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 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	Substantial Completion Date July 2016 Anticipated Completion Date February 2017
Contract No. 3	BAF Facility Demolition	Complete
Contract No. 4	MCC HH Emergency Replacement	Substantial completion in September 2016. Awaiting training.
Contract No. 5	BAF Restoration and Rehabilitation Civil Contract	Notice to Proceed (NTP) Issued May 27, 2016
Contract No. 6	BAF Electrical	NTP Issued May 27, 2016
Contract No. 7	BAF HVAC	NTP Issued May, 27, 2016
Contract No. 8	BAF Plumbing	NTP Issued May 27, 2016
Contract No. 9	Secant Pile Contract	Substantial Completion by November 30, 2016

Contract No. 10 13	Solids Handling Renovation	Bids to be opened March 1, 2017
Floodwall	Floodwall and New Diversion Structure	Currently in construction. Anticipated Completion Date September of 2017

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 clears the way for the construction of a new maintenance facility.

Contract Status: 100% Complete

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. Work associated with this contract is being reimbursed by FEMA due to the flood of 2011.

Status: Blue Heron has installed two of the three grinders and has requested outages to install the valves in the east sludge pump station the first week of January 2017. We are negotiating with Blue Heron to delete some of the valve replacements and also equipment installations that GHD has determined should no longer be performed under this contract.

Contract Status: 80% 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 include 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.

Status: LeChase has completed the demolition on the BAF Facility. They have removed the methanol from the methanol tanks that are to be disposed of in Contract #5. They have completed the repair of the over cuts in the CN and DN cells. During the work associated with the repairs of the overcuts, additional rebar was discovered to have been cut during the original construction. Additional repair work was performed by LeChase to repair these additional damaged bars. An analysis was performed by Atlantic Testing Lab to determine the extent of the damage in the DN

cells, and GHD is preparing a recommendation for the future repairs to the rebar in the walls of the DN cells. The scope of work for the contract was increased with five change orders. Change Order One modified the contract to demolish and remove the existing Blower Building to improve construction on contracts 5-8 at the C-N cells 1-8. Change Order Two demolished the known concrete in the C cell area inside the secant pile area below the elevation 825 (the original limit of demolition indicated on the contract documents.) Change Order Three removed the additional concrete pile caps and steel H piles not originally included in the contract documents and also backfilled from elevation 825 to 831. The Fourth Change Order compensated the contractor for demolition of approximately 3600 CY of additional concrete within the secant pile area not known to exist. The removal of the additional concrete eliminated a delay in excess of four months on the overall project, and reduced the cost to avoid having a future contractor remove the concrete. The Fifth and final change order compensated LeChase for repairing defective rebar from the original construction while LeChase was repairing the rebar that they over cut at their own expense.

Contract Status: 100% Complete

Contract No. 4 - MCC - HH Emergency Replacement

Contract 4 replaces the original existing Motor Control Center (MCC) in the Head House. 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 is both critical to keeping the BJCJSTP in service, and because the original MCC is extremely unreliable due to the age and condition of the gear. MCC HH Emergency replacement also replaces 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 includes replacement -of the existing raw sewage variable frequency drives that were located in the existing MCC HH. The new drives will be more reliable, more efficient, and will provide better performance of the existing raw sewage pumps.

Status: The new VFD's and MCC HH have been installed in the Head House. All work on the MCC HH project has been completed including the removal of the existing MCC, and project closeout items. The only remaining item of work to complete is change order work to provide training to STP staff on the operation and maintenance of the new electrical equipment.

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, 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 CN BAF 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 NTP for Contract No. 5 was issued on May 27, 2016, which complied with milestone requirements in the revised Consent Order. The west tower crane is operational. Work continued on demolition of the primary clarifiers 7-10, and has begun in the CN Cells 1-8. Structural work has begun on the Administration Building, with the installation of concrete for the elevator on the north side of the building and the stairwell area on the south side of the building. The temporary bypass pumping piping is installed and operational to divert the flow from Binghamton directly to primary clarifiers 2-5. The Binghamton grit house has been demolished and the Johnson City grit house will be decommissioned as soon as the 30" Johnson City force main is diverted directly to primary clarifiers 1 & 6. As soon as all flow is diverted from Johnson City, mass demolition and excavation will begin for the Headworks Building. The master schedule is being updated to show the status of the work through the month of November. The latest draft shows that the Phase 1 Milestone is scheduled to complete on June 18, 2018, and the Phase 2 Milestone is scheduled to complete 44 days ahead of the required date. CEPT has been relocated and is operational. The temporary electrical work at primary clarifiers 1-6 and the East Sludge Pump Station is now complete. The Kruger submittal continues to be revised to comply with the contract requirements. The equipment and materials associated with the Kruger package is valued at almost 20% of the project and is in detailed final review. The rock anchors for the foundation of the backwash tank are complete and the concrete slab is under construction.

The contractor has acknowledged that they can meet the Phase I and Phase II milestones. Some of the intermediate milestones have been revised to better reflect the actual construction sequencing.

Contract Status: 11% 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: Contract No. 6 was bid and awarded in compliance with the May 27, 2016 milestone for issuing the NTP in the Consent Order. The contractor has mobilized and has begun installing the underground electrical manholes and ductwork within the site. NYSEG has identified their requirements for the cable, equipment, and duct banks to be installed within their substation east of the WTP site. Matco has provided input for the Project CPM baseline schedule. Equipment and material shop drawings are being submitted for review and approval.

Contract Status: 12% 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: Contract No. 7 was awarded on May 27, 2016 in compliance with the DEC milestones in the Consent Order. The contractor has mobilized and has been submitting material submittals for the HVAC Equipment for the project. They have provided supporting information for the development of the CPM Schedule. They have acknowledged they can meet the required milestones of the Consent Order. They are installing the HVAC Unit for the electrical room in the Headhouse, and have begun removing the permanent ductwork in the East Scrubber Building.

Contract Status: 10% 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: Contract No. 8 Notice to Proceed was issued in compliance with the May 27, 2016 milestone for issuing the NTP in the Consent Order. The contractor is mobilizing and has provided the supporting information for the overall CPM Schedule. They have confirmed that they can meet the required milestones of the Consent Order. They have continued installing the plumbing in the new maintenance building and the east scrubber building. They also intend to install the new potable water backflow preventer that will allow the potable water to be used as a backup of the existing non-potable plant water system.

Contract Status: 8% 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. The contractor has completed the wales and struts and they have completed the excavation to the required elevation for work to begin under Contract 5. A punch list for items to complete is being worked on by the Contractor.

Contract Status: 98% Complete

Contract No. 10 - 13 -Solids Handling Renovation

Contracts No. 10-13 are intended to renovate and improve the solids handlings systems including the existing digester control building, existing digesters, solids dewatering systems, and all ancillary equipment. The scope will be further developed as the design progresses. The constructability review has begun based on 90% of the design document. This project is out to bid with a pre-bid meeting scheduled for February 3, 2017 and bid opening on March 1, 2017 with the anticipation of issuing a NTP in May 2017.

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 side of the STP. The project also includes two new pump stations to pump rainwater out of the plant during the storm events that might overwhelm the existing storm drain system. The new flood wall system works in conjunction with new flood wall features included in Contract No.5 BAF General Civil Construction. The flood wall systems are being funded by a FEMA recovery grant.

Status: Construction is proceeding with the concrete work on the flood wall around the sludge thickeners. They continue work both east and west from the thickeners, and the concrete work for Pump Stations 1 and 2 is complete. The contractor is anticipating that they will be complete with the flood wall by May 2017, and will complete the work associated with Manhole #3 on the 54" trunk sewer line from Binghamton east of the floodwall during the summer. The completion of the gate installation in the sampling manhole will occur approximately three weeks after manhole #3. Work on the Digester Rehabilitation has been suspended for the winter and will resume in mid to late March 2017 depending on weather conditions. The subgrade condition is being assessed as excavation areas are exposed. Work has begun to relocate the 10" sanitary sewer that serves a portion of the Town of Vestal. All permit requirements regarding the SEQR and the USACE permit have been complied with. We are currently projecting the Contractor to complete the floodwall within the allowed contract completion date in the Consent Order milestones.

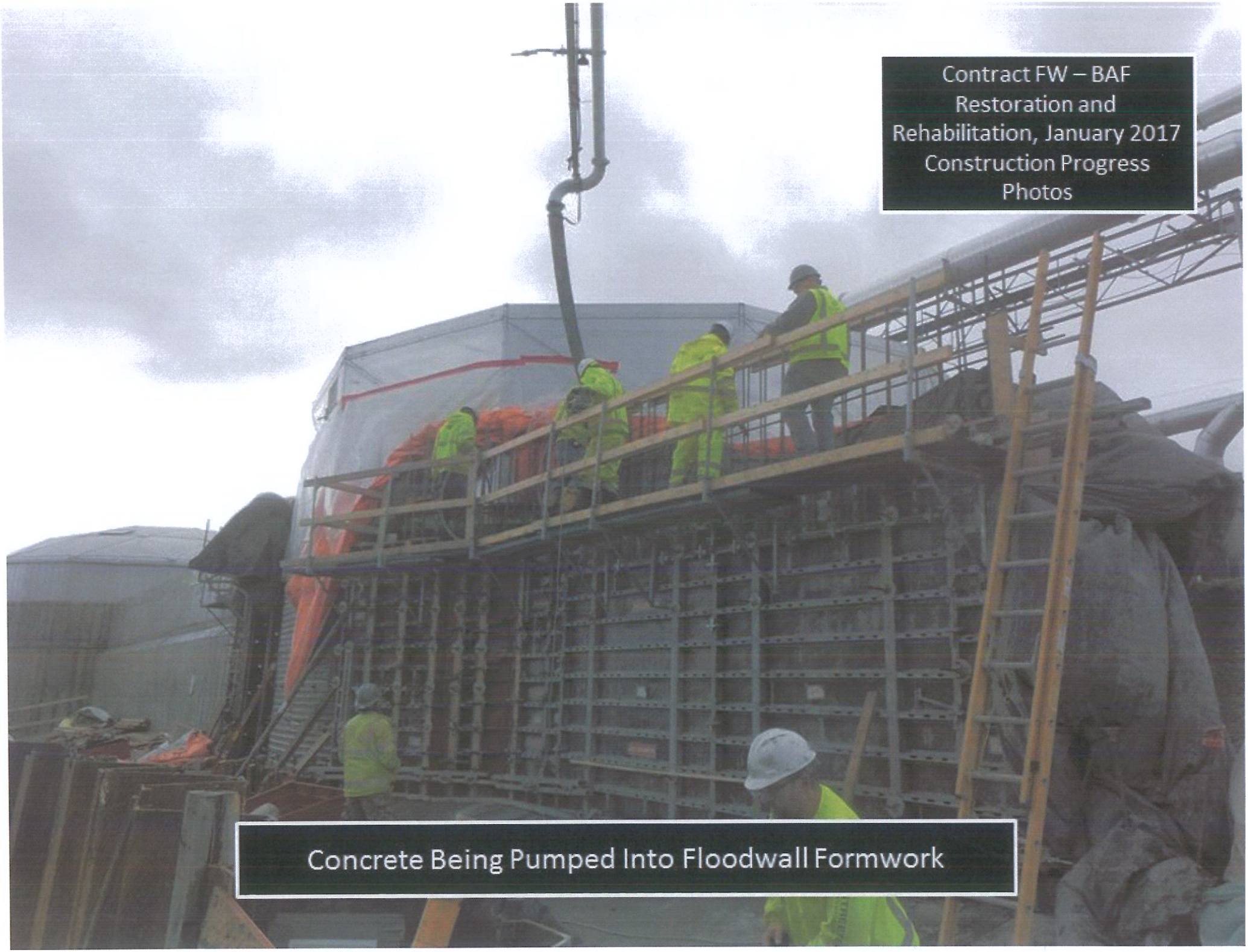
Contract Status: 45% Complete

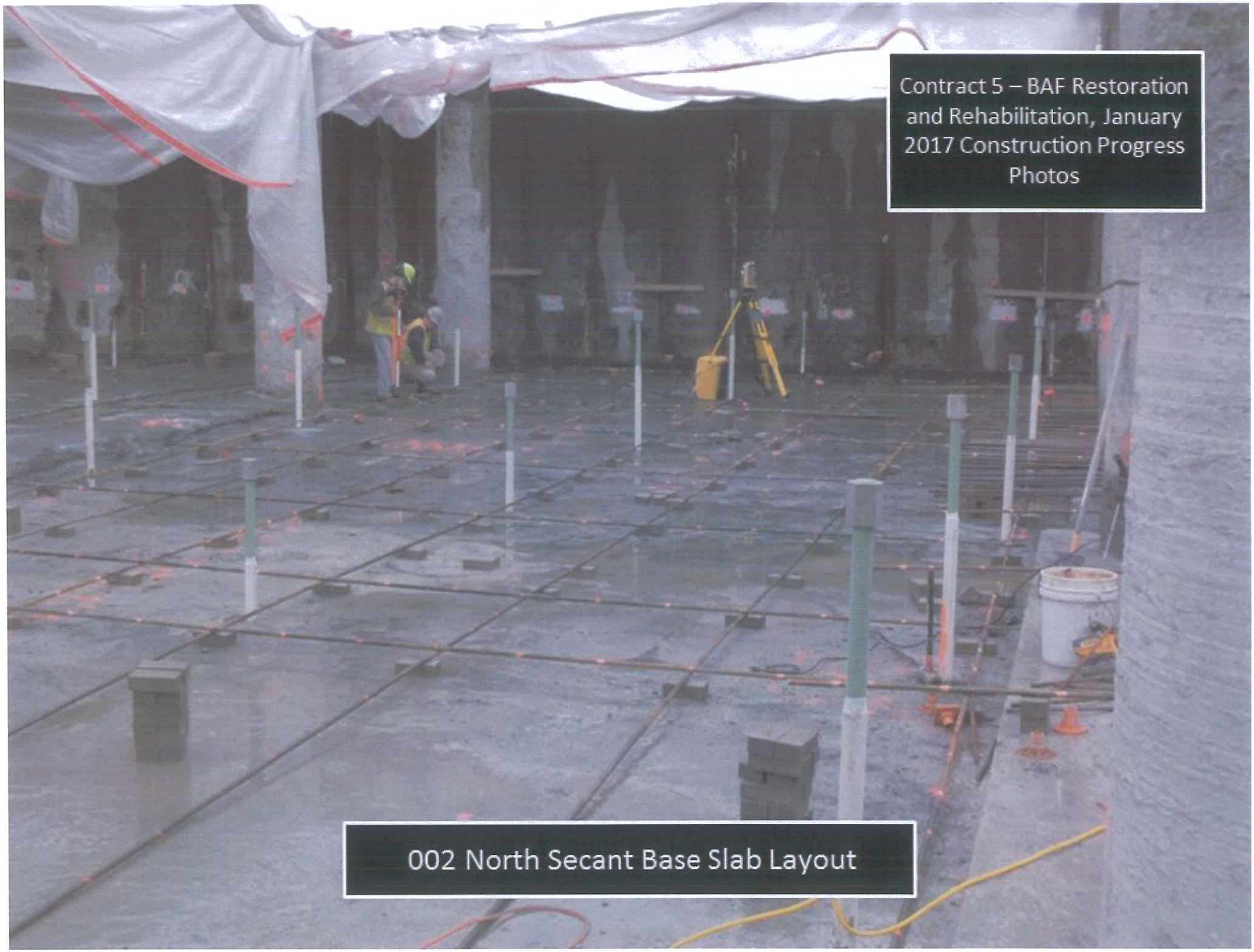
NOTES:

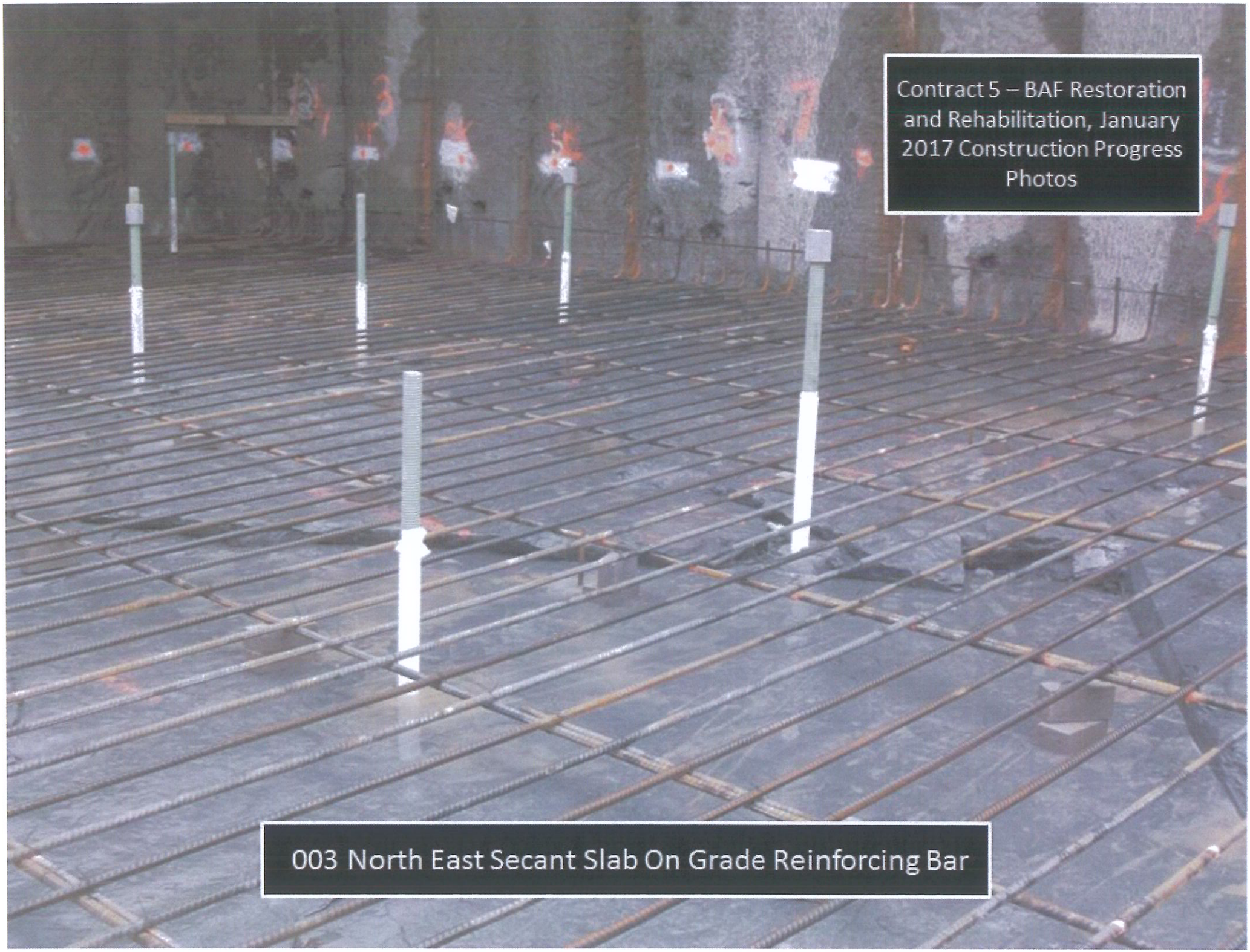
1. SWPPP measures continue to be maintained by all contracts. Any deficiences noted during inspections are quickly remedied.

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.

3. Contracts 5-8 and 10 are continuing the submittal process for all equipment and materials. They are being reviewed and processed as they are submitted.

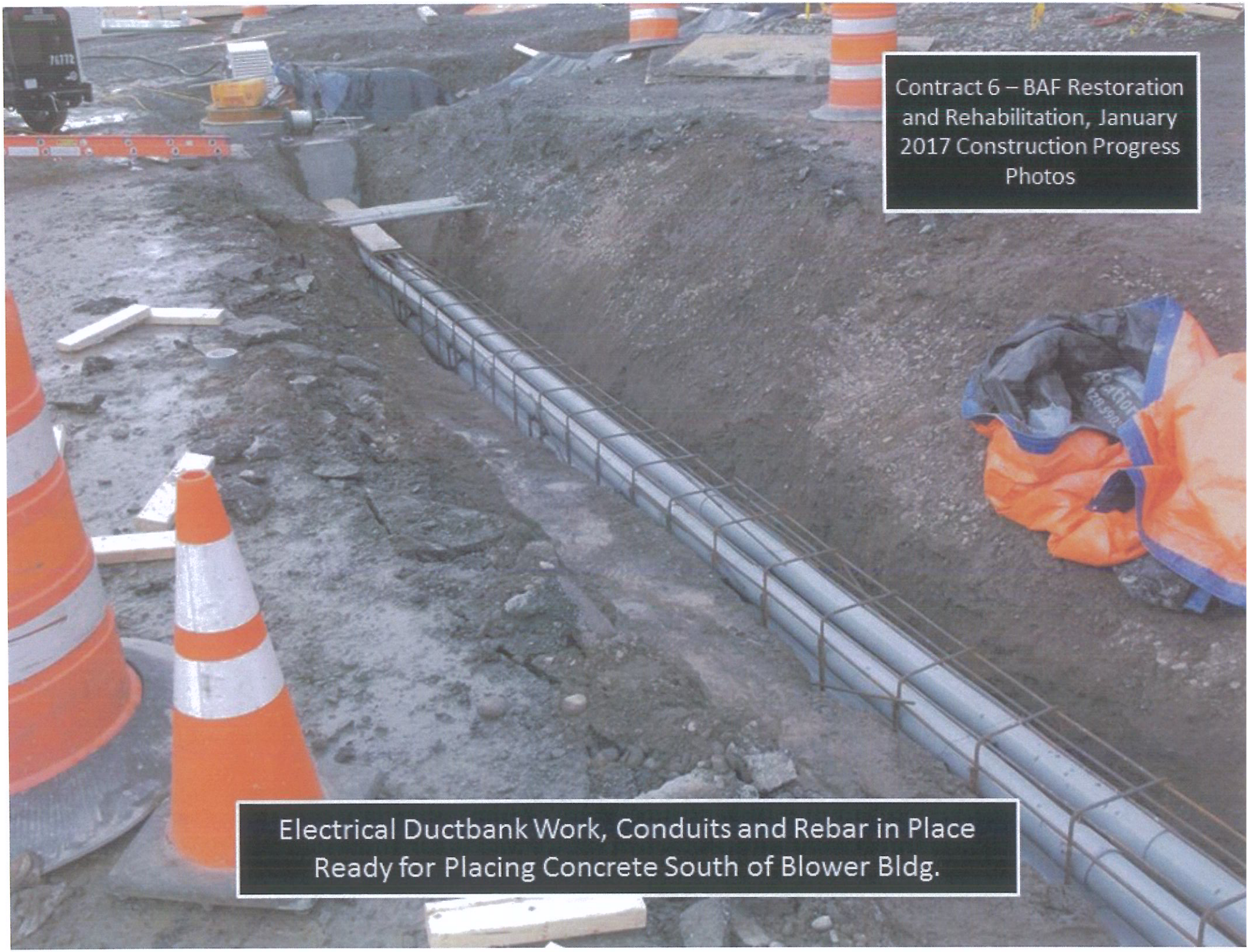

Contract FW – BAF Restoration and Rehabilitation, January 2017 Construction Progress Photos
Concrete Being Pumped Into Floodwall Formwork

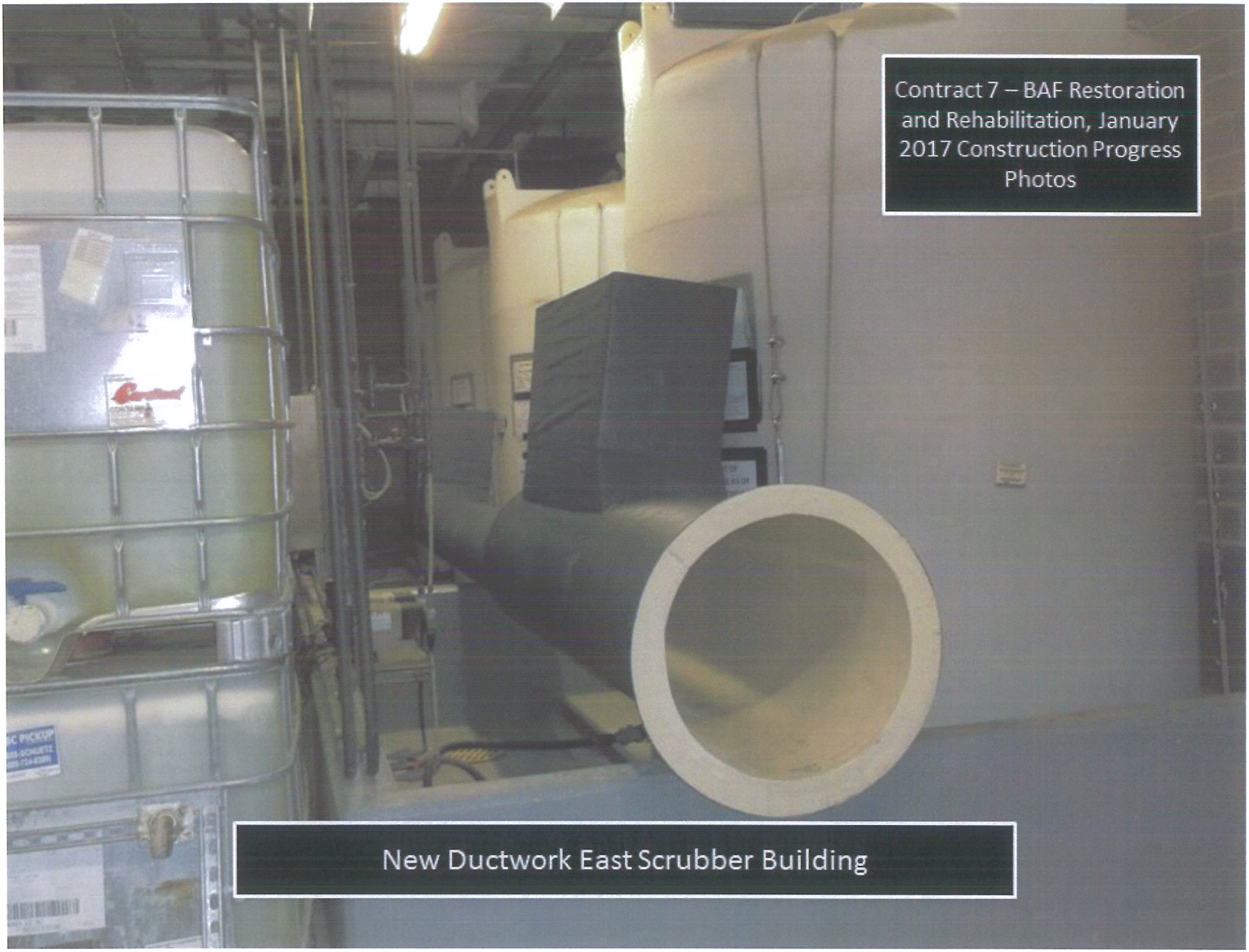

Contract 5 – BAF Restoration and Rehabilitation, January 2017 Construction Progress Photos
002 North Secant Base Slab Layout


Contract 5 – BAF Restoration and Rehabilitation, January 2017 Construction Progress Photos
003 North East Secant Slab On Grade Reinforcing Bar


Contract 5 – BAF Restoration and Rehabilitation, January 2017 Construction Progress Photos
Johnson City 30" Force Main By-Pass


Contract 5 – BAF Restoration and Rehabilitation, January 2017 Construction Progress Photos
Rebar & Form Work for Modification to Primary Settling Tanks 7-10


Contract 6 – BAF Restoration and Rehabilitation, January 2017 Construction Progress Photos
Electrical Ductbank Work, Conduits and Rebar in Place Ready for Placing Concrete South of Blower Bldg.


Contract 7 – BAF Restoration and Rehabilitation, January 2017 Construction Progress Photos
New Ductwork East Scrubber Building