### MONTGOMERY TOWNSHIP SOMERSET COUNTY, NEW JERSEY

### ADDENDUM NO. 4 TO CONTRACT DOCUMENTS

for

### STAGE II WASTEWATER TREATMENT PLANT FLOOD PROTECTION PROJECT

BID PACKAGE #B06-2022

September 7, 2022



### MONTGOMERY TOWNSHIP SOMERSET COUNTY, NEW JERSEY

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The following changes and additional information are hereby made part of the Contract Documents:

#### **Responses to Questions:**

1. Please compare the 7'-3" Heel width for the Type 1B Flood Walls on Dwg S4 to the "Heel" widths for the foundation slabs for the Storm Water Pump Station and for the Effluent Pump Station shown on Dwg's S5, S7 & S8 The Flood Wall Site Plan Dwg S3 shows the flood side of these "Heels" to be aligned in a continuous fashion. However, the "Heel" width for the Storm Water Pump Station is 6'-6", and the "Heel" width for the Effluent Pump Station is 7'-6". Please clarify whether or not the "Heel" widths for the two pump stations are correct.

### Response: The 6'-6" dimension on Section 3/S-5 and the 7'-6" dimension shown on Section 1/S-7 and Section 2/S-7 are correct.

2. Please compare the 3'-6" Heel/Footing thickness for the Type 1B & Type 2 Flood Walls on Dwg S4 to the "Heel" thickness of the foundation slabs for the Storm Water Pump Station and for the Effluent Pump Station shown on Dwg's S5, S7 & S8 The "Heel" thickness for the Storm Water Pump Station is 3'-0"", and the "Heel" thickness for the Effluent Pump Station is 2'-0". Please clarify whether or not the "Heel" thicknesses for the two pump stations are correct.

## Response: Revise the flood wall thickness shown on Section 1/S-5 and Section 2/S-5 to 3'-6" to match the thickness shown on Section 1/S-4. The 2'-0" footing thickness shown on Section 1/S-7 and 2/S-7 are correct.

3. Please confirm our assumption that all roof slabs for the two pump stations are to be 12" thick because the roof slab thickness is not dimensioned in most of the pump station sections on Dwg's S5, S6 S7 & S8 and we wish to refrain from scaling the drawings.

### Response: Confirmed, all roof slabs shall be 12" thick.

4. Please review the foundation slab rebar for the Effluent Pump Station on Dwg's S7 & S8 to clarify whether or not the #4 Bars @ 6" o.c. are correct, because the same rebar for the Storm Water Pump Station are #8's @ 9" o.c.

### Response: Mat slab bars for Effluent Pump Station to be #6 @ 9" O.C., top and bottom, each way.

5. Please review the roof slab rebar for the Effluent Pump Station on Dwg's S7 & S8 because #5's @ 9" o.c. T&B, Each Way appears to be the correct rebar, but the various sections on Dwg's S7 & S8 call-out #4 bars.

### Response: Roof slab reinforcement shall be #5 @ 9" O.C., top and bottom, each way.

6. As depicted on Dwg. C13, the Profile of the Concrete Flood Wall Footings is stepped at many locations. However, there is no typical detail provided on the Flood Wall drawings that shows how these stepped Footings are to be constructed. Typically, we would expect the stepped Footings to incorporate a haunch detail. Even if there are no haunches at these stepped footings, please provide a typical detail that shows how the rebar is to be detailed at these stepped locations.

### Response: Haunch/Stepped Footing Detail is shown on Sheet GS-4

7. It would be appreciated if the Concrete Flood Wall Site Plan drawings were to be revised to show the locations of the stepped footings with dashed line symbols extending across the width of the flood wall footings.

### Response: Sheets S-3 and S-4 show a dashed line at step locations.

8. There are dashed lines on the Flood Wall Site Plan Dwg's S1 & S2 that extend across the width of the footings and which sometimes are located at Expansion Joints, but are not always located at EJ's. What do these dashed line symbols represent?

### Response: The dashed lines show haunches and change in foundation elevation.

9. Please clarify whether or not Mass Concrete thermal controls will be required for any portions of the Flood Walls and the two Pump Stations.

### Response: Thermal Control Plans are required. Reference Section 03300, Part 1.6.H.6.

10. With regard to the Rebar Dowels shown on Dwg S4 for the Concrete Flood Wall Types, we do not believe that these Rebar Dowels were drawn to scale. These are the Rebar Dowels that are installed in the Flood Wall Footings and extend vertically into the Flood Walls. Please provide the required minimum dimensions for the horizontal legs and vertical legs of these Rebar Dowels for the various heights of the Walls. The dimensioning of these Rebar Dowels is an important structural design issue and not a routine detailing issue that would be delegated to the rebar detailer when preparing the rebar shop drawings. The Bidders need to be provided with this design information as soon as possible in order to complete their Rebar Quantity Take-Offs.

## Response: Contractor to determine dimensions for rebar as sufficient information is provided. Plans and Sections provided show wall & foundation elevations. Lap splice table is also provided on drawing GS-5.

11. Please review the #6 Rebars (the Long Bars) that are called-out on Dwg S5 for the Flood Wall Footing that is incorporated into the Effluent Pump Station because all of the similar Rebars for the Flood Wall Types on Dwg S4 are called-out as #8 bars.

### Response: Flood Wall Footings reinforcing incorporated into Effluent Pump Station shall be as shown on Section 5/S-6.

12. Please review the #5 Horizontal Rebars (the Long Bars) that are called-out on the Effluent Pump Station Section #1 on Dwg S7 for the 2'-0" thick Flood Wall because those Horizontal Bars do not match the Typical #4 Horizontal Rebars that are shown on Dwg S4 for all of the Flood Wall Types.

### Response: Flood Wall reinforcing shall be as shown on Section 1/S-7.

13. Please note that Note #12 on Electrical Dwg E3 does not mention the need to provide Temporary Power for the diversion of flow at the existing Headworks, and it also does not mention the Temporary Power for the diversion of the treated waste water from the existing Chlorine Contact /Post Aeration Tank to the Millstone River during the CIPP work. Please clarify.

### Response: The Influent Pump Station is located within the Headworks Facility. Revise Note 12 on Sheet E-3 as follows:

"12. A TEMPORARY 480V, 3 PH DISTRIBUTION PANEL FED FROM THE MDB SPARE 250A CB IS TO PROVIDE POWER TO THE HEADWORKS BYPASS PUMPING SYSTEM, THE RHPS BYPASS PUMPING SYSTEM, THE PLANT OUTFALL BYPASS PUMPING SYSTEM AND THE TEMPORARY AERATION BLOWER SKID."

Reference the revised Section 16050-1.01.B and 16050-1.01.C included in Addendum 3. As stated in the Addendum 3 specification revision, there are four planned bypass operations that will require temporary power:

- 1. Rocky Hill Pump Station: 2-5HP pumps, single feed rated 20A, 460VAC, 3 phase
- 2. Influent Pump Station: 3-10HP pumps, single feed rated 70A, 460VAC, 3 phase
- 3. Aeration Blowers: 2-60HP, VFD blowers, individual feeds rated 125A, 460VAC, 3 phase
- 4. Plant Outfall Bypass Pumping: 3-10HP pumps, single feed rated 70A, 460VAC, 3 phase

These bypass pumping systems and the temporary Aeration Blower skid can be fed from the same temporary power circuit or if the Contractor identifies an alternate source that is better suited for the application, the alternate source can be reviewed with the Engineer to determine the acceptability of the concept.

14. Please note that the references to a By-Pass Pumping for the IPS in Part 1.1.B and Part 1.1.E.5 of Electrical Spec Section 16050 is not mentioned in the By-Pass Pumping Spec Section 01501, and it is not mentioned in the Construction Sequence Part 1.4.B of Spec 01005. Please clarify the need for the IPS By-Pass Pumping.

Response: The Influent Pump Station is located within the Headworks Facility. The Headworks Bypass Pumping System noted in Section 01501 is intended for bypassing the Headwork Facility/Influent Pump Station (IPS) as required for (a) installing the Owner Furnished wet well mixer and the 12-inch DR piping at the IPS wet well as shown on Sheets M-5 and M-6 and (b) decommissioning the IPS control panel located within the Control Building and moving its functionality to the new PLC-1 in the Main Alarm Panel as described in Section 16050, Part 1.1.E.5. All related control and monitoring conductors are to be relocated to the new PLC-1, refer to the Division 13 specifications. PLC-1 shall be in place and tested prior to migrating the control. Section 01005, Part 1.4.B has been revised to include a reference to the electrical/control work at the IPS to be performed during bypassing of the Headworks Facility/IPS.

15. Part 1.1.B and Part 1.1.E.5 of Electrical Spec Section 16050 make reference to the need for electrical work, by-pass pumping, and mechanical work to be performed at the Influent Pump Station (IPS), but the location of the IPS is not shown on any of the drawings, and there is no Mechanical Drawing that covers the installation of the backwash return pipe that is referenced in Part 1.1.E.5 of Electrical Spec Section 16050. Since this is a Lump Sum Project, the Bidders need to be provided with all information pertaining to the IPS as soon as possible.

### Response: See response to Question 14 above, and response to Question 67 in Addendum No. 3.

16. We request that the following Flood Wall details be revised include notes that call-out the need for holes to be drilled through the FRP Sheet Piles for the insertion of the rebar through the sheet piles so that this requirement is made clear. These drilling notes should specify the spacing of the holes and the purpose of the holes. Please add these drilling notes to the following details: the Transition Joint Detail #5 on Dwg S10, the Keyway Detail #6 on Dwg S10, and the Typical flood Wall Base Slab Detail on Dwg S10.

### Response: Detail 6/S-10 provides this note, additional notes will not be provided.

17. The Flood Wall Stem Expansion Joint Detail on Dwg GS-6 states that is it not drawn to scale, but we believe that it was drawn to the scale of 1.5" = 1 Foot. Please confirm our assumption.

### Response: Contractor is not to scale drawings. Detail is to show design intent only.

18. Please provide dimensions for the various rebar shapes that are shown in the Flood Wall Stem Expansion Joint Detail on Dwg GS-6 so that the cost of these rebar shapes can be determined.

### Response: Rebar sizes and bends are standard. Contractor can estimate based on details provided.

19. Reference: Rain Intensity Dwgs GS-1. Rain Intensity = 3" (100-year/1 - hour) We will be using 6" based on manufacturer.

### Response: Bidders may choose to exceed the specified design criteria.

20. With regard to the new ductbank sections "NB" & "NC" on for Dwg E-11, please note that Conduits CC-501, CC-502, CC-503, CC-510 & CC-511 are not sized. Please provide the diameters of these conduits.

### Response: Per the Conduit and Wiring Schedule on Sheet E-11, these conduits are 1inch diameter.

21. Part 3.1.N of Spec Section 16402 calls for ductbank markers to be provided. Since we are not familiar with these ductbank markers, please provide a detail for a typical ductbank marker.

## Response: The requirement is waived. Simple warning tape installed in the excavation above the ductbank is sufficient for any new ductbank. The warning tape can be conventional 4" wide yellow with black print plastic tape.

22. Please clarify the 7'-6" Fence height that is indicated on the Chain Link Fence Detail on Dwg C18 because fence fabric is typically provided in one foot increments, such as: 6', 7' & 8' heights. Also, Part 2.2 of the Fence Spec Section 02821 makes reference to a 6' high fence fabric.

### Response: Revise the 7'-6" dimension shown on the chain link fence detail on Sheet C-18 to 7'-3" and provide 7'-0" high fence fabric with 3 inches of clearance from ground level to the bottom rail.

23. We take exception to the 3 year planting warranty that is referenced in Part 1.7 of Spec Section 02901. Please change this to a One Year Guarantee Period, which is customary practice in the industry.

### Response: The 3-year planting warranty is required by the Delaware Raritan Canal Commission and is not negotiable.

24. We take exception to the Tree Planting Sequence Note #2 on Dwg C7 that requires the hand digging of planting pits with a hand shovel to produce pits with vertical sides. We know of no reason why this method should be used, and this method does not conform with customary practices in the industry, and this method is not required by other owners and public agencies, and it is not mentioned in Spec Section 02901.

Response: The tree plantings shown on C-7 are for the purpose of compensating disturbance to the Delaware Raritan Canal Commission's (DRCC) onsite stream corridor. Given the environmentally sensitive nature of these plantings, hand excavation to limit compaction of the surrounding soils shall be utilized to the maximum extent practicable.

25. Tree Planting Sequence Note #8 on Dwg C7 calls for the installation of a Tube Type Shelter with Caps with each Tree; and, General Planting Note #4.3 on Dwg C7 states that Tree Shelters shall be installed for each tree planted per the details on Dwg C7. With regard to these Tree Shelters, please be advised of the following: (a) we have never heard of such a device being used for planting trees; (b) we do not know of any reason why any type of shelter would be needed when planting trees; (c) the Tube Shelters are not mentioned in Spec Section 02901; and, (d) if these Tree Shelters are to be provided then please provide specifications and details for the shelters.

Response: The tree plantings shown on C-7 are for the purpose of compensating disturbance to the Delaware Raritan Canal Commission's (DRCC) onsite stream corridor. Given the environmentally sensitive nature of these plantings, tree shelters are required, Tubex Shelterguard or equal.

26. We take exception to the Deer Exclusion and Tree Protection Note #6.4 that requires maintenance of the Deer Fence for a minimum of five years, etc. The Contractor should not be responsible for this type of maintenance. This type of maintenance should be the responsibility of the township public works department.

### Response: Deer fence shall be guaranteed by the contractor for one (1) full year after initial acceptance by the Owner's Field Representative.

27. Also, please confirm that the Contractor will not be required to remove the Tree Stakes from the trees two years after the trees have been planted, as per Note #3 under the Tree Planting Detail on Dwg C7.

### Response: The Contractor is not responsible for the removal of the tree stakes from the trees two years after planting.

28. With regard to the Deer Fence noted on Dwg C7, please confirm that the Deer Fence will encircle each group of the plantings, and that the Deer Fence will not be installed around each individual tree.

### Response: Deer Fence shall encircle each group of plantings.

29. Are there any landscaping/planting areas that are to be mulched on this project?

Response: Per Specification 01014, 01568, 02100, and 02901, mulching shall occur no more than five days after seeding. Per Specification 02901 Part 1.6.D.5: All trees and shrubs shall be mulched. Per Specification 02901 Part 1.6.E.1: All areas not required to be developed otherwise shall be planted with grass and mulched.

30. Please clarify the required topsoil thickness to be provided for the grass restoration areas because Part 1.6.E of Spec Section 02901 mentions 6" of Topsoil, and Somerset-Union Soil Conservation General Note #10 on Dwg. C16 mentions 5" of Topsoil. Whereas NJDOT Spec's require 4" of Topsoil.

### Response: The required topsoil thickness shall be 6 inches.

31. We have already had one WBE / Small Business Misc. Metals Fabricator tell us that they cannot provide us with pricing on the fabrication of the stairs, railings and platforms because the drawings lack structural design information. Yet, the Contractor is expected to solicit quotes and hire Small Businesses (SED's) in order to meet the NJDEP's SED, MBE & WBE subcontracting goals for this project. Therefore, please provide the structural design information for the stairs, railings and platforms so that we can meet the Small Business hiring goals for this project.

### Response: Refer to responses to Questions 19 and 20 in Addendum No. 3

32. The Addendum #1 issue of Dwg C9, as well as Dwg C11, do not indicate how all of the interior areas of the Treatment Plant, which are defined as the areas contained within the Flood Wall and Chain Link Fence, are to be restored after these areas have been disturbed through trenching, foundation excavation, and from the use of heavy equipment, such track-mounted equipment, that will be used during construction. Dwg C11 only shows the areas that are to be Milled & Paved. What about all of the other areas that will be disturbed from the Contractors operations to excavate and construct the new Sludge Storage Tank and the two Pump Stations, and to perform the trenching for the new ductbanks and for the new drainage within the Treatment Plant areas? Please clarify how all interior areas of the Treatment Plant are to be restored.

### *Response:* Disturbance to existing paved and/or gravel areas shall be restored in-kind. Disturbance to pervious areas such as adjacent to the stormwater pump station, and behind the process aeration tank shall be restored with permanent seeding.

33. Please provide the thickness of the existing pavement inside the Treatment Plant where the Milling & Paving is to be performed.

### **Response:** Existing pavement inside the plant area includes 4 inches of bituminous base course underlain by 4 inches of dense graded aggregate.

34. Please provide a Pipe Trench Restoration Detail and a Ductbank Restoration Detail for new ductbanks and new drainage that will be installed in the Treatment Plant areas.

Response: A Pipe Trench Restoration Detail has been provided as an attachment to this addendum to indicate pavement restoration requirements at the pipe (or ductbank) trench. A typical ductbank section detail is provided on Sheet E-11.

35. The existing Chlorine Contact Tank requires By-Pass Pumping work and is to be demolished, but there is no Bid Item provided for this work in the Bid Proposal. Please provide a new Bid Item for this work.

## Response: Bypassing of the existing plant outfall piping is required to allow for lining of the outfall, connection of the new 16-inch PE piping to the existing outfall piping, and to allow for construction of the Effluent Pump Station. Bypassing of the existing Chlorine Contact Tank is not required.

36. The Rocky Hill Pump Station requires By-Pass Pumping work as well as Structural, Mechanical and Electrical modifications to be performed, but there is no Bid Item provided for this work in the Bid Proposal. Please provide a new Bid Item for this work.

### Response: See response to Question 16 in Addendum No. 2.

37. Please provide more detailed information to clarify the scope of work that is described in Parts 1.4.3 & 1.4. 4 of the Construction Sequence in Spec Section 01005 regarding the demolition of the existing Contact Chlorine Tank and the construction of the new Effluent Pump Station. The way it is written implies that the new Effluent Pump Station is to be constructed in two stages. However, neither the structural drawings nor the mechanical drawings for the Effluent Pump Station. Also, the structural drawings do not show any construction joints that would be needed for a two-stage constructed in two stages, please explain why this needs to be done and then please revise the structural and mechanical drawings to show how this is to be accomplished.

Response: The construction sequence in Part 1.4.B in Section 01005 has been revised with respect to the construction of the Effluent Pump Station and the demolition of the existing Chlorine Contact Tank and is included in this Addendum.

38. Please clarify whether or not the existing Chlorine Contact Tank will be demolished before or after the new Effluent Pump Station is completed.

Response: The Chlorine Contact Tank shall remain in service until the Effluent Pump Station has been constructed and placed into operation and after the Effluent Filters and UV Disinfection Units are placed into operation. Refer to revisions in Part 1.4.B of Section 01005 which are included in this Addendum.

39. Please confirm that the demolition of the existing Chlorine Contact Tank is not to be performed in two stages and will be demolished in one stage.

### Response: The Chlorine Contact Tank will be demolished in one stage.

40. Please clarify the Note on Dwg C5 that points to the existing 12" EFF Sewer and states that this pipe is to be abandoned. Isn't this the same 12" Pipe that is shown on Dwg C10 to receive the CIPP Lining?

## Response: As shown on Sheet C-9, new 16-inch PE piping will connect to the existing 12-inch outfall piping. The existing 12-inch outfall piping upstream of the connection point is to be abandoned in place.

41. Please provide an estimated volume (gallons) of sewage to be pumped from the existing Process Aeration Tank.

Response: Pumping of sewage from the existing Process Aeration Tank is not required. The existing drainage system piping will be used for draining the inner tank and outer tank sections when needed for constructing the improvements at the Tank.

42. Is there any pumping that will need to be done to decant the existing Clarifier Tanks? If so, what is the estimated volume (gallons)?

### Response: The existing drainage system piping will be used for draining the Final Clarifiers. Pumping is not required.

43. Numerous disparities exist when comparing the wall layout shown on Sheets S-2 and S-3 with the table on Sheet C-13. For example, the table on Sheet C-13 shows the first concrete wall section (Section 8) is a Type 4 wall section with a length of 25 LF. Sheet S-2 shows a Type 4 wall section extending 49'-4 11/16" from the start of the concrete wall section. Which sheet(s) should be used?

### Response: Refer to Addendum No. 3 which includes revisions to Sheet C-13.

44. On Sheet S-5, Section 1 shows the bottom of footing elevation of the South chamber of the Stormwater Pump Station to be El 39'-3". On Sheet S-6, the bottom of footing elevation for the same chamber is shown as 38'-0" in Sections 4 & 5. Which is correct?

### Response: Elevation 39'-3" is correct.

45. Please refer to Drawing E-1. Please provide nameplate information for the existing MDB and MCC-A.

Response: The MDP is a Square D Switchboard, QED, 1200A, 4 wire, 480/277V, Plant Code 43, Drawing #11899757-19. Reference Note 13, E-1. MCC-A is a Square D Model 6, Factory Order # 11899757-001, Plant 046, NEMA Type 1A, 3PH, 4 wire, 800A Horizontal Bus, 300A Vertical Bus.

46. With regard to the Process Piping Schedule on Dwg M2, please clarify the Type of Joints for the Ductile Iron (DR) Drain Lines because portions of the DR Piping are buried and other portions are exposed. Currently, the Piping Schedule only identifies Flanged Joints, which are appropriate for exposed piping. Please specify the Joint Type required for the buried portions of the (DR) Drain Lines.

Response: The Process Piping Schedule on Sheet M-2 has been revised to indicate mechanical joints for buried ductile iron DR piping and is included in this Addendum.

47. Please note that the 20" & 24" STM Piping on Dwg C9 from the new Stormwater Pump Station to the Stormwater Outfall needs to be made from Ductile Iron Pipe because this STM piping arrangement cannot be achieved with RCP. This should be noted on the Process Piping Schedule because the Process Piping Schedule currently shows all STM Pipe as being made with RCP Pipe.

### Response: See the response to Question 8 in Addendum No. 3.

48. The 8" STM Pipe on Dwg C9 from the Trench Drain to Inlet #1 also must be made from Ductile Iron Pipe, and this should also be noted on the Process Piping Schedule. This is because 8" Class V RCP is not available.

### Response: The Process Piping Schedule on Sheet M-2 has been revised to indicate ductile iron piping for the 8" STM piping and is included in this Addendum.

49. Please revise the Process Piping Schedule on Dwg M2 to include the type of Pipe and Pipe Joint, etc. for the following Pipes that are shown on Dwg C9 but not included in the Process Piping Schedule: (a) the relocated 8" DI Pipe: (b) the 3" UVR Pipe at the Filter Building: (c) the 6" Type WAS Piping and the 4" Type DEC Piping that are feeding the New Sludge Storage Tank.

## Response: (a) The relocated 8" DI piping shall be ductile iron with mechanical joints per Section 02615; (b) UVR piping has been added to the Process Piping Schedule and is included in this Addendum; (c) DEC piping and WAS piping were added to the Process Piping Schedule in Addendum No. 3.

50. The Process Piping Schedule on Dwg M2 shows two types of Pipe for the Type SW Piping - PVC and DIP. Please clarify how this is to be interpreted. Can the Contractor use either type of pipe, or are there certain locations where PVC should not be used and DIP is required?

### *Response: Provide PVC for piping smaller than 3 inches, and ductile iron for piping 3 inches and larger.*

51. Dwg C9 shows five new Plug Valves being installed in a location that is be-tween the two Clarifier Tanks. Please clarify how the Plug Valve replacement work should be performed: (a) can the Contractor install all five Plug Valves in one operation: (b) is there a sequence that needs to be followed when replacing the Plug Valves; (c) can the flow be diverted or stopped during the replacement work; and (d) does this work need to be performed during low flow periods?

Response: Replacement of the buried plug valves on the RAS piping at the Final Clarifiers will be accomplished by draining a Final Clarifier (as required to perform the Final Clarifier Rehabilitation work) and removing the RAS valves (2) associated with that Final Clarifier and repeating this sequence for the remaining Final Clarifier. The remaining valve common to both Final Clarifiers will be removed and replaced

### during low flow periods and will require closing the new RAS values for both Final Clarifiers.

52. Dwg C9 shows a new 4" Gate Valve to be installed on the existing 4" SW Piping. Please clarify whether to not this new Gate Valve is a replacement valve or a new valve that has to be cut-into the existing pipe.

### Response: The new 4" gate value is not a replacement value. The existing 4" SW piping is currently not in service or pressurized.

53. Dwg C9 partially shows a 3" Air Line that runs from the Blower Building to the new Effluent Pump Station. With regard to this new 3" Air Line, please revise Dwg C9 to show the entire path for the new Air Line and show where the Air Line emanates from the Blower Building.

## *Response: Refer to Sheet M-7 which shows the location where the 3-inch A piping leaves the Blower Building. The Contractor shall determine the routing of this piping from the Blower Building to the new Effluent Pump Station.*

54. With regard to the new 3" Air Line and the new 12" Air Line shown on the Dwg C9, the Process Piping Schedule shows that these pipes are to be made with Stainless Steel Pipe, and Spec Section 15066 is referenced on the chart. However, Spec Section 15066 is not included in Division 15. Please provide the missing Spec Section 15066.

### Response: Refer to the attached Section 15066 – Stainless Steel Pipe and Fittings included in this Addendum.

55. With regard to the new 3" Air Line and the new 12" Air Line shown on the Dwg C9, please confirm that these Air Lines are to be run underground.

### Response: The new 3-inch, 8-inch and 12-inch A piping is to be run underground.

56. When we compare the Demolition Dwg D9 for the existing Sludge Storage Tank to the Pipe Removals on Demolition Dwg C5, we do not see any Pipe Removals shown on Dwg C5 of any Pipes that serve the existing Sludge Storage Tank. Yet, Dwg D9 shows piping that serves the existing Storage Tank. Please clarify the scope of work regarding the Pipe Removals related to the Demolition of the existing Sludge Storage Tank.

Response: Refer to Sheet D-9 for the extent of existing piping demolition at the existing Sludge Storage Tank. Removal of the existing 8-inch air piping shall extend to the existing Blower Building. Removal of the existing 6-inch drain, 6-inch overflow piping and 6-inch supernatant piping shall extend to the existing drain manholes located adjacent to the Tank. Removal of the 6-inch waste sludge piping shall extend to where the new 6-inch WAS piping is to connect to the existing waste sludge piping as indicated on Sheet C-9.

57. Would it be possible to show the perimeter of the concrete flood wall footing on proposed site plans C-8 and C-9? This would be helpful in calculating foundation

excavation and backfill quantities since site plans show existing and proposed grades. Also, it will help in determining if there is sufficient room available for benching and sloping to construct footings.

### Response: Refer to attached Sheets C-8 and C-9 which have been revised to show the extent of the footings (red dashed lines).

### **Specifications:**

- 1. Section BP: The Contract Time has been revised from 630 days to 720 days. Replace Section BP with the attached Section BP.
- 2. Replace Section 01005 Miscellaneous Requirements with the attached revised Section. Revisions to this Specification include the following:
  - In Part 1.4.B.1, revise the 8<sup>th</sup> bullet as follows:
    - "During bypassing of the Headworks Facility, drain the Influent Pump Station (IPS) wet well and install new 12-inch DR piping and Owner-Furnished wet well mixer, and decommission the IPS control panel and move its functionality to the new PLC-1 as described in Section 16050, Part 1.1.E.5."
  - In Part 1.4.B.2, revise the last sentence as follows: "Install and operate bypass pumping system per Section 01501 to pump from the existing Post Aeration Tank to the outfall discharge location during the CIPP work and during construction of the Effluent Pump Station as required."
  - Replace Part 1.4.B.3 with the following:
    - "3. Construct Effluent Pump Station, Plant Effluent Diversion Chamber, Post Aeration Tank, the 16-inch PE piping from the inlet of the existing CCT to the Post Aeration Tank, and the 16-inch PE piping from the Effluent Pump Station to the connection at the existing outfall piping. Conduct testing of the Effluent Pump Station."
  - In Part 1.4.B.7, first bullet, add the following after the first sentence: "Remove and dispose of remaining grit and residuals from the tank section."
  - In Part 1.4.B.12, revise the first sentence in the last bullet as follows: "Drain inner tank and dispose of remaining grit and residuals."
  - In Part 1.4.B.13, add the following sentence: "After draining the Tank, remove and dispose of remaining grit and residuals. The Owner will arrange for temporary removal of waste sludge from the Process Aeration Tank until the new Sludge Storage Tank is placed into operation."
- 3. Add the attached Section 15066 Stainless Steel Pipe and Fittings.

### **Drawings:**

- 1. Sheet S-5: On Section 1 and Section 2, revise the footing thickness shown for the Type 1B Flood Wall from 3'-0" to 3'-6".
- 2. Sheet M-2: Replace this Sheet with the attached revised Sheet. The following revisions have been included with this revised Sheet:

- Mechanical joints are indicated for buried DR piping and flanged joints are indicated for exposed DR piping in the Process Piping Schedule
- Ductile iron piping is indicated for the 8-inch STM piping in the Process Piping Schedule
- UVR piping has been added to the Process Piping Schedule
- Process Piping Note 3.B has been deleted
- 3. Revise Note 12 on Sheet E-3 as follows:
  - "12. A TEMPORARY 480V, 3 PH DISTRIBUTION PANEL FED FROM THE MDB SPARE 250A CB IS TO PROVIDE POWER TO THE HEADWORKS BYPASS PUMPING SYSTEM, THE RHPS BYPASS PUMPING SYSTEM, THE PLANT OUTFALL BYPASS PUMPING SYSTEM AND THE TEMPORARY AERATION BLOWER SKID."
- 3. Refer to attached Sheets C-8 and C-9, which have been revised to show the extent of the flood wall footing (dashed red lines).

### **Details and Other Attachments:**

- 1. The following detail is included in this Addendum:
  - Figure A4-1: Pipe Trench Restoration Detail

END OF ADDENDUM NO. 4



### **SECTION BP**

### **BID PROPOSAL FORM** CONTRACT TIME: 720 DAYS FROM DATE LISTED ON THE NOTICE TO PROCEED SCHEDULE OF LIQUIDATED DAMAGES: <u>\$1,000 PER DAY</u>

### PENNIED OR UNBALANCED BIDS MAY BE REJECTED

| Item | Description and                              |       | Approx.  | Unit Price |       |
|------|--|-------|----------|------------|-------|
| No.  | Unit Price in Words                          | Units | Quantity | in Numbers | Total |
| 1    | Site mobilization                            |       |          |            |       |
|      |  |       |          |            |       |
|      |  | IS    |          | N/A        |       |
|      | lump sum in words                            |       | 1N/A     | 1.0/2.     |       |
| 2    | Cast In Place Pine Lining of 12-inch Outfall |       |          |            |       |
|      | Cast in Thee Tipe Lining of 12-men Outrain   |       |          |            |       |
|      |  |       |          |            |       |
|      | lump sum in words                            |       |          |            |       |
|      | 1  | LS    | N/A      | N/A        |       |
| 3    | Flood Wall                                   |       |          |            |       |
|      |  |       |          |            |       |
|      |  |       |          |            |       |
|      | lump sum in words                            |       |          |            |       |
|      |  | LS    | N/A      | N/A        |       |



7

8

10

Township of Montgomery Bid Package: # B06-2022 Stage II Wastewater Treatment Plant Flood Protection Project Opening Date: September 20, 2022 at 11:00 AM

### Description and Unit Price Item Approx. Units No. Unit Price in Words Quantity in Numbers Total Filter Building Improvements 4 lump sum in words LS N/A N/A Final Effluent Pump Station 5 lump sum in words LS N/A N/A Storm Water Pump Station 6 lump sum in words 9

#### PENNIED OR UNBALANCED BIDS MAY BE REJECTED

|                                    | LS | N/A  | N/A  |  |
|------------------------------------|----|------|------|--|
| Rehabilitation of Final Clarifiers |    |      |      |  |
| Duran anna in suconda              |    |      |      |  |
| lump sum in words                  | IS | N/A  | N/A  |  |
| Process Aeration Tank Improvements | LS | 1N/A | IN/A |  |
|                                    |    |      |      |  |
| Tump sum in words                  |    |      |      |  |
|                                    | LS | N/A  | N/A  |  |
| Blower Building Improvements       |    |      |      |  |
| hump over in monda                 |    |      |      |  |
| lump sum in words                  | LS | N/A  | N/A  |  |
| Sludge Storage Tank                |    |      |      |  |
|                                    |    |      |      |  |
| lump sum in words                  | IS | NI/A | N/A  |  |
|                                    | பல | 1N/A | 1N/A |  |
|                                    |    |      |      |  |



Township of Montgomery Bid Package: # B06-2022 Stage II Wastewater Treatment Plant Flood Protection Project Opening Date: September 20, 2022 at 11:00 AM

### PENNIED OR UNBALANCED BIDS MAY BE REJECTED

| Item | Description and   |                | Approx.  | Unit Price |       |
|------|---|----------------|----------|------------|-------|
| No.  | Unit Price in Words   | Units          | Quantity | in Numbers | Total |
| 11   | Miscellaneous Site Improvements and Site Lighting   |                |          |            |       |
|      | lump sum in words   | LS             | N/A      | N/A        |       |
| 12   | Drilled Micropiles Verification Load Testing  |                |          |            |       |
|      | lump sum in words   | LS             | N/A      | N/A        |       |
| 13   | Drilled Micropiles Installation, the unit price per lineal foot of  |                |          |            |       |
|      | unit price in words   | Feet           | 5,600    |            |       |
| 14   | Remove and dispose of grit and residuals from the existing Process<br>Aeration Tank and the existing Sludge Storage Tank, the unit price<br>per cubic yard of |                |          |            |       |
|      | unit price in words   | Cubic<br>Yards | 120      |            |       |
| 15   | Remove and dispose of rock, the unit price per cubic yard of  | Cubic          | 10       |            |       |
|      | unit price in words   | Yards          | 10       |            |       |
| 16   | Demobilization and Project Closeout   |                |          |            |       |
|      | lump sum in words   | LS             | N/A      | N/A        |       |



Township of Montgomery Bid Package: # B06-2022 Stage II Wastewater Treatment Plant Flood Protection Project Opening Date: September 20, 2022 at 11:00 AM

| 17 | ALLOWANCE FOR OWNER REQUESTED CHANGES |     |     |     |             |
|----|---------------------------------------|-----|-----|-----|-------------|
|    | Thirty Thousand<br>allowance in words | N/A | N/A | N/A | \$30,000.00 |
|    |                                       |     |     |     |             |

Base Bid Amount in Words\_\_\_\_\_

Base Bid Amount in Numbers\_\_\_\_\_



Township of Montgomery Bid Package: # B06-2022 Stage II Wastewater Treatment Plant Flood Protection Project Opening Date: September 20, 2022 at 11:00 AM

I am making the proposal for the above named Contract/order, and I am executing the said proposal with full authority so to do; that said I have not, directly or indirectly, entered into any agreement, participate in any collusion, or otherwise taken any action in restraint of free, competitive bidding in connection with the above named Contract/order; and that all statements contained in said proposal and in this affidavit are true and correct, and made with full knowledge that the Township of Montgomery relied upon the truth of the statements contained in said Proposal and in the statements contained in this affidavit in awarding the Contract/order for the said proposal.

I further warrant that no person or selling agency has been employed or retained to solicit or secure such Contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, except bona fide employees or bona fide established commercial or selling agencies maintained by

Award of Contract shall be based on the lowest responsible bid in conformance with N.J.S.A. 40A:11-1 et seq. and N.J.A.C. 5:34.

| Printed Name of Authorized Agent | Signature of Authorized Agent       |
|----------------------------------|-------------------------------------|
| Title                            | Date                                |
|                                  |                                     |
| Company Name                     | Federal I.D. # or Social Security # |
|                                  |                                     |
| Address                          |                                     |
|                                  |                                     |
| Telephone Number                 | Fax Number                          |
|                                  |                                     |
| E-mail address                   |                                     |
|                                  |                                     |

### SECTION 01005

### MISCELLANEOUS REQUIREMENTS

### PART 1 - GENERAL

#### 1.1 GENERAL:

- A. The Contractor shall perform all Work in accordance with and conform to all miscellaneous requirements as herein specified, at no additional cost to the Owner.
- B. This Section includes requirements for maintaining plant operations and sequence of construction, grit and residuals disposal, and protection of freshwater wetlands.

#### 1.2 MAINTENANCE OF PLANT OPERATIONS:

- A. The Contractor shall at all times conduct his operations so as to interfere as little as possible with operation of the existing works. The Contractor shall develop a written program, in cooperation with the Engineer and Owner, which shall provide for completion of the Work, as shown on the Drawings and as specified, in a manner that enables the existing treatment plant processes to be properly operated, without interruption to flow and the treatment process, other than short, scheduled shutdowns coordinated with the Owner throughout the construction period.
- B. The Owner may require Work to be performed during periods of low flow or some other time frame that minimizes the impact to plant operations. The Contractor shall perform all such Work in accordance with any such scheduling requirements, which may include working on weekends and/or working during night-time, overnight, or early-morning hours.
  - 1. Water surface elevations are shown on drawings are approximate, Contractor shall consider and coordinate construction activities with water surface elevations. Time frames of such can be confirmed and coordinated with Owner.

### 1.3 SUBMITTALS:

- A. Operation of the wastewater treatment process must be maintained throughout the duration of the project and use of portions of the new work will be required prior to completion of the project to maintain operation. The Contractor shall develop and submit a plan to maintain the continuous operation of the treatment process throughout the project.
- B. The plan shall be in accordance with the approved schedule submitted by the Contractor.

- C. The plan shall include a detailed sequence of construction activities, further to and in greater detail than any Progress Schedule elsewhere required in accordance with the Specifications, specifically illustrating the manner in which items and equipment will be demolished and/or installed to ensure compliance with the requirements of these Specifications.
- D. The detailed sequence shall include all temporary measures, proposed work times, channel entry procedures, etc.

### 1.4 MAINTENANCE OF PLANT OPERATIONS SEQUENCE

### A. General:

- 1. In order to maintain the continuous plant operation desired, a construction sequence for each area is outlined under this Article. The sequence may also include temporary power requirements.
- 2. The category and item order for each area are not intended as an exact sequence of work or a listing of priorities. However, within each area constraints and procedural steps are presented and are intended to recommend a sequence in order to maintain the continuous operation of the plant.
- 3. The methods proposed are intended for guidance only, and the CONTRACTOR may request modifications to these procedures for approval by the OWNER and the ENGINEER.
- 4. As the need for shutdowns becomes evident, the CONTRACTOR shall notify the ENGINEER, who with assistance and approval of the OWNER, will arrange for necessary shutdowns. When shutdown times are permitted, the time allowed shall be consecutive hours, one after the other. All Work shall be completed during the period by the use of overtime.
- B. Construction Sequence:
  - 1. Construct improvements at the Filter Building including the following:
    - Demolition work, installation of new effluent filters, ultraviolet disinfection units, flow meter, service water booster pump system, pre-engineered metal building including HVAC and lighting systems, platforms and walkways.
    - Flow from the Final Clarifiers to the Chlorine Contact Tank (CCT) shall be maintained through the existing temporary above grade 16-inch HDPE piping (not shown on the drawings) until the new Filters and UV disinfection systems are placed into service.
    - Maintain existing sodium hypochlorite and sodium bisulfite systems in service until new filters and UV disinfection systems are inservice.
    - Install new 16-inch FE piping as shown on the Drawings and connect to the existing inlet piping of the CCT.
    - Install bypass pumping system per Section 01501 at the Rocky Hill Pump Station and pump flow from the manhole upstream of the Pump Station to the manhole upstream of the Headworks. Construct modifications to the Rocky Hill Pump Station and re-route section of 8-inch ductile iron force main as indicated on Sheet C-9.
    - Install new drainage piping from the Filter Building to the Headworks facility.

- Install bypass pumping system per Section 01501 at the manhole upstream of the Headworks structure to bypass the Headworks Facility and pump flow to the Process Aeration Tank.
- During bypassing of the Headworks Facility, drain the Influent Pump Station (IPS) wet well and install new 12-inch DR piping and Owner-Furnished wet well mixer, and decommission the IPS control panel and move its functionality to the new PLC-1 as described in Section 16050, Part 1.1.E.5.
- Test new filters, UV disinfection units, service water booster pump system and building systems and place into operation.
- 2. Install cast-in-place pipe (CIPP) lining of the 12-inch outfall piping. Install 16inch wye, cleanout and 16-inch by 12-inch reducer at the existing 12-inch outfall piping as shown. Install and operate bypass pumping system per Section 01501 to pump from the existing Post Aeration Tank to the outfall discharge location during the CIPP work and during construction of the Effluent Pump Station as required.
- 3. Construct Effluent Pump Station, Plant Effluent Diversion Chamber, Post Aeration Tank, the 16-inch PE piping from the inlet of the existing CCT to the Post Aeration Tank, and the 16-inch PE piping from the Effluent Pump Station to the connection at the existing outfall piping. Conduct testing of the Effluent Pump Station.
- 4. Demolish the CCT/Post Aeration Tank.
- 5. Construct stormwater collection system and Stormwater Pump Station.
- 6. Rehabilitate Final Clarifiers Nos. 1 and 2. Sequence the work so that only one clarifier is out of service at any one time.
- 7. Construct improvements at the Process Aeration Tank, including the following:
  - Shut off wastewater flow and aeration to one of the two outer ring tank sections and drain the tank section. Remove and dispose of remaining grit and residuals from the tank section. Sandblast and coat the tank, remove existing air diffusers, install new air diffusers, connect to the existing aeration header and place the tank back in service. Repeat this work at the other outer ring tank section.
  - Install new aeration piping, flow control valves and flow meters at the Process Aeration Tank as shown.
  - Install two temporary aeration blowers at the Process Aeration Tank at ground level. Refer to Section 01500 for blower requirements.
  - Connect the new aeration diffusers in the outer tank sections and the new aeration piping, flow control valves and flow meters to the temporary aeration blowers and run the blowers manually.
- 8. Install new 12-inch A piping from the Process Aeration Tank to the Blower Building.
- 9. Demolish existing aeration blowers, piping, valves and associated electrical equipment at the Blower Building.
- 10. Install new aeration blowers, piping, valves and associated electrical equipment and control systems at the Blower Building.
- 11. Install final connections to the new air piping and place the new aeration blowers into service and remove the temporary aeration blowers.
- 12. Construct the remaining improvements at the Process Aeration Tank, including the following:

- Shut off wastewater flow to the Process Aeration Tank to allow for installation of new 12-inch INF piping and place back into service.
- Shut off return activated sludge flow to the Process Aeration Tank to allow for installation of new 6-inch RAS piping and place back into service.
- Connect to the new 12-inch INF piping and install temporary piping to one of the outer tank sections to allow the influent flow to bypass the inner tank section.
- Drain inner tank and dispose of remaining grit and residuals. Sandblast and recoat the tank, install new mixer, air piping and air flow control valve, and place the tank back into service.
- 13. Demolish the existing Sludge Storage Tank and construct the new Sludge Storage Tank. After draining the Tank, remove and dispose of remaining grit and residuals. The Owner will arrange for temporary removal of waste sludge from the Process Aeration Tank until the new Sludge Storage Tank is placed into operation.
- 14. Remove the existing Sludge Storage Tank blowers, piping, valves and associated electrical equipment at the Blower Building.
- 15. Install new Sludge Storage Tank blowers, piping, valves and associated electrical equipment and control systems at the Blower Building.
- 16. Construct miscellaneous site improvements and new site lighting.
- 17. Construct perimeter flood wall. Flood wall construction may take place concurrently with Items 1 through 10.

### 1.5 DRCC STREAM CORRIDOR CONSERVATION EASEMENT SIGNAGE

A. The Contractor shall erect signage marking the Delaware and Raritan Canal Commission (DRCC) stream corridor conservation easement. Signs shall be installed at 200 foot intervals along the boundaries of the easement areas. An easement map showing the easement areas (Parcels A through H) and sign details are included as the end of this section.

For bidding purposes, the Contractor shall assume a total of forty (40) signs will be required.

### END OF SECTION





# NO DISTURBANCE BEYOND THIS POINT

## CONSERVATION AREA

### **D&R Canal Commission**

TO REPORT VIOLATIONS CALL

(609) 397-2000





#### SECTION 15066

### STAINLESS STEEL PIPE AND FITTINGS

### PART 1 - GENERAL

### 1.01 DESCRIPTION:

A. Provide and test, stainless steel pipe, fittings and appurtenances, as indicated and specified.

### 1.02 RELATED WORK:

A. Division 1: General Requirements

### 1.03 REFERENCES:

- A. American National Standards Institute Inc. (ANSI) Standards:
  - 1. B16.1: Standard for Cast Iron Pipe Flanges and Flanged Fittings 25, 125, 250 and 800 lb.
  - 2. B36.19M: Standard for Stainless Steel Pipe.
- B. American Society for Testing and Materials (ASTM) Publications:
  - 1. A240: Specification for Heat Resisting Chromium and Chromium-Nickel Stainless Steel Plate, Sheet and Strip for Pressure Vessels.
  - 2. A312: Specification for Seamless and Welded Austenitic Stainless Steel Pipe.
  - 3. A380: Standard Practice for Cleaning, Descaling, and Passivation of Stainless Steel Parts, Equipment and Systems.
  - 4. A530: Specification for General Requirements for Specialized Carbon and Alloy Steel Pipe.
  - 5. A774: Specification for As-Welded Wrought Austenitic Stainless Steel Fittings for General Corrosive Service at Low and Moderate Temperatures.
  - 6. A778: Specification for Welded, Unannealed Austenitic Stainless Steel Tubular Products.

C. Fluid Sealing Association: Technical Handbook.

### 1.04 SUBMITTALS:

- A. Shop Drawings: Submit the following in accordance with Section 01300 SUBMITTALS:
  - 1. Pipe layouts in full detail.
  - 2. Location of hangers and supports.
  - 3. Location and type of anchors.
  - 4. Location of couplings and expansion joints.
  - 5. Large scale details of wall penetrations or special fittings.
  - 6. Schedules of pipe, fittings, expansion joints and other appurtenances.
  - 7. Catalog cuts and technical data for expansion joints, couplings, gaskets, pipe supports and other accessories.
  - 8. Submit reports as required for welding certifications per ANSI B31.1 paragraph 127.6.
  - 9. Manufacturer's descriptive literature and technical data on insulation and proposed method of installation.

### 1.05 QUALITY ASSURANCE:

- A. Provide manufacturer's certification that materials meet or exceed minimum requirements as specified.
- B. Welder Qualifications:
  - 1. Quality and certify welding procedures, welders, and operators in accordance with ANSI B31.1, paragraph 127.5 for shop and project site welding of piping work.
- C. Job Conditions:
  - 1. Coordinate dimensions and drillings of flanges with flanges for valves, pumps and equipment to be installed in the piping systems.

### PART 2 - PRODUCTS

### 2.01 STAINLESS STEEL PIPE:

- A. Manufacturers:
  - 1. Douglas Brothers
  - 2. Felker
  - 3. Bristol Metals
  - 4. Or acceptable equivalent product.

### B. Material:

- 1. Type 304L sheet and plate per ASTM 240.
- 2. Maximum carbon content of 304L material limited to 0.03 percent.
- 3. Finish: 2D.
- C. Fabrication:
  - 1. Fabricate in accordance with ASTM A778 in NPS sizes shown with dimensional tolerances per ASTM A530.
  - 2. Perform welding by qualified welders conforming to standard procedures. Weld piping with wall thickness up to 11 gauge (0.125-in.) with the TIG (GTAW) process. Properly bevel heavier walls and use a root pass with the TIG (GTAW) process followed by subsequent passes with the TIG (GTAW), MIG (GMAW), or Metallic Arc (SMAW) process.
  - 3. Add filler wire of ELC grades to all welds to provide a cross section at the weld equal to or greater than the parent metal. Distribute smooth and evenly weld deposit and provide a crown of no more than 1/16 inch on the I.D. and 3/32 inch on the O.D. of the piping.
  - 4. Concavity, undercut, cracks or crevices are not acceptable.
  - 5. Butt Welds: Full penetration to the interior surface, with inert gas shielding provided to the interior and exterior of the joint.
  - 6. Remove excessive weld deposits, slag, spatter, and projections by grinding.

- 7. Continuously weld angle face rings on both sides to the pipe or fitting.
- 8. Grind all welds on gasket surfaces smooth.
- 9. Contour pipe branches, taps and bosses to the radius of the main pipe run and bevel and weld with full penetration. No projections to the inside of the branch or main run are acceptable. Provide a smooth transition from ID of run to ID of branch.
- 10. Wire-brush inside and outside weld areas with brushes of stainless steel that are specifically designed to be used only on stainless steel.
- 11. After manufacture, passivate stainless steel pipe, fittings, and appurtenances by immersion in a pickling solution of 6 percent nitric acid and 3 percent hydrofluoric acid. Temperature and detention time to be sufficient for removal of oxidation and ferrous contamination without more than superficial etch of surface. Perform a complete neutralizing operation by immersion in a trisodium phosphate rinse followed by clean water wash.
- 12. After fabrication, either passivate by immersion (see above paragraph) or scrub interior and exterior of welds with same solution or pickling paste and stainless steel wire brushes to remove weld discoloration and then neutralize and wash clean.
- 13. Fittings: Butt weld type or flanged, manufactured in accordance with ASTM-A-774 of the same raw material and in the same thicknesses as the pipe. Socket weld fittings are not acceptable.
  - a. Elbows: Provide smooth flow die formed, long radius; with centerline to end of elbow equal to 1.5 times the nominal pipe size.
- 14. Fabricate tees and branch connections true and square with wall thickness same as pipe.
- 15. Reducers evenly tapered with tangent ends for butt weld connection.
  - a. Reducers may be straight tapered cone construction.
- 16. Secure flanges to pipe ends and plug openings prior to shipment.
- D. Design:
  - 1. Stainless steel pipe: Nominal pipe size diameter pipe fabricated of stainless steel sheets, schedule 10.

- 2. Joints: Butt welded buried piping, flanged for exposed piping.
- 3. Flanged Joints: Van Stone back-up flange type, 150 lb. ANSI Type 304L stainless steel back-up flanges.
- 4. Hardware: Type 316 stainless steel.
- 5. Fabricate flanged joint face rings fabricated of rolled stainless steel angles.
- 6. Use angle face rings with thickness equal to or greater than the wall of the pipe or fitting to which it is welded. Continuously weld on both sides to the pipe or fitting. Fabricate angle legs so as not to interfere with the flange bolt holes.
- 7. Isolate stainless steel flanges from other ferrous metal connections at valves and equipment with flange insulating kit.
  - a. Pipe flange insulating kit, double washer type:
    - (1) Flange gasket: Type E, 1/8 inch [3 mm] thick neoprene-faced phenolic.
    - (2) Insulating sleeves: 1/32 inch [0.8 mm] thick polyethylene, full length, one for each flange bolt.
    - (3) Insulating washers: 1/8 inch [3 mm] thick phenolic, two for each flange bolt.
    - (4) Mechanical washers: 1/8 [3 mm] inch thick Type 316 stainless steel, two for each flange bolt.

### PART 3 - EXECUTION

- 3.01 INSTALLATION OF PIPE:
  - A. Ensure pipelines parallel to building walls wherever possible. Install piping to accurate lines and grades. Where temporary supports are used, ensure rigidity to prevent shifting or distortion of pipe. Provide for expansion where necessary.
  - B. Pitch piping toward low points. Provide for draining low points.
  - C. Before assembly, remove dirt and chips from inside pipe and fittings.

- D. Make flanged joints with bolts; bolt studs with nut on each end; or studs with nuts where one flange is tapped.
  - 1. Except as otherwise specified, provide number and size of bolts conforming to same ANSI standards.
  - 2. Provide Type 316 stainless steel hardware.
  - 3. Provide ring gaskets of suitable for the service specified and indicated, 1/16-in. [1.5 mm] thick gaskets.
  - 4. Make up flanged joints tight with care being taken to prevent undue strain upon valves or other pieces of equipment.

### 3.02 TESTING:

- A. Clean of dirt, dust, oil, grease and other foreign material, before pressure and leakage tests.
- B. Pressure and Leakage Tests:
  - 1. Conduct combined pressure and leakage test in pipelines.
  - 2. Furnish and install temporary testing plugs or caps; pressure pumps, pipe connections, meters, gages, equipment, and labor.
  - 3. Test when desired and comply with Engineer's orders and specifications.
  - 4. Fill section of pipe with water and expel air.
  - 5. Pressure and leakage test consists of first raising water pressure (based on elevation of lowest point of section under test and corrected to gage location) to pressure in psi bar numerically equal to test pressures indicated in the Process Pipe Schedule.
  - 6. No visible leakage in joints.
  - 7. If unable to achieve and maintain specified pressure for one hour with no additional pumping, section failed to pass test.
  - 8. If section fails pressure and leakage test, locate, uncover, and repair or replace defective pipe, fitting, or joint, at no additional expense and without time extension. Conduct additional tests and repairs until section passes test.

- 9. Immediately upon completion of testing, drain and dry piping to remove all traces of water and condensation.
- 10. Modifications to test procedure only if permitted by Engineer.

### 3.03 CONTRACT CLOSEOUT:

A. Provide in accordance with Section 01700.

### END OF SECTION

|                              |  |                              |             |                                |                          |                   |                      |                                       | PROCES                                   | S PIPING SCHEDUL   | E          |                     |                   |        |                            |                                     |                            |         |  |
|------------------------------|--|------------------------------|-------------|--------------------------------|--------------------------|-------------------|----------------------|---------------------------------------|--|--|------------|---------------------|-------------------|--------|----------------------------|-------------------------------------|----------------------------|---------|--|
|                              | SYSTEM DESIG                           | GN CONDIT                    | TIONS       | S                              |                          | PIPIN             | ١G                   |                                       |  | INSULATION TEST REQUIREMENTS   |            |                     |                   |        |                            |                                     |                            |         |  |
| LEGEND                       | SYSTEM                                 | TEMP.<br>(DEG. F)<br>MIN. MA | ) P<br>X. W | PRESSURE<br>(PSI)<br>/ORK. MAX | MATERIAL                 | DIAMETER<br>RANGE | SCH/<br>CLASS        | LINING                                | COATING                                  | JOINT TYPE   | TYPE       | THICKNESS<br>(INCH) | PRESSURE<br>(PSI) | MEDIUM | TEST<br>DURATION<br>(MIN.) | LEAKAGE<br>ALLOWANCE<br>(SEE NOTES) | SPEC.<br>SECTION<br>NUMBER | REMARKS |  |
| А                            | BLOWER AIR                             | 180 225                      | 5           | 4 7.5                          | TYPE 304 STAINLESS STEEL | 4"-12"            | SCH 10               |                                       |  | WELDED, FLANGED  |            |                     | 20                | AIR    | 60                         | ZERO                                | 15066                      |         |  |
| DEC                          | DECANT                                 | 45 65                        | 5           | 10 20                          | DUCTILE IRON             | 4"                | CLASS 53             | DOUBLE CEMENT LINED                   | BITUMINOUS (BURIED)<br>PAINTED (EXPOSED) | SUBMERGED / EXPOSED: FLANGED / GROOVED<br>BURIED: RESTRAINED FLEX JOINT<br>W/ MJ FITTINGS RESTRAINED W/ RETAINER GLAND |            | 2                   | 30                | WATER  | 60                         | ZERO                                | 02615                      |         |  |
| DR                           | DRAIN LINES                            | 45 65                        | 5           | 10 20                          | DUCTILE IRON             | 3"-12"            | CLASS 53             | DOUBLE CEMENT LINED                   | BITUMINOUS (BURIED)<br>PAINTED (EXPOSED) | MECHANICAL JOINT (BURIED)<br>FLANGED (EXPOSED)   |            |                     | 30                | WATER  | 10                         | ZERO                                | 02615                      |         |  |
| FC                           | FINAL CLARIFIER<br>INFLUENT & EFFLUENT | 45 65                        | 5           | 10 20                          | DUCTILE IRON             | 12" - 16"         | CLASS 53             | DOUBLE CEMENT LINED                   | BITUMINOUS (BURIED)<br>PAINTED (EXPOSED) | SUBMERGED / EXPOSED: FLANGED / GROOVED<br>BURIED: RESTRAINED FLEX JOINT<br>W/ MJ FITTINGS RESTRAINED W/ RETAINER GLAND | SEE NOTE 4 | 2                   | 30                | WATER  | 60                         | ZERO                                | 02615                      |         |  |
| OF                           | OVERFLOW                               | 45 65                        | 5           | 10 20                          | DUCTILE IRON             | 6" - 10"          | CLASS 53             | DOUBLE CEMENT LINED                   | BITUMINOUS (BURIED)<br>PAINTED (EXPOSED) | SUBMERGED / EXPOSED: FLANGED / GROOVED<br>BURIED: RESTRAINED FLEX JOINT<br>W/ MJ FITTINGS RESTRAINED W/ RETAINER GLAND |            |                     | 30                | WATER  | 60                         | ZERO                                | 02615                      |         |  |
| SW                           | SERVICE WATER                          | 45 65                        | 5           | 60 100                         | PVC / DUCTILE IRON       | 1" - 6"           | SCH. 80 /<br>CL 53   | SEE SPEC                              | BITUMINOUS (BURIED)<br>PAINTED (EXPOSED) | PVC: SOLVENT WELDED / FLANGED<br>DIP: FLANGED / RESTRAINED FLEX JOINT  | SEE NOTE 4 | 2                   | 100               | WATER  | 60                         | ZERO                                | 02615,15370                |         |  |
| PE                           | PLANT EFFLUENT                         | 45 65                        | 5           | 10 20                          | DUCTILE IRON             | 12" - 16"         | CLASS 53             | DOUBLE CEMENT LINED                   | BITUMINOUS (BURIED)<br>PAINTED (EXPOSED) | SUBMERGED / EXPOSED: FLANGED / GROOVED<br>BURIED: RESTRAINED FLEX JOINT<br>W/ MJ FITTINGS RESTRAINED W/ RETAINER GLAND | SEE NOTE 4 | 2                   | 30                | WATER  | 60                         | ZERO                                | 02615                      |         |  |
| SPD                          | SUMP PUMP DISCHARGE                    | 45 65                        | 5           | 10 20                          | PVC                      | 1"-2"             | SCH 80               |                                       |  | SOLVENT WELDED   |            |                     | 30                | WATER  | 60                         | ZERO                                | 15370                      |         |  |
| STM                          | STORM                                  | 45 65                        | 5           | 10 20                          | DUCTILE IRON, RCP        | 8" - 24"          | CLASS 53,<br>CLASS V | DOUBLE CEMENT LINED<br>(DUCTILE IRON) | BITUMINOUS<br>(BURIED DUCTILE IRON)      | RESTRAINED FLEX JOINT (DUCTILE IRON)<br>RUBBER GASKET (RCP)  |            |                     |                   |        |                            |                                     | 02609, 02615               |         |  |
| STM (FORCE<br>MAIN, OUTFALL) | STORM                                  | 45 65                        | 5           | 10 20                          | DUCTILE IRON             | 12" - 24"         | CLASS 53             | DOUBLE CEMENT LINED                   | BITUMINOUS (BURIED)<br>PAINTED (EXPOSED) | SUBMERGED / EXPOSED: FLANGED / GROOVED<br>BURIED: RESTRAINED FLEX JOINT<br>W/ MJ FITTINGS RESTRAINED W/ RETAINER GLAND | SEE NOTE 4 | 2                   | 30                | WATER  | 60                         | ZERO                                | 02615                      |         |  |
| WAS                          | WASTE ACTIVATED SLUDGE                 | 45 65                        | 5           | 20 30                          | DUCTILE IRON             | 6"                | CLASS 53             | GLASS LINED                           |  | SUBMERGED / EXPOSED: FLANGED / GROOVED<br>BURIED: RESTRAINED FLEX JOINT<br>W/ MJ FITTINGS RESTRAINED W/ RETAINER GLAND | SEE NOTE 4 | 2                   | 50                | WATER  | 60                         | ZERO                                | 02615                      |         |  |
| UVR                          | UV RECIRCULATION                       | 45 65                        | 5           | 60 100                         | TYPE 304 STAINLESS STEEL | 2" - 3"           | SCH 10               |                                       |  | FLANGED  |            |                     | 100               | WATER  | 60                         | ZERO                                | 15066                      |         |  |
|                              |  |                              |             |                                |                          |                   |                      |                                       |  | · · · · · · · · · · · · · · · · · · ·  |            |                     |                   |        |                            |                                     |                            |         |  |

### PROCESS PIPING NOTES:

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1. PIPING SCHEDULE ABOVE REFERS TO CIVIL AND MECHANICAL PROCESS PIPING ONLY. REFER TO OTHER DISCIPLINES FOR ANY NON-PROCESS PIPING SHOWN AS BACKGROUND INFORMATION ON THE MECHANICAL DRAWINGS AND FOR CONTINUATION OF PIPING BEYOND MECHANICAL DISCIPLINE LIMITS OF WORK. ALL PIPING THAT IS NOT BURIED OR IN CONCRETE SLABS AND FOOTINGS SHALL BE CONSIDERED EXPOSED.

2. IN AREAS NOTED ON DRAWINGS CONTRACTOR SHALL FIELD ROUTE SERVICE WATER PIPE TO EQUIPMENT. CONTRACTOR SHALL SUBMIT SHOP DRAWING SHOWING PIPE ROUTING PLAN AND DETAILS FOR ENGINEER'S REVIEW. EXPOSED SERVICE WATER PIPING OUTSIDE OF HEATED BUILDING STRUCTURES TO BE HEAT TRACED, INSULATED AND JACKETED.

3. PROVIDE BURIED PIPING WITH RESTRAINED JOINTS. A. DUCTILE IRON - RESTRAINED PUSH-ON JOINTS WITH MECHANICAL JOINT FITTINGS RESTRAINED WITH MEGALUGS OR APPROVED EQUAL.

4. HEAT TRACING AND INSULATION:

A. CONTRACTOR SHALL PROVIDE HEAT TRACING, INSULATION AND JACKETING FOR EXPOSED PIPING IN SCHEDULE OUTSIDE OF STRUCTURES WHERE NOTED ON THE DRAWINGS. B. EXTEND HEAT TRACING, INSULATION AND JACKETING TO 4 FEET BELOW GRADE. INSULATION SHALL BE OF THE MINIMUM THICKNESS INDICATED. C. TYPE OF INSULATION, REFER TO SECTION 15085 OF THE SPECIFICATIONS.

D. REFER TO SHEET E-13 FOR HEAT TRACING REQUIREMENTS

5. ALL PIPING AND FITTINGS UNDER CONCRETE SLABS AND CONCRETE STRUCTURES SHALL BE CONCRETE ENCASED.

|              | GATE SCHEDULE         |                                 |                                 |                                   |               |   |               |                  |                            |                  |                      |  |  |  |
|--------------|-----------------------|---------------------------------|---------------------------------|-----------------------------------|---------------|---|---------------|------------------|----------------------------|------------------|----------------------|--|--|--|
| TAG<br>NO.   | NUMBER<br>OF<br>UNITS | LOCATION<br>SERVICE             | GATE SIZE<br>W(IN.) x<br>H(IN.) | GATE<br>TYPE                      | CONFIGURATION | OPERATING HEAD<br>(MAX. WATER TO<br>GATE ငူ ) (FT.) | FRAME<br>TYPE | CLOSURE TYPE     | OPERATOR TYPE              | SPEC.<br>SECTION | R                    |  |  |  |
| G-1, G-2, G3 | 3                     | EFFLUENT PUMP STATION GATE      | 16 X 16                         | NON SELF CONTAINED<br>RISING STEM | FABRICATED    | 7.5   | WALL MOUNTED  | UPWARD OPENING   | ELECTRIC MOTOR<br>ACTUATED | 15103            | OPERATOR SUPPORTED B |  |  |  |
| G-4          | 1                     | EFFLUENT PUMP STATION WEIR GATE | 36 X 48                         | NON SELF CONTAINED<br>RISING STEM | FABRICATED    | 2.0   | WALL MOUNTED  | DOWNWARD OPENING | ELECTRIC MOTOR<br>ACTUATED | 15103            | OPERATOR SUPPORTED B |  |  |  |
| G-5          | 1                     | STORMWATER PUMP STATION GATE    | 24 X 24                         | NON SELF CONTAINED<br>RISING STEM | FABRICATED    | 2.0   | WALL MOUNTED  | UPWARD OPENING   | ELECTRIC MOTOR<br>ACTUATED | 15103            | OPERATOR SUPPORTED B |  |  |  |
| G-6          | 1                     | STORMWATER DRAIN                | 12 X 12                         | NON SELF CONTAINED<br>RISING STEM | FABRICATED    | 2.0   | WALL MOUNTED  | UPWARD OPENING   | MANUAL                     | 15103            | OPERATOR SUPPORTED B |  |  |  |

|                     | PROCESS PUMP SCHEDULE |                           |                         |                           |                   |                |                         |                |                  |              |    |               |               |                         |                  |         |
|---------------------|-----------------------|---------------------------|-------------------------|---------------------------|-------------------|----------------|-------------------------|----------------|------------------|--------------|----|---------------|---------------|-------------------------|------------------|---------|
| TAG NU<br>NO. U     | NUMBER                | UMBER<br>OF NAME<br>UNITS |                         |                           | RATING POINT      |                |                         |                | 0541             | MOTOR DA     |    | ГА            |               | 0050                    |                  |         |
|                     | OF<br>UNITS           |                           | LOCATION TYPE           |                           | CAPACITY<br>(GPM) | HEAD<br>(FEET) | STATIC<br>HEAD<br>(FT.) | MIN.<br>EFF. % | IMPELLER TYPE    | SEAL<br>TYPE | HP | RPM<br>(MAX.) | ENCL.<br>TYPE | DRIVE<br>TYPE           | SPEC.<br>SECTION | REMARKS |
| PUEF-1 TO<br>PUEF-3 | 3                     | EFFLUENT PUMPS            | EFFLUENT PUMP STATION   | SUBMERSIBLE NON-CLOG PUMP | 1,250             | 27             | 12                      | 67             | 2 SEMI-OPEN VANE | SEE SPEC     | 15 | 1,200         | SUBMERGED     | DIRECT COUPLED<br>(VFD) | 11319            |         |
| PUST-1 TO<br>PUST-3 | 3                     | STORMWATER PUMPS          | STORMWATER PUMP STATION | SUBMERSIBLE NON-CLOG PUMP | 3,740             | 31             | 18                      | 81             | 2 SEMI-OPEN VANE | SEE SPEC     | 40 | 900           | SUBMERGED     | DIRECT COUPLED<br>(VFD) | 11319            |         |

| TAG NO.                                | NUMBER<br>OF UNITS | R NAME                         |                 |                       | CAPACITY | PRESSU       | INLET    | BAROMETRIC | BLOWER SPEED | MOTOR DA |              | A            | DRIVE  | SPEC    |           |
|--|--------------------|--------------------------------|-----------------|-----------------------|----------|--------------|----------|------------|--------------|----------|--------------|--------------|--------|---------|-----------|
|  |                    |                                | LOCATION        | IYPE                  | (SCFM)   | RE<br>(PSIG) | (DEG. F) | (PSIA)     | (RPM)        | HP       | RPM<br>(MAX) | ENCL<br>TYPE | TYPE   | SECTION | REMARKS   |
| BLAE - 200<br>BLAE - 201<br>BLAE - 202 | 3                  | PROCESS AERATION BLOWERS       | BLOWER BUILDING | POSITIVE DISPLACEMENT | 640      | 8.0          | 100      | 14.64      | 4,100        | 40       | 1,800        | TEFC         | V-BELT | 11377   | SEE NOTES |
| BLSL-300<br>BLSL-301                   | 2                  | SLUDGE STORAGE TANK<br>BLOWERS | BLOWER BUILDING | POSITIVE DISPLACEMENT | 850      | 8.0          | 100      | 14.64      | 3,900        | 50       | 1,800        | TEFC         | V-BELT | 11377   | SEE NOTES |

EQUIPMENT SCHEDULE NOTES:

1. EQUIPMENT SCHEDULES ARE FOR QUICK REFERENCE, SHOULD THERE BE A CONFLICT BETWEEN SCHEDULE AND SPECIFICATION, SPECIFICATION SHALL BE FOLLOWED.

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|            |            |            |                          |   |                             |              | Bright People. Right Solutions. | 150 Colloca Bood Work Suits 100        | Princeton NJ 08540        | Fnone: 009-924-0821<br>www.kleinfelder.com |  |  |  |  |  |
|------------|------------|------------|--------------------------|---|-----------------------------|--------------|---------------------------------|--|---------------------------|--|--|--|--|--|--|
|            |            |            |                          | ISSUED FOR<br>BIDDING   |                             |              |                                 |  |                           |  |  |  |  |  |  |
|            |            |            | TIMOTHY D. BRADLEY, P.E. | TIMOTHY D. BRADLEY, P.E.<br>PROFESSIONAL ENGINEER<br>NJ LIC. NO. 34109<br>M<br>12/10/2021<br>SIGNATURE DATE<br>KLEINFELDER, INC.<br>CERT. OF AUTH. 24GA28272100 |                             |              |                                 |  |                           |  |  |  |  |  |  |
| 09/07/2022 | 08/29/2022 | 08/16/2022 | 12/10/2021               | 02/22/2021  | 12/10/2020                  | 0000112100   | 0202/10/00                      | 06/03/2020                             | 08/06/2019                |  |  |  |  |  |  |
| ADDENDUM 4 | ADDENDUM 3 | ADDENDUM 1 | 6 ISSUED FOR BIDDING     | 5 REVISED PER DRCC COMMENTS   | 4 REVISED PER DRCC COMMENTS |              |                                 | 2 90% PROGRESS SUBMISSION              | 1 30% PROGRESS SUBMISSION | REVISIONS                                  |  |  |  |  |  |
|            |            |            | 02/16/2018 02/16/2018    | PRO IECT NO 6484D   |                             | DRAWN BY ELD |                                 | CHECKED BY CSF                         | FILE NAME                 | M - Schedules_Revised.dwg                  |  |  |  |  |  |
|            |            |            |                          |   |                             |              |                                 | STAGE II WWTP FLOOD PROTECTION PROJECT | MONTGOMERY TOWNSHIP       | SOMERSET COUNTY, NEW JERSEY                |  |  |  |  |  |
|            |            |            | SHI                      | EET   |                             | N            | -                               | 2                                      |                           |  |  |  |  |  |  |







|  | PROJECT NO.<br>DRAWN BY:           | 6484E<br>ELD          | PIPE TRENCH<br>RESTORATION DETAIL                               | FIGURE |
|--|------------------------------------|-----------------------|---|--------|
| KLEINFELDER<br>Bright People. Right Solutions. | CHECKED BY:<br>DATE: C<br>REVISED: | CSF<br>09-06-2022<br> | STAGE II WWTP<br>FLOOD PROTECTION PROJECT<br>MONTGOMERY TWP, NJ | A4-1   |

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