November 3, 2015

ADDENDUM NO. 3

TO THE CONTRACT DOCUMENTS
FOR THE CONSTRUCTION OF

CITY OF MASSILLON 2013 WWTP IMPROVEMENTS PROJECT
CONTRACT NO. 2 - GENERAL CONSTRUCTION

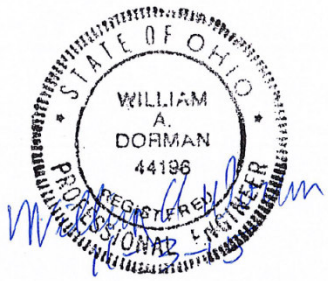
MASSILLON, OHIO

TO ALL HOLDERS OF CONTRACT DOCUMENTS:

Your attention is directed to the following interpretations of, changes in, and additions to the Contract Documents for the City of Massillon 2013 WWTP Improvements Project, Contract No. 2. Sealed bids for the above referenced project will be received by the City of Massillon, Attn: Joel Smith, 151 Lincoln Way East, Massillon OH 44646 until **2:00 p.m., local time, November 6, 2015.**

This addendum is issued in accordance with Instructions to Bidders Article M, and is made part of the Contract Documents in accordance with Article 1 of the Agreement.

CTI ENGINEERS, INC / O'BRIEN & GERE, A JOINT VENTURE



WILLIAM A. DORMAN, P.E.
JV PROJECT MANAGER

WILLIAM J. MEINERT, P.E.
JV DEPUTY PROJECT MANAGER

a. IN THE DECLARATION OF MANUFACTURERS

1. Under 46 71 13 Circular Gravity Thickeners, DELETE the following:

"( ) d. Amwell"

b. IN THE TECHNICAL SECTIONS

1. In Section 03 30 00,

   a. Under 2.6.B.3, DELETE "primary and secondary clarifiers." AND SUBSTITUTE THEREFOR "Pre-Thickening Tanks."

2. In Section 08 71 00,

   b. Under 2.13.A.2, DELETE "Acceptable Manufacturers: Norton 7500 series, Sargent 351" AND SUBSTITUTE THEREFOR "Acceptable Manufacturers: Norton 7500 series, Sargent 351, Stanley D-4550".

3. In Section 35 20 16.1,

   a. In paragraph 2.6.A "SCHEDULE", ADD the following:

Primary Effluent Pump Station							
	Slide Gate	Wet Well No. 1 Isolation	Non Self-Contained, CW	Up	36" x 36"	Non Rising Stem, Operating Nut	15' Seating/ 18' Unseating
	Slide Gate	Wet Well No. 2 Isolation	Non Self-Contained, CW	Up	36" x 36"	Non Rising Stem, Operating Nut	15' Seating/ 18' Unseating

4. In Section 35 20 16.2,

   a. In paragraph 2.6.A "SCHEDULE", DELETE the following:

Primary Effluent Pump Station							
	Slide Gate	Wet Well No. 1 Isolation	Non Self-Contained, CW	Up	36" x 36"	Floor Stand, Crank Operator, Rising Stem	15' Seating/ 18' Unseating
	Slide Gate	Wet Well No. 2 Isolation	Non Self-Contained, CW	Up	36" x 36"	Floor Stand, Crank Operator, Rising Stem	15' Seating/ 18' Unseating

5. In Section 44 31 21,

   a. Under 1.6.A.6, DELETE the text "H2S" and SUBSTITUTE THEREFOR the text "H_2S".

   b. Under 1.6.A.8, DELETE the text "H2S" and SUBSTITUTE THEREFOR the text "H_2S".

   c. Under 1.6.A.9, AFTER "Maximum pressure drop @ design flow rate" ADD the following: "including demister.". DELETE the text "7.8" and SUBSTITUTE THEREFOR the text "8.8".

6. In Section 46 21 43,

   a. Under 2.1.A.3, DELETE the text "Bracket Green (Ovivo)".

7. In Section 46 53 33.1,

   a. In paragraph 3.2.A "SCHEDULE", DELETE the following:

Contract 1a Equipment and (1/3) Media Delivery (1) (2)	1/14/2016

   And SUBSTITUTE THEREFOR the following:

Contract 1a Equipment and (1/3) Media Delivery (1) (2)	4/15/2016

   b. In paragraph 3.2.A "SCHEDULE", DELETE the following: "Liquidated Damages will apply per Contract 1a Special Conditions SC-8 for failure to complete specified tasks within the time frame established in Contract 1a Special Conditions SC-3." And SUBSTITUTE THEREFOR the following "Liquidated Damages will apply per Special Conditions SC-8 for failure to deliver submittals in accordance with agreed-upon schedule"

c. <u>IN THE CONTRACT DRAWINGS</u>

1. Drawing G-001, File No. 23374.51633-G-001, Revision 1, 09/23/2015 Issued for Bid:

   a. ADD "M-112A ODOR CONTROL PLAN AND SECTIONS WAD"

2. DELETE Drawing C-110, File No. 23374.51633-C110, Revision 1, 9/23/2015, and SUBSTITUE THEREFOR Drawing C-110, File No. 23374.51633-C110, Revision 2, 11/03/2015.

3. DELETE Drawing S-104, File No. 23374.51633-S104, Revision 1, 9/23/2015, and SUBSTITUE THEREFOR Drawing S-104, File No. 23374.51633-S104, Revision 2, 11/03/2015.

4. Drawing S-303, File No. 23374.51633-S303, Revision 1, 09/23/2015 Issued for Bid:

    a. DELETE NOTE "REPAIR CRACKING AND SPALLING IN EXISTING CONCRETE IN ACCORDANCE WITH DETAILS ON SHEET S-008" AND SUBSTITUTE THEREFOR "REPAIR CRACKING (20 LINEAR FEET) AND SPALLING (5 SQUARE FEET) IN NORTHWEST CORNER OF EXISTING CONCRETE TANKS IN ACCORDANCE WITH DETAILS ON SHEET S-008".

5. DELETE Drawing S-304, File No. 23374.51633-S304, Revision 1, 09/23/2015 and SUBSTITUTE THEREFOR Drawing S-304, File No. 23374.51633-S304, Revision 2, 11/02/2015.

6. DELETE Drawing S-311, File No. 23374.51633-S311, Revision 1, 09/23/2015 and SUBSTITUTE THEREFOR Drawing S-311, File No. 23374.51633-S311, Revision 2, 11/02/2015.

7. DELETE Drawing S-313, File No. 23374.51633-S313, Revision 1, 09/23/2015 and SUBSTITUTE THEREFOR Drawing S-313, File No. 23374.51633-S313, Revision 2, 11/02/2015.

8. DELETE Drawing M-105, File No. 23374.51633-M105, Revision 1, 9/23/2015, and SUBSTITUE THEREFOR Drawing M-105, File No. 23374.51633-M105, Revision 2, 11/03/2015.

9. DELETE Drawing M-107, File No. 23374.51633-M107, Revision 1, 9/23/2015, and SUBSTITUE THEREFOR Drawing M-107, File No. 23374.51633-M107, Revision 2, 11/03/2015.

10. DELETE Drawing M-108, File No. 23374.51633-M108, Revision 1, 9/23/2015, and SUBSTITUE THEREFOR Drawing M-108, File No. 23374.51633-M108, Revision 2, 11/03/2015.

11. DELETE Drawing M-109, File No. 23374.51633-M109, Revision 1, 9/23/2015, and SUBSTITUE THEREFOR Drawing M-109, File No. 23374.51633-M109, Revision 2, 11/03/2015.

12. DELETE Drawing M-111, File No. 23374.51633-M111, Revision 1, 9/23/2015, and SUBSTITUE THEREFOR Drawing M-111, File No. 23374.51633-M111, Revision 2, 11/03/2015.

13. DELETE Drawing M-112, File No. 23374.51633-M112, Revision 1, 9/23/2015, and SUBSTITUE THEREFOR Drawing M-112, File No. 23374.51633-M112, Revision 2, 11/03/2015.

14. ADD Drawing M-112A, File No. 23374.51633-M112A, Revision 0, 11/03/2015.

15. DELETE Drawing M-230, File No. 23374.51633-M230, Revision 2, 10/23/2015, and SUBSTITUE THEREFOR Drawing M-230, File No. 23374.51633-M230, Revision 3, 11/03/2015.

16. DELETE Drawing M-232, File No. 23374.51633-M232, Revision 1, 9/23/2015, and SUBSTITUE THEREFOR Drawing M-232, File No. 23374.51633-M232, Revision 2, 11/03/2015.

17. DELETE Drawing M-233, File No. 23374.51633-M233, Revision 1, 9/23/2015, and SUBSTITUE THEREFOR Drawing M-233, File No. 23374.51633-M233, Revision 2, 11/03/2015.

18. Drawing M-313, File No. 23374.51633-M-313, Revision 1, 09/23/2015 Issued for Bid:

    a. DELETE "LEVER & CRANK OPERATOR FOR 2' SLIDE GATE IN AN/AX EFFLUENT CHANNEL AT 14" TRANSITION PIPE (TYP. X2 PER TANK)" and SUBSTITUTE THEREFOR the following: "LEVER & CRANK OPERATOR FOR 14" DIAMETER SLUICE GATE FOR 14" TRANSITION PIPE (TYP. X2 PER TANK)"

19. Drawing M-304, File No. 23374.51633-M-304, Revision 1, 09/23/2015 Issued for Bid:

    b. Under "NOTES:" ADD the following:

        i. "6. CONTRACT 1A EQUIPMENT ANCHOR BOLTS, NUTS AND WASHERS PROVIDED WITH CONTRACT 1A EQUIPMENT. CONTRACT 2 SHALL PROVIDE ASSOCIATED HILTI HIT-RE 500-SD EPOXY ADHESIVE."

20. Drawing H-602, File No. 23374.51633-H602, Revision 1, 09/23/2015 Issued for Bid:

    c. DELETE NOTE "EXISTING 6" NATURAL GAS" AND SUBSTITUTE THEREFOR "EXISTING 5" NATURAL GAS".

21. Drawing H-603, File No. 23374.51633-H603, Revision 1, 09/23/2015 Issued for Bid:

    a. DELETE NOTE "AIR-COOLED CONDENSER ACCU-A-1" (larger unit, between column lines D and E), AND SUBSTITUTE THEREFOR "AIR-COOLED CONDENSER ACCU-A-2".

22. Drawing H-604, File No. 23374.51633-H604, Revision 1, 09/23/2015 Issued for Bid:

    b. DELETE NOTE "6" NATURAL GAS (NG) TIE-IN TO EXISTING SUPPLY IN VERTICAL" AND SUBSTITUTE THEREFOR "5" NATURAL GAS TIE-IN TO EXISTING SUPPLY IN VERTICAL".

    c. DELETE LINE TAG "6" NG" AND SUBSTITUTE THEREFORE "5" NG".

23. Drawing H-610, File No. 23374.51633-H610, Revision 1, 09/23/2015 Issued for Bid:

a. DELETE NATURAL GAS LINE TAG "6"" AND SUBSTITUTE THEREFORE "5"" (two places).

24. Drawing H-611, File No. 23374.51633-H611, Revision 1, 09/23/2015 Issued for Bid:

    a. DELETE NATURAL GAS LINE TAG "6"" AND SUBSTITUTE THEREFORE "5"".

25. DELETE Drawing E-005, File No. 23374.51633-E005, Revision 1, 09/23/2015 and SUBSTITUTE THEREFOR Drawing E-005, File No. 23374.51633-E005, Revision 2, 11/02/2015.

26. DELETE Drawing E-006, File No. 23374.51633-E006, Revision 1, 09/23/2015 and SUBSTITUTE THEREFOR Drawing E-006, File No. 23374.51633-E006, Revision 2, 11/02/2015.

27. DELETE Drawing E-007, File No. 23374.51633-E007, Revision 1, 09/23/2015 and SUBSTITUTE THEREFOR Drawing E-007, File No. 23374.51633-E007, Revision 2, 11/02/2015.

28. Drawing E-018, File No. 23374.51633-E018, Revision 1, 09/23/2015, At Branch Panel "PP-FSB-1", CKT 2,4,6, DELETE "ACCU-FSB-1" and Label as "SPARE", At CKT 8,10,12, DELETE "MUAU-1" and Label as "SPARE". At Branch Panel "PP-ADMIN-1" At CKT 20,22,24, DELETE "ACCU-A-1 and SUBSTITUTE THERFOR "ACCU-A-2".

29. DELETE Drawing E-020, File No. 23374.51633-E020, Revision 1, 09/23/2015 and SUBSTITUTE THEREFOR Drawing E-020, File No. 23374.51633-E020, Revision 2, 11/02/2015.

30. DELETE Drawing E-021, File No. 23374.51633-E021, Revision 1, 09/23/2015 and SUBSTITUTE THEREFOR Drawing E-021, File No. 23374.51633-E021, Revision 2, 11/02/2015.

31. DELETE Drawing E-024, File No. 23374.51633-E024, Revision 1, 09/23/2015 and SUBSTITUTE THEREFOR Drawing E-024, File No. 23374.51633-E024, Revision 2, 11/02/2015.

32. Drawing E-026, File No. 23374.51633-E026, Revision 1, 09/23/2015 Issued for Bid.

    a. CIRCUIT DESIGNATION "CC-SG-28" DELETE "MOTOR CONTROL CENTER "MCC-DC2C" AND SUBSTITUTE THEREFOR "MOTOR CONTROL CENTER "MCC-IFAS-1".

    b. CIRCUIT DESIGNATION "CC-SG-29" DELETE "MOTOR CONTROL CENTER "MCC-DC2C" AND SUBSTITUTE THEREFOR "MOTOR CONTROL CENTER "MCC-IFAS-1".

c. CIRCUIT DESIGNATION "CC-SG-30" DELETE "MOTOR CONTROL CENTER "MCC-DC2C" AND SUBSTITUTE THEREFOR "MOTOR CONTROL CENTER "MCC-IFAS-1".

33. DELETE Drawing E-104, File No. 23374.51633-E104, Revision 1, 09/23/2015 and SUBSTITUTE THEREFOR Drawing E-104, File No. 23374.51633-E104, Revision 2, 11/02/2015.

d. QUESTIONS AND ANSWERS

Q41: Spec section 46 53 33.1 indicates the Kruger IFAS equipment is going to be delivered 1/14/16. Per Kruger's storage instructions it is preferred to warehouse the equipment for storage. With such an early delivery compared to when this equipment will be installed there is potentially a large cost to the owner for the means and methods to store and maintain this equipment that would have to be included in the bid. Can the delivery of this equipment be postponed to a date that is closer to the installation?

A41: The first media delivery date was revised from 1/14/16 to 4/15/16 via addendum. Refer to addendum items.

Q42: Drawings E-005 and E-006 show, according to the drawing legend, existing 480V lines running extensively throughout the site. However there are new conduit and cable designations pointing to several of these lines and some of these lines, again shown as existing, are coming out of the new Primary Effluent Pump Station. It would not appear these lines are all existing. Please revise drawing to differentiate between new and existing.

A42: See Drawing E-005, File No. 23374.51633-E005, Revision 2, 11/02/2015 and Drawing E-006, File No. 23374.51633-E006, Revision 2, 11/02/2015 for clarification.

Q43: Request clarification on the following electrical and instrumentation items:

Q43a: Who is responsible to provide the Tertiary filter building PCS control panel?

A43a: The Contractor is responsible for providing the Tertiary Filter Building PCS Control Panel.

Q43b: Should all conduits between buildings and/or areas be quoted as underground when not shown?

A43b: Conduits shown and/or scheduled between buildings should be assumed to be underground.

Q43c: Who provides the blower control panel?

A43c: The Contractor is responsible for providing the Blower Control Panel through the Blower Manufacturer. Refer to Specification 43 11 23.11.1 Aeration Blowers Control Panel Modifications for additional information.

Q43d: Who provides the instruments for all instrumentation?

A43d: All instruments shall be provided by the Contractor unless otherwise noted on the Contract Drawings.

Q43e: Power conduit schedule P-PEPS-14 refers to a MCC-PEPS-3. Is this correct? If so where is this MCC located?

A43e: MCC-PEPS-3 is a typo, it should read MCC-PEPS-2.

Q43f: Who is responsible to provide the fine screens local control panels?

A43f: Fine Screens local control panels are provided by the Fine Screen Manufacturer, See Specification 46 21 43 Band Screens and Screening Washing Machines for additional information.

Q43g: PP and LP conduit and cable is not scheduled. Would you like us to bid according to the panel schedules and not take any consideration for voltage drop and or conduit sizing?

A43g: Reference Drawing E-020, File No. 23374.51633-E020, Revision 1, 09/23/2015 Issued for Bid for conduit and cables scheduled for Panels PP-FSB-1 and PP-ADMIN-1. Reference Drawing E-022, File No. 23374.51633-E022, Revision 1, 09/23/2015 Issued for Bid for conduit and cables scheduled for Panel PP-TFB-1. See Revised Drawing E-021, File No. 23374.51633-E021, Revision 2, 11/02/2015 Issued Per Addendum No.3 for conduit and cables scheduled for Panel PP-PEPS-1. For the LP panels reference Table on Drawing E-018, File No. 23374.51633-E018, Revision 1, 09/23/2015 Issued for Bid for guidance on maximum distance, conductor, conduit size and quantities.

Q44: Request clarification on the Magnetic Flow Meter specification:

Q44a: Section 2.2_G_2_A&B Commonly magnetic flow meters 24" and smaller have ANSI/ASME Class 150 carbon steel flanges and magnetic flow meters larger than 24" have AWWA Class D Carbon Steel flanges. We represent Krohne and would like to know if this would be acceptable?

A44a: There is no pre-qualification of alternates during bid stage.

Q44b: Section 2.2_G_12 This section calls for "Electronics shall be Potted and/or suitable for installation in Hazardous classified spaces as noted and/or shown on the Drawings". Krohne does not pot their electronics however they do pot their connection head on the flow element (there

are no electronics in the connection head if the meter is a remote mount signal converter version) where the remote signal converter cabling terminates in the connection head when meeting IP68 specifications. When "Potted" is called out is this to meet an IP68 specification?

A44b: Any portion of the meter, which contains electronics, shall be potted to prevent the ingress of water into the electronics. Flow tube, converter and transmitter shall be suitable for hazardous classified locations, as shown in the contract drawings)

Q44c: What is the hazardous area classification? Class 1 Division 1 or Class 1 Division 2? Lastly, some magnetic flow meters that have a (H) designation appear to be in vaults per the drawings. In these cases would IP68 rating also be required?

A44c: Class 1 Division 1, Groups C, D. Refer to Drawings E-003 for specific classifications.

Q44d: Lastly, some magnetic flow meters that have a (H) designation appear to be in vaults per the drawings. In these cases would IP68 rating also be required?

A44d: Meters installed in areas with the potential of submergence, shall be protected against water ingress, and FM approved.

Q45: Request clarification on the following electrical items:

Q45a: Drawing E-005: Is the medium voltage 15 KV 4/0 cable Aluminum or Copper?

A45a: Aluminum

Q45b: Does cable from transformer “B” to new EMH-3 get removed?

A45b: Cable from the existing Transformer “B” location to the new EMH-3 shall be removed.

Q45c: Drawing is not clear on what is existing 480v from the new underground runs. Please clarify.

A45c: See revised Drawing E-005 File No. 23374.51633-E005 Revision 2, 11/02/2015 in addendum items for clarification.

Q45d: What size is the service for temporary power to Sludge buildings? How is garage to be fed temporary?

A45d: The service size to each Ex. Sludge Building will be 200 amps, See Drawing E-005, File No. 23374.51633-E005, Revision 2, included in this addendum. The Garage is powered from the Ex. Primary Sludge Building No.1 service and has an existing

disconnect located at Existing Primary Sludge Building No.1, this will be the point of connect for the temporary feed to the garage.

Q45e: Cannot find new Feeds to Administration, sludge buildings, and Garage. Please clarify.

A45e: See revised Drawing E-005, File No. 23374.51633-E005, Revision 2, 11/02/2015.

Q45f: Please clarify Drawing E-301 – Detail #2 is all Heat Trace to have a spare?

A45f: Yes, all heat trace is to have a spare.

Q45g: DrawingE-701. Drawing says to remove existing RAS Pump VFDs. Who furnishes new drives?

A45g: New drives are to be furnished by the contractor under this contract.

Q46: Request clarification on the following items:

Q46a: Please provide us with the deductible amounts on your Builders Risk Policy.

A46a: The Owner is responsible for any builder's risk deductible, so the deductible amount is not necessary information for the Contractor.

Q46b: Due to the complexity of the project and the submitted questions not yet answered we request a bid extension of 2 weeks in order to provide the Owner with the most complete and competitive pricing possible.

A46b: All questions received through the questions cutoff date have been answered via addendum. The bid period will not be extended.

Q46c: Reference to drawing S-301, demolition note states to remove existing concrete wall and repair per detail in drawing S-008. Is this repair part of the unit price pay item 3.16? If not please confirm that contractor to bevel saw-cut concrete floor and patch per the detail at all removed walls in drawings S-301 through S-303 as part of the base bid.

A46c: Demolition and structural repair work noted in the structural Contract Drawings is part of the base bid. Slab noted shall be repaired in accordance with "Concrete Surface Repair Detail" on sheet S-008.

Q46d: Reference to drawing S-303 Note on top right corner states to repair cracking and spalling in existing concrete in accordance to details on sheet S-008. Please confirm this repair is part of the unit price pay item 3.16, if not please quantify.

A46d: Crack and spall repair noted on S-303 is part of the base bid. Refer to addendum

item.

Q46e: Reference to drawing S-311 which shows the walkway portion shown between IR Well 3 and stair depicting reinforcement as a new walkway. Section 3/S313 in this area references this walkway as existing. Also demo plans do not show existing slab to be removed, please clarify.

A46e: Refer to addendum item.

Q46f: Reference to drawing S-312, sections for the new Concrete walls for Anoxic, Anaerobic, etc., do not show waterstop at the walkway. Section 1 drawing S-325 show 6" water stop at top of the wall. Should we include water stop on top of all the new walls?

A46f: As shown in section 1 on S-312 and section 1 on S-325, 6" x 3/8" PVC waterstops are required at the top of walls for the Gallery. Waterstops are not required between tops of walls and "T" shaped walkways.

Q46g: Reference to cast in place concrete specification section 033000-7, article 2.6 concrete mixtures item B.3 calls for Swept-in-Grout topping in the primary and secondary clarifiers. There is no work shown in plans for this work in the clarifiers. The only similar application is shown in the Mechanical drawings M-611 & 613 for Pre-Thickening tanks, where it calls for removal of existing grout in tank bottom and re-grout with new. Please confirm that there is no grout work in the primary and secondary clarifiers, and we only grout the bottom of thickening tanks.

A46g: Swept-in-Grout required at the Pre-Thickening Tanks. Refer to addendum item.

Q47: In reference the answer to Q24b in Addendum 02: Given the Roughing Filters only serve the adjacent aeration tank, it's not possible to maintain the requirement of at least 3 Aeration Basins in service or 2 Aeration Basins and a temporarily aerated Anaerobic/Anoxic Tank. A Roughing Filter must be demolished to install the Temporarily Anaerobic/Anoxic Tank, which will remove an Aeration Basin from service. Confirm that the intent is to have 2 Aeration Basins with roughing filters in service while the temporarily aerated Anaerobic/Anoxic Tank is being constructed.

A47: The intent of the temporary PEPS piping is to allow for wastewater distribution to the Aeration Basins when the Roughing Filter is taken offline for demolition, thus allowing all three Aeration Basins to remain in service even as Roughing Filters are demolished and temporary anaerobic/anoxic tankage is constructed. It is understood that the associated aeration basin will need to be taken temporarily out of service to make the temporary tie-in; however, this should be limited to approximately one week (including time to take the tank offline/out of service). Otherwise, all three aeration tanks should be in service until the new anaerobic anoxic tank with temporary aeration is available.

Q48: Request clarification on the following Addendum No. 2 items:

Q48a: Reference Addendum No. 2 – Q30d – Please provide the bypass pumping capacity, suction and discharge points for the bypass work associated on M101.

A48a: The maximum bypass pumping capacity is 31.5 MGD which is equal to the pumping capacity of each individual influent screw pump. Suction and discharge point locations are based on the Contractor's means and methods. Historically, during dry weather conditions, night-time flows are as low as 6 MGD and existing average daily flow is 10.3 MGD.

Q48b: Reference Addendum No. 2 – Q30d – Please provide bulk heading details to complete the bypass work associated with drawing M101.

A48b: Bulk heading to complete the bypass work associated with drawing M-101 is up to the means and methods of the Contractor.

Q48c: Reference Addendum No. 2 – Q30d – Are there any isolation devices upstream and downstream of the Influent chamber in the 66" sewer the contractor can utilize to facilitate this work?

A48c: There are no isolation devices upstream of the influent chamber. At the base of the influent screw pumps there are slide gates used to isolate the flow to each individual screw pump. See drawings M-102 and M-103.

Q49: Could you please identify the areas that would be coated per Painting section 099100 3.5, C. Concrete, 4. Immersion, Wastewater. Also, within that item is a note that states 'Where flexibility is required, use SherFlex Elastomeric Polyurethane. Where would that be required if at all?

A49: These would be required as noted on drawings and in the finish schedule.

Q50: Request clarification on the following electrical items:

Q50a: Drawing E-204: Conduit CC-PEPS-42 is shown between damper and fan, however it is not listed on the conduit schedule.

A50a: See Drawing E-024, File No. 23374.51633-E024, Revision 2, 11/02/2015 Issued Per Addendum No.3.

Q50b: Drawing E-208: Conduit CC-PEPS-10A is not listed on the conduit schedule. Should this conduit be CC-PEPS-16A?

A50b: Yes, that is correct, Conduit should be labeled CC-PEPS-16A.

Q50c: Drawing E-503: Conduit CC-TFB-22 is not listed on the conduit schedule. Should this conduit be CC-TB-22?

A50c: Yes, the conduit is mis-labeled on the drawing.

Q50d: Drawing E-503: Do not see conduit CC-TB-7 continued on site plans.

A50d: See Drawing E-006, File No.23374.51633-E006, Revision 2, 11/02/2015 Issued Per Addendum No.3.

Q50e: Drawing E-605: Do not see a routing for the conduits listed on site drawings.

A50e: These conduits are not shown on the site plans, contractor will have to field coordinate routing of these conduits, these conduits could potentially be routed in the secondary gallery.

Q50f: Drawing E-702: Should panel labeled LP-SG-2C be labeled LP-IFAS-1?

A50f: No, it is labeled correctly as LP-SG-2C, the Panel Schedule for "LP-IFAS-1"on Drawing E-019, File No. 23374.51633-E019, Revision 1 09/23/2015 is labeled incorrectly, the Panel should read "LP-SG-2C".

Q50g: Drawing E-702: Conduits CC-SG-28 , CC-SG-29, CC-SG-30 according to the conduit schedule go to MCC-DC2C. Where is MCC-DC2C located?

A50g: The conduit schedule is mis-labeled, See Addendum No.2 for clarification.

Q50h: Drawing E-021: Should conduit P-IFAS-10 go to transformer T-DC not T-PEPS-1 and is 2" conduit correct for this feeder?

A50h: The conduit schedule is mis-labeled, it should read "Transformer T-DC 30KVA 480-120/208V".

Q50i: Drawing E-021: Do not see routing on site drawings for P-PEPS-29.

A50i: Routing of conduit is at the contractor's discretion, contractor will have to field verify and coordinate the routing of conduit.

Q50j: Drawing E-023: Do not see routing for conduit CC-OD-1 on site drawing.

A50j: Routing of conduit is at the contractor's discretion, contractor will have to field verify and coordinate the routing of conduit.

Q50k: Drawing E-024: Do not see conduits CC-SRB-1 and CC-SR-2 on any drawings.

A50k: See Drawing E-102, File No. 23374.51633-E102, Revision 1, 09/23/2015 for conduits.

Q50l: Do not see conduits listed on drawing or routing for CC-IFAS-1, 1A, 2, 2A, 3, 3A, 4, 4A, 5,

5A, 6, 6A, 7, 7A, 8, 8A, 9, 9A.

A50l: Conduits are not used and are designated that way on Drawing E-024, File No. 23374.51633-E024 Revision 2, Addendum 3 11/02/2015.

Q50m: Drawing E-025: Do not see conduits CC-IFAS-46 or 46A shown on drawings.

A50m: Conduits are now shown on Drawing E-305, File No. 23374.51633-E305 Revision 2, 11/02/2015.

Q50n: Drawing E-026: Do not see conduits CC-TB-23 or 24 on drawings.

A50n: See "Digester Waste Gas Burner Wiring Diagram" Drawing E-032, File No. 23374.51633-E032 Revision 1, 09/23/2015

Q50o: Drawing E-104: ACCU-A-1 shows that circuit going to LP-ADMIN-1. Conduit schedule has a designation P-AD-12 going to ACCU-A-1 from PP-ADMIN-1. Which is correct?

A50o: ACCU-A-1 is powered from Panel LP-ADMIN-1 Circuit 8,10. Conduit designation P-AD-12 serves ACCU-A-2. On Drawing E-104 File No. 23374.51633-E104 Revision 1, Delete Label "AIR COOLED CONDENSER ACCU-A-1" and Substitute "AIR COOLED CONDENSER ACCU-A-2". Delete Label "AIR COOLED CONDENSER ACC-A-1" and Substitute "AIR COOLED CONDENSER ACCU-A-1".

Q50p: Drawing E-104: Do not see a circuit for ACC-A-1.

A50p: See response above, ACCU-A-1 has a circuit from Panel LP-ADMIN-1, Circuit 8/10.

Q50q: Drawing E-104: Circuit P-Ad-19 is shown at Boiler. Conduit schedule has it going to T-AD-2 which is already fed by conduit P-AD-3. Where is conduit P-AD-19 supposed to go?

A50q: Conduit P-AD-19 should go to Boiler B-A-1. On Drawing E-020, File No. 23374.51633-E020 Revision 1, 09/23/2015 Revise Conduit Designation P-AD-19, At Column "From" Delete "Panelboard PP-ADMIN-1 Circuit 44,46,48" and Substitute "Panelboard PP-ADMIN-1 Circuit 31,33,35", At Column "To" Delete "30 kva Transformer T-AD-2" and Substitute "Boiler B-A-1", At Column "Conduit Size" Delete 1" and Substitute ¾", At Column "Conductors Qty/Size" Delete "3-#6, 1-#10 grd" and Substitute "3-#12, 1-#12 GRD".

Q50r: Drawing E-108: Circuit P-FSB-27 is shown for Pressure Washer but is listed as not used on the conduit schedule. What size conduit and wire is required?

A50r: On Drawing E-020, File No. 23374.51633-E020 Revision 1, 09/23/2015 Revise Conduit Designation P-FSB-27, At Column "From" Delete "Not Used" and Substitute "Motor Control Center MCC-FSB-1", At Column "To" Add "Pressure Washer", At Column "Conduit Size" Add

¾", At Column "Conductors Qty/Size" Add "3-#12, 1-#12 GRD".

Q50s: Drawing E-108: Does EUH-FSB-1 go to panel PP-FSB-1 as shown or to MCC-FSB-1 as indicated as P-FSB-12 on the conduit schedule?

A50s: On Drawing E-020, File No. 23374.51633-E020 Revision 1, 09/23/2015 Revise Conduit Designation P-FSB-12, At Column "From" Delete "Motor Control Center MCC-FSB-1" and Substitute "Panel PP-FSB-1".

Q50t: Drawing E-005: Do not see routing for conduits P-FSB-1, P-FSB-16, and P-FSB-17 from manhole EMH-1 to Odor Control Structure, Sludge Building 1&2. These Conduits do show going to manhole.

A50t: See revised Drawing E-005, File No. 23374.51633-E005 Revision 2, 11/02/2015 for routing of conduits P-FSB-1, PFSB-16, P-FSB-17.

Q50u: Drawing E-005: Do not see routing for conduit CC-OC-1.

A50u: Contractor shall coordinate the actual location of existing RIO Cabinet located at the Headworks Building, final routing of conduit will be at the contractor's discretion.

Q50v: Drawing E-005: Conduit CC-FSB-35 is only shown to EPB-2. Please indicate remaining route.

A50v: See revised Drawing E-005, File No. 23374.51633-E005 Revision 2, 11/02/2015 for routing of conduit CC-FSB-35.

Q50w: Drawing E-005: Do not see a conduit routing or a conduit schedule for MCC-PEPS-1 or MCC-PEPS-2.

A50w: See revised Drawing E-005, File No. 23374.51633-E005 Revision 2, 11/02/2015 for routing of conduit PF-PEPS-1 and PF-PEPS-2. See revised Drawing E-020, File No. 23374.51633-E020 Revision 2, 11/02/2015 for conduits PF-PEPS-1 and PF-PEPS-2.

Q50x: Drawing E-020:No conduit or wire size indicated for conduit P-OC-02

A50x: See revised Drawing E-020, File No. 23374.51633-E020 Revision 2, 11/02/2015 for conduit P-OC-02 wire and conduit sizes.

Q51: Request clarification on the following temporary treatment items:

Q51a: How many new Anaerobic/ Anoxic tanks (out of 9) need to be constructed along with temporary aeration and put into service before one existing aeration basin can be taken offline for conversion to biological reactor? Several questions were asked and addressed in addendums

1 and 2 relating to this sequencing however this question still remains unclear.

A51a: All 9 Anaerobic/Anoxic tanks must be constructed prior to one aeration basin being taken offline for conversion to biological reactor.

Q51b: The answer to question 11 in addendum 1 indicates the temporary piping shown on M-231 is to roughing filters 3-6. However the drawing shows piping to roughing filters 1-6 which is correct based on paragraph D.12 in spec section 00850. Is the answer to question 11 incorrect? Please clarify.

A51b: The answer is correct. The temporary piping shown on drawing M-231 shows connections to roughing filters 1 through 6. Hydraulic calculations were conducted based on discharge flow only going to roughing filters 3 through 6 resulting in the discharge rates stated in Addendum number 1.

Q52: Request clarification on the following HVAC items:

Q52a: The gas line shown as a tie-in on drawing H-602 and H-604 requires us to tie-in to a 6" existing main. This main is only a 5" line. Should the new piping be 5" as well instead of the 6" shown?

A52a: Yes. Please refer to Addendum item.

Q52b: A note on H-602 shows us installing a tee and a valve in the BHWS that is designated to be demo'ed. What is the purpose of this tee and valve?

A52b: The tee and valve are intended to allow the operator to supply hot water to the loop from the digester heating system, and switch to the building hot water system when ready by closing and opening valves (if necessary).

Q52c: Accu-a-1 on H-103 should be accu-a-2 for the larger unit.

A52c: Agreed. Refer to Addendum item.

Q53: If no replacement parts are available for certain light fixtures should we figure in complete light fixtures for this purpose?

A53: Yes.

Q54: What material is requested for the V-spring light poles on drawing E-308; galvanized steel, Aluminum or Stainless?

A54: V-spring light poles shall be aluminum.

Q55: Request clarification on the following items:

Q55a: Does the thermal insulation spec 072100 relate to the insulation shown in the masonry wall of the Fine Screen Building and Primary Effluent Pump Station, shown in details 1, 2, 3 and scupper detail on sheet A002? Please provide a Masonry wall construction detail for the new Masonry walls in these two buildings.

A55a: CMU is to be insulated per specification 04 22 00 2.9. Typical masonry details on are shown on drawing S-006.

Q55b: Reference to Specification Section 092216 for structural metal framing, summary refers to Gypsum board wall and ceiling framing, there are no Gyp board work shown in the drawings please clarify the use of the metal framing.

A55b: Metal framing is not required.

Q55c: Please provide detail for the Pre-Cast hollow core bearing on masonry walls for the fine screen and primary effluent pump station.

A55c: See drawing A-002.

Q55d: Refer to the Kruger docs, 1a. Is the Hilti epoxy in these docs being included?

A55d: Kruger (Contract 1a) is supplying anchors (bolts, nuts, washers) while installation contractor supplies epoxy adhesive.

Q55e: Reference to drawings M-313. Note above An/Ax swing zone no. 2 states there are 2' slide gates, typ. X2 per tank. Are these supposed to be the 14" dia sluice gates in the schedule on 35 20 16.2-9 & 10?

A55e: Yes. The reference on drawing M-313 is a typo and was revised via addendum. Refer to addendum items.

Q55f: Reference to Kruger shop drawing no. 930F-1209, calls for 2x2x3/16 x 17'-10" long angle supports for 1" ¼" diffusers, are these supports provided by Kruger, please confirm since we don't identify them in the bill of materials.

A55f: Drawing 930F-1209 is an assembly that is called out on the Bill of Materials under item 8. The components that make up that assembly are listed on the drawing and include the noted angle. Kruger is supplying three (3) of these items, as a whole, fully assembled as show on 930F-1209.

Q56: Please clarify the following in reference to drawing M-230:

Q56a: Please advise a wall thickness and material type (304 or 316) for the 30" SS pipe and fittings shown on the discharge of the Primary Effluent Pumps. Spec. section 40 05 13.19 Stainless-Steel Process Piping (Air, Low Pressure) does not seem to apply to this section of pressure piping. Can this stainless steel piping material type be reconsidered to be changed to ductile iron as the coupling of 30" O.D. stainless steel pipe into the 30" ductile iron MJ 90-bend will be difficult, if not impossible.

A56a: Change all stainless steel pipe and fittings shown on the discharge of the primary effluent pumps to ductile iron. Drawings M-230, M232, and M233 have been revised and included in this Addendum.

Q57: Reference drawing M-230 and the gate schedule listed in spec. section 35 20 16.2: The notes on drawing M-230 call out a 36" SS (stainless steel) wall mounted slide gate with a non-rising stem. The 2 gates listed in the schedule in spec. section 35 20 16.2 at the Primary Effluent Pump Station call for these 2 gates to be of aluminum construction with a rising stem floor stand, crank operated. Can the type and material of construction for these two gates be clarified?

A57: The notes on drawing M-230 are correct. The gates are 36" stainless steel, wall mounted, with non-rising stems. The gate specifications have been revised with this addendum. Refer to the addendum items.

Q58: Payment Item 4.1 is an allowance for furnishing only new laboratory equipment to be installed in the existing lab in the Operations building. The definition of this pay item indicates that the installation, configuration and testing of this equipment is included in bid item 1.2 if specific equipment is shown on drawings or included in specifications. Please provide a specification and drawing showing this equipment so that the cost of this work can be estimated and included in bid item 1.2, or adjust payment item 4.1 to include this work as well.

A58: The allowance is for furnishing and installing and testing, unless specified to be furnished in the base bid.

Q59: In the Kruger shop drawings for the IFAS system there are discrepancies between quantities listed in the bill of materials (drawing 930M-0001) for the aeration grid assemblies and drawing 930M-0001 sheet 5 of 8 which establishes where the aeration grid assemblies are located in the tank. This applies to items 8-16 of the bill of materials. Please clarify the correct number of assemblies for these items.

A59: See attached revised BOM. Items 8, 9, 11-16 on BOM were corrected to reflect the proper quantities.

Q60: Is the 90 day performance test outlined in the Kruger shop drawings for the IFAS equipment to be completed prior to substantial and final completion for contract 2?

A60: Bidders should assume that the C1a and C1b performance tests will be completed before C2 substantial completion, anticipating that C1a and C1b schedules will be reviewed with the

awarded contractor to coordinate activities.

Q61: Please clarify the following dewatering items:

Q61a: Please confirm 20 monitoring wells will be required and all will be within the limits of the plant.

A61a: Per specification 31 23 19 (Dewatering), the Contractor shall prepare and submit a detailed dewatering plan, stamped and signed by the professional engineer or geologist responsible for its preparation. Dewatering system shall be as required to maintain the groundwater level at least 3 feet below the lowest required excavation depths.

Q61b: Can a single flow meter be used at the discharge point or is each well required to have a flow meter?

A61b: Per specification 31 23 19 (Dewatering), section 2.3, a flow meter with the accuracy of one gallon per minute and a total quantity gage with an accuracy of 10 gallons shall be placed within the discharge line of each dewatering well.

Q61c: Advise whether dewatering effluent shall be discharged to the river or the plant influent.

A61c: Per specification 31 23 19 (Dewatering), section 1.2.C, discharge f dewatering effluent shall comply with all required Federal, State or Local permits and approval from ODNR, OEPA and any other government agency with authority over the removal and release of groundwater to adjacent Waters of the US. In no case shall water be discharged to sanitary sewers.

Q61d: Do monitoring wells need to be abandoned with casing in place? Or removed and filled with stone?

A61d: Per specification 31 23 19 (Dewatering), section 3.3.K, abandon dewatering and/or monitoring wells in accordance with the well abandonment procedures of the Division of Water of the Ohio Department of Natural Resources.

Q62: Please provide drawings of the existing clarifiers numbered 1-6.

Q62: Copies of drawing numbers 5, 6, 7, and 8 from the 1995 City of Massillon, Ohio WWTP Improvements drawing set are attached at the end of this Addendum for reference only. This data was prepared by others and are NOT PART OF THE CONTRACT DOCUMENTS.

Q63: Tertiary Filters: The last line item in the schedule, 48' x 48" gate is noted as aluminum in the schedule. Sheet M-153 denotes the gate as stainless steel. Please confirm the required material of construction.

A63: The aluminum 48" gate shown at the end of the schedule in specification 35 20 16.2 is for the bypass channel with the tertiary filters shown on drawing M-504. Drawing M-153 shows the fine screen improvements in which the gates are stainless steel.

Q64: Drawing E-010 Shows reuse of RAS VFDs Drawing E-701 shows RAS VFDs to be removed Do we remove these 4 VFDs and replace with New or use existing? If new who provides and is there a spec on these drives. Drawing E-310 Show replacement of 6 VFDs. Who provides and is there a spec on these drives responsible to provide the Tertiary Filter Building PCS Control Panel?

A64: The four existing RAS VFD's are being removed and replaced with 4 NEMA 4X VFD's. The VFD's are being provided and installed by the Contractor under this contract. The 6 existing VFD'S at the Blower Control Building are to be removed and replaced with 6 new NEMA 12 VFD's, the VFD's are to be provided and installed by the Contractor under this contract. The VFD'S are specified in Specification 26 29 23 Variable Frequency Motor Controllers. See question and answer above (Q43a) for who is providing the Tertiary Filter Building Control Panel.

Q65: Please clarify a couple of discrepancies between the Declaration of Manufacturer (Section 00442) and the technical specifications. Section 46 21 43 lists Bracket Green (Ovivo) as an approved manufacturer however they are not listed in Section 00442. Also the declaration of manufacturer section lists Amwell for section 46 71 13, however Amwell is not listed as an approved manufacturer in 46 71 13.

A65: These have been clarified via addendum. Refer to addendum items.

Q66: In "SECTION 40 91 00, INSTRUMENTATION GENERAL" paragraph "2.2 FIELD INSTRUMENTS line L. Pressure Transmitter – Indicating states... "3. Proper sensor shall be furnished for application; gauge, differential, absolute pressure measurement" Can you define which application (gauge, dp, or absolute?) is used for each tagged unit? PE/PIT-350-1A PE/PIT-350-2A PE/PIT-350-3A PE/PIT-355-1A PE/PIT-355-2A PE/PIT-355-3A

A66: The pressure transmitters referenced are on the suction line of piping, thus the possibility of a vacuum exists and a gauge pressure configuration would be recommended.

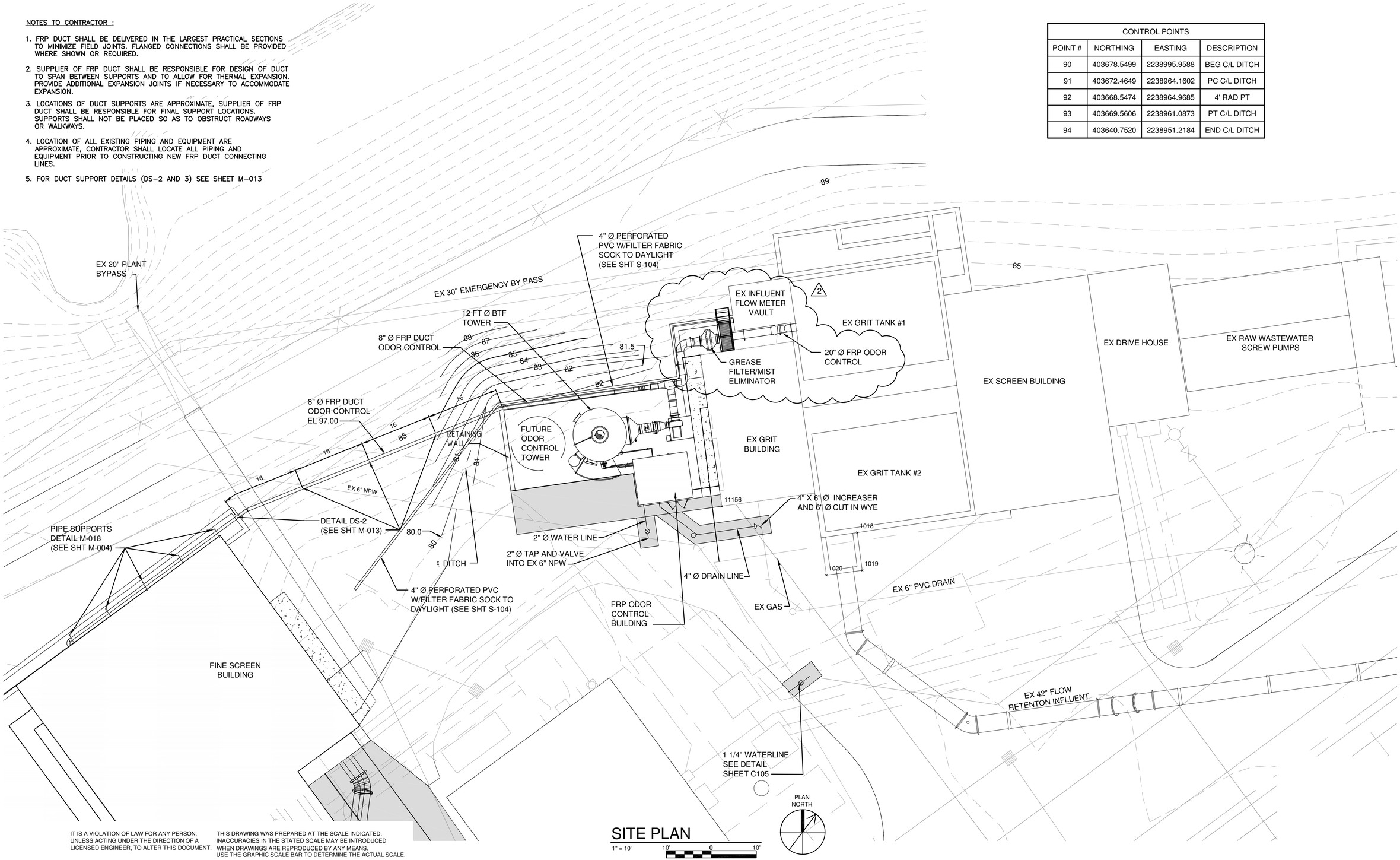
* * * * *

SAVED: 11/3/15 11:24 AM

NOTES TO CONTRACTOR :

1. FRP DUCT SHALL BE DELIVERED IN THE LARGEST PRACTICAL SECTIONS TO MINIMIZE FIELD JOINTS. FLANGED CONNECTIONS SHALL BE PROVIDED WHERE SHOWN OR REQUIRED.
2. SUPPLIER OF FRP DUCT SHALL BE RESPONSIBLE FOR DESIGN OF DUCT TO SPAN BETWEEN SUPPORTS AND TO ALLOW FOR THERMAL EXPANSION. PROVIDE ADDITIONAL EXPANSION JOINTS IF NECESSARY TO ACCOMMODATE EXPANSION.
3. LOCATIONS OF DUCT SUPPORTS ARE APPROXIMATE, SUPPLIER OF FRP DUCT SHALL BE RESPONSIBLE FOR FINAL SUPPORT LOCATIONS. SUPPORTS SHALL NOT BE PLACED SO AS TO OBSTRUCT ROADWAYS OR WALKWAYS.
4. LOCATION OF ALL EXISTING PIPING AND EQUIPMENT ARE APPROXIMATE, CONTRACTOR SHALL LOCATE ALL PIPING AND EQUIPMENT PRIOR TO CONSTRUCTING NEW FRP DUCT CONNECTING LINES.
5. FOR DUCT SUPPORT DETAILS (DS-2 AND 3) SEE SHEET M-013

CONTROL POINTS			
POINT #	NORTHING	EASTING	DESCRIPTION
90	403678.5499	2238995.9588	BEG C/L DITCH
91	403672.4649	2238964.1602	PC C/L DITCH
92	403668.5474	2238964.9685	4' RAD PT
93	403669.5606	2238961.0873	PT C/L DITCH
94	403640.7520	2238951.2184	END C/L DITCH



SITE PLAN
1" = 10'

IN CHARGE OF WAD
DESIGNED BY WAD
CHECKED BY WAD
DRAWN BY AJP/GJL

NO.	DATE	REVISION	INT.
2	11/03/2015	ADDENDUM NO. 3	WAD
1	09/23/2015	ISSUED FOR BID	WAD
0	03/19/2015	ISSUED FOR OEPA REVIEW	WAD

CTI / O'BRIEN & GERE JOINT VENTURE
CTI ENGINEERS, INC.
220 MARKET AVENUE SOUTH
SUITE 750
CANTON, OH 47702

CITY OF MASSILLON
2013 WWTP IMPROVEMENTS
MASSILLON, OHIO

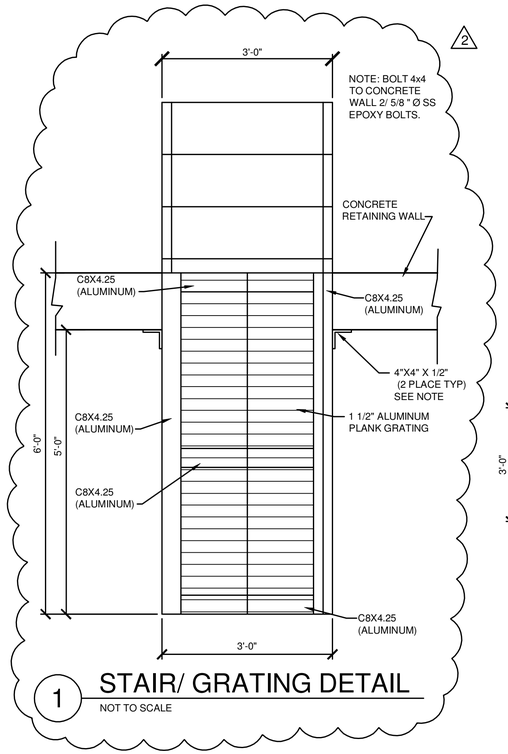
CIVIL
SITE

PROPOSED ODOR CONTROL SITE PLAN

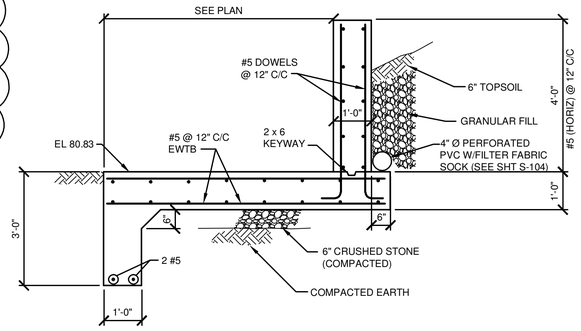
FILE NO. 23374.51633 -C109
DATE MARCH 19, 2015

C-110

E:\E14007 MASSILLON WWTP IMPROVEMENTS\GJL DRAWINGS\REV 51633-C-116.DWG



1 STAIR/ GRATING DETAIL
NOT TO SCALE



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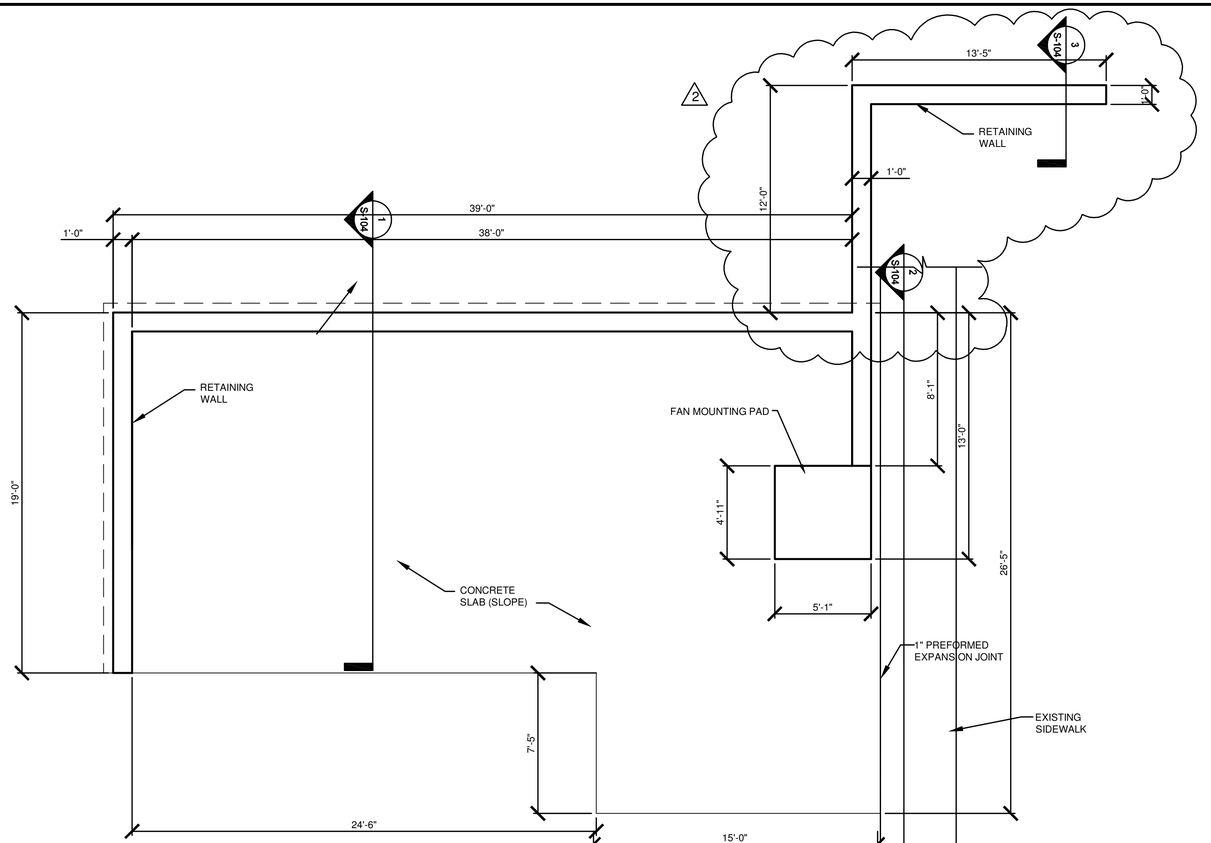
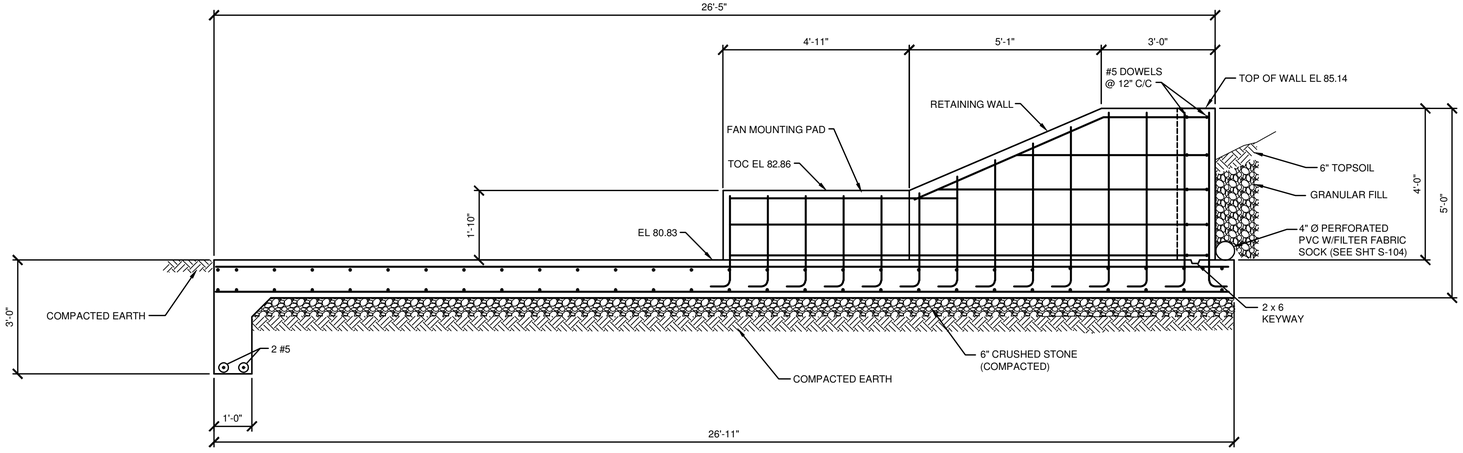


PLAN
1/4"=1'-0"



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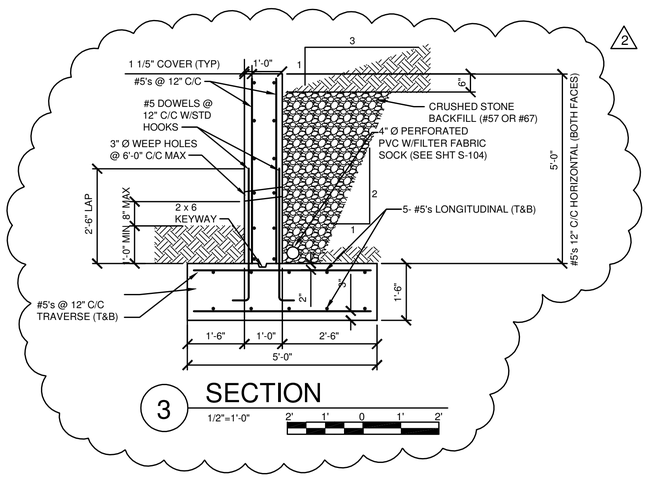

3 SECTION
1/2"=1'-0"

IN CHARGE OF WAD
DESIGNED BY KGP
CHECKED BY PCC
DRAWN BY GJL

NO.	DATE	REVISION	INT.
2	11/03/2015	ADDENDUM NO. 3	WAD
1	09/23/2015	ISSUED FOR BID	WAD
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CTI ENGINEERS, INC.
220 MARKET AVENUE SOUTH
SUITE 750
CANTON, OH 47702

CITY OF MASSILLON
2013 WWTP IMPROVEMENTS
MASSILLON, OHIO

STRUCTURAL
HEADWORKS

ODOR CONTROL PLAN AND SECTION

FILE NO. 23374.51633 -S104
DATE MARCH 19, 2015

S-104

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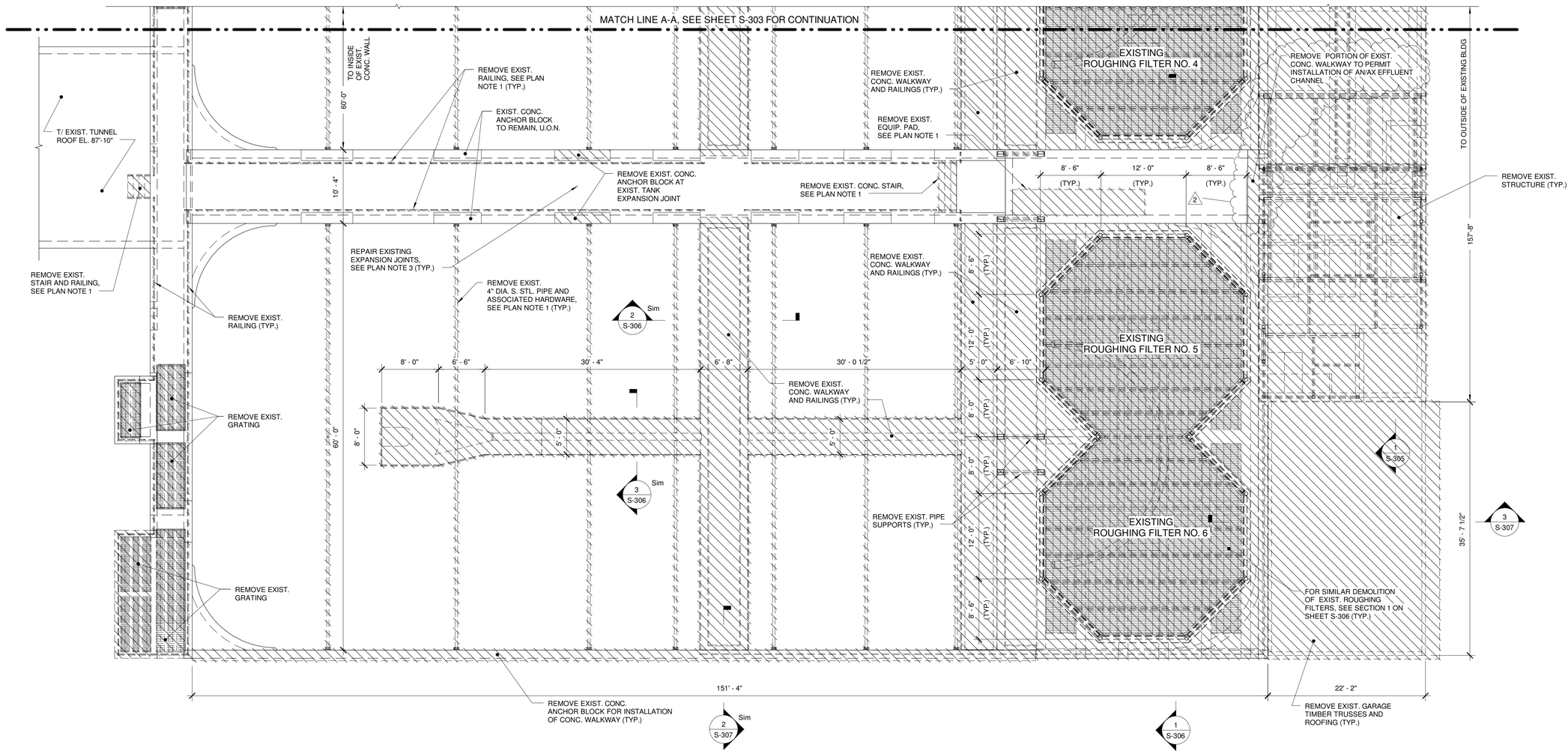

1 SOUTH DEMOLTION PLAN AT EL.143'-0"

1/8" = 1'-0"

8' 4' 0 8'

PLAN NORTH

PLAN NOTES:
1. FOLLOWING REMOVAL OF STRUCTURAL ELEMENTS REPAIR EXIST. CONC. SURFACES PER DETAILS ON S-008 (TYP.)
2. SEE SECTIONS ON SHEETS S-305 AND S-306 FOR DEMOLITION OF EXIST. SCREW PUMP STRUCTURE AND ROUGHING FILTERS.
3. AT EXISTING JOINTS IN GALLERY REMOVE EXISTING EXPANSION JOINT SEALANT AND REPAIR EXISTING EXPANSION JOINTS IN ACCORDANCE WITH TYPE 1 JOINT SEAL DETAIL ON SHEET S-005.

IN CHARGE OF	RFB
DESIGNED BY	TRL
CHECKED BY	CHL
DRAWN BY	RAE

NO.	DATE	REVISION	INT.
2	11/03/2015	ADDENDUM NO. 3	RFB
1	09/23/2015	ISSUED FOR BID	RFB
0	03/19/2015	ISSUED FOR OEPA REVIEW	RFB

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O'BRIEN & GERE
220 MARKET AVENUE SOUTH
SUITE 750
CANTON, OH 47702

CITY OF MASSILLON
2013 WWTP IMPROVEMENTS
MASSILLON, OHIO

STRUCTURAL
EXISTING AERATION TANKS
SOUTH DEMOLITION PLAN AT EL. 143'-0"

FILE NO. 23374.51633- S304
DATE MARCH 19, 2015

S-304

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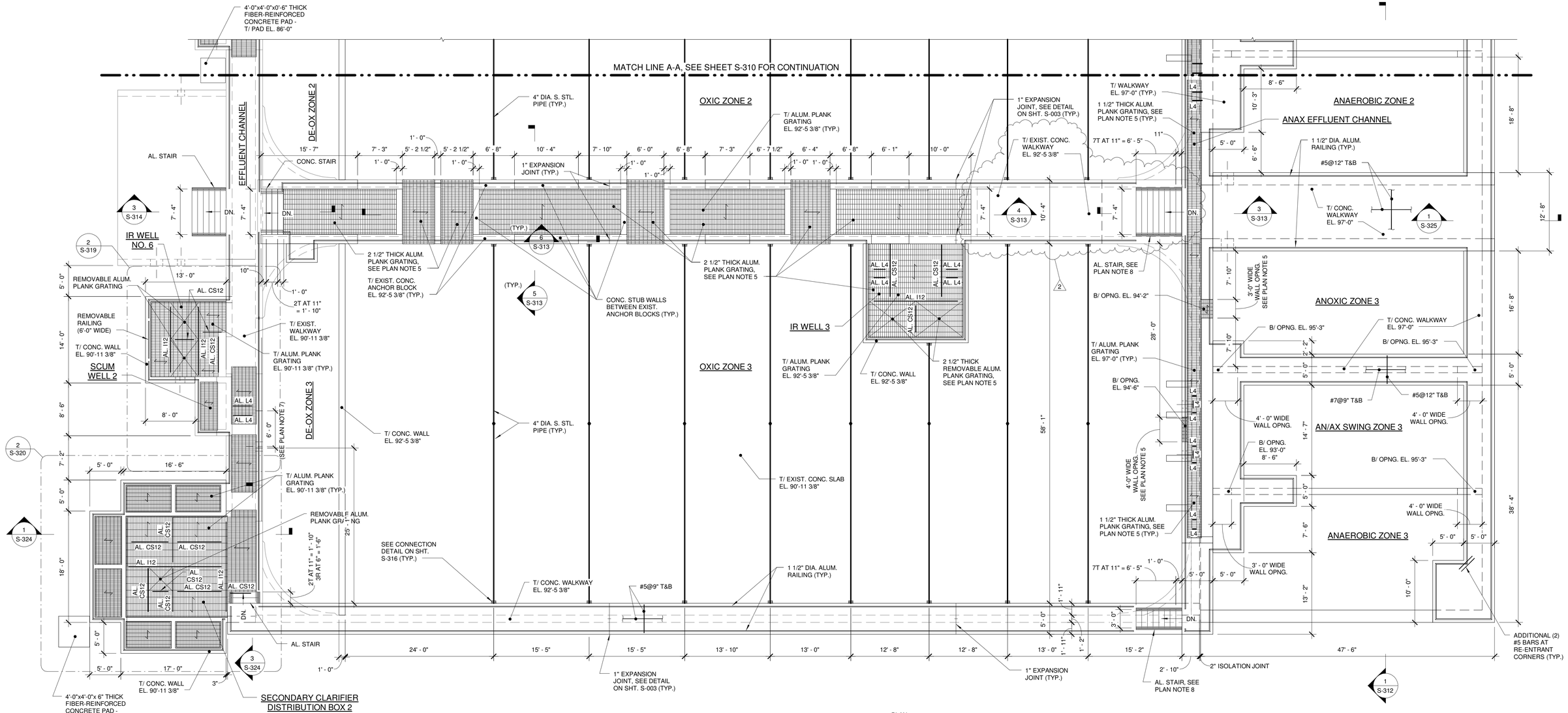

SOUTH PLAN AT EL. 97'-0"

1/8" = 1'-0"

PLAN NORTH

PLAN NOTES:
1. COORDINATE SIZE AND LOCATION OF STRUCTURAL FRAMING AND GRATING OPENINGS WITH MECH. DWGS. AND EQUIPMENT MFR.
2. AL. C12 INDICATES ALUMINUM CS12x11.8
3. AL. L4 INDICATES ALUMINUM L4x4x1/2"
4. AL. I12 INDICATES ALUMINUM I12x8.27
5. ALUM. PLANK GRATING SHALL BE DIAGONAL (ADA) PUNCHED (OPENINGS AT 3/4" ON CENTER), HEAVY DUTY, ALUMINUM PLANK WITH ALUMINUM OXIDE GRIT COATING FOR SLIP RESISTANCE. REFER TO ALUM. PLANK GRATING NOTES ON SHEET S-001 FOR ADDITIONAL INFORMATION.
6. LOCATE RAILING POSTS TO SPAN OVER OPENINGS AND PROVIDE MINIMUM 6" FROM EDGE OF CONCRETE TO CENTERLINE OF POST.
7. FIBER REINF. CONC. INFILL, 1'-2" WIDE, CENTERED IN PORTION OF EXIST. OPENING BELOW SLAB. ROUGHEN SURFACE OF EXIST. CONC. TO 1/4" AMPLITUDE AND APPLY BONDING AGENT.
8. FIELD VERIFY RISE AND RUN AND FABRICATE STAIR AFTER BIOLOGICAL REACTOR TANKS LEAK TESTING HAS BEEN COMPLETED.

IN CHARGE OF	RFB
DESIGNED BY	TRL
CHECKED BY	CHL
DRAWN BY	RAE

NO.	DATE	REVISION	INT.
2	11/03/2015	ADDENDUM NO. 3	RFB
1	09/23/2015	ISSUED FOR BID	RFB
0	03/19/2015	ISSUED FOR OEPA REVIEW	RFB

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O'BRIEN & GERE
220 MARKET AVENUE SOUTH
SUITE 750
CANTON, OH 47702

CITY OF MASSILLON
2013 WWTP IMPROVEMENTS
MASSILLON, OHIO

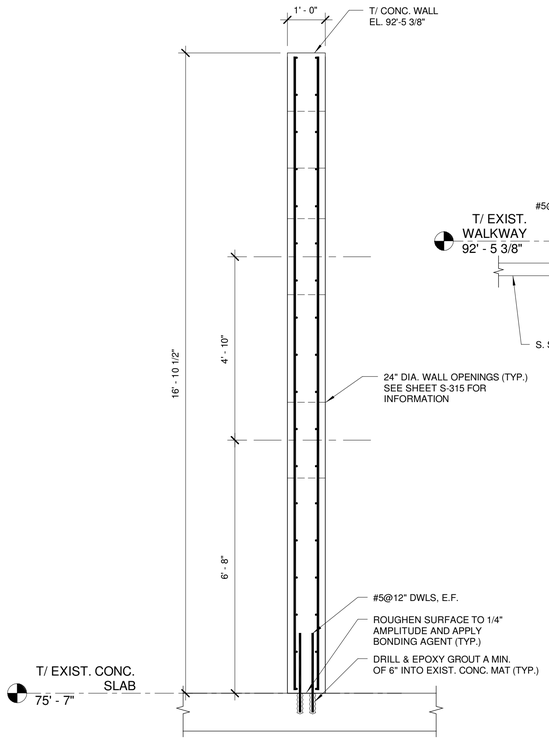
STRUCTURAL
BIOLOGICAL REACTOR TANKS

SOUTH PLAN AT EL. 97'-0"

FILE NO. 23374.51633- S311

DATE MARCH 19, 2015

S-311



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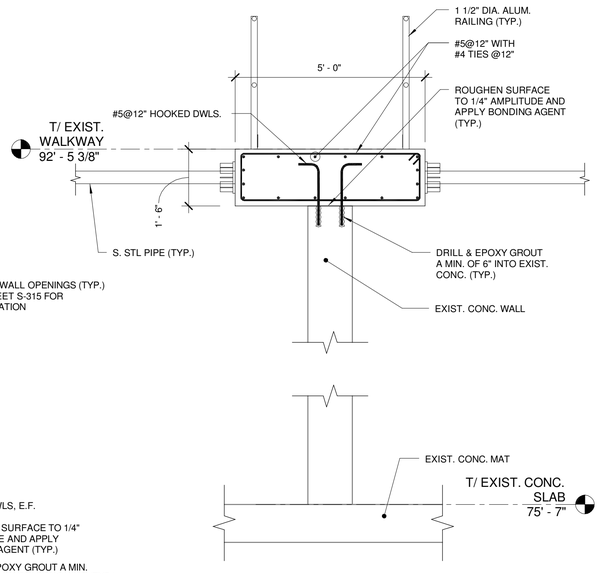

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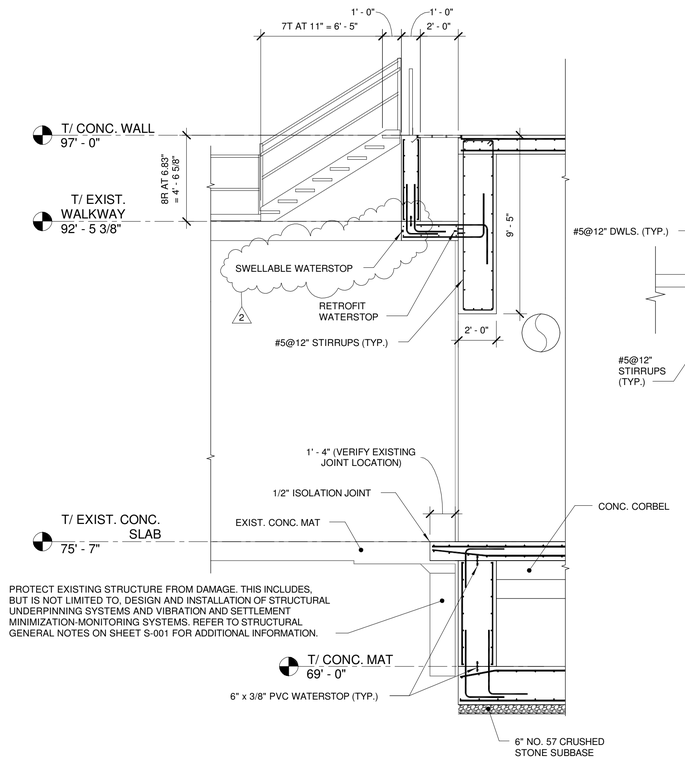

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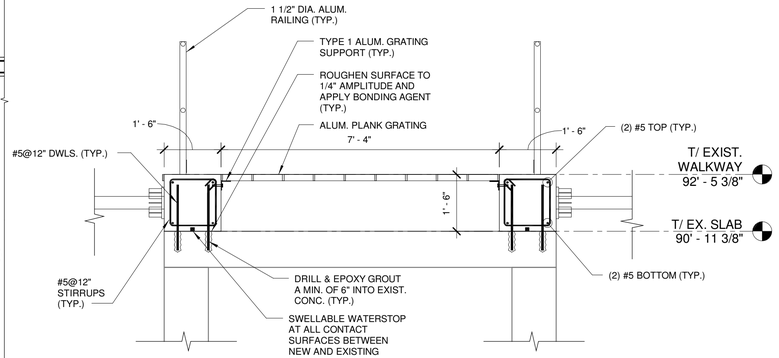
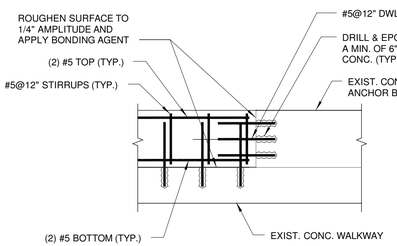
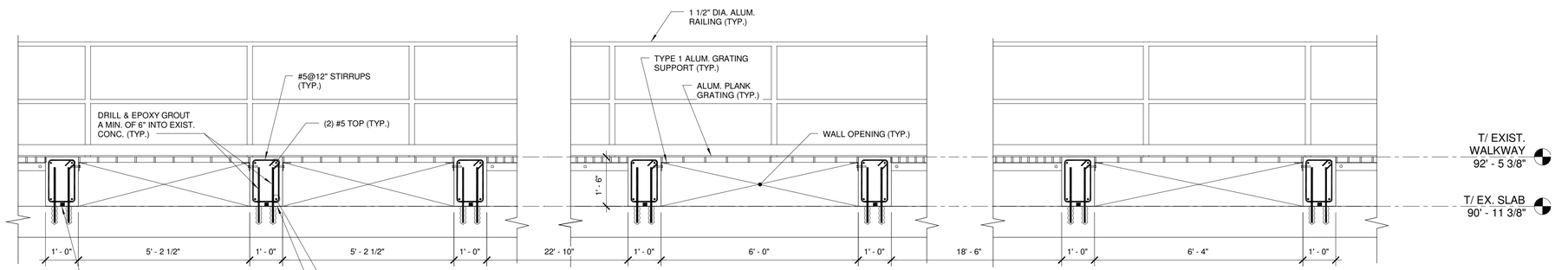


5 SECTION
1/2" = 1'-0"



6 SECTION
1/2" = 1'-0"

SECTION NOTES:
1. ISOLATION JOINTS SHALL CONSIST OF POLYETHYLENE FOAM EXPANSION JOINT FILLER AT CONTACT SURFACES BETWEEN NEW AND EXISTING STRUCTURES.



4 SECTION
1/2" = 1'-0"

IN CHARGE OF	RFB
DESIGNED BY	TRL
CHECKED BY	CHL
DRAWN BY	RAE

NO.	DATE	REVISION	INT.
2	11/03/2015	ADDENDUM NO. 3	RFB
1	09/23/2015	ISSUED FOR BID	RFB
0	03/19/2015	ISSUED FOR OEPA REVIEW	RFB

CTI / O'BRIEN & GERE JOINT VENTURE
O'BRIEN & GERE
220 MARKET AVENUE SOUTH
SUITE 750
CANTON, OH 47702

CITY OF MASSILLON
2013 WWTP IMPROVEMENTS
MASSILLON, OHIO

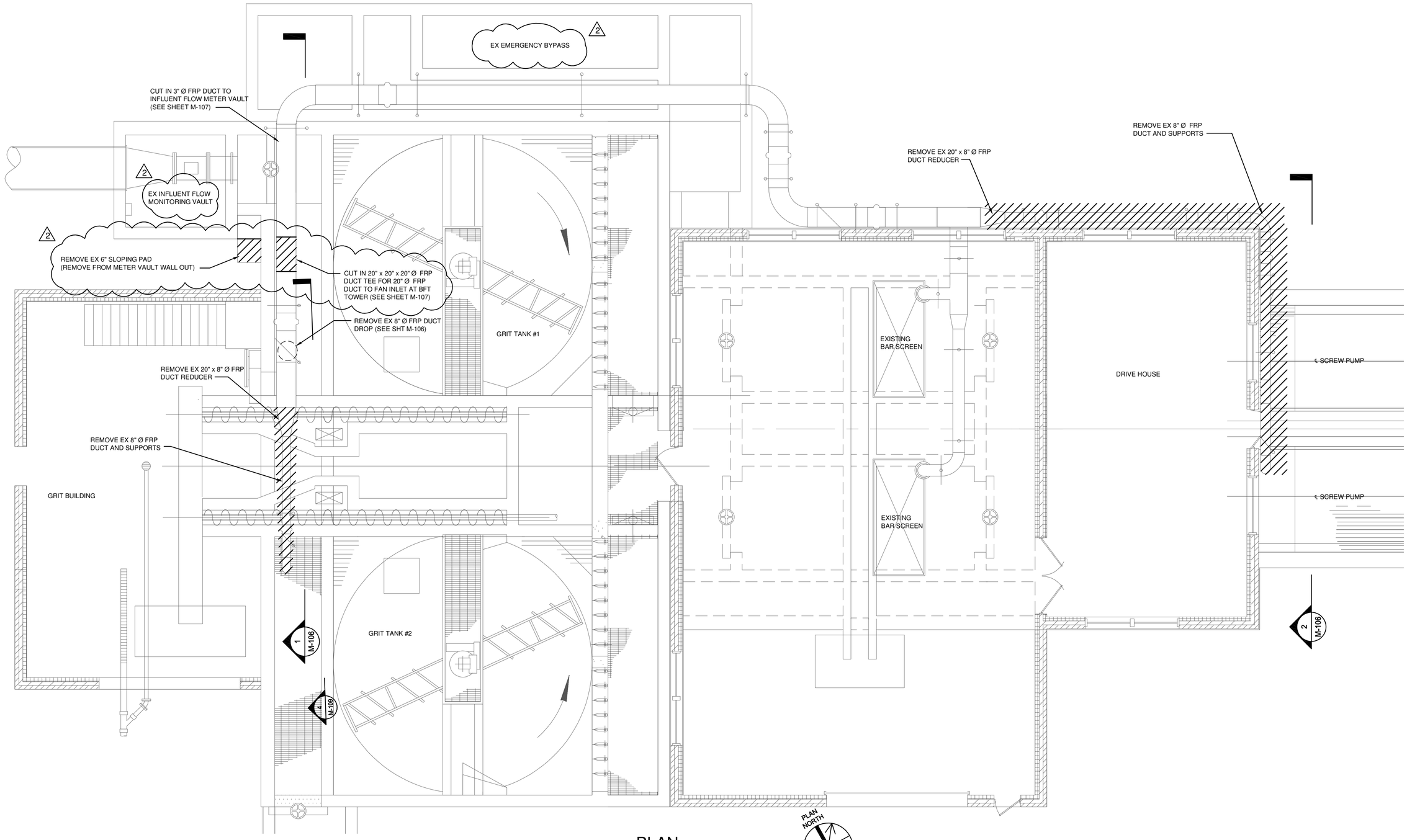
STRUCTURAL
BIOLOGICAL REACTOR TANKS

MODIFICATION SECTIONS

FILE NO.
23374.51633- S313

DATE
MARCH 19, 2015

S-313



PLAN

1/4"=1'-0"

4' 2' 0 2' 4'

IN CHARGE OF WAD
DESIGNED BY WAD/DRB
CHECKED BY RWR
DRAWN BY GJL

NO.	DATE	REVISION	INT.
2	11/03/2015	ADDENDUM NO. 3	WAD
1	09/23/2015	ISSUED FOR BID	WAD
0	03/19/2015	ISSUED FOR OEPA REVIEW	WAD

CTI / O'BRIEN & GERE JOINT VENTURE
CTI ENGINEERS, INC.
220 MARKET AVENUE SOUTH
SUITE 750
CANTON, OH 47702

CITY OF MASSILLON
2013 WWTP IMPROVEMENTS
MASSILLON, OHIO

MECHANICAL
HEADWORKS

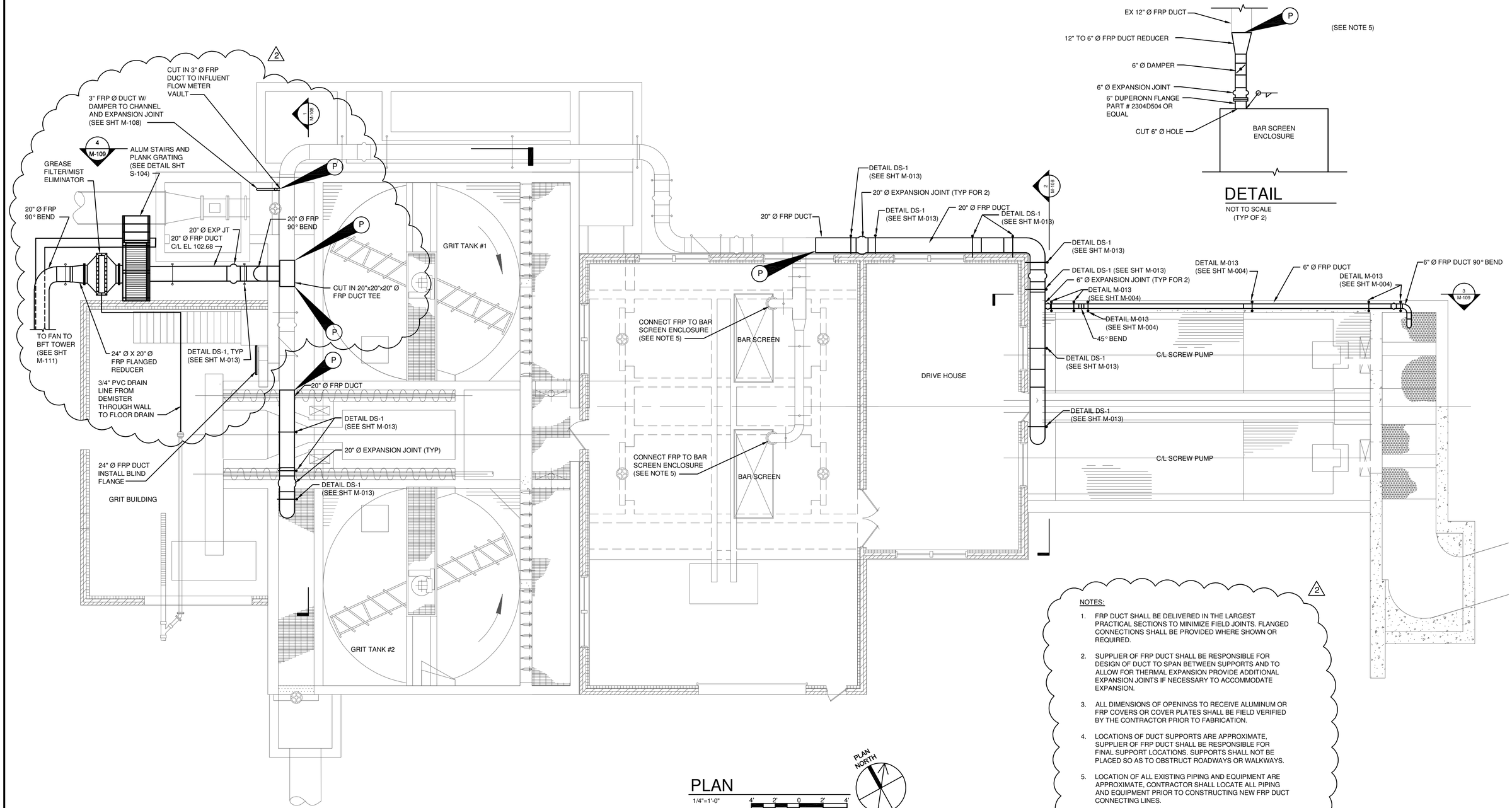
ODOR CONTROL DEMOLITION PLAN

FILE NO. 23374.51633 -M105

DATE MARCH 19, 2015

M-105

SAVED: 11/3/15 11:27 AM



DETAIL

NOT TO SCALE
(TYP OF 2)

PLAN

1/4"=1'-0"

4' 2' 0 2' 4'

PLAN NORTH

2

NOTES:

1. FRP DUCT SHALL BE DELIVERED IN THE LARGEST PRACTICAL SECTIONS TO MINIMIZE FIELD JOINTS. FLANGED CONNECTIONS SHALL BE PROVIDED WHERE SHOWN OR REQUIRED.
2. SUPPLIER OF FRP DUCT SHALL BE RESPONSIBLE FOR DESIGN OF DUCT TO SPAN BETWEEN SUPPORTS AND TO ALLOW FOR THERMAL EXPANSION PROVIDE ADDITIONAL EXPANSION JOINTS IF NECESSARY TO ACCOMMODATE EXPANSION.
3. ALL DIMENSIONS OF OPENINGS TO RECEIVE ALUMINUM OR FRP COVERS OR COVER PLATES SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO FABRICATION.
4. LOCATIONS OF DUCT SUPPORTS ARE APPROXIMATE, SUPPLIER OF FRP DUCT SHALL BE RESPONSIBLE FOR FINAL SUPPORT LOCATIONS. SUPPORTS SHALL NOT BE PLACED SO AS TO OBSTRUCT ROADWAYS OR WALKWAYS.
5. LOCATION OF ALL EXISTING PIPING AND EQUIPMENT ARE APPROXIMATE, CONTRACTOR SHALL LOCATE ALL PIPING AND EQUIPMENT PRIOR TO CONSTRUCTING NEW FRP DUCT CONNECTING LINES.
6. FOR DUCT SUPPORT DETAILS SEE SHEETS M-004 AND M-013.

IN CHARGE OF WAD
DESIGNED BY WAD/DRB
CHECKED BY RWR
DRAWN BY GJL

NO.	DATE	REVISION	INT.
2	11/03/2015	ADDENDUM NO. 3	WAD
1	09/23/2015	ISSUED FOR BID	WAD
0	03/19/2015	ISSUED FOR OEPA REVIEW	WAD

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ENGINEERS, INC.
220 MARKET AVENUE SOUTH
SUITE 750
CANTON, OH 47702

CITY OF MASSILLON
2013 WWTP IMPROVEMENTS
MASSILLON, OHIO

MECHANICAL
HEADWORKS

ODOR CONTROL PLAN AND DETAIL

FILE NO. 23374.51633 -M107
DATE MARCH 19, 2015

M-107

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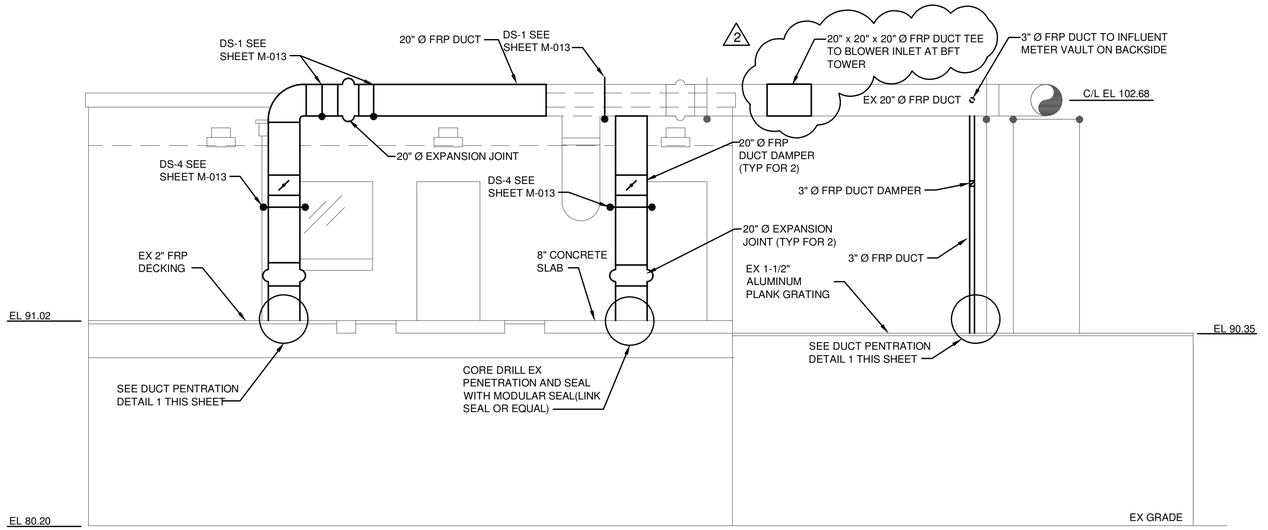
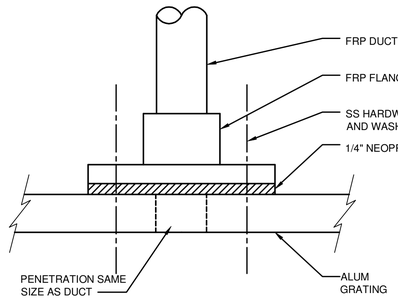
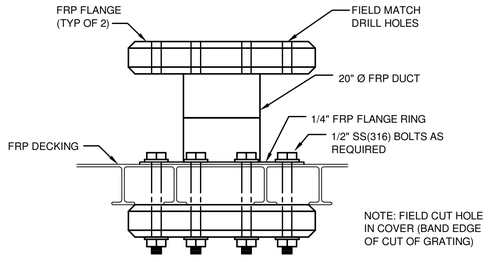


1 SECTION
1/4"=1'-0"

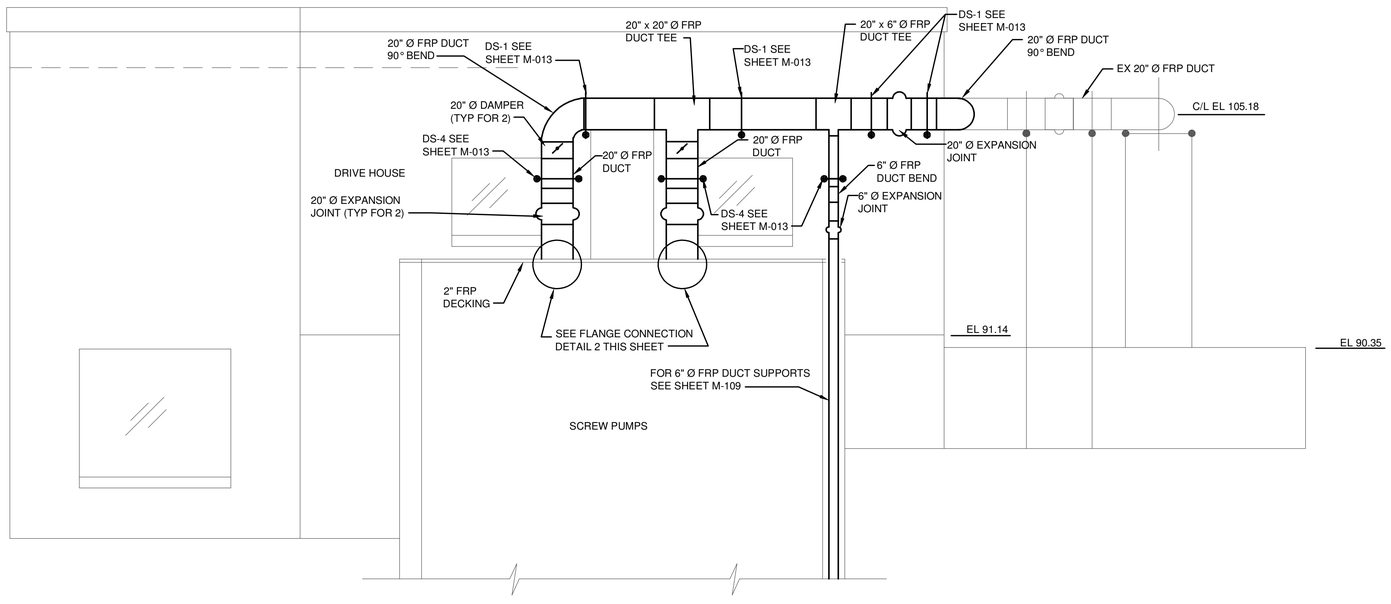
NOTES:
1. LOCATE DAMPERS TO BE ACCESSED WITHOUT LADDERS (WHERE POSSIBLE).
2. FOR PIPE SUPPORT DETAIL SEE SHEET M-004.



1 DUCT PENETRATION DETAIL
NOT TO SCALE



2 FLANGE CONNECTION DETAIL
NOT TO SCALE



2 SECTION
1/4"=1'-0"

IN CHARGE OF WAD
DESIGNED BY WAD/DRB
CHECKED BY RWR
DRAWN BY GJL

NO.	DATE	REVISION	INT.
2	11/03/2015	ADDENDUM NO. 3	WAD
1	09/23/2015	ISSUED FOR BID	WAD
0	03/19/2015	ISSUED FOR OEPA REVIEW	WAD

CTI / O'BRIEN & GERE JOINT VENTURE
CTI ENGINEERS, INC.
220 MARKET AVENUE SOUTH
SUITE 750
CANTON, OH 47702

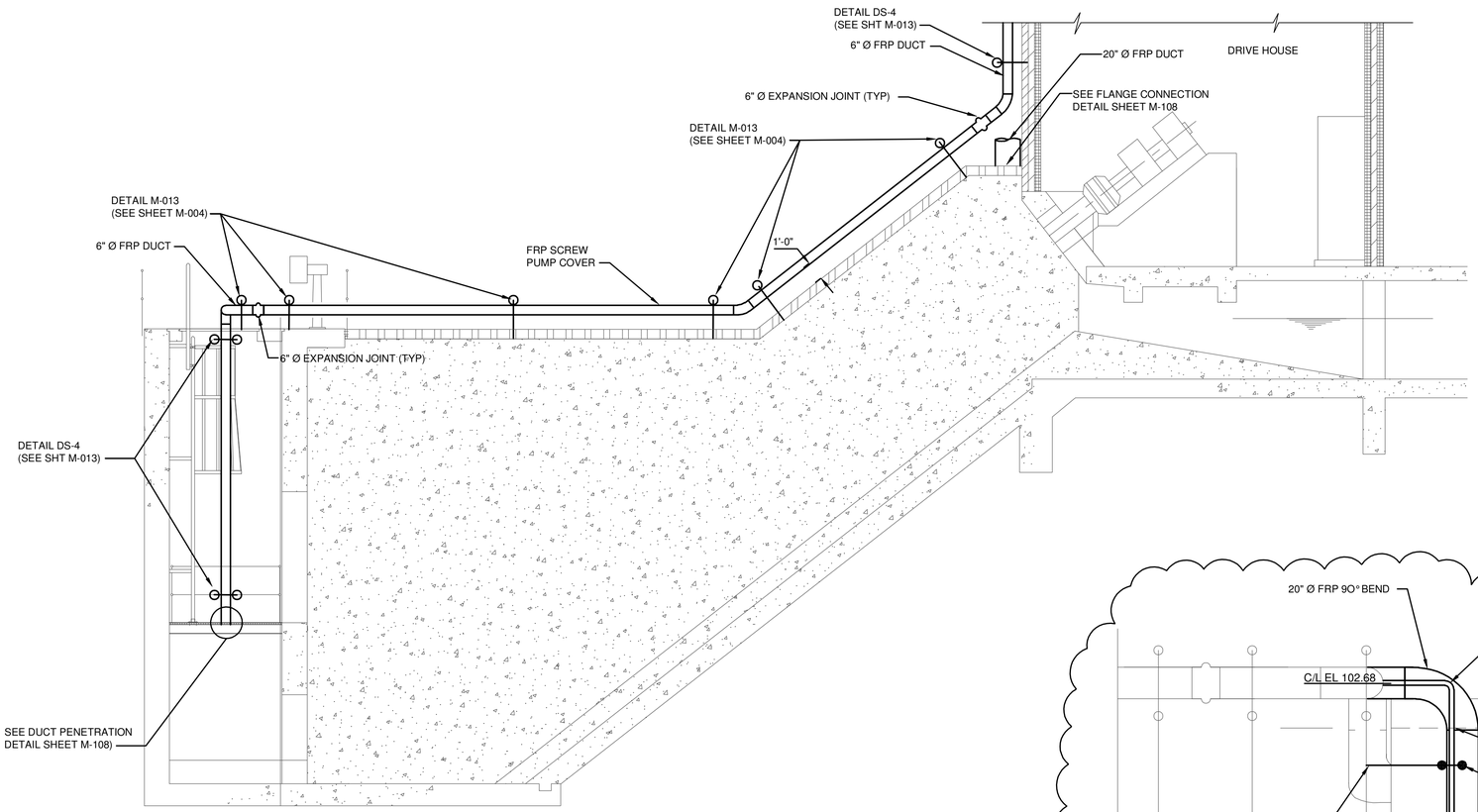
CITY OF MASSILLON
2013 WWTP IMPROVEMENTS
MASSILLON, OHIO

MECHANICAL
HEADWORKS
ODOR CONTROL SECTIONS AND DETAILS

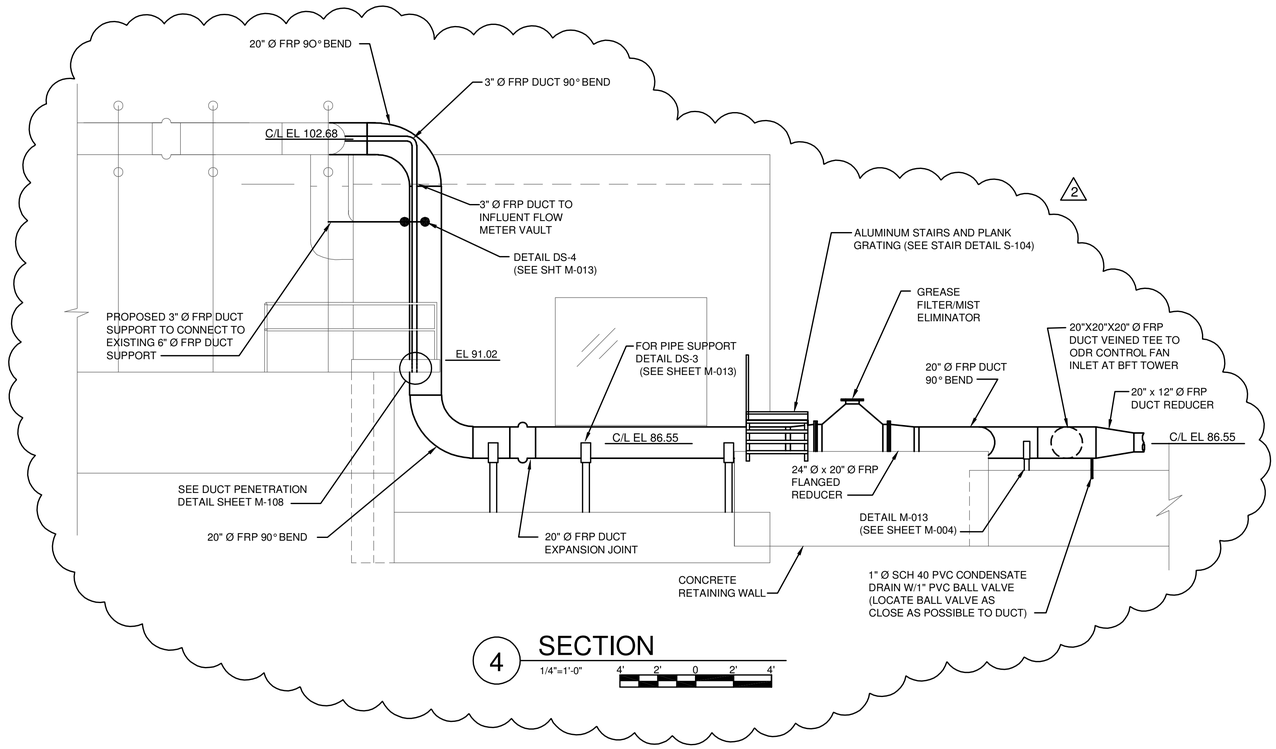
FILE NO. 23374.51633 -M108
DATE MARCH 19, 2015

M-108

SAVED: 11/3/15 10:43 AM



3 SECTION
1/4"=1'-0" 4' 2' 0 2' 4'



4 SECTION
1/4"=1'-0" 4' 2' 0 2' 4'

IN CHARGE OF WAD
DESIGNED BY WAD/DRB
CHECKED BY RWR
DRAWN BY GJL

NO.	DATE	REVISION	INT.
2	11/03/2015	ADDENDUM NO. 3	WAD
1	09/23/2015	ISSUED FOR BID	WAD
0	03/19/2015	ISSUED FOR OEPA REVIEW	WAD

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SUITE 750
CANTON, OH 47702

CITY OF MASSILLON
2013 WWTP IMPROVEMENTS
MASSILLON, OHIO

MECHANICAL
HEADWORKS

ODOR CONTROL SECTIONS AND DETAIL

FILE NO. 23374.51633 -M109
DATE MARCH 19, 2015
M-109

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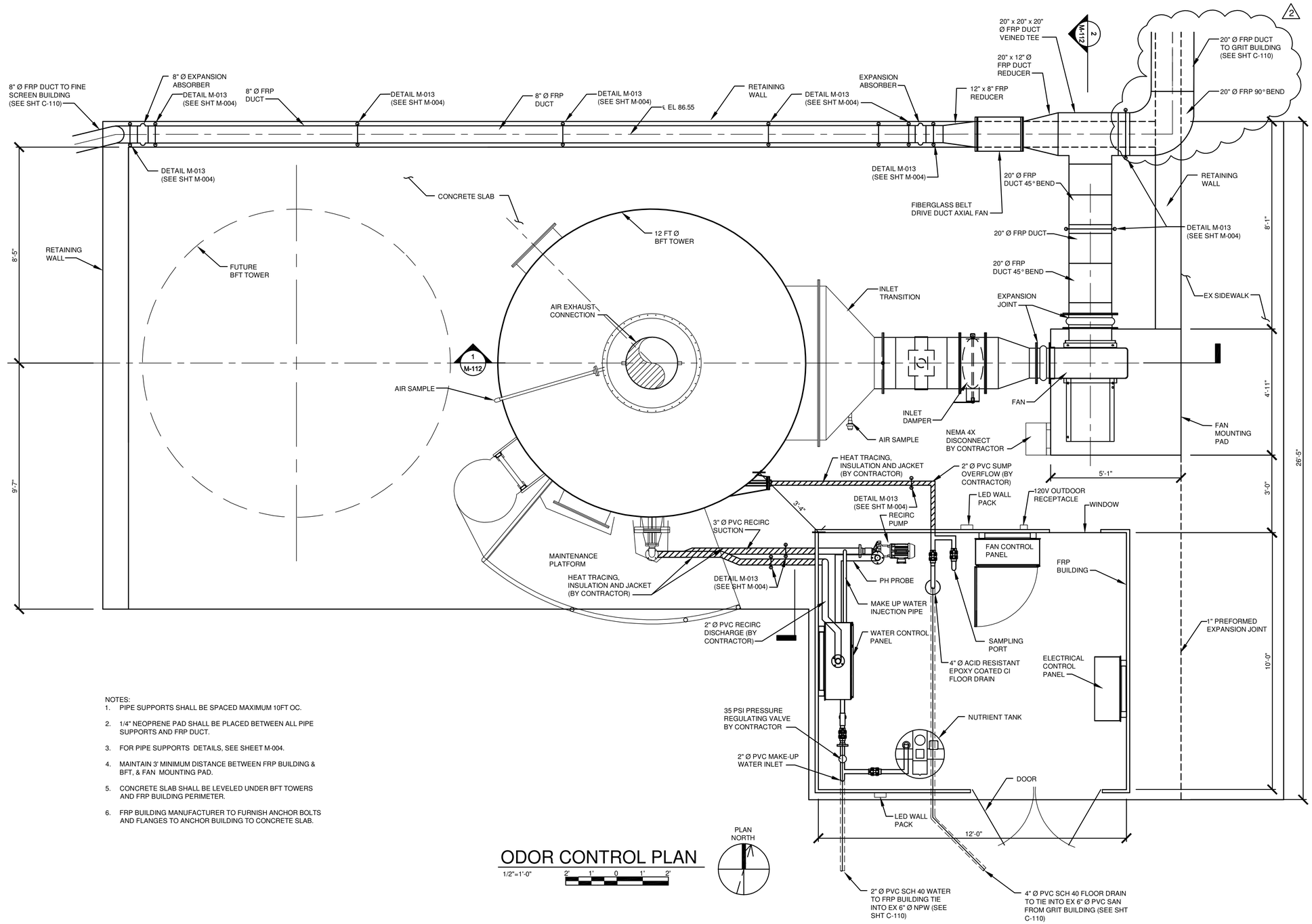


NOTES:
1. PIPE SUPPORTS SHALL BE SPACED MAXIMUM 10FT OC.
2. 1/4" NEOPRENE PAD SHALL BE PLACED BETWEEN ALL PIPE SUPPORTS AND FRP DUCT.
3. FOR PIPE SUPPORTS DETAILS, SEE SHEET M-004.
4. MAINTAIN 3' MINIMUM DISTANCE BETWEEN FRP BUILDING & BFT, & FAN MOUNTING PAD.
5. CONCRETE SLAB SHALL BE LEVELED UNDER BFT TOWERS AND FRP BUILDING PERIMETER.
6. FRP BUILDING MANUFACTURER TO FURNISH ANCHOR BOLTS AND FLANGES TO ANCHOR BUILDING TO CONCRETE SLAB.

ODOR CONTROL PLAN

1/2"=1'-0" (2' 1' 0 1' 2')

PLAN NORTH

IN CHARGE OF WAD
DESIGNED BY DRB/WAD
CHECKED BY RWR
DRAWN BY GJL

NO.	DATE	REVISION	INT.
2	11/03/2015	ADDENDUM NO. 3	WAD
1	9/23/2015	ISSUED FOR BID	WAD
0	03/19/2015	ISSUED FOR OEPA REVIEW	WAD

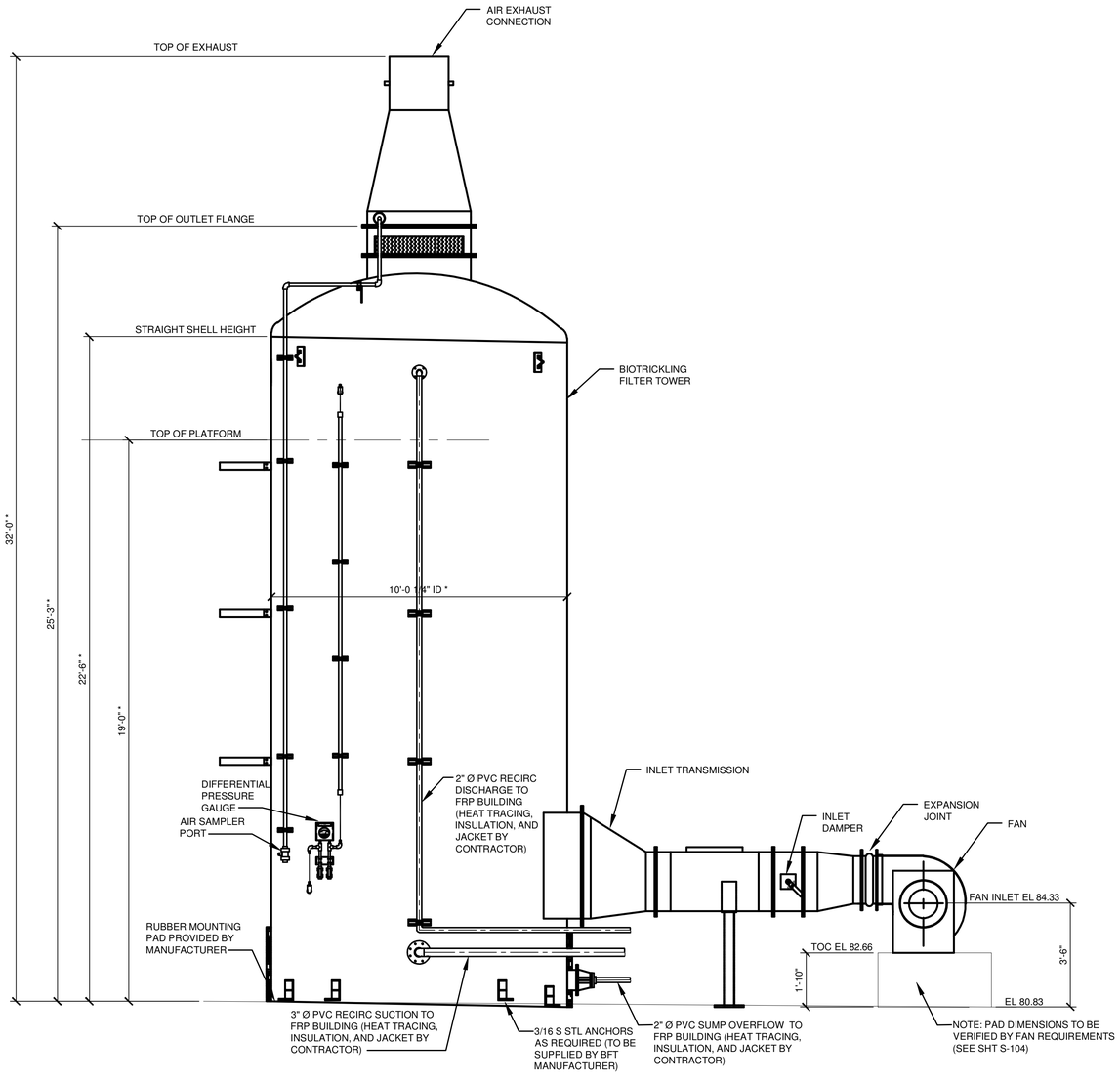
CTI / O'BRIEN & GERE JOINT VENTURE
CTI ENGINEERS, INC.
220 MARKET AVENUE SOUTH
SUITE 750
CANTON, OH 47702

CITY OF MASSILLON
2013 WWTP IMPROVEMENTS
MASSILLON, OHIO

MECHANICAL
HEADWORKS
ODOR CONTROL PLAN

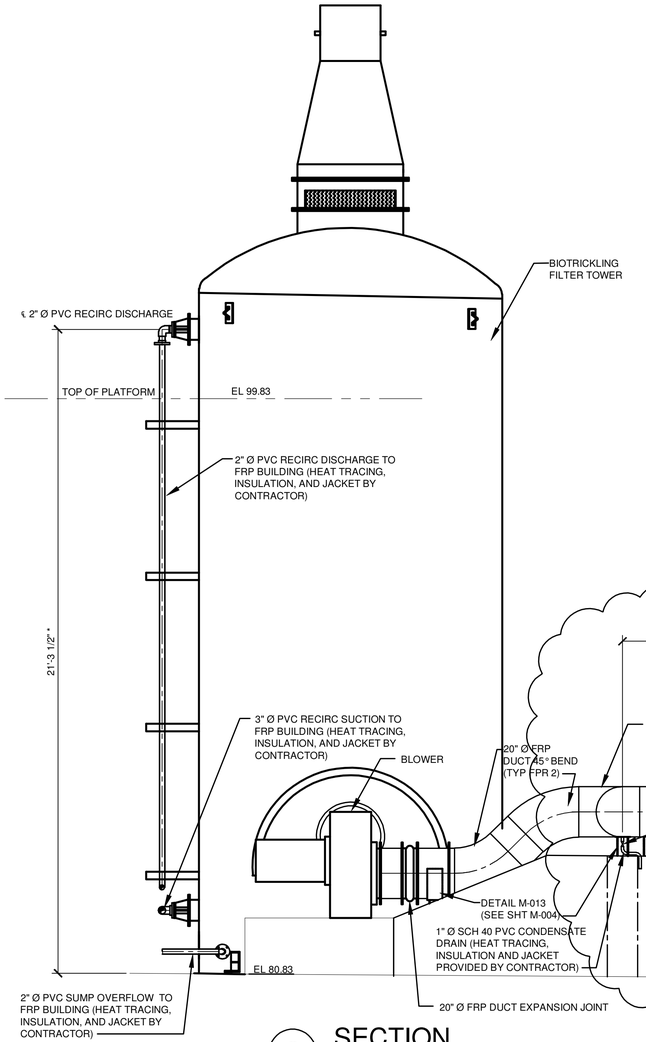
FILE NO. 23374.51633 -M111
DATE MARCH 19, 2015
M-111

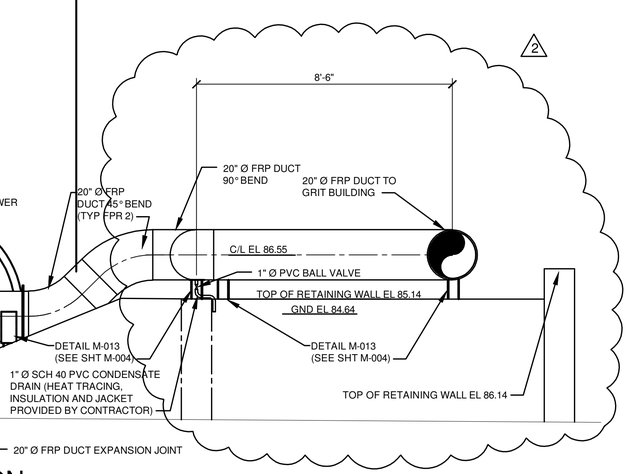
NOTE:
1/4" NEOPRENE PAD SHALL BE PLACED
BETWEEN ALL PIPE SUPPORTS AND FRP DUCT.



* TO BE DETERMINED BY THE MANUFACTURER

1 SECTION
NOT TO SCALE





2 SECTION
NOT TO SCALE

IN CHARGE OF WAD
DESIGNED BY WAD/DRB
CHECKED BY RWR
DRAWN BY GJL

NO.	DATE	REVISION	INT.
2	11/03/2015	ADDENDUM NO. 3	WAD
1	9/23/2015	ISSUED FOR BID	WAD
0	03/19/2015	ISSUED FOR OEPA REVIEW	WAD

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CTI ENGINEERS, INC.
220 MARKET AVENUE SOUTH
SUITE 750
CANTON, OH 47702

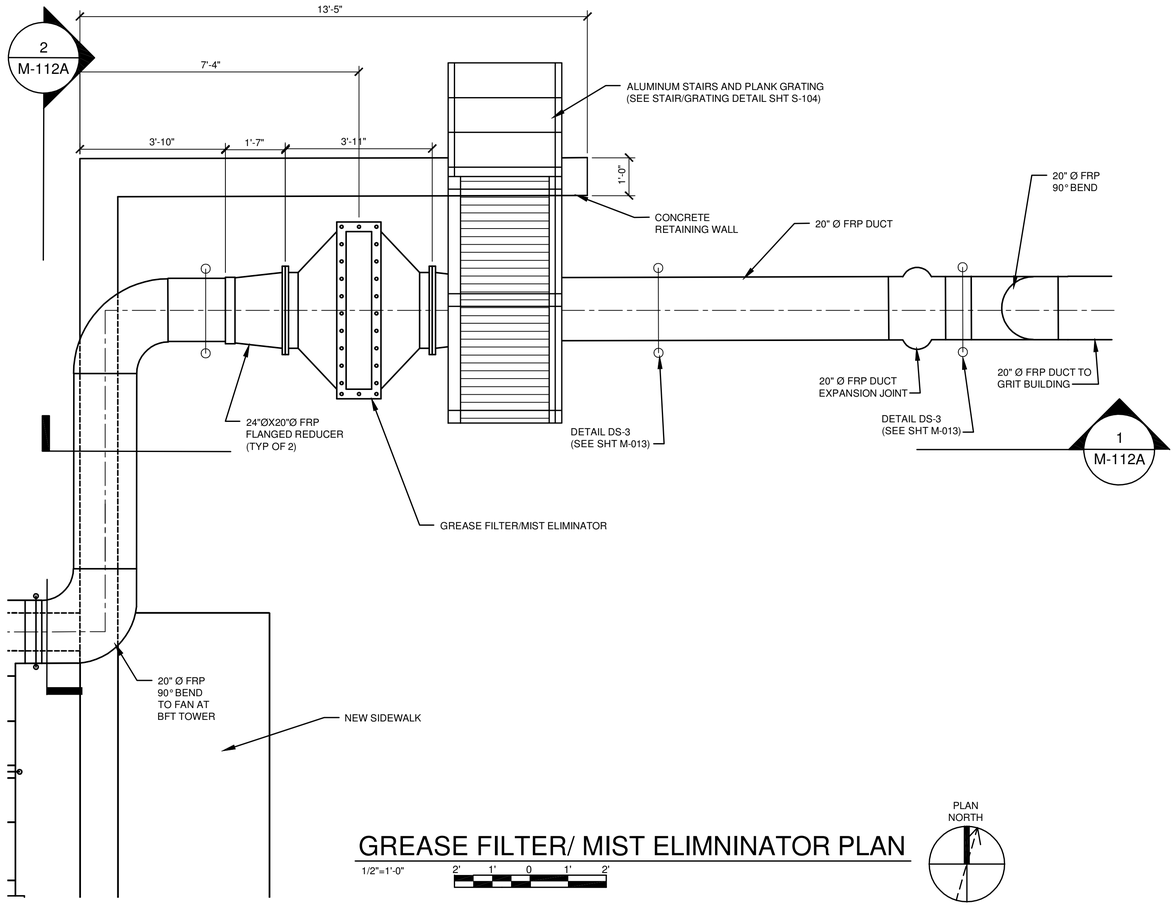
CITY OF MASSILLON
2013 WWTP IMPROVEMENTS
MASSILLON, OHIO

MECHANICAL
HEADWORKS

ODOR CONTROL SECTIONS

FILE NO. 23374.51633 -M112
DATE MARCH 19, 2015

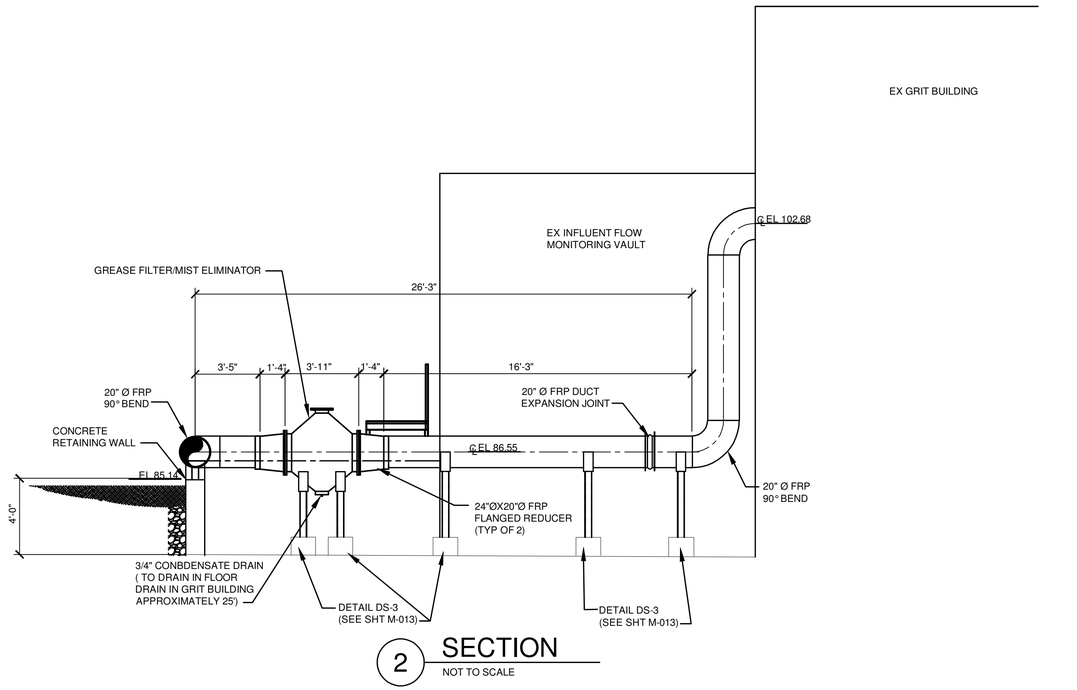
M-112



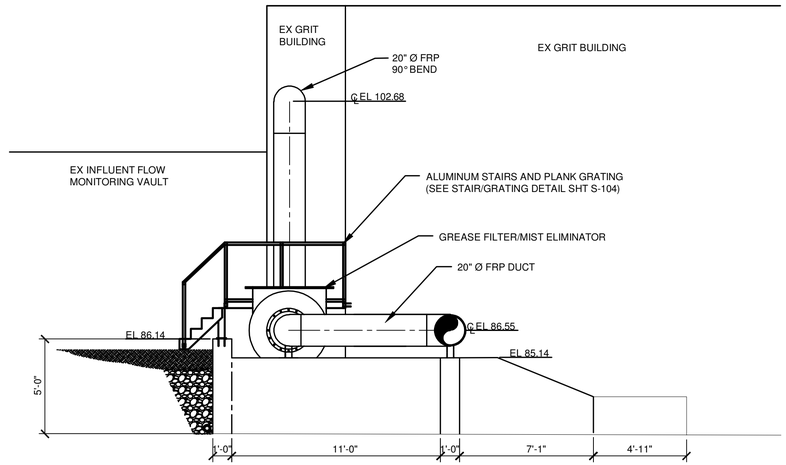
GREASE FILTER/ MIST ELIMNINATOR PLAN

1/2"=1'-0" 2' 1' 0 1' 2'

PLAN NORTH



2 SECTION
NOT TO SCALE



1 SECTION
NOT TO SCALE

IN CHARGE OF WAD
DESIGNED BY WAD/DRB
CHECKED BY RWR
DRAWN BY GJL

NO.	DATE	REVISION	INT.
0	11/03/2015	ADDENDUM NO. 3	WAD

CTI / O'BRIEN & GERE JOINT VENTURE
CTI ENGINEERS, INC.
220 MARKET AVENUE SOUTH
SUITE 750
CANTON, OH 47702

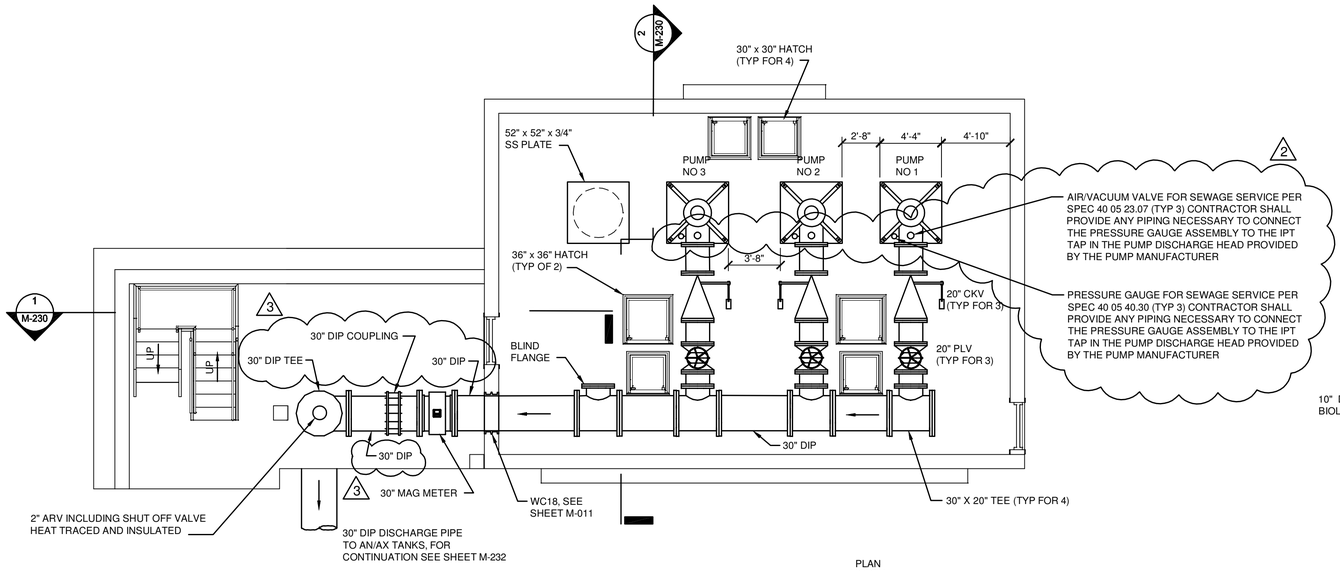
CITY OF MASSILLON
2013 WWTP IMPROVEMENTS
MASSILLON, OHIO

MECHANICAL
HEADWORKS

ODOR CONTROL PLAN AND SECIONS

FILE NO. 23374.51633 -M112A
DATE NOVEMBER 03, 2015

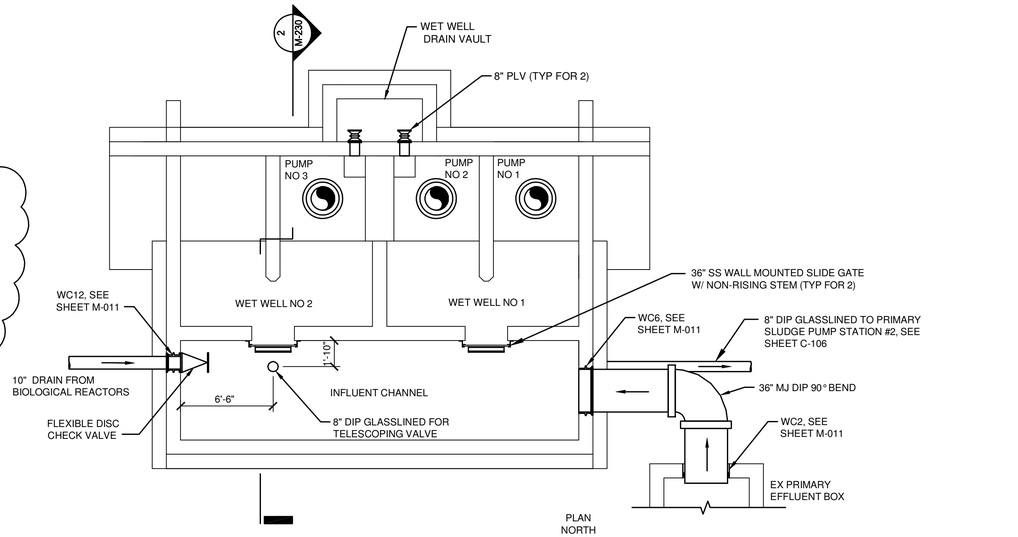
M-112A



MOTOR ROOM PLAN

3/16"=1'-0" 5' 0 5'

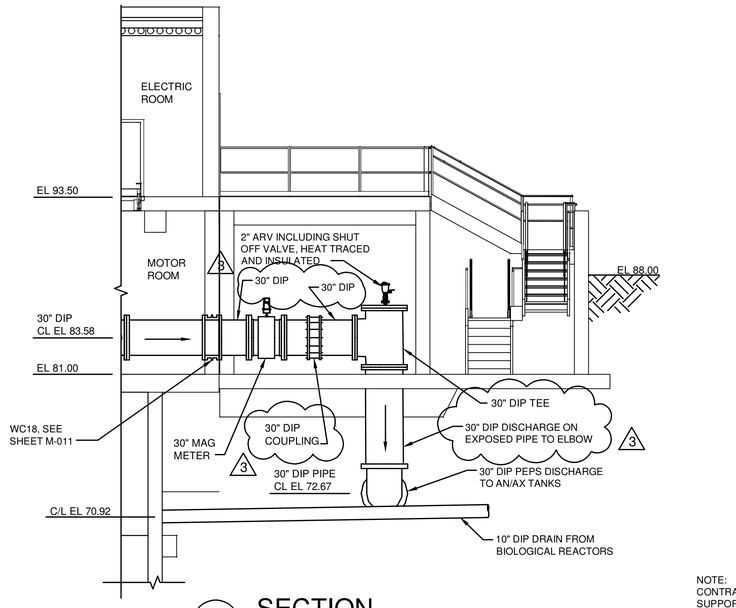
PLAN NORTH



WET WELL PLAN

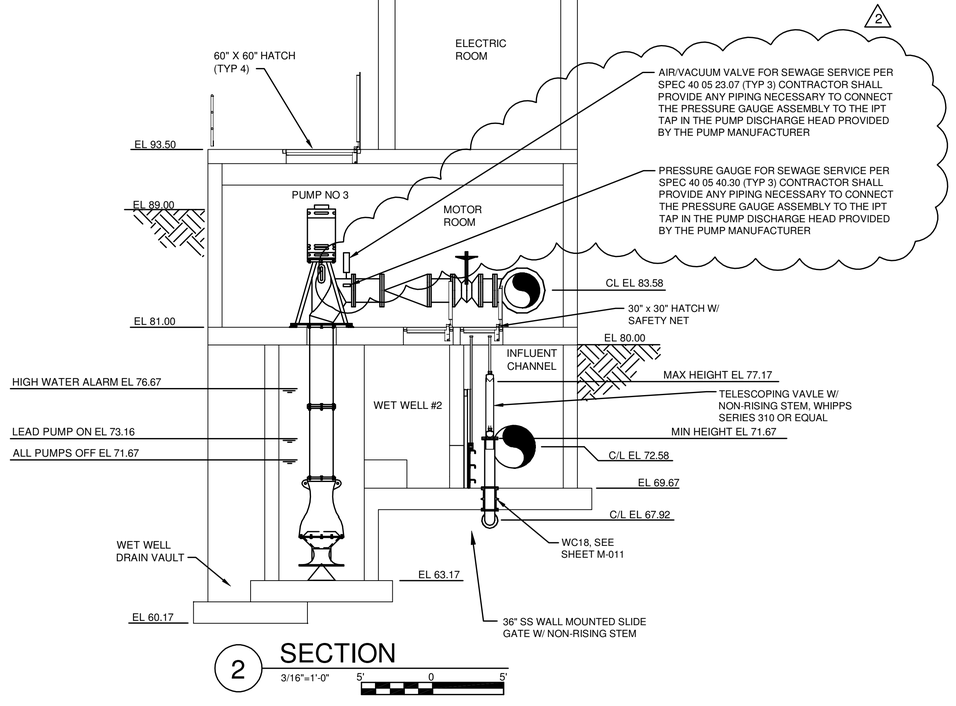
3/16"=1'-0" 5' 0 5'

PLAN NORTH



1 SECTION

3/16"=1'-0" 5' 0 5'



2 SECTION

3/16"=1'-0" 5' 0 5'

NOTE:
CONTRACTOR TO IDENTIFY AND PROPOSE SPECIFIC PIPING SUPPORTS AND SUBMIT AS SHOP DRAWING. ALL PIPES TO BE SUPPORTED FROM FLOOR. SEE DETAIL M-013 ON SHEET M-004.

IN CHARGE OF WAD
DESIGNED BY DBK
CHECKED BY RWR
DRAWN BY JAM

NO.	DATE	REVISION	INT.
3	11/03/2015	ADDENDUM NO. 3	RWR
2	10/23/2015	ADDENDUM NO. 1	RWR
1	09/23/2015	ISSUED FOR BID	RWR
0	03/19/2015	ISSUED FOR OEPA REVIEW	RWR

CTI / O'BRIEN & GERE JOINT VENTURE
CTI ENGINEERS, INC.
220 MARKET AVENUE SOUTH
SUITE 750
CANTON, OH 47702

CITY OF MASSILLON
2013 WWTP IMPROVEMENTS
MASSILLON, OHIO

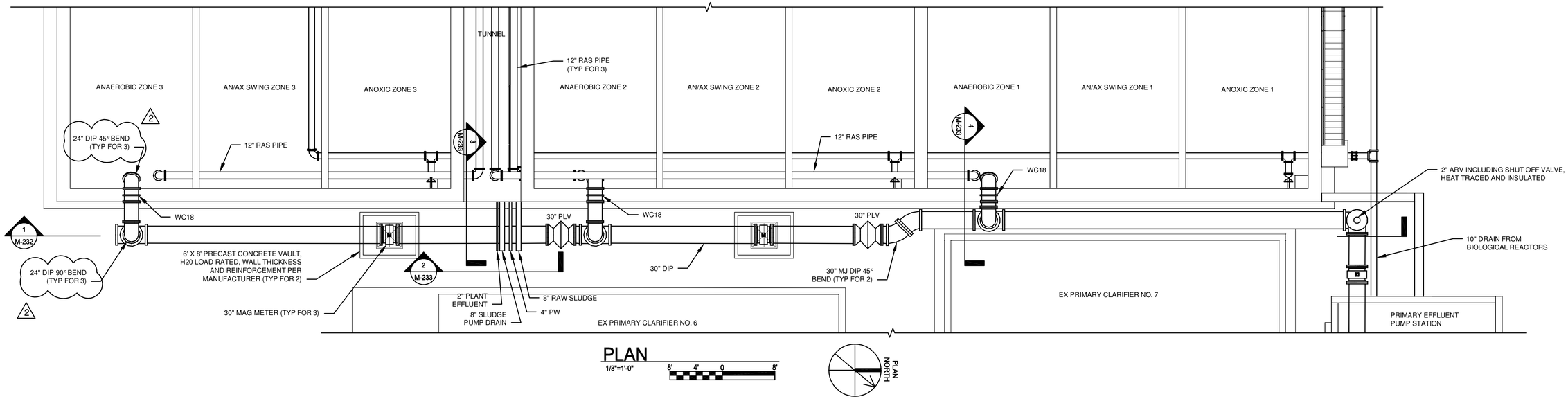
MECHANICAL
PRIMARY EFFLUENT PUMP STATION

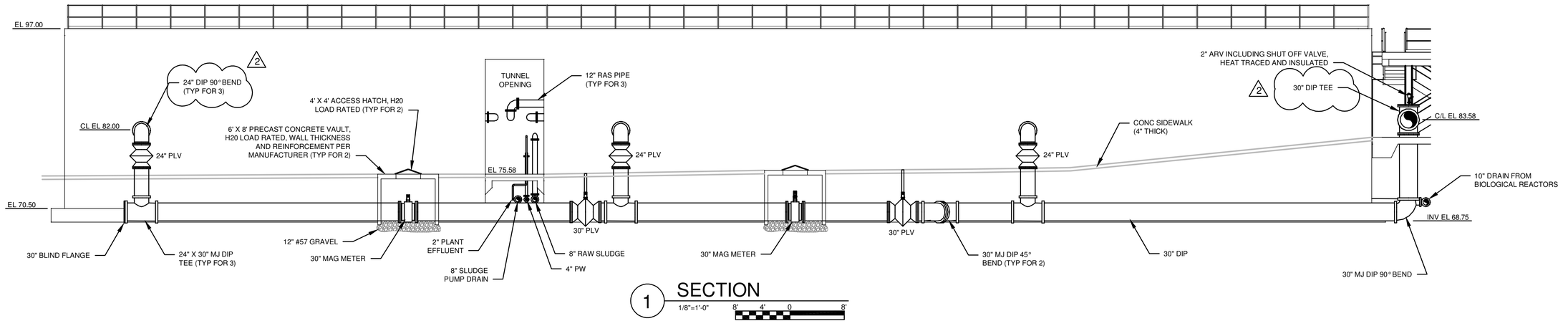
PLANS AND SECTIONS

FILE NO. 23374.51633 -M230
DATE MARCH 19, 2015

M-230

SAVED: 11/2/15 3:09 PM





IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ENGINEER, TO ALTER THIS DOCUMENT.

THIS DRAWING WAS PREPARED AT THE SCALE INDICATED. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR TO DETERMINE THE ACTUAL SCALE.

IN CHARGE OF WAD
DESIGNED BY DBK
CHECKED BY PCC
DRAWN BY JAM

NO.	DATE	REVISION	INT.
2	11/03/2015	ADDENDUM NO. 3	DBK
1	09/23/2015	ISSUED FOR BID	DBK
0	03/19/2015	ISSUED FOR OEPA REVIEW	DBK

CTI / O'BRIEN & GERE JOINT VENTURE
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SUITE 750
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CITY OF MASSILLON
2013 WWTP IMPROVEMENTS
MASSILLON, OHIO

MECHANICAL
PRIMARY EFFLUENT PUMP STATION
DISCHARGE PIPING PLAN AND SECTION

FILE NO. 23374.51633 -M232
DATE MARCH 19, 2015
M-232

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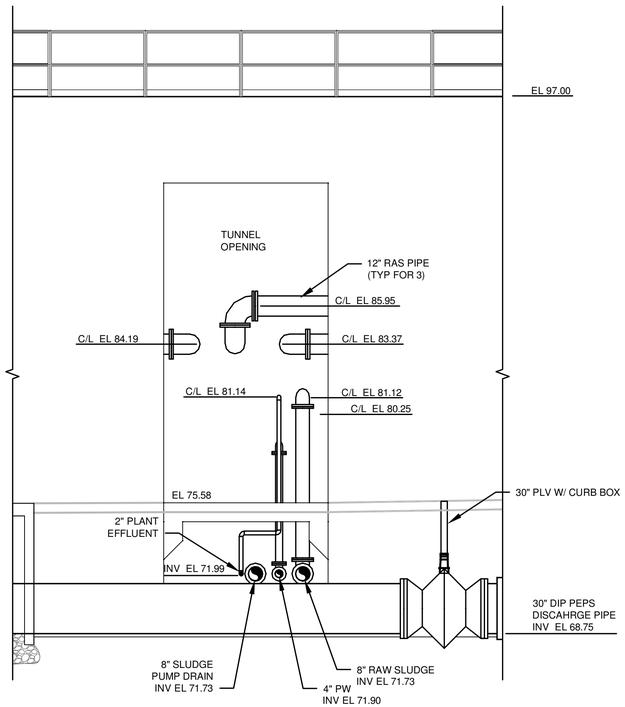
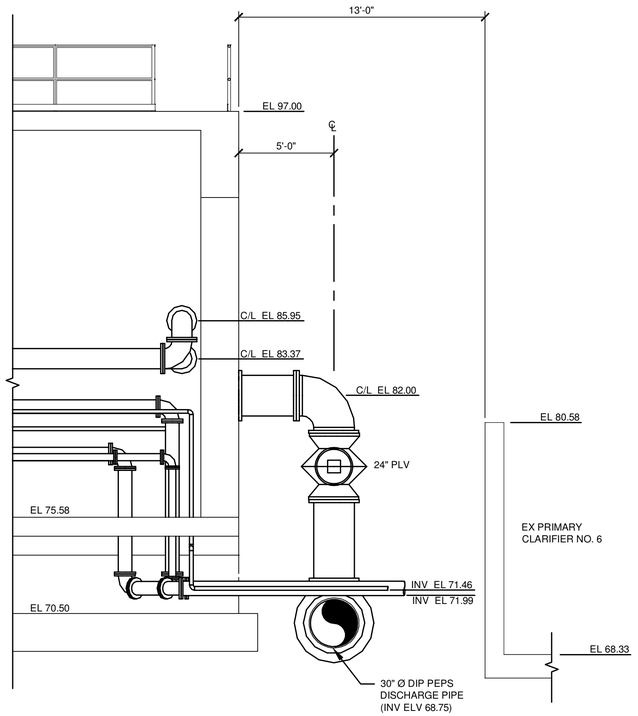
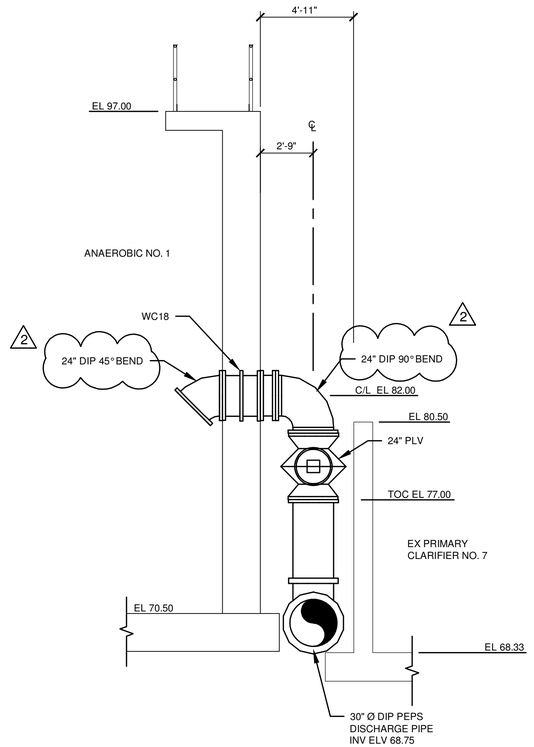


2 SECTION
1/4"=1'-0" 4' 2' 0 2' 4'



3 SECTION
1/4"=1'-0" 4' 2' 0 2' 4'



4 SECTION
1/4"=1'-0" 4' 2' 0 2' 4'

IN CHARGE OF WAD
DESIGNED BY DBK
CHECKED BY PCC
DRAWN BY JAM

NO.	DATE	REVISION	INT.
2	11/03/2015	ADDENDUM NO. 3	DBK
1	09/23/2015	ISSUED FOR BID	DBK
0	03/19/2015	ISSUED FOR OEPA REVIEW	DBK

CTI / O'BRIEN & GERE JOINT VENTURE
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SUITE 750
CANTON, OH 47702

CITY OF MASSILLON
2013 WWTP IMPROVEMENTS
MASSILLON, OHIO

MECHANICAL
PRIMARY EFFLUENT PUMP STATION

SECTIONS

FILE NO. 23374.51633 -M233
DATE MARCH 19, 2015

M-233

3-1/C 15KV 4/0 U.G. CABLE WITH PVC JACKET OVER CONCENTRIC NEUTRAL IN 4" PVC SCHEDULE 80 CONDUIT

PROPOSED LOCATION OF RELOCATED TRANSFORMER "B", FIELD COORDINATE ACTUAL LOCATION

PRIMARY EFFLUENT PUMP STATION

PROPOSED LOCATION OF RELOCATED TRANSFORMER "C", FIELD COORDINATE ACTUAL LOCATION

REMOVE CONDUIT AND CONDUCTOR FROM CURRENT TRANSFORMER "C" LOCATION BACK TO EXISTING ELECTRIC MANHOLE

PROVIDE AND INSTALL A NEW MANHOLE EMH-3, SEE DETAIL SHEET E-029. AT MANHOLE SPLICE EXISTING CONDUCTORS WITH NEW USING A WATERTIGHT, SUBMERSIBLE SPLICE KIT USING A THOMAS&BETTS ALUMINUM FLOOD-SEAL COMPRESSION SPLICE KIT OR APPROVED EQUAL.

PF-PEPS-2

CC-PEPS-40

PF-PEPS-1

PROVIDE AND INSTALL NEW TRANSFORMER PAD, SEE SHEET E-029 FOR TRANSFORMER PAD DETAIL

PROVIDE AND INSTALL A NEW MANHOLE EMH-2, SEE DETAIL SHEET E-029. AT MANHOLE SPLICE EXISTING CONDUCTORS WITH NEW USING A WATERTIGHT, SUBMERSIBLE SPLICE KIT USING A THOMAS&BETTS ALUMINUM FLOOD-SEAL COMPRESSION SPLICE KIT OR APPROVED EQUAL.

FINE SCREEN BUILDING

CC-FSB-02, CC-AB-01

CC-FSB-01, CC-FSB-02 & CC-FSB-35

P-FSB-1

EPB-1

ODOR CONTROL STRUCTURE

PROPOSED ELECTRIC MANHOLE EMH-1, SEE DETAIL SHEET E-029

INFLUENT FLOW METER VAULT

3-1/C 15KV 4/0 U.G. CABLE WITH PVC JACKET OVER CONCENTRIC NEUTRAL IN 4" PVC SCHEDULE 80 CONDUIT

8 PRIMARY CLARIFIERS 7

EX. PRIMARY SLUDGE BUILDING NO.2

EXISTING PREAERATION TANKS

CC-FSB-35

APPROXIMATE LOCATION OF TEMPORARY POWER POLE

P-FSB-16

P-FSB-17

CC-FSB-01, CC-AB-01

EXISTING GRIT BUILDING

EXISTING GRIT TANKS

EXISTING SCREEN BUILDING

CC-PEPS-39

PRIMARY CLARIFIERS

(1) 3 CONDUCTOR #3/0 ACC ALUMINUM CABLE

1 2 3 4 5 6

LOCATION OF CONDUIT IS APPROXIMATE ONLY. CONTRACTOR TO FIELD VERIFY ACTUAL LOCATION

SERVICE ENTRANCE DROP TO EX. PRIMARY SLUDGE BUILDING NO.2 SERVICE DISCONNECT SWITCH. SEE OVERHEAD SERVICE ENTRANCE DETAIL ON SHEET E-029

EPB-4

EXISTING ADMIN. BUILDING

PF-AD-1

ROUTE CONDUITS THRU THE SECONDARY TUNNEL TO THE LAB PCS CONTROL PANEL, FIELD COORDINATE ACTUAL ROUTING WITH OWNER

APPROXIMATE LOCATION OF TEMPORARY POWER POLE

CC-BB-24

EX. PRIMARY SLUDGE BUILDING NO.1

CC-BB-24, CC-PEPS-39

TRANSFORMER "B"

TRANSFORMER "C", RELOCATE TO NEW LOCATION SHOWN ON THIS PLAN

(2) 3 CONDUCTOR #3/0 ACC ALUMINUM CABLE

TRANSFORMER "A2"

TRANSFORMER "A1"

EPB-2

EPB-3

SERVICE ENTRANCE DROP TO EX. PRIMARY SLUDGE BUILDING NO.1 SERVICE DISCONNECT SWITCH. SEE OVERHEAD SERVICE ENTRANCE DETAIL ON SHEET E-029

CC-FSB-35

APPROXIMATE LOCATION AND ROUTING OF TEMPORARY POWER

(2) 3 CONDUCTOR #3/0 ACC ALUMINUM CABLE

CC-FSB-35

EX. GARAGE

TEMPORARY 40'-0" CLASS 4 POLE IMBEDDED IN GROUND 6'-0" USING AUGER METHOD (TYPICAL FOR 4)

2" CONDUIT w/3-#3/0, 1-#6 GRD FROM EXISTING TRANSFORMER UP TO TEMPORARY SERVICE DISCONNECTS

EXISTING TRANSFORMER "E1", CONNECT TEMPORARY SERVICE EX. PRIMARY SLUDGE BUILDING NO.1 & NO.2 ON THE SECONDARY SIDE OF TRANSFORMER

AT SERVICE POLE PROVIDE AND INSTALL (2) NEMA 3R, 200A FUSED DISCONNECT SWITCHES FUSED FOR 200 AMPS. oNE EACH FOR EX. PRIMARY SLUDGE BUILDING NO.1 AND EX. PRIMARY SLUDGE BUILDING NO.2.

LEGEND:

- EXISTING 480V LINE
- EXISTING 12.47KV LINE
- PROPOSED 480V LINE (P = POWER)
- PROPOSED CONTROL CONDUIT (CC = CONTROL)
- PROPOSED 12.47KV LINE
- EQUIPMENT SCHEDULED FOR REMOVAL
- POINT OF CONNECTION

PARTIAL SITE PLAN

1"=20'-0" 20' 0 20'

PLAN NORTH

UTILITY NOTE:

EXISTING UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE PLANS, RECORDS AND SURVEYS. THERE LOCATION MUST THEREFORE BE CONSIDERED APPROXIMATE AND NO GUARANTEE IS MADE TO THE HORIZONTAL OR VERTICAL LOCATION OF SUCH FACILITIES, STRUCTURES AND UTILITIES. THERE MAY BE OTHERS, THE EXISTENCE OF WHICH IS PRESENTLY UNKNOWN. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL FACILITIES, STRUCTURES AND UTILITIES IN THE FIELD PRIOR TO COMMENCING WORK.

KEY NOTES:

1. REMOVE CONDUIT DOWN TO FIRST STRAIGHT COUPLING BELOW GRADE. PROTECT CONDUCTORS AND USE FOR CONNECTION TO TEMPORARY SERVICE.
2. ONCE THE MOTOR CONTROL CENTER MCC-FSB-1 HAS BEEN TESTED AND ENERGIZED AT THE NEW FINE SCREENS BUILDING, INSTALL NEW PVC COATED RIGID STEEL CONDUIT FROM FIRST COUPLING BELOW GRADE AND ROUTE CONDUIT UP OUTSIDE OF BUILDING TO EXISTING POWER DISTRIBUTION PANELBOARD LOCATED IN EXISTING PRIMARY SLUDGE BUILDING NO.2. PROVIDE AND INSTALL SEALOFFS AS REQUIRED.
3. INSTALL NEW CONDUCTORS FOR NEW INCOMING SERVICE. SEE CONDUIT AND CONDUCTOR SCHEDULES FOR CONDUIT AND CONDCUTOR SIZE AND QUANTITY. COORDINATE SND SCHEDULE DURATION OF SHUTDOWN WITH THE OWNER FOR INSTALLATION OF NEW CONDUCTORS.

THIS DRAWING WAS PREPARED AT THE SCALE INDICATED. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR TO DETERMINE THE ACTUAL SCALE.

IN CHARGE OF DL
DESIGNED BY JEC
CHECKED BY RGH
DRAWN BY JEC

NO.	DATE	REVISION	INT.
2	11/02/2015	ADDENDUM NO. 3	DL
1	09/23/2015	ISSUED FOR BID	DL
0	03/19/2015	ISSUED FOR OEPA REVIEW	DL

CTI / O'BRIEN & GERE JOINT VENTURE
O'BRIEN & GERE
220 MARKET AVENUE SOUTH
SUITE 750
CANTON, OH 47702

CITY OF MASSILLON
2013 WWTP IMPROVEMENTS
MASSILLON, OHIO

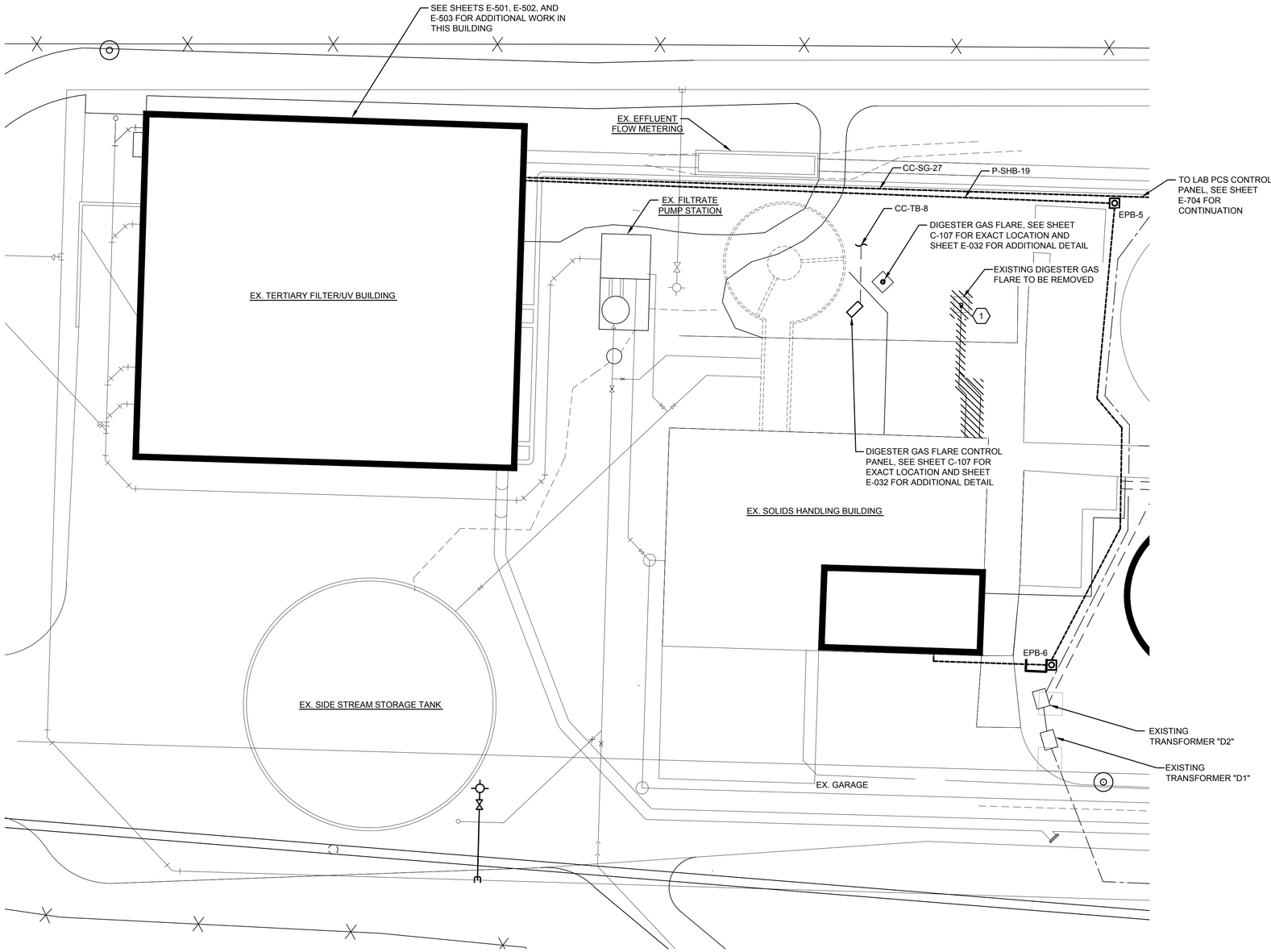
ELECTRICAL

SITE PARTIAL PLAN

FILE NO. 23374.51633 - E005

DATE SEPT. 23, 2015

E-005



PARTIAL SITE PLAN

1"=20'-0" 20' 0 20'

PLAN NORTH

DEMOLITION NOTES:

1. ALL STRUCTURES SHOWN ON THIS SHEET ARE EXISTING.
2. EXISTING CONDITIONS ARE TAKEN FROM FIELD OBSERVATIONS AND PRIOR DESIGN DOCUMENTS WHERE AVAILABLE AND ARE NOT GUARANTEED. PRIOR TO SUBMITTING BID, VISIT SITE TO SEE EXISTING CONDITIONS AND DIFFICULTIES THAT MAY AFFECT DEMOLITION WORK. NOT ALL DEVICES TERMINATIONS, JUNCTION BOXES AND WIRING HAVE BEEN SHOWN.
3. WHEN EXISTING CONSTRUCTION WHICH IS TO REMAIN IS DAMAGED DURING DEMOLITION AS A RESULT OF THE CONTRACTOR'S WORK, IT SHALL BE REPAIRED AND/OR REPLACED WITH SIMILAR OR LIKE MATERIALS, SUBJECT TO THE OWNER'S APPROVAL.
4. PROVIDE REMOVAL OF ALL EXISTING WIRING, ASSOCIATED WITH EQUIPMENT SHOWN OR NOTED FOR REMOVAL. WHERE PRACTICAL THE EXISTING CONDUIT SHALL REMAIN IN PLACE AND BE REUSED FOR INSTALLATION OF NEW EQUIPMENT. CONTRACTOR IS RESPONSIBLE FOR PROTECTING EXISTING CONDUIT DURING CONSTRUCTION.
5. EXISTING CONDUIT SCHEDULED FOR REUSE SHALL BE CLEANED AND SWABBED OF ANY DEBRIS PRIOR TO INSTALLING NEW CONDUCTORS.
6. REMOVED EQUIPMENT AND MATERIALS NOT DESIGNATED FOR RETURN TO THE OWNER OR FOR REINSTALLATION SHALL BE DISPOSED OF OFF SITE.

KEYED NOTES:

(1) DISCONNECT AND REMOVE EXISTING CONDUCTORS BACK TO POWER SOURCE, AT SOURCE LABEL CIRCUIT AS SPARE. CONDUIT SHALL BE REOVED TO A POINT 3'-0" BELOW GRADE AND ABANDONED IN PLACE. AT COMPLETION OF PROJECT PROVIDE A UPDATED TYPEWRITTEN PANEL DIRECTORY

UTILITY NOTE:

EXISTING UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE PLANS, RECORDS AND SURVEYS. THERE LOCATION MUST THEREFORE BE CONSIDERED APPROXIMATE AND NO GUARANTEE IS MADE TO THE HORIZONTAL OR VERTICAL LOCATION OF SUCH FACILITIES, STRUCTURES AND UTILITIES. THERE MAY BE OTHERS, THE EXISTENCE OF WHICH IS PRESENTLY UNKNOWN. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL FACILITIES, STRUCTURES AND UTILITIES IN THE FIELD PRIOR TO COMMENCING WORK.

2

LEGEND:

- EXISTING 480V LINE
- EXISTING 12.47KV LINE
- PROPOSED 480V LINE (P = POWER)
- PROPOSED CONTROL CONDUIT (CC = CONTROL)
- PROPOSED 12.47KV LINE
- EQUIPMENT SCHEDULED FOR REMOVAL

IN CHARGE OF DL
DESIGNED BY JEC
CHECKED BY RGH
DRAWN BY JEC

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CITY OF MASSILLON
2013 WWTP IMPROVEMENTS
MASSILLON, OHIO

ELECTRICAL

PARTIAL SITE PLAN

FILE NO. 23374.51633 - E006

DATE SEPT. 23, 2015

E-006

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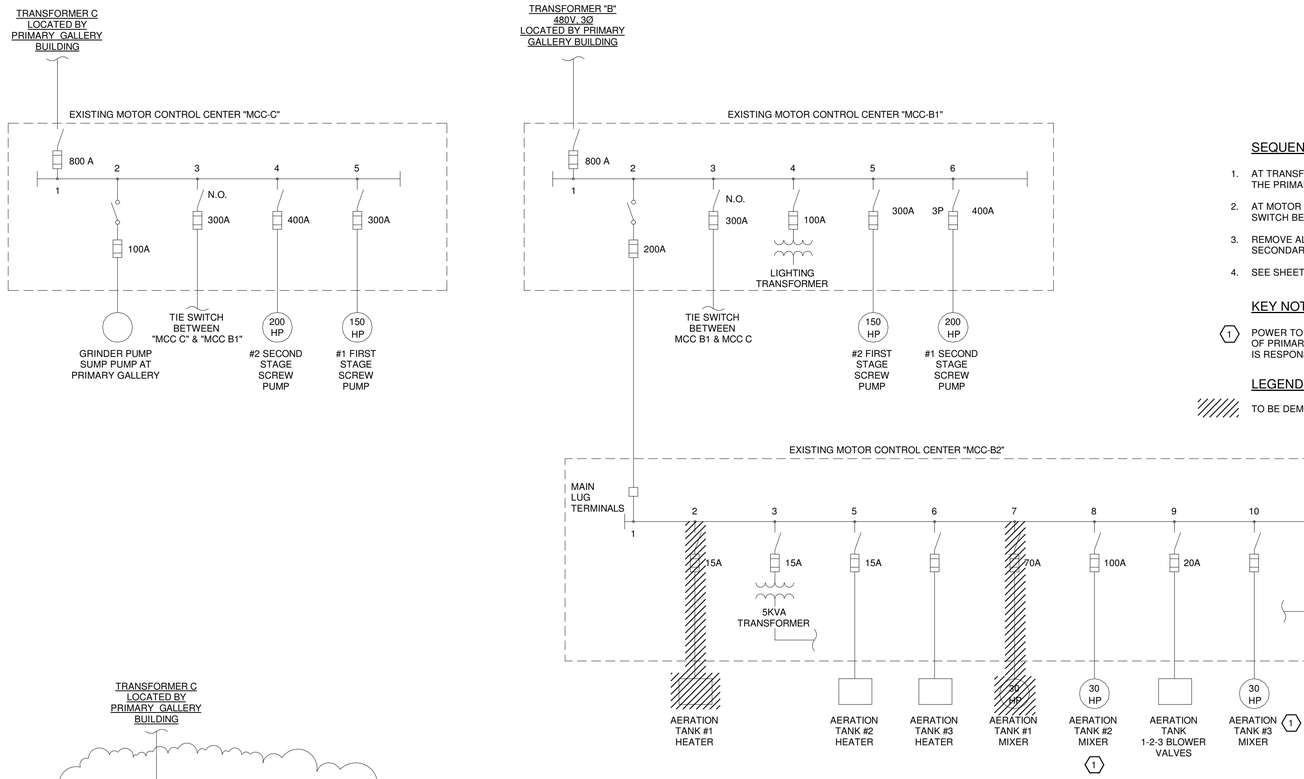


1 EXISTING PRIMARY GALLERY MCC'S

NOT TO SCALE

SEQUENCE OF CONSTRUCTION:

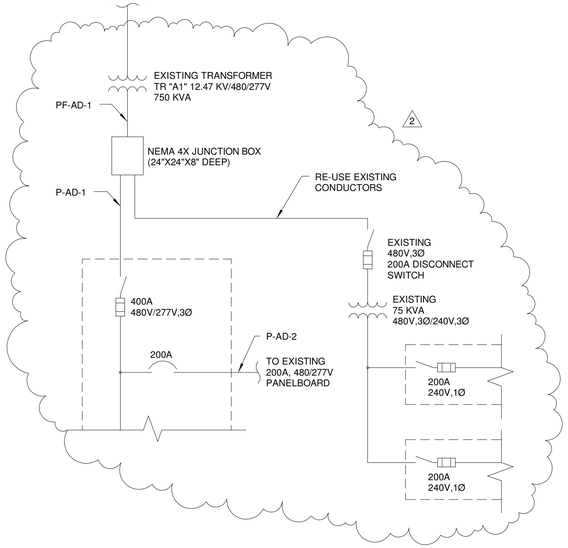
1. AT TRANSFORMER "C" (SEE SHEET E-004 FOR ACTUAL LOCATION) OPEN THE NORMALLY CLOSED SWITCH ON THE PRIMARY SIDE OF THE TRANSFORMER.
2. AT MOTOR CONTROL CENTER "C" (MCC "C") OPEN THE 800A MAIN FUSED SWITCH AND CLOSE THE TIE SWITCH BETWEEN "MCC-C" AND "MCC-B1".
3. REMOVE ALL CONDUCTORS AND CONDUIT BETWEEN MCC "C" 800A MAIN FUSED SWITCH AND THE SECONDARY SIDE OF TRANSFORMER "C". DISPOSE OF ALL CONDUIT, BUS DUCT AND CONDUCTOR OFF SITE.
4. SEE SHEET E-003 FOR ADDITIONAL INFORMATION FOR SEQUENCE OF CONSTRUCTION.

KEY NOTES:

(1) POWER TO AERATION TANK MIXER #2 AND AERATION TANK MIXER #3 SHALL BE MAINTAINED DURING DEMOLITION OF PRIMARY GALLERY AND THE CONVERSION OF AERATION TANK #1 TO THE NEW IFAS SYSTEM. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING POWER.

LEGEND:

TO BE DEMOLISHED



2 MODIFIED ADMINISTRATION BLDG. ONE-LINE

NOT TO SCALE

3 EXISTING ADMINISTRATION BLDG. ONE-LINE

NOT TO SCALE

IN CHARGE OF	DL
DESIGNED BY	JEC
CHECKED BY	RGH
DRAWN BY	WGF

NO.	DATE	REVISION	INT.
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CITY OF MASSILLON
2013 WWTP IMPROVEMENTS
MASSILLON, OHIO

ELECTRICAL
EXISTING PRIMARY GALLERY

ONE-LINE DIAGRAM

FILE NO. 23374.51633- E007

DATE SEPT. 23, 2015

E-007

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POWER - CONDUIT SCHEDULE

DESIGNATION	FROM	TO	CONDUIT SIZE	CONDUCTORS QTY/SIZE	REMARKS
PF-FSB-1	EXISTING PADMOUNTED TRANSFORMER "A2"	MOTOR CONTROL CENTER MCC-FSB-1	3-4"	9-750 MCM 3-#4/0GRD	PROVIDE AND INSTALL NEW CONDUIT TO NEW EMH-01, CONTRACTOR MAY REUSE EXISTING CONDUIT AS SHOWN ON SHEET E-006.
P-FSB-1	MOTOR CONTROL CENTER MCC-FSB-1	3-STAGE ODOR CONTROL UNIT ELECTRICAL CONTROL PANEL	1 1/2"	3-#2 1-#8GRD	-
P-FSB-2	FINE SCREEN NO.1 CONTROL PANEL	WASHER COMPACTOR NO.1	3/4"	3-#12 1-#12GRD	-
P-FSB-3	FINE SCREENS NO.2 CONTROL PANEL	WASHER COMPACTOR NO.2	3/4"	3-#12 1-#12GRD	-
P-FSB-4	MOTOR CONTROL CENTER MCC-FSB-1	MAKE UP AIR UNIT MUAU-FSB-1 VFD	1"	3-#6 1-#10GRD	-
P-FSB-4A	MAKE UP AIR UNIT MUAU-FSB-1 VFD	MAKE UP AIR UNIT MUAU-FSB-1	1"	3-#6 1-#10GRD	-
P-FSB-5	PANELBOARD LP-FSB-1	ACCU-1	3/4"	3-#12 1-#12GRD	-
P-FSB-6	PANELBOARD LP-FSB-1	ACU-1	3/4"	3-#12 1-#12GRD	-
P-FSB-7	MOTOR CONTROL CENTER MCC-FSB-1	FINE SCREEN NO.1 CONTROL PANEL	3/4"	3-#12 1-#12GRD	-
P-FSB-7A	FINE SCREENS NO.1 CONTROL PANEL	FINE SCREEN NO.1	3/4"	3-#12 1-#12GRD	-
P-FSB-8	MOTOR CONTROL CENTER MCC-FSB-1	FINE SCREENS NO.2 CONTROL PANEL	3/4"	3-#12 1-#12GRD	-
P-FSB-8A	FINE SCREENS NO.2 CONTROL PANEL	FINE SCREEN NO.2	3/4"	3-#12 1-#12GRD	-
P-FSB-9	MOTOR CONTROL CENTER MCC-FSB-1	EXISTING SLUICE GATE NO.1	3/4"	3-#12 1-#12GRD	-
P-FSB-10	MOTOR CONTROL CENTER MCC-FSB-1	EXISTING SLUICE GATE NO.2	3/4"	3-#12 1-#12GRD	-
P-FSB-11	MOTOR CONTROL CENTER MCC-FSB-1	EXISTING SLUICE GATE NO.3	3/4"	3-#12 1-#12GRD	-
P-FSB-12	MOTOR CONTROL CENTER MCC-FSB-1	ELECTRICAL ROOM EUH-FSB-1	3/4"	3-#10 1-#10GRD	-
P-FSB-13	MOTOR CONTROL CENTER MCC-FSB-1	PLANT WATER PUMP P-FSB-XX	3/4"	3-#12 1-#12GRD	-
P-FSB-15	MOTOR CONTROL CENTER MCC-FSB-1	RECIRCULATION PUMP P-FSB-3	3/4"	3-#12 1-#12GRD	-
P-FSB-16	MOTOR CONTROL CENTER MCC-FSB-1	EXISTING PRIMARY SLUDGE BUILDING NO.2	2"	3-#3/0 1-#6GRD	-
P-FSB-17	MOTOR CONTROL CENTER MCC-FSB-1	EXISTING PRIMARY SLUDGE BUILDING NO.1 & GARAGE	2"	3-#3/0 1-#6GRD	-
P-FSB-18	MOTOR CONTROL CENTER MCC-FSB-1	PANELBOARD PP-FSB-1	2"	4-#3/0 1-#6GRD	-
P-FSB-19	PANELBOARD PP-FSB-1	TRANSFORMER T-FSB-1 45 KVA	1"	3-#8 1-#10GRD	-
P-FSB-20	TRANSFORMER T-FSB-1 45 KVA	PANELBOARD LP-FSB-1	1 1/2"	4-#1 1-#6GRD	-
P-FSB-21	MOTOR CONTROL CENTER MCC-FSB-1	FAN F-FSB-2 VFD	3/4"	3-#12 1-#12GRD	VFD IS VENDOR PROVIDED, INSTALLED UNDER THIS CONTRACT
P-FSB-22	MOTOR CONTROL CENTER MCC-FSB-1	FAN F-FSB-3 VFD	3/4"	3-#12 1-#12GRD	VFD IS VENDOR PROVIDED, INSTALLED UNDER THIS CONTRACT
P-FSB-21A	FAN F-FSB-2 VFD	FAN F-FSB-2	3/4"	3-#12 1-#12GRD	-
P-FSB-22A	FAN F-FSB-3 VFD	FAN F-FSB-3	3/4"	3-#12 1-#12GRD	-
P-FSB-23	MOTOR CONTROL CENTER MCC-FSB-1	BOILER	3/4"	3-#12 1-#12GRD	-
P-FSB-24	MOTOR CONTROL CENTER MCC-FSB-1	BOILER PUMP P-FSB-1	3/4"	3-#12 1-#12GRD	-
P-FSB-25	MOTOR CONTROL CENTER MCC-FSB-1	BOILER PUMP P-FSB-2	3/4"	3-#12 1-#12GRD	-
P-FSB-26	MOTOR CONTROL CENTER MCC-FSB-1	MUAU-FSB-2	3/4"	3-#12 1-#12GRD	-
P-FSB-27	MOTOR CONTROL CENTER MCC-FSB-1	PRESSURE WASHER	3/4"	3-#12 1-#12GRD	-
P-FSB-28	MOTOR CONTROL CENTER MCC-FSB-1	FINE SCREENS BYPASS INLET CHANNEL GATE OPERATOR	3/4"	3-#12 1-#12GRD	-
P-FSB-29	MOTOR CONTROL CENTER MCC-FSB-1	FINE SCREENS BYPASS OUTLET CHANNEL GATE OPERATOR	3/4"	3-#12 1-#12GRD	-
P-FSB-30	MOTOR CONTROL CENTER MCC-FSB-1	INFLUENT GATE FINE SCREENS CHANNEL (EAST SIDE)	3/4"	PULL WIRE	CONDUIT INSTALLED FOR FUTURE CONNECTION BY OTHERS
P-FSB-31	MOTOR CONTROL CENTER MCC-FSB-1	INFLUENT GATE FINE SCREENS CHANNEL (WEST SIDE)	3/4"	PULL WIRE	CONDUIT INSTALLED FOR FUTURE CONNECTION BY OTHERS
P-FSB-32	MOTOR CONTROL CENTER MCC-FSB-1	EFFLUENT GATE FINE SCREENS CHANNEL (EAST SIDE)	3/4"	PULL WIRE	CONDUIT INSTALLED FOR FUTURE CONNECTION BY OTHERS
P-FSB-33	MOTOR CONTROL CENTER MCC-FSB-1	EFFLUENT GATE FINE SCREENS CHANNEL (WEST SIDE)	3/4"	PULL WIRE	CONDUIT INSTALLED FOR FUTURE CONNECTION BY OTHERS
P-FSB-34	FINE SCREEN NO.1 CONTROL PANEL	FINE SCREEN NO.1 LOCAL CONTROL PANEL	3/4"	2-#12 1-#12GRD	-
P-FSB-35	FINE SCREEN NO.2 CONTROL PANEL	FINE SCREEN NO.2 LOCAL CONTROL PANEL	3/4"	2-#12 1-#12GRD	-
P-OC-01	ELECTRICAL CONTROL PANEL	ODOR CONTROL SYSTEM CONTROL PANEL	1"	3-#8 1-#10GRD	-
P-OC-02	ODOR CONTROL SYSTEM CONTROL PANEL	ODOR CONTROL SYSTEM BLOWER	3/4"	3-#8 1-#10GRD	-

POWER - CONDUIT SCHEDULE

DESIGNATION	FROM	TO	CONDUIT SIZE	CONDUCTORS QTY/SIZE	REMARKS
P-OC-03	ODOR CONTROL SYSTEM CONTROL PANEL	FINE SCREEN BUILDING INLINE FAN	3/4"	3-#12 1-#12GRD	-
P-PSPS1-1	EXISTING PANELBOARD DP-PS	PRIMARY ACTIVATION RECYCLE VALVE CV-261	3/4"	3-#12 1-#12GRD	-
P-PSPS1-2	EXISTING PANELBOARD DP-PS	EUH-PSPS1-1	3/4"	3-#12 1-#12GRD	-
P-PSPS1-3	EXISTING PANELBOARD DP-PS	EUH-PSPS1-2	3/4"	3-#12 1-#12GRD	-
PF-AD-1	EXISTING TRANSFORMER "A1"	NEMA 4X JUNCTION BOX LOCATED AT ADMINISTRATION BUILDING EXTERIOR	2-4"	6-750 KCMIL 2-#2/0GRD	
P-AD-1	NEMA 4X JUNCTION BOX LOCATED AT ADMINISTRATION BUILDING EXTERIOR	PANELBOARD PP-ADMIN-1, 400A, 480/277V, 3 PHASE, 4 WIRE	2-2"	6-#3/0 2-#2 GRD	-
P-AD-2	PANELBOARD PP-ADMIN-1, 400A, 480/277V, 3 PHASE, 4 WIRE	EX. POWER PANEL 277/480V, 3 PHASE, 4 WIRE	2"	3-#3/0 1-#XXGRD	-
P-AD-3	PANELBOARD PP-ADMIN-1, 400A, 480/277V, 3 PHASE, 4 WIRE	TRANSFORMER T-AD-2 30 KVA, 480V-120/208V	1"	3-#6 1-#10GRD	-
P-AD-4	TRANSFORMER T-AD-2 30 KVA, 480V-120/208V	PANELBOARD LP-ADMIN-1, 100A, 3 PHASE, 4 WIRE	1 1/2"	4-#2 1-#8GRD	-
P-AD-5	PANELBOARD PP-ADMIN-1, CIRCUIT 1,3,5	VAV-A-3, VAV-A-4	3/4"	3-#12 1-#12GRD	-
P-AD-6	PANELBOARD PP-ADMIN-1, CIRCUIT 2,4,6	VAV-A-6, VAV-A-7	3/4"	3-#12 1-#12GRD	-
P-AD-7	PANELBOARD PP-ADMIN-1, CIRCUIT 7,9,11	VAV-A-5	3/4"	3-#12 1-#12GRD	-
P-AD-8	PANELBOARD PP-ADMIN-1, CIRCUIT 8,10,12	VAV-A-9 (BACT LAB)	3/4"	3-#12 1-#12GRD	-
P-AD-9	PANELBOARD PP-ADMIN-1, CIRCUIT 13,15,17	VAV-A-8, VAV-A-10 (CORRIDOR & OFFICE)	3/4"	3-#12 1-#12GRD	-
P-AD-10	PANELBOARD PP-ADMIN-1, CIRCUIT 14,16,18	VAV-A-1, VAV-A-2 (MENS LOCKER & LUNCH ROOM)	3/4"	3-#12 1-#12GRD	-
P-AD-11	PANELBOARD PP-ADMIN-1, CIRCUIT 19,21,23	AIR HANDLING UNIT AHU-A-1 (MECHANICAL ROOM)	3/4"	3-#10 1-#10GRD	-
P-AD-12	PANELBOARD PP-ADMIN-1, CIRCUIT 20,22,24	AIR COOLED CONDENSER ACCU-A-2	1 1/2"	3-#4 1-#8GRD	-
P-AD-13	PANELBOARD PP-ADMIN-1, CIRCUIT 25,27,29	AIR CONDITIONING UNIT ON ROOF A-RTU-1	3/4"	3-#8 1-#10GRD	-
P-AD-14	PANELBOARD PP-ADMIN-1, CIRCUIT 37,39,41	FAN F-A-1 (LOCATED ON ROOF OF ADMINISTRATION BLDG.)	3/4"	3-#12 1-#12GRD	-
P-AD-15	PANELBOARD PP-ADMIN-1, CIRCUIT 43,45,47	FAN F-A-2 (LOCATED ON ROOF OF ADMINISTRATION BLDG.)	3/4"	3-#12 1-#12GRD	-
P-AD-16	PANELBOARD PP-ADMIN-1 CIRCUIT 26,28,30	BOILER PUMP P-A-1	3/4"	3-#12 1-#12GRD	-
P-AD-17	PANELBOARD PP-ADMIN-1, CIRCUIT 32,34,36	BOILER PUMP P-A-2	3/4"	3-#12 1-#12GRD	-
P-AD-18	PANELBOARD PP-ADMIN-1, CIRCUIT 38,40,42	PUMP P-A-3 (RTU-A-1)	3/4"	3-#12 1-#12GRD	-
P-AD-19	PANELBOARD PP-ADMIN-1 CIRCUIT 31,33,35	BOILER B-A-1	3/4"	3-#12 1-#12GRD	-
P-HW-1	EXISTING CIRCUIT FROM OLD VALVE OPERATOR	VALVE DISCONNECT DS-HW-1 TO FCV-114-1	LFMC	TO MATCH EXISTING	EXTEND CIRCUIT TO NEW DISCONNECT AND VALVE OPERATOR, USE LFMC CONDUIT, CONDUCTORS TO MATCH EXISTING
P-HW-2	EXISTING CIRCUIT FROM OLD VALVE OPERATOR	VALVE DISCONNECT DS-HW-1 TO FCV-114-1	LFMC	TO MATCH EXISTING	EXTEND CIRCUIT TO NEW DISCONNECT AND VALVE OPERATOR, USE LFMC CONDUIT, CONDUCTORS TO MATCH EXISTING
PF-PEPS-1	EXISITNG TRANSFORMER "C"	MOTOR CONTROL CENTER MCC-PEPS-1	2-4"	6-#600 KCMIL 2-#4GRD	-
PF-PEPS-2	EXISTING TRANSFORMER "B"	MOTOR CONTROL CENTER MCC-PEPS-2	2-4"	6-#600 KCMIL 2-#4GRD	-
P-PEPS-1	MOTOR CONTROL CENTER "MCC-PEPS-1"	PEPS PUMP NO.1 VFD	2"	3-#4/0 1-#4GRD	-
P-PEPS-1A	PEPS PUMP NO.1 VFD	PEPS PUMP NO.1 (M-275-1)	3"	3-#4/0 1-#4GRD	VFD CABLE PER SPECIFICATION 26 05 19
P-PEPS-2	MOTOR CONTROL CENTER "MCC-PEPS-1"	PEPS PUMP NO.2 VFD	2"	3-#4/0 1-#4GRD	-
P-PEPS-2A	PEPS PUMP NO.2 VFD	PEPS PUMP NO.2 (M-275-2)	3"	3-#4/0 1-#4GRD	VFD CABLE PER SPECIFICATION 26 05 19
P-PEPS-3	MOTOR CONTROL CENTER "MCC-PEPS-2"	PEPS PUMP NO.3 VFD	2"	3-#4/0 1-#4GRD	-
P-PEPS-3A	PEPS PUMP NO.3 VFD	PEPS PUMP NO.3 (M-275-3)	3"	3-#4/0 1-#4GRD	VFD CABLE PER SPECIFICATION 26 05 19
P-PEPS-4	MOTOR CONTROL CENTER "MCC-PEPS-1"	ANAEROBIC MIXER NO.1 (M-305-1)	3/4"	3-#12 1-#12GRD	-
P-PEPS-5	MOTOR CONTROL CENTER "MCC-PEPS-1"	ANAEROBIC MIXER NO.2 (M-305-2)	3/4"	3-#10 1-#10GRD	-
P-PEPS-6	MOTOR CONTROL CENTER "MCC-PEPS-2"	ANAEROBIC MIXER NO.3 (M-305-3)	3/4"	3-#10 1-#10GRD	-
P-PEPS-7	MOTOR CONTROL CENTER "MCC-PEPS-1"	ANOXIC MIXER NO.1 (M-307-1)	3/4"	3-#12 1-#12GRD	-
P-PEPS-8	MOTOR CONTROL CENTER "MCC-PEPS-1"	ANOXIC MIXER NO.2 (M-307-2)	3/4"	3-#12 1-#12GRD	-
P-PEPS-9	MOTOR CONTROL CENTER "MCC-PEPS-2"	ANOXIC MIXER NO.3 (M-307-3)	3/4"	3-#10 1-#10GRD	-
P-PEPS-10	MOTOR CONTROL CENTER "MCC-PEPS-1"	PANELBOARD PP-PEPS-1 480/277V	2"	3-#3/0 1-#6GRD	-
P-PEPS-10A	PANELBOARD PP-PEPS-1 480/277V	TRANSFORMER T-PEPS-1 45KVA 480-120/208V	1 1/2"	3-#4 1-#8GRD	-
P-PEPS-10B	TRANSFORMER T-PEPS-1 45KVA 480-120/208V	PANELBOARD LP-PEPS-1 120/208V	2"	4-#3/0 1-#6GRD	-
P-PEPS-10C	PANELBOARD LP-PEPS-1 120/208V	PANELBOARD LP-PEPS-2 120/208V	2"	4-#3/0 1-#6GRD	-
P-PEPS-11	MOTOR CONTROL CENTER "MCC-PEPS-1"	AIR KNIFE/SCOUR BLOWER NO.1 MOTOR CONTROLLER	1"	3-#6 1-#10GRD	-
P-PEPS-12	MOTOR CONTROL CENTER "MCC-PEPS-1"	AN/AX SWING MIXER NO.1 (M-306-1)	3/4"	3-#12 1-#12GRD	-

IN CHARGE OF DL
DESIGNED BY JEC
CHECKED BY RGH
DRAWN BY WGF

NO.	DATE	REVISION	INT.
2	11/02/2015	ADDENDUM NO.3	DL
1	09/23/2015	ISSUED FOR BID	DL
0	03/19/2015	ISSUED FOR OEPA REVIEW	DL

CTI / O'BRIEN & GERE JOINT VENTURE
O'BRIEN & GERE
220 MARKET AVENUE SOUTH
SUITE 750
CANTON, OH 47702

CITY OF MASSILLON
2013 WWTP IMPROVEMENTS
MASSILLON, OHIO

ELECTRICAL

POWER CONDUIT SCHEDULE

FILE NO. 23374.51633- E020
DATE SEPT. 23, 2015

E-020

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POWER - CONDUIT SCHEDULE

DESIGNATION	FROM	TO	CONDUIT SIZE	CONDUCTORS QTY/SIZE	REMARKS
P-PEPS-13	MOTOR CONTROL CENTER "MCC-PEPS-1"	AN/AX SWING MIXER NO.2 (M-306-2)	3/4"	3-#10 1-#10GRD	-
P-PEPS-14	MOTOR CONTROL CENTER "MCC-PEPS-3"	AN/AX SWING MIXER NO.3 (M-306-3)	3/4"	3-#10 1-#10GRD	-
P-PEPS-15	MOTOR CONTROL CENTER "MCC-PEPS-2"	AIR KNIFE/SCOUR BLOWER NO.2 MOTOR CONTROLLER	1"	3-#6 1-#10GRD	-
P-PEPS-16	MOTOR CONTROL CENTER "MCC-PEPS-1"	SCUM PUMP NO.1 CONTROL PANEL	1"	3-#8 1-#10GRD	-
P-PEPS-17	MOTOR CONTROL CENTER "MCC-PEPS-2"	SCUM PUMP NO.2 CONTROL PANEL	1"	3-#8 1-#10GRD	-
P-PEPS-18	MOTOR CONTROL CENTER "MCC-PEPS-1"	UH-PEPS-1	3/4"	3-#12 1-#12GRD	-
P-PEPS-19	MOTOR CONTROL CENTER "MCC-PEPS-1"	UH-PEPS-2	3/4"	3-#12 1-#12GRD	-
P-PEPS-20	MOTOR CONTROL CENTER "MCC-PEPS-1"	WATER BOOSTER PUMP PACKAGE	3/4"	3-#12 1-#12GRD	-
P-PEPS-21	MOTOR CONTROL CENTER "MCC-PEPS-1"	DISCHARGE KNIFE GATE VALVE NO.1 (FCV-281-1)	3/4"	3-#12 1-#12GRD	-
P-PEPS-22	MOTOR CONTROL CENTER "MCC-PEPS-1"	DISCHARGE KNIFE GATE VALVE NO.2 (FCV-281-2)	3/4"	3-#12 1-#12GRD	-
P-PEPS-23	MOTOR CONTROL CENTER "MCC-PEPS-1"	DISCHARGE KNIFE GATE VALVE NO.3 (FCV-281-3)	1"	3-#10 1-#10GRD	-
P-PEPS-24	MOTOR CONTROL CENTER "MCC-PEPS-2"	EUH-PEPS-3	3/4"	3-#12 1-#12GRD	-
P-PEPS-25	PANELBOARD LP-PEPS-2	ACU-PEPS-1	3/4"	3-#12 1-#12GRD	-
P-PEPS-26	PANELBOARD LP-PEPS-2	ACCU-PEPS-1	3/4"	3-#10 1-#10GRD	-
P-PEPS-27	PANELBOARD LP-PEPS-2	ACU-PEPS-2	3/4"	3-#12 1-#12GRD	-
P-PEPS-28	PANELBOARD LP-PEPS-2	ACCU-PEPS-2	3/4"	3-#10 1-#10GRD	-
P-PEPS-29	MOTOR CONTROL CENTER "MCC-PEPS-2"	MOTOR CONTROL CENTER "MCC-IFAS-1"	4"	3-#600 MCM 1-#2GRD	-
P-PEPS-30	MOTOR CONTROL CENTER "MCC-PEPS-2"	EUH-PEPS-4	3/4"	3-#12 1-#12GRD	-
P-PEPS-31	PANELBOARD PP-PEPS-1 CIRCUIT 2,4,6	OXIC BUTTERFLY VALVE NO.1 (FCV-375-1)	3/4"	3-#10 1-#10GRD	-
P-PEPS-32	PANELBOARD PP-PEPS-1 CIRCUIT 8,10,12	OXIC BUTTERFLY VALVE NO.2 (FCV-375-2)	3/4"	3-#12 1-#12GRD	-
P-PEPS-33	PANELBOARD PP-PEPS-1 CIRCUIT 1,3,5	OXIC BUTTERFLY VALVE NO.3 (FCV-375-3)	3/4"	3-#10 1-#10GRD	-
P-PEPS-34	PANELBOARD LP-PEPS-1 CIRCUIT 12,14,16	DEOX BUTTERFLY VALVE NO.1 (FCV-377-1)	3/4"	3-#10 1-#10GRD	-
P-PEPS-35	PANELBOARD LP-PEPS-1 CIRCUIT 18,20,22	DEOX BUTTERFLY VALVE NO.2 (FCV-377-2)	3/4"	3-#12 1-#12GRD	-
P-PEPS-36	PANELBOARD LP-PEPS-1 CIRCUIT 11,13,15	DEOX BUTTERFLY VALVE NO.3 (FCV-377-3)	3/4"	3-#12 1-#12GRD	-
P-PEPS-37	PANELBOARD PP-PEPS-1 CIRCUIT 1,3,5	TANK 1 480V RECEPTACLE	3/4"	3-#10 1-#10GRD	-
P-PEPS-38	PANELBOARD PP-PEPS-1 CIRCUIT 7,9,11	TANK 1 480V RECEPTACLE	3/4"	3-#10 1-#10GRD	-
2 P-PEPS-39	PANELBOARD PP-PEPS-1 CIRCUIT 13,15,17	TANK 1 480V RECEPTACLE	3/4"	3-#8 1-#10GRD	-
P-PEPS-40	MOTOR CONTROL CENTER "MCC-PEPS-2"	HEAT TRACE CONTROL PANEL	1"	3-#6 1-#10GRD	-
P-PEPS-41	HEAT TRACE CONTROL PANEL	HEAT TRACE FOR FERRIC LINES	3/4"	2-#8 1-#10GRD	-
P-PEPS-42	HEAT TRACE CONTROL PANEL	HEAT TRACE FOR PEPS VERTICAL DISCHARGE (TRAIN 1)	3/4"	2-#12 1-#12GRD	-
P-PEPS-43	HEAT TRACE CONTROL PANEL	HEAT TRACE FOR PEPS VERTICAL DISCHARGE (TRAIN 2)	3/4"	2-#12 1-#12GRD	-
P-PEPS-44	HEAT TRACE CONTROL PANEL	HEAT TRACE FOR PEPS VERTICAL DISCHARGE (TRAIN 3)	3/4"	2-#8 1-#10GRD	-
2 P-PEPS-45	PANELBOARD PP-PEPS-1 CIRCUIT 2,4,6	TANK 1 480V RECEPTACLE	3/4"	3-#10 1-#10GRD	
P-PEPS-46	PANELBOARD PP-PEPS-1 CIRCUIT 8,10,12	OXIC ZONE 2 480V RECEPTACLE	3/4"	3-#10 1-#10GRD	
P-PEPS-47	PANELBOARD PP-PEPS-1 CIRCUIT 14,16,18	OXIC ZONE 2 480V RECEPTACLE	3/4"	3-#8 1-#10GRD	
P-PEPS-48	PANELBOARD PP-PEPS-1 CIRCUIT 20,22,24	OXIC ZONE 3 480V RECEPTACLE	3/4"	3-#10 1-#10GRD	
P-PEPS-49	PANELBOARD PP-PEPS-1 CIRCUIT 26,28,30	OXIC ZONE 3 480V RECEPTACLE	3/4"	3-#8 1-#10GRD	
P-PEPS-50	PANELBOARD PP-PEPS-1 CIRCUIT 19,21,23	OXIC ZONE 3 480V RECEPTACLE	3/4"	3-#8 1-#10GRD	
P-PEPS-51	PANELBOARD PP-PEPS-1 CIRCUIT 25,27,29	OXIC ZONE 3 480V RECEPTACLE	1"	3-#6 1-#10GRD	
P-SHB-1	MOTOR CONTROL CENTER "MCC-D1A"	MOTOR CONTROL CENTER "MCC-D1AA"	3"	3-#500 MCM 1-#2GRD	-
P-SHB-2	MOTOR CONTROL CENTER "MCC-D1AA"	BOILER NO.1 PUMP P-SHB-1	3/4"	3-#12 1-#12GRD	-

POWER - CONDUIT SCHEDULE

DESIGNATION	FROM	TO	CONDUIT SIZE	CONDUCTORS QTY/SIZE	REMARKS
P-SHB-10	MOTOR CONTROL CENTER "MCC-D1AA"	BUILDING HEAT PUMP P-SHB-8	3/4"	3-#10 1-#10GRD	-
P-SHB-11	MOTOR CONTROL CENTER "MCC-D1AA"	BUILDING HEAT PUMP P-SHB-9	3/4"	3-#10 1-#10GRD	-
P-SHB-12	MOTOR CONTROL CENTER "MCC-D1AA"	FAN ON ROOF F-SHB-1	3/4"	3-#12 1-#12GRD	-
P-SHB-13	MOTOR CONTROL CENTER "MCC-D1AA"	FAN ON ROOF F-SHB-2	3/4"	3-#12 1-#12GRD	-
P-SHB-14	MOTOR CONTROL CENTER "MCC-D1AA"	HOT WATER BOILER B-SHB-1	3/4"	3-#12 1-#12GRD	-
P-SHB-15	MOTOR CONTROL CENTER "MCC-D1AA"	HOT WATER BOILER B-SHB-2	3/4"	3-#12 1-#12GRD	-
P-SHB-16	MOTOR CONTROL CENTER "MCC-D1AA"	HOT WATER BOILER B-SHB-3	3/4"	3-#12 1-#12GRD	-
P-SHB-17	MOTOR CONTROL CENTER "MCC-D1AA"	HOT WATER BOILER B-SHB-4	3/4"	3-#12 1-#12GRD	-
P-SHB-18	MOTOR CONTROL CENTER "MCC-D1AA"	HOT WATER BOILER B-SHB-5	3/4"	3-#12 1-#12GRD	-
P-SHB-19	MOTOR CONTROL CENTER "MCC-D1-A"	TERTIARY FILTER BUILDING PANELBOARD TERT-P1	3"	3-#4/0 1-#4GRD	-
P-SHB-20	MOTOR CONTROL CENTER "MCC-D1AA"	MUAU-SHB-1	3/4"	3-#12 1-#12GRD	
P-BB-1	EXISTING MOTOR CONTROL CENTER MCC-E1	DIURNAL FLOW BLOWER NO.3 (DFRTB-3) VFD	EXISTING CONDUIT	3-#500 MCM 1-#2GRD	AT MCC-E1 UTILIZE EXISTING DIURNAL FLOW BLOWER DFRTB-3 COMPARTMENT AND INSTALL NEW CONDUCTORS
P-BB-1A	DIURNAL FLOW BLOWER NO.3 (DFRTB-3) VFD	DIURNAL FLOW BLOWER NO.3 (DFRTB-3)	EXISTING CONDUIT	3-#500 MCM 1-#2GRD	-
P-BB-2	EXISTING MOTOR CONTROL CENTER MCC-E1	DIURNAL FLOW BLOWER NO.2 (DFRTB-2) VFD	EXISTING CONDUIT	3-#500 MCM 1-#2GRD	AT MCC-E1 UTILIZE EXISTING DIURNAL FLOW BLOWER DFRTB-2 COMPARTMENT
P-BB-2A	DIURNAL FLOW BLOWER NO.2 (DFRTB-2) VFD	DIURNAL FLOW BLOWER NO.2 (DFRTB-2)	EXISTING CONDUIT	3-#500 MCM 1-#2GRD	-
P-BB-3	EXISTING MOTOR CONTROL CENTER MCC-E1	IFAS BLOWER NO.3 (EX. AERATION TANK BLWR NO.3) VFD	EXISTING CONDUIT	6-#300 MCM 2-#1GRD	AT MCC-E1 UTILIZE EXISTING AERATION TANK BLOWER ATB-3 COMPARTMENT AND INSTALL NEW CONDUCTORS (2 PER PHASE)
P-BB-3A	IFAS BLOWER NO.3 (EX. AERATION TANK BLWR NO.3) VFD	IFAS BLOWER NO.3 (EX. AERATION TANK BLWR NO.3)	EXISTING CONDUIT	6-#300 MCM 2-#1GRD	INSTALL NEW CONDUCTORS (2 PER PHASE)
P-BB-4	EXISTING MOTOR CONTROL CENTER MCC-E2	IFAS BLOWER NO.1 (EX. AERATION TANK BLWR NO.1) VFD	EXISTING CONDUIT	6-#300 MCM 2-#1GRD	AT MCC-E2 UTILIZE EXISTING AERATION TANK BLOWER ATB-1 COMPARTMENT AND INSTALL NEW CONDUCTORS (2 PER PHASE)
P-BB-4A	IFAS BLOWER NO.1 (EX. AERATION TANK BLWR NO.1) VFD	IFAS BLOWER NO.1 (EX. AERATION TANK BLWR NO.1)	EXISTING CONDUIT	6-#300 MCM 2-#1GRD	INSTALL NEW CONDUCTORS (2 PER PHASE)
P-BB-5	EXISTING MOTOR CONTROL CENTER MCC-E2	IFAS BLOWER NO.2 (EX. AERATION TANK BLWR NO.2) VFD	EXISTING CONDUIT	6-#300 MCM 2-#1GRD	AT MCC-E2 UTILIZE EXISTING AERATION TANK BLOWER ATB-2 COMPARTMENT AND INSTALL NEW CONDUCTORS (2 PER PHASE)
P-BB-5A	IFAS BLOWER NO.2 (EX. AERATION TANK BLWR NO.2) VFD	IFAS BLOWER NO.2 (EX. AERATION TANK BLWR NO.2)	EXISTING CONDUIT	6-#300 MCM 2-#1GRD	INSTALL NEW CONDUCTORS (2 PER PHASE)
P-BB-6	EXISTING MOTOR CONTROL CENTER MCC-E2	DIURNAL FLOW BLOWER NO.1 (DFRTB-1) VFD	EXISTING CONDUIT	3-#500 MCM 1-#2GRD	AT MCC-E2 UTILIZE EXISTING DIURNAL FLOW BLOWER DFRTB-1 COMPARTMENT
P-BB-6A	DIURNAL FLOW BLOWER NO.1 (DFRTB-1) VFD	DIURNAL FLOW BLOWER NO.1 (DFRTB-1)	EXISTING CONDUIT	3-#500 MCM 1-#2GRD	-
P-IFAS-1	MOTOR CONTROL CENTER "MCC-IFAS-1"	IR PUMP NO.1A	2 1/2"	3-#4 1-#8GRD	VFD CABLE PER SPECIFICATION 26 05 19
P-IFAS-2	MOTOR CONTROL CENTER "MCC-IFAS-1"	IR PUMP NO.1B	2 1/2"	3-#4 1-#8GRD	VFD CABLE PER SPECIFICATION 26 05 19
P-IFAS-3	MOTOR CONTROL CENTER "MCC-IFAS-1"	IR PUMP NO.4	2 1/2"	3-#4 1-#8GRD	VFD CABLE PER SPECIFICATION 26 05 19
P-IFAS-4	MOTOR CONTROL CENTER "MCC-IFAS-1"	IR PUMP NO.2A	2 1/2"	3-#4 1-#8GRD	VFD CABLE PER SPECIFICATION 26 05 19
P-IFAS-5	MOTOR CONTROL CENTER "MCC-IFAS-1"	IR PUMP NO.2B	2 1/2"	3-#4 1-#8GRD	VFD CABLE PER SPECIFICATION 26 05 19
P-IFAS-6	MOTOR CONTROL CENTER "MCC-IFAS-1"	IR PUMP NO.5	2 1/2"	3-#4 1-#8GRD	VFD CABLE PER SPECIFICATION 26 05 19
P-IFAS-7	MOTOR CONTROL CENTER "MCC-IFAS-1"	IR PUMP NO.3A	2 1/2"	3-#4 1-#8GRD	VFD CABLE PER SPECIFICATION 26 05 19
P-IFAS-8	MOTOR CONTROL CENTER "MCC-IFAS-1"	IR PUMP NO.3B	2 1/2"	3-#4 1-#8GRD	VFD CABLE PER SPECIFICATION 26 05 19
P-IFAS-9	MOTOR CONTROL CENTER "MCC-IFAS-1"	IR PUMP NO.6	2 1/2"	3-#4 1-#8GRD	VFD CABLE PER SPECIFICATION 26 05 19
P-IFAS-10	MOTOR CONTROL CENTER "MCC-IFAS-1"	TRANSFORMER T-PEPS-1 30KVA 480-120/208V	2"	3-#6 1-#10GRD	-
P-IFAS-10A	TRANSFORMER T-PEPS-1 30KVA 480-120/208V	PANELBOARD LP-IFAS-1	1 1/2"	4-#2 1-#8GRD	-
P-GT-01	PANELBOARD LP-IFAS-1, CIRCUITS NO.16, 18	FLOW METERS FIT-531-1, FIT-531-2, FIT-533-1, FIT-533-2	3/4"	8-#12 1-#12GRD	SEE PANELBOARD LP-IFAS-1 SCHEDULE, SHEET E-019
P-GT-02	NOT USED				
P-GT-03	MOTOR CONTROL CENTER MCC-IFAS-1	PRE-THICKENER NO.1 SCRAPER DRIVE CONTROL PANEL	3/4"	3-#12 1-#12GRD	MCC-IFAS-1 LOCATED AT SECONDARY GALLERY, SEE SHEET E-702 FOR LOCATION
P-GT-04	MOTOR CONTROL CENTER MCC-IFAS-1	PRE-THICKENER NO.2 SCRAPER DRIVE CONTROL PANEL	3/4"	3-#12 1-#12GRD	MCC-IFAS-1 LOCATED AT SECONDARY GALLERY, SEE SHEET E-702 FOR LOCATION

IN CHARGE OF	DL
DESIGNED BY	JEC
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CONTROL CIRCUIT - CONDUCTOR AND CONDUIT SCHEDULE

DESIGNATION	FROM	TO	CONDUIT SIZE	CONDUCTORS QTY/SIZE	REMARKS
CC-PEPS-23	MOTOR CONTROL CENTER MCC-PEPS-2	IFAS CONTROL PANEL	1 1/2"	50-#14	INCLUDES SPARES
CC-PEPS-24	PEPS PCS CONTROL PANEL	IFAS CONTROL PANEL	1"	FIBER OPTIC CABLE	-
CC-PEPS-25	PEPS PUMP NO.1 VFD	PEPS PUMP NO.1 FSL-275-1, HS-275-1, TSH-275-1	3/4"	7-#14	-
CC-PEPS-26	PEPS PUMP NO.2 VFD	PEPS PUMP NO.2 FSL-275-2, HS-275-2, TSH-275-2	3/4"	7-#14	-
CC-PEPS-27	PEPS PUMP NO.3 VFD	PEPS PUMP NO.3 FSL-275-3, HS-275-3, TSH-275-3	3/4"	7-#14	-
CC-PEPS-28	PEPS PCS CONTROL PANEL	FLOW TRANSMITTER FIT-280A	3/4"	1-#16 TSP	-
CC-PEPS-28A	FLOW TRANSMITTER FIT-280A	FE-280A	3/4"	MANUFACTURER'S CABLE	-
CC-PEPS-29	PEPS PCS CONTROL PANEL	FE/FIT-280B	3/4"	1-#16 TSP	-
CC-PEPS-30	PEPS PCS CONTROL PANEL	FE/FIT-280C	3/4"	1-#16 TSP	-
CC-PEPS-31	PEPS PCS CONTROL PANEL	FCV-281-1	3/4"	1-#16 TSP	-
CC-PEPS-32	PEPS PCS CONTROL PANEL	FCV-281-1	3/4"	8-#14	-
CC-PEPS-33	PEPS PCS CONTROL PANEL	FCV-281-2	3/4"	1-#16 TSP	-
CC-PEPS-34	PEPS PCS CONTROL PANEL	FCV-281-2	3/4"	8-#14	-
CC-PEPS-35	PEPS PCS CONTROL PANEL	FCV-281-3	3/4"	1-#16 TSP	-
CC-PEPS-36	PEPS PCS CONTROL PANEL	FCV-281-3	3/4"	8-#14	-
CC-PEPS-37	PEPS PCS CONTROL PANEL	ELECTRICAL ROOM VENTILATION FAIL (TSH-275-3)	3/4"	2-#14	-
CC-PEPS-38	PEPS PCS CONTROL PANEL	ALARM HORN (YAI-276)	3/4"	2-#14	-
CC-PEPS-39	PEPS PCS CONTROL PANEL	LAB PCS CONTROL PANEL	2"	2-FIBEROPTIC CABLES	-
CC-PEPS-40	PEPS PCS CONTROL PANEL	TERTIARY FILTER BUILDING PCS CONTROL PANEL	2"	1-FIBEROPTIC CABLE	-
CC-PEPS-41	PEPS PCS CONTROL PANEL	IFAS CONTROL PANEL AT PEPS BUILDING	1"	1-FIBEROPTIC CABLE	-
CC-BB-1	EX. DIURNAL FLOW BLOWER NO.1	FE/FIT-355-1, PIT-355-1A & 1B TE/TIT-355-1	1 1/2"	4-#16 TSP	-
CC-BB-2	EX. DIURNAL FLOW BLOWER NO.2	FE/FIT-355-2, PIT-355-2A & 2B, TE/TIT-355-2	1 1/2"	4-#16 TSP	-
CC-BB-3	EX. DIURNAL FLOW BLOWER NO.3	EX. EQ. BASIN BLOWER NO. 3 FE/FIT-355-3, & 3A, TE/TIT-355-3	1 1/2"	4-#16 TSP	-
CC-BB-4	IFAS BLOWER NO.1 CONTROL PANEL	FE/FIT-350-1, PIT-350-1A & 1B, TE/TIT-350-1	1 1/2"	4-#16 TSP	EXISTING AERATION BLOWER NO.4
CC-BB-5	IFAS BLOWER NO.2 CONTROL PANEL	FE/FIT-350-2, PIT-350-2A & 2B, TE/TIT-350-2	1 1/2"	4-#16 TSP	EXISTING AERATION BLOWER NO.5
CC-BB-6	IFAS BLOWER NO.3 CONTROL PANEL	FE/FIT-350-3, PIT-350-3A & 3B, TE/TIT-350-3	1 1/2"	4-#16 TSP	EXISTING AERATION BLOWER NO.6
CC-BB-7	BLOWER BUILDING PCS CONTROL PANEL	PE/PIT-351-1A, PE/PIT-351-1B, & TE/TIT-351-1	1"	3-#16 TSP	-
CC-BB-8	BLOWER BUILDING PCS CONTROL PANEL	IFAS BLOWER NO.1 & NO.2 VFD'S	1 1/2"	4-#16 TSP	-
CC-BB-9	BLOWER BUILDING PCS CONTROL PANEL	IFAS BLOWER NO.1 & NO.2 VFD'S	1"	20-#14	INCLUDES SPARES
CC-BB-10	BLOWER BUILDING PCS CONTROL PANEL	IFAS BLOWER NO.3 VFD	3/4"	10-#14	INCLUDES SPARES
CC-BB-11	BLOWER BUILDING PCS CONTROL PANEL	IFAS BLOWER NO.3 VFD	3/4"	2-#16 TSP	-
CC-BB-12	BLOWER BUILDING PCS CONTROL PANEL	DIURNAL BASIN NO.1, NO.2, NO.3 BLOWER VFD'S	1"	30-#14	INCLUDES SPARES
CC-BB-13	BLOWER BUILDING PCS CONTROL PANEL	DIURNAL BASIN NO.1, NO.2, NO.3 BLOWER VFD'S	1 1/2"	6-#16 TSP	-
CC-BB-14	BLOWER BUILDING PCS CONTROL PANEL	FE/FIT-351-1	3/4"	1-#16 TSP	-
CC-BB-23	NOT USED				-
CC-BB-24	BLOWER BUILDING PCS CONTROL PANEL	LAB PCS CONTROL PANEL	2"	FIBEROPTIC CABLE	-
CC-BB-25	DIURNAL BLOWER NO.1 VARIABLE FREQUENCY DRIVE PANEL	TSH-355-1	3/4"	1-#16 TSP	-
CC-BB-26	BLOWER BUILDING PCS CONTROL PANEL	VT-355-1	3/4"	1-#16 TSP	-

2

CONTROL CIRCUIT - CONDUCTOR AND CONDUIT SCHEDULE

DESIGNATION	FROM	TO	CONDUIT SIZE	CONDUCTORS QTY/SIZE	REMARKS
CC-BB-27	DIURNAL BLOWER NO.2 VARIABLE FREQUENCY DRIVE PANEL	TSH-355-2	3/4"	1-#16 TSP	-
CC-BB-28	BLOWER BUILDING PCS CONTROL PANEL	VT-355-2	3/4"	1-#16 TSP	-
CC-BB-29	DIURNAL BLOWER NO.3 VARIABLE FREQUENCY DRIVE PANEL	TSH-355-3	3/4"	1-#16 TSP	-
CC-BB-30	BLOWER BUILDING PCS CONTROL PANEL	VT-355-3	3/4"	1-#16 TSP	-
CC-BB-31	IFAS BLOWER NO.1 VARIABLE FREQUENCY DRIVE PANEL	TSH-350-1	3/4"	1-#16 TSP	-
CC-BB-32	BLOWER BUILDING PCS CONTROL PANEL	VT-350-1	3/4"	1-#16 TSP	-
CC-BB-33	IFAS BLOWER NO.2 VARIABLE FREQUENCY DRIVE PANEL	TSH-350-2	3/4"	1-#16 TSP	-
CC-BB-34	BLOWER BUILDING PCS CONTROL PANEL	VT-350-2	3/4"	1-#16 TSP	-
CC-BB-35	IFAS BLOWER NO.3 VARIABLE FREQUENCY DRIVE PANEL	TSH-350-3	3/4"	1-#16 TSP	-
CC-BB-36	BLOWER BUILDING PCS CONTROL PANEL	VT-350-3	3/4"	1-#16 TSP	-
CC-SRB-1	EX. RIO CABINET F1 & F2 AT RETENTION BASIN	FLOW RETENTION BASIN INFLUENT FLOW TRANSMITTER FIT-139	3/4"	1-#16 TSP	COORDINATE ACTUAL LOCATION OF EX. RIO CABINET WITH WWTP PERSONNEL
CC-SRB-2	FLOW RETENTION BASIN INFLUENT FLOW TRANSMITTER FIT-139	FLOW RETENTION BASIN INFLUENT FLOW METER FE-139	3/4"	MANUFACTURERS CABLE	-
CC-IFAS-1	NOT USED				-
CC-IFAS-1A	NOT USED				-
CC-IFAS-1B	IR PUMP NO.1A VFD	IR PUMP NO.1A (M-325-1A) TSH-325-1A, LSH-325-1A	3/4"	10-#14	INCLUDES SPARES
CC-IFAS-2	NOT USED				-
CC-IFAS-2A	NOT USED				-
CC-IFAS-2B	IR PUMP NO.1B VFD	IR PUMP NO.1B (M-325-1B) TSH-325-1B, LSH-325-1B	3/4"	10-#14	INCLUDES SPARES
CC-IFAS-3	NOT USED				-
CC-IFAS-3A	NOT USED				-
CC-IFAS-3B	IR PUMP NO.4 VFD	IR PUMP NO.4 (M-326-1) TSH-326-1, LSH-326-1	3/4"	10-#14	INCLUDES SPARES
CC-IFAS-4	NOT USED				-
CC-IFAS-4A	NOT USED				-
CC-IFAS-4B	IR PUMP NO.2A VFD	IR PUMP NO.2A (M-325-2A) TSH-325-2A, LSH-325-2A	3/4"	10-#14	INCLUDES SPARES
CC-IFAS-5	NOT USED				-
CC-IFAS-5A	NOT USED				-
CC-IFAS-5B	IR PUMP NO.2B VFD	IR PUMP NO.2B (M-325-2B) TSH-325-2B, LSH-325-2B	3/4"	10-#14	INCLUDES SPARES
CC-IFAS-6	NOT USED				-
CC-IFAS-6A	NOT USED				-
CC-IFAS-6B	IR PUMP NO.5 VFD	IR PUMP NO.5 (M-326-2) TSH-326-2, LSH-326-2	3/4"	10-#14	INCLUDES SPARES
CC-IFAS-7	NOT USED				-
CC-IFAS-7A	NOT USED				-
CC-IFAS-7B	IR PUMP NO.3A VFD	IR PUMP NO.3A (M-325-3A) TSH-325-3A, LSH-325-3A	3/4"	10-#14	INCLUDES SPARES
CC-IFAS-8	NOT USED				-
CC-IFAS-8A	NOT USED				-
CC-IFAS-8B	IR PUMP NO.3B VFD	IR PUMP NO.3B (M-325-3B) TSH-325-3B, LSH-325-3B	3/4"	10-#14	INCLUDES SPARES
CC-IFAS-9	NOT USED				-

2

2

IN CHARGE OF DL
DESIGNED BY JEC
CHECKED BY RGH
DRAWN BY WGF

NO.	DATE	REVISION	INT.
2	11/02/2015	ADDENDUM NO.3	DL
1	09/23/2015	ISSUED FOR BID	DL
0	03/19/2015	ISSUED FOR OEPA REVIEW	DL

CTI / O'BRIEN & GERE JOINT VENTURE
O'BRIEN & GERE
220 MARKET AVENUE SOUTH
SUITE 750
CANTON, OH 47702

CITY OF MASSILLON
2013 WWTP IMPROVEMENTS
MASSILLON, OHIO

ELECTRICAL

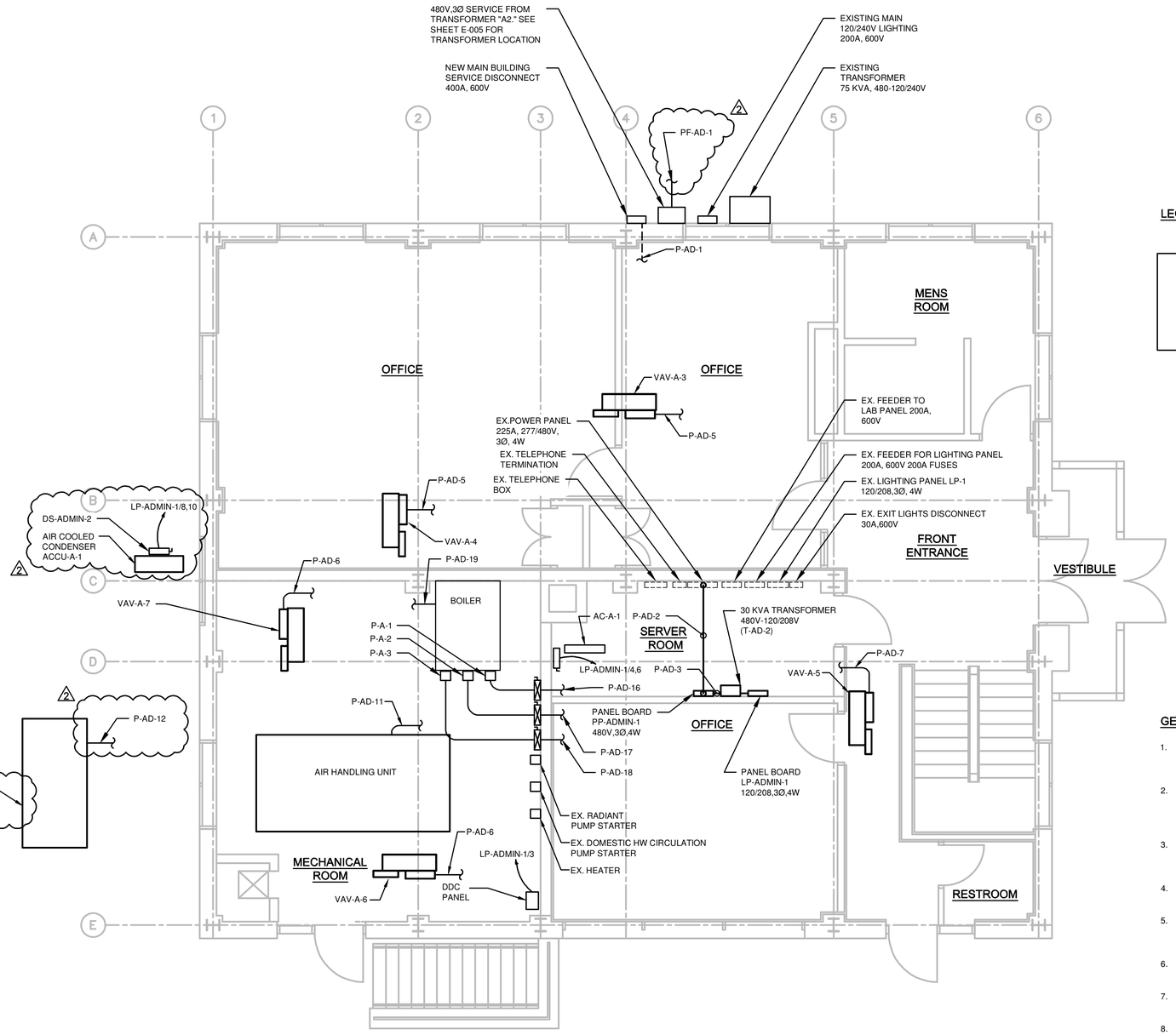
CONTROL CONDUIT SCHEDULE

FILE NO. 23374.51633- E024
DATE SEPT. 23, 2015

E-024

C:\Users\fletchwg\Documents\51633.MEP-FSB_fletchwg.rvt

SAVED: 11/2/15 1:07 PM



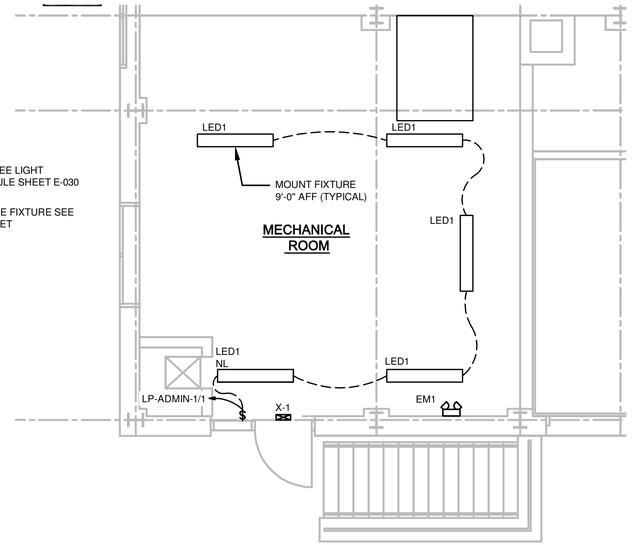
FIRST FLOOR PLAN

1/4"=1'-0" 4' 2' 0 2' 4' PLAN NORTH

LEGEND:

LED1 / NL — FIXTURE TYPE, SEE LIGHT FIXTURE SCHEDULE SHEET E-030

NIGHT LIGHT TYPE FIXTURE SEE NOTE 5 THIS SHEET



LIGHTING PLAN

1/4"=1'-0" 4' 2' 0 2' 4' PLAN NORTH

GENERAL NOTES:

1. IT IS THE CONTRACTORS RESPONSIBILITY TO COORDINATE AND SCHEDULE ALL WORK WITH THE OWNER, ENGINEER AND OTHER CONTRACTORS
2. CONDUIT ROUTINGS SHOWN ARE SCHEMATIC ONLY, CONTRACTOR SHALL ROUTE CONDUIT BASED ON ACTUAL FIELD CONDITIONS AND IN COORDINATION WITH ALL OTHER EQUIPMENT BEING INSTALLED UNDER THIS CONTRACT.
3. WHERE TRENCHING FOR ELECTRICAL IS REQUIRED, CONTRACTOR SHALL VERIFY EXISTENCE OF UNDERGROUND OBSTRUCTIONS PRIOR TO EXCAVATION.
4. CONTRACTOR SHALL FIELD VERIFY ALL LENGTHS AND DIMENSIONS NOT SPECIFICALLY CALLED OUT ON THE DRAWINGS OR OTHERWISE NOTED.
5. ALL SPLICES IN UNDERGROUND CONDUCTORS (I.E. PULLBOXES AND MANHOLES) SHALL BE WATERPROOF AND SUBMERSIBLE, THOMAS & BETTS FLOOD-SEAL IN-LINE COMPRESSION SPLICE KITS.
6. WORKING CLEARANCE TO BE MAINTAINED IN FRONT OF ELECTRICAL EQUIPMENT, PER NEC TABLE 110,26(A)(1).
7. SPARE CONDUITS FROM DUCT BANKS SHALL TERMINATE 6" AFF WITH CAP, ADJACENT TO ELECTRICAL ROOM EXTERIOR WALL.
8. REFER TO CONDUIT & WIRE SCHEDULE SHEET E-020 AND E-023, FOR POWER AND CONTROL WIRING REQUIREMENTS AND PANELBOARD SCHEDULE LP-ADMIN-1 AND PP-ADMIN-1 ON SHEET E-018 FOR POWER CIRCUIT DESIGNATIONS.
9. COORDINATE ALL HVAC CONTROL REQUIREMENTS WITH HVAC CONTRACTOR. ALL REQUIRED CONDUIT SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR. LINE VOLTAGE (120VAC) CONDUCTORS ARE BY THE ELECTRICAL CONTRACTOR. LOW VOLTAGE CONDUCTORS BY THE HVAC CONTRACTOR. REFER TO HVAC DRAWINGS FOR THE CONTROL SEQUENCE.

GENERAL LIGHTING NOTES:

1. PROVIDE CONDUIT SLEEVE FOR EXISTING LIGHTING AND DEVICES.
2. VERIFY CLEARANCE REQUIREMENTS FOR ANY FIXTURE DIRECTLY ABOVE EQUIPMENT.
3. REFER TO PANEL BOARD SCHEDULE ON DRAWING E-XXX.
4. WALL MOUNTED EXIT SIGNS TO BE MOUNTED 8'-0" AFF AND CIRCUITED TO PANEL AS SCHEDULED.
5. EMERGENCY LIGHT IS TO BE CIRCUITED TO THE HOT LEG OF THE CIRCUIT FEEDING THE LIGHTS IN THE SAME AREA.
6. LIGHT FIXTURE MOUNTING HEIGHTS ARE TO BE LISTED AS BOTTOM OF FIXTURE.
7. INSTALL FIXTURES AT LOCATIONS AS SHOWN, AS NOTED OR AS CLOSE AS POSSIBLE TO THESE LOCATIONS. WHEN ADJUSTMENTS TO AVOID INTERFERENCE ARE REQUIRED, FIXTURES SHALL BE INSTALLED LEVEL AND PLUMB.
8. CLEAN EACH FIXTURE AT TIME OF SUBSTANTIAL COMPLETION.
9. OPERATE EACH FIXTURE AFTER INSTALLATION AND CONNECTION. INSPECT FOR AND REPAIR ALL IMPROPER CONNECTIONS AND OPERATION.

AREA CLASSIFICATION:
REQUIREMENTS FOR ELECTRICAL WORK AND MATERIALS VARIES FOR EACH ROOM OR AREA. REFER TO THE TABLE DWG. E-003 FOR ROOM/AREA CLASSIFICATION.

IN CHARGE OF DL
DESIGNED BY JEC
CHECKED BY RGH
DRAWN BY WGF

NO.	DATE	REVISION	INT.
2	11/02/2015	ADDENDUM NO.3	DL
1	09/23/2015	ISSUED FOR BID	DL
0	03/19/2015	ISSUED FOR OEPA REVIEW	DL

CTI / O'BRIEN & GERE JOINT VENTURE
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220 MARKET AVENUE SOUTH
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CANTON, OH 47702

CITY OF MASSILLON
2013 WWTP IMPROVEMENTS
MASSILLON, OHIO

ELECTRICAL
ADMINISTRATION BUILDING
FIRST FLOOR- POWER & LIGHTING PLANS

FILE NO. 23374.51633 - E104
DATE SEPT. 23, 2015

E-104

I:\CTI-OBG-JV.2337\451633.MASSILLON-NR-EX\DOCS\DWG\SHEETS\51633.E104.DWG

DRAWING NUMBER: 930M-0001
PROJECT NUMBER: 5700235402
PROJECT NAME: MASSILLON, OH

MD BILL OF MATERIALS

REVISION: 6
CREATED BY: CDP

ITEM	QTY	MATERIAL	DRAWING NUMBER	DESCRIPTION
1	75	SEE BOM	930F-1050	WLDMT, CYLINDRICAL SCREEN, PERFORATED, Ø23", 5'-0"LG, Ø5/8" HOLES, 13/16" CENTERS, STAGGERED, WITH FLG FLATS
2	33	SEE BOM	930F-1230	WLDMT, CYLINDRICAL SCREEN, PERFORATED, Ø23", 5'-0"LG, Ø5/8" HOLES, 13/16" CENTERS, STAGGERED, WITH PIPE HANGERS
3	33	SEE BOM	930F-1207	WLDMT, SPARGER, Ø23" X 5'-0"LG CYL SCREEN, Ø3" MANIFOLD, WITH TURN DOWN
4	63	AISI 304L	930F-0701	ANG, 3" PIPE SUPPORT, 2" X 2" X 3/16" X 10.75"LG
5	453	AISI 304L	930F-0703	ANG, 6" PIPE SUPPORT, 2" X 2" X 3/16" X 14"LG
6	30	AISI 304L	930F-1208	PIPE, 3", SCH10, 28.75"LG
7	18	AISI 304	930F-0779	SCREEN, PERFORATED, 14 GA, 2'-0" X 2'-0", Ø5/8" HOLES, 13/16" CENTERS, STAGGERED
8	3	SEE BOM	930F-1209	ASSY, AERATION GRID, 6", (8) 1-1/4" LATS @ 30" O.C., 8'-0" W, 248 HOLES, VERT. FLG. INLET, OPEN OUTLET, RH
9	9	SEE BOM	930F-1210	ASSY, AERATION GRID, 6", (8) 1-1/4" LATS @ 30" O.C., 8'-0" W, 248 HOLES, OPEN INLET, OPEN OUTLET, RH
10	3	SEE BOM	930F-1211	ASSY, AERATION GRID, 6", (7) 1-1/4" LATS @ 30" O.C., 8'-0" W, 217 HOLES, OPEN INLET, CAPPED OUTLET, RH
11	6	SEE BOM	930F-1212	ASSY, AERATION GRID, 6", (8) 1-1/4" LATS @ 30" O.C., 8'-0" W, 217 HOLES, VERT. FLG. INLET, OPEN OUTLET, LH
12	6	SEE BOM	930F-1213	ASSY, AERATION GRID, 6", (7) 1-1/4" LATS @ 30" O.C., 8'-0" W, 217 HOLES, OPEN INLET, CAPPED OUTLET, LH
13	21	SEE BOM	930F-1214	ASSY, AERATION GRID, 6", (8) 1-1/4" LATS @ 30" O.C., 8'-0" W, 176 HOLES, VERT. FLG. INLET, OPEN OUTLET, LH
14	21	SEE BOM	930F-1215	ASSY, AERATION GRID, 6", (8) 1-1/4" LATS @ 30" O.C., 8'-0" W, 176 HOLES, OPEN INLET, OPEN OUTLET, LH
15	18	SEE BOM	930F-1216	ASSY, AERATION GRID, 6", (7) 1-1/4" LATS @ 30" O.C., 8'-0" W, 154 HOLES, OPEN INLET, CAPPED OUTLET, LH
16	6	SEE BOM	930F-1217	ASSY, AERATION GRID, 6", (8) 1-1/4" LATS @ 30" O.C., 8'-0" W, 176 HOLES, VERT. FLG. INLET, OPEN OUTLET, RH
17	3	SEE BOM	930F-1218	ASSY, AERATION GRID, 6", (7) 1-1/4" LATS @ 30" O.C., 8'-0" W, 154 HOLES, OPEN INLET, CAPPED OUTLET, RH
18	3	SEE BOM	930F-1219	ASSY, AERATION GRID, 6", (9) 1-1/4" LATS @ 30" O.C., 8'-0" W, 279 HOLES, OPEN INLET, CAPPED OUTLET, LH
19	3	SEE BOM	930F-1220	ASSY, AERATION GRID, 6", (9) 1-1/4" LATS @ 30" O.C., 8'-0" W, 279 HOLES, OPEN INLET, CAPPED OUTLET, RH

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DRAWING NUMBER: 930M-0001
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PROJECT NAME: MASSILLON, OH

MD BILL OF MATERIALS

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REVISION: 6
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ITEM	QTY	MATERIAL	DRAWING NUMBER	DESCRIPTION
20	13	SEE BOM	930F-1221	WLDMT, DROP PIPE, 6", SCH10, FLG. ONE END, 14'-11 1/4"LG
21	3	SEE BOM	930F-1222	WLDMT, DROP PIPE, 3", SCH10, FLG. ONE END, 15'-4"LG
22	3	SEE BOM	930F-1223	WLDMT, DROP PIPE, 3", SCH10, ELBOW, 6'-10 3/8"LG
23	3	SEE BOM	930F-1224	WLDMT, AERATION GRID, 3", VERT FLG INLET, TEE W/OPEN OUTLET, 12'-5"LG
24	3	SEE BOM	930F-1225	WLDMT, AERATION GRID, 3", OPEN INLET, OPEN OUTLET, 20'-0"LG
25	6	SEE BOM	930F-1226	WLDMT, AERATION GRID, 3", OPEN INLET, CAPPED OUTLET, 20'-0"LG
26	3	SEE BOM	930F-1227	WLDMT, AERATION GRID, 3", OPEN INLET w/ELBOW, OPEN OUTLET, 20'-4 1/2"LG
27	26	SEE BOM	930F-1334	WLDMT, DROP PIPE, 6", SCH10, FLG. ONE END, 2X 45 DEG. OFFSET, 14'-11 1/4"LG
28	3	AISI 304L	-	CAP, PIPE, 3", SCH40, BW, MCMASTER #45605K591OR EQUIV
29	84	SEE MFG SHT	-	COUPLING, PIPE, FLEXIBLE, 3", STRAUB-FLEX-L-3-IPS-SS-E-SI
30	108	SEE MFG SHT	-	COUPLING, PIPE, FLEXIBLE, 6", STRAUB-FLEX-L-6-IPS-SS-E-SI
31	9	SEE MFG SHT	-	MIXER, SUBMERSIBLE, ABS MODEL RW4031 A46/8 CR, 6.2 HP
32	3	SEE MFG SHT	-	ASSY, HOIST, MANUAL, 30' LIFTING CABLE
33	9	SEE MFG SHT	-	ASSY, GUIDERAIL/BRACKET, HOIST (FOR 26.5' SWD)
34	9	SEE MFG SHT	-	BASEPLATE, HOIST
35	15	AISI 304	930F-1229	SCREEN, PERFORATED, 14 GA, 2'-0" X 4'-0", Ø5/8" HOLES, 13/16" CENTERS, STAGGERED
36	-	-	-	-
37	-	-	-	-
38	-	-	-	-
39	3	SEE BOM	930F-1231	WLDMT, SCREEN, GUIDED RADAR, 6", 4'-6" LG., PERF, Ø5/8" HOLES, 13/16" CENTERS, MODEL 7AF-4100-A01-00-048
40	-	-	-	-
41	1	SEE BOM	930F-1298	ASSY, AERATION GRID, 6", (10+6) 1-1/4" LATS @ 30" O.C., 274 HOLES, 11'-9" W, VERT. FLG. INLET, OPEN OUTLET, RH
42	1	SEE BOM	930F-1299	ASSY, AERATION GRID, 6", (9+4) 1-1/4" LATS @ 30" O.C., 11'-9" W, 234 HOLES, OPEN INLET, CAPPED OUTLET, RH
43	1	SEE BOM	930F-1300	ASSY, AERATION GRID, 6", (10+5) 1-1/4" LATS @ 30" O.C., 11'-9" W, 265 HOLES, VERT. FLG. INLET, OPEN OUTLET, RH
44	1	SEE BOM	930F-1301	ASSY, AERATION GRID, 6", (9+7) 1-1/4" LATS @ 30" O.C., 11'-9" W, 261 HOLES, OPEN INLET, CAPPED OUTLET, RH
45	1	SEE BOM	930F-1302	ASSY, AERATION GRID, 6", (9+6) 1-1/4" LATS @ 30" O.C., 11'-9" W, 252 HOLES, VERT. FLG. INLET, OPEN OUTLET, RH
46	1	SEE BOM	930F-1303	ASSY, AERATION GRID, 6", (10+6) 1-1/4" LATS @ 30" O.C., 11'-9" W, 274 HOLES, OPEN INLET, OPEN OUTLET, RH

KRÜGER

DRAWING NUMBER: 930M-0001
PROJECT NUMBER: 5700235402
PROJECT NAME: MASSILLON, OH

MD BILL OF MATERIALS

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REVISION: 6
CREATED BY: CDP

ITEM	QTY	MATERIAL	DRAWING NUMBER	DESCRIPTION
100	LABEL AND SHIP LOOSE - 1" SPARGER PIPE SUPPORT CONNECTION FASTENERS			
	66	AISI 304		U-BOLT, 1", 1/4-20, 1 3/8"ID, 2 1/4"LG, 1 1/8"LG THD, DALE CO. #US5 OR EQUIV
	132	AISI 304		WSHR, FLAT, 1/4", .313" ID, .625" OD, .051" THK, SAE
	132	AISI 304		NUT, HEX, NYLOCK, 1/4-20, ANSI
101	LABEL AND SHIP LOOSE - 3" SPARGER PIPE SUPPORT CONNECTION FASTENERS			
	66	AISI 304		U-BOLT, 3", 3/8-16, 3 9/16"ID, 4 3/4"LG, 2"LG THD, DALE CO. #US26 OR EQUIV
	132	AISI 304		WSHR, FLAT, 3/8", .438"ID, .812"OD, .064"THK, SAE
	132	AISI 304		NUT, HEX, NYLOCK, 3/8-16, ANSI
102	LABEL AND SHIP LOOSE - 6" PIPE SUPPORT CONNECTION FASTENERS			
	453	AISI 304		U-BOLT, 6", 3/8-16, 6 5/8"ID, 8"LG, 3"LG THD, DALE CO. #US30 OR EQUIV
	906	AISI 304		WSHR, FLAT, 3/8", .438"ID, .812"OD, .064"THK, SAE
	906	AISI 304		NUT, HEX, NYLOCK, 3/8-16, ANSI
103	LABEL AND SHIP LOOSE - 3" PIPE SUPPORT CONNECTION FASTENERS			
	63	AISI 304		U-BOLT, 3", 3/8-16, 3 9/16"ID, 4 3/4"LG, 2"LG THD, DALE CO. #US26 OR EQUIV
	126	AISI 304		WSHR, FLAT, 3/8", .438"ID, .812"OD, .064"THK, SAE
	126	AISI 304		NUT, HEX, NYLOCK, 3/8-16, ANSI
104	LABEL AND SHIP LOOSE - 3" PLATE FLANGE CONNECTION FASTENERS			
	3	EPDM	-	GSKT, FLG, FULL FACE, 3", 125/150 LB ANSI, 1/8" THK
	12	AISI 304	-	SCREW, HEX, 5/8-11 X 2 1/2"LG, ANSI
	24	AISI 304	-	WSHR, FLAT, 5/8", .656"ID, 1.3125"OD, .095"THK, SAE
	12	AISI 304	-	NUT, HEX, NYLOCK, 5/8-11, ANSI
105	LABEL AND SHIP LOOSE - 6" PLATE FLANGE CONNECTION FASTENERS			
	39	EPDM	-	GSKT, FLG, FULL FACE, 6", 125/150 LB ANSI, 1/8" THK
	312	AISI 304	-	SCREW, HEX, 3/4-10 X 2 1/2"LG, ANSI
	624	AISI 304	-	WSHR, FLAT, 3/4", .813"ID, 1.469"OD, .108"THK, SAE
	312	AISI 304	-	NUT, HEX, NYLOCK, 3/4-10, ANSI

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DRAWING NUMBER: 930M-0001
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MD BILL OF MATERIALS

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REVISION: 6
CREATED BY: CDP

ITEM	QTY	MATERIAL	DRAWING NUMBER	DESCRIPTION
107				**LABEL AND SHIP LOOSE - 3" WALL PIPE SUPPORT ANCHORING FASTENERS**
	36	AISI 304		ROD, THD, 5/8-11 X 12"LG, ANSI
	72	AISI 304		WSHR, FLAT, 5/8", .688"ID, 1.312"OD, .108"THK, SAE
	36	AISI 304		WSHR, LOCK, 5/8", ANSI
	108	AISI 304		NUT, HEX, 5/8-11, ANSI
108				**LABEL AND SHIP LOOSE - 6" WALL PIPE SUPPORT ANCHORING FASTENERS**
	117	AISI 304		ROD, THD, 5/8-11 X 12"LG, ANSI
	234	AISI 304		WSHR, FLAT, 5/8", .688"ID, 1.312"OD, .108"THK, SAE
	117	AISI 304		WSHR, LOCK, 5/8", ANSI
	351	AISI 304		NUT, HEX, 5/8-11, ANSI
109				**LABEL AND SHIP LOOSE - 3" AIR GRID SUPPORT ANCHORING FASTENERS**
	90	AISI 304		ROD, THD, 5/8-11 X 23"LG, ANSI
	180	AISI 304		WSHR, FLAT, 5/8", .688"ID, 1.312"OD, .108"THK, SAE
	90	AISI 304		WSHR, LOCK, 5/8", ANSI
	270	AISI 304		NUT, HEX, 5/8-11, ANSI
110				**LABEL AND SHIP LOOSE - DIFFUSER SUPPORT ANCHORING FASTENERS**
	644	AISI 304		ROD, THD, 5/8-11 X 19"LG, ANSI
	1288	AISI 304		WSHR, FLAT, 5/8", .688"ID, 1.312"OD, .108"THK, SAE
	644	AISI 304		WSHR, LOCK, 5/8", ANSI
	1932	AISI 304		NUT, HEX, 5/8-11, ANSI

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DRAWING NUMBER: 930M-0001
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MD BILL OF MATERIALS

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REVISION: 6
CREATED BY: CDP

ITEM	QTY	MATERIAL	DRAWING NUMBER	DESCRIPTION
111	LABEL AND SHIP LOOSE - CYLINDRICAL SCREEN TO WALL ANCHORING FASTENERS			
	864	AISI 304		ROD, THD, 3/8-16 X 4" LG, ANSI
	864	AISI 304		WSHR, FLAT, 3/8", .438"ID, .812"OD, .064"THK, SAE
	864	AISI 304		WSHR, LOCK, 3/8", ANSI
	864	AISI 304		NUT, HEX, 3/8-16, ANSI
112	LABEL AND SHIP LOOSE - MUD VALVE SCREEN TO FLOOR ANCHORING FASTENERS			
	930	AISI 304		ANCHOR, SPIKE, 3/16", MSHRM HD, 1 1/2"LG, POWERS#6604
113	LABEL AND SHIP LOOSE - 6" AIR GRID SUPPORT ANCHORING FASTENERS			
	612	AISI 304		ROD, THD, 5/8-11 X 26"LG, ANSI
	1224	AISI 304		WSHR, FLAT, 5/8", .688"ID, 1.312"OD, .108"THK, SAE
	612	AISI 304		WSHR, LOCK, 5/8", ANSI
	1836	AISI 304		NUT, HEX, 5/8-11, ANSI
114	LABEL AND SHIP LOOSE - SPARES			
	8	SEE MFG SHT	-	COUPLING, PIPE, FLEXIBLE, 3", STRAUB-FLEX-L-3-IPS-SS-E-SI
	11	SEE MFG SHT	-	COUPLING, PIPE, FLEXIBLE, 6", STRAUB-FLEX-L-6-IPS-SS-E-SI
	3	AISI 304L	930F-0701	ANG, 3" PIPE SUPPORT, 2" X 2" X 3/16" X 10.75"LG
	23	AISI 304L	930F-0703	ANG, 6" PIPE SUPPORT, 2" X 2" X 3/16" X 14"LG
	23	AISI 304		U-BOLT, 6", 3/8-16, 6 5/8"ID, 8"LG, 3"LG THD, DALE CO. #US30 OR EQUIV
	52	AISI 304		WSHR, FLAT, 3/8", .438"ID, .812"OD, .064"THK, SAE
	52	AISI 304		NUT, HEX, NYLOCK, 3/8-16, ANSI
	3	AISI 304		U-BOLT, 3", 3/8-16, 3 9/16"ID, 4 3/4"LG, 2"LG THD, DALE CO. #US26 OR EQUIV

KRÜGER

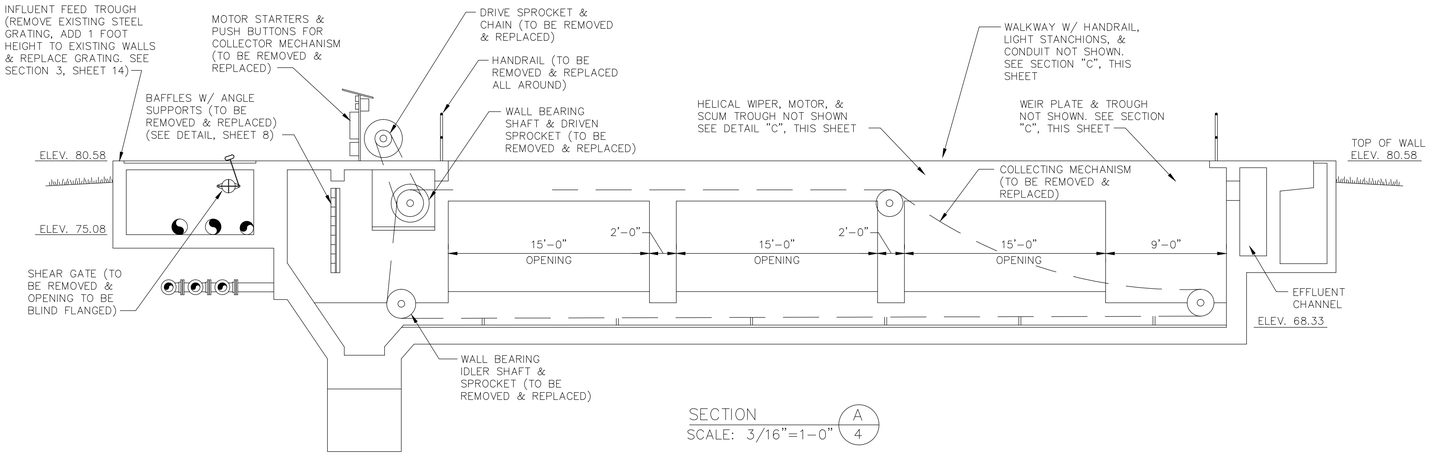
DRAWING NUMBER: 930M-0001
PROJECT NUMBER: 5700235402
PROJECT NAME: MASSILLON, OH

MD BILL OF MATERIALS
REVISION TABLE

PAGE 6 OF 6
REVISION: 6
CREATED BY: CDP

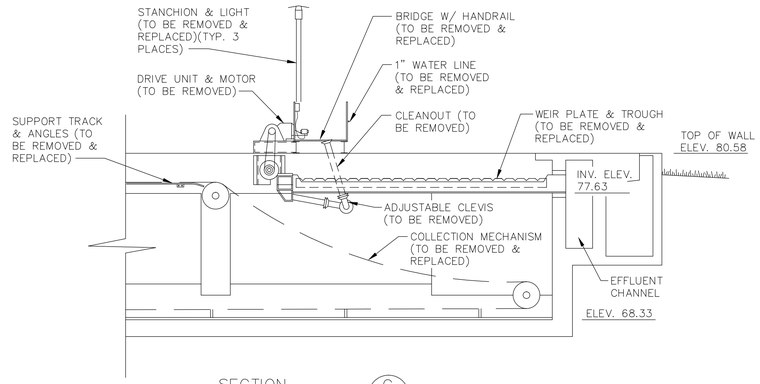
REV	CREATED	APPR	DATE	DESCRIPTION
0	CDP	.	01.21.15	RELEASED FOR SUBMITTAL
1	CDP		03.18.15	ADDED ITEM 7, ITEM 1 QTY WAS 75, ADDED 5% TO ITEM 4, 5, 100-103 QUANTITIES, ITEM 112 QTY WAS 390
2	CDP		03.31.15	REMOVED SPARES AND ADJUSTED QTY FOR ITEMS 4,5 100-103, 108,109
3	CDP		06.05.15	ITEM 30 QTY WAS 69, ITEM 114 QTY WERE 8 AND 7, DELETED ITEMS 27, 36-38,40, ADDED ITEMS 41-46, UPDATED HOLE QTY FOR ITEMS 8-19, ITEM 5 QTY WAS 468, UPDATED DESCRIPTION FOR ITEMS 20-23, ITEM 29 QTY WAS 81, ITEM 102 QTY WAS 468, ITEM 110 QTY WAS 648, ITEM 113 QTY WAS 648
4	CDP		08.31.15	QUANTITIES CHANGED FOR ITEMS 4,5, 8-16, 20, 102, 103,107 AND 114. ADDED ITEM 27, ITEM 114 DESCRIPTION WAS " 8" WALL PIPE SUPPORT ANCHORING FASTENERS", ADDED PIPE SUPPORT ANGLES AND HARDWARE TO ITEM 114. HOLE COUNTS CHANGED FOR ITEMS 8-19 AND 41-46. CHANGED LENGTH/CONFIGURATION TO DROP PIPES. ITEM 110 QTY WAS 612.
5	CDP		09.29.15	ITEM 1 QTY WAS 69, ITEM 111 WAS 816
6	CDP		10.29.15	QTY FOR ITEMS 8,9, 11-16 CHANGED

KRÜGER

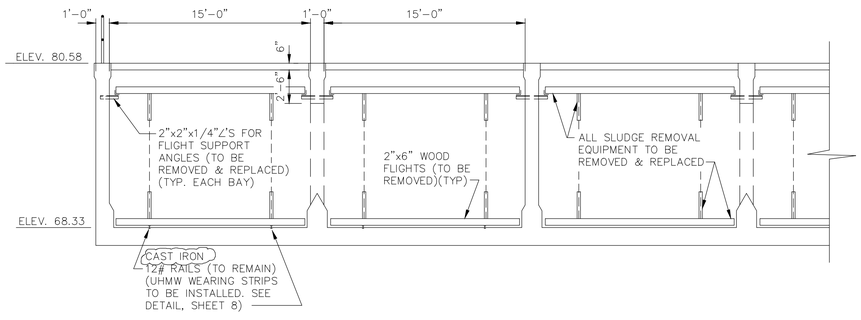


SECTION A
SCALE: 3/16"=1-0" (4)

NOTE:
ALL RENOVATIONS TO THE EQUIPMENT AS SHOWN IN THIS SECTION ARE TYPICAL FOR ALL 6 BAYS.



SECTION C
SCALE: 3/16"=1-0" (4)



SECTION B
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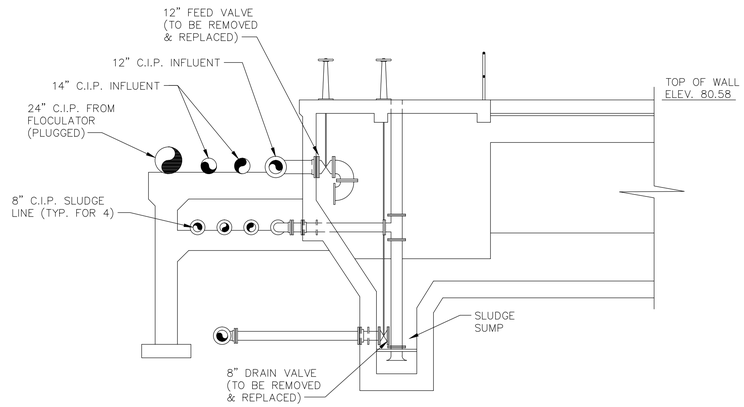

SECTION D
SCALE: 3/16"=1-0" (4)

DWN. BY: R.W.R.	REV. BY: B.J.T.
DATE: 02/09/95	DATE: 05/01/95
CAD DWG. FILE: 7023700\7023PC2	

REFERENCE ONLY

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AS BUILT DRAWINGS PREPARED BY:
CTI ENVIRONMENTAL, INC.

REVISIONS				
NO.	DESCRIPTIONS	DATE	BY	APP'D

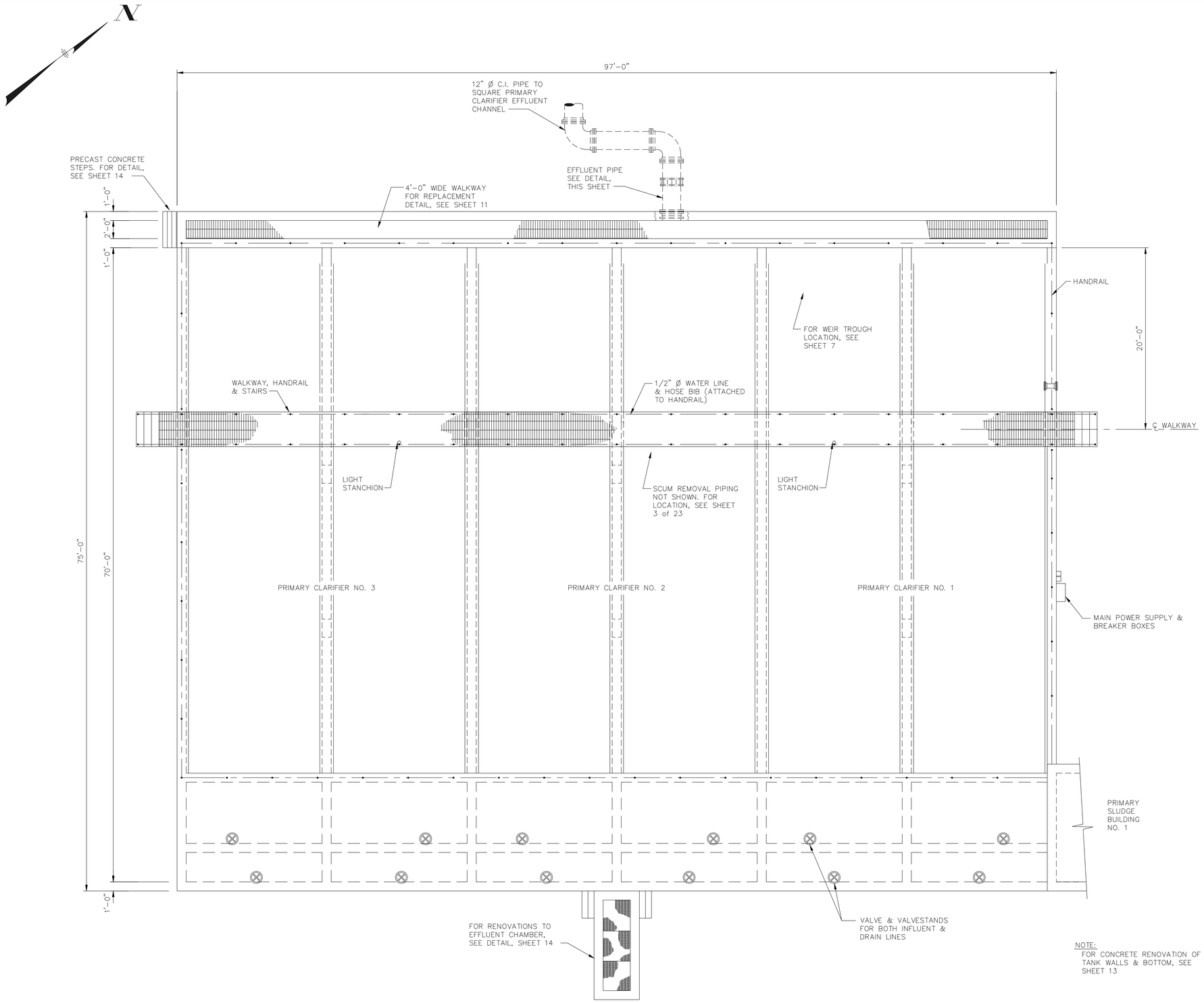
DESIGNED BY R.W.R.
DRAWN BY B.J.T.
CHECKED BY R.W.R.
APPROVED BY W.A.D.

URS CONSULTANTS, INC.
ARCHITECTS • ENGINEERS • PLANNERS

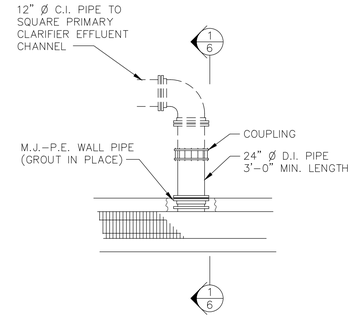
CITY OF MASSILLON, OHIO
W.W.T.P. IMPROVEMENTS
RECTANGULAR PRIMARY CLARIFIER
SECTIONS-GENERAL DEMOLITION

JOB NO. 3070237
DATE 06/09/95
SCALE 3/16"=1'-0"
SHEET 5 of 23

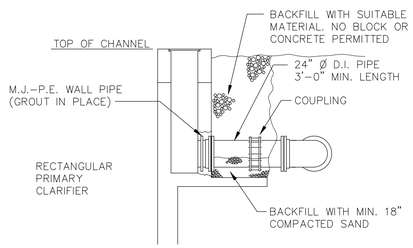
7023700\ABPC2



PLAN VIEW
SCALE: 3/16"=1'-0"



PLAN



SECTION 1/6
SCALE: 3/16"=1'-0"

PROPOSED

EFFLUENT CHAMBER
SCALE: 3/16"=1'-0"

NOTE:
FOR CONCRETE RENOVATION OF TANK WALLS & BOTTOM, SEE SHEET 13

THESE RECORD DOCUMENTS HAVE BEEN PREPARED BASED ON INFORMATION PROVIDED BY OTHERS. CTI ENVIRONMENTAL HAS REVIEWED THE INFORMATION SUBMITTED AND BELIEVES IT REFLECTS THE WORK AS CONSTRUCTED. HOWEVER, ALL PERSONS SHALL VERIFY INFORMATION TAKEN FROM THIS DRAWING.

AS BUILT DRAWINGS PREPARED BY:

CTI ENVIRONMENTAL, INC.

REFERENCE ONLY

DWN. BY: R.W.R.	REV. BY: B.J.T.
DATE: 03/02/95	DATE: 05/01/95
CAD DWG. FILE: 7023700\7023PC4	

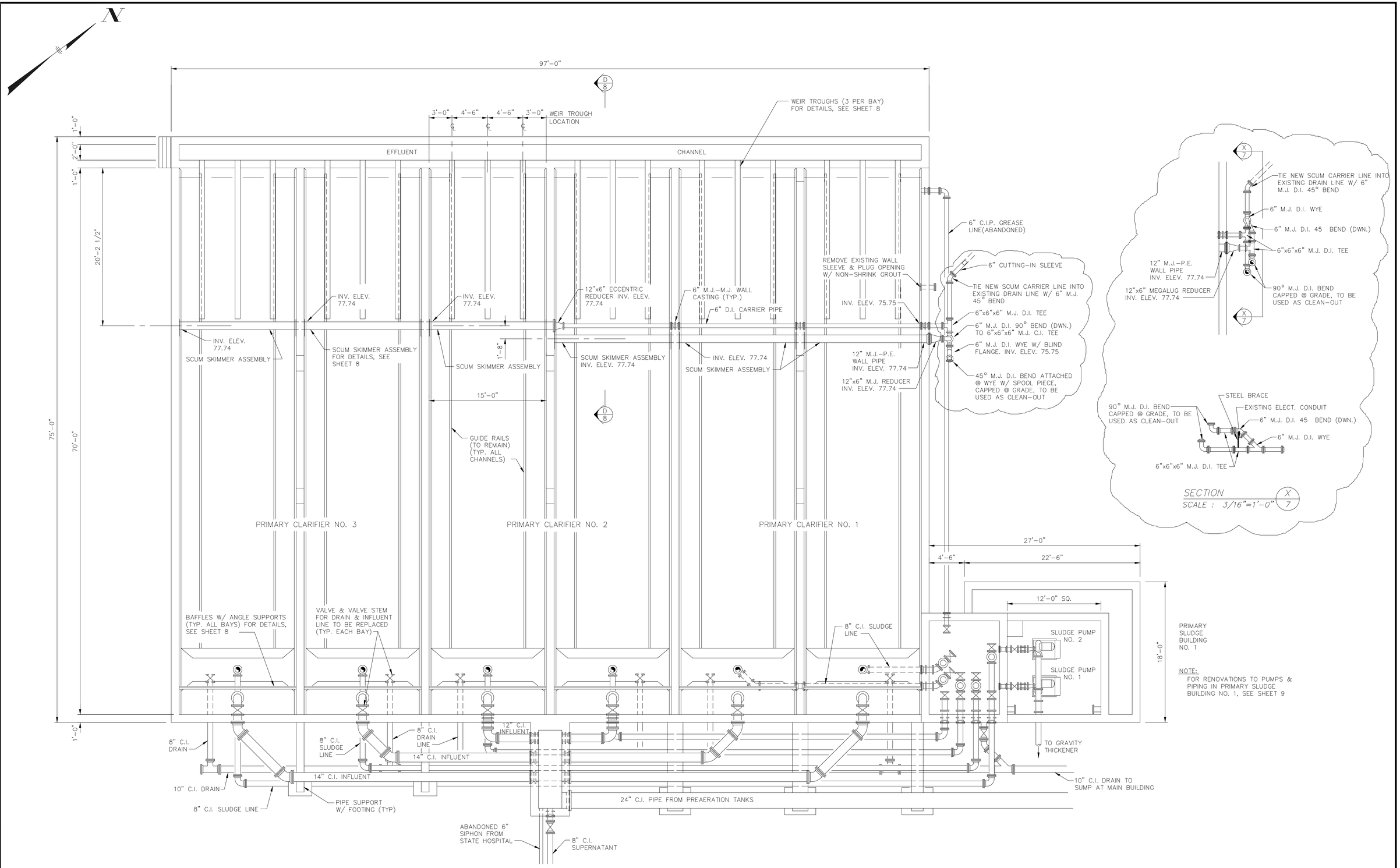
REVISIONS					
NO.	DESCRIPTIONS	DATE	BY	APP'D	
					DESIGNED BY R.W.R.
					DRAWN BY B.J.T.
					CHECKED BY R.W.R.
					APPROVED BY W.A.D.

URS CONSULTANTS, INC.
ARCHITECTS • ENGINEERS • PLANNERS

CITY OF MASSILLON, OHIO
W.W.T.P. IMPROVEMENTS
RECTANGULAR PRIMARY CLARIFIER
PLAN & SECTIONS-ELEV. 81.00

JOB NO.	3070237
DATE	06/09/95
SCALE	3/16"=1'-0"
SHEET	6 of 23

E5008\ABPC4



NOTE:
FOR RENOVATIONS TO PUMPS & PIPING IN PRIMARY SLUDGE BUILDING NO. 1, SEE SHEET 9

DWN. BY: R.W.R. | REV. BY: B.J.T.
DATE: 03/08/95 | DATE: 05/01/95
CAD DWG. FILE: 7023700\70237PC5

REFERENCE ONLY

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REVISIONS				
NO.	DESCRIPTIONS	DATE	BY	APP'D

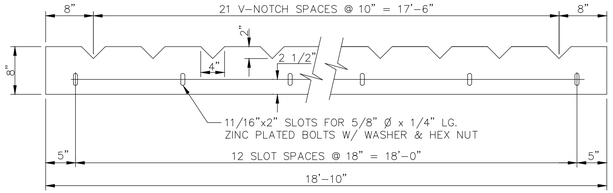
DESIGNED BY R.W.R.
DRAWN BY B.J.T.
CHECKED BY R.W.R.
APPROVED BY W.A.D.

URS CONSULTANTS, INC.
ARCHITECTS • ENGINEERS • PLANNERS

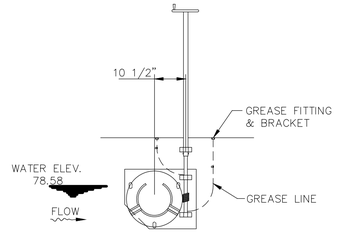
CITY OF MASSILLON, OHIO
W.W.T.P. IMPROVEMENTS
RECTANGULAR PRIMARY CLARIFIER
PLAN VIEW-ELEV. 80.00

JOB NO. 3070237
DATE 06/09/95
SCALE 3/16"=1'-0"
SHEET 7 of 23

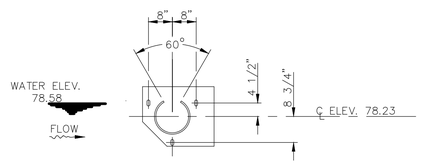
E5008\ABPC5



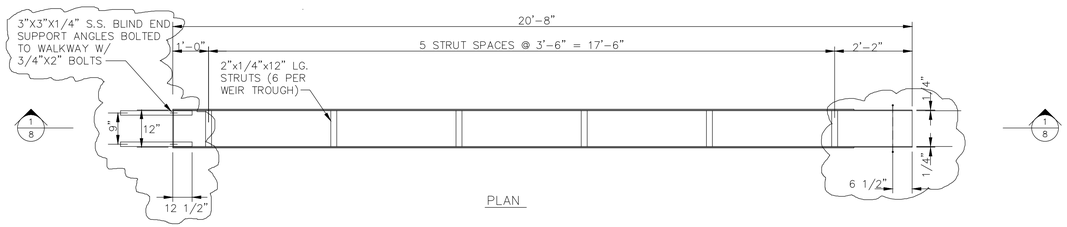
WEIR PLATE DETAIL
SCALE: 1" = 1'-0"



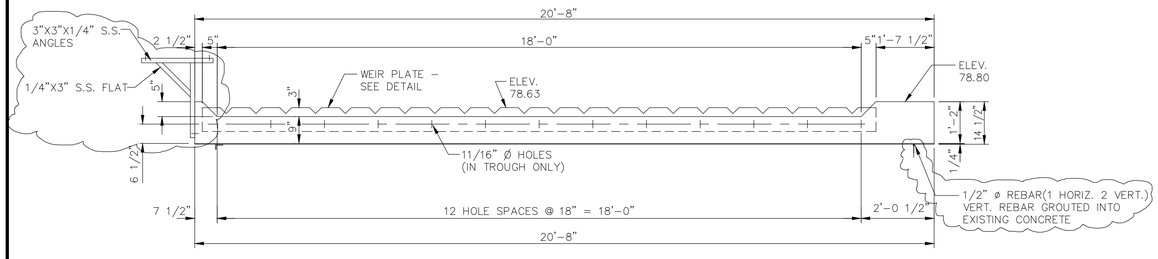
END VIEW
1/2"=1'-0"



ANCHOR DETAIL
1/2"=1'-0"



PLAN

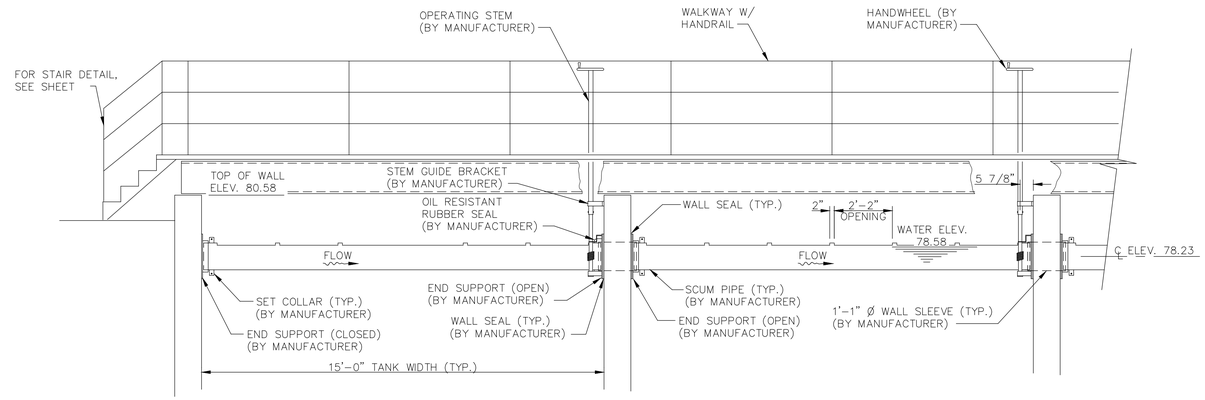


SECTION
SCALE: 1/2"=1'-0" (1/8)

WEIR TROUGH DETAIL
SCALE: 1/2" = 1'-0"
NOTE: 18 REQUIRED

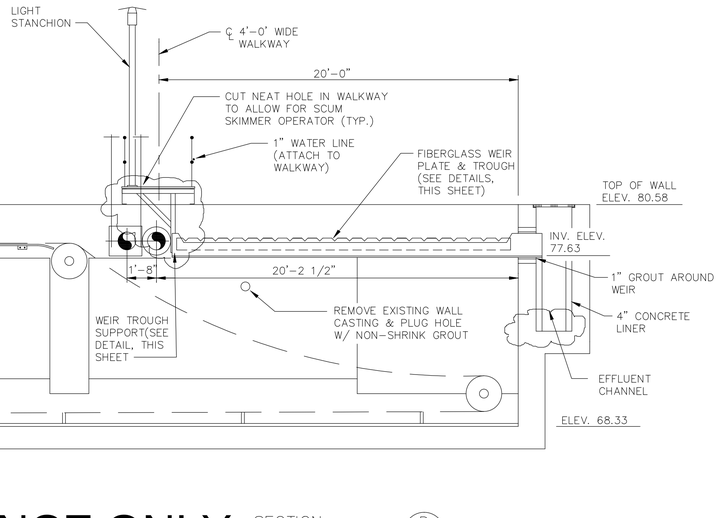
NOTES:

1. WEIR PLATES WILL BE OF FIBERGLASS CONSTRUCTION. ALL "VEE" NOTCHES IN WEIR PLATES MUST BE MACHINE CUT.
2. EXCEPT FOR ANCHOR BOLTS IN CONCRETE & CONCRETE INSERTS, ALL BOLTS, NUTS, & WASHERS USED TO ERECT UNITS WILL BE ZINC PLATED.
3. TROUGHS & WEIR PLATES WILL BE 1/4" UNLESS NOTED
4. PROVIDE 5/8" Ø HEX HEAD BOLTS & HEX HEAD NUTS WITH 2 WASHERS FOR WEIR PLATE CONNECTIONS.



S E C T I O N
3/8"=1'-0"

SCUM SKIMMER ASSEMBLY



AS BUILT DRAWINGS
PREPARED BY:

CTI ENVIRONMENTAL, INC.

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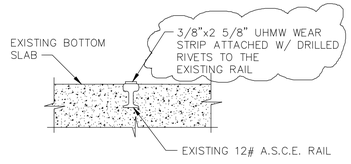
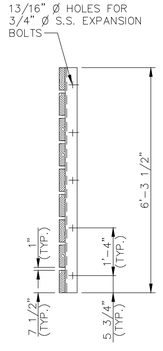
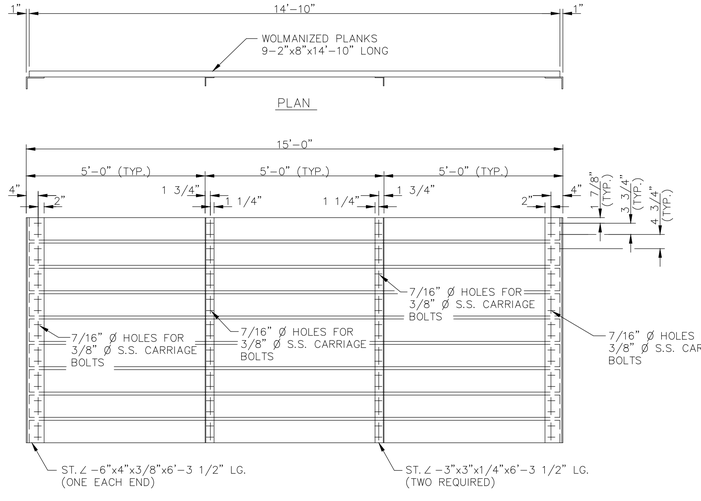


WEAR STRIP DETAIL
SCALE: 1" = 1'-0"
NOTE: 2 REQUIRED PER BAY
12 REQUIRED TOTAL



END VIEW



ELEVATION

PRIMARY CLARIFIER TANK BAFFLES
SCALE: 1/2" = 1'-0"

NOTE:
ALL STEEL ANGLES SHALL BE COATED WITH A BITUMINOUS COATING

REFERENCE ONLY

SECTION
SCALE: 1/4"=1'-0" (D/7)

DWN. BY: R.W.R.	REV. BY: B.J.T.
DATE: 03/15/95	DATE: 05/01/95
CAD DWG. FILE: 7023700\70237MD1	

REVISIONS					
NO.	DESCRIPTIONS	DATE	BY	APP'D	
					DESIGNED BY R.W.R.
					DRAWN BY B.J.T.
					CHECKED BY R.W.R.
					APPROVED BY W.A.D.

URS CONSULTANTS, INC.
ARCHITECTS • ENGINEERS • PLANNERS

CITY OF MASSILLON, OHIO
W.W.T.P. IMPROVEMENTS
RECTANGULAR PRIMARY CLARIFIER
MISCELLANEOUS DETAILS

JOB NO. 3070237
DATE 06/09/95
SCALE 1/4"=1'-0"
SHEET 8 of 23

E500B\ABMD1