

February 2018 Monthly Report

BJCJSTP Rehabilitation and Restoration Project

Background

The Binghamton-Johnson City Joint Sewage Treatment Plant (BJCJSTP) processes 18 million gallons per day with the capability of processing up to 60 million gallons per day (MGD) of wet weather flow. This plant is jointly owned by the City of Binghamton and the Village of Johnson City and managed by the Binghamton-Johnson City Joint Sewage Board (BJCJSB).

The BJCJSTP has suffered several catastrophic events since 2006. In 2006, the BJCJSTP was flooded by a 500 year flood that affected many of the processes in operation. In May of 2011, a concrete structure suffered structural failure, and in September 2011, the BJCJSTP suffered another 500 year flood that critically damaged equipment and rendered the secondary treatment fundamentally inoperable. The secondary process system is still largely inoperable today. A Consent Order was negotiated between the City of Binghamton, the Village of Johnson City, the BJCJSB and the NYSDEC to develop a plan to restore treatment operations at the BJCJSTP. The Consent Order requires the BJCJSTP to restore secondary treatment functionality and be able to fully treat 35 MGD of wet weather flow by August 1, 2018. To achieve this level of treatment, the reconstruction and testing of the Secondary Treatment Process must be completed as necessary to achieve treatment of 35 MGD. To comply with the Consent Order, the Sewage Treatment Plant must then be fully operable by May, 1, 2019, including the remainder of the secondary treatment process. There are also several interim milestones included in the Consent Order. The Consent Order has been amended to extend several interim milestones, and DEC has been made aware of the likely finish of the Phase 1 Milestone after the August 1, 2018.

The project is being constructed in accordance with Wicks Law, which requires that the project be bid as multiple prime contracts. More specifically, Wicks Law requires that the bulk of the construction work, consisting of the secondary treatment biological filtration filters (BAF), be divided into a General Civil Construction Contract, an Electrical Contract, an HVAC Contract and a Plumbing Contract. The following projects are either nearing completion, in construction, or in the planning stage.

Contract No.	Description	Status
Contract No. 1	Compost Facility Demolition	Complete
Contract No. 2	FEMA Mechanical	Complete
Contract No. 3	BAF Facility Demolition	Complete
Contract No. 4	MCC HH Emergency Replacement	Complete
Contract No. 5	BAF Restoration and Rehabilitation Civil Contract	Projected Phase 1 Substantial Completion November 2018. Projected Phase 2 Substantial Completion May 2019.

Contract No. 6	BAF Electrical	Projected Phase 1 Substantial Completion November 2018. Projected Phase 2 Substantial Completion May 2019.
Contract No. 7	BAF HVAC	Projected Phase 1 Substantial Completion November 2018.
Contract No. 8	BAF Plumbing	Projected Phase 1 Substantial Completion November 2018.
Contract No. 9	Secant Pile Contract	Complete
Contract No. 10	Solids Handling Renovation Civil Contract	Substantial Completion #1 - April 15, 2018; Substantial Completion #2 - November 12, 2018; Substantial Completion #3 - February 20, 2019; Final Completion - July 10, 2019.
Contract No. 11	Solids Handling Electrical	See Contract #10 Completion Dates
Contract No. 12	Solids Handling HVAC	See Contract #10 Completion Dates
Contract No. 13	Solids Handling Plumbing	See Contract #10 Completion Dates
Floodwall	Floodwall and New Diversion Structure	Currently in construction. Anticipated Completion Date July 2018.

Contract Descriptions

Contract No. 1 - Compost Facility Demolition

Demolition of the upper portion of the compost facility was performed to accommodate the construction of the new Administration Building to house the plant staff as well as provide the new control room to operate the new facilities. Demolition of the lower portion of the Compost Building cleared the way for the construction of a new maintenance facility.

Contract Status: 100% Complete – Contract Closed

Contract No. 2 - FEMA Mechanical

The FEMA Mechanical Project replaces valves, equipment and other miscellaneous items damaged in the 2011 flood. It includes equipment in both the East and West Primary Sludge Pumping Stations, valves and equipment located in the Head House, and equipment associated with Sludge Thickener Pumping Station Nos. 1 and 2. The cost of the work associated with this contract is being reimbursed by FEMA due to the flood of 2011.

Status: Blue Heron has completed all of the work not deleted by change. The elutriate pumps were deleted from the scope of work and will be performed under Contract #5.

Contract Status: 100% Complete

Contract No. 3 - BAF Facility Demolition

The BAF Demolition Contract removed the existing structures and utilities that conflict with the new construction work included in the BAF Rehabilitation and Restoration Project. Demolition efforts included selective demolition in the existing process tanks (C-Filters, N-Filters, and DN-Filters) and buildings and mechanical equipment and piping to ready the site for new construction.

Contract Status: 100% Complete - Contract Closed

Contract No. 4 - MCC - HH Emergency Replacement

Contract No. 4 replaced the original existing Motor Control Center (MCC) in the Head House (HH). The MCC is 50 years old, and is identified as MCC-HH. The contract was bid as an emergency contract because the electrical system in the Head House was both critical to keeping the BJCJSTP in service, and because the original MCC was extremely unreliable due to the age and deteriorated condition of the gear. MCC HH Emergency replacement also replaced the existing raw sewage pump drives of the existing 50 year old equipment including new electrical feeders from the HH to the Johnson City Grit House No. 1, a new feeder from the HH to the Thickened Sludge Pump Station No. 1, and various other panel boards. The emergency work also included replacement of the existing raw sewage variable frequency drives that were located in the existing MCC HH. The new drives installed are more reliable, more efficient, and will provide better performance of the existing raw sewage pumps.

Status: All work on the MCC- HH project has been completed.

Contract Status: 100% Complete

Contract No. 5 - BAF Restoration and Rehabilitation Civil Contract

When combined with the other BAF contracts (Nos. 6, 7 & 8), Contract No. 5, the General Civil Contract, is intended to provide a functioning automated plant using a BIOSTYR system that can be modified to fit current plant configurations. It is also intended to provide functioning automated headworks and primary clarification processes upstream of the BIOSTYR system and solid handling processes downstream of the BIOSTYR system.

Major components of the work under Contract No. 5 include new coarse screens and ancillary equipment, new piping and valves for the influent pumps, new metering equipment, new fine screens and grit removal with ancillary equipment, a new primary distribution box, new mechanical equipment for primary clarifiers 1-10, new chemical equipment for primary treatment, new chemical storage building, modification of the primary clarifier structural components to replace the aged and deteriorated mechanical equipment, new secondary influent pumps for the new BAF system, a new BAF backwash tank, new CNBAF and DN-BAF facilities, a new methanol system that will feed the DN-BAF cells, new Ultra Violet Light disinfection system to replace the existing chlorine disinfection system, new sludge thickening equipment and systems, a new administration building, new odor control equipment, two new 2MW electric generators, and a new plant outfall to the river.

Status: The weather in February was better than January's brutally cold temperatures allowing concrete work to be advanced throughout the project. The walls for the Headworks and the BAF Backwash Treatment Facility are almost complete. A plan to correct the problems at the Distribution Box has been agreed to and PC is proceeding with dowel installation which will allow the box construction to proceed.

Work on CN Cells 1-8 is being advanced with half walls expected to be completed in March. CN Cells 9-14 walls are also being advanced. The concrete walls forming flood protection around the outside of the U.V. building are almost complete.

In the Courtyard area, the asbestos containing material in the ductbank and along the walls of the existing Headhouse and Blower Building has been remediated and Matco is proceeding with core drills through those walls to allow their electrical work to proceed. The owner continues to maintain the emergency generator rental to provide back-up power to the Plant.

The contractor continued installing the pump piping in the existing Headhouse. PC has returned the flow to the existing Binghamton raw sewage pumps. During the construction of the pump piping installation, PC failed to keep the temperature in the lower level of the Headhouse at 60 degrees Fahrenheit as required by contract, and the cooling water jacket for Pump Number 2 froze and broke. PC is having the cooling water jacket replaced. PC has completed installation of the isolation gates for the coarse screens that will be installed in the influent channels.

The reconstruction of Primary Setting Tanks 7-10 is progressing well. The concrete coating applications are progressing and PC is continuing to install the effluent troughs and the chain flight equipment. The work is weather dependent and should be completed in March. The initial leakage test are complete with minor repairs implemented at joints.

The reinforcing steel issues pertaining to the CN Cells 1-8 areas have been resolved and the construction of the concrete walls, beams, and columns continued this month. Work on the west end of the DN Cells continued with the reinstallation of the dowels for the slab. The concrete slab on the west end of the structure has been placed. Concrete work for the walls continues.

Construction work in the area of the new UV Treatment Facility continued this month with the concrete work for the elevated slabs for the UV Facility. They will complete exterior walls at U.V. in March.

Very little work on the yard piping and utility replacement construction activities happened this month, due to the weather conditions. The new potable water service was turned on to the plant in February.

Construction of the new Chemical Building is well underway. The coatings for the concrete walls are complete and PC set the chemical storage tanks this month. The roof, including skylights, have been completed. The equipment and conduit installation began in February.

The caisson installation was completed in January. Completion of the slab for the Blower Building is essential for achieving flood protection for the plant. This work was delayed due to conditions at the site.

The electrical feed from the new generators to the transformers will not fit as originally designed by GHD. We have received a response to the remaining issues with the change. Installation will be in March.

Kruger equipment submittals are complete and the final detailed reviews are complete except for the UV netting. Bi-weekly telephone conference calls with Kruger, PC, GHD, and the CM have proven helpful in progressing the work. Much of the Kruger supplied equipment is in storage locally or in appropriate storage facilities at Kruger's direction. We have received the preliminary BAF Operations and Maintenance manuals as well as the startup and testing plan from Kruger. Installation of the precast slabs is scheduled to begin in March, 2018.

The work in the upper floor of the Administration Building is complete with final punch list and Fire Protection System testing occurring as this report is being filed with occupancy to be immediately available to staff upon approval. The lower floor (maintenance area) still has ongoing work with completion and occupancy scheduled for April, 2018.

Contract Status: 51% Complete

Contract No. 6 - BAF Electrical

The BAF Electrical Contract supports the BAF General Civil Contract and includes all electrical and instrumentation associated with the BAF contracts. The components include installation of the new UV disinfection system, installation of the new generators, installation of the electrical feed throughout the plant, as well as installation of the instrumentation and SCADA System throughout the plant.

Status: The manholes and the associated ductbank work for the new dual primary service are complete. The first of the new feeds to the plant has been connected and was energized in late August. The second feeder has been reinstalled by MATCO. Installation of the major conduits for the generators continued now that we have a modified design by GHD. The modified design layout for the conduit includes a new conduit support system that we received the design layout for in late December. MATCO is actively installing the conduit for the new generators in the new Generator Building, where they can.

MATCO continued work in the Chemical Storage Building, East Odor Control Building, and the Headhouse. MATCO is preparing for installation of the conduit and wiring for the courtyard switchgear. We are looking at options for the installation of the conduit in other locations to advance the electrical work to avoid overly congested work areas at the end of construction. PC has opened up additional areas for MATCO work in the Chemical Building, the northwest Electrical Building, and is planning to expedite work for the east portion of the DN Cell Electrical Building.

The new Courtyard substation was delivered and put into storage locally, pending completion of the new concrete ductbanks in the courtyard in February. The Courtyard is a utility congested area with major underground piping and extensive electrical ductbanks. PC finally completed backfill for the pipework in the courtyard in January. MATCO is expected to be working in earnest in March with the installation of new ductbanks and the beginning of installation activities associated with the new substation equipment. Work in the courtyard has been delayed due to the asbestos abatement issues in the courtyard.

Contract Status: 48% Complete

Contract No. 7 - BAF HVAC

The BAF HVAC Contract supports the BAF General Civil Contract and includes installation of all HVAC Systems in all STP Facilities as well as revisions to the odor control systems throughout the plant. The odor control improvements are intended to alleviate the odors that have been prevalent in the past in and around the plant.

Status: The contractor continued working on ductwork installation in the Maintenance Building, the East Scrubber Building, the Headhouse and the Chemical Storage Building. J&K has provided supporting information for the development of the CPM Schedule. They are coordinating with PC Construction and the other prime contractors. J&K completed installing the HVAC equipment in the new Administration Building this month. J&K continued rough-in HVAC systems with various other work areas around the site including East Scrubber.

Contract Status: 54% Complete

Contract No. 8 - BAF Plumbing

The BAF Plumbing Contract supports the BAF General Civil Contract and includes installation of plumbing systems for the new and existing facilities included in Contract No. 5.

Status: The contractor continues working on plumbing pipe installations in the new Administration Building, the Maintenance Building and the East Scrubber Building. They are coordinating with PC Construction and the other prime contractors and they have confirmed that they can meet the required milestones of the Consent Order. Danforth continued installing the plumbing in the new Administration Building this month.

Contract Status: 53% Complete

Contract No. 9 - Secant Pile Contract

The Secant Pile Contract includes installation of the secant piles that support the excavation for the new BAF Backwash tank as well as supporting the new CN Cells 9-14. Construction also includes excavation to the final grade for the BAF backwash tank. This project was bid separately from Contracts 5-8. In doing so, a minimum of four months on the critical path schedule was saved.

Status: The installation of the secant pile wall is complete. Close out documents have been prepared and are being submitted to close out this project.

Contract Status: 100% Complete

Contract No. 10 -Solids Handling Renovation Civil

Contract No. 10 is intended to renovate and improve the solids handling systems including the existing digester control building, existing digesters, solids dewatering systems, and all ancillary equipment. As part of the improvement to the solids handling process the following components will be constructed or installed. The new structures include a new Solids Handling Building, a new Gas Conditioning Building, and a new Sludge Loading Facility. The new equipment being installed includes new centrifuges, new mechanical thickeners, new gas processing equipment, new microturbines, and new scum screening equipment. The scope was further developed during the design processes to include sludge blend tanks. Additionally, the contract renovates the existing laboratory facilities at the STP. The contract was bid as a multi-prime contract consistent with New York State Construction Contract Requirements.

Status: Quandel got off to a late start but has made some progress this month. They have completed the base slab for the Solids Handling Building. They have begun the below grade walls. Quandel's schedule shows them failing to complete milestone #1 on time, and they will also need a recovery schedule to complete the work for the Solids Handling Building in compliance with the contract milestones.

Contract Status: 13% Complete

Contract No. 11 - Solids Handling - Electrical

The Solids Handling Electrical Contract supports the Solids Handling General Civil Contract and includes installation of electrical for the new and existing facilities included in Contract No. 10.

Status: The electrical contractor is MATCO, as it is on the BAF Contract No. 6. MATCO continues to support the General Civil Contractor's schedule.

Contract Status: 5% Complete

Contract No. 12 - Solids Handling - HVAC

The Solids Handling HVAC Contract supports the Solids Handling General Civil Contract and includes installation of HVAC systems for the new and existing facilities included in Contract No. 10.

Status: The HVAC contractor is J&K Plumbing, as it is on the BAF Contract No. 7. J&K continues to support the General Civil Contractor's schedule.

Contract Status: 12% Complete

Contract No. 13 - Solids Handling - Plumbing

The Solids Handling Plumbing Contract supports the Solids Handling General Civil Contract and includes installation of plumbing systems for the new and existing facilities included in Contract No. 10.

Status: The plumbing contractor is JW Danforth, as it is on the BAF Contract No. 8. Danforth continues to support the General Civil Contractor's schedule.

Contract Status: 18% Complete

Floodwall

The new floodwall being constructed at the STP is intended to protect the plant to an elevation 1.5 feet above the 2011 flood level. The floodwall includes concrete walls on the east and north sides of the STP. The project also includes two new pump stations to pump up stream out of the plant during the storm events. The new floodwall system works in conjunction with new floodwall features included in Contract No.5 BAF General Civil Construction. The floodwall systems are being funded by a FEMA recovery grant.

Status: The concrete floodwall under Streeter's contract has been completed. The concrete work for Pump Stations No 1 and 2 are complete. The contractor has continued installing the pump and pipework for the two pump stations. The concrete base has been completed and the precast concrete riser pieces are installed on the new MH #3. Streeter is now able to install the 54" overflow and also install the Binghamton University Line.

PC Construction's raw sewage bypass pumping effort was put into service during the last full week of October. Streeter was not able to complete the gate installation until after the bypass pump operation is complete. The completion of the gate installation in the sampling manhole was scheduled to occur in March. A significant issue has developed with the gate valve installation in MH #3. Streeter had been informed that the valves had been fabricated and were shipping in mid-February with an expected delivery in late-February. On February 26, 2018 we were informed that not only hadn't the valves not been shipped but that they hadn't been fabricated. Apparently there was a change in the ownership of the supplier. This situation is presently under investigation and the impacts have not been determined.


Rehabilitation of Digester No. 3 is complete. The leakage test was successful. Streeter completed water blasting to remove the old coatings in Digester No. 1 & 2. More material came off than anticipated by the Design Engineer. It has been agreed that the best course of action would be to have Streeter complete the removal of the coatings and have Quandel coat the inside of Digesters No. 1 & 2. The concrete repairs for Digester No. 3 overran the quantities include in Streeter's proposal. A change order will be needed to pay for the extra concrete repairs. We are negotiating with Streeter to determine the final concrete repair costs for the change order.

Contract Status: 87% Complete

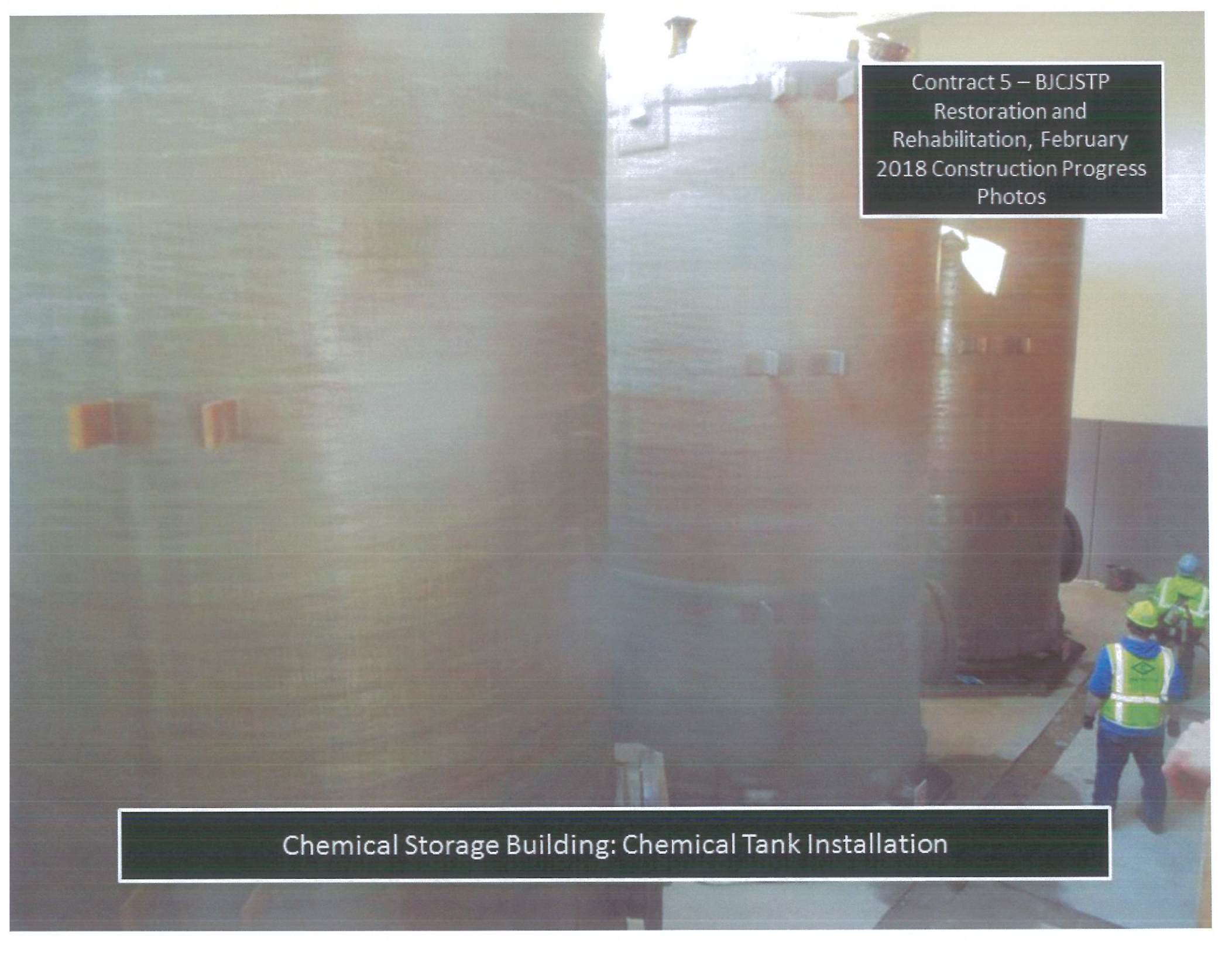
NOTES:

1. SWPPP measures continue to be maintained by all contracts. Any deficiencies noted during daily or weekly inspections are promptly remedied. Additional truck trap entrances have been now installed at the new entrances. In early December, we will be installing asphalt millings from the truck traps to the undisturbed asphalt pavement inside the plant to reduce tracking mud off site.
2. Weekly meetings are held for each contract to discuss the progress of the work and identify and resolve issues and problems. Meetings between contractors on the various contracts are held as necessary to facilitate any concerns and coordinate work between all contracts.

Contract 5 – BJCISTP
Restoration and
Rehabilitation, February
2018 Construction Progress
Photos

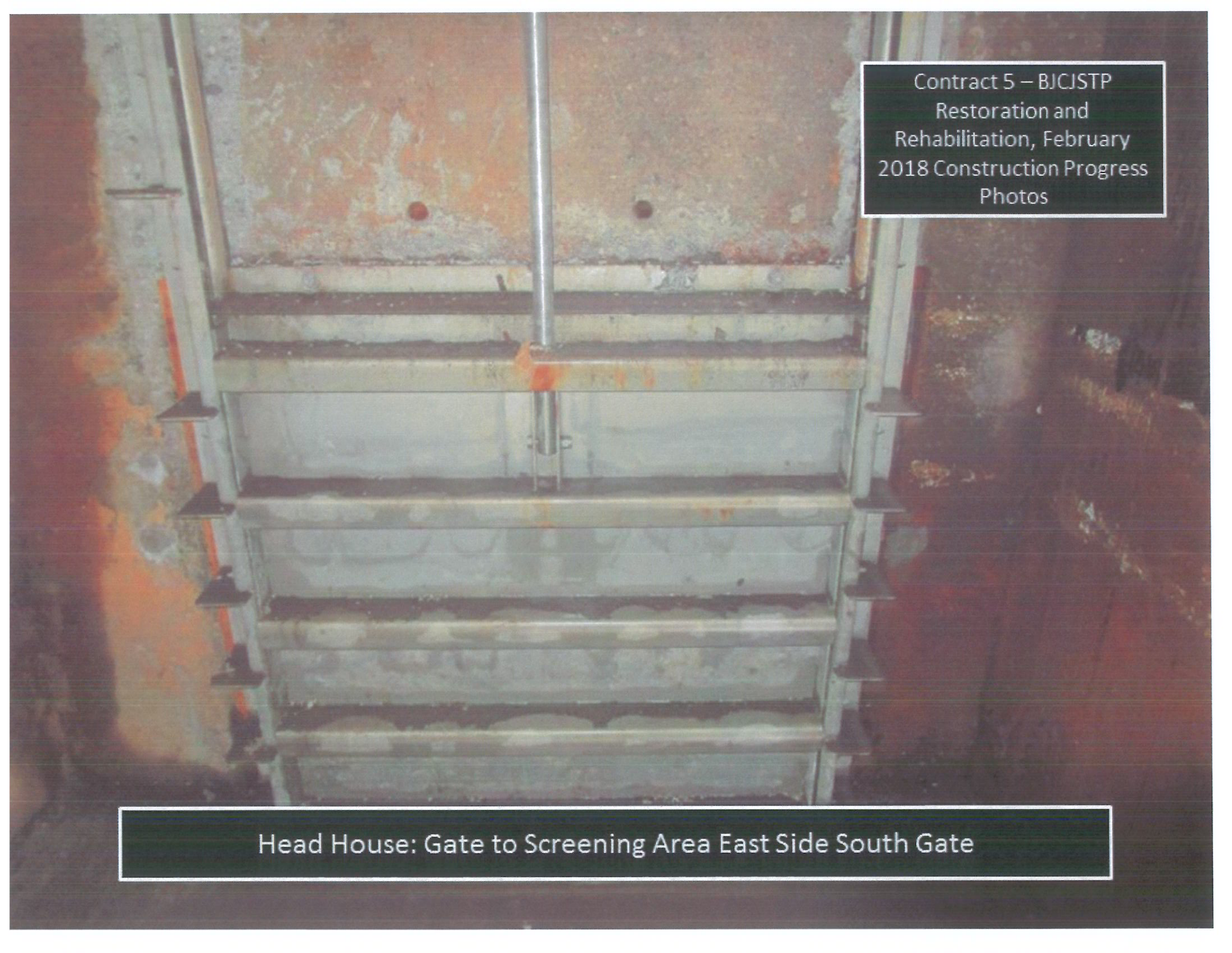
A large, dark, cylindrical chemical tank is being lowered into a building by a JCB crane. The crane is orange and has "JCB" written on its arm. The tank is suspended by yellow slings. In the background, there is a brick building with a white door and a window. A red semi-truck is parked on the right side of the image. A worker in a yellow safety vest and blue pants is walking towards the truck. The ground is covered in snow. The sky is blue with some clouds.

Chemical Storage Building: Setting Chemical Tank




Contract 5 – BJCJSTP
Restoration and
Rehabilitation, February
2018 Construction Progress
Photos

Chemical Storage Building: Chemical Tank Installation



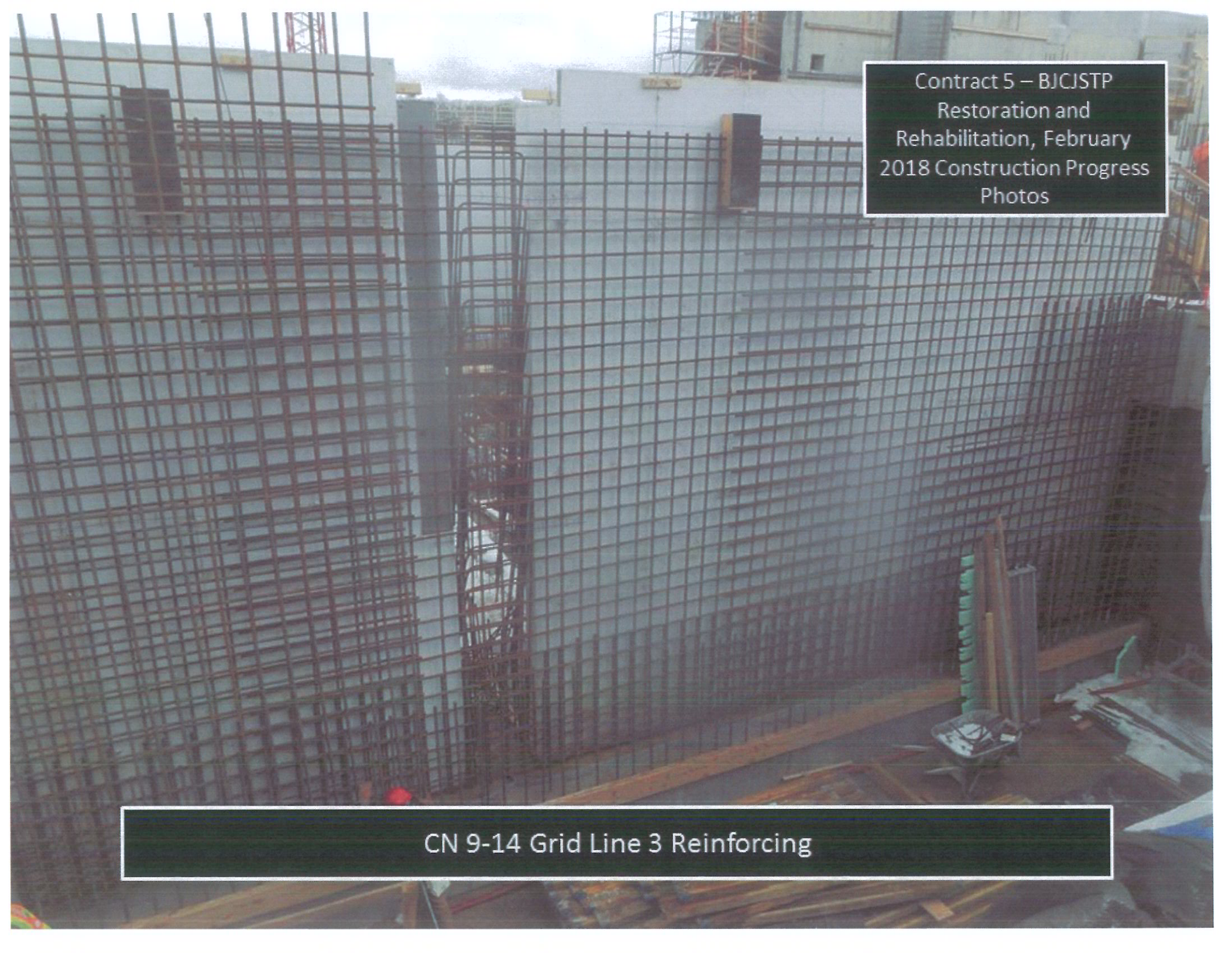
Contract 5 – BICJSTP
Restoration and
Rehabilitation, February
2018 Construction Progress
Photos

Head House: Gate to Screening Area East Side South Gate



Contract 5 – BJCISTP
Restoration and
Rehabilitation, February
2018 Construction Progress
Photos

UV Structure: South Divider Wall Reinforcing

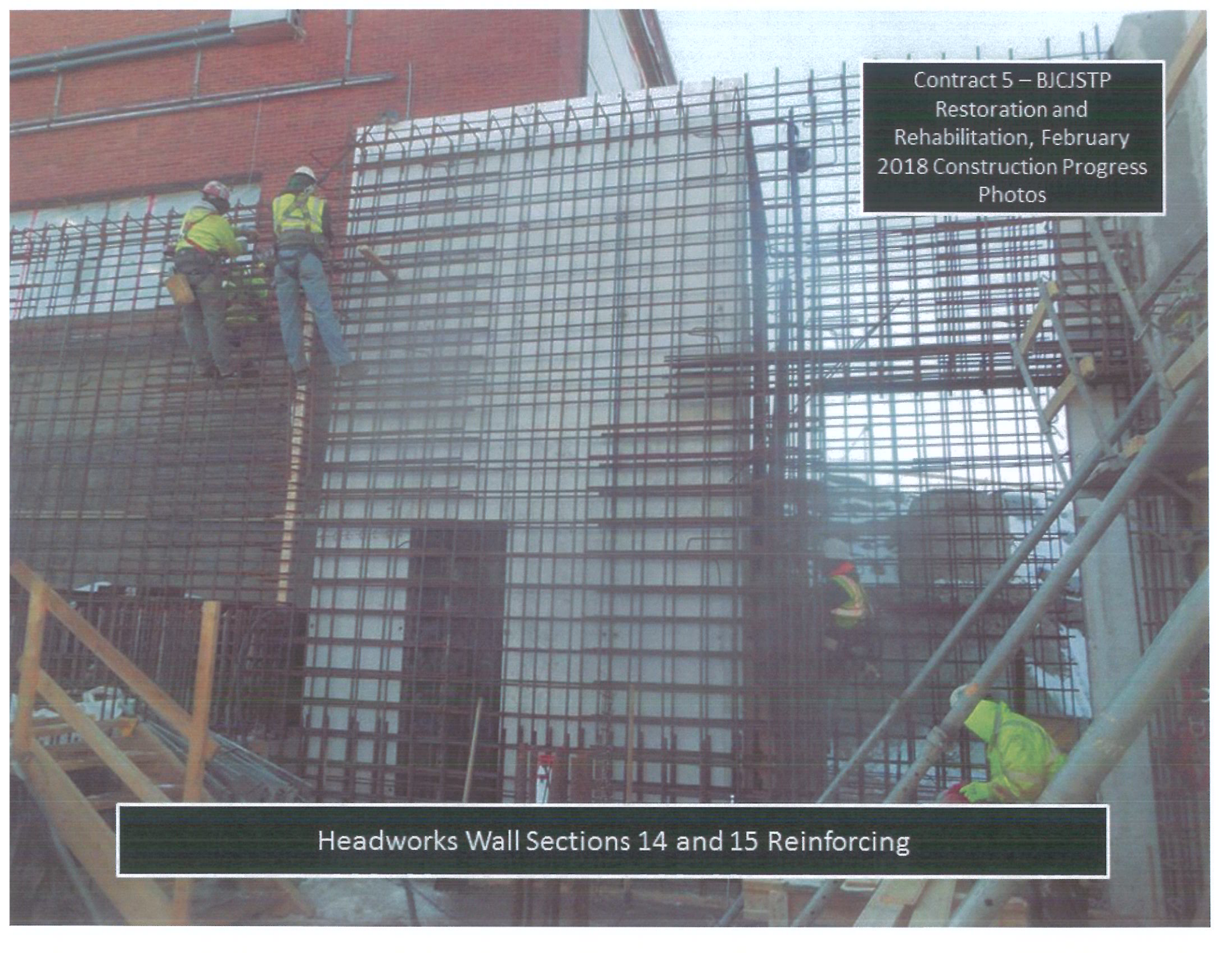


Contract 5 – BJCISTP
Restoration and
Rehabilitation, February
2018 Construction Progress
Photos

CN 9-14 Grid Line 3 Reinforcing

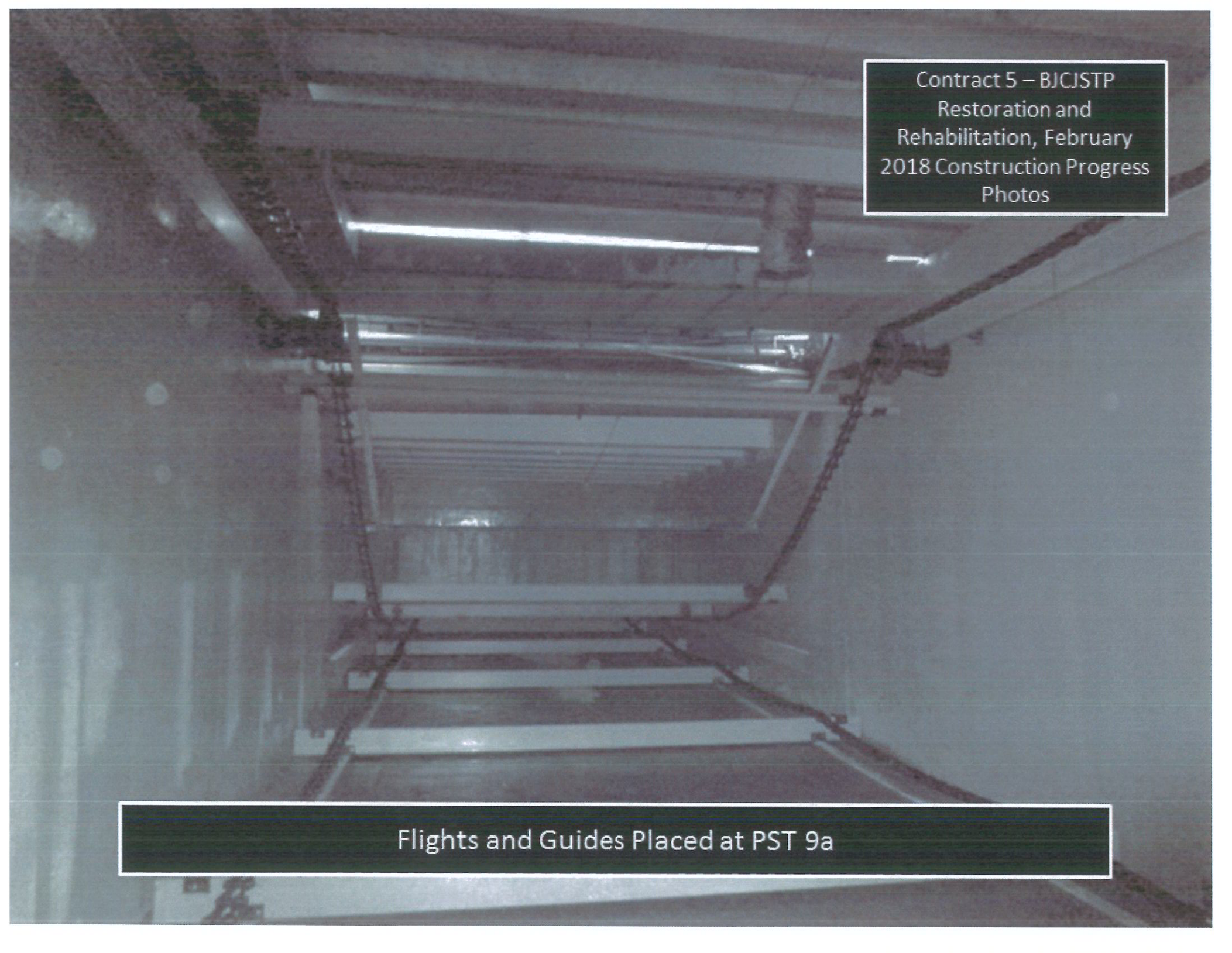
Contract 5 – BJCJSTP
Restoration and
Rehabilitation, February
2018 Construction Progress
Photos

CN 9-14 North and West Flood Wall Reinforcing



Contract 5 – BJCISTP
Restoration and
Rehabilitation, February
2018 Construction Progress
Photos

Headworks Wall Sections 14 and 15 Reinforcing

The image shows the interior of a tunnel during a restoration project. The ceiling is supported by a series of parallel metal beams. Various pipes and conduits are visible, running along the beams and walls. The lighting is somewhat dim, with some bright spots from overhead fixtures. The overall scene depicts a complex industrial or infrastructure environment.


Contract 5 – BJCISTP
Restoration and
Rehabilitation, February
2018 Construction Progress
Photos

Flights and Guides Placed at PST 9a

Contract 5 – BJCJSTP
Restoration and
Rehabilitation, February
2018 Construction Progress
Photos

Gears in PST 9a-b



A construction site in an urban area, likely near a waterfront. The foreground is dominated by a large, muddy excavation pit. A long, dark, wavy sheet pile is being cut off, with a green cutting machine on a small cart positioned in the center. The background shows various construction materials, including stacks of sheet piles, and several workers in high-visibility vests. Orange traffic cones and a red safety line are visible on the right side. In the distance, there are industrial buildings and utility poles under an overcast sky.


Contract 5 – BJCJSTP
Restoration and
Rehabilitation, February
2018 Construction Progress
Photos

Blower Building: Sheet Piles Being Cut off

Contract 10 – BICJSTP
Restoration and
Rehabilitation, February
2018 Construction Progress
Photos

02/14/2018

Solids Handling Foundation Slab Placement 1 of 3



Contract FW – BJCISTP
Restoration and
Rehabilitation, February
2018 Construction Progress
Photos

Digester #3 Leakage Test

Contract FW – BJCJSTP
Restoration and
Rehabilitation, February
2018 Construction Progress
Photos

Flood Wall Section 6 Footing Concrete Placement

