



# **RODEO SANITARY DISTRICT**

## **5-YEAR CAPITAL IMPROVEMENT PROGRAM FISCAL YEAR 2023-2024 UPDATE**

**District Board of Directors  
Janet Callaghan – President  
Maureen Brennan – Vice President  
Tara Shaia – Secretary  
Angela Noble  
Robert Russey**

**Prepared by:  
Steven S. Beall, P.E., District Manager**

**March 2024**

# INTRODUCTION

## BACKGROUND

The District's Capital Improvements Program (CIP) encompasses all engineered studies and projects related to improvements, repairs, rehabilitation, and replacement of the District's Water Pollution Control Plant (WCPC) and collection system. The 5-year CIP update is a planning tool that manifests proactive asset management, facilitates financial planning (sewer service charges and cash flow), promotes organizational balance (staff's ability to manage and support the workload), and informs the Board and the public about the District's infrastructure needs, upcoming projects, and proposed capital expenditures.

A draft 5-year CIP update is presented periodically for Board review and direction. A final version, including this 5-year CIP update document, will be presented for Board adoption. The last CIP update was the Comprehensive Wastewater Master Plan completed in 2013.

The strategic goal of the CIP is to complete, as measured by Board acceptance, at least two major capital projects every fiscal year.

## DISCUSSION

The following tables summarize major plant projects, collection system projects, and strategic initiative studies planned for the next five fiscal years, along with the estimated total project cost for each project and the fiscal year in which construction is anticipated to occur.

<b>Plant Projects</b>	<b>Est. Total Project Cost</b>	<b>Fiscal Year</b>
Treatment Processes		
Primary Clarifier Project	\$650,000	23-25
RAS/WAS Pump Upgrade	\$100,000	23-25
Buried and Above Ground Valve Replacement Project	\$100,000	23-25
Aeration Basin Rehab	\$150,000	23-25
RAS/WAS Control System Upgrade	\$200,000	24-25
Outdoor Wood Structure Rehab	\$100,000	25-26
Effluent Pump Station VFD Replacement Project	\$200,000	25-26
Operations Building Remodel	\$750,000	25-26
Secondary Clarifiers Weir/Laundry/Scum Beach Rehab	\$1,000,000	26-27
Nutrient Control Process Improvements	\$300,000	26-27
Digester Concrete and Cover Rehab	\$500,000	27-28
Major Electrical MCC Rehab	\$750,000	28-29
<b>Total</b>	<b>\$4,800,000</b>	

<b>Collection System Projects</b>	<b>Estimated Total Project Cost</b>	<b>Fiscal Year</b>
Pipelines & Manholes		
4 <sup>th</sup> Street to 3 <sup>rd</sup> Street Realignment Project	\$500,000	24-25
Investment Avenue to 3 <sup>rd</sup> Street Realignment	\$500,000	25-26
2028 Priority Improvements	\$500,000	27-28
<b>Total</b>	<b>\$1,500,000</b>	

<b>Strategic Initiatives</b>	<b>Est. Total Project Cost</b>	<b>Fiscal Year</b>
Masterplan Update	\$300,000	24-26
Climate Resiliency Study	\$100,000	24-25
<b>Total</b>	<b>\$400,000</b>	

## **FINANCIAL IMPACT**

### *Expenditures Summary*

Total estimated project costs across the five-year plan cusp \$6.7 million. Accordingly, annual expenditures average over \$1.34 million.

### *Revenue Summary*

Capital projects expenditures are offset by revenues from a combination of sources including sewer service charges, ad valorem property tax, debt, and possibly grants. For Fiscal Year 2023-2024 the Board approved a 13% increase for the Sewer Services Fees to primarily offset inflation and the major increases in the costs of goods and services. During Fiscal Year 2023-2024, the District is preparing a financial plan that includes revenue and capacity charges. The District is planning to increase the capacity charge from \$5,000 per residential equivalent unit to about \$10,400. The Capacity Charge has yet to be approved by the Board.

The District is also in the process of creating a five-year financial plan to accommodate the staffing need, CIP, and to address the continued inflation of the costs of goods and services. This financial plan will lay out a series of Sewer Service Fee increases over five years. The increases map ranges from 6-10 % per year depending on the District's needs.

For the short term CIP needs (2024-2025), the District is in the process of securing a bank loan for \$1.8 million. The debt service for this loan can come from existing Capital income. The District paid off two loans in 2015 and 2016. These two loans totaled \$248,900 in annual payments. Once these loans were paid off, and due to no sunset clause, the income derived from these loans was placed into the Capital Account. This was done to help increase the Capital Account reserve. With the reserve near the desired level of \$2 million, and the CIP needs for the District, this income can be used to secure the \$1.8 million loan (~\$150,000 annually).

The capital funding plan generally excludes Capacity Charges for new connections since they vary annually and are therefore difficult to forecast. The revenue derived from the Capacity Charge will be used for small CIP projects that are mainly reactive in nature.

Immediately following this introduction are project summary sheets arranged in the same order as the projects appear on the 5-year CIP update. Each summary sheet provides further detail about the project including its scope description, justification for being in the CIP, estimated total project cost, and anticipated schedule.





## **RODEO SANITARY DISTRICT**

5-YEAR CAPITAL IMPROVEMENT PROGRAM  
FISCAL YEAR 2023-2024 UPDATE

# **PLANT PROJECTS**

# RODEO SANITARY DISTRICT PLANT PROJECTS

**PROJECT NAME:** Primary Clarifier Project

**DESCRIPTION:**

Project elements include:

- Replacement of Primary Clarifier bridge, walkway, center platform.
- Replace remainder of steel handrail at Headworks structure.
- Removal of CMU brick wall and replace with aluminum handrail at Headworks.
- Concrete coating of deteriorated Headworks deck.
- Concrete coating of above water to 1-foot below water line of Primary Clarifier.
- Remove and replace electrical service for center drive.
- Replace all sludge mechanism wear parts and provide District with one full set of wear parts for future.

**JUSTIFICATION:** The existing Primary Clarifier was installed in 1957, with the clarifier mechanism being replaced in 2005. The clarifier bridge, walkway and platform are at the end of its useful service life. The steel is severely corroded and not designed to current seismic standards. If there was a significant seismic event, it is likely the clarifier bridge would fail and subsequently render the clarifier out of service for a year or so.

The Headworks was significantly rehabilitated with the Bar Screen Project. The District was not able to complete the rehab due to funding. The remaining elements are for safety and concrete restoration for longevity.

**ESTIMATED TOTAL PROJECT COST:** \$750,000 (\$650,000 for FY 24-25)

**ANTICIPATED SCHEDULE:**

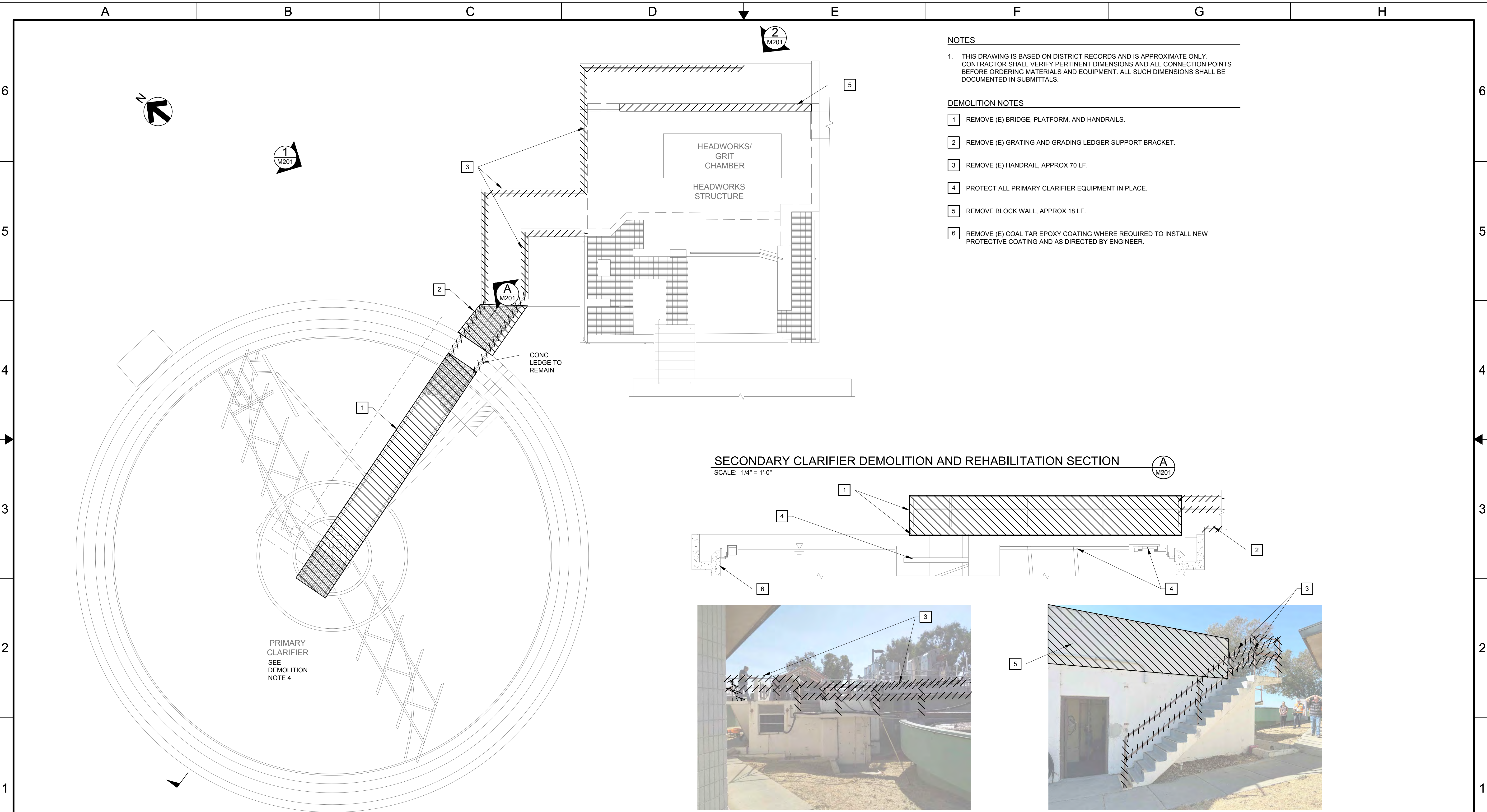
Design and Bid – FY23-24

Construction – FY 24-25



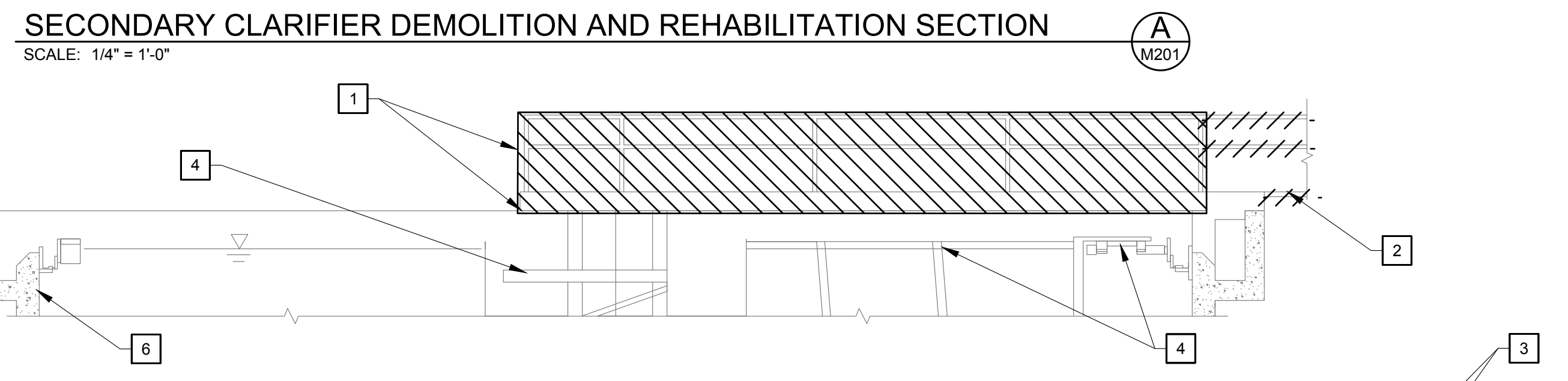


File Name: S:\common\projects\230-Rodeo SD\003-2024 WPCP Improvements\05-Design\Drawings\230-003-M200-Primary Clarifier.dwg Plotted By: ERIC JONES Plot Date: 3/1/2024 11:07 AM



- NOTES**
- THIS DRAWING IS BASED ON DISTRICT RECORDS AND IS APPROXIMATE ONLY. CONTRACTOR SHALL VERIFY PERTINENT DIMENSIONS AND ALL CONNECTION POINTS BEFORE ORDERING MATERIALS AND EQUIPMENT. ALL SUCH DIMENSIONS SHALL BE DOCUMENTED IN SUBMITTALS.
- DEMOLITION NOTES**
- REMOVE (E) BRIDGE, PLATFORM, AND HANDRAILS.
  - REMOVE (E) GRATING AND GRADING LEDGER SUPPORT BRACKET.
  - REMOVE (E) HANDRAIL, APPROX 70 LF.
  - PROTECT ALL PRIMARY CLARIFIER EQUIPMENT IN PLACE.
  - REMOVE BLOCK WALL, APPROX 18 LF.
  - REMOVE (E) COAL TAR EPOXY COATING WHERE REQUIRED TO INSTALL NEW PROTECTIVE COATING AND AS DIRECTED BY ENGINEER.

**PRIMARY CLARIFIER AND HEADWORK STRUCTURE DEMOLITION AND REHABILITATION PLAN**  
SCALE: 1/4" = 1'-0"



**PHOTO - HEADWORKS STRUCTURE**  
SCALE: NO SCALE



**PHOTO - HEADWORKS STRUCTURE**  
SCALE: NO SCALE

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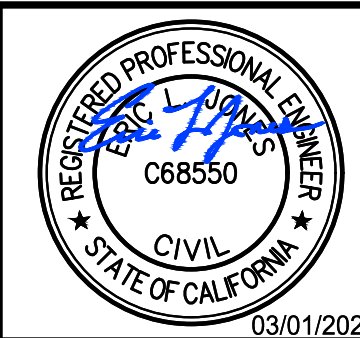
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DATE: 3/1/2024  
DRAWN BY: BF/AGP  
DESIGNED BY: BF  
PROJ. MGR.: ELJ

REV	DESCRIPTION	DATE	APVD

RODEO SANITARY DISTRICT

2024 WPCP IMPROVEMENT PROJECT

PRIMARY CLARIFIER AND HEADWORKS STRUCTURE DEMOLITION AND REHABILITATION PLAN, SECTION, AND PHOTOS



M201  
DRAWING NUMBER  
SHEET 5 OF 15





PHOTO - HEADWORKS STRUCTURE 3  
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PHOTO - HEADWORKS STRUCTURE 4  
SCALE: NO SCALE M203



PHOTO - HEADWORKS STRUCTURE 5  
SCALE: NO SCALE M203

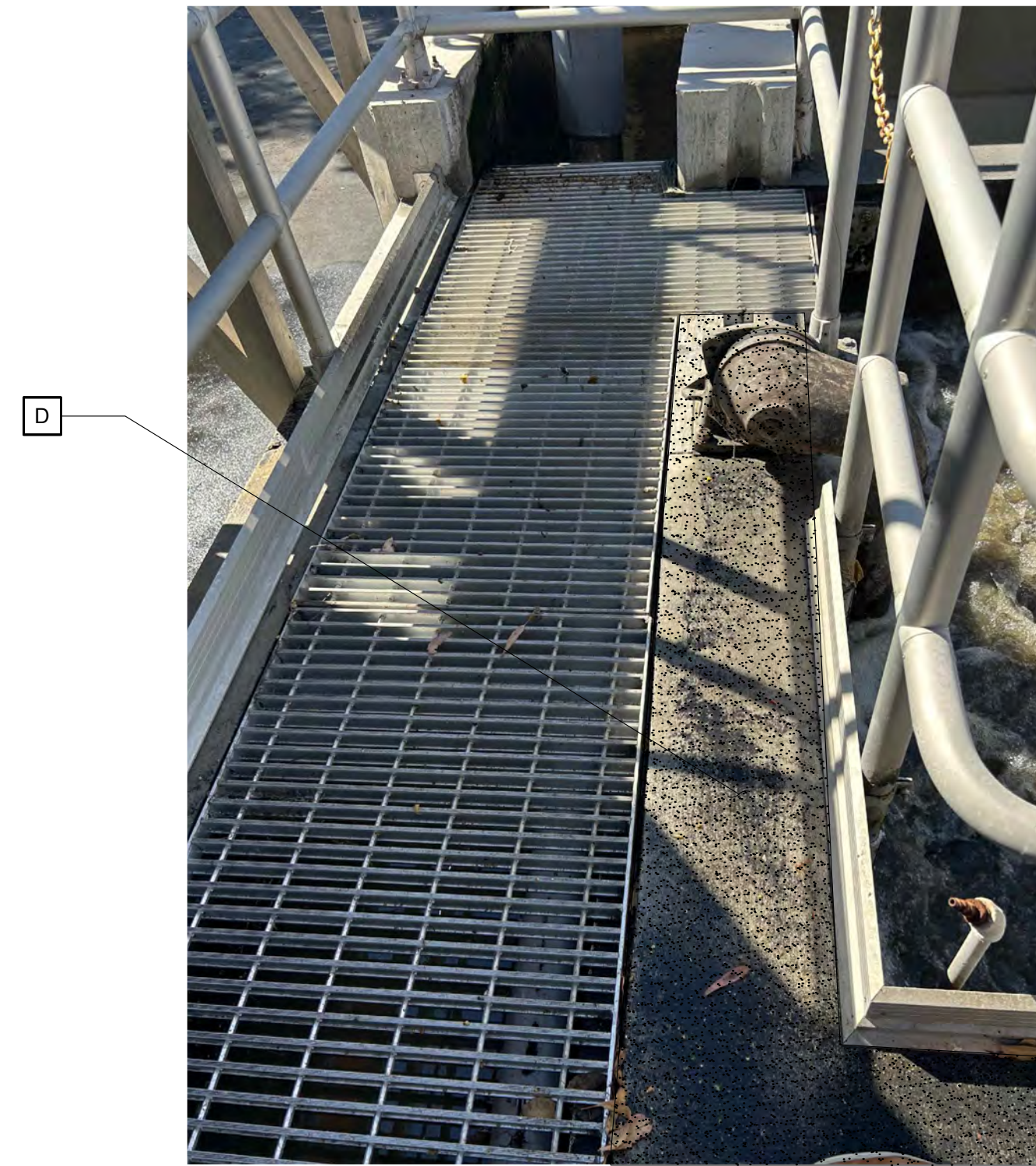
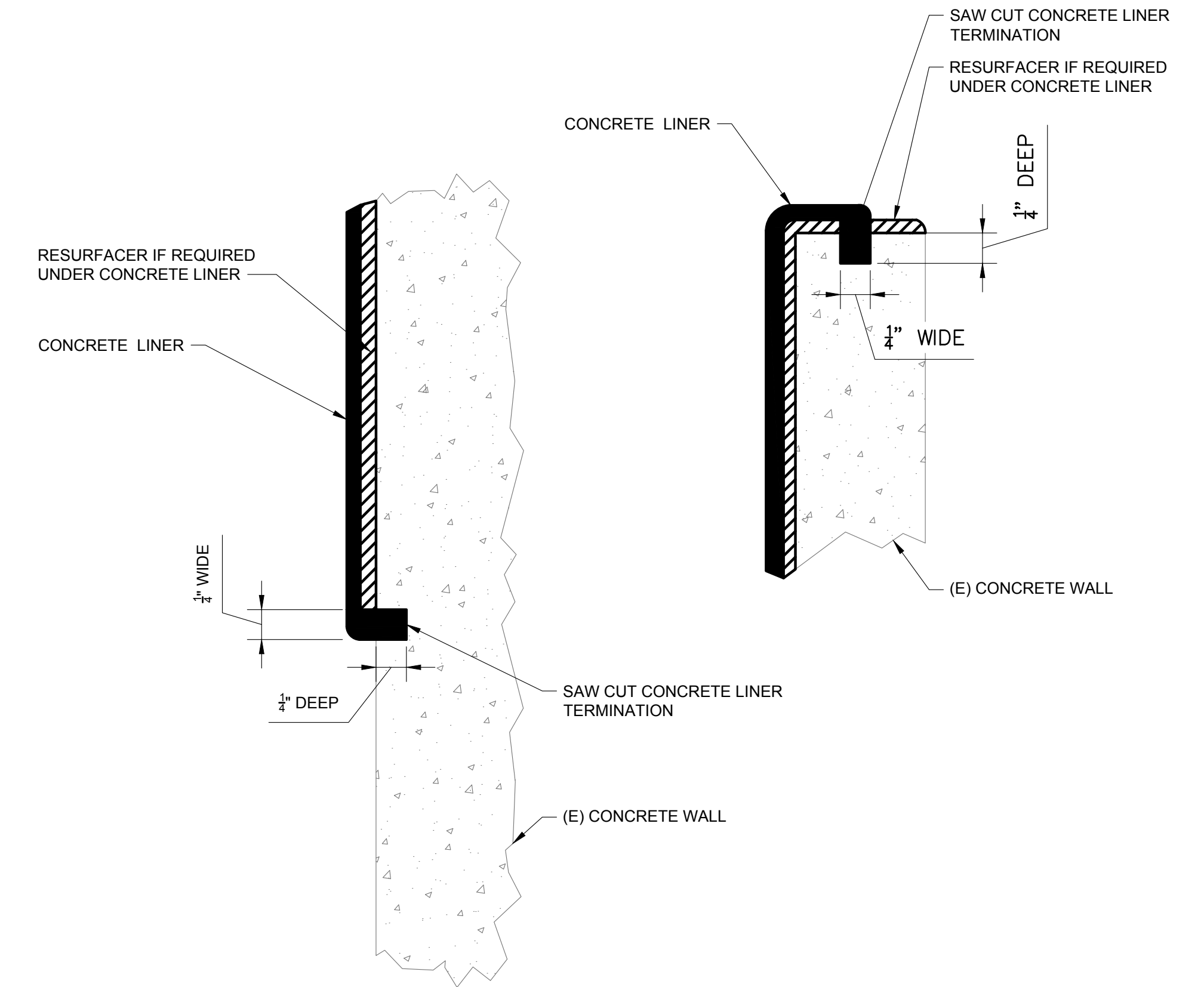


PHOTO - HEADWORKS STRUCTURE 6  
SCALE: NO SCALE M203

CONSTRUCTION/REHABILITATION NOTES

D RESURFACE CONCRETE WITH ANTI-SLIP MIX ADD ON, APPROX 280 SF. PRIOR TO RESURFACING, CONTRACTOR SHALL PROVIDE A SAMPLE FOR THE DISTRICT TO INSPECT AND CONFIRM THE AMOUNT OF ANTI-SLIP ADDER.



NOTES

1. CONTRACTOR SHALL COMPLETELY REMOVE (E) COAL TAR EPOXY COATING WHERE REQUIRED AND REPAIR WITH RESURFACER AS SPECIFIED IN SECTION 09900.
2. TROWEL CONCRETE LINER INTO SAW CUT TERMINATION TO DISPLACE ENTRAPPED AIR.

CONCRETE COATING DETAIL A

SCALE: NO SCALE

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PROJ. MGR.: ELJ

REV	DESCRIPTION	DATE	APVD

RODEO SANITARY DISTRICT

2024 WPCP IMPROVEMENT PROJECT

HEADWORKS STRUCTURE REHABILITATION PHOTOS & CONCRETE COATING DETAIL

REGISTERED PROFESSIONAL ENGINEER  
ERIC L. JONES  
C68550  
CIVIL  
STATE OF CALIFORNIA  
03/01/2024

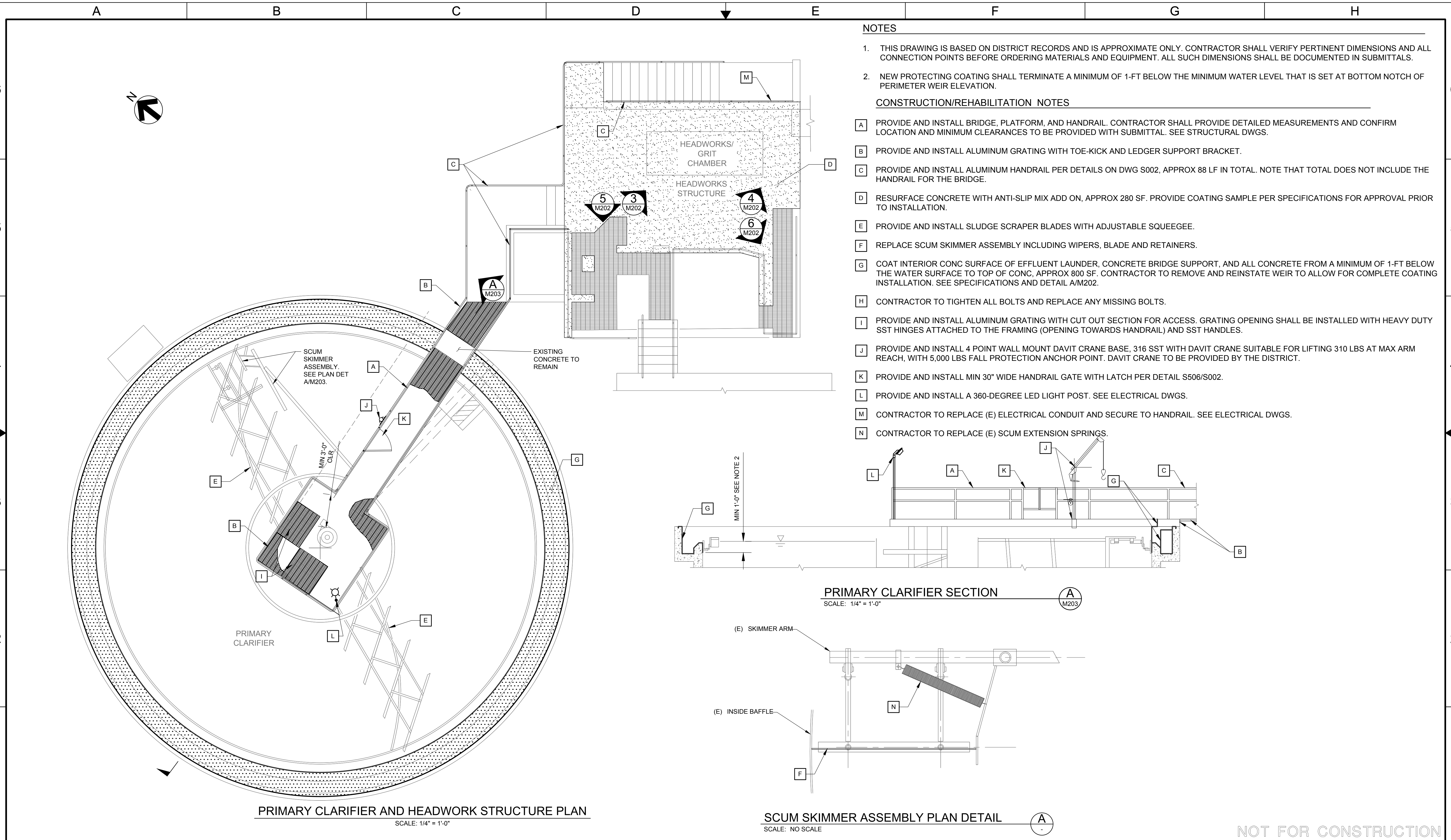
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SHEET 6 OF 15



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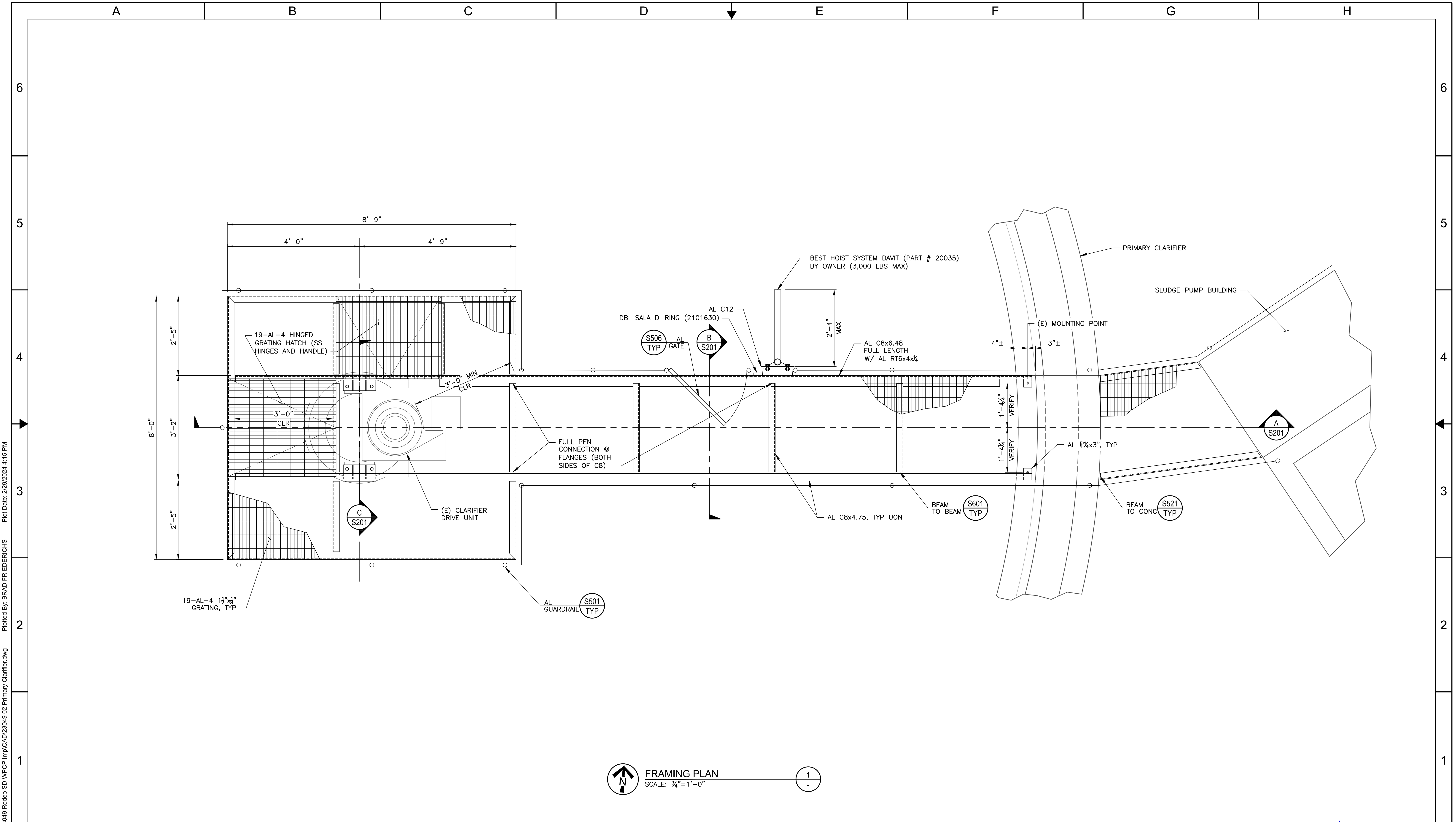
**NOTES**

1. THIS DRAWING IS BASED ON DISTRICT RECORDS AND IS APPROXIMATE ONLY. CONTRACTOR SHALL VERIFY PERTINENT DIMENSIONS AND ALL CONNECTION POINTS BEFORE ORDERING MATERIALS AND EQUIPMENT. ALL SUCH DIMENSIONS SHALL BE DOCUMENTED IN SUBMITTALS.
  2. NEW PROTECTING COATING SHALL TERMINATE A MINIMUM OF 1-FT BELOW THE MINIMUM WATER LEVEL THAT IS SET AT BOTTOM NOTCH OF PERIMETER WEIR ELEVATION.
- CONSTRUCTION/REHABILITATION NOTES**
- A PROVIDE AND INSTALL BRIDGE, PLATFORM, AND HANDRAIL. CONTRACTOR SHALL PROVIDE DETAILED MEASUREMENTS AND CONFIRM LOCATION AND MINIMUM CLEARANCES TO BE PROVIDED WITH SUBMITTAL. SEE STRUCTURAL DWGS.
  - B PROVIDE AND INSTALL ALUMINUM GRATING WITH TOE-KICK AND LEDGER SUPPORT BRACKET.
  - C PROVIDE AND INSTALL ALUMINUM HANDRAIL PER DETAILS ON DWG S002, APPROX 88 LF IN TOTAL. NOTE THAT TOTAL DOES NOT INCLUDE THE HANDRAIL FOR THE BRIDGE.
  - D RESURFACE CONCRETE WITH ANTI-SLIP MIX ADD ON, APPROX 280 SF. PROVIDE COATING SAMPLE PER SPECIFICATIONS FOR APPROVAL PRIOR TO INSTALLATION.
  - E PROVIDE AND INSTALL SLUDGE SCRAPER BLADES WITH ADJUSTABLE SQUEEGEE.
  - F REPLACE SCUM SKIMMER ASSEMBLY INCLUDING WIPERS, BLADE AND RETAINERS.
  - G COAT INTERIOR CONC SURFACE OF EFFLUENT LAUNDER, CONCRETE BRIDGE SUPPORT, AND ALL CONCRETE FROM A MINIMUM OF 1-FT BELOW THE WATER SURFACE TO TOP OF CONC, APPROX 800 SF. CONTRACTOR TO REMOVE AND REINSTATE WEIR TO ALLOW FOR COMPLETE COATING INSTALLATION. SEE SPECIFICATIONS AND DETAIL A/M202.
  - H CONTRACTOR TO TIGHTEN ALL BOLTS AND REPLACE ANY MISSING BOLTS.
  - I PROVIDE AND INSTALL ALUMINUM GRATING WITH CUT OUT SECTION FOR ACCESS. GRATING OPENING SHALL BE INSTALLED WITH HEAVY DUTY SST HINGES ATTACHED TO THE FRAMING (OPENING TOWARDS HANDRAIL) AND SST HANDLES.
  - J PROVIDE AND INSTALL 4 POINT WALL MOUNT DAVIT CRANE BASE, 316 SST WITH DAVIT CRANE SUITABLE FOR LIFTING 310 LBS AT MAX ARM REACH, WITH 5,000 LBS FALL PROTECTION ANCHOR POINT. DAVIT CRANE TO BE PROVIDED BY THE DISTRICT.
  - K PROVIDE AND INSTALL MIN 30" WIDE HANDRAIL GATE WITH LATCH PER DETAIL S506/S002.
  - L PROVIDE AND INSTALL A 360-DEGREE LED LIGHT POST. SEE ELECTRICAL DWGS.
  - M CONTRACTOR TO REPLACE (E) ELECTRICAL CONDUIT AND SECURE TO HANDRAIL. SEE ELECTRICAL DWGS.
  - N CONTRACTOR TO REPLACE (E) SCUM EXTENSION SPRINGS.

<p>10569 OLD PLACERVILLE RD SACRAMENTO, CA 95827 OFFICE: (916)364-1490 www.hydroscience.com</p>	<p>PAPER SIZE: 22X34 (ANSI D)</p> <p>0" 1/2" 1"</p> <p>THIS BAR IS 1 INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY.</p>	<p>JOB NO.: 230-003</p> <p>DATE: 3/1/2024</p> <p>DRAWN BY: BF/AGP</p> <p>DESIGNED BY: BF</p> <p>PROJ. MGR.: ELJ</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>REV</th> <th>DESCRIPTION</th> <th>DATE</th> <th>APVD</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>			REV	DESCRIPTION	DATE	APVD					<p><b>RODEO SANITARY DISTRICT</b></p>	<p><b>2024 WPCP IMPROVEMENT PROJECT</b></p>	<p><b>PRIMARY CLARIFIER AND HEADWORKS STRUCTURE PLAN AND SECTION</b></p>		<p><b>M203</b></p> <p>DRAWING NUMBER</p>
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**FRAMING PLAN**  
 SCALE: 3/4"=1'-0"

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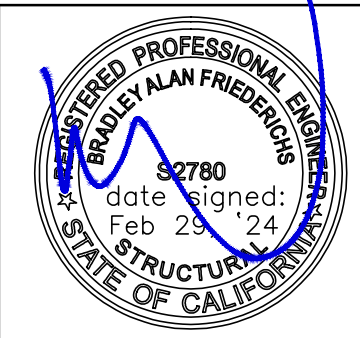
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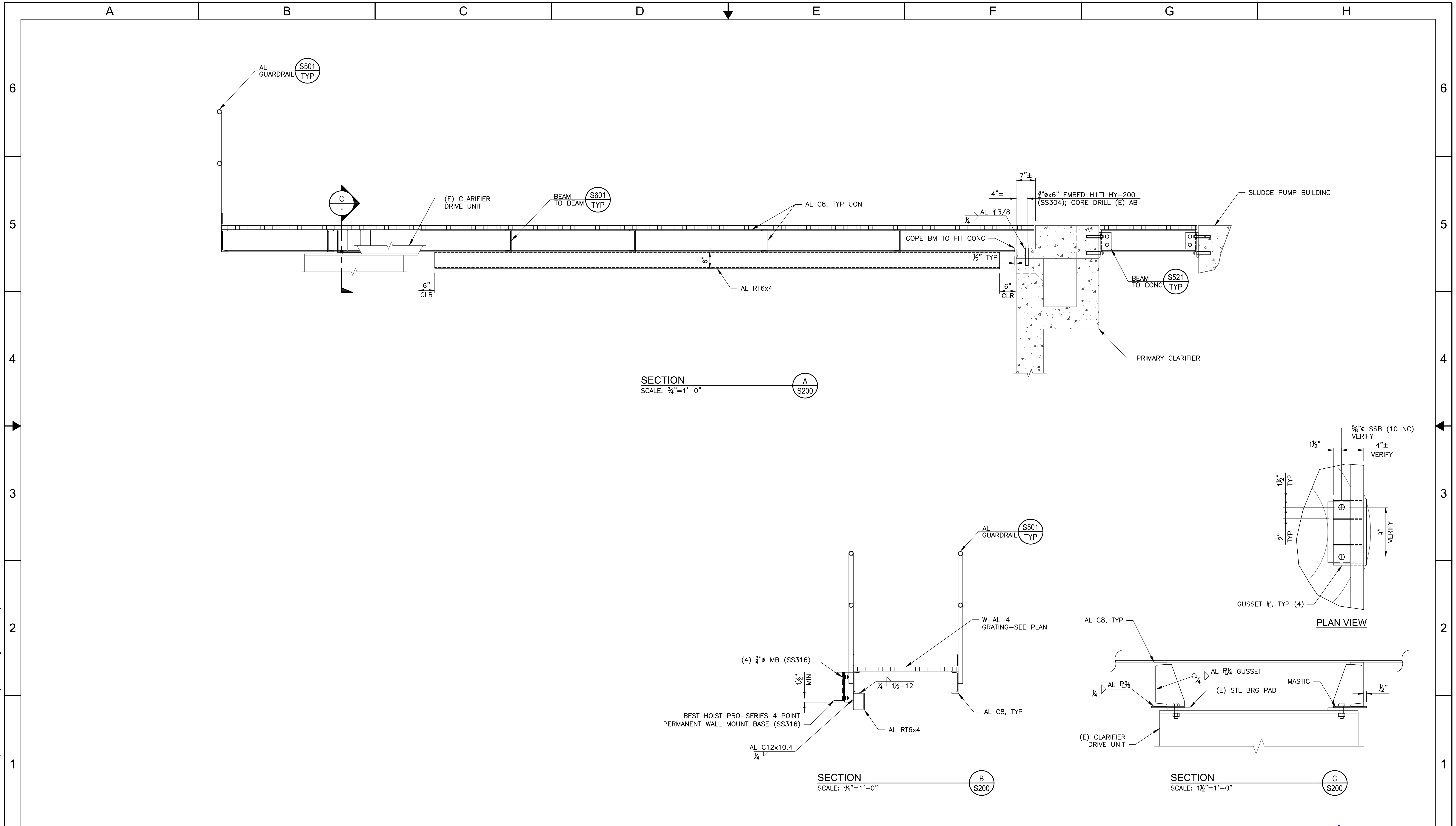
**RODEO SANITARY DISTRICT**  
 2024 WPCP IMPROVEMENT PROJECT

**PRIMARY CLARIFIER BRIDGE STRUCTURAL PLAN**

**S200**  
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 SHEET 10 OF 15



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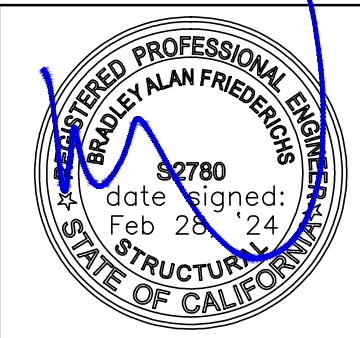
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 PROJ. MGR.:

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RODEO SANITARY DISTRICT

2024 WPCP IMPROVEMENT PROJECT

PRIMARY CLARIFIER BRIDGE STRUCTURAL SECTION & DETAILS

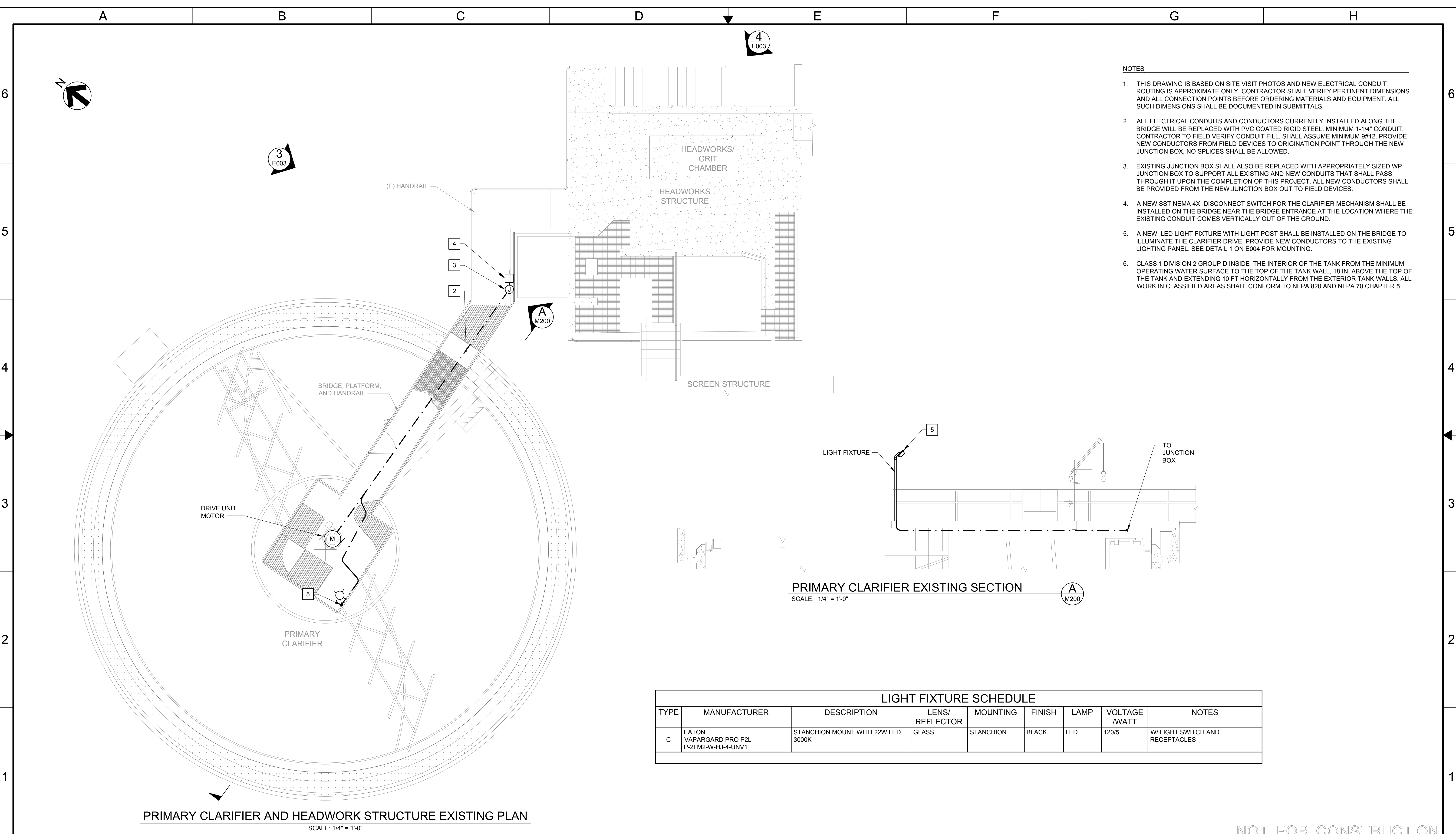


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  2. ALL ELECTRICAL CONDUITS AND CONDUCTORS CURRENTLY INSTALLED ALONG THE BRIDGE WILL BE REPLACED WITH PVC COATED RIGID STEEL MINIMUM 1-1/4" CONDUIT. CONTRACTOR TO FIELD VERIFY CONDUIT FILL. SHALL ASSUME MINIMUM #12. PROVIDE NEW CONDUCTORS FROM FIELD DEVICES TO ORIGINATION POINT THROUGH THE NEW JUNCTION BOX, NO SPLICES SHALL BE ALLOWED.
  3. EXISTING JUNCTION BOX SHALL ALSO BE REPLACED WITH APPROPRIATELY SIZED WP JUNCTION BOX TO SUPPORT ALL EXISTING AND NEW CONDUITS THAT SHALL PASS THROUGH IT UPON THE COMPLETION OF THIS PROJECT. ALL NEW CONDUCTORS SHALL BE PROVIDED FROM THE NEW JUNCTION BOX OUT TO FIELD DEVICES.
  4. A NEW SST NEMA 4X DISCONNECT SWITCH FOR THE CLARIFIER MECHANISM SHALL BE INSTALLED ON THE BRIDGE NEAR THE BRIDGE ENTRANCE AT THE LOCATION WHERE THE EXISTING CONDUIT COMES VERTICALLY OUT OF THE GROUND.
  5. A NEW LED LIGHT FIXTURE WITH LIGHT POST SHALL BE INSTALLED ON THE BRIDGE TO ILLUMINATE THE CLARIFIER DRIVE. PROVIDE NEW CONDUCTORS TO THE EXISTING LIGHTING PANEL. SEE DETAIL 1 ON E004 FOR MOUNTING.
  6. CLASS 1 DIVISION 2 GROUP D INSIDE THE INTERIOR OF THE TANK FROM THE MINIMUM OPERATING WATER SURFACE TO THE TOP OF THE TANK WALL, 18 IN. ABOVE THE TOP OF THE TANK AND EXTENDING 10 FT HORIZONTALLY FROM THE EXTERIOR TANK WALLS. ALL WORK IN CLASSIFIED AREAS SHALL CONFORM TO NFPA 820 AND NFPA 70 CHAPTER 5.

**PRIMARY CLARIFIER EXISTING SECTION**  
 SCALE: 1/4" = 1'-0"

**PRIMARY CLARIFIER AND HEADWORK STRUCTURE EXISTING PLAN**  
 SCALE: 1/4" = 1'-0"

LIGHT FIXTURE SCHEDULE								
TYPE	MANUFACTURER	DESCRIPTION	LENS/REFLECTOR	MOUNTING	FINISH	LAMP	VOLTAGE /WATT	NOTES
C	EATON VAPARGARD PRO P2L P-2LM2-W-HJ-4-UNV1	STANCHION MOUNT WITH 22W LED, 3000K	GLASS	STANCHION	BLACK	LED	120/5	W/ LIGHT SWITCH AND RECEPTACLES

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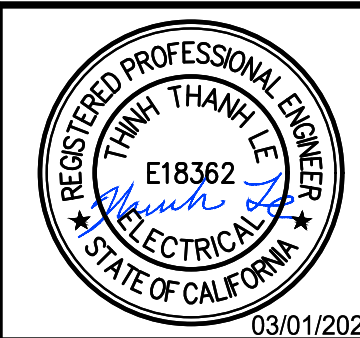
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 DESIGNED BY: MAH  
 PROJ. MGR.: ELJ

REV	DESCRIPTION	DATE	APVD
REVISIONS			

RODEO SANITARY DISTRICT

2024 WPCP IMPROVEMENT PROJECT

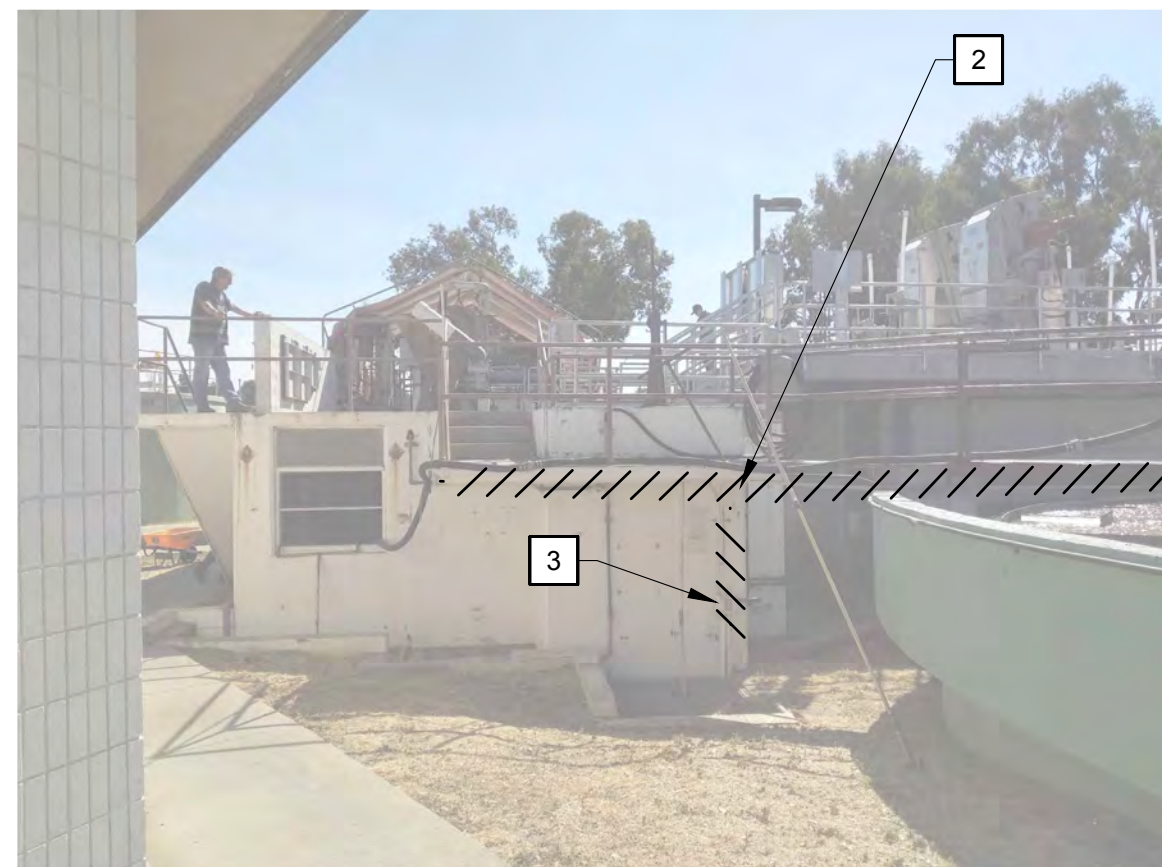
PRIMARY CLARIFIER AND HEADWORKS STRUCTURE ELECTRICAL PLAN, SECTION AND SCHEDULE



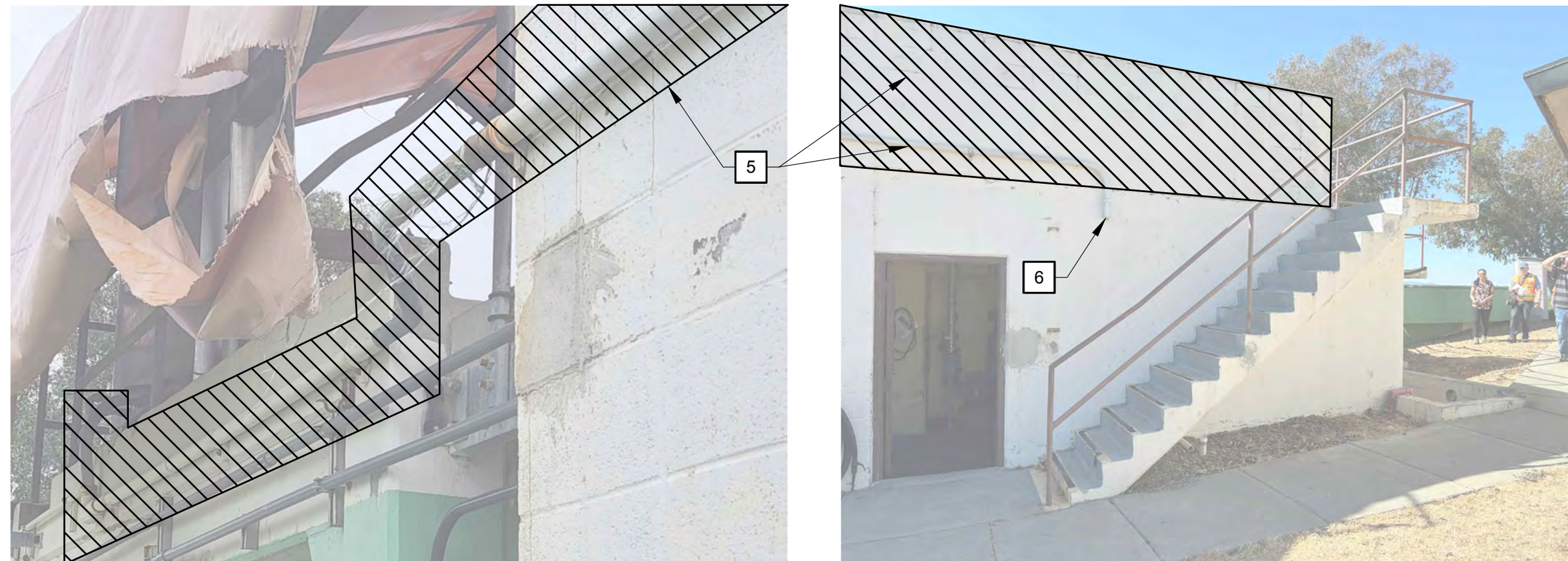
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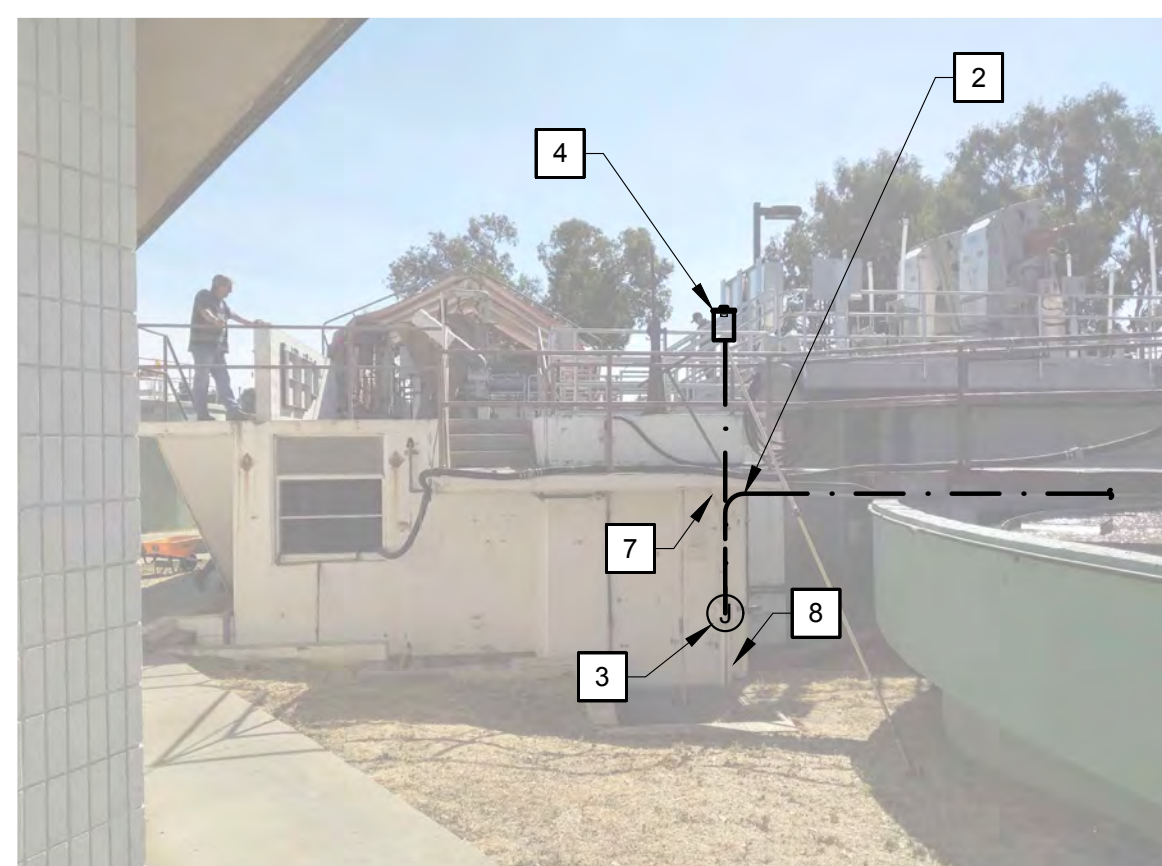
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**PHOTO - HEADWORKS STRUCTURE DEMO** (1)  
 SCALE: NO SCALE



**PHOTO - HEADWORKS STRUCTURE DEMO** (2)  
 SCALE: NO SCALE



**PHOTO - HEADWORKS STRUCTURE** (3)  
 SCALE: NO SCALE



**PHOTO - HEADWORKS STRUCTURE** (4)  
 SCALE: NO SCALE

- NOTES**
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  4. A NEW LOCAL WP DISCONNECT SWITCH FOR THE CLARIFIER MECHANISM SHALL BE INSTALLED ON THE BRIDGE NEAR THE BRIDGE ENTRANCE AT THE LOCATION WHERE THE EXISTING CONDUIT COMES VERTICALLY OUT OF THE GROUND.
  5. SUBWALL AND CONDUIT MOUNTED ON THIS WALL SHALL BE DEMOLISHED.
  6. DEMOLISH AND PROVIDE NEW JUNCTION BOX. REROUTE NEW CONDUIT TO EXISTING FIELD DEVICE. REPLACE EXISTING FLEXIBLE CONDUIT WITH NEW FLEXIBLE CONDUIT.
  7. EXISTING CONDUIT TO REMAIN.
  8. STUB-UP TO REMAIN.

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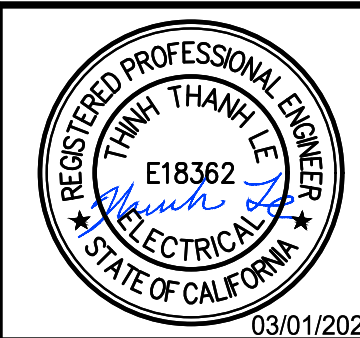
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 DESIGNED BY: MAH  
 PROJ. MGR.: ELJ

REV	DESCRIPTION	DATE	APVD
REVISIONS			

**RODEO SANITARY DISTRICT**

**2024 WPCP IMPROVEMENT PROJECT**

**PRIMARY CLARIFIER AND HEADWORKS STRUCTURE ELECTRICAL PHOTOS**



**E201**  
 DRAWING NUMBER  
 SHEET 14 OF 15



# RODEO SANITARY DISTRICT PLANT PROJECTS

**PROJECT NAME:** RAS/WAS Pump Upgrade

**DESCRIPTION:**

Project elements include:

- Replacement of RAS, WAS, and RAS/WAS pumps.
- Replace valves.

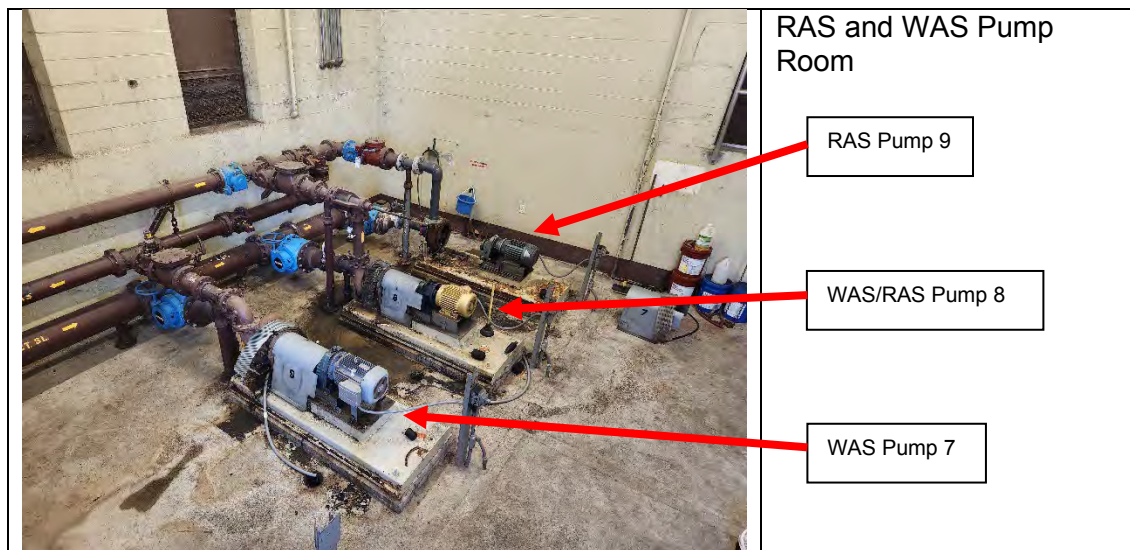
**JUSTIFICATION:** The existing RAS and WAS pumps were installed in 1973 and made by Alice-Chalmers (AC). AC is no longer in business and only survives in successor companies. The District inquired about replacement parts for the pumps. The parts were 40+ weeks from potential delivery and very costly.

Over the years, the RAS/WAS room has flooded destroying the motors for the pumps. This would leave the District in a very bad operational regime necessitating costly temporary equipment. The pumps being installed are dry pit submersible and can operate if the room were to flood with no issue.

**ESTIMATED TOTAL PROJECT COST:** \$100,000

**ANTICIPATED SCHEDULE:**

Construction – FY 23-24





Broken pump casing



Severe Corrosion



Severe Corrosion and crack

# PLANT PROJECTS

**PROJECT NAME:** Buried and Above Ground Valve Replacement

**DESCRIPTION:**

Project elements include:

- Replacement buried valves.
- Replacement of above ground valves.

**JUSTIFICATION:** Most of the below ground valves for the secondary plant were installed in 1973. Most of the above ground valves were installed/replaced in the early 2000s. The below ground valves are far beyond their useful service life and have not functioned for decades. Many of the above ground valves are becoming very difficult to operate.

District staff will replace the above ground valves periodically over the fiscal year. The below ground valves will be replaced when the District contracts for other major work. The below ground valve replacement will be added by change-order.

**ESTIMATED TOTAL PROJECT COST:** \$100,000

**ANTICIPATED SCHEDULE:**

Construction – FY 23-25

# RODEO SANITARY DISTRICT PLANT PROJECTS

**PROJECT NAME:** Aeration Basin Rehab

**DESCRIPTION:**

Project elements include:

- Re-skinning 29 membrane panels.
- Replacement of all gate operators.
- Replacement of all air flow instruments and displays.
- Replace fiberglass grating with aluminum.
- Misc other mechanical items.

**JUSTIFICATION:** The aeration basin received a major upgrade in 2005 with the conversion from coarse bubble to fine bubble diffuser equipment. The membrane panels have a service life of about 15 years. The flow instrumentation equipment has also reached the end of its service life. The gates and fiberglass grating were installed in 2000 and are at the end of their service life.

RSD staff will primarily be responsible for all aspects of this rehab project. IT is anticipated that the District will save several hundred thousand dollars res-skinning the membrane panels and performing the work in-house.

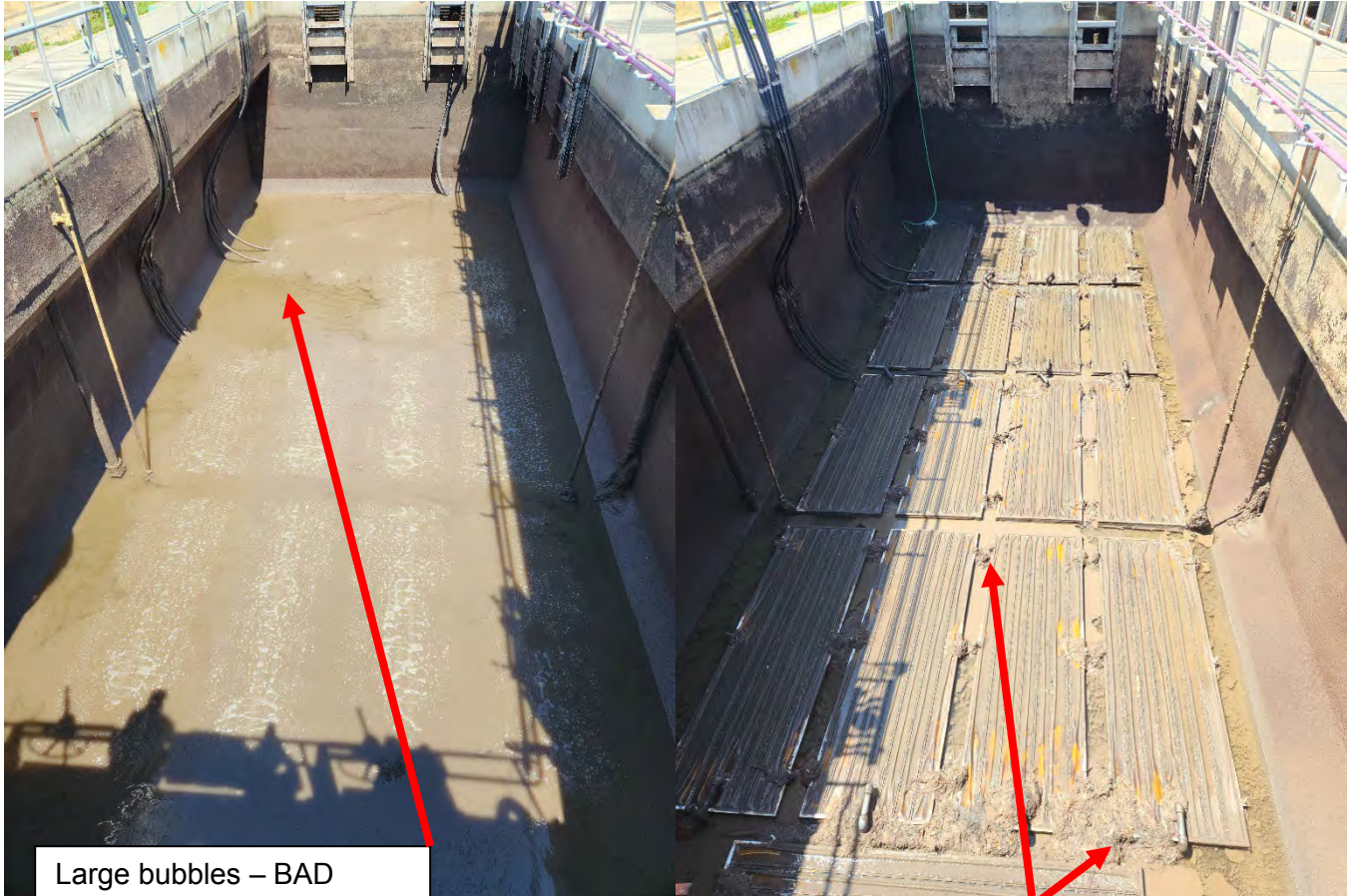
**ESTIMATED TOTAL PROJECT COST:** \$150,000

**ANTICIPATED SCHEDULE:**

Construction – FY 23-25



# BASIN A



Large bubbles – BAD panels

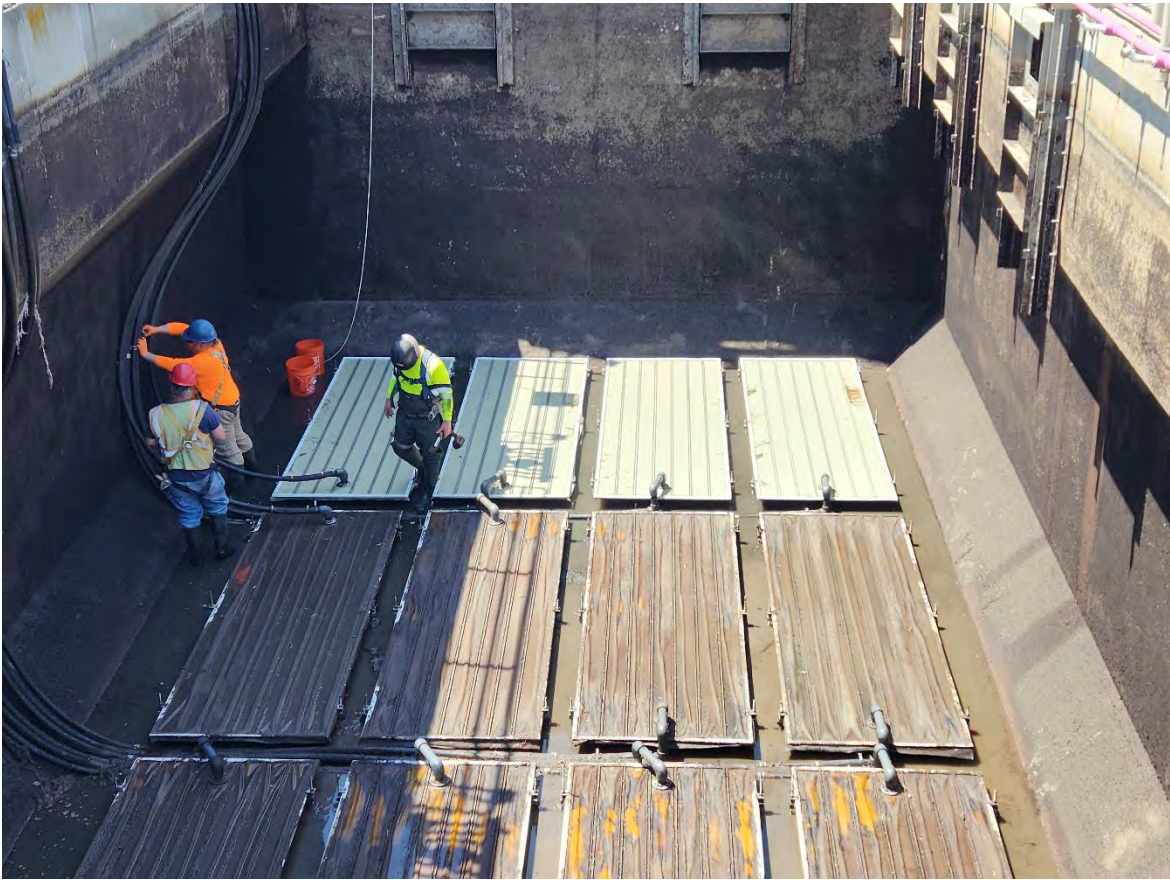
RAGS everywhere!





RSD Staff designed and built cradle for panels

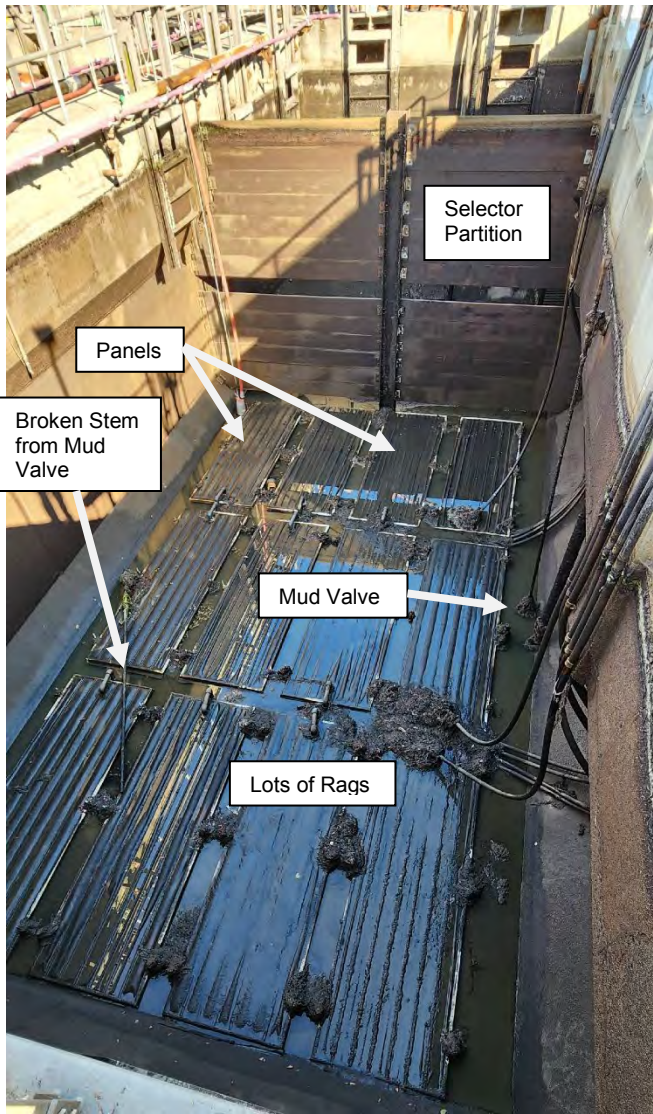




# BASIN B

Four new panels installed





# Air Panel Cleaning and Assembly

Dirty old membrane removal

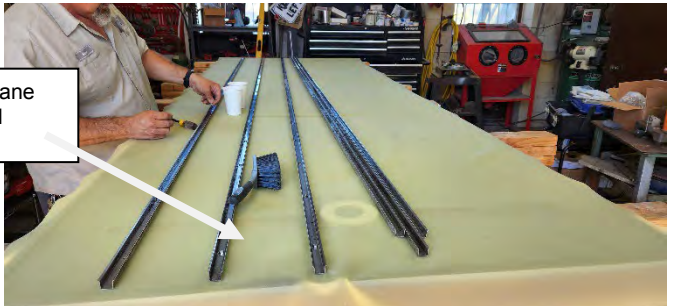




Cleaned parts waiting for



Membrane and rail install



Membranes come in a roll, staff cut to length



Clamp to hold rail until silicon dries





Panel Install  
complete

# RODEO SANITARY DISTRICT PLANT PROJECTS

**PROJECT NAME:** RAS/WAS Control System Upgrade

**DESCRIPTION:**

Project elements include:

- New TWAS control panel
- New RAS/WAS control panel.
- Elevated platform in RAS room.
- Relocate RAS/WAS VFDs and RAS/WAS control panel above RAS Room flood line.

**JUSTIFICATION:** The Waste Activated Sludge Thickener (TWAS) was installed in 2000. The TWAS control panel has been modified over the years and is at the end of its service life. There is no simple way to upgrade the panel. The WAS system also does not operate remotely, necessitating operator input and configuration. The RAS/WAS pump control panel was installed before 2000 and is at the end of its service life. Like the TWAS panel, this RAS/WAS control panel cannot be upgraded. The RAS/WAS control panel also needs to be moved above the RAS room flood line.

When the new panels are built, they will be based on the District's standardized PLC systems that the District stores replacement parts. They will also be upgradable in the future so a new panel will not be needed.

**ESTIMATED TOTAL PROJECT COST:** \$200,000

**ANTICIPATED SCHEDULE:**

Construction – FY 23-25

Flooded RAS Room



# RODEO SANITARY DISTRICT PLANT PROJECTS

**PROJECT NAME:** Outdoor Wood Structure Rehab

**DESCRIPTION:**

Project elements include:

- Rehab wood structure for Effluent Pump Station
- Rehab wood structure for Analyzer Building
- Rehab wood structure for Chemical Feed Building
- Rehab wood structure for Storage Room

Individual project elements may consist of:

- Replace siding as needed.
- Replace doors.
- Replace Roof.
- Enhance weather proofing.
- Condition ground around buildings.

**JUSTIFICATION:** Over the years, in order to maximize limited District funds, the District either purchased Tuff Sheds for small buildings or constructed simple wood frame structures. These structures have been in service for 15-20 years. Performing some wood remediation and repair will extend their service life for at least another 20 years.

**ESTIMATED TOTAL PROJECT COST:** \$100,000

**ANTICIPATED SCHEDULE:**

Construction – FY 25-26



Chemical Feed Building





Analyzer Building



Effluent Pump Station Building



Storage Room / Fish Lab



# RODEO SANITARY DISTRICT PLANT PROJECTS

**PROJECT NAME:** Effluent Pump Station VFD Replacement Project

**DESCRIPTION:**

Project elements include:

- Replace two 100 horsepower effluent wet weather pump VFDs.

**JUSTIFICATION:** The current VFD for the effluent wet weather pumps are manufactured by Robicon. Robicon has been succeeded by a company called Siemens Technology. They have discontinued the Robicon VFD line. As a result, the spare parts for these critical VFDs are getting extremely difficult to find. The last VFD failure (December 2022), the District was still in possession of a spare VFD controller card. This is the more common component for failure. The existing VFD are a duty standby arrangement. The District has two old cards that will be sent out for repair, if possible. The District is still trying to source spare parts with no success.

**ESTIMATED TOTAL PROJECT COST:** \$200,000

**ANTICIPATED SCHEDULE:**

Construction – FY 25-26



100 HP VFDs for large effluent pumps



# RODEO SANITARY DISTRICT PLANT PROJECTS

**PROJECT NAME:** Operations Building Remodel

**DESCRIPTION:**

Project elements include:

- Reconfigure operations building for more office space.
- Reconfigure bathroom and locker for male and female space.
- ADA Compliance.
- Remodel kitchen and break area.

**JUSTIFICATION:**

The Operations Building was constructed in 1973 and has had little improvement or renovations since construction. The operation building's tar and gravel roof was replaced with a membrane roofing system in 2019. The Managers office received a superficial renovation in 2006. The flooring system in the common area and lab was replaced in 2016. Other than these limited improvements, the building remains as it was constructed in 1973.

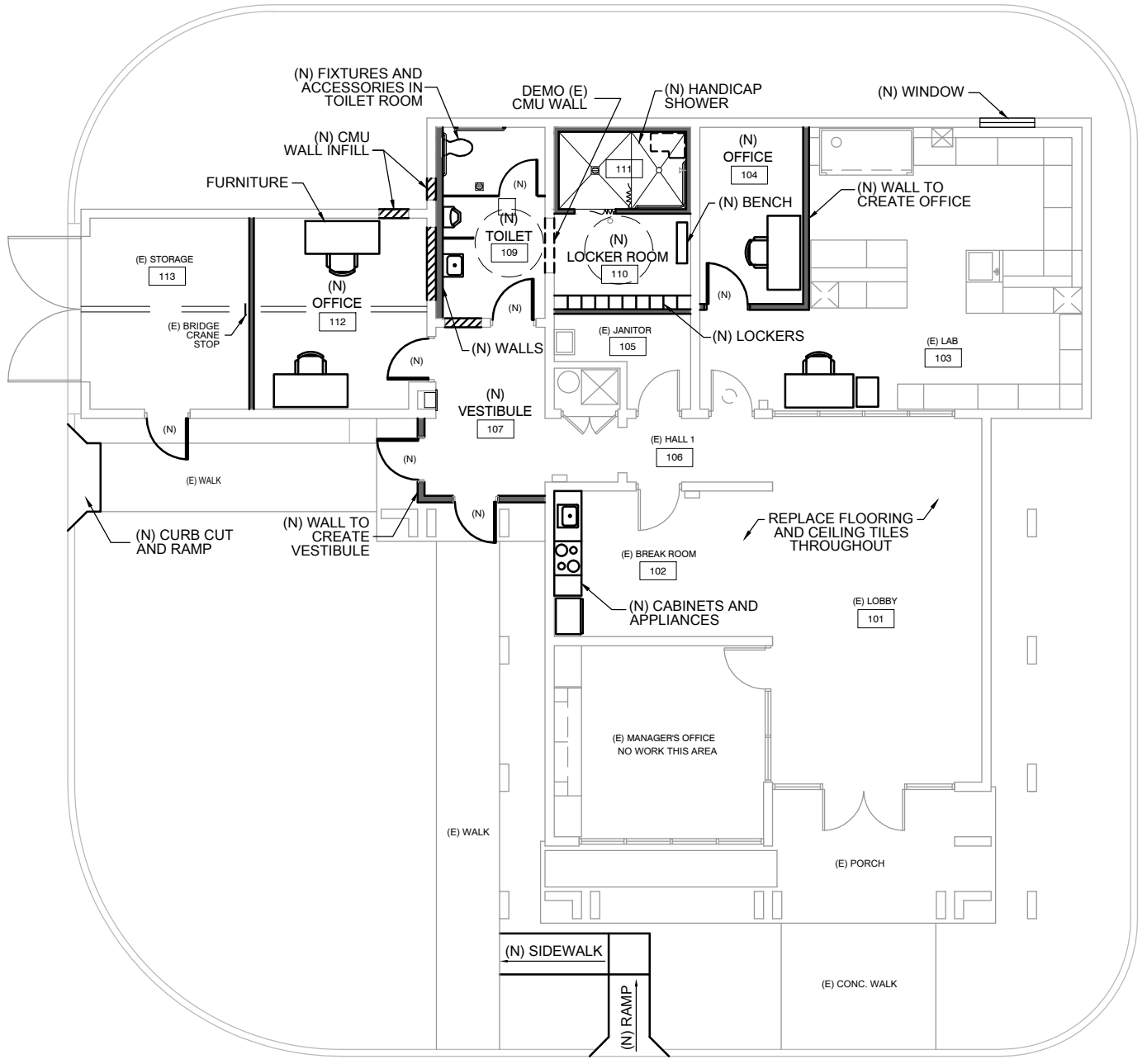
The building is in need of remodel. The building also needs to be brought into compliance with the American Disabilities Act. A handicapped ramp and automatic door would be installed at the administrative building, the bathroom and lab would be remodeled to be consistent with the American Disabilities Act and the storage area would be modified for office and storage space.

As part of a previous plant project, the District worked with HydroScience and prepared a Technical Memorandum regarding the remodel needs. Their proposed layout is attached.

**ESTIMATED TOTAL PROJECT COST:** \$750,000

**ANTICIPATED SCHEDULE:**

Construction – FY 25-26



- LEGEND**
- EXISTING TO REMAIN
  - NEW METAL STUD FRAMED WALL
  - - - WALL DEMOLITION
  - ▨ CMU WALL INFILL
  - (N) NEW
  - (E) EXISTING

FIGURE 1



PRELIMINARY FLOOR PLAN

# RODEO SANITARY DISTRICT PLANT PROJECTS

**PROJECT NAME:** Secondary Clarifiers Rehabilitation

**DESCRIPTION:**

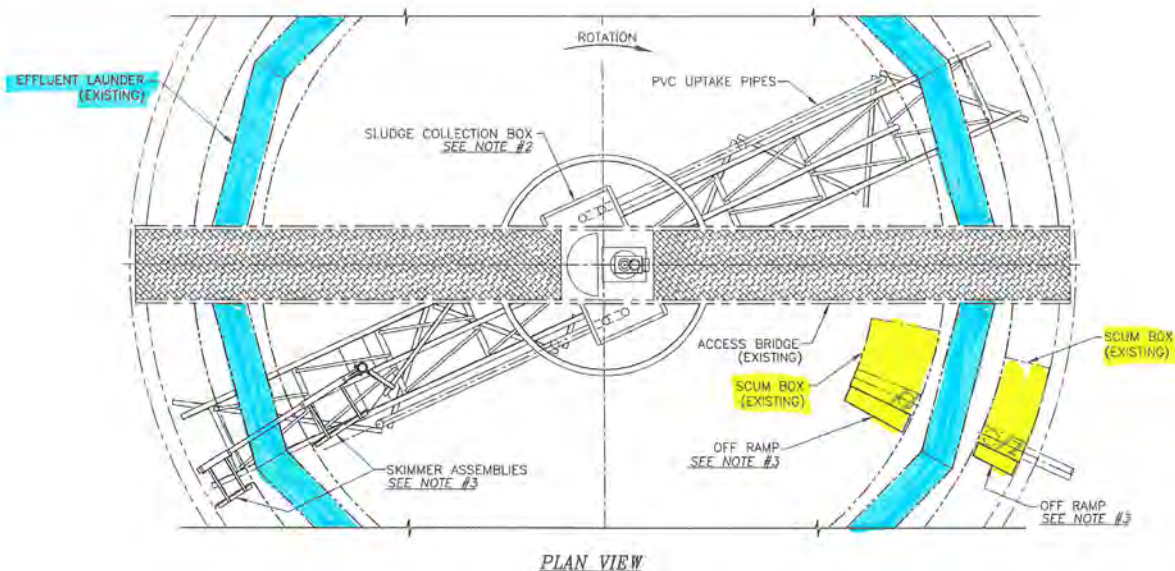
Project elements include:

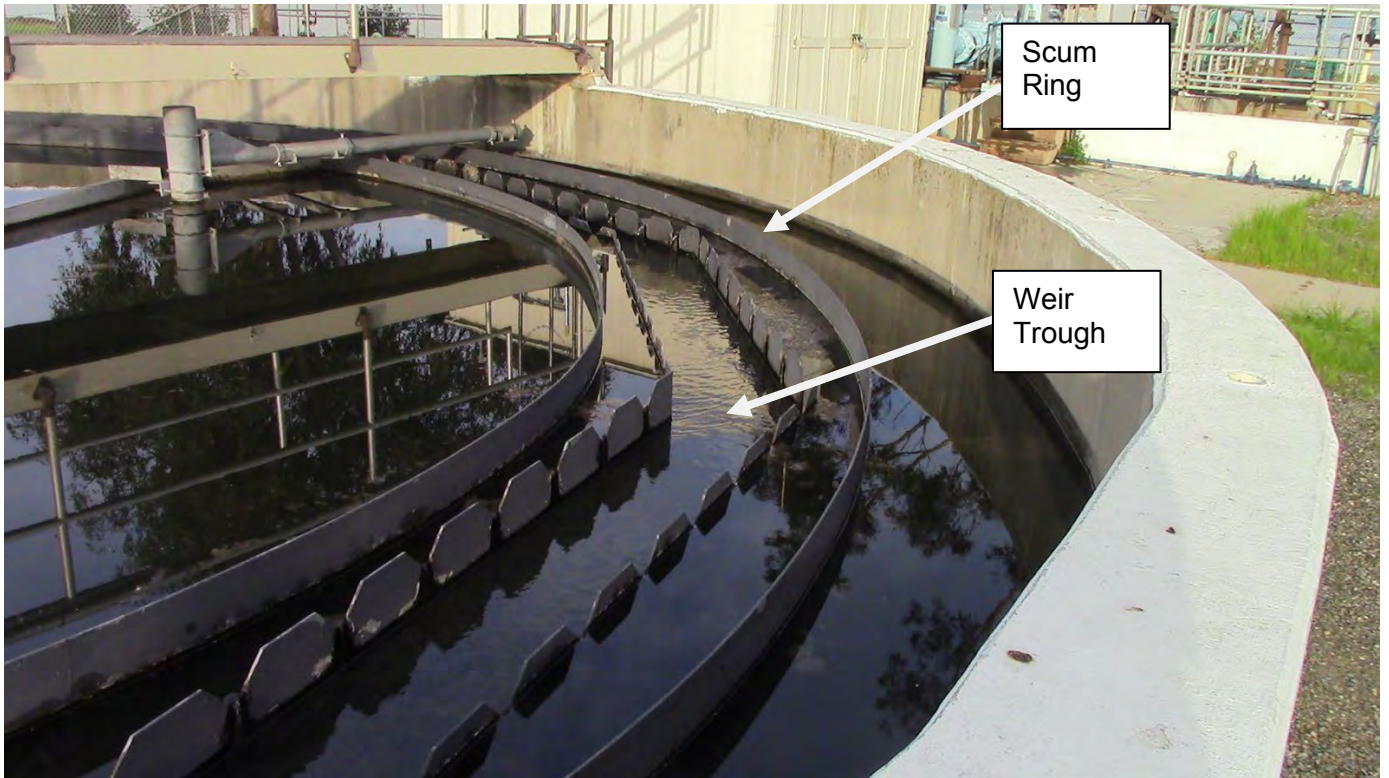
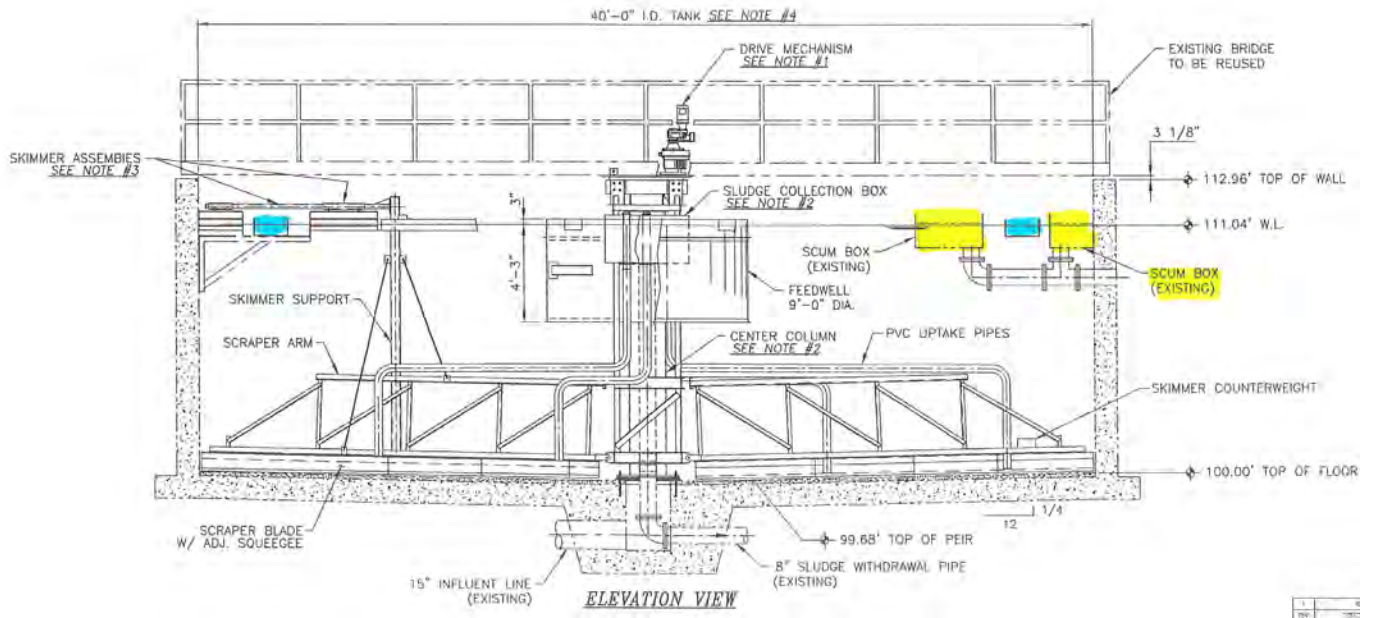
- Replace Launders and Weirs.
- Replace Scum Rings, Scum Beaches and Scum Piping.
- Coatings project for remaining clarifier mechanism.
- Replace all electrical conduits and install new local control panels.

**JUSTIFICATION:**

The project originally was to be comprised of the Primary Clarifier and the Secondary Clarifiers. The project was taken to about 50 percent design before halting design on the Secondary Clarifiers. Design was halted due to the cost estimate for the Primary Clarifier and Secondary Clarifiers exceeding the available funding. Due to the priority of the Primary Clarifier Project and the ability to implement temporary repairs to the Secondary Clarifier elements (if needed), it was decided to postpone the Secondary Clarifier Project.

The Secondary Clarifier Mechanisms were replaced in 2009 after 46 years of service. The scum rings and weir troughs are highlighted in blue, and the scum boxes and beaches are in yellow. At the time of the 2009 project, the District sand blasted, and epoxy coated the Scum rings, weir troughs, scum box and beach for both secondary clarifiers. At that time, it was acknowledged that this was a short-term temporary fix to substantially corroded and deteriorated metal items. The proposed new scum rings, trough/weirs, and scum beaches will be made of epoxy coated steel.









Single Local Control Panel for both clarifiers – not code compliant.



Maze of electrical conduits that may or may not be in use.





**ESTIMATED TOTAL PROJECT COST: \$1,000,000**

**ANTICIPATED SCHEDULE:**

Construction – FY 26-27



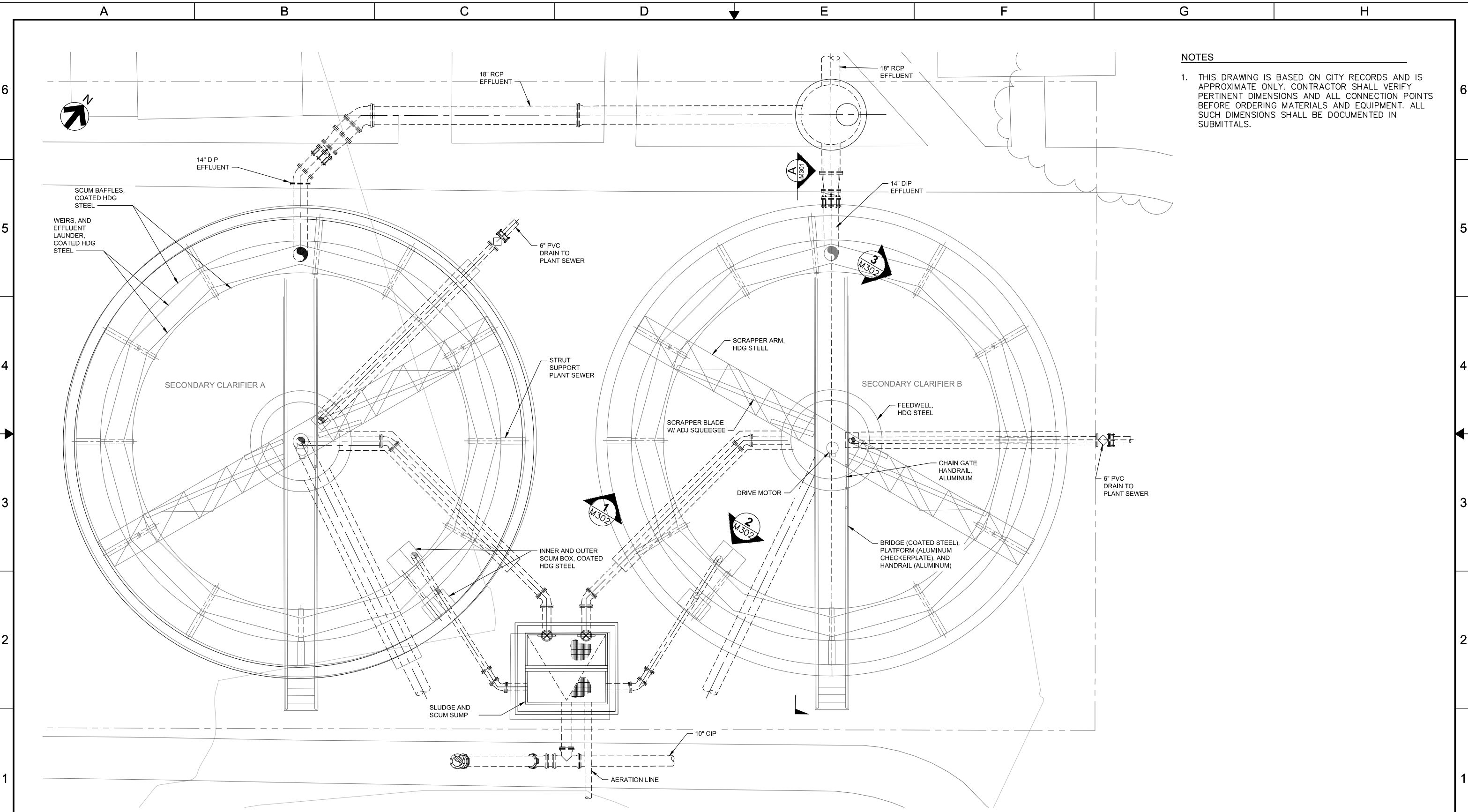
# Corrosion Photos

Secondary Clarifier





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 Plotted By: ERIC JONES  
 Plot Date: 12/21/2023 1:50 PM



**NOTES**

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**SECONDARY CLARIFIERS EXISTING PLAN**  
 SCALE: 1" = 8'-0"

NOT FOR CONSTRUCTION

**HydroScience**  
 10569 OLD PLACERVILLE RD  
 SACRAMENTO, CA 95827  
 OFFICE: (916)364-1490 www.hydroscience.com

PAPER SIZE: 22X34 (ANSI D)  
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JOB NO.: 230-003  
 DATE: 10/24/2023  
 DRAWN BY: BF/AGP  
 DESIGNED BY: BF  
 PROJ. MGR.: ELJ

REV	DESCRIPTION	DATE	APVD

RODEO SANITARY DISTRICT

2024 WPCP IMPROVEMENT PROJECT

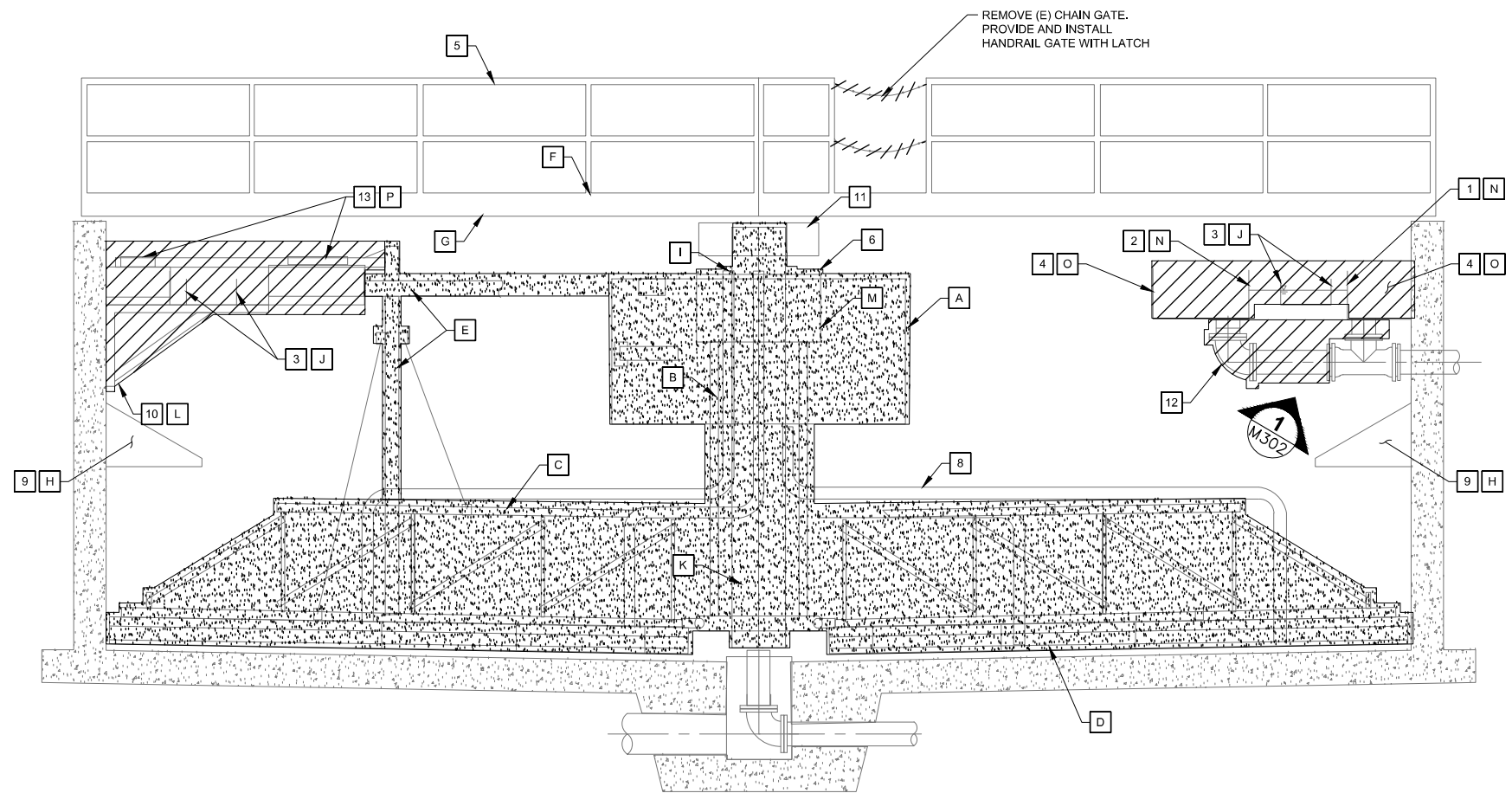
SECONDARY CLARIFIERS EXISTING PLAN

30% SUBMITTAL  
 NOV 2023

M300  
 DRAWING NUMBER  
 SHEET 9 OF 27



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**SECONDARY CLARIFIER SECTION**  
SCALE: 1" = 40'-0" A  
M300

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  - ALL FITTINGS AND VALVES SHALL BE RATED FOR MINIMUM 250 PSI WORKING PRESSURE.
  - DEMOLITION AND CONSTRUCTION/REHABILITATION ARE APPLICATION TO BOTH SECONDARY CLARIFIERS. WHERE TYPICAL NUMBER IS SHOWN, CONTRACTOR TO ALLOW FOR DOUBLE TO ACCOUNT FOR BOTH SECONDARY CLARIFIERS.

- DEMOLITION NOTES**
- REMOVE OUTER SCUM RING.
  - REMOVE INNER SCUM RING.
  - REMOVE EFFLUENT LAUNDER AND WEIR.
  - REMOVE INNER AND OUTER SCUM BOX, TYP OF 2.
  - BRIDGE, PLATFORM AND HANDRAIL TO REMAIN AND PROTECT IN PLACE.
  - REVOLVING MECHANICAL EQUIPMENT TO REMAIN AND PROTECT IN PLACE.
  - PVC UPTAKE TO REMAIN AND PROTECT IN PLACE, TYP OF 4..
  - DENSITY CURRENT BAFFLE TO REMAIN AND PROTECT IN PLACE.
  - REMOVE STRUT SUPPORTS, TYP OF 12.
  - DRIVE HOUSE AND DRIVE RING TO PROTECT AND REMAIN IN PLACE.
  - REMOVE PIPING.
  - REMOVE INNER AND OUTER SKIMMER ASSEMBLIES INCLUDING BRACKET AND CONNECTION TO SKIMMER SUPPORT SYSTEM.

- CONSTRUCTION/REHABILITATION NOTES**
- REHABILITATE FEEDWELL.
  - REHABILITATE CENTER COLUMN IN PLACE AND SUPPORT SYSTEM. CONTRACTOR TO NOTE THAT INTERNAL SURFACE OF CENTER COLUMN REHABILITATION IS NOT REQUIRED.
  - REHABILITATE SCRAPER ARMS.
  - REPLACE SCRAPER BLADES WITH ADJUSTABLE SQUEEGEE, TYP OF 2.
  - REHABILITATE SKIMMER SUPPORT SYSTEM.
  - REPAIR HANDRAIL CONNECTIONS TO BRIDGE.
  - REHABILITATE BRIDGE BEAMS.
  - REPAIR DENSITY CURRENT BAFFLE FASTENERS.
  - REPLACE DRAFT TUBES SLIDE GATES ON PVC UPTAKE PIPES, TYP OF 4.
  - PROVIDE AND INSTALL WEIRS AND LAUNDER. NEW WEIRS AND LAUNDER TO BE CIRCULAR AND BOTTOM OF LAUNDER SLOPED AT 1/2 TO 12 TO DRAIN CONNECTION.
  - REPLACE ACCESS DOOR GASKETS ON CENTER COLUMN.
  - PROVIDE AND INSTALL SYSTEM SUPPORT, TYP OF 12. INSTALL ANCHORS A MINIMUM OF 6-INCH CLEAR FROM ORIGINAL SUPPORT SYSTEM.
  - REHABILITATE SLUDGE COLLECTION BOX.
  - PROVIDE AND INSTALL INNER/ OUTER SCUM RING, AND SKIMMER ASSEMBLY.
  - PROVIDE AND INSTALL SCUM BOX, TYP OF 2.
  - PROVIDE AND INSTALL INNER AND OUTER SKIMMER ASSEMBLIES INCLUDING BRACKET AND CONNECTION TO SKIMMER SUPPORT SYSTEM.

**HydroScience**  
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DATE: 10/24/2023  
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DESIGNED BY: BF  
PROJ. MGR.: ELJ

REV	DESCRIPTION	DATE	APVD

**RODEO SANITARY DISTRICT**

**2024 WPCP IMPROVEMENT PROJECT**

**SECONDARY CLARIFIERS DEMOLITION AND REHABILITATION SECTION**

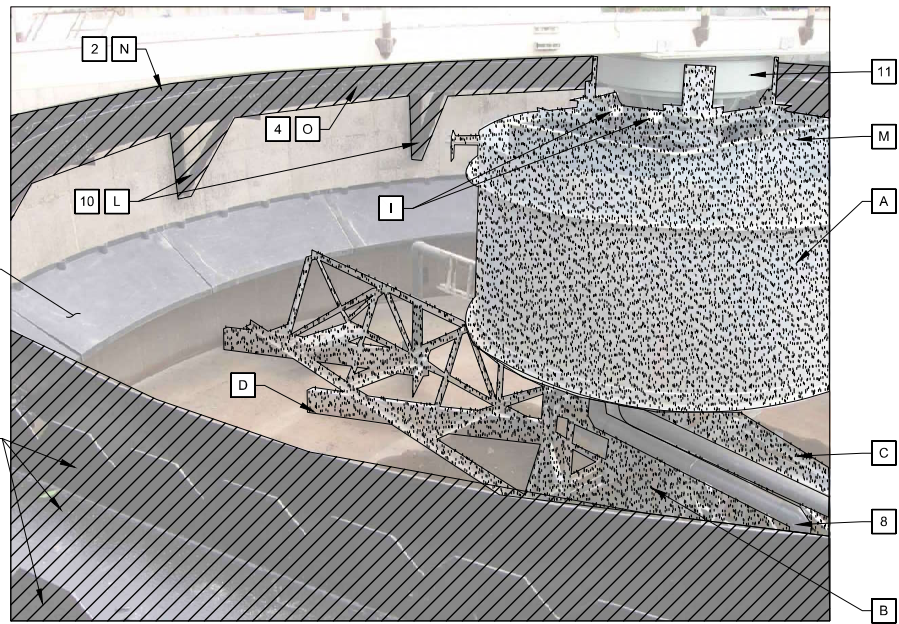
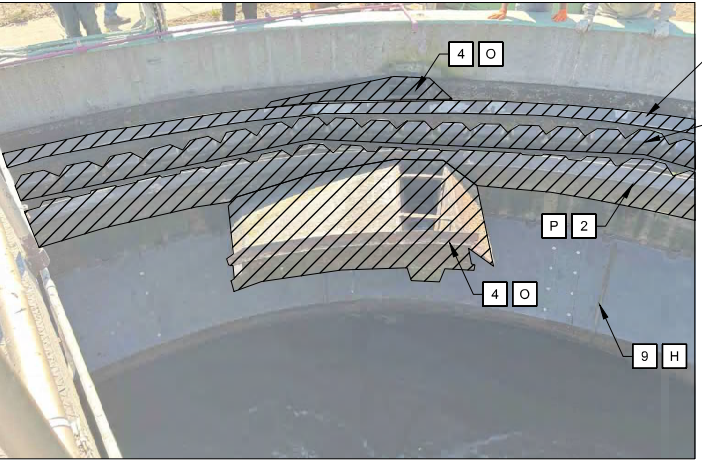
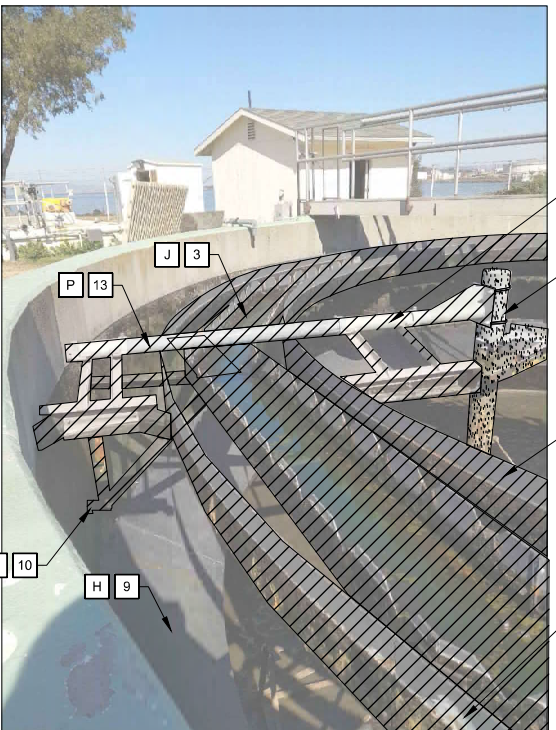
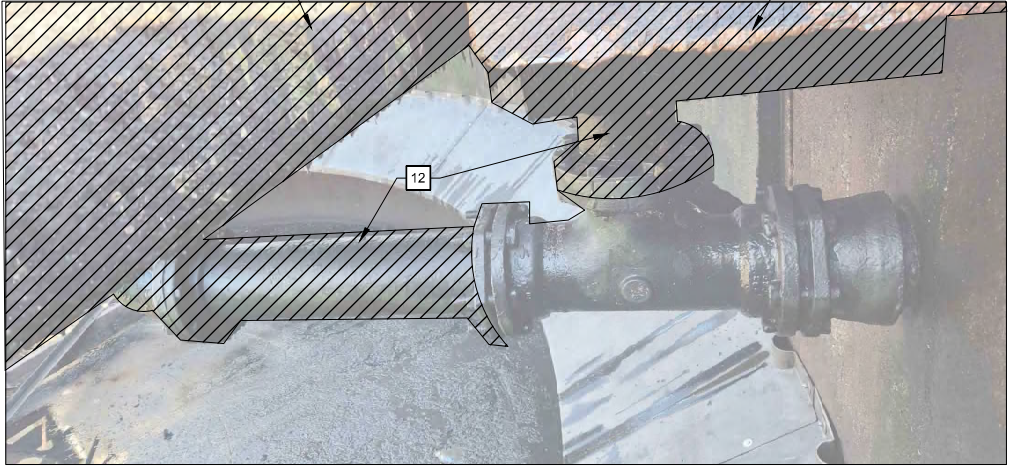

**30% SUBMITTAL NOV 2023**


**M301**  
DRAWING NUMBER  
SHEET 10 OF 27

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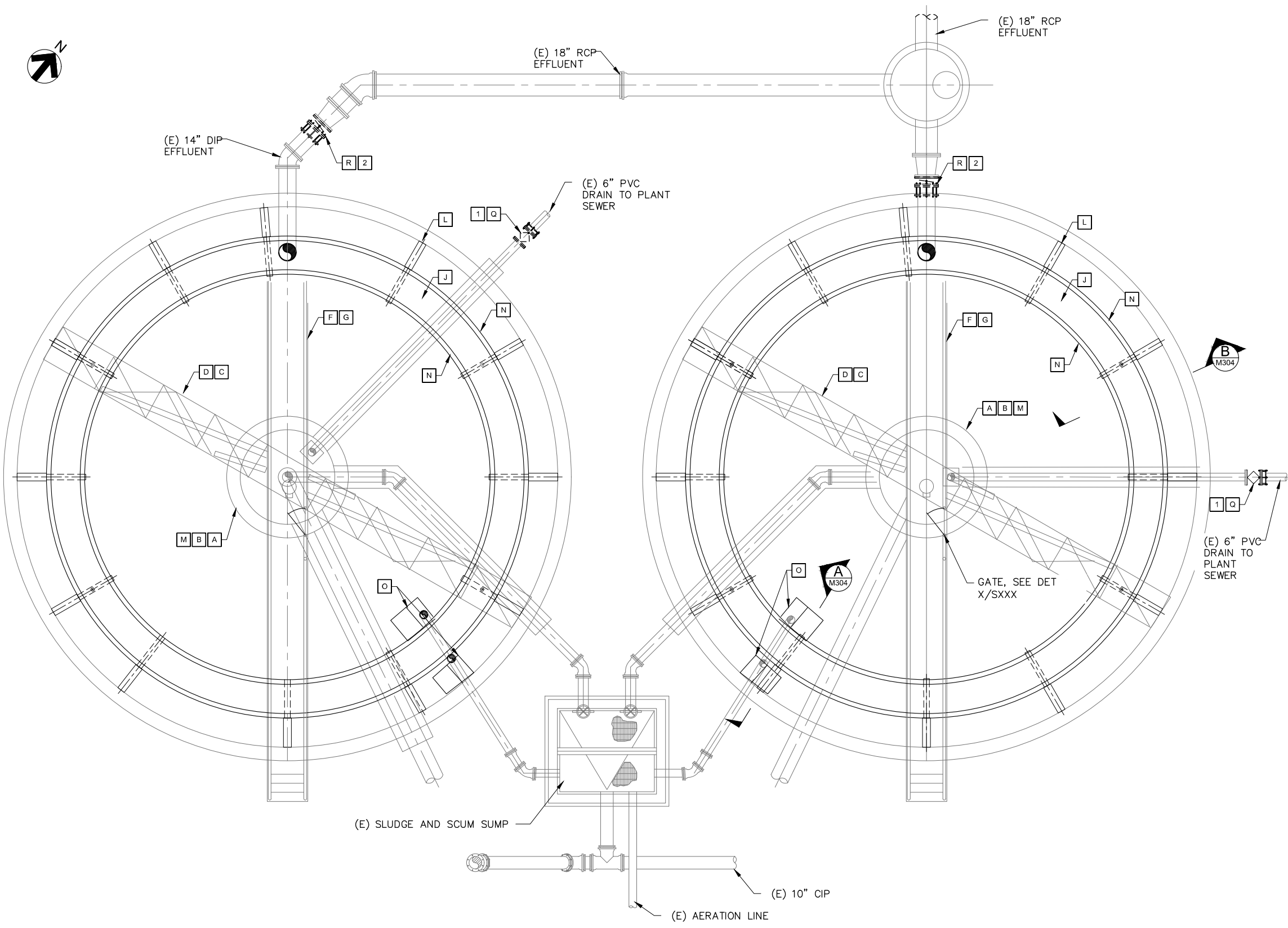
A	B	C	D	E	F	G	H
 <p style="text-align: center;"><b>PHOTO - SECONDARY CLARIFIER</b> SCALE: NO SCALE</p> <p style="text-align: right;">1 M300</p>	 <p style="text-align: center;"><b>PHOTO - SECONDARY CLARIFIER</b> SCALE: NO SCALE</p> <p style="text-align: right;">2 M300</p>	 <p style="text-align: center;"><b>PHOTO - SECONDARY CLARIFIER</b> SCALE: NO SCALE</p> <p style="text-align: right;">3 M300</p>	 <p style="text-align: center;"><b>PHOTO - SECONDARY CLARIFIER</b> SCALE: NO SCALE</p> <p style="text-align: right;">1 M301</p>	 <p style="text-align: center;"><b>PHOTO - EFFLUENT LINE</b> SCALE: NO SCALE</p> <p style="text-align: right;">1</p>	<p><b>NOTES</b></p> <ol style="list-style-type: none"> <li>THIS DRAWING IS BASED ON CITY RECORDS AND IS APPROXIMATE ONLY. CONTRACTOR SHALL VERIFY PERTINENT DIMENSIONS AND ALL CONNECTION POINTS BEFORE ORDERING MATERIALS AND EQUIPMENT. ALL SUCH DIMENSIONS SHALL BE DOCUMENTED IN SUBMITTALS.</li> <li>ALL FITTINGS AND VALVES SHALL BE RATED FOR MINIMUM 250 PSI WORKING PRESSURE.</li> <li>DEMOLITION AND CONSTRUCTION/REHABILITATION ARE APPLICATION TO BOTH SECONDARY CLARIFIERS. WHERE TYPICAL NUMBER IS SHOWN, CONTRACTOR TO ALLOW FOR DOUBLE TO ACCOUNT FOR BOTH SECONDARY CLARIFIERS.</li> </ol> <p><b>DEMOLITION NOTES</b></p> <ol style="list-style-type: none"> <li>REMOVE OUTER SCUM RING.</li> <li>REMOVE INNER SCUM RING.</li> <li>REMOVE EFFLUENT LAUNDER AND WEIR.</li> <li>REMOVE INNER AND OUTER SCUM BOX, TYP OF 2.</li> <li>BRIDGE TO REMAIN AND PROTECT IN PLACE.</li> <li>REVOLVING MECHANICAL EQUIPMENT TO REMAIN AND PROTECT IN PLACE.</li> <li>PVC UPTAKE TO REMAIN AND PROTECT IN PLACE, TYP OF 4..</li> <li>DENSITY CURRENT BAFFLE TO REMAIN AND PROTECT IN PLACE.</li> <li>REMOVE STRUT SUPPORTS, TYP OF 12.</li> <li>DRIVE HOUSE AND DRIVE RING TO PROTECT AND REMAIN IN PLACE.</li> <li>REMOVE PIPING.</li> <li>REMOVE INNER AND OUTER SKIMMER ASSEMBLIES INCLUDING BRACKET AND CONNECTION TO SKIMMER SUPPORT SYSTEM.</li> </ol> <p><b>CONSTRUCTION/REHABILITATION NOTES</b></p> <ol style="list-style-type: none"> <li>REHABILITATE FEEDWELL.</li> <li>REHABILITATE CENTER COLUMN IN PLACE AND SUPPORT SYSTEM. CONTRACTOR TO NOTE THAT INTERNAL SURFACE OF CENTER COLUMN REHABILITATION IS NOT REQUIRED.</li> <li>REHABILITATE SCRAPER ARMS.</li> <li>REPLACE SCRAPER BLADES WITH ADJUSTABLE SQUEEGEE, TYP OF 2.</li> <li>REHABILITATE SKIMMER SUPPORT SYSTEM.</li> <li>REPAIR HANDRAIL CONNECTIONS TO BRIDGE.</li> <li>REHABILITATE BRIDGE BEAMS.</li> <li>REPAIR DENSITY CURRENT BAFFLE FASTENERS.</li> <li>REPLACE DRAFT TUBES SLIDE GATES ON PVC UPTAKE PIPES, TYP OF 4.</li> <li>PROVIDE AND INSTALL WEIRS AND LAUNDER. NEW WEIRS AND LAUNDER TO BE CIRCULAR AND BOTTOM OF LAUNDER SLOPED AT 1/2 TO 12 TO DRAIN CONNECTION.</li> <li>REPLACE ACCESS DOOR GASKETS ON CENTER COLUMN.</li> <li>PROVIDE AND INSTALL SYSTEM SUPPORT, TYP OF 12. INSTALL ANCHORS A MINIMUM OF 6-INCH CLEAR FROM ORIGINAL SUPPORT SYSTEM.</li> <li>REHABILITATE SLUDGE COLLECTION BOX.</li> <li>PROVIDE AND INSTALL INNER/ OUTER SCUM RING, AND SKIMMER ASSEMBLY.</li> <li>PROVIDE AND INSTALL SCUM BOX, TYP OF 2.</li> <li>PROVIDE AND INSTALL INNER AND OUTER SKIMMER ASSEMBLIES INCLUDING BRACKET AND CONNECTION TO SKIMMER SUPPORT SYSTEM.</li> </ol>	<p style="text-align: center;"><b>NOT FOR CONSTRUCTION</b></p>	

 <p>10569 OLD PLACERVILLE RD SACRAMENTO, CA 95827 OFFICE: (916)364-1490 www.hydroscience.com</p>	<p>PAPER SIZE: 22X34 (ANSI D) 0" 1/2" 1" THIS BAR IS 1 INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY.</p>	<p>JOB NO. : 230-003 DATE: 10/24/2023 DRAWN BY: BF/AGP DESIGNED BY: BF PROJ. MGR.: ELJ</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>REV</th> <th>DESCRIPTION</th> <th>DATE</th> <th>APVD</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	REV	DESCRIPTION	DATE	APVD					<p><b>RODEO SANITARY DISTRICT</b></p>	<p><b>2024 WPCP IMPROVEMENT PROJECT</b></p>	<p><b>SECONDARY CLARIFIERS DEMOLITION AND REHABILITATION PHOTOS</b></p>	<p><b>30% SUBMITTAL NOV 2023</b></p>	<p><b>M302</b> DRAWING NUMBER SHEET 11 OF 27</p>
REV	DESCRIPTION	DATE	APVD													
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Plotted By: ERIC JONES  
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- CONSTRUCTION/REHABILITATION NOTES**
- [A] REHABILITATE FEEDWELL.
  - [B] REHABILITATE CENTER COLUMN IN PLACE AND SUPPORT SYSTEM. CONTRACTOR TO NOTE THAT INTERNAL SURFACE OF CENTER COLUMN REHABILITATION IS NOT REQUIRED.
  - [C] REHABILITATE SCRAPER ARMS.
  - [D] REPLACE SCRAPER BLADES WITH ADJUSTABLE SQUEEGEE, TYP OF 2.
  - [E] REHABILITATE SKIMMER SUPPORT SYSTEM.
  - [F] REPAIR HANDRAIL CONNECTIONS TO BRIDGE.
  - [G] REHABILITATE BRIDGE BEAMS.
  - [H] REPAIR DENSITY CURRENT Baffle FASTENERS.
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  - [N] PROVIDE AND INSTALL INNER/ OUTER SCUM RING, AND SKIMMER ASSEMBLY.
  - [O] PROVIDE AND INSTALL SCUM BOX, TYP OF 2.
  - [P] PROVIDE AND INSTALL INNER AND OUTER SKIMMER ASSEMBLIES INCLUDING BRACKET AND CONNECTION TO SKIMMER SUPPORT SYSTEM.
  - [Q] PROVIDE AND INSTALL 6" ISOLATION VALVE ON DRAIN LINE.
  - [R] PROVIDE AND INSTALL 14" EFFLUENT VALVE.

- DEMOLITION NOTES**
- [1] REMOVE (E) 6" ISOLATION VALVE ON DRAIN LINE.
  - [2] REMOVE (E) 14" EFFLUENT VALVE.

**SECONDARY CLARIFIER PLAN**  
SCALE: 1/4" = 1'-0"

NOT FOR CONSTRUCTION

**HydroScience**  
10569 OLD PLACERVILLE RD  
SACRAMENTO, CA 95827  
OFFICE: (916)364-1490 www.hydroscience.com

PAPER SIZE: 22X34 (ANSI D)  
0" 1/2" 1"  
THIS BAR IS 1 INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY.

JOB NO.: 230-003  
DATE: 10/24/2023  
DRAWN BY: BF/AGP  
DESIGNED BY: BF  
PROJ. MGR.: ELJ

REV	DESCRIPTION	DATE	APVD

RODEO SANITARY DISTRICT

2024 WPCP IMPROVEMENT PROJECT

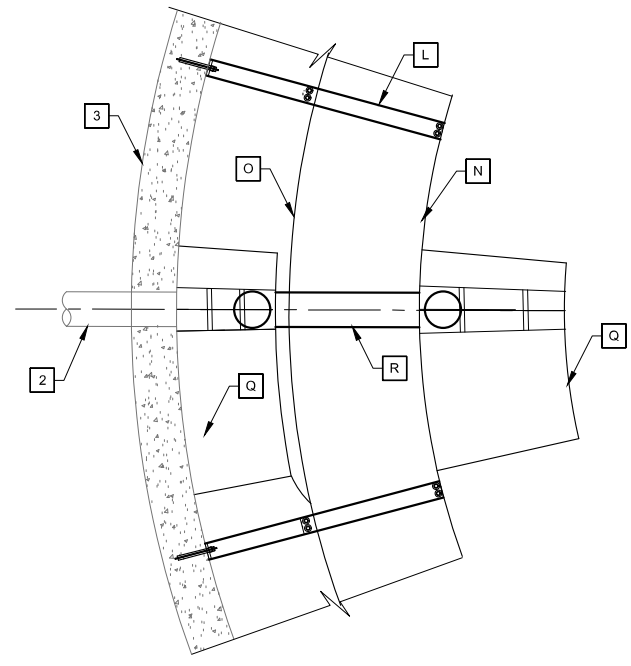
SECONDARY CLARIFIER PLAN

30% SUBMITTAL  
NOV 2023

M303  
DRAWING NUMBER  
SHEET 12 OF 27

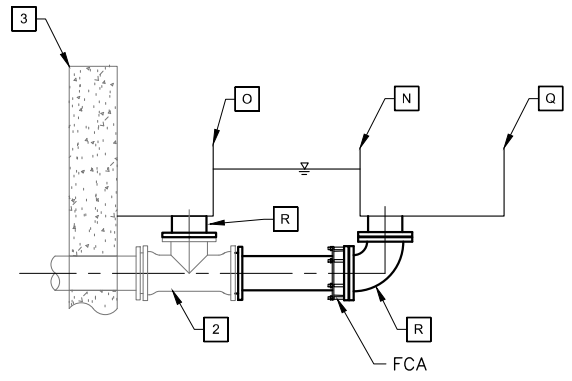
File Name: S:\common\projects\230-Rodeo SD\WPCP Improvements\05-Design\Drawings\230-003-M304-WWTF Site - 12.20.23.dwg  
 Plotted By: ERIC JONES  
 Plot Date: 12/21/2023 1:51 PM

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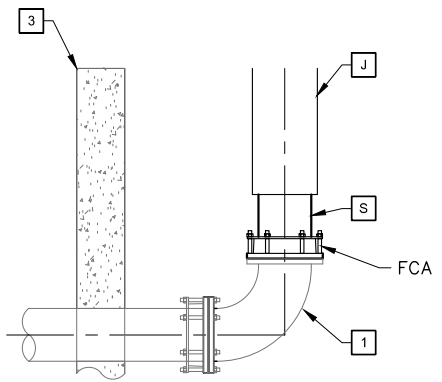


**SCUM BOXES PLAN VIEW**  
SCALE: NONE

**NOTES**  
1. WEIRS AND LAUNDER NOT SHOW FOR CLARITY.



**SCUM BOXES SECTION**  
SCALE: NO SCALE



**EFFLUENT LAUNDER DROP BOX SECTION**  
SCALE: NO SCALE

**NOTES**  
1. SCUM RINGS NOT SHOW FOR CLARITY.

**NOTES**  
1. THIS DRAWING IS BASED ON CITY RECORDS AND IS APPROXIMATE ONLY. CONTRACTOR SHALL VERIFY PERTINENT DIMENSIONS AND ALL CONNECTION POINTS BEFORE ORDERING MATERIALS AND EQUIPMENT. ALL SUCH DIMENSIONS SHALL BE DOCUMENTED IN SUBMITTALS.  
2. ALL FITTINGS AND VALVES SHALL BE RATED FOR MINIMUM 250 PSI WORKING PRESSURE.

**CONSTRUCTION/REHABILITATION NOTES**  
 [J] PROVIDE DROP BOX TO ALLOW FOR CONNECTION AND SLOPE INDICATED FOR EFFLUENT LAUNDER.  
 [L] PROVIDE AND INSTALL SYSTEM SUPPORT. OFF CENTER FROM ORIGINAL SUPPORT SYSTEM.  
 [N] PROVIDE AND INSTALL INNER SCUM RING.  
 [O] PROVIDE AND INSTALL OUTER SCUM RING.  
 [Q] PROVIDE AND INSTALL SCUM BOX, TYP OF 2.  
 [R] PROVIDE AND INSTALL 6" SCUM PIPING.  
 [S] PROVIDE AND INSTALL 14" EFFLUENT PIPING CONNECTION TO LAUNDER.

**DEMOLITION NOTES**  
 [1] 14" EFFLUENT PIPING TO REMAIN AND PROTECT IN PLACE.  
 [2] 6" SCUM PIPING TO REMAIN AND PROTECT IN PLACE.  
 [3] CLARIFIER CONCRETE WALL TO REMAIN AND PROTECT IN PLACE.

**SECONDARY CLARIFIER - DETAILS**  
SCALE: 1/2" = 1'-0"

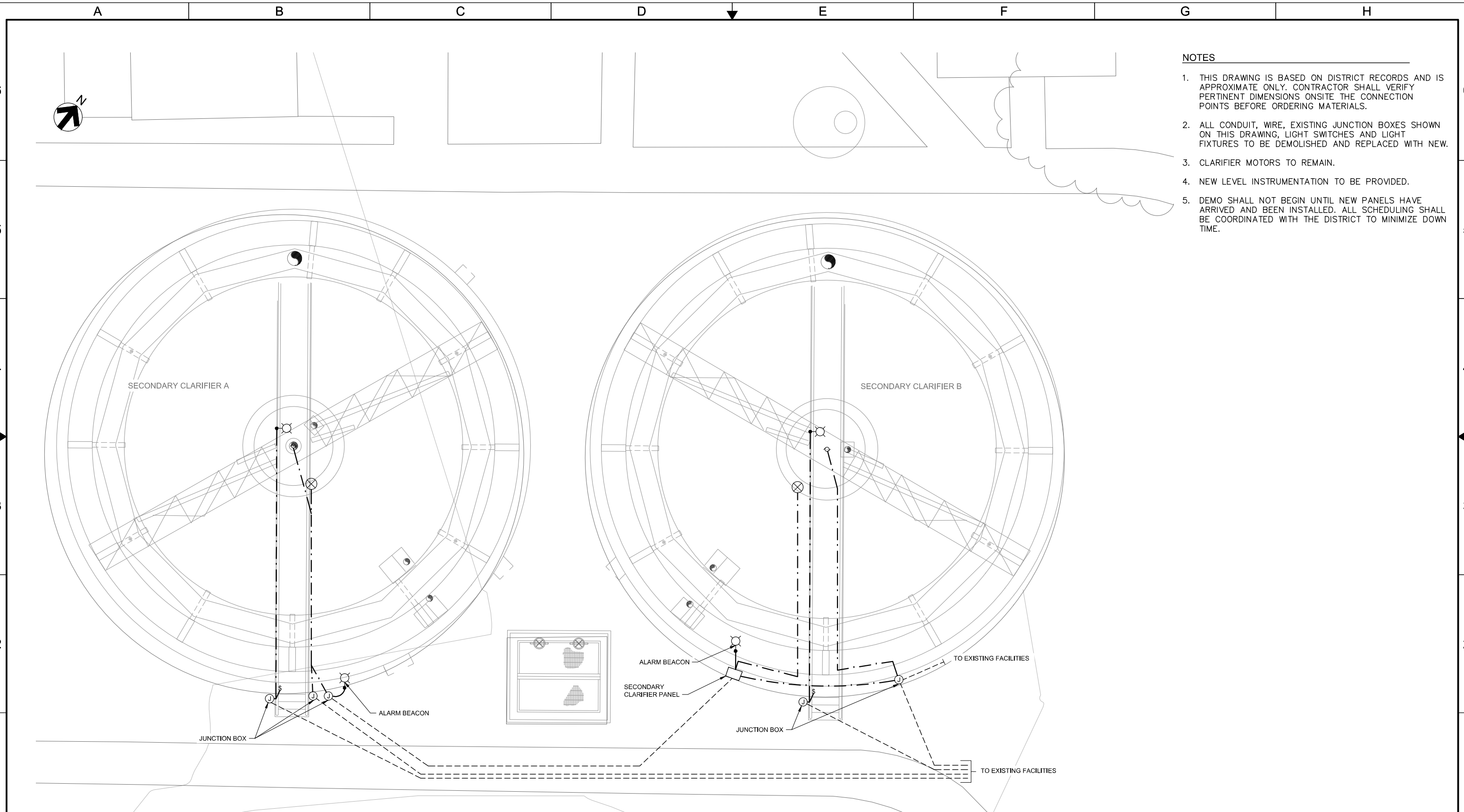
NOT FOR CONSTRUCTION

 10569 OLD PLACERVILLE RD SACRAMENTO, CA 95827 OFFICE: (916)364-1490 www.hydroscience.com	PAPER SIZE: 22X34 (ANSI D) 0" 1/2" 1" THIS BAR IS 1 INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY.	JOB NO.: 230-003 DATE: 10/24/2023 DRAWN BY: BF/AGP DESIGNED BY: BF PROJ. MGR.: ELJ	REVISIONS REV      DESCRIPTION      DATE      APVD				RODEO SANITARY DISTRICT	2024 WPCP IMPROVEMENT PROJECT	SECONDARY CLARIFIER SECTION AND DETAILS	30% SUBMITTAL NOV 2023	M304 DRAWING NUMBER SHEET 13 OF 27

A B C D E F G H



File Name: S:\common\projects\230-Rodeo SD\WPCP Improvements\05-Design\Drawings\230-003-E300-Electrical Plan\_SC.dwg  
 Plotted By: ERIC JONES  
 Plot Date: 12/21/2023 1:51 PM



- NOTES**
1. THIS DRAWING IS BASED ON DISTRICT RECORDS AND IS APPROXIMATE ONLY. CONTRACTOR SHALL VERIFY PERTINENT DIMENSIONS ONSITE THE CONNECTION POINTS BEFORE ORDERING MATERIALS.
  2. ALL CONDUIT, WIRE, EXISTING JUNCTION BOXES SHOWN ON THIS DRAWING, LIGHT SWITCHES AND LIGHT FIXTURES TO BE DEMOLISHED AND REPLACED WITH NEW.
  3. CLARIFIER MOTORS TO REMAIN.
  4. NEW LEVEL INSTRUMENTATION TO BE PROVIDED.
  5. DEMO SHALL NOT BEGIN UNTIL NEW PANELS HAVE ARRIVED AND BEEN INSTALLED. ALL SCHEDULING SHALL BE COORDINATED WITH THE DISTRICT TO MINIMIZE DOWN TIME.

**SECONDARY CLARIFIERS EXISTING ELECTRICAL PLAN**  
 SCALE: 1/4" = 1'-0"

NOT FOR CONSTRUCTION

10569 OLD PLACERVILLE RD  
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JOB NO.: 230-003  
 DATE: 10/24/2023  
 DRAWN BY: BF/AGP  
 DESIGNED BY: BF  
 PROJ. MGR.: ELJ

REV	DESCRIPTION	DATE	APVD
REVISIONS			

**RODEO SANITARY DISTRICT**

**2024 WPCP IMPROVEMENT PROJECT**

**SECONDARY CLARIFIERS EXISTING ELECTRICAL PLAN**

**30% SUBMITTAL NOV 2023**

**E300**  
 DRAWING NUMBER  
 SHEET 24 OF 27

File Name: S:\common\projects\230-LRodeo SD\003-2024 WPCP Improvements\05-Design\Drawings\230-003-E301-Electrical Plan\_SC.dwg Plotted By: ERIC JONES Plot Date: 12/21/2023 1:51 PM

A B C D E F G H

6  
5  
4  
3  
2  
1



PHOTO - SECONDARY CLARIFIER ①  
SCALE: NO SCALE

(E) CLARIFIER CONTROL PANEL



PHOTO - SECONDARY CLARIFIER ②  
SCALE: NO SCALE

**NOTES**

- THIS DRAWING IS BASED ON CITY RECORDS AND IS APPROXIMATE ONLY. CONTRACTOR SHALL VERIFY PERTINENT DIMENSIONS ONSITE THE CONNECTION POINTS BEFORE ORDERING MATERIALS AND EQUIPMENT.

**CONSTRUCTION NOTES**

- F DEMO SHALL NOT BEGIN UNTIL NEW CONTROL PANELS HAVE BEEN INSTALLED.
- G DEMO SCHEDULE SHALL BE COORDINATED WITH DISTRICT STAFF.

**DEMOLITION NOTES**

- DEMOLISH ONLY WHAT IS SHOWN. THERE ARE OTHER EXISTING FACILITIES THAT SHARE THE JUNCTION BOXES AND CONDUITS. CARE SHOULD BE TAKEN TO ASSURE ONLY CONDUITS AND WIRE ASSOCIATED WITH THE SECONDARY CLARIFIERS ARE DEMOLISHED.
- ALL STUB UP CONDUITS SHALL BE PRESERVED AND REUSED. IF INSTANCE OCCURS WHERE A STUBBED UP CONDUIT IS NOT USED IT SHALL BE CAPPED FOR FUTURE USE.

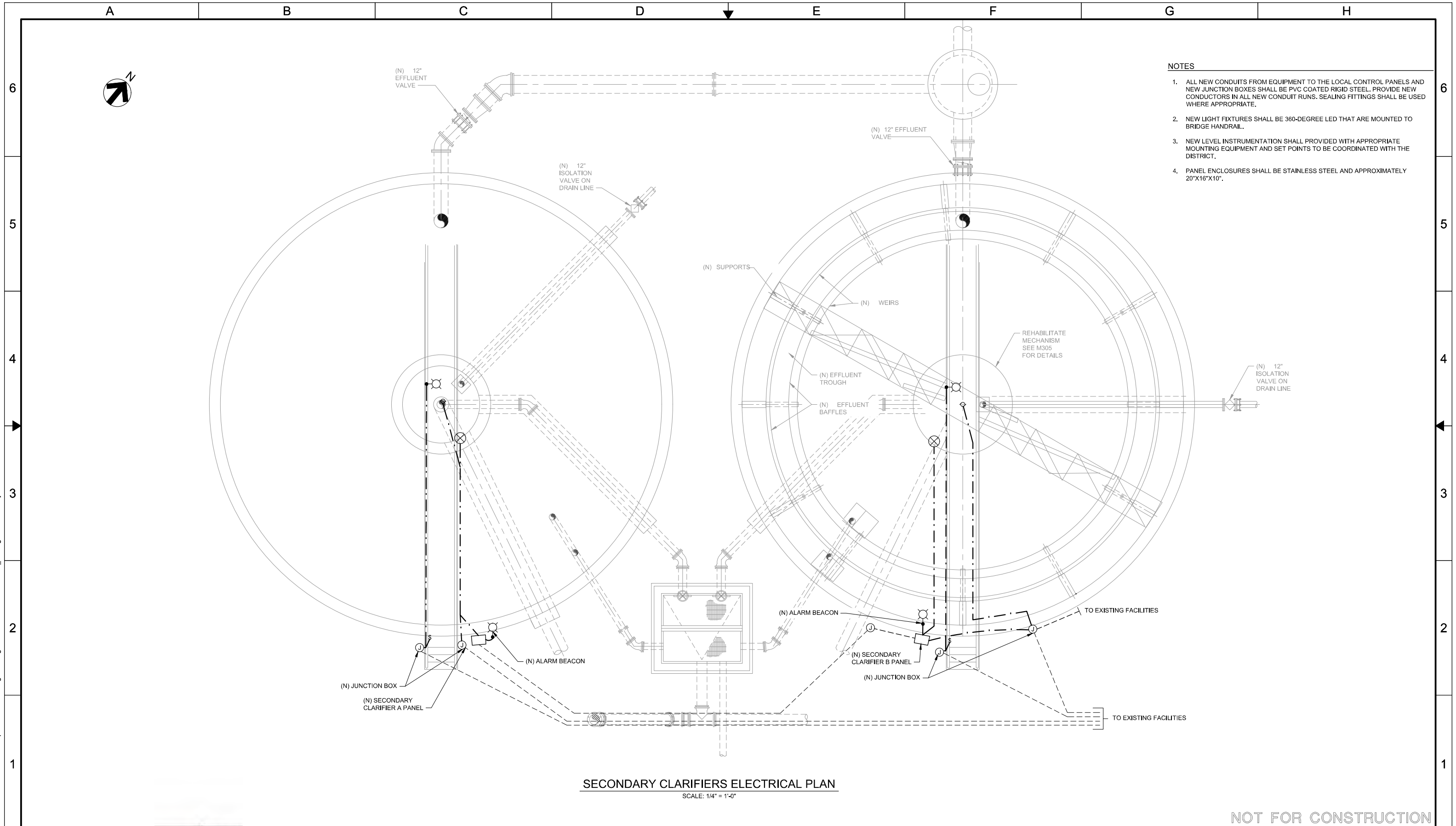
NOT FOR CONSTRUCTION

 10569 OLD PLACERVILLE RD SACRAMENTO, CA 95827 OFFICE: (916)364-1490 www.hydroscience.com	PAPER SIZE: 22X34 (ANSI D) 0" 1/2" 1" THIS BAR IS 1 INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY.	JOB NO. : 230-003 DATE: 10/24/2023 DRAWN BY: BF/AGP DESIGNED BY: BF PROJ. MGR.: ELJ	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">REV</th> <th style="width: 70%;">DESCRIPTION</th> <th style="width: 10%;">DATE</th> <th style="width: 15%;">APVD</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	REV	DESCRIPTION	DATE	APVD					RODEO SANITARY DISTRICT	2024 WPCP IMPROVEMENT PROJECT	SECONDARY CLARIFIERS ELECTRICAL DEMOLITION PHOTOS	30% SUBMITTAL NOV 2023	E301 <small>DRAWING NUMBER</small> SHEET 25 OF 27
	REV	DESCRIPTION	DATE	APVD												
REVISIONS																

A B C D E F G H



File Name: S:\common\projects\230-LRodeo SD\003-2024 WPCP Improvements\05-Design\Drawings\230-003-E302-Electrical Plan\_SC.dwg Plotted By: ERIC JONES Plot Date: 12/21/2023 1:51 PM



- NOTES**
1. ALL NEW CONDUITS FROM EQUIPMENT TO THE LOCAL CONTROL PANELS AND NEW JUNCTION BOXES SHALL BE PVC COATED RIGID STEEL. PROVIDE NEW CONDUITORS IN ALL NEW CONDUIT RUNS. SEALING FITTINGS SHALL BE USED WHERE APPROPRIATE.
  2. NEW LIGHT FIXTURES SHALL BE 360-DEGREE LED THAT ARE MOUNTED TO BRIDGE HANDRAIL.
  3. NEW LEVEL INSTRUMENTATION SHALL PROVIDED WITH APPROPRIATE MOUNTING EQUIPMENT AND SET POINTS TO BE COORDINATED WITH THE DISTRICT.
  4. PANEL ENCLOSURES SHALL BE STAINLESS STEEL AND APPROXIMATELY 20"X16"X10".

**SECONDARY CLARIFIERS ELECTRICAL PLAN**  
SCALE: 1/4" = 1'-0"

NOT FOR CONSTRUCTION

 10569 OLD PLACERVILLE RD SACRAMENTO, CA 95827 OFFICE: (916)364-1490 www.hydroscience.com	PAPER SIZE: 22X34 (ANSI D) 0" 1/2" 1" THIS BAR IS 1 INCH AT FULL SCALE. IF NOT, SCALE ACCORDINGLY.	JOB NO. : 230-003 DATE: 10/24/2023 DRAWN BY: BF/AGP DESIGNED BY: BF PROJ. MGR.: ELJ	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>REV</th> <th>DESCRIPTION</th> <th>DATE</th> <th>APVD</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	REV	DESCRIPTION	DATE	APVD					<b>RODEO SANITARY DISTRICT</b>	<b>2024 WPCP IMPROVEMENT PROJECT</b>	<b>SECONDARY CLARIFIER ELECTRICAL PLAN</b>	<b>30% SUBMITTAL</b> <b>NOV 2023</b>	<b>E302</b> <small>DRAWING NUMBER</small> <small>SHEET 26 OF 27</small>
	REV	DESCRIPTION	DATE	APVD												
A	B	C	D	E	F	G	H									

# RODEO SANITARY DISTRICT PLANT PROJECTS

**PROJECT NAME:** Nutrient Control Process Improvements

**DESCRIPTION:**

Project elements include:

- Implement pumping and mixing upgrades.
- Add instrumentation and control features to reduce nutrient discharge.

**JUSTIFICATION:**

Over the years, the RWQCB has been gathering data on nutrient discharge into the greater San Francisco Bay. The data is for various chemical components of Nitrogen and Phosphorus.

The RWQCB has issued an administrative draft of a proposed order that would place a limit on RSDs discharge, in May 2025, of 50 kg/day and May 2034 of 39 kg/day. Based on current operating scenarios, the RSDs WPCP is very close to the 50kg/day limit. It is not clear if there will be a timeline for implementation or if these dates will change.

An Excerpt from the Draft Admin Order:

**Optimization Requirements for Small Dischargers**

*Dischargers with final effluent limitations in Table 4 that are less than or equal to 200 kilograms per day (i.e., American Canyon, Benicia, Burlingame, Crockett Community Services District, Marin County [Paradise Cove] Sanitary District No. 5, Marin County [Tiburon] Sanitary District No. 5, Millbrae, Mt. View Sanitary District, Novato Sanitary District, Rodeo Sanitary District, San Francisco International Airport, Sewerage Agency of Southern Marin, Sausalito-Marín City Sanitary District, and Treasure Island Development Authority) that decide not to pursue treatment plant upgrades shall optimize their treatment systems to reduce total inorganic nitrogen loads. Each year, with the Annual Report required by MRP section 5.2.2, each of these Dischargers shall report on its optimization efforts over the past year, the corresponding impact on nutrient loads, and what it plans to do in the following year.*

It is clear that RSD needs to conduct process performance analysis and implement trial projects to determine if the WPCP can simply implement minor projects to obtain the desired levels of nutrient discharge. It seems apparent that this would satisfy the new Order.

It also seems that the Order would be in support of **Nature Based Solutions**, or perhaps a Living Levee.

**ESTIMATED TOTAL PROJECT COST:** \$300,000

**ANTICIPATED SCHEDULE:**

Construction – FY 26-27 or earlier.



# RODEO SANITARY DISTRICT PLANT PROJECTS

**PROJECT NAME:** Digester Concrete and Cover Rehab

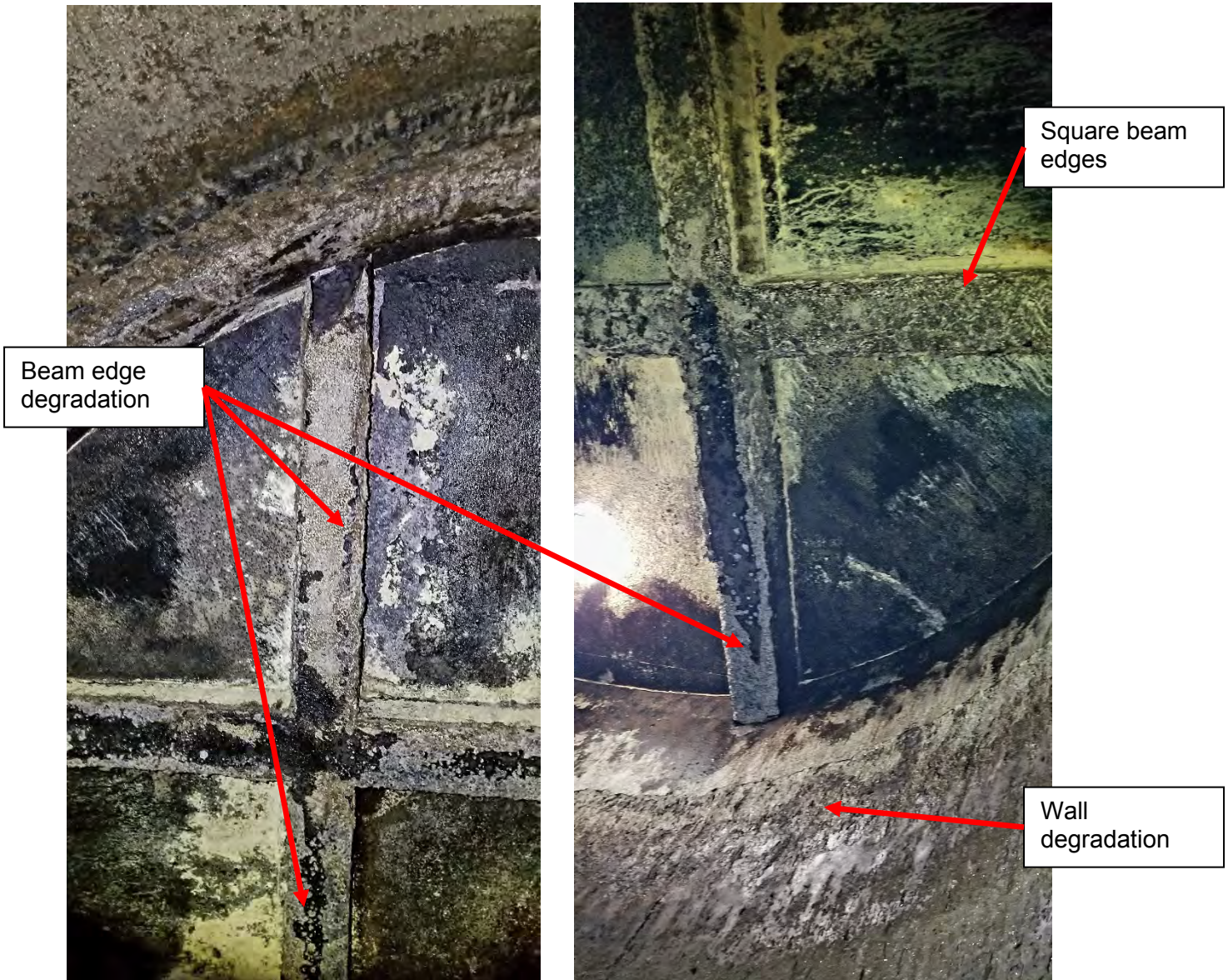
**DESCRIPTION:**

Project elements include:

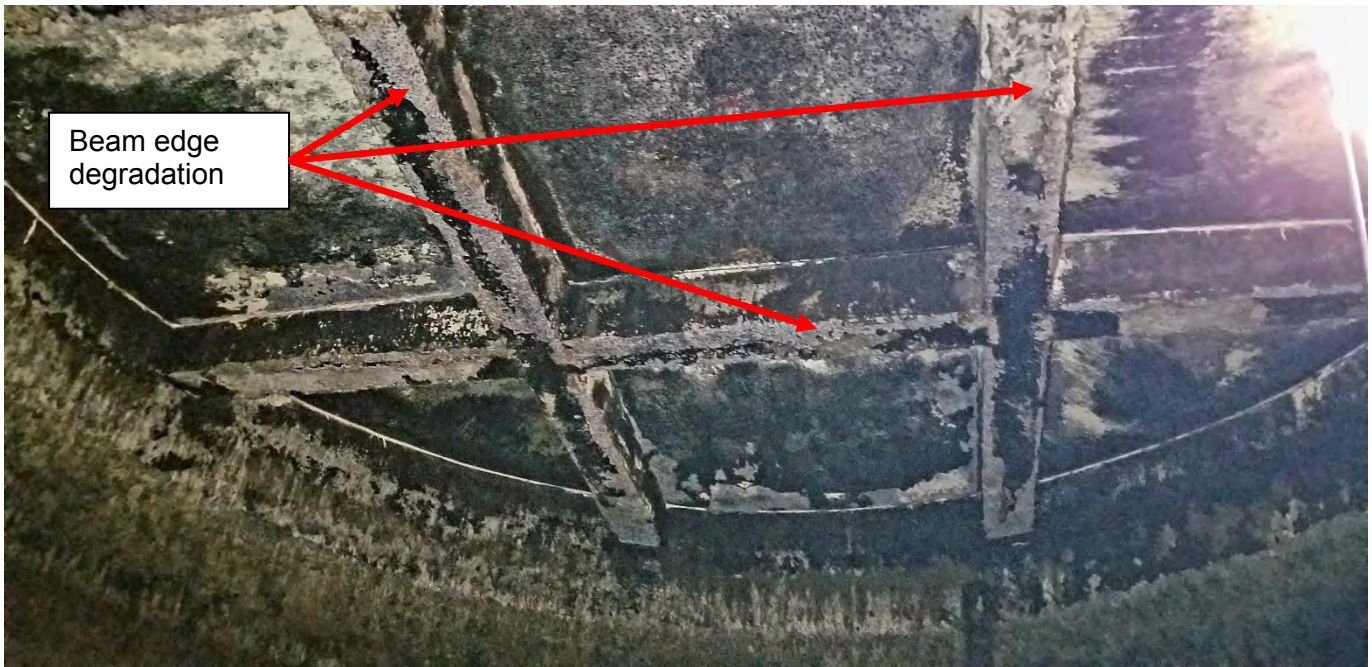
- Rehabilitate cover seals.
- Rehabilitate concrete degradation for beams, walls, and cover panels.
- Implement coating system

**JUSTIFICATION:**

The digester cleaning project was completed on July 1, 2022. It appears that Digester A will need extensive cover rehabilitation after the next cleaning cycle...or before. There are signs of concrete loss in the beams that support the cover panels and the walls. The following photos show the degradation:

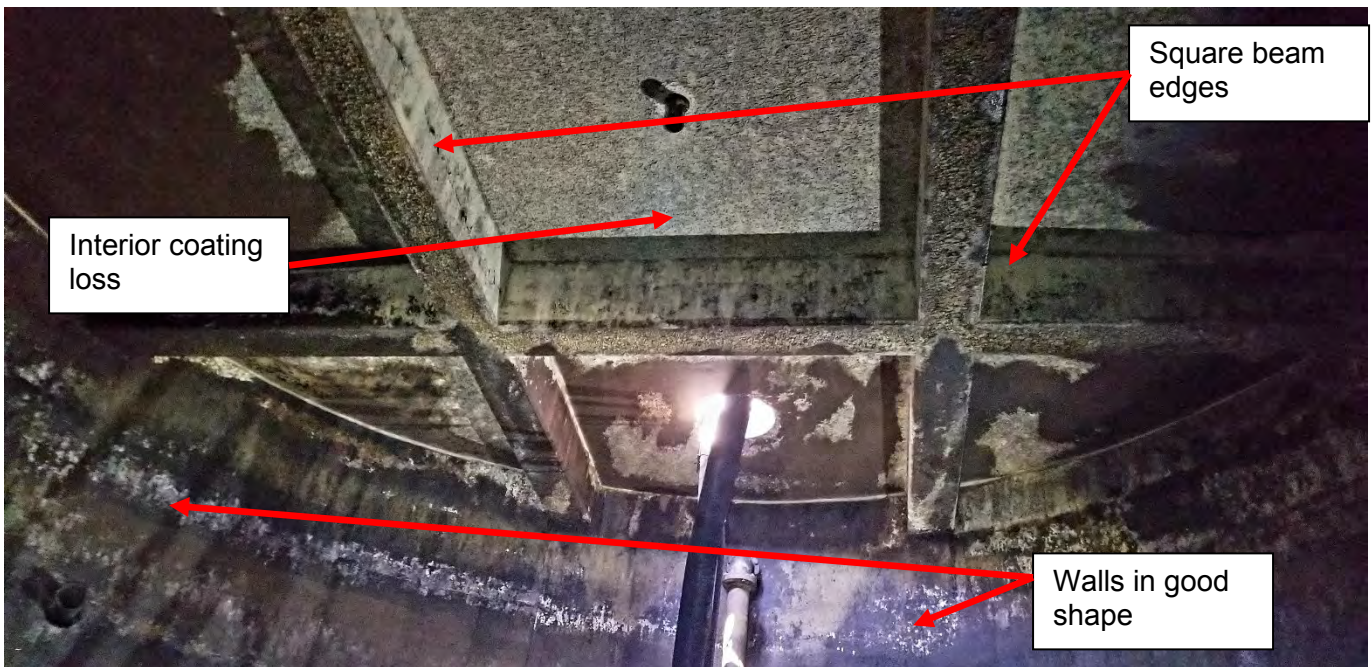






Potential cover solutions include total replacement with a new fixed aluminum cover or simply concrete restoration/replacement. It is anticipated the cover rehab could be about \$500,000.

Digester B's cover is in much better shape.



Prior to returning Digester B to service, the beam to cover and wall to cover seals were replaced. This was done by cleaning and removing all material from the inside of the District. After cleaning, backer rod and caulking were installed. On the next cleaning cycle, the cover seal can be inspected to determine how the re-seal performed. As part of the cover rehab process, an advanced coating system should be installed in both digesters.

**ESTIMATED TOTAL PROJECT COST:** \$500,000

**ANTICIPATED SCHEDULE:**

Construction – FY 27-28



# RODEO SANITARY DISTRICT PLANT PROJECTS

**PROJECT NAME:** Major Electrical MCC Rehab

**DESCRIPTION:**

Project elements include:

- Complete MCC P1 relocation to MCC P1A.

**JUSTIFICATION:**

MCC P1 was constructed in 1973. The MCC is at the end of its service life. Many of the electrical buckets have been moved to MCC P1A over the years. There are still about 40 percent of the buckets in use. The new MCC P1A room has sufficient room for expansion.

This would be the completion of the first phase of several major electrical projects.

Other future projects include:

- Replacing the main WPCP breaker and switch gear panel.
- Replacing MCC P2.
- New main WPCP transformer
- New full plant grounding system

**ESTIMATED TOTAL PROJECT COST:** \$750,000

**ANTICIPATED SCHEDULE:**

Construction – FY 28-29



## **RODEO SANITARY DISTRICT**

5-YEAR CAPITAL IMPROVEMENT PROGRAM  
FISCAL YEAR 2023-2024 UPDATE

# **COLLECTION SYSTEM PROJECTS**



# RODEO SANITARY DISTRICT COLLECTION SYSTEM PROJECTS

**PROJECT NAME:** 4<sup>th</sup> Street to 3<sup>rd</sup> Street Realignment Project

**DESCRIPTION:**

Existing sewer alignment from 4<sup>th</sup> Street to 3<sup>rd</sup> Street is out of an existing District owned easement and routed under residential structures.

Alignment map is on the following page.

RSD worked with Associated Right of Way Services to understand the property rights and completed an easement assessment memo (available if requested). The memo indicated the District did have an easement and looked into new easement elements.

Project elements include:

- Exchange partial existing easement elements for partial new location.
- Re-route sewer line into new and existing easement locations.
- Relocate 3<sup>rd</sup> Street alignment.

**JUSTIFICATION:**

Sewer lines are under residential structures and in poor condition. Replacing reduces extreme liability issues. Improves the District's ability to perform maintenance.

**ESTIMATED TOTAL PROJECT COST:** \$500,000

**ANTICIPATED SCHEDULE:**

Construction – FY 24-25



Map Title



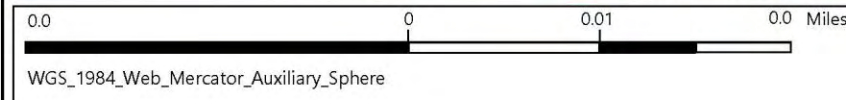
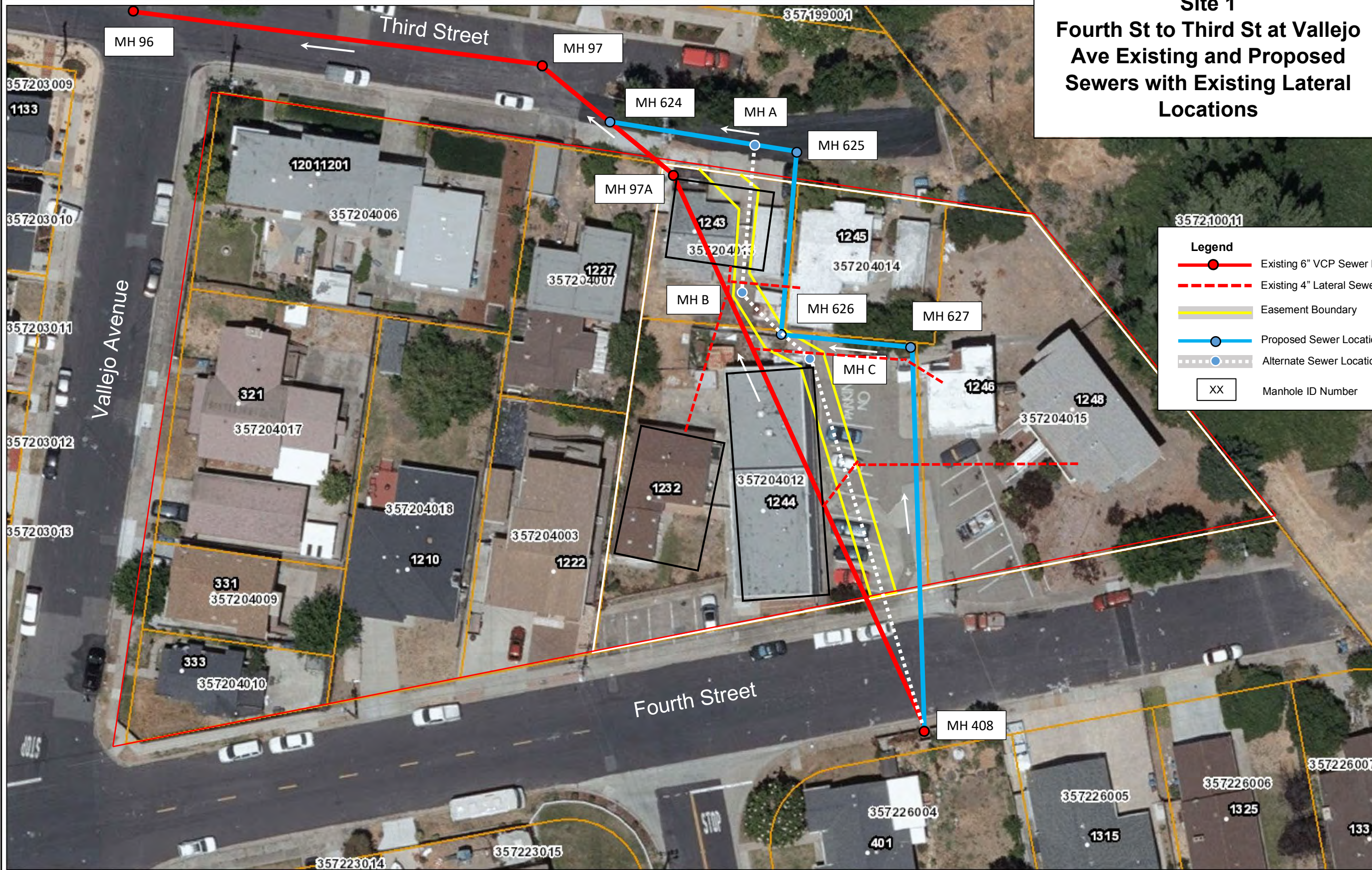
# Site 1 Fourth St to Third St at Vallejo Ave Existing and Proposed Sewers with Existing Lateral Locations

### Legend

- Address Points
- Assessment Parcels
- World Imagery
- Low Resolution 15m Imagery
- High Resolution 60cm Imagery
- High Resolution 30cm Imagery
- Stations

**Legend**

- Existing 6" VCP Sewer Location
- Existing 4" Lateral Sewer
- Easement Boundary
- Proposed Sewer Location
- Alternate Sewer Location
- XX Manhole ID Number



1: 564

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.  
THIS MAP IS NOT TO BE USED FOR NAVIGATION

**Notes**  
Contra Costa County -DOIT GIS



# RODEO SANITARY DISTRICT COLLECTION SYSTEM PROJECTS

**PROJECT NAME:** Investment Avenue to 3<sup>rd</sup> Street Realignment Project

**DESCRIPTION:**

Existing sewer alignment from Investment Avenue to 3<sup>rd</sup> Street is out of a District owned easement and routed under residential structures. Sewer was constructed, in part, by the Army Corps of Engineers in the late 1960s. This was done when the Rodeo Creek was channelized. Over the years, residences in the area constructed patios and other structures without coordinating with the District. Procedures in place today would not have allowed this to occur.

Show from sewer map.

RSD has completed some research on this area and concluded there are no District owned easements. Some sections of the sewer lines are in existing public utility corridors. If the District relocates the sewer in the middle of the vacant lot at 721 3<sup>rd</sup> Street, the lot becomes developable. The property owner will likely give the District the easement for no cost.

Project elements include:

- Secure licenses or easements from County Flood Control District.
- Re-route sewer line into new easement locations.
- Relocate Investment Street alignment.

**JUSTIFICATION:**

Some sections of the sewer line are under residential structures and in poor condition. Replacing reduces extreme liability issues. Improves the District's ability to perform maintenance. Secures RSD infrastructure in documented easements.

**ESTIMATED TOTAL PROJECT COST:** \$500,000

**ANTICIPATED SCHEDULE:**

Construction – FY 25-26



# Site 2 Investment to Third Street, Proposed Sewer Modifications



- Legend**
- Board of Supervisors' Districts
  - City Limits
  - Unincorporated
  - Address Points
  - Streets
  - Assessment Parcels
  - World Imagery
  - Low Resolution 15m Imagery
  - High Resolution 60cm Imagery
  - High Resolution 30cm Imagery
  - Citations

Sewer No.	Size	Proposed Easement Status	Pipe Status
1	10" VCP	No Change	Active
2	6" VCP	Potential Relocate	Abandoned
3	8" VCP	Potential Relocate	Abandoned
4	10" PVC	TBD	Abandoned
5	6" VCP	Potential Relocate	Abandoned
6	10" PVC	TBD	Possible Relocation
7	10" PVC	TBD	New Sewer Route

All dashed lines are abandoned

Building is not enclosed under rooftop

See Figure 6 for Potential Sewer Relocations South of MH 560

**Legend**

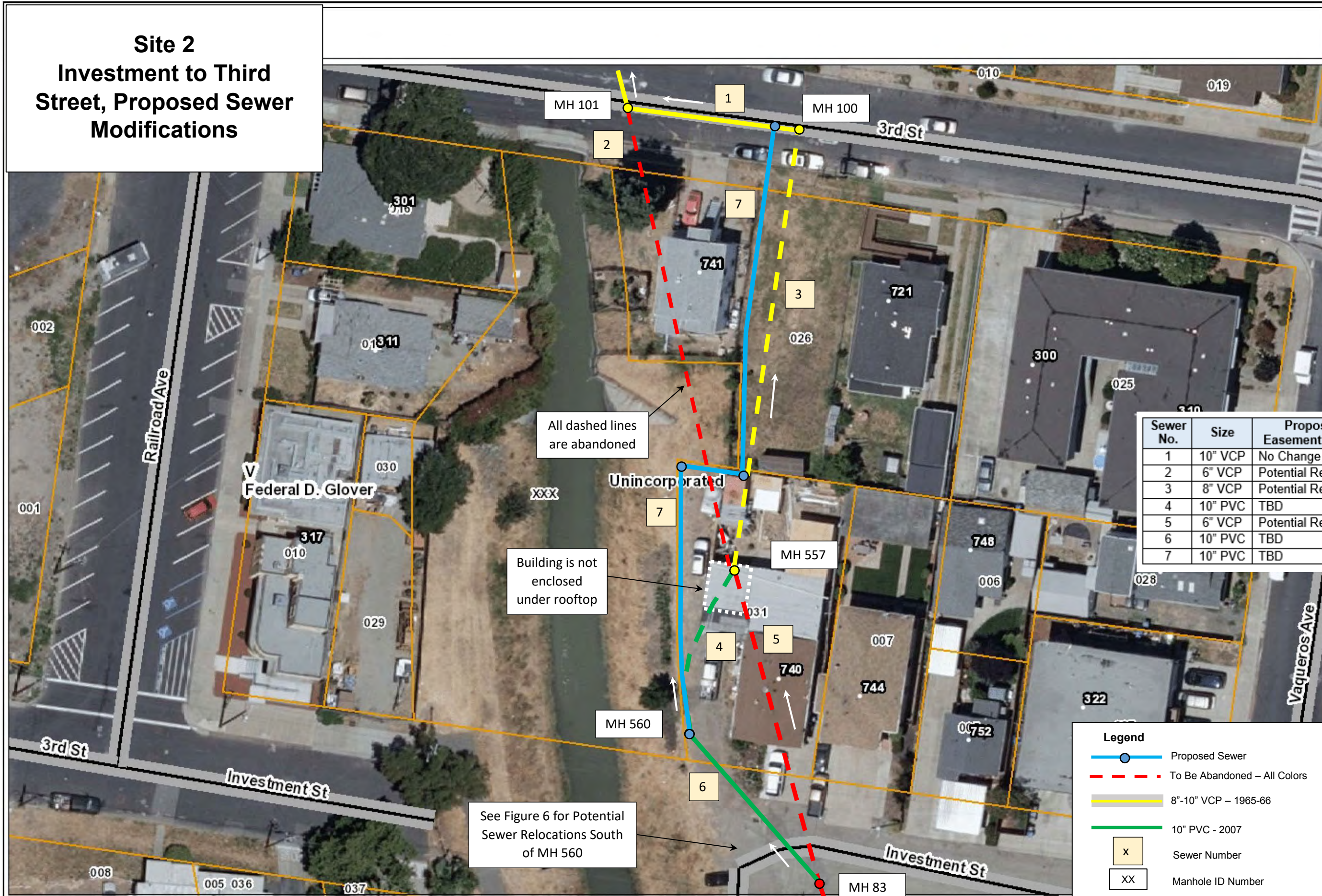
- Proposed Sewer
- - - - - To Be Abandoned – All Colors
- 8"-10" VCP – 1965-66
- 10" PVC - 2007
- X Sewer Number
- XX Manhole ID Number

1:564

**Notes**  
Contra Costa County -DOIT GIS

0.0 0 0.01 0.0 Miles  
WGS\_1984\_Web\_Mercator\_Auxiliary\_Sphere

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THIS MAP IS NOT TO BE USED FOR NAVIGATION





# Site 3 - North Fourth St to Investment St Proposed Sewer Modifications



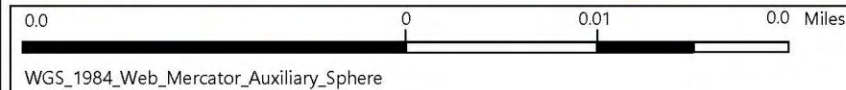
### Legend

- Board of Supervisors' Districts
- City Limits
- Unincorporated
- Address Points
- Building Outlines
- Assessment Parcels
- World Imagery
- Low Resolution 15m Imagery
- High Resolution 60cm Imagery
- High Resolution 30cm Imagery
- Citations

Sewer No.	Size	Proposed Easement Status	Pipe Status
1	10" PVC	TBD	Abandoned
2	6" VCP	Potential Relocate	Abandoned
3	10" PVC	TBD	Active
4	6" VCP	Potential Relocate	Abandoned
5	10" PVC	TBD	New Sewer Route
6	8" PVC	Public R/W	New Sewer Route
7	10" PVC	TBD	New Sewer Route

### Legend

	6" VCP - 1940's
	10" PVC - 2007
	Proposed Sewer Location
	Abandoned
	Sewer Number
	Manhole ID Number



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1: 564

**Notes**  
Contra Costa County -DOIT GIS



# RODEO SANITARY DISTRICT COLLECTION SYSTEM PROJECTS

**PROJECT NAME:** 2028 Priority Improvements

**DESCRIPTION:**

Project elements are undefined. Will need to conduct small study/evaluation to identify elements. Will likely be in response to deficiencies identified in CWWMP update.

Project elements include:

- Sewer rehabilitation.
- Manhole rehabilitation.

**JUSTIFICATION:**

7

**ESTIMATED TOTAL PROJECT COST:** \$500,000

**ANTICIPATED SCHEDULE:**

Construction – FY 27-28





# **RODEO SANITARY DISTRICT**

5-YEAR CAPITAL IMPROVEMENT PROGRAM  
FISCAL YEAR 2023-2024 UPDATE

# **STRATEGIC INITIATIVES**

# RODEO SANITARY DISTRICT STRATEGIC INITIATIVES

**PROJECT NAME:** Comprehensive Wastewater Master Plan Update

**DESCRIPTION:**

RSD prepared a Comprehensive Wastewater Master Plan (CWWMP) in June 2013. The report was instrumental and critical for the development of major capital improvements RSD implemented over the next decade. These improvements have totaled almost \$20 million and include:

- 5 major sewer rehabilitation projects totaling about 20 percent of the collections system.
- Total renovation of the Main Pump Station.
- Renovation of the Anaerobic processing system at the WPCP.
- Implementation of SCADA at the WPCP.
- Addition of Bar Screen Facilities at the WPCP Headworks.
- Major rehabilitation of the Headworks.

The CWWMP recommended more projects than have been completed. The District was not financially capable of implementing all the projects identified in the CWWMP.

**JUSTIFICATION:**

Now that the above projects are complete, coupled with this 5-year CIP, it would be prudent for RSD to update the CWWMP. The update could assist in prioritize remaining major projects and suggest funding plans to finance them.

**ESTIMATED TOTAL PROJECT COST:** \$300,000

**ANTICIPATED SCHEDULE:**

Implementation – FY 24-26



# RODEO SANITARY DISTRICT STRATEGIC INITIATIVES

**PROJECT NAME:** Climate Resiliency Study

**DESCRIPTION:**

The purpose of this strategic initiative is to develop a District Climate Action Plan and / or Climate Resilience Plan. Each of the District's three main asset areas (plant, collection system, and pump stations) will be evaluated for potential vulnerabilities and impacts due to climate change, sea level rise, and groundwater rise. The District's consumption of fossil fuels is also an area that needs study and possibly future planning.

**JUSTIFICATION:**

The District must understand the potential impacts that a changing climate may have upon its infrastructure and assets and should develop a Climate Action / Resilience Plan to mitigate those impacts. The District is yet to undertake any formal action on climate change such as this study; therefore, it should do so soon. A Climate Action / Resilience Plan would also ensure that the District is aware of any climate-related regulatory requirements that it must meet, inform capital improvement program (CIP) development, provide technical guidance for CIP project execution, and better position the District for future funding opportunities. The District may need to plan for the replacement of its fossil fuel-consuming assets with assets that consume alternative forms of energy.

**ESTIMATED TOTAL PROJECT COST:** \$100,000

**ANTICIPATED SCHEDULE:**

Implementation – FY 24-25