

Laguna Treatment Plant Flood Protection Project

Initial Study/Proposed MND

City of Santa Rosa

20 December 2022



This document has been prepared by:



4300 Llano Road
Santa Rosa, CA, 95407
T 707-543-3878 | srcity.com

In collaboration with:



2235 Mercury Way, Suite 150
Santa Rosa, California 95407, United States
T 707.523.1010 | ghd.com

Contents

1.	Project Information	1-1
1.1	CEQA Requirements	1-1
1.2	Project Background	1-1
1.3	Project Location and Existing Setting.....	1-2
1.4	Project Description	1-2
1.4.1	Flood Protection Berm	1-2
1.4.2	Northern Berm, Flood Gate, Warning System (Llano Road).....	1-3
1.4.3	Retaining Wall.....	1-4
1.4.4	Stormwater Improvements	1-4
1.5	Existing Temporary Floodwall.....	1-4
1.6	Construction	1-4
1.6.1	Construction Schedule	1-4
1.6.2	Access and Staging during Construction	1-4
1.6.3	Temporary Bypass Road and Traffic Control	1-5
1.6.4	Construction Workers, Haul Trips, and Equipment	1-5
1.6.5	Tree Removal	1-5
1.7	Operation and Maintenance	1-6
1.8	Compliance with Existing Regulations and Standard BMPS	1-6
1.8.1	Implementation of Geotechnical Design Recommendations	1-6
1.8.2	Implementation of Air Quality Control Measures during Construction	1-6
1.8.3	Implementation of Stormwater Pollution Prevention Plan	1-7
1.8.4	Implementation of Applicable Community Climate Action Plan Measures..	1-7
1.8.5	Compliance with City of Santa Rosa Tree Ordinance	1-8
1.8.6	Compliance with Municipal Separate Storm Sewer System (MS4) Permit.	1-8
1.9	Required Agency Approvals	1-8
1.10	Tribal Consultation.....	1-9
2.	Environmental Factors Potentially Affected.....	2-1
3.	Environmental Analysis.....	3-1
3.1	Aesthetics.....	3-1
3.2	Agriculture and Forest Resources	3-5
3.3	Air Quality.....	3-7
3.4	Biological Resources	3-11
3.5	Cultural Resources	3-23
3.6	Energy Resources	3-26
3.7	Geology and Soils	3-28
3.8	Greenhouse Gas Emissions	3-31
3.9	Hazards and Hazardous Materials.....	3-33
3.10	Hydrology and Water Quality	3-36
3.11	Land Use and Planning	3-40
3.12	Mineral Resources.....	3-41
3.13	Noise	3-42

3.14	Population and Housing.....	3-47
3.15	Public Services	3-48
3.16	Recreation	3-49
3.17	Transportation	3-50
3.18	Tribal Cultural Resources	3-52
3.19	Utilities and Service Systems.....	3-55
3.20	Wildfire	3-58
3.21	Mandatory Findings of Significance	3-60
4.	References.....	4-1
5.	Report Preparers.....	5-1
5.1	City of Santa Rosa.....	5-1
5.2	GHD	5-1
5.3	Sub-consultants.....	5-1

Table Index

Table 3.3-1: Construction Exhaust Air Emissions Associated with the Project	3-9
Table 3.13-1: Typical Ranges of Construction Noise Levels at 50 Feet.....	3-43
Table 3.13-2: Total Calculated Lmax and Leq Noise Levels from RCNM.....	3-44
Table 3.13-3: Construction Vibration Levels at Nearby Buildings	3-46

Figure Index

Figure 1	Project Location	1-10
Figure 2	Site Plan	1-11

Image Index

Image 3.1-1	Existing View along Llano Road (looking south)	3-4
Image 3.1-2	View of Proposed Berm, Warning Signal, Raised Road.....	3-4

Appendices

Appendix A	Design Sheets
Appendix B	Air Quality Modeling
Appendix C	Wetland Delineation and Biological Resource Mapping

1. Project Information

Project Title	Laguna Treatment Plant Flood Protection Project
Lead Agency Name & Address	City of Santa Rosa, 69 Stony Circle, Santa Rosa, CA 95401
Contact Person & Phone Number	Andy Wilt, 707.543.3878
Project Location	4300 Llano Road, Santa Rosa, Sonoma County
General Plan Land Use Designation	Public/Institutional
Zoning	Rural Residential (RR-40)

1.1 CEQA Requirements

This project is subject to the requirements of the California Environmental Quality Act (CEQA). The lead agency is the City of Santa Rosa. The purpose of this Initial Study is to provide a basis for deciding whether to prepare an Environmental Impact Report, a Mitigated Negative Declaration, or a Negative Declaration. This Initial Study is intended to satisfy the requirements of the California Environmental Quality Act, CEQA, (Public Resources Code, Div 13, Sec 21000-21177), and the State CEQA Guidelines (California Code of Regulations, Title 14, Sec 15000-15387). CEQA encourages lead agencies and applicants to modify their projects to avoid significant adverse impacts.

Section 15063(d) of the State CEQA Guidelines states the content requirements of an Initial Study as follows:

1. A description of the project including the location of the project;
2. An identification of the environmental setting;
3. An identification of environmental effects by use of a checklist, matrix, or other method, provided that entries on a checklist or other form are briefly explained to indicate that there is some evidence to support the entries;
4. A discussion of the ways to mitigate the significant effects identified, if any;
5. An examination of whether the project would be consistent with existing zoning, plans, and other applicable land use controls;
6. The name of the person or persons who prepared or participated in the Initial Study.

1.2 Project Background

The City of Santa Rosa Water Department operates the Regional Water Reuse System to produce and distribute tertiary treated recycled water to the cities of Santa Rosa, Rohnert Park, Cotati, Sebastopol, and the South Park County Sanitation District. The system includes operation and maintenance of the Laguna Treatment Plant (LTP) to treat wastewater and produce recycled water, the Biosolids Compost Facility to divert biosolid waste generated at the LTP and put it to beneficial use, and the recycled water distribution system to distribute the recycled water to end users.

The LTP is a critical facility located adjacent to the Laguna de Santa Rosa (Laguna) where major storm events have in the past inundated the site with up to three feet of water and debris, with the most recent occurrences in January 2006 and again in 2019. This 2006 flood event was caused by

a storm with about a 10- to 15-year return frequency. It is reasonable to expect future floods to occur with more frequency and with greater magnitude due to climate change.

Flooding at the site has the potential to create hazards for City staff, damage physical assets, and cause the release of raw or partially treated wastewater to the Laguna posing a threat to public health and water quality downstream from the LTP. Flood protection at the LTP will serve to mitigate these risks.

In 2016 a temporary emergency floodwall comprised of interlocking concrete blocks was installed in the southwest corner of the LTP site to protect the existing UV disinfection facilities during future flood events. This temporary barrier provides only limited protection to a portion of the LTP. The City proposes to install a permanent flood protection berm along the southern boundary of the LTP.

1.3 Project Location and Existing Setting

The LTP Flood Protection Project is located at, and within the vicinity of, the LTP at 4300 Llano Road in Santa Rosa, Sonoma County (see **Figure 1 Project Location**). The LTP is located east of Llano Road, while the biosolids facility and recycled water ponds are located west of Llano Road. Improvements would occur within the LTP site, with some ancillary improvements occurring along Llano Road (see **Figure 2 Site Plan**).

The Project boundary is indicated on **Figure 2** and includes the full extent of the LTP site east of Llano Road, but only a portion of City property to the west. In addition, improvements would occur along Llano Road south of the LTP.

The majority of the LTP site is paved or otherwise developed with the treatment plant facilities, associated structures, disturbed and compacted areas, and landscaping. The developed areas are surrounded by ruderal annual grassland. Along the eastern border of the site, along Walker Road, is a row of pine trees, interspersed with small oak trees. Along the southern portion of the site, bordering the Laguna de Santa Rosa, is seasonal wetland, harding grass perennial grassland, riparian woodland, perennial wetland, and a landscaped native plant restoration garden.

Within the Project improvement footprint, man-placed undocumented fill exists to depths of up to six feet. The fill is of variable thickness, density, and composition. In the ruderal grasslands south of Meadow Lane and north of the high flow storage basins are existing mounds of stockpiled material placed during plant upgrades that occurred in the mid-1990s. The stockpiles are approximately 8 to 10 feet deep, consisting of previously excavated material.

1.4 Project Description

The Project includes installation of a flood protection berm, flood gate, warning system and barrier arms, pier and lagging retaining wall, and modifications to the existing stormwater system. See **Figure 2 Site Plan** and **Appendix A Design Sheets**. In addition, the existing temporary floodwall would be dismantled. Each of these project components are discussed in detail below.

1.4.1 Flood Protection Berm

An earthen berm would be constructed along approximately 2,500 linear feet of the southeast corner of the LTP. The height of the berm would range from 5 to 8 feet depending on the location and corresponding elevation. The top elevation of the berm would be located at a minimum elevation of approximately 92 feet. The top would be flat, approximately 10 to 12 feet wide, and able to

accommodate vehicles in an emergency. Construction of the berm would require approximately 18,000 cubic yards of soil.

To accommodate the flood protection berm, the existing southern entrance would be reconfigured and relocated approximately 50 feet to the north.

1.4.2 Northern Berm, Flood Gate, Warning System (Llano Road)

There would be three improvements along Llano Road, a north-south arterial. From north to south the improvements would be: 1) short segment flood protection berm; 2) northern warning signal and flood gate near the southern LTP entrance; and 3) southern warning signal and barrier arm.

Northern Berm

Approximately 500 feet south of Meadow Lane, an earthen berm, perpendicular to Llano Road, would be constructed on either side. The top elevation of the berm would be a consistent 89 feet. The west length of berm would be approximately 80 feet long and up to one foot high. The east side would be approximately 120 feet long and up to two feet high. The purpose of the northern berm is to protect the LTP from flooding along Colgan Creek.

Flood Gate and Northern Warning System

Immediately south of the southern LTP entrance would be the flood gate. The flood gate would normally be flush with the surface of Llano Road and, as a buoyant plate hinged along one edge, would be designed to begin rising automatically (passively) when floodwaters reach elevation 86.6 feet above mean sea level.

To provide maximum flood protection before the flood gate rises, Llano Road would be raised approximately 2.5 feet at this location, and gradually taper down to existing road grade approximately 350 feet to the north and 250 feet to the south.

Immediately north of the flood gate would be a warning signal and barrier arm system that would activate when floodwaters reached an elevation of 86.1 feet above mean sea level (approximately 0.5 feet below the flood gate rising). The signal and arms would be mounted to metal posts in a concrete base.

In addition to the aluminum buoyant plate, the flood gate assembly would consist of a fabricated metal base with internal channels to admit and drain flood water by gravity, support arms to prevent the plate from rotating beyond 90 degrees and a hydraulic lifting mechanism to raise the gate for maintenance purposes. The gate seals on each side by means of gaskets against metal side “wiper plates” affixed to the concrete retaining walls, and along the bottom edge by a similar flexible gasket system. The flood gate assembly will be anchored to a cast-in-place, reinforced concrete support (mat) slab, on top of which will be a cast-in-place, reinforced concrete apron surrounding the assembly and making it flush with the road surface.

Soil materials will be excavated to a minimum depth of two feet below the bottom of the mat slab (equates to 3'-6" below existing grade of Llano Road) and replaced with engineered fill to provide suitable support for the entire installation.

Southern Warning System

Approximately 975 feet south of the flood gate would be the southern warning signal and barrier arm system. The signal and arms would be mounted to metal posts in a concrete base.

1.4.3 Retaining Wall

To stabilize the raised road, a pier and lagging retaining wall would be constructed on the east side of the road, south of the flood gate. The retaining wall would be approximately 130 feet long with a retained height that varies between 0 and 5 feet. The piers (piles) would be drilled at approximately 7 feet on center.

1.4.4 Stormwater Improvements

The stormwater improvements would consolidate and redirect stormwater within the LTP (see **Appendix A Design Plans**) and introduce additional runoff from the west side of Llano Road. Currently, stormwater is collected and routed to six existing discharge points into the Laguna de Santa Rosa along the southern boundary of the LTP. With implementation of the stormwater improvements, all six existing discharge points, as well as a seventh outfall not currently used, would be removed. Four of these outfalls sit within the bank of perennial wetlands and one sits within a seasonal wetland. After removal of the outfalls, the wetland banks will be recontoured to match the existing bank and seeded with an appropriate wetland seed mix.

The existing, but currently inactive, side by side 54-inch and 48-inch effluent discharge pipes would be repurposed to function as a storm water discharge facility and become the single point of discharge. To reroute the stormwater, approximately 1,750 linear feet of 18 to 24-inch pipe would be installed. Stormwater discharge volumes would remain similar to existing conditions.

With regard to stormwater capture and treatment prior to discharge, refer to Section 1.8.6 Compliance with Municipal Separate Storm Sewer System (MS4) Permit.

1.5 Existing Temporary Floodwall

An approximate 800 linear-foot temporary flood wall exists in the southwest corner and protects the UV disinfection facilities. This wall is made of sections of precast concrete blocks that have been mortared together. This temporary barrier would be disassembled and stored within a different area of the LTP.

1.6 Construction

1.6.1 Construction Schedule

Overall construction is anticipated to begin in the fall of 2022, and last for approximately 18 months. Construction hours would be 7:00 a.m. to 6:30 p.m. Monday through Friday, and 9:00 a.m. to 5:00 p.m. on Saturdays. Although not anticipated, limited nighttime work may be required along Llano Road to install the floodgate and retaining wall.

1.6.2 Access and Staging during Construction

Access to the LTP would occur via Llano Road primarily through the relocated southern entrance, with secondary access provided through a temporary entrance that would be constructed approximately 200 feet north of the existing southern entrance. Staging would occur throughout the LTP on paved and compacted gravel areas adjacent to work areas. In the event additional space is needed, a secondary staging area has been identified along the east side of the LTP. This area is partially graveled and has been used in the past for staging purposes. Workers would park their vehicles within designated areas of the LTP.

1.6.3 Temporary Bypass Road and Traffic Control

Construction of proposed facilities along Llano Road may require traffic control or brief road closures. To accommodate construction of the flood gate and the associated road modifications, a temporary by-pass would be constructed on the west side of Llano Road across from the southern LTP entrance. The by-pass would be paved, accommodate two-way traffic, and be approximately 400 feet in length. The by-pass would be in place for approximately 6 months. When construction of the Flood Protection improvements is complete, the by-pass road would be removed, and the surface graded to pre-project conditions and hydroseed with a native seed mix.

The City would require the contractor to develop and implement a temporary Traffic Control Plan outlining work zones, activities, and time needed to complete the work in each zone. In addition, notification of emergency responders of the temporary road diversion would be required.

1.6.4 Construction Workers, Haul Trips, and Equipment

The number of construction-related vehicles traveling to and from the Project site would vary daily. The estimated size of the construction workforce at any one time during construction is anticipated to range between 10 and 20 workers.

Construction debris, including soil, plant material, concrete, and asphalt, would be recycled where feasible. Materials found unsuitable for reuse or recycling would be disposed of at a regional landfill. Importation of construction materials would include soil, aggregate base, concrete, and pipes. Miscellaneous material deliveries would range from 4 to 40 loads per day.

In the ruderal grasslands south of Meadow Lane and north of the high flow storage basins are existing mounds of stockpiled material placed during construction of plant upgrades in the 1990s. This area is referred to as the “borrow” area on **Figure 2 Site Plan**. Adjacent to the borrow area is a “secondary” borrow area, which may be used if additional material is needed. Up to 8,800 cubic yards of material from the mounds would be re-purposed for the earthen berm. Up to 13,000 cubic yards of soil is anticipated to be imported. Imported material is expected to equate to 850 truckloads. Once the material in the borrow area is repurposed for the flood berm, the borrow area would be graded and smoothed out, with a layer of either a pervious material such as drainrock or decomposed granite, or impervious material such as gravel or paving. If an impervious material is used, additional low impact development (LID) features, in compliance with the MS4 permit, would be installed adjacent to the borrow area.

Anticipated construction equipment includes excavator, loader/backhoe, compactor, industrial saw, small equipment for excavation, paver, and generator.

1.6.5 Tree Removal

Approximately 136 trees will be removed as part of the Project. The trees will be replaced in accordance with Chapter 17-24 Trees, of the City’s Municipal Code. Of the trees to be removed, 33 are heritage requiring replacement. In accordance with the City of Santa Rosa Tree Ordinance, 168 trees of similar species would need to be planted. The City has identified areas along the southern border of the LTP, to plant a majority of the replacement trees, with some being planted along the periphery to the west, north, and east. The City will pay the in lieu fee as allowed in the City of Santa Rosa Tree Ordinance, for any trees that would not fit within the LTP.

1.7 Operation and Maintenance

Following construction, general operation and maintenance activities associated with the Flood Protection Project facilities would include annual inspection of the berm, mowing, and repair of any deformed areas that may develop. Maintenance of the flood gate and warnings systems would include periodic operational tests. No new employees would be required for inspections or maintenance of the improvements but would be handled by existing staff.

1.8 Compliance with Existing Regulations and Standard BMPS

The following actions are included as part of the project to reduce or avoid potential adverse effects that could result from construction or operation of the project. Mitigation measures are presented in the following analysis sections in Chapter 3, Environmental Analysis. Compliance with existing regulations and mitigation measures, together, will be included in a Mitigation Monitoring Program at the time that the project is considered for approval.

1.8.1 Implementation of Geotechnical Design Recommendations

The Project will be designed and constructed in compliance with the site-specific recommendations made in Design Report, *Geotechnical Investigation, Proposed Laguna Treatment Plant Flood Wall* (Brelje & Race 2020). This will include design in accordance with recommendations for re-working and properly placing the existing man-placed fill beneath the flood berm alignment, providing adequate support for the floodgate, and inclusion of a retaining wall on the east side of the Llano Road grade rise. The geotechnical recommendations will be incorporated into the final plans and specifications for the Project and will be implemented during construction.

1.8.2 Implementation of Air Quality Control Measures during Construction

To limit dust, criteria pollutants, and precursor emissions associated with the construction activity, the following Bay Area Air Quality Management District (BAAQMD) recommended Basic Construction Measures will be included in construction contract specifications and required during implementation of the Project:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas and unpaved access roads) shall be watered two times per day;
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered or shall have at least two feet of freeboard;
- All visible mud or dirt tracked-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping shall be prohibited;
- All vehicle speeds on unpaved areas shall be limited to 15 miles per hour;
- All paving shall be completed as soon as possible after trenching work is finished;
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for construction workers at all access points;

- All construction equipment shall be maintained and properly tuned in accordance with manufacturer’s specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation;
- A publicly visible sign shall be posted with the telephone number and person to contact at the City regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District’s phone number shall also be visible to ensure compliance with applicable regulations.

1.8.3 Implementation of Stormwater Pollution Prevention Plan

The Project would disturb more than an acre, therefore the City will be required to seek coverage under State Water Resources Control Board (Water Board) Order No. 2009-0009-DWQ, Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities. The City will submit permit registration documents (notice of intent, risk assessment, site maps, SWPPP, annual fee, and certifications) to the Water Board. The SWPPP will address pollutant sources, best management practices, and other requirements specified in the Order. The SWPPP will include erosion and sediment control measures, dust control practices to prevent wind erosion, sediment tracking, and dust generation by construction equipment. A Qualified SWPPP Practitioner will oversee implementation of the Project SWPPP, including visual inspections, sampling and analysis, and ensuring overall compliance.

1.8.4 Implementation of Applicable Community Climate Action Plan Measures

The majority of GHG reduction measures within the Community Climate Action Plan apply to land use projects and therefore would not apply to this infrastructure project. The exception is Measure 9.2 Construction Emissions, which promotes reducing emissions from heavy-duty construction equipment by limiting idling and utilizing cleaner fuels, equipment, and vehicles. To ensure that the Project is consistent with Measure 9.2, the following action items shall be incorporated into the Project design and/or implemented during construction.

- 9.2.1 Construction vehicle shall minimize idling times either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes or less (as required by the California airborne toxics control measure Title 13, Section 2485 of CCR). Provide clear signage at all access points to remind contractors of idling restrictions.
- 9.2.2 Construction equipment shall be maintained in accordance with manufacturer’s specifications.
- 9.2.3 Contractor shall be required to implement one of the following measures, as feasible and appropriate to the construction project:
 - Substitute electrified equipment for diesel- and gasoline-powered equipment where practical.
 - Use alternative fuels for construction equipment onsite, where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane, or biodiesel.
 - Avoid the use of on-site generators by connecting to grid electricity or utilizing solar-powered equipment.

1.8.5 Compliance with City of Santa Rosa Tree Ordinance

The City will comply with Chapter 17-24 Trees, of the City's Municipal Code which regulates the removal of heritage and non-heritage trees and requires tree replacement on-site or the payment of an in-lieu fee. The City has identified areas within the LTP for planting replacement trees. The City will pay the in lieu fee as allowed in the City of Santa Rosa Tree Ordinance for any replacement trees that will not fit within the LTP site.

1.8.6 Compliance with Municipal Separate Storm Sewer System (MS4) Permit

The Project will create or replace more than 10,000 square feet of impervious surface and therefore will be required to incorporate low impact development (LID) bioretention features in accordance with the Low Impact Development Technical Design Manual. The design goal of 100% capture and treatment for the new and existing impervious developed portions of the Project footprint will be achieved by routing the event runoff through four LID bioretention features (see **Appendix A Design Sheets**). The LID features are designed to retain the volume of runoff from the newly developed portion of the site resulting from the 1-inch 24-hour storm event. Excess runoff will be diverted into the on-site storm drain system. The sizing of the features and treatment requirements have been calculated using City of Santa Rosa Storm Water BMP Calculator, ver. 8.11.0. Based on the current Project design, approximately 11,000 square feet of bioretention area will be provided. If the borrow areas are covered with an impervious surface, additional bioretention will be provided in accordance with the MS4 permit.

1.9 Required Agency Approvals

The following agencies may issue approvals for the Project, and thus need to rely upon the MND. This MND is intended to apply to all the Project approvals listed below, as well as to any other permits or approvals necessary to implement the Project.

U.S. Army Corps

- Section 404 Permit if federal jurisdictional waters are to be impacted
- Formal Consultation with U.S. Fish & Wildlife Service for impacts to California Tiger Salamander

Federal Emergency Management Agency

- Conditional Letter of Map Revision/Letter of Map Revision

Regional Water Quality Control Board

- Section 401 Water Quality Certification for potential impacts to federal waters or Waste Discharge Requirements for potential impacts to State waters

State Water Board

- Notice of Intent to Comply with the Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities

California Department of Fish and Wildlife

- Section 1602 Lake and Streambed Alteration Agreement
- Incidental Take Authorization for California Tiger Salamander

Sonoma County

- Encroachment Permit for work along Llano Road

City of Santa Rosa

- Building and Grading Permit
- Tree Removal Permit

1.10 Tribal Consultation

In November of 2016, Sonoma State University Anthropological Studies Center (ASC) Staff Archaeologist, Michael Meyer, and a Federated Indians of Graton Rancheria (Graton Rancheria) Tribal Monitor, monitored 14 geotechnical borings performed throughout the LTP site. No archaeological materials were identified during borings and the soils observed did not indicate sensitivity for cultural resources. A Graton Rancheria Tribal Monitor was present during all borings as they were inspected and when the archaeologist concluded that cores contained no cultural remains. Graton Rancheria Tribal Historic Preservation Officer (THPO) was contacted on November 10 and 15, 2016, for follow-up information or concerns about the monitoring. Graton Rancheria was sent a copy of findings report on November 17, 2016. No response was received.

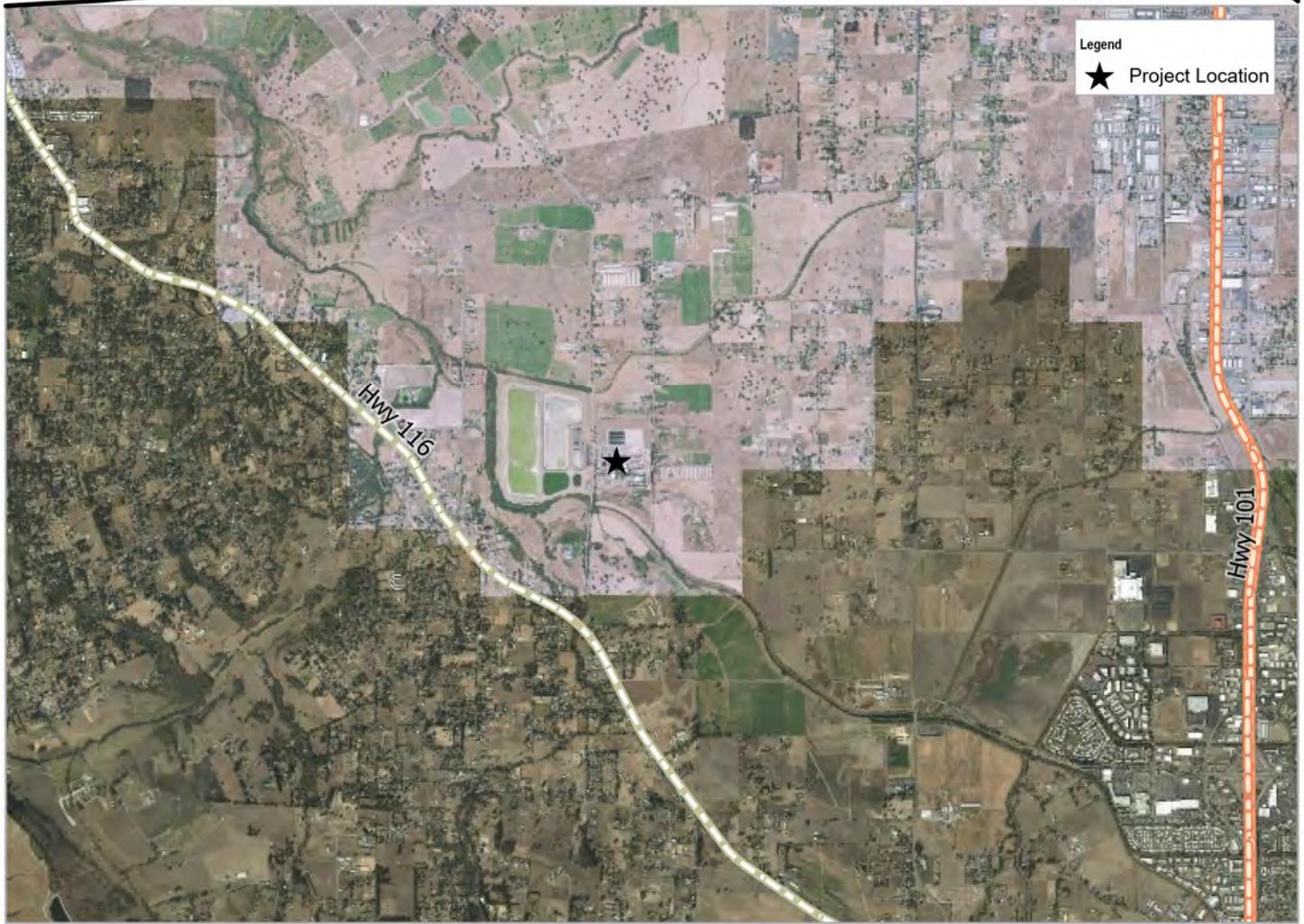
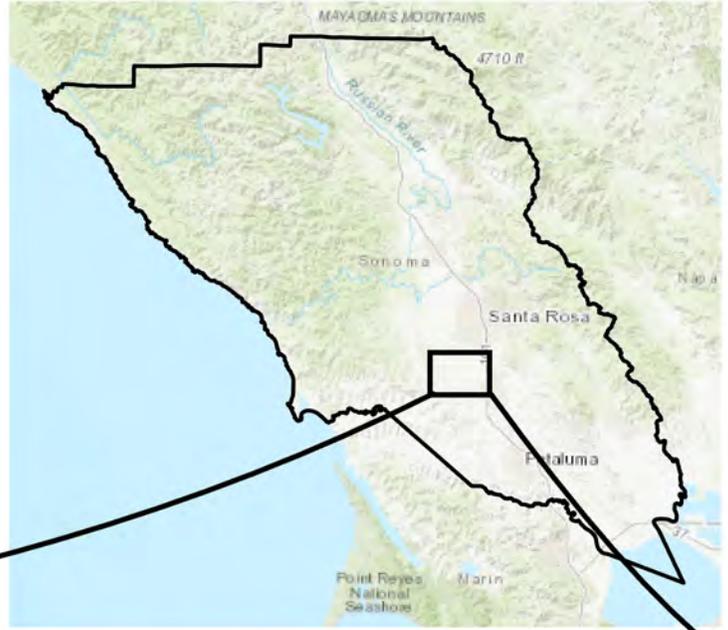
In June of 2020, ASC Staff Archaeologist Scott McGaughey and two Graton Rancheria Tribal Monitors, monitored 11 geotechnical borings performed throughout the LTP site. No archaeological materials were identified during borings and the soils observed did not indicate sensitivity for cultural resources. Graton Rancheria Tribal Monitors were present during all borings as they were inspected and when the archaeologist concluded that cores contained no cultural remains. Graton Rancheria THPO was contacted on June 24, and July 13, 2020, for follow-up information or concerns about the monitoring. Graton Rancheria was sent a copy of the findings report on August 3, 2020. No response was received.

On October 14, 2021, the City of Santa Rosa sent Lytton Rancheria of California and Graton Rancheria, a tribal consultation invitation pursuant to California Assembly Bill 52. On October 18, 2021, Graton Rancheria responded with a formal request for tribal consultation. On October 19, 2021, Lytton Rancheria responded that they did not need further consultation.

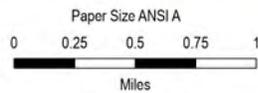
On November 4, 2021, the City met with Graton Rancheria to discuss the Project. During the meeting Graton Rancheria requested that a 2016 Archaeological Resources Study for the Project site be updated to include the findings of the geotechnical investigations and include a single map showing the boring locations from both the 2016 and 2020 geotechnical investigations. The City provided the updated report to the Graton Rancheria THPO on January 12, 2022.

On February 8, 2022, the City met with Graton Rancheria to review the updated report. Graton Rancheria asked a few additional questions which the City provided answers on February 8 and 11, 2022.

For a summary of the investigation and mitigation measures related to tribal cultural resources, see Section 3.18 Tribal Cultural Resources.



Legend
★ Project Location



City of Santa Rosa
Santa Rosa Laguna Treatment Plant
Flood Protection Project

Project No. 11189492.30
Revision No. -
Date 2/28/2022

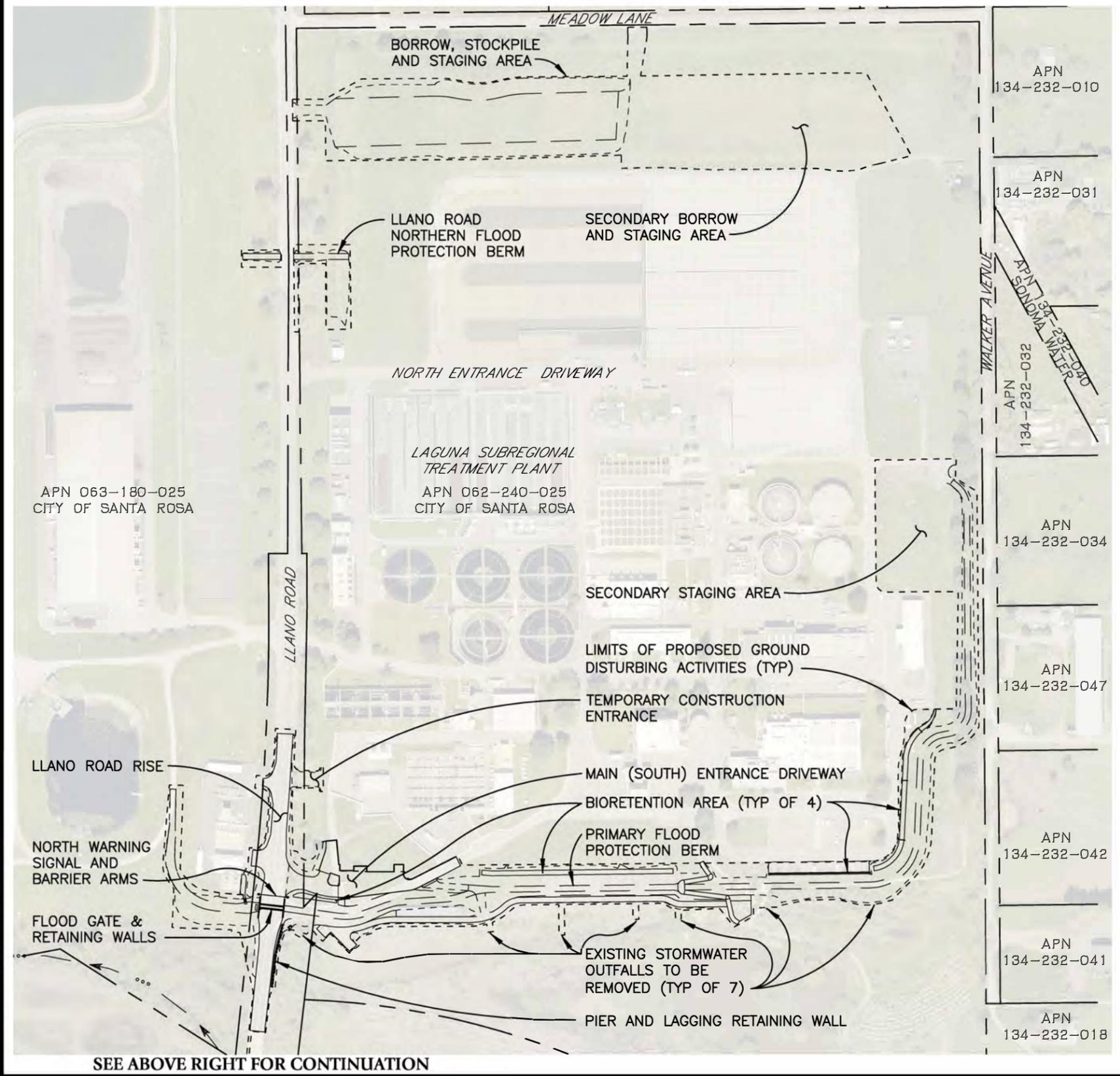
Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

Vicinity Map

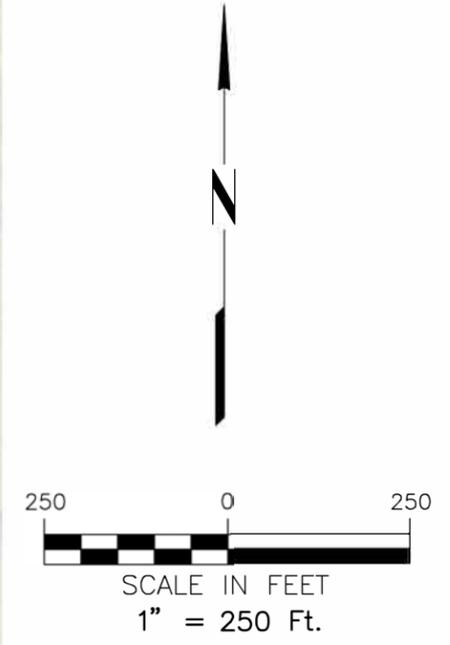
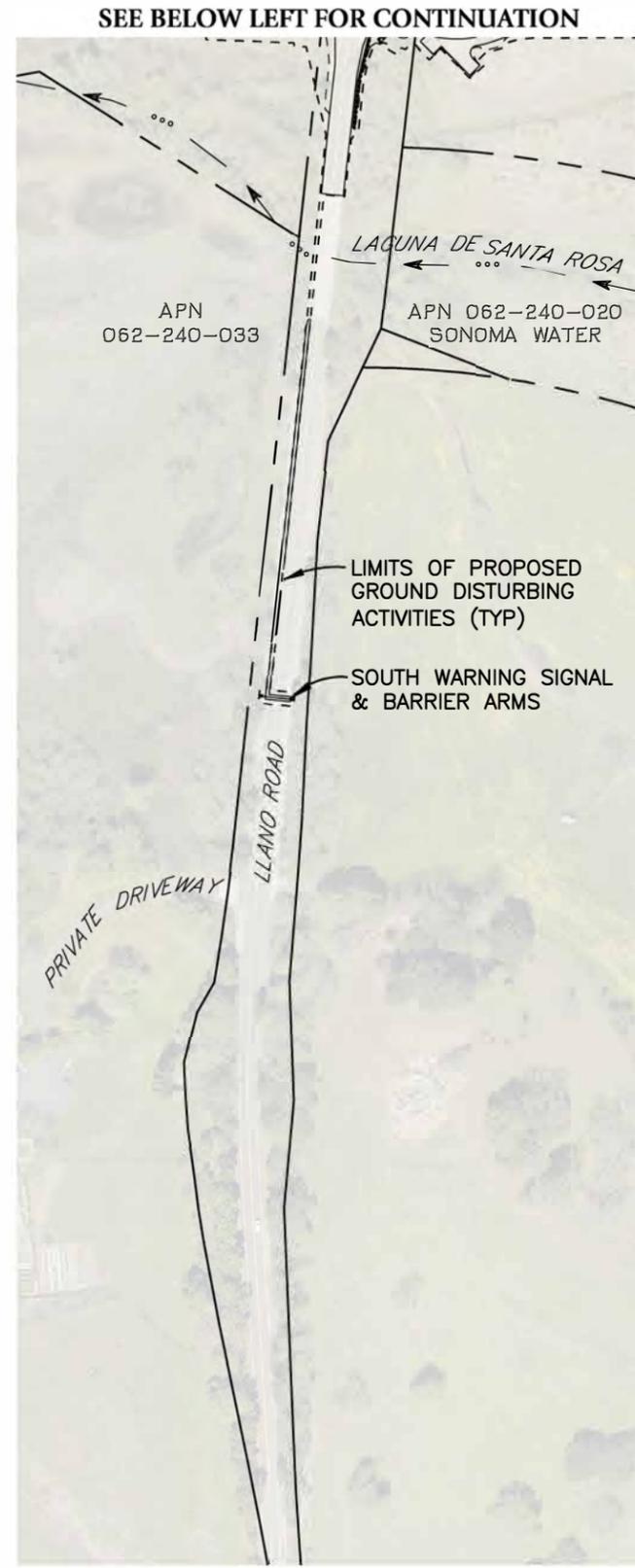
FIGURE 1

TAB. 3 OVERALL SITE PLAN & SURVEY CONTROL DATA

12-13-22 \\filzghi\44115\dwg\44115_00\EXHIBIT\44115_00 EXHIBIT-Environmental Study.dwg



SEE ABOVE RIGHT FOR CONTINUATION



LAGUNA TREATMENT PLANT FLOOD PROTECTION

FIGURE 2 SITE PLAN
DECEMBER 2022

2. Environmental Factors Potentially Affected

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

- | | | |
|--|--|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Public Services |
| <input type="checkbox"/> Agricultural & Forestry Resources | <input type="checkbox"/> Hazards & Hazardous Materials | <input type="checkbox"/> Recreation |
| <input type="checkbox"/> Air Quality | <input type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Transportation |
| <input type="checkbox"/> Energy | <input type="checkbox"/> Land Use/Planning | <input type="checkbox"/> Tribal Cultural Resources |
| <input type="checkbox"/> Biological Resources | <input type="checkbox"/> Mineral Resources | <input type="checkbox"/> Utilities/Service Systems |
| <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Noise | <input type="checkbox"/> Wildfire |
| <input type="checkbox"/> Geology/Soils | <input type="checkbox"/> Population/Housing | <input type="checkbox"/> Mandatory Findings of Significance |

DETERMINATION (To be completed by the Lead Agency)

On the basis of this initial evaluation:

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

Monet sheikhali
Monet sheikhali (Dec 15, 2022 09:46 PST)

Monet Sheikhali, City of Santa Rosa

Dec 15, 2022

Date

3. Environmental Analysis

3.1 Aesthetics

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Except as provided in Public Resources Code 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 within a state scenic highway?				✓
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public view 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?				✓

Setting

The Laguna Treatment Plant is located in an area predominantly consisting of agricultural uses, rural residential uses, and associated infrastructure. The LTP site is a City island, surrounded by County land. The Sonoma County General Plan identifies three scenic resources: Community Separators, Scenic Landscape Units, and Scenic Highway Corridors. A Community Separator is defined as rural open space, agricultural, and resource lands that separate cities and communities. Scenic Landscape Units provide visual relief from urban density and have little capacity to absorb development without visual impacts. The area to the north and to the south of the LTP site is designated as a Scenic Landscape Unit, with particular reference to the Laguna de Santa Rosa. Llano Road bisects the project site but is not designated as a Scenic Corridor nor are there Community Separators within visual distance of the Project site.

a) Have a substantial adverse effect on a scenic vista? (Less than Significant)

A scenic vista is generally considered a view of an area that has remarkable scenery or a natural or cultural resource that is indigenous to the area. The Sonoma County General Plan identifies the Laguna de Santa Rosa as providing scenic value and has a goal to retain the large open scenic character of Scenic Landscape Units. Image 3.1-1, below, provides a view of the riparian area immediately south of the southern LTP entrance point. Immediately south of the riparian area is the Laguna de Santa Rosa, which is not visible in the image as a result of the trees. As Llano Road crosses the Laguna de Santa Rosa, trees immediately adjacent to the bridge block views of the LTP,

particularly on the east side where a majority of the improvements would be visible without the existing dense vegetation cover.

All proposed improvements would be located within the footprint of the existing LTP site or along the Llano Road frontage. No improvements would occur within the Scenic Landscape Units or be positioned such that they would block views. The view of the proposed improvements, from those traveling along Llano Road, would be obscured by the existing dense tree vegetation. As viewers approach the LTP entrance, the earthen berm and Llano Road modifications (including warning signal and barrier arm system) would become visible within the context of the existing industrial facility but would not have a substantial adverse effect on the scenic vista associated with the Laguna de Santa Rosa. As seen in Image 3.1-2, the low-lying earthen berm does not substantially change the view at the LTP entrance, nor does it block the view of the Laguna de Santa Rosa which cannot be seen under existing conditions due to the intervening trees.

The impact to scenic vistas would be less than significant.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? (No Impact)

According to the California Scenic Highway Mapping System, the Project site is not located along or in the vicinity of any officially designated scenic highways (Caltrans 2022). The closest eligible state scenic highway is Highway 116 located approximately 0.75 mile to the west. The Project site is not visible from Highway 116.

No impact would occur to scenic resources located within a state scenic highway.

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public view 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? (Less than Significant)

As noted above, under the discussion on scenic vistas, all proposed improvements would be located within the footprint of the existing LTP site or along the Llano Road frontage. The LTP site is industrial in nature and the improvements would be ancillary, blending in with the existing facility. In particular, the earthen berm would be lower in elevation than the existing pond berms on the west side of Llano Road and be hydroseeded with a native mix appropriate to the site. Although elevated, the surface itself would blend with the surrounding ruderal grasslands in color and texture, similar to the existing berm on the opposite side of Llano Road. The view of the proposed improvements, from those traveling along Llano Road, would be obscured from a distance by the existing tree vegetation, only becoming briefly visible as one approaches and then passes the main improvements at the LTP entrance. As seen in Image 3.1-2, the low-lying earthen berm does not substantially change the view at the LTP entrance, nor does it block the view of the Laguna de Santa Rosa which cannot be seen under existing conditions due to the intervening trees. The project would not substantially degrade the existing visual character or quality of the public view from the road.

The impact to visual character and quality of the public view of the site and its surroundings would be less than significant.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? (No Impact)

The Project does not include the installation of any light fixtures, therefore there would be no new sources of light or glare that could potentially affect day or nighttime views in the area. In addition, the proposed facilities (e.g., earthen berm, raised roadway, warning signal/signage) would not include reflective material, thus there would be no new sources of glare.

No impact would occur from light or glare.

Image 3.1-1 Existing View along Llano Road (looking south)



Image 3.1-2 View of Proposed Berm, Warning Signal, Raised Road



3.2 Agriculture and Forest Resources

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

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance? (Less than Significant)

The Project improvements are generally located within the existing LTP facility, the majority of which is designated as "Urban and Built-Up Land". Although the LTP site is an existing industrial facility, the northern portion of the LTP, between Meadow Lane and the high flow storage basins, is designated as Farmland of Statewide Importance (California Department of Conservation 2021). The proposed staging area and existing mounds from which soil would be excavated and repropoed for the earthen berm, are located in the area of Farmland of Statewide Importance. Removal of the soil mounds would change the topography, leveling out this ruderal grassland area. The staging would be temporary. Neither activity would permanently convert this portion of the site to a non-agricultural use. Once the Project is constructed, the temporarily disturbed area would be hydroseeded and remain as ruderal grassland. Impacts related to the conversion of lands designated as Farmland of Statewide importance would be less than significant.

b) Conflict with existing zoning for agricultural use or Williamson Act Contract? (No Impact)

The Project site is zoned Rural Residential (RR-40) and is not under a Williamson Act Contract (City 2017). Therefore, the Project would not conflict with existing zoning for agricultural use or a Williamson Act Contract. No impact would occur.

c, d) Conflict with existing zoning for forest land or timberland, or result in the loss of forest land? (No Impact)

The Project site is zoned as Rural Residential which does not support forest land. Therefore, the Project would not conflict with existing zoning for forest land or timberland, or result in the loss of forest land. No impact would occur.

e) Result in conversion of farmland or forest land? (No Impact)

The LTP is an industrial facility. No forest land exists at the Project site, nor is the land used for agricultural purposes. Off-site improvements would be limited to the Llano Road right of way. Therefore, the Project would not result in the conversion of farmland or forest land. No impact would occur.

3.3 Air Quality

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
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) Result in a cumulatively considerable net increase in any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?			✓	
c) Expose sensitive receptors to substantial pollutant concentrations?			✓	
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			✓	

The air quality analysis utilizes the thresholds of significance, screening criteria and levels, and impact assessment methodologies presented in the Bay Area Air Quality Management District (BAAQMD) CEQA Air Quality Guidelines (BAAQMD 2017a). As provided by the BAAQMD's CEQA Air Quality Guidelines, if a project meets the screening criteria for an impact category, and the analysis is consistent with the methodology used to develop the screening criteria, then its air quality impact for that category may be considered less than significant.

a) Conflict with or obstruct implementation of the applicable air quality plan? (No Impact)

The BAAQMD Bay Area 2017 Clean Air Plan is the most recently adopted regional air quality plan that pertains to the Project site (BAAQMD 2017b). The 2017 Clean Air Plan builds upon and enhances the BAAQMD's efforts to reduce emissions of fine particulate matter (PM_{2.5}) and toxic air contaminants (TACs). The 2017 Clean Air Plan contains 85 individual control measures in nine economic sectors: stationary (industrial) sources, transportation, energy, buildings, agriculture, natural and working lands, waste management, water, and super-greenhouse gas pollutants. Many of these control measures require action on the part of the BAAQMD, the California Air Resources Board (CARB), or local communities, and are not directly related to the actions undertaken for an individual infrastructure project. The Project would not prevent the BAAQMD from implementing these actions and none apply directly to the Project. In addition, the Project would not result in a growth in population or jobs in the project area; therefore, the Project would not exceed the growth assumptions contained in the 2017 Clean Area Plan. Implementation of the Project would not conflict with or obstruct the Bay Area 2017 Clean Air Plan. As a result, no impact would occur.

b) Result in a cumulatively considerable net increase in any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard? (Less than Significant)

According to California standards, the San Francisco Bay Area Air Basin (Air Basin) is currently designated as a nonattainment area for PM_{2.5} and PM₁₀ and ozone (BAAQMD 2021). Under national standards, the Air Basin is currently designated as nonattainment for 8-hour ozone, and nonattainment for PM_{2.5}. The Air Basin is in attainment (or unclassified) for all other air pollutants

(BAAQMD 2021). Therefore, the non-attainment pollutants of concern for this impact question are ozone, PM10 and PM2.5.

Exposure to levels of ozone above current State or federal standards can lead to human health effects such as lung inflammation and tissue damage and impaired lung functioning. Ozone exposure is also associated with symptoms such as coughing, chest tightness, shortness of breath, and the worsening of asthma symptoms (BAAQMD 2017a). Ozone is not emitted directly into the air, but is a regional pollutant formed by a photochemical reaction in the atmosphere. Ozone precursors, reactive organic gases (ROG) and oxides of nitrogen (NOx), react in the atmosphere in the presence of sunlight to form ozone. Therefore, the BAAQMD does not have a recommended ozone threshold, but has thresholds of significance for project-emitted NOx and ROG. In developing thresholds of significance for air pollutants, BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions (BAAQMD 2017a).

Construction – Criteria Pollutants

Overall construction activities would occur over approximately 18 months. The types of air pollutants generated by construction activities are typically nitrogen oxides (NOx) and particulate matter, such as dust and exhaust. Construction activities could temporarily increase levels of PM2.5 and PM10 downwind of construction activity. These are temporary emissions that vary considerably from day-to-day and by the type of equipment and weather conditions. In addition, reactive organic gases (ROG) are emitted during operation of gas and diesel-powered construction-equipment.

Project construction would result in regional air pollutant and precursor emissions from equipment exhaust and worker trips to the project site. The BAAQMD's 2017 Air Quality Guidelines provides screening criteria for determining if a project could potentially result in significant construction-phase impacts from criteria pollutants and precursors. Construction of the Project would result in a less-than-significant impact to air quality if the screening criteria are met. The following are the BAAQMD construction screening criteria:

1. All Basic Construction Mitigation Measures would be included in the project design and implemented during construction.
2. Construction-related activities would not include any of the following:
 - Demolition activities inconsistent with District Regulation 11, Rule 2: Asbestos Demolition, Renovation and Manufacturing;
 - Simultaneous occurrence of more than two construction phases;
 - Simultaneous construction of more than one land use type;
 - Extensive site preparation; or
 - Extensive material transport (e.g., greater than 10,000 cubic yards of soil import/export) requiring a considerable amount of haul truck activity.

As noted in Section 1.8.2 of the Project Description, the Project would comply with BAAQMD's basic construction measures. None of the listed construction-related activities apply to Project construction with the exception of material transport greater than 10,000 cubic yards. It is anticipated that the Project would import approximately 13,000 cubic yards of soil for construction of the flood protection

berm. The remaining soil required will be rebalanced on site, including excavation from the borrow areas described in Section 1.6.4 of this Initial Study. Export of material would include approximately 1,400 tons of demolished pavement and concrete and 2,000 cubic yards of soils material.

As one of the BAAQMD's screening criteria has not been met, the Project's construction exhaust emissions were estimated using CalEEMod version 2020.4.0 and project-specific construction equipment activity, for information purposes (see **Appendix B Air Quality Modeling**). The Project's estimated average construction emissions are shown in Table 3.3-1. As shown, the Project's construction emissions would not exceed the BAAQMD's recommended thresholds of significance. Therefore, Project construction would result in a less-than-significant impact.

Table 3.3-1: Construction Exhaust Air Emissions Associated with the Project

Parameter	Pollutant Emissions (lbs/day)			
	ROG	NOx	PM10	PM2.5
Project Average Emissions	0.82	8.83	0.36	0.33
BAAQMD Thresholds	54	54	82	54
Significant Impact?	No	No	No	No

Operation – Criteria Pollutants

The Project would consist of the operation of flood gates and warning systems during periodic operational tests and during substantial flood events. The Project would not include stationary sources of air emissions and would not result in new employees or increased operational activity that would result in air emissions. As such, the Project would not result in substantial long-term operational emissions of criteria air pollutants. Therefore, the Project's operational contribution to a cumulative nonattainment criteria pollutant impact would be less than significant.

c) Expose sensitive receptors to substantial pollutant concentrations? (Less than Significant)

Sensitive receptors are defined by the BAAQMD as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. The LTP is located in a rural area with few nearby residences. Potential sensitive receptors in the vicinity of the Project include residences along Walker Avenue. At the closest point, the nearest residences are approximately 100 feet east of the Project's proposed flood protection berm, and more than 0.25 mile from the proposed improvements at and near the facility entrance.

Construction – Pollutant Concentrations

For construction-related dust, the BAAQMD recommends incorporation of best management practices (BMPs) to reduce localized dust impacts to less than significant. As described in Section 1.8.2, Compliance with Existing Regulations and Standard BMPS, Air Quality Control Measures during Construction, the Project would incorporate the BAAQMD recommended basic construction measures during construction. Therefore, the Project's potential to generate localized pollutant concentrations, such as PM10 or PM2.5, during construction would be less than significant.

Construction equipment and associated heavy-duty truck traffic generate diesel particulate matter (DPM) exhaust, which is a known toxic air contaminant. As stated above, the Project would incorporate the BAAQMD recommended basic construction measures during construction. Such measures include minimizing idling times for trucks and equipment to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]), ensuring that construction equipment is maintained in accordance with manufacturer's specifications, watering exposed surfaces twice a day to minimize fugitive dust emissions, and other measures.

In addition, construction activities related to the flood protection berm and associated improvements would shift and not be concentrated in one location for the entire duration of construction. Because the construction activities would shift from one end of the Project site to the other, prolonged exposure of sensitive receptors to construction equipment exhaust would not occur.

Exposure of sensitive receptors to substantial pollutant concentrations would be less than significant.

Operation – Pollutant Concentrations

The primary source of operational emissions from the Project would be episodic maintenance and inspection of the berm, mowing, and repair of any deformed areas that may develop, similar to existing maintenance activities at the LTP. In addition, the Project would not result in new employees or operational trips to and from the Project site. Therefore, operation of the Project would not create emissions that could expose sensitive receptors to substantial pollutant concentrations. No impact would occur from operation.

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

During construction, odors from the use of equipment during construction activities would be intermittent and temporary. Such odors generally dissipate rapidly from the source with an increase in distance. The impact would be less than significant.

Facilities known to produce odors include landfills, coffee roasters, and wastewater treatment facilities. BAAQMD's Air Quality Guidelines provides that an odor source with five (5) or more confirmed complaints in the new source area per year averaged over three years is considered to have a significant impact on receptors. Although the Project site is a wastewater treatment plant, the proposed flood protection and associated improvements would not change the operation of the existing LTP or modify the facility's treatment methods. The Project would not result in substantial adverse odors over existing conditions. No operational impact to odors would occur.

3.4 Biological Resources

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

Setting

Construction activities would include excavation and fill as well as vegetation clearing and grubbing. Construction activities may also generate elevated levels of airborne noise or sediment or effluent discharges. Natural habitat is present within the Project site, and baseline conditions support some special status species, habitats, and aquatic resources, as described further below.

Vollmar Natural Lands Consulting (VNLC) conducted initial desktop scoping for potential presence of sensitive biological resources within the Project site. Sources reviewed include but are not limited to:

- publicly-available Geographic Information Systems (GIS) data layers,
- high-resolution digital aerial photography of the Project area, including 1-meter resolution ortho-rectified National Agriculture Imagery Program (NAIP) imagery,
- published books and reports,
- soils, geology, topography, and general reference layers (roads and hydrography, etc.),

- reports previously prepared by other biologists in the Project area,
- rare species occurrence data (searches considered data within 10 miles of the Project site) including:
 - species listed or proposed for listing by the federal government as threatened or endangered under the Federal Endangered Species Act (ESA) (50 CFR 17.12);
 - species listed or proposed for listing by the State of California as rare, threatened, or endangered under the California ESA (CESA) (14 Cal. Adm. Code 670.5);
 - species identified in California Native Plant Society's (CNPS) Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPS 2016-2019) (Lists 1-4); and
 - additional species that meet the definition of rare, threatened, or endangered under the California Natural Diversity Database

VNLC also conducted surveys at the Project site during the fall of 2015, spring of 2016, and fall of 2019 (the later surveys were conducted as the Project area boundary was expanded due to changes in Project design). These field surveys involved the mapping and characterization of site habitats to: 1) confirm the extent of potential jurisdictional Waters (wetlands and other Waters of the US); 2) determine the potential for on-site habitats to support the California tiger salamander (CTS) and/or special-status species; and 3) identify any special-status plants present in the Project area at the time of the surveys. Specifically, the surveys consisted of a formal wetland delineation as well as reconnaissance-level rare plant and habitat surveys. The habitat component of the surveys included an effort to identify habitat elements favorable for CTS breeding and upland movement and aestivation.

The following associated reports were prepared to document baseline environmental conditions at the Project site and to assess potential Project impacts to sensitive biological resources:

- *Laguna Treatment Plant Driveway Widening Rare Plant Surveys* (City of Santa Rosa 2009, 2010, and 2011)
- *Laguna Treatment Plant Flood Protection Berm Rare Plant Surveys Spring 2010* (City of Santa Rosa 2010)
- Delineation of Potential Jurisdictional Waters of the U.S. (VNLC 2020a, mapping included in **Appendix C Wetland Delineation and Biological Resource Mapping**) (Preliminary Jurisdictional Determination provided by US Army Corps in July 2021)
- *Habitat Assessment Report for California Tiger Salamander and Special-status Plants* (VNLC 2020b, mapping included in **Appendix C**)
- Laguna Treatment Plant Flood Protection Project - Tree Survey
- Programmatic Biological Assessment - Santa Rosa Laguna Treatment Plant Flood Protection Project and Future Improvement Projects
- Incidental Take Permit Application - Santa Rosa Laguna Treatment Plant Flood Protection Project and Future Improvement Projects

Based on the results of these initial surveys, studies, and assessments, Project activities are expected to impact areas of seasonal and perennial wetland habitat, riparian habitat, and

upland/ruderal grassland. Activities also have the potential to impact sensitive species and their habitats.

Ground disturbance activities will occur both within and outside of the Laguna de Santa Rosa's 100-year flood plain. However, no activities would occur within the Laguna's wetted channel. No impacts to any federally-listed fully aquatic species associated with the Laguna would occur. Impacts are expected to be limited to terrestrial habitat as described further below.

- 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? (Less-than-Significant with Mitigation Incorporated)**

Special-status Plant Species

Special-status plant species include those listed as endangered, threatened, or candidate species by the California Department of Fish and Wildlife (CDFW), under CESA, and/or under the federal ESA. Plant species on the California Native Plant Society's California Rare Plant Ranking (CRPR) Lists 1A, 1B and 2A and 2B are also considered eligible for State listing as endangered or threatened pursuant to the California Fish and Game Code (FGC); the CDFW has oversight of these special status plant species as a trustee agency. As part of the CEQA process, such species should be considered, as they meet the definition of threatened or endangered under Sections 2062 and 2067 of the California FGC.

The following rare plant and floristic surveys were conducted, with reports prepared for the Project site:

- Rare Plant Surveys: May and June 2009; March, April, and May 2010; March, April, and May 2011 (City of Santa Rosa)
- Floristic Surveys: November 6, 2015; April 15, 2016; September 2019 (VNLC)
- *Habitat Assessment Report for California Tiger Salamander and Special-status Plants* (VNLC 2020b)

Rare plant surveys by the City of Santa Rosa were conducted in accordance with the United States Fish and Wildlife Service's guidelines for conducting and reporting botanical inventories for federally listed plants on the Santa Rosa Plain. Surveys were conducted three times in 2009, 2010 and 2011 to determine presence or absence of special-status plant species. Phenology for special-status plants was monitored at local reference sites within the Santa Rosa Plain. No special-status plant species were found during any of these surveys.

Floristic surveys conducted by VNLC considered and focused on the list of 34 special status plant species with potential to occur in the Project site as reported in the Habitat Assessment Report (page 36).

During desktop review, VNLC initially determined that marginal potential habitat may be present in the Project site for five species.:

- Sebastopol meadowfoam (*Limnanthes vinculans*), federally endangered, state endangered, CRPR 1B.1

- Sonoma sunshine (*Blennosperma bakeri*), federally endangered, state endangered, CRPR 1B.1
- Burke's goldfields (*Lasthenia burkei*), federally endangered, state endangered, CRPR Rank 1B.1
- Sonoma alopecurus (*Alopecurus aequalis var. sonomensis*), federally endangered, CRPR 1B.1
- congested-headed hayfield tarplant (*Hemizonia congesta ssp. congesta*), CRPR 1B.2

However, following field surveys, habitats in the Project area were determined to provide limited potential to support special-status plants. A total of 123 plant taxa were identified within the Project site, none of which were special-status or otherwise considered rare. The habitats on the site are generally disturbed and include a high percentage of nonnative plant species.

The floristic surveys were generally reconnaissance in nature. Three surveys were conducted; one in November 2015, one in April 2016, and one in September 2019. The April survey was protocol-level in that it included site visits to known special-status vernal pool species populations, involved a comprehensive survey of the entire project site, and was a full floristic inventory. The April survey was conducted during a timeframe in which three of the targeted special-status plants noted above would have been in bloom (i.e., Sebastopol meadowfoam, Sonoma sunshine, and Burke's goldfields). None were observed at this time. Therefore, it is concluded that these species do not occur in the Project site. In addition, the habitat assessment determined that congested-headed hayfield tarplant would be unlikely to occur based on existing on-site habitat conditions.

Potential for occurrence of Sonoma alopecurus was subsequently considered in the Project's Programmatic Biological Assessment (GHD 2021b) but eliminated from consideration for the following reasons. This species is well-studied, and the only known extant population in Sonoma County is located at Trione-Annadel State Park (approximately 10 miles to the northeast of the Project). There are only historic records from the Project vicinity (non-specific records near the Cunningham Marsh area no later than 1987; approximately 0.5 miles south of the Project site). Potential for occurrence on-site is negligible.

As no special-status plants are present within the Project site, no impact to special-status plants would occur.

Special-status Wildlife Species

VNLC conducted initial database scoping of the Project site and a 10-mile buffer around the Project area for sensitive species occurrences. Of the special-status wildlife species that were considered during scoping, only one was determined to have potential to occur in the Project area: the California tiger salamander (CTS), Sonoma Distinct Population Segment (federally endangered, state threatened). It also is expected that common but protected species of nesting migratory birds may occur within the Project area. Given existing conditions, no other sensitive wildlife species are likely to occur.

California Tiger Salamander

Reconnaissance-level field surveys were conducted within the Project site on fall of 2015, spring of 2016, and fall of 2019, and protocol-level aquatic surveys for CTS were conducted on March 28 and April 12, 2018. Per guidance from the USFWS, a third protocol survey was not conducted due to the

abundance of fish, crayfish, and bullfrogs (CTS predators) in the surveyed area. Site conditions have remained the same over the 5-year period of investigations.

During the 2015, 2016, and 2019 reconnaissance surveys, VNLC evaluated the Project site for its potential to provide breeding and/or upland habitat for CTS. VNLC specifically assessed the hydrologic and general habitat conditions of all wetland features in order to determine their potential to provide breeding habitat, looked for the presence of burrow complexes and large cracks in the soil (which could provide upland sheltering habitat for breeding CTS in the vicinity), and evaluated upland vegetation and levels of thatch in order to determine the ease with which CTS might be able to traverse upland habitats (i.e., research suggests that CTS tend to avoid traversing through areas of tall, dense herbaceous vegetation and thatch). The 2018 protocol-level aquatic surveys targeted CTS larva within the pond adjacent to the Project site, located on lands also owned by the City of Santa Rosa.

No breeding sites for CTS were located within the Project site or adjacent pond, and only marginal upland habitat for the species was identified within the Project site. VNLC concluded that the ruderal annual grassland outside the 100-year flood plain (17.07 acres within the LTP) provides marginal upland habitat for the species, and areas of ruderal grassland within the floodplain (11.9 acres within the LTP) does not provide suitable upland habitat.

Implementation of the Project would involve areas of ground disturbance, including excavation, fill, and vegetation removal in areas identified as marginal upland habitat. This also includes vehicle and equipment staging and material stockpiling. If present, CTS may be killed or wounded during ground disturbing activities through crushing, entrapment, or burying by heavy equipment. In addition, the species may be harmed through displacement from habitat (either via self-powered or human-aided relocation). As the Project site overlaps with federally-designated CTS critical habitat, permanent and temporary conversion of critical habitat is expected. This may impede migratory movements of CTS from nearby breeding ponds (if they disperse through the Project site, which is not currently known to occur).

Construction activities could also accidentally introduce chemical contaminants (e.g., fuel oils, grease) to the Project area. This may serve as a stressor to CTS (if present). As CTS have the potential to absorb these contaminants through their skin, exposure could result in take via injury (illness) and death. CTS (if present and sheltering on-site in burrows) could also be disturbed by construction noise and vibration.

The impact to CTS would be potentially significant without mitigation. This potentially significant impact would be reduced to a less than significant level with the implementation of Mitigation Measure BIO-1 Protect California Tiger Salamander and CTS Habitat During Construction, described below.

Migratory Birds

No specific special-status avian species were identified in the Habitat Assessment (VNLC 2020b) as having potential to occur in the Project site. In addition, no special-status avian species were observed in the Project site during reconnaissance level surveys or technical surveys; however, focused avian surveys were not conducted in the Project site. Based on existing conditions, it is assumed that suitable nesting habitat for several migratory nesting bird species (protected under the federal MBTA and California FGC) is present within the Project site, and that nesting birds are expected to be present in the Project site during the nesting season (February 1 through August 31, with CDFW and Project biologist discretion based on individual site conditions).

If present in the Project site during construction activities, special-status and protected migratory birds could be injured or killed via clearing and grubbing of vegetation or removal of trees, and/or potentially displaced from habitat, resulting in a potentially significant impact. This potentially significant impact would be reduced to a less than significant level with the implementation of Mitigation Measure BIO-2 Protect Migratory and Nesting Birds, described below.

b, c) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service, or state or federally protected wetlands? (Less-than-Significant with Mitigation Incorporated)

Sensitive Natural Communities

The undeveloped areas within the Project site consist primarily of ruderal habitat dominated by a mix of weedy forbs and grasses, especially soft chess (*Bromus hordeaceus*), ripgut (*B. diandrus*), wild oat (*Avena fatua*), and bristly ox-tongue (*Helminthotheca echioides*). The Project footprint also extends into the upper edges of the riparian zone of Laguna de Santa Rosa, where there are scattered valley oak (*Quercus lobata*), Oregon ash (*Fraxinus latifolia*), and arroyo willow (*Salix lasiolepis*), along with wetland understory below the stream banks, and quasi-wetland habitat dominated by invasive Himalayan blackberry (*Rubus armeniacus*) along the bank tops. Some of these same species are present along an offshoot of the Laguna de Santa Rosa to the east, and there are scattered seasonal wetlands in swales and other low-lying areas within the ruderal areas. The Project site also encompasses an actively maintained native plant demonstration garden.

Seven distinct habitat types exist within the site. These include, in general order of abundance:

- ruderal annual grassland (including a few scattered native oaks and other trees; 29.1 acres),
- Harding grass perennial grassland (1.6 acres),
- seasonal wetlands (1.5 acres),
- native plant garden (1.4 acres),
- landscaped areas (1.3 acres),
- riparian woodlands (0.6 acre), and
- perennial wetlands (0.5 acre).

Additionally, there are 9.5 acres of developed land within the Project site. See **Appendix C** for maps showing the distribution of these habitat types. Among these habitat types, the riparian woodlands and wetlands are considered to be Sensitive Natural Communities (SNCs) protected under various federal, state, and local environmental regulations.

Riparian Woodland

Project improvements would result in the removal of approximately 0.09 acre of riparian woodland near the southern Llano Road entrance/driveway. Within the 0.09 acre, five trees would be removed: two arroyo willow, one weeping willow (*Salix babylonica*), and two valley oak. These trees are located between the Llano Road entrance and the edge of a seasonal wetland. In total, this riparian area is part of an approximate 1.7-acre unbroken swath of riparian habitat (excluding the Laguna de Santa Rosa riparian corridor running perpendicular to the seasonal wetland) consisting of more than 100 trees. Removal of these five trees, one of which is non-native (i.e., weeping willow), would not have

a substantial adverse effect on this sensitive natural community. In addition, as noted in Section 1.6.5, the Project includes tree replacement plantings in accordance with the City's Tree Ordinance. Removal of the two oak trees would require planting 10 similar tree species, which would occur along the southern border of the Project site and within the vicinity of the seasonal wetland. The Project's impact to riparian woodland would be less than significant.

Jurisdictional Wetlands

The delineation field work conducted by VNLC on November 6, 2015, April 15, 2016, and September 11, 2019, with the later surveys conducted as the Project footprint changed. These surveys followed a delineation survey that was verified in 2009. Two separate Approved Jurisdictional Determinations for the Project site were completed in 2009 and in 2017 (File Number 2009-00304N). The 2019 field work delineation mapped 19 wetland features. These consist of 1.5 acres of seasonal wetland and 0.5 acre of perennial wetlands. A Preliminary Jurisdictional Determination was issued by the USACE in July 2021 (see **Appendix C**).

The Project could temporarily impact up to 0.7 acre of marginal seasonal wetland adjacent to the driveway and the southern access road. In addition, there are several wetlands within close proximity of the Project footprint. If not protected, these wetland areas could be impacted during construction if equipment inadvertently entered these areas or through other ancillary activities. Inadvertent disturbance to wetlands during construction would be a significant without mitigation.

Removal of 6 stormwater outfalls within perennial wetland and 1 outfall within a seasonal wetland would result in the removal of up to 375 square feet of fill.

As currently designed, the Project would permanently fill approximately 0.16 acre of wetland features, of which 0.001 is perennial wetland and 0.158 is marginal seasonal wetland. Four of the seasonal wetlands that would be impacted are either roadside ditches or have been created through depression grading specifically for the purpose of draining stormwater, with stormwater inlets/grates at each low point that drain stormwater to the Laguna de Santa Rosa via a culverted system. Fill impacts are related to the placement of soil material for the earthen flood berm and relocation of the main driveway, some of which would only partially fill individual wetlands. Impacts to the seasonal wetlands could increase if the final design encroaches further into a respective wetland. Permanent impacts to wetland features would be significant without mitigation.

With implementation of Mitigation Measure BIO-3 Protect Wetland Resources during Construction and Mitigation Measure BIO-4 Compensate for Loss of Wetland Resources, impacts to wetland resources would be less than significant. Full text of the mitigation measures is provided at the end of this section, as well as an analysis of the mitigation effectiveness.

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? (No Impact)

Wildlife movement corridors are areas that connect suitable wildlife habitat in a region otherwise fragmented by rugged terrain, changes in vegetation, or human disturbance. Natural features such as canyon drainages, ridgelines, peninsulas, or areas with vegetative cover provide wildlife corridors. Wildlife movement corridors are important because they provide access to mates, food, and water; allow the dispersal of individuals away from high population density areas and facilitate the exchange of genetic traits between populations.

There are no landscape features in the Project vicinity mapped as Essential Connectivity Areas or Natural Landscape blocks (CDFW 2021). The Project site is surrounded on three sides by hardscape (north, west, east; paved roads and LTP facilities). It is assumed that terrestrial wildlife could access the site by crossing these developed areas, but access by most species is more likely to occur from the south (from the Laguna de Santa Rosa and associated riparian corridor; with the exception of CTS, as the Laguna is non-habitat for this species and the Laguna is a natural barrier to their movement).

Primary habitat connectivity corridors in the Project site include the riparian corridor along the southern edge of the site (bordering the Laguna de Santa Rosa), and the Laguna de Santa Rosa itself. As the largest freshwater wetland complex on the California North Coast, the Laguna de Santa Rosa serves an important stopover site for migratory birds moving along the Pacific Flyway during fall and spring (heading to breeding grounds in the north and wintering grounds in the south). The Laguna also serves as an important wintering and breeding site for many avian migrants and a migration route to reach breeding areas for salmonids. No Project activities are proposed in or immediately adjacent to the Laguna that would impede wildlife access or connectivity. There are no other habitat features in the Project vicinity that would facilitate channelized wildlife movement.

The Project would not result in the creation of barriers to fish passage, as aquatic habitat is not present. The Project does not include fenced enclosures or other structures that would impede wildlife and would not preclude wildlife mobility, breeding, or reproduction beyond the existing conditions. No construction-related impact has been identified. Following construction, the proposed Project would not create an impediment to wildlife movement beyond the existing conditions.

No construction or operational impact would occur.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? (Less-than-Significant with Mitigation Incorporated)

The Santa Rosa General Plan, Citywide Creek Master Plan, and Santa Rosa Design Guidelines provide numerous goals and policies to protect biological resources. The policies require conservation of wetlands and waterways so that there is not net loss of wetlands, preservation of significant vegetation, trees, and biotic habitats, and ensuring construction adjacent to creek channels and riparian corridors is sensitive to the natural environment. As Project construction may impact certain biological resources, it would potentially conflict with applicable City policies and ordinances protecting biological resources. Such conflicts would be a potentially significant impact. Mitigation Measures BIO-1 through BIO-4, described below, would ensure that implementation of the Project would not conflict with City policies and ordinances protecting biological resources as explained above under Impacts “a” through “d”.

In addition, the City’s tree ordinance (City of Santa Rosa City Code. 2021) would apply to the Project as noted in Section 1.8.5 Compliance with Tree Ordinance. A tree is defined in the City’s tree ordinance as any woody plant having a single trunk diameter of 4 inches or more or a combination of multiple trunks having a total diameter of 8 inches or more. The City ordinance also identifies and defines heritage trees as native trees to Sonoma County with a diameter or circumference equal to or exceeding those listed within the Ordinance.

On April 5, 2021, GHD reviewed an existing inventory of the trees that would be removed during construction of the proposed Project. A total of 260 trees were found to be present within or adjacent to the Project footprint. Of the total trees inventoried on-site, 136 are slated for removal during Project

construction. In accordance with the City of Santa Rosa Tree Ordinance, it was determined that of the 136 trees identified for removal, 33 are heritage trees that would require replacement. Heritage tree species on-site include valley oaks and coast live oaks (*Quercus agrifolia*). Based on the City of Santa Rosa Tree Ordinance, replacement would result in the need to plant 168 trees of similar species. As noted in section 1.6.5 Tree Removal, areas along the southern border of the LTP have been identified to plant a majority of the replacement trees, with some being planted along the periphery to the west, north, and east. The placement of these trees would augment the riparian habitat adjacent to the Laguna de Santa Rosa, and provide screening, aesthetic, and wildlife benefits along the periphery consistent with the intent and purpose of the Tree Ordinance. Any trees that would not fit within the LTP site, the City would pay the in lieu fee as allowed in the City of Santa Rosa Tree Ordinance. As the Project would comply with the tree ordinance, no conflict would occur with Municipal Code Chapter 17-24.

Following construction, operation of the project would not require ground disturbance or other activities that would conflict with policies or ordinances protecting biological resources. Therefore, no operational impact would occur.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? (Less-than-Significant with Mitigation Incorporated)

The Project is within both a core area and a management area designated in the *Santa Rosa Plain Recovery Plan* (USFWS 2016) for the CTS and within the *Santa Rosa Plain Conservation Strategy Study Area* (CDFW, USFWS, et al. 2005). As described below, impacts to CTS and CTS habitat would be mitigated via implementation of Mitigation Measure BIO-1, Protect California Tiger Salamander and CTS Habitat during Construction, which requires compliance with the Santa Rosa Plain Conservation Strategy. With implementation of Mitigation Measure BIO-1, the Project would not conflict with the provisions of an adopted habitat conservation plan, and the impact would be less than significant.

Mitigation Measures

Implementation of Mitigation Measure BIO-1 requires pre-construction surveys, exclusion fencing, and a biological monitor to avoid and minimize potential impacts to CTS during construction. Mitigation for permanent impacts would follow the established mitigation ratios in the *Santa Rosa Plain Conservation Strategy*.

Implementation of Mitigation Measure BIO-2 would reduce impacts to migratory and nesting birds by limiting construction and vegetation removal to specified work windows, and if that is not feasible providing a procedure to follow to identify nests and establish buffers and other avoidance measures until nesting is complete.

Implementation of Mitigation Measure BIO-3 requires procedures be implemented to protect wetlands during construction and Mitigation Measure BIO-4 requires compensation of permanently impacted wetlands such that there is no net loss, reducing impacts to wetland resources to less than significant.

Mitigation Measure BIO-1: Protect California Tiger Salamander and CTS Habitat during Construction

Mitigation for impacts to CTS habitat shall be as stipulated in the *Santa Rosa Plain Conservation Strategy* (USFWS 2005) or any subsequent guidance adopted by USFWS. To prevent loss of CTS habitat within the Santa Rosa Plain, the USFWS and CDFW require that mitigation lands be purchased for the acreage that is being disturbed. The Project is located both within and outside 2,200 feet of a known breeding site, and the City shall compensate for loss of CTS habitat by purchasing mitigation credits at a ratio of 2:1 and 1:1 respectively, or as required by USFWS and CDFW. The mitigation shall be purchased from a mitigation bank that is within the Santa Rosa Plain for the species.

Minimization and avoidance measures contained in the Project's Biological Opinion with USFWS and Incidental Take Permit from the CDFW shall be implemented during construction within areas where CTS may occur. These measures may include but are not limited to:

- A USFWS/CDFW-approved biological monitor will be on site during work in potential CTS habitat.
- The biological monitor will conduct a training session for all construction workers before work begins on the Project.
- City or its subcontractor shall install temporary exclusion fencing to prevent the CTS from dispersing into the Project site. Exclusion fencing will be at least three feet high and the lower six inches of the fence will be buried in the ground to prevent animals from crawling under. The remaining 2.5 feet will be left above ground to serve as a barrier for animals moving on the ground surface. The barrier shall be designed to allow the CTS to leave the Project area using a one-way funnel, ramp or other method approved by the CDFW.
- An erosion and sediment control plan will be implemented to prevent impacts of wetland restoration and construction on habitat outside the work areas.
- Access routes and number and size of staging and work areas will be limited to the minimum necessary to achieve the Project goals. Routes and boundaries of the roadwork will be clearly marked prior to initiating construction/grading.
- All foods and food-related trash items will be enclosed in sealed trash containers at the end of each day and removed completely from the site once every three days.
- No pets will be allowed anywhere in the project site during construction.
- A speed limit of 10 mph on dirt roads will be maintained, if applicable.
- All equipment will be maintained such that there will be no leaks of automotive fluids such as gasoline, oils, or solvents.
- Hazardous materials such as fuels, oils, solvents, etc., will be stored in sealable containers in a designated location that is at least 200 feet from aquatic habitats. All fueling and maintenance of vehicles and other equipment and staging areas will occur at least 50 feet from any aquatic habitat.
- Project areas temporarily disturbed by construction activities will be revegetated.

- If CTS are found, the City shall coordinate with the USFWS and CDFW to prevent take of individuals and mitigate for loss of habitat.

Mitigation Measure BIO-2: Protect Migratory and Nesting Birds

The City shall protect migratory and nesting birds. Seasonal avoidance of the February 1 to August 31 nesting season shall be utilized when feasible, to avoid impacts on bird species protected under the federal MBTA and California FGC that may be nesting within the Project site or adjacent area during construction. Removal of trees and clearing of shrubs or other vegetation for construction shall be conducted, if possible, during the fall and/or winter months from September 1 to January 31, outside of the active nesting season.

If vegetation removal cannot be confined to work during the non-nesting season, the City shall have a qualified ornithologist conduct pre-construction nesting surveys within, and adjacent to, the Project construction footprint, to check for nesting activity of native birds. The ornithologist shall conduct a minimum of one-day preconstruction survey within the seven-day period prior to vegetation removal. If vegetation removal work lapses for seven days or longer during the nesting season, a qualified ornithologist shall conduct a supplemental avian survey before Project work is reinitiated.

If an active nest is found, the qualified ornithologist would determine the extent of an appropriate construction free buffer zone to be established around the nest and/or operational restrictions in consultation with the CDFW. Buffer zones would be delineated with flagging and maintained until the nests have fledged or nesting activity has ceased. Buffer sizes would take into account factors such as: (1) roadway, LTP, and other ambient noise levels, (2) distance from the nest to the LTP facilities and distance from the nest to the active construction area, (3) noise and human disturbance levels at the construction-site at the time of the survey and the noise and disturbance expected during the construction activity, (4) distance and amount of vegetation or other screening between the construction-site and the nest, and (5) sensitivity of individual nesting species and behaviors of the nesting birds.

Mitigation Measure BIO-3: Protect Wetland Resources during Construction

The City shall clearly identify wetland areas to be preserved within and abutting the Project footprint with high-visibility construction fencing or markers (e.g., lathe or pin flags) before site preparation. These wetland exclusion areas will be marked appropriately on the construction documents, as defined in the Preliminary Jurisdictional Delineation dated July 2021. Construction will not encroach upon these preserved jurisdictional wetland areas. No construction activity, traffic, equipment, or materials will be permitted in fenced wetland areas. The fencing will be maintained throughout the construction period. Exclusion fencing and markers will be removed following the completion of construction activities.

Mitigation Measure BIO-4: Compensate for Loss of Wetland Resources

The City shall avoid fill of wetland resources, to the extent feasible. If fill cannot be avoided, the City shall compensate for the loss of seasonal and perennial wetland habitat through the purchase of wetland credits at a ratio of 1:1, from an approved mitigation bank within the Santa Rosa Plain so that there is no net loss in wetlands. Alternatively, on-site restoration and/or enhancement activities can be implemented through a Wetland Restoration and Enhancement plan that quantifies the restoration and enhancement areas,

details the activities to be implemented (removal of non-natives, enlarging existing wetland features, removal of existing fill, etc.), identifies the benefits of the activities, and provides for monitoring to ensure long-term success of the enhancement and restoration activities. Required permits from the U.S. Army Corp of Engineers and the North Coast Regional Water Quality Control Board shall be received prior to the start of on-site construction activity. The City shall ensure any additional avoidance measures outlined in the permits are implemented.

3.5 Cultural Resources

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?				✓
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?			✓	
c) Disturb any human remains, including those interred outside of formal cemeteries?			✓	

This analysis is based on site-specific analysis performed by cultural resource specialists, the results of which are summarized in the following reports: *Archaeological Resources Review for the Laguna Treatment Plant* (ASC 2015); *Laguna Treatment Plant Geotechnical Boring Monitoring* (ASC 2016); *Laguna Treatment Plant Flood Protection Project Geotechnical Boring Monitoring* (ASC 2020), and *Archaeological Resources Study for the Laguna Treatment Plant* (ASC 2022). These reports are not included in the Appendices of this Initial Study but are considered confidential documents kept in City files.

a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5? (No Impact)

The CEQA Guidelines define a historical resource as: (1) a resource listed in the California Register of Historical Resources; (2) a resource included in a local register of historical resources, as defined in the California Public Resources Code (PRC) Section 5020.1(k), or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); or (3) any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the lead agency's determination is supported by substantial evidence in light of the whole record.

The Sonoma State University Anthropological Studies Center (ASC) conducted a records search at the Northwest Information Center for the Area of Potential Effect (APE) which included portions of the Laguna Treatment Plant and a ¼-mile buffer surrounding it. No recorded historic resources were found within, or adjacent to, the LTP. In addition, none of the built resources within the LTP site would be materially impaired nor is there any information available to indicate that the LTP would be eligible under any of the requirements of PRC Section 5024.1(g). Therefore, there would be no impact to historic resources.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? (Less than Significant with Mitigation)

The above referenced records search found that fourteen previous cultural resource studies have been conducted within the APE, covering approximately 50% of the LTP site. No recorded prehistoric archaeological sites were found within the LTP. A request of the Native American Heritage Commission (NAHC) to review the Sacred Lands File for information on Native American cultural

resources in the APE was negative, suggesting there was no information on file about the presence of sacred sites within the APE. The LTP sits on disturbed fill material, and the archaeological resources review conducted in 2015 concluded that there was moderate sensitivity for prehistoric cultural resources in undisturbed sediments at greater than six feet of depth.

In November 2016, 14 geotechnical borings were conducted throughout the LTP and were monitored and inspected by a professional archaeologist from ASC and a tribal monitor from the Federated Indians of Graton Rancheria. Each of the 14 bores examined were negative for indicators of archaeological deposits. A summary report noted extensive grading within the LTP site with areas of fill 8 to 10 feet below the current ground surface and exceeding 10 feet in some areas.

In June 2020, 11 additional geotechnical borings were conducted around the eastern and southern edges of the LTP with one boring located along Llano Road toward the north. Each boring was monitored and inspected by a professional archaeologist from ASC and a tribal monitor from the Federated Indians of Graton Rancheria. Each of the additional 11 bores examined were negative for indicators of archaeological deposits, and fill material was found up to 6 feet below the current ground surface.

Based on the monitoring results of the 25 geotechnical borings, that no archaeological materials were identified and soils observed during monitoring did not indicate sensitivity for cultural resources, both memos concluded that no further prehistoric archaeological investigation of the LTP was required.

The 2022 archaeological resources study evaluated additional areas of the LTP, including the primary borrow area and northern berm. A pedestrian survey of these areas was conducted in November 2021. During the pedestrian survey, parallel linear transects were walked, examining the ground surface, soils brought to the surface by burrowing animals, and the side slopes of the primary borrow area. No indicators of archeological or cultural resources were observed during the pedestrian survey of the additional areas, and the 2022 archaeological resources study concluded that in disturbed sediments, the sensitivity for intact cultural deposits is low for isolated artifacts or re-deposited cultural material.

In summary, the results of the NWIC and NAHC record searches, geotechnical borings, and pedestrian survey did not identify any known archaeological sites within the Project footprint nor any indicators of archaeological deposits. Monitoring of the geotechnical borings documented the highly disturbed nature of the LTP site, with fill material ranging from 6 to 10 feet below the current ground surface and deeper in certain areas. Because Project-related excavation would not occur deeper than 6 feet below the ground surface, the likelihood of encountering intact archaeological resources during construction is low. The impact to cultural resources is less than significant.

**c) Disturb any human remains, including those interred outside of formal cemeteries?
(Less than Significant)**

Construction would involve ground-disturbing activities within the confines of the Project site.

No human remains are known to exist within the Project site. As summarized in Impact “b” above, construction of the Project would require only shallow excavations within areas that have been highly disturbed during the initial construction of the LTP. The 25 geotechnical borings showed no indicators of archaeological or cultural resources. The likelihood of encountering human remains during construction is low, and the Project would be required to follow procedures outlined in Public

Resources Code § 5097.9 and Health and Safety Code § 7050.5 in the unlikely event of inadvertent discovery of human remains. The impact would be less than significant.

3.6 Energy Resources

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Result in potentially significant environmental impacts 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?				✓

a) Result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation? (Less than Significant)

Construction

Construction of the Project would involve grading, excavation and use of heavy machinery as discussed under Section 3.3 (Air Quality). Construction would require the use of fuels, primarily gas, diesel, and motor oil. The precise amount of construction-related energy consumption that would occur is uncertain. However, construction would not require a large amount of fuel or energy usage because of the moderate number of construction vehicles and equipment, worker trips, and truck trips that would be required for a Project of this scale. Worker and delivery trips associated with construction of the Project are estimated on average to be 28 per day and increase to approximately 110 trips per day during peak construction. Construction equipment would remain staged in the Project site once mobilized. Use of these fuels would not be wasteful or unnecessary because their use is necessary to complete the Project.

Excessive idling and other inefficient site operations would be prohibited. Equipment idling times would be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes or less (as required by the California airborne toxics control measure (Title 13, Section 2485 of the CCR). Finally, as noted in Section 1.8.2 of the Project Description, all construction equipment would be maintained and properly tuned in accordance with manufacturer's specifications.

Because construction would not result in the use of large amounts of fuel and energy in a wasteful manner, impacts related to the inefficient use of construction-related energy resources would be less than significant.

Operation

The Project would not result in new employees or increased vehicle miles travelled (VMT). Operation would include minor on-site activities, including mowing and annual inspection. Facility inspections and mowing currently occur on the Project site; the Project would not result in a substantial increase or intensification of those operational activities.

Because the Project would not result in new VMT, or substantially increase or intensify operational activities such as inspection or mowing, operational-related energy impacts would also be less than significant.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency? (No Impact)

In 2003, the California Energy Commission (CEC), the California Power Authority (CPA), and the California Public Utilities Commission (CPUC) jointly adopted an Energy Action Plan (EAP) that listed goals for California's energy future and set forth a commitment to achieve these goals through specific actions (CEC 2003). In 2005, the CPUC and the CEC jointly prepared the EAP II to identify the further actions necessary to meet California's future energy needs. Additionally, the CEC prepared the State Alternative Fuels Plan in partnership with the California Air Resources Board and in consultation with the other state, federal, and local agencies. The alternative fuels plan presents strategies and actions California must take to increase the use of alternative non-petroleum fuels in a manner that minimizes costs to California and maximizes the economic benefits of in-state production (CEC 2005).

Locally, the City of Santa Rosa General Plan includes goals and policies to promote energy conservation in the City (Goal H-G, Policies H-G-1, H-G-2, H-G-5, H-G-6, and H-G-7) and to increase local energy awareness (Policy H-G-8). However, none of the goals or policies are applicable to the Proposed Project.

Construction and operation of the Project would not conflict with or obstruct implementation of either the EAP, EAP II, the State Alternative Fuels Plan or local City general plan goals. Project construction would not require a large amount of fuel or energy usage because of the limited extent and nature of the proposed improvements and the minimal number of construction vehicles and equipment, worker trips, and truck trips that would be required for a project of this scale. Project operation would not require substantial additional energy use beyond existing conditions. No conflicts with a state or local plan for renewable energy or energy efficiency have been identified. Therefore, no impact would result.

3.7 Geology and Soils

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
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?				✓
ii. Strong seismic ground shaking?			✓	
iii. Seismic related ground failure, including liquefaction?			✓	
iv. Landslides?			✓	
b) Result in substantial soil erosion or the loss of topsoil?			✓	
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on, or off, site landslide, lateral spreading, subsidence, liquefaction or collapse?			✓	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?			✓	
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				✓
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?			✓	

a.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. (No Impact)

The Alquist-Priolo Act (Public Resources Code Sections 2621–2630) was passed in 1972 to mitigate the hazard of surface faulting to structures designed for human occupancy. The purpose of the Act is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The Project does not include structures designed for human occupancy. Additionally, the site is not within a current Alquist-Priolo Fault Zone and published maps do not indicate the presence of active fault traces crossing the site. The nearest known fault is the Rogers Creek Fault, approximately 6 miles northeast of the Project site (Brelje & Race 2020). No impact would occur.

a.ii) Strong seismic ground shaking? (Less than Significant)

The Project site is located within the general region of the San Andreas Fault system, which is strongly affected by seismic activity. Several northwest trending faults of the San Andreas system are within several miles of the site, including the Rogers Creek Fault (~6 miles northeast), West Napa Fault (~22 miles southeast), San Andreas Fault (~14 miles southwest), Green Valley Fault (~24 miles east), and the Hayward Fault (~30 miles southeast). Historical earthquake records indicate potential for strong ground shaking in the San Francisco Bay Area and Sonoma County, therefore, future seismic shaking should be anticipated at the site. As stated in Section 1.8.1 in the Project Description, the Project would be designed and constructed in compliance with the site-specific recommendations made in *Design Report - Geotechnical Investigation, Proposed Laguna Treatment Plant Flood Wall* (Brelje & Race 2020). In addition, the improvements do not include any buildings or other structures that are typically related to loss, injury, or death during an earthquake. Therefore, the impact of seismic ground shaking on the proposed improvements would be less than significant.

a.iii, a.iv, c, d) Liquefaction, landslides, or otherwise unstable soils? (Less than Significant)

Liquefiable soils were observed directly beneath the floodgate footprint at 30 to 40 feet below ground surface. Liquefaction susceptible soils were also observed in Borings TB-4 (within the area on Llano Road that would be improved), TB-8 (along the southern berm location) and TB-11 (northwest corner of the LTP). The southern end of the LTP is mapped as “very high” liquefaction potential according to Sonoma County General Plan Liquefaction Hazard Areas map. Expansive soils were observed on-site as well, specifically in borings TB-1 (west side of Llano Road, LTP main entrance), 6 (south end of LTP along the southern berm location), 7 (south end of LTP along the southern berm location), 8 (south end of LTP along the southern berm location), 9 (south end of LTP along the southern berm location) and 11 (northwest corner of the LTP). If exposed to seasonal variation in moisture content, some of the near surface clayey soils are likely to undergo volume changes, generating heave or contraction.

As stated above and in Section 1.8, the Project would be designed and constructed in compliance with the site-specific recommendations made in *Design Report - Geotechnical Investigation, Proposed Laguna Treatment Plant Flood Wall* (Brelje & Race 2020). Therefore, with incorporation of the site-specific geotechnical recommendations, the impact related to potential liquefaction, and expansive or unstable soils would be less than significant.

The proposed improvements are located in an area that is essentially flat. Some steep slopes occur south of the proposed berm, toward the Laguna de Santa Rosa. However, the potential for seismically-induced (or otherwise) landslides and/or slope failures to occur near enough to the proposed improvements to affect them would be low. Therefore, potential impacts related to landslides would be less than significant.

b) Result in substantial soil erosion or the loss of topsoil? (Less than Significant)

The areas to be disturbed during construction would consist of hardscapes and soils that have been highly altered from their original, natural state, as well as undeveloped areas that would be built up to construct the flood protection berms. As stated in Section 1.8.3, the Project would comply with the National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit), which includes best management practices to prevent soil erosion during construction. Compliance with the NPDES permit requirements would ensure that potential impacts from soil erosion or loss of topsoil during construction would be less than significant.

Following construction, the Project would not result in soil erosion or loss of topsoil, as disturbed areas would be restored to general pre-construction conditions and/ or revegetated. No additional ground disturbance would occur during the operational phase. Therefore, no operational impact related to soil erosion or loss of topsoil would 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? (No Impact)

The Project would not involve the use of septic tanks or other alternative wastewater disposal systems. No impact would occur.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (Less than Significant)

No paleontological resources are known to be on or adjacent to the Project site. In addition, given the extent of past disturbance and depth of man-placed fill material at the LTP site it is unlikely that such resources would be encountered during construction as excavation is anticipated to not exceed the existing fill material. The impact to paleontological resources would be less than significant.

3.8 Greenhouse Gas Emissions

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

Assembly Bill 32 (AB 32), the California Global Warming Solutions Act of 2006 requires California to reduce its GHG emissions to 1990 levels by 2020. In December 2008, pursuant to AB 32, the CARB adopted the Climate Change Scoping Plan (Scoping Plan), which outlined measures to attain the 2020 GHG emissions limit. California achieved its 2020 GHG emissions reductions target of returning to 1990 levels 4 years earlier than mandated by AB 32.

The Scoping Plan has been updated twice; the current version is the 2017 Scoping Plan Update. The state is currently implementing strategies in the 2017 Scoping Plan Update to further reduce its GHG emissions by 40% below 1990 levels by 2030.

The 2017 Scoping Plan provides California's climate policy portfolio and recommended strategies to put the state on a path to achieve the 2030 target set by EO B-30-15 and SB 32, discussed below. The scenario includes ongoing and statutorily required programs, continuing the Cap-and-Trade Program, and high-level objectives and goals to reduce GHGs across multiple economic sectors. Existing programs, also known as "known commitments", identified by the 2017 Scoping Plan include: SB 350, the Low Carbon Fuel Standard Program, CARB's Mobile Source Strategy, Senate Bill 1383 for short-lived climate pollutants, California's Sustainable Freight Action Plan. The high-level objective and goals recommendations cover the energy, transportation, industry, water, waste management, agriculture, and natural and working lands, and are to be implemented by a variety of state agencies.

In June 2012, the City of Santa Rosa adopted a community Climate Action Plan (CCAP) (City of Santa Rosa 2012) which examines community-wide sources of greenhouse gas (GHG) emissions, identifies reduction targets, and outlines strategies for reducing emissions (Santa Rosa 2012). The CCAP applies to both private and public projects and contains emission reduction goals for year 2020 and 2035. As provided in the BAAQMD's comment letter on the CCAP's SEIR, the City's CCAP meets the programmatic threshold for a Qualified GHG Reduction Strategy established by the BAAQMD guidelines. According to the BAAQMD CEQA Air Quality Guidelines, a project that is consistent with an adopted qualified greenhouse gas reduction strategy can be presumed to have less-than-significant greenhouse gas emission impacts.

In August 2013, the City adopted the *Municipal Operations Climate Action Plan* (MCAP) as a companion document to the CCAP. The MCAP addresses GHG emissions from the City's municipal operations, including that of the LTP (Santa Rosa 2013).

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? (No Impact)

The evaluation of whether the Project would generate GHG emissions in a manner that would impact the environment is based on the Project's consistency with applicable GHG reduction strategies identified in the Santa Rosa MCAP and the Santa Rosa CCAP. The MCAP identifies strategies for reducing GHG emissions related to municipal operations such as purchasing, equipment replacements, building upgrades, and fleet fuels. None were found to apply to the Flood Protection Project. Based on a review of the Santa Rosa CCAP, the only measure applicable to the Project is Measure 9.2 Construction Emissions.

CCAP Measure 9.2 focuses on reducing emissions from heavy-duty equipment. Actions 9.2.1, 9.2.2, and 9.2.3 require minimizing idling times, construction equipment maintenance, and working with project applicants to limit GHG emissions by substituting equipment with electric equipment instead of diesel or gasoline-powered equipment, using alternative fuels, or avoiding use of on-site generators. As mentioned in Section 1.8.4, Compliance with Existing Regulations and Standard BMPS, Implementation of Community Climate Action Plan Measures, all of the above listed actions are incorporated into the Project Description as measures to be implemented by the Project contractor. Therefore, the Project would be compliant with CAP Measure 9.2 and related implementing actions.

The Project is consistent with the applicable GHG reduction strategies to reduce GHG emissions, therefore there is no impact.

b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases? (No Impact)

General Plan Goal OSC-M and Policy OSC-M direct the City of Santa Rosa to meet local, regional, and state targets for reduction of GHG emissions through implementation of the CCAP. As summarized in impact "a", the City's CCAP is considered a qualified GHG Reduction Strategy, as established by the BAAQMD's guidelines and consistent with State CEQA Guidelines Section 15183.5. The CCAP applies to both private and public projects and contains emission reduction goals for year 2020 and 2035.

The Project would be consistent with the Santa Rosa CCAP and, by extension, the requirements of AB 32 and CARB's Scoping Plan adopted to achieve the emission reduction requirements of AB 32 (Santa Rosa 2012). Therefore, the Project would comply with General Plan goal OSC-M and policy OSC-M-1 (Santa Rosa 2012).

The Project is consistent with the applicable adopted plans, policies, and regulations to reduce GHG emissions, therefore there is no impact.

3.9 Hazards and Hazardous Materials

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

a, b) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials; or create reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? (Less than Significant)

Construction activities would involve the use of hazardous materials, such as fuels, lubricants, paints, and solvents. These materials are commonly used during construction, are not acutely hazardous and would be used in small quantities.

Regular transport of such materials to and from the Project site during construction could result in an incremental increase in the potential for accidents. However, numerous laws and regulations ensure the safe transportation, use, storage, and disposal of hazardous materials. For example, Caltrans and the California Highway Patrol regulate the transportation of hazardous materials and wastes, including container types and packaging requirements, as well as licensing and training for truck operators, chemical handlers, and hazardous waste haulers. Worker safety regulations cover hazards related to the prevention of exposure to hazardous materials and a release to the environment from hazardous materials use. The California Division of Occupational Safety and

Health (Cal-OSHA) also enforces hazard communication program regulations, which contain worker safety training and hazard information requirements, such as procedures for identifying and labeling hazardous substances, communicating hazard information related to hazardous substances and their handling, and preparation of health and safety plans to protect workers and employees. As contractors would be required to comply with existing hazardous materials laws and regulations, the potential impact associated with transport, use, and disposal of hazardous materials is considered less than significant.

Following construction, operation of the Project would not result in the need for new hazardous materials to be transported, used or disposed. No operational impact would occur.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? (No Impact)

The nearest school is located approximately 3.2 miles northeast of the Project site. Therefore, the Project is not located within a quarter mile of an existing or proposed school and no impact associated with emitting or handling hazardous materials, substances, or waste within a quarter mile of a school would occur.

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? (Less than Significant)

The provisions in Government Code Section 65962.5 are commonly referred to as the "Cortese List." A search of the Cortese List was completed for the Project to determine if any known hazardous waste sites have been recorded on or adjacent to the project site. These include:

- Department of Toxic Substances Control EnviroStor database;
- List of Leaking Underground Storage Tank Sites from the Water Board GeoTracker database;
- List of solid waste disposal sites identified by the Water Board with waste constituents above hazardous waste levels;
- List of "active" Cease and Desist Orders and Cleanup and Abatement Orders from the Water Board; and
- List of hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code.

A search of the Cortese List was completed to determine if any known hazardous waste sites have been recorded on or adjacent to the project site (SWQCB 2021). The Project site is listed on the Cortese List twice. Once as a Leaking Underground Storage Tank (LUST) Clean-Up Site and second for operating a permitted underground storage tank. The LUST Clean-Up Site has been designated as "case closed" meaning no further action is required. The permitted underground storage tank is currently being operated according to state regulations and does not pose a risk. Therefore, it is not anticipated that construction of the proposed flood protection improvements would encounter any hazardous materials. Therefore, a less than significant impact would occur.

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? (No Impact)

The Project is not located within the jurisdictional boundaries of the Sonoma County Comprehensive Airport Land Use Plan (Sonoma County 2016), or within two miles of a public airport or public use airport. No impact would occur.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? (No Impact)

The City's adopted Emergency Operations Plan (Santa Rosa 2017) does not designate specific evacuation routes or emergency shelter locations or include policies or procedures with which the Project would conflict. Therefore, the Project would not impair implementation of or physically interfere with the plan. No impact would occur.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires? (No Impact)

The Project is not located within the Santa Rosa Wildland Urban Interface zone, or within a CAL FIRE designated fire hazard severity zone (Santa Rosa 2009, CAL FIRE 2021). In addition, the proposed improvements do not involve new habitable structures. No impact would occur. Please refer to Section 3.20 (Wildfire) for a more comprehensive discussion regarding wildfires.

3.10 Hydrology and Water Quality

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?			✓	
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?				✓
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i. Result in substantial erosion or siltation on- or off-site?			✓	
ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?			✓	
iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?			✓	
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?				✓

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality? (Less than Significant)

Water quality standards and objectives are achieved primarily through the establishment of NPDES permits and waste discharge requirements.

State Water Resources Control Board NPDES Order No. 2009-0009, as amended by Order No. 2012-0006, applies to public and private construction projects that include one or more acres of soil disturbance. Construction of the Project would disturb more than one acre of land and has the potential to degrade water quality as a result of erosion caused by earthmoving activities during construction or the accidental release of hazardous construction chemicals. Exposed soil from stockpiles, excavated areas, and other areas where ground cover would be removed could be transported elsewhere by wind or water. If not properly managed, this could increase sediment loads in receiving water bodies, thereby adversely affecting water quality. As mentioned above under Section 1.8.3, Implementation of a Construction Storm Water Pollution Prevention Plan (SWPPP), would ensure dust control practices to prevent wind erosion, sediment tracking, dust generation by

construction equipment, management of concrete slurry, asphalt, pavement cutting, and other street and road activities to avoid discharge to storm drains from such work. Therefore, with implementation of the SWPPP the Project would not violate water quality standards or substantially degrade surface or ground water quality. A less than significant impact during construction would occur.

As part of its stormwater NPDES permit and pollution prevention program, the City of Santa Rosa requires incorporation of low impact development measures in accordance with the Low Impact Development Technical Design Manual (Santa Rosa 2017). Because the Project would create/replace more than 10,000 square feet of impervious surfaces, the Project would be required to incorporate low impact development facilities into the design. Approximately 11,000 square feet of bioretention features would be installed on-site, with additional bioretention features added if either of the borrow areas are covered with an impervious service. With installation of the bioretention features, 100 percent of post-project runoff would be captured and treated prior to discharge to the Laguna de Santa Rosa. The addition of the bioretention features would improve the water quality, over existing conditions, of the stormwater discharge at the facility.

The consolidation of the six existing active stormwater outfalls to the existing, but currently inactive, side by side effluent discharge pipes would function as a storm water discharge facility and become a new single point of discharge. The City would update the Industrial Stormwater Pollution Prevention Plan for the Laguna Treatment Plant to reflect this change in the stormwater system and would continue to implement provisions of the SWPPP, including storm water monitoring plan to verify the effectiveness of the SWPPP.

No other applicable waste discharge requirements are anticipated to apply to the Project. No operational impact would occur from implementation of the Project.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? (No Impact)

The Project is located in the Santa Rosa Valley-Santa Rosa Plain Groundwater Basin 1-055.01 (DWR 2021) and is not listed as a basin in Critical Conditions of Overdraft (DWR 2021). On-site recycled water or contractor-supplied water would be used during construction for dust suppression on work areas. Use of groundwater is not anticipated for construction of the Project. Similarly, the Project would not decrease groundwater supplies or interfere with groundwater management. No construction-related impact would result.

During operation, the Project would not utilize groundwater and would not result in an increase in population or employment that would indirectly increase groundwater demand. The small increase in impervious area would not create a deficit in aquifer volume, cause the lowering of groundwater levels, or substantially interfere with groundwater recharge. The LID features described above would allow filtration at, or greater than, existing conditions. No operational impact would result.

c.i, ii, iii) 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 result in substantial erosion or siltation on- or off-site; substantially increase the rate or amount of surface runoff in manner which would result in flooding on- or offsite; or exceed the capacity of existing or

planned stormwater drainage systems, or provide substantial additional sources of polluted runoff? (Less than Significant)

Because construction of the Project would disturb greater than one acre of soil, the City of Santa Rosa would be required to obtain coverage under the Construction General Permit, which would require development and implementation of a SWPPP as part of the Project. The required SWPPP would ensure BMPs to prevent erosion-related impacts during construction would be implemented. Therefore, construction would not result in substantial erosion or siltation on- or off-site or provide additional sources of polluted runoff.

The Project would not alter the course of a stream or river. Once constructed, the Project would increase the area of impervious surfaces by approximately 52,950 square feet (44,600 square feet of new gravel road and 8,350 square feet of paved area). However, low impact development, consisting of three bioretention basins and one swale, would be installed on-site to capture and treat 100 percent of the post Project volume of stormwater. While stormwater discharge would be consolidated, discharge volumes would be similar to existing conditions. The proposed stormwater discharge location is sized such that it would accommodate stormwater flows and therefore would not require any modifications. Overall discharge volumes would be similar to existing conditions while the LID features would slow the discharge rate during smaller storm events. The stormwater would enter an offshoot of the Laguna de Santa Rosa, ultimately entering the Laguna de Santa Rosa, as it does under current conditions. Therefore, operation would not increase the rate of runoff or affect the capacity of the stormwater drainage systems. The impact would be less than significant.

c, iv) Impede or redirect flood flows? (Less than Significant)

The Project is located within a Special Hazard Flood Zone (FEMA 2021). During flooding events, water pushes up from the Laguna de Santa Rosa toward, and into, the LTP facility. The existing 100-year flood boundary cuts through the southern portion of the LTP facility just south of the Administration Building and clarifiers. The flood protection berm would prevent flood waters from entering the LTP during certain flood events. The flood protection berm would shift the 100-year flood boundary between approximately 100 to 400 feet to the south (depending on location), excluding up to 10 acres from the floodplain once constructed. The City is currently preparing documentation to receive a Conditional Letter of Map Revision and subsequent Letter of Map Revision for the changes in the 100-year flood elevation that would occur with implementation of the Project. Given the small area of floodplain impacted, it is not anticipated that the modeling will indicate any significant changes on the surrounding flood elevation. It is anticipated that FEMA will issue the CLOMR stipulating the Project meets the minimum requirements of the National Flood Insurance Program. Given the Project cannot be implemented without completing this process, the Project's impact on flood flows would be less than significant.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation? (Less than Significant)

The Project is not located within a tsunami or seiche zone, however, is located within a Special Flood Hazard Zone (FEMA 2021). If an extreme flood event were to occur during construction, heavy equipment and associated diesel and fluids could be impacted and washed into the Laguna de Santa Rosa if not secured. However, the required SWPPP, as well as Clean Water Act Section 401 permit, would ensure measures to prevent pollutants from entering water ways during construction would be implemented. The risk of pollutant release during construction would be less than significant.

After construction, the LTP facility would be protected from flood hazards. Installation of the flood protection berm would protect the site from being inundated in the future. Additionally, the Project components would not utilize any pollutants during operation that could be released and cause a hazard. Therefore, there would be no operational impact.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? (No Impact)

The relevant water quality control plan is the North Coast Regional Basin Plan, which establishes thresholds for key water resource protection objectives for both surface waters and groundwater. The Project would obtain coverage under SWRCB Order No. 2009-0009-DWQ, Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities, which would include a SWPPP. In addition, the LTP implements an Industrial Stormwater Pollution Plan for operation of the facility which will be updated, and subsequently implemented, as part of the Project. Finally, implementation of the LID features described above will treat 100% of the stormwater run-off within the site, prior to discharge to the Laguna de Santa Rosa. These regulatory requirements and associated requisite monitoring would ensure a conflict with the Basin Plan does not occur. No impact would result.

3.11 Land Use and Planning

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
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?				✓

a) Physically divide an established community? (No Impact)

Division of an established community typically occurs when a new physical feature, in the form of a highway or railroad, physically transects an area, thereby removing mobility and access within an established community. The LTP site is located in a rural part of Sonoma County. The Project would construct flood protection berms, flood warning systems, roadway improvements, and a flood gate generally within the existing LTP facility. Travel through the area would remain the same as existing conditions after implementation of the improvements, with traffic being restricted only during a flood event. Therefore, the Project would not physically divide an established community. No impact would occur.

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? (No Impact)

The Project site has a land use designation of Public/Institutional, which allows for an area or cluster of governmental or semi-public facilities, such as hospitals, utility facilities, and government office centers (City of Santa Rosa 2009). The existing LTP facilities fall within this category of uses. Furthermore, the Project would seek to protect the existing facilities by constructing flood protection berms, warning systems, flood gates, and other improvements, which is consistent with General Plan Policy NS-D-4. General Plan Policy NS-D-4 calls for incorporation of features and appropriate standards that reduce flooding hazards. Implementation of the Project would not alter the existing or proposed uses of the Project site and would incorporate features to protect the LTP facility from flooding hazards, therefore, the Project is consistent with the City's land use plan and policies. Other specific City of Santa Rosa General Plan policies adopted for the purpose of avoiding environmental effects are evaluated throughout this Initial Study under the corresponding issue areas; for example, policies related to biological resources are evaluated in Section 3.4 Biological Resources. Where potential inconsistencies are identified, environmental protection action and/or mitigation measures are identified to ensure consistency. Therefore, the Project would not conflict with adopted plans, policies, or regulations and no impact would occur.

3.12 Mineral Resources

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

a, b) 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, or a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? (No Impact)

Under the Surface Mining and Reclamation Act, the State Geologist classifies areas into Mineral Resource Zones (MRZs). The Project is not located in an area classified as MRZ-2, and therefore is not located in an area of known economic mineral deposits of value to the region or state (California Geological Survey 2013). No impact would occur.

The *Santa Rosa General Plan 2035* directs the City to work with the County of Sonoma to encourage the conservation of mineral resources and the protection of access to such resources. The *Sonoma County General Plan 2020* and the *Sonoma County Aggregate Resources Management Plan* do not identify MRZ-2 resource areas on or in the vicinity of the Project site (Sonoma County 2016, Sonoma County 2010). No impact would occur.

3.13 Noise

Would the project:	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
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 noise levels?			✓	
c) For a project located within 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 expose people residing or working in the project area to excessive noise levels?				✓

The following analysis is based on the *Construction Noise and Vibration Assessment* (Illingworth & Rodkin 2021) prepared for 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? (Less than Significant)

The City of Santa Rosa has adopted a quantitative noise ordinance in Chapter 17-16 of the Municipal Code. Section 17-16.120 regulates noise from machinery and equipment:

“It is unlawful for any person to operate any machinery, equipment, pump, fan, air conditioning apparatus, or similar mechanical device in any manner so as to create any noise which would cause the noise level at the property line of any property to exceed the ambient base noise level by more than 5 decibels.”

The City of Santa Rosa Municipal Code does not have any regulations regarding construction noise.

A “substantial” noise increase can be defined as an increase in noise levels to that which causes interference with activities normally associated with established nearby land uses during the day and/or night. One indicator that noise could interfere with daytime activities normally associated with residential land uses would be speech interference. An indicator that noise could interfere with nighttime activities normally associated with residential uses would be sleep interference. This analysis therefore uses 70 dBA for speech interference and 50 dBA for sleep interference, to determine whether a temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project would be substantial.

Construction Noise Impacts

Construction activities generate considerable amounts of noise, especially during earth-moving activities when heavy equipment is used. Maximum construction noise levels typically range from about 80 to 90 dBA Lmax at 50 feet from the noise source. Typical hourly average construction-

generated noise levels for public works projects are about 78 to 89 dBA Leq measured at 50 feet from the center of the site during busy construction periods (e.g., earth moving equipment, impact tools, etc.), as shown in Table 3.13-1 below.

Table 3.13-1: Typical Ranges of Construction Noise Levels at 50 Feet

	Leq (dBA) Domestic Housing		Office Building, Hotel, Hospital, School, Public Works		Industrial Parking Garage, Religious Amusement & Recreations, Store, Service Station		Public Works Roads & Highways, Sewers, and Trenches	
	I	II	I	II	I	II	I	II
Ground Clearing	83	83	84	84	84	83	84	84
Excavation	88	75	89	79	89	71	88	78
Foundations	81	81	78	78	77	77	88	88
Erection	81	65	87	75	84	72	79	78
Finishing	88	72	89	75	89	74	84	84
I - All pertinent equipment present at site.								
II - Minimum required equipment present at site.								

Source: U.S.E.P.A., *Legal Compilation on Noise*, Vol. 1, p. 2-104, 1973.

Project construction is expected to take approximately 18 months. Construction hours are assumed to be 7:00 a.m. to 6:30 p.m. Monday through Friday for planned daytime work, and 9:00 a.m. to 5:00 p.m. on Saturday. Construction activities generate considerable amounts of noise, especially during earth-moving activities when heavy equipment is used. The construction of the proposed Project would involve demolition, site preparation, grading, excavation for berm and roadway grading, trenching and foundation for storm drain and other underground utilities, flood gate and retaining wall building and surfacing. During each stage of construction, there would be a different mix of equipment operating, and noise levels would vary by stage and vary within stages, based on the amount of equipment in operation and the location at which the equipment is operating. These construction activities along with the respective levels expected from each phase of construction are summarized in Table 3.13-2 below. Note that, although not anticipated, limited construction from the flood gate and retaining wall phase may be required during nighttime hours.

The construction noise levels during the daytime work were calculated to range from 84 to 90 dBA Lmax and from 84 to 87 dBA Leq at 50 feet, using FHWA's Roadway Construction Noise Model (Table 3.13-2), which assumes that all of the equipment could be operated simultaneously. The nighttime construction levels are calculated as 84 dBA Lmax and 84 dBA Leq at 50 feet. These Project-specific construction noise levels generally agree with the range of typical maximum and average noise levels presented above. Construction-generated noise levels drop off at a rate of about 6 dBA per doubling of the distance between the source and receptor. Shielding by buildings or terrain can provide an additional 5 to 10 dBA noise reduction at distant receptors.

Noise sensitive rural residential land uses are located to the east of the Project site. Standard methods for acoustical analysis of construction sites are based on the distance from the "acoustical center" or construction activity center of the site to the nearest noise-sensitive receptor, as was the case for this analysis (US Department of Transportation 2018). In other words, the proposed pieces of construction equipment are not modeled at the construction area boundary, but rather at the

approximate center of the area in which most construction activity is likely to occur. The nearest existing residences are located at distances ranging 900 to 1,000 feet east, from the center of the project site. At the closest residence (900 feet away), maximum noise levels generated by project construction would typically range from about 59 to 65 dBA L_{max}, and hourly average noise levels would typically range from about 59 to 62 dBA L_{eq} for daytime construction.

The floodgate and retaining wall construction may be required during nighttime hours. The residences closest to the center of this construction phase are approximately 2,000 feet away. Maximum noise levels generated at this distance are computed to be approximately 52 dBA L_{max}, and hourly average noise levels would be 52 dBA L_{eq}.

The loudest construction noise levels expected during the day (62 dBA L_{eq}) and during the night (52 dBA L_{eq}) are below the 70 dBA and 60 dBA L_{eq} thresholds for speech and sleep interference respectively. Therefore, this results in a less-than-significant impact for both daytime and potential nighttime construction noise.

Table 3.13-2: Total Calculated L_{max} and L_{eq} Noise Levels from RCNM

Description	Equipment	Quantity	Total Calculated (dBA) at 50 ft		Calculated (dBA) at residences (900 ft)	
			L _{max} *	L _{eq}	L _{max} *	L _{eq}
Demolition	Concrete/Industrial Saws	1	90	86	65	61
	Excavators	1				
	Rubber-Tired Dozers	1				
	Tractors/Loaders/Backhoes	1				
Site Preparation	Graders	1	85	85	60	60
	Rubber-Tired Dozers	1				
	Tractors/Loaders/Backhoes	1				
Berm & Roadway Grading (Grading/Excavation)	Excavators	1	85	87	60	62
	Graders	1				
	Rubber-Tired Dozers	1				
	Tractors/Loaders/Backhoes	1				
	Scrapers	2				
Storm Drain & Underground Utilities	Tractors/Loaders/Backhoes	1	90	85	65	60
	Excavators	1				
	Concrete/Industrial Saws	1				
Floodgate & Retaining Wall Building (Building-Exterior)	Cranes	1	84	84	59	59
	Forklifts	1				
	Excavators	2				
	Tractors/Loaders/Backhoes	1				
	Welders	1				
Surfacing (Paving)	Cement & Mortar Mixers	1	84	84	59	59
	Pavers	1				

	Paving Equipment	1				
	Rollers	1				
	Tractors/Loaders/Backhoes	1				

* Total L_{max} is the value for the loudest piece of equipment

Project Operation

The Project does not include new mechanical equipment noise sources that could expose existing noise-sensitive receptors surrounding the Project site to additional noise. Therefore, during operation, the Project would not generate noise in excess of standards. No impact would occur.

b) Result in generation of excessive groundborne vibration or noise levels? (Less than Significant)

Proposed construction phases would include demolition, site preparation, grading/excavation, trenching, and paving. Perceptible vibration may occur when heavy equipment or impact tools are used in close proximity to sensitive receptors. However, the proposed Project would not require pile driving, which can cause excessive vibration.

The City of Santa Rosa does not specify any construction vibration limit. For structural damage, the California Department of Transportation recommends a vibration limit of 0.5 in/sec PPV for buildings structurally sound and designed to modern engineering standards, 0.3 in/sec PPV for buildings that are found to be structurally sound but where structural damage is a major concern, and a conservative limit of 0.25 in/sec PPV for historic and some old buildings. The 0.3 in/sec PPV vibration limit would be applicable to properties in the immediate vicinity of the Project site since there are no known historic buildings in the vicinity.

Vibration levels would vary depending on soil conditions, construction methods, and equipment used. Jackhammers typically generate vibration levels of 0.035 in/sec PPV and drilling typically generates vibration levels of 0.09 in/sec PPV at a distance of 25 feet. Vibration levels are highest close to the source, and then attenuate with increasing distance at the rate $(D_{ref}/D)^{1.1}$, where D is the distance from the source in feet, and D_{ref} is the reference distance of 25 feet. Table 3.13-3 presents typical vibration levels that could be expected from construction equipment at 25 feet and summarizes the expected vibration levels at residences bordering the construction footprint, the closest being 100 feet away from the Project site. Vibration levels at distances greater than 25 feet from the Project site would not exceed the 0.3 in/sec PPV threshold for buildings of normal conventional construction.

The US Bureau of Mines has analyzed the effects of blast-induced vibration on buildings in USBM RI 8507, and these findings have been applied to vibrations emanating from construction equipment on buildings. There would be no observations of “threshold damage,” “minor damage,” or “major damage” at buildings of normal conventional construction when vibration levels were 0.3 in/sec PPV or less.

Project-generated vibration levels would fall below the 0.3 in/sec PPV structural damage threshold and also the 0.1 in/sec PPV annoyance threshold at all surrounding residential buildings. Neither cosmetic, minor, or major damage would occur beyond 25 feet. At these locations and in other surrounding areas where vibration would not be expected to cause structural damage, vibration levels may still be perceptible. However, as with any type of construction, this would be anticipated and would not be considered significant, given the intermittent and short duration of the phases that

have the highest potential of producing vibration. A less than significant impact would occur during the construction phase.

Table 3.13-3: Construction Vibration Levels at Nearby Buildings

Equipment		PPV (in/sec)	
		Source Level (25 ft)	East Residences (100 ft)
Clam shovel drop		0.202	0.044
Hydromill (slurry wall)	In soil	0.008	0.002
	In rock	0.017	0.004
Vibratory Roller		0.210	0.046
Hoe Ram		0.089	0.019
Large bulldozer		0.089	0.019
Caisson drilling		0.089	0.019
Loaded trucks		0.076	0.017
Jackhammer		0.035	0.008
Small bulldozer		0.003	0.001

Source: Transit Noise and Vibration Impact Assessment Manual, Federal Transit Administration

During operation, no groundborne vibration would occur, and the Project would not result in exposure of persons to or generation of excessive groundborne vibration levels. Therefore, no operational impact would result.

- c) For a project located within 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 expose people residing or working in the project area to excessive noise levels? (No Impact)**

The Project is not located within the vicinity of a private airstrip or an airport land use plan, or within two miles of a public airport or public use airport. Therefore, the Project would not expose people residing or working in the project area to excessive noise levels. No impact would occur.

3.14 Population and Housing

	Potential Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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?				✓

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)? (No Impact)

The Project would not construct new homes or businesses in the area. The Project would not indirectly induce population growth, because it would not extend infrastructure into new areas not already served by the City and would not increase the overall capacity of the sewer system or the treatment capacity of the LTP. Therefore, no impact to population growth would occur.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? (No Impact)

No homes or people would be displaced as a result of Project construction or operation, and no replacement housing would be needed. Therefore, no impact would occur.

3.15 Public Services

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire Protection?				✓
Police protection?				✓
Schools?				✓
Parks?				✓
Other public facilities?				✓

- a) **Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for public services? (No Impact)**

As discussed in Section 3.14, Population and Housing, implementation of the Project would not induce population growth and, therefore, would not require expanded fire or police protection facilities to maintain acceptable service ratios, response times, or other performance objectives. The Project also would not result in an increase in the City's student population, and therefore, no new or expanded schools would be required. The Project would not result in the increased use of existing parks and other public facilities as it would not induce population growth. The Project would not require the expansion of recreational facilities to maintain acceptable service ratios in parks, and would not require the expansion of other public facilities. No impact on public services would occur.

3.16 Recreation

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
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?				✓

a, b) 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, or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment? (No impact)

The Project would not increase employees or population in the surrounding community, so the use of existing neighborhood and regional parks or other recreational facilities would not change as a result of the Project. The Project would not result in the physical deterioration of public recreational facilities and would not require construction of parks and recreational facilities. No impact would occur.

3.17 Transportation

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, 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?			✓	

Llano Road currently does not have bike lanes or pedestrian facilities on either side of the roadway. Additionally, there are no existing bus routes or bus stops along Llano Road. The *Sonoma County Bicycle and Pedestrian Plan* (Sonoma County 2010) identifies Llano Road as a proposed Class II bike route.

a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? (No Impact)

During construction, the normal functionality of Llano Road within the Project area would be temporarily altered due to the by-pass. In addition, construction would result in additional vehicle trips by construction workers, supply trucks, and haul trucks travelling to and from active portions of the Project site. The number of construction-related vehicles traveling to and from the Project site would vary on a daily basis, however, as described above in Section 1.6.4, the City estimates that miscellaneous materials deliveries would range from 4 to 40 loads per day and construction workers would range from 10 to 20 per day during the peak of construction. The addition of construction-related traffic would occur during daytime hours between 7 a.m. and 6:30 p.m., Monday through Friday, and 9:00 a.m. to 5:00 p.m. on Saturdays. Although not anticipated, limited nighttime work may be required along Llano Road to install the floodgate and retaining wall.

Construction of proposed facilities along Llano Road may require traffic control or brief road closures. To accommodate construction of the flood gate and the associated road modifications, a temporary by-pass would be constructed on the west side of Llano Road across from the southern LTP entrance. The by-pass would be paved, accommodate two-way traffic, and be approximately 400 feet in length. The by-pass would be in place for approximately 6 months. When construction of the Flood Protection improvements are complete, the by-pass road would be removed.

The Project would not substantially affect congestion on local roadway segments because trips would occur at differing periods of the day and would represent a small percentage of the capacity of the roadway. The proposed by-pass would allow for continued circulation and access through the Project area. The Llano Road improvements would not prevent future implementation of the proposed Class II bike route as adequate right-of-way would remain. Project construction would not conflict with a plan, ordinance, or policy related to circulation system and therefore, there would be no impact.

Operation and maintenance of the Project facilities would be similar to the operation and maintenance of the existing LTP facilities. and no increase in trips related to the LTP operations would occur. Because the proposed Project would not represent an increase in the intensity of the existing use, and would not require additional staffing or maintenance visits, no conflicts with a program plan, ordinance, or policy addressing the circulation system have been identified. Therefore, no impact would result.

See impact "c" below for a discussion of potential impacts relative to traffic hazards during construction.

b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)? (No Impact)

CEQA Guidelines § 15064.3, Subdivision (b) contains criteria for analyzing the transportation impacts of land use projects (such as residential or commercial projects) and transportation projects (such as roadway capacity projects). However, the proposed Project is neither a land use nor transportation project. Additionally, the Project would not result in new employees or other sources of operational VMT. Therefore, the Project would not conflict with CEQA Guidelines Section 15064.3, Subdivision (b) and would result in no impact.

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? (No Impact)

The Project improvements would not increase traffic hazards. Although Llano Road would be raised by approximately 2.5 feet for approximately 600 feet, the roadway trajectory and line of site would remain the same. The Project would not introduce any new curves, intersections, or visibility impairments. The use of the site would remain the same, thus there would be no introduction of an incompatible use to the Project area. No impact would occur.

d) Result in inadequate emergency access? (Less than Significant)

Llano Road would remain open during construction activities. However, traffic would be shifted to a temporary by-pass road adjacent to Llano Road while the flood gate and associated improvements are installed. During this part of the construction, the Project may temporarily slow emergency response times. As noted in Section 1.6.3, the contractor would develop and implement a temporary Traffic Control Plan, which would require notification of emergency responders, and outline work zones, activities, and time needed to complete the work in each zone. With implementation of the Traffic Control Plan, the impact to emergency access would be less than significant.

3.18 Tribal Cultural Resources

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a tribal cultural resource listed or eligible for listing in the California Register of Historic Resources, or in a local register of historic resources as defined in Public Resources Code section 5020.1(k)?		✓		
b) Cause a substantial adverse change in the significance of a tribal cultural resource that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to the criteria set forth in subdivision (c) of the Public Resources Code section 5024.1? In applying the criteria set forth in subdivision (c) of the Public Resources Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.		✓		

The CEQA Guidelines define tribal cultural resources as: (1) a site, feature, place, cultural landscape, sacred place, or object with cultural value to a California Native American Tribe that is listed or eligible for listing on the California Register of Historical Resources, or on a local register of historical resources as defined in Public Resources Code Section 5020.1(k); or (2) a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant according to the historical register criteria in Public Resources Code Section 5024.1(c), and considering the significance of the resource to a California Native American Tribe.

Refer to Section 1.10 Tribal Consultation for a description of the City’s AB 52 consultation with Lytton Rancheria and Graton Rancheria.

a, b) Cause a substantial adverse change in the significance of a tribal cultural resource? (Less than Significant with Mitigation)

There are no tribal cultural resources within the Project site that are listed in the California Register of Historic Resources and no known tribal cultural resources eligible for listing on the Register. A review of the Sacred Lands file for information on Native American cultural resources in the study area did not indicate the presence of Native American cultural resources. In consultation with the tribe affiliated with the geographic area of the Project site, no known tribal cultural resources were identified within the Project site.

Although no evidence of known tribal cultural resources has been found, the discovery of unknown tribal cultural resources cannot be entirely discounted. If the Project encountered unknown tribal cultural resources a potentially significant impact would occur if the resources were subject to substantial adverse change.

Mitigation Measure

Mitigation Measure TCR-1 would reduce the impact to unknown tribal resources to a less-than-significant level because a treatment plan to address discovery of unanticipated resources and to preserve and/or record those resources consistent with appropriate laws and requirements would be implemented.

Mitigation Measure TCR-1: Protect Unknown Tribal Cultural Resources

The City shall prepare a Tribal Cultural Resources Inadvertent Discovery Treatment Plan for the LTP. The Treatment Plan shall be reviewed by the City and FIGR and approved by the City prior to the start of Project construction. Alternatively, the City may utilize and implement a Treatment Plan prepared by the Federal Lead Agency, approved through the Section 106 process, and meets the criteria of this mitigation measure.

The Treatment Plan shall detail recommended steps for protecting, preserving, or data recovery for archaeological and tribal cultural resources, if found. The Treatment Plan shall include one or more of the following strategies to ensure that appropriate actions to protect tribal cultural resources are taken, as described below.

Protection and Preservation

The preferred treatment of an archaeological resource is protection and preservation. Protection can be achieved by either avoidance (not developing within the boundaries of an archaeological resource), by covering an archaeological resource with geo-fabric and sufficient fill to protect it during and after construction, or by reducing/restricting development within the boundaries of a resource.

Pre-Construction Data Recovery

For significant archaeological resources that are not protected and preserved in place, data recovery within a sensitive area to be affected is necessary. Data recovery must be performed by qualified archaeologists using standard archaeological techniques. Data recovery must include processing and analysis of recovered cultural materials using appropriate archaeological methods, and preparation of the recovered materials for permanent disposition (e.g., re-burial in a location that would be protected in perpetuity) per the requirements of the Treatment Plan.

Construction Monitoring

Archaeological monitoring shall be instituted for ground-disturbing activities associated with construction. Monitoring shall be performed by a qualified archaeologist and may also include a Native American monitor, if requested by the local tribe affiliated with the area, and will consist of directly watching the excavation, grading, trenching, and other earth-moving processes. Monitoring shall continue on a daily basis whenever depth of excavation exceeds six feet or for other reasons identified by the monitoring archaeologist or tribal representative.

In the event that archaeological deposits are encountered, the piece of equipment that encounters the suspected materials must be stopped, and the find inspected by the monitoring archaeologist. If the deposit contains Historic Resources, Unique Archaeological Resources, or Tribal Cultural Resources as defined by CEQA, all work must be stopped in the immediate vicinity and the archaeologist shall undertake data recovery of the deposit. Data recovery efforts must follow standard archaeological methods. Work may proceed

after a find has been appropriately addressed and a qualified archaeologist and tribal representative agree that no further damage would result.

3.19 Utilities and Service Systems

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electrical 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 management and reduction statutes and regulations related to solid waste?				✓

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electrical power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? (No Impact)

The Project would not result in an increased demand for water, electrical power, natural gas, or telecommunications facilities. Therefore, the Project would not require or result in the construction of other water, wastewater treatment, electrical power, natural gas, or telecommunications facilities or expansion of existing facilities. No impact would occur.

The Project would, however, consolidate and redirect stormwater within the LTP. Currently, stormwater is collected and routed to six existing discharge points indirectly into the Laguna de Santa Rosa along the southern boundary of the LTP site. The Project would redirect wastewater to a single point of discharge with no change in the stormwater discharge volumes over existing conditions. This stormwater discharge relocation would be a functional replacement and would not require or result in the construction of other facilities outside of those included and analyzed in this document. No impact would occur.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? (No Impact)

The Project would install flood protection infrastructure at the LTP. During construction a small amount of water would be used for dust suppression. Construction-related water demands would be short-term and small, limited primarily to dust suppression. During operation, the Project would not utilize water and would therefore not result in an increased demand of water supply. No impact would occur.

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? (No Impact)

As described above under item a), the Project would not result in an increase in the generation of wastewater. Because there would be no increase in wastewater treatment, the Project would not impair the ability of City's LTP to continue serving existing commitments. No impact would occur.

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? (Less than Significant)

Construction of the Project would result in a temporary increase in solid waste disposal needs associated with construction wastes. Construction wastes would include, but not be limited to, demolished asphalt pavement, concrete, and excavated soils. Construction waste with no practical reuse or that cannot be salvaged or recycled would be disposed of at a local landfill. Active permitted regional landfills include the Redwood Sanitary Landfill (26 million cubic yards remaining capacity), Potrero Hills Landfill (13.9 million cubic yards remaining capacity), Vasco Road Landfill (7.4 million cubic yards remaining capacity), and Keller Canyon Landfill (63.4 million cubic yards remaining capacity) (CalRecycle 2021). Solid waste generated by the Project would represent a small fraction of the daily permitted tonnage of these facilities. Therefore, the Project's construction-related solid waste disposal needs would be sufficiently accommodated by existing landfills, and the impact would be less than significant, and due to the temporary nature of the construction phase would not impair the attainment of solid waste goals. The construction-related impact would be less than significant.

Following construction, Project operation would not generate additional solid waste. No operational impact would occur.

e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste? (No Impact)

The City has entered into a franchise agreement to provide construction and demolition debris collection service within the City in accordance with Municipal Code Chapter 9-12. The existing franchise agreement requires that the franchisee recycle 50 percent of all construction and demolition debris collected within the City. Compliance with applicable statutes and regulations regarding construction waste would be conditionally required as part of Project. Therefore, no impact would occur.

No applicable federal solid waste regulations would apply to the Project. At the State level, the Integrated Waste Management Act mandates a reduction of waste being disposed and establishes an integrated framework for program implementation, solid waste planning, and solid waste facility

and landfill compliance. The Project would not conflict with or impede implementation of such programs.

Following construction, the Project improvements would not generate solid waste. Therefore, no operational impact would occur.

3.20 Wildfire

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
If located in or near a state responsibility area or lands classified as very high fire 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?				✓

The Project site is located approximately 0.2 miles north of the nearest State Responsibility Area (SRA) and approximately 7.3 miles south of the nearest very high fire severity zone (CalFire 2021; City 2009).

a) Substantially impair an adopted emergency response plan or emergency evacuation plan or exacerbate wildfire risks? (No Impact)

The City's adopted Emergency Operations Plan (Santa Rosa 2017) outlines how the City coordinates the response to major emergencies and disasters. The Plan does not designate specific evacuation routes or emergency shelter locations or include policies or procedures with which the Project would conflict.

However, if Llano Road were to be used as an evacuation route, due to unforeseen circumstances, access would be unchanged from existing conditions with implementation of the Project. The proposed road improvements would not change the existing capacity or use of Llano Road.

The Project would not impair implementation of or physically interfere with the plan. No 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? (Less than Significant)

The proposed flood protection infrastructure would generally be installed within a fairly flat topographical area. The northern, southern, and eastern borders of the site consist of grassland and vegetation. The vegetated portions could be susceptible to wildfire during Project construction as a result of accidental ignition. However, all fuel and flammable substances, and construction equipment would be appropriately stored pursuant to all required State and local regulations.

During operation, the flood protection berm would be mowed regularly to reduce grassland fuel. Therefore, there is no operational risk of exacerbating wildfire risks. A less than significant impact would occur.

- 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? (No Impact)**

Implementation of the Project would not result in a need to expand infrastructure to the Project area or in the immediate vicinity of the Project. No new roads for fire defense, expanded water sources, new power lines, or the development of other utilities would be required. No impact would result.

- 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? (No Impact)**

The Project would not bring additional people or structures to the LTP site. The Project site is located on relatively flat terrain and within a partially developed area. If a wildfire were to occur, post-fire slope instability would be unlikely. There would be no impact.

3.21 Mandatory Findings of Significance

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Does the project:				
a) 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) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?			✓	
c) Have environmental effects which would 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? (Less than Significant with Mitigation)**

As evaluated in this IS/Proposed MND, the Project would not 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; reduce the number or restrict the range of an endangered, rare, or threatened species; or eliminate important examples of the major periods of California history or prehistory.

Compliance with existing regulations (see Section 1.8 Compliance with Existing Regulations and Standard BMPs) would reduce impacts related to air quality, geologic hazards, stormwater run-off, greenhouse gas emissions, tree replacement, and water quality. Additionally, mitigation measures are listed herein to reduce impacts related to biological resources and tribal cultural resources. With implementation of the required mitigation measures, impacts would be less than significant.

- 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)?
(Less than Significant)**

Cumulative impacts are defined as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts” (CEQA Guidelines Section 15355). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

The cumulative impact analysis in this Initial Study uses the list approach. A search was undertaken for reasonably foreseeable projects in the vicinity of the Project area that may have overlapping or cumulative impacts with the proposed Project. No specific nearby projects with potentially overlapping impacts in the Project area, including along Llano Road, were identified. One project, referred to as UV Disinfection Improvements, within the LTP will be implemented in the near future. However, construction of the UV Disinfection Project will be finishing as the Flood Protection Project begins, with little overlap. Therefore, implementation of the Project would not contribute to potential cumulative impacts.

c) Does the project have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly? (Less than Significant)

As discussed in the analysis throughout Chapter 3 of this Initial Study, the Project would not have environmental effects that would cause substantial adverse direct or indirect effects on human beings after compliance with existing regulations.

4. References

- Anthropological Studies Center (ASC). 2015. Archaeological Resources Review for the Laguna Treatment Plant Project. September 24.
- Anthropological Studies Center (ASC). 2016. Laguna Treatment Plant Geotechnical Boring Monitoring. December 13.
- Anthropological Studies Center (ASC). 2020. Laguna Treatment Plant Flood Protection Project Geotechnical Boring Monitoring. August.
- Anthropological Studies Center (ASC). 2022. Laguna Treatment Plant Flood Protection Project Geotechnical Boring Monitoring. January.
- BAAQMD. 2017a. California Environmental Quality Act Air Quality Guidelines. May.
- BAAQMD. 2017b. Final 2017 Clean Air Plan. April.
- BAAQMD. 2021. Air Quality Standards and Attainment Status (Last Updated 1/5/2017). Website accessed on August 24, 2021 at: <http://www.baaqmd.gov/research-and-data/air-quality-standards-and-attainment-status>
- Brelje & Race Consulting Engineers. 2020. Design Report, Geotechnical Investigation for the Proposed Laguna Treatment Plant Flood Wall.
- California Department of Conservation (CDC). 2021. California Important Farmland Finder. Available at: <https://maps.conservation.ca.gov/DLRP/CIFF/>.
- California Department of Fish and Wildlife (CDFW), U.S. Fish and Wildlife Service (USFWS), et al. 2005. Santa Rosa Plain conservation strategy. USFWS, Sacramento Fish and Wildlife Office, Sacramento, California, USA.
- California Department of Water Resources. 2021. SGMA Data Viewer. Available at: <https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#boundaries>
- California Energy Commission (CEC). 2005. Energy Action Plan II. October. <https://docs.cpuc.ca.gov/published/REPORT/51604.htm>
- CalFire. 2021. Fire Hazard Severity Zone Viewer. Available at: <https://egis.fire.ca.gov/FHSZ/>.
- California Geological Survey. 2013. Updated Mineral Land Classification: Aggregate Materials in the North San Francisco Bay Production-Consumption Region, Sonoma, Napa, Marin, and Southwestern Solano Counties, California.
- California Department of Transportation (Caltrans). 2022. California State Scenic Highways. <https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways>
- City of Santa Rosa. 2012. *Community Climate Action Plan*.
- City of Santa Rosa. 2013. *Municipal Climate Action Plan*.

- City of Santa Rosa. 2017. *City of Santa Rosa Emergency Operations Plan*.
- City of Santa Rosa. 2009. *Santa Rosa General Plan 2035*. November.
- City of Santa Rosa. 2021. Santa Rosa City Code. Available at: <https://qcode.us/codes/santarosa/>
- California Department of Resources Recycling and Recovery (CalRecycle). 2016. Solid Waste Information System Facility/Site Search. Available at: <https://www2.calrecycle.ca.gov/SolidWaste/Site/Search>.
- County of Sonoma. 2010. *Sonoma County Aggregate Resources Management (ARM) Plan*.
- County of Sonoma. 2010. *Sonoma County Bicycle and Pedestrian Plan*.
- County of Sonoma. 2016. *Sonoma County General Plan 2020*. August.
- County of Sonoma. 2016. *Comprehensive Airport Land Use Plan*.
- Illingworth & Rodkin, Inc. 2021. *LTP Flood Protection Project Construction Noise and Vibration Assessment*. August.
- State Water Resources Control Board (SWRCB). 2021. Geotracker Database. Available at: <https://geotracker.waterboards.ca.gov/>.
- U.S. Department of Transportation. 2018. Transit Noise and Vibration Impact Assessment Manual. Federal Transit Administration Report No. 0123. September.
- U.S. Fish and Wildlife Service (USFWS). 2016. Recovery Plan for the Santa Rosa Plain: *Blennosperma bakeri* (Sonoma sunshine); *Lasthenia burkei* (Burke's goldfields); *Limnanthes vinculans* (Sebastopol meadowfoam); California Tiger Salamander Sonoma County Distinct Population Segment (*Ambystoma californiense*). U.S. Fish and Wildlife Service, Pacific Southwest Region, Sacramento, California, USA.
- Vollmar Natural Lands Consulting (VNLC). 2020a. *Delineation of Potential Jurisdictional Waters of the U.S.* January.
- Vollmar Natural Lands Consulting (VNLC). 2020b. *Habitat Assessment Report for California Tiger Salamander and Special-status Plants*. January.

5. Report Preparers

5.1 City of Santa Rosa

Andy Wilt, Associate Civil Engineer and City Project Manager

Amy Nicholson, Senior Planner

5.2 GHD

Kristine Gaspar, Project Manager

Charles Smith, Technical Reviewer

Chryss Meier, Environmental Scientist

Brian Bacciarini, Environmental Scientist

Lucas Piper, Landscape Architect

Haley Cahill, Environmental Planner

Sam Moose, Environmental Scientist

5.3 Sub-consultants

Anthropological Studies Center – Cultural Resources

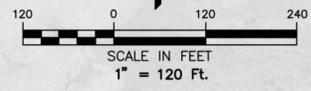
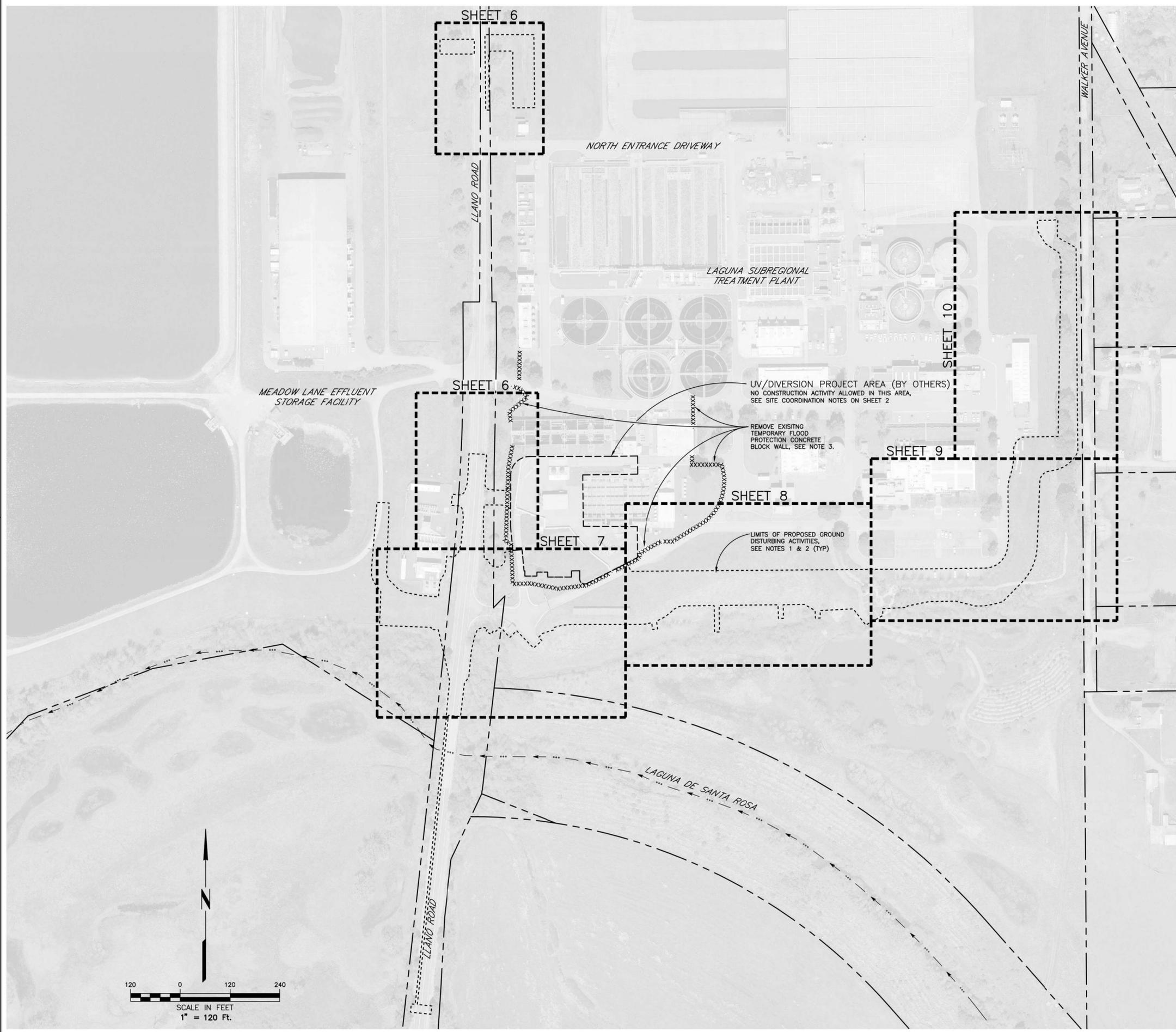
Brelje & Race Consulting Engineers – Project Engineer

Illingworth & Rodkin – Noise

Appendices

Appendix A

Design Sheets

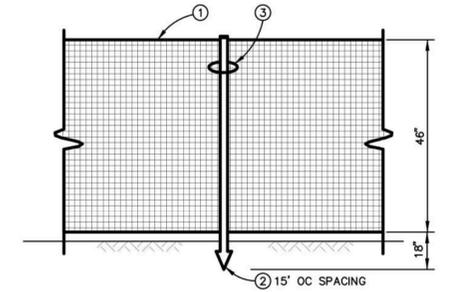
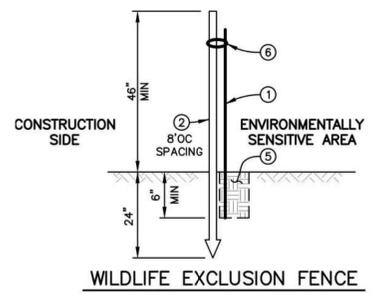


GENERAL SITE PREPARATION AND DEMOLITION NOTES

- NO CONSTRUCTION EQUIPMENT OR GROUND DISTURBING ACTIVITIES WILL BE ALLOWED OUTSIDE OF THE WORK LIMITS SHOWN UNLESS OTHERWISE NOTED. CONTRACTOR SHALL COMPLY WITH ENVIRONMENTAL MITIGATION PROVISIONS INDICATED IN THE TECHNICAL SPECIFICATIONS.
- THE FIRST ORDER OF WORK SHALL BE TO INSTALL CONSTRUCTION FENCING ALONG THE WORK LIMITS AS INDICATED ON SHEETS 6 THRU 10, 21, AND 22.
- EXISTING TEMPORARY FLOOD WALL BLOCKS WILL BE RELOCATED BY UV/DIVERSION PROJECT CONTRACTOR DURING CONSTRUCTION. UV/DIVERSION PROJECT CONTRACTOR WILL MAINTAIN TEMPORARY FLOOD PROTECTION FACILITIES DURING THE RAINY SEASON (OCTOBER THRU APRIL). FLOOD PROTECTION CONTRACTOR SHALL REMOVE TEMPORARY FLOOD PROTECTION FACILITIES FOLLOWING COMPLETION AND TESTING OF PERMANENT FLOOD PROTECTION FACILITIES.
- CONTRACTOR SHALL SALVAGE EXISTING PRECAST CONCRETE BLOCKS (2.5'(W) X 2.5' (H) X 5' (L)) AND STOCKPILE AT AN ON-SITE LOCATION DESIGNATED BY THE CITY. EXISTING PRECAST CONCRETE BLOCKS ARE MORTARED TOGETHER. CONTRACTOR SHALL TAKE CARE TO MINIMIZE DAMAGE TO EXISTING PRECAST CONCRETE BLOCKS. DAMAGED BLOCKS SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.
- ALL TREES AND BUSHES NOT MARKED ON THIS PLAN SHALL BE SAVED.
- TREES AND BUSHES MARKED TO BE REMOVED SHALL BE CUT AND REMOVED, INCLUDING ROOT BALL. BACKFILL AND COMPACT ROOT BALL HOLES WITH NATIVE MATERIAL TO RESTORE ORIGINAL GRADE.

LEGEND

- REMOVE AND DISPOSE OF EXISTING UTILITIES: UTILITY PIPES AND STRUCTURES SHALL BE COMPLETELY REMOVED INCLUDING ALL EXISTING GRANULAR PIPE BEDDING MATERIAL AND PROPERLY DISPOSED OF OFFSITE. CUT AND CAP PORTIONS OF THE UTILITIES TO REMAIN. SEE SHEETS 6 THRU 10 FOR SIZE AND TYPE.
- PROTECT EXISTING UTILITY TO REMAIN: UTILITY PIPES AND STRUCTURES TO REMAIN AND SHALL BE PROTECTED IN PLACE DURING CONSTRUCTION. ONLY THE PORTION OF UNDERGROUND UTILITY PIPES WITHIN THE LIMITS OF THE PROPOSED GROUND DISTURBING ACTIVITIES ARE SHOWN TO BE PROTECTED. SEE PLANS FOR UTILITY PIPES TO REMAIN WITH INSTALLATION OF A CUT-OFF COLLAR.
- REMOVE AND DISPOSE OF EXISTING HARDSCAPE: REMOVE ALL EXISTING SURFACE IMPROVEMENTS, INCLUDING, BUT NOT LIMITED TO, ASPHALT, ASPHALT DIKES, BASE MATERIAL, FENCES (INCLUDING FOOTINGS), LIGHTS, AND OTHER EXISTING MISCELLANEOUS HARDSCAPE IMPROVEMENTS WITHIN THE LIMITS OF HATCHING IDENTIFIED HEREIN ON SHEETS 6 THRU 10 AND PROPERLY DISPOSE OF OFFSITE, UNLESS OTHERWISE NOTED. AT THE CONTRACTOR'S OPTION, NON-CONTAMINATED BASE MATERIAL MAY BE STOCKPILED FOR REUSE ON-SITE AS BASE MATERIAL FOR HARDSCAPE AREAS ONLY.
- STRIP AND DISPOSE OF ORGANICS: REMOVE ALL VEGETATION, INCLUDING, BUT NOT LIMITED TO, GRASS, PLANTS, SHRUBS, ETC. WITHIN THE LIMITS OF THE HATCHING IDENTIFIED HEREIN ON SHEETS 6 THRU 10 AND PROPERLY DISPOSE OF OFFSITE, UNLESS OTHERWISE NOTED.
- REMOVE AND DISPOSE OF EXISTING CONCRETE & STRUCTURES: REMOVE ALL EXISTING CONCRETE IMPROVEMENTS, INCLUDING, BUT NOT LIMITED TO, CONCRETE, CONCRETE CURBS AND GUTTERS OF ALL TYPES AND SIZES, EXISTING BUILDINGS, MISCELLANEOUS CONCRETE FOOTINGS, AND OTHER MISCELLANEOUS STRUCTURE WITHIN THE LIMITS OF HATCHING IDENTIFIED HEREIN ON SHEETS 6 THRU 10 AND PROPERLY DISPOSE OF OFFSITE, UNLESS OTHERWISE NOTED.
- INSTALL TEMPORARY CONSTRUCTION FENCING PER DETAILS ON THIS SHEET. TEMPORARY CONSTRUCTION FENCING ALSO INDICATES THE PERMITTED LIMITS OF WORK. ANY WORK PERFORMED BY THE CONTRACTOR IS TO REMAIN WITHIN THE FENCING BOUNDARY UNLESS OTHERWISE NOTED. PROJECT BIOLOGIST WILL DETERMINE EXACT LOCATIONS AND TYPE OF CONSTRUCTION FENCING.
- TREE TO BE REMOVED.
- TREE TO BE SAVED.



- #### ENVIRONMENTALLY SENSITIVE AREA FENCE
- FRASER-EDWARDS SPORTS FENCE - IT PLUS/PLASTIC FENCING, OR EQUAL COLOR-ORANGE OR RED.
 - LIGHTWEIGHT 6' HEIGHT STANDARD FORM QUALITY "T-POST".
 - SLIDE FABRIC OVER "T-POST" AND INSTALL METAL TIE WIRE AT TOP OF POST.
 - E-FENCE WILDLIFE EXCLUSION FENCE FOR SPECIAL STATUS SMALL VERTEBRATES WITH SEDIMENT CONTROL PANEL AS MANUFACTURED BY ERTEC OR APPROVED EQUIVALENT.
 - EXCAVATE A TRENCH A MINIMUM OF 4" WIDE AND BURY EXCLUSION FENCE A MINIMUM OF 8" BELOW EXISTING GROUND SURFACE. BACKFILL TRENCH WITH NATIVE MATERIALS.
 - 14 AWG GALVANIZED WIRE GUIDE. APPROXIMATELY 3" BELOW TOP OF FENCE.

TEMPORARY CONSTRUCTION FENCING

NOT TO SCALE

PRELIMINARY
NOT FOR CONSTRUCTION
DATE 07-02-2021



City of
Santa Rosa
Brejle & Race
REGISTERED PROFESSIONAL ENGINEERS
1000 W. WASHINGTON STREET, SUITE 100
SANTA ROSA, CA 95404
TEL: 707.546.1100 FAX: 707.546.1101



NO.	DATE	REVISION	BY

75% SUBMITTAL

SCALE: AS SHOWN
DWN BY: BLB
DATE: JULY 2021
CHK BY: BLB

**LAGUNA TREATMENT PLANT
FLOOD PROTECTION &
SITE PREPARATION &
DEMOLITION OVERALL PLAN,
NOTES & SHEET LAY**

CONTRACT NO.
C00544
SHEET 5 OF 62
FILE NO. 2020-XXXX

LEGEND

SEE LEGEND ON SITE PREPARATION & DEMOLITION OVERALL PLAN, NOTES & SHEET LAYOUT (SHEET 5) FOR ADDITIONAL INFORMATION

- ////// REMOVE & DISPOSE OF EXISTING UTILITY
- AAA ABANDON EXISTING UTILITY
- PPP PROTECT EXISTING UTILITY TO REMAIN
- [Hatched Box] REMOVE & DISPOSE OF EXISTING HARDSCAPE
- [Dotted Box] STRIP & DISPOSE OF ORGANICS
- [Cross-hatched Box] REMOVE AND DISPOSE OF EXISTING CONCRETE & STRUCTURES
- CF --- INSTALL TEMPORARY CONSTRUCTION FENCING
- ⊗ TREE TO BE REMOVED.
- △ TREE TO BE SAVED.

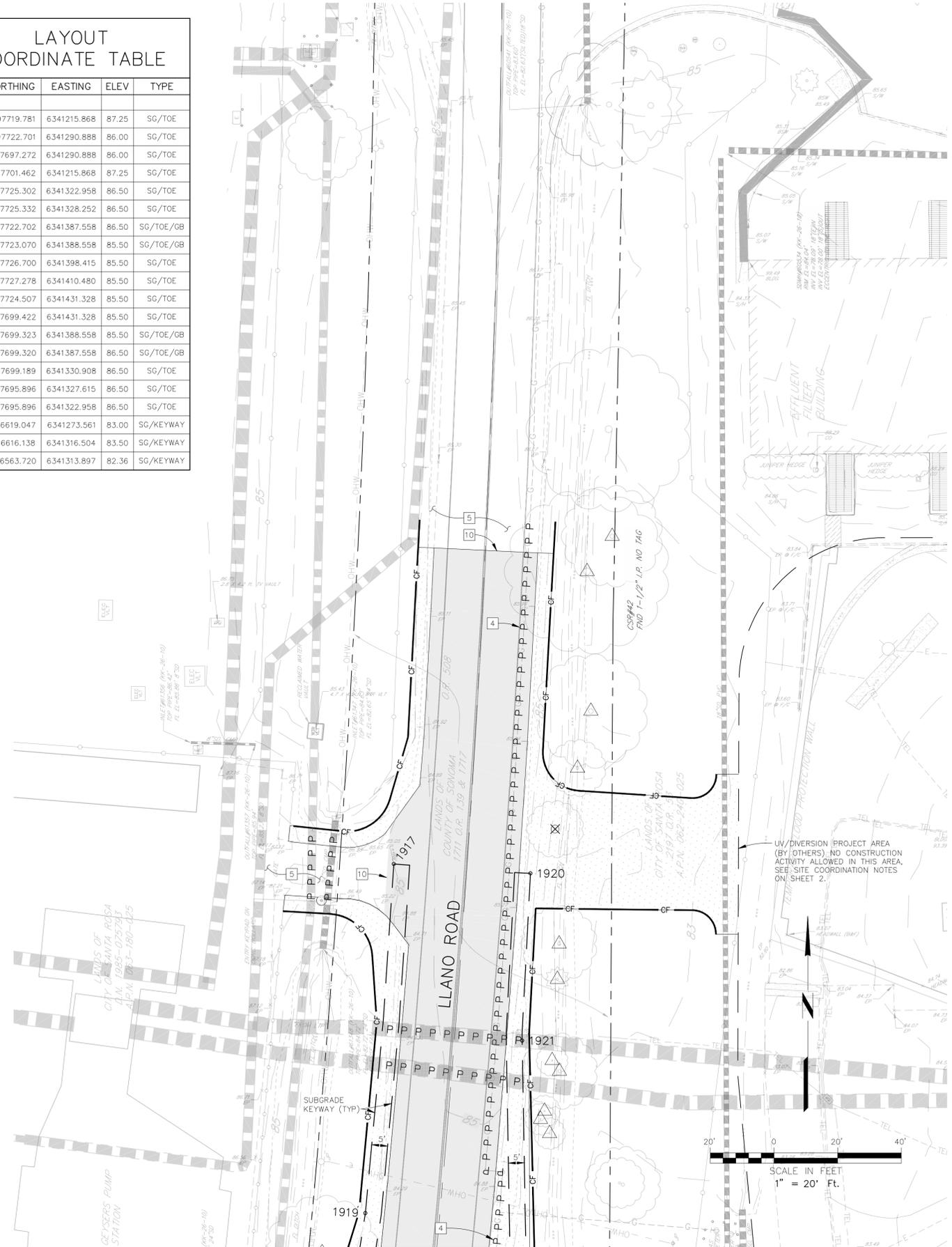
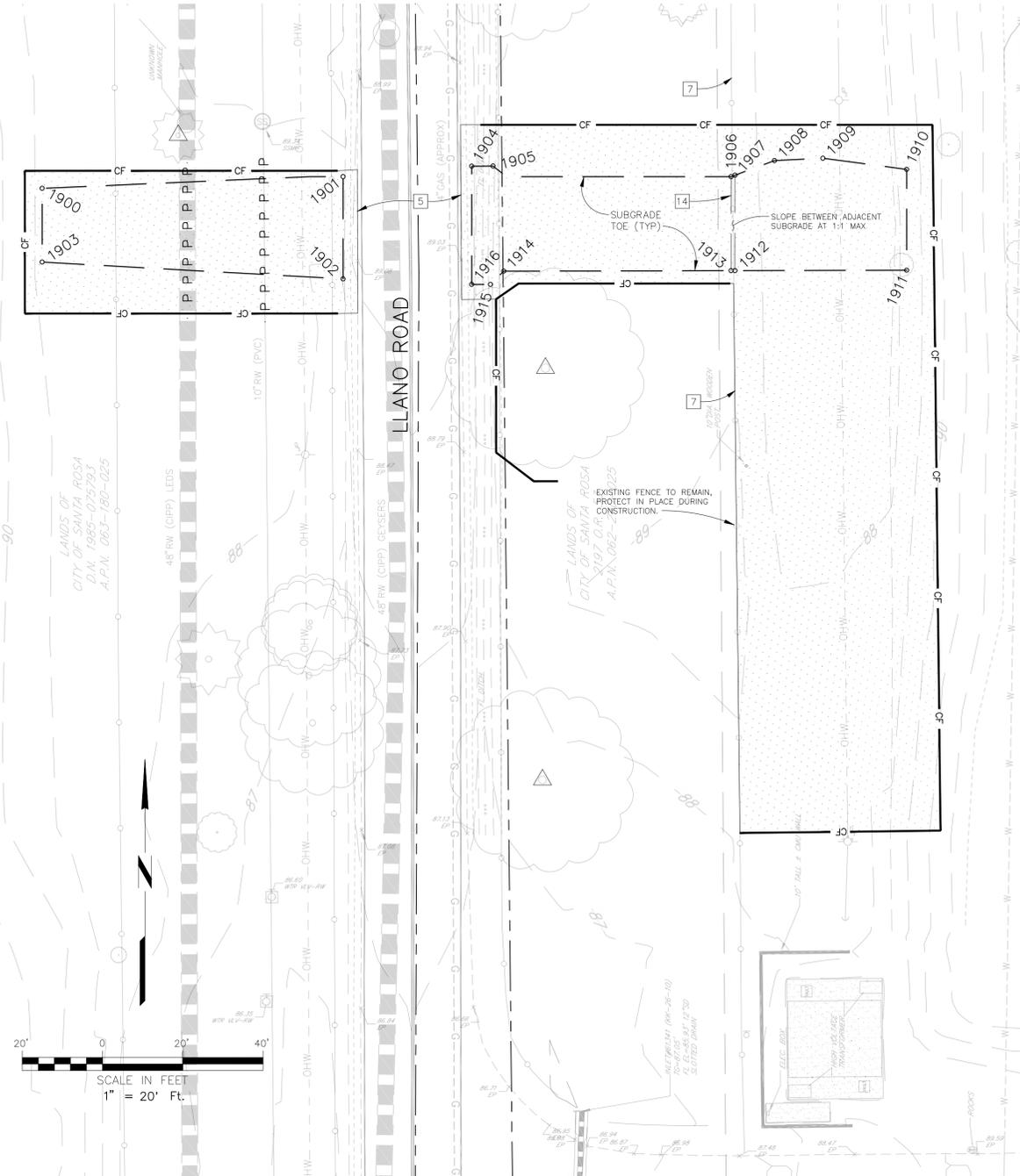
DEMOLITION NOTES

(ONLY NOTES RELEVANT TO THIS SHEET ARE SHOWN)

- 4 THE CITY HAS CONTACTED PG&E FOR RELOCATION OF EXISTING GAS MAIN. THE CONTRACTOR SHALL COORDINATE WITH PG&E TO SCHEDULE RELOCATION OF GAS MAIN WHERE IT CONFLICTS WITH THE PROPOSED WORK. PROTECT EXISTING AND/OR RELOCATED GAS MAIN IN PLACE DURING CONSTRUCTION.
- 5 EXISTING SURFACING TO REMAIN, PROTECT IN PLACE DURING CONSTRUCTION.
- 7 EXISTING FENCE TO REMAIN, PROTECT IN PLACE DURING CONSTRUCTION.
- 10 SAWCUT EXISTING IMPROVEMENTS.
- 14 REMOVE EXISTING FENCE, INCLUDING FOUNDATION AND PROPERLY DISPOSE OF OFF-SITE.

LAYOUT COORDINATE TABLE

NO	NORTHING	EASTING	ELEV	TYPE
1900	1897719.781	6341215.868	87.25	SG/TOE
1901	1897722.701	6341290.888	86.00	SG/TOE
1902	1897697.272	6341290.888	86.00	SG/TOE
1903	1897701.462	6341215.868	87.25	SG/TOE
1904	1897725.302	6341322.958	86.50	SG/TOE
1905	1897725.332	6341328.252	86.50	SG/TOE
1906	1897722.702	6341387.558	86.50	SG/TOE/GB
1907	1897723.070	6341388.558	85.50	SG/TOE/GB
1908	1897726.700	6341398.415	85.50	SG/TOE
1909	1897727.278	6341410.480	85.50	SG/TOE
1910	1897724.507	6341431.328	85.50	SG/TOE
1911	1897699.422	6341431.328	85.50	SG/TOE
1912	1897699.323	6341388.558	85.50	SG/TOE/GB
1913	1897699.320	6341387.558	86.50	SG/TOE/GB
1914	1897699.189	6341330.908	86.50	SG/TOE
1915	1897695.896	6341327.615	86.50	SG/TOE
1916	1897695.896	6341322.958	86.50	SG/TOE
1917	1896619.047	6341273.561	83.00	SG/KEYWAY
1920	1896616.138	6341316.504	83.50	SG/KEYWAY
1921	1896563.720	6341313.897	82.36	SG/KEYWAY



SEE SHEET 7

PRELIMINARY
NOT FOR CONSTRUCTION
DATE 07-02-2021



City of Santa Rosa
Breje & Race
REGISTERED PROFESSIONAL ENGINEERS
1000 WASHINGTON STREET, SUITE 100, SANTA ROSA, CA 95402
TEL: 707/539-1111 FAX: 707/539-1112



NO.	DATE	REVISION	BY

75% SUBMITTAL	
SCALE: AS SHOWN	DATE: JULY 2021
DWN BY: BLB	CHK BY: BLB

**LAGUNA TREATMENT PLANT
FLOOD PROTECTION
SITE PREPARATION &
DEMOLITION PLAN**

CONTRACT NO. C00544
SHEET 6 OF 62
FILE NO. 2020-XXXX

SEE SHEET 6

SEE SHEET 8



City of Santa Rosa
Brejle & Race
 REGISTERED PROFESSIONAL ENGINEERS
 CIVIL
 STATE OF CALIFORNIA

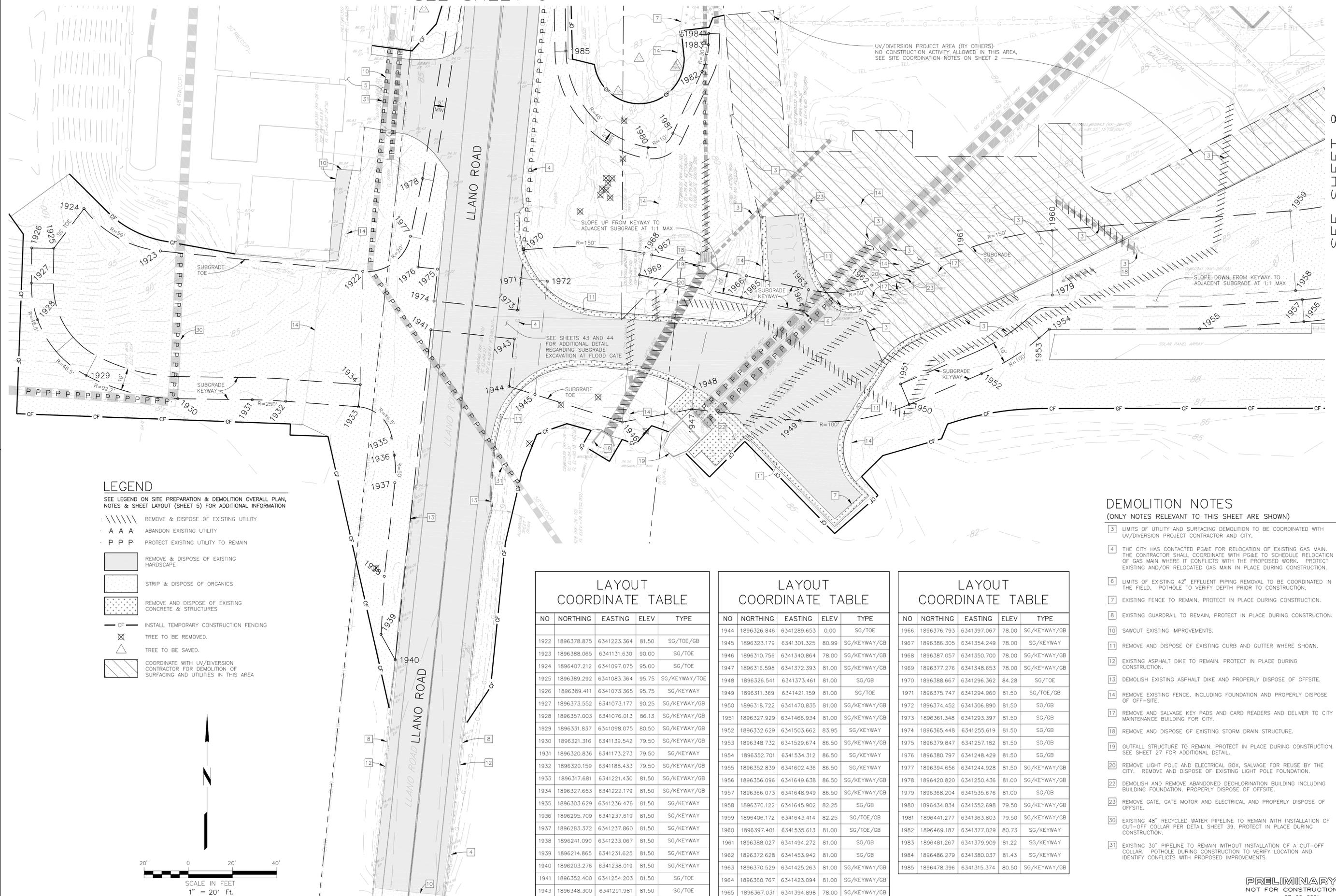


NO.	DATE	REVISION	BY

75% SUBMITTAL	SCALE: AS SHOWN	DATE: JULY 2021
	DWN BY:	CHK BY: BLB

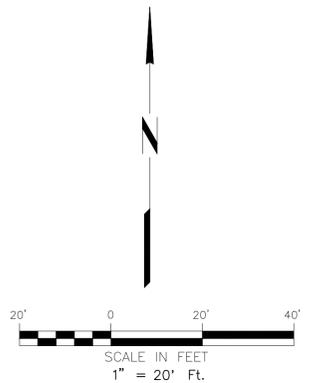
**LAGUNA TREATMENT PLANT
 FLOOD PROTECTION
 SITE PREPARATION &
 DEMOLITION PLAN**

CONTRACT NO. C00544
 SHEET 7 OF 62
 FILE NO. 2020-XXXX



LEGEND
 SEE LEGEND ON SITE PREPARATION & DEMOLITION OVERALL PLAN, NOTES & SHEET LAYOUT (SHEET 5) FOR ADDITIONAL INFORMATION

- REMOVE & DISPOSE OF EXISTING UTILITY
- ABANDON EXISTING UTILITY
- PROTECT EXISTING UTILITY TO REMAIN
- REMOVE & DISPOSE OF EXISTING HARDSCAPE
- STRIP & DISPOSE OF ORGANICS
- REMOVE AND DISPOSE OF EXISTING CONCRETE & STRUCTURES
- INSTALL TEMPORARY CONSTRUCTION FENCING
- TREE TO BE REMOVED.
- TREE TO BE SAVED.
- COORDINATE WITH UV/DIVERSION CONTRACTOR FOR DEMOLITION OF SURFACING AND UTILITIES IN THIS AREA



LAYOUT COORDINATE TABLE

NO	NORTHING	EASTING	ELEV	TYPE
1922	1896378.875	6341223.364	81.50	SG/TOE/GB
1923	1896388.065	6341131.630	90.00	SG/TOE
1924	1896407.212	6341097.075	95.00	SG/TOE
1925	1896389.292	6341083.364	95.75	SG/KEYWAY/TOE
1926	1896389.411	6341073.365	95.75	SG/KEYWAY
1927	1896373.552	6341073.177	90.25	SG/KEYWAY/GB
1928	1896357.003	6341076.013	86.13	SG/KEYWAY/GB
1929	1896331.837	6341098.075	80.50	SG/KEYWAY/GB
1930	1896321.316	6341139.542	79.50	SG/KEYWAY/GB
1931	1896320.836	6341173.273	79.50	SG/KEYWAY
1932	1896320.159	6341188.433	79.50	SG/KEYWAY/GB
1933	1896317.681	6341221.430	81.50	SG/KEYWAY/GB
1934	1896327.653	6341222.179	81.50	SG/KEYWAY/GB
1935	1896303.629	6341236.476	81.50	SG/KEYWAY
1936	1896295.709	6341237.619	81.50	SG/KEYWAY
1937	1896283.372	6341237.860	81.50	SG/KEYWAY
1938	1896241.090	6341233.067	81.50	SG/KEYWAY
1939	1896214.865	6341231.625	81.50	SG/KEYWAY
1940	1896203.276	6341238.019	81.50	SG/KEYWAY
1941	1896352.400	6341254.203	81.50	SG/TOE
1943	1896348.300	6341291.981	81.50	SG/TOE

LAYOUT COORDINATE TABLE

NO	NORTHING	EASTING	ELEV	TYPE
1944	1896326.846	6341289.653	0.00	SG/TOE
1945	1896323.179	6341301.325	80.89	SG/KEYWAY/GB
1946	1896310.756	6341340.864	78.00	SG/KEYWAY/GB
1947	1896316.598	6341372.393	81.00	SG/KEYWAY/GB
1948	1896326.541	6341373.461	81.00	SG/GB
1949	1896311.369	6341421.159	81.00	SG/TOE
1950	1896318.722	6341470.835	81.00	SG/KEYWAY/GB
1951	1896327.929	6341466.934	81.00	SG/KEYWAY/GB
1952	1896332.629	6341503.662	83.95	SG/KEYWAY
1953	1896348.732	6341529.674	86.50	SG/KEYWAY/GB
1954	1896352.701	6341534.312	86.50	SG/KEYWAY
1955	1896352.839	6341602.436	86.50	SG/KEYWAY
1956	1896356.096	6341649.638	86.50	SG/KEYWAY/GB
1957	1896366.073	6341648.949	86.50	SG/KEYWAY/GB
1958	1896370.122	6341645.902	82.25	SG/GB
1959	1896406.172	6341643.414	82.25	SG/TOE/GB
1960	1896397.401	6341535.613	81.00	SG/TOE/GB
1961	1896388.027	6341494.272	81.00	SG/GB
1962	1896372.628	6341453.942	81.00	SG/GB
1963	1896370.529	6341425.263	81.00	SG/KEYWAY/GB
1964	1896360.767	6341423.094	81.00	SG/KEYWAY/GB
1965	1896367.031	6341394.898	78.00	SG/KEYWAY/GB

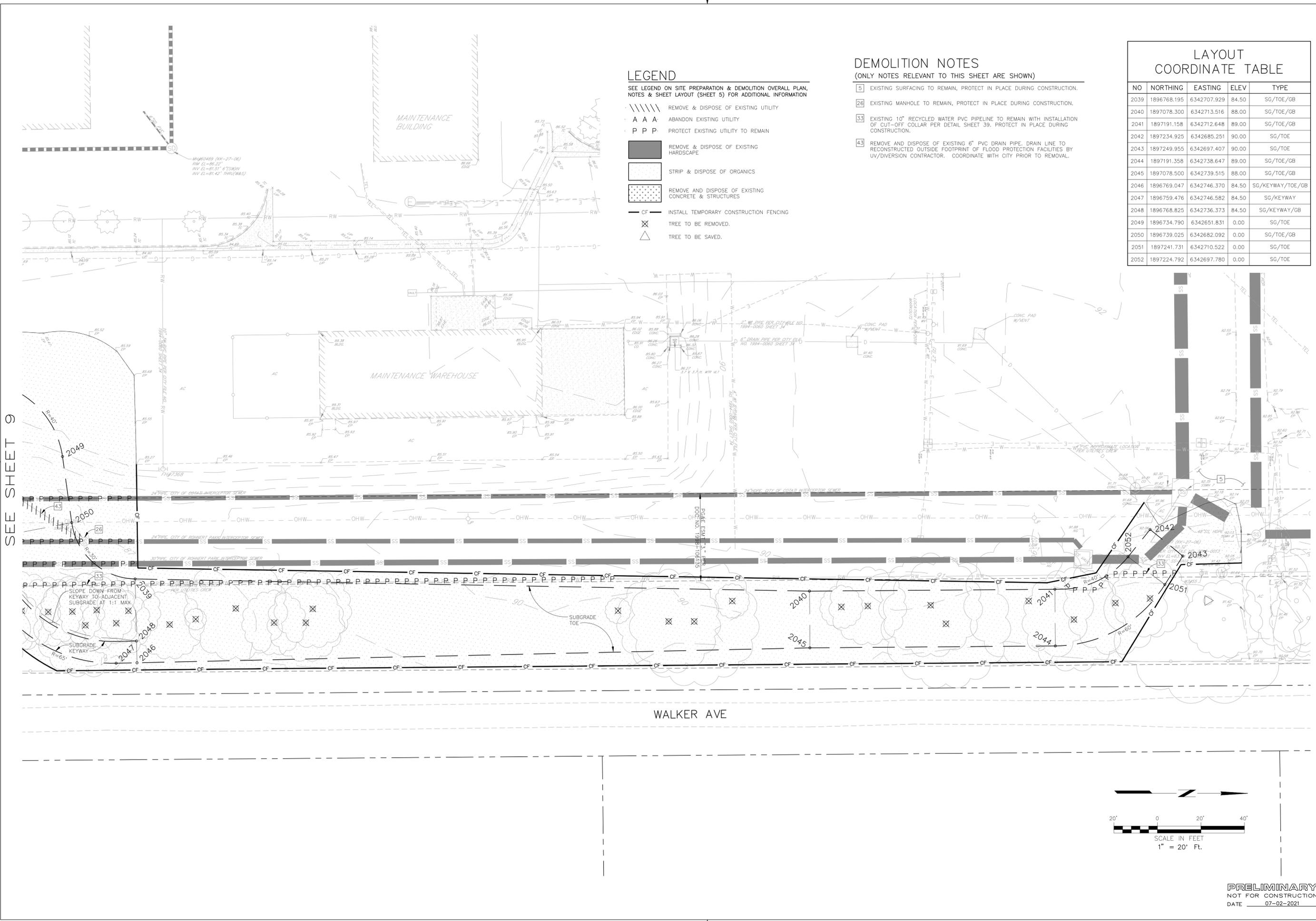
LAYOUT COORDINATE TABLE

NO	NORTHING	EASTING	ELEV	TYPE
1966	1896376.793	6341397.067	78.00	SG/KEYWAY/GB
1967	1896386.305	6341354.249	78.00	SG/KEYWAY
1968	1896387.057	6341350.700	78.00	SG/KEYWAY/GB
1969	1896377.276	6341348.653	78.00	SG/KEYWAY/GB
1970	1896388.667	6341296.362	84.28	SG/TOE
1971	1896375.747	6341294.960	81.50	SG/TOE/GB
1972	1896374.452	6341306.890	81.50	SG/GB
1973	1896361.348	6341293.397	81.50	SG/GB
1974	1896365.448	6341255.619	81.50	SG/GB
1975	1896379.847	6341257.182	81.50	SG/GB
1976	1896380.797	6341248.429	81.50	SG/GB
1977	1896394.656	6341244.928	81.50	SG/KEYWAY/GB
1978	1896420.820	6341250.436	81.00	SG/KEYWAY/GB
1979	1896368.204	6341535.676	81.00	SG/GB
1980	1896434.834	6341352.698	79.50	SG/KEYWAY/GB
1981	1896441.277	6341363.803	79.50	SG/KEYWAY/GB
1982	1896469.187	6341377.029	80.73	SG/KEYWAY
1983	1896481.267	6341379.909	81.22	SG/KEYWAY
1984	1896486.279	6341380.037	81.43	SG/KEYWAY
1985	1896478.396	6341315.374	80.50	SG/KEYWAY/GB

- DEMOLITION NOTES**
 (ONLY NOTES RELEVANT TO THIS SHEET ARE SHOWN)
- 3 LIMITS OF UTILITY AND SURFACING DEMOLITION TO BE COORDINATED WITH UV/DIVERSION PROJECT CONTRACTOR AND CITY.
 - 4 THE CITY HAS CONTACTED PG&E FOR RELOCATION OF EXISTING GAS MAIN. THE CONTRACTOR SHALL COORDINATE WITH PG&E TO SCHEDULE RELOCATION OF GAS MAIN WHERE IT CONFLICTS WITH THE PROPOSED WORK. PROTECT EXISTING AND/OR RELOCATED GAS MAIN IN PLACE DURING CONSTRUCTION.
 - 6 LIMITS OF EXISTING 42" EFFLUENT PIPING REMOVAL TO BE COORDINATED IN THE FIELD. POTHOLE TO VERIFY DEPTH PRIOR TO CONSTRUCTION.
 - 7 EXISTING FENCE TO REMAIN, PROTECT IN PLACE DURING CONSTRUCTION.
 - 8 EXISTING GUARDRAIL TO REMAIN, PROTECT IN PLACE DURING CONSTRUCTION.
 - 10 SAWCUT EXISTING IMPROVEMENTS.
 - 11 REMOVE AND DISPOSE OF EXISTING CURB AND GUTTER WHERE SHOWN.
 - 12 EXISTING ASPHALT DIKE TO REMAIN. PROTECT IN PLACE DURING CONSTRUCTION.
 - 13 DEMOLISH EXISTING ASPHALT DIKE AND PROPERLY DISPOSE OF OFFSITE.
 - 14 REMOVE EXISTING FENCE, INCLUDING FOUNDATION AND PROPERLY DISPOSE OF OFF-SITE.
 - 17 REMOVE AND SALVAGE KEY PADS AND CARD READERS AND DELIVER TO CITY MAINTENANCE BUILDING FOR CITY.
 - 18 REMOVE AND DISPOSE OF EXISTING STORM DRAIN STRUCTURE.
 - 19 OUTFALL STRUCTURE TO REMAIN. PROTECT IN PLACE DURING CONSTRUCTION. SEE SHEET 27 FOR ADDITIONAL DETAIL.
 - 20 REMOVE LIGHT POLE AND ELECTRICAL BOX, SALVAGE FOR REUSE BY THE CITY. REMOVE AND DISPOSE OF EXISTING LIGHT POLE FOUNDATION.
 - 22 DEMOLISH AND REMOVE ABANDONED DECHLORINATION BUILDING INCLUDING BUILDING FOUNDATION. PROPERLY DISPOSE OF OFFSITE.
 - 23 REMOVE GATE, GATE MOTOR AND ELECTRICAL AND PROPERLY DISPOSE OF OFFSITE.
 - 30 EXISTING 48" RECYCLED WATER PIPELINE TO REMAIN WITH INSTALLATION OF CUT-OFF COLLAR PER DETAIL SHEET 39. PROTECT IN PLACE DURING CONSTRUCTION.
 - 31 EXISTING 30" PIPELINE TO REMAIN WITHOUT INSTALLATION OF A CUT-OFF COLLAR. POTHOLE DURING CONSTRUCTION TO VERIFY LOCATION AND IDENTIFY CONFLICTS WITH PROPOSED IMPROVEMENTS.

PRELIMINARY
 NOT FOR CONSTRUCTION
 DATE 07-02-2021

06-30-21 kdfzghl \\4415\dwg\4415_00\4415_00.DEMO.dwg TAB: 7 SITE PREPARATION & DEMOLITION PLAN



LEGEND

SEE LEGEND ON SITE PREPARATION & DEMOLITION OVERALL PLAN, NOTES & SHEET LAYOUT (SHEET 5) FOR ADDITIONAL INFORMATION

- //// REMOVE & DISPOSE OF EXISTING UTILITY
- AAA ABANDON EXISTING UTILITY
- PPP PROTECT EXISTING UTILITY TO REMAIN
- REMOVE & DISPOSE OF EXISTING HARDSCAPE
- ▨ STRIP & DISPOSE OF ORGANICS
- ▩ REMOVE AND DISPOSE OF EXISTING CONCRETE & STRUCTURES
- CF — INSTALL TEMPORARY CONSTRUCTION FENCING
- ⊗ TREE TO BE REMOVED.
- △ TREE TO BE SAVED.

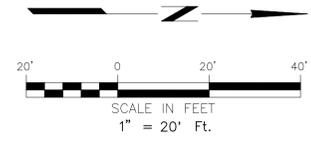
- ### DEMOLITION NOTES
- (ONLY NOTES RELEVANT TO THIS SHEET ARE SHOWN)
- 5 EXISTING SURFACING TO REMAIN, PROTECT IN PLACE DURING CONSTRUCTION.
 - 26 EXISTING MANHOLE TO REMAIN, PROTECT IN PLACE DURING CONSTRUCTION.
 - 33 EXISTING 10" RECYCLED WATER PVC PIPELINE TO REMAIN WITH INSTALLATION OF CUT-OFF COLLAR PER DETAIL SHEET 39. PROTECT IN PLACE DURING CONSTRUCTION.
 - 43 REMOVE AND DISPOSE OF EXISTING 6" PVC DRAIN PIPE. DRAIN LINE TO RECONSTRUCTED OUTSIDE FOOTPRINT OF FLOOD PROTECTION FACILITIES BY UV/DIVERSION CONTRACTOR. COORDINATE WITH CITY PRIOR TO REMOVAL.

LAYOUT COORDINATE TABLE

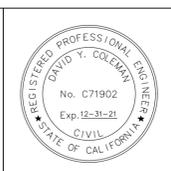
NO	NORTHING	EASTING	ELEV	TYPE
2039	1896768.195	6342707.929	84.50	SG/TOE/GB
2040	1897078.300	6342713.516	88.00	SG/TOE/GB
2041	1897191.158	6342712.648	89.00	SG/TOE/GB
2042	1897234.925	6342685.251	90.00	SG/TOE
2043	1897249.955	6342697.407	90.00	SG/TOE
2044	1897191.358	6342738.647	89.00	SG/TOE/GB
2045	1897078.500	6342739.515	88.00	SG/TOE/GB
2046	1896769.047	6342746.370	84.50	SG/KEYWAY/TOE/GB
2047	1896759.476	6342746.582	84.50	SG/KEYWAY
2048	1896768.825	6342736.373	84.50	SG/KEYWAY/GB
2049	1896734.790	6342651.831	0.00	SG/TOE
2050	1896739.025	6342682.092	0.00	SG/TOE/GB
2051	1897241.731	6342710.522	0.00	SG/TOE
2052	1897224.792	6342697.780	0.00	SG/TOE

SEE SHEET 9

WALKER AVE



PRELIMINARY
NOT FOR CONSTRUCTION
DATE 07-02-2021



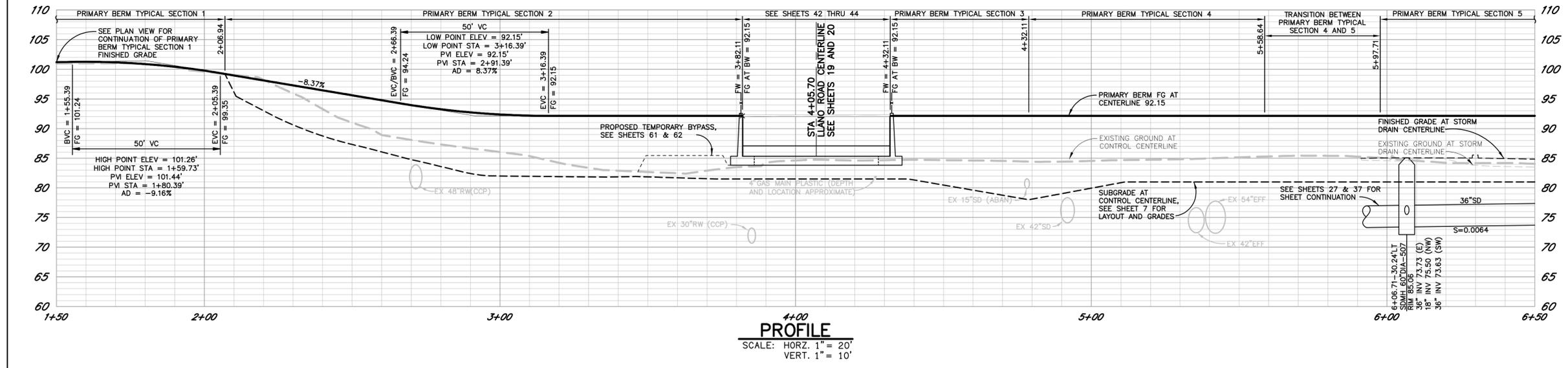
City of Santa Rosa
Breje & Race
REGISTERED PROFESSIONAL ENGINEERS
1000 W. WASHINGTON ST., SUITE 100, SANTA ROSA, CA 95404
TEL: (707) 539-1100 FAX: (707) 539-1101

NO.	DATE	REVISION	BY

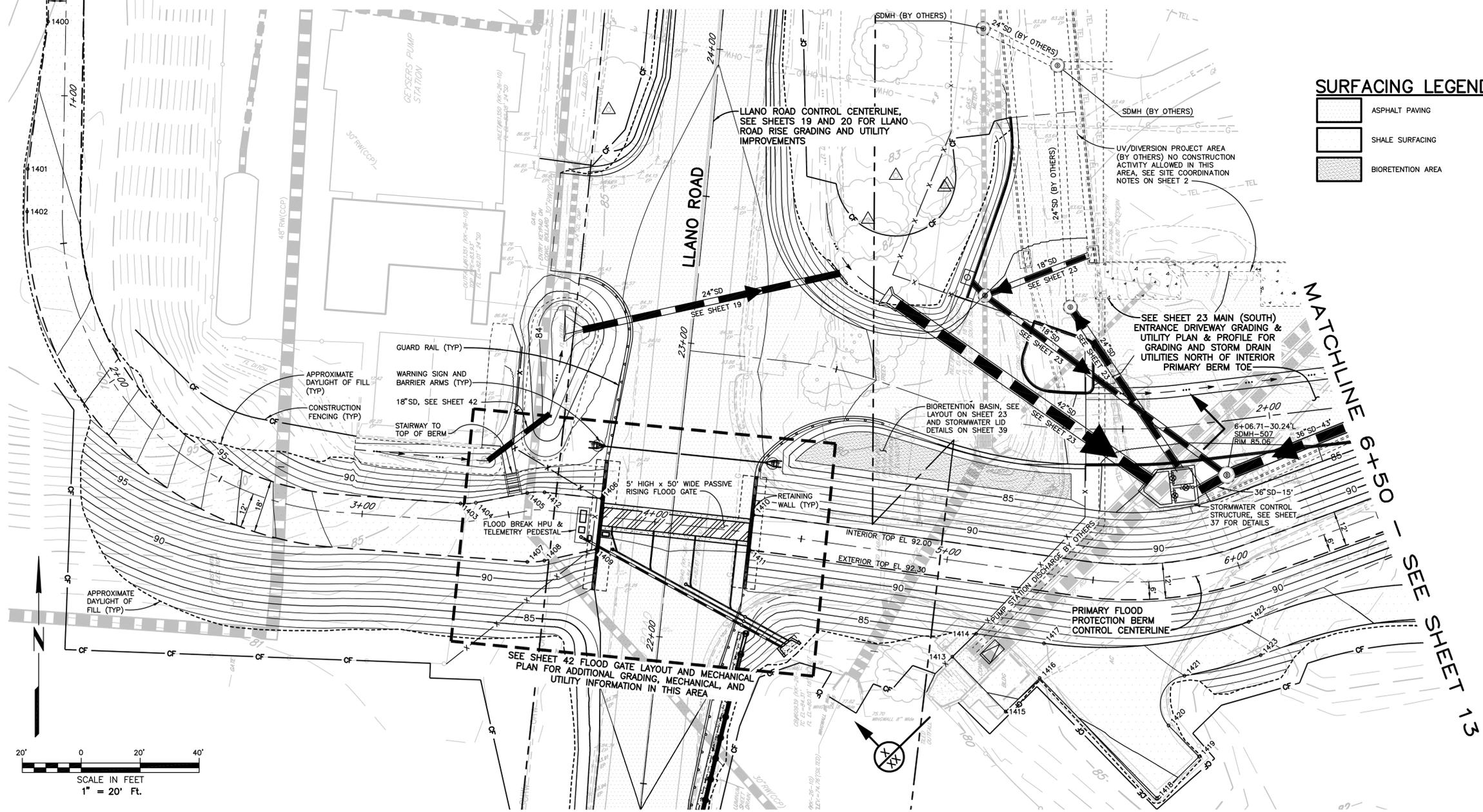
75% SUBMITTAL

SCALE: AS SHOWN
DWN BY:
CHK BY: BLB
DATE: JULY 2021

**LAGUNA TREATMENT PLANT
FLOOD PROTECTION
SITE PREPARATION &
DEMOLITION PLAN**



SEE SHEET 13

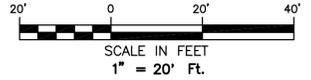


SURFACING LEGEND

- ASPHALT PAVING
- SHALE SURFACING
- BIORETENTION AREA

LAYOUT COORDINATE TABLE

NO	STA/OFFSET	GRADE	DESCRIPTION
1400	0+75.00-6.00'R	100.75'	AP
1401	1+25.00-12.00'R	101.30'	AP
1402	1+39.44-12.00'R	101.41'	BC
1403	3+33.01-6.00'L	92.00'	BC
1404	3+39.80-6.00'L	92.00'	EC
1405	3+57.56-6.00'L	92.00'	BC
1406	3+81.11-6.00'L	92.00'	AP
1407	3+53.24-16.92'R	92.57'	BC
1408	3+64.12-17.01'R	92.58'	EC
1409	3+81.11-11.28'R	92.43'	AP
1410	4+33.11-6.00'L	92.00'	AP
1411	4+33.11-6.00'R	92.30'	AP
1412	3+61.68-6.00'L	92.00'	EC
1413	5+06.37-32.34'R	???'	AP
1414	5+13.28-23.50'R	85.30'	AP
1415	5+26.87-48.21'R	84.91'	AP
1416	5+36.73-35.37'R	85.15'	AP
1417	5+36.48-23.50'R	85.45'	BC
1418	5+68.42-73.31'R	84.69'	AP
1419	5+78.33-60.58'R	85.31'	AP
1420	5+71.99-49.02'R	85.43'	BC
1421	5+77.19-32.77'R	86.00'	PCC
1422	5+97.79-19.25'R	87.08'	PCC
1423	5+98.36-31.23'R	86.78'	PCC



City of Santa Rosa
Brelje & Race
CONSULTING ENGINEERS

NO.	DATE	REVISION	BY

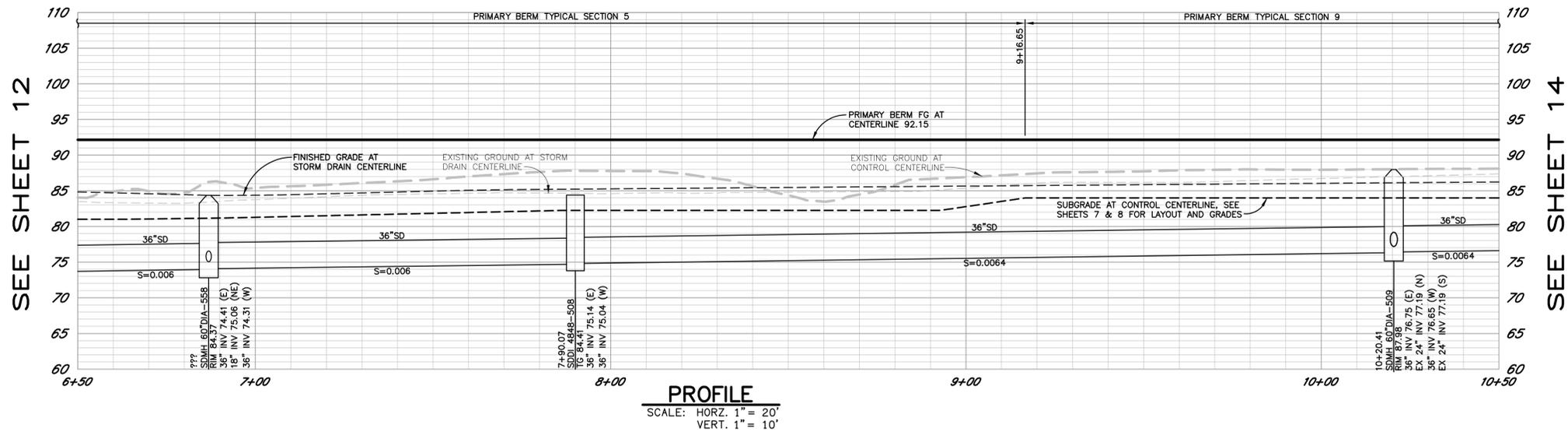
75% SUBMITTAL

SCALE: AS SHOWN
DATE: JULY 2021
DWN BY: BLB
CHK BY: BLB

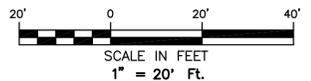
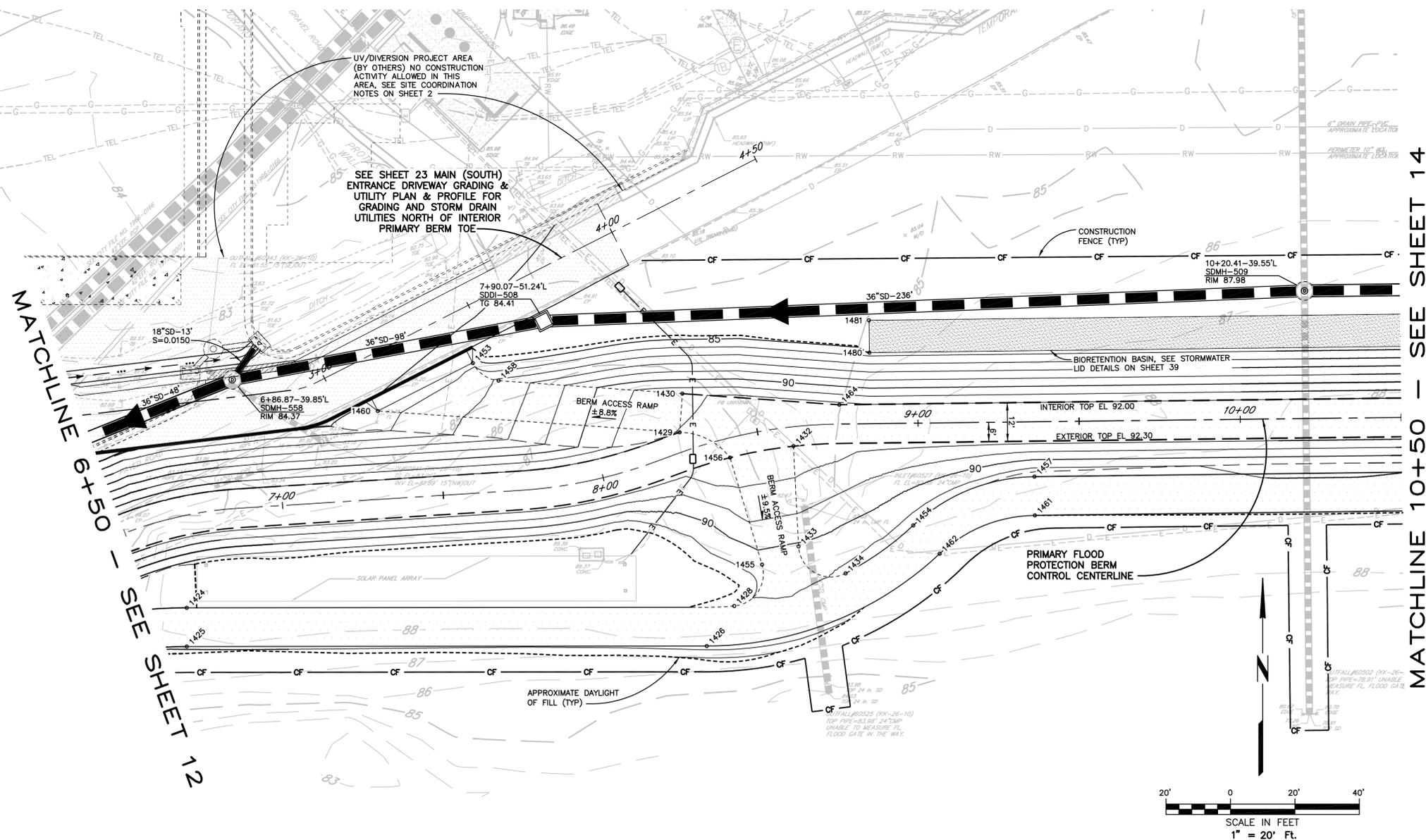
**LAGUNA TREATMENT PLANT
FLOOD PROTECTION
PRIMARY BERM GRADING &
UTILITY PLAN & PROFILE
STA.0+00-STA.6+50**

PRELIMINARY
NOT FOR CONSTRUCTION
DATE: 07-02-2021

CONTRACT NO. C00544
SHEET 12 OF 62
FILE NO. 2020-XXXX



PROFILE
SCALE: HORIZ. 1" = 20'
VERT. 1" = 10'



LAYOUT COORDINATE TABLE			
NO	STA/OFFSET	GRADE	DESCRIPTION
1424	6+62.73-28.00'R	88.65'	EC
1425	6+58.16-39.54'R	88.35'	EC
1426	8+13.60-59.11'R	88.46'	BC
1428	8+24.70-50.37'R	88.86'	EC
1429	8+27.05-6.00'L	92.04'	AP
1430	8+31.27-17.11'L	91.74'	AP
1432	8+60.64-6.00'R	92.30'	AP
1433	8+58.29-37.00'R	89.78'	BC
1434	8+76.95-46.25'R	88.82'	EC
1453	7+61.73-40.28'L	85.82'	APRON EC
1454	8+98.16-31.66'R	88.54'	BC
1455	8+41.90-40.54'R	89.51'	BC
1456	8+39.79-6.00'R	92.30'	AP
1457	9+35.93-17.00'R	88.47'	EC
1458	7+69.36-34.34'L	87.21'	BC
1460	7+31.37-27.34'L	85.63'	EC
1461	9+35.93-29.00'R	88.17'	BC
1462	9+06.25-40.51'R	88.24'	PCC
1464	8+75.64-6.00'L	92.29'	AP
1480	8+85.15-22.00'L	85.60'	BIORETENTION
1481	8+85.15-32.00'L	???'	BIORETENTION

SURFACING LEGEND

	ASPHALT PAVING
	SHALE SURFACING
	BIORETENTION AREA



City of Santa Rosa
Brelje & Race
CONSULTING ENGINEERS

NO.	DATE	REVISION	BY

75% SUBMITTAL

SCALE: AS SHOWN
DATE: JULY 2021
DWN BY: BLB
CHK BY: BLB

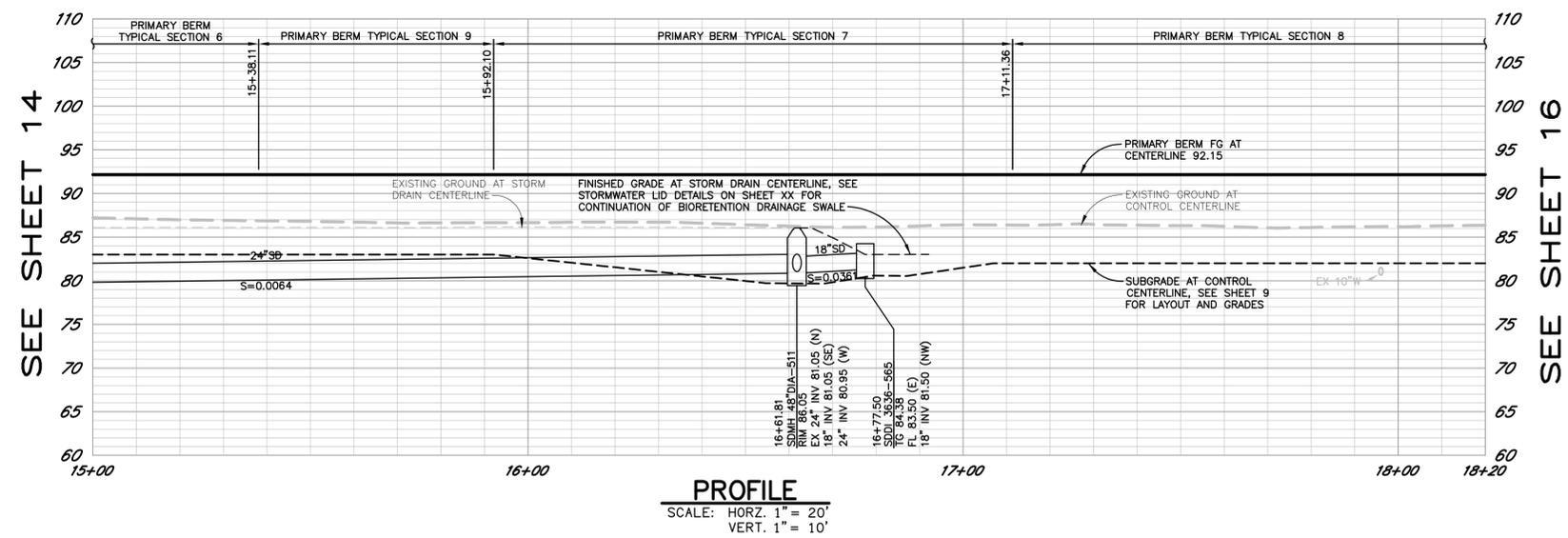
**LAGUNA TREATMENT PLANT
FLOOD PROTECTION
PRIMARY BERM GRADING &
UTILITY PLAN & PROFILE
STA. 6+50-STA. 10+50**

CONTRACT NO. C00544
SHEET 13 OF 62
FILE NO. 2020-XXXX

PRELIMINARY
NOT FOR CONSTRUCTION
DATE: 07-02-2021

01-19-21 kffzqpi: \\4415\dwg\4415_00\4415.00 BASE-Flood Protection_Berm.dwg TAB: 15 PRIMARY BERM GRADING & UTILITY PLAN & PROFILE

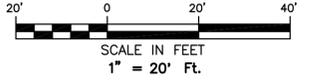
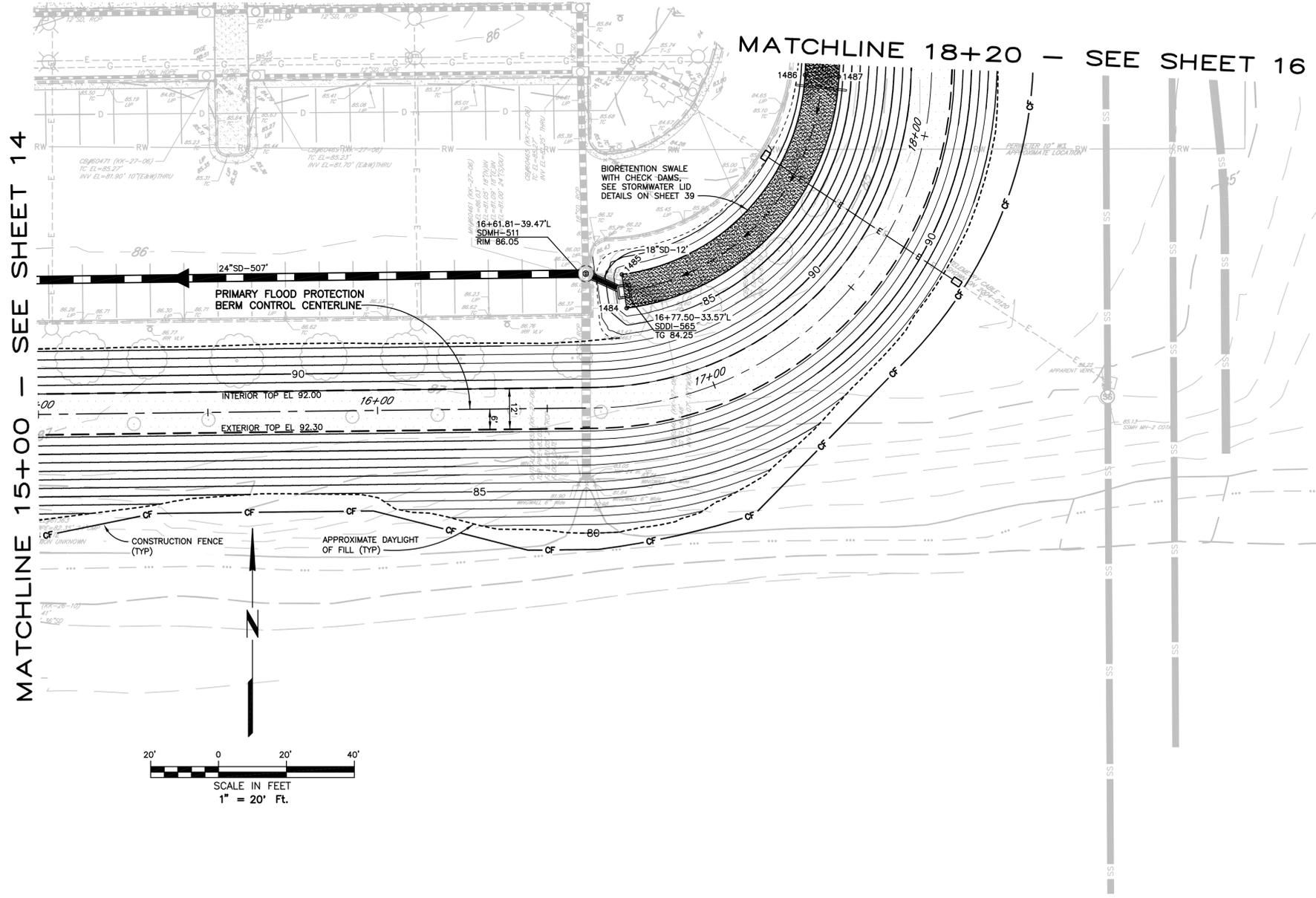
MATCHLINE 15+00 - SEE SHEET 14



LAYOUT COORDINATE TABLE			
NO	STA/OFFSET	GRADE	DESCRIPTION
1484	16+77.50-28.57'L	83.00'	BIORETENTION
1485	16+77.50-38.57'L	83.00'	BIORETENTION
1486	18+16.57-37.22'L	83.52'	BIORETENTION
1487	18+16.47-27.22'L	83.52'	BIORETENTION

SURFACING LEGEND

- ASPHALT PAVING
- SHALE SURFACING
- BIORETENTION AREA



City of Santa Rosa
Brelje & Race
CONSULTING ENGINEERS
1000 B Street, Suite 100, Santa Rosa, CA 95404-1000
TEL: (707) 539-1100 FAX: (707) 539-1101

NO.	DATE	REVISION	BY

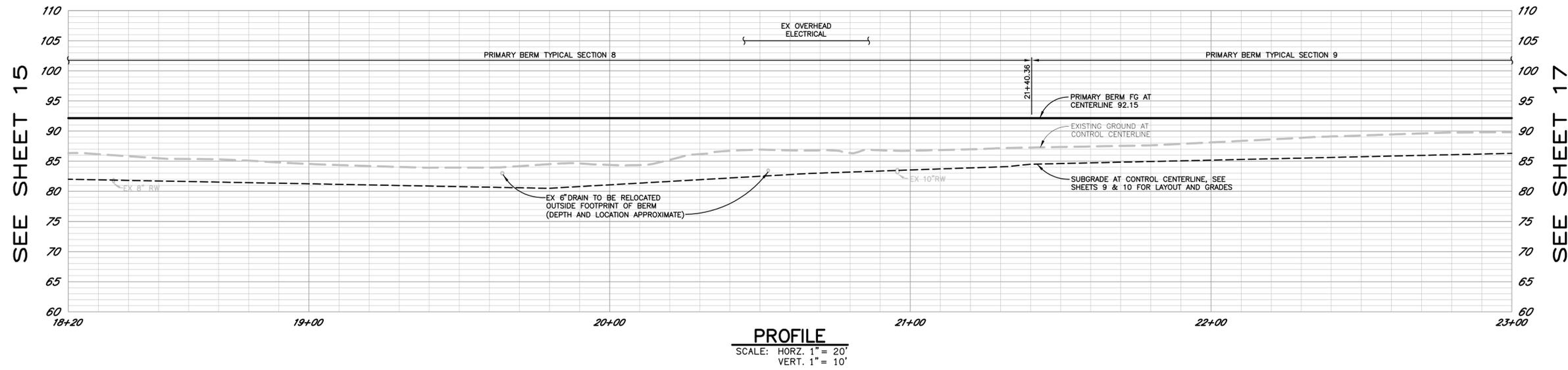
75% SUBMITTAL

SCALE: AS SHOWN
DWN BY: BLB
DATE: JULY 2021
CHK BY: BLB

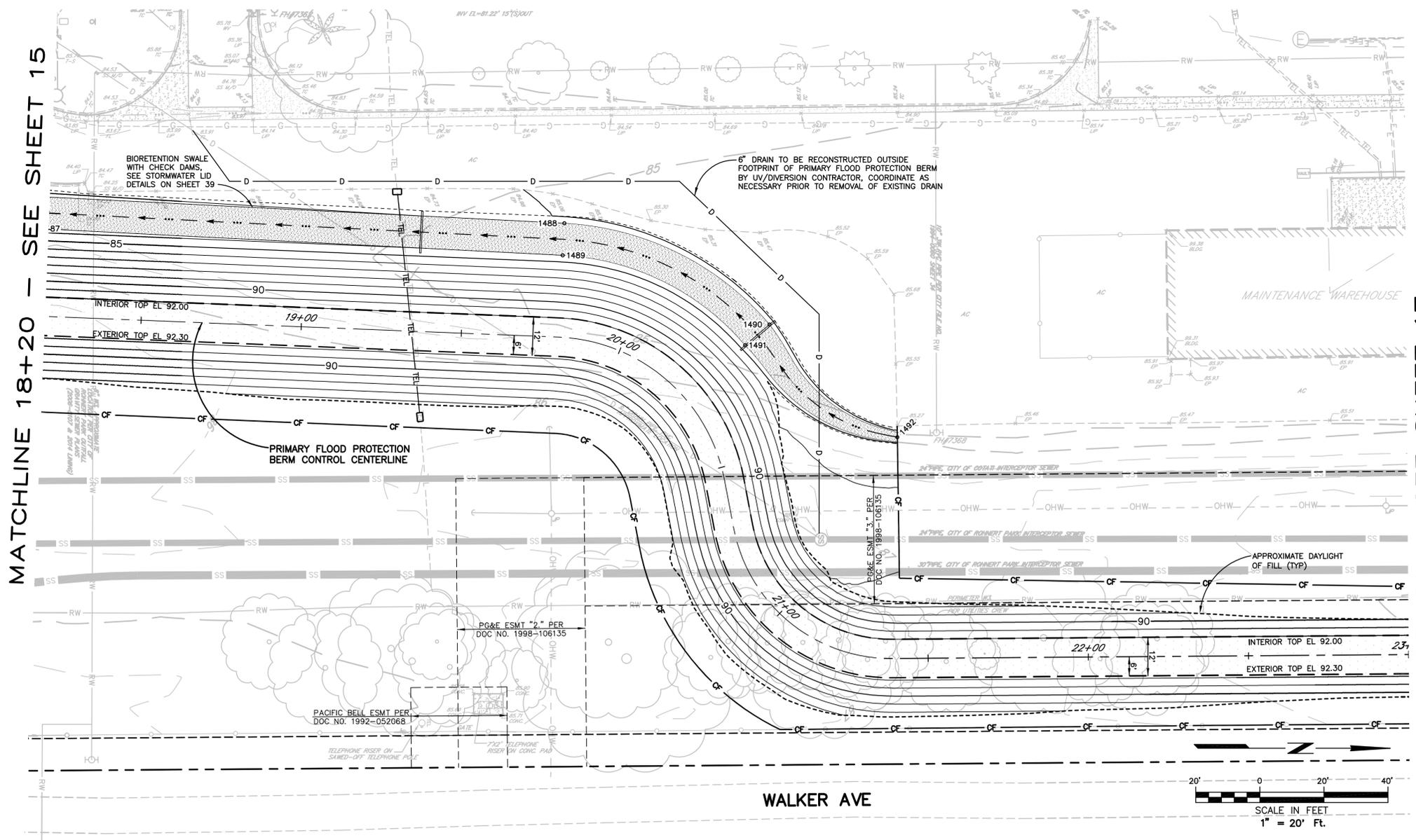
LAGUNA TREATMENT PLANT
FLOOD PROTECTION
PRIMARY BERM GRADING &
UTILITY PLAN & PROFILE
STA. 15+00-STA. 18+20

CONTRACT NO. C00544
SHEET 15 OF 62
FILE NO. 2020-XXXX

PRELIMINARY
NOT FOR CONSTRUCTION
DATE 07-02-2021



PROFILE
SCALE: HORZ. 1" = 20'
VERT. 1" = 10'

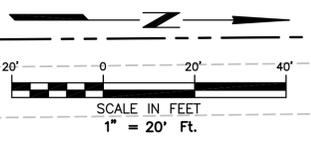


LAYOUT COORDINATE TABLE

NO	STA/OFFSET	GRADE	DESCRIPTION
1488	19+80.61-35.51'L	84.18'	BIORETENTION
1489	19+80.56-25.51'L	84.18'	BIORETENTION
1490	20+25.32-34.99'L	84.40'	BIORETENTION
1491	20+25.26-25.00'L	84.40'	BIORETENTION
1492	20+52.64-55.51'L	84.89'	BIORETENTION

SURFACING LEGEND

	ASPHALT PAVING
	SHALE SURFACING
	BIORETENTION AREA



NO.	DATE	REVISION	BY

75% SUBMITTAL

SCALE: AS SHOWN
DWN BY: BLB
DATE: JULY 2021
CHK BY: BLB

**LAGUNA TREATMENT PLANT
FLOOD PROTECTION
PRIMARY BERM GRADING &
UTILITY PLAN & PROFILE
STA. 18+20-STA. 23+00**

CONTRACT NO. C00544
SHEET 16 OF 62
FILE NO. 2020-XXXX

PRELIMINARY
NOT FOR CONSTRUCTION
DATE 07-02-2021

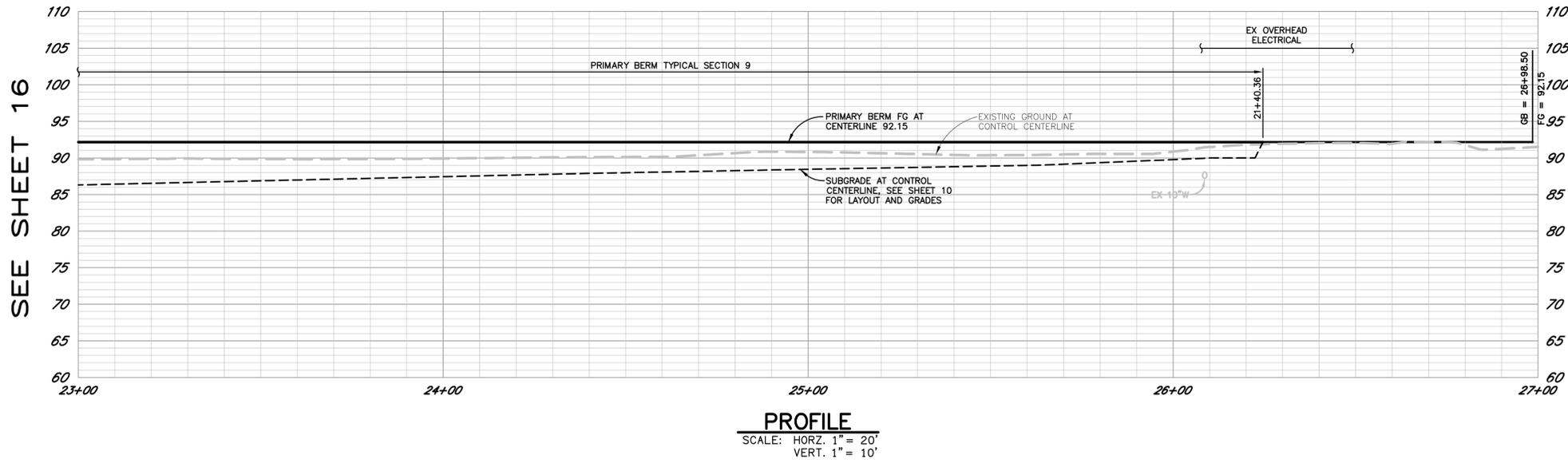
SEE SHEET 17

SEE SHEET 17

MATCHLINE 18+20 - SEE SHEET 15

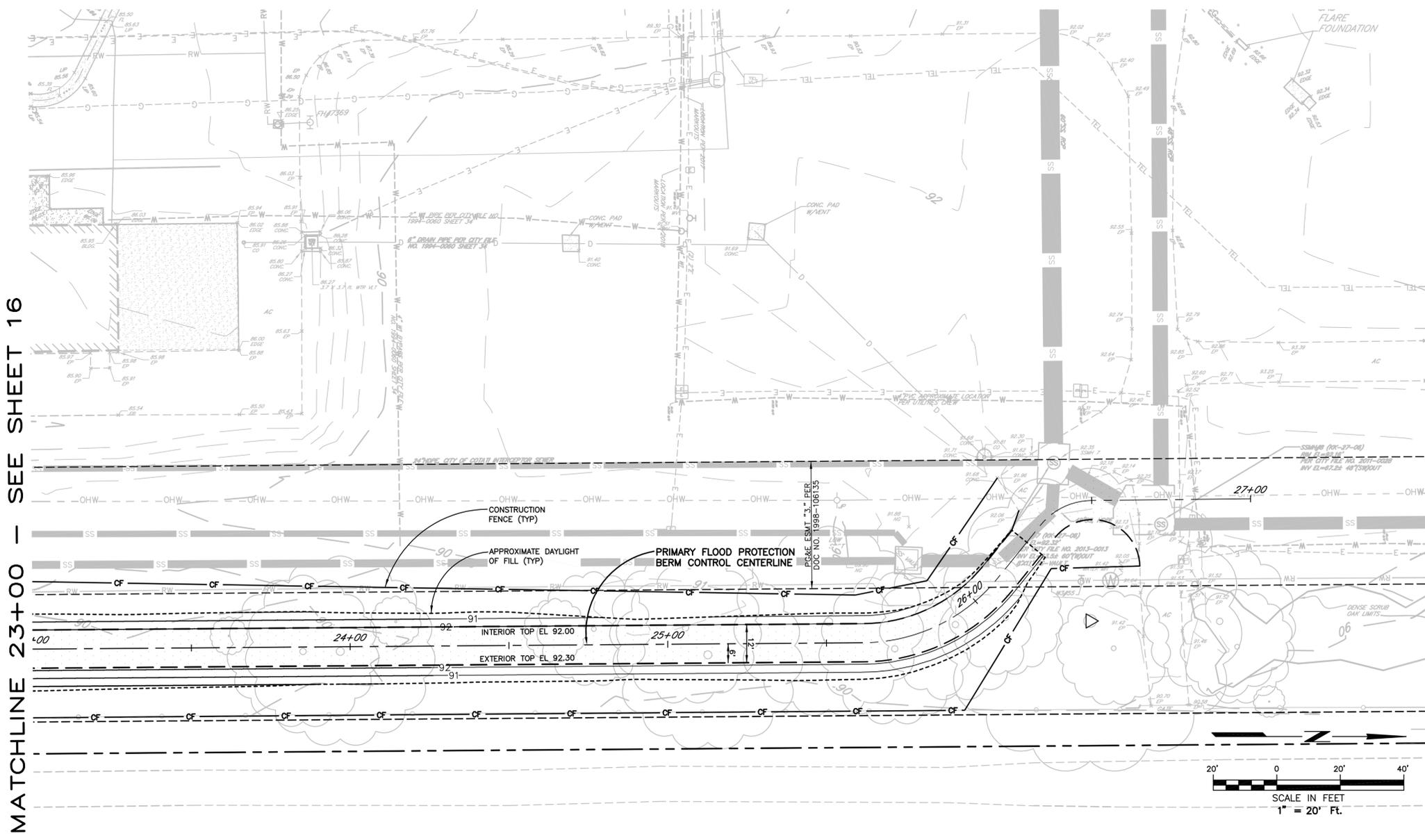
SEE SHEET 15

SEE SHEET 17



SURFACING LEGEND

- ASPHALT PAVING
- SHALE SURFACING
- BIORETENTION AREA



MATCHLINE 23+00 - SEE SHEET 16



NO.	DATE	REVISION	BY

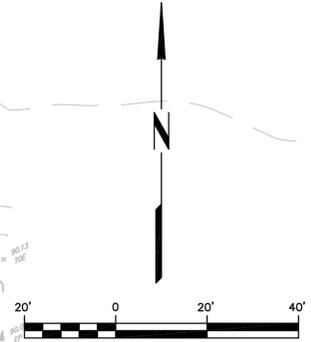
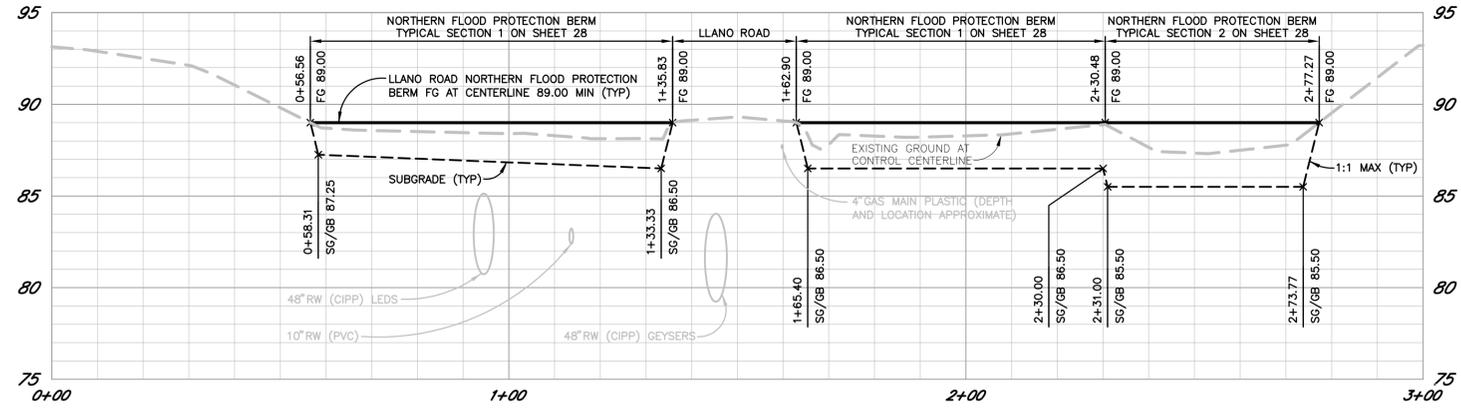
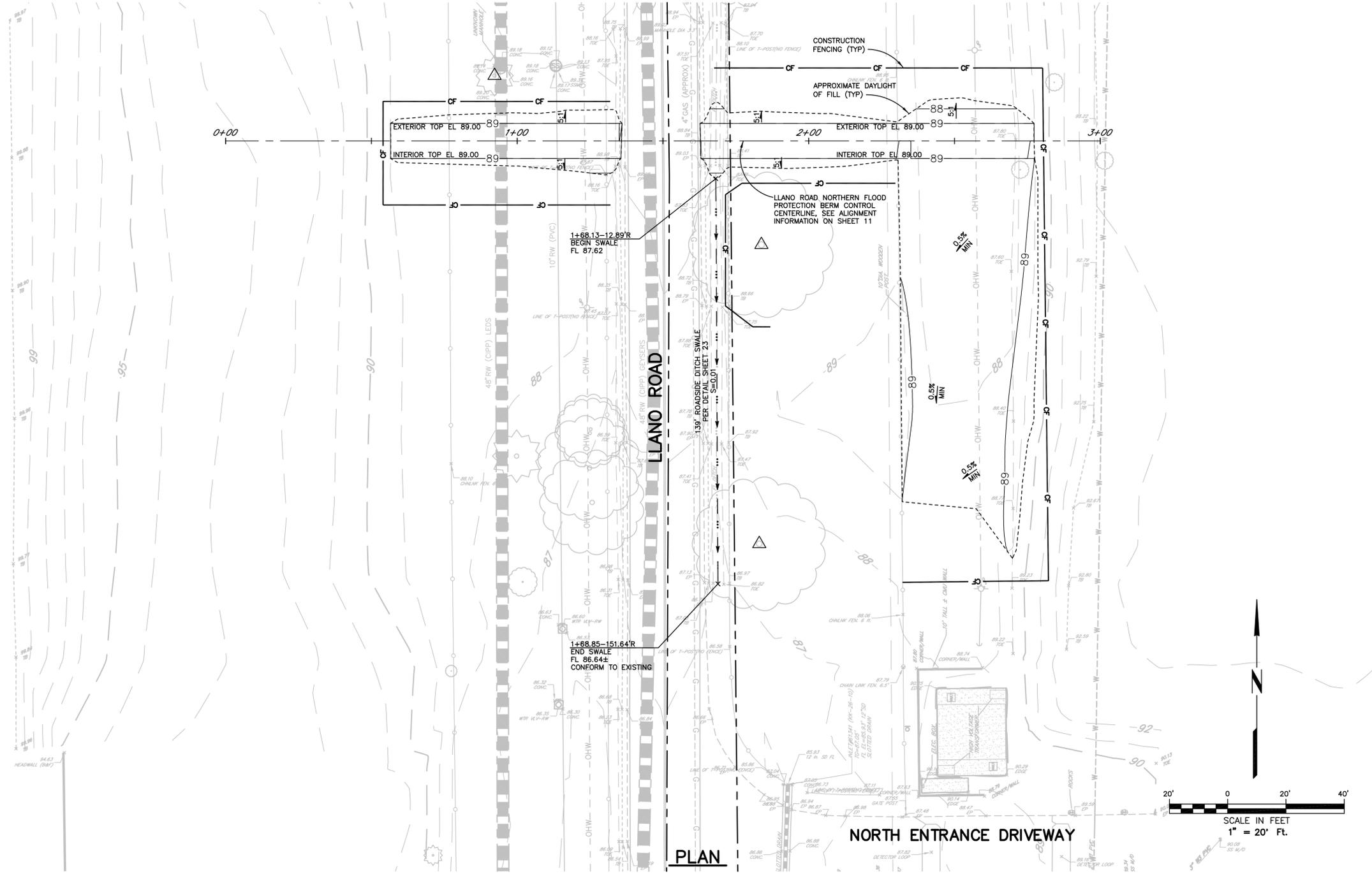
75% SUBMITTAL

SCALE: AS SHOWN DATE: JULY 2021
 DWN BY: CHK BY: BLB

**LAGUNA TREATMENT PLANT
 FLOOD PROTECTION
 PRIMARY BERM GRADING
 & UTILITY PLAN & PROFILE
 STA. 23+00-STA. 27+00**

CONTRACT NO. C00544
SHEET 17 OF 62
FILE NO. 2020-XXXX

PRELIMINARY
 NOT FOR CONSTRUCTION
 DATE 07-02-2021



NO.	DATE	REVISION	BY

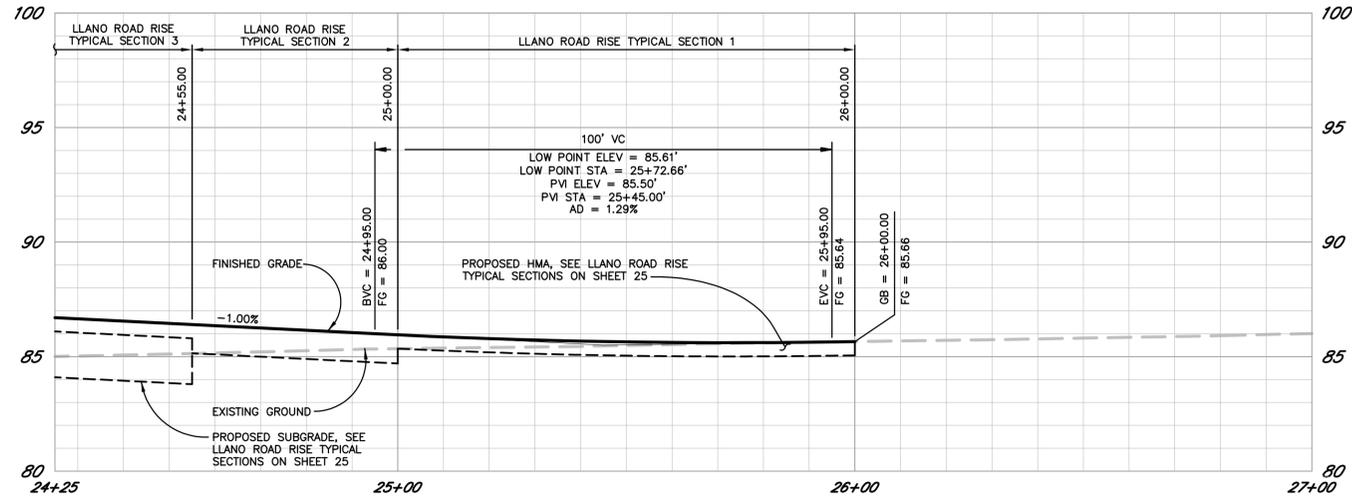
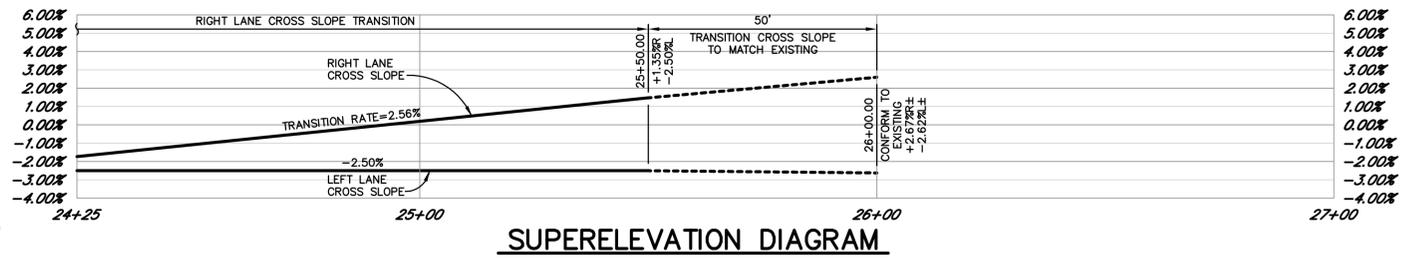
75% SUBMITTAL	
SCALE: AS SHOWN	DATE: JULY 2021
DWN BY:	CHK BY: BLB

**LAGUNA TREATMENT PLANT
FLOOD PROTECTION
LLANO ROAD NORTHERN BERM
GRADING PLAN & PROFILE**

CONTRACT NO. C00544
SHEET 18 OF 62
FILE NO. 2020-XXXX

PRELIMINARY
NOT FOR CONSTRUCTION
DATE 07-02-2021

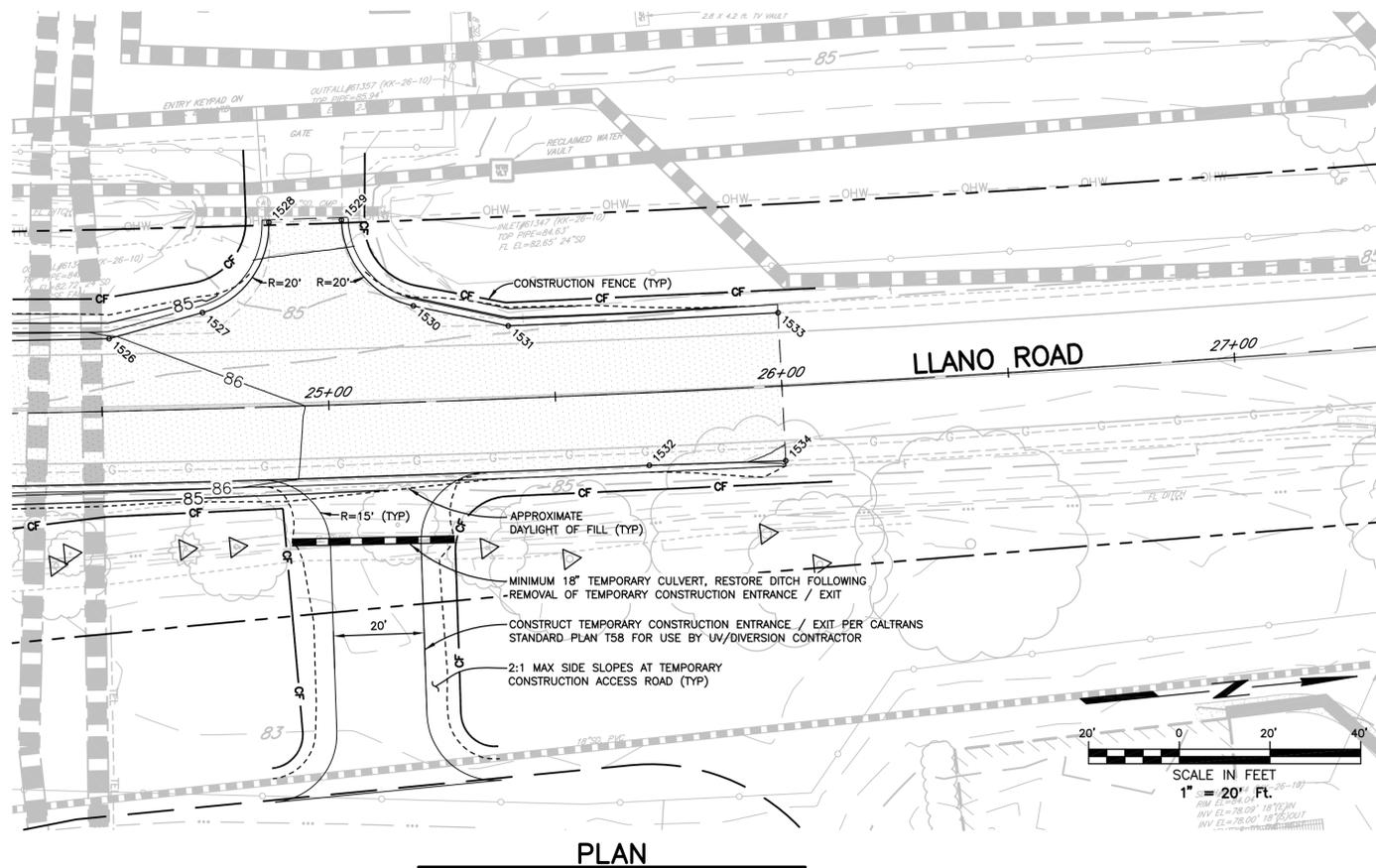
SEE SHEET 19



LAYOUT COORDINATE TABLE

NO	STA/OFFSET	GRADE	DESCRIPTION
1526	24+51.90-16.00'L	86.03'	AP/WIDTH TRANSITION
1527	24+72.71-21.21'L	85.69'	BC/WIDTH TRANSITION
1528	24+88.00-40.65'L	86.54'	EC/CONFORM
1529	25+04.14-40.65'L	86.47'	BC/CONFORM
1530	25+19.43-21.21'L	85.23'	EC/WIDTH TRANSITION
1531	25+40.25-16.00'L	85.23'	AP/WIDTH TRANSITION
1532	25+70.00-16.00'R	85.88'	AP/CONFORM TO EX WIDTH
1533	26+00.00-16.11'L	85.19'	CONFORM
1534	26+00.00-16.49'R	86.04'	CONFORM

MATCHLINE STA 24+25 - SEE SHEET 19



NO.	DATE	REVISION	BY

75% SUBMITTAL

SCALE: AS SHOWN	DATE: JULY 2021
DWN BY:	CHK BY: BLB

LAGUNA TREATMENT PLANT
 FLOOD PROTECTION
 LLANO ROAD RISE GRADING
 PLAN & PROFILE

CONTRACT NO.
 C00544
 SHEET 20 OF 62
 FILE NO. 2020-XXXX

PRELIMINARY
 NOT FOR CONSTRUCTION
 DATE 07-02-2021



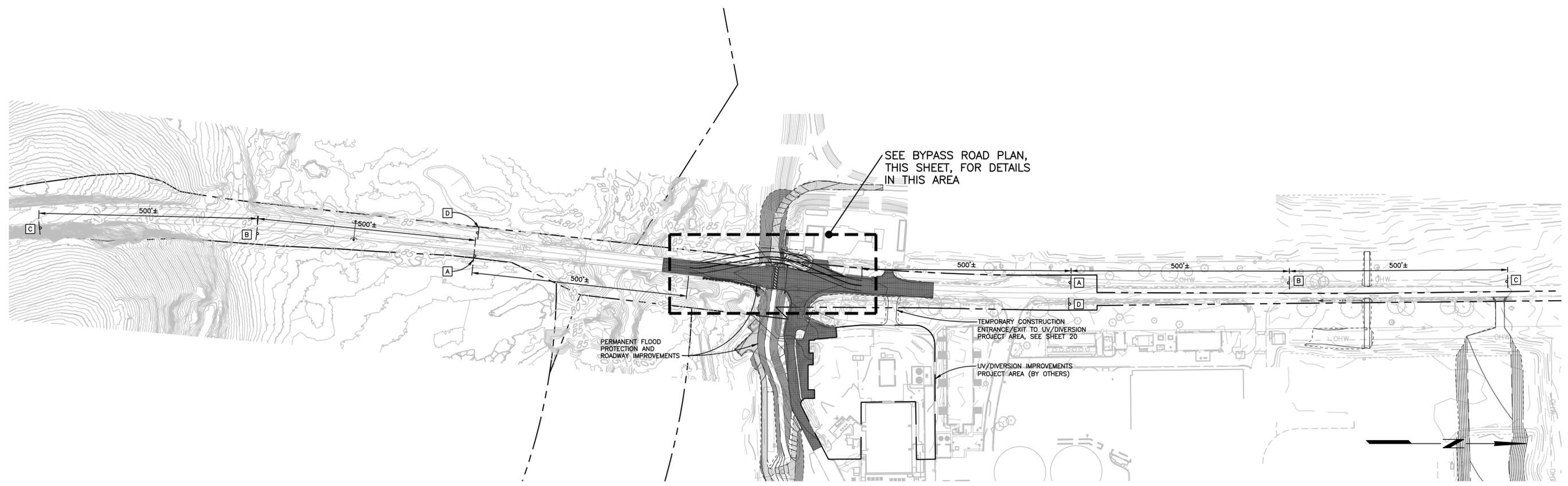
City of
Santa Rosa
Brelje & Race
REGISTERED PROFESSIONAL ENGINEERS
 CIVIL
 STATE OF CALIFORNIA



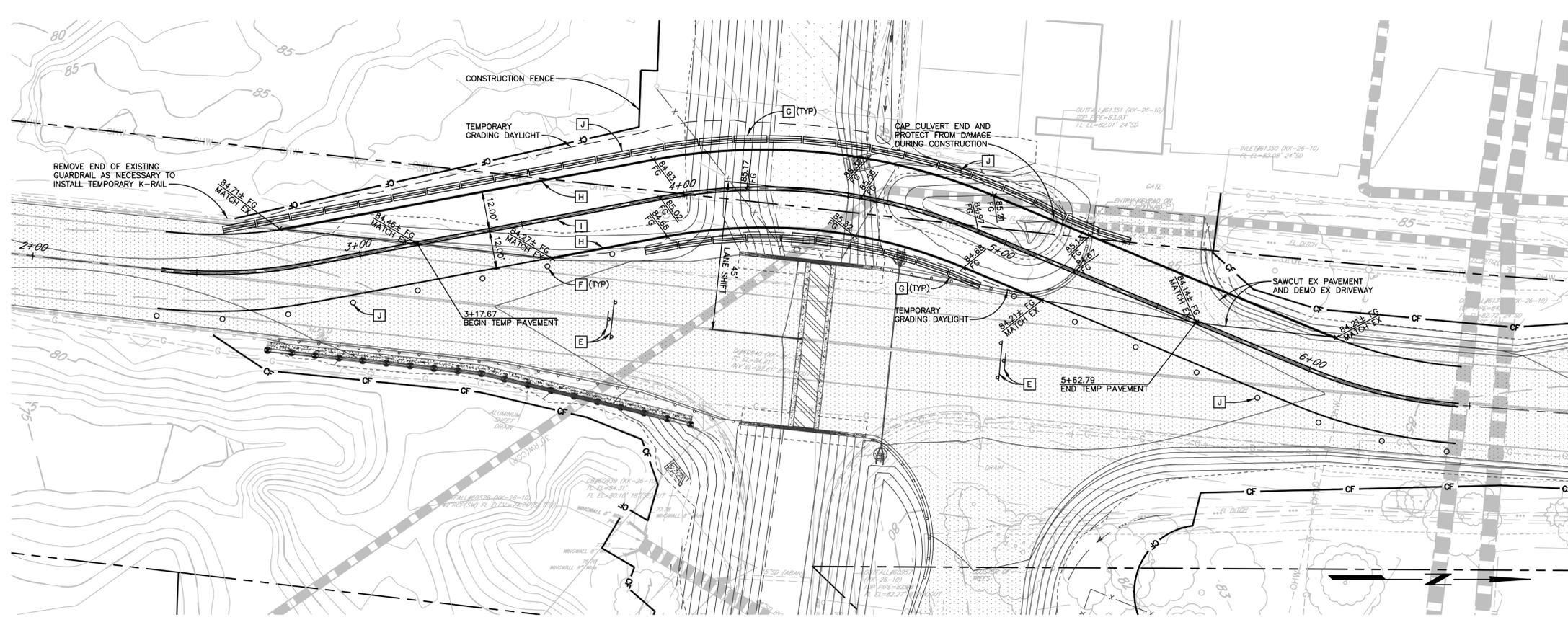
NO.	DATE	REVISION	BY

x75% SUBMITTAL	SCALE: AS SHOWN	DATE: JULY 2021	CHK BY: BLB
	DWN BY:		

LAGUNA TREATMENT PLANT FLOOD PROTECTION TEMPORARY TRAFFIC CONTROL PLAN	CONTRACT NO. C00544
	SHEET 61 OF 62
	FILE NO. 2020-XXXX



TEMPORARY TRAFFIC CONTROL ZONE
 SCALE: 1"=120'



Appendix B

Air Quality Modeling

LTP Flood Protection Project - Sonoma-San Francisco County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

**LTP Flood Protection Project
Sonoma-San Francisco County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	5.80	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	75
Climate Zone	4			Operational Year	2024
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

- Project Characteristics - Construction Only
- Land Use - Appx 5.8-acre footprint of construction
- Construction Phase - Project-Specific Phasing and Durations
- Off-road Equipment - Project-specific Fleet and Activity
- Trips and VMT - Default Worker Trip and Demo Export trip generation. 850 loads for soils import = 1,700 truck trips for soils import. Default Trip Lengths
- Demolition - 1,400 tons of pavement and concrete
- Grading - 13,000 cubic yards soil import
- Road Dust - Defaults
- Fleet Mix - Defaults

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	15.00

LTP Flood Protection Project - Sonoma-San Francisco County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstructionPhase	NumDays	10.00	25.00
tblConstructionPhase	NumDays	20.00	75.00
tblConstructionPhase	NumDays	230.00	180.00
tblConstructionPhase	NumDays	20.00	25.00
tblGrading	MaterialImported	0.00	13,000.00
tblProjectCharacteristics	PrecipitationFrequency	0	75
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblProjectCharacteristics	WindSpeed	0	2.2
tblTripsAndVMT	HaulingTripNumber	1,625.00	1,700.00

2.0 Emissions Summary

**2.1 Overall Construction
Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0937	1.0630	0.7405	1.9600e-003	0.2442	0.0412	0.2854	0.0857	0.0379	0.1237	0.0000	177.3265	177.3265	0.0425	7.1300e-003	180.5159
2023	0.0577	0.5714	0.6957	1.3800e-003	0.1057	0.0247	0.1304	0.0232	0.0228	0.0459	0.0000	122.3387	122.3387	0.0346	2.2600e-003	123.8789
Maximum	0.0937	1.0630	0.7405	1.9600e-003	0.2442	0.0412	0.2854	0.0857	0.0379	0.1237	0.0000	177.3265	177.3265	0.0425	7.1300e-003	180.5159

LTP Flood Protection Project - Sonoma-San Francisco County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	1. Demolition	Demolition	9/5/2022	9/23/2022	5	15	
2	2. Site Preparation	Site Preparation	10/1/2022	11/4/2022	5	25	
3	3. Grading/Excavation	Grading	10/15/2022	1/27/2023	5	75	
4	4. Trenching/Foundation	Trenching	11/12/2022	1/20/2023	5	50	
5	5. Building Exterior	Building Construction	11/12/2022	7/21/2023	5	180	
6	6. Paving	Paving	9/30/2023	11/3/2023	5	25	

Acres of Grading (Site Preparation Phase): 20

Acres of Grading (Grading Phase): 139.92

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
1. Demolition	Concrete/Industrial Saws	1	1.30	81	0.73
1. Demolition	Excavators	1	8.00	158	0.38
1. Demolition	Rubber Tired Dozers	1	8.00	247	0.40
1. Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
2. Site Preparation	Graders	1	6.40	187	0.41
2. Site Preparation	Rubber Tired Dozers	1	6.40	247	0.40
2. Site Preparation	Tractors/Loaders/Backhoes	1	6.40	97	0.37
3. Grading/Excavation	Excavators	1	0.70	158	0.38
3. Grading/Excavation	Graders	1	5.30	187	0.41
3. Grading/Excavation	Rubber Tired Dozers	1	3.20	247	0.40

LTP Flood Protection Project - Sonoma-San Francisco County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3. Grading/Excavation	Scrapers	2	5.30	367	0.48
3. Grading/Excavation	Tractors/Loaders/Backhoes	1	4.00	97	0.37
4. Trenching/Foundation	Concrete/Industrial Saws	1	0.70	81	0.73
4. Trenching/Foundation	Excavators	1	8.00	158	0.38
4. Trenching/Foundation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
5. Building Exterior	Cranes	1	1.80	231	0.29
5. Building Exterior	Excavators	2	5.30	158	0.38
5. Building Exterior	Forklifts	1	2.00	89	0.20
5. Building Exterior	Generator Sets	0	8.00	84	0.74
5. Building Exterior	Tractors/Loaders/Backhoes	1	2.70	97	0.37
5. Building Exterior	Welders	1	0.10	46	0.45
6. Paving	Cement and Mortar Mixers	1	1.60	9	0.56
6. Paving	Pavers	1	6.40	130	0.42
6. Paving	Paving Equipment	1	6.40	132	0.36
6. Paving	Rollers	1	6.40	80	0.38
6. Paving	Tractors/Loaders/Backhoes	1	6.40	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
1. Demolition		4		138.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
2. Site Preparation		3		0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
3. Grading/Excavation		6		1,700.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
4. Trenching/Foundation		3		0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
5. Building Exterior		6		0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
6. Paving		5		0.00	10.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

LTP Flood Protection Project - Sonoma-San Francisco County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 1. Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0150	0.0000	0.0150	2.2700e-003	0.0000	2.2700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.4700e-003	0.0953	0.0725	1.3000e-004		4.6300e-003	4.6300e-003		4.2800e-003	4.2800e-003	0.0000	11.7340	11.7340	3.6200e-003	0.0000	11.8244
Total	9.4700e-003	0.0953	0.0725	1.3000e-004	0.0150	4.6300e-003	0.0196	2.2700e-003	4.2800e-003	6.5500e-003	0.0000	11.7340	11.7340	3.6200e-003	0.0000	11.8244

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.2000e-004	0.0125	2.5500e-003	4.0000e-005	1.1500e-003	1.1000e-004	1.2600e-003	3.1000e-004	1.0000e-004	4.2000e-004	0.0000	4.3986	4.3986	1.2000e-004	6.9000e-004	4.6087
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.9000e-004	2.1000e-004	2.2600e-003	1.0000e-005	5.9000e-004	0.0000	5.9000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4950	0.4950	2.0000e-005	2.0000e-005	0.5005
Total	6.1000e-004	0.0127	4.8100e-003	5.0000e-005	1.7400e-003	1.1000e-004	1.8500e-003	4.7000e-004	1.0000e-004	5.8000e-004	0.0000	4.8936	4.8936	1.4000e-004	7.1000e-004	5.1092

LTP Flood Protection Project - Sonoma-San Francisco County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 2. Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0708	0.0000	0.0708	0.0343	0.0000	0.0343	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0142	0.1573	0.0754	1.8000e-004		6.7500e-003	6.7500e-003		6.2100e-003	6.2100e-003	0.0000	16.0531	16.0531	5.1900e-003	0.0000	16.1829
Total	0.0142	0.1573	0.0754	1.8000e-004	0.0708	6.7500e-003	0.0776	0.0343	6.2100e-003	0.0405	0.0000	16.0531	16.0531	5.1900e-003	0.0000	16.1829

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	2.8000e-004	3.0100e-003	1.0000e-005	7.8000e-004	1.0000e-005	7.9000e-004	2.1000e-004	0.0000	2.1000e-004	0.0000	0.6600	0.6600	3.0000e-005	2.0000e-005	0.6673
Total	3.8000e-004	2.8000e-004	3.0100e-003	1.0000e-005	7.8000e-004	1.0000e-005	7.9000e-004	2.1000e-004	0.0000	2.1000e-004	0.0000	0.6600	0.6600	3.0000e-005	2.0000e-005	0.6673

LTP Flood Protection Project - Sonoma-San Francisco County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 3. Grading/Excavation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1412	0.0000	0.1412	0.0445	0.0000	0.0445	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0494	0.5457	0.3417	8.2000e-004		0.0218	0.0218		0.0201	0.0201	0.0000	72.3024	72.3024	0.0234	0.0000	72.8870
Total	0.0494	0.5457	0.3417	8.2000e-004	0.1412	0.0218	0.1630	0.0445	0.0201	0.0646	0.0000	72.3024	72.3024	0.0234	0.0000	72.8870

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.9000e-003	0.1130	0.0230	4.1000e-004	0.0104	9.9000e-004	0.0114	2.8400e-003	9.5000e-004	3.7900e-003	0.0000	39.7360	39.7360	1.1100e-003	6.2800e-003	41.6344
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5800e-003	1.1400e-003	0.0124	3.0000e-005	3.2400e-003	2.0000e-005	3.2600e-003	8.6000e-004	2.0000e-005	8.8000e-004	0.0000	2.7226	2.7226	1.0000e-004	9.0000e-005	2.7527
Total	4.4800e-003	0.1142	0.0355	4.4000e-004	0.0136	1.0100e-003	0.0146	3.7000e-003	9.7000e-004	4.6700e-003	0.0000	42.4587	42.4587	1.2100e-003	6.3700e-003	44.3870

LTP Flood Protection Project - Sonoma-San Francisco County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 3. Grading/Excavation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0990	0.0000	0.0990	0.0214	0.0000	0.0214	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0166	0.1781	0.1190	3.0000e-004		7.0300e-003	7.0300e-003		6.4700e-003	6.4700e-003	0.0000	26.2887	26.2887	8.5000e-003	0.0000	26.5013
Total	0.0166	0.1781	0.1190	3.0000e-004	0.0990	7.0300e-003	0.1061	0.0214	6.4700e-003	0.0278	0.0000	26.2887	26.2887	8.5000e-003	0.0000	26.5013

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.8000e-004	0.0331	7.1800e-003	1.4000e-004	3.7700e-003	2.3000e-004	4.0000e-003	1.0300e-003	2.2000e-004	1.2500e-003	0.0000	13.8316	13.8316	3.9000e-004	2.1900e-003	14.4929
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3000e-004	3.6000e-004	4.1300e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1800e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	0.9649	0.9649	3.0000e-005	3.0000e-005	0.9749
Total	1.0100e-003	0.0334	0.0113	1.5000e-004	4.9500e-003	2.4000e-004	5.1800e-003	1.3400e-003	2.3000e-004	1.5700e-003	0.0000	14.7965	14.7965	4.2000e-004	2.2200e-003	15.4678

LTP Flood Protection Project - Sonoma-San Francisco County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 4. Trenching/Foundation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.9700e-003	0.0647	0.1017	1.5000e-004		3.3100e-003	3.3100e-003		3.0600e-003	3.0600e-003	0.0000	13.5438	13.5438	4.1600e-003	0.0000	13.6478
Total	6.9700e-003	0.0647	0.1017	1.5000e-004		3.3100e-003	3.3100e-003		3.0600e-003	3.0600e-003	0.0000	13.5438	13.5438	4.1600e-003	0.0000	13.6478

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3000e-004	3.9000e-004	4.2200e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.9240	0.9240	4.0000e-005	3.0000e-005	0.9342
Total	5.3000e-004	3.9000e-004	4.2200e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.9240	0.9240	4.0000e-005	3.0000e-005	0.9342
Total	5.3000e-004	3.9000e-004	4.2200e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.9240	0.9240	4.0000e-005	3.0000e-005	0.9342

LTP Flood Protection Project - Sonoma-San Francisco County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 4. Trenching/Foundation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.7700e-003	0.0248	0.0436	7.0000e-005		1.2200e-003	1.2200e-003		1.1300e-003	1.1300e-003	0.0000	5.8074	5.8074	1.7800e-003	0.0000	5.8519
Total	2.7700e-003	0.0248	0.0436	7.0000e-005		1.2200e-003	1.2200e-003		1.1300e-003	1.1300e-003	0.0000	5.8074	5.8074	1.7800e-003	0.0000	5.8519

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e-004	1.5000e-004	1.6500e-003	0.0000	4.7000e-004	0.0000	4.7000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3860	0.3860	1.0000e-005	1.0000e-005	0.3900
Total	2.1000e-004	1.5000e-004	1.6500e-003	0.0000	4.7000e-004	0.0000	4.7000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3860	0.3860	1.0000e-005	1.0000e-005	0.3900

LTP Flood Protection Project - Sonoma-San Francisco County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 6. Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.8200e-003	0.0672	0.0960	1.5000e-004		3.3400e-003	3.3400e-003		3.0800e-003	3.0800e-003	0.0000	12.8639	12.8639	4.1400e-003	0.0000	12.9672
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	6.8200e-003	0.0672	0.0960	1.5000e-004		3.3400e-003	3.3400e-003		3.0800e-003	3.0800e-003	0.0000	12.8639	12.8639	4.1400e-003	0.0000	12.9672

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.8000e-004	3.9000e-004	4.4700e-003	1.0000e-005	1.2800e-003	1.0000e-005	1.2800e-003	3.4000e-004	1.0000e-005	3.5000e-004	0.0000	1.0453	1.0453	4.0000e-005	3.0000e-005	1.0562
Total	5.8000e-004	3.9000e-004	4.4700e-003	1.0000e-005	1.2800e-003	1.0000e-005	1.2800e-003	3.4000e-004	1.0000e-005	3.5000e-004	0.0000	1.0453	1.0453	4.0000e-005	3.0000e-005	1.0562

Appendix C

**Wetland Delineation and Biological
Resource Mapping**

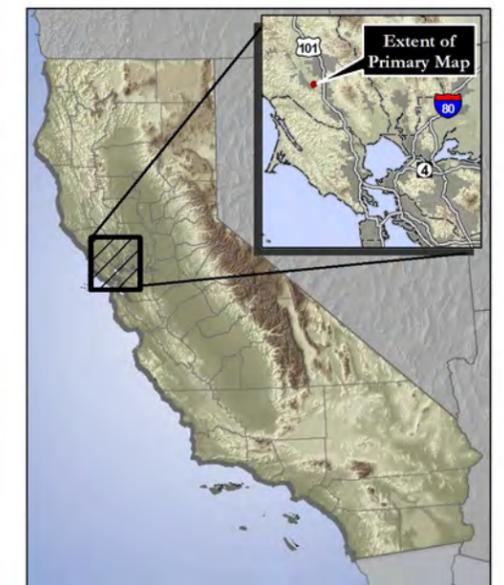
FIGURE 2 POTENTIAL JURISDICTIONAL WATERS OF THE U.S. Laguna Treatment Plant Project

Sonoma County, California

Legend

- Delineation Point (P1)
- Culvert
- Potential Jurisdictional Wetland (2.007 ac.)*
- 2019 Study Area - ~45 ac.
- 2009 Study Area - ~25 ac. (Verified)
- 2016 Boundary - ~38 ac. (Verified in 2017)*

* Wetlands within previous boundary were verified in 2017. Areas outside previous boundary were surveyed for wetlands in 2019, resulting in the identification of additional 0.104 acre (southern edge of study area).



Preliminary Jurisdictional Determination for the Laguna Treatment Plant, Pursuant to Section 404 Clean Water Act
Sonoma County, California
(38.36896, -122.76533)

U.S. Army
Corps of Engineers
San Francisco District
Regulatory Division

Accurate as depicted in legend

Preliminary Jurisdictional Determination verified only within the designated Study Area. All drainages, as depicted in the legend and on the map, are potential waters of the U.S. All boundaries shown for these features are approximate.

File ID: SPN-2009-00304 Date: June 29, 2021 In 1 Sheet



Data Sources: VNLC, 2019 | GHD 2015
USDA NAIP 2014 | Gap, 1998
GIS/Cartography by VNLC, Jan. 2020
Map File: Wets_344_B-L_2021-0212.mxd

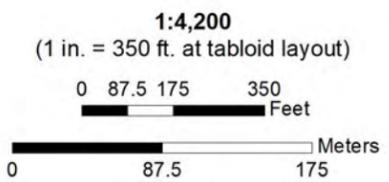
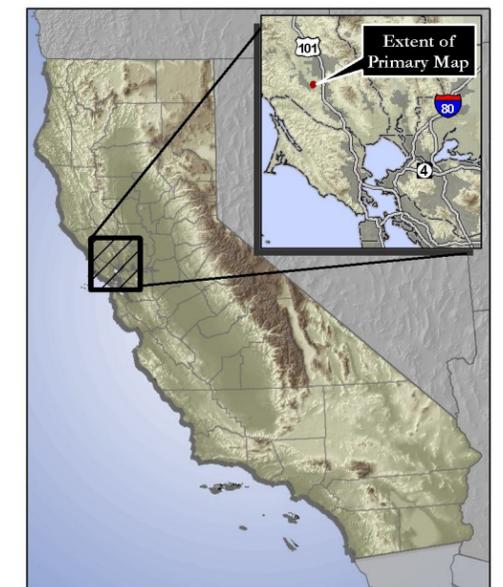


FIGURE 4
HABITAT TYPES
Laguna Treatment Plant Project
 Sonoma County, California

Legend

- Study area (45.5 acres)
- Habitat Types**
- Ruderal Annual Grassland (29.1 ac.)
- Harding Grass Perennial Grassland (1.6 ac.)
- Seasonal Wetland (1.5 ac.)
- Native Plant Restoration Site (1.4 ac.)
- Landscaped (1.3 ac.)
- Riparian Woodland (0.6 ac.)
- Perennial Wetland (0.5 ac.)
- Developed (9.5 ac.)*

* All un-colored areas



1:4,200

(1 in. = 350 ft. at tabloid layout)



Data Sources: VNLC, 2017 | USFWS 2015
 ESRI 2015 | Gap, 1998 | USGS DEM
 GIS/Cartography by VNLC, Jan. 2019-Nov. 2015
 Map File: Habitat_344_B-L_2019-0108.mxd

**FIGURE 5
POTENTIAL CTS PRESENCE
Laguna Treatment Plant Project**

Sonoma County, California

Legend

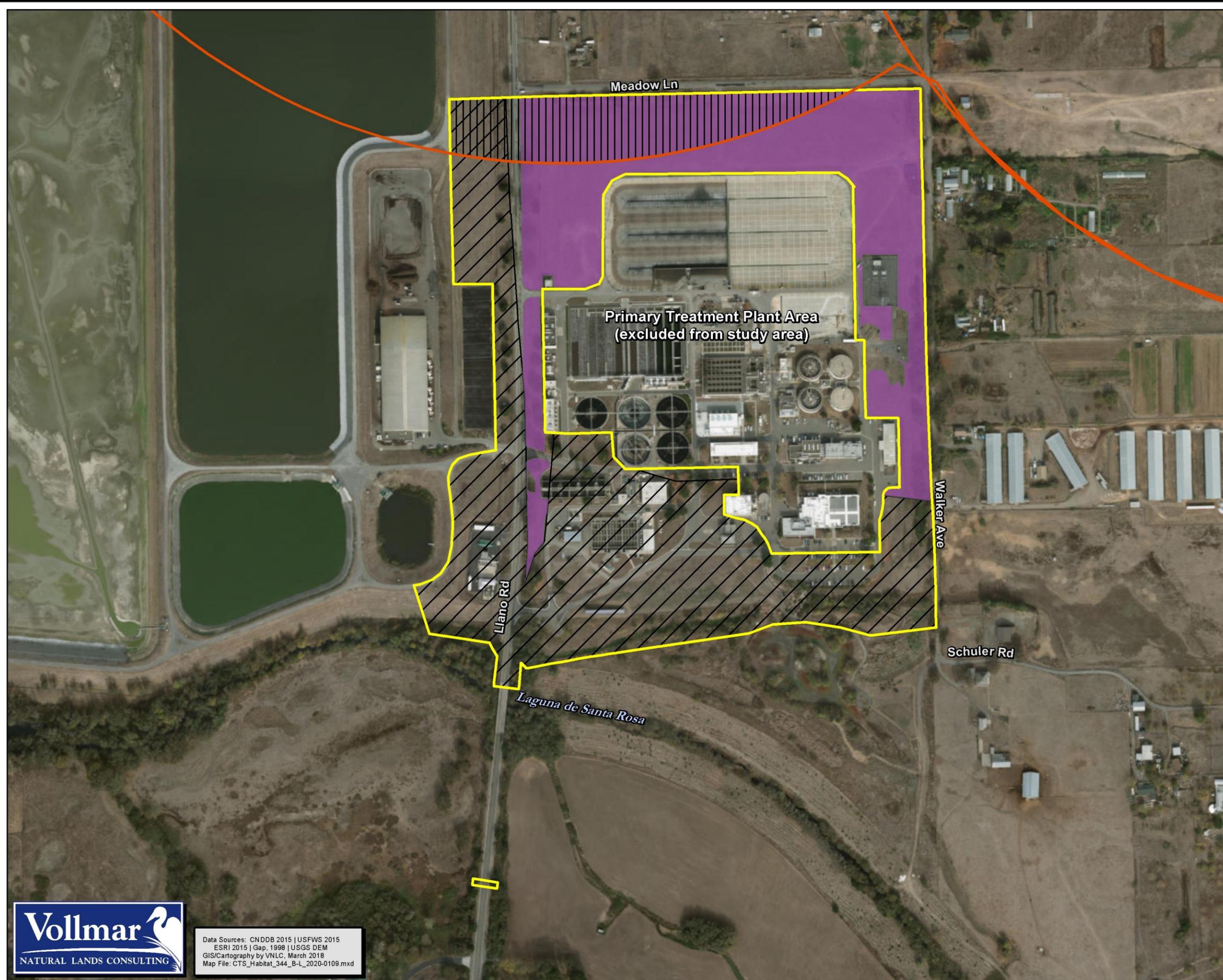
- Marginal Potential Upland Habitat (32.9 ac.)
- 2,200 feet buffer from CTS breeding pond
- Study area within 100-year floodplain*
- Area within 2,200 feet of CTS breeding pond and within marginal potential upland habitat
- Study area (45.5 acres)

*Not considered CTS upland habitat



1:4,200

(1 in. = 350 ft. at tabloid layout)



Data Sources: CNDD8 2015 | USFWS 2015
ESRI 2015 | Gap, 1998 | USGS DEM
GIS/Cartography by VNLC, March 2018
Map File: CTS_Habitat_344_B-L_2020-0109.mxd



ghd.com

→ **The Power of Commitment**