



# TCSD WASTEWATER TREATMENT PLANT IMPROVEMENT PROJECT

CWSRF PROJECT NO. C-06-8247-210

## OVERVIEW

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Project Progress

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Base Bid Items

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Additive Alternate Items

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Cost Estimate

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Next Steps

## PROJECT PROGRESS

Application for  
Planning Funds (2016)

Planning Phase (2018)

Application for  
Construction Funds (2020)

Project Design (2021)

Construction Phase  
(March 2023)

BASE BID

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Storage Lagoon Relining

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Sludge Lagoon Aerator

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RAS Pump Station

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Electrical and SCADA  
Improvements





## STORAGE LAGOON RELINING

# SLUDGE LAGOON AERATOR

## Description

- Replacement of the aerators in the sludge lagoon with two 20 HP floating brush aerators.

## Purpose

- Mixing and aeration in the sludge lagoon are currently inefficient and difficult to operate.
- Fully mixing the stored sludge will:
  - Improve treatment
  - Reduce odors
  - Improve operations and sludge removal

## RAS PUMP INSTALLATION

### Description

- Installation of new pumps that will remove solids from the clarifiers.

### Purpose

- New RAS/WAS pumps are flow-paced to provide precise control of recycling and wasting of solids.
- Improves biological treatment process.

# ELECTRICAL IMPROVEMENTS

## Electrical upgrades for:

- RAS pumps
- Floating brush aerators
- SCADA improvements



## ALTERNATE ITEMS

### Site Paving

- Driveway
- Aeration basin
- Pump House

### Effluent Line Relocation

DATE: 03/05/2021 11:39:22 AM BY: JMB (JAMES M. BLACK) PROJECT: TUOLUMNE CITY SANITARY DISTRICT WASTEWATER TREATMENT PLANT UPGRADES SHEET: GRADING AND DRAINAGE PLAN

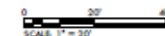


# LEGEND

- PROPOSED PCC PAVEMENT
- PROPOSED SHUTTERED SEE DETAIL 3, SHEET D-02
- EXISTING CONCRETE
- PROPOSED CURB SEE DETAIL 1, SHEET D-02

## NOTES

1. CONTRACTORS MUST NOT HAVE CONTACT WITH OR BLOCK FLOW FROM THE POND WAS FILING.
2. STORAGE LAGOON SHALL BE EXISTED BY TCD STAFF. CONTRACTOR SHALL COORDINATE THE TIMING OF THE SHUTTERED WITH THE TCD OPERATIONS STAFF. A MINIMUM OF 14 DAYS NOTICE SHALL BE PROVIDED BY THE CONTRACTOR PRIOR TO STARTING WORK IN THE STORAGE LAGOON.



**BLACKWATER**  
CONSULTING ENGINEERS, INC.  
602 LYELL DRIVE, MODOesto, CA 95356 PH: 209.332.1820



REV	DATE	DESCRIPTION	APP

PROJECT NO.  
**J14068**  
DESIGNED BY  
JMB  
DRAWN BY  
SPD  
CHECKED BY  
JMB  
DATE  
**MARCH 2021**



TUOLUMNE CITY SANITARY DISTRICT  
WASTEWATER TREATMENT PLANT UPGRADES

GRADING AND DRAINAGE PLAN

VERIFY SCALES  
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DRAWING NO.  
**C-06**  
SHEET NO.  
**08 OF 36**

# DRIVEWAY PAVING





# AERATION BASIN PAVING





# PUMPHOUSE PAVING





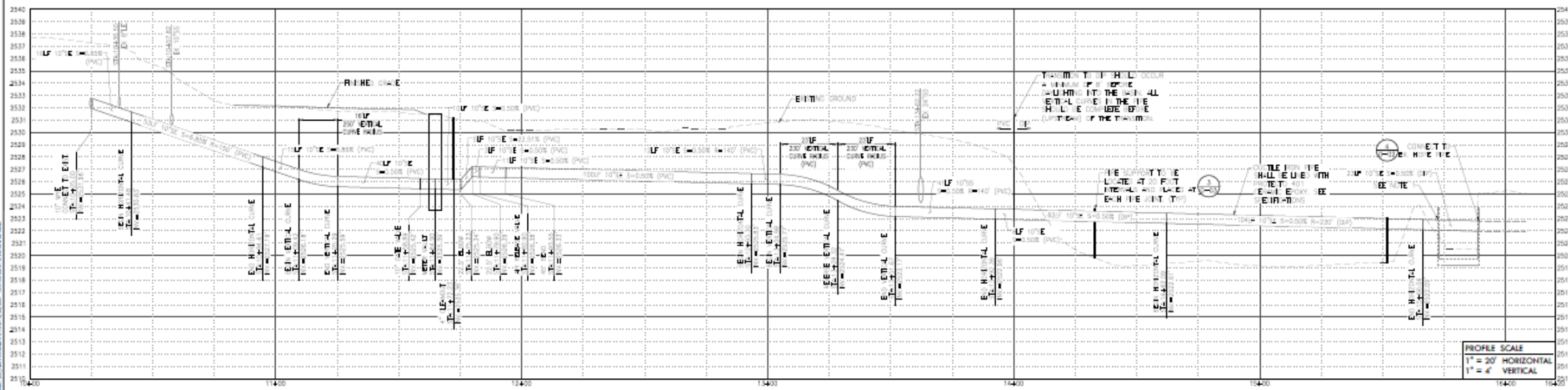
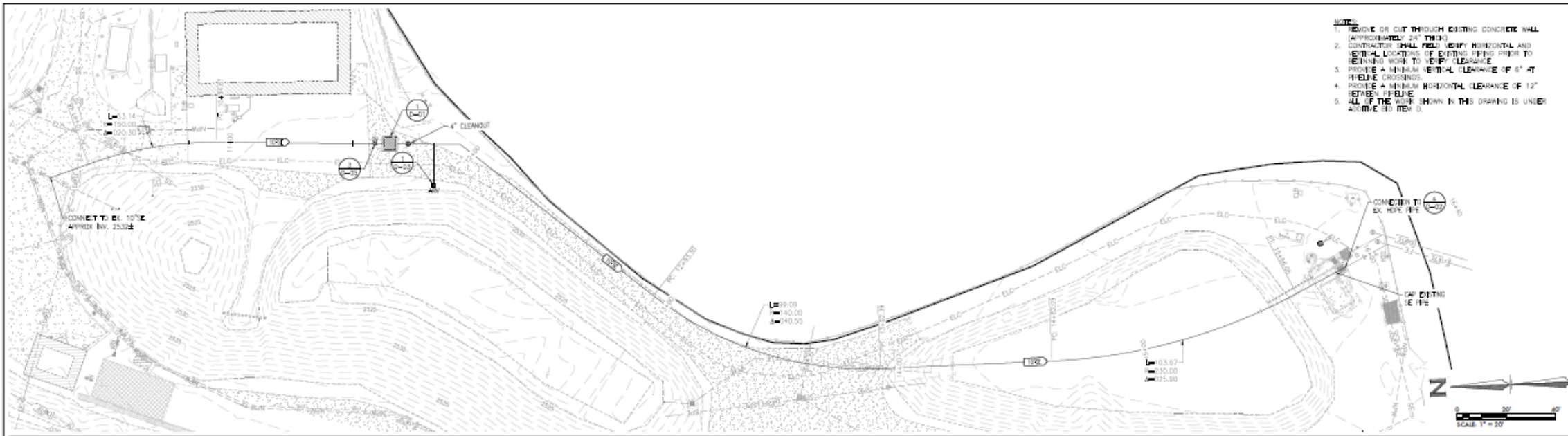
## EFFLUENT FLOW METER AND LINE RELOCATION

### Description

- Installation of a new effluent flow meter and realignment of outfall line.

### Purpose

- Improve accuracy of flow measurement and process control.
- Improve hydraulic flow characteristics of plant effluent.



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TUOLUMNE CITY SANITARY DISTRICT  
WASTEWATER TREATMENT PLANT UPGRADES

PIPING PLAN AND PROFILE  
ADDITIVE BID ITEM D

VERIFY SCALES  
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DRAWING NO.  
C-05  
SHEET NO.  
07 OF 36

# ESTIMATED COSTS

Item	Total Cost
<b>Base Bid</b>	
1 - Mobilization/Demobilization	\$56,465
2 - Storage Lagoon Shotcrete Relining	\$250,000
3 - Sludge Lagoon Aerator Installation	\$80,000
4 - RAS Pump Installation	\$500,000
5 - Electrical Updates	\$299,300
<b>Estimated Construction Cost</b>	<b>\$1,185,765</b>
10% construction contingency	\$118,577
Preparation of Bid Documents	\$85,000
Consultant assistance during bidding	\$5,000
Engineering services during construction	\$20,000
Environmental Services	\$20,000
Construction Management (10%)	\$118,577
<b>Project Total</b>	<b>\$1,552,918</b>
<b>Alternate Bid Items</b>	
<b>(Prices Increased to Include Contingency, Mobilization, and Construction Management)</b>	
A - Driveway Concrete Paving	\$18,048
B - Aeration Basin Concrete Paving	\$201,010
C - Pump House Concrete Paving	\$6,565
D - Effluent Flow Meter and Line Relocation	\$316,651
<b>Project Total with Alternate Bid Items</b>	<b>\$2,095,192</b>

# SUMMARY

Base Bid	Alternate Items	Cost Estimate	Funding Amount
Storage Lagoon Relining Sludge Lagoon Aerators RAS/WAS Pump Station Electrical and SCADA Improvements	Driveway Paving Aeration Basin Paving Pumphouse Paving Effluent Flow Meter and Outfall Line Relocation	Construction: \$1,185,765 Contingency: \$118,577 Soft Costs Remaining: \$163,577 Alternate Bid Items: \$542,274	Construction: \$1,188,135 Contingency: \$168,214 Soft Costs: \$325,799 Total: \$1,682,148