

# Constructability Meeting

OPW 53082 Monroe Street Lift Station Improvements Project

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Brian McKee  
Melody Glasscock

*September X, 2020*

The logo for CDM Smith, featuring the text "CDM" stacked above "Smith" in a bold, white, sans-serif font. The logo is positioned on a dark blue background that also contains a microscopic image of water bubbles.

**CDM  
Smith**

**WATER** + ENVIRONMENT + TRANSPORTATION + ENERGY + FACILITIES

# Safety Minute – Gas Detection; Pit Falls to Avoid

- Not Knowing the Differences in Gas Types
- Not Performing Routine Bump Tests and Gas Detector Maintenance
- Not Following Safety Plans After a Gas Alarm
- Not Offering Gas Detection Training for Employees



# Schedule & Estimated Budget

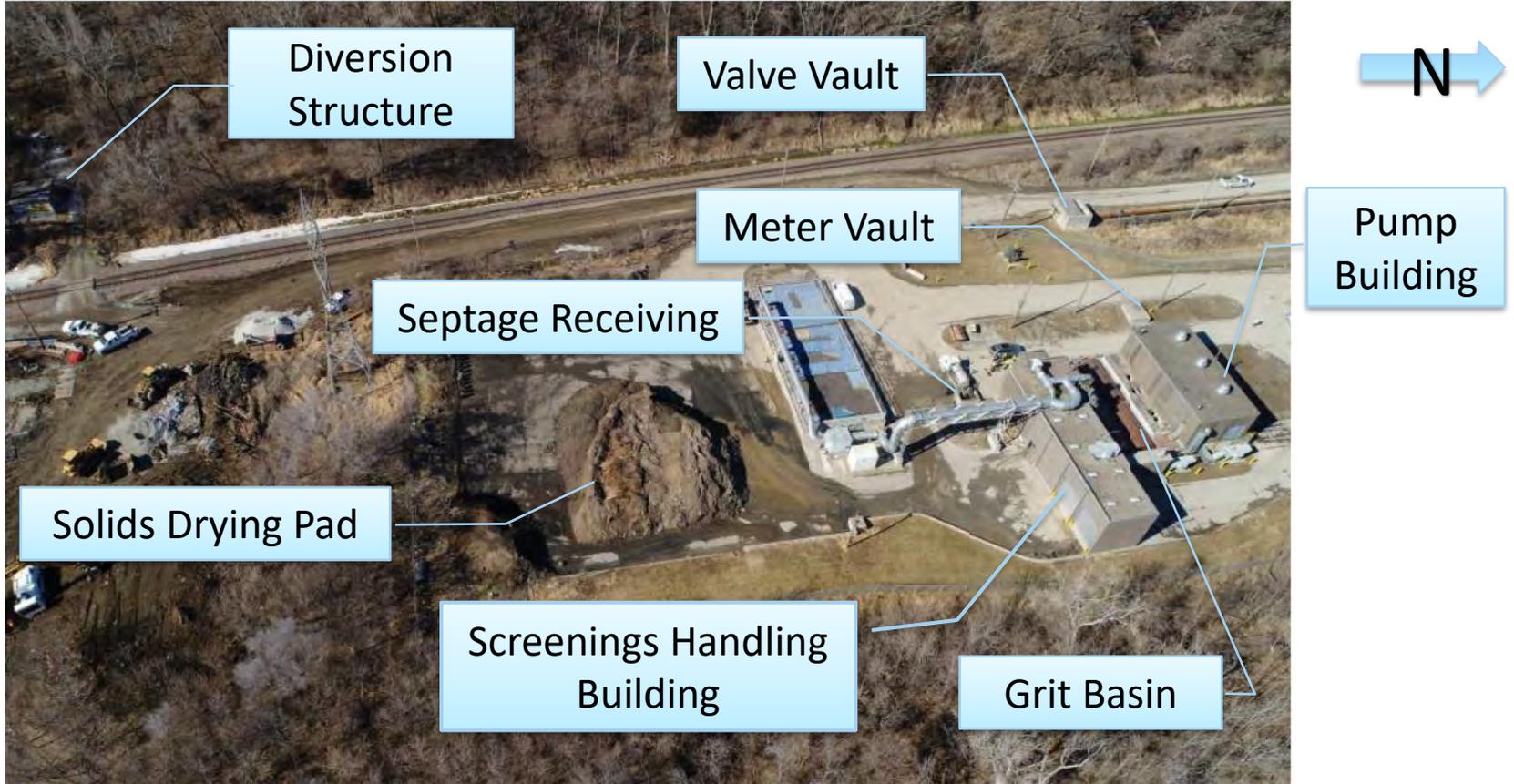
- Estimated Budget: \$19-26M

	Project Schedule
Advertise	February 15, 2021
100% Set	March 22, 2021
Award Date	May 25, 2021
Final Completion	February 2023



# MSLS & DS-119 Site Overview

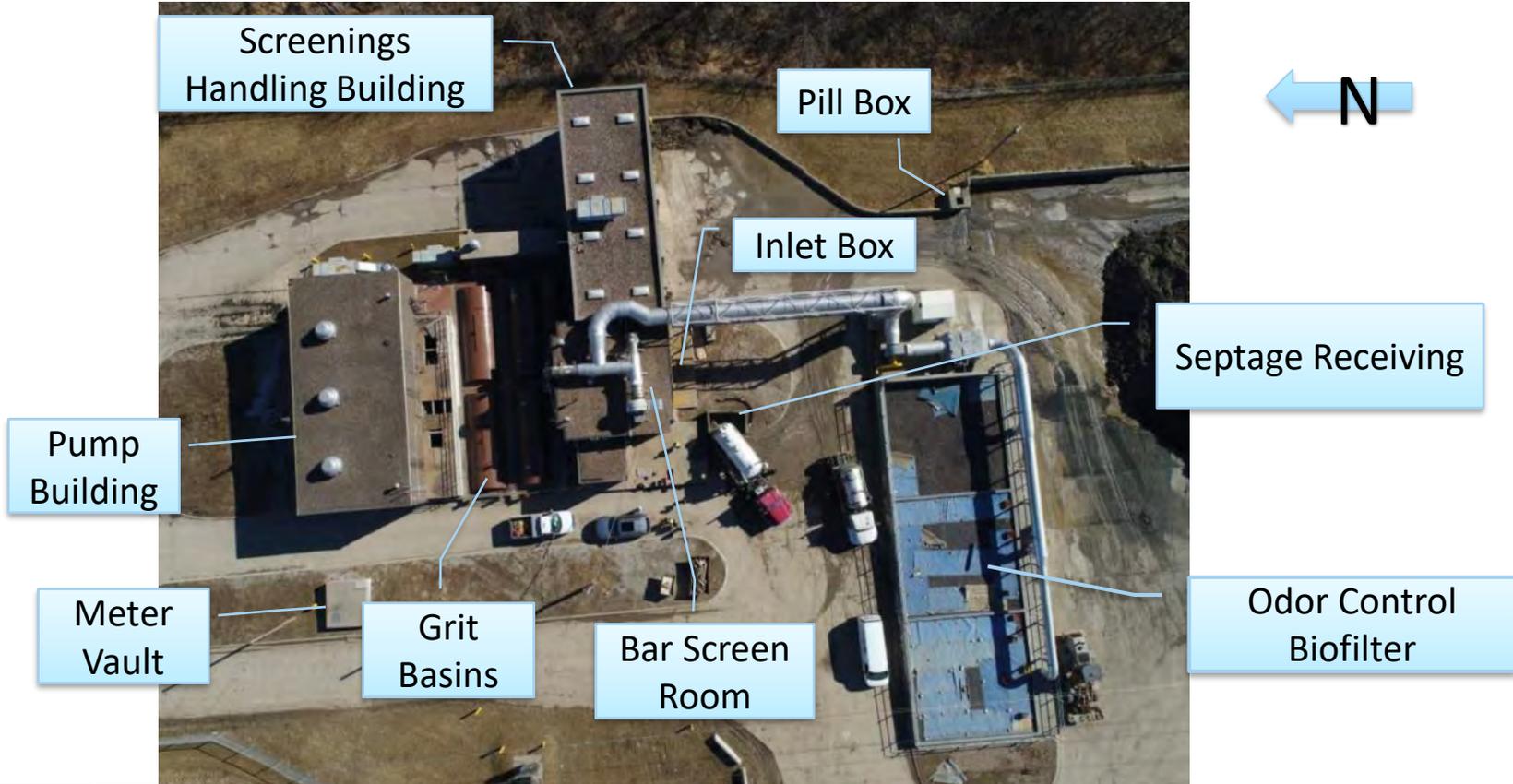
# Overall Aerial View



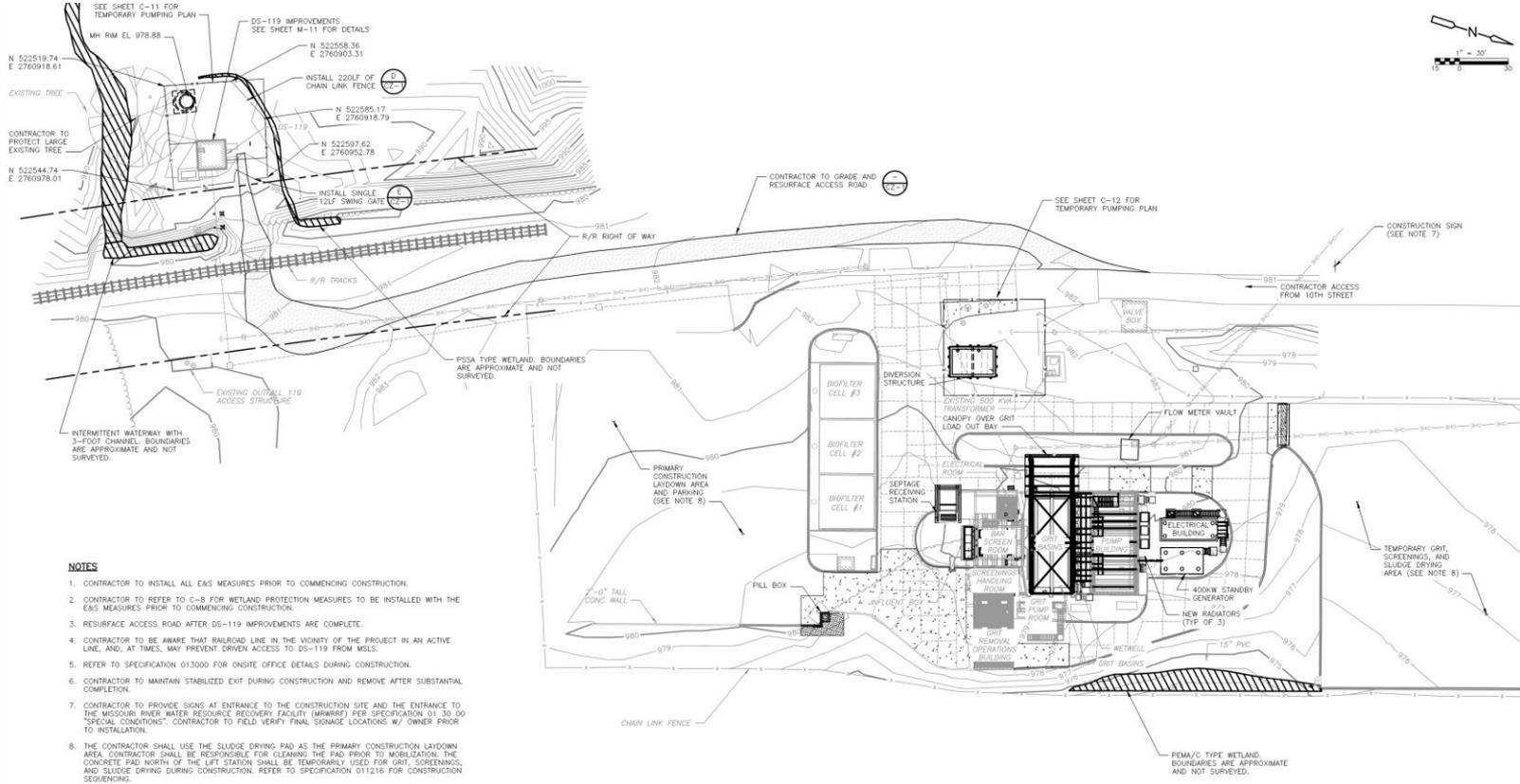
# DS-119 Exterior



# MSLS Ariel View



# Site Imps



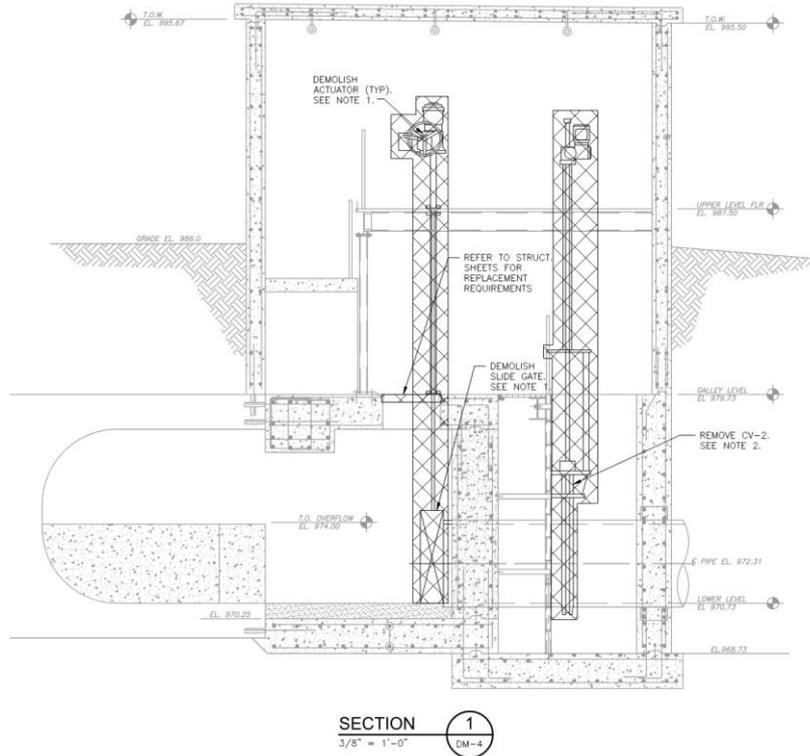
## NOTES

- CONTRACTOR TO INSTALL ALL EAS MEASURES PRIOR TO COMMENCING CONSTRUCTION.
- CONTRACTOR TO REFER TO C-8 FOR WETLAND PROTECTION MEASURES TO BE INSTALLED WITH THE EAS MEASURES PRIOR TO COMMENCING CONSTRUCTION.
- RESURFACE ACCESS ROAD AFTER DS-119 IMPROVEMENTS ARE COMPLETE.
- CONTRACTOR TO BE AWARE THAT RAILROAD LINE IN THE VICINITY OF THE PROJECT IS AN ACTIVE LINE, AND, AT TIMES, MAY PREVENT DRIVEN ACCESS TO DS-119 FROM MSL.
- REFER TO SPECIFICATION 013000 FOR ONSITE OFFICE DETAILS DURING CONSTRUCTION.
- CONTRACTOR TO MAINTAIN STABILIZED EXIT DURING CONSTRUCTION AND REMOVE AFTER SUBSTANTIAL COMPLETION.
- CONTRACTOR TO PROVIDE SIGNS AT ENTRANCE TO THE CONSTRUCTION SITE AND THE ENTRANCE TO THE MISSOURI RIVER WATER RESOURCE RECOVERY FACILITY (MRWRFF) PER SPECIFICATION 01 30 00 "SPECIAL CONDITIONS". CONTRACTOR TO FIELD VERIFY FINAL SIGNAGE LOCATIONS W/ OWNER PRIOR TO INSTALLATION.
- THE CONTRACTOR SHALL USE THE SLUDGE DRYING PAD AS THE PRIMARY CONSTRUCTION LAYDOWN AREA. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING THE PAD PRIOR TO MOBILIZATION. THE CONCRETE PAD NORTH OF THE LIFT STATION SHALL BE TEMPORARILY USED FOR GRIT, SCREENINGS, AND SLUDGE DRYING DURING CONSTRUCTION. REFER TO SPECIFICATION 011216 FOR CONSTRUCTION SIGNAGING.

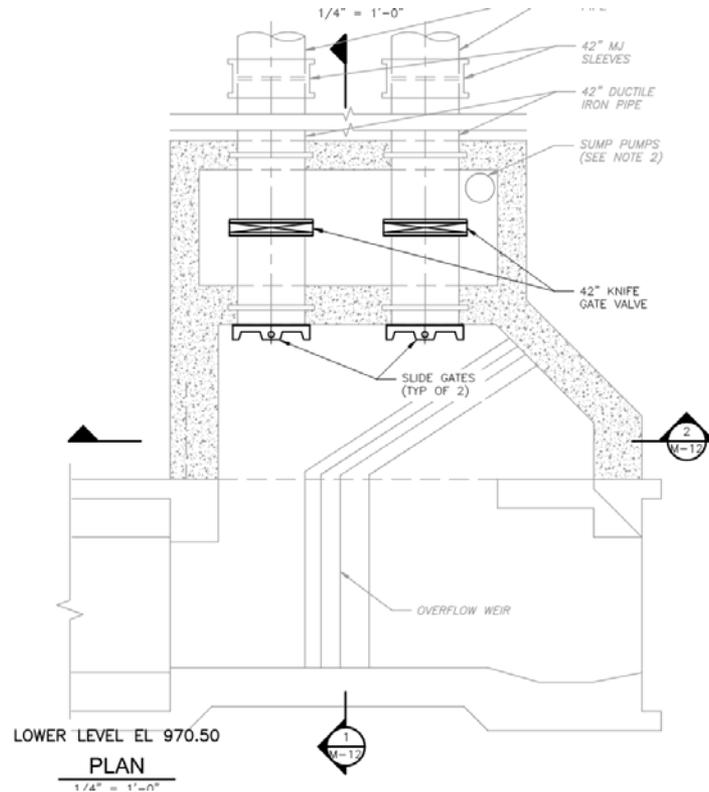


# DS-119 Improvements

# DS-119 Demolition



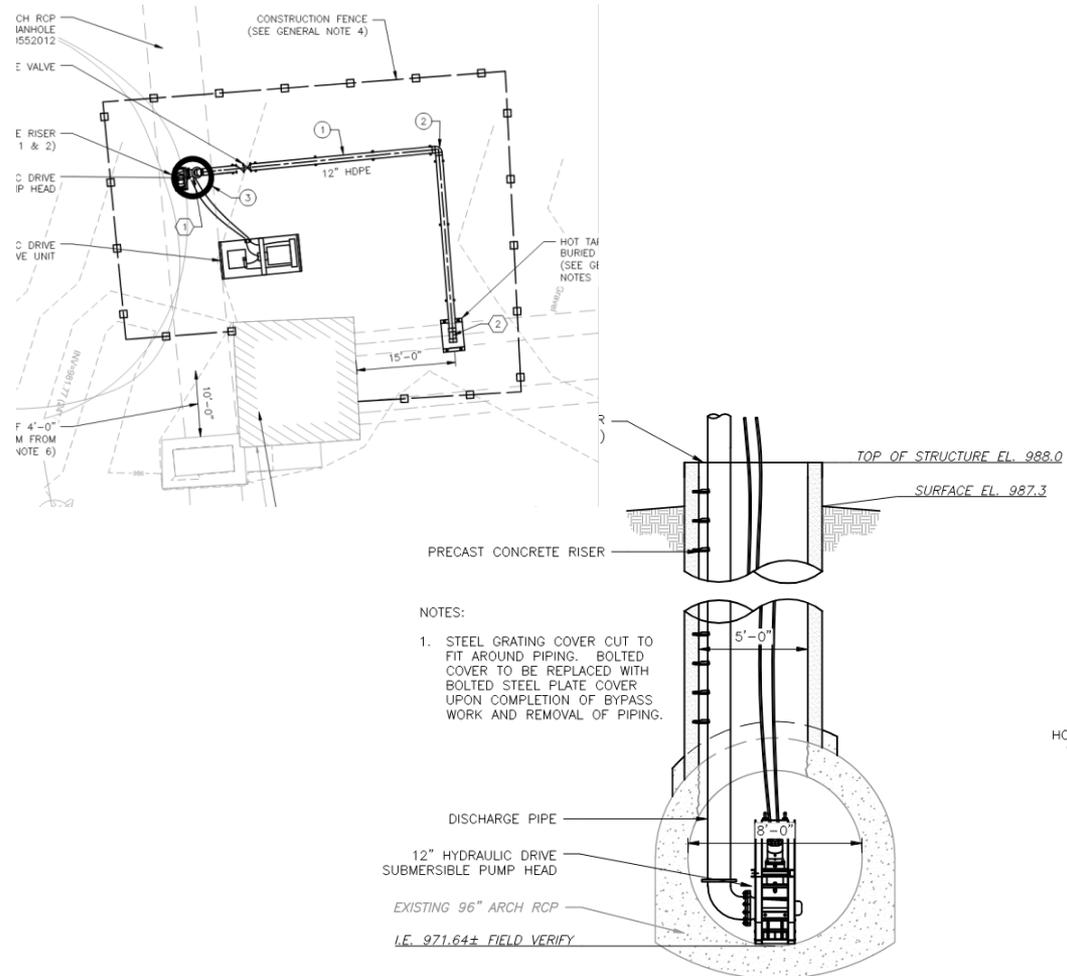
# DS-119 Improvements



- New Slide Gates
- New Control Valves & Actuators
- Sump Pumps
- Level Sensor
- Electrical
- Building Hardening

# DS-119 Bypassing

- MH Remains
- Need to Replace SLGs
- Dry Weather Only
- Safety? – Double Block
- Wet weather aspects
- How long to replace the Slide Gates?



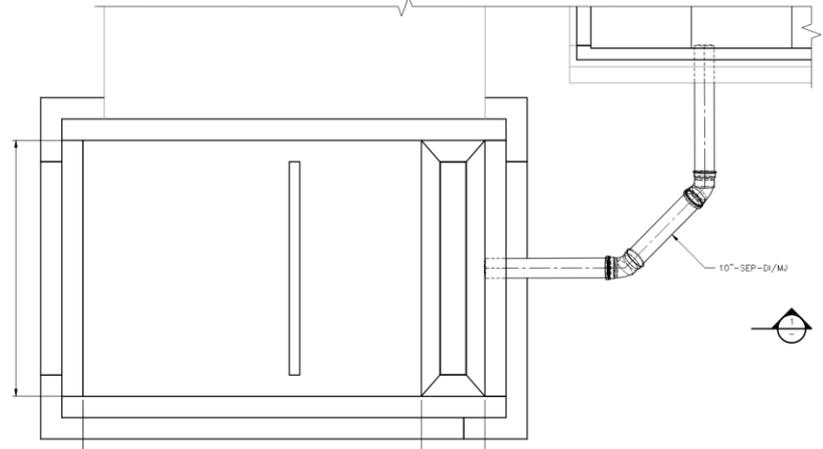
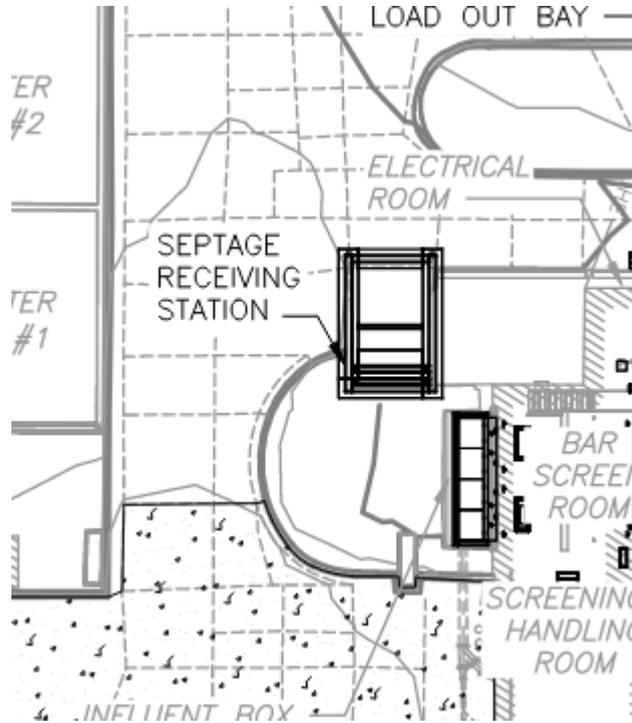


# Septage Receiving & Pill Box

# Septage Receiving

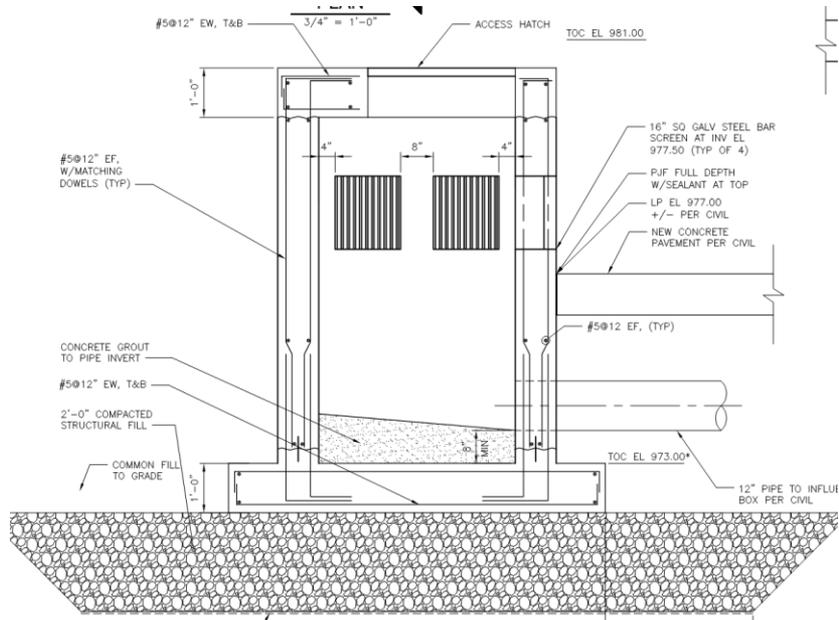


# Septage Receiving Imps



# Pill Box

- Remove & Replace

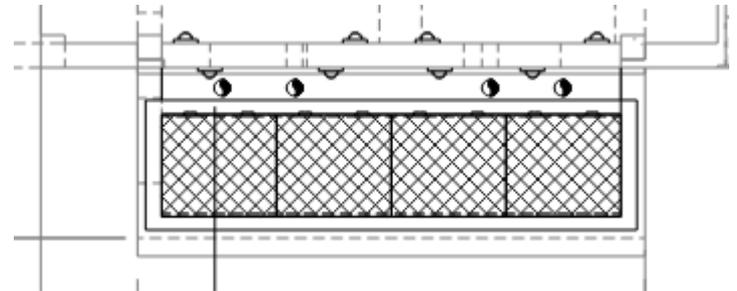
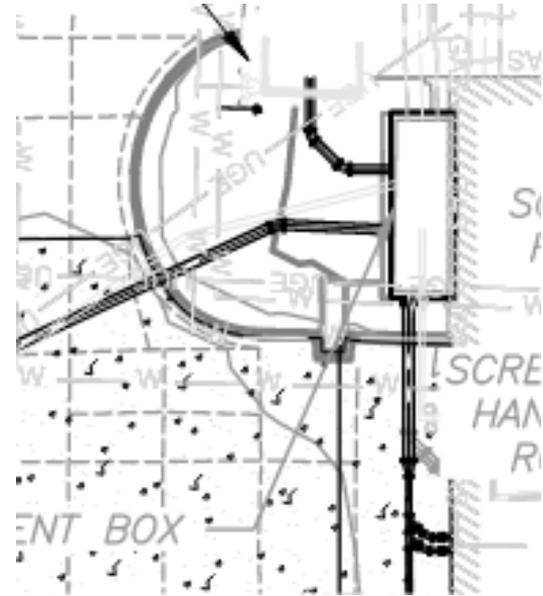




# Inlet Box

# Inlet Box

- Remove and Replace Covers
- New piping connections
- Structural Repairs

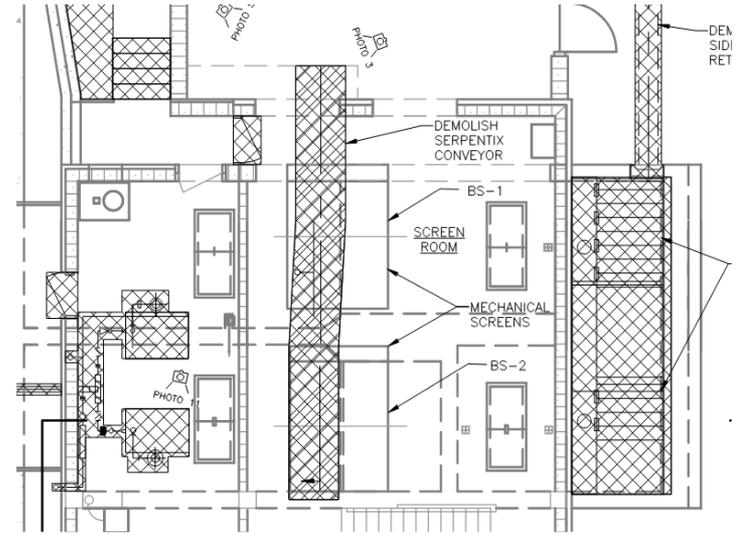




# Bar Screen Room

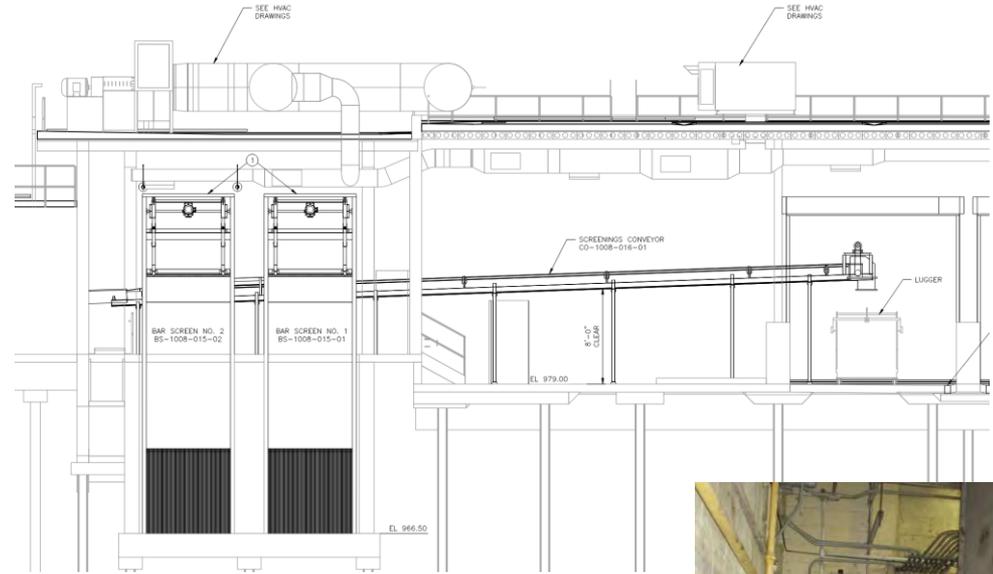
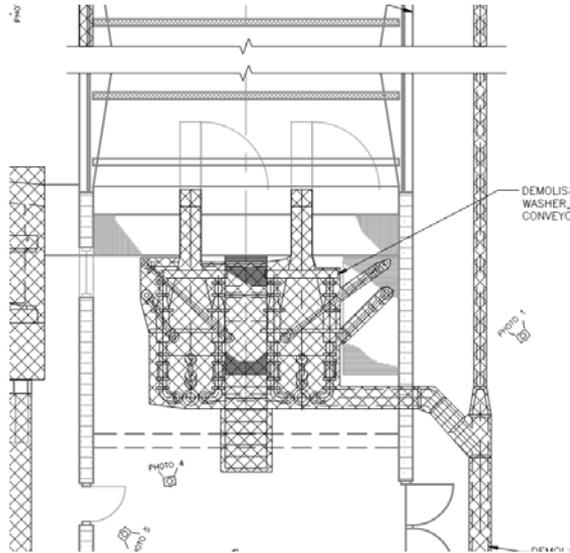
# Bar Screen Imps

- Rebuild Screens
- Replace Existing Gates
- Replace Conveyor



# Bar Screen Room – Conveyor

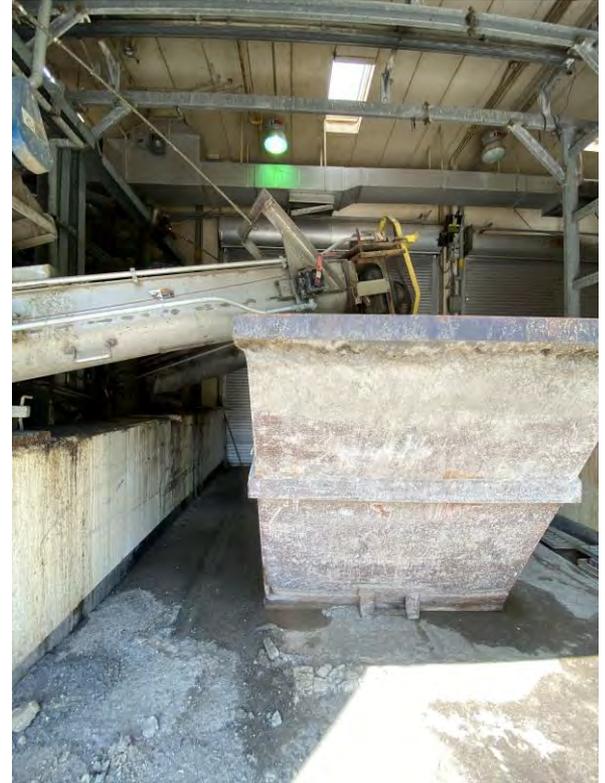
- Replace the Conveyor
- Remove Exist. Grit System



# Screenings Handling Room – Interior



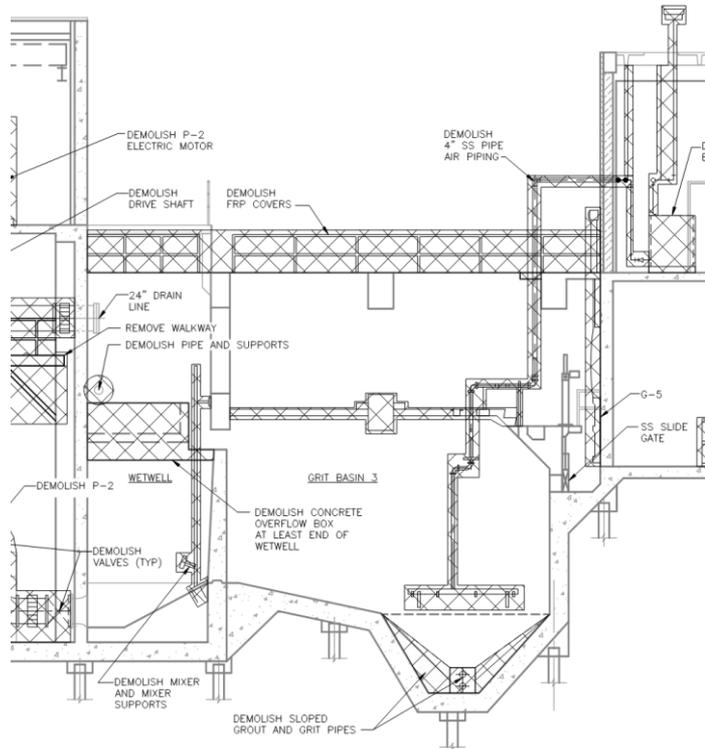
# Screenings Handling Room – Luggers & Trench





# Grit Basin and New Clamshell

# Grit Basins – Demolition



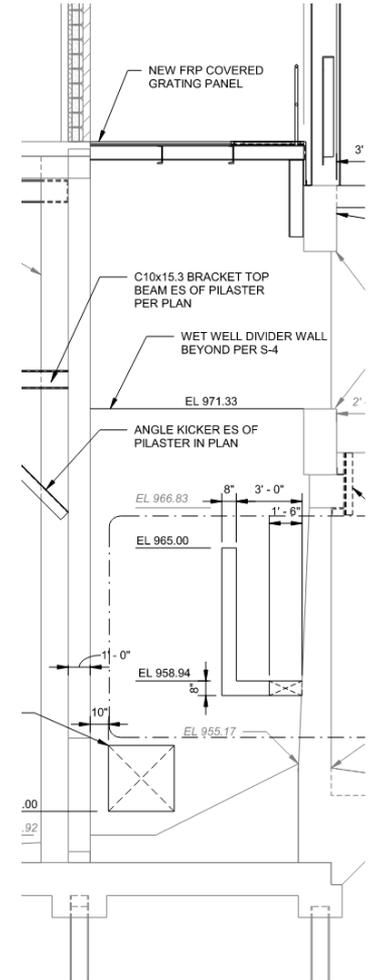
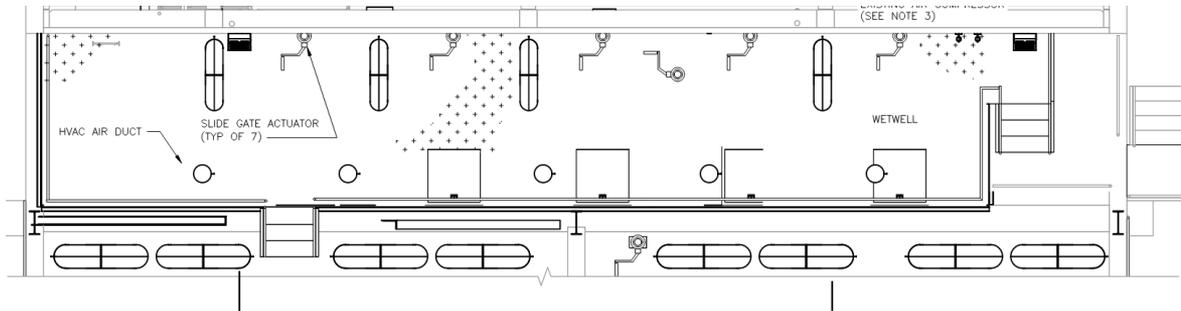




# Wet Well

# Wet Well

- Replace the Covers
- Cleaning and Repairs
- New Baffle & Walls
- Isolation Gates

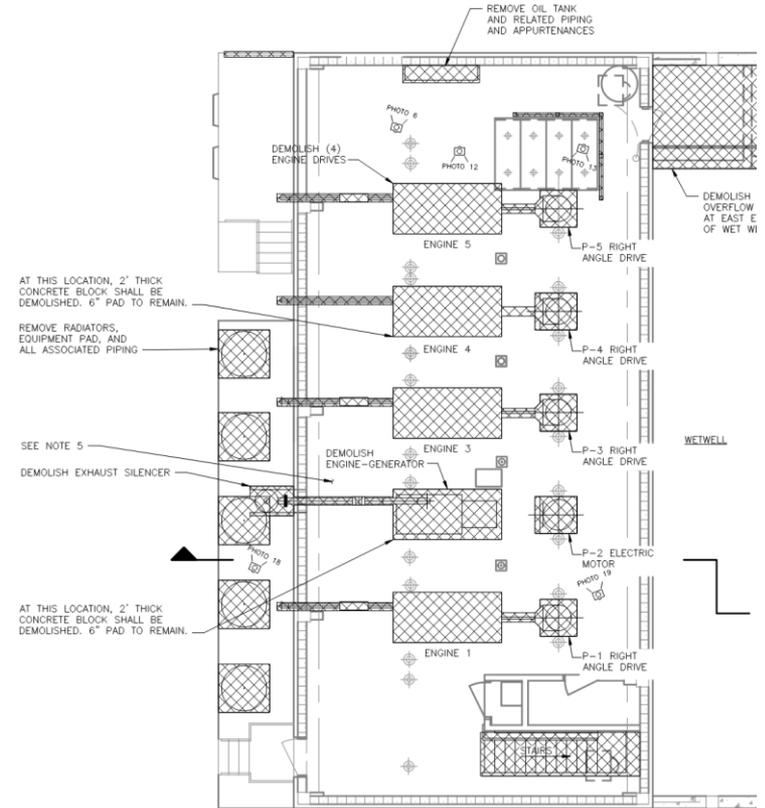




# Pump Building

# Engine Room

- Remove and Replace Engines
- Break Tank
- Remove and Replace Radiators

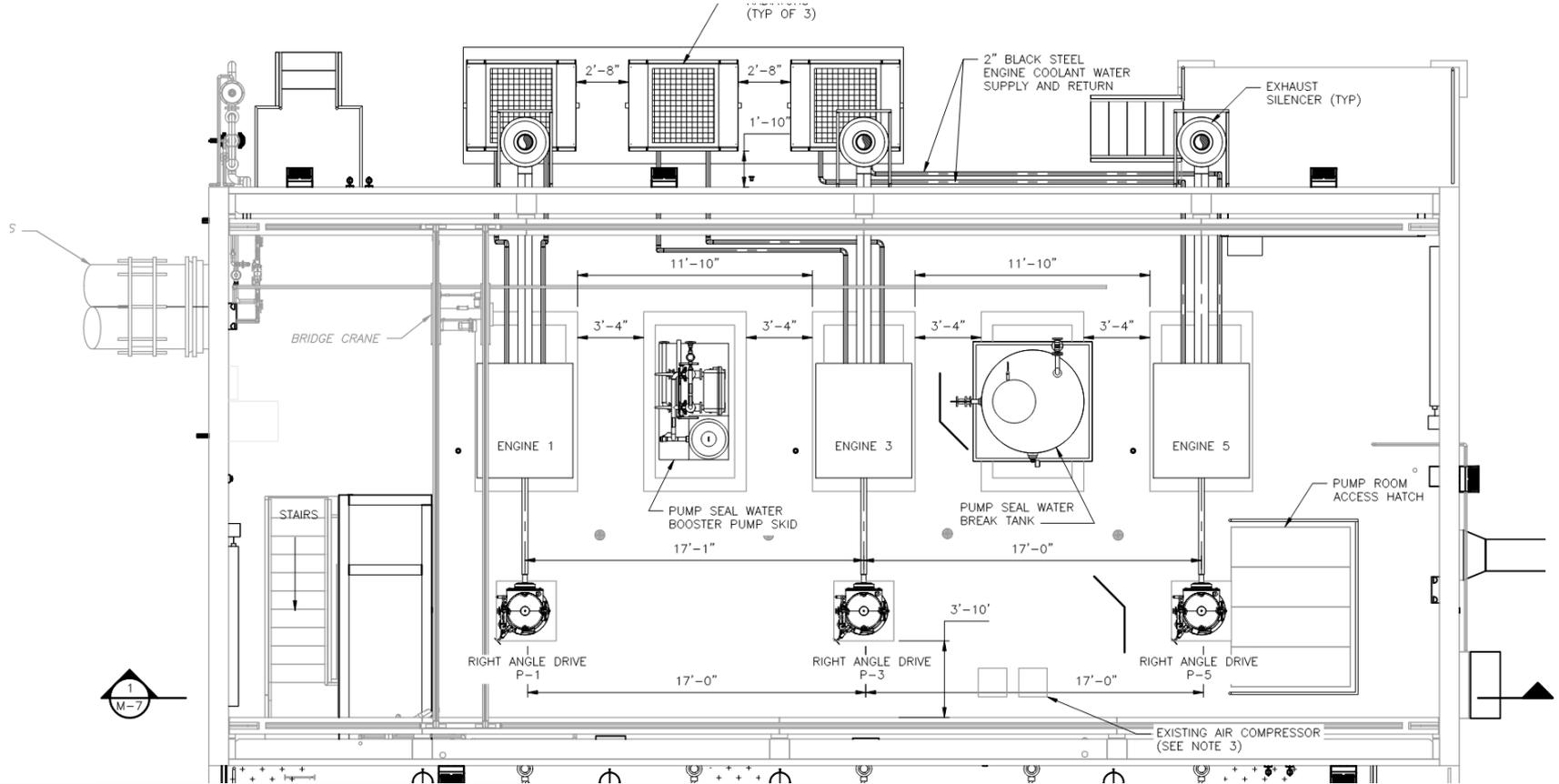


DEMOLISH ALL 4 FRP  
COVERS OVER GRIT BA

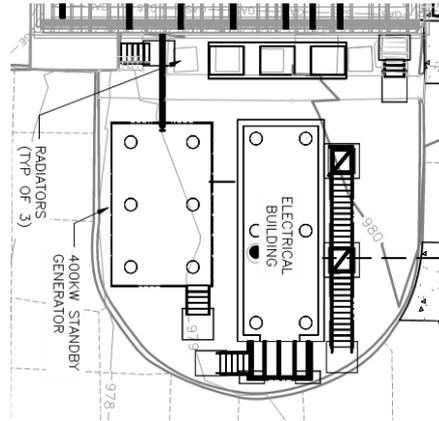
# Engine Room



# Engine Room Imps.

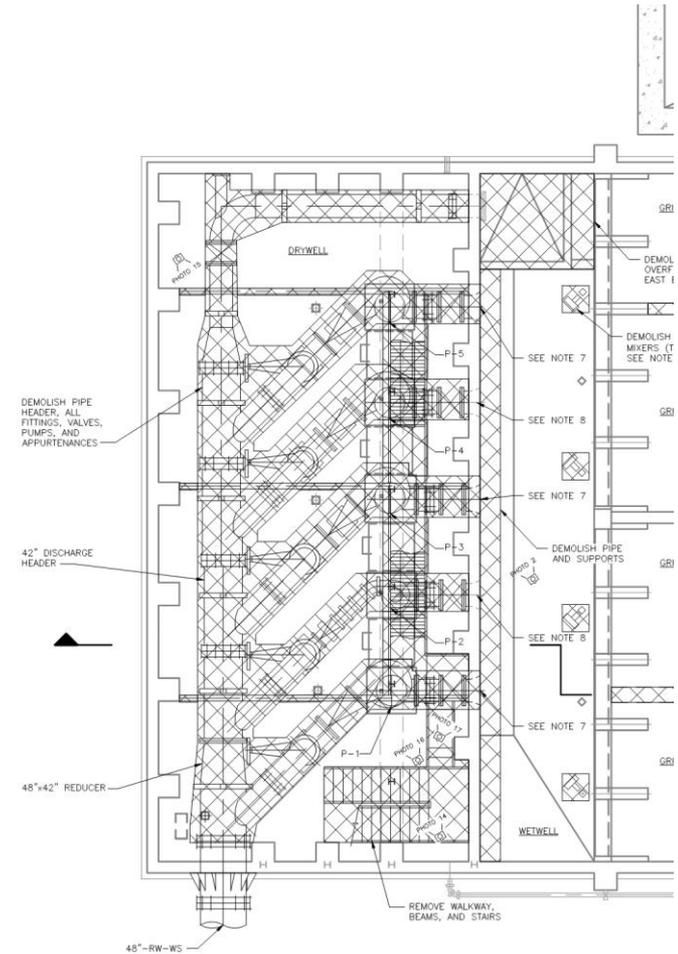
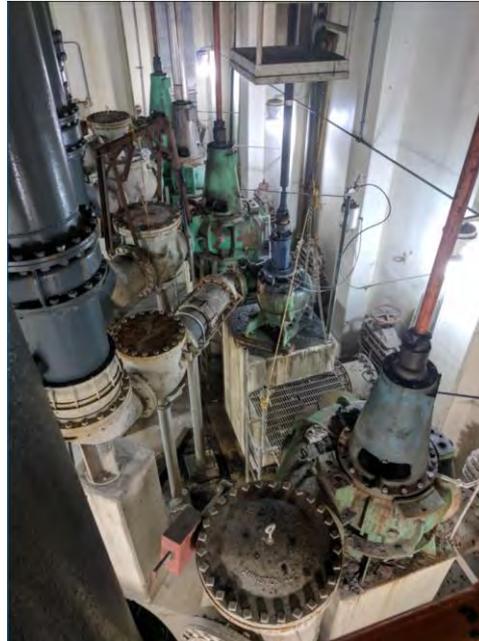


# MSLS Exterior Photos – Remote Radiators

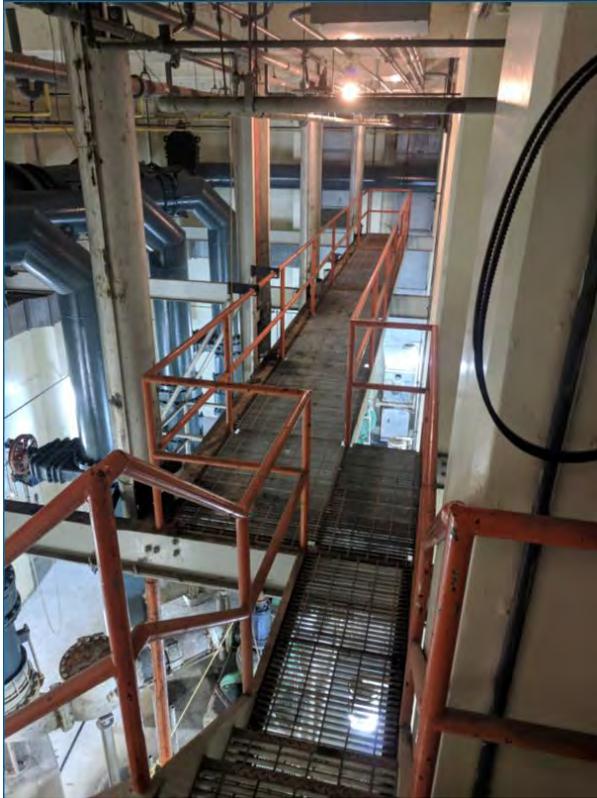


# Pump Room

- Remove and Replace Pumps & Piping

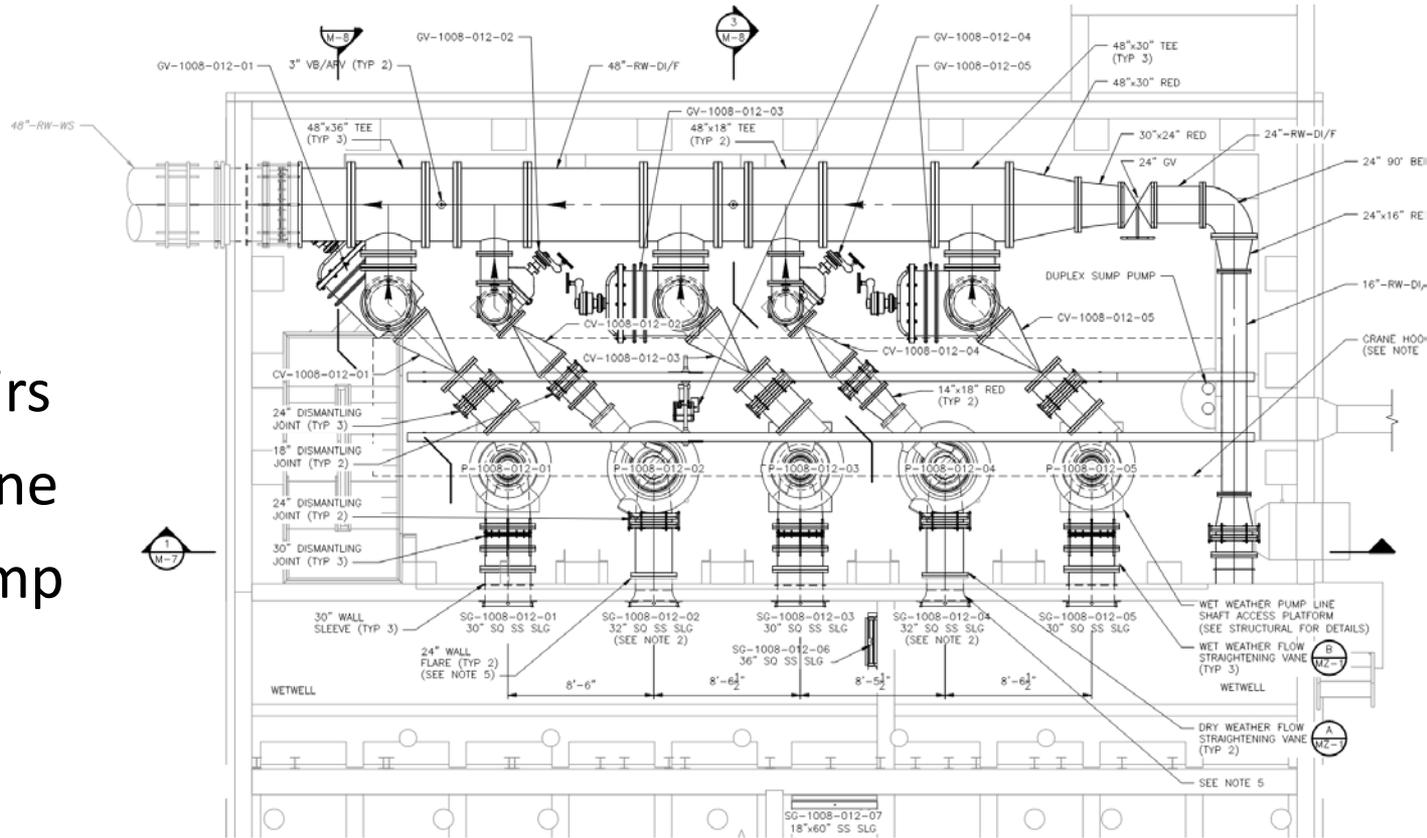


# Lower Level Dry Pit



# Lower Level Dry Pit

- Pumps & Piping
- Supports
- Access Stairs
- Sliding Crane
- Duplex Sump Pumps



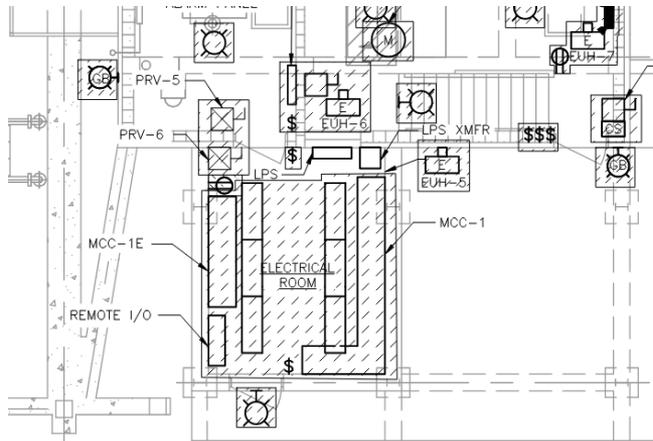




# Electrical Building and Generator

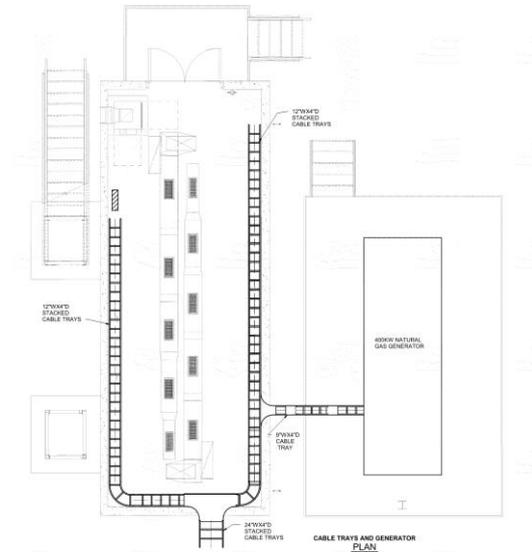
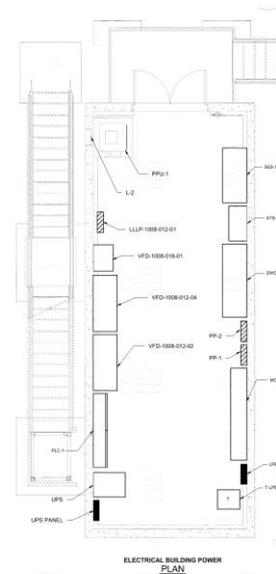
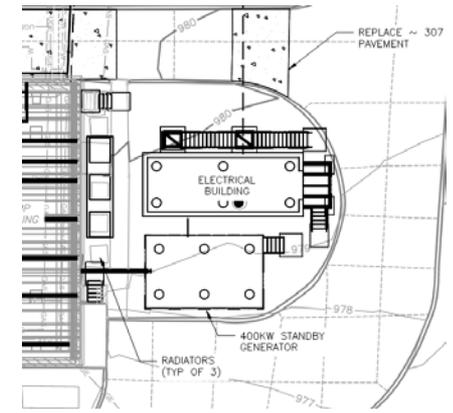
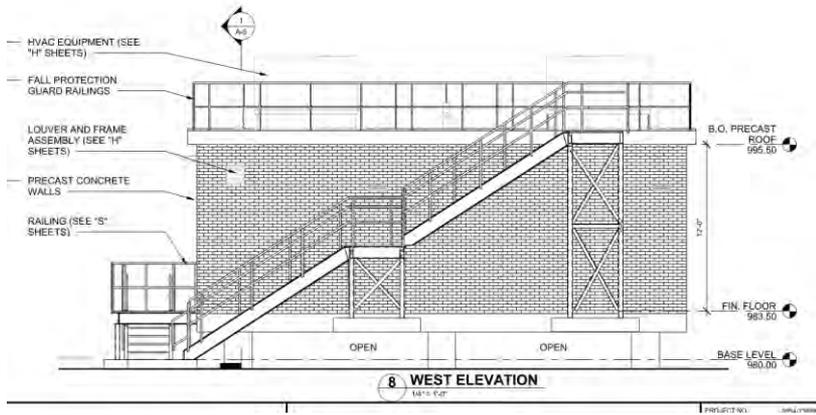
# Existing Electrical Room

- Demolition of Equipment
- Dry Weather Bypass Pumps



# Electrical Building

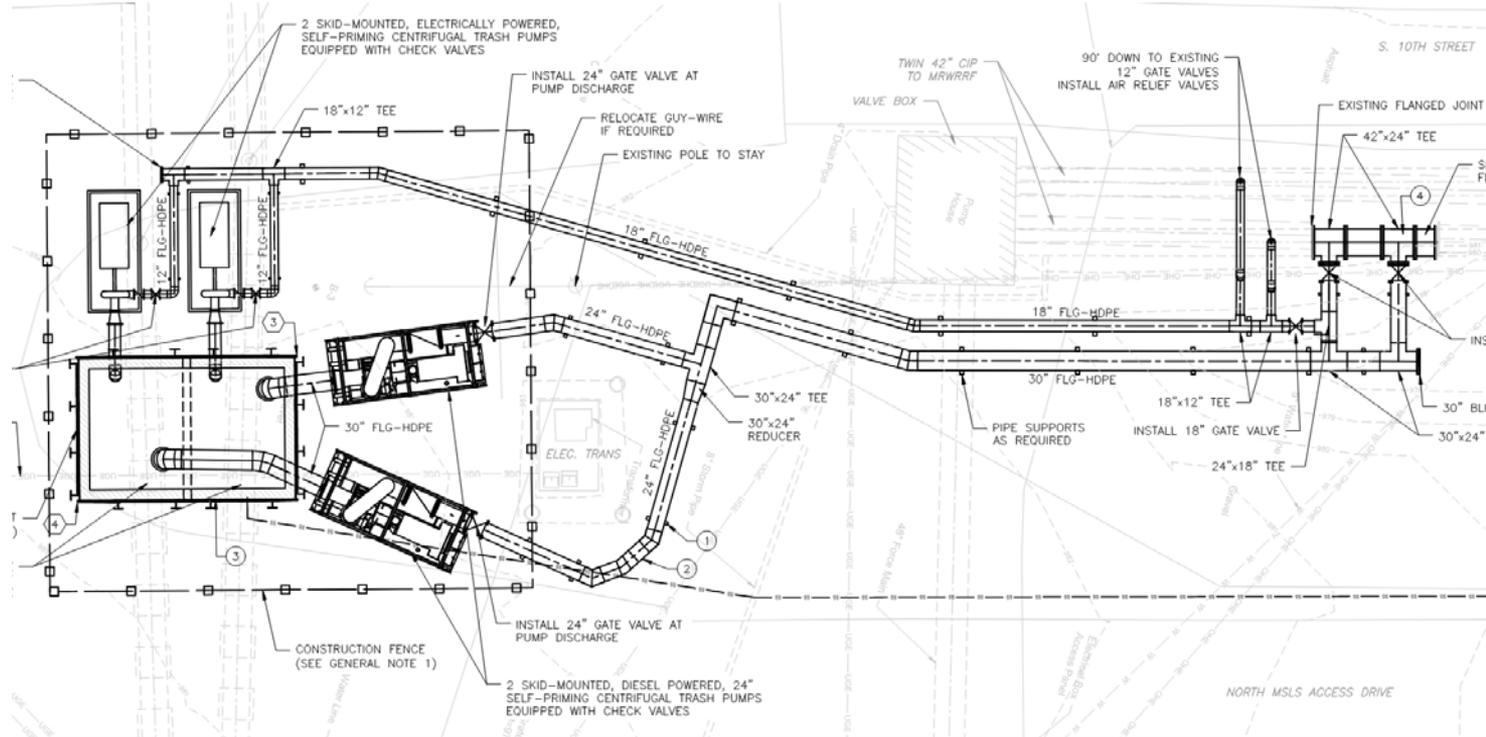
- Electrical Building
- Natural Gas Generator
- Full Lighting Replacement
- Pier-mounted Building





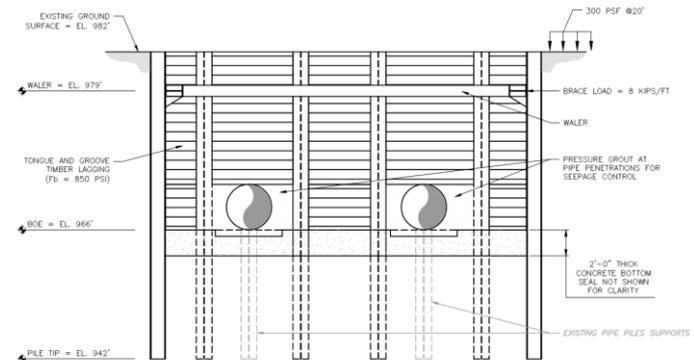
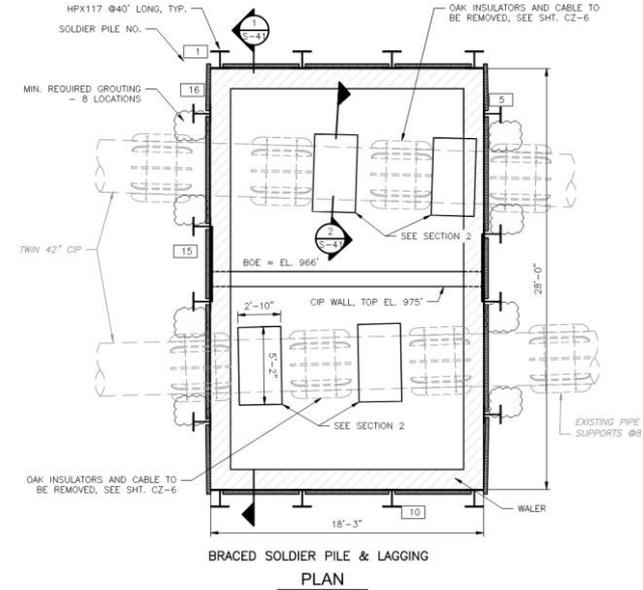
# MSLS – Bypass Pumping

# Bypass Pumping

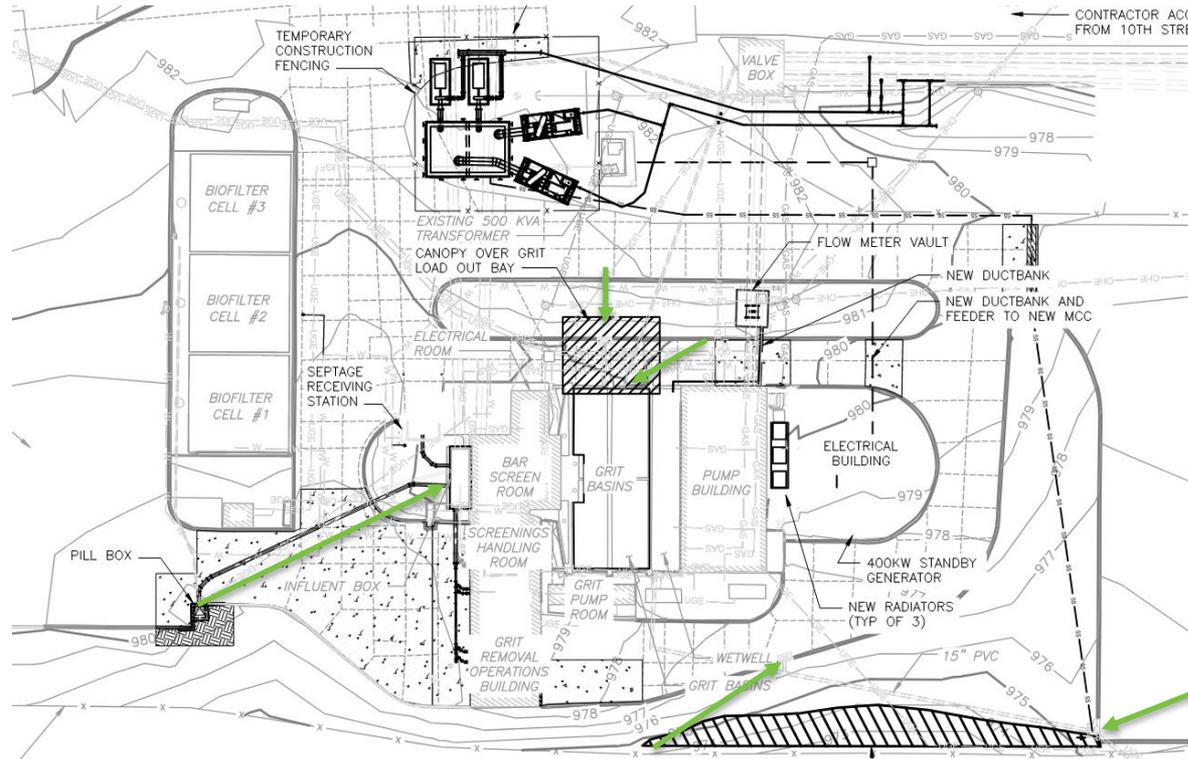


# Bypass Pumping

- Dry Weather = 6 MGD
- Wet Weather Bypass Pumping = 40 MGD
- Fuel Source
  - Diesel Wet Weather
  - Electric Dry Weather
- Temporary Pit
- Grit Removal – Unit Price per CY
- Duration? – Planning on 8 to 10 months
- Monitoring
  - Level Sensor
  - Manned During Wet weather Operations



# Other Flows Into MSLS

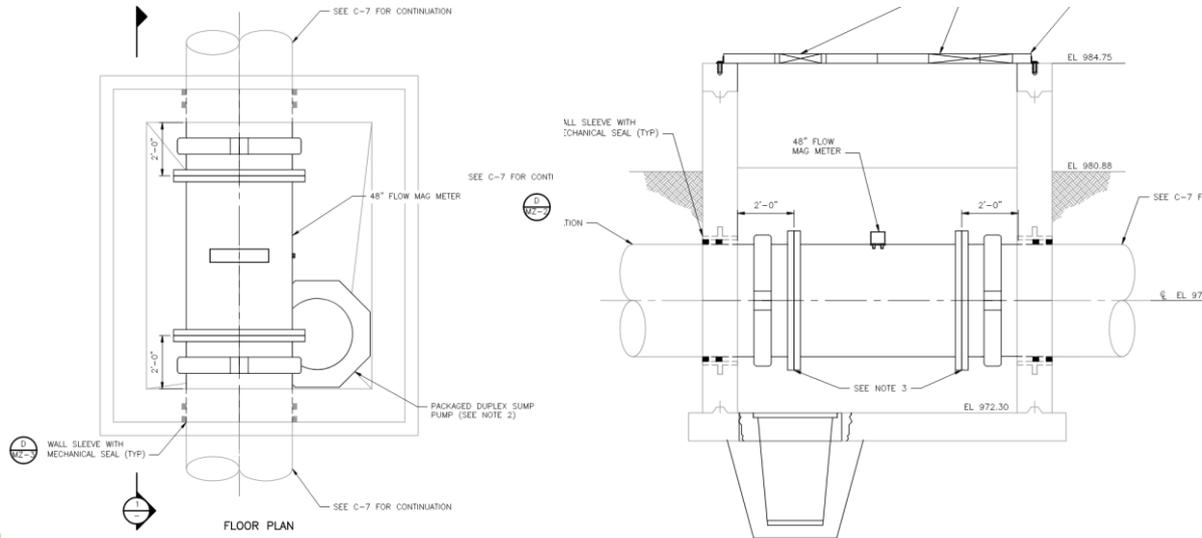




# Site Improvements

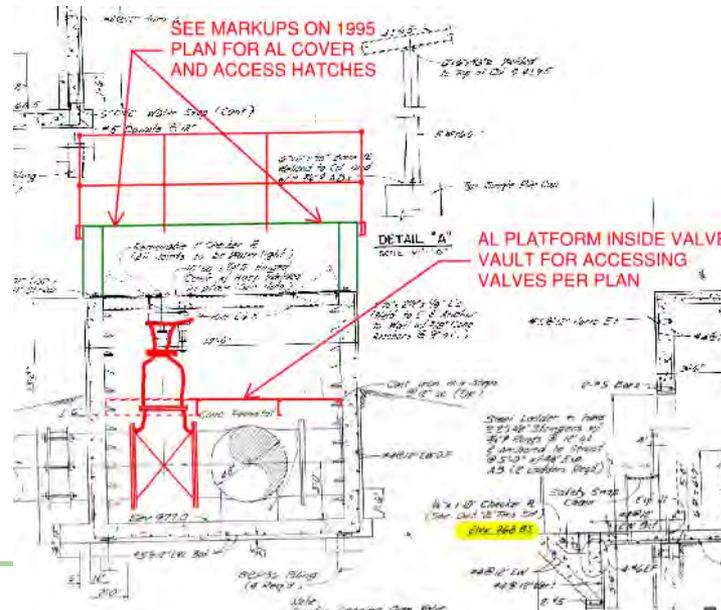
# Meter Vault

- Remove and Replace Meter Vault

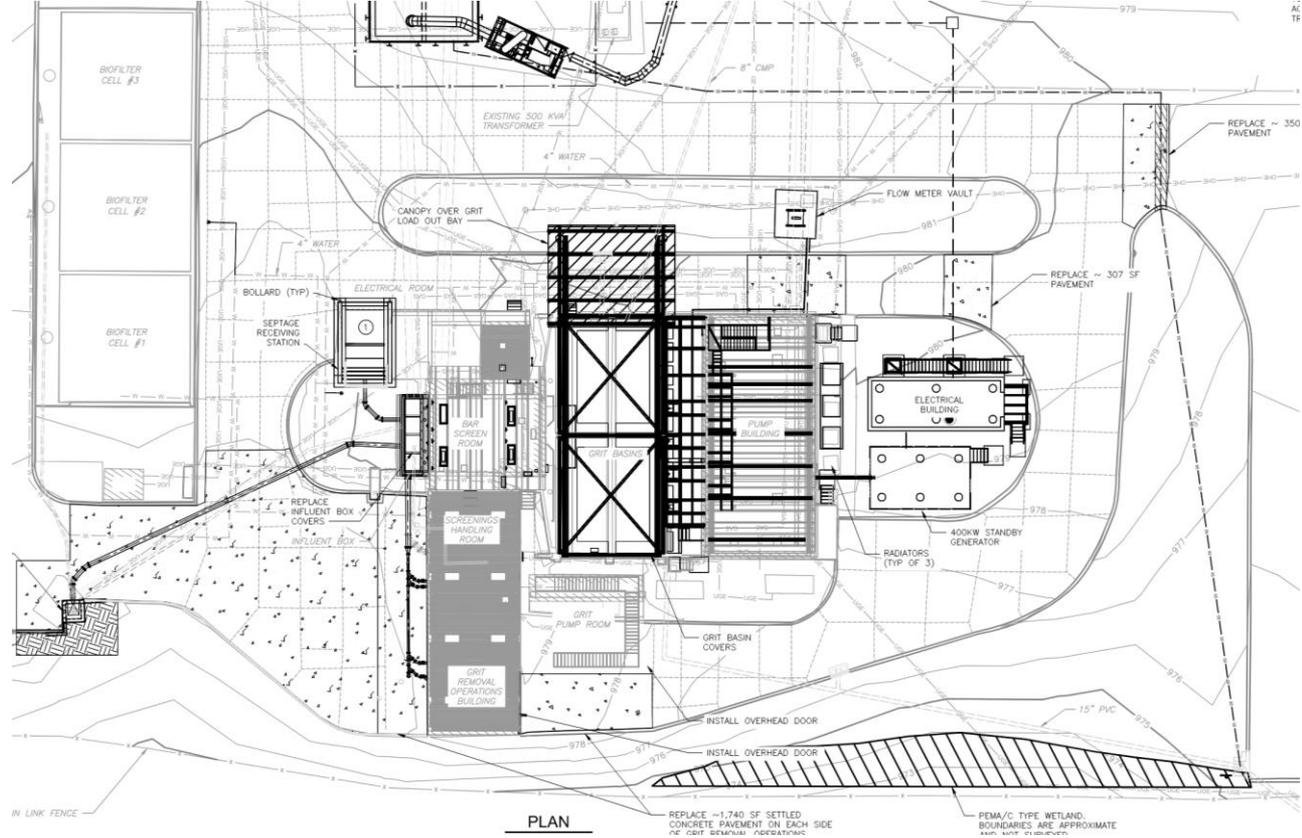


# Valve Vault

- Scope
  - New AL Covers w/ Access Hatch
  - New Gate Valves – Rebuild or replace?
  - One Line Stop?

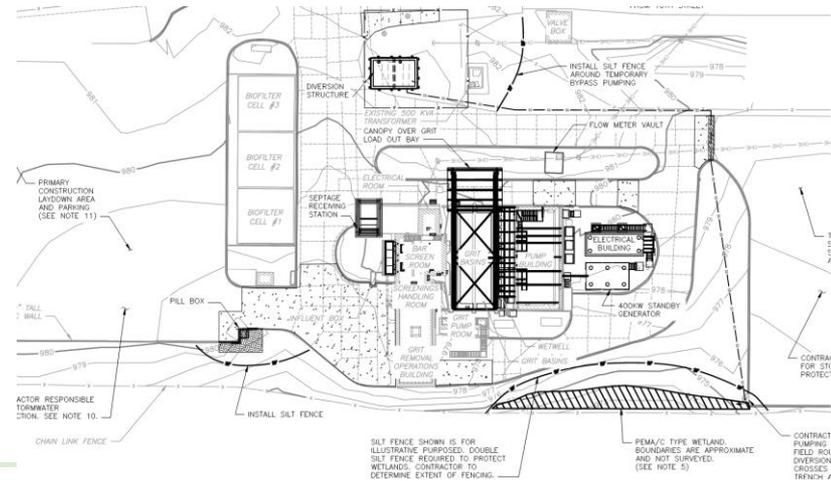
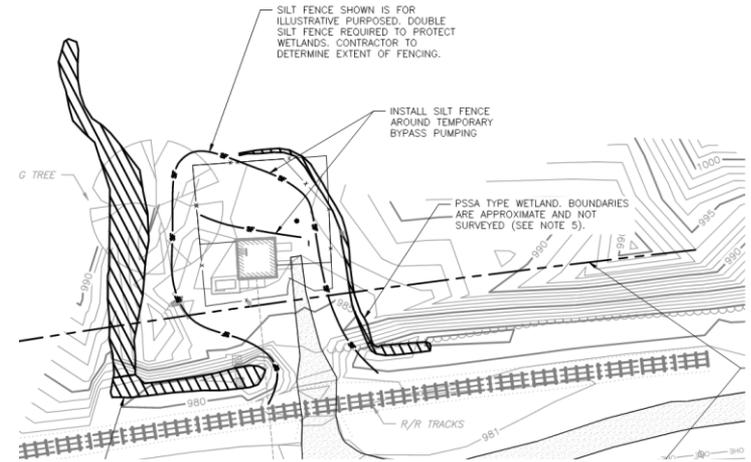


# Pavement Restoration



# E&S

- Wetlands in the area
- Stormwater Control and Containment





# SCADA

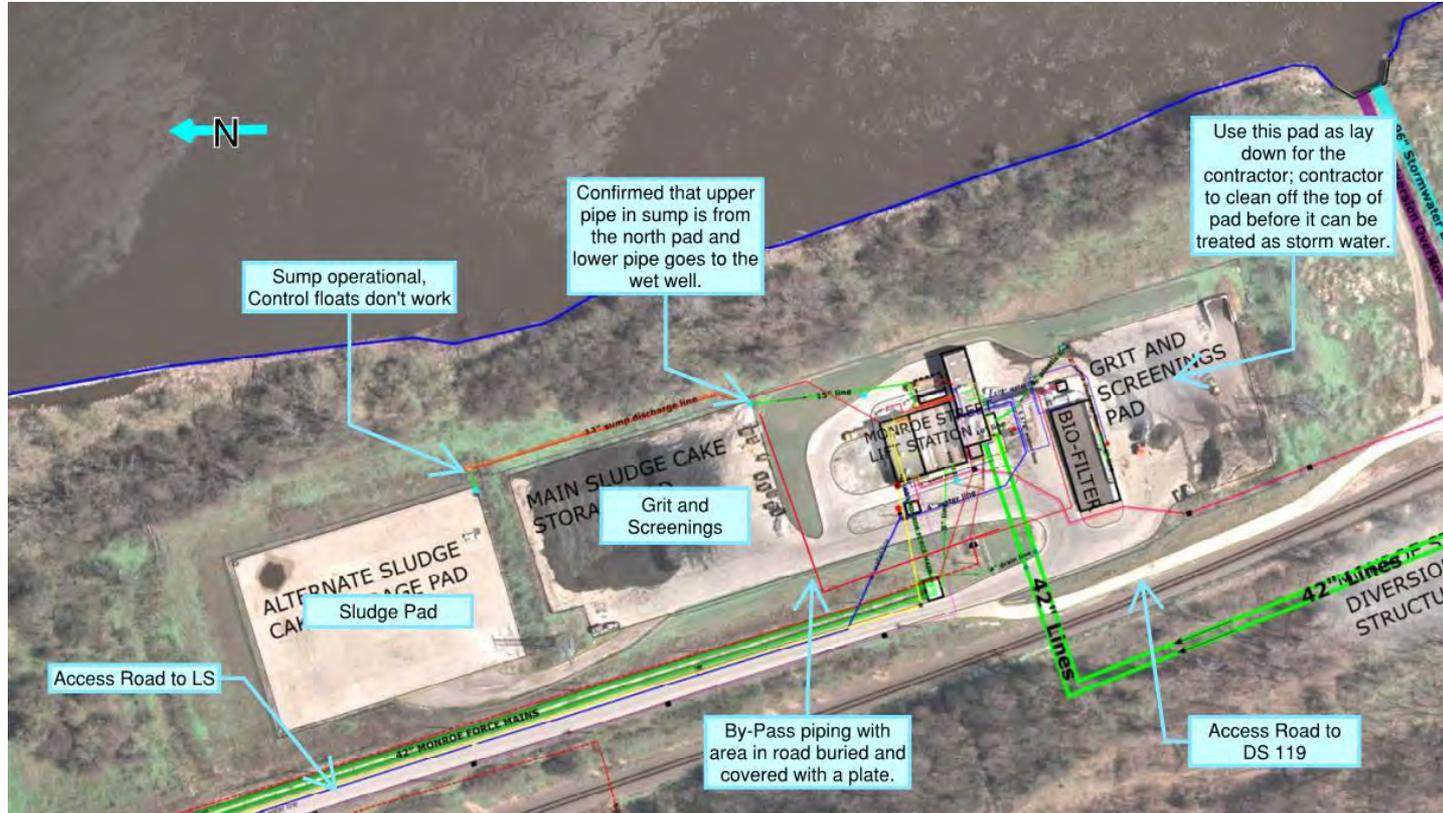
# SCADA Scope

- Modification to MRWRRF SCADA Systems
- New Instruments and Controls
- Replacement of PLCs and RTUs on site



# Contractor Staging

# Construction Site Plan



# Accessibility

- This is a tight site. Could construction take longer due to that?
- All access to Lift Station around bypass pumping structure
- All construction access through Missouri River Water Resource Recovery Facility and down tight access road along pipes.



# Construction Sequence

# #1 - Proposed Sequence during DS-119 Bypass

- During dry weather conditions, remove and replace 42-inch slide gates. Hydrotest the gates prior to ending bypass pumping at DS-119.
- Replace Knife Gate Valves and Actuators
- Install Sump Pumps
- Various Electrical, HVAC, and Site Improvements

# Proposed Sequence during MSLS Bypass

- Construct Bypass Box & Install Bypass pumping
- Construct Electrical Building and Generator Slab
- *Portions of Demolition & Improvements may be allowed PRIOR to bypass*
- During Bypass
  - Complete Demolition and Improvements Inside MSLS
  - Install new Pumps, Engine drives, piping and appurtenances
  - Refurbish Bar Screens and Install Conveyor
  - Various Electrical, Structural improvements
  - Covers over inlet box, grit basins, and wet well
  - Perform Programming

# Sequence not required during Bypass

- Install new Clamshell Bridge Crane over Grit Basin
- Various HVAC and Architectural work
- Complete pavement repairs and site restoration



# Permits & Schedule

# Permits

- 404 – Maybe
- Construction Dewatering General Discharge Permit
- NDEE- Hydrostatic Testing/Dewatering Permit
- NDEE - Construction Permit and Plant Review
- City of Omaha – Bldg, Elec., Mech & Plumbing Permits
- **RAILROAD**

# Schedule

- Anticipated Advertise: February 2021
  - Advertise from 95% Documents
- Completion
  - Substantial Completion: 610 days
  - Final Completion: 640 days
  - BILS
    - Substantial Completion: 986 days (This includes ~150 days delay from flooding)
    - Final Completion: 1015 days
- Liquidated Damages – Values not set at this time.
  - \$5,000 per for Substantial Completion
  - \$2,500 per day for Final Completion

# City of Omaha SB/ESB Participation

- Ideas for SB/ESB Participation
  - Electrical – Is there more than one qualified?
  - Demolition – Would this typically be handled by GC?
  - Other ideas?



# Construction Risks & Construcatability

# Construction Risks

- Schedule
  - DS-119 and Bypass Pumping
  - Overall Completion
- High Water During Construction
- Specialty Crane Development
- Soils for Disposal
- Others?
  - Safety?

# Open Discussion on Constructability

- Contractor Concerns/Risk Items
- Potential Cost Savings Alternatives
- Schedule Feasibility
- SB/ESB Participation



Adjourn