EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: March 26, 2026

MEMO TO: Board of Directors

THROUGH: Clifford C. Chan, General Manager CCC

FROM: Serge V. Terentieff, Director of Engineering and Construction SVT

SUBJECT: Orinda Water Treatment Plant Disinfection and Chemical Systems Safety Improvements Project Update

This memorandum provides an update on construction of Specification 2139: Orinda Water Treatment Plant (WTP) Disinfection and Chemical Systems Safety Improvements Project (Project). The attached progress report includes accomplishments and progress since the November 6, 2025 update, including community outreach, fiscal status, and near-term planned work. The Project has shifted from below ground to above ground building construction and installation of process, electrical and building equipment representing a major milestone for the project.

Construction commenced in June 2022 and is expected to be completed by July 2027. The next update will be provided in an information memo on August 6, 2026.

CCC:SVT:mjh

Attachment: 2026 Triannual Progress Report No. 1

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ATTACHMENT

2026 Triannual Progress Report No. 1
Specification 2139: Orinda Water Treatment Plant (WTP) Disinfection and Chemical Safety Systems Improvement Project

The project is progressing well after some schedule delays, with major highlights including the completion of the reinforced concrete structure for the underground chlorine contact basin (CCB), completion of the reinforced concrete structure for underground ultraviolet (UV) room, completion of the complex piping connections within the Effluent 1 excavation, removal of the Claremont Tunnel bypass, major progress in completion of the last three chemical systems, and installation and testing of both prefabricated electrical buildings. A detailed summary of the work progress is listed in this attachment.

Project Scope

The scope of work for this project includes:

- Construction of a new disinfection facility comprised of a UV disinfection and CCB facility and an above-ground maintenance and UV electrical building (MAUVE)
- Construction of a grounds maintenance building and associated parking area
- Installation of new effluent piping and connections to the Claremont Tunnel and Los Altos No. 2 Pumping Plant (LAPP2)
- Construction of two new electrical buildings
- Installation of two standby generators and fuel storage tanks
- Modifications to the Briones Center
- Modifications to the raw water channel
- Demolition of existing grounds maintenance and mechanical maintenance facilities
- Demolition and replacement of the chemical storage and feed systems and other chemical systems safety improvements

Community Outreach Update

- An updated timelapse video of construction progress was posted on the District's project webpage (https://www.ebmud.com/about-us/construction-and-maintenance/construction-my-neighborhood/owtpdi).
- A construction site tour and interviews were provided to University of California, Berkeley to gather video footage and documentation of the project as an example of the civil engineering projects and to highlight alumni's contributions to this project.
- Identified and provided notice to neighbors about upcoming construction impacts, including noise and traffic, emphasizing the pre-planned extended work hours required for concrete deliveries.

Progress Status Update

Safety

- A total of 1,082 contractor craft working days were completed without a lost time injury since construction began.

Raw Water Improvements

- Completed third phase of the 36-inch steel pipeline for the Lafayette Aqueduct No. 1 (LAF1) Wasteway. The final phase will be installed this year and will reconnect and allow draining of the LAF1 Wasteway to San Pablo Creek.
- Completed the emergency raw water bypass connection from the Raw Water Channel to the Claremont Tunnel since the Claremont Tunnel bulkhead wall is removed. There is an air gap between the raw water and potable water provided by a removable pipe spool piece which will be installed to allow emergency operation of the bypass.

Pipeline Tie-ins

- Completed the raw water channel, Effluent 1, and Claremont Tunnel outages ahead of schedule
- Completed the annual space grouting between the tunnel casings and the 108-inch UV-CCB influent and the 78-inch Effluent 2 steel pipelines located within the tunnels
- Completed modification of the steel piping in the LAPP2 suction vault located within the Effluent 1 excavation
- Completed the technically challenging final connection of the 48-inch steel pipeline from the CCB Effluent Weir Structure to LAPP2 which will serve as the supply line for LAPP2 in the future
- Performed extensive inspections of the critical welded steel piping

Underground Construction

- Calibrated the automated geotechnical monitoring system, which monitors ground movement and settlement during drilling, excavation, grouting, and tunneling

UV-CCB Facility Construction

UV Influent Weir Structure

- Completed concrete crack repairs, hydrostatic testing, and roof waterproofing installation
- Began backfill with flowable fill
- Completed interior wall finishes
- Began installation of interior baffle walls

CCB Effluent Weir Structure

- Completed reinforced concrete roof deck
- Completed installation and testing of the six 108-inch by 96-inch stainless steel weir gates which will control plant hydraulics in the future

CCB Structure

- Completed concrete crack repairs for the intermediate and top roof decks
- Completed wall finishing for the interior side of the concrete walls
- Completed installation of the two 120-inch by 144-inch stainless steel CCB isolation gates for bypass system
- Filled structure with water for the hydrostatic leak test and began concrete crack repairs on the walls

UV Room

- Lowered temporary shoring towers and decking, which provided temporary support of the ceiling, to allow workers to begin installation of mechanical, electrical, and piping on the ceiling
- Removed temporary shoring towers and continued installation and testing of mechanical, electrical, and piping on the ceiling using telescopic boom lifts
- Began installation of wall conduits
- Began wall finishing and joint sealant installation for interior side of concrete walls
- Began installation of 84-inch gallery piping for the UV bypass
- Began installation of 48-inch gallery piping for each UV train
- Began installation of the traveling bridge crane for future maintenance

MAUVE Building – North End

- Completed reinforced concrete first floor walls
- Completed reinforced concrete equipment pads on first floor
- Completed installation of temporary shoring towers and support deck for second floor

UV-CCB Facility Bridge

- Removed three approach ramps, bridge deck, and bridge beams in preparation for installing underground utilities

<u>Power Buildings</u>

- Completed factory acceptance testing (FAT) for Los Altos Power Building (LAPB)
- Disassembled LAPB at factory, shipped to jobsite, and reassembled
- Began contractor testing of LAPB at jobsite
- Completed energization and contractor testing of South Electrical Building (SEB)
- Began control system functional testing (CSFT) of SEB

Los Altos Pumping Plant No. 2

- Started outage and completed selective demolition of electrical and mechanical components
- Completed new access roof hatch
- Began installation of new 12-inch surge valve and electrical load break switches
- Demolished the abandoned electrical transformer located at the north end of the plant in preparation for construction of a retaining wall and foundation for the new 2.5-megawatt plant generator and fuel storage tank that will provide standby power to the water treatment plant

Chemical Safety System Improvements

- Continued installation of new fluoride, ammonia, and caustic soda systems
- Continued construction of chemical pipe expansion vaults and sumps throughout the project site
- Continued installation of the replacement heating, ventilation, and air conditioning systems and fire protection systems in the chemical building
- Installed new storage tanks and skylights for the retrofitted fluoride and ammonia rooms
- Continued construction of the new caustic soda room in the chemical building

Scheduled Work

Raw Water Improvements

- Install fourth and final phase of the welded steel pipeline for the LAF1 Wasteway which will reconnect it to San Pablo Creek

Pipeline Tie-ins

- Field verify alignment of existing buried Effluent 1 pipeline to finalize shop drawings for fabrication of piping modifications for Effluent 2

Underground Construction

- Complete construction of the expanded Effluent 1 pipeline vault and backfill of the Effluent 1 excavation
- Remove Effluent 1 temporary access bridge
- Excavate and install shoring bracing for the Effluent 2 excavation

UV-CCB Facility Construction

- Complete hydrostatic test of the CCB Structure

- Complete backfill of the CCB Structure
- Complete MAUVE Building reinforced concrete structure
- Continue installation of mechanical, electrical, and plumbing in UV Room

Power Buildings

- Complete testing and energize LAPB
- Connect first loads to SEB and LAPB from LAPP2

Los Altos Pumping Plant No. 2

- Complete outage and improvements

Chemical Safety System Improvements

Significant progress is being made on the chemical system improvements despite this portion of work being delayed approximately one year due to differing site conditions, operational constraints, and supply chain issues.

- Complete installation of the new fluoride, ammonia, and caustic soda chemical systems
- Complete construction of new caustic soda room within the chemical building
- Continue installation of the permanent chemical feed lines through the project site

Fiscal Update

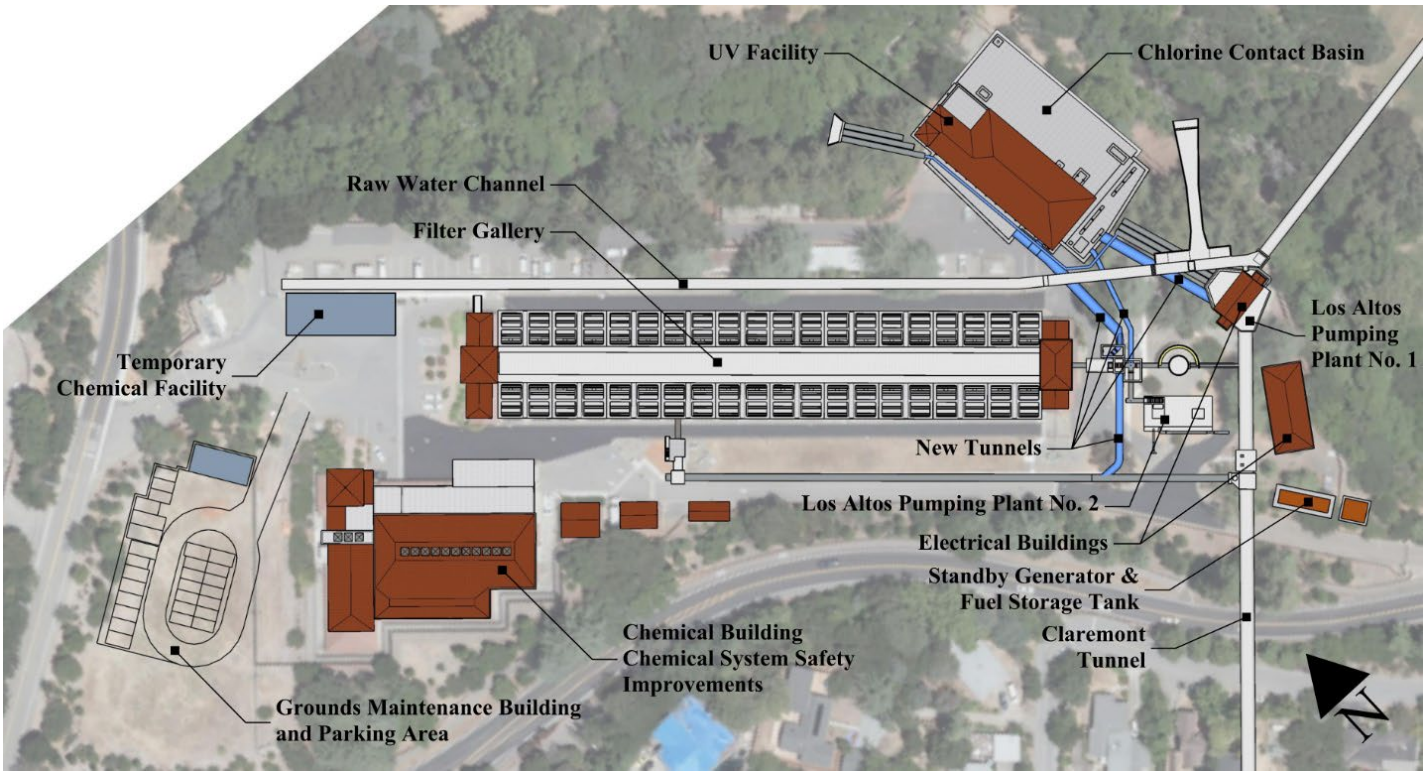
Budget Category	Spent To-date	Budget[1]	Spent
Construction Contract (base)	$217,530,763	$267,721,132	81.3%
Construction Contract (change orders – see Note 1)	$9,221,086	$10,378,616	88.8%
Engineering Support and Construction Management Costs	$31,616,281	$46,653,553	67.8%

Notes:
1. The current total approved change order contingency budget is $13,386,057. It is estimated that this change order contingency will need to be raised to $18,740,479, an increase from 5% to 7% of the original contract amount of $267,721,132 due to several changes including electrical, structural, and piping conflicts, differing site conditions, and adverse weather conditions. The need to raise the change order contingency will be noted in the General Manager's March 2026 Monthly Report, under Financial Stability.

Schedule Update

Schedule Category	Days Elapsed	Contract Days	Elapsed
Construction Contract Calendar Days	1,422	1,853	76.7%

Overall Site Plan



Construction Progress Photos

Figure 1 – Aerial View of UV-CCB Facility

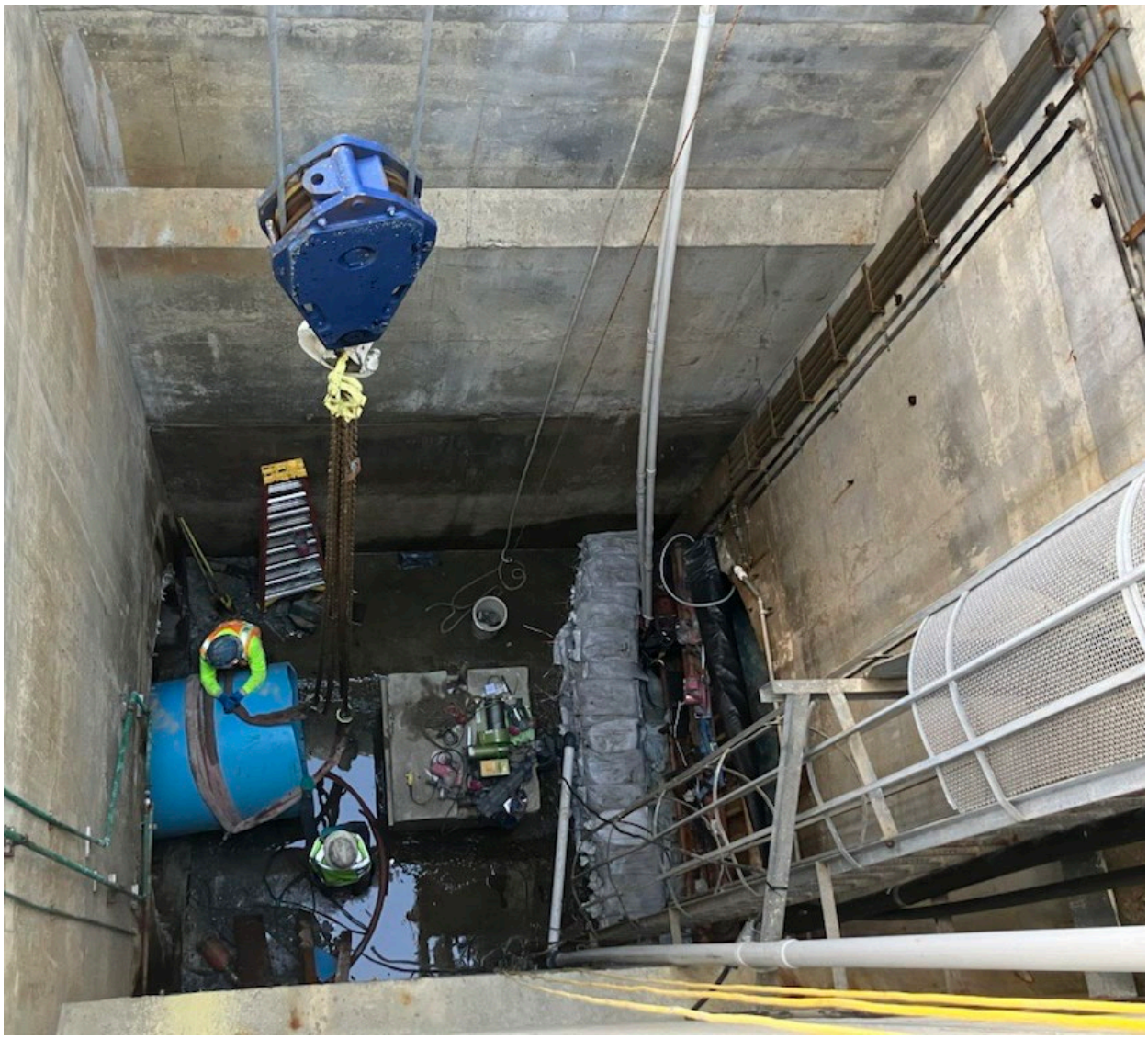


Figure 2 – Claremont Tunnel Access Shaft: view looking down as workers install slings around 48-inch Effluent 1 bypass piping in preparation for crane lift of the pipe out of the tunnel.

Figure 3 – Claremont Tunnel Access Shaft: view looking down as crane lifts 48-inch Effluent 1 bypass piping out of the tunnel.

Figure 4 – Claremont Tunnel: view looking down length of the tunnel as workers clean it out in preparation for disinfection and return to service to end the outage.

Figure 5 – Engineer inspecting 108-inch steel bulkhead installed for hydrostatic testing of the UV Influent Channel.

Figure 6 – Black plastic water reservoir providing static water level for hydrostatic water testing of the UV Influent Channel located underneath the concrete slab which the reservoir is resting upon.

Figure 8 – Crawler crane lifting 40-foot segment of 36-inch LAF1 Wasteway steel piping from the temporary bridge into the trench located below.

Figure 9 – 36-inch LAF1 Wasteway steel piping installed on the roof of the UV Influent Channel.

Figure 10 – Inspector watching workers below place flowable fill to bury 36-inch LAF1 Wasteway steel piping and UV Influent Channel.

Figure 11 – Workers applying protective mortar lining inside special 48-inch steel piping piece for LAPP2 suction piping.

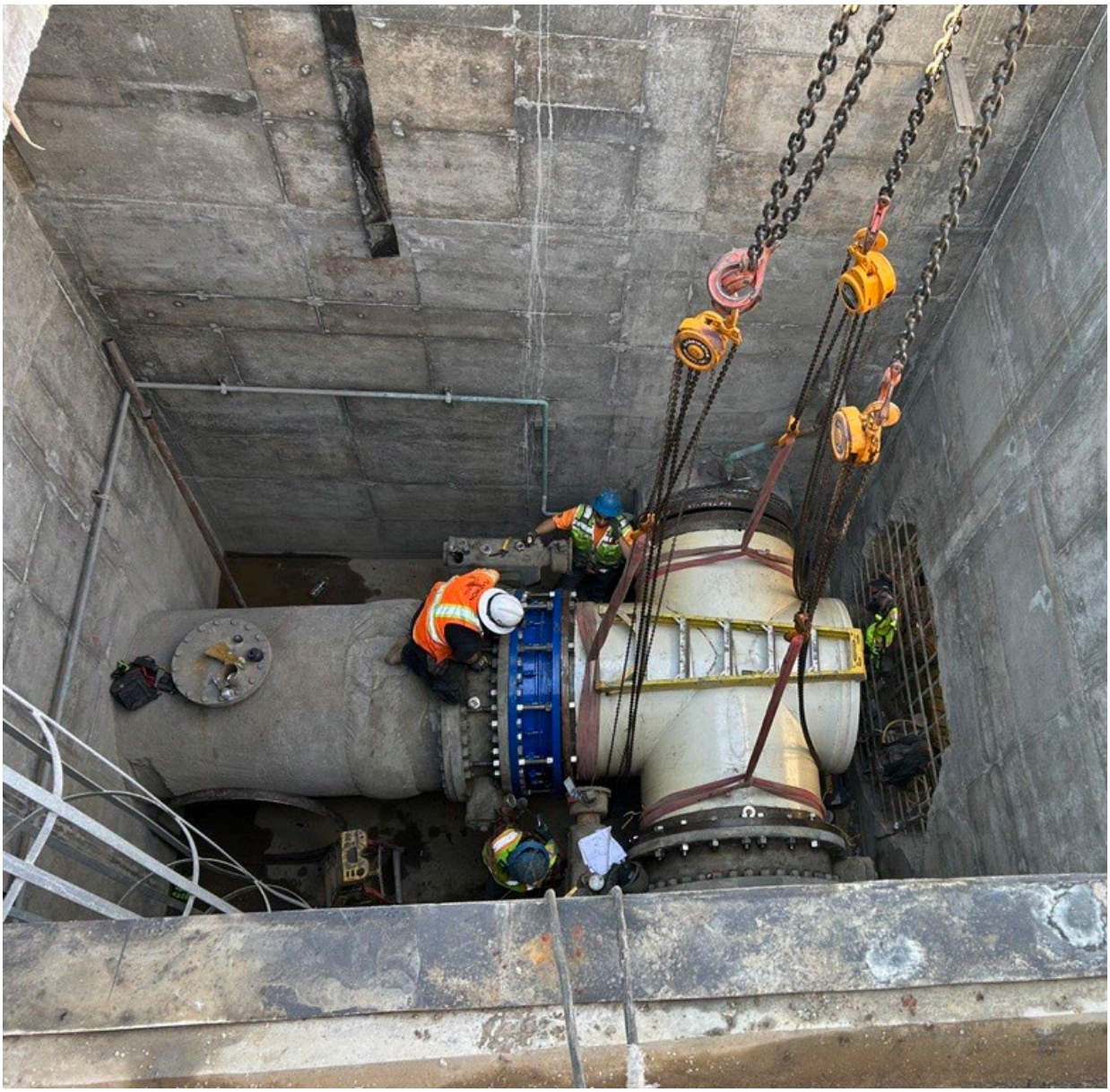


Figure 12 – View looking down into LAPP2 suction piping vault of workers positioning special 48-inch steel piping piece with the aid of a crane located above.

Figure 13 – Workers connecting special 48-inch steel piping piece to existing piping using a welded butt strap connection.

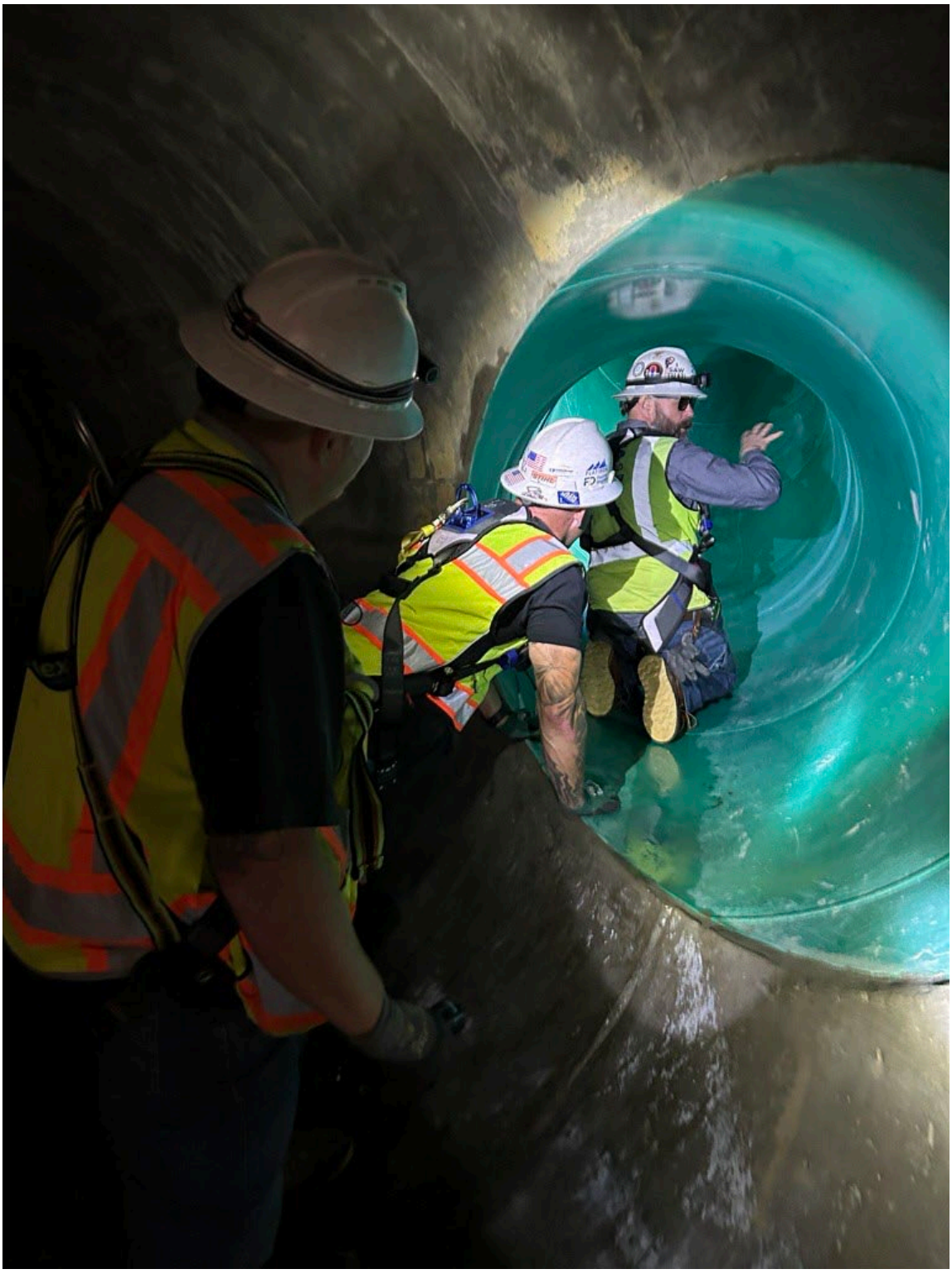


Figure 14 – Inspector kneeling in 48-inch branch line providing feedback to contractor's staff who are standing inside 108-inch Effluent 1 steel piping.

Figure 15 – Workers backfilling 108-inch Effluent 1 steel piping with flowable fill inside the Effluent 1 excavation.

Figure 16 – View looking down into Effluent 1 excavation showing piping completed and wooden wall forms in the foreground which will provide temporary support for future underground Effluent 1 vault walls.

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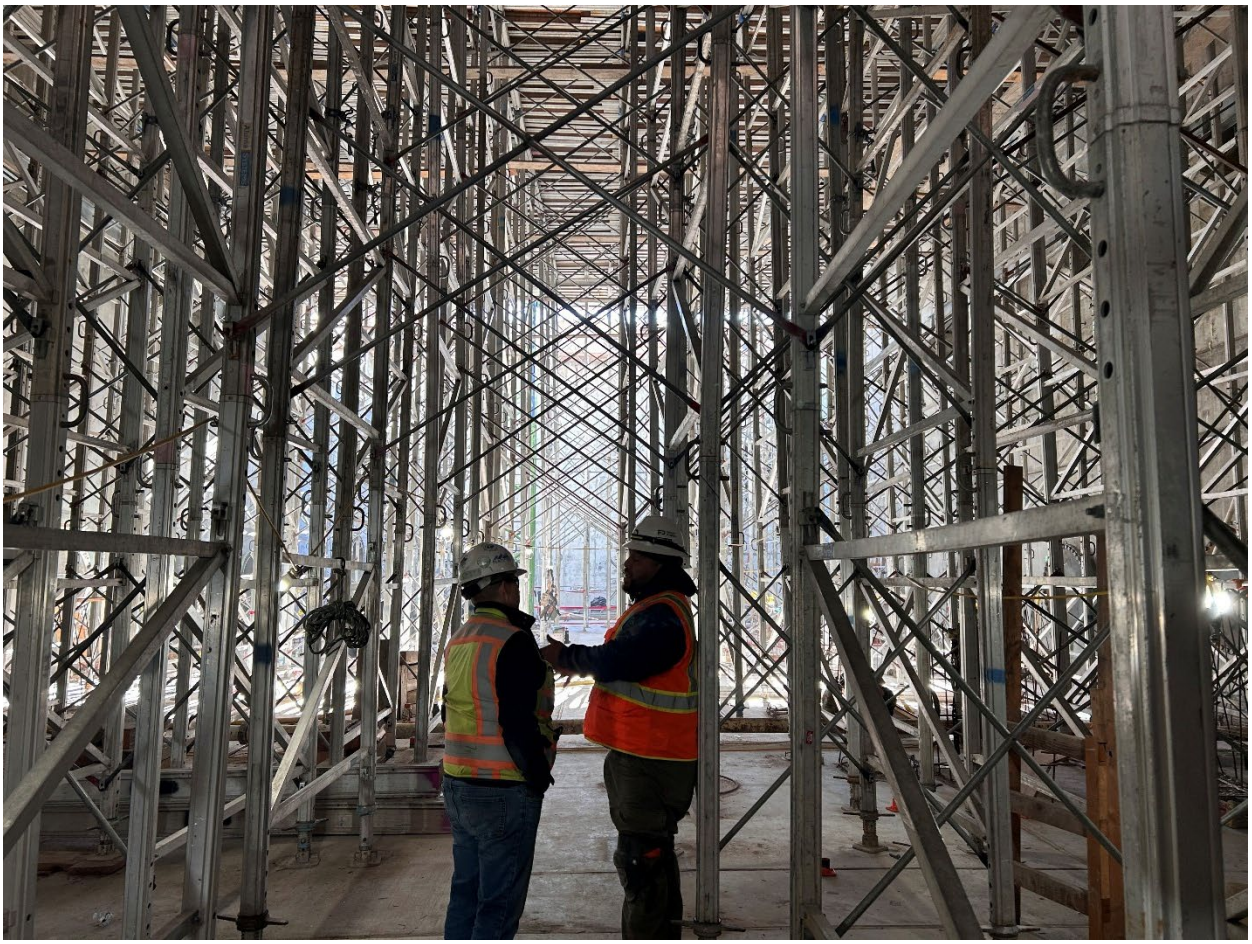

Figure 17 – View looking down the length of the UV Room with scaffolding towers providing temporary support for placement of the UV Room concrete roof slab, located 25-feet above the floor.

Figure 18 – View of the completed UV Room concrete roof slab which serves as the ground level floor for the future MAUVE Building.

Figure 19 – Worker climbing onto the temporary catwalk which provides access for construction of the first level reinforced concrete walls for the future MAUVE Building.

Figure 20 – Worker connecting reinforcing steel for full height concrete wall which will serve as the exterior wall for the first two floors of the future MAUVE Building.

Figure 20 – Aerial view of UV-CCB Facility. On the left, workers are placing temporary scaffolding and decking support for reinforced concrete deck which will serve as the support for the second floor of the future MAUVE Building. On the right, there is a depressed concrete slab which is the roof of the underground CCB. This structure will be buried in soil soon. In the meantime, workers are staging materials for the operation happening on the left side of the photo.

Figure 21 – Workers completing the final concrete pour for the roof of the Effluent Weir Structure with the aid of the green telescoping concrete pump.

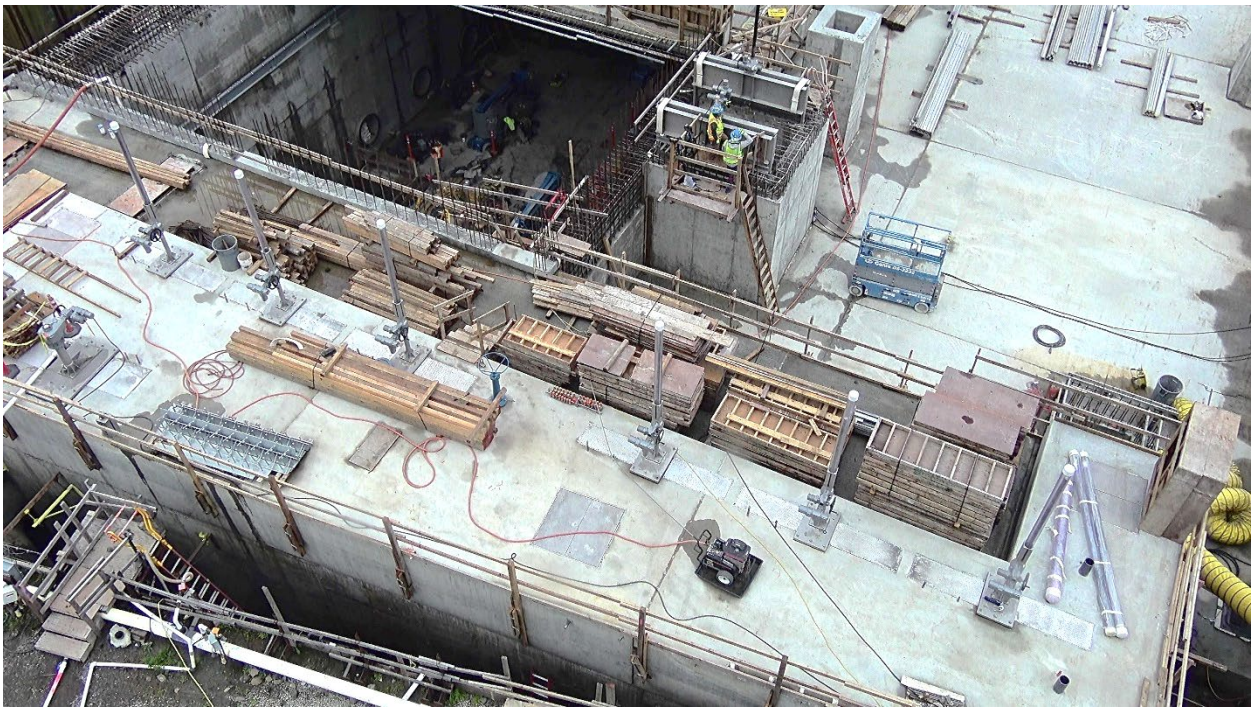

Figure 22 – Aerial view of the completed Effluent Weir Structure with the tall stems of the 6 effluent weir gates extending up out of the roof.

Figure 23 – Aerial view of the UV-CCB Facility. The contractor is only building the north end of the MAUVE Building at this point to maintain clear access for bringing materials into the UV Room below through the large opening shown in the lower left of the photo.

Figure 24 – View looking down the length of the UV Room showing the temporary scaffolding towers removed.

Figure 26 – Engineer standing on top of 84-inch valve to show scale. The valve will be placed in the UV Room for hydraulic isolation of the bypass piping.

Figure 27 – Crane lowering 84-inch steel bypass piping into the UV Room below.

Figure 29 – Crane lowering 84-inch steel bypass piping into the UV Room with the aid of workers serving as spotters.

Figure 30 – View looking down the length of the UV Room (opposite direction from Figure 24) showing workers on telescoping lifts installing mechanical, electrical, and plumbing on the ceiling.

Figure 31 – Crane in the background ready to lift 48-inch fabricated steel piping segments which into the UV Room.

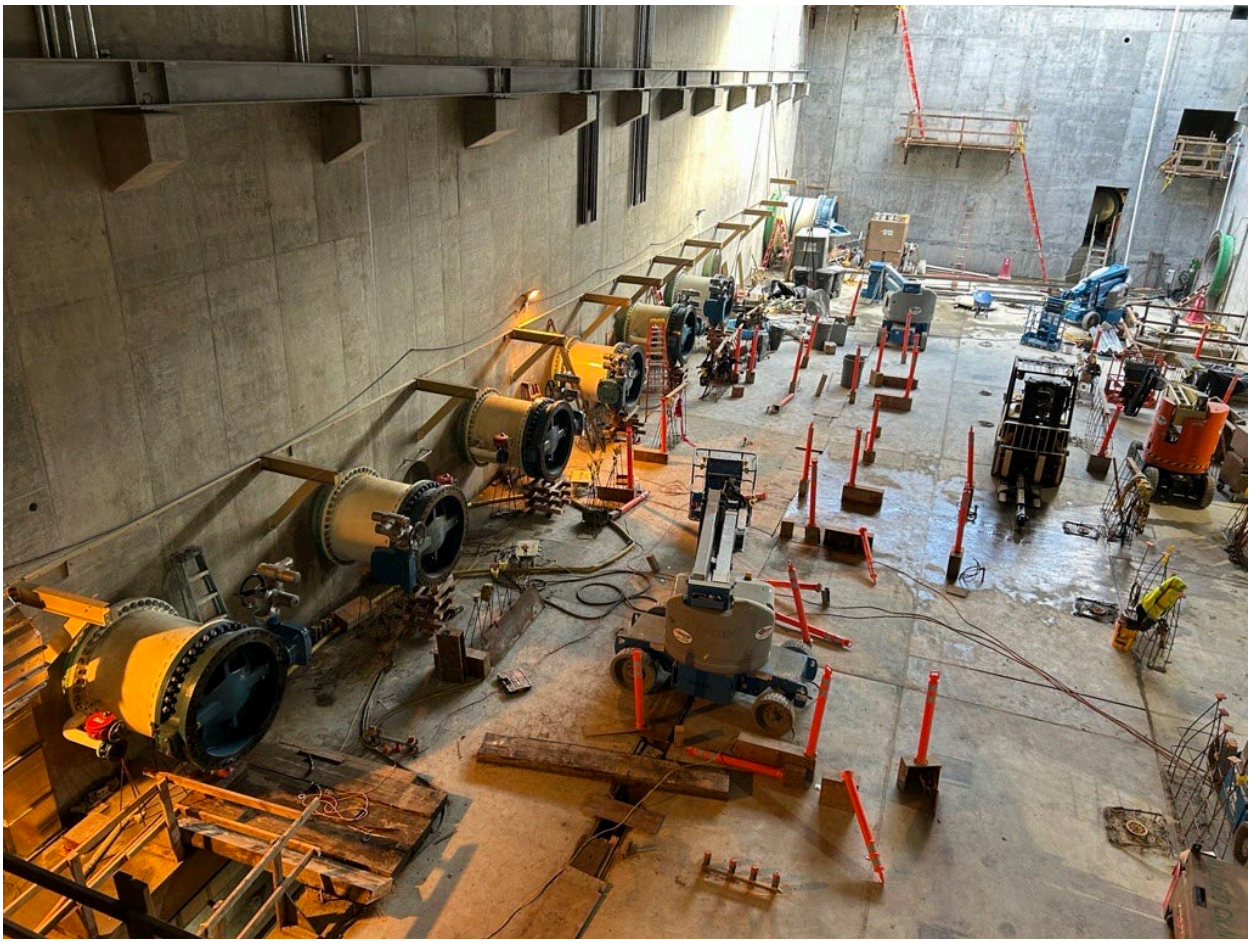

Figure 32 – 48-inch fabricated steel piping segments installed with isolation valves in the UV Room. Each of the six piping segments will be part of the six UV trains which will extend across the UV Room floor in the future.

Figure 33 – Aerial view of completed SEB on the right and empty concrete pad, in the background, ready to receive the pre-fabricated LAPB.

Figure 34 – View of crane lifting first segment of the pre-fabricated LAPB on the left side of the photo.

Figure 35 – Closeup view of crane lifting first segment of the pre-fabricated LAPB onto the prepared concrete foundation.

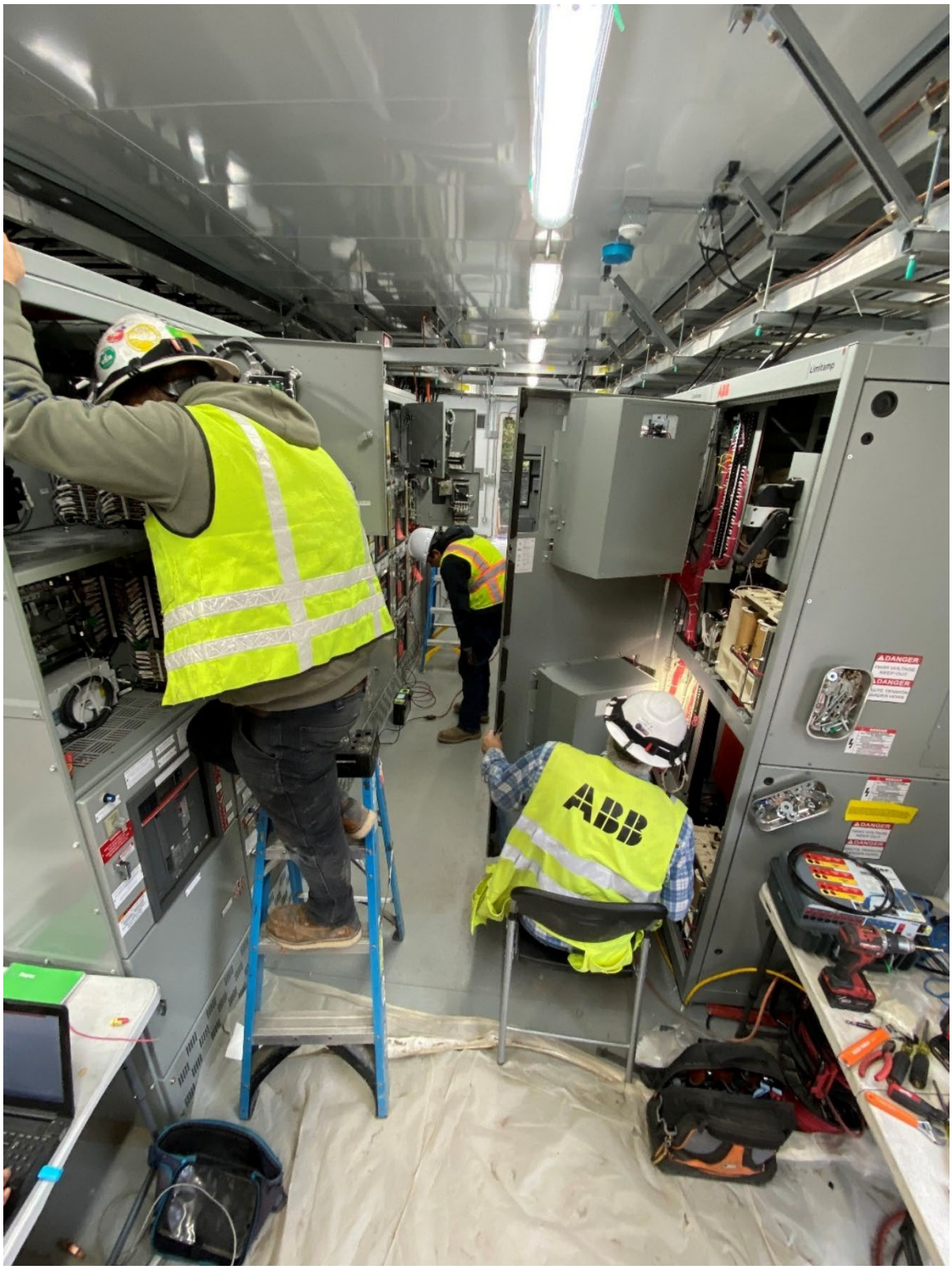

Figure 36 – Electricians completing reconnection and wiring of electrical gear inside the pre-fabricated LAPB.

Figure 37 – Engineers performing testing of electrical gear inside the pre-fabricated LAPB.

Figure 38 – Workers unloading fiberglass reinforced plastic chemical tanks from a delivery truck.

Figure 39 – Crane lowering fiberglass reinforced plastic chemical tank into Chemical Building through the roof opening.

Figure 40 – Crane lowering skylight to close Chemical Building roof opening.

Figure 41 – New fiberglass reinforced plastic chemical tanks and skylights installed in the Chemical Building.

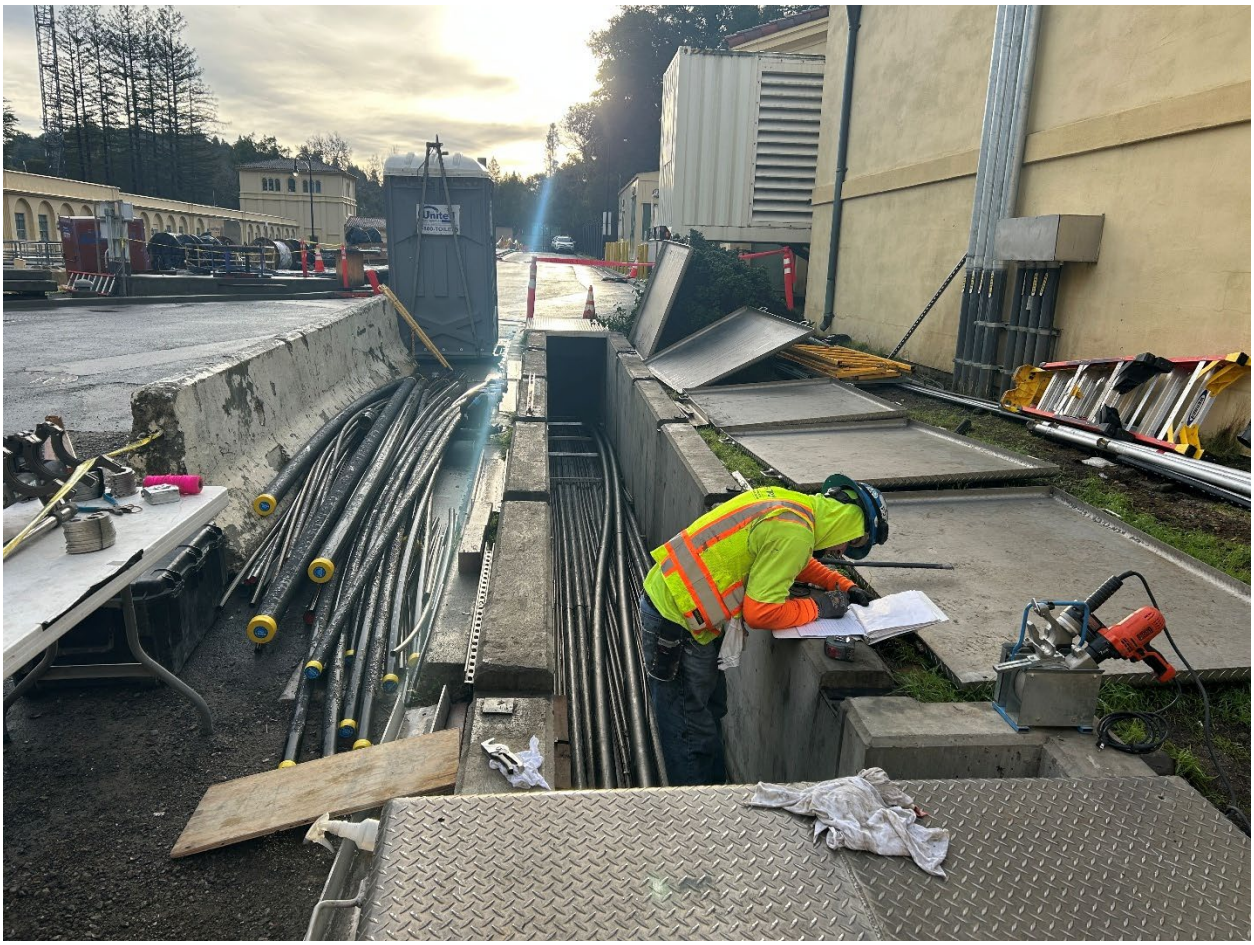

Figure 42 – Worker installing high density polyurethane chemical piping in a pipe trench.

Figure 43 – Worker demolishing old electrical gear in LAPP2.

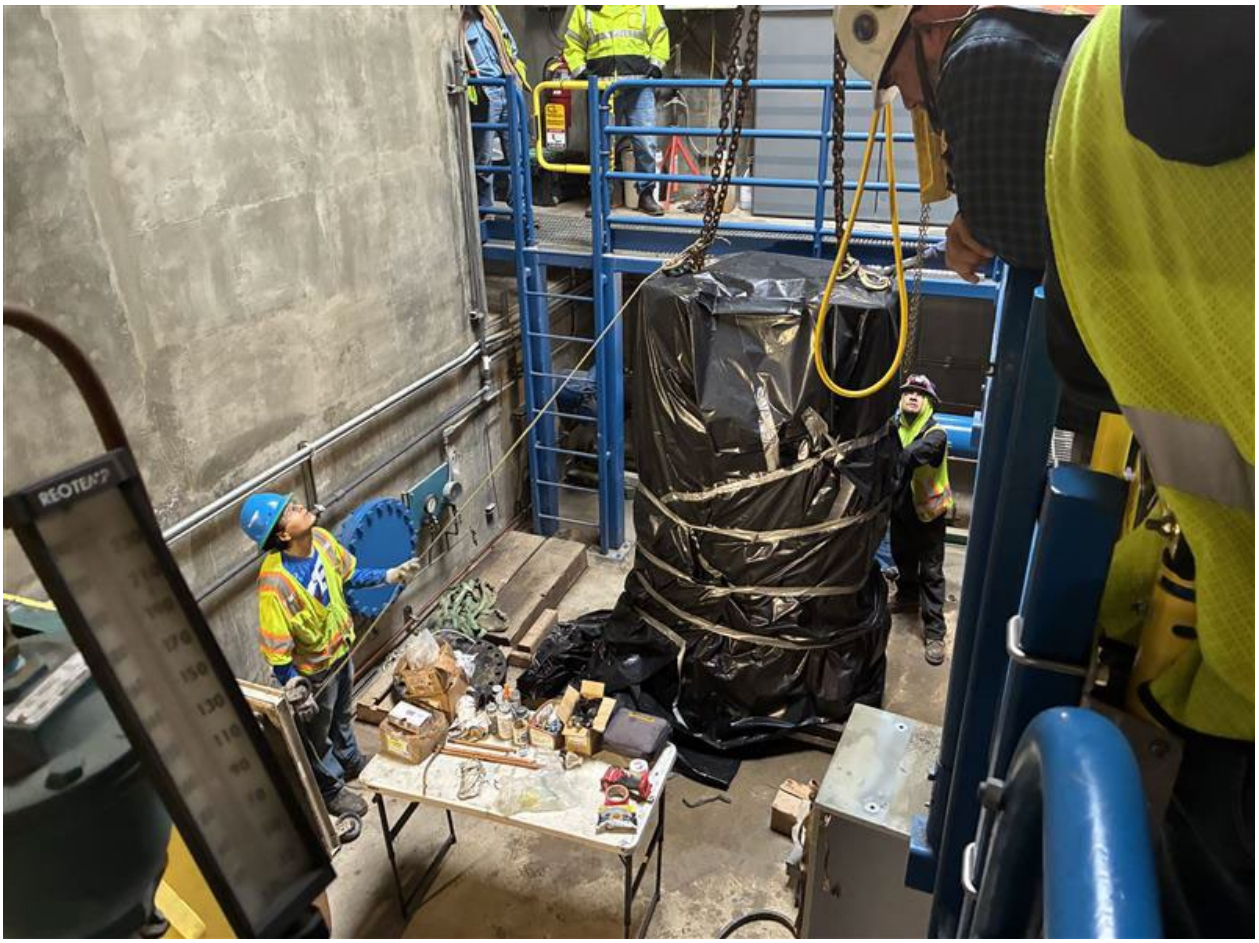

Figure 44 – Worker preparing for a crane lift of old electrical gear out the roof of LAPP2.

Figure 45 – UV-CCB Facility temporary bridge in partially demolished state.

Figure 46 – Workers attaching crane sling to roadway beam of UV-CCB Facility temporary bridge in preparation for removal.