Washers		13		8
Pumps		84		8
Rollers	130.00	81	8.00	8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		255		8
Rubber Tired Loaders	235.00	200	3.00	8
Scrapers		362		8
Signal Boards		6		8
Skid Steer Loaders	80.00	65	4.00	8
Surfacing Equipment		254		8
Sweepers/Scrubbers	24.00	64	1.00	8
Tractors/Loaders/Backhoes	98.00	98	5.00	8
Trenchers		81		8
Welders		46		8

END OF DATA ENTRY SHEET