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June 2021

#### DOCUMENT 009113 - ADDENDA

#### 1.1 PROJECT INFORMATION

A. Project Name: Ayer Wastewater Treatment Facility – FY2020 Improvements

B. Owner: Town of Ayer

C. Owner Project Number: 20DPW05

D. Engineer: Matthew Pitta, P.E., PMP

E. Date of Addendum: June 17, 2021

F. Addendum No.: 3

#### 1.2 NOTICE TO BIDDERS

- A. This Addendum is issued to all registered plan holders pursuant to the INSTRUCTIONS to Bidders. This Addendum serves to clarify, revise, and supersede information in the Project Manual, Drawings, and previously issued Addenda. Portions of the Addendum affecting the Contract Documents will be incorporated into the Contract by enumeration of the Addendum in the Owner/Contractor Agreement.
- B. The Bidder shall acknowledge receipt of this Addendum in the appropriate space on the Bid Form.
- C. The date for receipt of bids is unchanged by this Addendum, at same time and location.

#### 1.3 ATTACHMENTS

- A. This Addendum includes the following attached Documents and Specification Sections:
  - 1. Filed Sub Bid Opening Results
  - 2. Section 013513.53 Maintenance of Existing Plant Operations
- B. This Addendum includes the following attached Sheets:
  - 1. Sketch SK-M-1
  - 2. Sketch SK-M-2
  - 3. Sketch SK-M-3
  - 4. Sketch SK-M-4
  - 5. Sketch SK-I-1

- 1.4 REVISIONS TO PREVIOUS ADDENDA (NOT USED)
- 1.5 REVISIONS TO DIVISION 00 PROCUREMENT REQUIREMENTS AND CONTRACTING REQUIREMENTS (NOT USED)
- 1.6 REVISIONS TO DIVISION 01 GENERAL REQUIREMENTS
  - A. Delete Specification Section 013513.53 Maintenance of Existing Plant Operations in its entirety and replace with the attached
- 1.7 REVISIONS TO DIVISIONS 02 49 SPECIFICATION SECTIONS (NOT USED)
- 1.8 QUESTIONS AND ANSWERS
  - A. **Question:** For bidding purposes, please provide a quantity of sludge to remove from the sludge holding tanks as indicated on DWG M-4 and where we can dispose of the material?

**Response:** Per Specification Section 013513.53 – Maintenance of Existing Plant Operations, Paragraph 1.4, sludge will be removed by the Owner. Contractor shall clean tanks as needed to perform improvements.

B. **Question:** Please confirm quantity of Knife Gate Valves at the WAS Pumps suction side. DWG I-5 shows four (4), whereas DWG M-11 shows two (2) and has a note stating typical of two.

**Response:** See attached sketch (SK-M-4).

C. **Question:** Please provide a detail for the truck fill requirements if this is to be demolished or new as indicated on DWG I-9. There isn't any mentioned on the Mechanical DWGs that this is new other than ZSC-1675.

**Response:** See attached sketch (SK-I-1).

D. **Question:** Please confirm that the Filed Sub bids are responsible for removal and disposal of their own demolition work as indicated on their respective drawings.

**Response:** HVAC and Electrical Filed Sub Bid Contractors shall be responsible for their own demolition work.

E. **Question:** Will there be any additional site visits provided? If so, who can we coordinate with?

**Response:** Site visits may be requested. Please contact Engineer to arrange.

## TOWN OF AYER, MASSACHUSETTS AYER WASTEWATER TREATMENT FACILITY - FY2020 IMPROVEMENTS FILED SUB BID OPENING CONTRACT NO. 20DPW05

June 10, 2021 @ 2:30 P.M.

#### HVAC - 230001

Bidder	Base Bid	Addenda	DCAM Update	Bid Security	Signature	Restricted From	Restricted To
CAM HVAC	\$ 249,000.00	х	х	x	х	City Enterprise Inc.	-
Thomas E. Snowden Inc.	\$ 268,000.00	х	х	х	х	-	-
Winston Builders	\$ 345,000.00	х	х	х	х	-	Winston Builders

# TOWN OF AYER, MASSACHUSETTS AYER WASTEWATER TREATMENT FACILITY - FY2020 IMPROVEMENTS FILED SUB BID OPENING CONTRACT NO. 20DPW05 June 10, 2021 @ 2:30 P.M.

#### Electrical - 260001

Bidder	Base Bid	Addenda	DCAM Update	Bid Security	Signature	Restricted From	Restricted To
AMP Electrical Inc.	\$ 267,000.00	х	х	х	х	Waterline Industries	-
LaFleur Electrical Contractors	\$ 318,280.00	х	х	х	х	-	-
Weston Sampson Inc	\$ 405,000.00	х	х	х	х	-	Weston and Sampson CMR Inc.
Fall River Electrical Associates	\$ 466,199.00	х	х	х	х	Waterline Industries	-

#### SECTION 013513.53 - MAINTENANCE OF EXISTING PLANT OPERATION

#### 1.1 SUMMARY

A. The Town of Ayer Wastewater Treatment Plant (WWTP) is operated 24 hours a day, seven days a week. The existing plant will be maintained in continuous operation by the Owner at all times during the entire construction period except for periods specifically delineated within this Section. Schedule and conduct work such that it will not impede any treatment process, cause any National Pollutant Discharge Elimination System (NPDES) permit violations, create potential hazards to operating equipment and/or personnel, reduce the quality of the plant effluent, disrupt any delivery operations, disrupt deliveries or cause odor or other nuisance. Ensure complete compatibility with the plant operations in its working schedules.

#### 1.2 SUBMITTALS

- A. At all times conduct operations so as to interfere as little as possible with existing works and plant operations. Develop a sequence of operation, in cooperation with the Engineer and Owner, which shall provide for construction and start-up of the Work in the most orderly manner possible. All interferences with the existing facilities and processes shall be clearly identified in the sequence of operation developed, including reasons why the interference cannot be avoided. Alternative sequences shall be presented, including any reasons why the alternative sequences cannot avoid interferences to the plant's operation.
- B. Within 60 calendar days of the Notice to Proceed, submit, in accordance with the provisions of Section 013300 "Submittal Procedures," complete descriptions of procedures to maintain plant operation to supplement the construction schedule developed in accordance with Section 013200 "Construction Progress Documentation." The description shall include:
  - Step-by-step procedures, required durations, and specific procedures required to be
    performed by the Contractor; as well as assistance from the Owner's personnel that the
    Contractor will request; note that Contractor shall not assume that request for assistance
    from Owner's personnel will be granted. The procedures shall include a minimum twoweek notification to the Owner for any alterations that affect operation of the treatment
    plant.
  - Step-by-step procedures for connecting new and existing instrumentation to the SCADA system.
  - 3. Complete plans of temporary systems required as part of this Contract to maintain plant operations. These plans shall clearly delineate the intended location of these temporary systems and the Contractor's proposed methods for phasing from existing to temporary to completed facilities.
  - 4. All connections to existing systems, including coordination activities performed by Contractor and Owner personnel.
  - 5. All methods of flow maintenance. The plan shall include the method of interruption of flow, anticipated duration of interruption of flow, and detailed procedure for accomplishing

the work including interruption of flow. If a bypass plan is required, the Contractor shall prepare and submit a specific, detailed description of the proposed system prepared by a Registered Professional Engineer in the Commonwealth of Massachusetts.

#### 1.3 EXISTING PLANT OPERATIONS

- A. The plant is designed and operated as an activated sludge plant, with a design average flow of 1.79 million gallons per day (MGD), and a peak flow of 5.65 MGD.
- B. Plant influent passes first through the headworks that consists of vortex grit removal. From the grit vortex removal tank, the wastewater flows to the primary clari-thickeners for removal of settleable solids and particulate biochemical oxygen demand (BOD), and partial thickening of the primary sludge. Primary sludge is pumped to sludge storage tanks for blending with the waste activated sludge. Primary effluent is then distributed to the anoxic tanks followed by the aeration tanks for removal of the remaining particulate BOD and soluble BOD, and nitrogen. Mixed liquid from the aeration tanks is distributed to the secondary clarifiers, where phosphorus is also removed through the addition of aluminate sulfate. Secondary effluent is then conveyed to the filter feed pumps and tertiary filtration. Once filtered, the effluent is disinfected with ultraviolet treatment. Return activated sludge is returned to the head of the anoxic and/or aeration tanks. Waste activated sludge is pumped to the thickened sludge storage tanks. The blended sludge is then transferred to hauling trucks for offsite disposal. Side streams from the tertiary filters and process drains are collected and pumped and returned upstream ahead of the primary clarifiers.
- C. Septage is delivered to plant at regular intervals by truck haulers and unloaded into an influent channel with an inline grinder prior to being integrated into the process flow upstream of the primary clari-thickeners. Septage is only unloaded from 7:00 a.m. until 3:30 p.m., Monday through Saturday.
- D. Sludge is hauled offsite by truck haulers from the sludge storage tanks. Sludge truck access (for up to 65-foot tanker trucks) to/from the Process and Maintenance Building shall be maintained at all times as specified herein. The WWTP produces 1 to 3 tankers per day of liquid sludge.
- E. Unless specifically noted below, or permitted in writing by the Owner and Engineer, the construction activities under this Contract shall not, under any circumstances, reduce the treatment capability of the plant. The treatment capability of the plant refers to all portions of wastewater treatment, including septage receiving, screenings and grit removal, primary treatment, secondary treatment, tertiary treatment, disinfection of plant effluent, liquid sludge storage and hauling, chemical addition and plant water service.
- F. The Owner will continue to operate the treatment plant during the construction period and will be responsible for maintaining effluent quality to comply with the NPDES permit. Fully cooperate with the Owner, coordinate the construction schedule with the Owner and Engineer, and provide the necessary labor, equipment and materials to prevent interruption to flow, treatment (including chemical addition as required), and solids processing. The Owner and Engineer reserve the right to take any action required to meet permit limits and prevailing conditions

G. All wastewater samplers, analyzers, and meters required for proper plant operation and reporting shall be protected and remain operational throughout construction. Maintain safe access to samplers and meters at all times.

### 1.4 LIMITATIONS ON EXISTING PLANT OPERATIONS AND CONSTRAINTS DURING CONSTRUCTION

- A. The procedures submitted under Paragraph 1.2 above shall be adhered to except as deviations are expressly permitted by Engineer. Maintain compliance with the following operational limitations and needs as part of his proposed construction plan.
- B. The Owner's personnel will operate valves and equipment as necessary for diverting flow, draining of tanks, etc. However, it is emphasized that the operations of the existing facilities take precedence over all construction activities. Operational assistance given to the Contractor by the Owner will be provided when the Owner's schedule and manpower permit. Such assistance by the Owner may be limited on specific occasions because of process limitations, wet weather flows or unavailability of personnel. Delays caused by such limitations shall be expected and shall not be the basis for claim of extra costs by the Contractor.
- C. Fully cooperate with the Owner, Engineer and Owner and coordinate construction activities to prevent interference or disruption to ongoing wastewater treatment and sludge processing activities. This includes, but is not limited to, maintaining wastewater treatment while installing new instrumentation and control systems and new electrical work, installing new process equipment, cleaning and repair of existing tanks, maintaining site access and traffic patterns, maintaining conveyance systems as required, and completing all demolition, modifications, and new construction activities.
- D. The plant's normal working hours are Monday through Friday, 7:00 a.m. to 3:30 p.m. During this time, the plant is fully staffed. The plant is not staffed between 3:30 p.m. and 7:00 a.m. Contractor will plan and schedule their regular construction activities during normal working hours, to the extent practicable. Should it be necessary for the Contractor to perform work outside normal working hours, notify the Engineer prior to conducting such work to allow for any required coordination and/or effort from the Owner's contract operator or modifications to the plant operations. Unless otherwise agreed upon, the Contractor shall be responsible for all overtime costs associated with Engineer's and Owner's contract operator's staff working outside of the WWTP's normal working hours.
- E. All work connecting with, cutting into, and reconstructing existing pipes or structures shall be planned to minimize the impact on the operation of the existing facilities and interfere with the operation of the existing facilities for the shortest possible time. Anticipate that these activities may need to be scheduled when the demands on the facilities best permit such interference, even though it may be necessary to work outside of normal working hours to meet these requirements.
- F. Portions of some pipelines must remain in service while alterations are being made on other portions. Piping systems that must remain in service shall be isolated by placing blind flanges, plugs, or caps on all open ends. All temporary piping required to keep piping systems in service shall be provided by the Contractor. The Contractor is responsible for the stability of all partial piping systems and shall provide temporary bracing as required. All wastewater within pipes to be opened shall be collected and discharged into the plant influent system. Wastewater shall not

be pumped to nor allowed to flow to any of the existing storm drainage system or overland to the river.

- G. Before starting work which will interfere with the operation of existing facilities, do all possible preparatory work and shall see that all labor, tools, materials, and equipment are made ready. Also assist in instructing operations and maintenance personnel in all new operating procedures.
- H. Provide, maintain, and operate all temporary facilities such as pumping equipment, blowers, conduits, and all other labor and equipment necessary to intercept the sewage flow before it reaches the points where it would interfere with his work, carry it past the area of work, and return it to the system after the area of work.
- I. Flow to and through the treatment plant shall generally not be interrupted. Flow through portions of the plant may only be shut-down to perform work as delineated herein. All shut-downs shall occur only upon written request and with prior written authorization from the Owner. Such authorizations will be limited to times when the hydraulic capacity of units remaining in service shall not be exceeded. When work requires that a portion of the plant be shut down, the Contractor shall be fully prepared to execute the work in the most expeditious manner. Plan the work by taking into consideration all potential problems that may be encountered. Spare pumps, pipe and fittings, and all other equipment appropriate for the work to be done shall be readily available by the Contractor for use in an emergency under the Contractor's operation. The Contractor shall be prepared to work continuously (24 hours per day, 7 days per week) during the time when any units or pipelines are out of service that affect the treatment process.
- J. If bypass pumping is required, sufficient pumping capacity shall be provided to meet the existing flow rate(s), with one pump out of service.
- K. Influent flow measurement shall be maintained at all times.
- L. The Primary Scum Well is needed for operation and shall remain in operation at all times while the existing primary sludge pumps and primary scum pump are replaced one-by-one.
- M. The Secondary Scum Well is needed for operation and shall remain in operation at all times while the existing return activated sludge pumps and waste activated sludge pumps and secondary scum pump are replaced one by one.
- N. Two of the three existing thickened primary sludge (TPS) / primary scum pumps in the basement of the Process and Maintenance Building shall remain operational to service the existing primary clari-thickeners until the third pump is replaced and operational. Thus, pumps shall be replaced one at a time. Work on the next pump shall not commence until the new pump, including instruments, controls and associated suction/discharge piping is installed, started-up, performance tested and operating satisfactorily.
- O. Return activated sludge pumps shall be maintain operational at all times.
- P. One of the two existing waste activated sludge (WAS) pumps in the basement of the Process and Maintenance Building shall remain operational to service the existing Secondary Clarifiers No. 1 and No. 2 until the second pump is replaced and operational to service the Secondary Clarifier No. 1 and No. 2. Work on the second pump shall not commence until the first pump,

including instruments, controls and associated suction/discharge piping is installed, started-up, performance tested and operating satisfactorily.

- Q. One of the existing two thickened sludge storage tanks adjacent to the Process and Maintenance Building shall remain operational to store thickened primary sludge transferred by the existing or new TPS pumps, primary scum transferred by the existing or new TPS pumps, WAS transferred by the existing or new WAS pumps, and secondary scum transferred by the existing secondary scum pump, until work in the second tank has been completed and placed in satisfactory operation. One tank shall always be available to store liquid sludge prior to transport off-site by a sludge hauler for ultimate disposal. Work on the second existing tank shall not commence until the work in the first tank, including diffusers, level instruments, controls, one low pressure process blower and associated suction/discharge piping is installed, started-up, performance tested and operating satisfactorily.
- R. One of the two existing sludge transfer pumps in the basement of the Process and Maintenance Building shall remain operational to service the existing sludge storage tanks No. 2 and No. 3 until the second pump is replaced and operational to service the sludge storage tanks. Work on the second pump shall not commence until the first pump, including instruments, controls and associated suction/discharge piping is installed, started-up, performance tested and operating satisfactorily.
- S. The tertiary filters shall remain operational at all times unless otherwise approved by the Owner.
- T. The UV disinfection units shall remain in operation unless having fewer trains operational is approved by the Owner.
- U. Provide the Owner's personnel and agents with vehicular and personnel access to all areas of the existing plant which remain in operation.
- V. Potable water shall remain operational at all times.
- W. Existing plumbing and fire protection systems shall be kept in operation at all times. Systems to be modified, relocated, removed or replaced shall be kept in operation until temporary and/or new systems have been tested, accepted and authorized for use. If sewers or drains must be taken out of service to facilitate construction operations, alternative provisions shall be made to collect wastewater or drainage and dispose of them. Such wastewater shall be discharged within the treatment plant as approved by the Owner. Drainage shall be discharged in accordance with the NPDES construction discharge permit.
- X. Existing yard sewer and drains shall be kept in operation at all times. Construct and maintain all temporary bypass systems and be responsible for all bypass pumping or gravity conveyance of flows that may be required to prevent backing up of flow during Work.
- Y. Unless specified differently, when open tanks and channels have to be taken off line to accommodate the construction, the Owner will operate the necessary gates and valves to accomplish this work. The Owner will drain the tanks and remove sediment from existing tanks and pipes as feasible using existing pumps and drain lines. The Owner will also remove and dispose of accumulated solids out of the bottom of the tanks. The Contractor is responsible for any additional cleaning required to make tanks ready for modifications as specified in Section 017300 "Execution."

Z. On-site storm drains shall be kept in operation at all times. Drains to be abandoned, removed, and/or replaced shall be kept in operation until new site grading or temporary provisions for collecting and re-routing storm run-off have been installed, tested, accepted and put into service.

- AA. Heating and ventilation shall be provided for and maintained in the existing buildings and in any temporary facilities. Temperatures to be maintained in any areas occupied by WWTP operating personnel shall be at least 65 degrees F in cold weather months and maximum of 78 degrees F in warm weather months. The temperatures to be maintained in all other interior WWTP areas, whether new, existing or temporary, shall be a minimum of 55 degrees F and a maximum of 104 degrees F. Electrical Rooms shall be maintained at a maximum temperature of 85 degrees F. Contractor to furnish temporary heating and ventilation as needed to maintain the temperatures listed above at times when existing and/or new heating and ventilation is not in operation.
- BB. Electric power (i.e. both normal utility power and standby generator power), as well as lighting service shall be uninterrupted in all areas that remain in operation except as otherwise specified herein.
- CC. If any outage is longer than the allowed time, make provisions for generator connections to provide power to maintain plant operations.
- DD. Septage truck disposal operations shall not be interrupted.
- EE. Liquid sludge hauling operations shall not be interrupted as part of the work to modify the existing truck fill piping. Temporary piping shall be furnished as necessary to maintain operations
- FF. Existing instrumentation and controls shall remain fully functional except as otherwise specified herein.
- GG. All temporary systems and facilities provided by the Contractor shall be demonstrated to be operational to the satisfaction of the Engineer and Owner before any existing systems can be removed from use. The temporary facilities are critical to the operation of the wastewater treatment facilities. Availability of the facilities must be maintained at all times. Respond to requests from the Engineer for repair and maintenance of temporary facilities immediately within 30 minutes (7 days per week, 24 hours per day, including holidays). If the Contractor fails to immediately respond to requests for repair and maintenance within 30 minutes, such repair and maintenance may be performed by the Owner. All costs associated with such repair and maintenance performed by the Owner shall be the responsibility of the Contractor.
- HH. In the event that underground piping or utilities which are not shown on the Drawings are encountered, such piping or utilities shall not be disturbed without prior approval of the Engineer.
- II. New equipment and/or treatment units may not be used until specified testing and acceptance procedures are completed and written authorization for use is given by the Engineer.
- JJ. Contractor staging areas have been designated on the Drawings. All plant access roads shall remain unobstructed throughout construction for staff use, sludge hauling, septage truck deliveries, chemical deliveries, emergency vehicles, and any other purpose required by plant

activities except as required for specific stages of the Work. Access to/from the site shall be maintained as specified in Section 011000 "Summary."

- KK. Make all arrangements necessary to secure additional offsite parking and staging areas as required throughout the duration of construction.
- LL. The Tank Drain Wet Well is needed for operation of the existing grit system, tertiary filters, and other plant drains and shall remain in operation. Contractor shall coordinate taking this wet well temporarily out of service for the replacement of the two tank drain pumps and pump rails and accessories with the Owner and the Owner's operations of the associated processes. This activity may need to be scheduled when the demands on the facilities better allow such interference and may need to be outside of normal working hours.

#### 1.5 SEQUENCE OF CONSTRUCTION - GENERAL

- A. In order to maintain continuous plant operations during construction, a construction sequence similar to that described herein shall be required. Specific constraints and steps are outlined and are intended to suggest a sequence for specific activities. This sequence shall be coordinated with the Owner and the Engineer and submitted for approval in accordance with the requirements of Paragraph 1.2. Work shall not commence unless the sequence has been accepted and approved.
- B. The detailed sequence of construction shall be based upon the schedule submitted by the Contractor and approved by the Engineer as specified above. However, as a guide for bidders in the preparation of their bid and for the Contractor in the preparation of his schedule, a suggested sequence of construction is described below. The Contractor may alter the sequence as approved by the Engineer, providing plant operations are maintained.
- C. The order of construction shall be subject to the approval of the Engineer; such approval or direction, however, shall in no way relieve the Contractor's responsibility to perform the work in strict accordance with the Contract Documents. The construction plans and specifications have been developed to minimize the construction impacts on the operation of the treatment plant. The Contractor shall note the requirements of this Section with regard to the operation of the plant and the phasing of construction when developing his work sequence. The Contractor's work sequence shall be specifically detailed in the schedule that is required under Section 013200 "Construction Progress Documentation."
- D. The following work sequence provides for completing the construction of the project within the requirements of the Owner's plant operation and scheduling limitations. It does not intend to cover all sequences necessitated by the actual construction methods. This is a partial outline only. Portions of the work not specifically itemized must be scheduled by the Contractor in accordance with the requirements of the approved construction sequence. The Contractor is required to account for all details in formulating his own complete plan for implementation of the project.
- E. Some of the tasks below may overlap one another in performance of the work. Numerical identification of the tasks does not necessarily conform with actual order of construction.

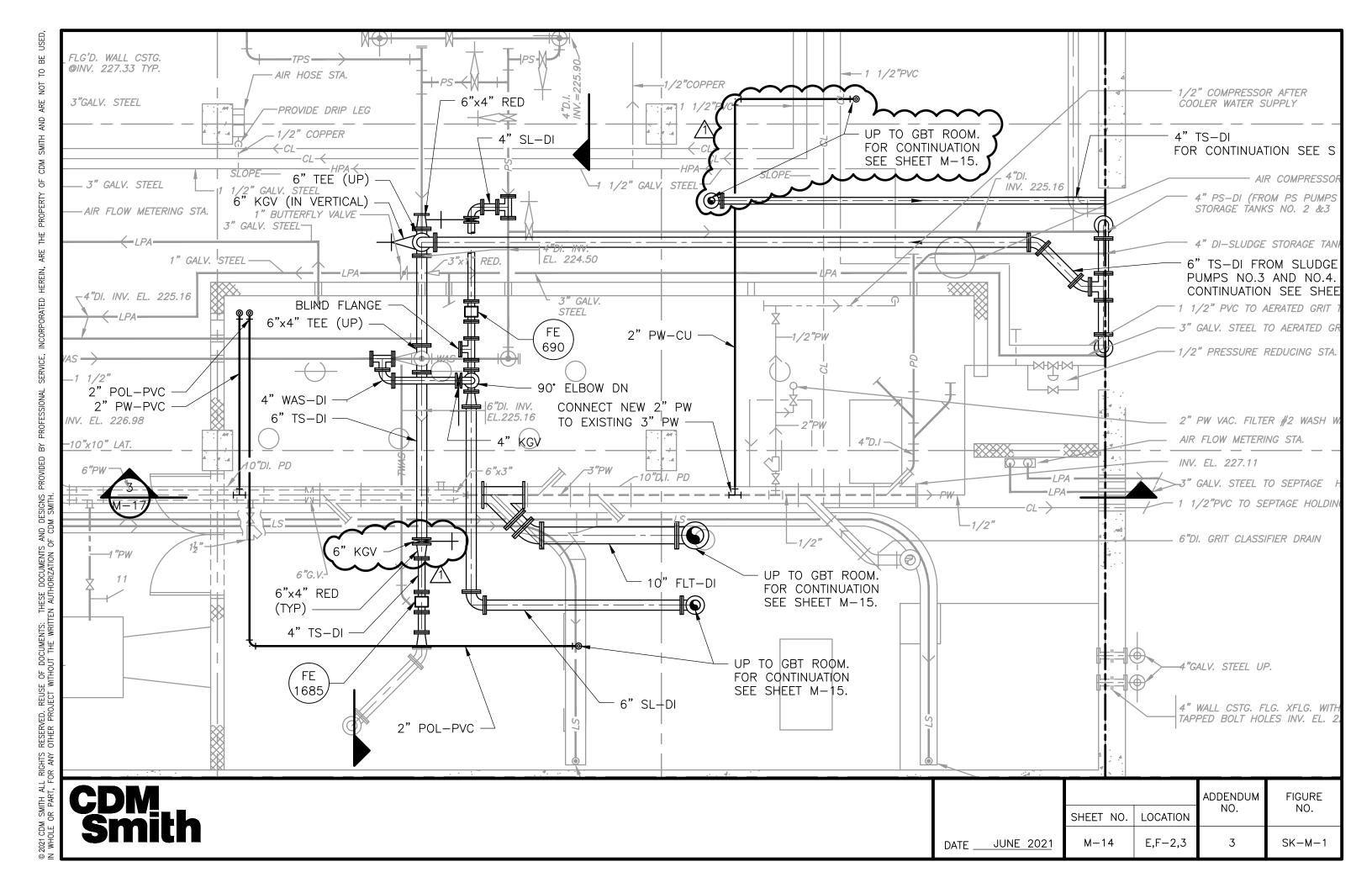
#### 1.6 SEQUENCE OF CONSTRUCTION – SPECIFIC AREAS

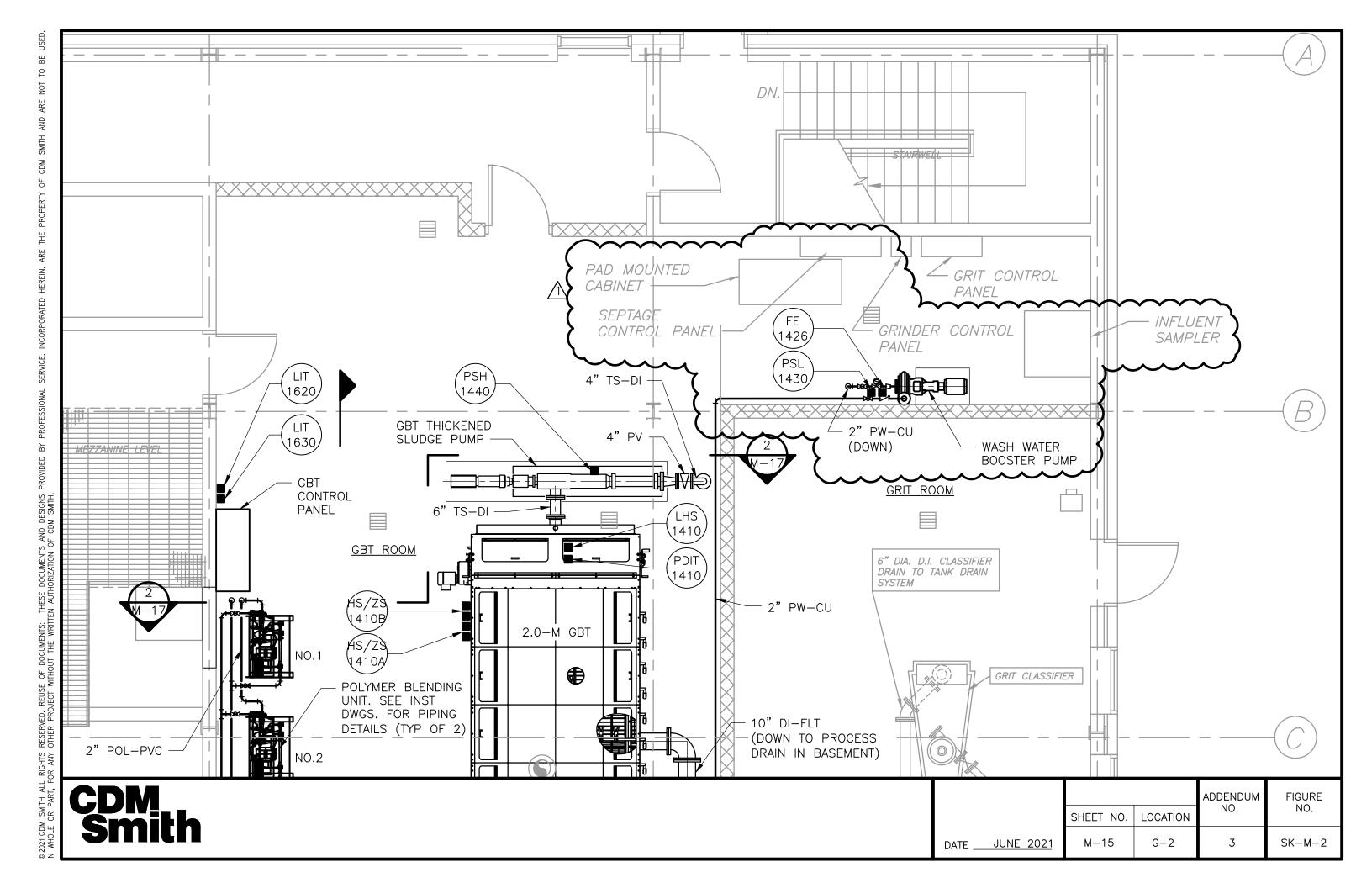
#### A. Process and Maintenance Building:

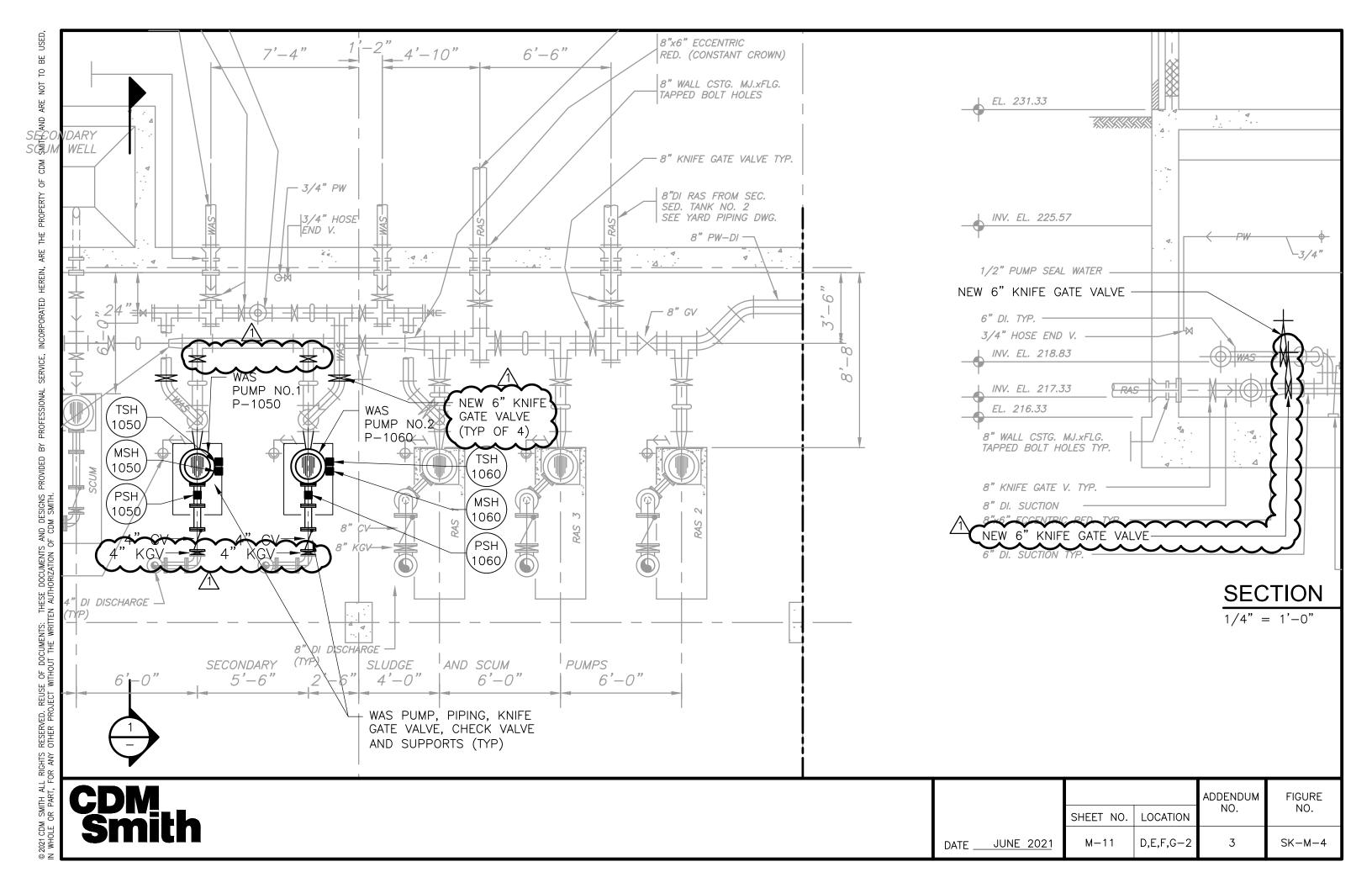
1. Remove and replace the existing thickened primary sludge pumps with the new thickened primary sludge pumps and inline grinders, along the with associated suction and discharge piping and valves.

- 2. Remove and replace the existing WAS pumps with the new WAS pumps along the with associated suction and discharge piping and valves.
- 3. Remove the sections of 4" sludge piping between the sludge storage tanks and the truck fill connection point and replace with the 6" sludge piping.
- 4. Remove and replace the sludge transfer pumps with the new larger thickened sludge transfer pumps, along the with associated suction and discharge piping and valves.
- 5. Make the structural repairs to the two thickened sludge storage tanks and install the new sludge mixing equipment and place tanks into operation. The tanks shall be taken offline for work one tank at a time.
- 6. Install the new plant water pumping system and manual basket strainer in the basement, connect new system and piping to the existing plant water piping and plant water storage tank, start-up and test and place system into operation.
- 7. Install polymer feeds systems, startup, test, and make ready for operation.
- 8. Install the new gravity belt thickener (GBT), wash water system, and GBT thickened sludge transfer pump. Make the plant water, polymer, sludge feed, and thickened sludge piping connections to the GBT. Start up, test, and make the GBT and ancillary systems ready for operation.
- 9. Startup the full GBT operation including sludge feed pumps (thickened primary sludge pumps and WAS pumps), GBT thickened sludge transfer pump, polymer feed systems, wash water system, and operate. Upon successful startup and operation of the unit, conduct the required performance testing.
- 10. Apply new resinous flooring in basement following all new work, removal of old equipment and concrete support pads, and installation of new concrete equipment support pads.

**END OF SECTION 013513.53** 







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