INITIAL STUDY/MITIGATED NEGATIVE DECLARATION
MD-24 TEAFORD MEADOWS WATER SYSTEM IMPROVEMENTS PROJECT

July 2023

Prepared For:
Madera County
200 W. 4th Street, 3rd Floor
Madera, CA 93637

DFA Project No. 2000552-001P
DFA Agreement No. D16-02073
Madera County Project No. 14-004

NV5

15092 Avenue of Science, Suite 200
San Diego, CA 92128
PROJECT NO. 226118-0000217.01

INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

PAGE

1 PROJECT SUMMARY 1

1.1 CONTACT 1
1.2 INTRODUCTION 1
1.3 PROJECT LOCATION AND SETTING 2
1.4 BACKGROUND 5
1.5 PROJECT DESCRIPTION 7
1.6 ANTICIPATED PERMITS AND COORDINATION 11
1.7 POTENTIAL ENVIRONMENTAL EFFECTS 12
1.8 EVALUATION OF ENVIRONMENTAL IMPACTS 12
1.9 DETERMINATION OF ENVIRONMENTAL IMPACTS 14

2 ENVIRONMENTAL CHECKLIST 15

2.1 AESTHETICS 15

2.1.1 REGULATORY SETTING 15
2.1.2 ENVIRONMENTAL SETTING 15
2.1.3 IMPACT ANALYSIS 16

2.2 AGRICULTURE AND FORESTRY RESOURCES 18

2.2.1 REGULATORY SETTING 18
2.2.2 ENVIRONMENTAL SETTING 19
2.2.3 IMPACT ANALYSIS 19

2.3 AIR QUALITY 21

2.3.1 REGULATORY SETTING 21
2.3.2 ENVIRONMENTAL SETTING 26
2.3.3 IMPACT ANALYSIS 26

2.4 BIOLOGICAL RESOURCES 28

2.4.1 REGULATORY SETTING 28
2.4.2 ENVIRONMENTAL SETTING 30
2.4.3 IMPACT ANALYSIS 31

2.5 CULTURAL RESOURCES 35

2.5.1 REGULATORY SETTING 35
2.5.2 ENVIRONMENTAL SETTING 37
2.5.3 IMPACT ANALYSIS 39

2.6 ENERGY 40

2.6.1 REGULATORY SETTING 40
2.6.2 ENVIRONMENTAL SETTING 41
2.6.3 IMPACT ANALYSIS 42

2.7 GEOLOGY AND SOILS 43

2.7.1 REGULATORY SETTING 43
2.7.2 ENVIRONMENTAL SETTING 45
2.7.3 IMPACT ANALYSIS 46

2.8 GREENHOUSE GAS EMISSIONS 49
2.8.1 REGULATORY SETTING 49
2.8.2 ENVIRONMENTAL SETTING 49
2.8.3 IMPACT ANALYSIS 50
2.9 HAZARDS AND HAZARDOUS MATERIALS 52
2.9.1 REGULATORY SETTING 52
2.9.2 ENVIRONMENTAL SETTING 56
2.9.3 IMPACT ANALYSIS 56
2.10 HYDROLOGY AND WATER QUALITY 60
2.10.1 REGULATORY SETTING 60
2.10.2 ENVIRONMENTAL SETTING 62
2.10.3 IMPACT ANALYSIS 66
2.11 LAND USE AND PLANNING 69
2.11.1 REGULATORY SETTING 69
2.11.2 ENVIRONMENTAL SETTING 70
2.11.3 IMPACT ANALYSIS 70
2.12 MINERAL RESOURCES 71
2.12.1 REGULATORY SETTING 71
2.12.2 ENVIRONMENTAL SETTING 72
2.12.3 IMPACT ANALYSIS 73
2.13 NOISE 73
2.13.1 BACKGROUND OF NOISE 73
2.13.2 REGULATORY SETTING 75
2.13.3 ENVIRONMENTAL SETTING 79
2.13.4 IMPACT ANALYSIS 79
2.14 POPULATION AND HOUSING 81
2.14.1 REGULATORY SETTING 81
2.14.2 ENVIRONMENTAL SETTING 82
2.14.3 IMPACT ANALYSIS 83
2.15 PUBLIC SERVICES 84
2.15.1 REGULATORY SETTING 84
2.15.2 ENVIRONMENTAL SETTING 84
2.15.3 IMPACT ANALYSIS 85
2.16 RECREATION 86
2.16.1 REGULATORY SETTING 86
2.16.2 ENVIRONMENTAL SETTING 87
2.16.3 IMPACT ANALYSIS 87
2.17 TRANSPORTATION 88
2.17.1 REGULATORY SETTING 88
2.17.2 ENVIRONMENTAL SETTING 88
2.17.3 IMPACT ANALYSIS 89

2.18 TRIBAL CULTURAL RESOURCES 90
2.18.1 REGULATORY SETTING 90
2.18.2 ENVIRONMENTAL SETTING 91
2.18.3 IMPACT ANALYSIS 91
2.19 UTILITIES AND SERVICE SYSTEMS 92
2.19.1 REGULATORY SETTING 93
2.19.2 ENVIRONMENTAL SETTING 95
2.19.3 IMPACT ANALYSIS 95
2.20 WILDFIRE 98
2.20.1 REGULATORY SETTING 98
2.20.2 ENVIRONMENTAL SETTING 99
2.20.3 IMPACT ANALYSIS 99
2.21 MANDATORY FINDINGS OF SIGNIFICANCE 101
3 RESERVED FOR PUBLIC COMMENTS ON CIRCULATED DRAFT IS/MND 103
4 MITIGATION MONITORING AND REPORTING PROGRAM 104
4.1 PURPOSE OF THE PROJECT 104
4.2 REGULATORY FRAMEWORK 105
4.3 FORMAT OF THIS PLAN 105
4.4 IMPACTS AND MITIGATION MEASURES 105
4.4.1 MITIGATION MEASURE AIR-1 106
4.4.2 MITIGATION MEASURE BIO-1 107
4.4.3 MITIGATION MEASURE BIO-2 108
4.4.4 MITIGATION MEASURE BIO-3 109
4.4.5 MITIGATION MEASURE BIO-4 110
4.4.6 MITIGATION MEASURE CUL-1 111
4.4.7 MITIGATION MEASURE CUL-2 112
4.4.8 MITIGATION MEASURE GEO-1 113
4.4.9 MITIGATION MEASURE HAZ-1 114
4.4.10 MITIGATION MEASURE HAZ-2 115
4.4.11 MITIGATION MEASURE HWQ-1 116
4.4.12 MITIGATION MEASURE NV-1 118
4 REFERENCES 120
5 LIST OF PREPARERS 123
5.4 LEAD AGENCY — COUNTY OF MADERA 123
5.5 PROJECT CONSULTANTS — NV5, INC. 123

LIST OF TABLES

TABLE 1: PERMITS/REQUIREMENTS AND ASSOCIATED AGENCIES.....11
TABLE 2: SJVAPCD ATTAINMENT STATUS OF THE STATE AND FEDERAL AMBIENT AIR QUALITY.....23
TABLE 3: SJVAPCD CRITERIA POLLUTANTS FOR AIR QUALITY.....23
TABLE 4: SJVAPCD APPLICABLE SIGNIFICANCE THRESHOLDS FOR AIR POLLUTANTS.....24
TABLE 5: SJVAPCD ATTAINMENT PLANS.....25
TABLE 6: EXAMPLES OF COMMON NOISE LEVELS.....74
TABLE 7: TYPICAL NOISE LEVELS OF CONSTRUCTION EQUIPMENT.....76
TABLE 8: STATE LAND USE COMPATIBILITY STANDARDS FOR COMMUNITY NOISE ENVIRONMENT.....76
TABLE 9: MADERA COUNTY MAXIMUM ALLOWABLE NOISE EXPOSURE NON-TRANSPORTATION NOISE SOURCES.....78
TABLE 10: MADERA COUNTY HOUSING IN 2010.....82
TABLE 11: MADERA COUNTY DEMOGRAPHICS IN 2010.....82
TABLE 12: APPLICABLE PROGRAM MITIGATION MEASURES.....105

LIST OF FIGURES

FIGURE 1: PROJECT LOCATION MAP.....3
FIGURE 2: PROJECT SITE MAP.....4
FIGURE 3: FLOOD ZONE MAP.....64
FIGURE 4: WETLAND MAP.....65

LIST OF APPENDICES

APPENDIX A - PRELIMINARY DESIGN DRAWINGS
APPENDIX B - BIOLOGICAL EVALUATION
APPENDIX C - CULTURAL REPORT
APPENDIX D - PALEONTOLOGICAL RESOURCE ASSESSMENT

ACRONYMS AND ABBREVIATIONS

µg/L	micrograms per liter
AB	Assembly Bill
ACM	Asbestos-Containing Materials
AHPA	Archeological and Historic Preservation Act
APE	Area of Potential Effect
APN	assessor parcel number
ARE-20	Agriculture, Rural, Exclusive-20 acres
ARE-40	Agriculture, Rural, Exclusive-40 acres
AST	Above-Ground Storage Tank
ATCMs	Airborne Toxic Control Measures
bgs	below ground surface
BLM	Bureau Of Land Management
CAA	Clean Air Act
Cal/OSHA	California Division of Occupational Safety and Health
CalARP	California Accidental Release Prevention
CalEPA	California Environmental Protection Agency
CALFire	California Department of Forestry and Fire Protection
CalGEM	Geologic Energy Management Division
CalRecycle	Department of Resources Recycling And
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Standards Code
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH_4	Methane
CHRIS	California Historical Resources Information System
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
CRHR	California Register of Historical Resources
CRHR	California Register of Historical Resources
CUPA	Certified Unified Program Agency

CWA	Clean Water Act
dB	Decibels
dBA	A-Weighted Decibel
DDW	Division of Drinking Water
DEH	Division Environmental Health
DLRP	Division of Land Resource and Protection
DMG	State Division of Mines and Geology
DOC	California Department of Conservation
DOGGR	Division Of Oil, Gas, and Geothermal Resources
DTSC	California Department of Toxic Substance Control
DWR	Department of Water Resources
DWS	Drinking Water Standard
EIR	Environmental Impact Report
EO	Executive Order
EPCRA	Emergency Planning Community Right-To-Know Act
ESA	Endangered Species Act
F&G	Fish And Game Code
FEMA	Federal Emergency Management Agency
FHSZ	Fire Hazard Severity Zone
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FLPMA	Federal Land Policy and Management Act
FMMP	Farmland Monitoring and Mapping Program
FR	Federal Register
FTA	Federal Transit Administration
GAMA	groundwater ambient monitoring and assessment
GHG	Greenhouse Gas
gpd	gallons per day
gpm	gallons per minute
GSA	Groundwater Sustainability Agency
HAPs	Hazardous Air Pollutants
HCP/NCCP	Habitat Conservation Plan/Natural Community Conservation Plan
hp	horsepower
in/sec	Inches Per Second
LEA	Local Enforcement Agency
Leq	Energy Equivalent or Energy Average Level
LHMPU	Local Hazard Mitigation Plan Update
Lmax	Maximum A-Weighted Sound Level

LPA	Local Primary Agency
LUST	Leaking Underground Storage Tank
MBTA	Migratory Bird Treaty Act
MCGP	Madera County General Plan
MCL	Maximum Contaminant Level
MD-24	Madera County MD-24
MDD	Maximum Daily Demand
MLD	Most Likely Descendant
MM	Mitigation Measure
MRZ	Mineral Resources Zone
NEHRP	National Earthquake Hazards Reduction Program
NHPA	National Historic Preservation Act
NIST	National Institute of Standards and Technology
NMFS	National Marine Fisheries Service
Nox	Oxides of Nitrogen
NPDES	National Pollution Discharge Elimination System
NPPA	Native Plant Protection Act
NSF	National Science Foundation
OS	Open Space
OSFM	California Office of the State Fire Marshall
OSHA	Occupational Safety and Health Administration
OWTS	On-site Water Treatment System
PG&E	Pacific Gas and Electric
PM	Particulate Matter
PM_{10}	Respirable Particulate Matter
POS	Public Open Space
PPV	Peak Particle Velocity
PRC	Public Resources Code
Project	proposed Project
psi	pounds per square inch
RCRA	Resource Conservation and Recovery Act
RMPs	Resource Management Plans
RMS	Residential, Mountain, Single-family District
ROG	reactive organic gases
ROW	Right-Of-Way
RRS	Rural, Residential, Single-family District
RWQCB	Regional Water Quality Control Board
SB	Senate Bill

SIP	State Implementation Plans
SJVAPCD	San Joaquin Valley Air Pollution Control District
SMACRA	Surface Mining and Reclamation Control Act
Sox	Oxides of Sulfur
SPCC	Spill Prevention, Control, And Countermeasure
SR	State Route
SRA	State Responsibility Area
SWPPP	Stormwater Pollution and Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminant
TPY	Total Per Year
US	United States
USACE	United States Army Corps of Engineering
USC	United States Code
USEPA	United States Environmental Protection Agency
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VMT	Vehicle Miles Traveled
$\mu g/m^3$	micrograms per cubic meter

NOTICE OF INTENT TO ADOPT AN INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Date: July 3, 2023
To: Interested Parties
SWRCB FA No.: D16-02073
RE: MD-24 Teaford Meadows Water System Improvements Project

PROJECT LOCATION AND DESCRIPTION

Madera County Maintenance District 24 (MD-24) owns and operates a public water system in the unincorporated community of Teaford Meadows, northwest of the community of North Fork. Teaford Meadows is a rural community located on Teaford Saddle Road (Road 223) in the Sierra Nevada mountains at an approximate average elevation of 3,500' feet above sea level. MD-24 is a community water system that serves the residences of Teaford Meadows. MD-24 also provides wastewater collection and treatment services to the Teaford Meadows community.

Water service is provided to approximately 66 residential service connections with a population of approximately 150 with no commercial, industrial, or school connections. MD-24 has a service area of approximately 25 acres.

The proposed Project (Project) consists of improvements and additions to the MD-24 water system's pipelines, wells, storage tank, and associated infrastructure. The Project is proposed by Madera County and benefits the residents served by MD-24. MD-24 anticipates receiving funding assistance to implement the Project from the Division of Financial Assistance of the State Water Resources Control Board.

DECLARATION

Madera County has determined that the above project, with mitigation measures, would have no significant impact on the environment and is therefore exempt from the requirements of an environmental impact report. The determination is based on the attached Draft Initial Study and following findings:

1. The Project will not decrease the environmental quality, substantially reduce habitat, cause a wildlife population to drop below self-sustaining levels, reduce the number or restrict the range of special-status species, or eliminate important examples of California history or prehistory.
2. The Project does not have potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals.
3. The Project will not have impact that are individually limited but cumulatively considerable.
4. The Project will not have environmental effects that will cause substantial adverse effects on human being, either directly or indirectly.
5. The Project incorporates all applicable mitigation measures or environmental commitments identified in the draft initial study.

6. This draft Mitigated Negative Declaration (MND) reflects the independent judgement of the lead agency.

MITIGATION AND MONITORING AND REPORTING PROGRAM

A Mitigation and Monitoring and Reporting Program (MMRP) was prepared for the project and made part of the draft Mitigated Negative Declaration to address and mitigate potential impacts to biological and cultural resources.

DOCUMENT REVIEW AND AVAILABILITY

The Initial Study/Mitigated Negative Declaration (IS/MND) report is being circulated for public review. Comment period of 30-days will begin starting on July 8th, 2023 until August 8th, 2023. Comments on the IS/MND must be received in writing via email or U.S. mail to the contact listed below by 5:00 PM on August 8th, 2023. For e-mailed comments, please include the project title in the subject line and include the commenter's name and U.S. Postal Service mailing address.

Submit comments to:

By mail,
Madera County Public Works
200 W. 4th Street, Suite 3100
Madera, CA 93637
Attn: Raymundo Gutierrez

By email,
Raymundo.Gutierrez@maderacounty.com
Please include "MD-24 Teaford Meadows CEQA Review Comments" in the subject line.

During the 30-day public review period the IS/MND will be available for review on the CEQAnet web portal at: https://ceqanet.opr.ca.gov and on the Madera County website at: https://www.maderacounty.com/government/public-works/public-notice.

PUBLIC HEARING

On August 23, 2023, the Madera County Developmental Review Committee will conduct a public hearing to consider the of the Mitigated Negative Declaration and Mitigation Monitoring and Reporting Program pursuant to the California Environmental Quality Act (CEQA). The hearing will be held at Presentation Room 3200 located at 200 W. 4th Street, Madera, CA 93637.

1 PROJECT SUMMARY

1.1 CONTACT

LEAD AGENCY: County of Madera

Engineering Services
Attn.: Raymundo Gutierrez
200 W. 4th Street, Suite 3100
Madera, CA 93637
(559) 675-7811
raymundo.gutierrez@maderacounty.com

1.2 INTRODUCTION

The proposed Project (Project) is located in an unincorporated area of Madera County known as Teaford Meadows. Madera County's Maintenance District 24 (MD-24) owns and operates a public water system to serve the Teaford Meadows community. Improvements are proposed to the MD-24 public water system. The Madera County Public Works Department currently oversees 33 special districts established for the operation and maintenance of water, wastewater, drainage, or lighting. Of these 33 districts, there are 24 Maintenance Districts (MDs). Public Works staff operates 30 community water systems and 14 community wastewater systems. Staff also provides direct water and wastewater services to approximately 15,000 connections within Madera County and processes approximately 3.1 million gallons of potable water daily for these residents (Madera County 2022).

MD-24 is located in Madera County Supervisorial District 5 on County Road 223 midway between the towns of Oakhurst and North Fork. MD 24 was formed on April 9, 1968 by County Board of Supervisors Resolution No. 68-164 to operate and maintain the water system, sewer system, and roads for small, residential communities within its boundaries. MD-24 (Public Water System No. 2000552) provides potable water service to the community of Teaford Meadows.

The Project is includes enhancements and construction that will address the aging production wells, improving water supply source redundancy, and water quality that exceed federal and state standards for arsenic, iron, and manganese. Madera County is proposing:

- Equipping of test well, including a new electrical service, propane generator, transfer switch, and propane tank
- New water treatment facility
- New transmission pipeline connecting the Well Nos. 2 and 4 site to a new water treatment facility
- New distribution pipeline and communication conduit parallel to proposed transmission pipeline
- Power supply improvements along Moic Drive and Teaford Poyah, and service to the new well and treatment facility
- Improvements at Well Nos. 2 and 4 site.

  - Wellhead improvements
  - Inspection, brushing, and bailing Well Nos. 2 and 4
  - Mechanical piping improvements
  - Security gate adjacent to Teaford Poyah
  - Connection of proposed signal conduit to proposed meters and controllers
- Destruction of Well No. 3 and disconnecting pipeline from Well No. 3 to the distribution system

1.3 PROJECT LOCATION AND SETTING

MD-24 provides potable water service to approximately 66 residents about 10 miles northwest of the community of North Fork (Figure 1). The existing water infrastructure and Project elements are proposed within Madera County right-of-way (ROW) near Teaford Saddle Road (Road 223) on Teaford Poyah, Moic Drive, and Little Finegold Creek Drive (Figure 2). MD-24 was formed in 1968 to provide potable water services to the residents in its service area. There are no commercial, industrial, or school connections.

Legend

★ Project Location

NV5

1 W DEER VALLEY ROAD
BUILDING 2, SUITE 305
PHOENIX, ARIZONA 85027
Tel: 623.374.6637 Fax: 623.738.3690

PROJECT LOCATION
INTIAL STUDY/
MITIGATED NEGATIVE DECLARATION

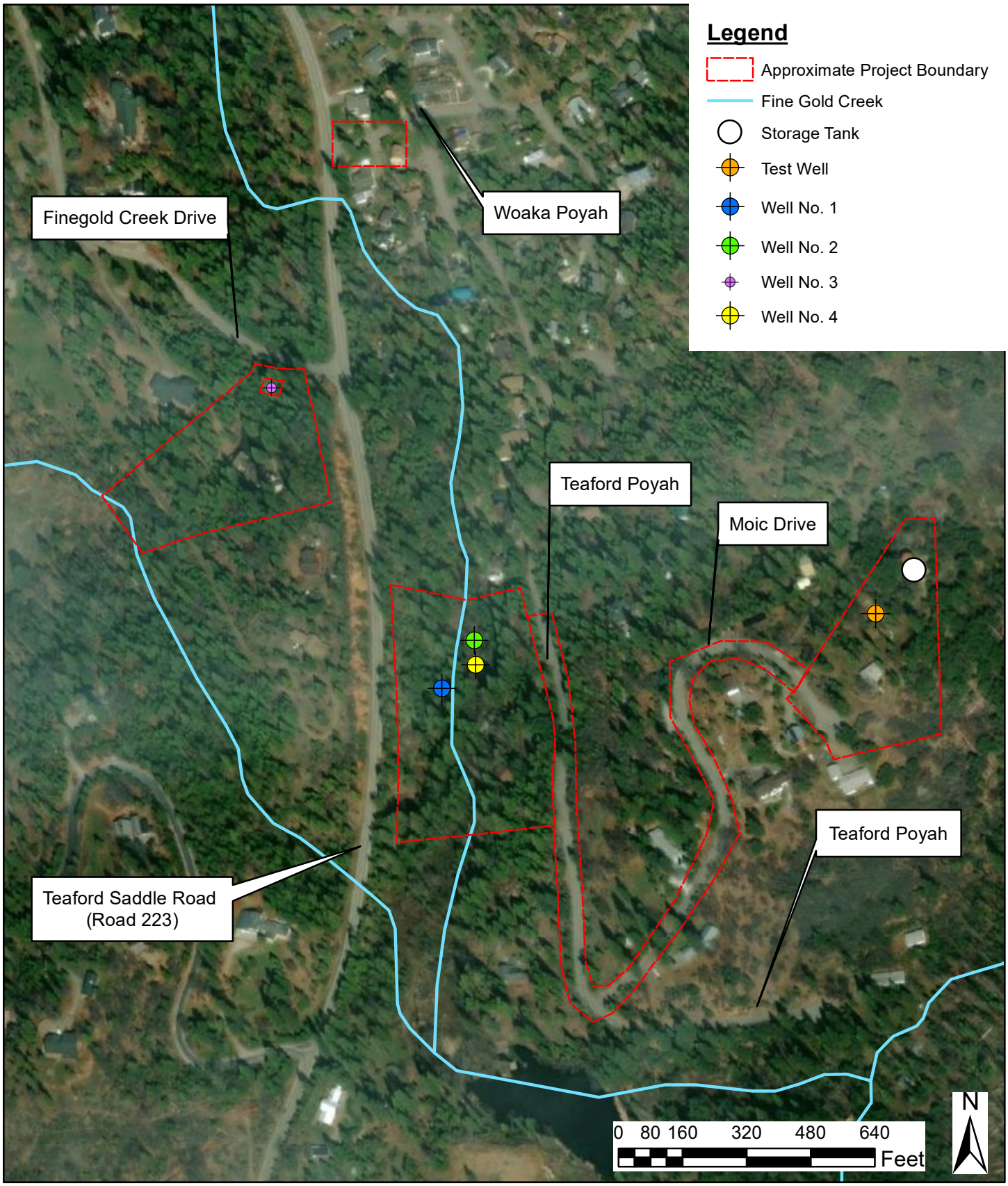
FIGURE 1

PROJECT NO. 226117-0000217.01 | DATE:06/28/2023

FOR: COUNTY OF MADERA

DES: LAB | DR: LAB | CHK: MM

SHT 1 OF 1



N V 5

1 W DEER VALLEY ROAD
BUILDING 2, SUITE 305
PHOENIX, ARIZONA 85027
Tel: 623.374.6637 Fax: 623.738.3690

SITE MAP
INITAL STUDY/
MITIGATED NEGATIVE DECLARATION

FIGURE 2

PROJECT NO. 226117-0000217.01 | DATE: 6/28/2023

FOR: COUNTY OF MADERA

DES: LAB | DR: LAB | CHK:MM

SHT 1 OF 1

Service Layer Credits: Source: Esri, Maxar, CDFW, Earthstar Geographics, and the GIS User Community

1.4 BACKGROUND

Water Wells and Water Quality

The MD-24 water system is supplied by groundwater wells. The Teaford Meadows Water System, Public Water System Number 2000552, provides service to 66 improved units and 6 standby units. In addition, there are 8 contract water service connections consisting of 7 improved units and 1 standby unit. The system has three hard rock wells (Wells Nos. 2, 3 and 4). Well No. 3 is outside of the district and not utilized due to heavy iron contamination. The wells pump directly into the distribution system that consists of 6,300 feet of 4 and 6-inch AC water mains which back feed a 115,000 gallon storage tank.

The MD-24 serves existing residential developments that includes 66 lots and covers an area of approximately 25 acres. The MD-24 currently operates and maintains two active wells (Wells Nos. 2 and 4), one standby well (Well No. 3), one inactive well (Well No. 1), and one test well. Well Nos. 1, 2, and 4 are located on the same County-owned parcel APN (061-012-012), adjacent to Teaford Poyah, Well No. 3 is located on a different County-owned parcel (APN 061-500-032) adjacent to Fine Gold Creek Drive. The test well is located on a County-owned parcel (APN 061-490-33) adjacent to Moic Drive (Figure 2 in Section 1.3).

Well No. 1 is inactive and is not connected to the distribution system. No work is proposed at Well No. 1.

Well No. 2 is active and permitted. Well No. 2 has a constant-speed motor and has a water production rate of approximately 26 gallons per minute. Since 2014 Well No. 2 has received multiple violations for exceeding concentrations of arsenic, iron, and manganese over the maximum concentration levels (MCL). The concentrations of iron in Well No. 2 ranges from non-detect to 490 micrograms per liter (µg/L) with a MCL of 300 µg/L. Similarly, manganese concentrations range from 46 to 380 µg/L with a MCL of 50 µg/L.

Well No. 3 is classified as a standby source, and is utilized only during emergencies. Well No. 3 has interior deterioration. From the surface, it has been observed that the steel casing has deteriorated. In addition to physical deterioration, Well No. 3 has multiple violations for exceeding concentrations of arsenic, iron, and manganese since 2011. The concentrations of arsenic in Well No. 3 range from non-detect to 1.2 µg/L and have a MCL of 10 µg/L. The concentration of iron ranges from 1,600 to 41,000 µg/L. The concentration of manganese ranges from 110 to 350 µg/L. There is a possibility of iron-consuming bacteria within the well, which may be the cause of the high levels of iron concentrations and deteriorating well casing.

Well No. 4 is active and is located adjacent to Well No. 2. Well No. 4 also has a constant-speed motor and has a normal water production rate of approximately 35 gpm. Beginning in 2014, Well No. 4 has received multiple violations for arsenic, iron, and manganese. Arsenic concentrations in Well No. 4 have ranged from 12 to 99 µg/L and the well has not tested below the MCL for arsenic since 2014. Concentrations of iron have ranged from 210 to 2,500 µg/L. Likewise, concentrations of manganese have ranged from 110 to 350 µg/L.

MD-24 actively and regularly utilizes Well Nos. 2 and 4. However, if one well were to render offline, the maximum daily demand MDD) would not be met. The MDD for MD-24 is 53 gpm over a 24-hour

period. Well Nos. 2 and 4 have a normal production rate of 26 gpm and 35 gpm. Therefore, MD-24 does not comply with Drinking Water Standards for California Code of Regulations (CCR), Title 22, Section 64554(c) for meeting MDD while the largest producing source is offline.

Since MD-24's current wells (Nos. 2 and 4) do not comply with Drinking Water Standards, a test well was drilled in 2019 (WCR2019-010778). The well was drilled to a depth of 925 below ground surface (bgs) with a temporary concrete pad on the surface. A sanitary seal was installed at 100 bgs and 8-inch open hole below the seal. Groundwater was first encountered at 580 bgs. The test well was tested in 2019 for arsenic, iron, manganese, and flow. The concentration of arsenic was 4.9 µg/L, iron was 710 µg/L, and 290 µg/L. The flow rate was approximately 157 gpm (10 day pump test, August 2019, Walt Bannon Drilling). The well was completed but not equipped.

Water Storage

MD-24 has one storage tank (Tank No. 1) located on an MD-24-owned parcel (APN 061-490-032) adjacent to Moic Drive (Figure 2). The steel, storage tank holds 125,000 gallons with a common inlet/outlet configuration. Tank No. 1 is composed of welded steel on a gravel foundation. Well Nos. 2 and 4 pump into the distribution system that then supplies the storage tank. When production rate exceeds the community's water demand, the storage fills. When the community's water system exceeds the wells' combined production rate, the tank's water elevation falls.

Treatment

MD-24 does not own or operate any treatment systems for water service.

Booster Pump Station

There are no booster pump stations in the MD-24 water delivery system. All customers are supplied water that is pressurized by the storage tank located on APN 061-490-032.

Distribution System

The distribution pipeline system originates at the existing water storage tank. From this tank, water is supplied to customers through a network of underground pipelines. This distribution system is also used to convey water from the wells to the storage tank site

Compliance with Regulatory Agency and Compliance Orders

MD-24 is regulated by a local primary agency (LPA), the Madera County Community and Economic Development Department's Environmental Health Division. MD-24 is not in regular compliance with drinking water requirements pertaining to the concentrations of arsenic, iron, and manganese. The concentrations of these contaminants are regularly in exceedance of their respective maximum contaminant levels (MCLs). The LPA provided MD-24 a Water System Inspection Report (December 2022) that noted several deficiencies with the water system infrastructure. These deficiencies include wellhead configurations and conditions, a common inlet-outlet at the storage tanks, inadequate water supply, and water quality exceedances for arsenic, iron, and manganese.

1.5 PROJECT DESCRIPTION

To address the regular exceedances for water quality, deficiencies in the systems infrastructure, and operation and maintenance deficiencies for the MD-24 system, several components are presented in the PER (Draft PER 2022) and will be implemented. The Project includes the following components:

Equipping the Test Well

A test well was drilled as part of the project's planning phase and was completed in July 2019. This project component proposes to install a pump and motor at the test well. The test well will discharge to the proposed transmission pipeline, which will connect to the proposed water treatment facility, to be located northeast of the wellhead.

Pacific Gas & Electric (PG&E) will provide electrical service to the new well site, extended the service from existing poles along Moic Drive. The electric utility's power along Moic Drive is single-phase electrical power. Due to the power requirements of the test well and electrical demand at the treatment facility, the proposed project requires that the PG&E electrical service in the immediate area will be upgraded to three-phase electric power. Approximately nine power poles on Moic Drive will either be replaced or be modified to provide three-phase power. These improvements would be constructed by PG&E (or contractors).

A new propane generator, propane storage tank, and automatic transfer switch will be installed adjacent to the well. The generator will have capacity to serve the test well and the proposed treatment facility (see below). The generator will be utilized during extended grid power outages and during periodic testing. Normally, the well and treatment facility will utilize grid power (Pacific Gas and Electric). Access to the test well, generator, propane tank, storage tank, and treatment facility will be via an existing dirt road and southern portion of the parcel (APN 061-490-033 and -034). This dirt road will also be used by the property owner to the south, primarily to allow access to refill that parcel's propane tank.

New Treatment Facility

The MD-24 system has experienced multiple violations for exceeding concentrations of arsenic, iron, and manganese. This project component includes a new water treatment facility to be installed adjacent to the existing storage tank and test well within a County-owned parcel (APN 061-490-035). The proposed water treatment facility will remove arsenic, iron, and manganese from the water produced at Well Nos 2, 4, and the test well. Water from these wells will flow into the treatment facility through the proposed transmission pipeline. After the water is treated, the water will continue be pumped into the existing storage tank. A new inlet pipe to the tank will be constructed. The treatment facility will utilize a coagulation filtration process for the removal of arsenic, iron, and manganese.

A building will be constructed around the treatment facility. The building will have an approximate footprint of approximately 1,000 square feet. The building will have a maximum height of approximately 16 feet above grade. During construction, an estimated overexcavation and recompaction depth of five feet is anticipated. The site will contain interior and exterior lighting.

Exterior lighting will be manually activated and will normally be used during urgent or emergency repair and operations periods.

The proposed building will contain several pumps and motors, process equipment, piping, monitoring equipment, and alarms. The building will not be used for a commercial or residential purposes. The building will have climate control features to prevent freezing and high temperatures within the building. The treatment facility will utilize a coagulant (ferric chloride, aluminum sulfate, or other chemical) to chemically bond with contaminants. The anticipated coagulant, ferric chloride, has a United States Department of Transportation Hazard classification 8 (corrosive material), and is listed as a hazardous substance per the Clean Water Act (Fisher Scientific 2007). The contaminants, after bonding with the coagulant, will be removed by settling and filtration. The coagulant will be regularly delivered to the site and will be stored on site. The stored coagulant will be within secondary containment vessels and within the proposed building. Deliveries of coagulant to the site is anticipated to be on an approximately weekly basis. The frequency of delivery may increase when the system's water demands are higher (typically in summer months) and may be reduced when the system's water demands are lower. During normal operation, County operations staff are anticipated to visit the site daily. During repairs or extensive investigations or inspections, additional vehicles and staff may be on-site and utilize street parking.

The treatment process will generate solid (sludge) and dewatered backwash sludge. The waste will contain the removed iron, manganese, and arsenic, along with the coagulant chemically bound to these contaminants. The solid (sludge) and used media were tested for toxicity using the toxicity characteristic leaching procedure (TCLP). The solid (sludge) passed the TCLP and is not deemed hazardous. Hauling of the solid (sludge) from the site is anticipated to be on an approximately weekly basis. The frequency of hauling may increase when the system's water demands are higher (typically in summer months) and may be reduced when the system's water demands are lower. However, the backwash is considered hazardous because of the arsenic. A pilot study was conducted using the California Waste Extraction Test (WET) in which the total threshold limit concentration (TTLC) is 50 milligrams per kilogram (mg/kg) of arsenic. The pilot study utilizing the WET tested the backwash at 64 mg/kg of arsenic. Since the backwash is considered hazardous waste, the County, as part of the permitting review, prior to construction, will develop a plan for hauling and disposal in accordance with local, state, and federal laws.

The ground-level vegetation around the storage tank, test well, and proposed treatment facility will be periodically removed to reduce the risk of fire damage. Ground level vegetation will be removed within 30 feet of these facilities, or to the property line, whichever is less.

New Transmission Pipeline

Due to the proposed water treatment facility, this project component proposes a new, separate transmission pipeline with isolation, blow-off and air-release valves to connect Well Nos. 2, 4, and the test well to the proposed water treatment facility. The proposed pipeline would convey raw water directly from the wells to the treatment facility. All of the water produced from these wells will be conveyed through the proposed transmission pipeline.

The pipeline would originate at the County-owned parcel that contains Well Nos. 2 and 4 (APN 061-012-012). The pipeline commences at Teaford Poyah, where it will travel south until reaching Moic

Drive. The pipeline will then proceed along Moic Drive until reaching the County-owned parcel (APN 061-490-033). Water produced from the test well will connect to this pipeline and will continue to the proposed water treatment facility.

The pipeline will have a diameter of four inches and will be installed using trenching methods. The trenches will be approximately five-feet deep and three-feet wide. The impacted pavement will be restored per Madera County Department of Public Works Standards. Existing ROW is present along the northernmost portions of the alignment. South of the County-owned parcel containing Well Nos. 2 and 4, the County will accept existing offers of ROW dedication from privately-owned parcels along Teaford Poyah and Moic Drive.

Simultaneous to construction of this project component, a communication conduit will be installed along the proposed pipeline alignment to improve communication between Well Nos, 2, 4, the test well, the existing storage tank, and the water treatment facility.

Parallel to the pipeline corridor, the overhead electrical utility facilities (PG&E) will be upgraded to three-phase power. Electrical utilities in this area are currently overhead. Electric improvements within the County-owned parcels at the test well and treatment facility site to serve the new well and treatment facility are proposed to be placed underground with a new meter.

New Distribution Pipeline

This project component includes a new, 8-inch distribution pipeline parallel to the transmission pipeline to be installed along Moic Drive and Teaford Poyah. The distribution pipeline will convey treated water from the existing storage tank to the existing distribution pipeline network. This pipeline will also provide a second route to convey water from the storage tank to the MD-24's existing customers, improving hydraulic performance, redundancy of a key facility, and improved access for operators. The distribution pipeline will connect to the existing distribution pipeline system in two locations. The first is along Moic Drive, approximately 450 feet northeast of the intersection of Moic Drive and Teaford Poyah. The second is along Teaford Poyah, east of the Well Nos. 2 and 4 site.

Wellhead Improvements

This project component includes wellhead improvements at Well Nos. 2 and 4. These improvements are based on a 2022 water system inspection by Madera County Environmental Health Division.

At Well No. 2, the mechanical pipeline will be replaced. A new concrete pad will be replace the existing, with a slightly larger footprint. The air vent will be revised to have a downturned, screened vent with 24-gauge metal mesh wire. The wellhead will be raised to have a clearance of 24 inches or more above existing grade. A sensor will be installed within the well to continuously measure the groundwater level. The mechanical piping, flow meter, and check valve will be replaced. The flow meter will be located adjacent to Well No. 4. The mechanical piping will have a pump to waste arrangement. The control system at the wellhead will be revised to incorporate operations limits and conditions from the treatment facility. Debris (leaves, dirt) around the site will be removed on a continuous basis.

At Well No. 4, the wellhead will be raised to have a clearance of 24 inches or more above existing grade. The top of the conductor and well casings will be removed, and new casing will be extended to approximately 22 and 30 inches above grade, respectively. The air vent will be revised to have a downturned, screened vent with 24-gauge metal mesh wire. A sensor will be installed within the well to continuously measure the groundwater level. The mechanical piping, flow meter, and check valve will be replaced. The control system at the wellhead will be revised to incorporate operations limits and conditions from the treatment facility. Debris (leaves, dirt) around the site will be removed on a continuous basis.

Destruction of Wells

This project component includes the destruction of Well No. 3. Well No. 3 exhibits physical deterioration of the well's visible steel interior and exterior. At Well No. 3, inconsistent and widely varying iron concentrations in the water produced over the past five years indicate the presence of iron-consuming bacteria, which has contributed to the physical deterioration of the steel casing of the well.

Well No. 3 will be destroyed per Department of Water Resources and Madera County requirements. All surface features of the well will be removed, including the enclosure and electrical supply. The County anticipates selling/conveying the ownership of the parcel on which Well No. 3 is located (APN 061-500-032) to the adjacent/surrounding property owner (APN 061-500-017). The pipeline connecting the well to the Teaford Meadows distribution system will be cut and plugged near along Woaka Poyah, east of the intersection of Teaford Saddle Road. A new blowoff valve and/or air release/vacuum valve will be installed at this location.

Land and Rights of Way

Along Moic Drive, property owners had previously offered dedication of right of way to Madera County. Madera County will accept these right of way dedications to allow a continuous right of way along Moic Drive for the transmission pipeline, distribution pipeline, and communication conduit.

At the test well, storage tank, and treatment facility site, the County will complete a lot merger of the four adjacent parcels (APNs 061-490-032, 033, -034, and -035).

The County anticipates selling/conveying the ownership of the parcel on which Well No. 3 is located (APN 061-500-032) to the adjacent/surrounding property owner (APN 061-500-017).

1.6 ANTICIPATED PERMITS AND COORDINATION

TABLE 1: PERMITS/REQUIREMENTS AND ASSOCIATED AGENCIES	
AGENCY	**PERMIT/REQUIREMENT**
Madera County Community and Economic Development Department Division of Environmental Health (DEH)	Water Supply Permit Amendment Well Destruction Permit
Madera County Public Works Department	Encroachment Permit Grading and Erosion Control Permit
Madera County Building Department	Electrical Permit Building Permit
Madera County Fire Department	Underground Fire Main Permit LPG Tank Self Certification
San Joaquin Air Pollution Control District	Permit for Operating Emergency Generator Construction
Pacific Gas and Electric	Provision of Electrical Utility Service Cessation of Service at Well No. 3
California State Water Resources Control Board - Division of Financial Assistance (DFA)	Project Funding

1.7 POTENTIAL ENVIRONMENTAL EFFECTS

The Project could potentially result in one or more of the following significant environmental effects; however, proposed mitigation measures will reduce effects to less than significant:

☐	Aesthetic	☐	Agriculture and Forestry Resources	☒	Air Quality
☒	Biological Resources	☒	Cultural Resources	☐	Energy
☒	Geology/Soils	☐	Greenhouse Gas Emissions	☒	Hazards and Hazardous Materials
☒	Hydrology/Water Quality	☐	Land Use/Planning	☐	Mineral Resources
☒	Noise	☐	Population/Housing	☐	Public Services
☐	Recreation	☐	Transportation	☒	Tribal Cultural Resources
☐	Utilities/Service Systems	☐	Wildfire	☐	Mandatory Findings of Significance

1.8 EVALUATION OF ENVIRONMENTAL IMPACTS

The 2021 California Environmental Quality Act (CEQA) Statute and Guidelines (AEP 2021) suggests that the following criteria be used when evaluating effects using the environmental checklist. These criteria have been used in this Initial Study:

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures,

and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

    a. Earlier Analysis Used. Identify and state where they are available for review.
    b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
    c. Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8. The explanation of each issue should identify:

    a. the significance criteria or threshold, if any, used to evaluate each question; and
    b. the mitigation measure identified, if any, to reduce the impact to less than significance

1.9 DETERMINATION OF ENVIRONMENTAL IMPACTS

On the basis of this Evaluation of Environmental Impacts:

☐ I find that the Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☑ I find that although the Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect:
1) has been adequately analyzed in an earlier document pursuant to applicable legal standards;
2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the Project could have a significant effect on the environment, because all potentially significant effects:
(a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the Project, nothing further is required.

Raymundo Gutierrez
Signature

7/6/2023
Date

Raymundo Gutierrez
Printed Name

Madera County
For

2 ENVIRONMENTAL CHECKLIST

2.1 AESTHETICS

2.1.1 REGULATORY SETTING

This section addresses regulations, laws, and policies related to aesthetics in compliance with Federal, State, and local entities and includes descriptions and details.

Federal Regulations, Laws, and Policies

There are no federal regulations, laws, or policies related to aesthetics.

State Regulations, Laws, and Policies

California Scenic Highway Program

In 1963, the California State Legislature established the California Scenic Highway Program, a provision of the Streets and Highways Code, to preserve and enhance the natural beauty of California (California Department of Transportation (Caltrans) 2015). The state highway system includes designated scenic highways and those that are eligible for designation as scenic highways.

Local Regulations, Laws, and Policies

Madera County General Plan

The Madera County General Plan (MCGP) Policy Document (PD) contains goals and policies to protect the scenic routes and visual and scenic resources (PD 1995). The MCGP does not identify any scenic viewsheds within the County. The Project adheres to goals and policies of the MCGP scenic routes and visual and scenic resources.

2.1.2 ENVIRONMENTAL SETTING

This section addresses the aesthetic and visual quality of the region and potential impacts associated with the implementation of the Project. It includes a description of existing visual conditions and an evaluation of potential effects on aesthetic resources.

The Project area is in a rural area known as Teaford Meadows, in the Sierra Nevada Mountains in northeast Madera County, approximately 10 miles northwest of the community of North Fork (Figure 1 in Section 1.3). The rolling hills and oak trees of the Sierra Nevada foothills dominates the landscape. The visual quality from the Project area is variously affected by the existing residential developments, roads, and water system infrastructure and is considered to be less than scenic.

Visual Character and Quality of the Site

Residential housing, mountain landscape, paved and unpaved roads, overhead electric utility poles and wiring, and existing MD-24 infrastructure (Figure 2 in Section 1.3) adjoin the Project area.

Light and Glare

Nighttime lighting is necessary to provide and maintain safe, secure, and attractive environments.

Light that falls beyond the intended area of illumination is referred to as "light trespass." The most common cause of light trespass is spillover light, which occurs when a lighting source illuminates surfaces beyond the intended area, such as when building security lighting or parking lot lights shine onto neighboring properties. Spillover light can adversely affect light-sensitive uses, such as residences, at nighttime. Both light intensity and fixtures can affect the amount of any light spillover. Modern, energy-efficient fixtures that face downward, such as shielded light fixtures, are typically less obtrusive than older, upward-facing light fixtures.

Glare is caused by light reflections from pavement, vehicles, and building materials such as reflective glass, polished surfaces, or metallic architectural features. During daylight hours, the amount of glare depends on the intensity and direction of sunlight.

In general, the night sky in the Project area is not impacted. The most intense lighting in or near the Project sites is from the surrounding residential buildings. These structures are continuous light sources, including the nighttime hours. Residential housing and vehicle headlights illuminate the surrounding roadways.

2.1.3 IMPACT ANALYSIS

The following sections discuss the key issues with respect to the Project's potential to impact aesthetic resources.

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
AESTHETICS. Except as provided in Public Resource Code (PRC) Section 21099, 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 buildings along a State scenic highway?	☐	☐	☐	☒
c. In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Project Impact Discussion
Would the project:

a) Have a substantial adverse effect on a scenic vista?

Direct and Indirect Effects. Scenic vistas are typically categorized as either panoramic views (visual access to a large geographic area) or focal views (visual access to a particular object, scene, setting, or feature of interest). There are no scenic areas designated by the MCGP. During construction, there is potential for construction activities (e.g construction equipment, warning markers on roadways, and staging) to have an effect on a scenic vista. However, the proposed construction is temporary and upon completion will return to a similar footprint with the addition of the proposed new well and water treatment facility. Existing overhead electrical wiring and poles, generally located along Moic Drive, will be improved as part of the project. The improvements to the PG&E infrastructure will add wiring along the same alignment, adding a minor visual impact, albeit not to a scenic vista. A less than significant impact would occur.

b) Substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings along a State scenic highway?

Direct and Indirect Effects, Construction and Operation. The Project would not substantially damage scenic resources. The local roads in the Project area are not designated or eligible as a State Scenic Highway under the California Scenic Highway Program (Caltrans 2022). The closest designated Scenic Highway to the Project is in the County of Mariposa for State Route (SR) 140 (SR-140) approximately 50 miles to the northwest. The closest Eligible Highway is Route-41 (CA-41) approximately 4 miles northwest of the Project (Caltrans 2022). The site is not visible from either highway. The Project construction will be located on Madera County ROW and will not have an effect to any highway. There may be temporary traffic during the temporary vehicles entering and exiting the Project site on Road 223. No impact would occur relative to this issue.

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Direct and Indirect Effects, Construction and Operation. The Project elements will be located within existing Madera County ROW or Madera County owned parcels. There is potential for construction-related aesthetic impacts (e.g., grading activities, construction equipment, warning markers on roadways, and staging) that would only be short-term as motorists and residents drive by the construction sites. Upon completion of construction, the Project site will return to a similar footprint, with the addition of the new well's mechanical equipment and water treatment facility. These facilities will not be readily visible from the connecting street (Moic Drive). There would be a less than significant impact to the existing visual character and quality of public views 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?

Direct and Indirect Effects, Construction and Operation. The Project elements as discussed in the Project Description (see Section 1.5) do not include added continuous and substantial sources of

light or glare. Manually activated exterior lighting is proposed at the tank and new well site, which would be used to support urgent or emergency repairs during nighttime. During construction of the proposed facilities, no nighttime construction would take place. Impacts to views in the area relating to light or glare would be less than significant.

2.2 AGRICULTURE AND FORESTRY RESOURCES

2.2.1 REGULATORY SETTING

This section addresses regulations, laws, and policies related to agriculture and forestry resources in compliance with Federal, State, and local entities and includes descriptions and details.

Federal Regulations, Laws, and Policies

There are no federal regulations, laws, or policies related to agriculture and forestry resources.

State Regulations, Laws, and Policies

California Department of Conservation

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 (DOC) as an optional model to use in assessing impacts on agriculture and farmland. The Farmland Monitoring and Mapping Program (FMMP) contains maps and statistical data regarding California's agriculture resources including the zoning of farmland. In determining whether impacts on forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection (CalFire) regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board (CARB).

Williamson Act

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, is a non-mandated State program for counties and cities to preserve agricultural land and discourage the premature conversion of agricultural land to urban uses. The DOC Division of Land Resource Protection (DLRP) provides Williamson Act maps and maps of important farmland for counties in California, including Madera County. Each map indicates areas of urban/built-up land in addition to illustrating the locations of various agricultural-related (Williamson Act or farmland designation) categories.

Local Regulations, Laws, and Policies

Madera County General Plan

The MCGP contains goals and policies related to agricultural and forest resources to protect the agricultural use of the County, including the zoning of land for such purposes. The Project adheres to goals and policies related forest resource.

2.2.2 ENVIRONMENTAL SETTING

This section describes the existing agricultural and forestry conditions within the Project area and evaluates whether the Project would result in significant impacts related to agriculture and forestry resources.

Although the regional character of the Sierra Nevada foothills is rural and includes some farmland, the Project site classified by Madera County as Residential, Mountain, Single Family District (RMS) and Residential, Rural, Single-Family District (RRS), and Open Space (OS) land uses (Land Use 2022). The land surrounding the Project site is zoned by the County as Public Open Space (POS) or Agriculture, Rural, Exclusive (ARE). The DOC Important Farmland Finder has not classified the Project area and has not been mapped (DOC 2018).

2.2.3 IMPACT ANALYSIS

The following sections discuss the key issues with respect to the Project's potential to impact agriculture and forestry resources.

	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
AGRICULTURE AND FORESTRY RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the Project:				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program (FMMP) 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 PRC [PRC] Section 12220(g)), timberland (as defined by PRC 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?	☐	☐	☐	☒

Project Impact Discussion
Would the project:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program (FMMP) of the California Resources Agency, to non-agricultural use?

Direct and Indirect Effects. The Project area has not been classified by the DOC California Important Farmland Map Finder (DOC 2018). Therefore, it is unknown if any prime, unique, or statewide important farmland exists. The Project site is not used for farming. As discussed above, the land is zoned by the County as OS, RRS, and RMS. The proposed locations are existing County ROWs or County owned parcels that are currently used for water system and wastewater system infrastructure. The Project proposes enhancements and additions to MD-24 including a new well, new water treatment facility, destruction of Well Nos. 1 and 3, wellhead improvements to Well Nos. 2 and 4, and new transmission line to connect Well Nos. 2, 4 and proposes well to the new water treatment facility. No existing farmland zoned by the County will be converted from agricultural use. No impact would occur relative to this issue.

b) Conflict with existing zoning for agricultural use, or a Williamson Act Contract?

Direct and Indirect Effects. As discussed above, the Project has not been classified by the DOC. Additionally, the Project location is zoned by the Madera County as RMS, RRS, and OS. The MCGP Background Report states that most of the Williamson Act Contracts in the County are lands devoted to agricultural use and zoned as agriculture (Background Report 1995). The Project is not located in land zoned as agriculture by the County, therefore no impact would occur relative to this issue.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in PRC Section 12220(g)), timberland (as defined by PRC Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

Direct and Indirect Effects. The Project location is zoned by Madera County as RMS, RRS, and OS (Land Use 2022). The MCGP Background Report states that almost all of the timberlands in the County are located in the Sierra National Forest under jurisdiction of the US Forest Service (USFS) (Background Report 1995). The Project is not located in the Sierra National Forest under the management of the USFS. Although the proposed treatment facility site and existing tank site will be adjacent to USFS lands (Sierra National Forest), this Project site is located in Madera County ROW and County-owned parcels. Parcels in the area are used for rural residential living and are regularly disturbed by human activities and the built environment, including clearing for fire protection purposes. The Project proposes enhancements and additions to MD-24 including equipping a new well, new water treatment facility, destruction of Well No. 3 and disconnection of pipeline from Well No. 3 to the distribution system, wellhead improvements to Well Nos. 2 and 4, a new transmission line to connect Well Nos. 2, 4 and proposed well to the new water treatment facility, power supply

improvements to serve the new well and treatment facility, and a new distribution pipeline and signal conduit. The Project is located adjacent to, but not within, forest land, timberland, or timberland production land, and would not conflict with existing zoning or cause rezoning of these lands. No impact would occur relative to this issue.

d) Result in the loss of forest land or conversion of forest land to non- forest use?

Direct and Indirect Effects. As discussed above, the Project would not result in the loss of forest land or conversion of forest land to non-forest land as the Project is not located in any land that would be converted from forest land to non-forest use. The Project will be located in County ROW or County owned parcels. The Project proposes enhancements and additions to MD-24 including equipping a new well, new water treatment facility, destruction of Well No. 3 and disconnection from the distribution system, wellhead improvements to Well Nos. 2 and 4, a new transmission line to connect Well Nos. 2, 4 and proposed well to the new water treatment facility, and a new distribution pipeline and signal conduit. No impact would occur relative to this issue.

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?

Direct and Indirect Effects. As discussed in the previous questions, the Project would not involve other changes in the existing environment which, due to their location or nature, which could result in conversion of Farmland to non-agricultural use, or conversion of forest land to non-forest use. The Project will update and enhance existing MD-24 infrastructure in County ROW and parcels. Upon completion, the proposed system will have a similar footprint to the existing system, with the addition of the new water treatment facility and equipping of the new well. No impact would occur relative to this issue.

2.3 AIR QUALITY

2.3.1 REGULATORY SETTING

This section addresses regulations, laws, and policies related to air quality in compliance with Federal, State, and local entities and includes descriptions and details.

Federal Regulations, Laws, and Policies

Clean Air Act

The Clean Air Act (CAA) is implemented by the United States Environmental Protection Agency (USEPA) and sets ambient air limits, the National Ambient Air Quality Standards (NAAQS), for six criteria pollutants: particulate matter of aerodynamic radius of 10 micrometers or less (PM_{10}), particulate matter of aerodynamic radius of 2.5 micrometers or less ($PM_{2.5}$), carbon monoxide (CO), nitrogen dioxide (NO_2), ground-level ozone, and lead. Of these criteria pollutants, particulate matter and ground-level ozone pose the greatest threats to human health.

State Regulations, Laws, and Policies

California Air Resources Board

The California Air Resources Board (CARB) sets standards for criteria pollutants in California that are more stringent than the NAAQS and include the following additional contaminants: visibility-reducing particles, hydrogen sulfide, sulfates, and vinyl chloride. The Project is located in an unincorporated area known as Teaford Meadows in Madera County (Figure 1 in Section 1.3).

General Conformity Rule

Section 176(c) of the CAA provides that federal agencies cannot engage, support, or provide financial assistance for licensing, permitting, or approving any project unless the project conforms to the applicable State Implementation Plans (SIP). Under CAA Section 176(c) requirements, USEPA promulgated 40 Code of Federal Regulations (CFR) Part 51, Subpart W, and 40 CFR Part 93, Subpart B, "Determining Conformity of General Federal Actions to State or Federal Implementation Plans" (see 58 Federal Register 63214 (November 30, 1993), as amended; 75 Federal Register 17272 (April 5, 2010) and 75 Federal Register 17274.) These regulations, commonly referred to as the General Conformity Rule, apply to all federal actions except for those federal actions that are specifically excluded from review (e.g., stationary-source emissions) or are related to transportation plans, programs, and projects under Title 23 US Code (USC) or the Federal Transit Act, which are subject to Transportation Conformity. In states that have an approved SIP revision adopting General Conformity regulations, 40 CFR Part 51, Subpart W, applies; in states that do not have an approved SIP revision adopting General Conformity regulations, 40 CFR Part 93, Subpart B, applies. The Project site is not located in an area of California with approved SIPs adopting General Conformity regulations.

The General Conformity Rule is used to determine if federal actions meet the requirements of the CAA and the applicable SIP by ensuring that air emissions related to the action do not:

- Cause or contribute to new violations of a NAAQS;
- Increase the frequency or severity of any existing violation of a NAAQS; or
- Delay timely attainment of a NAAQS or interim emission reduction.

A conformity determination under the General Conformity Rule is required if the federal agency determines that the action would occur in a nonattainment or maintenance area; no specific exemptions apply to the action; the action is not included in the federal agency's "presumed to conform" list; emissions from the proposed action are not within the approved emissions budget for an applicable facility; and the total direct and indirect emissions of a pollutant (or its precursors) are at or above the de minimis levels established in the General Conformity Rule (75 Federal Register (FR) 17274). Applicable de minimis levels are shown in Table 4.

Attainment status for is indicated in Table 2, and they show the issues with ozone and PM.

TABLE 2. SJVAPCD ATTAINMENT STATUS OF THE STATE AND FEDERAL AMBIENT AIR QUALITY STANDARDS		
AMBIENT AIR QUALITY STANDARD	SJVAPCD	
POLLUTANT	FEDERAL STANDARDS	STATE STANDARDS
Ozone - One hour	No Federal Standard	Nonattainment/Severe
Ozone - Eight hour	Nonattainment/Extreme	Nonattainment
PM 10	Attainment	Nonattainment
PM 2.5	Nonattainment	Nonattainment
Carbon Monoxide	Attainment/Unclassified	Attainment/Unclassified
Nitrogen Dioxide	Attainment/Unclassified	Attainment
Sulfur Dioxide	Attainment/Unclassified	Attainment
Lead (Particulate)	No Designation/Classification	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified
Vinyl Chloride	No Federal Standard	Attainment

Source: SJVAPCD (Ambient Air Quality Standards 2012)

TABLE 3. SJVAPCD CRITERIA POLLUTANTS FOR AIR QUALITY	
POLLUTANT	STATUS
Lead	Attainment
Nitrogen Dioxide	Attainment
Sulfur Dioxide	Attainment
Carbon Monoxide	Attainment
PM10	Attainment
Ozone 1-hr standard (revoked)	Attainment. In 2016 EPA finalizes finding that Valley attained standard based on 2012-2014 data. San Joaquin Valley first and only region to be classified as "Extreme Nonattainment" to then attain standard.
Ozone, 8 hour standard	1997 Standard 84 ppb (Nonattainment): Continuing to make progress towards this standard, projected to attain by 2023. Days exceeding standard reduced by over 90% 2008 Standard 75 ppb (Nonattainment): Continuing to make progress towards this standard, projected to attain by 2031. Days exceeding standard reduced by over 70% 2015 Standard 70 ppb (Nonattainment): Developing attainment plan for this standard. Days exceeding this standard reduced by over 35%.
PM2.5	1997 24-hour Standard 65 µg/m3 (Attainment): EPA determined in 2021 that Valley has attained 1997 24-hour standard based on 2018-2020 data 1997 Annual Standard 15 µg/m3 (Nonattainment): Continuing to make progress towards this standard, projected to attain by 2023 2006 24-hour Standard 35 µg/m3 (Nonattainment): Continuing to make

TABLE 3. SJVAPCD CRITERIA POLLUTANTS FOR AIR QUALITY	
POLLUTANT	**STATUS**
	progress towards this standard, projected to attain by 2024 2012 Annual Standard 12 µg/m3 (Nonattainment): Continuing to make progress towards this standard, projected to attain by 2025

Source: SJVAPCD (About the District 2022)

Six methods are available for demonstrating conformity:

- Document that the emissions from the action are identified and accounted for in the SIP;
- Obtain a statement from the applicable state or local air quality agency indicating that the emissions from the action, along with all other emissions in the area, would not exceed the budget for those emissions in the SIP;
- Obtain from the local Metropolitan Planning Organization a statement indicating that the emissions are included in transportation plan modeling;
- Obtain agreement from the state to include the emissions in the SIP;
- Conduct air quality modeling to demonstrate that the emissions would not cause or contribute to a violation of the NAAQS; this modeling option is not available for areas in nonattainment for ozone or NO_2 and some $PM_{2.5}$ areas; or
- Mitigate or offset the increase in emissions; offset emissions must be offset to zero for ozone precursors, nitrogen dioxide and PM, not to the de minimis levels.

In addition, federal activities may not cause or contribute to new violations of air quality standards, exacerbate existing violations, or interfere with timely attainment or required interim emissions reductions toward attainment. The Project is subject to review under the General Conformity Rule. At this time a formal General Conformity determination is not presented, but a comparison to de minimis thresholds is discussed as an indication of the potential General Conformity applicability and/or determination which will need to occur prior to the start of construction.

Table 4. SJVAPCD Applicable Significance Thresholds for Air Pollutants			
POLLUTANT/PRECURSOR	**CONSTRUCTION EMISSION**	**PERMITTED EQUIPMENT AND ACTIVITIES**	**NON-PERMITTED EQUIPMENT AND ACTIVITIES**
	EMISSIONS (TPY)	**EMISSIONS (TPY)**	**EMISSIONS (TPY)**
Carbon Monoxide (CO)	100	100	100
Reactive Organic Gases (ROG)	10	10	10
Oxides of Nitrogen (NOx)	10	10	10
Oxides of Sulfur (SOx)	27	27	27
Particulate Matter (PM_{10})	15	15	15
Particulate Matter ($PM_{2.5}$)	15	15	15

Source: SJVAPCD (CEQA 2012)

Toxic Air Pollutants

USEPA and CARB regulate various stationary sources, area sources, and mobile sources. USEPA has regulations involving performance standards for specific sources that may release toxic air contaminants (TACs), known as hazardous air pollutants (HAPs) at the federal level. In addition, USEPA has regulations involving emission criteria for off-road sources such as emergency generators, construction equipment, and vehicles. CARB has been granted permission to establish emission standards for vehicles sold in California and for other emission sources, such as consumer products and certain off-road equipment. CARB also establishes passenger vehicle fuel specifications. Airborne Toxic Control Measures (ATCMs), including the following relevant measures, are implemented to address sources of TACs:

- ATCM for Diesel Particulate Matter from Portable Engines Rated at 50 Horsepower (hp) and Greater.

Local Regulations, Laws, and Policies

San Joaquin Valley Air Pollution Control District

The San Joaquin Valley Air Pollution Control Pollution District (SJVAPCD) is responsible for air quality attainment in this region. The SJVAPCD is made up of eight counties in California's Central Valley, including the Madera County. According to the USEPA, SJVAPCD has some of the worst air quality in the nation due to failing to meet federal requirements for ozone (smog) and particular matter (PM) (USEPA 2022). The SJVAPCD has adopted plans to address ozone and particulate matter issues in the Project area (Table 5).

TABLE 5. SJVAPCD ATTAINMENT PLANS

NAME OF PLAN	DATE OF APPLICATION	STANDARD(S) TARGETED	APPLICABLE AREA	POLLUTANT(S) TARGETED	ATTAINMENT DATE
SJVAPCD 2018	November 2018	1997: Annual (15 µg/m³) and 24-hour (65 µg/m³) 2006: 24-hour (35 µg/m³) 2012: Annual (12 µg/m³)	Entire District	PM	2021
SJVAPCD 2016 8-Hour Ozone Standard Plan	June 2016	Federal eight	Entire District	NOx	2031

Source: SJVAPCD (Air Quality Attainment Plans 2012)

The SJVAPCD maintains a set of Rules and Regulations to implement these plans. During construction, Regulation VIII-Fugitive PM10 Prohibitions is in effect. This regulation includes various

rules, such as, Rule 8021- Construction, Demolition Excavation, Extraction, And Other Earthmoving Activities that will be in affect during the proposed construction (Current District Rules 2012).

Madera County Air Quality General Plan Element

The Air Quality Element contains objectives and policies surrounding mitigation, education, outreach, hazards, energy and more (Air Quality Element 2010). The Air Quality Element adheres to the SJVAPCD and other elements of the General Plan. The Project adheres to the goals and policies of the Air Quality Element.

2.3.2 ENVIRONMENTAL SETTING

This section describes the existing air quality conditions within the Project area and evaluates whether the Project would result in significant impacts related to air quality.

The primary pollution sources in the vicinity of the Project area are vehicles and residences. The proposed generator will have a small effect on the air quality when in use. Contribution of particulate material or ozone of the Project will be made during construction, from the periodic testing and emergency use of the generator at the new well site, and from emergency use and testing of the generator. No permit is required for emergency generators under 50 hp. During normal operation of the facilities, there will be no change during operation of the water production system and pumping that would produce particulate matter or add ozone. The generator will be diesel and would provide power to these essential facilities only operating during periodic testing and extended grid outages.

2.3.3 IMPACT ANALYSIS

The following sections discuss the key issues with respect to the Project's potential to impact air quality.

	Potential Significant impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No impact
AIR QUALITY. Where available, the significance criteria established by the applicable air quality management district 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?	☐	☐	☒	☐
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?	☐	☒	☐	☐
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

Project Impact Discussion
Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?

Direct and Indirect Effects. The Project would not conflict with or obstruct implementation of the Madera County Air Quality Element or the SJVAPCD. Madera County or its contractors will apply to the SJVAPCD for a permit to operate the proposed generator for the proposed new well and treatment facility. The generator will operate during extended grid outages and during periodic testing. A less than significant would occur relative to this issue since the generators would operate under a SJVAPCD permit.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Direct and Indirect Effects. Implementation of the Project would not result in continuous emission of criteria pollutants. The Project would provide enhancements and additional infrastructure to accommodate existing rural developments; as such, it would not generate additional population growth that could generate air pollutant emissions that would contribute to a cumulatively considerable impact. During normal operation of water facilities, no pollutants would be emitted from existing or proposed water facilities. During extended power grid outages and for brief periodic testing periods, the proposed generator will operate, which may produce criteria pollutants. Since the generator would operate under a SJVAPCD permit, a less than significant impact would occur relative to this issue.

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?

Direct and Indirect Effects, Construction and Operations. Sensitive receptors (i.e., children, senior citizens, and acutely or chronically ill people) are more susceptible to the effects of air pollution than the general population. Land uses considered as sensitive receptors typically include residences, schools, playgrounds, childcare centers, hospitals, convalescent homes, and retirement homes. During the short-term construction periods associated with the Project, diesel exhaust particulate matter will be generated by construction equipment and vehicles. Diesel exhaust particulate matter is known by the State of California to include carcinogenic compounds, and long-term exposure to diesel exhaust emissions has the potential to result in adverse health effects. During operation of the new well and treatment facility, a new propane generator will operate on a limited basis, anticipated to be only during extended grid outages and during periodic testing. The risks associated with exposure to carcinogenic substances are typically based on a lifetime of chronic exposure, which defined in the California Air Pollution Control Officers' Associated Air Toxics "Hot Spots" Program Risk Assessment Guidelines as 24 hours per day, 7 days per week, 365 days per year, for 70 years.

Dust would be generated during construction for the Project. Excavating, grading, and leveling would occur throughout the project and would expose sensitive receptors (residences) to dust. Therefore, implementation of **Mitigation Measure (MM) AIR-1** and **MM HWQ-1** (see Section 3.10.3) would

minimize the potential on sensitive receptors and reduce the significance of this impact. Upon completion of the Project, no substantial pollution to sensitive receptors would occur; the area would return to the current level of impact. Accordingly, given the short-term nature of the Project's construction period, potential impacts related to exposure of existing sensitive receptors to substantial pollutant concentrations (including diesel exhaust) would be less than significant with the implementation of **MM AIR-1** and **MM HWQ-1.**

> **MM AIR-1**: Prior to the commencement of grading activities, the contractor shall prepare a construction emissions reduction plan that meets the requirements of SJVAPCD Rule VIII, Fugitive PM10 Prohibition. The construction emissions reductions plan shall be submitted to the SJVAPCD for review and approval. The required permits, anticipated to consist of the Construction Emissions Reduction Plan and a generator permit, from the SJVAPCD shall be issued prior to commencement of grading activities.

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

Direct and Indirect Effects, Construction and Operation. The Project would not result in indirect effects related to odors. The Project does not include off-site components or facilitate additional projects that would generate new sources of odor on a permanent basis. During construction, there is a possibility for odors from construction activities (diesel exhaust, asphalt, etc.). However, upon completion of the construction, the area will return to a similar footprint with the addition of the new well and water treatment facility. During normal operation, no odors would be emitted from existing or proposed enclosed water treatment facility. During extended power grid outages and for brief periodic testing periods, the propane powered emergency generator will operate, which may produce objectionable odors. A less than significant impact would occur relative to this issue.

2.4 BIOLOGICAL RESOURCES

2.4.1 REGULATORY SETTING

This section addresses regulations, laws, and policies related to biological resources in compliance with Federal, State, and local entities and includes descriptions and details.

Federal Regulations, Laws, and Policies

Endangered Species Act

The Endangered Species Act (ESA) (16 USC § 1531 et seq.; 50 CFR Parts 17 and 222) provides for conservation of species that are endangered or threatened throughout all or a substantial portion of their range, as well as protection of the habitats on which they depend. The U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) share responsibility for implementing the ESA. In general, USFWS manages terrestrial and freshwater species, whereas NMFS manages marine and anadromous species.

Section 9 of the ESA and its implementing regulations prohibit the "take" of any fish or wildlife species listed under the ESA as endangered or threatened, unless otherwise authorized by federal regulations. The ESA defines the term "take" to mean "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (16 USC § 1532). Section

7 of the ESA (16 USC § 1531 et seq.) outlines the procedures for federal interagency cooperation to conserve federally-listed species and designated critical habitats. Section 10(a)(1)(B) of the ESA provides a process by which nonfederal entities may obtain an incidental take permit from USFWS or NMFS for otherwise lawful activities that incidentally may result in "take" of endangered or threatened species, subject to specific conditions.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 USC Chapter 7, Subchapter II) protects migratory birds. Most actions that result in take, or the permanent or temporary possession of, a migratory bird, or the parts, nests, or eggs of such a bird, constitute violations of the MBTA. The MBTA also prohibits destruction of occupied nests. USFWS is responsible for overseeing compliance with the MBTA.

Executive Order 11990, Protection of Wetlands

Executive Order (EO) 11990 provides for protection of wetlands from federal or federally approved projects when a practicable alternative is available. If impacts on wetlands cannot be avoided, all practicable measures to minimize harm must be included. U.S Army Corps of Engineers (USACE) is the administering agency.

Federal Land Policy and Management Act of 1976

Public land managed by the US Department of the Interior, Bureau of Land Management (BLM) is regulated under the Federal Land Policy and Management Act of 1976 (FLPMA). Under this regulation, the BLM develop Resource Management Plans (RMPs) that direct BLM District Offices in the sustainable, best use of the biological resources of the public land. For the Project, nearby public land falls under the jurisdiction of the BLM California Desert District (Barstow Field Office) (BLM 2022).

State Regulations, Laws, and Policies

California Department of Fish and Wildlife

The California Department of Fish and Wildlife (CDFW) manages California's fish, wildlife, plant resources, and the habitats which they depend on. The CDFW has 7 Regions throughout the state:

- Region 1 Northern Region
- Region 2 Northern Central Region
- Region 3 Bay Delta Region
- Region 4 Central Region
- Region 5 South Coast Region
- Region 6 Inland Deserts Region
- Region 7 Marina Region

The Project is located in Region 4 the Central Region. The Central Region is comprised of Kern, Kings, Tulare, San Luis Obispo, Monterey, San Benito, Merced, Mariposa, Tuolumne, Fresno, Stanislaus, and Madera counties.

California Fish and Game Code

The California Fish and Game Code (F&G) includes various statutes that protect biological resources, including the Native Plant Protection Act of 1977 (NPPA) and the California Endangered Species Act (CESA). The NPPA (F&G §§ 1900-1913) authorizes the Fish and Game Commission to designate plants as endangered or rare and prohibits take of any such plants, except as authorized in limited circumstances. CESA (F&G §§ 2050–2098) prohibits state agencies from approving a project that would jeopardize the continued existence of a species listed under CESA as endangered or threatened. F&G § 2080 prohibits the take of any species that is state listed as endangered or threatened or designated as a candidate for such listing. The CDFW may issue an incidental take permit authorizing take of listed and candidate species if that take is incidental to an otherwise lawful activity, subject to specified conditions. F&G §§ 3503, 3513, and 3800 protect native and migratory birds, including their active or inactive nests and eggs, from all forms of take. In addition, F&G §§ 3511, 4700, 5050, and 5515 identify species that are fully protected from all forms of take. F&G Section 3511 lists fully protected birds, § 5515 lists fully protected fish, § 4700 lists fully protected mammals, and § 5050 lists fully protected amphibians.

Local Regulations, Laws, and Policies

Madera County General Plan

The MCGP contains goals and policies to protect the biological resources of the County (PD 1995). The document includes discussion of wetland and riparian areas, fish and wildlife habitat, and vegetation. The Project adheres to the goals and policies related to biological resources.

2.4.2 ENVIRONMENTAL SETTING

This section describes the existing biological conditions within the Project area and evaluates whether the Project would result in significant impacts related to biological resources.

In 2022, Live Oak Associates Inc. (Live Oak) was contracted to complete a biological investigation of the Project area consistent in scale with the CEQA Initial Study and NEPA. In October of 2022, Live Oak staff performed a reconnaissance-level field survey that located principal land uses along with the constituent plants and animals and analyzed potential impacts to biological resources. Project impacts based on biotic resources for the Biological Resources Assessment. The data and conclusions to these efforts are contained in the Biological Resources Assessment attached in Appendix B.

The environmental setting of the Project site, and associated survey area, is generally a sparse rural residential neighborhood. Fine Gold Creek passes through the area of potential effect (APE) and Lake Moic (perennial pond) is located 130 feet from the project site at its closest point. Little Fine Gold Creek is a potential jurisdictional water. Jurisdictional waters are subject to the authority of the US Army Corps of Engineering (USACE), California Department of Fish and Wildlife (CDFW), and/or the Regional Water Quality Control Board (RWQCB). The biotic habitats are mixed oak/pine woodland, ruderal/developed, and mixed coniferous forest. Mixed oak and pine woodland is primarily an area dominated by various species of oak and other tree species that provide a habitat to wildlife diversity. Developed/ ruderal are lands regularly disturbed by human activities or associated with the build environment. Mixed conifer forest is primarily tree-dominated, mid-elevation forest. (Appendix B)

Nineteen (19) special-status plant species are known to exist within the region of the Project area (Appendix B, Table 1). In addition, there are twenty-three (23) special status animal species known to exist within the regional vicinity (Appendix B, Table 1). All of the special-status plant species are absent or unlikely to occur due to lack of suitable habitat, the Project locations elevational range, lack of granitic sands, decomposed granite, or they have been eradicated from the region. Sixteen (18) special-states animal species are absent or unlikely, four (4) are possible, and one (1) is likely. Live Oak identified the APE as a potential suitable habitat for the western mastiff bat *(Eumops perotis californicus*) (California Species of Concern), the Ringtail (*Bassariscus astutus*) (California Fully Protected), western pond turtle (*Emys marmorata*) (California Species of Concern), and the monarch butterfly (*Danaus plexippus*) (Federal Candidate). Liveoak identified the APE as a suitable habitat for the California Species of Concern pallid bat (*Antrozous pallidus*) and is likely to occur in the APE (Appendix B).

There is potential for the construction to impact endangered, threatened, and special-status species and Little Fine Gold Creek, but proposed mitigation measures would reduce or eliminate Project impacts to the species and creek to be less than significant under CEQA and NEPA. There are no designated critical habitats or sensitive natural communities (SNCs) within the Project site. Little Fine Gold Creek has the potential to be used by animals for movement, but the existing water, electrical, and wastewater treatment infrastructure and residents have disrupted the wildlife movement for decades. (Appendix B).

2.4.3 IMPACT ANALYSIS

The following sections discuss the key issues with respect to the Project's potential to impact biological resources.

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

Project Impact Discussion
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 Wildlife or U.S. Fish and Wildlife Service?***

Direct and Indirect Effects, Construction. The Biological Resources Assessment (Live Oak 2023) recognized impacts the Project may have through habitat modifications during construction on various species (Appendix B). First, the Project construction has the potential to impact the active raptor or other migratory bird nests. To comply and avoid the potential for construct-related

disturbance/effect on raptor or other migratory bird nests, the Project will implement **Mitigation Measure (MM) BIO-1.**

> **MM BIO-1:** To avoid and minimize potential for construction-related mortality/disturbance of nesting birds the proposed project construction will be implemented outside of the avian nesting season, typically defined as February 1st to August 31st. If construction is to occur during the avian nesting season, a qualified biologist will conduct pre-construction surveys for active bird nests within 10 days prior to the start of construction. The survey area will encompass the site and accessible surrounding lands within 250 feet for nesting migratory birds and 500 feet for raptors (i.e., birds of prey). If any active nests are discovered in or near the proposed construction zones, the biologist will identify a suitable construction-free buffer around the nest. This buffer will be identified on the ground with flagging or fencing and will be maintained until the biologist has determined that the young have fledged and are capable of foraging independently.

Next, the Project has the potential to impact the California Species of Concern Pallid Bat (Appendix B). The mixed oak and pine woodland and the mixed coniferous forest provide a year-long suitable habit for the bat. In order to minimize potential impacts to roosting Pallid Bats and any native bat species the Project will implement **MM BIO-2**.

> **MM BIO-2:** To avoid potential impact to maternity bat roosts, removal of trees with bat roosting habitat should occur outside of the period between April 1st and September 30th, the time frame within which colony-nesting bats generally assemble, give birth, nurse their young, and ultimately disperse. If a tree must be removed, within 14 calendar days prior to the start of activities impacting trees (removal or trimming), a qualified biologist will conduct preconstruction surveys for roosting pallid bats. It shall include an evening emergence survey to identify if any bats use the trees as night roosts at the tree removal locations. An additional preconstruction survey shall be conducted following any lapse in tree removal that exceeds 14 calendar days. If a non-breeding bat colony is found in trees proposed for removal, the individuals will be humanely evicted, under the direction of a qualified biologist, to ensure that no harm or "take" of any bats occurs as a result of construction activities. Should any maternal roosts be identified, a qualified biologist will establish suitable disturbance-free buffers around the trees. Buffers will be delineated on a map, and identified on the ground with flagging or fencing, if feasible, and will be maintained until a qualified biologist has determined that the roosts are no longer active.

Third, the Project has the potential to impact the California Species of Concern Western Pond Turtle (Appendix B). Lake Moic provides a suitable habitat for the Western Pond Turtle. In order to minimize potential impacts to the Western Pond Turtle the Project will implement **MM BIO-3**.

> **MM BIO-3**: If any western pond turtles are found within construction zones, work shall stop in the area around the turtle until it leaves the construction zone on its own volition or until it is relocated to a safe area of suitable habitat by a qualified biologist. Prior to the start of construction, construction personnel will be trained on the identification, behavior, and ecology of the western pond turtle, and the project-specific measures adopted for its protection. Attendees will be given a handout that summarizes the training material and provides a photographic key to differentiating between the western pond turtle and the red-eared slider,

which is known to occur on site. Attendance at all training sessions will be documented on sign-in sheets.

Lastly, the Project has potential to impact the water quality in creeks and downstream waters. Little Fine Gold Creek passes through the APE (75 feet west of Well No. 1, 120 feet west of Well No.4, and 100 feet west of Well No. 2) and Lake Moic is downstream from the APE. In order to minimize potential impacts to water quality and degradation the Project will implement MM BIO-4.

> MM BIO-4: To avoid and minimize the potential for pollutants to enter Little Fine Gold Creek, all proposed improvement activities that require vehicular crossing the existing road over Little Fine Gold Creek shall take place only when conditions are dry. If the existing at-grade crossing contains any water (flowing or pooled), no vehicle will drive across Little Fine Gold Creek. Pedestrian traffic is permitted during wet conditions. No maintenance or disturbance to the existing gravel access road to Well No. 2 will be permitted. No refueling, storage, servicing, or maintenance of equipment shall take place within 100 feet of aquatic habitat. All machinery used during construction shall be properly maintained and cleaned to prevent spills and leaks that could contaminate soil or water. Any spills or leaks from construction equipment (i.e., fuel, oil, hydraulic fluid, and grease) shall be cleaned up in accordance with applicable local, state, and/or federal regulations.

The Project will also have a less than significant impact to the monarch butterfly, the Ringtail and Western Mastiff Bat, the absent and unlikely special status plant and animal species, sensitive natural communities, wildlife movement corridors, and water of the U.S. and State. MMs are not warranted (Appendix B).

Overall, with implementation of these mitigation measures, the Project impacts relative to this issue would be less than significant.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community as identified in local or regional plans, policies, or regulations, or by CDFW or USFWS?

Direct and Indirect Effects. There are no designated critical habitats or sensitive natural communities within the Project site (Appendix B). No riparian habitat was identified by Live Oak. There will be no impact relative to this issue.

c) Have a substantial adverse effect on state or 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?

Direct and Indirect Effects, Construction. Live Oak identified Lake Moic (perennial pond) to be 150 feet from the closest point of the APE. As discussed above in (a), the Project construction has the potential to effect water quality Little Find Gold Creek (potential jurisdictional water) and Lake Moic. However, with the implementation of MM BIO-4 there would be less than a significant effect on Little Fine Gold Creek and Lake Moic.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Direct and Indirect Effects. The Project site is mainly composed of rural residential housing, roads, existing water infrastructure, a wastewater treatment and disposal facility, and Little Fine Gold Creek. There is not a native wildlife nursery site in the Project site. The project site does contain topographic and aquatic features typical for wildlife movement corridors. However, due to the existing utilities and residences disrupt and have disrupted for decades. It is assumed that the wildlife using this area for movement are common species with some degree of tolerance to anthropogenic disturbance (Appendix B). There would be a less than significant impact to movement of native resident or wildlife species.

e) Conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance?

Direct and Indirect Effects. In accordance with Policy 5.F.3 of the Madera County General Plan (PD 1995), the Project supports the preservation of outstanding areas of natural vegetation, including, but not limited to, oak woodlands, riparian areas, and vernal pools. The Proposed Project plans to add and modify water system infrastructure to MD-24 while limiting additional impact to the existing well field, which is adjacent to a riparian area (Little Fine Gold Creek). There would be less than significant impact relative to this issue.

f) Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional, or State HCP?

Direct and Indirect Effects. According to the CDFW's, there are no NCCPs in Madera County (CDFW 2019). There are no local HCPs but there are two Significant Natural Areas identified in the Madera County Final Environmental Impact Report (State Clearinghouse No.93102017) (EIR 1995). The project is not located in the Significant Natural Areas. The Project elements are mainly comprised of subsurface components except for the proposed equipping of well and water treatment facility. There would be a no impact to HCP or NCCP.

2.5 CULTURAL RESOURCES

2.5.1 REGULATORY SETTING

This section addresses regulations, laws, and policies related to cultural resources in compliance with Federal, State, and local entities and includes descriptions and details.

Federal Regulations, Laws, and Policies

National Historic Preservation Act and Archeological and Historic Preservation Act

If federal funding, such as State Revolving Funds, is applied to this project, the National Environmental Policy Act requires that the National Historic Preservation Act and the Archeological and Historic Preservation Act (AHPA) applies to this project. The National Historic Preservation Act (NHPA) embodies a long-standing national policy to preserve historic sites, buildings, structures,

districts and objects of national, state, tribal, local, and regional significance and, among other things, to protect such historic properties from adverse impacts caused by activities undertaken or funded by federal agencies. The NHPA is administered by the Department of the Interior and the Advisory Council on Historic Preservation. The Advisory Council on Historic Preservation implements section 106 of the NHPA and has promulgated regulations for consultation regarding how to determine the effects of federal agency undertakings on historic properties (36 CFR Part 800). Although under certain circumstances the Council may become directly involved in such consultations, the procedures generally call for consultation between the federal agency and relevant state or tribal historic preservation officers (SHPOs and THPOs) and other interested parties. The intent of the AHPA is to limit the loss of important historical data that would result from federal, or federally authorized, construction activities. Unlike section 106 of the NHPA, which principally addresses adverse effects to historic properties identified within a project area prior to project initiation, the requirements of the AHPA are typically invoked when historic properties are discovered after the project has begun and potential adverse effects may occur.

State Regulations, Laws, and Policies

California Environmental Quality Act

Section 21083.2 of the California PRC requires that the lead agency determine whether a project may have a significant effect on unique archaeological resources. A unique archaeological resource is defined in the PRC as an archaeological artifact, object, or site about which it can be clearly demonstrated that there is a high probability that it:

- Contains information needed to answer important scientific research questions, and there is demonstrable public interest in that information;
- Has a special or particular quality, such as being the oldest of its type or the best available example of its type; or
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Measures to avoid, conserve, preserve, or mitigate significant effects on these resources are also provided under PRC § 21083.2.

Section 15064.5 of the CEQA Guidelines notes that "a project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment." Substantial adverse changes include physical changes to the historical resource or to its immediate surroundings, such that the significance of the historical resource would be materially impaired. CEQA lead agencies are expected to identify potentially feasible measures to mitigate significant adverse changes in the significance of a historical resource before they approve such projects. Historical resources are those that are:

- Listed in, or determined to be eligible for listing in, the California Register of Historical Resources (CRHR) (PRC §5024.1[k]);
- Included in a local register of historic resources (PRC §5020.1) or identified as significant in an historic resource survey meeting the requirements of PRC §5024.1(g); or
- Determined by a lead agency to be historically significant.

CEQA Guidelines § 15064.5 also prescribes the processes and procedures found under Health and Safety Code § 7050.5 and PRC § 5097.95 for addressing the existence of, or probable likelihood of,

Native American human remains, as well as the unexpected discovery of any human remains within the Project site. This includes consultation with the appropriate Native American tribes.

CEQA Guidelines § 15126.4 provides further guidance about minimizing effects to historical resources through the application of mitigation measures. Mitigation measures must be legally binding and fully enforceable.

California Register of Historical Resources

PRC § 5024.1 establishes the CRHR. The register lists all California properties considered to be significant historical resources. The CRHR includes all properties listed as or determined to be eligible for listing in the National Register of Historic Places (NRHP), including properties evaluated under Section 106 of the National Historic Preservation Act (NHPA). The criteria for listing are similar to those of the NRHP. Criteria for listing in the CRHR include resources that:

- Are associated with the events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- Are associated with the lives of persons important in our past;
- Embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of an important creative individual, or possess high artistic values; or
- Have yielded, or may be likely to yield, information important in prehistory or history.

The regulations set forth the criteria for eligibility as well as guidelines for assessing historical integrity and resources that have special considerations.

California Historical Resources Information System

The California Historical Resources Information System (CHRIS) maintains documents and materials relating to historical resources (e.g. buildings, structures, objects, historic and archeological sites, landscapes, districts). CHRIS operates nine Information centers located on California State University and University of California campuses under direction from the California Office of Historic Preservation and State Historical Resources Commission (PRC 5020.4(a)(2) and 5020.4(a)(3)). The Project area operates under the San Joaquin Valley Information Center.

Local Regulations, Laws, and Policies

Madera County General Plan

The MCGP contains a goal and policies to protect, identify, and enhance the county's historical, archaeological, paleontological, and cultural sites and the site's contributing environment. The Project adheres to the goals and policies related to cultural and historical resources.

2.5.2 ENVIRONMENTAL SETTING

This section describes the existing cultural resource conditions within the Project area and evaluates whether the Project would result in significant impacts related to cultural resources.

In 2022 and 2023, Paleowest, LLC (Paleowest) performed an archeological and historical resources investigation of the Project area consistent in scale with a CEQA Initial Study. In December 2022,

Paleowest staff performed a site pedestrian survey. The data and conclusions to these efforts are contained in the Cultural Report, attached to this document (Appendix C).

The Project lies in the Sierra Foothills, which is near the overlap of the Foothill Yokuts and the Western Mono or Monache ethnolinguistic groups. The Kechayi of Yokuts speakers occupied the area several miles south of the Project and the *Toltichi* group of Yokuts speakers occupied areas four miles southeast of the Project area in a village known as *Tsobotipau* (below the Wishon Powerhouse). Areas southeast of the Proposed Project site was occupied by either the Toltichi group of Yokuts speakers or Northfork Mono (*Nim* and may have also been called Yayanchi in the past). The exact native groups that inhabited the region prior to ethnographic period is still debated (PaleoWest 2023).

The Toltichi group translated to the "stream people". Little is known about this group or their linguistics. It is assumed that the tribe fell prey to indirect but widespread effect of early Euro-American contact (epidemics/unrecorded violent encounters). The Northfork Mono spoke Northwestern Mono dialect, which is a part of Numic or Mono-Paviotso dialect. The Kechayi spoke the Northern Hill dialect of the Yokuts, a Penutian language. Other dialects of Dumna, Dalinchi, and Chukchansi were all spoken in the foothills of the Sierra Nevada (PaleoWest 2023).

Spanish settlement of Alta California began in 1769, when two presidios were established in San Diego (1769) and Monterey (1770). In 1772, Spanish soldiers under command of Pedro Fages entered Tulare and Kern counties. In 1806, the first Spanish explorers reached the Kaweah River Region in Tulare County through leadership of Gabriel Moraga. In 1845, John C. Fremont came to the region and established a Euro-American settlement. In 1805 and 1806 the first Spanish explorers reached the Kaweah River region in Tulare County. In 1821, California and Mexico won independence from Spain. In the 1820, the hostility between ranchers, the Mexican Government, and the tribes increased. In the 1830s, the interior peoples were overcome by a widespread and devastating epidemic thought to have been malaria. California became a state in 1850, and counties were organized. Madera County was incorporated in 1893. (PaleoWest 2023).

Establishment of Teaford Meadows began in the 1960s. In 1967, drawings display the subdivision of what is now Teaford Saddle Road. The area was developed by then owners George and John Bushnell of Los Angeles. Teaford Saddle Road was constructed and paved in 1984. Housing in the Project area was constructed between 1998 and 2005. (PaleoWest 2023).

The December 20, 2022 pedestrian survey identified no archaeological resources and no historic properties affected in the Project area of potential effect (APE) (PaleoWest 2023).

2.5.3 IMPACT ANALYSIS

The Project's potential impacts were assessed using the impact criteria and thresholds of the following sections discuss the key issues with respect to the Project's potential to impact cultural resources.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
CULTURAL RESOURCES. Would the Project:				
a. Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	☐	☐	☐	☒
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☒	☐	☐
c. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

Project Impact Discussion

Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

Direct and Indirect Effects. As described above, no historical resources were identified in the APE. The Project would be no impact to known historic resources.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Direct and Indirect Effects, Construction. During the pedestrian survey of the APE, Paleowest did not identify any archaeological resources pursuant to 15064.5 or historical resources (Appendix C). However, excavation and construction activities, regardless of depth, could result in findings of archaeological resources (Native American stone tools, pottery, animal bone and stone flakes, historical bottles, ceramic dishes, iron tools, cooking utensils, bricks, nails, coins, and buttons, fire pits or charcoal concentrations, stone and brick building foundations, stone or brick lined water cisterns). In the unlikely event that archaeological resources are encountered during project development, **MM CUL-1** would be implemented (Appendix C). Assuming that this mitigation happened, a less than significant impact would occur.

MM CUL-1: During ground disturbing activities, if any event that archaeological deposits, concentration of artifacts, or culturally modified soil deposits (including trash pits older than 45 years) are discovered, all work on the affected site must stop until a Secretary of the Interior (SOI) qualified archaeologist views the finds and makes a preliminary evaluation. Examples of archaeological discoveries includes:

- Native American stone tools, pottery, animal bone, and stone flakes;

- Historic Period bottles, ceramic dishes, iron tools, cooking utensils, bricks, nails, coins, and buttons;
- Fire pits or charcoal concentrations containing Native American or historic Period artifacts;
- Stone or brick building foundations; stone or brick lined water cisterns; and
- Human remains.

If warranted, further archaeological work in the APE should be performed.

c) Disturb any human remains, including those interred outside of formal cemeteries?

Direct and Indirect Effects, Construction. During the cultural resource investigation, no evidence of human burial or remains was identified (Appendix C). However, excavation and construction activities, regardless of depth, could result in findings of human remains. In the unlikely event that human remains are encountered during project development, MM CUL-2 would be implemented. Assuming that this mitigation happened, a less than significant impact would occur.

MM CUL-2: State law prescribes measures that must be taken in the event that any human remains are discovered. If human remains are discovered, Section 7050.5(b) of the California Health and Safety Code requires that the County Coroner be immediately notified of the discovery and no further excavation or disturbance of the site or nearby area may occur (100-foot buffer) until the County Coroner has determined, within two working days of notification of the discovery, the nature of the remains. If the Coroner determines that the remains are, or are believed to be, Native American, he or she is required to notify the NAHC in Sacramento within 24 hours. In accordance with California Public Resources Code, Section 5097.98, the NAHC must immediately notify those persons it believes to be the most likely descendant (MLD) from the deceased Native American. The MLD shall complete their inspection within 48 hours of being granted access to the site. The MLD would then determine, in consultation with the property owner, the disposition of the human remains. Compliance with state and federal law would ensure that no impacts occur to any human remains that may be discovered on site.

2.6 ENERGY

2.6.1 REGULATORY SETTING

This section addresses regulations, laws, and policies related to energy in compliance with Federal, State, and local entities and includes descriptions and details.

Federal Regulations, Laws, and Policies

There are no federal regulations, laws, or policies related to energy.

State Regulations, Laws, and Policies

California Environmental Quality Act

The goal of conserving energy implies the wise and efficient use of energy. The means of achieving this goal include:

1. decreasing overall per capita energy consumption,
2. decreasing reliance on fossil fuels such as coal, natural gas and oil, and
3. increasing reliance on renewable energy sources.

In order to ensure that energy implications are considered in project decisions, CEQA requires that Environmental Impact Reports (EIRs) include a discussion of the potential energy impacts of Projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy (see PRC section 21100(b)(3)). Energy conservation implies that a project's cost-effectiveness be reviewed not only in dollars but also in terms of energy requirements. For many projects, cost-effectiveness may be determined more by energy efficiency than by initial dollar costs. A lead agency may consider the extent to which an energy source serving the project has already undergone an environmental review that adequately analyzed and mitigated the effects of energy production.

Local Regulations, Laws, and Policies

Madera County General Plan

The MCGP does not contain specific goals and policies relative to the issue of energy.

2.6.2 ENVIRONMENTAL SETTING

This section describes the existing energy conditions within the Project area and evaluates whether the Project would result in significant impacts related to energy.

Power infrastructure changes are limited to utility (PG&E) power supply (above ground and underground) for the proposed Project elements. The power infrastructure improvements will generally be along Moic Drive and within County-owned parcels east of Moic Drive to serve the new well and treatment facility. The total volume of groundwater extracted by MD-24 facilities will not change as a result of the project. However, the location of the groundwater extraction, and the location of power consumption, will include the recently drilled test well. Well Nos. 2 and 4 will continue to operate. Power consumption at Well No. 3 will cease following the well's proposed destruction. The proposed water treatment facility will generally operate hydraulically, with a minimal consumption of electricity. The backwash pump will consume the greatest amount of electricity but will operate only periodically (approximately daily). Hydraulic energy losses through the treatment system will increase the power consumption at the three wells. It is anticipated that the energy consumption from the pump/motor at Well No. 3 and from the proposed treatment facility will require PG&E to upgrade to three-phase electric power and construct approximately nine power poles on Moic Drive, replacing existing wiring and poles. Equipping of the new well, construction of the new water treatment facility, wellhead improvements at Well Nos. 2 and 4, and new transmission line to connect Well Nos. 2, 4, and proposed well to the new water treatment facility will result in some attenuation of energy consumption.

2.6.3 IMPACT ANALYSIS

The following sections discuss the key issues with respect to the Project's potential to impact energy.

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

Project Impact Discussion

Would the project:

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Direct and Indirect Effects, Construction and Operations. Construction activities would require the use of gasoline, diesel fuel, other fuels, and electricity in order to be completed. Energy usage during construction typically involves the use of motor vehicles both for the transportation of workers and equipment and also for direct construction actions such as the use of cranes, excavators, and trucks. This one-time energy expenditure required to construct the project would be non-recoverable. However, energy needs for project construction would be temporary and would not require additional capacity or increase peak or base period demands for electricity or other forms of energy. Additional energy usage would occur as power for tools and equipment used on-site; including but not limited to gas generators, air compressors, air handlers and filters, and other typical direct construction energy uses.

The Project proposes enhancements and additions to MD-24 including equipping a new well, new water treatment facility, destruction of Well No. 3, wellhead improvements to Well Nos. 2 and 4, a new transmission line to connect Well Nos. 2, 4 and proposed well to the new water treatment facility, and a new distribution pipeline. The Project would not conflict with or obstruct a state plan for renewable energy or energy efficiency. The total volume of groundwater extracted from MD-24's wells would not change. The location of this extraction, and the location of grid power consumption, would change to include the new well and treatment facility. Well Nos. 2 and 4 would continue to operate. Power consumption at Well No. 3 will cease following the well's destruction. Potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation would be less than significant.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Direct and Indirect Effects, Construction and Operation. The Project would not conflict with or obstruct a state plan for renewable energy or energy efficiency during or upon the completion of construction. No impact would occur relative to this issue.

2.7 GEOLOGY AND SOILS

2.7.1 REGULATORY SETTING

This section addresses regulations, laws, and policies related to geology and soils in compliance with Federal, State, and local entities and includes descriptions and details.

Federal Regulations, Laws, and Policies

The National Earthquake Hazards Reduction Act

The National Earthquake Hazards Reduction Act of 1977 (Public Law 95-124) and creation of the National Earthquake Hazards Reduction Program (NEHRP) established a long-term earthquake risk reduction program to better understand, predict, and mitigate risks associated with seismic events. Four federal agencies are responsible for coordinating activities under NEHRP; U.S. Geological Survey (USGS); National Science Foundation (NSF); Federal Emergency Management Agency (FEMA); and National Institute of Standards and Technology (NIST). Since its inception, NEHRP has shifted its focus from earthquake prediction to hazard reduction. The current program objectives (NEHRP 2018) are as follows:

- Developing effective measures to reduce earthquake hazards;
- Promoting the adoption of earthquake hazard reduction activities by federal, state, and local governments, national building standards and model building code organizations, engineers, architects, building owners, and others who play a role in planning and constructing buildings, bridges, structures, and critical infrastructure or “lifelines”;
- Improving the basic understanding of earthquakes and their effects on people and infrastructure through interdisciplinary research involving engineering, natural sciences, and social, economic, and decision sciences; and
- Developing and maintaining the USGS seismic monitoring system (Advanced National Seismic System); the NSF-funded project aimed at improving materials, designs, and construction techniques (George E. Brown Jr. Network for Earthquake Engineering Simulation); and the global earthquake monitoring network (Global Seismic Network).

Implementation of NEHRP objectives is accomplished primarily through original research, publications, and recommendations and guidelines for state, regional, and local agencies in the development of plans and policies to promote safety and emergency planning.

State Regulations, Laws, and Policies

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (PRC § 2621 et seq.) was passed to reduce the risk to life and property from surface faulting in California. The Alquist-Priolo Act prohibits construction of most types of structures intended for human occupancy on the surface traces of active faults and strictly regulates construction in the corridors along active faults (earthquake fault zones). It also defines criteria for identifying active faults, giving legal weight to terms such as "active," and establishes a process for reviewing building proposals in and adjacent to earthquake fault zones. Under the Alquist-Priolo Act, faults are zoned and construction along or across them is strictly regulated if they are "sufficiently active" and "well defined." Before a project can be permitted, cities and counties must require a geologic investigation to demonstrate that proposed buildings would not be constructed across active faults.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 (PRC §§ 2690–2699.6) establishes statewide minimum public safety standards for mitigation of earthquake hazards. While the Alquist-Priolo Act addresses surface fault rupture, the Seismic Hazards Mapping Act addresses other earthquake-related hazards, including strong ground shaking, liquefaction, and seismically induced landslides. Its provisions are similar in concept to those of the Alquist-Priolo Act: The state is charged with identifying and mapping areas at risk of strong ground shaking, liquefaction, landslides, and other seismic hazards, and cities and counties are required to regulate development within mapped seismic hazard zones. In addition, the act addresses not only seismically induced hazards but also expansive soils, settlement, and slope stability. Under the Seismic Hazards Mapping Act, cities and counties may withhold the development permits for a site within seismic hazard zones until appropriate site-specific geologic and/or geotechnical investigations have been carried out and measures to reduce potential damage have been incorporated into the development plans.

California Building Standards Code

Title 24 CCR, also known as the California Building Standards Code (CBC), specifies standards for geologic and seismic hazards other than surface faulting. These codes are administered and updated by the California Building Standards Commission. The CBC specifies criteria for open excavation, seismic design, and load-bearing capacity directly related to construction in California.

Local Regulations, Laws, and Policies

Local Hazard Mitigation Plan Update

The Local Hazard Mitigation Plan Update (LHMPU) both contain goals and policies to protect the public from seismic hazards due to the 15 active and potentially active fault segments, an undetermined number of buried faults occurring with 90 miles of Madera County (LHMPU 2017).

Madera County General Plan

The MCGP contains the health and safety element and the geological resources that discuss the objectives and policies to protect the public from hazards including seismic and geological hazards and protection of geological formations in the County . The Project adheres to the goals and policies related to safety and geological resources.

2.7.2 ENVIRONMENTAL SETTING

This section describes the existing geological resources within the Project area and evaluates whether the Project would result in significant impacts related to geology and soils.

The Project is located in eastern Madera County in the foothills of the Sierra Nevada Mountains in the USGS Bass Lake Quadrangle (USGS 2015). The Sierra Nevada Mountains is a vast mountain range in northern California that separates the Central Valley and the Great Basin. The two regionally extensive fault trends that control the topography are the Round Valley and Hilton Creek Fault Zones (DOC 2021). The Project does not include proposed elements of any residential housing or other commercial structures that would result in risk of life. However, the proposed water treatment facility and new well has the potential to be a loss of property.

2.7.3 IMPACT ANALYSIS

The following sections discuss the key issues with respect to the Project's potential to impact geology and soils.

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

Project Impact Discussion
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?*

Direct and Indirect Effects. The Project does not look to build residential or commercial structures that could involve loss, injury, or death. The proposed area is within an active seismic area in central California. The Project site is located within the USGS Bass Lake quadrant. According to the California Geological Survey (CGS), the Project site is not underlain by active, potentially active, or inactive faults, or within an Alquist-Priolo Earthquake Zone (DOC 2021). However, the Project site has not been evaluated by the CGS for liquefaction hazards (DOC 2021). The Project site has been evaluated by the CGS Seismic Hazards Program: Landslide Zones, and is not in a landslide zone (California State Geoportal 2023). A less than significant impact would occur relative to this issue.

ii. *Strong seismic ground shaking?*

Direct and Indirect Effects. As discussed above (a(i)), given the location of the Project, is not subjected to potential seismic hazards including rupture ground shaking and ground failure. A less than significant impact would occur relative to this issue.

iii. *Seismic-related ground failure, including liquefaction?*

Direct and Indirect Effects. Seismically-induced liquefaction of soils is a potential geologic hazard, given the proximity of two major fault zones. As discussed above (a(i)), CGS has not evaluated the Project site for liquefaction or seismic landslide hazards (DOC 2017). **MM GEO-1** shall be implemented to determine if the Project area is within an area susceptible for liquefaction hazards. With **MM GEO-1**, a less than significant impact would occur relative to this issue.

> **MM GEO-1**: Prior to earthmoving activities, a certified geotechnical engineer or equivalent, shall preform a final geotechnical evaluation of the soils. The evaluation will follow the requirements of California Building Code Title 24, Part 2, Chapter 18, Section 1803.1.1.2. related to expansive soils and soil conditions. The structural design, tests and inspections, and soils and foundation standards will be in accordance with requirements from California Building Code Title 24, Part, 2, Chapter 16, 17, and 18. The final geotechnical evaluation shall include design recommendations to ensure that soil conditions do not pose a threat to the health and safety of people or structures, including threats from liquefaction, subsidence, lateral spreading, or collapse. The grading and improvement plan for each phase of the project shall be designed in accordance with the recommendations provided in the final geotechnical evaluation.

iv. *Landslides?*

Direct and Indirect Effects. Given the topography of the site, there is no indication that landslides would affect the project. According to the California Geological Survey (CGS) Hazards Program: Landslide Zones, the Project area is not in a landslide zone (California State Geoportal 2023). Potential adverse effects, including the risk of loss, injury, or death involving from seismically induced ground rupture, ground shaking, ground failure, or landslides would be less than significant.

b) Result in substantial soil erosion or loss of topsoil?

Direct and Indirect Effects, Construction and Operations. The Project would not result in permanent substantial soil erosion or the loss of topsoil. Construction activities (trenching and excavation) would result in temporary soil disturbance throughout the Project site. Disturbed soils would be exposed to erosion during construction as soils loosen and become susceptible to the effects of wind and precipitation events. However, the Project's soil has not been evaluated. In order to evaluate the conditions of the soils, **MM GEO-1** will be implemented. With the implementation of **MM GEO-1**, substantial soil erosion or loss of topsoil would be less than significant.

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 offsite landslide, lateral spreading, subsidence, liquefaction or collapse?

Direct and Indirect Effects. The Project site has not been evaluated for geologic units or soil that is unstable. To determine what lies beneath the Project site **MM GEO-1** will be implemented. With **MM GEO-1**, a less than significant impact will occur.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Direct and Indirect Effects. The Project site has not been evaluated for expansive soils as defined in Table 18-1 B of the Uniform Building Code (1994). To determine what soils are located within the Project site **MM GEO-1** will be implemented. Proposed pipelines and conduits will be backfilled with native material (if granular in nature) or with imported material (sand). The treatment facility will be overexcavated and backfilled to create more uniform and suitable surface conditions. With **MM GEO-1**, a less than significant impact will occur.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

Direct and Indirect Effects. The Project does not involve the construction of septic tanks or alternative wastewater disposal systems. No impact would occur relative to this issue.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Direct and Indirect Effects. PaleoWest conducted a paleontological resource assessment for the MD-24 in May 2023. They utilized the SVP system (2010) to assess paleontological sensitivity and the level of effort required to manage potential impacts to significant fossil resources in the Project area (PaleoWest 2023). The Paleontological Resource Assessment is attached in Appendix D.

Due to the high-temperature origins of the geological units surrounding the Project area, igneous units like the Bass Lake tonalite (Kbl), are typically unable to preserve biologic material and are assigned no paleontological sensitivity as a result.

The potential for any project to have negative impacts to paleontological resources is based on the amount of ground disturbance associated with a project. PaleoWest determined the geologic units underlying the Project area have no paleontological sensitivity and no paleontological mitigation is necessary for the Project. A less than significant impact would occur relative to this issue.

2.8 GREENHOUSE GAS EMISSIONS

2.8.1 REGULATORY SETTING

This section addresses regulations, laws, and policies related to Greenhouse Gas (GHG) emissions in compliance with Federal, State, and local entities and includes descriptions and details.

Federal Regulations, Laws, and Policies

There are no federal regulations, laws, or policies related to GHG emissions.

State Regulations, Laws, and Policies

Assembly Bill 32

Assembly Bill (AB) 32, California Global Warming Solutions Act of 2006, was passed in 2006 and requires the state of California to reduce its GHG emissions from 1990 levels by 2020 (CARB 2022). CARB is required to adopt regulations to maximize feasible and cost-effective GHG reduction measurements. The bill covers CO_2, CH_4, N_2O, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and Nitrogen trifluoride (NF_3). A Scoping Plan is required and is updated every five years.

Local Regulations, Laws, and Policies

Madera County General Plan

The MCGP Air Quality Element contains goals and policies to reduce the production of GHGs in the County (Air Quality Element 2010). The Air Quality Element encourages the reduction of GHGs to reduce the impact of climate change. The Project adheres to the goals and policies related to the reduction of GHG emissions in the Air Quality Element.

2.8.2 ENVIRONMENTAL SETTING

This section describes the existing GHG conditions within the Project area and evaluates whether the Project would result in significant impacts related to GHG.

Climate change results from the accumulation in the atmosphere of GHGs, which are produced primarily by the burning of fossil fuels for energy. Because GHGs (carbon dioxide (CO_2), methane (CH_4), and nitrous oxide) persist and mix in the atmosphere, emissions anywhere in the world affect the climate everywhere in the world. GHG emissions are typically reported in terms of carbon dioxide equivalents (CO_2e) which converts all GHGs to an equivalent basis taking into account their global warming potential compared to CO_2.

Anthropogenic (human-caused) emissions of GHGs are widely accepted in the scientific community as contributing to global warming. Temperature increases associated with climate change are expected to adversely affect plant and animal species, cause ocean acidification and sea level rise, affect water supplies, affect agriculture, and harm public health. Global climate change is already affecting ecosystems and societies throughout the world. Climate change adaptation refers to the efforts undertaken by societies and ecosystems to adjust to and prepare for current and future climate change, thereby reducing vulnerability to those changes. Human adaptation has occurred naturally over history; people move to more suitable living locations, adjust food sources, and more recently, change energy sources. Similarly, plant and animal species also adapt over time to changing conditions; they migrate or alter behaviors in accordance with changing climates, food sources, and predators.

Many national, as well as local and regional, governments are implementing adaptive practices to address changes in climate, as well as planning for expected future impacts from climate change. Some examples of adaptations that are already in practice or under consideration include conserving water and minimizing runoff with climate-appropriate landscaping, capturing excess rainfall to minimize flooding and maintain a constant water supply through dry spells and droughts, protecting valuable resources and infrastructure from flood damage and sea level rise, and using water-efficient appliances. In 2014, the USEPA adopted a Climate Change Adaptation Plan, which identifies vulnerabilities from climate change, and provides guiding principles for adaptation and performance measures, California has an adopted statewide Climate Adaptation Strategy and its update, the Safeguarding California Plan, which combined summarize climate change impacts, recommend adaptation strategies, and make realistic sector-1 specific recommendations for the nine sectors identified in the plans, including water and energy sectors.

From 2019, the transportation sector of the California economy was the largest source of emissions, accounting for approximately 40 percent of the total emissions. Passenger vehicles accounted for more than 70 percent of emissions in the transportation sector. The industrial sector accounted for approximately 20 percent of the total emissions, and emissions from electricity generation were about 15 percent of the total. The rest of the emissions are made up of various sources (CARB 2021).

The San Joaquin Valley Air Basin is controlled by SJVAPCD. The Project is located Madera County in the unincorporated area near the community of North Fork. The MCGP Air Quality Element contain goals and policies surrounding GHGs (Air Quality Element 2010).

2.8.3 IMPACT ANALYSIS

The following sections discuss the key issues with respect to the Project's potential impacts to contribute GHG emissions.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
GREENHOUSE GAS EMISSIONS. Would the Project:				
a. Generate greenhouse gas (GHG) emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b. Conflict with any applicable plan, policy or regulation of an agency adopted for the purposes of reducing the emissions of greenhouse gases	☐	☐	☐	☒

Project Impact Discussion
Would the project:

a) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

Direct and Indirect Effects, Construction and Operation. As discussed above, the MCGP Air Quality Element provides goal and policies on GHG emissions. The Project would be consistent with all applicable General Plan goals and objectives, particularly Objective AQ C1.1 and Goal G1 (Air Quality Element 2010). The objective aims to accurately assess and mitigate air quality and climate change from Projects within the County and the goal aims to reduce the county's GHG emissions. The Project would not increase the generation of emissions upon completion of construction because water production and distribution operations would be similar to the current operations. The improvements to well sites would enable MD-24 to attenuate its electrical demand and reduce or eliminate well pumping during peak electrical demand periods (afternoons), which could result in a slight decrease in GHG emissions over the long term. GHG emissions resulting from construction activities would be short term and minor. The Project would include the installation and limited operation of power generator, which would not generate significant greenhouse gas emissions due its limited use (brief testing and use during extended power outages). Greenhouse gas emissions would not significantly change, either directly or indirectly, and would not have a significant effect on the environment. Potential impacts from GHG emissions would be less than significant.

*b) **Conflict with any applicable plan, policy or regulation of an agency adopted for the purposes of reducing the emissions of greenhouse gases?***

Direct and Indirect Effects. As discussed in (a), the Project would not generate significant emissions of GHGs and, therefore, the Project would not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. No impact would occur relative to this issue.

2.9 HAZARDS AND HAZARDOUS MATERIALS

2.9.1 REGULATORY SETTING

This section addresses regulations, laws, and policies related to hazards and hazardous materials in compliance with Federal, State, and local entities and includes descriptions and details.

Hazardous materials and hazardous wastes are subject to extensive federal, state, and local regulations to protect public health and the environment. These regulations provide definitions of hazardous materials, establish reporting requirements, set guidelines for handling, storage, transport, and disposal of hazardous wastes, and require health and safety provisions for workers and the public. The major federal, state, and regional agencies enforcing these regulations are USEPA; Occupational Safety and Health Administration (OSHA); California Department of Toxic Substances Control (DTSC); California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA); California Governor's Office of Emergency Services (Cal OES); State Water Resources Control Board (SWRCB); Central Valley Regional Water Quality Control Board (RWQCB); and SJVAPCD.

Federal Regulations, Laws, and Policies

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, also called the Superfund Act; 42 USC § 9601 et seq.) is intended to protect the public and the environment from the effects of past hazardous waste disposal activities and new hazardous material spills. Under CERCLA, USEPA has the authority to seek the parties responsible for hazardous materials releases and to ensure their cooperation in site remediation. CERCLA also provides federal funding (through the "Superfund") for the remediation of hazardous materials contamination. The Superfund Amendments and Reauthorization Act of 1986 (Public Law 99-499) amends some provisions of CERCLA and provides for a Community Right-to-Know program. The California Department of Toxic (DTSC) is responsible for implementing the Resource Conservation and Recovery Act (RCRA) program as well as California's own hazardous waste laws, which are collectively known as the Hazardous Waste Control Law. Under the Certified Unified Program Agency (CUPA) program, the California Environmental Protection Agency (CalEPA) has in turn delegated enforcement authority to the County of San Bernardino for state law regulating hazardous waste producers or generators.

Resource Conservation and Recovery Act

The RCRA of 1967 (42 USC § 6901 et seq.) as amended by the Hazardous and Solid Waste Amendments of 1984, is the primary federal law for the regulation of solid waste and hazardous waste in the United States. These laws provide for the "cradle-to-grave" regulation of hazardous wastes, including generation, transportation, treatment, storage, and disposal. Any business, institution, or other entity that generates hazardous waste is required to identify and track its hazardous waste from the point of generation until it is recycled, reused, or disposed of. The USEPA has primary responsibility for implementing RCRA, but individual states are encouraged to seek authorization to implement some or all RCRA provisions. California received authority to implement the RCRA program in August 1992. DTSC is responsible for implementing the RCRA program in California, in addition to California's own hazardous waste laws, which are collectively known as the Hazardous Waste Control Law.

Spill Prevention, Control, and Countermeasure Rule

USEPA's Spill Prevention, Control, and Countermeasure (SPCC) Rule (40 CFR, Part 112) apply to facilities with a single above-ground storage tank (AST) with a storage capacity greater than 660 gallons, or multiple tanks with a combined capacity greater than 1,320 gallons. The rule includes requirements for oil spill prevention, preparedness, and response to prevent oil discharges to navigable waters and adjoining shorelines. The rule requires specific facilities to prepare, amend, and implement SPCC Plans.

Occupational Safety and Health Administration

Occupational Safety and Health Administration (OSHA) is responsible at the federal level for ensuring worker safety. OSHA sets federal standards for implementation of workplace training, exposure limits, and safety procedures for the handling of hazardous substances (as well as other hazards). OSHA also establishes criteria by which each state can implement its own health and safety program.

Emergency Planning Community Right-to-Know Act

The Emergency Planning Community Right-to-Know Act (EPCRA), also known as SARA Title III, was enacted in November1986. This law requires any infrastructure at the state and local levels to plan for chemical emergencies. Reported information is then made publicly available so that interested parties may become informed about potentially dangerous chemicals in their community. EPCRA Sections 301 through 312 are administered by EPA's Office of Emergency Management. EPA's Office of Information Analysis and Access implements the EPCRA Section 313 program. In California, SARA Title III is implemented through California Accidental Release Program (CalARP).

State Regulations, Laws, and Policies

Safe Drinking Water and Toxic Enforcement Act of 1986 - Proposition 65

The Safe Drinking Water and Toxic Enforcement Act of 1986, more commonly known as Proposition 65, protects the state's drinking water sources from contamination with chemicals known to cause cancer, birth defects, or other reproductive harm. Proposition 65 also requires businesses to inform the public about exposure to such chemicals in the products they purchase, in their homes or workplaces, or that are released into the environment. In accordance with Proposition 65, the California Governor's Office publishes, at least annually, a list of such chemicals. The Office of Environmental Health Hazard Assessment (OEHHA), an agency under the CalEPA, is the Lead Agency for implementation of the Proposition 65 program. Proposition 65 is enforced through the California Attorney General's Office; however, district and city attorneys and any individual acting in the public interest may also file a lawsuit against a business alleged to be in violation of Proposition 65 regulations.

California Occupational Safety and Health Administration

California Occupational Safety and Health Administration (Cal/OSHA) assumes primary responsibility for developing and enforcing workplace safety regulations in California. Cal/OSHA regulations

pertaining to the use of hazardous materials in the workplace (CCR Title 8) include requirements for safety training, availability of safety equipment, accident and illness prevention programs, warnings about exposure to hazardous substances, and preparation of emergency action and fire prevention plans. Hazard communication program regulations that are enforced by Cal/OSHA require workplaces to maintain procedures for identifying and labeling hazardous substances, inform workers about the hazards associated with hazardous substances and their handling, and prepare health and safety plans to protect workers at hazardous waste sites. Employers also must make material safety data sheets available to employees and document employee information and training programs. In addition, Cal/OSHA has established maximum permissible radiofrequency radiation exposure limits for workers (Title 8 CCR § 5085(b)) and requires warning signs where radiofrequency radiation may exceed the specified limits (Title 8 CCR § 5085(c)). Cal/OSHA's Lead in Construction Standard is contained in Title 8, Section 1532.1 of the California Code of Regulations. The regulations address all of the following areas: permissible exposure limits (PELs); exposure assessment; compliance methods; respiratory protection; protective clothing and equipment; housekeeping; medical surveillance; medical removal protection; employee information, training, and certification; signage; record keeping; monitoring; and agency notification.

California Accidental Release Prevention

The purpose of the California Accidental Release Prevention (CalARP) program is to prevent accidental releases of substances that can cause serious harm to the public and the environment, to minimize the damage if releases do occur, and to satisfy community right-to-know laws. In accordance with this program, businesses that handle more than a threshold quantity of regulated substance are required to develop a risk management plan. This risk management plan must provide a detailed analysis of potential risk factors and associated mitigation measures that can be implemented to reduce accident potential. CUPAs implement the CalARP program through review of risk management plans, facility inspections, and public access to information that is not confidential or trade secret.

California Health and Safety Code and Code of Regulations

California Health and Safety Code Chapter 6.95 and 19 California Code of Regulations Section 2729 set out the minimum requirements for business emergency plans and chemical inventory reporting. These regulations require businesses to provide emergency response plans and procedures, training program information, and a hazardous material chemical inventory disclosing hazardous materials stored, used, or handled on site. A business that uses hazardous materials or a mixture containing hazardous materials must establish and implement a business plan if the hazardous material is handled in certain quantities.

State Asbestos-Containing Materials (ACM) Regulations

State-level agencies, in conjunction with the USEPA and OSHA, regulate removal, abatement, and transport procedures for asbestos-containing materials. Releases of asbestos from industrial, demolition, or construction activities are prohibited by these regulations and medical evaluation and monitoring is required for employees performing activities that could expose them to asbestos. Additionally, the regulations include warnings that must be heeded and practices that must be followed to reduce the risk for asbestos emissions and exposure. Finally, federal, state, and local

agencies must be notified prior to the onset of demolition or construction activities with the potential to release asbestos.

California Building Code

The State of California provided a minimum standard for building design through the 2010 CBC, which is located in Part 2 of Title 24 of the CCR. The 2010 CBC is based on the 1997 Uniform Building Code but has been modified for California conditions. It is generally adopted on a jurisdiction-by-jurisdiction basis, subject to further modification based on local conditions. Commercial and residential buildings are plan-checked by local city and county building officials for compliance with the CBC. Typical fire safety requirements of the CBC include: the installation of sprinklers in all high-rise buildings; the establishment of fire resistance standards for fire doors, building materials, and particular types of construction; and the clearance of debris and vegetation within a prescribed distance from occupied structures in wildlife hazard areas.

California Fire Code (2010)

California Code of Regulations, Title 24, also known as the California Building Standards Code, contains the California Fire Code, included as Part 9 of that title. Updated every three years, the California Fire Code includes provisions and standards for emergency planning and preparedness, fire service features, fire protection systems, hazardous materials, fire flow requirements, and fire hydrant locations and distribution. The Madera County Fire Department provides fire protection services for the unincorporated areas of Madera County (Project Area) and as such, implements and enforces the California Fire Code in the Project Area (Fire Department 2022).

California Certified Unified Program Agencies

CalEPA oversees California's CUPA. The program protects Californians from hazardous waste and hazardous materials by ensuring local regulatory agencies consistently apply statewide standards when they issue permits, conduct inspections, and engage in enforcement activities. The Unified Program is a consolidation of multiple environmental and emergency management programs.

Local Regulations, Laws, and Policies

California Certified Unified Program Agencies

The Madera County CUPA is managed by the Madera County Environmental Health Division (EHD). The Madera County CUPA has jurisdiction in all unincorporated and incorporated areas of the County including the Project area.

Madera County General Plan

The MCGP contains the health and safety element that discusses natural hazards, emergency management, hazardous materials, and public safety in the County. The Project adheres to the goals and policies related to hazards and hazardous materials.

2.9.2 ENVIRONMENTAL SETTING

This section describes the existing hazards and hazardous material conditions within the Project area and evaluates whether the Project would result in significant impacts related to hazards and hazardous materials.

According to the DTSC mapping tool EnviroStor, there are no active hazardous waste clean-up sites within 3,000 feet of the Project site (DTSC 2022). There is one leaking underground storage tank (LUST) Cleanup site approximately 3 miles northeast of the Project site and there are multiple sites in the community of North Fork approximately 10 miles southeast of the Project site. The proposed construction will have no impact on the any of the surrounding sites or facilities.

The Project does not expect to generate any reportable quantities of hazardous materials from construction. However, upon completion of the proposed water treatment facility, the waste from the water treatment will contain arsenic. The arsenic from the California WET TTLC displayed thresholds above the TTLC of 50 mg/kg (Field Pilot Test Report 2022). The arsenic was measured at 64 mg/kg. Since the arsenic did not pass the California WET TTLC, the arsenic is deemed hazardous waste.

Operation of the proposed treatment facility will involve the use of chemicals used for oxidation, coagulation, and disinfection. These chemicals include sodium hypochlorite, ferric chloride, and a polymer. These chemicals will be periodically delivered to the treatment facility site by vehicle, and will be temporarily stored on site.

2.9.3 IMPACT ANALYSIS

The following sections discuss the key issues with respect to the Project's potential to impact hazards and hazardous materials.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
HAZARDS AND HAZARDOUS MATERIALS. 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 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?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
HAZARDS AND HAZARDOUS MATERIALS. Would 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 result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☒	☐

Project Impact Discussion
Would the project:

a) ***Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?***

Direct and Indirect Effects, Construction and Operations. The Project construction would involve use of toxic or hazardous substances typical for construction related activities (e.g., oil, vehicle fuels, construction equipment, hydraulic fluids, and solvents) which could result in exposure to the public or the environment in the event of a spill or leak. **MM HAZ-1** is proposed to minimize potential impacts during construction. With this mitigation measure in place, the Project construction is expected to have no significant direct or indirect effect on hazards and hazardous materials.

> **MM HAZ-1***:* If in-situ potentially hazardous materials are encountered, all construction in the vicinity of the encounter will be halted. All construction contractors shall immediately stop all surface or subsurface activities in the event that potentially hazardous materials are encountered, an odor is identified, or considerably stained soil is visible. Contractors shall follow all applicable local, state, and federal regulations regarding discovery, response, disposal, and remediation for hazardous materials encountered during the construction process. These requirements shall be included in the contractor specifications. If any hazardous materials, waste sites, or vapor intrusion risks are identified prior to or during construction, a qualified professional, in consultation with appropriate regulatory agencies, will develop and implement a plan to remediate the contamination and properly dispose of the contaminated material. If material imports are proposed, the contractor shall furnish the MD-24 or its representative with appropriate documentation certifying that the imported materials are free of contamination.

Upon completion of construction, the Project operations will utilize chemicals and will generate solid waste for the proposed water treatment facility. The water treatment facility will utilize an oxidizer/disinfectant (sodium hypochlorite) and a coagulant (ferric chloride, aluminum sulfate, or other chemical) to chemically bond with the arsenic, iron, and manganese. Sodium hypochlorite is

considered hazardous for temporary storage (non-flammable corrosive material) and may generate hazardous vapors during ambient conflagration. The anticipated coagulant, ferric chloride, has a United States Department of Transportation Hazard classification 8 (corrosive material), and is listed as a hazardous substance per the Clean Water Act (Fisher Scientific 2007). The contaminants in the untreated water, after bonding with the coagulant, will be removed by settling and filtration. The stored coagulant will be within secondary containment vessels, within the proposed building. The arsenic in backwash wastewater will be concentrated utilizing a polymer (e.g. Kroff KR-F5115 or similar). KR-F5115 is noted as hazardous as a skin and eye irritant. The oxidizer/disinfectant, coagulant, and polymer will be regularly delivered to the site and stored on site. Deliveries of coagulant to the site is anticipated on an approximately weekly basis. The frequency of delivery may increase when the system's water demands are higher (typically in summer months) and may be reduced when the system's water demands are lower.

The solid (sludge) and used media were tested for toxicity using the TCLP and passed. The backwash dewatered sludge from treatment will be temporarily stored on-site. The backwash dewatered sludge contains arsenic and is deemed hazardous pursuant to the California WET TTLC (see Section 2.9.2). Since the backwash is considered hazardous waste, the County, as part of the permitting review, prior to construction, will develop a plan for hauling and disposal in accordance with local, state, and federal laws. Upon completion of the Project, operations would create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

> **MM HAZ-2:** Madera County will develop a Hazardous Materials and Solid Waste Handling Plan to confirm and review practices for the transportation, handling, storage, and disposal of chemicals and solid waste generated by the treatment process. The Plan will also address safety measures, containment requirements, and responses to spills and other emergencies. Madera County will develop this Plan prior to construction, and will refine the Plan during startup of facilities.

b) *Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?*

Direct and Indirect Effects, Construction and Operation. The Project construction would involve use of toxic or hazardous substances typical for construction related activities (e.g., oil, vehicle fuels, construction equipment, hydraulic fluids, and solvents) which could result in exposure to the public or the environment in the event of a spill or leak. **MM HAZ-1** is proposed to minimize potential impacts during construction. **MM HAZ-2** is proposed to minimize potential impacts during treatment facility operation. With this mitigation measure in place, the Project construction is expected to have no significant direct or indirect effect on hazards and hazardous materials.

During operation, the coagulant (ferric chloride), which is considered hazardous (corrosive), will be delivered to the site approximately weekly and will be temporarily stored on site. The anticipated coagulant, ferric chloride, has a United States Department of Transportation Hazard classification 8 (corrosive material), and is listed as a hazardous substance per the Clean Water Act (Fisher Scientific 2007). Additionally, the waste from the water treatment facility is deemed hazardous (see Section 2.9.2). As such, there is the possibility of accidental releases (e.g., spilling of hydraulic fluid or diesel fuel from construction maintenance or operating activities, the coagulant, and arsenic waste) during construction. **MM HAZ-1** and **MM HAZ-2** are proposed to minimize potential impacts. With this

mitigation measure in place, the Project is expected to have less than significant effect on hazards and hazardous materials.

c) *Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?*

Direct and Indirect Effects. There is no existing or proposed school within one-quarter mile of the Project. North Fork Elementary School, owned and maintained by the Chawanakee Unified School District, is approximately 10 miles northeast of the Project. No impact relative to this issue.

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?*

Direct and Indirect Effects. The Project is not 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. The Project is expected to have no impact on hazards and hazardous materials.

e) *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?*

Direct and Indirect Effects. No public airports are located near the Project. The closest airport is located approximately 15 miles southeast (Johnston Field- 5CL9). No impact would occur relative to this issue.

f) *Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

Direct and Indirect Effects. During construction, the Project could potentially impart or physically interfere with an adopted emergency response plan or emergency evacuation plan. The trenching for the transmission pipeline, distribution pipeline, and electric utility improvements would temporarily impair traffic on Moaka Poyah, Teaford Poyah, and Moic Road. At all times, at least one lane of traffic will remain open. If deemed necessary by the County as part of its permitting review, prior to construction, the County will develop and implement a traffic control plan. After the completion of the Project, MD-24 operations would return to similar footprint and would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. A less than significant impact would occur relative to this issue.

g) *Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?*

Direct and Indirect Effects. The Project is located within an area with Very High Fire Hazard Severity Zone (FHZS) and Moderate FHZS (OSFM 2022) under a State Responsibility Area (SRA). The Project does not include construction of residential or commercial property that could potentially expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving

wildland fires. The treatment facility building will not normally be occupied. Operators will visit the facility and new well site for up to a few hours per day. The Project proposes enhancements and additions to MD-24 including equipping a new well, a new water treatment facility, destruction of Well No. 3, wellhead improvements to Well Nos. 2 and 4, a new transmission line to connect Well Nos. 2, 4 and proposed well to the new water treatment facility, and a new distribution pipeline. The Project will have a similar footprint of structures and equipment except the construction of a new treatment facility building, equipping the wellhead, a generator, and propane tank. A less than significant impact would occur relative to this issue.

2.10 HYDROLOGY AND WATER QUALITY

2.10.1 REGULATORY SETTING

This section addresses regulations, laws, and policies related to hydrology in compliance with Federal, State, and/or local entities and includes descriptions and details.

Federal Regulations, Laws, and Policies

Clean Water Act

The Clean Water Act (CWA) is the primary federal law that protects the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. The key sections pertaining to water quality regulation for the Project are CWA § 303 and § 402.

Section 303(d) - Listing of Impaired Water Bodies

Under CWA § 303(d), states are required to identify "impaired water bodies" (those not meeting established water quality standards), identify the pollutants causing the impairment, establish priority rankings for waters on the list, and develop a schedule for development of control plans to improve water quality. United States Environmental Protection Agency (USEPA) then approves the state's recommended list of impaired waters or adds and/or removes water bodies.

Section 402 - National Pollutant Discharge Elimination System Permits for Stormwater Discharge

CWA § 402 regulates construction-related stormwater discharges to surface waters through the National Pollutant Discharge Elimination System (NPDES). The NPDES is officially administered by USEPA. In California, USEPA has delegated its authority to the California State Water Resources Control Board (SWRCB); the SWRCB in turn delegates implementation responsibility to the nine Regional Water Quality Control Boards (RWQCB), as discussed with regard to the Porter-Cologne Water Quality Control Act below.

Under the Statewide General Construction Activity permit, discharges of stormwater from construction sites with a disturbed area of one or more acres are required to either obtain individual NPDES permits for stormwater discharges or to be covered by the General Permit. Coverage by the General Permit is accomplished by completing and filing a Notice of Intent with the SWRCB and developing and implementing a Storm Water Pollution Prevention Plan (SWPPP). Each applicant under the General Construction Activity Permit must ensure that a SWPPP is prepared prior to grading and is implemented during construction. The SWPPP must list BMPs implemented on the

construction site to protect stormwater runoff and must contain a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs; and a monitoring plan if the site discharges directly to a water body listed on the State's 303(d) list of impaired waters.

Federal Emergency Management Agency

FEMA produces flood insurance rate maps that identify special flood hazard areas. The maps further classify these areas into "zones" that broadly characterize the potential risk of an area being inundated by a 100-year or 500-year flood in any given year.

Wild and Scenic Rivers Act

In 1968, Congress created the National Wild and Scenic Rivers System Act to designate and preserve certain rivers in a free-flowing condition for the enjoyment of present and future generations. Designated wild and scenic rivers have outstanding natural, cultural, and recreational values and are administered by a federal or state agency. Rivers are classified as wild, scenic, or recreational with the wild classification indicating river areas that are not impounded, only accessible by trail, and have unpolluted waters and essentially primitive watersheds or shorelines. The scenic and recreational classifications indicate rivers with perhaps more development or accessibility and/or past impoundment or diversion.

State Regulations, Laws, and Policies

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (known as the Porter-Cologne Act), passed in 1969, dovetails with the CWA (see discussion of the CWA above). It established the SWRCB and divided the state into nine regions, each overseen by the California Regional Water Quality Control Board (RWQCB). The SWRCB is the primary state agency responsible for protecting the quality of the state's surface water and groundwater supplies. However, much of the SWRCB's daily implementation authority is delegated to the nine RWQCBs, which are responsible for implementing CWA §§ 401, 402, and 303(d). In general, the SWRCB manages water rights and regulates statewide water quality, whereas the RWQCBs focus on water quality within their respective regions. The Proposed Project is located in the Central Valley RWQCB Region-5 (R-5).

The Porter-Cologne Act requires the RWQCBs to develop water quality control plans (also known as Basin Plans) that designate beneficial uses of California's major surface water bodies and groundwater basins and establish specific narrative and numerical water quality objectives for those waters. Beneficial uses represent the services and qualities of a water body - i.e., the reasons why the water body is considered valuable. Water quality objectives reflect the standards necessary to protect and support those beneficial uses. Basin Plan standards are primarily implemented by regulating waste discharges so that water quality objectives are met. Under the Porter-Cologne Act, Basin Plans must be updated every 3 years.

Groundwater Ambient Monitoring and Assessment

The Groundwater Ambient Monitoring and Assessment (GAMA) Program is California's comprehensive groundwater quality monitoring program that was created by the SWRCB (State Water Board) in 2000. It was later expanded by AB 599 - the Groundwater Quality Monitoring Act of 2001. The main goals of GAMA are to:

- Improve statewide comprehensive groundwater monitoring.
- Increase the availability to the general public of groundwater quality and contamination information.

Local Regulations, Laws, and Policies

Madera County General Plan

The MCGP contains goals and policies related to water supply and delivery, water resources, wetland and riparian areas, and flood hazards. The Project adheres to goals and policies related to water supply and delivery, water resources, wetland and riparian areas, and flood hazards.

Drinking Water Program of Madera County EHD

The County's Drinking Water Program (Community and Economic Development Department, EHD) is in place to protect public health and prevent diseases from potable water in Small Public Water Systems. Small Public Water Systems are defined as supplying drinking water and having 15 to 199 service connections or serve 25 individuals at least 60 days out of the year. The SWRCB, Division of Drinking Water (SWRCB-DDW) has appointed Madera County EHD as LPA for enforcement of the state's drinking water regulator for Small Public Water Systems. Small Public Water Systems serving more than 200 and more connections are regulated by the SWRCB-DDW. The Madera County Public Works Department currently owns and operates 30 community water systems and 14 community wastewater systems, including MD-24. The EHD is the LPA for MD-24.

Ground Water and Water Wells

A permit is required from EHD to drill wells or destroy wells. Wells must be constructed or destroyed by a licensed C-57 well driller. The construction, installation, and destruction of groundwater wells must comply with Madera County Code and DWR Water Well Bulletin 74-81 and 74-90.

2.10.2 ENVIRONMENTAL SETTING

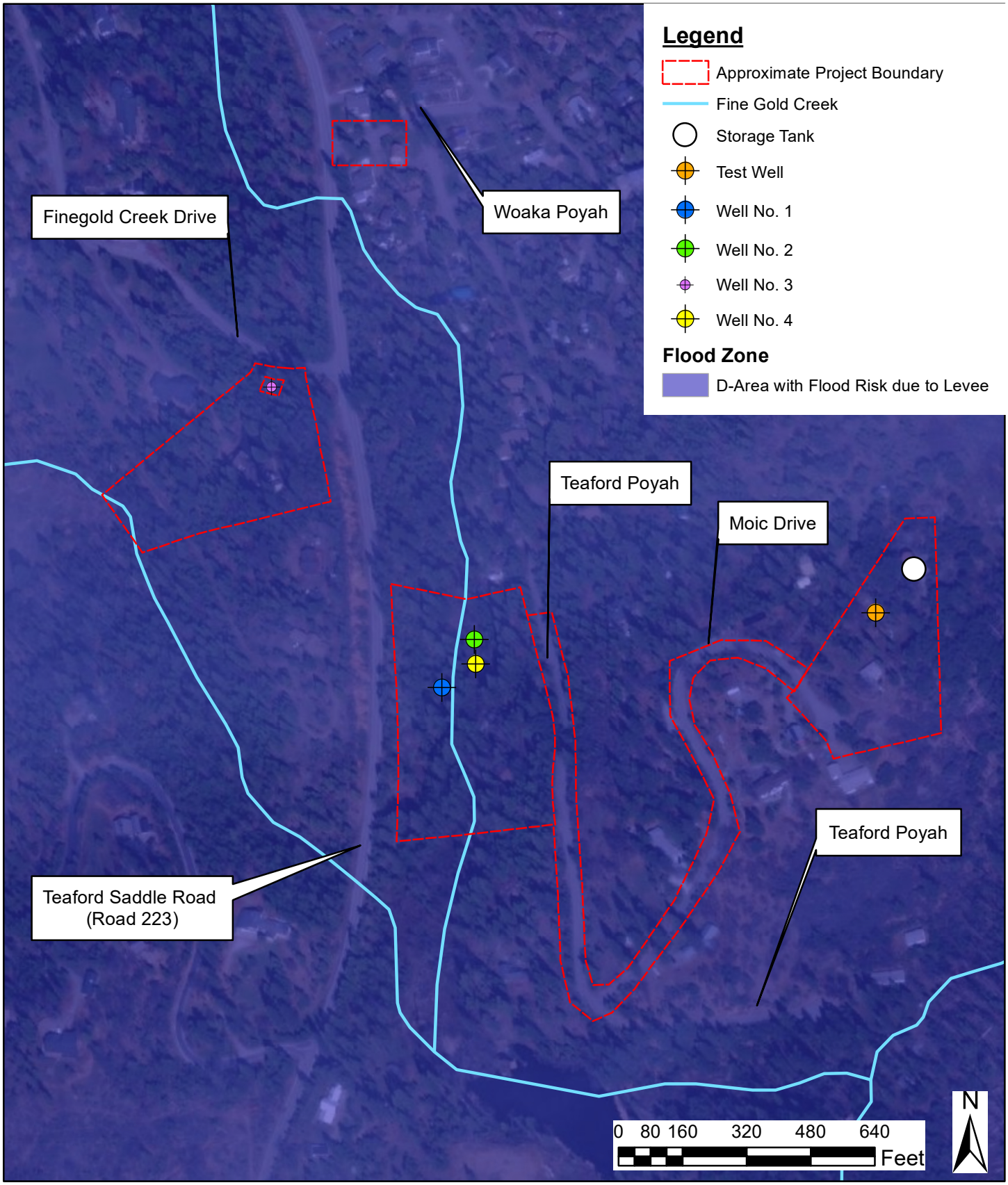
This section describes the existing hydrology and water quality conditions within the Project area and evaluates whether the Project would result in significant hydrology or water quality impacts.

According to the United States Fish and Wildlife Service's (USFWS) National Inventory of Wetlands, the Project does have wetlands located nearby (Figure 3). Riverine wetlands, one freshwater pond, freshwater emergent wetlands, and freshwater forested/shrub wetlands are located near or within the Project area (USFWS 2022). Little Fine Gold Creek also runs throughout the Project site (Figure 2 in Section 1.3).

A flood map search for Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) confirms that the Project is located in panel ID number 06039C0515E. The panel confirms the Project area has been mapped by FEMA for flood zone hazards and is located in zone D (Figure

4) (FEMA 2008). Zone D is a risk of flooding due to the presence of a levee. Madera County has no designated flood-zone hazard maps available for this area. Additionally, the Project area is situated over a U.S. Environmental Protection Agency (USEPA) sole source aquifer known as the Fresno Streamflow Source Zone (USEPA 2022).

MD-24 serves 66 residential service connections with a population of approximately 150 residents. MD-24 has two active wells (Well Nos. 2 and 4), one test well, one standby well (Well No. 3), and one inactive well (Well No. 1). MD-24 wells produce water with concentrations arsenic, iron, and manganese that regularly exceed their respective MCLs. Likewise, MD-24 does not comply with the MDD per CCR, Title 22, 64554(c). These concentrations do not comply with the Drinking Water Standards. The Project proposes equipping of the test well, a new water treatment facility, destruction of Well No. 3, new transmission and distribution pipelines, and wellhead improvements for Well Nos. 2 and 4 (see Section 1.5). The proposed Project will provide improved potable water service to the existing customers of MD-24.



N V 5

1 W DEER VALLEY ROAD
BUILDING 2, SUITE 305
PHOENIX, ARIZONA 85027
Tel: 623.374.6637 Fax: 623.738.3690

FIOOD PLAIN MAP

INITAL STUDY/
MITIGATED NEGATIVE DECLARATION

FIGURE 3

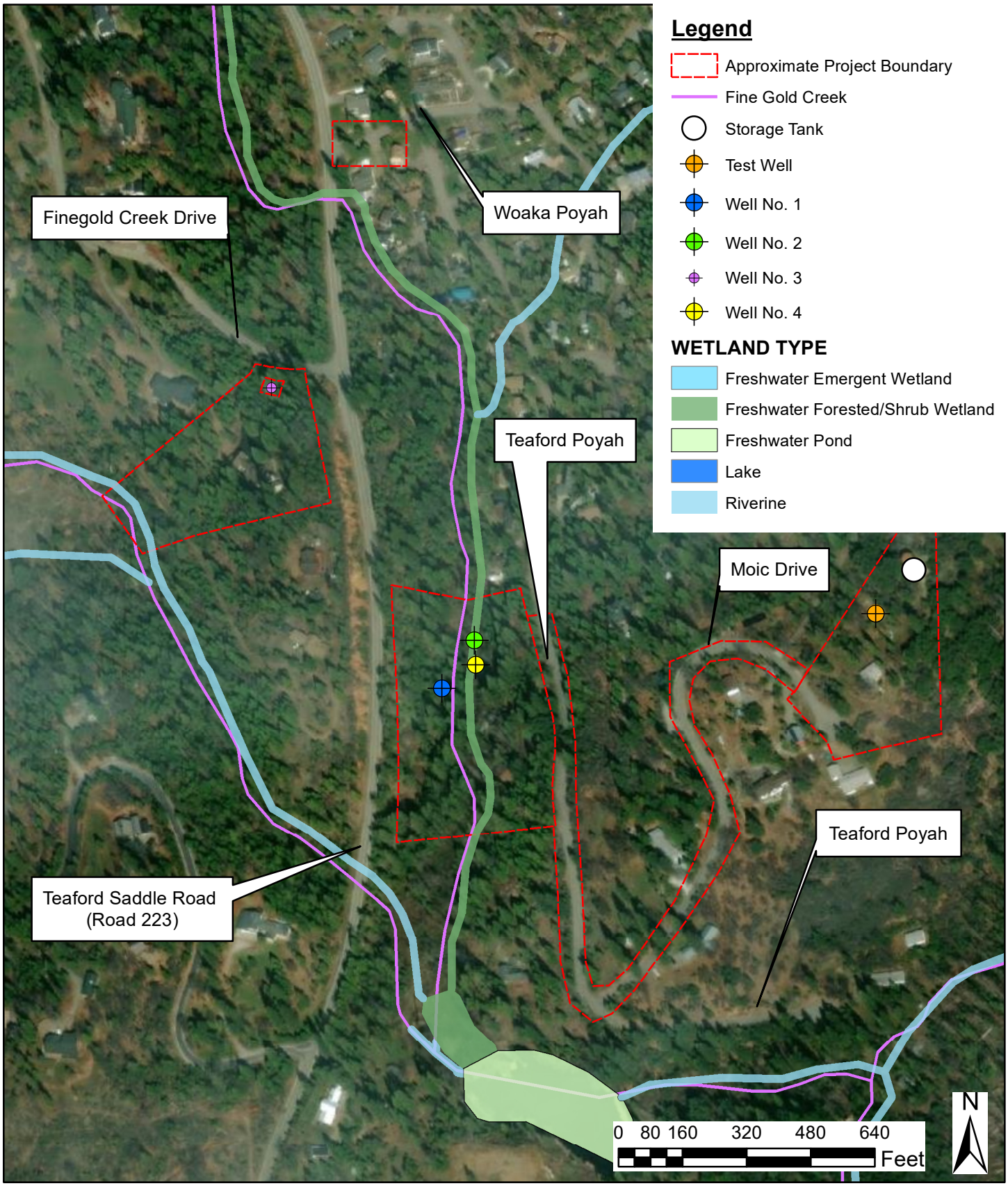
FOR: COUNTY OF MADERA

PROJECT NO. 226117-0000217.01	DATE: 6/28/2023

DES: LAB	DR: LAB	CHK:MM

SHT 1 OF 1

Service Layer Credits: Source: Esri, Maxar, FEMA, CDFW, Earthstar Geographics, and the GIS User Community



N V 5
1 W DEER VALLEY ROAD
BUILDING 2, SUITE 305
PHOENIX, ARIZONA 85027
Tel: 623.374.6637 Fax: 623.738.3690

WETLAND MAP

INITAL STUDY/
MITIGATED NEGATIVE DECLARATION

FIGURE 4

PROJECT NO. 226117-0000217.01 | DATE: 6/28/2023

FOR: COUNTY OF MADERA

DES: LAB | DR: LAB | CHK:MM

SHT 1 OF 1

Service Layer Credits: Source: Esri, Maxar, CDFW, USFWS, Earthstar Geographics, and the GIS User Community

2.10.3 IMPACT ANALYSIS

The following sections discuss the key issues with respect to the Project's potential to impact hydrology and water.

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

Project Impact Discussion

Would the project:

a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Direct and Indirect Effects, Construction, and Operation. The Project principally aims to address concentrations of arsenic, iron, and manganese in the wells that regularly exceed the respective MCLs set by the State of California and the federal government. MD-24 has had regular exceedances of the MCL since 2011. Advancing the Project will address the deficiencies related to arsenic, iron,

and manganese MCLs for drinking water and will address violations documented by Madera County EHD. Upon completion of the Project, no impact on surface or groundwater quality would result from normal operations.

During construction, there is potential for contaminants to affect surface or groundwater quality (fuels, sediments, and debris) from construction activities (excavating). Thus, **MM HWQ-1, MM HAZ-1** (Section 2.9.3) and **MM BIO-4** (Section 2.4.3) are proposed to minimize potential impacts. With this mitigation measure in place, the Project is expected to have less than significant effect on surface or groundwater quality during construction.

MM HWQ-1: The selected Contractor will assess the receiving water vulnerability and develop a Stormwater Pollution Prevention Plan (SWPPP) that complies with the requirements of the NPDES General Construction Permit (Order 2009-0009-DWQ as amended by 2010 0014-DWQ and 2012-006-DWQ) based on the project-specific risk level. The SWPPP shall identify specific actions and best management practices (BMPs) relating to the prevention of stormwater pollution from project-related construction sources by identifying a practical sequence for site restoration, BMP implementation, contingency measures, responsible parties, and agency contacts. The SWPPP shall reflect localized surface hydrological conditions, local jurisdictional requirements and shall be reviewed and approved by MD-24 prior to commencement of work.

The SWPPP shall be prepared by a qualified SWPPP developer with BMPs selected to achieve maximum pollutant removal and that represent the best available technology that is economically achievable. BMPs for soil stabilization and erosion control practices and sediment control practices will also be required. Performance and effectiveness of these BMPs shall be determined either by visual means where applicable (i.e., observation of above-normal sediment release), or by actual water sampling in cases where verification of contaminant reduction or elimination, (e.g., inadvertent petroleum release) is required to determine the adequacy of the measure.

The SWPPP shall also address other project-specific water quality threats, as required for individual improvements including but not limited to, temporary dewatering, hydrostatic testing, well drilling and development, and other resource permits as required under the Federal Clean Water Act, County Grading Ordnance, and State Fish and Game Code, as applicable. Construction and post-construction BMPs will be designed to avoid the creation of standing water and potential mosquito breeding habitats.

b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Direct and Indirect Effects, Construction and Operation. The Project would not decrease groundwater supplies or interfere with groundwater recharge. The Project aims to improve drinking water quality supplied to MD-24's existing customers, address the water quality issues, and comply with standards. Although the normal extraction location will change from Well Nos. 2 and 4 (APN 061-012-012) to include the test well (APN 061-490-033 and -034), the total volume of water extracted from groundwater will not significantly change because of the Project. The Project proposes the destruction of Well No. 3, which will no longer extract groundwater or be a source of water (Figure 2 in Section 1.3). To equip and utilize the test well, a permit will be given by Madera County EHD. Madera County EHD is also anticipated to issue a Water Supply Permit Amendment to MD-24 as a

result of the Project. Groundwater recharge is not anticipated to be impacted by the Project. The Project will add a de minimis area of impervious surface. There is no artificial groundwater recharge in the Project area. A less than significant impact would occur relative to this issue.

c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i. result in substantial erosion or siltation on- or off-site;

Direct and Indirect Effects, Construction, and Operation. The Project construction could cause a temporary surface and soils disturbance on or off-site. Upon completion of construction, the Project would return to a similar footprint with the addition of the new water treatment facility and equipping of test well but would not contribute to erosion or siltation on or off-site. A new 1000-square-foot building would be placed around the proposed water treatment facility. The footprint of facilities would increase at the site of the test well and storage tank (Figure 2 in Section 1.3), partially offset by the removal of the existing Well No. 3. With the implementation of **MM HWQ-1**, erosion or siltation on or off-site would be minimized. With **MM-HWQ-1,** a less than significant impact would occur relative to the issue.

ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;

Direct and Indirect Effects, Construction, and Operation. The Project construction could cause temporary increase or rate of surface run-off. The footprint of facilities would increase at the site of the test well and storage tank (Figure 2 in Section 1.3), nearly offset with the destruction and removal of the existing Well No. 1. Upon completion of construction, the Project site would return to a similar footprint with the addition of the proposed water treatment facility and equipped test well and would not contribute surface runoff. With the implementation of **MM HWQ-1**, increased surface runoff would be minimized. With **MM-HWQ-1,** a less than significant impact would occur relative to the issue.

iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;

Direct and Indirect Effects, Construction, and Operation. During construction, the Project could create polluted runoff due to construction equipment and sediments. However, with the implementation of **MM HWQ-1**, polluted runoff would be mitigated. Upon completion of construction, the Project site would return to a similar footprint with the addition of the proposed water treatment facility and equipped test well and would not contribute to exceeding runoff or polluted runoff. The footprint of facilities would increase at the storage tank and test well site, nearly offset with the destruction and removal of the existing Well No. 3. The impact would be less than significant with **MM HWQ-1**.

iv. or impede or redirect flood flows?

Direct and Indirect Effects, Construction, and Operation. A flood map search for Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) panel ID number 06039C0515E

shows the Project area is with Zone D, a risk of flooding due to levee (Figure 4) (FEMA 2008). Additionally, the Project site has an average slope of 8.4% (Google Earth Pro 2022). The Project is not located in an area on different elevations that would cause redirection of flood flows. The Project would have a less than significant impact would occur relative to this issue.

d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

Direct and Indirect Effects. A flood map search for Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) panel ID number 06039C0515E shows the Project area is located in Zone D, risk of flooding due to a levee (Figure 4) (FEMA 2008). The Project is well inland and no threat of tsunami is present. There are no nearby bodies of water that could produce seiche. The closest body of water is Bass Lake approximately three miles northeast and down-gradient of the site. A less than significant impact would occur relative to this issue.

e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Direct and Indirect Effects. The Project's jurisdiction for the RWQCB is the Central Valley Region (R-5), which is in the North Central Valley Basin. The Project would not conflict with or obstruct implementation of the Water Quality Control Plan for the Central Valley Region (RWQCB 2022). According to the Department of Water Resources (DWR) Groundwater Basin Assessment tool the Project site is not located in a groundwater basin (DWR 2022). Similarly, Madera County states there is no Groundwater Sustainability Agency (GSA) in the project area (Madera County 2023). Therefore, there are no direct or indirect effects of the Project that would conflict with a potential sustainable groundwater management plan (SGMP) or GSA. No impact would occur relative to this issue.

2.11 LAND USE AND PLANNING

2.11.1 REGULATORY SETTING

This section addresses regulations, laws, and policies related to land use and planning in compliance with Federal, State, and local entities and includes descriptions and details.

Federal Regulations, Laws, and Policies

Federal Land Policy and Management Act of 1976

Public land managed by the BLM is regulated under the FLPMA of 1976. Under this regulation, the BLM develops RMPs that direct BLM District Offices in the sustainable, best use of the biological resources of the public land. For the Potential Project, the nearby BLM falls under the jurisdiction of the BLM Central California District, Bakersfield Field Office (BLM 2022).However, no land under the jurisdiction of BLM is adjacent to the property site.

Forest and Land Resource Management Plan

The Forest and Land Resource Management Plan was developed in 1991 to direct and manage the Sierra National Forest. The plan assisted in protecting forest resources, mixing activities, and fulfilling legislative requirements. The plan applies to all land within the National Forest land

administered by the Sierra National Forest. The Project is not anticipated to impact the Sierra National Forest. The Forest is, however, immediately adjacent to the proposed treatment facility.

Local Regulations, Laws, and Policies

Madera County General Plan

The MCGP 2016-2024 Housing Element Update (Housing Element 2015) contains goals, policies, and programs to help meet the housing needs in the County, including the zoning of land for such purposes.

2.11.2 ENVIRONMENTAL SETTING

This section describes the existing land use and planning conditions within the Project area and evaluates whether the Project would result in significant impacts related to land use and planning.

The Project does not use public land but is located adjacent to the Sierra National Forest and lands administered by the USFS (BLM 2022). However, the Project will not have any impact on lands located in the Sierra National Forest administered by the USFS. Project construction is proposed within Madera County ROW and County-owned parcels adjacent to the USFS lands. The proposed use is compatible with MCGP.

2.11.3 IMPACT ANALYSIS

The following sections discuss the key issues with respect to the Project's potential to impact land use and agriculture.

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

Project Impact Discussion
Would the project:
a) ***Physically divide an established community?***

Direct and Indirect Effects. The Project would not physically divide an established community. The Project area is a lightly populated, unincorporated area of Madera County. Construction would cause minimal, temporary disruption and there would be no impact after completion. The Project proposes enhancements and additions to MD-24 including a new well, new water treatment facility, destruction of Well No. 1, wellhead improvements to Well Nos. 2 and 4, and new transmission line to connect Well Nos. 2, 4, and proposed well to the new water treatment facility The majority of

improvements will be located underground (proposed transmission and distribution pipelines) or in areas to which the general public already is not allowed access (well sites, storage tank/well site). The proposed treatment facility and well site are located at the edge of the Teaford Meadows community, adjacent to Sierra National Forest. Access to USFS lands would not be impeded by the Project. The location and footprint of existing and proposed facilities are comparable. No impact would occur relative to this issue.

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?***

Direct and Indirect Effects. The Project location is in unincorporated area in Madera County and is located in land zoned by the County as RRS, RMS, and OS (see section 2.2.2) (Land Use 2022). The Project is entirely consistent with the MCGP. The Project does not impact these community characteristics, as the facilities will be located on the same Madera County-owned parcels and will have similar footprints and functions to the existing facilities with addition of the new well and water treatment facility. No impact would occur relative to this issue.

2.12 MINERAL RESOURCES

2.12.1 REGULATORY SETTING

This section addresses regulations, laws, and policies related to mineral resources in compliance with Federal, State, and local entities and includes descriptions and details.

Federal Regulations, Laws, and Policies

No federal regulations, laws, or policies related to mineral resources.

State Regulations, Laws, and Policies

California Surface Mining and Reclamation Act

The federal Surface Mining and Reclamation Control Act of 1975 (SMACRA) requires that the State Mining and Geology Board identify, map, and classify land throughout California that contain regionally significant mineral resources. Designations of land areas are assigned by the DOC and CGS following analysis of geologic reports and maps, field investigations, and using information about the locations of active sand and gravel mining operations. Local jurisdictions are required to enact planning procedures to guide mineral conservation and extraction at particular sites, and to incorporate mineral resource management policies into their general plans.

California Department of Conservation, Geologic Energy Management Division

The DOC Geologic Energy Management Division (CalGEM), formerly known as the Division of Oil, Gas, and Geothermal Resources (DOGGR), oversees the drilling, operation, maintenance, and closing of oil, natural gas, and geothermal wells. The division is intended to protect the environment, prevent pollution, and ensure public safety.

State Division of Mines and Geology

The State Division of Mines and Geology (DMG) serves, represents, and regulates interest in the reclamation of mined lands, geologic and seismic hazards, and conservation of mineral resources.

Local Regulations, Laws, and Policies

Madera County General Plan

The MCGP contains goals and policies for mineral resource. Oil and gas resources have not been identified in this section (PD 1995). The Project adheres to the goals and policies related to mineral resources.

Madera County General Plan Background Report

To manage mining resources, the County has incorporated mineral resource information into the mineral resources element of the MCGP Background Report and designated clusters or belts of mineral deposits as Mineral Resource Zones (MRZs).

2.12.2 ENVIRONMENTAL SETTING

This section describes the existing mineral resource conditions within the Project area and evaluates whether the Project would result in significant impacts related to mineral resources.

Madera County has aggregated mineral resources along the San Joaquin River and stone (subbase), dimension stone (granitic), and aggregate resources are commercially mined in the County (Background Report 1995). Mineral resources in the County are classified as either MRZ-1 or MRZ-2 zones. These zones are defined as areas where:

- adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence, or areas where adequate information indicates that significant mineral deposits are present;
- where it is judged that a high likelihood for their presence exists and are zoned as areas of OS, POS, or Agriculture, Rural, Exclusive-20 and -40 (ARE-20 and ARE-40).

The Project area is not located near the San Joaquin River. The river is located approximately 60 miles southwest of the Project. The Project is surrounded by rural residences and land that is zoned by Madera County as RRS, RMS, and OS (see section 2.2.2) (Land Use 2022). There is land that is zoned as OS, which would be classified as a MRZ-2 zone. The land where existing Wells No. 1, 2, and 4 (APN 061-012-012) are located on are within land zoned as OS (MRZ-2 zone). However, the County has owned and operated this land for the purposes of water supply and wastewater treatment for several decades. Therefore, there will be no impact to an MRZ-2 zone.

2.12.3 IMPACT ANALYSIS

The following sections discuss the key issues with respect to the Project's potential to impact mineral resources.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
MINERAL RESOURCES. 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?	☐	☐	☒	☐

Project Impact Discussion

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?

Direct and Indirect Effects. As discussed above, one part of the Project site is delineated in the MCGP as land considered a MRZ-2 (Well Nos. 1, 2, and 4 (APN 061-012-012)), which is highly likely to contain mineral resources that would be of value to the region. The County owns the land and has utilized this land for water supply and wastewater treatment systems for several decades. Therefore, the Project would not result in a loss of a locally-important mineral resource. A less than significant impact would occur relative to this issue.

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?

Direct and Indirect Effects. As discussed above, one part of the Project site is delineated on the MCGP as land considered a MRZ-2, which are highly likely to contain mineral resources that would be of value to the region. The County owns this land, and has operated water supply and wastewater treatment systems on this parcel for several decades. Therefore, the Project would not result in a loss of a locally-important mineral resource. A less than significant impact would occur relative to this issue.

2.13 NOISE

2.13.1 BACKGROUND OF NOISE

In the CEQA context, noise can be defined as unwanted sound. Sound is characterized by various parameters including the rate of oscillation of sound waves (frequency), the speed of propagation,

and the pressure level or energy content (amplitude). In particular, the sound pressure level is the most common descriptor used to characterize the loudness of an ambient sound level, or sound intensity. The decibel (dB) scale is used to quantify sound intensity. Because sound pressure can vary enormously within the range of human hearing, a logarithmic scale is used to keep sound intensity numbers at a convenient and manageable level. The human ear is not equally sensitive to all frequencies in the spectrum, so noise measurements are weighted more heavily for frequencies to which humans are sensitive, creating the A-weighted decibel (dBA) scale.

Different types of measurements are used to characterize the time-varying nature of sound. Below are brief definitions of these measurements and other terminology used in this section (section 2.13).

- dB is a measure of sound on a logarithmic scale that indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micro-pascals.
- dBA is an overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
- Maximum sound level (L_{max}) is the maximum sound level measured during a given measurement period.
- Minimum sound level (L_{min}) is the minimum sound level measured during a given measurement period.
- Equivalent sound level (L_{eq}) is the equivalent steady-state sound level that, in a given period, would contain the same acoustical energy as a time-varying sound level during the same period.
- Day-night sound level (L_{dn}) is the energy average of the dBA sound levels occurring during a 24-hour period, with a 10 dB added to the dBA during the period from 10:00 p.m. to 7:00 a.m. (typical sleeping hours). This weighted adjustment reflects the elevated sensitivity of individuals to ambient sound during nighttime hours.
- Community noise equivalent level (CNEL) is the energy average of the dBA sound levels during a 24-hour period, with 5 dB added to the dBA sound levels between 7:00 p.m. to 10:00 p.m. and 10 dB added to the dBA between 10:00 p.m. and 7:00 a.m.

In general, human sound perception is such that a change in sound level of 3 dB is barely noticeable, a change of 5 dB is clearly noticeable, and a change of 10 dB is perceived as doubling or halving the sound level. Table 6 presents approximate noise levels for common noise sources, measured adjacent to the source.

TABLE 6: EXAMPLES OF COMMON NOISE LEVELS

COMMON OUTDOOR ACTIVITIES NOISE LEVEL (DBA)	NOISE LEVEL (DBA)
Jet flyover at 1,000 feet	110
Gas lawnmower at 3 feet	100
Diesel truck at 50 feet traveling 50 miles per hour	90
Noisy urban area, daytime	80
Gas lawn mower at 100 feet, commercial area	70
Heavy traffic at 300 feet	60
Quiet urban area, daytime	50
Quiet urban area, nighttime	40
Quiet suburban area, nighttime	30

Source: Technical Noise Supplement to the Traffic Noise Analysis Protocol (Caltrans 2013)

Ground-borne vibration propagates from the source through the ground to adjacent buildings by surface waves. Vibration may be composed of a single pulse, a series of pulses, or a continuous oscillatory motion. The frequency of a vibrating object describes how rapidly it is oscillating, measured in Hertz (Hz). Most environmental vibrations consist of a composite, or "spectrum," of many frequencies. The normal frequency range of most ground-borne vibrations that can be felt generally starts from a low frequency of less than 1 Hz to a high of about 200 Hz. Vibration information for this analysis has been described in terms of the peak particle velocity (PPV), measured in inches per second, or of the vibration level measured with respect to root-mean-square vibration velocity in decibels (VdB), with a reference quantity of 1 micro-inch per second.

Vibration energy dissipates as it travels through the ground, causing the vibration amplitude to decrease with distance away from the source. High-frequency vibrations reduce much more rapidly than do those characterized by low frequencies, so that in a far field zone distant from a source, the vibrations with lower frequency amplitudes tend to dominate. Soil properties also affect the propagation of vibration. When ground-borne vibration interacts with a building, a ground-to-foundation coupling loss usually results but the vibration also can be amplified by the structural resonances of the walls and floors. Vibration in buildings is typically perceived as rattling of windows, shaking of loose items, or the motion of building surfaces. In some cases, the vibration of building surfaces also can be radiated as sound and heard as a low-frequency rumbling noise, known as ground-borne noise.

Ground-borne vibration is generally limited to areas within a few hundred feet of certain types of industrial operations and construction/demolition activities, such as pile driving. Road vehicles rarely create enough ground-borne vibration amplitude to be perceptible to humans unless the receiver is in immediate proximity to the source or the road surface is poorly maintained and has potholes or bumps. Human sensitivity to vibration varies by frequency and by receiver. Generally, people are more sensitive to low-frequency vibration. Human annoyance also is related to the number and duration of events; the more events or the greater the duration, the more annoying it becomes.

2.13.2 REGULATORY SETTING

This section addresses regulations, laws, and policies related to noise in compliance with Federal, State, and local entities and includes descriptions and details.

Federal Regulations, Laws, and Policies

No federal laws, regulations, or policies related noise and vibration apply to the Project.

Federal Transit Administration

The Federal Transit Administration (FTA) Guidelines for Construction Vibration in Transit Noise and Vibration Impact Assessment state that for evaluating daytime construction noise impacts in outdoor areas, a noise threshold of 90 A-weighted decibels (dBA) equivalent sound level (L_{eq}) should be used for residential areas (FTA 2006).

For construction vibration effects, the FTA guidelines use an annoyance threshold of 80 VdB for infrequent events (fewer than 30 vibration events per day) and a damage threshold of 0.3 inches per

second (in/sec) peak particle velocity (PPV) for engineered concrete and masonry structures and 0.12 in/sec PPV for buildings extremely susceptible to vibration damage (FTA 2006).

Federal Highway Administration

Noise levels generated by a point source decrease at a rate of approximately 6 dBA per doubling of distance from the source. Therefore, if a particular point source generates average noise levels of 89 dBA at 50 feet, L_{eq} would be 83 dBA at 100 feet, 77 dBA at 200 feet, 71 dBA at 400 feet, and so on. This calculated reduction in noise level is based on the loss of energy resulting from the geometric spreading of the sound wave as it leaves the source and travels outward. For example, to characterize noise levels associated with construction activities, it is important to understand the highest level of noise generated by the construction equipment. The Federal Highway Administration (FHWA) Roadway Construction Noise Model produced estimates of the L_{max} of typical construction equipment and provides the noise levels at distances of 50 and 200 feet (FHWA 2006).

TABLE 7. TYPICAL NOISE LEVELS OF CONSTRUCTION EQUIPMENT

TYPICAL NOISE LEVELS OF CONSTRUCTION EQUIPMENT	
Equipment Type	Typical Sound Level at 50 FT (dBA)
Backhoe	80
Bulldozer	85
Compactor	82
Compressor	81
Concrete Mixer	85
Concrete Pump	82
Crane, Derrick	88
Crane, Mobile	83
Loader	85
Pavement Breaker	88
Paver	89
Pile Driver, Impact	101
Pump	76
Roller	74
Truck	88

Source: FHWA Roadway Construction Noise Model (FHWA 2006).

State Regulations, Laws, and Policies

California requires each local government entity to implement a noise element as part of its general plan. California Administrative Code, Title 4, presents guidelines for evaluating the compatibility of various land uses as a function of community noise exposure. The state land use compatibility guidelines are listed in Table 14.

TABLE 8: STATE LAND USE COMPATIBILITY STANDARDS FOR COMMUNITY NOISE ENVIRONMENT

COMMUNITY NOISE EXPOSURE- L_{DN} OR CNEL (DB)							
Land Use Category	50	55	60	65	70	75	80
[redacted]							

TABLE 8: STATE LAND USE COMPATIBILITY STANDARDS FOR COMMUNITY NOISE ENVIRONMENT	
COMMUNITY NOISE EXPOSURE- L_{DN} OR CNEL (DB)	
Land Use Category	50 55 60 65 70 75 80
Residential- Low Density Single Family, Duplex, Mobile Homes	
Residential - Multi-Family	
Schools, Libraries, Churches, Hospitals, Nursing Homes	
Auditoriums, Concert Halls, Amphitheaters	
Sports Arenas, Outdoor Spectator Sports	
Playgrounds, Neighborhood Parks	
Golf Courses, Riding Stables, Water Recreation, Cemeteries	
Office Buildings, Business Commercial, and Professional	
Industrial, Manufacturing, Utilities, Agriculture	

TABLE 8: STATE LAND USE COMPATIBILITY STANDARDS FOR COMMUNITY NOISE ENVIRONMENT		
COMMUNITY NOISE EXPOSURE- L_{DN} OR CNEL (DB)		
Land Use Category	50 55 60 65 70 75 80	
	Normally Acceptable	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
	Conditionally Acceptable	New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
	Normally Unacceptable	New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
	Clearly Unacceptable	New Construction or development generally should not be undertaken.

Local Regulations, Laws, and Policies

Madera County General Plan

The MCGP PD regulates permissible noise levels in the unincorporated areas of the County including the Project area (PD 1995). In the MCGP Background Report, noise in different settings were studied. There are scattered residences structures in the vicinity of the Project and the standard for construction noise would assume adjacent residential and commercial use. The County Code states:

- 7.A.4 - Development of new noise-sensitive land uses shall not be permitted where the noise level from existing non-transportation noise sources exceeds the noise level standards of Table 7.A.4 (see below).
- 7.A.9 - Vibration perception threshold: The minimum ground or structure-borne vibrational motion necessary to cause a normal person to be aware of the vibration by such direction means as, but not limited to, sensation by touch or visual observation of moving objects. The perception threshold shall be presumed to be a motion velocity of one-tenth (0.1) in/sec over the range of one to one hundred hertz. (Resolution No. 2010-043)
- 7.A.10 - Operation or permitting the operation of any device that creates a vibration which is above the vibration perception threshold of an individual at the location where the sensitivity exists such as the property line of a residential development or from the location of residence constructed on agricultural property. (Resolution No. 2010-043)

Table 9. Madera County Maximum Allowable Noise Exposure for Non-Transportation Noise Sources

TABLE 9. MADERA COUNTY MAXIMUM ALLOWABLE NOISE EXPOSURE FOR NON-TRANSPORTATION NOISE SOURCES		
	Daytime (7 am to 10 pm)	Nighttime (10 pm to 7 am)
Hourly Leq, dB	50	45
Maximum Level, dB	70	65

1As determined at the property line of the receiving land use. When determining the effectiveness of noise mitigation measures, the standards may be applied on the receptor side of noise barriers at the property line.
Note: Each of the noise levels specified above shall be lowered by 5 dB for pure tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings)

Source: MCGP (PD 1995)

2.13.3 ENVIRONMENTAL SETTING

This section describes the existing noise conditions within the Project area and evaluates whether the Project would result in significant impacts related to noise.

The Project area is in a rural residential setting with some noise sources typical of rural residences and local roads. Vehicles using nearby roads and day-to-day residential activities are the primary noise sources. Residences near the Project area may be sensitive to high noise levels.

2.13.4 IMPACT ANALYSIS

The following sections discuss the key issues with respect to the Project's potential noise impacts.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
NOISE. Would the Project:				
a. Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b. Result in generation of excessive groundborne vibration or groundborne noise levels?	☐	☒	☐	☐
c. For a project located in the vicinity of a private airstrip or 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 could expose people residing or working in the Project area to excessive noise levels?	☐	☐	☐	☒

Project Impact Discussion

Would the project:

a) Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Direct and Indirect Effects, Operation. There would be minimal permanent increase in ambient noise generated by the Project. The Project proposes enhancements and additions to MD-24 including a new well, new water treatment facility, destruction of Well No. 3, wellhead improvements to Well

Nos. 2 and 4, and new transmission and distribution pipelines to connect Well Nos. 2, 4 and proposed well to the new water treatment facility. New underground communication conduit will be installed and existing overhead electrical power (PG&E) wiring and poles will be improved. The principal source of additional noise would be from periodic vehicle access to the new well and treatment facility site. Vehicle trips to the existing Well Nos. 2 and 4 site will not change. Vehicle access to the existing Well No. 3 site will cease following the Project. Noise generated as a result of the Project would be generated from chemical delivery and waste trucks accessing the treatment facility site, approximately weekly. Water system operators would access the well and treatment facility site approximately daily. Water system operators would continue accessing the existing storage tank, located adjacent to the proposed treatment facility. The proposed propane generator would only operate during extended electrical grid outages and during periodic testing. A propane delivery truck would access the test well site to refill the propane tank, which could co-occur with propane deliveries to nearby residential properties. The test well will be equipped with a constant speed submersible pump, which will produce minimal noise. The treatment facility would generally operate hydraulically. However, some noise generating processes such was backwashing would occur up to several times per week. Noise emittance would be attenuated by the treatment facility building enclosure. The Project would result in a slightly increased noise footprint, a less than significant impact is relative to the issue.

Direct and Indirect Effects, Construction. There are multiple residences in proximity to the Project (within 200 feet of Project). Noise impacts associated with the construction of the Project would be temporary in nature and would not occur during nighttime hours. Construction would involve the destruction of Well No. 3, equipping of the test well, a new treatment facility, a new transmission line, well head improvements for Wells No. 2 and 4, trenching, pipe installation, backfilling, and repaving activities. The loudest construction activity associated with the Project would be digging trenches using a backhoe. Caltrans standard specifications provide information that can be considered in determining whether construction would result in adverse noise impacts. The specification states:

- Do not exceed 86 dBA at 50 feet from the job site activities from 9 p.m. to 6 a.m.
- Equip an internal combustion engine with the manufacturer-recommended muffler. Do not operate an internal combustion engine on the job site without the appropriate muffler. (Caltrans 2020)

The Caltrans specifications are not consistent with the MCGP. Therefore, MM NV-1 shall be implemented, which would reduce any impact due to noise from construction to less than significant.

MM NV-1: The Construction Contractor shall demonstrate to the satisfaction of the MD-24 Project Manager that the following noise control techniques are implemented during the clearing, demolition, grading, and construction phases of the Project:

- Heavy equipment repair and contractor staging shall be conducted at sites as far as practical from nearby residences. Construction equipment, including vehicles, generators and compressors, shall be maintained in proper operating condition and shall be equipped with manufacturers' standard noise control devices or better (e.g., mufflers, acoustical lagging, and/or engine enclosures).
- Temporary sound barriers (or curtains), stockpiles of excavated materials, or other effective shielding or enclosure techniques shall be used where construction noise would exceed 90 dBA within less than 50 feet from a noise sensitive receptor.

- Construction work, including on-site equipment maintenance and repair, shall be limited to the hours specified in the County noise ordinance.
- Electrical power shall be supplied from commercial power supply, wherever feasible, in order to avoid or minimize the use of engine-driven generators.
- Electrically powered equipment shall be used instead of pneumatic or internal-combustion powered equipment, where feasible.
- Unnecessary idling of internal combustion engines (i.e., in excess of 5 minutes) shall be prohibited.
- Operating equipment shall be designed to comply with all applicable local, state, and federal noise regulations.
- Construction site and access road speed limits shall be established and enforced during the construction period.
- If lighted traffic control devices are to be located within 500 feet of residences, the devices shall be powered by batteries, solar power, or similar sources, and not by an internal combustion engine.
- The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only.
- No project-related public address or music system shall be audible at any adjacent sensitive receptor

b) Expose persons to or generate excessive groundborne vibration or groundborne noise levels?

Direct and Indirect Effects, Construction and Operation. During construction, some amount of temporary ground-borne vibration would occur, primarily during excavation. There would be no permanent increase in excessive groundborne vibration or groundborne noise levels generated by the Project upon completion or during operation. Implementation of **MM NV-1** would ensure there would be a less than significant direct impact due to groundborne vibration or groundborne noise from the Project.

c) *For a project located in the vicinity of a private airstrip or 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 could expose people residing or working in the Project area to excessive noise levels?*

Direct and Indirect Effects. The Project is not located within the vicinity of a private airstrip or an airport land use plan. The nearest airstrip is 15 miles southeast (Johnston Field- 5CL9). No impact would occur relative to this issue.

2.14 POPULATION AND HOUSING

2.14.1 REGULATORY SETTING

This section addresses regulations, laws, and policies related to population and housing in compliance with Federal, State, and local entities and includes descriptions and details.

Federal Regulations, Laws, and Policies

There are no federal regulations, laws, or policies related to population and housing germane to this project.

State Regulations, Laws, and Policies

There are no state regulations, laws, or policies related to population and housing germane to this project.

Local Regulations, Laws, and Policies

Madera County General Plan

The MCGP 2016-2024 Housing Element Update states that the county has eleven adopted planning areas and four future areas that are currently in process of being established (Housing Element 2015). These current and future planning areas are committed to the County and goals that coordinate an equitable sharing of public and private costs associated with providing appropriate community services and infrastructure to meet growth needs. The Project is not located in one of the eleven adopted planning areas.

2.14.2 ENVIRONMENTAL SETTING

This section describes the existing population and housing conditions within the Project area and evaluates whether the Project would result in significant impacts related to population and housing.

The Project is located in an unincorporated area known as MD-24 in Madera County and is located approximately 40 miles northeast of the City of Madera. MD-24 is located in the Sierra Nevada mountains in eastern Madera County. Surrounding the Project sites, the land is zoned as RRS, RMS, and OS by Madera County (Land Use 2022). The housing in the unincorporated Madera County in 2010 is displayed in Table 10 and the demographic composition ion 2010 is displayed in Table 11.

TABLE 10: MADERA COUNTY HOUSING IN 2010	
MADERA COUNTY	
Population	70,729
Housing Units	49,012
Household Size (Average)	3.34

Source: MCGP Housing Element Update 2016-2024 (Housing Element 2015)

TABLE 11: MADERA COUNTY DEMOGRAPHICS IN 2010		
CATEGORY (NOT HISPANIC)	MADERA COUNTY POPULATION	PERCENTAGE
White	52,283	73.90%
Black	1,202	1.70%
American Indian, Eskimo, or Aleut	1827	2.60%
Asian	1,038	1.50%
Native Hawaiian/Pacific Islander	53	0.10%
Other Race	11464	16.20%
Two or more races	2862	0.04
Any Race (Hispanic Origin)	27,147	38.40%

Source: MCGP Housing Element Update 2016-2024 (Housing Element 2015).

2.14.3 IMPACT ANALYSIS

The following sections discuss the key issues with respect to the Project's potential to impact population and housing.

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

Project Impact Discussion

Would the project:

a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Direct and Indirect Impact, Construction and Operation. The Project would not directly induce substantial population growth because it does not involve construction of new residential buildings and businesses, expand roads, or other develop infrastructure into areas that are not designated for development in the MCGP. The Project may indirectly incentivize limited population growth as the local public water supply would no longer be out of compliance regarding arsenic, iron, and manganese, fire suppression would be improved, and water supply reliability would increase. However, any growth caused by this is unlikely to be significant. Therefore, a less than significant impact would occur relative to this issue.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

Direct and Indirect Impact, Construction and Operation. The Project proposes enhancements and additions to MD-24 including a new well, new water treatment facility, destruction of Well No. 3, wellhead improvements to Well Nos. 2 and 4, and new transmission line to connect Well Nos. 2 and 4, a proposed well to the new water treatment facility. Existing, above-ground MD-24 water system infrastructure is generally located on County-owned parcels or County rights of way, and all proposed construction will be within the County ROW or County-owned parcels that are not currently used for or planned to contain housing. Therefore, it would not displace any existing people or housing that would necessitate the construction of replacement housing elsewhere. No impact would occur relative to this issue.

2.15 PUBLIC SERVICES

2.15.1 REGULATORY SETTING

This section addresses regulations, laws, and policies related to public services in compliance with Federal, State, and local entities and includes descriptions and details.

Federal Regulations, Laws, and Policies

There are no federal regulations, laws, or policies related to public services.

State Regulations, Laws, and Policies

There are no state regulations, laws, or policies related to public services.

Local Regulations, Laws, and Policies

Madera County General Plan

The MCGP contains goals and policies related to public facilities and services that assures that public facilities and services are available to all County residents. The Project adheres to the goals and policies related to public facilities and services.

2.15.2 ENVIRONMENTAL SETTING

This section describes the existing public service conditions within the Project area and evaluates whether the Project would result in significant impacts related to public services.

The Project is located in the unincorporated area of Madera County known as Teaford Meadows and is located approximately 50 miles northeast of Madera City. The unincorporated area surrounds the communities of Wishon, Oakhurst, and North Fork. Madera County borders Mono County to the east, Merced County to the west, Fresno County to the south, and Mariposa County and Tuolomne County to the north. The Project is located in a rural area served by County and regional responders.

Madera County Fire Department

The Madera County Fire Department was established on September 21st, 1928 (Fire Department 2022). The Fire Department provides emergency services to all of the unincorporated areas of the County. The closet Madera County fire station is Station 11 at 33400 Douglas Ranger Station Road in North Fork, approximately 10 miles southeast of the Project.

Madera County Sheriff's Department

The Madera County Sherriff's Office was formed in 1893 (Sheriff 2022). The Madera County Sherriff's Office is responsible for public protection and criminal investigation in the unincorporated areas of Madera County. The closest station is located approximately 11 miles northwest of the Project at 48267 Liberty Drive in Oakhurst.

Chawanakee Unified School District

The Project is served by the Chawanakee Unified School District for elementary education, high school, and adult school. North Folk Elementary School, Chawanakee Adult School, Mountain Oaks High School, and Manzanita Community Day School are located near the Project. The schools are located in North Folk, approximately 10 miles southeast of the Project. The school district has one stop located near the Project site located on Road 223 and Finegold Creek Drive (Figure 2 in Section 1.3).

California State Parks

The Project is located approximately 27 miles southwest of Millerton Lake State Recreation Area. Additionally, the Project is located approximately 16 miles southeast of the Wassama Round House State Historic Park.

Parks and Recreation

There are no county or regional parks in the vicinity of the Project. However, North Fork Recreation Center is located approximately 10 miles southeast of the Project.

2.15.3 IMPACT ANALYSIS

The following sections discuss the key issues with respect to the Project's potential impacts to public services.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
PUBLIC SERVICES. Would the Project:				
a. Result in substantial adverse impacts associated with the provision or need for new or physically altered public services, the construction of which could cause significant physical environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:				
Fire protection?	☐	☐	☒	☐
Police protection?	☐	☐	☒	☐
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

Project Impact Discussion

Would the project:

a) ***Result in substantial adverse impacts associated with the provision or need for new or physically altered public services, the construction of which could cause significant physical environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services?***

- ***Fire protection?***

- ***Police protection?***
- ***Schools?***
- ***Parks?***
- ***Other public facilities?***

Direct and Indirect Impact, Construction and Operation. The Project does not involve development that would generate new population that would cause an increase in demand for public services and facilities, including fire and police protection, schools, parks, or other public facilities. The Project looks to construct and maintain water infrastructure to serve potable water to existing MD-24 residential service connections. The water quality, water supply reliability, and enhanced fire suppression capabilities and reliability of the water system will increase as a result of the Project and would be a long-term benefit to the service area. The Project may indirectly incentivize limited population growth as the local public water supply would no longer be out of compliance regarding arsenic, iron, and manganese. There is the possibility for some disturbance to local roads during construction. Access along the local roads (Teaford Poyah, Moic Drive, Moaka Poyah, and Finegold Creek Drive) will be maintained, although traffic may be limited to one way traffic in some areas during construction. A school bus stop is located at the intersection of Road 223 (Teaford Saddle Road) and Little Finegold Creek Drive, approximately 100 feet east of the site of destruction of Well No. 3. Madera County will require its contractor to schedule work at this site during periods when school is not in session (e.g. winter break, spring break, summer break). If deemed necessary by the County, MD-24 will, prior to construction, develop and implement a traffic control plan. Upon completion of the Project, there would be no impact that would affect public services and or ratios, response times, or other performance objectives relative to the issue.

2.16 RECREATION

2.16.1 REGULATORY SETTING

This section addresses regulations, laws, and policies related to recreation in compliance with Federal, State, and local entities and includes descriptions and details.

Federal Regulations, Laws, and Policies

No federal regulations, laws, or policies related to recreation.

State Regulations, Laws, and Policies

No state regulations, laws, or policies related to recreation.

Local Regulations, Laws, and Policies

Madera County General Plan

The MCGP's contains goals and policies related to public recreations and parks, private recreational facilities, and recreation trails. The Project adheres to the goals and policies related to recreation.

2.16.2 ENVIRONMENTAL SETTING

This section describes the existing recreation conditions within the Project area and evaluates whether the Project would result in significant impacts related to recreation.

There are no neighborhood or regional parks, or other recreational facilities, near the Project. North Fork Recreation Center is located approximately 10 miles southeast of the Project and is the closest recreational facility.

2.16.3 IMPACT ANALYSIS

The following sections discuss the key issues with respect to the Project's potential impacts to recreation.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
RECREATION. Would 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?	☐	☐	☐	☒
b. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Project Impact Discussion

Would 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?*

b) *Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?*

Direct and Indirect Effects. The Project does not involve development of commercial or residential structures that would generate an increase in population and would therefore not result in an increase in the use of existing neighborhood and regional parks or other recreational facilities. The Project proposes enhancements and additions to MD-24 including equipping a new well, new water treatment facility, destruction of Well No. 3 and disconnection from the distribution system, wellhead improvements to Well Nos. 2 and 4, and new transmission line to connect Well Nos. 2, 4 and proposed well to the new water treatment facility, distribution pipeline, communication conduit, and electrical power poles and wiring improvements. The Project may indirectly incentivize limited population growth as the local public water supply would no longer be out of compliance regarding arsenic, iron, and manganese, fire suppression, and water supply reliability. However, significant growth or additional use of recreational resources as a result of these improvements is unlikely. The Project would not include recreational facilities or require the construction or expansion of recreational facilities; therefore, the Project will have no impact related to recreation.

2.17 TRANSPORTATION

2.17.1 REGULATORY SETTING

This section addresses regulations, laws, and policies related to land use and planning in compliance with Federal, State, and local entities and includes descriptions and details.

Federal Regulations, Laws, and Policies

There are no federal regulations, laws, or policies related to transportation.

State Regulations, Laws, and Policies

California Department of Transportation

The Caltrans manages the state highway system and ramp interchange intersections. The state agency is also responsible for highway, bridge, and rail transportation planning, construction, and maintenance.

California Environmental Quality Act

CEQA Guidelines section 15064.3, subdivision (b), specifies the criteria for determining the significance of transportation impacts. Vehicle miles traveled (VMT) is "generally" the best measurement of transportation impacts, thus allowing agencies room to tailor their analyses to include other measures if appropriate. The guidelines describe factors that might indicate whether a project's VMT is less than significant or not and gives examples of projects that might have less-than-significant impacts with respect to VMT, such as projects that would result in decreased VMT.

Local Regulations, Laws, and Policies

Madera County General Plan

The MCGP contains goals and policies related to transportation and circulation in Madera County. The Project adheres to all goals and policies related to transportation and circulation.

2.17.2 ENVIRONMENTAL SETTING

This section describes the existing transportation conditions within the Project area and evaluates whether the Project would result in significant impacts related to transportation.

The Project area is located on the east and west of Teaford Saddle Road (Road 223), with most construction occurring east of Teaford Saddle Road. Construction will occur on Madera County ROW in the residential streets of Moic Drive, Teaford Poyah, Moaka Poyah, and Finegold Creek Drive. The Project would include trenching off these residential streets for a new transmission pipeline, and appurtenances to those facilities. The trench widths will be approximately 3 feet wide by 3 feet in depth and will utilize modified Madera County standards to the greatest reasonable extent. Upon completion of construction, the residential streets will return to similar conditions. The proposed surface appurtenances (water treatment facility and equipping of test well) will not be constructed near the residential streets. A school bus stop is located at the intersection of Road 223 (Teaford

Saddle Road) and Little Finegold Creek Drive, approximately 100 feet east of the site of destruction of Well No. 3. Madera County will require its contractor to schedule work at this site during periods when school is not in session (e.g. winter break, spring break, summer break). There will be no permanent effects on transportation or circulation in the Project area.

2.17.3 IMPACT ANALYSIS

The following sections discuss the key issues with respect to the Project's potential to impact transportation.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
TRANSPORTATION. Would the Project:				
a. Conflict with a program, plan, ordinance, or policy addressing the circulation system including transit, roadways, bicycle and pedestrian facilities?	☐	☐	☒	☐
b. Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☐	☒
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d. Result in inadequate emergency access?	☐	☐	☒	☐

Project Impact Discussion

Would the project:

a) ***Conflict with a program, plan, ordinance, or policy addressing the circulation system including mass transit, roadway, bicycle and pedestrian facilities?***

Direct and Indirect Effects, Construction and Operation. The Project's operation would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. Temporary delays might be experienced on Moic Drive, Moaka Poyah, and Teaford Poyah during excavation and construction. Limited delays may also take place on Road 223 as vehicles enter and exit the Project site. However, this would be no more of a burden than the normal use of the road by heavy construction in other parts of the region. Upon completion of construction, there is no foreseeable impact to a program, plan, ordinance, or policy surrounding the circulation system, including transit, roadway, bicycle and pedestrian facilities. A school bus stop is located at the intersection of Road 223 (Teaford Saddle Road) and Little Finegold Creek Drive, approximately 100 feet east of the site of destruction of Well No. 3. Madera County will require its contractor to schedule work at this site during periods when school is not in session (e.g. winter break, spring break, summer break). A less than significant impact would occur relative to this issue.

b) ***Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?***

Direct and Indirect Impact. The Project is not a transportation project and would not be expected to permanently change or increase VMT in the vicinity. Traffic would temporarily increase during construction. No impact would occur relative to this issue.

c) *Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?*

Direct and Indirect Impact, Operation. The Project is not a transportation project. Improvements within roadways (electrical utility service and water system services) will be underground or flush with the road surface (valve boxes), except for surface appurtenances (new treatment system and equipping of test well). The Project elements would not be expected to increase roadway hazards. No impact would occur relative to this issue.

d) Result in inadequate emergency access?

Direct and Indirect Impact, Construction and Operation. The Project is not a transportation project, the Project proposes enhancements and additions to MD-24 including a new well, new water treatment facility, destruction of Well No. 3 and disconnection from the distribution system, wellhead improvements to Well Nos. 2 and 4, a new transmission line to connect Well Nos. 2, 4 and proposed well to the new water treatment facility, and a new distribution pipeline. The Project elements would not be expected to increase roadway hazards. However, during construction, there is a possibility for disruption to emergency access due to excavation on Moic Drive, Moaka Poyah, and Teaford Poyah. If deemed necessary by the County, MD-24 will, prior to construction, develop and implement a traffic control plan. A less than significant impact would occur relative to this issue.

2.18 TRIBAL CULTURAL RESOURCES

2.18.1 REGULATORY SETTING

Federal Regulations, Laws, and Policies

There are no federal laws, regulations, or policies related to tribal cultural resources.

State Regulations, Laws, and Policies

Assembly Bill 52

Assembly Bill (AB) 52, which was approved in September 2014, and which went into effect on July 1, 2015, requires that state lead agencies consult with any California Native American tribe that is traditionally and culturally affiliated with the geographic area of a project, if so requested by the tribe. The bill, chaptered in Public Resources Code § 21084.2, also specifies that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource (TCR) is a project that may have a significant effect on the environment. TCRs are further defined under Public Resources Code § 21074 as follows:

- A cultural landscape that meets the criteria of subdivision (a) is a TCR to the extent that the landscape is geographically defined in terms of the size and scope of the landscape; and

- A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "nonunique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

Mitigation measures for TCRs must be developed in consultation with the affected California Native American tribe pursuant to newly chaptered § 21080.3.2 of the PRC, or according to § 21084.3. Section 21084.3 of the PRC identifies mitigation measures that include avoidance and preservation of TCRs and treating TCRs with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource.

2.18.2 ENVIRONMENTAL SETTING

See Section 2.5 – Cultural Resources for a description of the potential tribal cultural resources found in the vicinity of the Project.

On December 28, 2023 and January 10, 2023, MD-24 sent letters via to twelve tribes offering consultation regarding the proposed Project in accordance with AB52. MD-24 sent letters to these twelve tribes, as these were tribes identified by the Native American Heritage Commission that may have knowledge of cultural resources in the Project area (PaleoWest 2023). The tribes included Dumna Wo-Wah Tribal Government, Chicken Ranch Rancheria of Me-Wuk Indians, Tule River Indian Tribe, Tuolumne Band of Me-Wuk Indians, Nashville Enterprise of Miwok-Maidu-Nishinam Tribe, Wuksache Indian Tribe/Eshom Valley Band, Picayune Rancheria of Chukansi Indians, Southern Sierra Miwuk Nation, North Fork Rancheria of Mono Indians, North Fork Mono Tribe, Pakan'yani Maidu of Strawberry Valley Rancheria, Big Sandy Rancheria of Western Mono Indians.

Ron Goode of the North Fork Mono Tribe replied to contact him if any cultural resources were identified. Andrea Reich of the Tuolumne Band of Me-Wuk Indians replied on April 10, 2023, that Madera County is not within their aboriginal territory and the Tribe has no knowledge of any cultural resource. MD-24 attempted telephonic outreach twice to all tribes in January 2023. There was no response or feedback from other tribes as of this report.

Mitigation measures for TCRs must be developed in consultation with the affected California Native American tribe pursuant to newly chaptered § 21080.3.2 of the Public Resources Code, or according to § 21084.3. Section 21084.3 of the Public Resources Code identifies mitigation measures that include avoidance and preservation of TCRs and treating TCRs with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource.

2.18.3 IMPACT ANALYSIS

The following sections discuss the key issues with respect to the Project's potential to impact to tribal cultural resources.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
TRIBAL CULTURAL RESOURCES.				

a. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC section 5020.1(k)? or	☐	☐	☐	☒
ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?	☐	☒	☐	☐

Project Impact Discussion
Would the project:

a) ***Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC section 5020.1(k)?***

Direct and Indirect Effects, Construction and Operations. Tribal cultural resources listed or eligible for listing on the California Register of Historical Resources were not identified in the Proposed Project area (See Section 3.5 and Appendix C for additional information on identification efforts). No impact.

b) ***A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?***

Direct and Indirect Effects, Construction and Operations. While no known tribal cultural resources were identified in the project area, there is a possibility that pre-colonial archaeological resources could be found during project construction ground-disturbing activities have the potential to result in the discovery of, or unanticipated damage to, archaeological contexts and human remains, and this possibility cannot be totally eliminated (PaleoWest 2023). Consequently, there is a potential for significant impacts on TCRs. Implementation of the stop work and treatment procedures to avoid and minimize potential impacts as described in **MM-CUL-1** and **MM CUL-2** (see Section 2.5.3) would reduce the potential impacts to less than significant with mitigation incorporated.

2.19 UTILITIES AND SERVICE SYSTEMS

2.19.1 REGULATORY SETTING

This section addresses regulations, laws, and policies related to utilities and service systems in compliance with Federal, State, and local entities and includes descriptions and details.

Federal Regulations, Laws, and Policies

Resource Conservation and Recovery Act

The RCRA as amended by the Hazardous and Solid Waste Amendments of 1984, is the primary federal law for the regulation of solid waste in the United States. The USEPA has primary responsibility for implementing RCRA, but individual states are encouraged to seek authorization to implement some or all RCRA provisions. California received the authority to implement the RCRA program in August 1992.

State Regulations, Laws, and Policies

Solid Waste

Department of Resources Recycling and Recovery

The Department of Resources Recycling and Recovery (CalRecycle), a department of CalEPA, administers and provides oversight for all of California's state-managed non-hazardous waste handling and recycling programs.

Assembly Bill 939

AB 939 (Integrated Solid Waste Management Act of 1989; PRC 40050 et seq.) established an integrated waste-management system that focused on source reduction, recycling, composting, and land disposal of waste. AB 939 required every California city and county to divert 50 percent of its waste from landfills by the year 2000. Compliance with AB 939 is measured in part by comparing solid waste disposal rates for a jurisdiction with target disposal rates. Actual rates at or below target rates are consistent with AB 939. AB 939 also requires California counties to show 15 years of disposal capacity for all jurisdictions in the county or show a plan to transform or divert its waste.

Assembly Bill 341

AB 341 (Chapter 476, Statutes of 2011) increased the statewide solid waste diversion goal to 75 percent by 2020. The law also mandates recycling for commercial and multifamily residential land uses as well as schools and school districts. Section 5.408 of the 2013 California Green Building Standards Code (Title 24, California Code of Regulations, Part 11) requires that at least 50 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

Senate Bill 1383

Senate Bill (SB) 1383 (SB 1383) targets a 50 percent reduction in landfilling of organic waste by 2022 and 75 percent by 2025. By 2022, SB 1383 requires every jurisdiction to provide organic waste collection to all residents and businesses. Jurisdiction is defined as a city, county, a city and

county or special district that provides solid waste collection services. Organic waste is defined as food, green material, landscape and pruning waste, organic textiles and carpets, lumber, wood, paper products, printing and writing paper, manure, biosolids, digestate, and sludges by Calrecycle (MC Solid Waste Management 2022).

Assembly Bill 1826

AB 1826 states that the state will implement an organic recycling program for business and multi-family residential properties (5 or more units). As of 2021, the threshold is to generate 2 cubic yards (CY) or more of solid waste and recyclables per week, and then must arrange for organic waste recycling services. Organic waste is defined as food, green material, landscape and pruning waste, organic textiles and carpets, lumber, wood, paper products, printing and writing paper, manure, biosolids, digestate, and sludges by Calrecycle (MC Solid Waste Management 2022).

Water and Wastewater Utilities

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (known as the Porter-Cologne Act), passed in 1969, dovetails with the CWA (see discussion of the CWA above). It established the SWRCB and divided the state into nine regions, each overseen by an RWQCB. The SWRCB is the primary state agency responsible for protecting the quality of the state's surface water and groundwater supplies. However, much of the SWRCB's daily implementation authority is delegated to the nine RWQCBs, which are responsible for implementing CWA §§ 401, 402, and 303(d). In general, the SWRCB manages water rights and regulates statewide water quality, whereas the RWQCBs focus on water quality within their respective regions.

The Porter-Cologne Act requires the RWQCBs to develop water quality control plans (also known as Basin Plans) that designate beneficial uses of California's major surface water bodies and groundwater basins and establish specific narrative and numerical water quality objectives for those waters. Beneficial uses represent the services and qualities of a water body - i.e., the reasons why the water body is considered valuable. Water quality objectives reflect the standards necessary to protect and support those beneficial uses. Basin Plan standards are primarily implemented by regulating waste discharges so that water quality objectives are met. Under the Porter-Cologne Act, Basin Plans must be updated every 3 years.

Public water systems, such as JRCWD, are subject to the Division of Drinking Water (DDW) of the SWRCB. DDW defers to the San Bernardino County Department of Public Health to be the regulatory agency of JRCWD and issues and monitors drinking water supply permits to systems within San Bernardino County with less than 200 connections. The JRCWD has 280 service connections and is subject to the DDW.

Local Regulations, Laws, and Policies

Madera County Integrated Waste Management Plan

Madera County's Solid Waste program encompasses various components of refuse (trash) disposal, collection, and recycling services to ensure the health and welfare of the public in unincorporated

areas of Madera County (Solid Waste Management 2020). These components include, but are not limited to:

- Waste Disposal Facilities
- Residential and Commercial refuse (trash) collection services
- Recycling services
- Special waste collection and clean-up events

The Solid Waste Management Section of the Engineering Services Division is responsible for ensuring that the Solid Waste Program is administered in compliance with local, State, and Federal regulations.

Madera County General Plan

The MCGP contains goals and policies related to public facilities and services that discusses landfills, transfer stations, and solid waste recycling. The Project adheres to the goals and policies related to public facilities and services.

2.19.2 ENVIRONMENTAL SETTING

This section describes the existing land use and planning conditions within the Project area and evaluates whether the Project would result in significant impacts related to utilities and service systems.

In Madera County, solid waste collection services are provided by two exclusive franchise agreements that provide hauling services for residential, commercial, and construction/demolition. The areas are divided by elevation, Mountain area (above 1000' feet or Valley Area below 1000' feet. The Project area is in unincorporated Madera County above 1000' ft, so Emadco Disposal, Inc. is responsible for hauling services (Solid Waste Management 2020). Near the Project area (approximately 10 miles southeast) is the North Fork Transfer Station which is open for public self-haulers and commercial franchises under the Red Rock Environmental Group (MC Solid Waste Management 2020). Electricity is provided to the Project area by PG&E Company (PG&E 2014). Propane is provided to individual properties by private propane delivery.

2.19.3 IMPACT ANALYSIS

The following sections discuss the key issues with respect to the Project's potential to impact utilities and service systems.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
UTILITIES AND SERVICE SYSTEMS. Would the Project:				
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐

b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☐	☒
e. Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

Project Impact Discussion

Would the project:

a) ***Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?***

Direct and Indirect Effects, Construction and Operations. Some limited temporary disruption of water utility services may occur because of construction. However, these impacts would likely be limited to a few hours during construction in the middle of the day on weekdays, and service reliability will be increased following the completion of construction. Upon completion of the Project, no expansion of water, wastewater treatment or stormwater drainage, natural gas, or telecommunications is needed because of the Project. Following equipping of the test well, it will become a primary water source, along with Well Nos. 2 and 4. Well No. 3 will be destroyed. MD-24's Well Nos. 2 and 4 will remain in service and active with wellhead improvements. Electric power supply will need to be provided to the test well (to be equipped) and to the treatment facility. Due to anticipated electrical loads, it is anticipated that PG&E above ground wiring and poles along Moic Drive and Teaford Poyah will need to be improved or replaced. It is anticipated that power supply in this area will be improved to 3-phase power. A less than significant impact relative to this issue.

b) ***Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?***

Direct and Indirect Effects, Construction and Operations. The Project will not generate any new permanent demands on existing or proposed water supplies. Equipping the test will provide a third source of potable drinking water. Well No. 3 will be destroyed and will no longer extract groundwater. A new treatment system facility will be constructed which will improve the quality of water and reduce the concentrations of iron, manganese, and arsenic to below their respective MCLs. The water system infrastructure improvements would not result in significant additional water usage. Temporary use of water would be required during construction, but it is well within the normal daily usage variability of the water utility. MD-24 may allow or mandate that water from Well No. 1 be utilized for dust control, compaction, and other construction purposes. Water consumption may increase as a result of the improved water quality and as a result of treatment facility waste generation (backwashing). A less than significant impact would occur relative to this issue.

c) *Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?*

Direct and Indirect Effects, Construction and Operations. Madera County (MD-24) provides wastewater collection, treatment, and disposal service to the Teaford Meadows community. The Project will not add wastewater generation or impact wastewater collection, treatment, or disposal operations. The Project does not add residential or commercial units. Therefore, no wastewater treatment provider will be impacted. No impact would occur relative to this issue.

d) *Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?*

Direct and Indirect Effects, Construction and Operations. The Project will generate solid waste at the proposed water treatment facility. The water treatment facility will utilize an oxidizer/disinfectant (sodium hypochlorite) and a coagulant (ferric chloride, aluminum sulfate, or other chemical) to chemically bond with the arsenic, iron, and manganese to facilitate their removal. The anticipated coagulant, ferric chloride, has a United States Department of Transportation Hazard classification 8 (corrosive material), and is listed as a hazardous substance per the Clean Water Act (Fisher Scientific 2007). The contaminants, after bonding with the coagulant, will be removed by settling and filtration. A polymer will be utilized to increase settlement of removed arsenic in the proposed backwash waste tank. The oxidizer/disinfectant, coagulant, and polymer will be regularly delivered to the site and will be stored on site. The coagulant will be stored within secondary containment vessels, within the proposed building. Deliveries of oxidizer/disinfectant, coagulant, and polymer to the site are anticipated on an approximately weekly basis. The frequency of delivery may increase when the system's water demands are higher (typically in summer months), and may be reduced when the system's water demands are lower.

During normal operation, the treatment system will generate solid sludge (non-hazardous) and hazardous backwash dewatered sludge (hazardous) from the proposed treatment facility (see Section 2.9.2). Hauling of the solid sludge is anticipated on an approximately weekly basis. The frequency of hauling may increase when the system's water demands are higher (typically in summer months) and may be reduced when the system's water demands are lower. The backwash will be temporarily placed in an onsite holding tank at the treatment facility building. Since the backwash is considered hazardous waste, the County, as part of the permitting review, prior to construction, will develop a plan for hauling and disposal of the backwash in accordance with local, state, and federal laws. See MM-HAZ-2. Upon completion of the Project, operations would create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. With the County's plans, a less than significant impact would occur relative to this issue.

e) *Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?*

Direct and Indirect Effects, Construction and Operations. As discussed above in (d), the Project will produce hazardous and non-hazardous waste from the proposed water treatment facility. Minimal generation of solid waste would occur during construction, but it is well within the normal daily generation variability of the community and will not impose a burden on local facilities. Madera

County will require that removed facilities (steel, wood, concrete) be recycled. A less than significant impact would occur relative to this issue.

2.20 WILDFIRE

2.20.1 REGULATORY SETTING

This section addresses regulations, laws, and policies related to wildfire in compliance with Federal, State, and local entities and includes descriptions and details.

Federal Regulations, Laws, and Policies

There are no federal regulations, laws, or policies related to wildfire.

State Regulations, Laws, and Policies

Office of the State Fire Marshal and California Department of Forestry and Fire Protection

The California Office of the State Fire Marshal (OSFM) and CalFIRE administer state policies regarding wildland fire safety. Construction contractors must comply with the following requirements in the PRC during construction activities at any sites with forest-, brush-, or grass-covered land:

- Earthmoving and portable equipment with internal combustion engines must be equipped with a spark arrestor to reduce the potential for igniting a wildland fire (PRC § 4442).
- Appropriate fire suppression equipment must be maintained from April 1 to December 1, the highest-danger period for fires (PRC § 4428).
- On days when a burning permit is required, flammable materials must be removed to a distance of 10 feet from any equipment that could produce a spark, fire, or flame, and the construction contractor must maintain the appropriate fire suppression equipment (PRC § 4427).
- On days when a burning permit is required, portable tools powered by gasoline-fueled internal combustion engines must not be used within 25 feet of any flammable materials (PRC § 4431).

California Environmental Quality Act

SB 1241 required the Office of Planning and Research, the Natural Resources Agency, and CalFire to develop "amendments to the initial study checklist of the [CEQA Guidelines] for the inclusion of questions related to fire hazard impacts for projects located on lands classified as state responsibility areas, as defined in section 4102, and on lands classified as very high fire hazard severity zones, as defined in subdivision (i) of section 51177 of the Government Code."

Local Regulations, Laws, and Policies

Madera County General Plan

The MCGP contains the health and safety section that discusses natural hazards, airport hazards, public safety, hazardous materials, and emergency management including fire hazards. The Project adheres to goals and policies related to fire hazards.

The LHMPU looks to minimize or eliminate long-term risks to people and property from hazards in Madera County (LHMPU 2017). The LHMPU discusses the objectives and goals to minimize or eliminate risk concerning wildfires.

2.20.2 ENVIRONMENTAL SETTING

This section describes the existing wildfire conditions within the Project area and evaluates whether the Project would result in significant impacts related to wildfire.

The region surrounding the Project site is zoned as having a Very High and Moderate FHSZ in SRA (OSFM 2021). Surrounding the Project area is land without a FHSZ status in federal state responsibility (FRA). The closest Madera County Fire Department Station 11 at 33400 Douglas Ranger Station Road in North Fork, is approximately 10 miles southeast of the Project.

2.20.3 IMPACT ANALYSIS

The following sections discuss the key issues with respect to the Project's potential wildfire impacts.

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

Project Impact Discussion

Would the project:

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

Direct and Indirect Effects, Construction and Operation. The Project is located within an area with a Very High and Moderate FHSZ (OSFM 2021). The existing and proposed above-ground facilities generally will be located adjacent to existing above-ground facilities. No above-ground facilities will

be constructed within a transportation route. During construction, there is a possibility for the construction activity to interfere with local roads and indirectly affect an emergency response or evacuation plan. If deemed necessary by the County, prior to construction, the County develop and implement a traffic control plan. However, upon completion of the construction, there would be no impact on emergency response or evacuation plans. A less than significant impact would occur.

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Direct and Indirect Effects, Construction and Operation. The Project is located in a SRA (OSFM 2022). However, the Project area is located on land classified as a Moderate FHSZ, but the Project would not exacerbate wildfire risks (OSFM 2022). According to Google Earth, the average slope across the Project area is approximately 8.4% (2022). County staff will keep areas surrounding existing and proposed above-ground facilities (wellheads, storage tank, treatment facility, generator, propane tank) clear of vegetation, debris, and brush to a distance of 30' or more, or to the property line. There would be less than significant impact.

c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

Direct and Indirect Effects, Construction and Operation. The Project would not require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may significantly exacerbate fire risk or that may result in temporary or ongoing impacts on the environment. The improvements will contain new underground electrical service to the test well and treatment facility. The improvements will also contain a new generator and propane, which will both add and attenuate risk of fire. The Project would improve fire protection through the construction of a more reliable and capable water delivery system, resulting from equipping the test well, installation of an emergency generator, and the new distribution pipeline along Moic Drive and Teaford Poyah. The proposed distribution pipeline will have fire hydrants along its alignment. No impact would occur relative to this issue.

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Direct and Indirect Effects, Construction and Operation. The Project does not plan to construct residential, commercial, or service structures that could expose people or structures to significant risks. The Project would not significantly alter the drainage, runoff, or post-fire slope instability of the area. The average slope across the Project area is less than 8.4%. Therefore, with the Project plans and slope, no impact would occur relative to this issue.

2.21 MANDATORY FINDINGS OF SIGNIFICANCE

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

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Improvements are proposed within County-owned parcels and public roadways, which are already impacted sites. Existing human activity has already impacted most of the Proposed Project area. No unusual effects on listed species are anticipated provided that the mitigation measures proposed herein (MMs BIO-1 and BIO-2). With these MMs in place the Proposed Project would have a less than significant impact.

No known representations of California history or prehistory have been found in the Project area. Any unanticipated discoveries of historical or prehistorical resources would be mitigated by MMs CUL-1 and CUL-2. With these MMs in place the Proposed Project would have a less than significant impact. A Less Than Significant is anticipated with Mitigation Measures Incorporated.

b) *Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?*

Cumulative Impacts. No reasonably foreseeable future actions were found (Madera County, Caltrans 2023) that are expected to provide cumulative impacts. No impact is anticipated.

c) *Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?*

There will be some inconvenience experienced by local residents and travelers on public roads, along with minimal noise and dust generation, during construction activities. However, the implementation of MM AIR-1 and NV-1 is expected to mitigate any potential harm or impact. During operation, the treatment system will Cause a minor increase in vehicle trips due to operator vehicles, deliveries, and hauling. Impacts from hazardous materials are expected to be mitigated by MM HAZ-1 and HAZ-2. All on all, if the proposed mitigation measures are implemented as part of the Proposed Project, a less than significant impact is expected.

3 RESERVED FOR PUBLIC COMMENTS ON CIRCULATED DRAFT IS/MND

4 MITIGATION MONITORING AND REPORTING PROGRAM

4.1 PURPOSE OF THE PROJECT

MD-24 is located in Madera County Supervisorial District 5 on County Road 223 midway between the towns of Oakhurst and North Fork. MD-24 was formed on April 9, 1968 by Madera County Board of Supervisors Resolution No. 68-164 to operate and maintain the water system, sewer system, and roads for small, residential communities within its boundaries. MD-24 (Public Water System No. 2000552) provides potable water service to the residents of Teaford Meadows.

The MD-24 system is supplied entirely by groundwater. The MD-24 owns, operates, and maintains three permitted wells (Well Nos. 2, 3, and 4), one inactive well (Well No. 1), and one storage tank (Tank No. 1) (see Figure 2 in Section 1.3).

The MD-24 does not have an active outside standby or emergency water supply source should the existing wells fail. The MD-24 has no current interconnections with water agencies.

The improvement objectives for the MD-24's potable water system are as follows:

1. Address the MD-24's regular exceedances of concentrations of iron, arsenic, and manganese above the respective MCLs which will address regular exceedances of MCL and comply with Madera County EHD and CCR, Title 22, Section 64449.
2. Equip the test well to become a new source of potable water.
3. Rehabilitate Wells Nos. 2 and 4 to addresses the deficiencies of downturned screened vent, wellhead heights and conditions, sensors, piping, flow meter, check valve, and air vents. Perform interior inspection of the wells and redevelop wells as needed.
4. Destroy Well No. 3 due to physical deterioration and water quality. Disconnect Well No. 3 from distribution system along Moaka Poyah.
5. Construct new enclosed water treatment facility to remove arsenic, iron, and manganese from the water at Well Nos. 2, 4, and the test well.
6. New transmission pipeline and signal/communication conduit to connect Well Nos. 2, 4 and test well to the new water treatment facility.
7. New distribution pipeline between the existing storage tank and the Teaford Meadows distribution system, generally paralleling the proposed transmission pipeline.
8. Improvements to the electric utility's (PG&E) distribution wiring and poles along Moic Drive and Teaford Poyah to provide 3-phase power to the proposed well and treatment facility site.
9. Improve water supply system reliability and redundancy, communication systems, and infrastructure access.

4.2 REGULATORY FRAMEWORK

California Public Resources Code Section 21081.6 and California Code of Regulations Title 14, Chapter 3, Section 15097 require public agencies to adopt mitigation monitoring and reporting plans when they approve projects under a Mitigated Negative Declaration (MND). The reporting and monitoring plan must be adopted when a public agency makes its findings pursuant to CEQA so that the mitigation requirements can be made conditions of project approval.

4.3 FORMAT OF THIS PLAN

This Mitigation Monitoring and Reporting Program provides a summary of the mitigation measures included in the Project includes a statement of the impact discussed in the Initial Study/ Mitigated Negative Declaration (IS/MND) and the corresponding mitigation measure. The mitigation measure is followed by a description of implementation including: the criteria used to determine the effectiveness of the mitigation, the timeframe for implementation, and the party responsible for implementing, monitoring, and reporting the success of the measure.

Implementation of each mitigation measure is ultimately the responsibility of the California Environmental Quality Act (CEQA) Lead Agency, which will be the County of Madera and the delegated responsibility to its construction contractor(s) and consultants. The mitigation measures in this plan contains a "Verified By" signature line, which will be signed by the County's project manager when the measure has been fully implemented. The proof of implementation and success of the mitigation shall be reported to the Lead Agency's contact person. No further actions or monitoring are necessary for the implementation or effectiveness of the measure.

4.4 IMPACTS AND MITIGATION MEASURES

TABLE 12: APPLICABLE PROGRAM MITIGATION MEASURES	
ENVIRONMENTAL FACTORS	PROGRAM MITIGATION MEASURE
Air Quality	MITIGATION MEASURE AIR-1
Biological Resources	MITIGATION MEASURE BIO-1, BIO-2, BIO-3, and BIO-4
Cultural Resources	MITIGATION MEASURES CUL-1 and CUL-2
Geology/Soils	MITIGATION MEASURE GEO-1
Hazards& Hazardous Materials	MITIGATION MEASURE HAZ-1 and HAZ-2
Hydrology/Water Quality	MTIGIATION MEASURE HWQ-1
Noise	MITIGATION MEASURE NV-1
Tribal Cultural Resources	MITIGATION MEASURES CUL-1 and CUL-2

4.4.1 MITIGATION MEASURE AIR-1

Summary: During construction, there is potential for the generation of fugitive dust because of excavation and other earth-moving construction activities.

MITIGATION MEASURE AIR-1: Prior to the commencement of grading and earthwork activities, the contractor shall prepare a construction emissions reduction plan that meets the requirements of SJVAPCD Rule VIII, Fugitive PM10 Prohibition. The construction emissions reductions plan shall be submitted to the SJVAPCD for review and approval. Required permits from the SJVAPCD shall be issued prior to the commencement of grading activities.

Implementation: The contractor hired to complete the grading activity shall submit the construction emissions reduction plan to MD-24, who shall submit the plan to SJVAPCD for review and approval. Monitoring of the plan shall be accomplished by the contract and documented in daily reports to Madera County.

Timing: Prior to earthmoving activity.

Monitoring and Reporting: **Monitoring and Reporting:** Madera County will prepare and keep on file documentation verifying the implementation of the above-referenced measure.

Verified By:

Raymundo Gutierrez _____ 6/29/2023

Madera County Project Manager — Date:

4.4.2 MITIGATION MEASURE BIO-1

Summary: During construction, there is potential for construction related mortality/disturbance of nesting birds.

MITIGATION MEASURE BIO-1: To avoid and minimize potential for construction-related mortality/disturbance of nesting birds the proposed project construction will be implemented outside of the avian nesting season, typically defined as February 1st to August 31st. If construction is to occur during the avian nesting season, a qualified biologist will conduct pre-construction surveys for active bird nests within 10 days prior to the start of construction. The survey area will encompass the site and accessible surrounding lands within 250 feet for nesting migratory birds and 500 feet for raptors (i.e., birds of prey). If any active nests are discovered in or near the proposed construction zones, the biologist will identify a suitable construction-free buffer around the nest. This buffer will be identified on the ground with flagging or fencing and will be maintained until the biologist has determined that the young have fledged and are capable of foraging independently.

Implementation: A qualified biologist will conduct pre-construction surveys for active bird nests. The survey area will encompass the site and accessible surrounding lands within 250 feet for nesting migratory birds and 500 feet for raptors (i.e., birds of prey).

Timing: 10 days prior to the start of construction.

Monitoring and Reporting: **Monitoring and Reporting:** Madera County will prepare and keep on file documentation verifying the implementation of the above-referenced measure.

Verified By:

Raymundo Gutierrez _____ 6/29/2023 _____

Madera County Project Manager — Date:

4.4.3 MITIGATION MEASURE BIO-2

Summary: During construction, there is potential for construction related mortality/disturbance of the Pallid Bat and other roosting bats.

MITIGATION MEASURE BIO-2: To avoid potential impact to maternity bat roosts, removal of trees with bat roosting habitat should occur outside of the period between April 1st and September 30th, the time frame within which colony-nesting bats generally assemble, give birth, nurse their young, and ultimately disperse. If a tree must be removed, within 14 calendar days prior to the start of activities impacting trees (removal or trimming), a qualified biologist will conduct preconstruction surveys for roosting pallid bats. It shall include an evening emergence survey to identify if any bats use the trees as night roosts at the tree removal locations. An additional preconstruction survey shall be conducted following any lapse in tree removal that exceeds 14 calendar days. If a non-breeding bat colony is found in trees proposed for removal, the individuals will be humanely evicted, under the direction of a qualified biologist, to ensure that no harm or "take" of any bats occurs as a result of construction activities. Should any maternal roosts be identified, a qualified biologist will establish suitable disturbance-free buffers around the trees. Buffers will be delineated on a map, and identified on the ground with flagging or fencing, if feasible, and will be maintained until a qualified biologist has determined that the roosts are no longer active.

Implementation: A qualified biologist will conduct preconstruction surveys for roosting pallid bats. It shall include an evening emergence survey to identify if any bats use the trees as night roosts at the tree removal locations. An additional preconstruction survey shall be conducted following any lapse in tree removal that exceeds 14 calendar days. Should any maternal roosts be identified, a qualified biologist will establish suitable disturbance-free buffers around the trees. Buffers will be delineated on a map, and identified on the ground with flagging or fencing, if feasible, and will be maintained until a qualified biologist has determined that the roosts are no longer active.

Timing: 14 calendar days prior to the start of activities impacting trees (removal or trimming).

Monitoring and Reporting: **Monitoring and Reporting:** Madera County will prepare and keep on file documentation verifying the implementation of the above-referenced measure.

Verified By:

Raymundo Gutierrez
Madera County
Project Manager

6/29/2023
Date:

4.4.4 MITIGATION MEASURE BIO-3

Summary: During construction, there is potential for construction disturbance of Western Pond Turtle.

MITIGATION MEASURE BIO-3: If any western pond turtles are found within construction zones work shall stop in the area around the turtle until it leaves the construction zone on its own volition or until it is relocated to a safe area of suitable habitat by a qualified biologist. Prior to the start of construction, construction personnel will be trained on the identification, behavior, and ecology of the western pond turtle, and the project-specific measures adopted for its protection. Attendees will be given a handout that summarizes the training material and provides a photographic key to differentiating between the western pond turtle and the red-eared slider, which is known to occur on site. Attendance at all training sessions will be documented on sign-in sheets.

Implementation: Prior to the start of construction, construction personnel will be trained on the identification, behavior, and ecology of the western pond turtle, and the project-specific measures adopted for its protection. Attendees will be given a handout that summarizes the training material and provides a photographic key to differentiating between the western pond turtle and the red-eared slider, which is known to occur on site. Attendance at all training sessions will be documented on sign-in sheets.

Timing: Prior to the start of construction.

Monitoring and Reporting: **Monitoring and Reporting:** Madera County will prepare and keep on file documentation verifying the implementation of the above-referenced measure.

Verified By:

Raymundo Gutierrez _____ 6/29/2023 _____

Madera County Project Manager

Date:

4.4.5 MITIGATION MEASURE BIO-4

Summary: During construction, there is potential for construction disturbance to the water quality and degradation of Little Fine Gold Creek and Lake Moic.

MITIGATION MEASURE BIO-4: To avoid and minimize the potential for pollutants to enter Little Fine Gold Creek, all proposed improvement activities that require crossing the existing road over Little Fine Gold Creek shall take place only when conditions are dry. If the existing at-grade crossing contains any water (flowing or pooled), no vehicle will drive across Little Fine Gold Creek. Pedestrian traffic is permitted during wet conditions. No maintenance or disturbance to the existing gravel access road to Well No. 2 will be permitted. No refueling, storage, servicing, or maintenance of equipment shall take place within 100 feet of aquatic habitat. All machinery used during construction shall be properly maintained and cleaned to prevent spills and leaks that could contaminate soil or water. Any spills or leaks from construction equipment (i.e., fuel, oil, hydraulic fluid, and grease) shall be cleaned up in accordance with applicable local, state, and/or federal regulations.

Implementation: All proposed improvement activities that require crossing the existing road over Little Fine Gold Creek shall take place only when conditions are dry. If the existing at-grade crossing contains any water (flowing or pooled), no vehicle will drive across Little Fine Gold Creek. Pedestrian traffic is permitted during wet conditions. No maintenance or disturbance to the existing gravel access road to Well No. 2 will be permitted. No refueling, storage, servicing, or maintenance of equipment shall take place within 100 feet of aquatic habitat.

Timing: Prior and during construction.

Monitoring and Reporting: **Monitoring and Reporting:** Madera County will prepare and keep on file documentation verifying the implementation of the above-referenced measure.

Verified By:

Raymundo Gutierrez

Madera County
Project Manager

6/29/2023

Date:

4.4.6 MITIGATION MEASURE CUL-1

Summary: In the event that pre-contact cultural resources are discovered during project activities, all work in the immediate vicinity of the find (within a 60-foot buffer) shall cease and a qualified archaeologist meeting Secretary of Interior standards shall be hired to assess the find.

MITIGATION MEASURE CUL-1: During ground disturbing or excavating activities, if any event that concentration of artifacts or culturally-modified soil deposits are discovered, all work must stop until a Secretary of the Interior (SOI) qualified archaeologist views the finds and makes a preliminary evaluation. If warranted, further archaeological work in the APE should be performed.

Implementation: If a discovery occurs, all work must stop until a Secretary of the Interior (SOI) qualified archaeologist views the finds and makes a preliminary evaluation. If warranted, further archaeological work in the APE should be performed. MD-24 to retain an archeologist in the event of a resource discovery.

Timing: During construction activities.

Effectiveness Criteria: The archeologist's report(s). Reports shall be maintained in the Project file.

Monitoring and Reporting: MD-24 will prepare and keep on file documentation verifying the implementation of the above-referenced measure.

Verified By:

Raymundo Gutierrez _____ 6/29/2023 _____

Madera County Project Manager — Date:

4.4.7 MITIGATION MEASURE CUL-2

Summary: During the cultural resource investigation, no evidence of human burial or remains was identified; however, in the unlikely event that human remains are encountered during project development, Mitigation Measure CUL-2 would be implemented.

MITIGATION MEASURE CUL-2: State law prescribes measures that must be taken in the event that any human remains are discovered. If human remains are discovered, Section 7050.5 of the California Health and Safety Code requires that the County Coroner be immediately notified of the discovery and no further excavation or disturbance of the site or nearby area may occur (100-foot buffer) until the County Coroner has determined, within two working days of notification of the discovery, the nature of the remains. If the Coroner determines that the remains are, or are believed to be, Native American, he or she is required to notify the NAHC in Sacramento within 24 hours. In accordance with California PRC, Section 5097.98, the NAHC must immediately notify those persons it believes to be the most likely descendant (MLD) from the deceased Native American. The MLD shall complete their inspection within 48 hours of being granted access to the site. The MLD would then determine, in consultation with the property owner, the disposition of the human remains. Compliance with state and federal law would ensure that no impacts occur to any human remains that may be discovered on site.

Implementation: In the event that pre-contact cultural resources are discovered during project activities, all work in the immediate vicinity of the find (within a 60-foot buffer) shall cease and a qualified archaeologist meeting Secretary of Interior standards shall be hired to assess the find. Work on the other portions of the project outside of the buffered area may continue during this assessment period. Additionally, local and affiliated Native American groups shall be contacted. If any such find occurs, local and affiliated Native American groups shall be provided information after the archaeologist makes his/her initial assessment of the nature of the find, so as to allow tribal input with regard to significance and treatment.

Timing: During construction activity.

Effectiveness Criteria: The archeologist's report(s). Reports shall be maintained in the Project file.

Monitoring and Reporting: MD-24 will prepare and keep on file documentation verifying the implementation of the above-referenced measure.

Verified By:

Raymundo Gutierrez

Madera County
Project Manager

6/29/2023

Date:

4.4.8 MITIGATION MEASURE GEO-1

Summary: No geotechnical investigation was developed prior to the IS/MND. Prior to construction activity, the MD-24 will implement Mitigation Measure GEO-1 to evaluate the soils and include design recommendations so that conditions do not pose a threat to the health and safety of people or structures, including threats from liquefaction, subsidence, lateral spreading, or collapse

MITIGATION MEASURE GEO-1: Geotechnical Investigation. Prior to construction activities, a certified geotechnical engineer or equivalent shall preform a geotechnical evaluation of the soils. The evaluation will follow the requirements of California Building Code Title 24, Part 2, Chapter 18, Section 1803.1.1.2 related to expansive soils and soil conditions. The structural design, tests and inspections, and soils and foundation standards will be in accordance with requirements from California Building Code Title 24, Part, 2, Chapter 16, 17, and 18. The final geotechnical evaluation shall include design recommendations to ensure that soil conditions do not pose a threat to the health and safety of people or structures, including threats from liquefaction, subsidence, lateral spreading, or collapse. The grading and improvement plans of the project shall be designed in accordance with the recommendations provided in the geotechnical evaluation.

Implementation: The Geotechnical Investigation shall be prepared by a qualified geotechnical engineer, or equivalent. The evaluation will follow the requirements of California Building Code Title 24, Part 2, Chapter 18, Section 1803.1.1.2 related to expansive soils and soil conditions. The structural design, tests and inspections, and soils and foundation standards will be in accordance with requirements from California Building Code Title 24, Part, 2, Chapter 16, 17, and 18. The final geotechnical evaluation shall include design recommendations to ensure that soil conditions do not pose a threat to the health and safety of people or structures, including threats from liquefaction, subsidence, lateral spreading, or collapse. The Report of Geotechnical Investigation shall be provided upon request to local permitting agencies (i.e. Madera County) during the design and permitting efforts.

Timing: Prior to construction activity.

Monitoring and Reporting: **Monitoring and Reporting:** MD-24 will prepare and keep on file documentation verifying the implementation of the above-referenced measure.

Verified By:

Raymundo Gutierrez
_____

Madera County
Project Manager

6/29/2023
_____

Date:

4.4.9 MITIGATION MEASURE HAZ-1

Summary: The Project is not 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, it would not create a significant hazard to the public or the environment. Mitigation Measure HAZ-1 is proposed to minimize potential impacts.

MITIGATION MEASURE HAZ-1: All construction contractors shall immediately stop all surface or subsurface activities in the event that uncontained potentially hazardous materials are encountered, an odor is identified, or considerably stained soil is visible. Contractors shall follow all applicable local, state, and federal regulations regarding discovery, response, disposal, and remediation for hazardous materials encountered during the construction process. These requirements shall be included in the contractor specifications.

Implementation: If any hazardous materials, waste sites, or vapor intrusion risks are identified prior to or during construction, a qualified professional, in consultation with appropriate regulatory agencies, will develop and implement a plan to remediate the contamination and properly dispose of the contaminated material.

If material imports are proposed, the contractor shall furnish MD-24 appropriate documentation certifying that the imported materials are free of contamination.

Timing: During construction activity.

Effectiveness Criteria: The hazardous waste professionals report(s). Reports shall be maintained in the Project file.

Monitoring and Reporting: MD-24 will prepare and keep on file documentation verifying the implementation of the above-referenced measure. These files shall be provided to the State Water Resources Control Board following completion of construction upon request.

Verified By:

Raymundo Gutierrez

Madera County
Project Manager

6/29/2023

Date:

4.4.10 MITIGATION MEASURE HAZ-2

Summary: The Project proposes the use of chemicals for the operation of the water treatment facility, including oxidizer/disinfectant, coagulant, and polymer. As a result, Mitigation Measure HAZ-1 is proposed to minimize potential impacts generated from the transportation, storage, handling, and disposal of chemicals and the waste produced by the treatment facility's operation.

MITIGATION MEASURE HAZ-2: Madera County will develop a Hazardous Materials and Solid Waste Handling Plan to confirm and review practices for the transportation, handling, storage, and disposal of chemicals and waste generated by the treatment process. The Plan will also address safety measures, containment requirements, and responses to spills and other emergencies.

Implementation: Develop the Plan prior to construction, and refine the Plan during the startup of facility operation. Provide training to operations and maintenance staff and supply companies on the transportation, storage, handling, and disposal of wastes generated at the treatment facility.

Timing: Develop the Plan prior to construction, and refine the Plan during startup of facilities.

Effectiveness Criteria: The hazardous waste professionals report(s). Reports shall be maintained in the Project file.

Monitoring and Reporting: MD-24 will prepare and keep on file documentation verifying the implementation of the above-referenced measure.

Verified By:

Raymundo Gutierrez
Madera County
Project Manager

6/29/2023
Date:

4.4.11 MITIGATION MEASURE HWQ-1

Summary: Mitigation Measure HWQ-1- is proposed to minimize potential impacts to off-site surface water quality.

MITIGATION MEASURE HWQ-1: MD-24 or its construction contractor will assess the receiving water vulnerability and develop a SWPPP that complies with the requirements of the NPDES General Construction Permit (Order 2009-0009-DWQ as amended by 2010 0014-DWQ and 2012-006-DWQ) based on the project-specific risk level. The SWPPP shall identify specific actions and best management practices (BMPs) relating to the prevention of stormwater pollution from project-related construction sources by identifying a practical sequence for site restoration, BMP implementation, contingency measures, responsible parties, and agency contacts. The SWPPP shall reflect localized surface hydrological conditions and local jurisdictional requirements and shall be reviewed by MD-24' representative prior to commencement of work.

The SWPPP shall be prepared by a qualified SWPPP developer with BMPs selected to achieve maximum pollutant removal and that represent the best available technology that is economically achievable. BMPs for soil stabilization and erosion control practices and sediment control practices will also be required. Performance and effectiveness of these BMPs shall be determined either by visual means where applicable (i.e., observation of above-normal sediment release), or by actual water sampling in cases where verification of contaminant reduction or elimination, (e.g., inadvertent petroleum release) is required to determine adequacy of the measure.

The SWPPP shall also address other project-specific water quality threats, as required for individual improvements including but not limited to, temporary dewatering, hydrostatic testing, and other resources permits as required under the Federal Clean Water Act, County Grading Ordnance, and State Fish and Game Code, as applicable. Construction and post-construction BMPs will be designed to avoid the creation of standing water and potential mosquito breeding habitat.

Implementation: The SWPPP shall be prepared by a qualified SWPPP developer with BMPs selected to achieve maximum pollutant removal and that represent the best available technology that is economically achievable. BMPs for soil stabilization and erosion control practices and sediment control practices will also be required. Performance and effectiveness of these BMPs shall be determined either by visual means where applicable (i.e., observation of above-normal sediment release), or by actual water sampling in cases where verification of contaminant reduction or elimination, (e.g., inadvertent petroleum release) is required to determine adequacy of the measure.

Timing: Prior to and during construction activity.

Effectiveness Criteria: The BMP performance reports shall determine effectiveness of the SWPPP. Reports shall be maintained in the Project file.

Monitoring and Reporting: MD-24 will prepare and keep on file documentation verifying the implementation of the above-referenced measure. These files shall be provided to the State Water Resources Control Board following completion of construction upon request.

Verified By:

Raymundo Gutierrez

Madera County
Project Manager

6/29/2023

Date:

4.4.12 MITIGATION MEASURE NV-1

Summary: During construction some amount of temporary noise ground borne vibration might occur, primarily during excavation.

MITIGATION MEASURE NV-1: The Construction Contractor shall demonstrate to the satisfaction of the MD-24 Project Manager that the following noise control techniques are implemented during the clearing, demolition, grading and construction phases of projects within 200 feet of residential land uses.

- Heavy equipment repair and contractor staging shall be conducted at sites as far as practical from nearby residences. Construction equipment, including vehicles, generators and compressors, shall be maintained in proper operating condition and shall be equipped with manufacturers' standard noise control devices or better (e.g., mufflers, acoustical lagging, and/or engine enclosures).
- Temporary sound barriers (or curtains), stockpiles of excavated materials, or other effective shielding or enclosure techniques shall be used where construction noise would exceed 90 dBA within less than 50 feet from a noise sensitive receptor.
- Construction work, including on-site equipment maintenance and repair, shall be limited to the hours specified in the noise ordinance of the affected jurisdiction(s).
- Electrical power shall be supplied from commercial power supply, wherever feasible, in order to avoid or minimize the use of engine-driven generators.
- Electrically powered equipment shall be used instead of pneumatic or internal-combustion powered equipment, where feasible.
- Unnecessary idling of internal combustion engines (i.e., in excess of 5 minutes) shall be prohibited.
- Operating equipment shall be designed to comply with all applicable local, state, and federal noise regulations.
- Construction site and access road speed limits shall be established and enforced during the construction period.
- If lighted traffic control devices are to be located within 500 feet of residences, the devices shall be powered by batteries, solar power, or similar sources, and not by an internal combustion engine.
- The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only.
- No project-related public address or music system shall be audible at any adjacent sensitive receptor.

Implementation: The construction contractors shall provide advance notice, between 2 and 4 weeks prior to construction, by mail to all residents or property owners within 200 feet of construction areas. The announcement shall state where and when construction will occur in the area. If construction delays of more than 7 days occur, an additional notice shall be made, either in person or by mail.

The County or the construction contractor shall identify and provide a public liaison person before and during construction to respond to concerns of neighboring residents about noise and other construction disturbance. The construction contractors shall also establish a program for receiving questions or complaints during construction and develop procedures for responding to callers.

Procedures for reaching the public liaison officer via telephone or in person shall be included in notices distributed to the public in accordance with the information above.

If material imports are proposed, the contractor shall furnish MD-24 appropriate documentation certifying that the imported materials are free of contamination.

Timing: During construction activity.

Effectiveness Criteria: The construction contractor material submittal(s). Submittals related to imported material shall be maintained in the environmental portions of the Project file.

Monitoring and Reporting: MD-24 will prepare and keep on file documentation verifying the implementation of the above-referenced measure. These files shall be provided to the State Water Resources Control Board following completion of construction, upon request.

Verified By:

Raymundo Gutierrez

Madera County
Project Manager

6/29/2023

Date:

4 REFERENCES

AdEdge Water Technologies, LLC. 2023. Field Pilot Test Report Madera County – Teaford Meadows, CA: Arsenic, Iron, and Manganese Removal Using Coagulation / Filtration (C/F) Treatment.

BLM (Bureau Land Management). 2022. California Maps: Map Viewer/Interactive Map webtool. [Online]: https://www.blm.gov/maps/frequently-requested/california. Accessed November 2022.

California State Geoportal. 2023. CGS Seismic Hazards Program: Landslide Zones. [Online]: https://gis.data.ca.gov/datasets/0860546963f147c78db3da52cd7ee413_0/about. Accessed January 2023.

CalTrans (California Department of Transportation),

____Scenic Highways. [Online]:https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways. Accessed November 2022.

____2013. Technical Noise Supplement to the Traffic Noise Analysis Protocol.

CARB (California Air Resources Board). 2021. California Greenhouse Gas Emissions for 2000 to 2019: Trends of Emission and Other Indicators. [Online]: https://ww2.arb.ca.gov/ghg-inventory-data. Accessed November 2022.

CDFW (California Department of Fish and Wildlife). 2019. California Natural Community Conservation Plans.

DOC (California Department of Conservation),

__2016. Farmland Mapping & Monitoring Program. [Online]:https://www.conservation.ca.gov/dlrp/fmmp. Accessed November 2022.

__2017. CGS Seismic Hazards Program: Landslide Zones webtool. [Online]: https://gis.data.ca.gov/maps/08d18656a0194881a7e0f95fde19f08c/explore?location=36.198874%2C-118.924914%2C8.00. Accessed November 2022.

__2021. EQ: California Earthquake Hazards Zone Application. [Online]:https://www.conservation.ca.gov/cgs/geohazards/eq-zapp. Accessed November 2022.

DRECP (Desert Renewable Energy Conservation Plan) Gateway. 2015. Madera County Williamson Act(Farmland Security Zones, Agricultural Preserves, and Non-renewables). [Online]: https://drecp.databasin.org/datasets/b6cebffff5ff477f8e1e98b32d681a9d/. Accessed October 2022.

DWR (Department of Water Resources). Groundwater Basin Boundary Assessment Tool. [Online]: https://gis.water.ca.gov/app/bbat/. Accessed November 2022.

FEMA (Federal Emergency Management Agency). 2008. Flood Insurance Rate Map. [Online]: https://msc.fema.gov/portal/home. Accessed November 2022.

Fisher Scientific. 2007. Material Safety Data Sheet: Iron (III) Chloride Anhydrous. [Online]: https://fscimage.fishersci.com/msds/09740.htm. Accessed January 2023.

FTA (Federal Transit Administration). 2006. Transit Noise and Vibration Impact Assessment. [Online]: https://www.transit.dot.gov/regulations-and-guidance/environmental-programs/fta-noise-and-vibration-impact-assessment. Accessed November 2022.

Google Earth Pro version 7.3. 2017. 37°16'18.16" N 119°34'21.95" W, elevation 0 feet eye alt 3403 ft.

Live Oak Associates, Inc. 2023. Biological Evaluation Teaford Meadows Water System Improvements Project DFA Contract No. D16-02073 North Fork, Madera County, CA.

Madera County,

____1995. Final Environmental Impact Report (EIR).

____1995. General Plan Policy Document.

____1995. General Plan Background Document.

____2010. General Plan Air Quality Element.

____2015. Housing Element Update 2016-2024.

____2017. General Plan Local Hazard Mitigation Plan Update (LHMPU).

____2022. Development Services Code Portal. [Online]: https://online.encodeplus.com/regs/maderacounty-ca/index.aspx. Accessed November 2022.

____Fire Department. [Online]: https://www.maderacounty.com/government/fire-department. Accessed November 2022.

____Land Use webtool. [Online]: https://gis.maderacounty.com/portal/apps/webappviewer/index.html?id=d2d780a4dc354d9e814cd9e10ba93c85. Accessed November2022.

____Liquid Waste Program. [Online]: https://www.maderacounty.com/government/community-economic-development-department/divisions/environmental-health-division/liquid-waste-program. Accessed December 2022.

____Sheriff. [Online]: https://www.maderacounty.com/government/sheriff. Accessed November 2022.

____2023. County GSAs. [Online]: https://www.maderacountywater.com/county-gsas/. Accessed January 2023.

Madera Local Agency Formation Commission. May 2022. North Fork and Bass Lake Areas Municipal Service Review and Sphere of Influence Update.

NEHRP (National Earthquake Hazards Report Program). 2018. Earthquake Hazards Reduction Act of 1977.

OSFM (Office of the State Fire Marshal). 2022. Fire Hazard Severity Zones Maps. [Online]: https://osfm.fire.ca.gov/divisions/community-wildfire-preparedness-and-mitigation/wildland-hazards-building-codes/fire-hazard-severity-zones-maps/. Accessed November 2022

PaleoWest. 2023. Historic Property Identification Report for Maintenance District 24 Teaford Meadows Water Improvements, Madera County, California.

PaleoWest. 2023. Paleontological Resource Assessment in Support of the MD-24 Teaford Meadows Water Improvements Project, DFA No. D16-02073, Madera County, California.

RWQCB (California Regional Water Quality Control Board). 2022. Central Valley R-5. [Online]: https://www.waterboards.ca.gov/rwqcb5/. Accessed November 2022.

SJVAPCD (San Joaquin Valley Air Pollution Control District),

____2012. Ambient Air Quality Standards & Valley Attainment Status. [Online]:https://www.valleyair.org/aqinfo/attainment.htm. Accessed November 2022.

____2012. Air Quality Attainment Plans. [Online]: https://www.valleyair.org/Air_Quality_Plans/air-quality-plans.htm. Accessed November 2022.

____2012. Current District Rules and Regulations. [Online]:https://www.valleyair.org/rules/1ruleslist.htm. Accessed November 2022.

____2012. CEQA. [Online]: http://www.valleyair.org/transportation/ceqa_idx.htm. Accessed October 2022.

____2022. About the District. [Online]: https://ww2.valleyair.org/about/. Accessed November 2022.

USEPA (United States Environmental Protection Agency). 2022. EPA Activities for Cleaner Air.[Online]: https://www.epa.gov/sanjoaquinvalley/epa-activities-cleaner-air. Accessed October 2022.

USEPA (United States Environmental Protection Agency). 2022. Sole Source Aquifers for Drinking Water webtool. [Online]: https://www.epa.gov/dwssa . Accessed November 2022.

USFWS (United States Fish and Wildlife Service). Wetland Mapper Tool. [Online]:https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/. Accessed November 2022.

5 LIST OF PREPARERS

5.4 LEAD AGENCY — COUNTY OF MADERA

Craig Wagner, P.E.....Supervising Civil Engineer

Ray Gutierrez.....Engineer II

5.5 PROJECT CONSULTANTS — NV5, INC.

Mark Murphy, AZ RG, Ph.D.....Senior Water Resources Scientist

Lauren Burokas.....Environmental Planner

James F. Owens, P.E.....Engineer

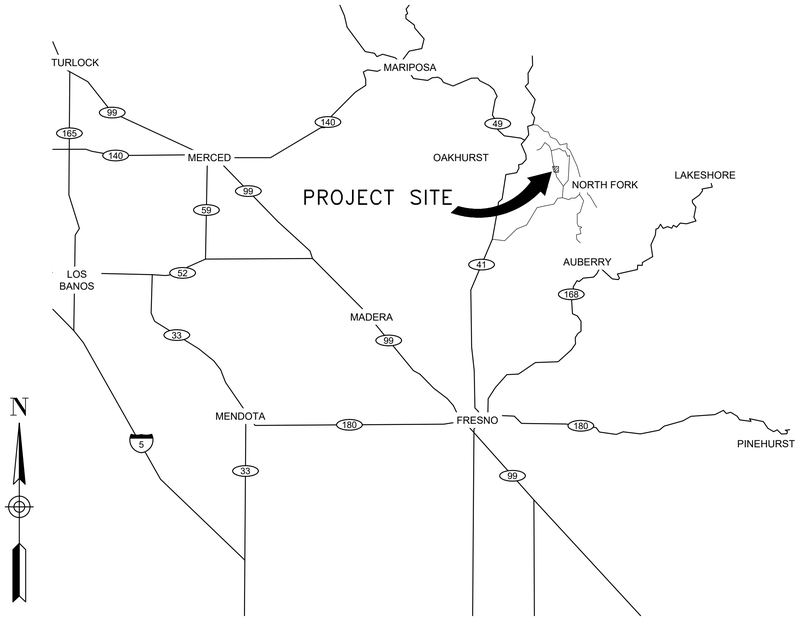
APPENDIX A

PRELIMINARY DESIGN DRAWINGS

MD-24 - TEAFORD MEADOWS
WATER SUPPLY IMPROVEMENTS PROJECT

35% SUBMITTAL

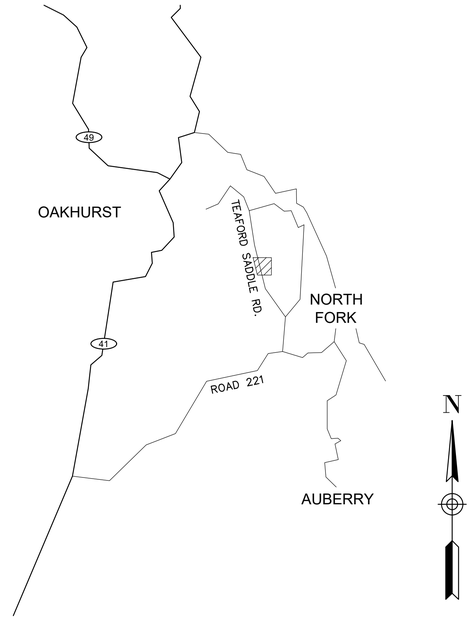
JUNE 2023



VICINITY MAP

SHEET INDEX

SHEET NO:	DWG. NO:	DRAWING TITLE:
1	T-01	TITLE SHEET
2	G-01	GENERAL NOTES AND SURVEY CONTROL
3	C-01	PROCESS FLOW DIAGRAM
4	C-02	EXISTING WELL NO. 1, 2, AND 4 SITE PLAN
5	C-03	WELL NO. 3 DESTRUCTION
6	C-04	WELL NO. 5 SITE PLAN
7	C-05	TREATMENT BUILDING AND TANK SITE PLAN
8	C-06	PLAN & PROFILE – TEAFORD POYAH STA 1+00 TO 6+50
9	C-07	PLAN & PROFILE – TEAFORD POYAH STA 6+50 TO 11+50
10	C-08	PLAN & PROFILE – MOIC DRIVE STA 11+50 TO 17+50
11	C-09	PLAN & PROFILE – MOIC DRIVE STA 17+50 TO 23+00
12	C-10	PLAN & PROFILE – MOIC DRIVE STA 23+00 TO 28+64.79
13	C-11	CIVIL DETAILS
14	M-01	MECHANICAL – WELL NO. 2
15	M-02	MECHANICAL – WELL NO. 4
16	M-03	MECHANICAL – WELL NO. 5
17	M-04	TREATMENT BUILDING LAYOUT
18	M-05	MECHANICAL DETAILS – 01



LOCATION MAP

DFA PROJECT NO. 2000552-001P
DFA FA NO. D16-02073

FUNDING FOR THIS PROJECT HAS BEEN PROVIDED IN FULL OR IN PART THROUGH AN AGREEMENT WITH THE STATE WATER RESOURCES CONTROL BOARD. CALIFORNIA'S DRINKING WATER STATE REVOLVING FUND IS CAPITALIZED THROUGH A VARIETY OF FUNDING SOURCES, INCLUDING GRANTS FROM THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY AND STATE BOND PROCEEDS. THE CONTENTS OF THIS DOCUMENT DO NOT NECESSARILY REFLECT THE VIEWS AND POLICIES OF THE FOREGOING, NOR DOES MENTION OF TRADE NAMES OR COMMERCIAL PRODUCTS CONSTITUTE ENDORSEMENT OR RECOMMENDATION FOR USE

CALIFORNIA Water Boards
STATE WATER RESOURCES CONTROL BOARD
REGIONAL WATER QUALITY CONTROL BOARDS

PROP 1
GOVERNOR GAVIN NEWSOM
WATER BOND 2014
RELIABILITY | RESTORATION | RESILIENCE

DIGALERT
Call 2 Working Days Before You Dig!
811

PRELIMINARY
NOT FOR CONSTRUCTION

DATE: 6/28/23 TIME: 3:50:48 PM
SERVER: NONE LAYOUT: 1
PATH: P:\2261\226118-0000217-01_TEAFORDMEADOWS\CADD\CIVIL
DRAWING NAME: T-01.DWG
PAGE SETUP: ----
DESIGNER: SD PROJ. MGR: JO

NO.	BY	DATE	REVISIONS:

CAUTION: The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes to the plans must be in writing and must be approved by the preparer of these plans.

REGISTERED PROFESSIONAL ENGINEER
JAMES F. OWENS
No. C-66067
Exp. 6/30/24
CIVIL
STATE OF CALIFORNIA

NV5
15092 AVENUE OF SCIENCE, SUITE 200
SAN DIEGO, CA 92128
P: 858.385.0500 WWW.NV5.COM

MD-24 - TEAFORD MEADOWS WATER SUPPLY IMPROVEMENTS
TITLE SHEET

PREPARED FOR: MADERA COUNTY DATE SUBMITTED: JUN 2023

DRAWING NUMBER T-01
1 OF 18 SHEETS
SCALE
VERTICAL: 1"= N/A
HORIZONTAL: 1"= N/A
JOB NUMBER 226118-0000217.01

ZACHARY.STOCK

GENERAL NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS (CONTRACT DOCUMENTS) AND THE 2018 EDITION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION. IN CASE OF CONFLICT, THE CONTRACT DOCUMENTS SHALL PREVAIL.
2. UNLESS OTHERWISE NOTED, CONNECTIONS TO EXISTING PIPELINES SHALL BE MADE DRY. THE TIME AND DURATION OF ANY SHUTDOWNS OF EXISTING MAINS SHALL BE SUBJECT TO APPROVAL BY THE OWNER. OWNER SHALL BE NOTIFIED FIVE WORKING DAYS MINIMUM IN ADVANCE OF ANY SHUTDOWN. SYSTEM VALVES WILL BE OPERATED BY OWNER'S FORCES ONLY.
3. CONTRACTOR SHALL COORDINATE WITH OWNER ALL ARRANGEMENTS FOR HIGH-LINING TEMPORARY SERVICES PRIOR TO SHUTDOWNS. NO SHUTDOWNS WILL BE SCHEDULED ON MONDAY, FRIDAY, OR WEEKENDS.
4. NO WORK MAY BEGIN OR PROCEED WITHOUT DIRECTION OF OWNER'S INSPECTOR. CONTRACTOR SHALL NOTIFY THE OWNER'S INSPECTOR 48 HOURS PRIOR TO THE BEGINNING OF WORK TO ARRANGE FOR INSPECTION OF THE PROJECT.
5. THE CONTRACTOR MUST CALL "DIG ALERT OF SOUTHERN CALIFORNIA" TO HAVE UNDERGROUND SERVICE UTILITIES LOCATED PRIOR TO CONSTRUCTION. THIS CALL WILL BE MADE AT LEAST 48 HOURS IN ADVANCE PRIOR TO ANY EXCAVATION WORK BEING PERFORMED. (DIG ALERT PHONE: 8-1-1)
6. ALL EXISTING UTILITIES INDICATED ON THE DRAWINGS ARE SHOWN DIAGRAMMATICALLY AND ARE BASED ON AVAILABLE DRAWINGS. THE CONTRACTOR SHALL POTHOLE AND VERIFY THE SIZE, MATERIAL, HORIZONTAL & VERTICAL LOCATION, BEARING, AND INCLINATION OF EXISTING UTILITIES, INCLUDING BUT NOT LIMITED TO LOCATIONS DESIGNATED ON THE DRAWINGS, AT LEAST ONE WEEK PRIOR TO ANY DEMOLITION WORK OR INSTALLATION OF NEW WORK. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES TO PROTECT ANY EXISTING UTILITIES OR STRUCTURES AT THE WORK SITE.
7. CONTRACTOR SHALL TIE OFF ALL VALVE LOCATIONS AND PROVIDE WRITTEN DIMENSIONS TO INSPECTOR IMMEDIATELY UPON INSTALLATION OF VALVES.
8. ALL DESIGN CHANGES TO THE WATER SYSTEM SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE IN WRITING PRIOR TO CONSTRUCTION AND ACCEPTANCE OF THE CHANGE.
9. THE WATER SYSTEM SHALL BE PRESSURE TESTED AND DISINFECTED IN ACCORDANCE WITH THE PROCEDURES IN THE SPECIFICATIONS.
10. PIPELINES AND APPURTENANCES SHALL BE DISINFECTED IN ACCORDANCE WITH THE SPECIFICATIONS PRIOR TO TIE-IN OR CONNECTION TO EXISTING SYSTEM FACILITIES. BACTERIOLOGIC QUALITY TEST RESULTS SHALL CONFORM TO THE CRITERIA SPECIFIED IN THAT SPECIFICATION.
11. CONTRACT RECORD DRAWINGS MUST BE SUBMITTED PRIOR TO FINAL ACCEPTANCE OF WORK. THE PLANS MUST PROVIDE POST CONSTRUCTION VERIFICATION OF THE LOCATION AND ELEVATION OF PIPES AND APPURTENANCES.
12. CONTRACTOR SHALL GUARANTEE ALL WORK FOR A PERIOD OF ONE (1) YEAR AFTER THE DATE OF ACCEPTANCE FOR THE PROJECT. CONTRACTOR SHALL REPAIR OR REPLACE ANY OR ALL SUCH WORK, TOGETHER WITH ANY OTHER WORK WHICH MAY BE DISPLACED IN SO DOING THAT MAY PROVE DEFECTIVE IN WORKMANSHIP AND/OR MATERIALS WITHIN THE ONE-YEAR PERIOD FROM THE DATE OF ACCEPTANCE WITHOUT EXPENSE WHATSOEVER TO THE OWNER, ORDINARY WEAR AND TEAR, UNUSUAL ABUSE OR NEGLECT EXCEPTED.
13. CONTRACTOR SHALL KEEP ACCESS TO DRIVEWAYS AND PRIVATE ROADS OPEN AT ALL TIMES DURING CONSTRUCTION. CONTRACTOR SHALL KEEP NON-SKID STEEL PLATES ONSITE TO COVER EXPOSED TRENCHES AND PROVIDE IMMEDIATE VEHICULAR OR PEDESTRIAN ACCESS.
14. CONSTRUCTION SEQUENCING AND FACILITY SHUTDOWN LIMITATIONS ARE ESSENTIAL TO THE EXECUTION OF THE WORK. SEE SPECIFICATIONS.
15. CONNECTION TO EXISTING ASBESTOS CEMENT PIPE SHALL BE MADE BY DISASSEMBLING THE EXISTING AC PIPE JOINT AND NOT CUTTING THE AC PIPE. PROVIDE NEW PVC PIPE SPOOLS AS REQUIRED TO COMPLETE CONNECTIONS.

ABBREVIATIONS

ABAN	ABANDONED	MAX	MAXIMUM
AB	AGGREGATE BASE	MFG	MANUFACTURER
AC	ASBESTOS CEMENT	MIN	MINIMUM
ALT	ALTERNATE	MJ	MECHANICAL JOINT
ANG	ANGLE		
APPROX	APPROXIMATE	N	NORTH
AWWA	AMERICAN WATER WORKS ASSOCIATION	No. (OR #)	NUMBER
		NTS	NOT TO SCALE
BF	BLIND FLANGE	OH	OVERHEAD
		OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
CA	CALIFORNIA		
CAV	COMBINATION AIR AND VACUUM VALVE		
		PG&E	PACIFIC GAS AND ELECTRIC
CL	CENTERLINE	PH	POTHOLE
CONC	CONCRETE	PI	POINT OF INTERSECTION
CONN	CONNECT/CONNECTION	PIP	PROTECT IN PLACE
CPVC	CHLORINATED POLYVINYL CHLORIDE	PL	PROPERTY LINE
		PO	PUSH ON
DEG	DEGREE	PP	POWER POLE
DEMO	DEMOLISH/DEMOLITION	PSI	POUNDS PER SQUARE INCH
DET	DETAIL	PT	POINT, POINT OF TANGENCY
DIA	DIAMETER	PVC	POLYVINYL CHLORIDE
DWG(S)	DRAWING(S)	PWR	POWER
E	EAST	RAD	RADIUS
EA	EACH	ROW	RIGHT OF WAY
ELEC	ELECTRIC		
EX	EXISTING	S	SLOPE, SOUTH
		SD	STORM DRAIN
FCA	FLANGED COUPLING ADAPTER	SF	SQUARE FEET
FLG	FLANGE	SHC	SODIUM HYPOCHLORITE
FH	FIRE HYDRANT	SHT	SHEET
FM	FORCE MAIN	SPEC(S)	SPECIFICATION(S)
FT (OR ')	FEET	SSPWC	STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION
G	GAS	STA	STATION
GV	GATE VALVE	STD	STANDARD
H, HORIZ	HORIZONTAL	TB	THRUST BLOCK
HDPE	HIGH DENSITY POLYETHLYENE	TEL/TELCO	TELEPHONE/TELECOMMUNICATION
		TOP	TOP OF PIPE
ID	INSIDE DIAMETER	TYP	TYPICAL
IN (OR ")	INCHES		
		UNK	UNKNOWN
L	LENGTH		
LF	LINEAR FEET	W	WEST, WATER

LEGEND

- EX. WATER VALVE
- EX. WATER METER
- EX. FIRE HYDRANT
- EX. POWER POLE
- EX. WIRE FENCE
- EX. TELCO CONDUIT
- EX. WATER LINE
- EX. ELECTRICAL CONDUIT
- PROPOSED WATER PIPELINE (DISTRIBUTION) — 20+00
- PROPOSED WATER PIPELINE (TRANSMISSION)
- PROPOSED WATER SERVICE WITH METER
- PROPOSED WATER SERVICE STUB OUT (FUTURE)
- PROPOSED WATER VALVE
- PROPOSED BLOW-OFF ASSEMBLY
- PROPOSED COMBINATION AIR AND VACUUM VALVE
- PROPOSED DRY BARREL FIRE HYDRANT

GEOTECHNICAL INVESTIGATION REPORT

x

SECTION AND DETAIL DESIGNATION

A / C-02 — SECTION LETTER CALLOUT; DRAWING NUMBER ON WHICH SECTION APPEARS

SECTION LETTER CALLOUT; DRAWING NUMBER ON WHICH SECTION WAS TAKEN — A / C-06 — SECTION
SCALE: 1/2"= 1'-0"

4 / C-04 — DETAIL NUMBER CALLOUT; DRAWING NUMBER ON WHICH DETAIL APPEARS

DETAIL — 1 / C-02 — DETAIL NUMBER CALLOUT; DRAWING NUMBER ON WHICH DETAIL WAS REFERENCED

BENCHMARK

SET 5/8 INCH REBAR WITH CAP STAMPED NV5 CONTROL AS POINT #1.
NAVD88 ELEVATION =3583.18'

BASIS OF BEARINGS

BEARINGS ARE REFERENCED TO GRID NORTH AS DEFINED BY THE CALIFORNIA COORDINATE SYSTEM 1983, ZONE III AND ARE BASED ON THE OBSERVED LINE FROM CORS P630 (NGS PID DN5665) TO CORS P245 (NGS PID DN7563) SAID BEARING = N 80°35'13" W

BASIS OF COORDINATES

THE COORDINATES ARE REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 AND ARE EXPRESSED IN TERMS OF THE CALIFORNIA COORDINATE SYSTEM 1983, ZONE III, AT EPOCH 2010, AND ARE BASED ON CORS POINT P630 PER NGS PID DN5665, AND CORS POINT P245 PER NGS PID DN7563. SAID GRID COORDINATES ARE AS FOLLOWS:

DN5665 = N-2049161.828' E-6996001.762'
DN7563 = N -2083096.464' E -6791307.100'
1 = N -1922262.305' E -6829742.472'

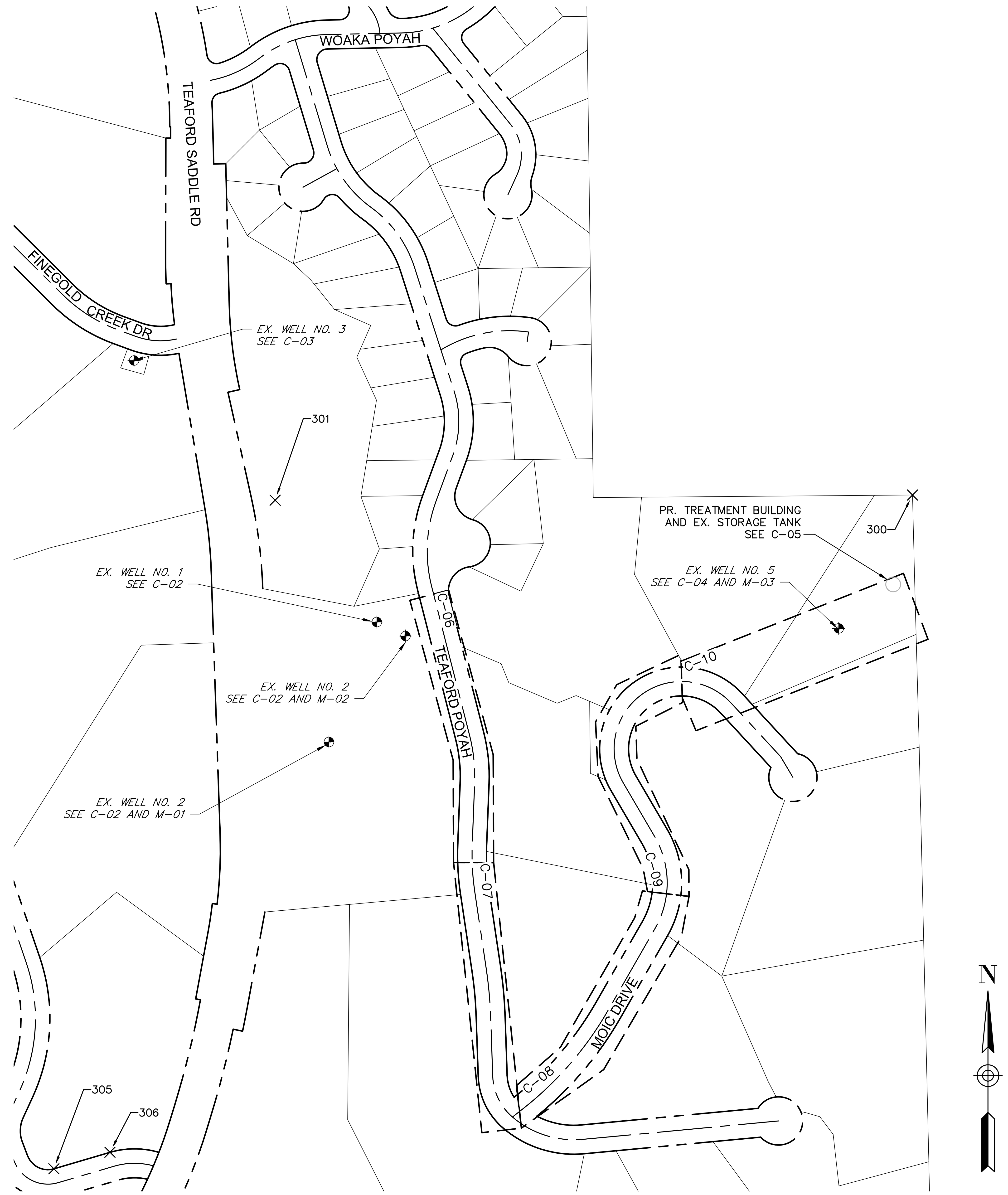
BASIS OF ELEVATION

ELEVATIONS ARE REFERENCED TO NAVD88 (NORTH AMERICAN VERTICAL DATUM OF 1988) UTILIZING GEOID12B. THE ORTHOMETRIC ELEVATION FOR POINT NO. "1" WAS DETERMINED BY A 7-HOUR GPS OBSERVATION, PROCESSED VIA THE NGS (NATIONAL GEODETIC SURVEY) OPUS WEB TOOL. THE NGS OPUS SOLUTION UTILIZED THE FOLLOWING CORS (CONTINUALLY OPERATING REFERENCE STATION) ELEVATIONS:

DN5665 = NAVD88 ELEVATION = 9084.60'
DN7563 = NAVD88 ELEVATION = 5281.62'
DM7575 = NAVD88 ELEVATION = 9078.15'

DATE OF INITIAL SURVEY

JULY 12, 2022 BY NV5, INC.



KEY MAP AND SURVEY CONTROL

0' 150' 300'
SCALE 1"= 150'

CONTROL POINTS

POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
300	1922636.976	6832615.845	3654.436	3/4IN NAIL N TAG LS2931
301	1922626.208	6831294.324	3564.576	2.5IN ALUM DISC US GENERAL LAND OFFICE SURVEY
305	1921239.877	6830835.644	3525.816	5/8IN YPC SNYDER LS4727
306	1921274.139	6830951.848	3507.802	5/8IN NO CAP LEANING EAST SHOT AT GROUND

PRELIMINARY
NOT FOR CONSTRUCTION

DATE: 6/28/23 TIME: 3:51:04 PM
SERVER: NONE LAYOUT: 2
PATH: P:\2261\226118-0000217-01_TEAFORDMEADOWS\CADD\CIVIL
DRAWING NAME: G-01.DWG
PAGE SETUP: ----
DESIGNER: SD PROJ. MGR: JO

NO.	BY	DATE	REVISIONS:

REGISTERED PROFESSIONAL ENGINEER — JAMES F. OWENS — No. C-66067 Exp. 6/30/24 — CIVIL — STATE OF CALIFORNIA

NV5
15092 AVENUE OF SCIENCE, SUITE 200
SAN DIEGO, CA 92128
P: 858.385.0500 WWW.NV5.COM

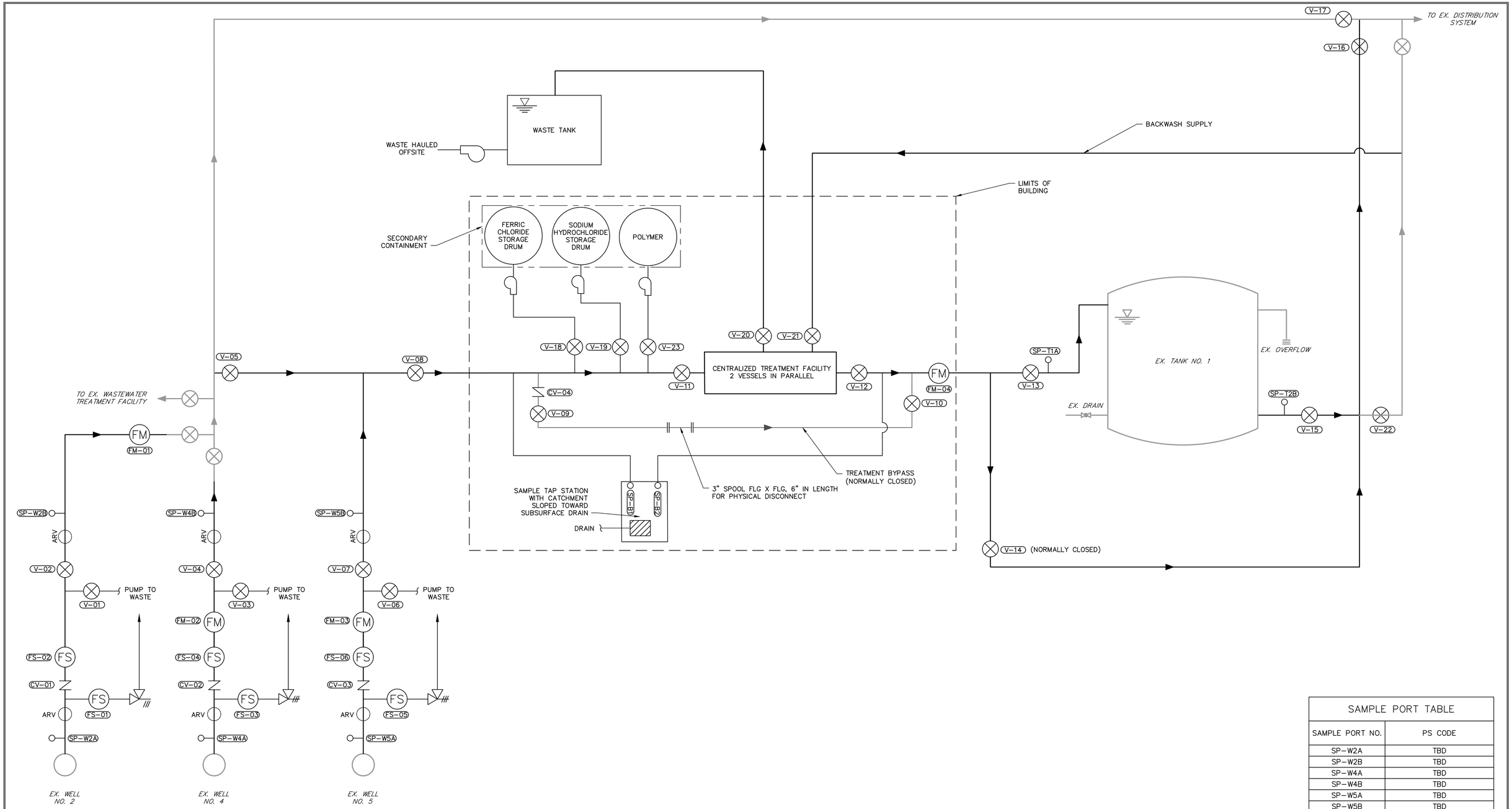
MD-24 - TEAFORD MEADOWS WATER SUPPLY IMPROVEMENTS
GENERAL NOTES AND SURVEY CONTROL

DRAWING NUMBER G-01
2 OF 18 SHEETS
SCALE
VERTICAL: 1"= 100'
HORIZONTAL: 1"= N/A

CAUTION: The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes to the plans must be in writing and must be approved by the preparer of these plans.

PREPARED FOR: MADERA COUNTY
DATE SUBMITTED: JUN 2023
JOB NUMBER 226118-0000217.01

ZACHARY.STOCK



SAMPLE PORT TABLE	
SAMPLE PORT NO.	PS CODE
SP-W2A	TBD
SP-W2B	TBD
SP-W4A	TBD
SP-W4B	TBD
SP-W5A	TBD
SP-W5B	TBD
SP-B1	TBD
SP-B2	TBD
SP-BW	TBD
SP-T1A	TBD
SP-T1B	TBD

LEGEND

ISOLATION VALVE | CHECK VALVE | PRESSURE RELIEF VALVE | FLOW SWITCH | FLOW SENSOR
FLOW DIRECTION | SAMPLE TAP | FLOW METER | BOOSTER PUMP

PRELIMINARY

NOT FOR CONSTRUCTION

DATE: 6/28/23 TIME: 3:51:20 PM
SERVER: NONE LAYOUT: Layout1
PATH: P:\2261\226118-0000217-01_TEAFORDMEADOWS\CADD\CIVIL
DRAWING NAME: C-01.DWG
PAGE SETUP: -----
DESIGNER: ZS PROJ. MGR: JO

NO.	BY	DATE	REVISIONS:

CAUTION: The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes to the plans must be in writing and must be approved by the preparer of these plans.

REGISTERED PROFESSIONAL ENGINEER JAMES F. OWENS No. C-66067 Exp. 6/30/24 CIVIL STATE OF CALIFORNIA

N|V|5
15092 AVENUE OF SCIENCE, SUITE 200
SAN DIEGO, CA 92128
P: 858.385.0500 WWW.NV5.COM

MD-24 - TEAFORD MEADOWS WATER SUPPLY IMPROVEMENTS
PROCESS FLOW DIAGRAM

PREPARED FOR: MADERA COUNTY

DATE SUBMITTED: JUN 2023

DRAWING NUMBER C-01
6 OF 18 SHEETS

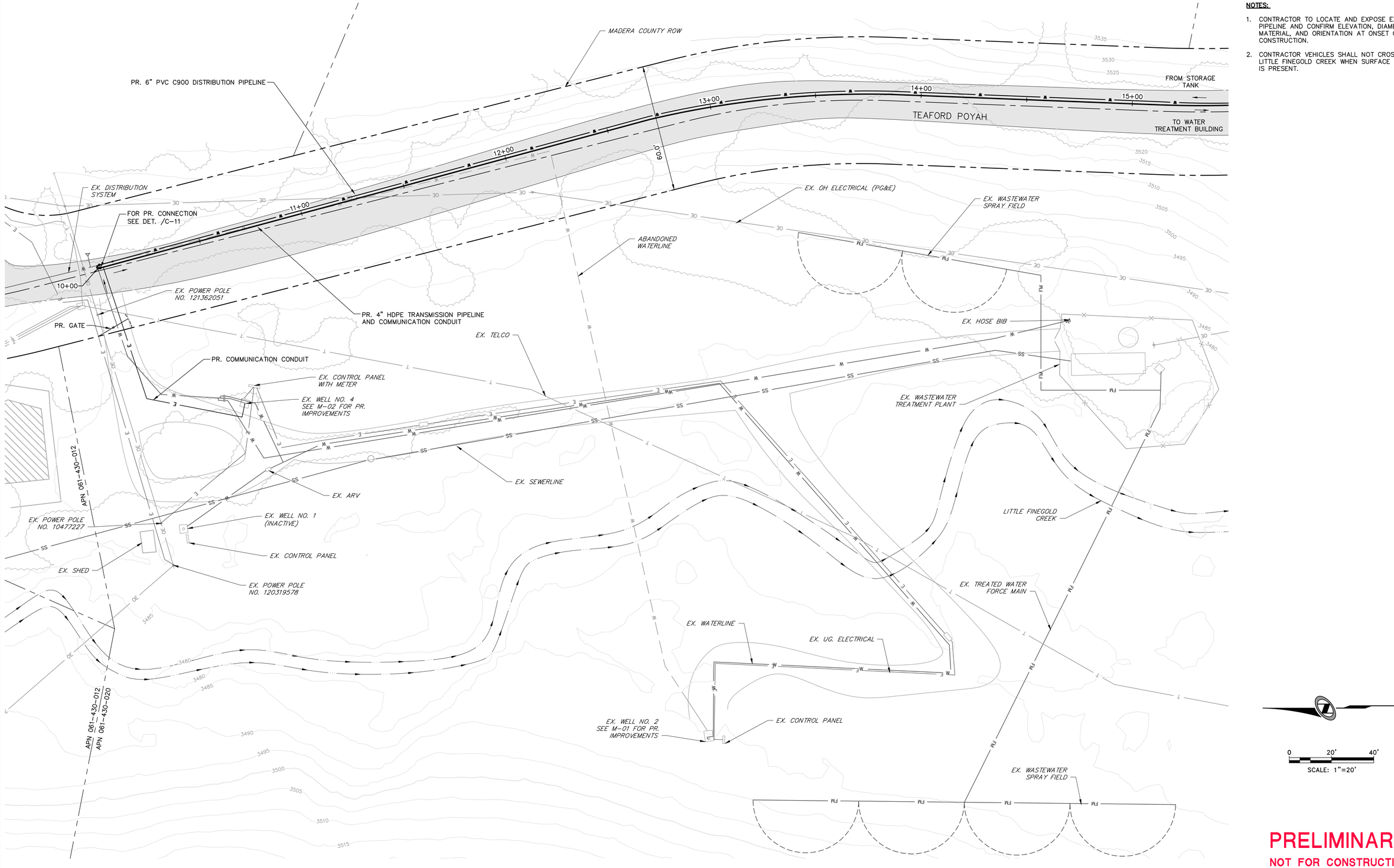
SCALE
VERTICAL: 1"= ####
HORIZONTAL: 1"= ####

JOB NUMBER 226118-0000217.01

ZACHARY STOCK

NOTES:

1. CONTRACTOR TO LOCATE AND EXPOSE EXISTING PIPELINE AND CONFIRM ELEVATION, DIAMETER, MATERIAL, AND ORIENTATION AT ONSET OF CONSTRUCTION.
2. CONTRACTOR VEHICLES SHALL NOT CROSS LITTLE FINEGOLD CREEK WHEN SURFACE WATER IS PRESENT.



0 20' 40'

SCALE: 1"=20'

PRELIMINARY

NOT FOR CONSTRUCTION

DATE: 6/28/23 TIME: 3:51:37 PM
SERVER: NONE LAYOUT: Layout1
PATH: P:\2261\226118-0000217-01_TEAFORDMEADOWS\CADD\CIVIL
DRAWING NAME: C-02.DWG
PAGE SETUP: ----
DESIGNER: ZS PROJ. MGR: JO

NO.	BY	DATE	REVISIONS:

CAUTION: The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes to the plans must be in writing and must be approved by the preparer of these plans.

REGISTERED PROFESSIONAL ENGINEER
JAMES F. OWENS
No. C-66067
Exp. 6/30/24
CIVIL
STATE OF CALIFORNIA

NV5
15092 AVENUE OF SCIENCE, SUITE 200
SAN DIEGO, CA 92128
P: 858.385.0500 WWW.NV5.COM

MD-24 - TEAFORD MEADOWS WATER SUPPLY IMPROVEMENTS
EXISTING WELL NO. 1, 2, AND 4 SITE PLAN

PREPARED FOR: MADERA COUNTY

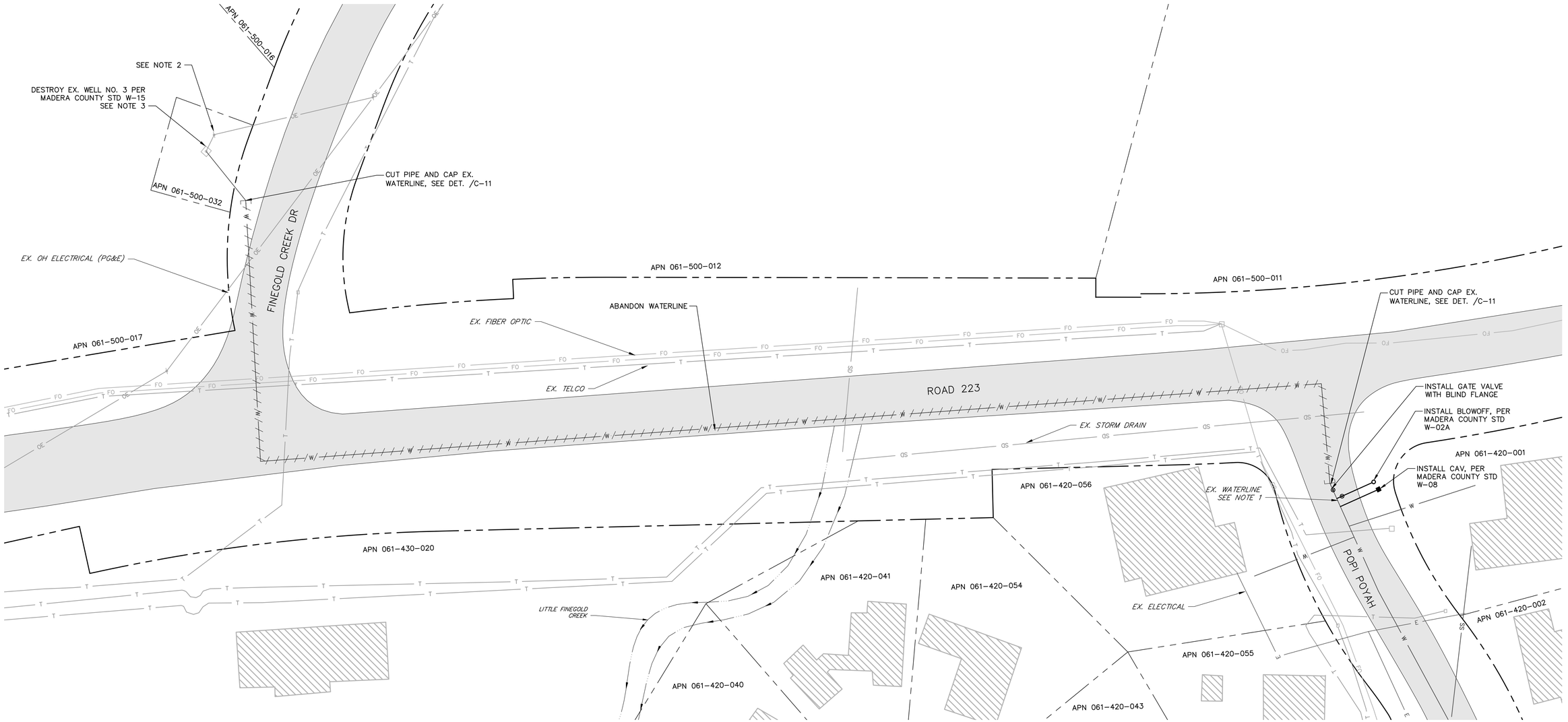
DATE SUBMITTED: JUN 2023

DRAWING NUMBER C-02
6 OF 18 SHEETS

SCALE
VERTICAL: 1"= AS NOTED
HORIZONTAL: 1"= AS NOTED

JOB NUMBER 226118-0000217.01

ZACHARY.STOCK



NOTES:

1. CONTRACTOR TO LOCATE AND EXPOSE EXISTING PIPELINE AND CONFIRM ELEVATION, DIAMETER, MATERIAL, AND ORIENTATION AT ONSET OF CONSTRUCTION.
2. MADERA COUNTY TO DISCONNECT AND REMOVE ELECTRICAL LINES TO WELL NO. 3 PRIOR TO WELL DESTRUCTION
3. CONTRACTOR TO REMOVE AND DISPOSE OF VALVES, PIPING, PUMP, MOTOR, COLUMN PIPING, CONCRETE PAD, AND WOODEN WELLHOUSE.

0 25' 50'

SCALE: 1"=25'

PRELIMINARY

NOT FOR CONSTRUCTION

DATE: 6/28/23 TIME: 3:51:52 PM
SERVER: NONE LAYOUT: Layout1
PATH: P:\2261\226118-0000217-01_TEAFORDMEADOWS\CADD\CIVIL
DRAWING NAME: C-03.DWG
PAGE SETUP: ----
DESIGNER: ZS PROJ. MGR: JO

NO.	BY	DATE	REVISIONS:

CAUTION: The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes to the plans must be in writing and must be approved by the preparer of these plans.

REGISTERED PROFESSIONAL ENGINEER JAMES F. OWENS No. C-66067 Exp. 6/30/24 CIVIL STATE OF CALIFORNIA

NV5
15092 AVENUE OF SCIENCE, SUITE 200
SAN DIEGO, CA 92128
P: 858.385.0500 WWW.NV5.COM

MD-24 - TEAFORD MEADOWS WATER SUPPLY IMPROVEMENTS
WELL NO. 3 DESTRUCTION

PREPARED FOR: MADERA COUNTY

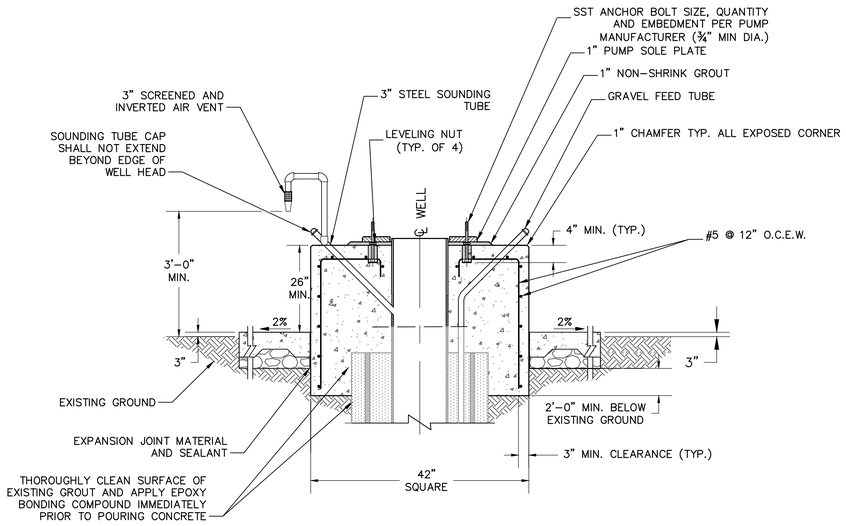
DATE SUBMITTED: JUN 2023

DRAWING NUMBER C-03
8 OF 18 SHEETS

SCALE
VERTICAL: 1"= AS NOTED
HORIZONTAL: 1"= AS NOTED

JOB NUMBER 226118-0000217.01

ZACHARY STOCK



CONCRETE WELL HEAD DETAIL

NTS

NOTES:

1. CONTRACTOR TO LOCATE AND EXPOSE EXISTING PIPELINE AND CONFIRM ELEVATION, DIAMETER, MATERIAL, AND ORIENTATION AT ONSET OF CONSTRUCTION.

PRELIMINARY

NOT FOR CONSTRUCTION

DATE: 6/28/23 TIME: 3:52:10 PM
SERVER: NONE LAYOUT: Layout1
PATH: P:\2261\226118-0000217-01_TEAFORDMEADOWS\CADD\CIVIL
DRAWING NAME: C-04.DWG
PAGE SETUP: ----
DESIGNER: ZS PROJ. MGR: JO

NO.	BY	DATE	REVISIONS:

REGISTERED PROFESSIONAL ENGINEER JAMES F. OWENS No. C-66067 Exp. 6/30/24 CIVIL STATE OF CALIFORNIA

NV5
15092 AVENUE OF SCIENCE, SUITE 200
SAN DIEGO, CA 92128
P: 858.385.0500 WWW.NV5.COM

MD-24 - TEAFORD MEADOWS WATER SUPPLY IMPROVEMENTS

WELL NO. 5 SITE PLAN

PREPARED FOR: MADERA COUNTY

DATE SUBMITTED: JUN 2023

DRAWING NUMBER C-04
6 OF 18 SHEETS

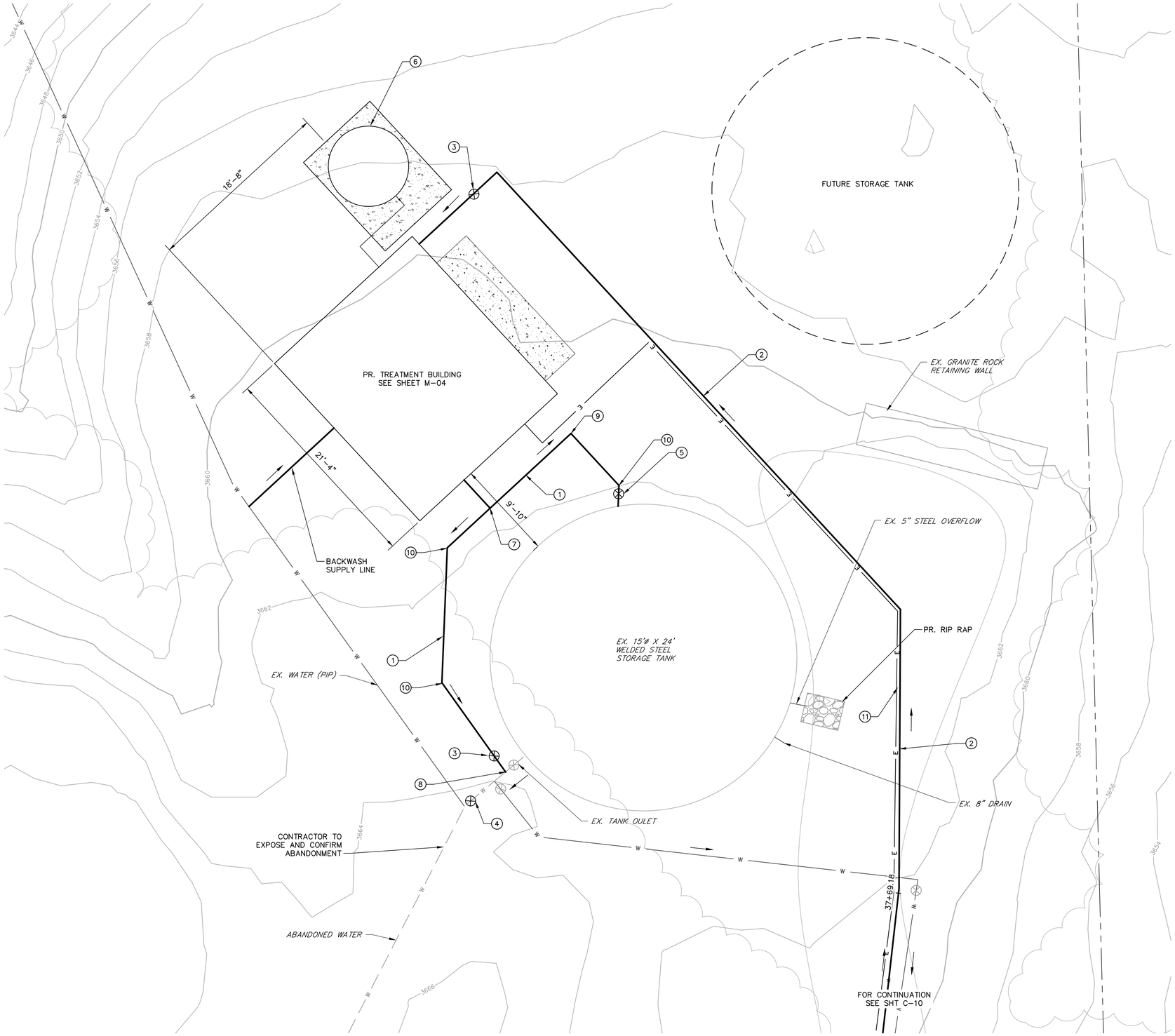
SCALE
VERTICAL: 1"= AS NOTED
HORIZONTAL: 1"= AS NOTED

JOB NUMBER 226118-0000217.01

ZACHARY.STOCK

CONSTRUCTION NOTES:

1. 4" PVC C900 PIPE, PER DET. 1/C-11
2. 4" HDPE PIPE AND SIGNAL CONDUIT, PER DET. 1/C-11
3. 4" DI GATE VALVE, FLG X FLG
4. 6" DI GATE VALVE, FLG X FLG
5. TANK NO. 1 INLET PIPING, SEE DET. 2/M-05
6. WASTE TANK, PER DET.
7. 4" DI TEE, MJ. CONSTRUCT THRUST BLOCK PER DET.
8. 6" X 4" DI TEE, MJ. CONSTRUCT THRUST BLOCK PER DET.
9. 4" DI 90° ELBOW, MJ CONSTRUCT THRUST BLOCK PER DET.
10. 4" DI 45° ELBOW, MJ CONSTRUCT THRUST BLOCK PER DET.
10. UNDERGROUND ELECTRICAL SUPPLY CONDUIT, SEE ELECTRICAL DRAWINGS



0 5' 10'

SCALE: 1"=5'

NOTES:

1. CONTRACTOR TO LOCATE AND EXPOSE EXISTING PIPELINE AND CONFIRM ELEVATION, DIAMETER, MATERIAL, AND ORIENTATION AT ONSET OF CONSTRUCTION.

PRELIMINARY

NOT FOR CONSTRUCTION

DATE: 6/28/23 TIME: 3:52:31 PM
SERVER: NONE LAYOUT: Layout1
PATH: P:\2261\226118-0000217-01_TEAFORMEADOWS\CADD\CIVIL
DRAWING NAME: C-05.DWG
PAGE SETUP: ----
DESIGNER: ZS PROJ. MGR: JO

NO.	BY	DATE	REVISIONS:

CAUTION: The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes to the plans must be in writing and must be approved by the preparer of these plans.

REGISTERED PROFESSIONAL ENGINEER
JAMES F. OWENS
No. C-66067
Exp. 6/30/24
CIVIL
STATE OF CALIFORNIA

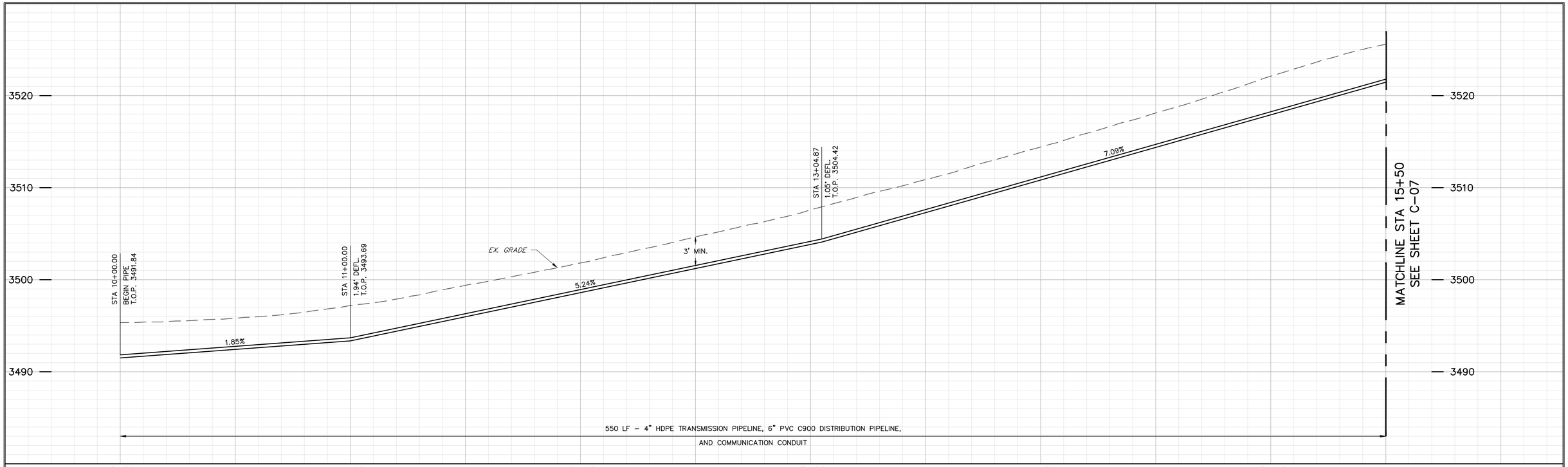
NV5
15092 AVENUE OF SCIENCE, SUITE 200
SAN DIEGO, CA 92128
P: 858.385.0500 WWW.NV5.COM

MD-24 - TEAFORD MEADOWS WATER SUPPLY IMPROVEMENTS
TREATMENT BUILDING AND TANK SITE PLAN

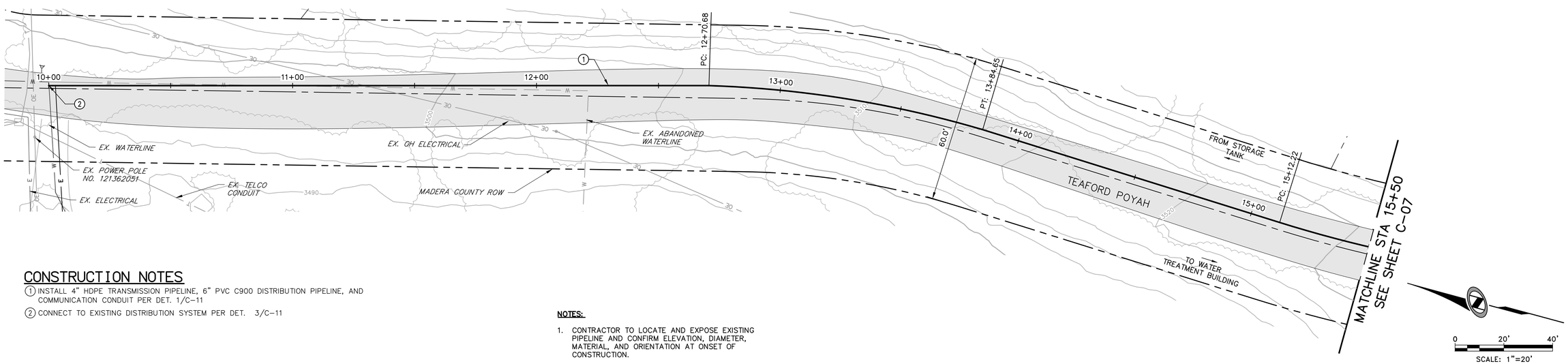
PREPARED FOR: MADERA COUNTY DATE SUBMITTED: JUN 2023

DRAWING NUMBER C-05
7 OF 18 SHEETS
SCALE
VERTICAL: 1"= AS NOTED
HORIZONTAL: 1"= AS NOTED
JOB NUMBER 226118-0000217.01

ZACHARY.STOCK



HORIZ. SCALE: 1"=20'
VERT. SCALE: 1"=5'



CONSTRUCTION NOTES

1. INSTALL 4" HDPE TRANSMISSION PIPELINE, 6" PVC C900 DISTRIBUTION PIPELINE, AND COMMUNICATION CONDUIT PER DET. 1/C-11
2. CONNECT TO EXISTING DISTRIBUTION SYSTEM PER DET. 3/C-11

NOTES:

1. CONTRACTOR TO LOCATE AND EXPOSE EXISTING PIPELINE AND CONFIRM ELEVATION, DIAMETER, MATERIAL, AND ORIENTATION AT ONSET OF CONSTRUCTION.

PRELIMINARY

NOT FOR CONSTRUCTION

DATE: 6/28/23 TIME: 3:52:52 PM
SERVER: NONE LAYOUT: Layout1
PATH: P:\2261\226118-0000217-01_TEAFORDMEADOWS\CADD\CIVIL
DRAWING NAME: C-06.DWG
PAGE SETUP: ----
DESIGNER: ZS PROJ. MGR: JO

NO.	BY	DATE	REVISIONS:

CAUTION: The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes to the plans must be in writing and must be approved by the preparer of these plans.

REGISTERED PROFESSIONAL ENGINEER
JAMES F. OWENS
No. C-66067
Exp. 6/30/24
CIVIL
STATE OF CALIFORNIA

NV5
15092 AVENUE OF SCIENCE, SUITE 200
SAN DIEGO, CA 92128
P: 858.385.0500 WWW.NV5.COM

MD-24 - TEAFORD MEADOWS WATER SUPPLY IMPROVEMENTS
PLAN & PROFILE - TEAFORD POYAH
STA 10+00 TO 15+50

PREPARED FOR: MADERA COUNTY

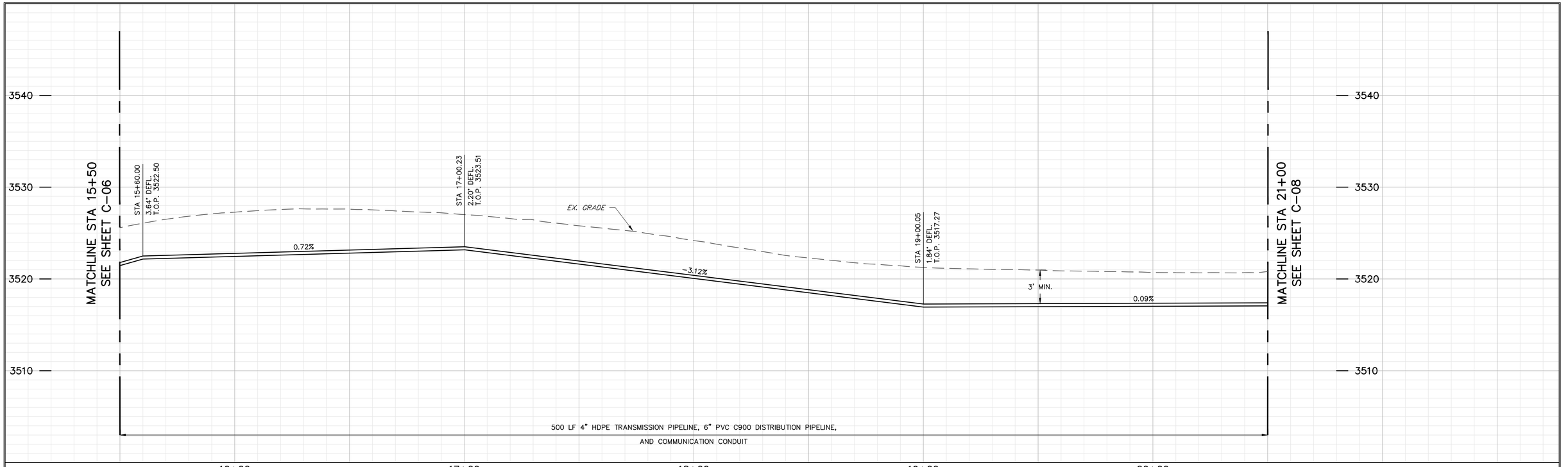
DATE SUBMITTED: MAR 2023

DRAWING NUMBER: C-06
8 OF 18 SHEETS

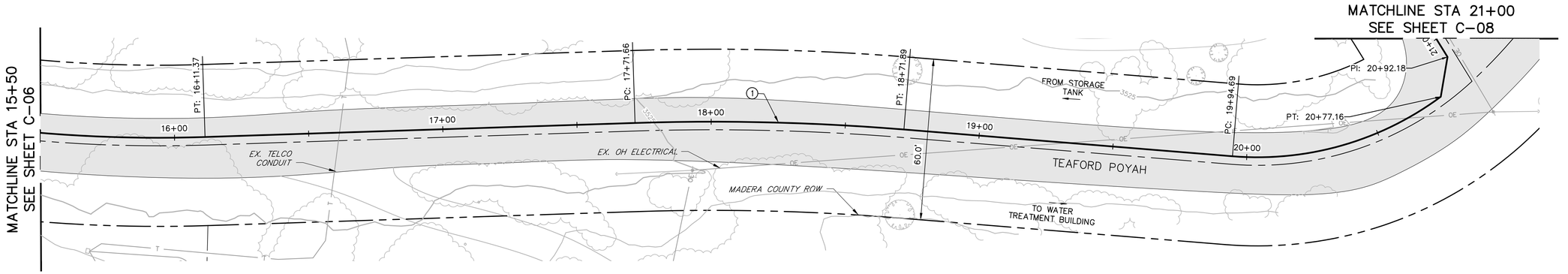
SCALE
VERTICAL: 1"= 5'
HORIZONTAL: 1"= 20'

JOB NUMBER: 226118-0000217.01

ZACHARY.STOCK



HORIZ. SCALE: 1"=20'
VERT. SCALE: 1"=5'



CONSTRUCTION NOTES

1. INSTALL 4" HDPE TRANSMISSION PIPELINE, 6" PVC C900 DISTRIBTUION PIPELINE, AND COMMUNICATION CONDUIT PER DET. 1/C-11

0 20' 40'
SCALE: 1"=20'

PRELIMINARY
NOT FOR CONSTRUCTION

DATE: 6/28/23 TIME: 3:53:11 PM
SERVER: NONE LAYOUT: Layout1
PATH: P:\2261\226118-0000217-01_TEAFORDMEADOWS\CADD\CIVIL
DRAWING NAME: C-07.DWG
PAGE SETUP: ----
DESIGNER: ZS PROJ. MGR: JO

NO.	BY	DATE	REVISIONS:

CAUTION: The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes to the plans must be in writing and must be approved by the preparer of these plans.

REGISTERED PROFESSIONAL ENGINEER
JAMES F. OWENS
No. C-66067
Exp. 6/30/24
CIVIL
STATE OF CALIFORNIA

NV5
15092 AVENUE OF SCIENCE, SUITE 200
SAN DIEGO, CA 92128
P: 858.385.0500 WWW.NV5.COM

MD-24 - TEAFORD MEADOWS WATER SUPPLY IMPROVEMENTS
PLAN & PROFILE - TEAFORD POYAH
STA 15+50 TO 21+00

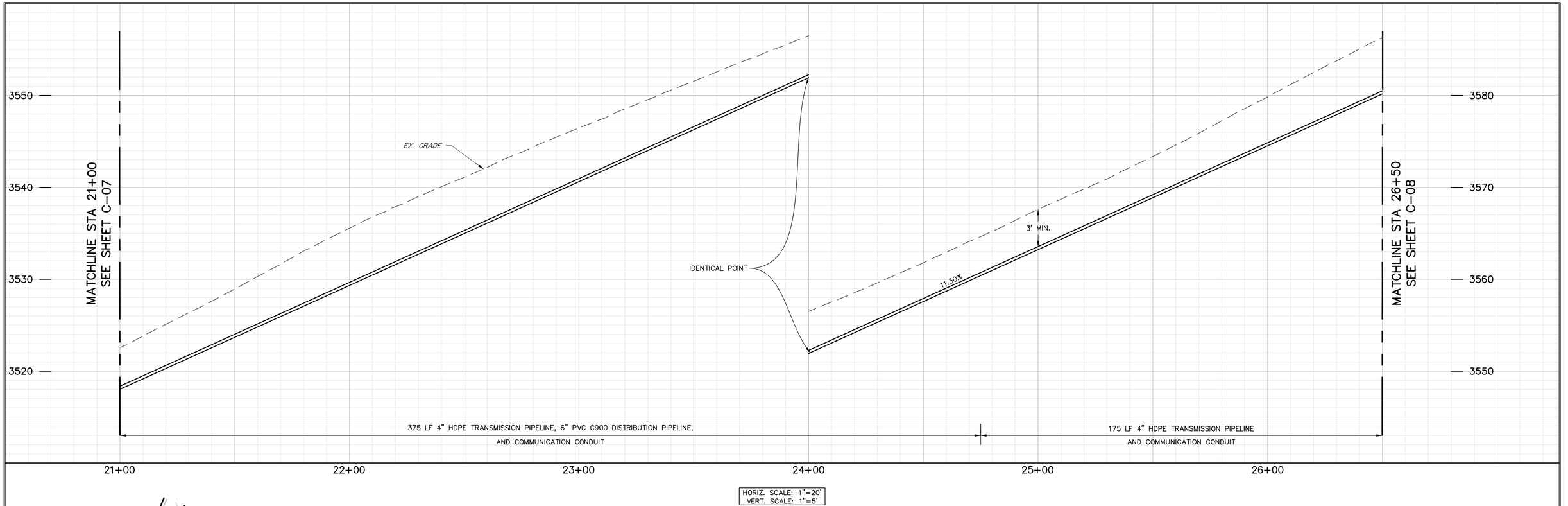
PREPARED FOR: MADERA COUNTY
DATE SUBMITTED: MAR 2023

DRAWING NUMBER
C-07
9 OF 18 SHEETS

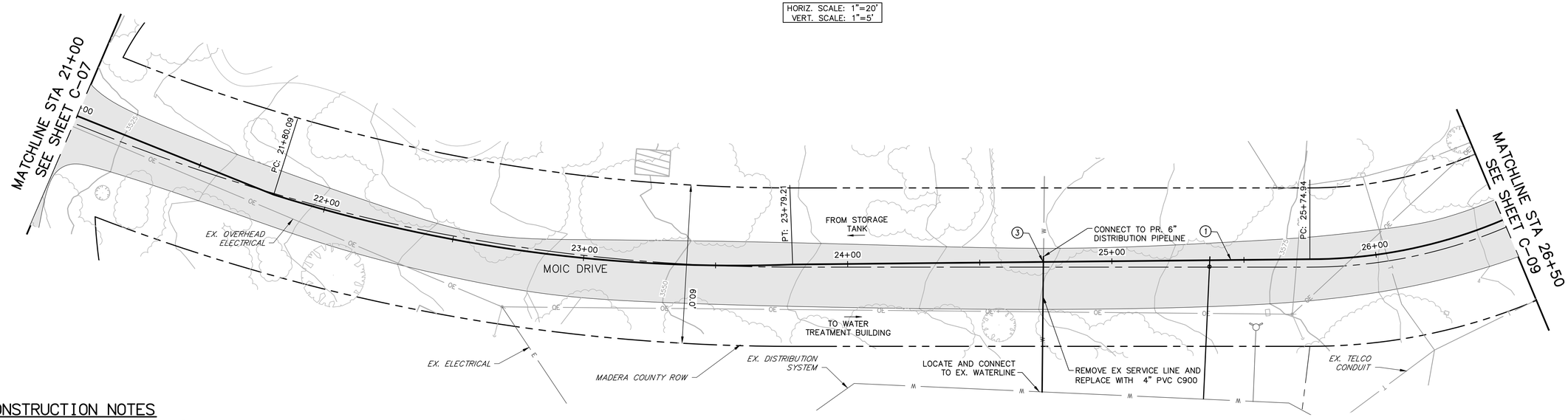
SCALE
VERTICAL: 1"= 5'
HORIZONTAL: 1"= 20'

JOB NUMBER
226118-0000217.01

ZACHARY.STOCK



HORIZ. SCALE: 1"=20'
VERT. SCALE: 1"=5'



CONSTRUCTION NOTES

1. INSTALL 4" HDPE TRANSMISSION PIPELINE, 6" PVC C900 DISTRIBUTION PIPELINE, AND COMMUNICATION CONDUIT PER DET. 1/C-11
3. CONNECT 6" PVC C900 DISTRIBUTION PIPELINE TO EXISTING WATERLINE, SEE DET.___/C-11

NOTES:

1. CONTRACTOR TO LOCATE AND EXPOSE EXISTING PIPELINE AND CONFIRM ELEVATION, DIAMETER, MATERIAL, AND ORIENTATION AT ONSET OF CONSTRUCTION.

0 20' 40'
SCALE: 1"=20'

PRELIMINARY
NOT FOR CONSTRUCTION

DATE: 6/28/23 TIME: 3:53:35 PM
SERVER: NONE LAYOUT: Layout1
PATH: P:\2261\226118-0000217-01_TEAFORDMEADOWS\CADD\CIVIL
DRAWING NAME: C-08.DWG
PAGE SETUP: ----
DESIGNER: ZS PROJ. MGR: JO

NO.	BY	DATE	REVISIONS:

CAUTION: The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes to the plans must be in writing and must be approved by the preparer of these plans.

REGISTERED PROFESSIONAL ENGINEER
JAMES F. OWENS
No. C-66067
Exp. 6/30/24
CIVIL
STATE OF CALIFORNIA

NV5
15092 AVENUE OF SCIENCE, SUITE 200
SAN DIEGO, CA 92128
P: 858.385.0500 WWW.NV5.COM

MD-24 - TEAFORD MEADOWS WATER SUPPLY IMPROVEMENTS
PLAN & PROFILE - MOIC DRIVE
STA 21+00 TO 26+50

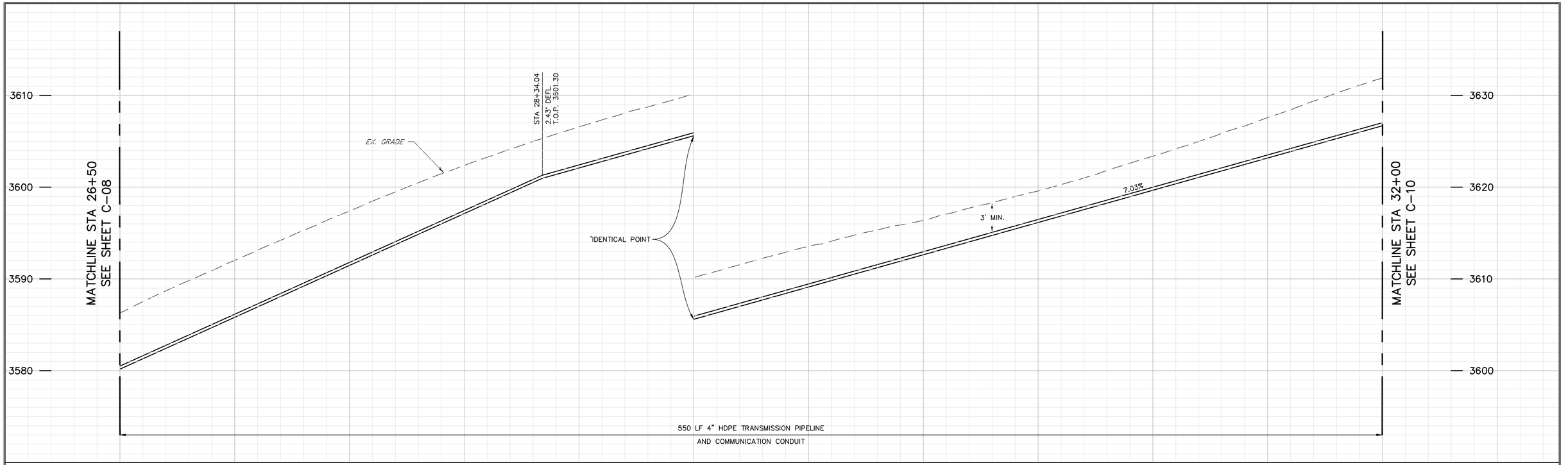
PREPARED FOR: MADERA COUNTY
DATE SUBMITTED: MAR 2023

DRAWING NUMBER
C-08
10 OF 18 SHEETS

SCALE
VERTICAL: 1"= 5'
HORIZONTAL: 1"= 20'

JOB NUMBER
226118-0000217.01

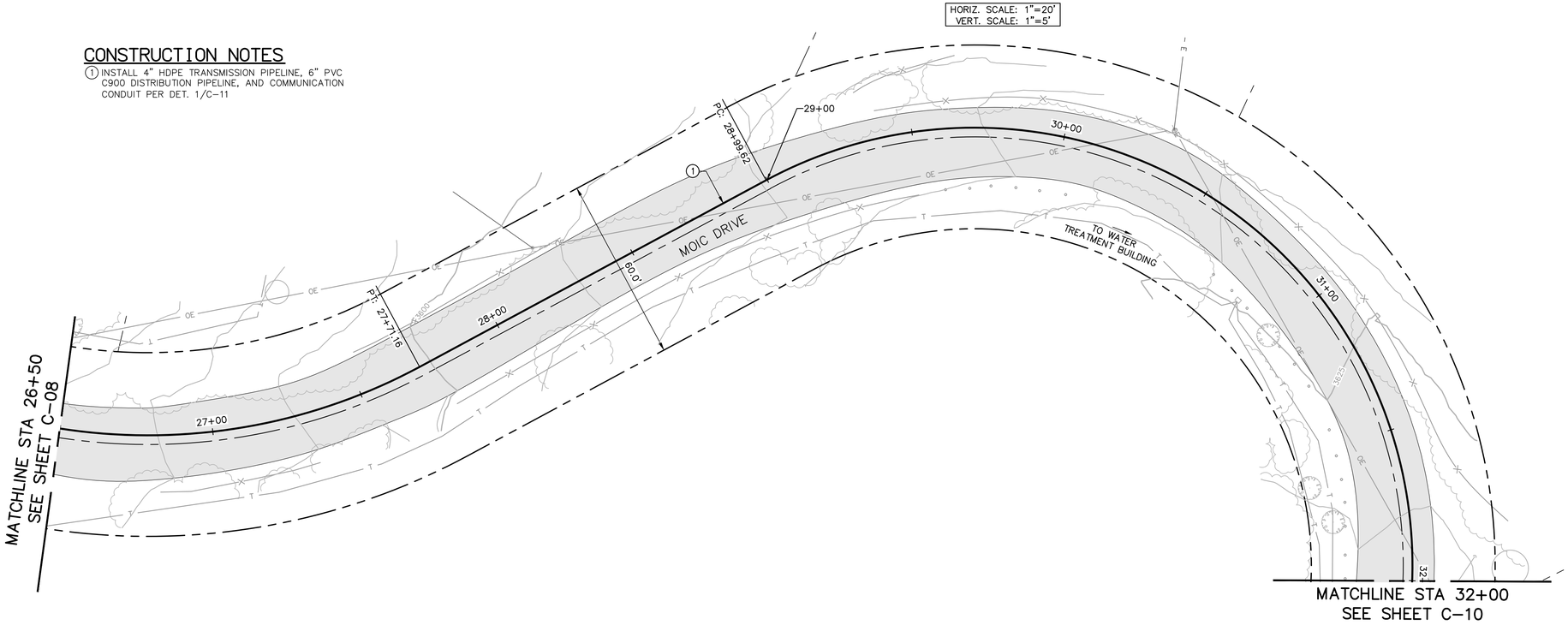
ZACHARY.STOCK



HORIZ. SCALE: 1"=20'
VERT. SCALE: 1"=5'

CONSTRUCTION NOTES

(1) INSTALL 4" HDPE TRANSMISSION PIPELINE, 6" PVC C900 DISTRIBUTION PIPELINE, AND COMMUNICATION CONDUIT PER DET. 1/C-11



0 20' 40'
SCALE: 1"=20'

PRELIMINARY
NOT FOR CONSTRUCTION

DATE: 6/28/23 TIME: 3:53:56 PM
SERVER: LAYOUT: 9
PATH: P:\2261\226118-0000217-01_TEAFORDMEADOWS\CADD\CIVIL
DRAWING NAME: C-09.DWG
PAGE SETUP: ----
DESIGNER: ZS PROJ. MGR: JO

NO.	BY	DATE	REVISIONS:

CAUTION: The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes to the plans must be in writing and must be approved by the preparer of these plans.

REGISTERED PROFESSIONAL ENGINEER
JAMES F OWENS
No. C-66067
Exp. 6/30/24
CIVIL
STATE OF CALIFORNIA

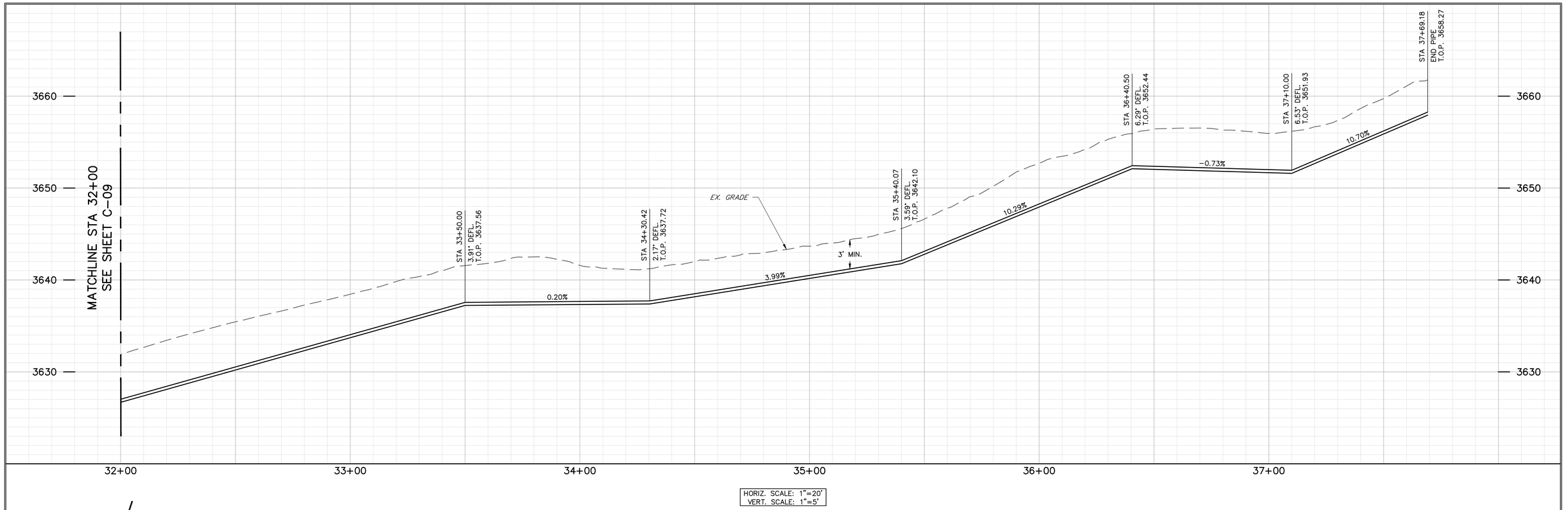
NV5
15092 AVENUE OF SCIENCE, SUITE 200
SAN DIEGO, CA 92128
P: 858.385.0500 WWW.NV5.COM

MD-24 - TEAFORD MEADOWS WATER SUPPLY IMPROVEMENTS
PLAN & PROFILE - MOIC DRIVE
STA 26+50 TO 32+00

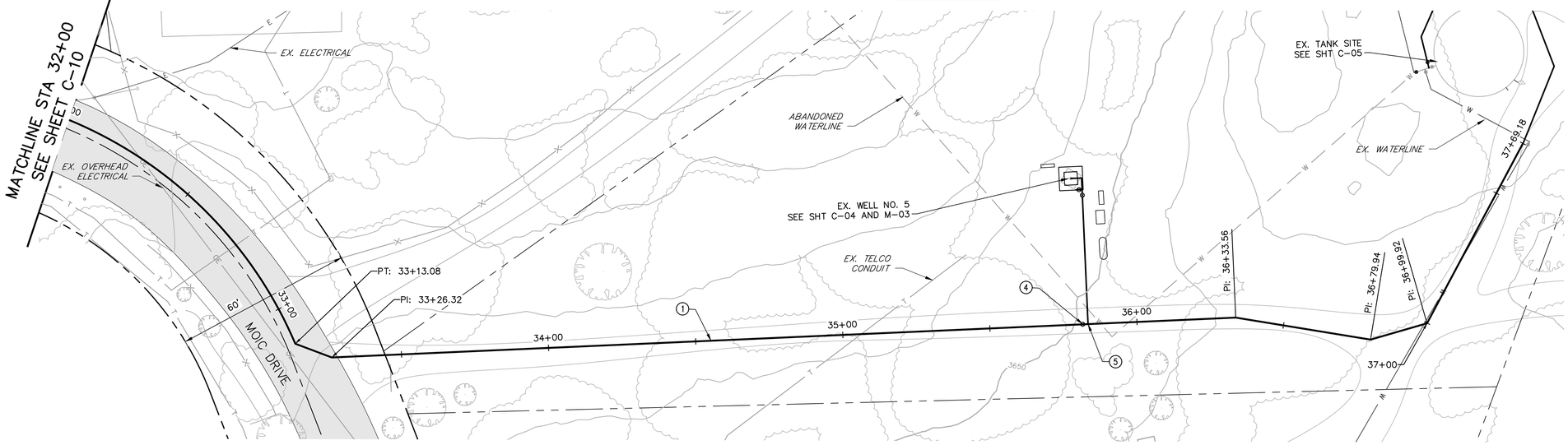
PREPARED FOR: MADERA COUNTY
DATE SUBMITTED: MAR 2023

DRAWING NUMBER C-09
11 OF 18 SHEETS
SCALE
VERTICAL: 1"= 5'
HORIZONTAL: 1"= 20'
JOB NUMBER 226118-0000217.01

ZACHARY.STOCK



HORIZ. SCALE: 1"=20'
VERT. SCALE: 1"=5'



NOTES:

1. CONTRACTOR TO LOCATE AND EXPOSE EXISTING PIPELINE AND CONFIRM ELEVATION, DIAMETER, MATERIAL, AND ORIENTATION AT ONSET OF CONSTRUCTION.

CONSTRUCTION NOTES

(1) INSTALL 4" HDPE TRANSMISSION PIPELINE, 6" PVC C900 DISTRIBUTION PIPELINE, AND COMMUNICATION CONDUIT PER DET. 1/C-11

(4) FURNISH AND INSTALL 4" DI GATE VALVE PER MADERA COUNTY STD. W-06

(5) INSTALL 4" DI TEE

0 20' 40'
SCALE: 1"=20'

DATE: 6/28/23 TIME: 3:54:20 PM
SERVER: NONE LAYOUT:
PATH: P:\2261\226118-0000217-01_TEAFORDMEADOWS\CADD\CIVIL
DRAWING NAME: C-10.DWG
PAGE SETUP: ----
DESIGNER: ZS PROJ. MGR: JO

NO.	BY	DATE	REVISIONS:

CAUTION: The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes to the plans must be in writing and must be approved by the preparer of these plans.

REGISTERED PROFESSIONAL ENGINEER
JAMES F. OWENS
No. C-66067
Exp. 6/30/24
CIVIL
STATE OF CALIFORNIA

N|V|5
15092 AVENUE OF SCIENCE, SUITE 200
SAN DIEGO, CA 92128
P: 858.385.0500 WWW.NV5.COM

MD-24 - TEAFORD MEADOWS WATER SUPPLY IMPROVEMENTS

PLAN & PROFILE - MOIC DRIVE

STA 32+00 TO 37+69.18

PREPARED FOR: MADERA COUNTY

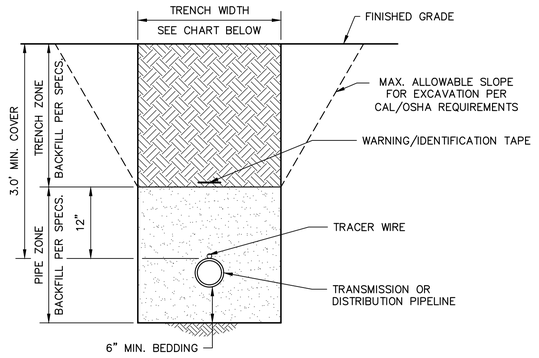
DATE SUBMITTED: MAR 2023

DRAWING NUMBER
C-10
12 OF 18 SHEETS

SCALE
VERTICAL: 1"= 5'
HORIZONTAL: 1"= 20'

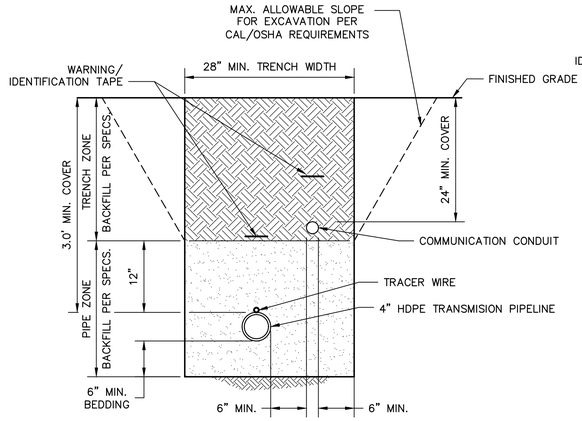
JOB NUMBER
226118-0000217.01

ZACHARY.STOCK

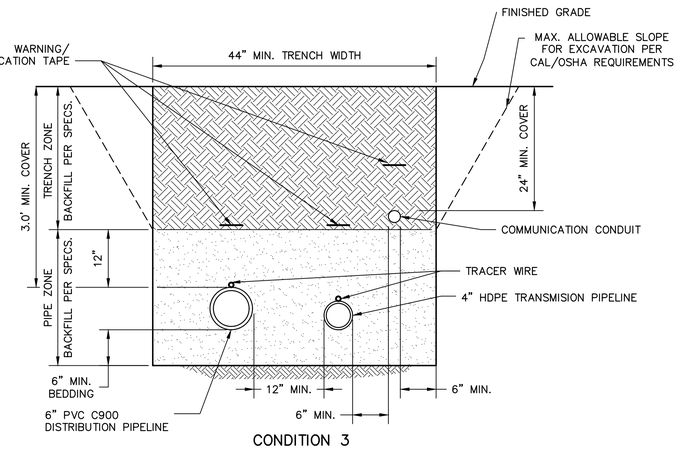


NOMINAL PIPE DIAMETER	MIN. DISTANCE	MAX. DISTANCE
4" & SMALLER	18"	28"
6" & 8"	24"	32"

CONDITION 1
TRANSMISSION OR
DISTRIBUTION PIPELINE ONLY



CONDITION 2
TRANSMISSION PIPELINE W/
COMMUNICATION CONDUIT

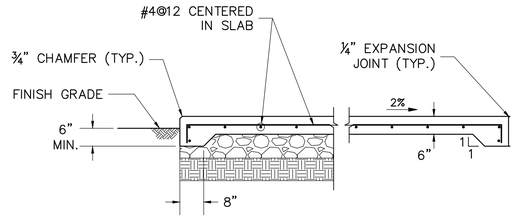


CONDITION 3
TRANSMISSION AND
DISTRIBUTION PIPELINE W/
COMMUNICATION CONDUIT

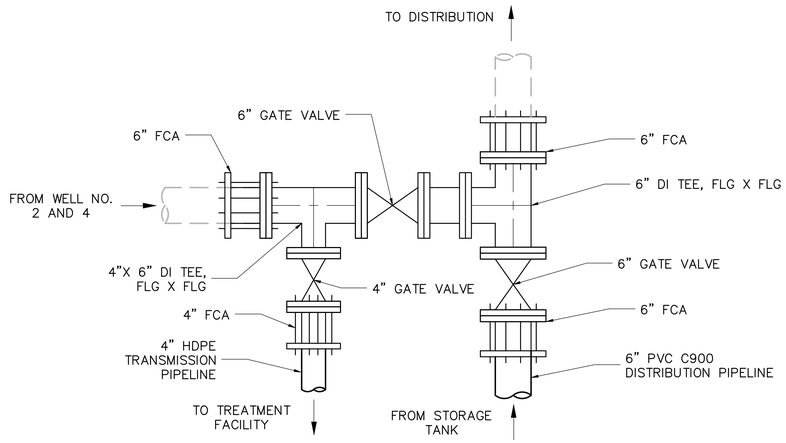
NOTES:

1. EXCAVATE BELL HOLES AT EACH PIPE JOINT TO PERMIT PROPER ASSEMBLY AND INSPECTION OF THE ENTIRE JOINT.
2. ALL PIPELINE TRENCHES SHALL BE EXCAVATED SO THAT THE DISTANCE BETWEEN TRENCH WALLS AT THE TOP OF PIPE SHALL BE AS SHOWN BELOW:

PIPE BEDDING AND TRENCH BACKFILL — 1/–
NOT TO SCALE



WELL CONCRETE PAD — 2/–
1" = 2'-0"



NOTES:

1. CONTRACTOR SHALL FIELD VERIFY SIZES, MATERIALS, LOCATIONS, AND DEPTHS OF EXISTING WATER PIPELINE PRIOR TO CONSTRUCTION. FIELD VERIFICATION SHALL OCCUR WITHIN 30 DAYS FOLLOWING NOTICE TO PROCEED.

TEAFORD POYAH CONNECTION DETAIL — 3/–
NTS

PRELIMINARY
NOT FOR CONSTRUCTION

DATE: 6/28/23 TIME: 3:54:30 PM
SERVER: NONE LAYOUT: 17
PATH: P:\2261\226118-0000217-01_TEAFORDMEADOWS\CADD\CIVIL
DRAWING NAME: C-11.DWG
PAGE SETUP: ----
DESIGNER: SD PROJ. MGR: JO

NO.	BY	DATE	REVISIONS:

CAUTION: The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes to the plans must be in writing and must be approved by the preparer of these plans.

REGISTERED PROFESSIONAL ENGINEER — JAMES F. OWENS — No. C-66067 Exp. 6/30/24 — CIVIL — STATE OF CALIFORNIA

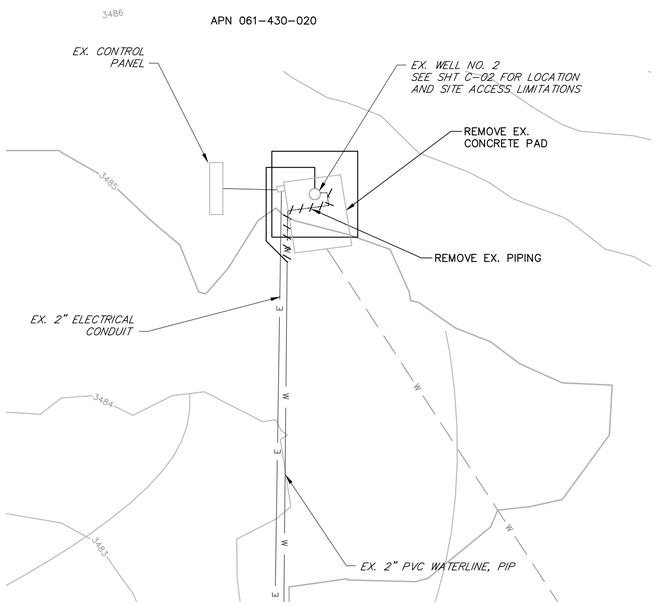
NV5
15092 AVENUE OF SCIENCE, SUITE 200
SAN DIEGO, CA 92128
P: 858.385.0500 WWW.NV5.COM

MD-24 - TEAFORD MEADOWS WATER SUPPLY IMPROVEMENTS
CIVIL DETAILS

PREPARED FOR: MADERA COUNTY
DATE SUBMITTED: JUN 2023

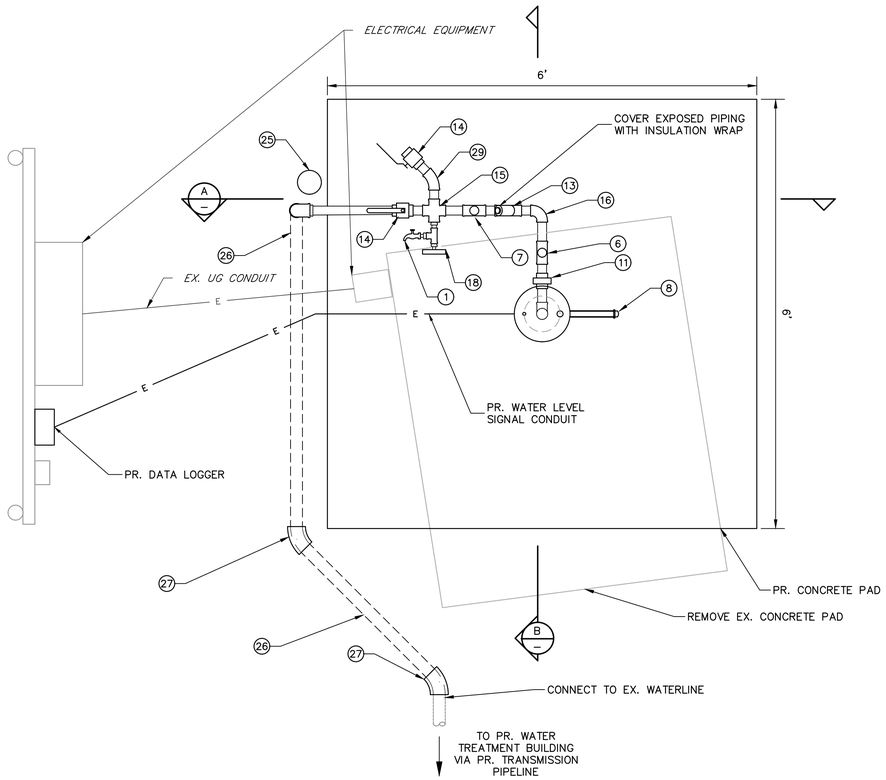
DRAWING NUMBER C-11
13 OF 18 SHEETS
SCALE
VERTICAL: 1"= N/A
HORIZONTAL: 1"= N/A
JOB NUMBER 226118-0000217.01

ZACHARY.STOCK



WELL NO. 2 SITE PLAN

SCALE: 1"=5'

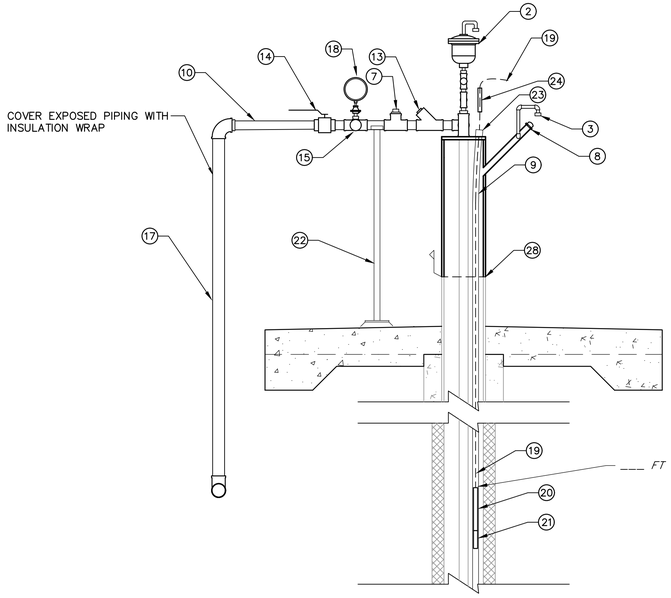


WELL NO. 2 – MECHANICAL PLAN

SCALE: 1"=1'-0"

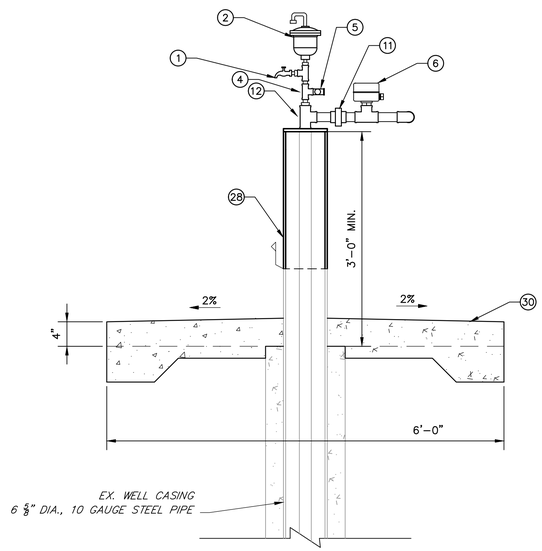
CONSTRUCTION NOTES

1. ½" 304 SST SAMPLE TAP W/ ½" 304 SST NIPPLE & ¾"x½" DIELECTRIC BUSHING
2. ½" AIR RELEASE VALVE W/ ½" 304 SST NIPPLE & ¾"x½" DIELECTRIC BUSHING
3. ½" HDG STEEL U-VENT W/ FINE MESH BUG SCREEN
4. ¾" HDG MALLEABLE IRON TEE
5. ¾" BRONZE PRESSURE RELIEF VALVE. ORIENT DISCHARGE TO EAST.
6. 1" FLOW SWITCH W/ 1½"x1" DIELECTRIC BUSHING
7. 1" HDG MALLEABLE IRON PLUG FOR FUTURE INJECTION POINT
8. 1½" CARBON STEEL SOUNDING TUBE W/ THREADED END CAP, SEE NOTE 3
9. 1" SCH 40 PVC MEASURING TUBE FOR SUBMERSIBLE PRESSURE TRANSMITTER.
10. 1½" HDG STEEL PIPE, TYP.
11. 1½" HDG MALLEABLE IRON UNION
12. 1½" HDG MALLEABLE IRON TEE
13. 1½" BRONZE CHECK VALVE
14. 1½" BRONZE BALL VALVE
15. 1½" HDG MALLEABLE IRON CROSS
16. 1½" HDG MALLEABLE IRON ELBOW
17. 2" HDG STEEL PIPE, TYP.
18. SST PRESSURE GAUGE
19. VENTED POLYURETHANE CABLE W/ KEVLAR STRAIN RELIEF CORD
20. SUBMERSIBLE PRESSURE TRANSMITTER
21. SINK WEIGHT
22. PIPE SUPPORT
23. STRAIN RELIEF CONNECTOR
24. CABLE CLAMP BY PRESSURE TRANSMITTER MANUFACTURER
25. TRACER WIRE ACCESS PORT. 4" SDR PVC PIPE W/ CAST IRON CAP
26. 2" PVC SCH 80 PIPE
27. 2" PVC 45° ELBOW
28. INSTALL (WELD) 6 ⅝" DIA. x ¼" WALL THICKNESS STEEL WELL CASING TO TOP OF EX. WELL CASING
29. 1½" HDG MALLEABLE IRON 45° ELBOW
30. CONCRETE PAD PER DET. 2/C-11



SECTION A

SCALE: 1"=1'-0"



SECTION B

SCALE: 1"=1'-0"

GENERAL NOTES:

1. EXCEPT AS NOTED OTHERWISE, CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL EXISTING ABOVE GRADE WELL PIPING APPURTENANCES AND CONCRETE SLAB. CONTRACTOR SHALL COORDINATE WITH CONSTRUCTION MANAGER PRIOR TO ANY DEMOLITION WORK.
2. CONTRACTOR WILL NEED TO LIFT, REMOVE, STORE, AND RE-INSTALL EXISTING WELL PUMP/MOTOR AND DROP PIPING FOR AND INSTALLATION OF THE PROPOSED IMPROVEMENTS AND FOR VIDEO, BRUSHING/ BAILING, PUMP TESTING WELL.
3. THE STEEL SOUNDING TUBE, WITH THREADED FACTORY TAP FOR VENT, SHALL BE SHOP WELDED TO THE PROPOSED STEEL CASING. THE SOUNDING TUBE AND EXISTING CASING SHALL BE FACTORY PRIMED AND FIELD EPOXY COATED.
4. CONTRACTOR SHALL DISINFECT EXISTING WELL, EXISTING WELL PIPING, AND PROPOSED WELL PIPING IN ACCORDANCE WITH AWWA STANDARD C654-13 PRIOR TO PLACING WELL BACK INTO SERVICE.
5. WELL DRILLED IN 1966 AND DEEPENED IN 1979 AND 1988. SEE SPECS FOR WELL COMPLETION REPORTS. CONTRACTOR TO VIDEO INSPECT AND OBTAIN SAMPLES FOR LAB TESTING BY COUNTY. SEE SPECS.
6. WELL NO. 2 PUMPS AT FLOW RATE OF APPROXIMATELY 26 GPM. THE DEPTH OF PUMP IS UNKNOWN.

PRELIMINARY

NOT FOR CONSTRUCTION

DATE: 6/28/23 TIME: 3:54:49 PM
SERVER: NONE LAYOUT: Layout1
PATH: P:\2261\226118-0000217-01_TEAFORDMEADOWS\CADD\CIVIL
DRAWING NAME: M-01.DWG
PAGE SETUP: ----
DESIGNER: ZS PROJ. MGR: JO

NO.	BY	DATE	REVISIONS:

REGISTERED PROFESSIONAL ENGINEER
JAMES F. OWENS
No. C-66067
Exp. 6/30/24
CIVIL
STATE OF CALIFORNIA

NV5
15092 AVENUE OF SCIENCE, SUITE 200
SAN DIEGO, CA 92128
P: 858.385.0500 WWW.NV5.COM

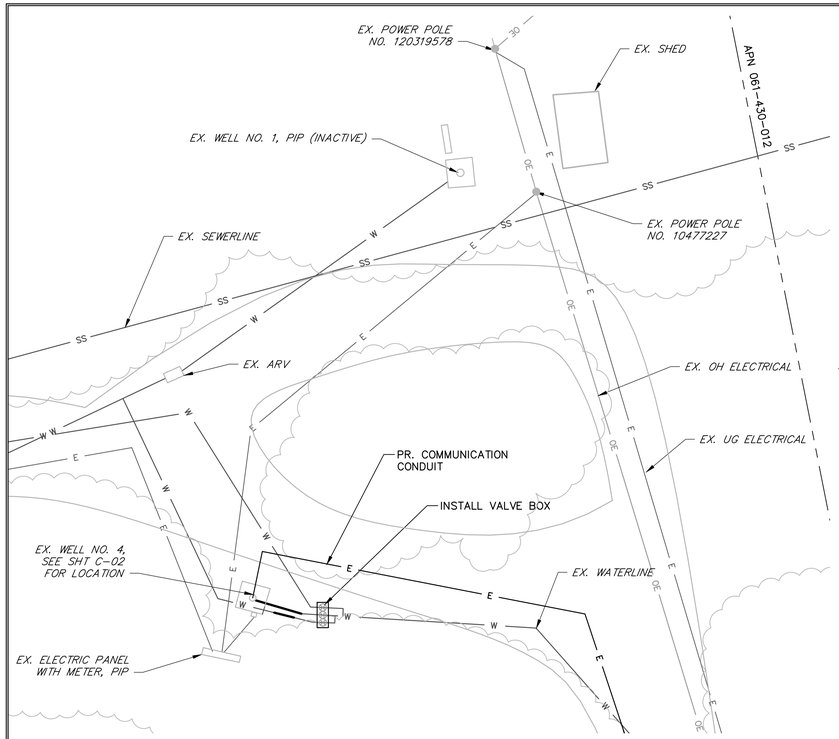
MD-24 - TEAFORD MEADOWS WATER SUPPLY IMPROVEMENTS

MECHANICAL - WELL NO. 2

DRAWING NUMBER M-01
14 OF 18 SHEETS
SCALE
VERTICAL: 1"= AS NOTED
HORIZONTAL: 1"= AS NOTED

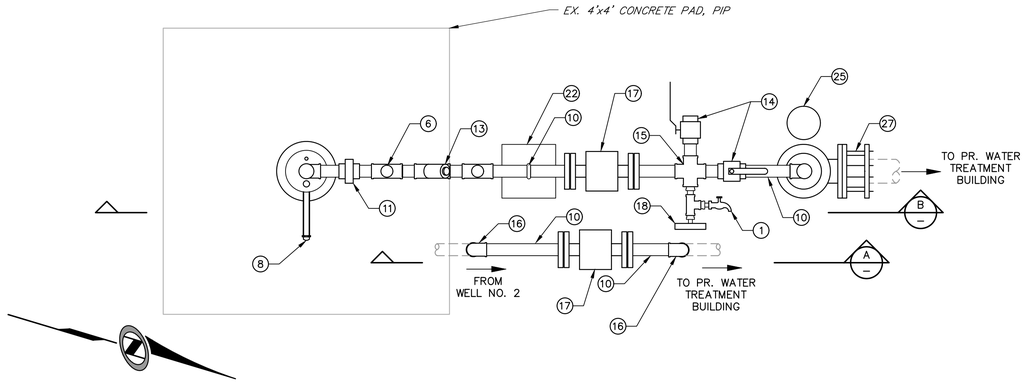
PREPARED FOR: MADERA COUNTY
DATE SUBMITTED: JUN 2023
JOB NUMBER 226118-0000217.01

ZACHARY STOCK



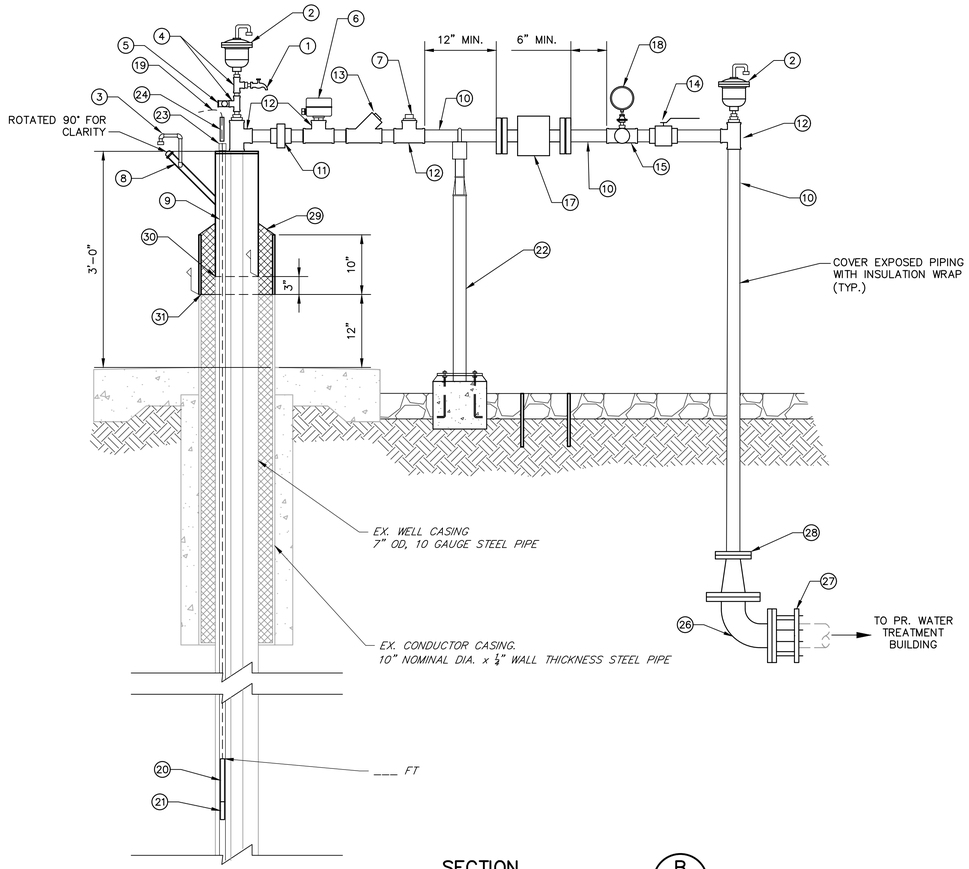
WELL NO. 1 AND 4 SITE PLAN

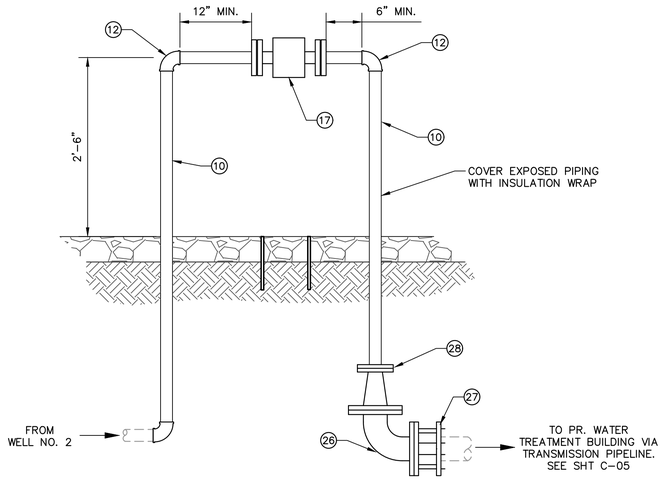
SCALE: 1"=10'



WELL NO. 4 – MECHANICAL PLAN

SCALE: 1"=1'-0"





SECTION A

SCALE: 1"=1'-0"

SECTION B

SCALE: 1"=1'-0"

CONSTRUCTION NOTES:

1. ½" 304 SST SAMPLE TAP W/ ½" 304 SST NIPPLE & ¾"x½" DIELECTRIC BUSHING
2. ½" AIR RELEASE VALVE W/ ½" 304 SST NIPPLE & ¾"x½" DIELECTRIC BUSHING
3. ½" HDG STEEL U-VENT W/ FINE MESH BUG SCREEN
4. ¾" HDG MALLEABLE IRON TEE
5. ¾" BRONZE PRESSURE RELIEF VALVE. ORIENT DISCHARGE TO SOUTH.
6. 1" FLOW SWITCH W/ 2"x1" DIELECTRIC BUSHING
7. 1" HDG MALLEABLE IRON PLUG FOR FUTURE INJECTION POINT
8. 1½" CARBON STEEL SOUNDING TUBE W/ THREADED END CAP, SEE NOTE 3
9. 1" SCH 40 PVC MEASURING TUBE FOR SUBMERSIBLE PRESSURE TRANSMITTER.
10. 2" HDG STEEL PIPE, TYP.
11. 2" HDG MALLEABLE IRON UNION
12. 2" HDG MALLEABLE IRON TEE
13. 2" BRONZE CHECK VALVE
14. 2" BRONZE BALL VALVE
15. 2" HDG MALLEABLE IRON CROSS
16. 2" HDG MALLEABLE IRON ELBOW
17. 2" MAGNETIC FLOW METER W/ SST GROUNDING RINGS, SEE NOTE 5
18. SST PRESSURE GAUGE
19. VENTED POLYURETHANE CABLE W/ KEVLAR STRAIN RELIEF CORD
20. SUBMERSIBLE PRESSURE TRANSMITTER
21. SINK WEIGHT
22. PIPE SUPPORT
23. STRAIN RELIEF CONNECTOR
24. CABLE CLAMP BY PRESSURE TRANSMITTER MANUFACTURER
25. TRACER WIRE ACCESS PORT. 4" SDR PVC PIPE W/ CAST IRON CAP
26. 4" DI ELBOW, FLxFL W/ THRUST BLOCK
27. 4" DI ADAPTER, FLxMJ
28. 2"x4" DI REDUCER, FLxFL
29. REMOVE AND REINSTALL GROUT SEAL
30. CUT AND REMOVE EX. WELL CASING AND INSTALL (WELD) 7" OD, 10 GAUGE STEEL WELL CASING
31. CUT AND REMOVE EX. CONDUCTOR CASING AND INSTALL (WELD) 10" NOMINAL DIAMETER x ¼" WALL THICKNESS STEEL CONDUCTOR CASING

GENERAL NOTES:

1. CONTRACTOR WILL NEED TO LIFT, REMOVE, STORE, AND RE-INSTALL EXISTING WELL PUMP/MOTOR AND DROP PIPING FOR AND INSTALLATION OF THE PROPOSED IMPROVEMENTS.
2. THE STEEL SOUNDING TUBE, WITH THREADED FACTORY TAP FOR VENT, SHALL BE SHOP WELDED TO THE PROPOSED STEEL CASING. THE SOUNDING TUBE AND EXISTING CASING SHALL BE FACTORY PRIMED AND FIELD EPOXY COATED.
3. CONTRACTOR SHALL DISINFECT EXISTING WELL, EXISTING WELL PIPING, AND PROPOSED WELL PIPING IN ACCORDANCE WITH AWWA STANDARD C654-13 PRIOR TO PLACING WELL BACK INTO SERVICE.
4. WELL DRILLED IN 1986 AND DEEPENED IN 2009. SEE SPECS FOR WELL COMPLETION REPORTS. CONTRACTOR TO VIDEO INSPECT AND OBTAIN SAMPLES FOR LAB TESTING BY COUNTY. SEE SPECS.
5. PROVIDE MINIMUM STRAIGHT PIPE RUN OF 2 DIAMETERS IN LENGTH DOWNSTREAM AND 5 DIAMETERS IN LENGTH UPSTREAM OF FLOW METER, OR PER FLOW METER MFR RECOMMENDATIONS, WHICHEVER IS GREATER.

PRELIMINARY

NOT FOR CONSTRUCTION

DATE: 6/28/23 TIME: 3:55:12 PM
SERVER: NONE LAYOUT: Layout1
PATH: P:\2261\226118-0000217-01_TEAFORDMEADOWS\CADD\CIVIL
DRAWING NAME: M-02.DWG
PAGE SETUP: ----
DESIGNER: ZS PROJ. MGR: JO

NO.	BY	DATE	REVISIONS:

REGISTERED PROFESSIONAL ENGINEER — JAMES F. OWENS — No. C-66067 Exp. 6/30/24 — CIVIL — STATE OF CALIFORNIA

NV5
15092 AVENUE OF SCIENCE, SUITE 200
SAN DIEGO, CA 92128
P: 858.385.0500 WWW.NV5.COM

MD-24 - TEAFORD MEADOWS WATER SUPPLY IMPROVEMENTS
MECHANICAL - WELL NO. 4

PREPARED FOR: MADERA COUNTY

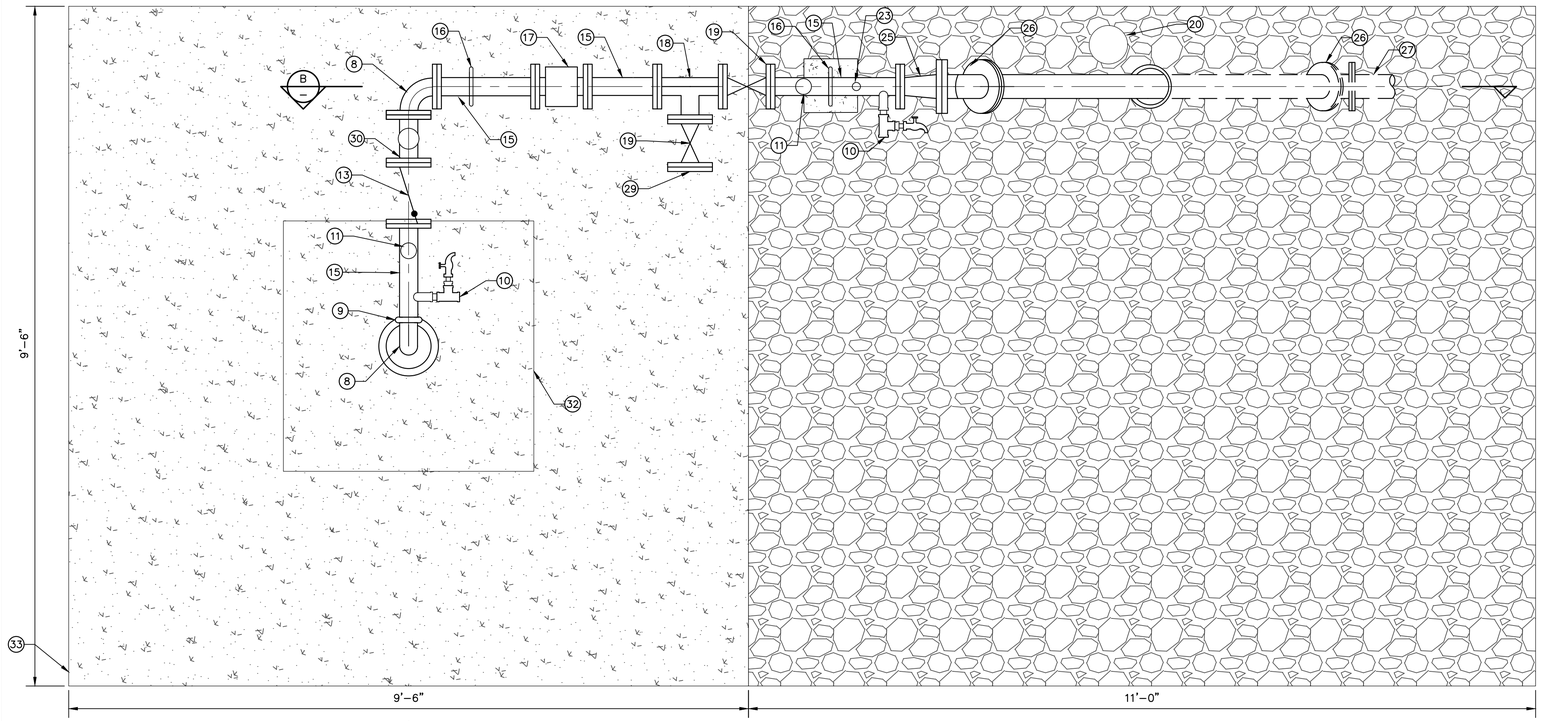
DATE SUBMITTED: JUN 2023

DRAWING NUMBER M-02
15 OF 18 SHEETS

SCALE
VERTICAL: 1"= AS NOTED
HORIZONTAL: 1"= AS NOTED

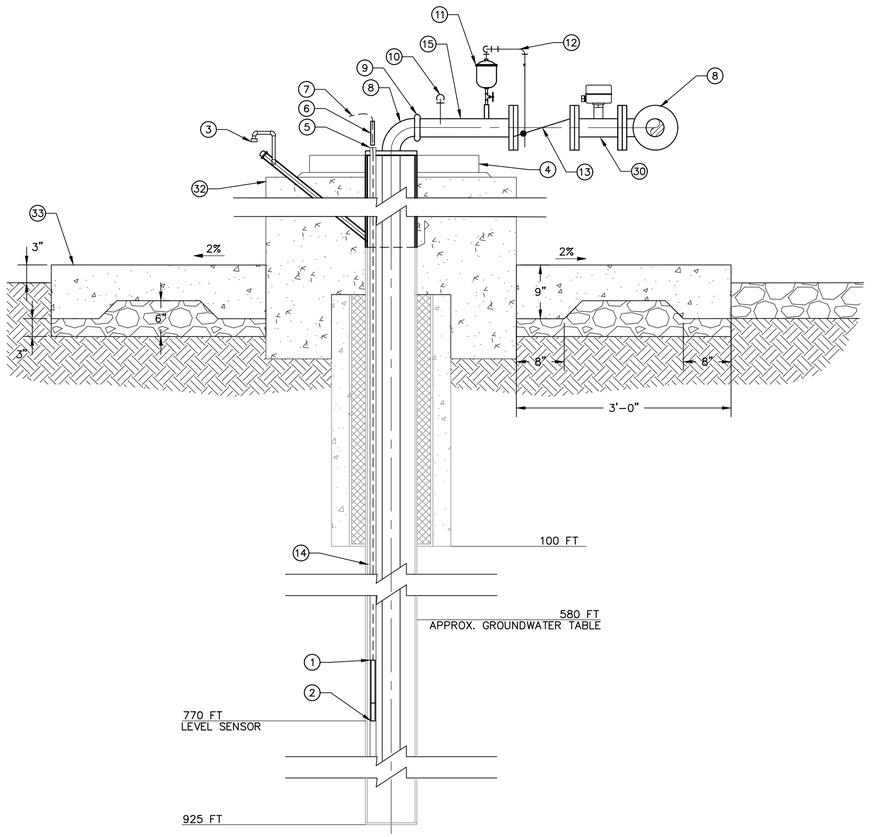
JOB NUMBER 226118-0000217.01

ZACHARY STOCK



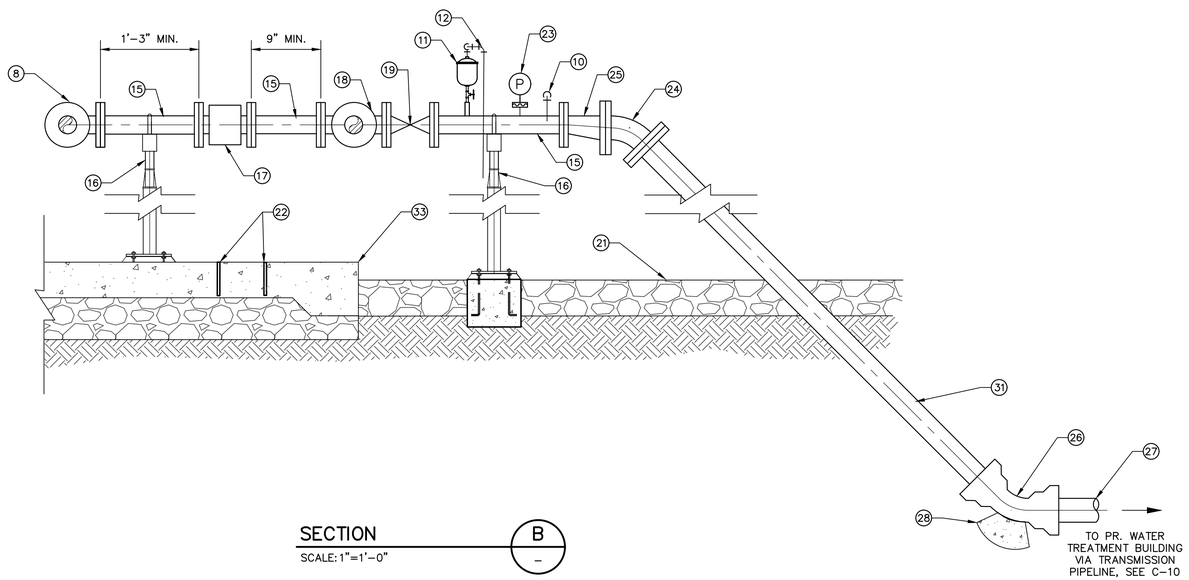
WELL NO. 5 – MECHANICAL PLAN

SCALE: 1"=1'-0"



SECTION A

SCALE: 1"=1'-0"



SECTION B

SCALE: 1"=1'-0"

CONSTRUCTION NOTES:

1. PLACE LIQUID LEVEL TRANSDUCER IN SOUNDING TUBE THROUGH WELL CAP
2. SINK WEIGHT
3. 3" SOUNDING TUBE WITH 3" SCREENED AND INVERTED AIR VENT. SEE NOTE 7.
4. STEEL WELL HEAD PLATE
5. STRAIN RELIEF CONNECTOR
6. CABLE CLAMP BY PRESSURE TRANSMITTER MANUFACTURER
7. VENTED POLYURETHANE CABLE W/ KEVLAR STRAIN RELIEF CORD
8. 3" DI ELBOW
9. VICTAULIC COUPLING
10. ½" SAMPLE TAP NON THREADED AND DOWN TURNED 30
11. 2" COMBINATION AIR RELEASE AND VACUUM VALVE WITH 2" ISOLATION BALL VALVE
12. GSP DRAIN PIPE
13. 3" CHECK VALVE
14. 1" SCH 40 PVC MEASURING TUBE FOR SUBMERSIBLE PRESSURE TRANSMITTER.
15. 3" DI PIPE
16. PIPE SUPPORT, SEE DET. 1/M-05
17. 3" MAGNETIC FLOW METER WITH GROUNDING RINGS, SEE NOTE 4
18. 3" X 3" DI TEE PUMP TO WASTE
19. 3" DI GATE VALVE, FL X FL
20. TRACER WIRE ACCESS PORT. 4" SDR PVC PIPE W/ CAST IRON CAP
21. 6" GRAVEL PAD
22. GROUNDING RODS
23. PRESSURE GAUGE WITH ISOLATION VALVE AND DIAPHRAGM SEAL
24. 4" DI 45° BEND, FL X FL WITH INSULATION
25. 3" X 4" DI REDUCER, FL X FL
26. 4" DI 45° BEND, MJ X MJ
27. 4" HDPE, PER DET. 1/C-11
28. THRUST BLOCK, SEE _____
29. 3" DI BLIND FLANGE
30. 3" FLOW SWITCH
31. 4" DI PIPE
32. CONCRETE WELLHEAD PEDESTAL PER DET. 1/C-04
33. CONCRETE SLAB, PER DET. 2/C-11

NOTES:

1. WELL DRILLED IN 2019. SEE SPECS FOR WELL COMPLETION REPORT NO. WCR2019-010778.
2. CONTRACTOR SHALL INSTALL THE PUMP ONLY AFTER WELL HEAD CONCRETE HAS REACHED DESIGN STRENGTH.
3. SOUNDING TUBES SHALL BEND OUTWARD TO CLEAR BASE OF DISCHARGE HEAD, THE PIPE CAPS SHALL BE A MINIMUM 4" ABOVE THE TOP OF THE CONCRETE WELL HEAD, AND SHALL NOT EXTEND BEYOND THE OUTSIDE EDGE OF THE WELL HEAD. THE SOUNDING TUBE IS TO BE INSTALLED WITH THE WELL PUMP.
4. DRAIN PIPE SHALL BE SCREENED AND INVERTED, 3 FT MINIMUM FROM FINISH GRADE.
5. PROVIDE MINIMUM STRAIGHT PIPE RUN OF 2 DIAMETERS IN LENGTH DOWNSTREAM AND 5 DIAMETERS IN LENGTH UPSTREAM OF FLOWMETER, OR PER FLOWMETER MFR RECOMMENDATIONS, WHICHEVER IS GREATER.
6. SEE SPECIFICATIONS FOR PUMP, MOTOR, AND COLUMN PIPING REQUIREMENTS
7. SUBMERSIBLE WELL PUMP'S ELECTRICAL CONDUIT TO BE INSTALLED THROUGH THE SOUNDING TUBE.

PRELIMINARY

NOT FOR CONSTRUCTION

DATE: 6/28/23 TIME: 3:55:34 PM
SERVER: NONE LAYOUT: Layout1
PATH: P:\2261\226118-0000217-01_TEAFORDMEADOWS\CADD\CIVIL
DRAWING NAME: M-03.DWG
PAGE SETUP: ----
DESIGNER: ZS PROJ. MGR: JO

NO.	BY	DATE	REVISIONS:

CAUTION: The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes to the plans must be in writing and must be approved by the preparer of these plans.

REGISTERED PROFESSIONAL ENGINEER · JAMES F. OWENS · No. C-66067 Exp. 6/30/24 · CIVIL · STATE OF CALIFORNIA

NV5
15092 AVENUE OF SCIENCE, SUITE 200
SAN DIEGO, CA 92128
P: 858.385.0500 WWW.NV5.COM

MD-24 - TEAFORD MEADOWS WATER SUPPLY IMPROVEMENTS
MECHANICAL - WELL NO. 5

PREPARED FOR: MADERA COUNTY

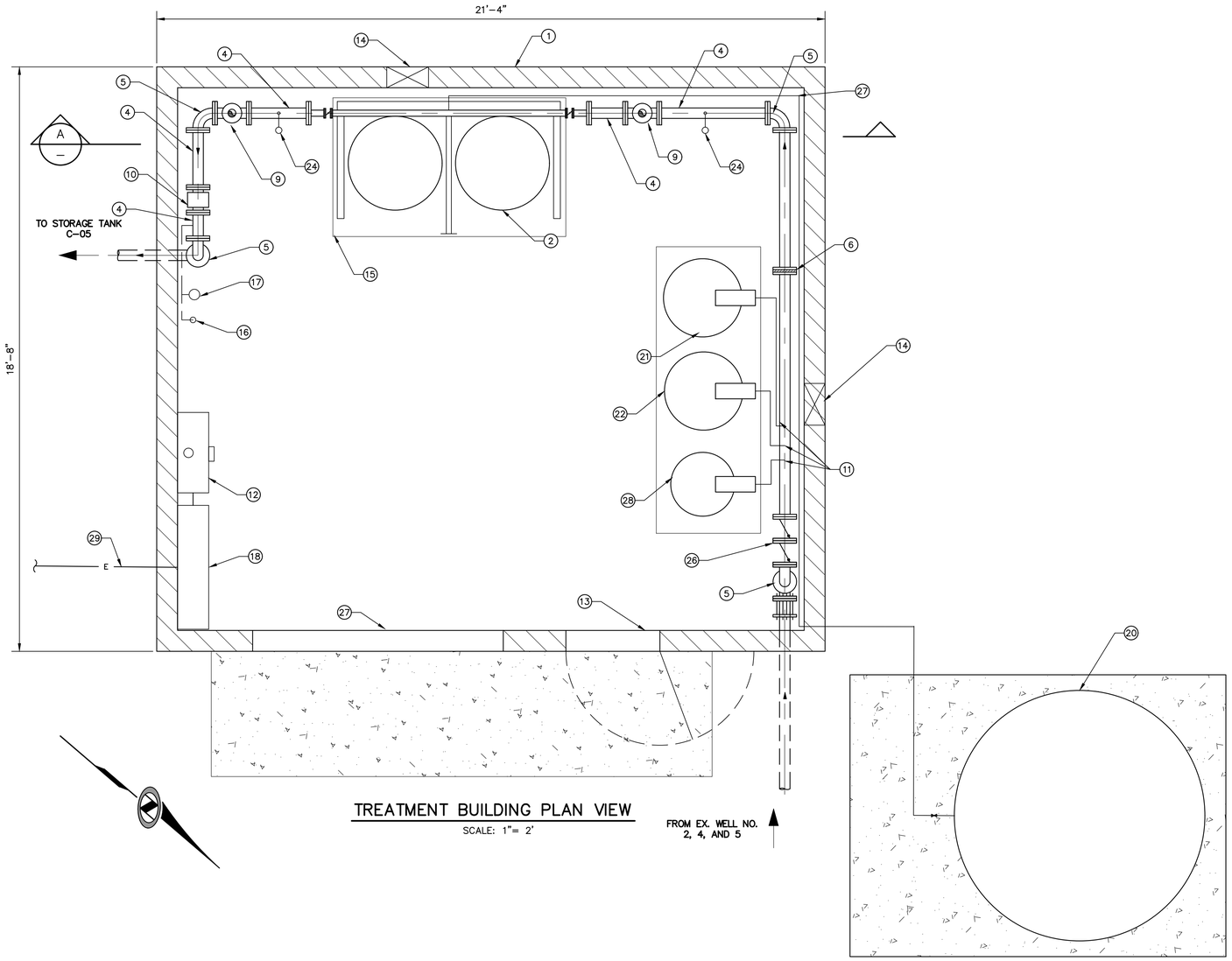
DATE SUBMITTED: JUN 2023

DRAWING NUMBER M-03
16 OF 18 SHEETS

SCALE
VERTICAL: 1"= AS NOTED
HORIZONTAL: 1"= AS NOTED

JOB NUMBER 226118-0000217.01

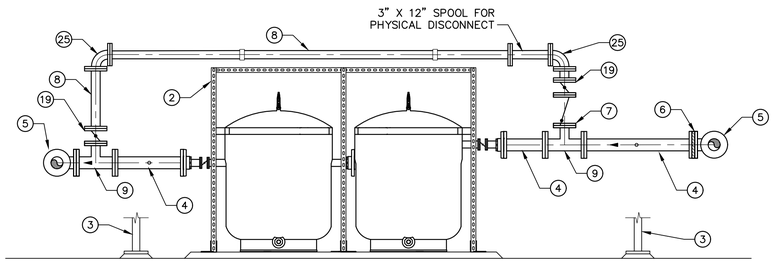
ZACHARY STOCK



TREATMENT BUILDING PLAN VIEW

SCALE: 1"= 2'

FROM EX. WELL NO. 2, 4, AND 5



A — SECTION A

SCALE: 1"= 2'

CONSTRUCTION NOTES:

1. PRE-ENGINEERED CONCRETE MASONRY BUILDING
2. TREATMENT UNITS
3. PIPE SUPPORT PER DETAIL 1, SHEET M-05
4. 4" PVC PIPE
5. 4" PVC 90° BEND
6. 4" STATIC MIXER
7. 3" CHECK VALVE, FLxFL
8. 3" PVC PIPE
9. 4"x4"x3" PVC TEE
10. 4" MAGNETIC FLOW METER
11. 1.5" SCH. 80 PVC, WALL MOUNTED, INSTALL PIPE SUPPORTS PER SPECIFICATION REQUIREMENTS
12. TREATMENT FACILITY CONTROL PANEL
13. 3'X7' ACCESS DOOR BY BLDG. MFR.
14. 8"X16" LOUVERS BY BLDG. MFR.
15. CONCRETE EQUIPMENT PAD
16. HOSE BIB, PER ____
17. EYE WASH STATION, PER ____
18. ELECTRICAL DISTRIBUTION PANEL. SEE SHEETS __
19. 3" BALL VALVE, FLXFL
20. SLUDGE WASTE TANK
21. FERRIC CHLORIDE STORAGE DRUM WITH SECONDARY CONTAINMENT
22. SODIUM HYDROCHLORIDE STORAGE DRUM
23. 6' X 7' ROLLUP DOOR
24. 1/2" SAMPLE TAP
25. 3" STEEL 90° BEND, FLxFL
26. 4" DOUBLE CHECK VALVE BFP
27. 1/2" CPVC
28. POLYMER TANK
29. UNDERGROUND ELECTRICAL SUPPLY CONDUIT, SEE SHT C-05

PRELIMINARY

NOT FOR CONSTRUCTION

DATE: 6/28/23 TIME: 3:55:46 PM
SERVER: NONE LAYOUT: Layout1
PATH: P:\2261\226118-0000217-01_TEAFORDMEADOWS\CADD\CIVIL
DRAWING NAME: M-04.DWG
PAGE SETUP: -----
DESIGNER: ZS PROJ. MGR: JO

NO.	BY	DATE	REVISIONS:

CAUTION: The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes to the plans must be in writing and must be approved by the preparer of these plans.

REGISTERED PROFESSIONAL ENGINEER — JAMES F. OWENS — No. C-66067 Exp. 6/30/24 — CIVIL — STATE OF CALIFORNIA

NV5

15092 AVENUE OF SCIENCE, SUITE 200
SAN DIEGO, CA 92128
P: 858.385.0500 WWW.NV5.COM

MD-24 - TEAFORD MEADOWS WATER SUPPLY IMPROVEMENTS
TREATMENT BUILDING LAYOUT

PREPARED FOR: MADERA COUNTY

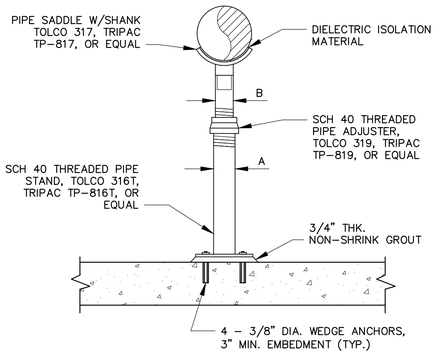
DATE SUBMITTED: JUN 2023

DRAWING NUMBER M-04
17 OF 18 SHEETS

SCALE
VERTICAL: 1"= AS NOTED
HORIZONTAL: 1"= AS NOTED

JOB NUMBER 226118-0000217.01

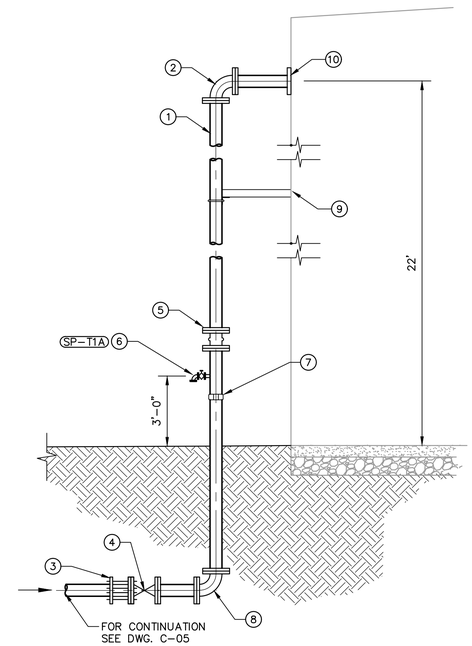
ZACHARY STOCK



NOTE: PIPE STANCHION SHALL BE HOT DIP GALV. STEEL

PIPE SIZE (INCHES)	A (INCHES)	B (INCHES)
1 1/2	1 1/2	3/4
2	1 1/2	3/4
3	2 1/2	1 1/2
4	3	2 1/2
6	3	2 1/2
8	3	2 1/2

ADJUSTABLE PIPE STANCHION — 1/–
NOT TO SCALE



2 — TANK INTLET CONNECTION DETAIL
NOT TO SCALE

CONSTRUCTION NOTES:

1. 4" DI SPOOL, FLG, LENGTH AS NEEDED
2. 4" DI 90° ELBOW, FLG X FLG
3. 4" RESTRAINED FLANGED COUPLING ADAPTER
4. 4" GATE VALVE, FLG X FLG PER MADERA COUNTY STD. W-06
5. 4" RUBBERIZED EXPANSION JOINT, FLG X FLG
6. SAMPLE TAP - 1" NIPPLE & BALL VALVE CORP STOP
7. 4" VIC COUPLING
8. 4" DI 90° ELBOW, FLG X FLG W/ THRUST BLOCK PER DET. 1/C-04
9. PIPE SUPPORTS AT HORIZONTAL BOLT RINGS PER TANK MFR, MIN. OF 3
10. 4" BOLTED TANK NOZZLE, FLG

PRELIMINARY
NOT FOR CONSTRUCTION

DATE: 6/28/23 TIME: 3:55:56 PM
SERVER: NONE LAYOUT: Layout1
PATH: P:\2261\226118-0000217-01_TEAFORDMEADOWS\CADD\CIVIL
DRAWING NAME: M-05.DWG
PAGE SETUP: ----
DESIGNER: ZS PROJ. MGR: JO

NO.	BY	DATE	REVISIONS:

REGISTERED PROFESSIONAL ENGINEER — JAMES F. OWENS — No. C-66067 Exp. 6/30/24 — CIVIL — STATE OF CALIFORNIA

NV5
15092 AVENUE OF SCIENCE, SUITE 200
SAN DIEGO, CA 92128
P: 858.385.0500 WWW.NV5.COM

MD-24 - TEAFORD MEADOWS WATER SUPPLY IMPROVEMENTS
MECHANICAL DETAILS - 01

PREPARED FOR: MADERA COUNTY
DATE SUBMITTED: JUN 2023

DRAWING NUMBER M-05
18 OF 18 SHEETS
SCALE
VERTICAL: 1"= NA
HORIZONTAL: 1"= NA
JOB NUMBER 226118-0000217.01

ZACHARY.STOCK

APPENDIX B

BIOLOGICAL EVALUATION

LIVE OAK
ASSOCIATES, INC.

BIOLOGICAL EVALUATION
MD-24 TEAFORD MEADOWS
WATER SYSTEM IMPROVEMENTS PROJECT
DFA CONTRACT NO. D16-02073
NORTH FORK, MADERA COUNTY, CA

By:

LIVE OAK ASSOCIATES, INC.

Austin Pearson, Vice President
Colleen Del Vecchio, Project Manager/Staff Ecologist and Arborist

For:

James Owens, PE
NV5, Inc.
15092 Avenue of Science, Suite 200
San Diego, CA 92128

March 14, 2023

Live Oak Associates, Inc. Project No. 2747-01
NV5, Inc. Project No. 226118-0000217.01

EXECUTIVE SUMMARY

The County of Madera proposes to address aging production wells, inadequate water supply source redundancy, and water quality issues that exceed federal and state standards for arsenic, iron, and manganese at their water facility MD-24 (Teaford Meadow Lakes). The project is primarily linear and is located approximately seven (7) miles northwest of the community of North Fork in eastern Madera County.

Live Oak Associates, Inc. conducted an investigation of the biotic resources of the project site and prepared a technical report in support of California Environmental Quality Act and National Environmental Policy Act review. This document provides a general description of the project site's regional setting and identifies in more detail the existing conditions of the project site itself, describing its characteristics, features, and resources. Specifically, this document identifies: (1) the biotic habitats of the site, including those that may be used by special status plant and animal species; (2) known and/or possible jurisdictional waters that may be present; and (3) other significant biotic resources that may be affected by site development.

The project site is located in the high foothills of the Sierra Nevada mountain range. Three biotic habitats and/or land uses were identified on the project site during the site survey: mixed oak and pine woodland, ruderal/developed, and mixed coniferous forest. Little Fine Gold Creek, a potentially jurisdictional water, passes through the project site at the location of an at-grade road crossing.

Proposed site development will result in impact to some biotic resources of the site. Potentially significant effects include: (1) disturbance of active raptor and other migratory bird nests; (2) potential construction related injury or mortality to roosting pallid bats (*Antrozous pallidus*) and other roosting bats; (3) potential construction related injury or mortality to western pond turtle; and (4) potential degradation of water quality in Little Fine Gold Creek from pollutants entering the drainage during site access and improvement activities.

The project can potentially avoid all significant effects to biotic resources of the site. This can be accomplished by implementing the following measures: (1) conduct pre-construction surveys for active raptor and migratory bird nests and avoid such nests during the nesting season; (2) avoid tree removal during bat maternal season and conduct pre-construction surveys for roosting bats, avoiding or evicting identified roosts, as appropriate; and (3) follow water quality protection measures (e.g. dry conditions only for access, no refueling or equipment maintenance near creek) while conducting proposed project improvements.

The project is not expected to significantly impact any special status plant species, sensitive natural communities or designated critical habitat, or wildlife movement corridors. There will be no impacts to jurisdictional waters through fill, removal, or other direct means. The project appears to be consistent with the Madera County General Plan.

TABLE OF CONTENTS

EXECUTIVE SUMMARY ii

1.0 INTRODUCTION 1

1.1 PROJECT BACKGROUND 1
1.2 PROJECT DESCRIPTION 4
1.3 REPORT OBJECTIVES 8
1.4 STUDY METHODOLOGY 8

2.0 EXISTING CONDITIONS 10

2.1 REGIONAL SETTING 10
2.2 PHYSICAL CONDITIONS OF PROJECT SITE 10
2.3 BIOTIC HABITATS 11
2.3.1 Mixed Oak and Pine Woodland 11
2.3.2 Developed/Ruderal 14
2.3.3 Mixed Conifer Forest 15
2.4 SPECIAL-STATUS PLANTS AND ANIMALS 17
2.5 JURISDICTIONAL WATERS 26
2.6 DESIGNATED CRITICAL HABITAT 27
2.7 SENSITIVE NATURAL COMMUNITIES 27
2.8 WILDLIFE MOVEMENT CORRIDORS 27

3.0 RELEVANT GOALS, POLICIES, AND LAWS 29

3.1 GENERAL PLAN POLICIES OF MADERA COUNTY 29
3.2 CALIFORNIA ENVIRONMENTAL QUALITY ACT 29
3.3 NATIONAL ENVIRONMENTAL POLICY ACT 30
3.4 THREATENED AND ENDANGERED SPECIES 32
3.5 HABITAT CONSERVATION PLANS AND NATURAL COMMUNITY CONSERVATION PLANS 32
3.6 DESIGNATED CRITICAL HABITAT 33
3.7 MIGRATORY BIRDS 33
3.8 BIRDS OF PREY 34
3.9 WETLANDS AND OTHER JURISDICTIONAL WATERS 34
3.10 MARINE MAMMAL PROTECTION ACT 37
3.11 MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT 37

4.0 IMPACTS AND MITIGATIONS 38

4.1 POTENTIALLY SIGNIFICANT PROJECT IMPACTS/MITIGATION 38
4.1.1 Disturbance to Active Raptor and Other Migratory Bird Nests from Construction Activities During Project Implementation 38
4.1.2 Potential Impacts to Pallid Bats (*Antrozous pallidus*) and Other Roosting Bats 39
4.1.3 Potential Impacts to Western Pond Turtle (*Emys marmorata*) 40
4.1.4 Potential Degradation of Water Quality in Creeks and Downstream Waters 41
4.2 LESS THAN SIGNIFICANT PROJECT IMPACTS 42
4.2.1 Project Impact to Monarch Butterfly 42

4.2.2 Project-Related Mortality of Special Status Animal Species that May Occur on the Project Site as Occasional or Regular Foragers but Breed Elsewhere 42
4.2.3 Project Impacts to Special Status Plant Species Absent from the Site 43
4.2.4 Project Impacts to Special Status Animal Species Absent from or Unlikely to Occur on Site 43
4.2.5 Project Impact to Sensitive Natural Communities and Designated Critical Habitat 44
4.2.6 Project Impact to Wildlife Movement Corridors 44
4.2.7 Project Impacts to Waters of the U.S. and State 45
4.0 LITERATURE CITED 46
APPENDIX A: SITE PLAN 48
APPENDIX B: VASCULAR PLANTS OF THE PROJECT SITE 49
APPENDIX C: TERRESTRIAL VERTEBRATES OF THE PROJECT SITE 53
APPENDIX D: SELECTED PHOTOGRAPHS OF THE PROJECT SITE 59
APPENDIX E: U.S. FISH AND WILDLIFE SERVICE OFFICIAL SPECIES LIST 67

1.0 INTRODUCTION

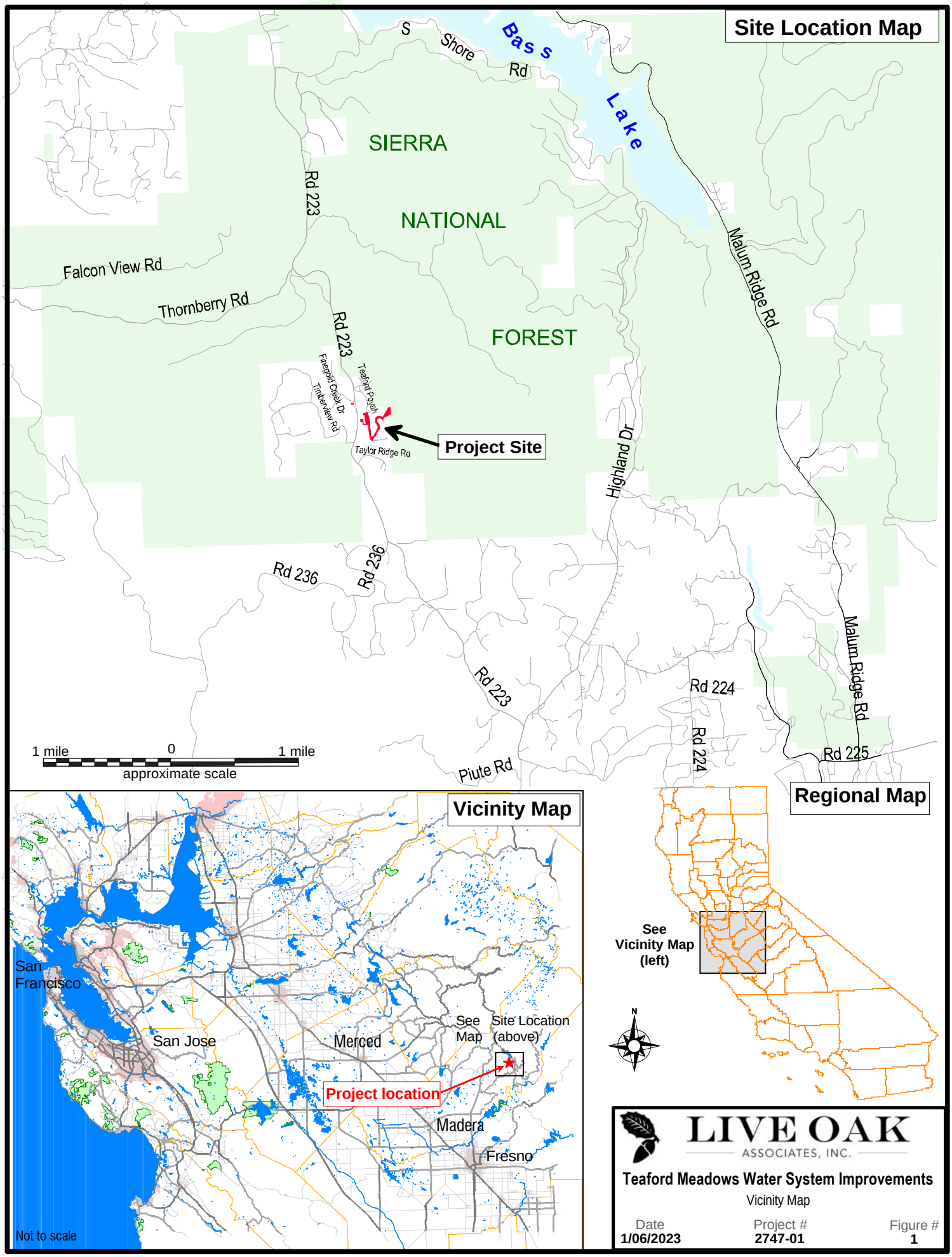
The following technical report, prepared by Live Oak Associates, Inc. (LOA) in support of California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) review, describes the biotic resources of approximately 6 acres of land that may be impacted by proposed improvements to a water distribution system, and evaluates potential impacts to those resources that could result from the project.

The project's area of potential effect (APE; also referred to as "project site") is primarily linear and is located northwest of the community of North Fork in eastern Madera County (Figure 1). The site may be found entirely on the *Bass Lake* U.S. Geological Survey (USGS) 7.5-minute quadrangle in Section 4, Township 8 South, Range 22 East and Section 33, Township 7 South, Range 22 East (Figure 2).

1.1 PROJECT BACKGROUND

This project is an effort by the County of Madera ("County") to address aging production wells, inadequate water supply source redundancy, and water quality issues that exceed federal and state standards for arsenic, iron, and manganese at their water facility MD-24 (Teaford Meadow Lakes). MD-24 provides potable water service to a portion of unincorporated Madera County known as Teaford Meadows. The water system, PWS No. 2000552, serves approximately 66 residences. There are no commercial, industrial, or school connections to the system. There are six vacant lots within the MD-24 service area that may develop single family residences in the future.

MD-24 owns and operates three permitted wells (Well Nos. 2, 3, and 4). A fourth well (Well No. 1) is classified as Inactive. Three wells (Well Nos. 1, 2, and 4) are located on a Madera County-owned parcel (APN 061-012-012) located between Teaford Poyah and Road 223, approximately 800 feet south of Woaka Poyah Road. Well No. 3 is located on a County-owned parcel (APN 061-500-032), along Fine Gold Creek Drive, west of Teaford Saddle Road (Road 223). Well No. 3 is located approximately 600 feet northwest of the other wells. See Appendix A for the existing facility and well site locations.

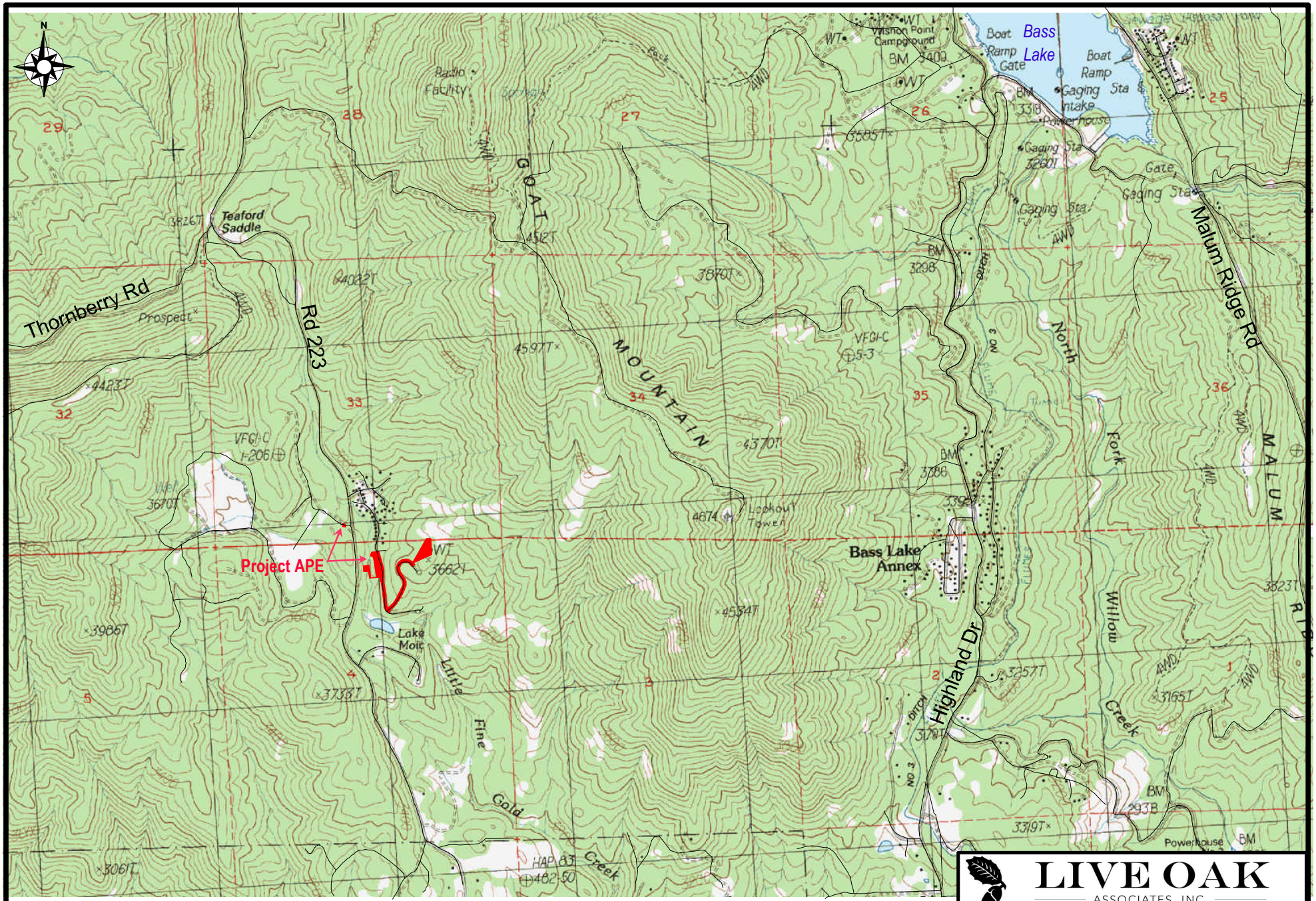


LIVE OAK ASSOCIATES, INC.

Teaford Meadows Water System Improvements

Vicinity Map

Date	Project #	Figure #
1/06/2023	2747-01	1



1 mile 0 1/2 mile 1 mile

approximate scale

From USGS
Bass Lake 7.5' Quadrangle 1990

LIVE OAK ASSOCIATES, INC.

Teaford Meadows Water System Improvements

U.S.G.S. Quadrangle

Date	Project #	Figure #
1/06/2023	**2747-01**	**2**

1.2 PROJECT DESCRIPTION

The proposed project consists of the components listed and described below:

1. Equipping Test Well

2. Construction of New Water Treatment Facility

3. Construction of a Transmission Pipeline connecting Well Nos. 2 and 4 to the New Water Treatment Facility

    a. Construction of a distribution pipeline connecting the existing storage tank to the existing distribution system. Proposed distribution pipeline alignment will parallel proposed transmission pipeline alignment.

4. Wellhead Improvements at Well Nos. 2 and 4.

5. Destruction of Well Nos. 3

Project Component 1 - Equipping Test Well

A test well was drilled as part of the project's planning phase and was completed in July 2019. The Well Completion Report number is WCR2019-010778. The well was drilled to a total depth of 925 feet below ground surface (bgs) and includes a temporary concrete well pad. A sanitary seal was installed to 100 feet bgs. Below the sanitary seal, an 8-inch open hole well was developed. Groundwater was first encountered at approximately 580 feet bgs. The well has an estimated yield of 200 gpm.

MD-24 proposes to install a pump and motor at the test well. The well will discharge to the proposed transmission pipeline (Project Component 3), which will connect to the proposed water treatment facility (Project Component 2), to be located northeast of the wellhead.

A new generator and automatic transfer switch will be installed adjacent to the well. The generator will have capacity to serve the well to be equipped and the new treatment facility. Access to the well, propane, generator, storage tank, treatment facility will be via an existing dirt road and southern portion of the parcel. This dirt road will also be used by the property owner to the south, primarily to allow access to refill that parcel's propane tank.

Project Component 2 – Construction of New Water Treatment Facility

A new water treatment facility will be installed within a County-owned parcel located on Moic Drive. The water treatment facility will remove arsenic, iron and manganese from the water produced at Well Nos 2, 4, and the well to be equipped. Water from these wells will flow into the treatment facility through the proposed transmission pipeline (Project Component 3). Following the treatment process, treated water will continue into the existing storage tank. A new inlet pipe to the tank will be constructed. The building will have a maximum height of approximately 16 feet above grade. During construction, an estimated over excavation and re-compaction depth of 5 feet is anticipated.

The proposed treatment facility will utilize a coagulant (ferric chloride, aluminum sulfate, or other chemical) to chemically bond with these contaminants. The contaminants, after bonding with the coagulant, will be removed by settling and filtration. The coagulant will be regularly delivered to the site and will be stored on site. The stored coagulant will be within secondary containment vessels, within the proposed building. Deliveries of coagulant to the site is anticipated on an approximately weekly basis. The frequency of delivery may increase when the system's water demands are higher (typically in summer months) and may be reduced when the system's water demands are lower. During normal operation, County operations staff are anticipated to visit the site daily. During repairs or extensive investigations or inspections, additional vehicles and staff may be on-site and utilize street parking.

The treatment process will generate waste. The waste will contain the removed iron, manganese, and arsenic, along with the coagulant chemically bound to these contaminants. Waste will be temporarily stored on-site. During normal operation, waste will be hauled from the site approximately weekly. The hauling frequency may increase when the system's water demands are higher (typically in summer months) and may be reduced when the system's water demands are lower.

The ground level vegetation around the storage tank, well to be equipped, and proposed treatment facility will be modified after construction is complete to reduce the risk of fire damage. Ground

level vegetation will be removed within 30 feet of these facilities, or to the property line, whichever is less.

Project Component 3 – Construction of a Transmission Pipeline

A transmission pipeline is proposed to connect Well Nos. 2, 4, and the proposed well to the treatment facility. This pipeline would convey raw water directly from the wells to the treatment facility without a customer water service connection. All of the water produced from these wells would be conveyed through the proposed pipeline.

The transmission pipeline would originate at the County-owned parcel that contains Well Nos. 2 and 4. There are existing waterlines that connect Well Nos. 2 and 4, therefore the pipeline trenching would begin on Teaford Poyah and head east, where it will travel south until reaching Moic Drive. The pipeline will proceed along Moic Drive until reaching the County-owned parcel. Water produced from the well to be equipped (Project Component 1) will connect to this pipeline, and will continue to the proposed treatment facility building (Project Component 2). The pipeline will have a diameter of 4-inches. The trench will extend to approximately 5 feet below the ground surface, except where utility conflicts or other conditions require a deeper installation in localized areas. The trench width will be 3 feet in diameter. A communication conduit will be installed along the pipeline alignment to improve communication between Well Nos, 2, 4, the well to be equipped, the existing storage tank, and the treatment facility. The impacted pavement will be restored per Madera County Department of Public Works Standards. Isolation, blow off and air release valves will be installed along the pipeline. Well Nos. 3 is proposed to be destroyed (Project Component 5) and will not connect to this pipeline.

Parallel to the proposed transmission pipeline, a new distribution pipeline will be constructed between the existing storage tank and the existing distribution system. Parallel to the pipeline corridor, the electrical utility facilities (Pacific Gas and Electric, or PG&E) will be upgraded to three phase power in the eastern portion of the project site. Electrical utilities in this area are currently overhead. Electric utility improvements are presumed to be constructed by PG&E forces or by forces contracted by PG&E. within the County-owned parcel on Moic Drive and

past the proposed electric meter, underground electrical conduits are proposed. See Appendix A, Figures 3 and 4.

Project Component 4 - Wellhead Improvements at Well Nos. 2 and 4

Wellhead improvements are proposed at Well Nos 2 and 4. Some of these improvements are based on a 2022 sanitary survey inspection by Madera County Community and Economic Development Department, Environmental Health Division.

At Well Nos. 2 and 4, the air vent will be revised to have a downturned, screened vent with 24 gauge metal mesh wire. The wellhead will be raised to have a clearance of 24 inches or more above existing grade. A groundwater level sensor will be installed within the well to continuously measure the groundwater level. The mechanical piping, flow meter, and check valve will be replaced. The control system at the wellhead will be revised to incorporate operations limits and conditions from the treatment facility. Debris (leaves, dirt) around the site will be removed on a continuous basis. The cracks in the concrete pad will be sealed. Tree logs will be removed from the well area. At Well No. 2 the pump to waste arrangement will be reconfigured.

Additionally, there is one safety improvement for these well sites. This includes a locking gate at the entrance of the dirt access road off of Teaford Poyah.

Project Component 5 - Destruction of Well Nos. 3

Well Nos. 3 exhibits physical deterioration of the wells' visible steel. At Well No. 3, inconsistent and widely varying iron concentrations in the water produced over the past five years indicate the presence of iron consuming bacteria, which is likely a primary contributor to the physical deterioration of the well.

Well Nos. 3 will be destroyed per Department of Water Resources and Madera County requirements. All surface features of Well No. 3 will be removed.

1.3 REPORT OBJECTIVES

Water infrastructure improvement projects such as that proposed by the project partners may damage or modify biotic habitats used by sensitive plant and wildlife species. In such cases, site development may be regulated by state or federal agencies, subject to review under CEQA and/or NEPA, and/or subject to local policies and ordinances. This report addresses issues related to: 1) sensitive biotic resources occurring within the project site; 2) the federal, state, and local laws regulating such resources; and 3) mitigation measures that may be required to reduce the magnitude of anticipated impacts and/or comply with permit requirements of state and federal resource agencies. As such, the objectives of this report are to:

- Summarize all site-specific information related to existing biological resources.
- Make reasonable inferences about the biological resources that could occur onsite based on habitat suitability and the proximity of the site to a species' known range.
- Summarize all state and federal natural resource protection laws that may be relevant to possible future site development.
- Identify and discuss project impacts to biological resources that may occur within the project site within the context of CEQA and NEPA guidelines and relevant state and federal laws.
- Identify avoidance and mitigation measures that would reduce the magnitude of project impacts in a manner consistent with the requirements of CEQA and NEPA and that are generally consistent with recommendations of the resource agencies regulating affected biological resources.

1.4 STUDY METHODOLOGY

Prior to any field investigations, a background review of the project site and region was conducted. Sources of information used included: (1) the *California Natural Diversity Database* (CDFW 2022), (2) the *Online Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2022), (3) the *Information for Planning and Consulting* (USFWS 2022), and (4) manuals, reports, and references related to plants and animals of the Sierra Nevada mountains region.

A reconnaissance-level field survey of the project site was conducted on October 28, 2022 by LOA biologist Colleen Del Vecchio. The survey consisted of walking through the project site

while identifying its principal land uses and the constituent plants and animals of each land use. The field survey conducted for this study was sufficient to assess the significance of possible biological impacts associated with the development plans for the project site.

LOA's field investigation did not include an aquatic resources delineation or focused surveys for special status species. The field survey was sufficient to generally describe those features of the project site that could be subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE), California Department of Fish and Wildlife (CDFW), and/or the Regional Water Quality Control Board (RWQCB), and to assess the significance of possible biological impacts associated with development of the project site.

Following the field survey, LOA conducted an analysis of potential project impacts based on the known and potential biotic resources of the project site discussed in Section 2.0.

2.0 EXISTING CONDITIONS

2.1 REGIONAL SETTING

The project site is located within the high foothills of the western Sierra Nevada mountains. Like most of California, the western Sierra Nevada foothills experience a Mediterranean climate. Warm dry summers are followed by cool moist winters. Summer temperatures commonly exceeds 90 degrees Fahrenheit, and the relative humidity is generally very low. Winter temperatures rarely exceed 60 degrees Fahrenheit, with daytime highs often between 50 and 60 degrees Fahrenheit. Annual precipitation in the vicinity of the project is about 32 inches, almost 90% of which falls between the months of October and April. Nearly all precipitation falls in the form of rain, with some snow.

The project site is in a sparse rural residential neighborhood approximately 3 miles southwest of the town center of North Fork. One creek, Little Fine Gold Creek, passes through the APE at the location of an at-grade road crossing. Lake Moic (a perennial pond) is located approximately 130 feet from the project site at its closest point.

2.2 PHYSICAL CONDITIONS OF PROJECT SITE

The overall topography of the site consists of a gentle sloping hill that ranges in elevation from approximately 3,500 feet at its western edge to 3,670 feet National Geodetic Vertical Datum (NGVD) at its eastern edge. Along the linear portions of the project, the APE is generally gently sloping. Within the proposed facility improvement areas there is sloping terrain adjacent to the existing infrastructure, but the proposed development sites are on flat terrain.

One soil-mapping unit was identified within the site: Holland family, 5 to 35 percent slopes (NRCS 2022). This soil type is classified as well drained with a high runoff class, and no hydric soil rating, meaning the soils do not have the propensity to pond water in depressions and form vernal pools. The parent material is residuum weathered from granodiorite.

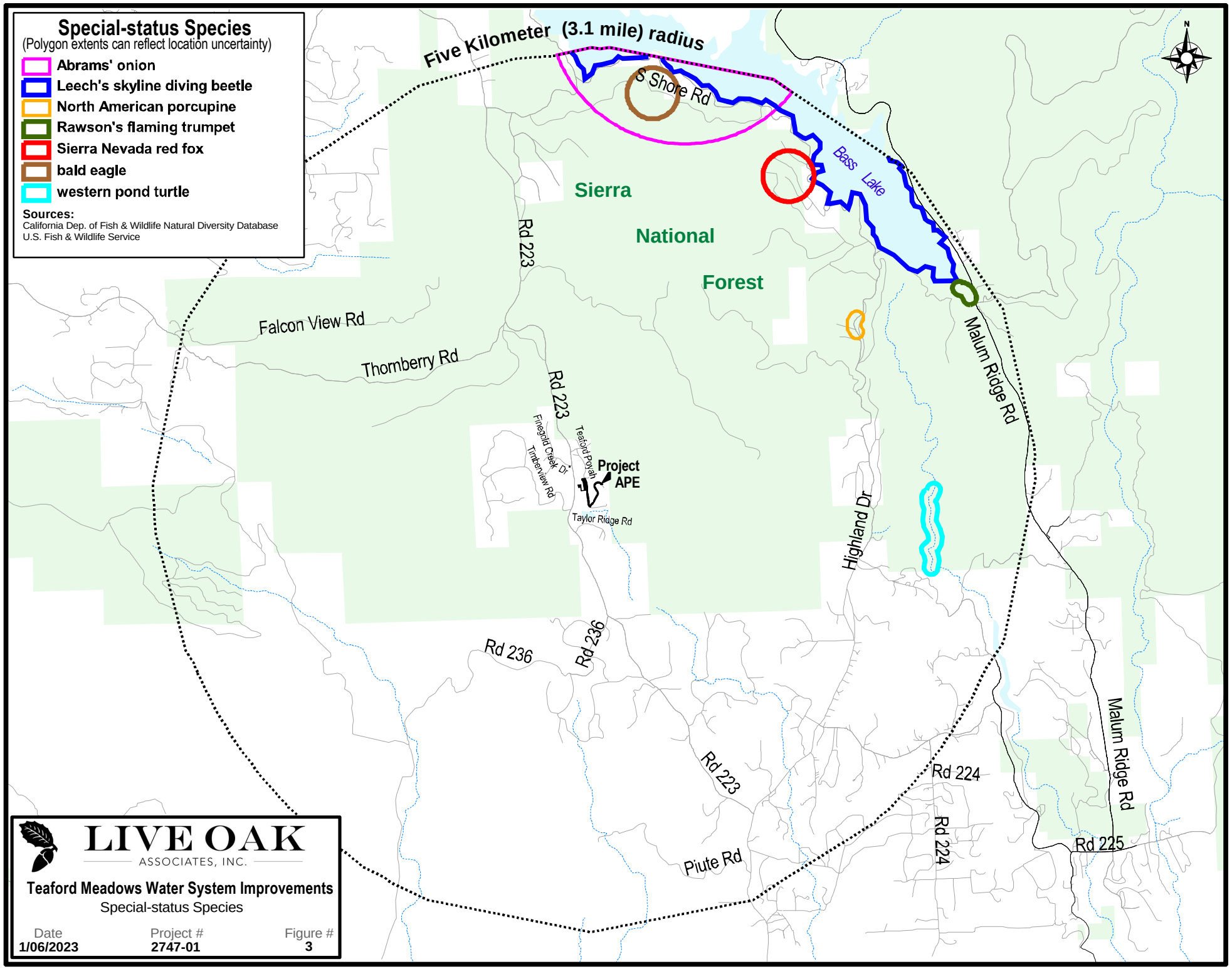
2.3 BIOTIC HABITATS

Three biotic habitats and/or land uses were identified on the project site during the site surveys: mixed oak and pine woodland, ruderal/developed, and mixed coniferous forest (Figure 3). A comprehensive list of the vascular plants observed on the project site is provided in Appendix B. A list of the terrestrial vertebrates observed and those that likely use habitats on and adjacent to the project site is provided in Appendix C. Photos taken during the site visit are presented in Appendix D.

2.3.1 Mixed Oak and Pine Woodland

The eastern portion of the project APE contains mostly mixed oak and pine woodland. Much of this habitat appears to experience disturbance from landowner activities, mainly fuel management for wildfire prevention, since this area is within a residential neighborhood. Also, there is existing water infrastructure (storage tank and test well) within the eastern parcel where the largest area of mixed oak and pine woodland is found. Within this parcel, one small area of the woodland appeared to be less disturbed due to its distance from existing water infrastructure and residences. This area contained a dense oak canopy with granite outcroppings underneath. This area is outside of the proposed project activities and ground disturbance locations. The soil throughout the mixed oak and pine habitat exhibited a high organic content with no granitic soils. The granite outcrops observed were not deteriorating.

Mixed oak and pine woodland is common throughout the lower elevations of the western Sierra Nevada Mountains. As the name implies, the dominant trees are various species of oak, primarily gold cup oak (*Quercus chrysolepis*), interior live oak (*Q. wislizeni*), and California black oak (*Q. kelloggii*), as well as ponderosa pine (*Pinus ponderosa)*, all of which were observed on the project site. Buckeye (*Aesculus californica*) is another common tree species observed in the site's mixed oak and pine woodland habitat. Common shrubs observed in the site's mixed oak and pine woodland included buck brush (*Ceanothus cuneatus*), Mariposa manzanita (*Arctostaphylos viscida* ssp. *mariposa*), and poison oak (*Toxicodendron diversilobum*). A number of grass and forb species were found in the understory, with dominant species including blue wildrye (*Elymus glaucus*), alkali sacaton (*Sporobolus airoides*), western needlegrass (*Stipa occidentalis*), larkspur


Special-status Species
(Polygon extents can reflect location uncertainty)
Abrams' onion
Leech's skyline diving beetle
North American porcupine
Rawson's flaming trumpet
Sierra Nevada red fox
bald eagle
western pond turtle
Sources:
California Dep. of Fish & Wildlife Natural Diversity Database
U.S. Fish & Wildlife Service
Five Kilometer (3.1 mile) radius
S Shore Rd
Bass Lake
Sierra
National
Forest
Rd 223
Falcon View Rd
Thornberry Rd
Rd 223
Finegold Creek Dr
Timberview Rd
Teaford Poyalin
Project
APE
Taylor Ridge Rd
Malum Ridge Rd
Highland Dr
Rd 236
Rd 236
Rd 223
Rd 224
Rd 224
Malum Ridge Rd
Rd 225
Piute Rd
N
LIVE OAK
ASSOCIATES, INC.
Teaford Meadows Water System Improvements
Special-status Species
Date
1/06/2023
Project #
2747-01
Figure #
3

(*Delphinium* spp.), rigid bird's beak (*Cordylanthus rigidus* ssp. *rigidus*), and Sierra mountain misery (*Chamaebatia foliolosa*), among others.

Typically, mixed oak and pine woodland habitat supports a great diversity of both resident and migratory wildlife. At this project site, the mixed oak and pine habitat is adjacent to developed/ruderal lands and is within a rural residential neighborhood, and due to regular disturbance and close proximity to housing, the habitat has a lower value and reduced expected wildlife diversity. Amphibian use of the woodland is likely limited to Sierran treefrogs (*Pseudacris sierra*), California toads (*Bufo boreas halophilus*), and gregarious slender salamander (*Batrachoseps gregarious*), which may find moist habitat under burrows, root masses, rocks, gardens, or irrigated landscaping within the woodland for use outside of the breeding season. The gregarious slender salamander may use the woodland habitat for breeding. The oak-pine woodland also provides habitat for some reptiles such as the San Joaquin fence lizard (*Sceloporus occidentalis biseriatus*), forest alligator lizard (*Elgaria multicarinata multicarinata*), Pacific gopher snake (*Pituophis catenifer catenifer*), western yellow bellied racer (*Coluber constrictor mormon*), and northern Pacific rattlesnake (*Crotalus oreganus oreganus*).

This habitat also provides foraging and nesting opportunity for various bird species. Resident birds observed or heard in this habitat include oak titmice (*Baeolophus inornatus*), acorn woodpeckers (*Melanerpes formicivorus*), turkey vulture (*Cathartes aura*), and California scrub jays (*Aphelocoma californica*). Other expected residents include California towhees (*Melozone crissalis*), spotted towhees (*Pipilo maculatus*), California quails (*Callipepla californica*), American robins (*Turdus migratorius*), and wild turkeys (*Meleagris gallopavo*). Winter migrants that would use this habitat include white-crowned sparrows (*Zonotrichia leucophrys*), yellow-rumped warblers (*Setophaga coronata*), and ruby-crowned kinglets (*Regulus calendula*). Summer migrants may include house wrens (*Troglodytes aedon*), phainopeplas (*Phainopepla nitens*), and ash-throated flycatchers (*Myiarchus cinerascens*). Raptors such as red-shouldered hawks (*Accipiter cooperi*), red-tailed hawks (*Buteo jamaicensis*), and western screech owls (*Strix occidentalis*) may occur here as well.

A few mammals or their sign were observed in this habitat, which included Botta's pocket gopher (*Thomomys bottae*), California ground squirrel (*Otospermophilus beecheyi*), mule deer

(*Odocoileus hemionus*), coyote (*Canis latrans*), and the dusky-footed wood rat (*Neotoma fuscipes*). Other mammals likely to occupy or occasionally occur in the site's mixed oak and pine woodland include the California pocket mouse (*Peromyscus californicus*), deer mouse (*Peromyscus maniculatus*), western gray squirrel (*Sciurus griseus*), Merriam's chipmunk (*Neotamias merriami*), and black bear (*Ursus americana*). A bobcat (*Lynx rufus*) was heard caterwauling at the time of the survey, approximately 100 feet north of the eastern project boundary within the United States Forest Service (USFS) Sierra National Forest lands.

2.3.2 Developed/Ruderal

The project site consists largely of developed/ruderal lands, or lands regularly disturbed by human activities and/or associated with the built environment. Developed areas of the APE include existing utility infrastructure (water and electric), paved and dirt roads, road shoulders, existing graded land, and lands disturbed by residential activities that have converted to ruderal vegetation.

At the time of LOA's survey, most of the developed/ruderal locations were dominated by grasses and herbs, reflecting regular maintenance practices in these areas. The vegetation generally consisted of common weedy grasses such as ripgut brome (*Bromus diandru*s), wild oats (*Avena fatua*), and hairy crabgrass (*Digitaria sanguinalis*). Herbaceous plants observed included a mix of native and non-native species tolerant of disturbed soils such as field hedge parsley (*Torilis arvensis*), bedstraw (*Galium* sp.), lupine (*Lupinus* spp.), short-podded mustard (*Hirschfeldia incana*), and American nightshade (*Solanum americanum*), among others.

The wildlife habitat value of developed/ruderal lands are of higher quality in certain areas of the project site due to the close proximity to natural habitat and biological resources, such as Little Fine Gold Creek. Amphibians such as the Sierra treefrog and California toad may breed in Little Fine Gold Creek, Lake Moic, or other nearby aquatic features in the project vicinity, and subsequently disperse through the site's developed/ruderal lands. Common reptiles such as the San Joaquin fence lizard, western side-blotched lizard (*Uta stansburiana elegans*), and Pacific gopher snake could potentially use ruderal habitats within the APE.

Avian species expected to forage on or pass over ruderal/disturbed areas of the site include the northern mockingbird (*Mimus polyglottos*), Eurasian collared dove (*Streptopelia decaocto*),

California scrub jay, Common raven (*Corvus corax*), European starling (*Sturnus vulgaris*), and house finch (*Carpodacus mexicanus*).

Evidence of burrowing mammal activity on the ruderal/developed lands of the project site was minimal with some fresh soil mounds and small burrows (less than 2 inches wide) in the area near the existing storage tanks and Well No. 3, likely from a Botta's pocket gopher. Other small mammals potentially occurring on ruderal/developed lands of the project site include the California ground squirrel, Audubon's cottontail (*Sylvilagus audubonii*), and deer mouse. Mammalian predators with the potential to occasionally occur on ruderal/developed lands of the site include disturbance-tolerant species such as the raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), and coyote. Also, a variety of native bat species have the potential to forage over ruderal/developed areas of the site, as well as other areas of the APE.

2.3.3 Mixed Conifer Forest

The western portion of the project APE contains areas of mixed conifer forest adjacent to the developed/ruderal lands with existing water infrastructure. In addition to the water infrastructure, a wastewater treatment plant exists within the mixed conifer forest, just south of the project site along Little Fine Gold Creek. The wastewater treatment plant also contributes a low level of constant noise to the vicinity. These existing utilities require regular maintenance activities within the mixed conifer forest resulting in regular human disturbance. Mixed conifer forest is also found at Well No. 3, located adjacent to Fine Gold Creek Drive.

This mixed coniferous forest is a tree-dominated, mid-elevation forest. The dominant conifers observed within this habitat type consisted of incense cedar (*Calocedrus decurrens*) and ponderosa pine (*Pinus ponderosa*). Some white fir (*Abies concolor*) trees and black oak were also observed within the forest. The forest canopy consisted mostly of mature trees, with some small openings supporting shrub species near disturbed/developed lands. Shrub species included mountain snowberry (*Symphoricarpos rotundifolius*), Mariposa manzanita, Sierra gooseberry (*Ribes roezlii*), and buck brush (*Ceanothus cuneatus*). Some herbaceous plants and grasses were found scattered within the mixed coniferous forest; these included American wild carrot (*Daucus*

pusillus), watercress (*Nasturtium officinale*), tall flat sedge (*Cyperus eragrostis*), Baltic rush (*Juncus balticus*), and white horehound (*Marrubium vulgare*).

This mixed coniferous forest is not a structurally complex habitat and was vertically uniform through most of its extent in the project area. The forest did have an almost continuous canopy cover; however, it was not multi-layered, and the tree age class was mature with little variation (limited young trees). Nevertheless, the organic matter in the form of leaves and woody debris that has accumulated on the forest floor provides cover for reclusive amphibians, reptiles, and small mammals and thus supports a variety of species. Snags and decaying logs serve as habitat for numerous invertebrates that may attract many vertebrate species dependent on them for food. Large standing trees, both living and dead, provide cover for nesting and denning birds and mammals.

Various amphibians and reptiles would occur in the mixed coniferous forest of the project site. Decaying logs provide habitat for gregarious slender salamander, ensatinas (*Ensatina eschscholtzii platensis*), and Sierra newts (*Taricha sierrae*). Sierra treefrogs and California toads are also expected in this habitat. A number of snakes would forage in this habitat including the northern rubber boa (*Charina bottae*), California mountain kingsnake (*Lampropeltis zonata*), and the coral-bellied ring-necked snake (*Diadophis punctatus pulchellus*).

The mixed conifer forest of the site provides habitat for a diversity of avian species. Resident species observed included the Steller's jay (*Cyanocitta stelleri*), northern flicker (*Colaptes auratus*), and common raven (*Corvus corax*). Other expected residents include the golden-crowned kinglet (*Regulus satrapa*) and white-breasted nuthatch (*Sitta carolinensis*). Conifers of the site provide nesting habitat for resident species during the summer, as well as numerous migrants. Migrants utilizing this habitat include black-headed grosbeak (*Pheucticus melanocephalus*), orange-crowned and Nashville warblers (*Vermivora celata* and *V. reficapilla*), dark-eyed juncos (*Junco hymalis*), and western tanagers (*Piranga ludoviciana*). Avian predators occurring on the site could include sharp-shinned hawks (*Accipiter striatus*), red-shouldered hawks, and western screech owls.

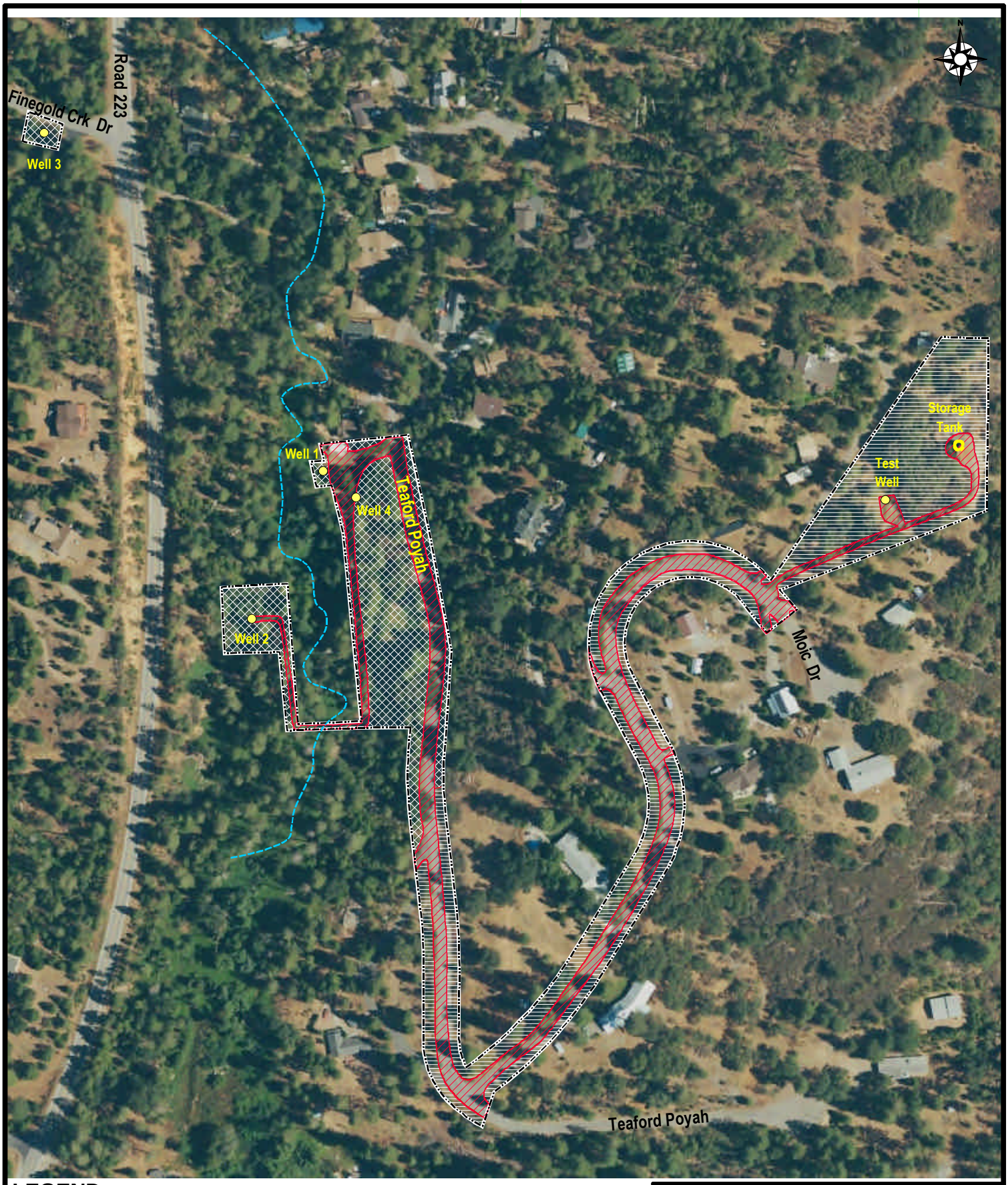
Mammals are typically well-represented in the mixed conifer forest habitat types. Small mammals of the forest floor may include deer mice, long-tailed voles (*Microtus longicaudus*), western grey squirrels, Merriam's chipmunks, and dusky-footed woodrats. One or more species of bats may roost in the cavities of tall conifers within this habitat type; these may include long-eared and long-legged bats (*Myotis evotis* and *M. volans*), and silver-haired bats (*Lasionycteris noctivagans*). The forest may also be frequented by mule deer. Mammalian predators foraging in the mixed conifer forest of the site would include striped skunks (*Mephitis mephitis*), long-tailed weasels (*Mustela frenata*), coyotes, black bears, and mountain lions (*Puma concolor*).

2.4 SPECIAL-STATUS PLANTS AND ANIMALS

Many species of plants and animals within the state of California have low populations, limited distributions, or both. Such species may be considered "rare" and are vulnerable to extirpation as the state's human population grows and the habitats these species occupy are converted to agricultural and urban uses. As described more fully in Section 3.3, state and federal laws have provided CDFW and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting the diversity of plant and animal species native to the state. A sizable number of native plants and animals have been formally designated as "threatened" or "endangered" under state and federal endangered species legislation. Others have been designated as candidates for such listing. Still others have been designated as "species of special concern" by the CDFW. The California Native Plant Society (CNPS) has developed its own set of lists (i.e., California Rare Plant Ranks, or CRPR) of native plants considered rare, threatened, or endangered (CNPS 2022). Collectively, these plants and animals are referred to as "special status species."

Special-status plants and wildlife of the project vicinity and their potential for occurrence on the project site have been identified in Table 1. The list of species for Table 1 was obtained using the USFWS Information for Planning and Consultation (IPaC) system (USFWS 2022; see Appendix E) and CNDDB (CDFW 2022); the latter entailed a records search for the nine 7.5-minute quadrangles containing and surrounding the project site (North Fork, Cascadel Point, O'Neals, Ahwahnee, Bass Lake, Shuteye Peak, Auberry, Millerton Lake East, and Millerton Lake West). Other sources of information for this table included *The California Native Plant Society's Inventory*

of Rare and Endangered Vascular Plants of California (CNPS 2022), iNaturalist (iNaturalist 2022), eBird (eBird 2022), and California Herps (Nafis 2022). Note that only federally and state listed plants listed as 1A, 1B, 2A, or 2B with threat ranks 0.1, 0.2, and 0.3 by the CRPR were included in this analysis. The locations of documented special status species occurrences in the project vicinity are depicted on Figures 4.



LEGEND

- Approximate Project site
- Little Fine Gold Creek
- Developed / Disturbed
- Mixed Oak & Pine Woodland
- Mixed Conifer Forest
- Well Site
- Storage Tank

300' 0 300 feet
approximate scale

Source:
USDA FSA Aerial Photography Field Office 2022

LIVE OAK ASSOCIATES, INC.

Teaford Meadows Water System Improvements

Biotic Habitats / Land Cover

Date	Project #	Figure #
1/06/2023	2747-01	4

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY.

Special-Status Plant Species (CDFW 2022, CNPS 2022, and USFWS 2022)

Species	Status	Habitat	Occurrence in the Project Site*
Abrams' onion (*Allium abramsii*)	CRPR 1B.2	Granitic sand between 4,600 and 6,500 feet in elevation. Blooms May- July.	**Absent.** Suitable habitat is absent from the project site and the site is below this species' elevational range.
Mingan moonwart (*Botrychium minganense*)	CRPR 2B.2	Occurs in creekbanks in mixed conifer forests of lower and upper montane coniferous forest, bogs, fens, meadows, and seeps. Prefers open forest along streams or around seeps. Found between 4,900 and 10,100 feet in elevation. Blooms July- September.	**Absent.** The site is below this species' elevational range.
Western goblin (*Botrychium montanum*)	CRPR 2B.1	Occurs in creekbanks in old-growth forest of lower and upper montane coniferous forest, meadows, and seeps. Particularly in shady conifer woodlands with *Calocedrus* along streams. Found between 4,900 and 6,800 feet in elevation. Blooms July- September.	**Absent.** The site is below this species' elevational range.
Mariposa pussy-paws (*Calyptridium pulchellum*)	FT, CRPR 1B.1	Fewer than 10 populations in Mariposa, Madera and Fresno Counties between 1,320 and 4,000 feet in elevation; primarily in coarse granitic sands of decomposing outcrops. Blooms April- August.	**Absent**. Suitable habitat is absent from the project site since the site is lacking granitic soils.
Mono hot springs evening primrose (*Camissonia sierrae* ssp. *alticola*)	CRPR 1B.2	Occurs in shallow soil on granite outcrops typically in ponderosa-pine forests. This species is only found in the central high Sierra Nevada at elevations between 6,500 and 7,700 feet. Blooms May- July.	**Absent.** The site is below this species' elevational range.
Tree anemone (*Carpenteria californica*)	CT, CRPR 1B.2	Occurs primarily in chaparral, but it also occurs in mixed hardwoods with a shrub understory in granitic soils between 1,115 and 4,400 feet in elevation. Blooms May- July.	**Absent.** This shrub is easily identifiable and was not observed during the site survey.
Small's southern clarkia (*Clarkia australis*)	CRPR 1B.2	Occurs in open, rocky sites of conifer forests or oak woodlands between 2,900 and 6,800 feet in elevation. Blooms June- July.	**Absent.** Suitable habitat is absent from the project site. There is only one record for Madera County in Fish Camp, from 1935 (CNDDB 2022). This population is stated as possibly extirpated, was searched for in 1978 and 1982.
Rawson's flaming trumpet (*Collomia rawosiana*)	CRPR 1B.2	Occurs on stabilized alluvium in riparian zones between 2,500 and 6,600 feet in elevation. Endemic to Madera and Mariposa Counties. Blooms July- August.	**Unlikely.** Suitable habitat is absent in the project APE, but is present in Little Fine Gold Creek adjacent to the project site. The nearest CNDDB record is Willow Creek below Bass Lake, approximately 3 miles northeast of the project site.

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY.

Plant Species Continued...

Species	Status	Habitat	Occurrence in the Project Site*
Hoover's cryptantha (*Cryptantha hooveri*)	CRPR 1A	Occurs in coarse sand within valley and foothill grassland between 165 and 1,200 feet in elevation. Blooms April- May.	**Absent.** Suitable habitat is absent from the project site, and the site is above this species' elevational range. Moreover, this species is presumed extinct.
Jepson's dodder (*Cuscuta jepsonii*)	CRPR 1B.2	Occurs on dry, undisturbed slopes in lower montane coniferous forest, broad-leafed upland forest, cismontane woodland, north coast coniferous forest. Is typically found in association with pine mat (*Ceanothus diversifolius*) and prostrate ceanothus (*Ceanothus prostrates*) between 3,900 and 9,000 feet in elevation. Blooms July- September.	**Absent.** The site is below this species' elevational range. Additionally, this species' typical plant associations are not present.
Slender-stalked monkeyflower (*Erythranthe gracilipes*)	CRPR 1B.2	Occurs within disturbed places such as burns and railroad grades on decomposed granite, also in cracks in large granite rocks. Chaparral, cismontane woodland, lower montane coniferous forest between 1,640 and 4,265 feet in elevation. Blooms April- June.	**Absent**. Suitable habitat is absent from the project site since the site is lacking decomposed granite.
Shuteve Peak fawn lily (*Erythronium pluriflorum*)	CRPR 1B.3	Occurs near rocky granitic outcrops and slopes. Upper montane coniferous forest, meadows and seeps, subalpine coniferous forest between 6,790 and 8,000 feet in elevation. Blooms May- July.	**Absent.** The site is well below this species' elevational range.
Brook pocket moss (*Fissidens aphelotaxifolius*)	CRPR 2B.2	Moss grows on rocks in stream channels and waterfalls, also in splash zones. Lower montane coniferous forest, upper montane coniferous forest, between 6,300 and 8,000 feet in elevation.	**Absent.** The site is well below this species' elevational range.
Short-leaved hulsea (*Hulsea brevifolia*)	CRPR 1B.2	Occurs in granitic or volcanic soils in openings and under canopy in mixed coniferous and red fir forests between 5,000 and 9,000 feet in elevation from Tulare to Tuolumne County. Blooms May- August.	**Absent.** The site is well below this species' elevational range.
Madera leptosiphon (*Leptosiphon serrulatus*)	CRPR 1B.2	Found in openings of oak woodland, cismontane woodland, and coniferous forest. Typically, on dry slopes; often on decomposed granite in woodlands at elevations between 1,000 and 4,300 feet. Blooms April- May.	**Absent.** Suitable habitat is absent from the project site since the site is lacking decomposed granite and undisturbed open native habitat.

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY.

Plant Species Continued...

Species	Status	Habitat	Occurrence in the Project Site*
Orange lupine (*Lupinus citrinus* var. *citrinus*)	CRPR 1B.2	Populations are known from Madera and Fresno counties in coarse granitic sands of decomposing outcrops between 2,000 and 5,500 feet in elevation. Blooms April- August.	**Absent.** Suitable habitat is absent from the project site since the site is lacking granitic sands.
Nuttall's ribbon-leaved pondweed (*Potamogeton epihydrus*)	CRPR 2B.2	Occurs in marshes and swamps, in shallow water of ponds, lakes, streams, and irrigation ditches between 1,300 and 6,200 feet in elevation. In the western Sierra Nevada mountains this species is known to occur at 6,000 feet in elevation or higher. Blooms July-August.	**Absent.** The site is well below the species' regional elevational distribution.
Bolander's clover (*Trifolium bolanderi*)	CRPR 1B.2	Occurs in moist mountain meadows in lower or upper montane coniferous forests. It is only found in the central and southern high Sierra Nevada mountains between 6,500 and 7,500 feet in elevation. Blooms Jun- August.	**Absent.** Suitable habitat is absent from the project site and the site is below the species' elevation range.
Grey-leaved violet (*Viola pinetorum* ssp. *grisea*)	CRPR 1B.2	Occurs on dry peaks and slopes in subalpine forest and upper montane coniferous forest between 5,000 and 11,050 ft. in elevation between Fresno County and San Bernardino County. Blooms all summer.	**Absent.** Suitable habitat is absent from the project site and the site is below this species' elevational range.

Special-Status Animal Species (CDFW 2022, USFWS 2022)

Species	Status	Habitat	Occurrence in the Project Site*
Monarch butterfly (*Danaus plexippus*)	FC	A large conspicuous butterfly that overwinters in coastal California and Baja California and breeds throughout California in the spring and summer along its annual migration north and east. The adult monarch lays its eggs on obligate milkweed (*Asclepias* spp.) host plants, which the resultant larvae feed on before pupating and emerging as adults to continue the migratory journey. In addition to milkweed, this species requires abundant nectar resources to nourish migrating adults, and trees for roosting during migratory stopovers.	**Possible.** Suitable breeding habitat is absent in the project site; no host plants were observed at a time when milkweed should have been readily identifiable. Adults may forage and roost in mixed oak and pine forest, and conifer forest. Adults are known to occur in Oakhurst and North Fork (WMMM 2022 and iNaturalist 2022).
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	FT	Lives in mature elderberry shrubs (*Sambucus* spp.) of California's Central Valley and Sierra Foothills.	**Absent.** USFWS has determined that the range of this species does not include eastern Madera County (USFWS 2017).

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY.

Animal Species Continued…

Species	Status	Habitat	Occurrence in the Project Site*
Delta smelt (*Hypomesus transpacificus*)	FT, CE	Mainly freshwater-saltwater mixing zone of the upper Sacramento-San Joaquin Estuary. Migrates upstream into the freshwater portions of the Sacramento and San Joaquin Rivers to spawn.	**Absent.** The project site is well outside of this species' known range.
Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi*)	FE	Historically in all accessible cold waters of the Lahontan Basin in a wide variety of water temps and conditions. Cannot tolerate presence of other salmonids. Requires gravel riffles in streams for spawning.	**Absent.** The project site is well outside of the species' known range, the Lahontan Basin.
California tiger salamander (*Ambystoma californiense*)	FT, CT	Found primarily in annual grasslands; requires vernal pools or other seasonal ponds for breeding and rodent burrows for aestivation. Although most California tiger salamanders aestivate within 0.4 mile of their breeding pond, outliers may aestivate up to 1.3 miles away (Orloff 2011).	**Absent.** Suitable habitat is absent from the project site and the site is outside of this species' known geographic range.
Yosemite toad (*Anaxyrus canorus*)	FT, CSC	Found in the vicinity of wet meadows, also in seasonal ponds associated with lodgepole pine and subalpine conifer forest, in the central High Sierra, 6,400 to 11,300 feet in elevation.	**Absent.** Suitable habitat is absent from the project site and the site is below this species' known elevational range.
Foothill yellow-legged frog (*Rana boylii*)	FE, CSC	Found in or near rocky streams in a variety of habitats at elevations up to 6,000 feet. Use submerged rocks and debris for cover. Requires gravel or rocks in moving water near stream margins for reproduction.	**Absent.** Suitable aquatic habitat is absent from the project site and vicinity. Little Fine Gold Creek does not provide the appropriate substrate or vegetation cover required. This species closest documentation is an extirpated population 3 miles west of the project site from 1970 (CNDDB 2022).
California red-legged frog (*Rana draytonii*)	FT, CSC	Inhabits quiet pools of streams, marshes, and occasionally ponds. Found in lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires permanent or nearly permanent pools for larval development, which takes 11 to 20 weeks.	**Absent.** This species' historic range includes the project site; however, this species no longer occurs south of Mariposa County (Barry and Fellars 2013).
Sierra Nevada yellow-legged frog (*Rana sierrae*)	FPE, CE	Found in cold mountain lakes and streams, generally from 5,000 to 12,000 feet in elevation. Breeding and egg laying occur after snowmelt from June- August.	**Absent.** Suitable habitat is absent from the project site and the site is below this species' known elevational range.

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY.

Animal Species Continued…

Species	Status	Habitat	Occurrence in the Project Site*
Western spadefoot (*Spea hammondii*)	CSC	Ranges throughout the Central Valley and adjacent foothills. Occurs primarily in grassland habitats. Reproduction occurs in shallow, temporary ponds.	**Absent.** Suitable habitat is absent from the project site and the site is outside of this species' known geographic range.
Western pond turtle (*Emys marmorata*)	CSC	Associated with permanent bodies of water. Requires partially submerged rocks or logs for basking sites. Eggs are deposited in a variety of soil types near water's edge. Seasonal hibernation/estivation includes use of upland habitat from water sources including ground squirrel burrows and loose substrate for burying themselves.	**Possible.** Little Fine Gold Creek within the project area lacks appropriate perennial stream pools to support this species. Lake Moic, a perennial water feature, is found 130 feet from the intersection of Moic Drive and Teaford Poyah. If this species is present in the lake, then the creek and existing paved road within the project area may be used temporarily for movement or refuge. The nearest CNDDB record is in North Fork Willow Creek, 2.5 miles east of the project site.
Willow flycatcher (*Empidonax trillii*)	CT	Requires dense willow thickets for nesting and roosting with low, exposed branches used for hunting and singing posts. Found on edges of wet meadows, ponds or backwaters.	**Absent.** Suitable habitat is absent from the project site since the project site is lacking the vegetation species that supports nesting and roosting of this species.
California condor (*Gymnogyps californianus*)	FE, CE, CFP	Vast expanses of open savannah, grasslands, and foothill chaparral in mountain ranges of moderate altitude. Nests in deep canyons containing clefts in rocky walls, and are also known to nest in redwood trees and (historically) sequoia trees.	**Absent.** Nesting and foraging habitat for this species is lacking from the project site and vicinity.
Bald eagle (*Haliaeetus leucocephalus*)	FD, CE, CFP	Found in a variety of water habitats including ocean shore, lake margins, and rivers for both nesting and wintering. Most nests are within 1 mile of water. Typically, they nest in large, old-growth, or dominant live tree with open branches, especially ponderosa pine. Roosts communally in winter.	**Absent.** Suitable habitat is absent from the project site and vicinity. Little Fine Gold Creek and other nearby aquatic features are not large enough to support this species.
Great-gray owl (*Strix nebulosa*)	CE	Nests in mixed conifer or red fir forests; requires a cool, sub-canopy micro-climate. Forages along edge of meadows above 4,000 feet in elevation.	**Absent.** Suitable meadow and old-growth conifer habitat are absent from the project site, and the site is below this species' known elevation range.
California spotted owl (*Strix occidentalis occidentalis*)	CSC	Found in older, multilayered, mixed conifer forest, often with an understory of black oaks and other deciduous hardwoods, and high canopy closure. Most often found in deep-shaded canyons, on north-facing slopes, and within 300 meters of water.	**Unlikely.** Suitable nesting habitat is absent from the project site and vicinity. The mixed conifer forest found on site is lacking characteristics preferred for nest sites (old growth, multilayered, tree density). Nesting sites are documented approximately 1 mile east and northwest of the site on Goat Mountain and Thornberry mountain. Individuals may be

			found from time to time in the project vicinity during wintering season and altitudinal migration.

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY.

Animal Species Continued…

Species	Status	Habitat	Occurrence in the Project Site*
Pallid bat (*Antrozous pallidus*)	CSC	Forages in deserts, grasslands, shrublands, woodlands, and forest. Roosts in rocky outcrops, cliffs, and crevices, caves, mines, trees, and various human structures to protect for high temperatures.	**Likely.** The site contains suitable foraging habitat for this species in the woodland and forest, as well as day/night roosts within the trees. An iNaturalist record with photographs of the species is documented 2 miles southeast of the project site in close proximity to Little Fine Gold Creek (iNaturalist 2022).
Ringtail (*Bassariscus astutus*)	CFP	Exploit a variety of habitats such as dry, rocky, brush-covered hillsides or riparian areas, typically not far from an open water source. Dens most often in rock crevices, boulder piles, or talus, but also tree hollows, root cavities, and rural buildings. Rarely use same den for more than a few days. Females with litters change dens within 10 days of birth and almost daily after 20 days.	**Possible.** The mixed conifer forest adjacent to Little Fine Gold Creek may support this species for foraging or temporary movement. Breeding is unlikely, as the existing water infrastructure and wastewater treatment plant result in frequent human disturbance and continuous low-level noise not ideal for den sites. This species is not tracked on CNDDB.
Western mastiff bat (*Eumops perotis californicus*)	CSC	Forages over dry washes, flood plains, chaparral, oak woodland, open ponderosa pine forest, grassland, and agricultural areas. Generally, roosts under exfoliating rock slabs, sometimes in large boulders and high buildings. Needs vertical faces to drop off to take flight.	**Possible.** The site contains suitable foraging habitat for this species in the woodland areas and this species has potential to forage on site and occasionally pass through. Suitable roosting habitat is absent in the project site and vicinity due to the lack of vertical height required by this species to take flight. The nearest record is 7.4 miles southeast of the project site on the San Joaquin River (CNDDB 2022). There are no nearby records in iNaturalist (iNaturalist 2022).
North American wolverine (*Gulo gulo luscus*)	CT, CFP	Occurs primarily in mixed and red fir and subalpine and wet meadow habitats at high elevations. Requires huge tracts of land for its extensive home range movements	**Absent.** Modern wolverine detections in California are limited to a single male sighted in the Lake Tahoe area between 2008 and 2017. The project site lacks suitable habitat and is too low in elevation for this species.
Fisher – Southern Sierra Nevada DPS (*Pekania pennanti*)	FE, CT, CSC	Occurs in intermediate to large-tree stages of coniferous forests and deciduous-riparian areas with a high percentage of canopy closure; steep slopes; uses cavities, snags, logs, and rocky areas for denning and cover. Requires large areas of dense, mature forest. The Southern Sierra Nevada DPS of this species is typically found at elevations between 4,500 and 7,000 feet (Green et al. 2008).	**Unlikely.** The site is below this species' typical elevational distribution in the southern Sierra Nevada, and modeled reproductive habitat is absent in the project site and vicinity (CBI 2021). The mixed conifer forest is uniform with no rocky areas and is relatively flat, therefore lacking favorable conditions to support this species. Moreover, the existing water infrastructure and wastewater treatment plant result in frequent human disturbance

			and continuous low-level noise making the area not ideal for den sites.

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY.

Animal Species Continued…

Species	Status	Habitat	Occurrence in the Project Site*
American badger (*Taxidea taxus*)	CSC	Uncommon resident statewide; most abundant in drier open stages of most shrub, forest, and herbaceous habitats. Needs sufficient food, friable soils, uncultivated ground. Preys on burrowing rodents. Digs its own burrows.	**Absent.** Suitable habitat is absent from the project site since the site is lacking friable soils and open habitat. Moreover, this species can be sensitive to human disturbance and is not likely to burrow within active residential communities.
Sierra Nevada red fox (*Vulpes vulpes necator*)	FE, CT	Occurs at higher elevations (generally above 3,900 feet) of the Sierra Nevada mountains. Use multiple habitat types in the alpine and subalpine zones including high-elevation conifer dominated by whitebark pine, mountain hemlock and lodgepole pine, as well as meadows and fell-fields; typically, in areas of heavy snow cover.	**Absent.** The project site is located well below the subalpine zone and outside of this species' distribution.

OCCURRENCE TERMINOLOGY

Present: Species observed on the site at time of field surveys or during recent past.
Likely: Species not observed on the site, but it may reasonably be expected to occur there on a regular basis.
Possible: Species not observed on the site, but it could occur there from time to time.
Unlikely: Species not observed on the site, and would not be expected to occur there except, perhaps, as a transient.
Absent: Species not observed on the site and precluded from occurring there because habitat requirements not met.

STATUS CODES

FE	Federally Endangered	CE	California Endangered
FT	Federally Threatened	CT	California Threatened
FC	Federal Candidate	CFP	California Fully Protected
FD	Federally Delisted	CSC	California Species of Special Concern
CRPR	California Rare Plant Ranks		
1A	Plants presumed extinct in California and rare/extinct elsewhere	0.1	Seriously Threatened in California
1B	Plants Rare, Threatened, or Endangered in California and elsewhere	0.2	Moderately Threatened in California
2B	Plants Rare, Threatened, or Endangered in California, but more common elsewhere	0.3	Not Very Threatened in California

2.5 JURISDICTIONAL WATERS

Jurisdictional waters are those rivers, creeks, drainages, lakes, ponds, reservoirs, and wetlands that are subject to the authority of the USACE, CDFW, and/or the RWQCB. In general, the USACE regulates navigable waters, tributaries to navigable waters, and wetlands adjacent to these waters, where wetlands are defined by the presence of hydric soils, hydrophytic vegetation, and wetland

hydrology. The CDFW asserts jurisdiction over waters in California that have a defined bed and bank, and the RWQCB has jurisdiction over California surface water and groundwater. The regulation of jurisdictional waters is discussed in more detail in Section 3.9.

Little Fine Gold Creek is a potentially jurisdictional water that passes through the APE at the location of an existing at-grade road crossing. The road will be used to access well No. 2.

2.6 DESIGNATED CRITICAL HABITAT

As will be discussed further in Section 3.5, the USFWS often designates areas of "critical habitat" when it lists species as threatened or endangered. Critical habitat is a specific geographic area(s) that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection.

Designated critical habitat is absent from the project site and surrounding lands (USFWS 2023).

2.7 SENSITIVE NATURAL COMMUNITIES

Sensitive natural communities are those that are of limited distribution, distinguished by significant biological diversity, home to special status species, etc. CDFW is responsible for the classification and mapping of all natural communities in California. Natural communities are assigned state and global ranks according to their degree of imperilment. Any natural community with a state rank of 3 (S3) or lower (on a 1 to 5 scale) is considered sensitive. Natural communities with ranks of S1-S3 are considered sensitive natural communities to be addressed in the environmental review processes of CEQA and its equivalents. Examples of sensitive natural communities in the vicinity of the project area include Northern Basalt Flow Vernal Pool and various types of Central Valley Drainage Streams (Sawyer, Keeler-Wolf and Evens 2009).

The project site does not support any sensitive natural communities.

2.8 WILDLIFE MOVEMENT CORRIDORS

Wildlife movement corridors are routes that animals regularly and predictably follow during seasonal migration, dispersal from native ranges, daily travel within home ranges, and inter-

population movements. Movement corridors in California are typically associated with valleys, ridgelines, and rivers and creeks supporting riparian vegetation.

This site contains topographic and aquatic features typical of wildlife movement corridors. Little Fine Gold Creek has the potential to be used by animals for movement. However, existing utility infrastructure and private residences within the project area likely create some disruption to wildlife movement and have for many decades. Therefore, wildlife using this area for movement are anticipated to be common species with some degree of tolerance for anthropogenic disturbance.

3.0 RELEVANT GOALS, POLICIES, AND LAWS

3.1 GENERAL PLAN POLICIES OF MADERA COUNTY

In compliance with CEQA, the lead agency must consider project conformance with applicable goals and policies of the General Plan of Madera County. The Madera County General Plan includes goals and policies designed to protect significant biotic resources of the Planning Area. Resource elements addressed by this plan include: (1) wetland and riparian areas, (2) fish and wildlife habitat, (3) vegetation, and (4) open space for the preservation of natural resources. Madera County General Plan policies related to natural resources can be found in Appendix D.

3.2 CALIFORNIA ENVIRONMENTAL QUALITY ACT

In California, any project carried out or approved by a public agency that will result in a direct or reasonably foreseeable indirect physical change in the environment must comply with CEQA. The purpose of CEQA is to ensure that a project's potential impacts on the environment are evaluated, and methods for avoiding or reducing these impacts are considered before the project is allowed to move forward. A secondary aim of CEQA is to provide justification to the public for the approval of any projects involving significant impacts on the environment.

According to Section 15382 of the CEQA Guidelines, a significant effect on the environment means a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic interest." Although the lead agency may set its own CEQA significance thresholds, project impacts to biological resources are generally considered to be significant if they would meet any of the following criteria established in Appendix G of the CEQA Guidelines:

- 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 CDFW or USFWS.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by CDFW or USFWS.

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

Furthermore, CEQA Guidelines Section 15065(a) requires the lead agency to make "mandatory findings of significance" if there is substantial evidence that a project may:

- Substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or substantially reduce the number or restrict the range of an endangered, rare or threatened species.
- Achieve short-term environmental goals to the detriment of long-term environmental goals.
- Produce environmental effects that are individually limited but cumulatively considerable, meaning that the incremental effects of the project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects.

3.3 NATIONAL ENVIRONMENTAL POLICY ACT

Projects that are proposed, funded, or authorized by federal agencies are generally subject to the provisions of NEPA. Signed into law in 1970, NEPA requires federal agencies to evaluate the environmental effects of their proposed actions prior to making decisions, and to provide opportunities for public review and comment during this process.

Under NEPA, effects are defined as "changes to the human environment from the proposed action or alternative that are reasonably foreseeable." Examples include "ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health." NEPA explicitly instructs agencies to consider direct, indirect, and cumulative effects; the latter denotes those effects that "result from

the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions" by any agency or entity" (40 CFR Part 1508.1(g)).

The level of NEPA review that is required is related to the project's potential to cause "significant" environmental effects. "Significant" is not explicitly defined under NEPA; however, the NEPA Implementing Regulations (40 CFR Parts 1500-1508) offer several guidelines for determining, and discounting, significance. Federal agencies are instructed to base their significance determinations on an analysis "of the potentially affected environment and degree of the effects of the action." *Potentially affected environment* refers both to the geographic area of the action, and to the resources found within this area; examples of the latter from the statute are listed species and designated critical habitat. Effects need not be far-reaching to be considered significant; for site-specific actions, a determination of significance usually depends only on the effects in the local area.

In considering the *degree* of an action's effects, federal agencies are instructed to consider the following:

- Both short- and long-term effects
- Both beneficial and adverse effects
- Effects on public health and safety
- Effects that would violate federal, state, tribal, or local law protecting the environment

NEPA requires that federal agencies consider mitigating for the environmental effects of their actions. Suitable measures include the following:

- Avoiding the impact altogether by not taking a certain action or parts of an action.
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- Compensating for the impact by replacing or providing substitute resources or environments.

3.4 THREATENED AND ENDANGERED SPECIES

In California, imperiled plants and animals may be afforded special legal protections under the California Endangered Species Act (CESA) and/or Federal Endangered Species Act (FESA). Species may be listed as "threatened" or "endangered" under one or both Acts, and/or as "rare" under CESA. Under both Acts, "endangered" means a species is in danger of extinction throughout all or a significant portion of its range, and "threatened" means a species is likely to become endangered within the foreseeable future. Under CESA, "rare" means a species may become endangered if their present environment worsens. Both Acts prohibit "take" of listed species, defined under CESA as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill" (California Fish and Game Code, Section 86), and more broadly defined under FESA to include "harm" (16 USC, Section 1532(19), 50 CFR, Section 17.3).

When state and federally listed species have the potential to be impacted by a project, the USFWS and CDFW must be included in the CEQA process. These agencies review the environmental document to determine the adequacy of its treatment of endangered species issues and to make project-specific recommendations for the protection of listed species. Projects that may result in the "take" of listed species must generally enter into consultation with the USFWS and/or CDFW pursuant to FESA and CESA, respectively. In some cases, incidental take authorization(s) from these agencies may be required before the project can be implemented.

3.5 HABITAT CONSERVATION PLANS AND NATURAL COMMUNITY CONSERVATION PLANS

Section 10 of the federal Endangered Species Act establishes a process by which non-federal projects can obtain authorization to incidentally take listed species, provided take is minimized and thoroughly mitigated. A Habitat Conservation Plan (HCP) developed by the project applicant in collaboration with the USFWS and/or National Marine Fisheries Service (NMFS) ensures that such minimization and mitigation will occur and is a prerequisite to the issuance of a federal incidental take permit. Similarly, a Natural Community Conservation Plan (NCCP) developed by the project applicant in collaboration with CDFW, provides for the conservation of biodiversity within a project area, and permits limited incidental take of state-listed species.

3.6 DESIGNATED CRITICAL HABITAT

The USFWS often designates areas of "critical habitat" when it lists species as threatened or endangered. Critical habitat is defined by section 3(5)(A) of the federal Endangered Species Act as "(i) The specific areas within the geographic area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features (I) essential to the conservation of the species and (II) that may require special management considerations or protection; and (ii) specific areas outside the geographic area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species." The Act goes on to define "conservation" as "the use of all methods and procedures that are necessary to bring an endangered or threatened species to the point at which listing under the Act is no longer necessary."

The designation of a specific area as critical habitat does not directly affect its ownership. Federal actions that result in destruction or adverse modification of critical habitat are, however, prohibited in the absence of prior consultation with the USFWS according to provisions of the act. Furthermore, recent appellate court cases require that federal actions affecting critical habitat promote the recovery of the listed species protected by the critical habitat designation.

The USFWS designates critical habitat for a species by identifying general areas likely to contain the species' "primary constituent elements," or physical or biological features of the landscape that the species needs to survive and reproduce. Although a unit of critical habitat for a particular species may be quite large, only those lands within the unit that contain the species' primary constituent elements are actually considered critical habitat by the USFWS.

3.7 MIGRATORY BIRDS

The Federal Migratory Bird Treaty Act (FMBTA: 16 USC 703-712) prohibits killing, possessing, or trading in any bird species covered in one of four international conventions to which the United States is a party, except in accordance with regulations prescribed by the Secretary of the Interior. The name of the act is misleading, as it actually covers almost all birds native to the United States, even those that are non-migratory. The FMBTA encompasses whole birds, parts of birds, and bird nests and eggs.

Native birds are also protected under California state law. The California Fish and Game Code makes it unlawful to take or possess any non-game bird covered by the FMBTA (Section 3513), as well as any other native non-game bird (Section 3800), even if incidental to lawful activities. Moreover, the California Migratory Bird Protection Act, enacted in September 2019, clarifies native bird protection and increases protections where California law previously deferred to federal law.

3.8 BIRDS OF PREY

Birds of prey are protected in California under provisions of the Fish and Game Code (Section 3503.5), which states that it is unlawful to take, possess, or destroy any birds in the order Falconiformes (hawks and eagles) or Strigiformes (owls), as well as their nests and eggs. The bald eagle and golden eagle are afforded additional protection under the federal Bald and Golden Eagle Protection Act (16 USC 668), which makes it unlawful to kill birds or their eggs.

Additionally, the Bald and Golden Eagle Protection Act (16 U.S.C., scc. 668-668c) prohibits anyone from taking (pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb) bald or golden eagles, including their parts, nests, or eggs, unless authorized under a federal permit. In addition to immediate acts of take, the act prohibits any disturbance that directly affects an eagle or an active eagle nest as well as any disturbance caused by humans around a previously used nest site during a time when eagles are not present such that it agitates or bothers an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death or nest abandonment.

3.9 WETLANDS AND OTHER JURISDICTIONAL WATERS

Section 404 of the federal Clean Water Act (CWA) regulates the discharge of dredged or fill material into “navigable waters” (33 U.S.C. §1344), defined in the CWA as “the waters of the United States, including the territorial seas” (33 U.S.C. §1362(7)). The CWA does not supply a definition for waters of the U.S., and that has been the subject of considerable debate since the CWA’s passage in 1972. A variety of regulatory definitions have been promulgated by the two federal agencies responsible for implementing the CWA, the Environmental Protection Agency

(EPA) and USACE. These definitions have been interpreted, and in some cases, invalidated, by federal courts.

Most recently, waters of the U.S. were defined by the Navigable Waters Protection Rule (NWPR). The new rule was published in the Federal Register on April 21, 2020 and took effect on June 22, 2020. However, on August 30, 2021, in the case of Pascua Yaqui Tribe v. U.S. Environmental Protection Agency, the U.S. District Court for the District of Arizona vacated and remanded the NWPR. In light of this order, the EPA and USACE have halted implementation of the NWPR and, until further notice, are interpreting "waters of the United States" consistent with the pre-2015 regulatory regime.

The interpretation of waters of the U.S. prior to 2015 generally included:

- All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide.
- All interstate waters including interstate wetlands.
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce.
- All impoundments of waters otherwise defined as waters of the United States under the definition.
- Tributaries of waters identified in the bulleted items above.

As determined by the United States Supreme Court in its 2001 Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers (SWANCC) decision, channels and wetlands isolated from other jurisdictional waters cannot be considered jurisdictional on the basis of their use, hypothetical or observed, by migratory birds. Similarly, in its 2006 consolidated Carabell/Rapanos decision, the U.S. Supreme Court ruled that a significant nexus between a wetland and other navigable waters must exist for the wetland itself to be considered a jurisdictional water.

All activities that involve the discharge of dredge or fill material into waters of the U.S. are subject to the permit requirements of the USACE. Such permits are typically issued on the condition that the applicant agrees to provide mitigation that result in no net loss of wetland functions or values. No permit can be issued until the RWQCB issues a Section 401 Water Quality Certification (or waiver of such certification) verifying that the proposed activity will meet state water quality standards.

Under the Porter-Cologne Water Quality Control Act of 1969, the State Water Resources Control Board has regulatory authority to protect the water quality of all surface water and groundwater in the State of California ("waters of the State"). Nine RWQCBs oversee water quality at the local and regional level. The RWQCB for a given region regulates discharges of fill or pollutants into waters of the State through the issuance of various permits and orders. Discharges into waters of the State that are also waters of the U.S. require a Section 401 Water Quality Certification from the RWQCB as a prerequisite to obtaining certain federal permits, such as a Section 404 Clean Water Act permit. Discharges into all waters of the State, even those that are not also waters of the U.S., require Waste Discharge Requirements (WDRs), or waivers of WDRs, from the RWQCB. The RWQCB also administers the Construction Storm Water Program and the federal National Pollution Discharge Elimination System (NPDES) program. Projects that disturb one or more acres of soil must obtain a Construction General Permit under the Construction Storm Water Program. A prerequisite for this permit is the development of a Storm Water Pollution Prevention Plan (SWPPP) by a certified Qualified SWPPP Developer. Projects that discharge wastewater, storm water, or other pollutants into a water of the U.S. may require a NPDES permit.

CDFW has jurisdiction over the bed and bank of natural drainages and lakes according to provisions of Section 1601 and 1602 of the California Fish and Game Code. Activities that may substantially modify such waters through the diversion or obstruction of their natural flow, change or use of any material from their bed or bank, or the deposition of debris require a Notification of Lake or Streambed Alteration. If CDFW determines that the activity may adversely affect fish and wildlife resources, a Lake or Streambed Alteration Agreement will be prepared. Such an agreement typically stipulates that certain measures will be implemented to protect the habitat values of the lake or drainage in question.

3.10 MARINE MAMMAL PROTECTION ACT

The Marine Mammal Protection Act (MMPA) was enacted on October 21, 1972. All marine mammals are protected under the MMPA. The MMPA prohibits, with certain exceptions, the "take" of marine mammals in U.S. waters and by U.S. citizens on the high seas, and the importation of marine mammals and marine mammal products into the U.S.

3.11 MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT

The Magnuson–Stevens Fishery Conservation and Management Act (MSA), enacted in 1976, is the primary law that governs marine fisheries management in U.S. federal waters. The MSA fosters the long-term biological and economic sustainability of marine fisheries. Its objectives include preventing overfishing, rebuilding overfished stocks, increasing long-term economic and social benefits, ensuring a safe and sustainable supply of seafood, and protecting habitat that fish need to spawn, breed, feed, and grow to maturity. The National Marine Fisheries Service (NMFS) works to identify and protect essential fish habitat. If a project may adversely impact essential fish habitat (EFH), as defined and mapped by NMFS, then consultation with NMFS will be required to determine how best to complete project development while supporting fish habitat and minimizing or avoiding environmental damage.

4.0 IMPACTS AND MITIGATIONS

The following discussions assume that project activities will be confined to the approximately 6-acre APE defined in this report. Specifically, it is assumed that Little Fine Gold Creek will be completely avoided by project improvement activities with the exception of vehicle traffic on the existing gravel road for access to Well No. 2; that no riparian vegetation will be impacted; and that removal of live trees and vegetation will be limited to initial fuel modification for all new improvements, as well as that required for construction of the proposed treatment facility.

4.1 POTENTIALLY SIGNIFICANT PROJECT IMPACTS/MITIGATION

4.1.1 Disturbance to Active Raptor and Other Migratory Bird Nests from Construction Activities During Project Implementation

Potential Impacts. The project site has the potential to be used for nesting by a variety of native avian species protected by the Migratory Bird Treaty Act and related state laws. Birds can nest in or on onsite trees and shrubs, on the ground, and in or on existing structures. If project construction or vegetation clearing takes place during the nesting season (generally February 1- August 31), birds nesting on the site could be injured or killed by construction activities or disturbed such that they would abandon their nests. Significant construction-related disturbance is also a possibility for birds nesting adjacent to the project site. Project-related injury, mortality, or disturbance of nesting birds that results in abandonment are potentially significant adverse environmental effects of the project.

Mitigation. To avoid and minimize the potential for construction-related mortality/disturbance of nesting birds, the following measures will be implemented:

> ***Measure 4.1.1a (Construction Timing).*** If feasible, the project will be implemented outside of the avian nesting season, typically defined as February 1 to August 31.
>
> ***Measure 4.1.1b (Pre-construction Surveys*).** If construction is to occur between February 1 and August 31, a qualified biologist will conduct pre-construction surveys for active bird nests within 10 days prior to the start of construction. The survey area will encompass the site and accessible surrounding lands within 250 feet for nesting migratory birds and 500 feet for raptors (i.e., birds of prey).

***Measure 4.1.1c (Avoidance of Active Nests*).** Should any active nests be discovered in or near proposed construction zones, the biologist will identify a suitable construction-free buffer around the nest. This buffer will be identified on the ground with flagging or fencing and will be maintained until the biologist has determined that the young have fledged and are capable of foraging independently.

Implementation of the above measures will reduce potential effects of future development of the project site on nesting migratory birds to a less than significant level under CEQA and NEPA and will ensure compliance with state and federal laws protecting nesting birds.

4.1.2 Potential Impacts to Pallid Bats (*Antrozous pallidus*) and Other Roosting Bats

Potential Impacts. Loose bark or cavities/hollow on trees can provide potential roosting habitat for the pallid bat (*Antrozous pallidus*) and other native bat species year-round in the mixed oak and pine woodland, as well as the mixed coniferous forest. Pallid bats are designated a Species of Special Concern by CDFW due to declining populations and loss of habitat. None of the existing water infrastructure appeared suitable for roosting. Bats are highly mobile while foraging, and it is anticipated that any of these bats attempting to forage on site at the time of construction would simply fly away from construction disturbance. The project developments are not anticipated to change foraging patters or opportunities. Project-related tree removal has potential to cause injury or mortality to roosting pallid bats or any native bat, and is considered a potentially significant impact under CEQA and NEPA.

Mitigation. In order to minimize potential impacts to roosting pallid bats and any native bat species, the applicant will implement the following measures:

Mitigation Measure 4.1.2a (Temporal Avoidance). To avoid potential impacts to maternity bat roosts, removal of trees with bat roosting habitat should occur outside of the period between April 1 and September 30, the time frame within which colony-nesting bats generally assemble, give birth, nurse their young, and ultimately disperse.

***Mitigation Measure 4.1.2b* (*Preconstruction Surveys*).** Within 14 calendar days prior to the start of activities impacting trees (removal or trimming), a qualified biologist will conduct preconstruction surveys for roosting pallid bats. It shall include an evening emergence survey to identify if any bats use the trees as night roosts at the tree removal locations. An additional preconstruction survey shall be conducted following any lapse in tree removal that exceeds 14 calendar days.

Mitigation Measure 4.1.2c (Minimization). If a non-breeding bat colony is found in trees proposed for removal, the individuals will be humanely evicted, under the direction of a qualified biologist, to ensure that no harm or "take" of any bats occurs as a result of construction activities.

***Mitigation Measure 4.1.2d* (*Avoidance of Maternal Roosting*).** Should any maternal roosts be identified, a qualified biologist will establish suitable disturbance-free buffers around the trees. Buffers will be delineated on a map, and identified on the ground with flagging or fencing, if feasible, and will be maintained until a qualified biologist has determined that the roosts are no longer active.

Compliance with the above mitigation measures will reduce potential impacts to roosting pallid bats or other native bat species from project-related injury or mortality to a less than significant level under CEQA and NEPA.

4.1.3 Potential Impacts to Western Pond Turtle (*Emys marmorata*)

Potential Impact. Western pond turtles (*Emys marmorata*) are designated a Species of Special Concern by CDFW due to declining populations and loss of habitat. This species has suitable habitat in the vicinity of the project site. It is anticipated that if western pond turtles are present, they would likely be at Lake Moic located approximately 130 feet south of the intersection of Moic Drive and Teaford Poyah, and 0.15 miles downstream of the at-grade crossing of Little Fine Gold Creek. Lake Moic and the habitat immediately surrounding Lake Moic, has more suitable estivation and upland nesting habitat than within the project site. It is anticipated that if western pond turtles were found on the project site, it would be during movement patterns as transients. Project-related injury or mortality to western pond turtle is considered a potentially significant impact under CEQA and NEPA.

Mitigation. In order to minimize potential impacts to western pond turtle, the applicant will implement the following measures:

Mitigation Measure 4.1.3a (Construction Related Avoidance). If any western pond turtles are found within construction zones work shall stop in the area around the turtle until it leaves the construction zone on its own volition or until it is relocated to a safe area of suitable habitat by a qualified biologist.

Mitigation Measure 4.1.3b (Pond Turtle Awareness Training). Prior to the start of construction, construction personnel will be trained on the identification, behavior, and ecology of the western pond turtle, and the project-specific measures adopted for its

protection. Attendees will be given a handout that summarizes the training material and provides a photographic key to differentiating between the western pond turtle and the red-eared slider, which is known to occur on site. Attendance at all training sessions will be documented on sign-in sheets.

Implementation of the above measures will reduce potential project impacts to the western pond turtle to a less than significant level.

4.1.4 Potential Degradation of Water Quality in Creeks and Downstream Waters

Potential Impact. A short segment of Little Fine Gold Creek passes through the APE at the location of an existing at-grade road crossing near Well No. 1, 2, and 4. The creek is approximately 75 feet west of Well No. 1, 120 feet west of Well No. 4, and 100 feet west of Well No. 2 (all existing). The existing gravel road across the creek will be used to access Well No. 2 to conduct proposed improvement activities. Although no dredge, fill, or other ground-disturbing activities are proposed for the creek or downstream waters (e.g. Lake Moic), the following measures shall be followed to prevent pollutants from entering the drainage during site access and proposed improvement activities.

Mitigation. To avoid and minimize the potential for pollutants to enter Little Fine Gold Creek, the following measures will be implemented:

Measure 4.1.4a (Dry Conditions). All proposed improvement activities that require crossing the existing road over Little Fine Gold Creek shall take place only when conditions are dry. If the existing at-grade crossing contains any water (flowing or pooled), no vehicle will drive across Little Fine Gold Creek. Pedestrian traffic is permitted during wet conditions.

Measure 4.1.4b (Little Fine Gold Creek Access Road). No maintenance or disturbance to the existing gravel access road to Well No. 2 will be permitted.

Measure 4.1.4c (Equipment Operation). No refueling, storage, servicing, or maintenance of equipment shall take place within 100 feet of aquatic habitat. All machinery used during construction shall be properly maintained and cleaned to prevent spills and leaks that could contaminate soil or water.

Measure 4.1.4d (Spills). Any spills or leaks from construction equipment (i.e., fuel, oil, hydraulic fluid, and grease) shall be cleaned up in accordance with applicable local, state, and/or federal regulations.

Compliance with the above mitigation measures will reduce potential water quality impacts to a less than significant level under CEQA and NEPA.

4.2 LESS THAN SIGNIFICANT PROJECT IMPACTS

4.2.1 Project Impact to Monarch Butterfly

Potential Impact. The proposed project site is located in an area where adult monarch butterflies are anticipated to be present for foraging and/or roosting in small numbers. Monarchs are known to forage within the Sierra Nevada foothills, particularly near private residences where native or ornamental flowering plants may be planted to attract pollinators. Large migratory populations are not documented in this region. No host plants were observed within or directly adjacent to the project APE at a time of year when milkweed should have been readily identifiable. Monarch adults are volant and would presumably have some ability to avoid construction disturbance while foraging or roosting on site.

Given the lack of host plants to support eggs, larvae, and pupae (non-mobile), and the general agility of adults which are assumed to be present in small numbers on site, any impacts to adult monarchs would be less than significant under CEQA and NEPA.

Mitigation. Mitigation measures are not warranted.

4.2.2 Project-Related Mortality of Special Status Animal Species that May Occur on the Project Site as Occasional or Regular Foragers but Breed Elsewhere

Potential Impacts. Two special status animals, ringtail (*Bassariscus astutus*) and western mastiff bat (*Eumops perotis Californicus*), have the potential to forage on the site from time to time but would not breed within the APE or close enough to the APE that they would be vulnerable to project-related disturbance at their den or roost sites (see Table 3). Foraging individuals of these species would not be vulnerable to construction-related injury or mortality because they are highly mobile and would be expected to simply avoid active work areas.

The project site does not offer any unique foraging habitat for these species, and is of lower value than other parts of the region due to the proximity to the residential neighborhood and regular

human disturbance. Furthermore, the foraging habitat is anticipated to be of similar value after project implementation. Therefore, the project will not result in the significant loss of foraging habitat for these species.

Mitigation. Mitigation is not warranted.

4.2.3 Project Impacts to Special Status Plant Species Absent from the Site

Potential Impact. Nineteen (19) special status plant species, vascular and bryophyte, are known to occur in the region (see Table 1). Eighteen (18) of these species are considered to be absent from the project site and vicinity due to the absence of any present or historically suitable habitat, and/or the site's being situated outside the species' known geographic or elevational range. These species include Abram's onion (*Allium abramsii*), Mingan moonwart (*Botrychium minganense*), Western goblin (*Botrychium montanum*), Mariposa pussy-paws (*Calyptridium pulchellum*), Mono hot springs evening primrose (*Camissonia sierrae* ssp. *alticola*), tree anemone (*Carpenteria californica*), Small's southern clarkia (*Clarkia australis*), Hoover's cryptantha (*Cryptantha hooveri*), Jepson's dodder (*Cuscuta jepsonii*), slender-stalked monkeyflower (*Erythranthe gracilipes*), Shuteye Peak fawn lily (*Erythronium pluriflorum*), Brook pocket moss (*Fissidens aphelotaxifolius*), short-leaved hulsea (*Hulsea brevifolia*), Madera leptosiphon (*Leptosiphon serrulatus*), orange lupine (*Lupinus citrinus* var. *citrinus*), Nuttall's ribbon-leaved pondweed (*Potamogeton epihydrus*), Bolander's clover (*Trifolium bolanderi*), and grey-leaved violet (*Viola pinetorum* ssp. *grisea*). One species, Rawson's flaming trumpet (*Collomia rawosiana*), is considered unlikely to be present due to a lack of suitable habitat on site. The proposed project is not expected to affect these species, and impacts would be less than significant under CEQA and NEPA.

Mitigation. Mitigation measures are not warranted.

4.2.4 Project Impacts to Special Status Animal Species Absent from or Unlikely to Occur on Site

Potential Impact. Of the twenty-three (23) special status animal species known from the regional vicinity, 18 are considered absent from or unlikely to occur on the project site due to the absence

of suitable habitat, the site's being located outside of the known geographical or elevational range of the species, or the species' having been extirpated from the region. These species include the valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), Delta smelt (*Hypomesus transpacificus*), Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi*), California tiger salamander (*Ambystoma californiense*), Yosemite toad (*Anaxyrus canorus*), foothill yellow-legged frog (*Rana boylii*), California red-legged frog (*Rana draytonii*), Sierra Nevada yellow-legged frog (*Rana sierrae*), western spadefoot (*Spea hammondii*), willow flycatcher (*Empidonax trillii*), California condor (*Gymnogyps californianus*), bald eagle (*Haliaeetus leucocephalus*), great grey owl (*Strix nebulosa*), California spotted owl (*Strix occidentalis occidentalis*), North American wolverine (*Gulo gulo luscus*), fisher (*Pekania pennanti*), American badger (*Taxidea taxus*), and Sierra Nevada red fox (*Vulpes vulpes necator*) (see Table 1).

Since there is little to no likelihood that these species occur on site, they have no appreciable potential to be affected through construction-related injury or mortality or loss of habitat. Project impacts to these species are considered less than significant.

Mitigation. Mitigation measures are not warranted.

4.2.5 Project Impact to Sensitive Natural Communities and Designated Critical Habitat

Potential Impact. Designated critical habitat and sensitive natural communities are absent from the project site. The project is expected to have no impact on sensitive natural communities or designated critical habitat.

Mitigation. No mitigation is warranted.

4.2.6 Project Impact to Wildlife Movement Corridors

Potential Impact. As noted in Section 2.8 of this report, Little Fine Gold Creek, which flows through the project site, may support regular wildlife movement. If this creek is used as a movement corridor, it would likely be by common wildlife species adapted to human disturbance and noise. The habitat value of this corridor is of a lower quality due to the presence of private residences and existing water/wastewater infrastructure in the vicinity of the creek. Because no work will occur within the creek corridor itself, and because any wildlife using the corridor would

presumably be relatively tolerant of anthropogenic disturbance, potential project impacts to this potential movement corridor are considered less than significant under CEQA and NEPA.

Mitigation. No mitigation is warranted.

4.2.7 Project Impacts to Waters of the U.S. and State

Potential Impact. Little Fine Gold Creek is the only potentially jurisdictional feature on site. Based on the current site plan, this creek will be fully avoided by project improvements. The nearest construction activities are the deactivation of Well No. 1 (approximately 75 feet east of the creek), and improvements to Well No 2 and 4 (approximately 100 feet west and 120 feet east, respectively). Furthermore, the existing gravel road that crosses the creek will not have any maintenance. The project as designed will have no impacts on potentially jurisdictional waters of the U.S. or state.

Mitigation. No mitigation is warranted.

4.0 LITERATURE CITED

Baldwin, B. G., D. H. Goldman, D. J. Keil, R. Patterson, and T. J. Rosatti, Eds. 2012. The Jepson Manual: Vascular Plants of California, 2nd edition. University of California Press, Berkeley, CA.

Calflora. 2022. Calflora: An online database of plant identification and distribution [web application]. Calflora, Berkeley, California. Available: http://www.calflora.org. (Accessed December 2022).

California Department of Fish and Game. 1994. Amphibian and Reptile Species of Special Concern in California. Jennings and Hayes. Rancho Cordova, CA. 255 p.

California Department of Fish and Wildlife (CDFW). 2014. California Interagency Wildlife Task Group. CWHR version 9.0 personal computer program. Sacramento, CA. Available: https://wildlife.ca.gov/Data/ CWHR/ Life-History-and-Range. (Accessed December 2022).

CDFW. 2023. California Natural Diversity Database. *BIOS 6* and *Rarefind 5.0*. The Resources Agency, Sacramento, CA. (Accessed December 2022).

California Native Plant Society (CNPS), Rare Plant Program. 2022. Rare Plant Inventory (online edition, v9-01 1.5). Available: https://www.rareplants.cnps.org. (Accessed December 2022).

Conservation Biology Institute (CBI). 2021. Fisher Reproductive Habitat Suitability Model, Southern Sierra Nevada. Published August 31, 2021. Available: https://databasin.org/ datasets/5c239d7077db4345ac254465644690d4/. (Accessed December 2022).

eBird. 2022. eBird: An online database of bird distribution and abundance [web application]. eBird, Cornell Lab of Ornithology, Ithaca, New York. Available: http://www.ebird.org. (Accessed December 2022).

Grinnell, J., J.S. Dixon and J.M. Linsdale. 1937. Fur-bearing mammals of California. Vol. 2. Univ. California Press, Berkeley.

iNaturalist. 2022. Available: https://www.inaturalist.org. (Accessed December 2022).

Jepson Flora Project (eds.) 2022. Jepson eFlora. Available: https://ucjeps.berkeley.edu/eflora/. (Accessed December 2022).

Nafis, G. (2022) California Herps - A Guide to the Amphibians and Reptiles of California. Available: http://www.californiaherps.com/. (Accessed December 2022).

Natural Resources Conservation Service (NRCS). September 1, 2022, Version 15. Custom Soil Resources Report for Madera County Area, California. U.S. Department of Agriculture.

Available: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx. (Accessed November 2022).

Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens. 2009. A Manual of California Vegetation, Second Edition. California Native Plant Society, Sacramento, CA 1300pp.

Sean J. Barry and Gary M. Fellers. History and Status of the California Red-legged Frog (*Rana draytonii*) in the Sierra Nevada, California, USA Herpetological Conservation and Biology 8(2):456-502. Published: 15 September 2013.

Sherwin, Rick and Rambaldini, Daniela A. 2005. Species Account: Pallid Bat (Antrozous pallidus). Western Bat Working Group. Available: https://www.co.monterey.ca.us /Home/ShowDocument?id=51322. Accessed December 2022.

U.S. Army Corps of Engineers (USACE). 1987. Corps of Engineers wetlands delineation manual. Department of the Army.

United States Fish and Wildlife Service (USFWS). 2017. Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*). U.S. Fish and Wildlife Service; Sacramento, California. 28 pp.

USFWS. 2022. Official Species List, Information for Planning and Consulting (IPaC). Consultation Code: 2023-0011688. Prepared November 2, 2022.

USFWS. 2023. Environmental Conservation Online System (ECOS): Threatened and Endangered Species Critical Habitat Report. Updated January 5, 2023. Available: https://ecos.fws.gov/ecp/report/table/critical-habitat.html. (Accessed January 2023).

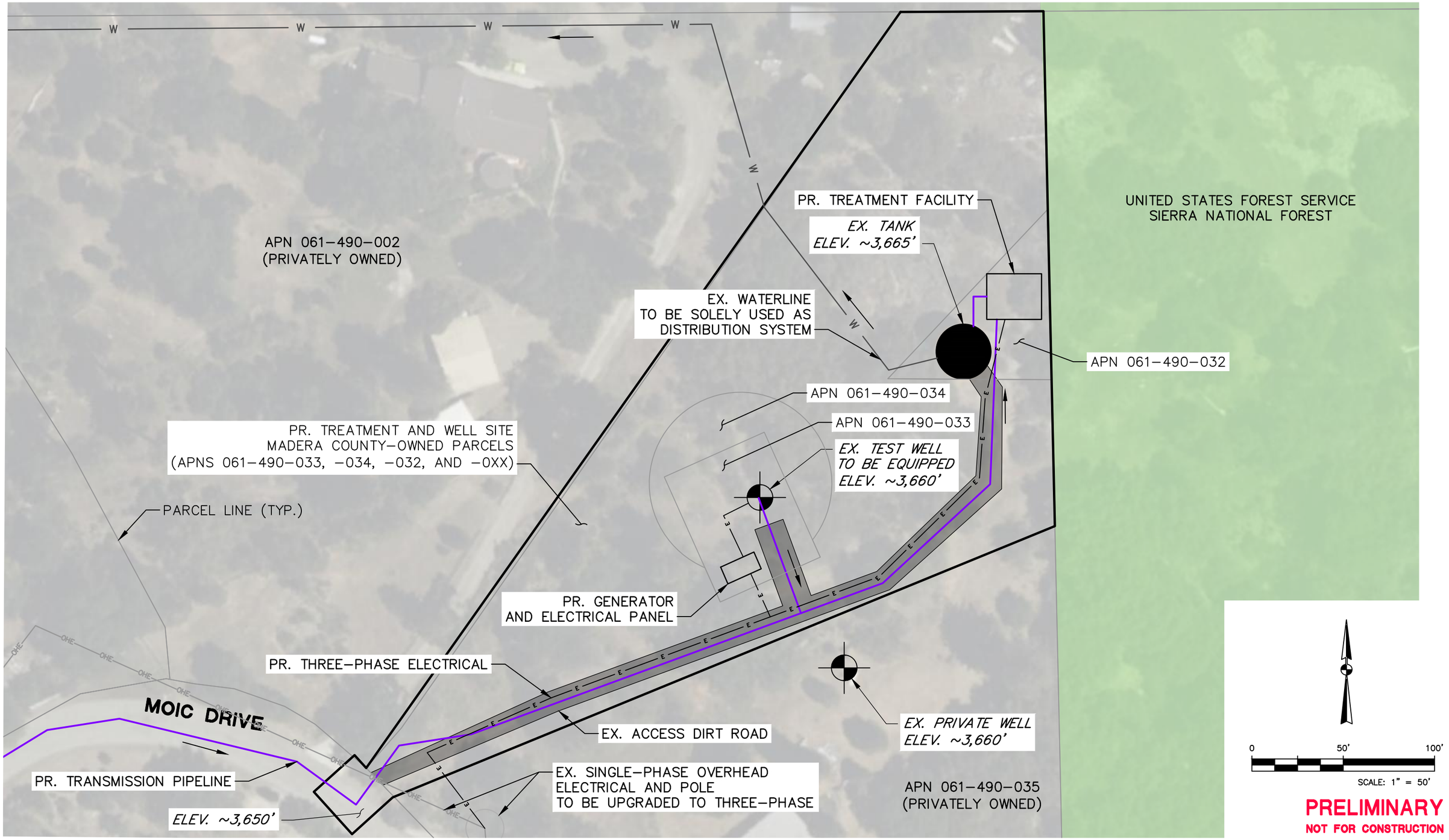
USFWS. 2014. Federal Register. Withdrawal of the Proposed Rule to Remove the Valley Elderberry Longhorn Beetle from the Federal List of Endangered and Threatened Wildlife; Proposed Rule. 50 CFR Part 17. Vol. 79, No. 180. Wednesday, September 17, 2014.

United States Geological Survey (USGS). 2021. The National Map: US Topo. Bass Lake Quadrangle, California- Madera County. 7.5-Minute Series.

Western Monarch Milkweed Mapper (WMMM). 2022. Data accessed from the Western Monarch Milkweed Mapper, a project by the Xerces Society, U.S. Fish and Wildlife Service, Idaho Department of Fish and Game, and Washington Department of Fish and Wildlife. Available: www.monarchmilkweedmapper.org. (Accessed: December 2022).

Zeiner, David C., William F. Laudenslayer, Kenneth E. Mayer and Marshal White. Ed. 1988-1990. California's Wildlife. Volume I-III. California Department of Fish and Game, Sacramento, California.

APPENDIX A: SITE PLAN



PRELIMINARY
NOT FOR CONSTRUCTION

DATE: 6/22/22 TIME: 9:15:36 AM
SERVER: N: DRIVE LAYOUT: Layout1
PATH: \\NV5.COM\SHARES\CASAC\PROJECT\226118-0000217.01 TEAFORD MEADOWS\CAD\EXHIBIT\CEQA_PER\
DRAWING NAME: FIG3-TANK_TREATMENT.DWG
PAGE SETUP: ----
DESIGNER: IM PROJ. MGR: JFO

NV5
15092 AVENUE OF SCIENCE, SUITE 200
SAN DIEGO, CA 92128
P: 858.385.0500 WWW.NV5.COM

MD 24 - TEAFORD MEADOWS WATER SYSTEM IMPROVEMENTS

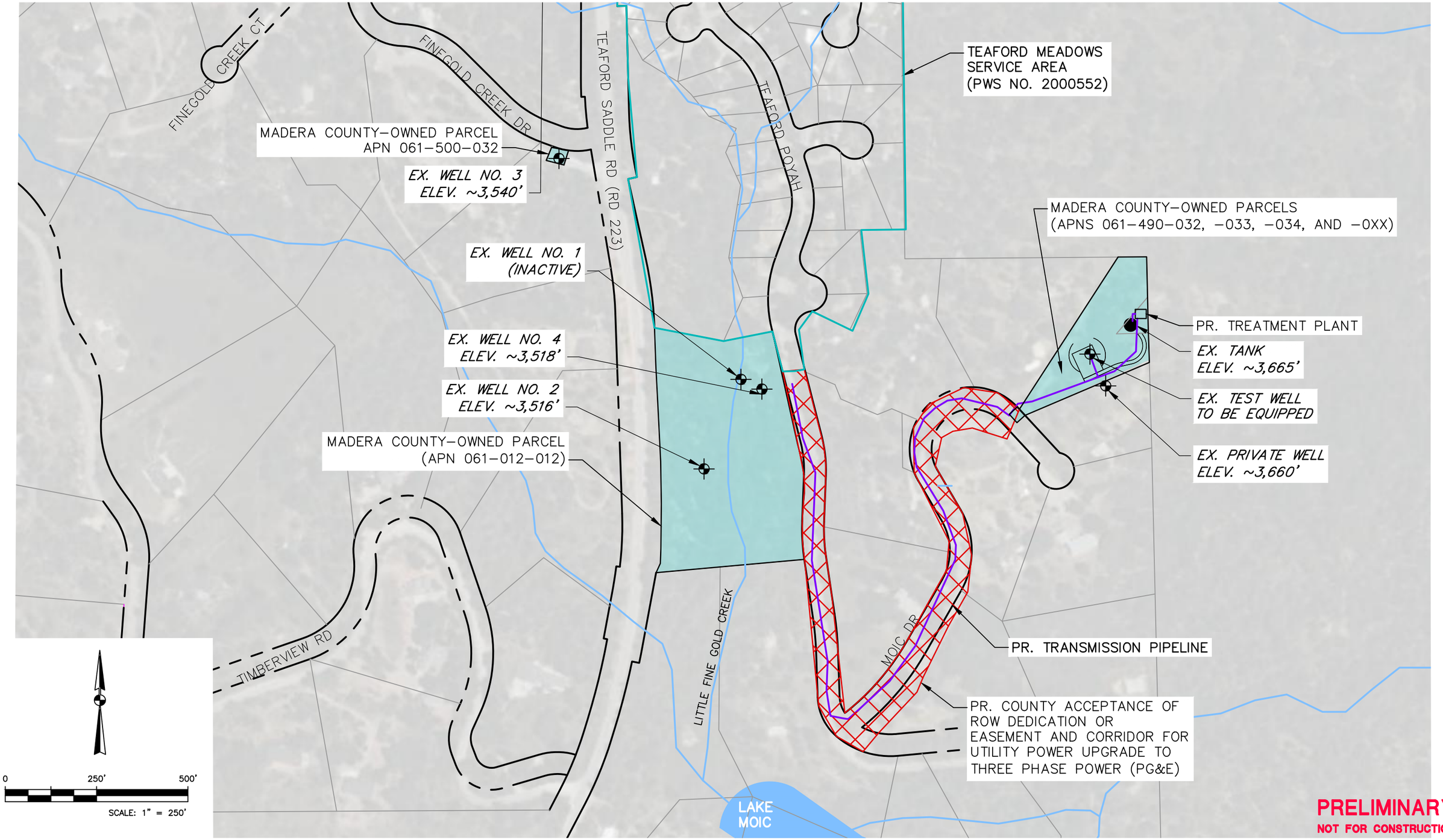
TANK AND TREATMENT FACILITY MAP

FIGURE NUMBER 3 OF 4 FIGURES

PREPARED FOR: COUNTY OF MADERA

DATE SUBMITTED: JUNE 2022

JOB NUMBER 226118-0000217.01



PRELIMINARY
NOT FOR CONSTRUCTION

DATE: 1/3/23 TIME: 6:25:54 PM
SERVER: N: DRIVE LAYOUT: Layout1
PATH: P:\226118-0000217-01_TEAFORDMEADOWS\CAD\EXHIBIT\CEQA_FEIR\
DRAWING NAME: FIG4–WELLSITE_TRANSMISSION.DWG
PAGE SETUP: ----
DESIGNER: IM PROJ. MGR: JFO

NV5
15092 AVENUE OF SCIENCE, SUITE 200
SAN DIEGO, CA 92128
P: 858.385.0500 WWW.NV5.COM

MD 24 - TEAFORD MEADOWS WATER SYSTEM IMPROVEMENTS

WELL SITE AND TRANSMISSION PIPELINE MAP

PREPARED FOR: COUNTY OF MADERA

DATE SUBMITTED: JAN 2023

FIGURE NUMBER 4 OF 4 FIGURES

JOB NUMBER 226118-0000217.01

EX. WASTEWATER SPRAY FIELD

EX. CONTROL PANEL

EX. WELL NO. 2

EX. UG. ELECTRICAL

EX. TREATED WATER FORCE MAIN

EX. WATERLINE

LITTLE FINEGOLD CREEK

APN 061-430-020

APN 061-430-012

EX. POWER POLE NO. 120319578

EX. CONTROL PANEL

EX. SHED

EX. ARV

EX. WELL NO. 1 (INACTIVE)

EX. POWER POLE NO. 10477227

EX. SEWERLINE

EX. WELL NO. 4

EX. WASTEWATER TREATMENT PLANT

EX. CONTROL PANEL WITH METER

ABANDONED WATERLINE

EX. HOSE BIB

EX. OH ELECTRICAL (PG&E)

PR. 4" HDPE TRANSMISSION PIPELINE

EX. POWER POLE NO. 121362051

EX. WASTEWATER SPRAY FIELD

TO WATER TREATMENT BUILDING

TEAFORD POYAH

FROM STORAGE TANK

PR. 6" PVC C900 DISTRIBUTION PIPELINE

PR. GATE VALVE (3)

MADERA COUNTY ROW 60.0'

EX. TELCO

0 20' 40'

SCALE: 1"=20'

PRELIMINARY

NOT FOR CONSTRUCTION

DATE: 12/21/22 TIME: 2:26:54 PM

SERVER: NONE LAYOUT: Layout1

PATH: \2261\226118-0000217-01_TEAFORDMEADOWS\CADD\CIVIL

DRAWING NAME: C-01.DWG

PAGE SETUP: 24x36_PDF-NoMerge

DESIGNER: #### PROJ. MGR: ####

NO.	BY	DATE	REVISIONS:

CAUTION: The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes to the plans must be in writing and must be approved by the preparer of these plans.

REGISTERED PROFESSIONAL ENGINEER JAMES F. OWENS No. C-66067 Exp. 6/30/24 CIVIL STATE OF CALIFORNIA

NV5
15092 AVENUE OF SCIENCE, SUITE 200
SAN DIEGO, CA 92128
P: 858.385.0500 WWW.NV5.COM

MD-24 - WATER SUPPLY IMPROVEMENTS

EXISTING WELL SITE PLAN

PREPARED FOR: MADERA COUNTY

DATE SUBMITTED: DEC 2022

SHEET NUMBER C-01

X OF X SHEETS

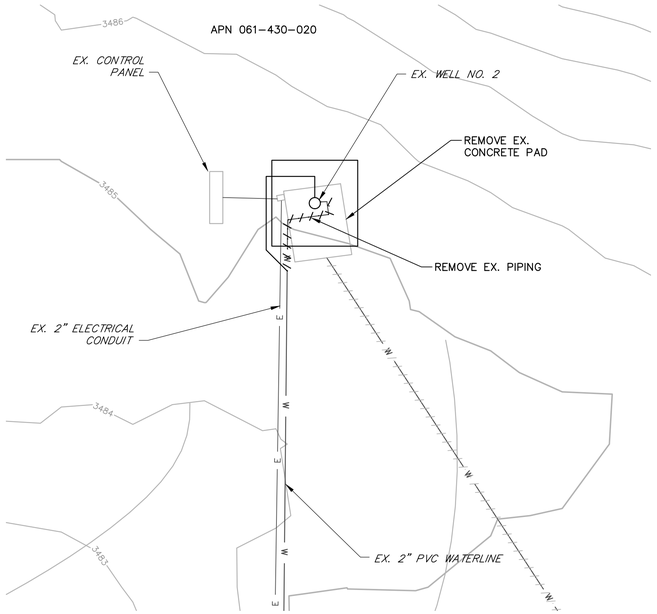
SCALE

VERTICAL: 1"= ####

HORIZONTAL: 1"= ####

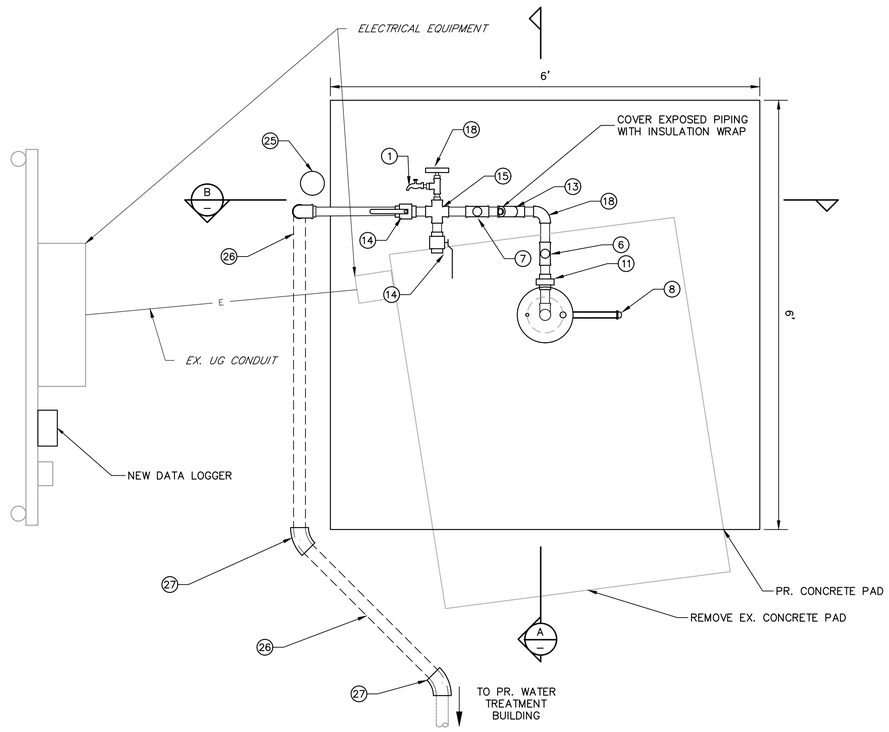
JOB NUMBER 226118-0000217.01

ZACHARY.STOCK



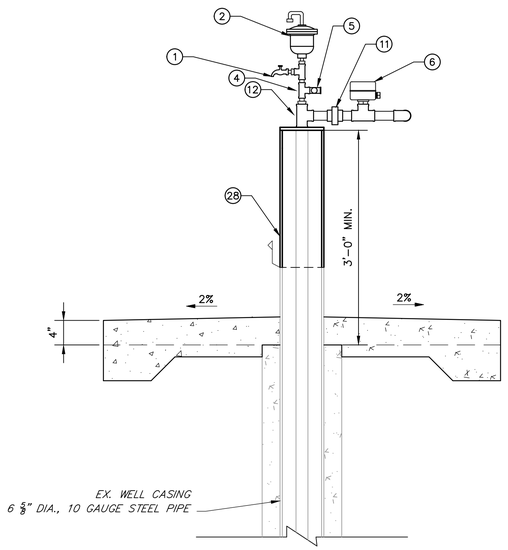
WELL NO. 2 SITE PLAN

SCALE: 1"=5'



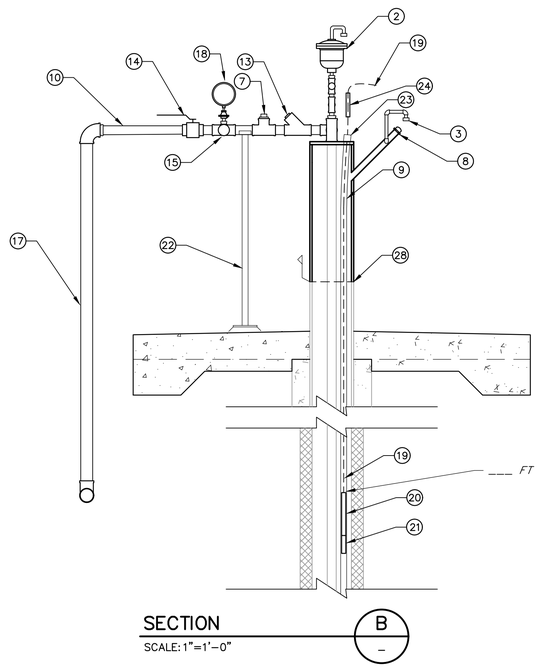
WELL NO. 2 – MECHANICAL PLAN

SCALE: 1"=1'-0"



SECTION A

SCALE: 1"=1'-0"



SECTION B

SCALE: 1"=1'-0"

CONSTRUCTION NOTES

1. ½" 304 SST SAMPLE TAP W/ ½" 304 SST NIPPLE & ¾"x½" DIELECTRIC BUSHING
2. ½" AIR RELEASE VALVE W/ ½" 304 SST NIPPLE & ¾"x½" DIELECTRIC BUSHING
3. ½" HDG STEEL U-VENT W/ FINE MESH BUG SCREEN
4. ¾" HDG MALLEABLE IRON TEE
5. ¾" BRONZE PRESSURE RELIEF VALVE. ORIENT DISCHARGE TO EAST.
6. 1" FLOW SWITCH W/ 1½"x1" DIELECTRIC BUSHING
7. 1" HDG MALLEABLE IRON PLUG FOR FUTURE INJECTION POINT
8. 1½" CARBON STEEL SOUNDING TUBE W/ THREADED END CAP, SEE NOTE 3
9. 1" SCH 40 PVC MEASURING TUBE FOR SUBMERSIBLE PRESSURE TRANSMITTER.
10. 1½" HDG STEEL PIPE, TYP.
11. 1½" HDG MALLEABLE IRON UNION
12. 1½" HDG MALLEABLE IRON TEE
13. 1½" BRONZE CHECK VALVE
14. 1½" BRONZE BALL VALVE
15. 1½" HDG MALLEABLE IRON CROSS
16. 1½" HDG MALLEABLE IRON ELBOW
17. 2" HDG STEEL PIPE, TYP.
18. SST PRESSURE GAUGE
19. VENTED POLYURETHANE CABLE W/ KEVLAR STRAIN RELIEF CORD
20. SUBMERSIBLE PRESSURE TRANSMITTER. SEE NOTE 5
21. SINK WEIGHT
22. PIPE SUPPORT
23. STRAIN RELIEF CONNECTOR
24. CABLE CLAMP BY PRESSURE TRANSMITTER MANUFACTURER
25. TRACER WIRE ACCESS PORT. 4" SDR PVC PIPE W/ CAST IRON CAP
26. 2" PVC SCH 80 PIPE
27. 2" PVC 45° ELBOW
28. INSTALL (WELD) 6 5/8" DIA. x ¼" WALL THICKNESS STEEL WELL CASING TO TOP OF EX. WELL CASING

GENERAL NOTES:

1. EXCEPT AS NOTED OTHERWISE, CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL EXISTING ABOVE GRADE WELL PIPING APPURTENANCES AND CONCRETE SLAB. CONTRACTOR SHALL COORDINATE WITH CONSTRUCTION MANAGER PRIOR TO ANY DEMOLITION WORK.
2. CONTRACTOR WILL NEED TO LIFT, REMOVE, STORE, AND RE-INSTALL EXISTING WELL PUMP/MOTOR AND DROP PIPING FOR AND INSTALLATION OF THE PROPOSED IMPROVEMENTS.
3. THE STEEL SOUNDING TUBE, WITH THREADED FACTORY TAP FOR VENT, SHALL BE SHOP WELDED TO THE PROPOSED STEEL CASING. THE SOUNDING TUBE AND EXISTING CASING SHALL BE FACTORY PRIMED AND FIELD EPOXY COATED.
4. CONTRACTOR SHALL DISINFECT EXISTING WELL, EXISTING WELL PIPING, AND PROPOSED WELL PIPING IN ACCORDANCE WITH AWWA STANDARD C654-13 PRIOR TO PLACING WELL BACK INTO SERVICE.
5. WELL DRILLED IN 1966 AND DEEPENED IN 1979 AND 1988. SEE SPECS FOR WELL COMPLETION REPORTS. CONTRACTOR TO VIDEO INSPECT AND OBTAIN SAMPLES FOR LAB TESTING BY DISTRICT. SEE SPECS.
6. WELL NO. 2 PUMPS AT FLOW RATE OF 26 GPM

0 20' 40'

SCALE: 1"=20'

PRELIMINARY

NOT FOR CONSTRUCTION

DATE: 12/21/22 TIME: 2:20:44 PM
SERVER: NONE LAYOUT: Layout1
PATH: \2261\226118-0000217-01_TEAFORDMEADOWS\CADD\CIVIL
DRAWING NAME: M-01.DWG
PAGE SETUP: 24x36_PDF-NoMerge
DESIGNER: ##### PROJ. MGR: ####

NO.	BY	DATE	REVISIONS:

REGISTERED PROFESSIONAL ENGINEER JAMES F. OWENS No. C-66067 Exp. 6/30/24 CIVIL STATE OF CALIFORNIA

NV5
15092 AVENUE OF SCIENCE, SUITE 200
SAN DIEGO, CA 92128
P: 858.385.0500 WWW.NV5.COM

MD-24 - WATER SUPPLY IMPROVEMENTS

MECHANICAL - WELL NO. 2 PLAN

SHEET NUMBER M-01 X OF X SHEETS

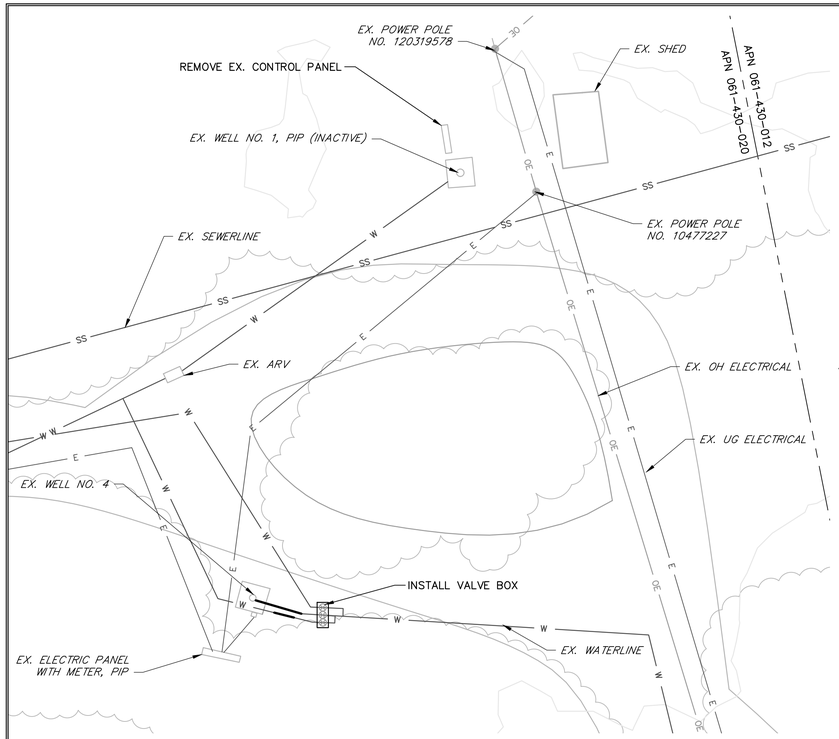
SCALE VERTICAL: 1"= #### HORIZONTAL: 1"= ####

PREPARED FOR: MADERA COUNTY

DATE SUBMITTED: DEC 2022

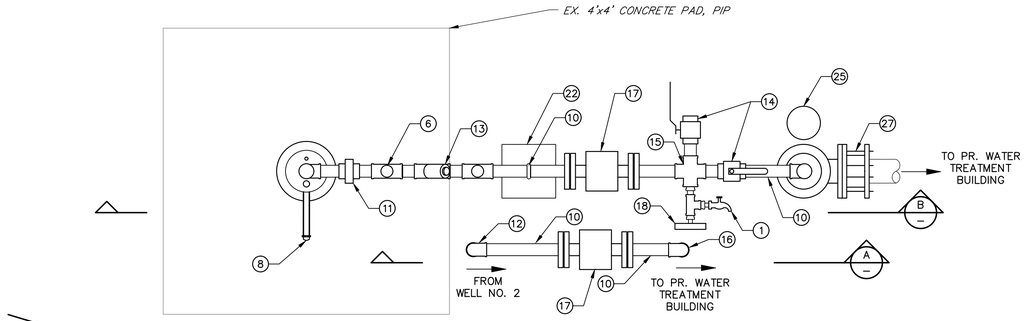
JOB NUMBER 226118-0000217.01

ZACHARY.STOCK



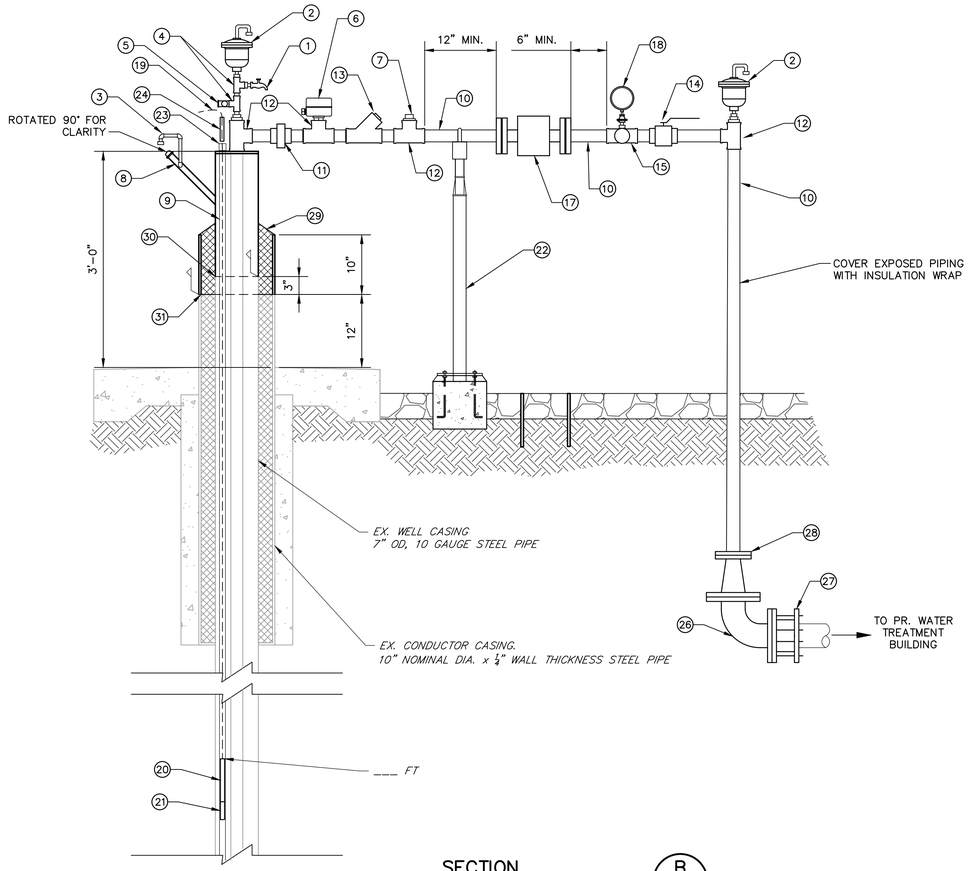
WELL NO. 1 AND 4 SITE PLAN

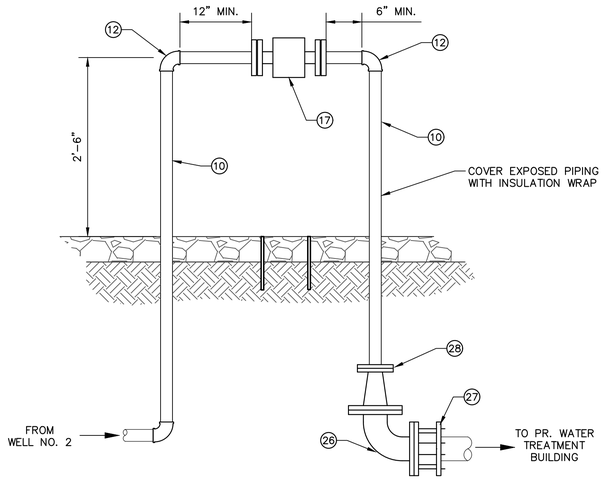
SCALE: 1"=10'



WELL NO. 4 – MECHANICAL PLAN

SCALE: 1"=1'-0"





SECTION A

SCALE: 1"=1'-0"

SECTION B

SCALE: 1"=1'-0"

CONSTRUCTION NOTES:

1. ½" 304 SST SAMPLE TAP W/ ½" 304 SST NIPPLE & ¾"x½" DIELECTRIC BUSHING
2. ½" AIR RELEASE VALVE W/ ½" 304 SST NIPPLE & ¾"x½" DIELECTRIC BUSHING
3. ½" HDG STEEL U-VENT W/ FINE MESH BUG SCREEN
4. ¾" HDG MALLEABLE IRON TEE
5. ¾" BRONZE PRESSURE RELIEF VALVE. ORIENT DISCHARGE TO SOUTH.
6. 1" FLOW SWITCH W/ 2"x1" DIELECTRIC BUSHING
7. 1" HDG MALLEABLE IRON PLUG FOR FUTURE INJECTION POINT
8. 1½" CARBON STEEL SOUNDING TUBE W/ THREADED END CAP, SEE NOTE 3
9. 1" SCH 40 PVC MEASURING TUBE FOR SUBMERSIBLE PRESSURE TRANSMITTER.
10. 2" HDG STEEL PIPE, TYP.
11. 2" HDG MALLEABLE IRON UNION
12. 2" HDG MALLEABLE IRON TEE
13. 2" BRONZE CHECK VALVE
14. 2" BRONZE BALL VALVE
15. 2" HDG MALLEABLE IRON CROSS
16. 2" HDG MALLEABLE IRON ELBOW
17. 2" MAGNETIC FLOW METER W/ SST GROUNDING RINGS, SEE NOTE 5
18. SST PRESSURE GAUGE
19. VENTED POLYURETHANE CABLE W/ KEVLAR STRAIN RELIEF CORD
20. SUBMERSIBLE PRESSURE TRANSMITTER
21. SINK WEIGHT
22. PIPE SUPPORT
23. STRAIN RELIEF CONNECTOR
24. CABLE CLAMP BY PRESSURE TRANSMITTER MANUFACTURER
25. TRACER WIRE ACCESS PORT. 4" SDR PVC PIPE W/ CAST IRON CAP
26. 4" DI ELBOW, FLxFL W/ THRUST BLOCK
27. 4" DI ADAPTER, FLxMJ
28. 2"x4" DI REDUCER, FLxFL
29. REMOVE AND REINSTALL GROUT SEAL
30. CUT AND REMOVE EX. WELL CASING AND INSTALL (WELD) 7" OD, 10 GAUGE STEEL WELL CASING
31. CUT AND REMOVE EX. CONDUCTOR CASING AND INSTALL (WELD) 10" NOMINAL DIAMETER x ¼" WALL THICKNESS STEEL CONDUCTOR CASING

GENERAL NOTES:

1. CONTRACTOR WILL NEED TO LIFT, REMOVE, STORE, AND RE-INSTALL EXISTING WELL PUMP/MOTOR AND DROP PIPING FOR AND INSTALLATION OF THE PROPOSED IMPROVEMENTS.
2. THE STEEL SOUNDING TUBE, WITH THREADED FACTORY TAP FOR VENT, SHALL BE SHOP WELDED TO THE PROPOSED STEEL CASING. THE SOUNDING TUBE AND EXISTING CASING SHALL BE FACTORY PRIMED AND FIELD EPOXY COATED.
3. CONTRACTOR SHALL DISINFECT EXISTING WELL, EXISTING WELL PIPING, AND PROPOSED WELL PIPING IN ACCORDANCE WITH AWWA STANDARD C654-13 PRIOR TO PLACING WELL BACK INTO SERVICE.
4. WELL DRILLED IN 1986 AND DEEPENED IN 2009. SEE SPECS FOR WELL COMPLETION REPORTS. CONTRACTOR TO VIDEO INSPECT AND OBTAIN SAMPLES FOR LAB TESTING BY DISTRICT. SEE SPECS.
5. PROVIDE MINIMUM STRAIGHT PIPE RUN OF 2 DIAMETERS IN LENGTH DOWNSTREAM AND 5 DIAMETERS IN LENGTH UPSTREAM OF FLOW METER, OR PER FLOW METER MFR RECOMMENDATIONS, WHICHEVER IS GREATER.

PRELIMINARY

NOT FOR CONSTRUCTION

DATE: 12/21/22 TIME: 2:20:36 PM
SERVER: NONE LAYOUT: Layout1
PATH: \2261\226118-0000217-01_TEAFORDMEADOWS\CADD\CIVIL
DRAWING NAME: M-02.DWG
PAGE SETUP: ----
DESIGNER: #### PROJ. MGR: ####

NO.	BY	DATE	REVISIONS:

REGISTERED PROFESSIONAL ENGINEER JAMES F. OWENS No. C-66067 Exp. 6/30/24 CIVIL STATE OF CALIFORNIA

NV5
15092 AVENUE OF SCIENCE, SUITE 200
SAN DIEGO, CA 92128
P: 858.385.0500 WWW.NV5.COM

MD-24 - WATER SUPPLY IMPROVEMENTS

MECHANICAL - WELL NO. 4 PLAN

PREPARED FOR: MADERA COUNTY

DATE SUBMITTED: DEC 2022

SHEET NUMBER M-02 X OF X SHEETS

SCALE VERTICAL: 1"= #### HORIZONTAL: 1"= ####

JOB NUMBER 226118-0000217.01

ZACHARY STOCK

APPENDIX B: VASCULAR PLANTS OF THE PROJECT SITE

APPENDIX B: VASCULAR PLANTS OF THE PROJECT SITE

The plants species listed below were observed at on the project site during a survey conducted by Live Oak Associates, Inc. on October 28, 2022. The U.S. Fish and Wildlife Service wetland indicator status of each plant has been shown following its common name.

OBL - Obligate
FACW - Facultative Wetland
FAC - Facultative
FACU - Facultative Upland
UPL - Upland
+/- - Higher/lower end of category
NR - No review
NA - No agreement
NI - No investigation

ANCARDIACEAE – Cashew Family		
Toxicodendron diversilobum	poison oak	FACU
APIACEAE – Umbellifer Family		
Daucus pusillus	American wild carrot	UPL
Torilis arvensis	field hedge parsley	UPL
AMERANTHIACEAE – Amaranth Family		
Amaranthus blitoides	prostrate pigweed	FAC
ASTERACEAE – Daisy Family		
Anaphalis margaritacea	pearly everlasting	FACU
Cirsium vulgare	bullthistle	FACU
Hypochaeris radicata	hairy cat's ear	FACU
Pseudognaphalium californicum	ladies' tobacco	UPL
Wyethia elata	Hall's wyethia	UPL
BRASSICACEAE – Mustard Family		
Hirschfeldia incana	shortpod mustard	UPL
Nasturtium officinale	watercress	OBL
CAPRIFOLIACEAE – Honeysuckle Family		
Symphoricarpos rotundifolius	mountain snowberry	UPL
CUPRESSACEAE – Conifer Family		
Calocedrus decurrens	incense cedar	UPL
CYPERACEAE – Sedge Family		
Carex sp.	sedge	
Cyperus eragrostis	tall flat sedge	FACW
ERICACEAE – Heath Family		
Arctostaphylos viscida ssp. mariposa	Mariposa manzanita	UPL
FABACEAE – Legumes Family		
Lupinus spp.	lupine	

FAGACEAE – Beach Family		
Quercus chrysolepis	gold cup oak	UPL
Quercus kelloggii	black oak	UPL
Quercus wislizeni	interior live oak	UPL
GROSSULARIACEAE – Gooseberry Family		
Ribes montigenum	mountain gooseberry	UPL
Ribes roezlii	Sierra gooseberry	UPL
JUNCACEAE – Rushes Family		
Juncus balticus	Baltic rush	FACW
LAMIACEAE – Mint Family		
Marrubium vulgare	white horehound	FACU
Stachys albens	white hedge nettle	OBL
OROBANCHACEAE – Broomrape Family		
Cordylanthus rigidus ssp. *rigidus*	rigid bird's beak	UPL
PINACEAE – Pine Family		
Abies concolor	white fir	UPL
Pinus ponderosa	ponderosa pine	FACU
PLANTAGINACEAE – Plantain Family		
Veronica americana	American speedwell	OBL
POACEAE – Grass Family		
Agrostis stolonifera	creeping bentgrass	FAC
Avena fatua	common wild oats	UPL
Bromus diandrus	ripgut brome	UPL
Bromus madritensis	foxtail chess	UPL
Cynodon dactylon	Bermuda grass	FACU
Cynosurus echinatus	annual dogtail	UPL
Digitaria sanguinalis	hairy crabgrass	FACU
Elymus glaucus	blue wildrye	FACU
Poa pratensis	Kentucky bluegrass	FAC
Poa secunda	pine bluegrass	FACU
Sporobolus airoides	alkali sacaton	FAC
Stipa occidentalis	western needlegrass	UPL
POLYGONACEAE – Buckwheat Family		
Persicaria lapathifolia	common knotweed	FACW
RANUNCULACEAE – Madder Family		
Delphinium spp.	larkspur	
RHAMNACEAE – Buckthorn Family		
Ceanothus cuneatus	buck brush	UPL
ROSACEAE – Rose Family		
Chamaebatia foliolosa	Sierra mountain misery	UPL
Rubus armeniacus	Himalayan blackberry	FAC
Rubus ursinus	California blackberry	FACU
RUBIACEAE –		
Galium sp.	bedstraw	

SAPINDACEAE – Soapberry Family		
Aesculus californica	buckeye	UPL
SOLANACEAE – Nightshade Family		
Solanum americanum	American black nightshade	FACU
VISCACEAE – Mistletoe Family		
Phoradendron sp.	mistletoe	

APPENDIX C: TERRESTRIAL VERTEBRATES OF THE PROJECT SITE

APPENDIX C: TERRESTRIAL VERTEBRATE SPECIES THAT POTENTIALLY OCCUR ON THE PROJECT SITE

The species listed below are those that may reasonably be expected to use the habitats of the project site routinely or from time to time. The list was not intended to include birds that are vagrants or occasional transients. Terrestrial vertebrate species observed in or adjacent to the project site during the October 28, 2022 survey have been noted with an asterisk.

CLASS: AMPHIBIA
ORDER: ANURA
FAMILY: BUFONIDAE (True Toads)
California Toad (*Bufo boreas halophilus*)
FAMILY: HYLIDAE (Treefrogs and Relatives)
Sierra Treefrog (*Pseudacris sierra*)
ORDER: CAUDATA (Salamanders)
FAMILY: PLETHODONTIDAE (Lungless Salamanders)
Arboreal Salamander (*Aneides lugubris*)
Gregarious Slender Salamander (*Batrachoseps gregarious*)
Sierra Nevada Ensatina (*Ensatina eschscholtzii platensis*)
FAMILY: SALAMANDRIDAE (Newts)
Sierra Newt (*Taricha sierrae*)

CLASS: REPTILIA
ORDER: SQUAMATA (Lizards and Snakes)
SUBORDER: SAURIA (Lizards)
FAMILY: ANGUIDAE (Alligator Lizards and Relatives)
Forest Alligator Lizard (*Elgaria multicarinata multicarinata*)
Sierra Alligator Lizard (*Elgaria coerulea palmeri*)
FAMILY: PHYRNOSOMATIDAE (Spiny, Side-blotched, Horned, and Relatives)
Western Sagebrush Lizard (*Sceloporus graciosus gracilis*)
San Joaquin Fence Lizard (*Sceloporus occidentalis biseriatus*)
FAMILY: SCINCIDAE (Skinks)
Northern Brown Skink (*Plestiodon gilberti placerensis*)
SUBORDER: SERPENTES (Snakes)
FAMILY: COLUBRIDAE (Colubrids)
Coral-bellied Ring-necked Snake (*Diadophis punctatus pulchellus*)
Northern Rubber Boa (*Charina bottae*)
Western Yellow-bellied Racer (*Coluber constrictor mormon*)
California Striped Racer (*Coluber lateralis lateralis*)
California Kingsnake (*Lampropeltis californiae*)
California Mountain Kingsnake (*Lampropeltis zonata*)
Pacific Gopher Snake (*Pituophis catenifer catenifer*)
Sierra Gartersnake (*Thamnophis couchii*)
Mountain Gartersnake (*Thamnophis elegans elegans*)
FAMILY: VIPERIDAE
Northern Pacific Rattlesnake (*Crotalus oreganus oreganus*)

CLASS: AVES

ORDER: APODIFORMES (Swifts and Hummingbirds)

FAMILY: TROCHILIDAE (Hummingbirds)

Black-chinned Hummingbird (*Archilochus alexandri*)

*Anna's Hummingbird (*Calypte anna*)

Rufous Hummingbird (*Selasphorus rufus*)

Allen's Hummingbird (*Selasphorus sasin*)

ORDER: COLUMBIFORMES (Pigeons and Doves)

FAMILY: COLUMBIDAE (Pigeons and Doves)

Band-tailed Pigeon (*Columba fasciata*)

Mourning Dove (*Zenaida macroura*)

ORDER: CORACIIFORMES (Kingfishers and Hornbills)

FAMILY: ALCEDINIDAE (Kingfishers)

Belted Kingfisher (*Megaceryle alcyon*)

ORDER: FALCONIFORMES (Vultures, Hawks, and Falcons)

FAMILY: CATHARTIDAE (American Vultures)

Turkey Vulture (*Cathartes aura*)

FAMILY: ACCIPITRIDAE (Hawks, Eagles, and Kites)

Cooper's Hawk (*Accipiter cooperi*)

Sharp-shinned Hawk (*Accipiter striatus*)

*Red-shouldered Hawk (*Buteo lineatus*)

*Red-tailed Hawk (*Buteo jamaicensis*)

ORDER: GALLIFORMES (Megapodes, Currassows, Pheasants, and Relatives)

FAMILY: PHASIANIDAE (Quails, Pheasants, and Relatives)

*California Quail (*Callipepla californica*)

*Wild Turkey (*Melegris gallopavo*)

ORDER: PICIFORMES (Woodpeckers and Relatives)

FAMILY: PICIDAE (Woodpeckers and Wrynecks)

*Northern Flicker (*Colaptes auratus*)

Hairy Woodpecker (*Dryobates villosus*)

*Acorn Woodpecker (*Melanerpes formicivorous*)

Nuttall's Woodpecker (*Picoides nuttallii*)

Downy Woodpecker (*Picoides pubescens*)

ORDER: STRIGIFORMES (Owls)

FAMILY: TYTONIDAE (Barn Owls)

Barn Owl (*Tyto alba*)

FAMILY: STRIGIDAE (Typical Owls)

Northern saw-whet owl (*Aegolius acadicus*)

Great Horned Owl (*Bubo virginianus*)

Western Screech Owl (*Megascops kennicottii*)

ORDER: PASSERIFORMES (Perching Birds)

FAMILY: AEGITHALIDAE (Bushtit)

*Bushtit (*Psaltriparus minimus*)

FAMILY: CARDINALIDAE (Cardinals and Allies)

Black-headed Grosbeak (*Pheucticus melanocephalus*)

Western Tanager (*Piranga ludoviciana*)

FAMILY: CERTHIIDAE (Treecreepers)

Brown Creeper (*Certhia americana*)

FAMILY: CORVIDAE (Jays, Magpies, and Crows)

*California Scrub Jay (*Aphelocoma californica*)

*Steller's Jay (*Cyanocitta stelleri*)

*Common Raven (*Corvus corax*)

FAMILY: FRINGILLIDAE (Finches)

House Finch (*Carpodacus mexicanus*)

Lesser Goldfinch (*Carduelis psaltria*)

Cassin's Finch (*Haemorhous cassinii*)

Purple Finch (*Haemorhous purpureus*)

FAMILY: HIRUNDINIDAE (Swallows)

Tree Swallow (*Tachycineta bicolor*)

Violet-green Swallow (*Tachycineta thalassina*)

Northern Rough-winged Swallow (*Stelgidopteryx serripennis*)

Cliff Swallow (*Hirundo pyrrhonota*)

FAMILY: ICTERIDAE (Blackbirds, Orioles and Allies)

Brewer's Blackbird (*Euphagus cyanocephalus*)

Bullock's Oriole (*Icterus bullockii*)

FAMILY: PASSERELLIDAE (New World Sparrows)

*Dark-eyed Junco (*Junco hyemalis*)

Lincoln's Sparrow (*Melospiza lincolnii*)

California Towhee (*Melozone crissalis*)

Song Sparrow (*Melospiza melodia*)

Fox Sparrow (*Passerella iliaca*)

Spotted Towhee (*Pipilo maculatus*)

Golden-crowned Sparrow (*Zonotrichia atricapilla*)

White-crowned Sparrow (*Zonotrichia leucophrys*)

FAMILY: PARIDAE (Titmice)

Oak Titmouse (*Baeolophus inornatus)*

FAMILY: PARULIDAE (New World Warblers)

Wilson's Warbler (*Cardellina pusilla*)

Orange-crowned Warbler (*Leiothlypis celata*)

Nashville Warbler (*Leiothlypis ruficapilla*)

Yellow-rumped Warbler (*Setophaga coronata*)

Townsend's Warbler (*Setophaga townsendii*)

FAMILY: POLIOPTILIDATE (Gnatcatchers and Gnatwrens)

Blue-gray Gnatcatcher (*Polioptila caerulea*)

FAMILY: PTILOGONATIDAE (Silky Flycatchers)

Phainopepla (*Phainopepla nitens*)

FAMILY: REGULIDAE (Kinglets)

*Ruby-crowned Kinglet (*Corthylio calendula*)

Golden-crowned Kinglet (*Regulus satrapa*)

FAMILY: SITTIDAE (Nuthatches)

White-breasted Nuthatch (*Sitta carolinensis*)

FAMILY: TROGLODYTIDAE (Wrens)
Bewick's Wren (*Thryomanes bewickii*)
House Wren (*Troglodytes aedon*)
FAMILY: TURDIDAE (Thrushes)
Western Bluebird (*Sialia mexicana*)
*American Robin (*Turdus migratorius*)
FAMILY: TYRANNIDAE (Tyrant Flycatchers)
Western Wood-pewee (*Contopus sordidulus*)
Pacific Slope Flycatcher (*Empidonax difficilis*)
*Black Phoebe (*Sayornis nigricans*)
Say's Phoebe (*Sayornis saya*)
Ash-throated Flycatcher (*Myiarchus cinerascens*)
FAMILY: VERIONIDAE (Vireos, Shrike-Babblers, and Erpornis)
Cassin's Vireo (*Vireo cassinii*)
Hutton's Vireo (*Vireo huttoni*)

CLASS: MAMMALIA
ORDER: ARTIODACTYLA
FAMILY: CERVIDAE (Deer, Elk, and Relatives)
Mule Deer (*Odocoileus hemionus*)
ORDER: CARNIVORA (Carnivores)
FAMILY: CANIDAE (Foxes, Wolves, and Relatives)
Coyote (*Canis latrans*)
Domestic/Feral Dog (*Canis lupus*)
Gray Fox (*Urocyon cinereoargenteus*)
FAMILY: PROCYONIDAE (Raccoons and Relatives)
Ringtail (*Bassariscus astutus*)
Raccoon (*Procyon lotor*)
FAMILY: MUSTELIDAE (Weasels, Badgers, and Relatives)
Long-tailed Weasel (*Mustela frenata*)
Striped Skunk (*Mephitis mephitis*)
FAMILY: FELIDAE (Cats)
Domestic/Feral Cat (*Felis catus*)
*Bobcat (*Lynx rufus*)
Mountain Lion (*Puma concolor*)
FAMILY: URSIDAE (Bears)
Black Bear (*Ursus amercanus*)
ORDER: CHIROPTERA (Bats)
FAMILY: MOLOSSIDAE (Free-tailed Bat)
Brazilian Free-tailed Bat (*Tadarida brasiliensis*)
FAMILY: VESPERTILIONIDAE (Vespertilionid Bats)
Pallid Bat (*Antrozous pallidus*)
Big Brown Bat (*Eptesicus fuscus*)
Hoary Bat (*Lasiurus cinereus*)
Silver-haired Bat (*Lasionycteris noctivagans*)
Yuma Myotis (*Myotis yumanensis*)

Long-eared Myotis (*Myotis evotis*)
Long-legged Myotis (*Myotis volans*)
California Myotis (*Myotis californicus*)
Small-footed Myotis (*Myotis leibii*)
Little Brown Bat (*Myotis lucifugus*)

ORDER: INSECTIVORA (Shrews and Moles)

FAMILY: SORCIDAE (Shrews)

Ornate shrew (*Sorex ornatus*)

FAMILY: TALPIDAE (Moles)

Broad-footed Mole (*Scapanus latimanus*)

ORDER: RODENTIA (Squirrels, Rats, Mice, and Relatives)

FAMILY: CRICETIDAE (Deer Mice, Voles, and Relatives)

Long-tailed Vole (*Microtus longicaudus*)
Dusky-footed Woodrat (*Neotoma fuscipes*)
California Pocket Mouse (*Perognathus californicus*)
Parasitic Mouse (*Peromyscus californicus*)
Deer Mouse (*Peromyscus maniculatus*)
Brush Mouse (*Peromyscus boylii*)
Western Harvest Mouse (*Reithrodontomys megalotis*)

FAMILY: GEOMYIDAE (Pocket Gophers)

*Botta's Pocket Gopher (*Thomomys bottae*)

FAMILY: MURIDAE (Old World Rats and Mice)

House Mouse (*Mus musculus*)

FAMILY: SCIURIDAE (Squirrels, Chipmunks, and Marmots)

Merriam's Chipmunk (*Neotamias merriami*)
*Western Grey Squirrel (*Sciurus griseus*)
California Ground Squirrel (*Spermophilus beecheyi*)

APPENDIX D: SELECTED PHOTOGRAPHS OF THE PROJECT SITE

Photo 1. Overview of Well No. 3 from Fine Gold Creek Drive, proposed for deactivation. Surrounded by mixed conifer forest.

Photo 2. Overview of proposed generator and electrical panel improvement adjacent to existing test well. Surrounded by mixed oak and pine woodland.

Photo 3. Overview of existing test well and associated infrastructure.

Photo 4. Overview of dirt access road/access to existing water storage tank in eastern portion of project area.

Photo 5. Overview of proposed treatment facility location adjacent to existing water storage tank with ruderal vegetation.

Photo 6. Overview of existing dirt road to access eastern area of project site off of Moic Drive. Surrounded by mixed oak and pine woodland.

Photo 7. Overview of transmission pipeline location in existing road (Moic Drive).

Photo 8. Overview of transmission pipeline location in existing road (Teaford Poyah), where the mixed oak pine and woodland transitions into mixed conifer forest.

Photo 9. Overview of Well No. 4 adjacent to existing dirt road where transmission pipeline will be connected to Teaford Poyah.

Photo 10. Overview of Well No. 1 (proposed for destruction), with Well No. 4 in background. Surrounded by mixed conifer forest, approximately 75 feet east of Little Fine Gold Creek.

Photo 11. Overview of existing dirt access road in mixed conifer forest to access Well No. 2 and wastewater treatment plant (not part of project improvements).

Photo 12. Overview of existing gravel access road that crosses Little Fine Gold Creek to access Well No. 2.

Photo 13. Overview of existing dirt access road in mixed conifer forest to access Well No. 2.

Photo 14. Overview of existing Well No. 2 proposed for improvements.

APPENDIX E: U.S. FISH AND WILDLIFE SERVICE OFFICIAL SPECIES LIST

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To:
Project Code: 2023-0011688
Project Name: Teaford Meadows Water System Improvements

March 14, 2023

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

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

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

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

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

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

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

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

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

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

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

PROJECT SUMMARY

Project Code: 2023-0011688
Project Name: Teaford Meadows Water System Improvements
Project Type: Water Supply Facility - Maintenance / Modification
Project Description: MD-24 provides potable water service to a portion of unincorporated Madera County known as Teaford Meadows. Teaford Meadows is located approximately 10 miles northwest of the community of North Fork. The water system, PWS No. 2000552, serves approximately 66 residences. There are no commercial, industrial, or school connections to the system. The water system is located in the foothills of the Sierra Nevada mountain range, at an approximate surface elevations ranging from 3,500 feet to 3,670 feet. There are six vacant lots within the MD-24 service are that may develop single family residences in the future. The proposed project aims to address aging production wells, inadequate water supply source redundancy, and water quality that exceed federal and state standards for arsenic, iron, and manganese.

MD-24 owns and operates three permitted wells (Well Nos. 2, 3, and 4). A fourth well (Well No. 1) is classified as Inactive. Three wells (Well Nos. 1, 2, and 4) are located on a Madera County-owned parcel (APN 061-012-012) located between Teaford Poyah Road and Road 223, approximately 800 feet south of Woaka Poyah Road. Well No. 3 is located on a County-owned parcel (APN 061-500-032), along Finegold Creek Drive, west of Teaford Saddle Road (Road 223). Well No. 3 is located approximately 600 feet northwest of the other wells.

The proposed project consists of the components listed below:
1. Equipping Test Well – APNs 061-490-033 and -034
2. Construction of New Water Treatment Facility (APN 061-490-0xx) (This new parcel will be created by Madera County)
3. Construction of a Transmission Pipeline connecting Well Nos. 2 and 4 to the New Water Treatment Facility
a. Construction of a distribution pipeline connecting the existing storage tank to the existing distribution system. Proposed distribution pipeline alignment will parallel proposed transmission pipeline alignment.
4. Wellhead Improvements at Well Nos. 2 and 4.
5. Destruction of Well Nos. 1 and 3

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@37.26958245,-119.57285115290573,14z

Counties: Madera County, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 7 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.

---

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.

MAMMALS

NAME	STATUS
Fisher *Pekania pennanti* Population: SSN DPS There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3651	Endangered

BIRDS

NAME	STATUS
California Condor *Gymnogyps californianus* Population: U.S.A. only, except where listed as an experimental population There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8193	Endangered
California Spotted Owl *Strix occidentalis occidentalis* Population: Sierra Nevada No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7266	Proposed Threatened

AMPHIBIANS

NAME	STATUS
California Red-legged Frog *Rana draytonii*	Threatened

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/2891

Sierra Nevada Yellow-legged Frog *Rana sierrae*	Endangered

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/9529

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

FLOWERING PLANTS

NAME	STATUS
Mariposa Pussypaws *Calyptridium pulchellum*	Threatened

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/2695

CRITICAL HABITATS

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

IPAC USER CONTACT INFORMATION

Agency: County of Madera
Name: Colleen Del Vecchio
Address: 39930 Sierra Way B
City: Oakhurst
State: CA
Zip: 93644
Email cdelvecchio1@gmail.com
Phone: 8608036072

LEAD AGENCY CONTACT INFORMATION

Lead Agency: County of Madera

APPENDIX C

CULTURAL REPORT – NOT PUBLICLY DISTRIBUTED

APPENDIX D

PALEONTOLOGICAL RESOURCE ASSESSMENT

PALEOWEST

T: 559.490.6880
F: 602.254.6280
info@paleowest.com

FRESNO, CALIFORNIA
1616 West Shaw Avenue
Fresno, CA 93711

May 30, 2023

James Owens
NV5, Inc.
15092 Avenue of Science, Suite 200
San Diego, California 92128
Transmitted via email to James.Owens@nv5.com

RE: Paleontological Resource Assessment in Support of the MD-24 Teaford Meadows Water Improvements Project, DFA No. D16-02073, Madera County, California

Dear James Owens,

At the request of NV5, Inc. (NV5), PaleoWest, LLC (PaleoWest) conducted a paleontological resource assessment for the MD-24 Teaford Meadows Water Improvements Project, DFA Agreement No. D16-02073 (Project) in Madera County, California. The goal of the assessment was to review existing topographic and geologic maps to identify the geologic units mapped within the Project area and other geologic units that might reasonably be expected to be impacted during ground disturbing activity, characterize the paleontological sensitivity of those units, and assess the potential for impacts to scientifically significant paleontological resources from Project development, and recommend mitigation measures to avoid or mitigate impacts to scientifically significant paleontological resources, as necessary.

This paleontological resource assessment included a search of museum records maintained by the University of California Museum of Paleontology (UCMP) and a review of existing geologic maps within the vicinity of the Project area. This technical memorandum was written in accordance with the guidelines set forth by the Society of Vertebrate Paleontology (SVP, 2010), and has been prepared in accordance with the requirements of a California Environmental Quality Act (CEQA)-Plus investigation, which includes compliance with federal and state regulations in the case a federal nexus is established during Project implementation. The County of Madera (County) is the Lead Agency for CEQA.

PROJECT LOCATION AND DESCRIPTION

The Project is within Section 33 of Township (T) 7 South (S), Range (R) 22 East (E), and Section 4 of T8S, R22E, on the Bass Lake, California 7.5-minute U.S. Geological Survey (USGS) quadrangle (Figure 1 through Figure 3). The Project area is rural and consists of undeveloped woodland interspersed with residential development and paved roads. MD-24 provides road, sewer, and potable water services for a small existing residential development in a portion of unincorporated Madera County known as Teaford Meadows. The water system, Public Water System (PWS) No. 2000552 (Teaford Meadows Water System), serves approximately 66 residences. There are no commercial, industrial, or school connections to the system. The Project aims to address aging production wells, inadequate water supply source redundancy, and water quality that exceed federal and state standards for arsenic, iron, and manganese.

Figure 1. Project area vicinity map.

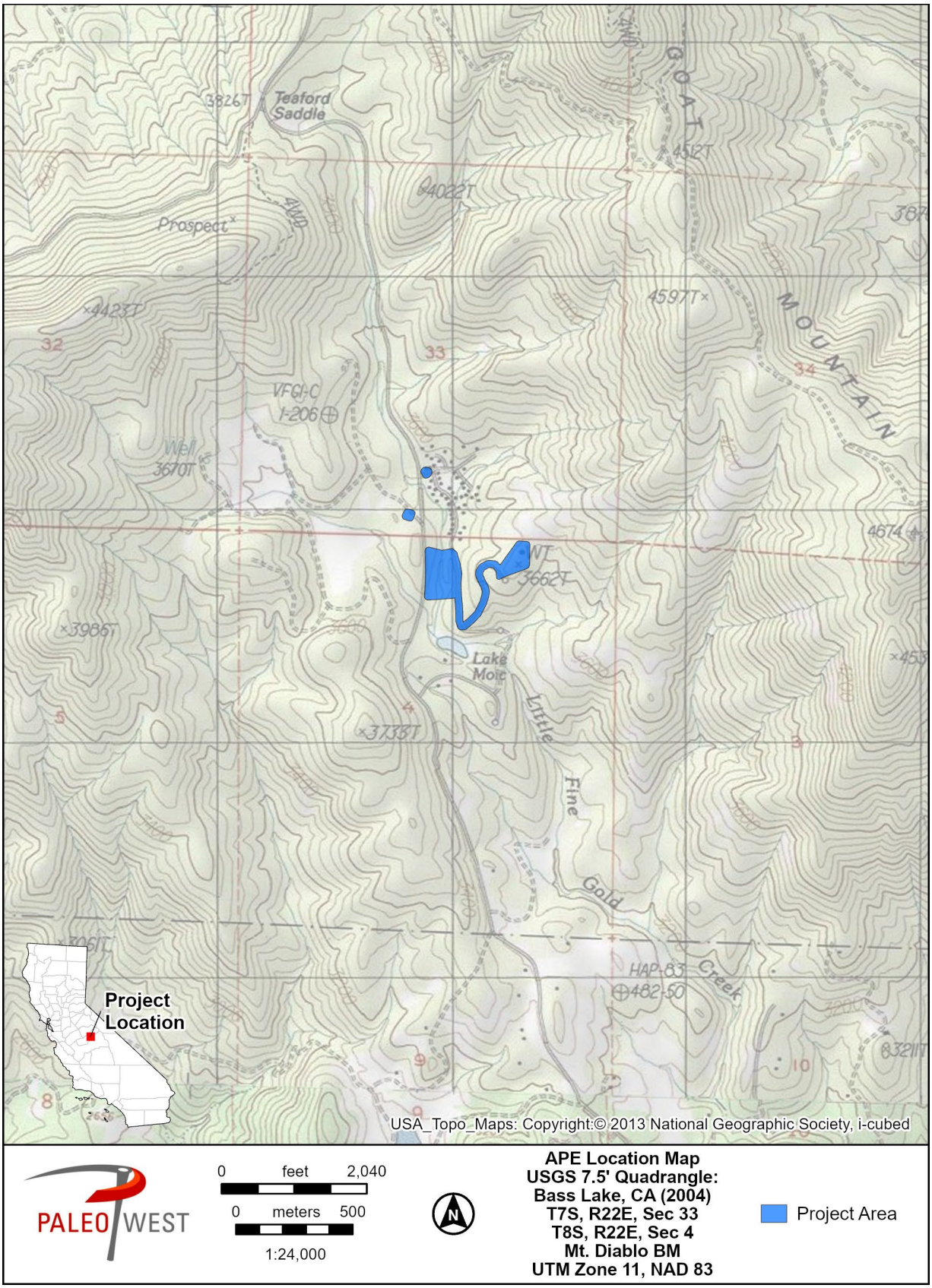


Figure 2. Project area location map.

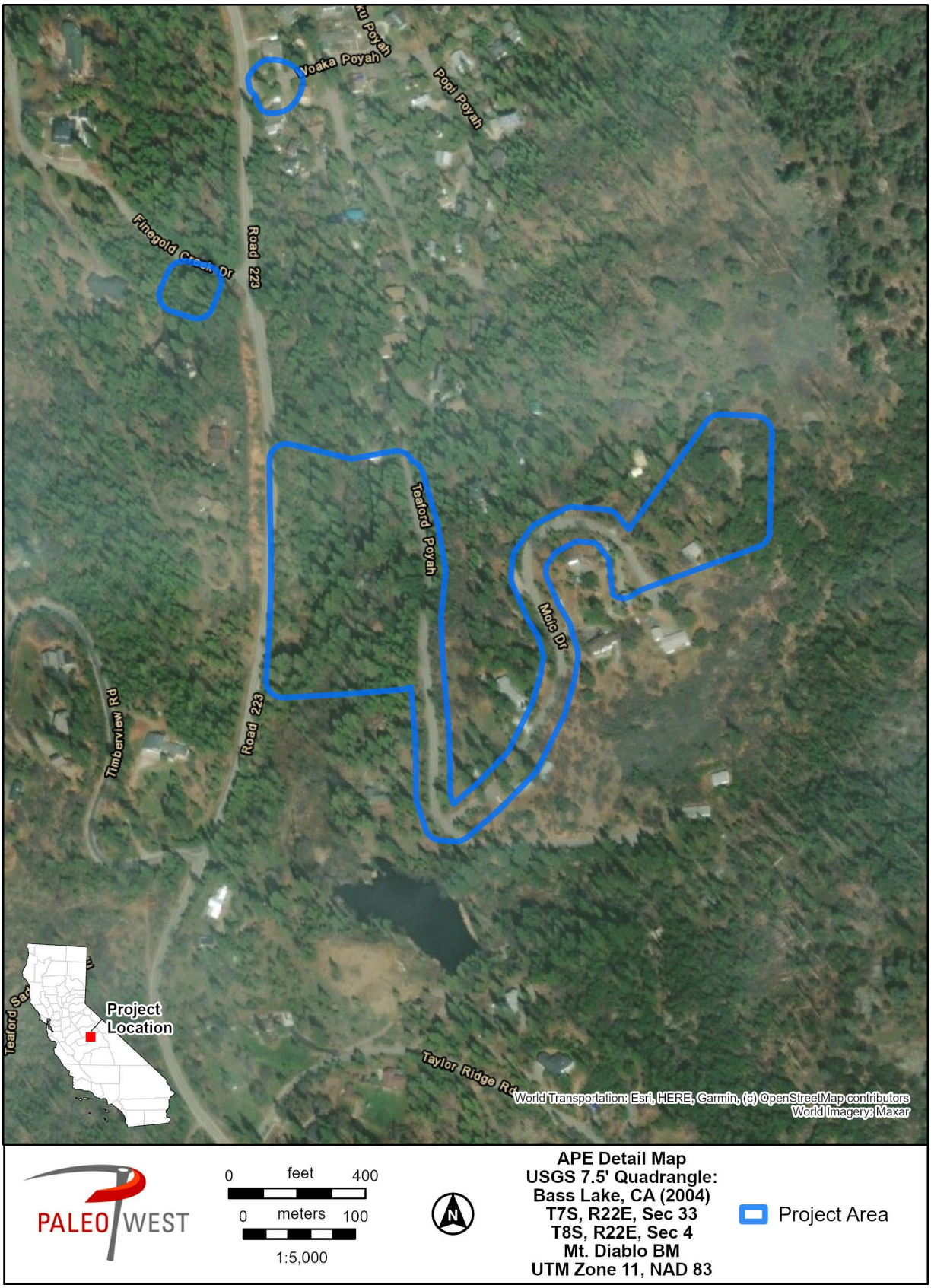


Figure 3. Project area detail map.

The Project consists of five components: (1) equipping the test well (Assessor's Parcel Numbers [APNs] 061-490-033 and 061-490-034), (2) construction of a new water treatment facility (APN 061-490-035), (3) construction of a transmission pipeline connecting Well Nos. 2 and 4 to the new water treatment facility and construction of a parallel and adjacent distribution pipeline, (4) wellhead improvements at Well Nos. 2 and 4, and (5) the destruction of Well No. 3. The Well No. 1 location was examined to facilitate future environmental documentation.

Pacific Gas and Electric will provide electrical service for the Project components, extending the service from existing poles along Moic Drive. The power along Moic Drive is single-phase electrical power. Due to the horsepower for the new well and proposed electrical demand at the new water treatment facility, Pacific Gas and Electric electrical service in the immediate area will be upgraded to three-phase electric power. Approximately nine power poles on Moic Drive will be replaced or modified to provide three-phase power.

The Project area is 15.87 acres and consists of the footprint of the wells and associated parcels and the path of the proposed pipelines that extends along Teaford Poyah and Moic Drive (Figure 1-3). For the construction of the new water treatment facility, ground disturbance is not anticipated to exceed 5 ft below the ground surface (bgs). Trenching for the proposed pipelines will typically extend to 5 ft bgs, except where utility conflicts or other conditions require a deeper installation in localized areas.

REGULATORY CONTEXT

Paleontological resources (i.e., fossils) are considered nonrenewable scientific resources because, once destroyed, they cannot be replaced. As such, paleontological resources are afforded protection under various federal, state, and local laws and regulations. Laws pertinent to this Project are discussed below.

This assessment has been completed in accordance with the requirements of a CEQA-Plus investigation, which includes compliance with both state and federal regulations in the case that a federal nexus is established during project execution. A federal nexus may be established with the requirement of federal funding and/or permitting. Compliance with both regulations allows the Lead Agency to apply the results of this assessment to both levels of regulation should a federal nexus be established. Federal, state, and local regulations applicable to potential paleontological resources in the project area are summarized below.

FEDERAL

National Environmental Policy Act of 1969

The National Environmental Policy Act (NEPA) (USC, section 4321 et seq.; 40 CFR, section 1502.25), as amended, directs federal agencies to "Preserve important historic, cultural, and natural aspects of our national heritage (Section 101(b) (4))." The current interpretation of this language has included scientifically important paleontological resources among those resources that may require preservation.

Paleontological Resources Preservation Act of 2009

The Paleontological Resources Preservation Act (PRPA) is part of the Omnibus Public Land Management Act of 2009 (Public Law [PL] 111-011 Subtitle D), the final rule enacted in 2022 (87 FR 47296). This act directs the Secretary of the Interior or the Secretary of Agriculture to manage and protect paleontological resources on federal land and develop plans for inventorying, monitoring, and deriving such resources' scientific and educational use. The directives of the PRPA include:

1. Uniform definitions of paleontological resources (as described in Section 2.3);
2. Prohibits the removal of paleontological resources of scientific interest from Federal land without a paleontological resource use permit issued under this act and provides uniform and minimum qualifications of permit applicants;
3. Establishes penalties for violations of this act;
4. Establishes a program to increase public awareness about such resources.
5. Paleontological resources collected under a permit remain United States property and must be preserved for the public in an approved repository to be made available for scientific research and public education.
6. Requires that the nature and location of paleontological resources on public lands be kept confidential as a means of protecting paleontological resources from theft and vandalism.

Definition of Paleontological Resources

Section 6301 of the PRPA and Departmental Proposed Rule at 43 CFR Part 49 define a paleontological resource as:

> Any fossilized remains, traces, or imprints of organisms, preserved in or on the earth's crust, that are of paleontological interest and that provide information about the history of life on earth, except that the term does not include— (A) any materials associated with an archaeological resource… (B) any cultural item… (3) Resources determined in writing by the authorized officer to lack paleontological interest or not provide information about the history of life on earth, based on scientific and other management considerations.

Consistent with the definition of a paleontological resource under the PRPA, those paleontological resources that lack scientific interest (e.g., ubiquitous, or do not provide information about the history of life on earth, etc.) are considered scientifically non-significant fossils.

State Laws and Regulations

California Environmental Quality Act

CEQA requires that public agencies and private interests identify the potential environmental consequences of their projects on any object or site of significance to the scientific annals of California (Division I, California Public Resources Code [PRC] Section 5020.1 [b]). Appendix G in

Section 15023 provides an Environmental Checklist of questions (PRC 15023, Appendix G, Section VII, Part f) that includes the following: "Would the project directly or indirectly destroy a unique paleontological resource or site or unique geological feature?"

CEQA does not define "a unique paleontological resource or site." However, the SVP has provided guidance specifically designed to support state and federal environmental review. The SVP broadly defines significant paleontological resources as follows:

> Fossils and fossiliferous deposits consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information. Paleontological resources are considered to be older than recorded human history and/or older than middle Holocene (i.e., older than about 5,000 radiocarbon years). (SVP, 2010:11)

Significant paleontological resources are determined to be fossils or assemblages of fossils that are unique, unusual, rare, diagnostically important, or common but have the potential to provide valuable scientific information for evaluating evolutionary patterns and processes or which could improve our understanding of paleochronology, paleoecology, paleophylogeography, or depositional histories. New or unique specimens can provide new insights into evolutionary history; however, additional specimens of even well-represented lineages can be equally important for studying evolutionary pattern and process, evolutionary rates, and paleophylogeography. Even unidentifiable material can provide useful data for dating geologic units if radiometric dating is possible. As such, common fossils (especially vertebrates) may be scientifically important, and therefore considered significant.

California Public Resources Code

Section 5097.5 of the Public Resources Code (PRC) states:

> No person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.

As used in this PRC section, "public lands" means lands owned by, or under the jurisdiction of, the state, city, county, district, authority, public corporation, or any agency thereof. Consequently, public agencies are required to comply with PRC 5097.5 for their activities, including construction and maintenance, as well as for permit actions (e.g., encroachment permits) undertaken by others.

LOCAL

Madera County

The Madera County Policy Document (Madera County, 1995) established the following goals and policies for paleontological resources under Section 4: Recreational and Cultural Resource, D. Historical and Cultural Resources:

> Goal 4.D: To identify, protect, and enhance Madera County's important historical, archaeological, paleontological, and cultural sites and their contributing environment.
>
> > Policy 4.D.2. The County shall coordinate with the cities and advisory councils in the county to promote the preservation and maintenance of Madera County's paleontological, archaeological, and historical resources.
> >
> > Policy 4.D.3. The County shall require that discretionary development projects identify and protect from damage, destruction, and abuse, important historical, archaeological, paleontological, and cultural sites and their contributing environment.

PALEONTOLOGICAL RESOURCE POTENTIAL

To assess whether a particular area has the potential to contain significant fossil resources at the subsurface, it is necessary to review published geologic mapping to determine the geology and stratigraphy of the area. The sensitivity of a geologic unit is affected by its potential to contain and preserve biologic material during deposition.

Absent specific agency guidelines, most professional paleontologists in California adhere to the guidelines set forth by SVP (2010) to determine the course of paleontological mitigation for a given project. These guidelines establish protocols for the assessment of the paleontological resource potential of underlying geologic units and outline measures to mitigate adverse impacts that could result from project development. Using baseline information gathered during a paleontological resource assessment, the paleontological resource potential of the geologic unit(s) (or members thereof) underlying a project area can be assigned to one of four categories defined by SVP (2010). Although these standards were written specifically to protect vertebrate paleontological resources, all fields of paleontology have adopted the following guidelines:

HIGH POTENTIAL (SENSITIVITY)

Rock units from which significant vertebrate or significant invertebrate fossils or significant suites of plant fossils have been recovered have a high potential for containing significant non-renewable fossiliferous resources. These units include but are not limited to, sedimentary formations and some volcanic formations which contain significant nonrenewable.

LOW POTENTIAL (SENSITIVITY)

Sedimentary rock units that are potentially fossiliferous but have not yielded fossils in the past or contain common and/or widespread invertebrate fossils of well documented and understood

taphonomic, phylogenetic species and habitat ecology. Reports in the paleontological literature or field surveys by a qualified vertebrate paleontologist may allow determination that some areas or units have low potentials for yielding significant fossils prior to the start of construction. Generally, these units will be poorly represented by specimens in institutional collections and will not require protection or salvage operations. However, as excavation for construction gets underway it is possible that significant and unanticipated paleontological resources might be encountered and require a change of classification from Low to High Potential and, thus, require monitoring and mitigation if the resources are found to be significant.

UNDETERMINED POTENTIAL (SENSITIVITY)

Specific areas underlain by sedimentary rock units for which little information is available have undetermined fossiliferous potentials. Field surveys by a qualified vertebrate paleontologist to specifically determine the potentials of the rock units are required before programs of impact mitigation for such areas may be developed.

NO POTENTIAL

Rock units of metamorphic or igneous origin are commonly classified as having no potential for containing significant paleontological resources.

RESOURCE CONTEXT

REGIONAL GEOLOGY

The Project area is on the western edge of the Sierra Nevada Geomorphic Province of California, a tilted fault block nearly 400 miles long (California Geological Survey, 2002). The Project is on the west slope of the Sierra Nevada foothills, which slope down toward the Great Valley (California Geological Survey, 2022). Locally, the Project is in an area formed by three main geologic events, a mountain-building event starting approximately 155 million years ago (Ma) known as the Nevadan orogeny (Schweickert et al., 1984), followed by magmatic intrusions starting approximately 115 Ma, and later uplift, unroofing, and erosion in the Cenozoic (Bateman, 1989). The latter phase of erosion and dissection exposed the metamorphic and igneous bedrock formed during the mountain-building and intrusive events. The igneous rocks dominate the geologic terrain of the Sierra Nevada, and the metamorphic rock is widespread across the lower Sierran foothills (Bateman, 1989).

GEOLOGY OF THE PROJECT AREA

According to published geologic mapping by the United States Geological Society in Madera County (Bateman, 1989), the Project area is entirely underlain by Bass Lake tonalite (Kbl). The tonalite is a medium-grained, equigranular, "granitoid" igneous rock with visible foliation due to metamorphic alteration from subsequent magmatic intrusions in the Cretaceous Era (145 to 66 Ma) (Bateman, 1989) (Figure 4).

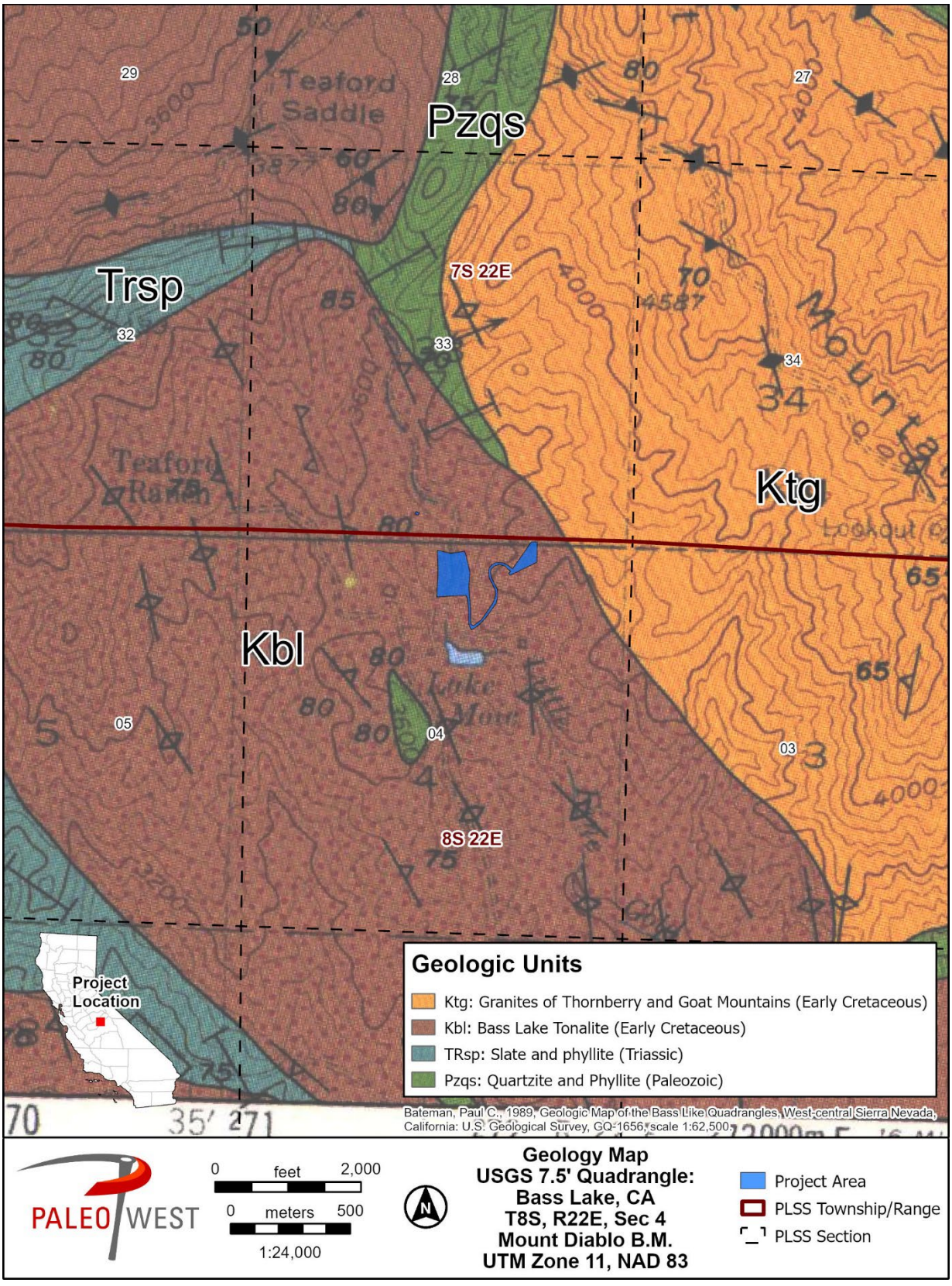


Figure 4. Project area geology map.

FINDINGS

This memorandum used the SVP system (2010) to assess paleontological sensitivity and the level of effort required to manage potential impacts to significant fossil resources during development of the Project area. Using this system, PaleoWest determined the sensitivity of geologic units by the relative abundance and risk of adverse impacts to vertebrate fossils and significant invertebrates and plants.

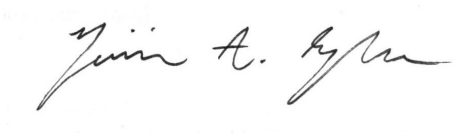
Due to their high-temperature origins, igneous units like the Bass Lake tonalite (Kbl) are typically unable to preserve biologic material and are assigned no paleontological sensitivity as a result.

RECOMMENDATIONS

In general, the potential for a given project to result in negative impacts to paleontological resources is directly proportional to the amount of ground disturbance associated with the Project. Thus, the higher the amount of ground disturbances within geological deposits with a known paleontological sensitivity, the greater the potential for negative impacts to paleontological resources. Since the geologic units underlying the Project area have no paleontological sensitivity, PaleoWest does not recommend further paleontological mitigation for the Project.

Thank you for contacting PaleoWest for this Project. If you have any questions, please do not hesitate to contact me at (909) 254-4035 or bscherzer@paleowest.com.

Sincerely,
PALEOWEST



Benjamin Scherzer, M.S. | Senior Paleontologist

REFERENCES

Bateman, P.C., 1989, Geologic map of the Bass Lake quadrangle, west-central Sierra Nevada, California: United States Geological Survey, Geologic Quadrangle Map GQ-1656, scale 1:62,500: https://pubs.er.usgs.gov/publication/gq1656 (accessed April 2023).

California Geological Survey, 2002, California geomorphic provinces. California Geological Survey Note 36, p. 4.

Madera County, 1995, Madera County General Plan, Policy Document, adopted October 24: https://www.maderacounty.com/home/showpublisheddocument/2850/636480653563500000 (accessed April 2023).

Schweickert, R.A., Bogen, N.L., Girty, G.H., Hanson, R.E., and C. Merguerian, 1984, Timing and structural expression of the Nevadan orogeny, Sierra Nevada, California: Geological Society of America Bulletin, v. 95, p. 967–979.

Society of Vertebrate Paleontology (SVP), 2010, Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources Society of Vertebrate Paleontology, Impact Mitigation Guidelines Revision Committee, p. 1–11, Bethesda, MD.

This page intentionally left blank.