



**CT Consultants**  
engineers | architects | planners  
Since 1922

To: All Plan Holders of Record

From: CT Consultants, Inc.

**Re: Addendum No. 4**  
**City of Canton Water Reclamation Facility**  
**Phosphorus/Total Nitrogen Project Contract No. 26**

Date: January 2, 2014

This Addendum forms a part of the contract documents and modifies the original bidding documents dated November 2013. Acknowledge receipt of this addendum in the space provided on the "bid form." Failure to do so may subject the bidder to disqualification.

As noted below, there will be an additional site visit, **January 3, 2014 at 9:00 a.m. EST.**

## **VOLUME 1**

### Table of Contents

- Page iii, Volume 1 **ADD** Notice of Award Page No. NA-1
- Page iii, Volume 1 **ADD** Notice to Proceed Page No. NP-1
- Page v, Volume 2 Division 5 - **ADD** Specification 05013CT – ALUMINUM ACCESS DOORS
- Page vi, Specification 11839CT **INSERT** "Air" following "Pressure."

### Instruction to Bidders

- Page ITB-3, E.4 **ADD** "January 3, 2014 9:00 a.m. EST" as one more additional site visit.

### Bid Form

- Page BF-2, **REMOVE** BF-2 and **INSERT** BF-2 (Revised).
- **ADD** "Item 11 Electric Utility Provider Allowance."

### Owner Contractor Agreement

- Page OAC-1, Section 1, **REVISE** second item "I" to "L" **ADD** "M. Notice of Award" and "N. Notice to Proceed."

### Notice of Award

- **ADD** Page NA-1 (attached)

### Notice to Proceed

- **ADD** Page NP-1 (attached)

## VOLUME 2

### Specification 01010CT – SUMMARY OF WORK

- Page 3, Section 1.5 C **REPLACE** “10” with “11”.
- Page 16, Section 1.5 C. 28 *Scour Air* Paragraph 1, Sentence 3, **REPLACE** with the following “For Base Bid, Contractor shall remove one blower at a time for on-site rehabilitation by Gardner Denver, Inc.”
- Page 16, Section 1.5 C. 28 *Scour Air* Paragraph 4, **ADD** after the last sentence “If selected by Owner, Contractor shall include cost for shipment to and from manufacturer’s facility.”
- Page 20, Administration Building Section Paragraph 2, at the end of the paragraph **ADD** “Contractor shall include freight cost in Bid Item 1.”
- Page 24, **ADD** the following after Item L.

#### **M. Bid Item 11 – Electric Utility Provider Allowance**

Include a \$5,000.00 allowance for anticipated charges by the utility for the main distribution switch gear refurbishment.

Refer to Specification Section 01210 – Allowances.

### Specification 05013CT – ALUMINUM ACCESS DOORS

- **ADD** Specification in its entirety. (Attached)

### Specification 09880CT – CONCRETE WATERPROOFING

- Page 1, Section 1.2 A, **ADD** “This includes only the four (4) Aerated Sludge Thickeners and as shown on the drawings.”

## VOLUME 3

### Specification 11310CT – PUMPING EQUIPMENT

- Page 7, Section 2.2 U.1, **REPLACE** with the following: “1. A local control panel with starter and VFD controls based on flow signals via the MCC and SCADA shall be provided. Panels shall be NEMA 4X Stainless Steel.
- Page 9, Section 2.3 T.1, **REPLACE** with the following: “1. A local control panel with starter and VFD controls based on flow signals via the MCC and SCADA shall be provided. Panels shall be NEMA 4X Stainless Steel.

### Specification 11370CT – COARSE BUBBLE DIFFUSED AIR EQUIPMENT

- Page 3, Air Control Valve Section DELETE paragraph and **ADD** “Air Control Valves shall be as indicated on the Valve Schedule Sheet 12P-08.”

### Specification 11377CT – POSITIVE DISPLACEMENT BLOWERS AND ACCESSORIES

- Page 1, Section 1.2 C **REPLACE** “Aerzen blowers are approved for these applications and may be provided with their standard offerings where this specification differs.”

Specification 11839CT – STAINLESS STEEL LOW PRESSURE AIR PIPING

- Page 7, Section 3.2 A, at the end of the first sentence **ADD** “, unless approved by the Engineer. Field welding will be permitted only when work on existing piping needs to be performed.”
- Page 5, Part 2, **ADD** the following after Section 2.7:

2.8 PRESSURE REGULATORS

A. Description: Single stage and suitable for air service. Include steel jacket and corrosion-resistant components, elevation compensator, and atmospheric vent.

1. Manufacturers:

a. Line Pressure Regulators:

1. American Meter Company.
  2. Donkin, Bryan RMG Canada, Ltd.
  3. Eclipse Combustion, Inc.
  4. Fisher Controls International, Inc.; Division of Emerson.
  5. Invensys.
  6. Maxitrol Company.
  7. National Meter Industries, Inc.
  8. Richards Industries, Inc.; Jordan Valve Div.
  9. Schlumberger Limited; Gas Div.
  10. Or Equal
2. NPS 2 (DN 50) and Smaller: Threaded ends according to ASME B1.20.1 for pipe threads.
  3. NPS 2-1/2 (DN 65) and Larger: Flanged ends according to ASME B16.5 for steel flanges and according to ASME B16.24 for copper and copper-alloy flanges.
  4. Line Pressure Regulators: ANSI Z21.80 with 10-psig (68.9-kPa) inlet pressure rating, unless otherwise indicated.

B. Pressure Regulator Vents: Factory- or field-installed, corrosion-resistant screen in opening if not connected to vent piping.

Specification 11848CT – TURBO BLOWERS AND ACCESSORIES

- **REPLACE** “breaker” with “blower.”
- Page 2, Section 1.1, After Paragraph G **ADD** “H. Deviations among turbo blowers exist with respect to testing PTC10 protocol and motor overload type and will be reviewed on a case by case basis.”
- Page 10, Section 2.7 A, **DELETE** “NOT APPLICABLE”
- Page 13, Section 3.2 A Paragraph 2, **REPLACE** “type of breaker” with “size of blower.”
- Page 15, Section 3.8 A, **REPLACE** “type of breaker” with “size of blower.”

Specification 13500CT – PROCESS INSTRUMENTATION CONTROL SYSTEMS

- Page 32, Section 1.17 Post Aeration Blowers **REPLACE** all references to “Turbo Blowers” with “Positive Displacement or Aerzen Hybrid Blowers.” And **ADD** “Contractor is responsible for providing the Control and Drive Systems furnished as part of the blower package system.”
- Page 52, Section 2.4F. **MOVE** “G. Communication” to the next line. Format is incorrect. Application software should be the current version of RSLogix.

**APPENDIX**

The following shall serve as additional clarifications to the noted sections in the Appendix:

1. Section 1 through 5
  - a. If a product, material, or apparatus is designated as a “Standard” in the Contract Documents, then in order to bid based on a substitute product, material, or apparatus, the proposed substitute product, material, or apparatus must be pre-approved as an accepted substitute by the Engineer, prior to bid, through an addendum. See Section K of the Instructions to Bidders. If a proposed substitute for a named Standard is not pre-approved as an accepted substitute by the Engineer, prior to bid, through an addendum, then the bidder proposing the substitute will be responsible for furnishing the named Standard should the bidder be awarded the contract.

**PLANS**

The following plan sheets are **REVISED** per the notes below:

- |         |      |  |
|---------|------|--|
| Sheet 6 | G-06 | <b>ADD</b> the following note under Transportation and Safety Practices “The Wheeling and Lake Erie railroad tracks on the site are active. Contractor shall coordinate activities with the Railroad Company as required.”   |
| Sheet 7 | G-07 | <b>ADD</b> the following General Notes:<br>“2. Existing Deck in Secondary Treatment area between Aeration Building and Aeration Tanks has not been load evaluated. The Contractor will be required to analyze the existing deck sections as part of their means and methods. New decking is designed for AASHTO H15 Wheel Loads.<br>3. The City will not allow crane access over tunnels unless the Contractor demonstrates that acceptable load capacity exists.” |

- Sheet 32 1C-17 **REPLACE** Note 6. with the following:  
“6. All transverse and longitudinal joints between new and existing pavement shall be installed per ODOT Standard Drawing 2.5.”
- Note 8. **DELETE** the second sentence.
- Note 9 **ADD** “Transverse joints shall have a nominal spacing of the lane width (pavement slab width) plus one foot, i.e. a 9’ wide lane (pavement slab width) shall have a nominal transverse joint spacing of 10’. Transverse joint spacing shall be adjusted as needed to align with pavement appurtenances, but shall be no less than 0.85 nor more than 1.15 of the lane (pavement slab) width. Longitudinal and transverse joints in intersections and other non-linear pavement shall be a maximum of 14’ and have a length to width ratio between 0.85 and 1.15. Expansion joints shall be placed at all intersections and every 500 feet in linear pavement.”
- Sheet 33 1C-18 **DELETE** the WIRE FABRIC DETAIL. **ADD** “All pavement shall be reinforced in accordance with ODOT Standard Drawing 1.1.”
- DELETE** the TRANSVERSE BUTT JOINT detail.
- Sheet 42 2P-01 **ADD** Note 6. Piping and Fittings shall be carbon steel to match existing. Bolts and nuts shall be cadmium plated. See Specification 11831.
- Sheet 74 3P-08 View A-A **DELETE** “Grease Flow Detectors”. Reference pertains to grease diverter box furnished by the Grit and Grease Manufacturer. See Sheet 71 3P-05.
- Sheet 79 3P-13 Note 4 **REVISE** “4” to “6” typ. of 3 (one for each intermediate channel).”
- Sheet 99 4P-02 **DELETE** note regarding blind flanges in Tank No. 4. There are a total of twelve (12) 36” Blind Flanges.
- Sheet 102 4P-05 Section E-E note **REVISE** “Plug” to “B’Fly”
- Sheet 102 4P-05 Section D-D **ADD** Note: “For pipe penetration, see Detail 4 on Sheet 11A-01, Typ. of 3.”
- Sheet 103 4P-06 **ADD** the Following Note to Section A-A “Diffuser supplier to provide all submerged piping and supports up to and including elbow at Elevation 77.0. Contractor to furnish all other piping, supports, fittings and appurtenances.”

- Sheet 104 4P-07 Section B-B and View 1-1 **REVISE** Scale from "1-4" " to "3/16".
- Sheet 108 5D-4 **DELETE** Note by Tank 3 calling for 6" x6" Tube Frame Pipe Supports to be Removed, Typ. 6 Tanks and eliminate cross hatching of pipe support by Tank 1. **ADD** Note: "All Air Piping Supports shall remain."
- Sheet 140 5P-06 **ADD** Note: "All new and relocated RAS system piping shall be MJ."
- Sheet 152 5P-18 **REVISE** Call out in Top Plan for "Removable Grating" to be "Type "J" Access Hatches."
- Sheet 189 8P-02 **ADD** the Following Note to Section C-C "Diffuser supplier to provide all submerged piping and supports up to and including elbow at tank wall. Contractor to furnish all other piping, supports, fittings and appurtenances."
- Sheet 193 9D-03 **REVISE** Note: "The Nuclear Density Meter is to be removed and returned to the Owner for disposal in accordance with Nuclear Regulatory Commission requirements."
- Sheet 196 9P-01 **REVISE** References to new or relocated C.I. pipe shall mean "new D.I. pipe."
- Sheet 199 9P-04 **MOVE** 8" Dresser Coupling to Elevation 81.5, typ. and **ADD** the Following Note "3. Diffuser supplier to provide all submerged piping and supports up to the dresser coupling. Contractor to furnish all other piping, supports, fittings and appurtenances."
- Sheet 236 12P-05 **DELETE** details for Type "K" and Type "KD" Doors.
- Sheet 238 12P-07 Stop Plate Schedule Plate Material **ADD** "or Aluminum."
- Sheet 239 12P-08 **DELETE** "Preliminary Treatment Flow Channel After Fine Screening 1-6" Mud Valve."
- Sheet 239 12P-08 Secondary Treatment Permeate Flow Control Valves **REVISE** valve size from "14" " to "12".
- Sheet 239 12P-08 Secondary Treatment Permeate Pump Isolation Valves **REVISE** valve quantity from "36" to "12", **REVISE** valve size from "16" " to "14" ", and **INSERT** "Suction" after "Pump" in valve location.

Sheet 239 12P-08 **ADD** the following valves:

Work Element	Location	Qty.	Type	Size	End Type	Operator	Normal Position	Remarks
Secondary Treatment	Permeate Pump Discharge	12	B'FLY	16"	WAFER	ELECTRIC ACTUATOR		
Secondary Treatment	Permeate Piping Discharge	12	B'FLY	16"	WAFER	HAND WHEEL	O	

Sheet 239 12P-08 Secondary Treatment Permeate Pump Discharge valve location **DELETE** "Pump" and in remarks **INSERT** "Flex" after "Swing."

Sheet 241 12P-10 Pipe Material Schedule By Work Element **ADD** the following note: "All air piping including intake, discharge and blow off and motor cooling exhaust piping shall be Welded Stainless Steel per Specification 11839CT."

Sheet 245 11-02 **ADD** Note: "For all VFDs shown on drawing 11-02 cable types shall be as specified on the one-line diagrams."

Sheet 297 0E-01 **ADD** to General Note J: "All conduits shall be sealed. Conduits smaller than 1 1/4" can be sealed using a foam sealant as manufactured by Polywater FST Duct Sealant or equal."

Sheet 313 0E-17 **REVISE** Motor Control Schedule for WAS Pump #1, #2 and #3 HP to "7.5".

Sheet 314 0E-18 **REVISE** Motor Control Schedule for WAS Pump #4, #5 and #6 HP to "7.5".

**The following plan sheets have been REVISED per the referenced attached Sketches:**

Sheet 126 5S-06 Sketch S-6 **ADD** Pump Pier detail.

Sheet 139 5P-05 Sketch P-5 **REVISE** Permeate Piping Layout, **ADD** Pump Pier.

Sheet 140 5P-06 Sketch P-6 **REVISE** Permeate Piping Layout.

**REMOVE the following plan sheets and replace with the attached:**

- Sheet 118 5-01 **REVISE** Permeate Piping Layout, **ADD** Pump Piers.  
Sheet 119 5-02 **REVISE** Permeate Piping Layout, **ADD** Pump Piers.  
Sheet 135 5P-01 **REVISE** Permeate Piping Layout, **ADD** Pump Piers.  
Sheet 136 5P-02 **REVISE** Permeate Piping Layout, **ADD** Pump Piers.  
Sheet 141 5P-07 **REVISE** Permeate Piping Layout, **ADD** Pump Piers.  
Sheet 142 5P-08 **REVISE** Permeate Piping Layout, **ADD** Pump Piers.  
Sheet 208 10D-06 **REMOVE** and **REPLACE** Sheet.  
Sheet 209 10D-07 **REMOVE** and **REPLACE** Sheet.  
Sheet 210 10D-08 **REMOVE** and **REPLACE** Sheet.  
Sheet 217 10S-04 **REMOVE** and **REPLACE** Sheet.  
Sheet 218 10S-05 **REMOVE** and **REPLACE** Sheet.

AGW/saa

Enclosures

**2.01 BID:**

Include the cost of all labor and material for the contract listed below. Bidder is to fill in all blanks related to the Bid Package for which a bid is being submitted. If no bid is submitted for an item, leave the item blank or insert "NO BID" in the blank. For alternate items, indicate whether the amount stated is in addition to or a deduction from the base bid amount (if there is no indication whether the amount for an alternate is an addition or a deduction, the amount shall be a deduction).

**2.02 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):**

ITEM	UNIT	Est. QUANTITY	BID UNIT PRICE (figures)	ITEM TOTAL (figures)
1) Phosphorous/Total Nitrogen Project Complete - except Items 2 through 11.	Lump	1	XXXXXXXXXXXXX	_____
2) Concrete Pavement Removal	SQ YD	48,300	_____	_____
3) Concrete Pavement	SQ YD	33,000	_____	_____
4) Sub-base Replacement	CU YD	1,100	_____	_____
5) Mudwell Material Removal	CU YD	1,300	_____	_____
6) Tertiary Filter Media Removal	CU YD	1,500	_____	_____
7) Tunnel Leak Repairs Allowance	Lump	1	XXXXXXXXXXXXX	\$50,000.00
8) Signage Allowance	Lump	1	XXXXXXXXXXXXX	\$35,000.00
9) SCADA Equipment Allowance	Lump	1	XXXXXXXXXXXXX	\$150,000.00
10) Erosion Control Allowance	Lump	1	XXXXXXXXXXXXX	\$25,000.00
11) Electric Utility Provider Allowance	Lump	1	XXXXXXXXXXXXX	\$5,000.00
TOTAL of ALL ITEMS:				_____

NOTICE OF AWARD

TO: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

PROJECT: CITY OF CANTON WATER RECLAMATION FACILITY PHOSPHORUS/  
TOTAL NITROGEN PROJECT CONTRACT NO. 26

You are notified that your Bid which was opened on \_\_\_\_\_ has been accepted for items in the amount of \_\_\_\_\_ at the unit bid prices as reflected in the bid tabulation contained herein *for* \_\_\_\_\_.

You are required by the Instructions to Bidders to execute the Agreement and furnish the required Bonds, Certificates of Insurance, and other documents within 10 calendar days from the date of receipt of this Notice.

Failure to comply with these conditions within the time specified will entitle Owner to consider your Bid in default, to annul this Notice and to declare your Bid Security forfeited.

The Owner will return to you one (1) fully signed set of the contract documents.

CITY OF CANTON, OHIO

\_\_\_\_\_  
William L. Bartos, Director of Public Service

\_\_\_\_\_  
Date

ACKNOWLEDGMENT

\_\_\_\_\_  
Contractor

\_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Date

NOTICE TO PROCEED

Project: CITY OF CANTON WATER RECLAMATION FACILITY PHOSPHORUS/ TOTAL  
NITROGEN PROJECT CONTRACT NO. 26

Owner: CITY OF CANTON, OHIO  
218 Cleveland Avenue SW  
Canton, Ohio 44702

To: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Date: \_\_\_\_\_

You are hereby notified to commence work in accordance with the Contract. All work shall be completed by \_\_\_\_\_.

CITY OF CANTON, OHIO

\_\_\_\_\_  
William L. Bartos, Director of Public Service

## SECTION 05013CT - ALUMINUM ACCESS DOORS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division - 1 Specification sections, apply to work of this section.

#### 1.2 DESCRIPTION OF WORK

- A. This section includes the furnishing and installation of all aluminum access doors and frames as shown on the Drawings necessary to complete the work of this Contract. Access doors shall include frames, hinges, handles, coatings, hardware and all appurtenances necessary for a complete installation.

#### 1.3 QUALITY ASSURANCE

- A. In addition to requirements of these specifications, comply with manufacturer's instructions and recommendations for work.

#### 1.4 WARRANTY

- A. Manufacturer shall guarantee against defects in material or workmanship for a period of five years under normal use, operation and service.

#### 1.5 SUBMITTALS

- A. Manufacturer's catalog data showing:
  - 1. Dimensions, spacing, and construction of doors and frames.
  - 2. Materials of construction.
- B. Detail shop drawings showing:
  - 1. Dimensions of each access door and frame.
  - 2. Location and identification mark.

## PART 2 - PRODUCTS

### 2.1 ACCESS DOORS

- A. Interior/exterior doors shall be Type "J" or Type "JD" as manufactured by the Bilco Company; or equal.
- B. The access frame shall be 1/4 in. aluminum with an anchor flange around the perimeter.
- C. The access door shall be 1/4 in. aluminum diamond pattern plate to withstand a live load of 300 pounds per square foot. The door shall be equipped with heavy forged brass hinges, stainless steel pins, spring operators for easy operation, and an automatic hold-open arm with release handle. A snap lock with removable handle shall be provided. A 1-1/2 in. drainage coupling shall be located in the front right corner of the access frame.
- D. Hardware shall be cadmium plated and factory finish shall be a mil finish with bituminous coating applied to the exterior of the frame.
- E. Access door and frame for interior/exterior doors shall be of the types and sizes specified.

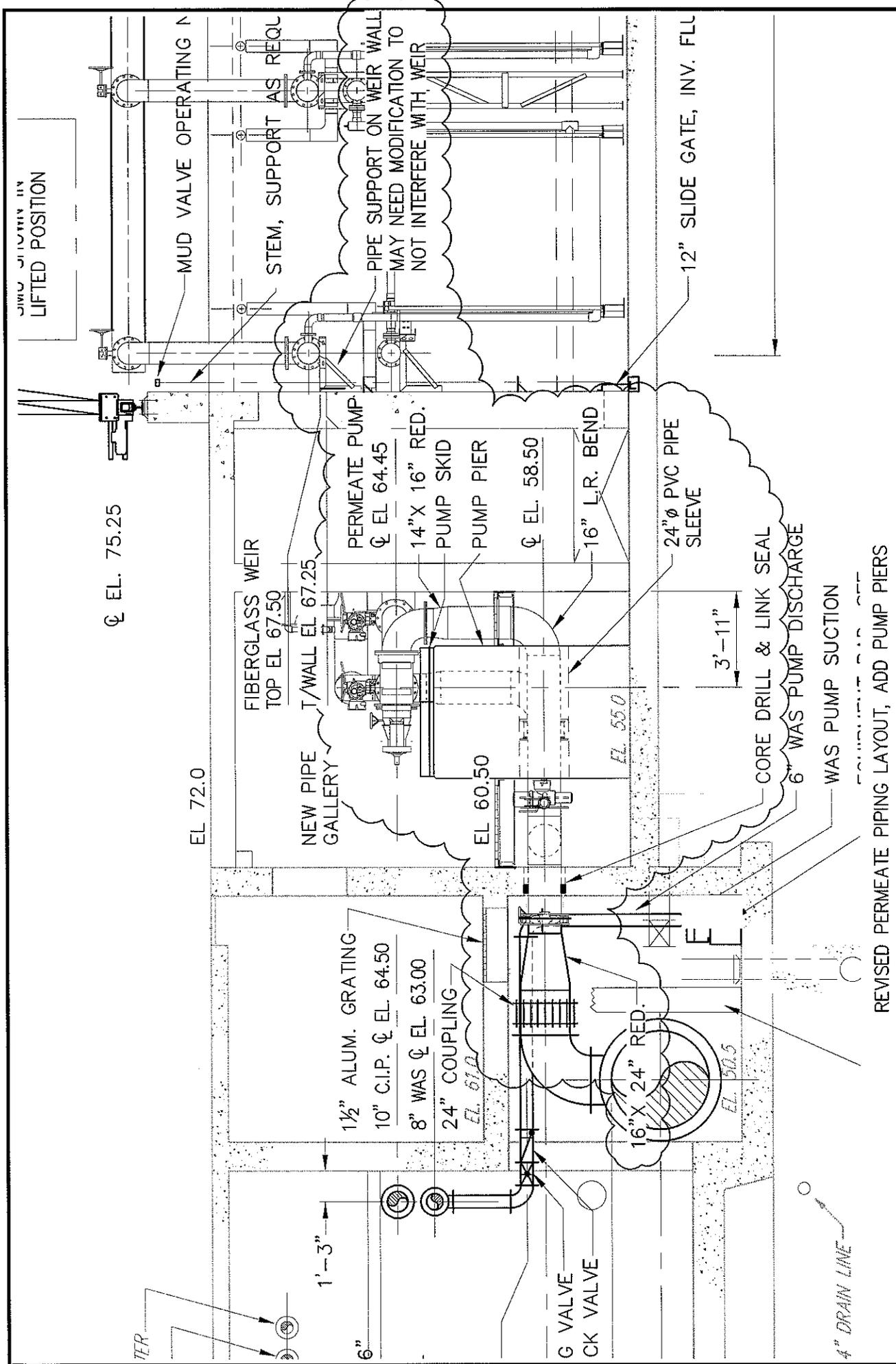
## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Installation shall be in accordance with manufacturer's instructions.

END OF SECTION 05013CT 1/89

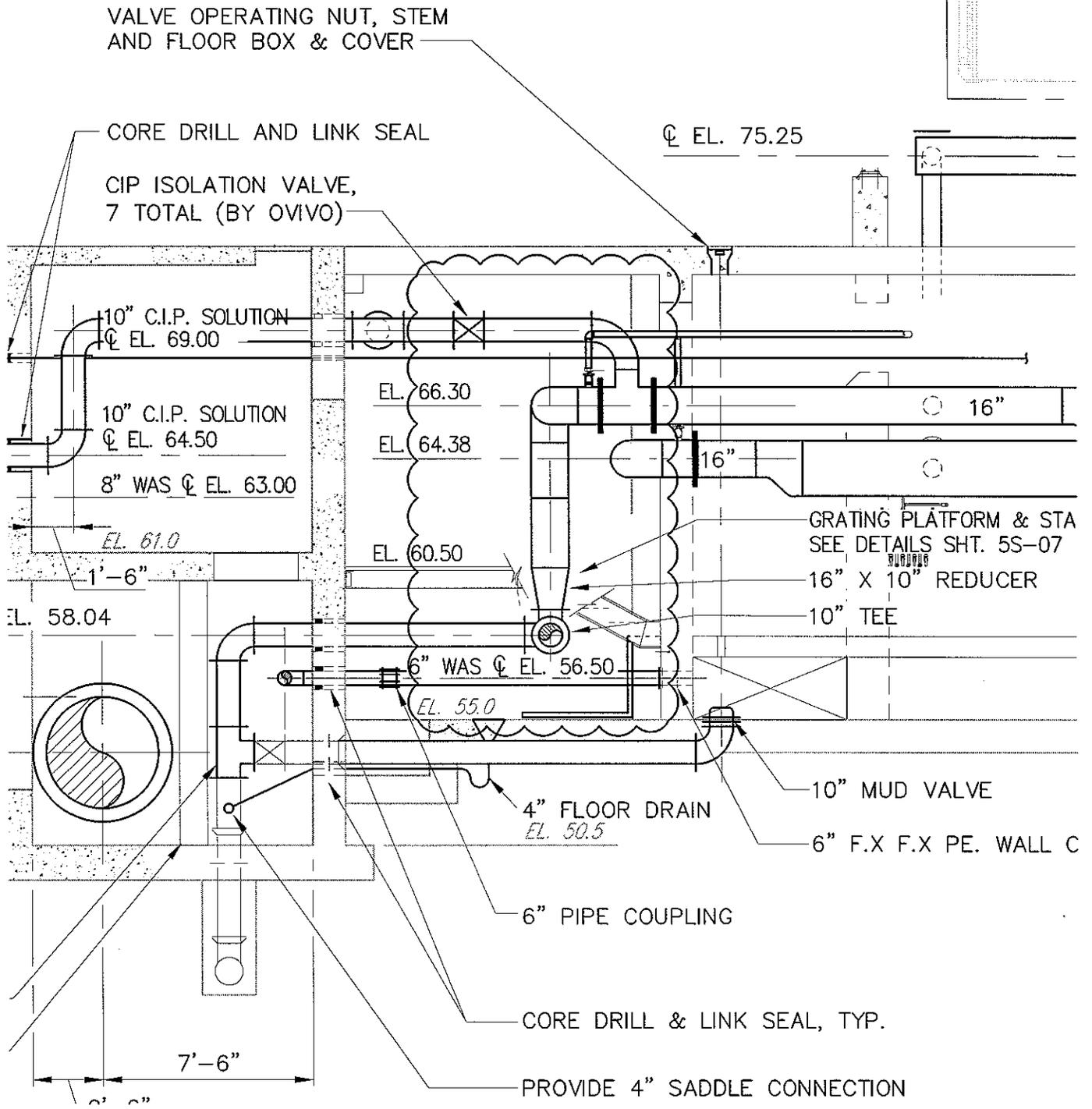




REVISED PERMEATE PIPING LAYOUT, ADD PUMP PIERS

NOTE: THIS DRAWING SHALL BE CONSIDERED TO BE PART OF SHEET 139 OF 375 - 5P-05.	
CT JOB NO. 10182	CANTON WATER RECLAMATION FACILITY
 <b>CT Consultants</b> engineers   architects   planners	PHOSPHORUS/TOTAL NITROGEN PROJECT
	CITY OF CANTON, STARK COUNTY, OHIO
DATE	1/2/14
SCALE	3/16" = 1'-0"
ADDENDUM	# 4
SKETCH	P-5

FOR GANTRY DETAILS SEE



REVISED PERMEATE PIPING LAYOUT

NOTE: THIS DRAWING SHALL BE CONSIDERED TO BE PART OF SHEET 140 OF 375 - 5P-06.

CT JOB NO. 10182



**CT Consultants**  
engineers | architects | planners

CANTON WATER RECLAMATION FACILITY  
PHOSPHORUS/TOTAL NITROGEN PROJECT  
CONTRACT NO. 26  
CITY OF CANTON, STARK COUNTY, OHIO

DATE

1/2/14

SCALE

3/16" - 1'-0"

ADDENDUM

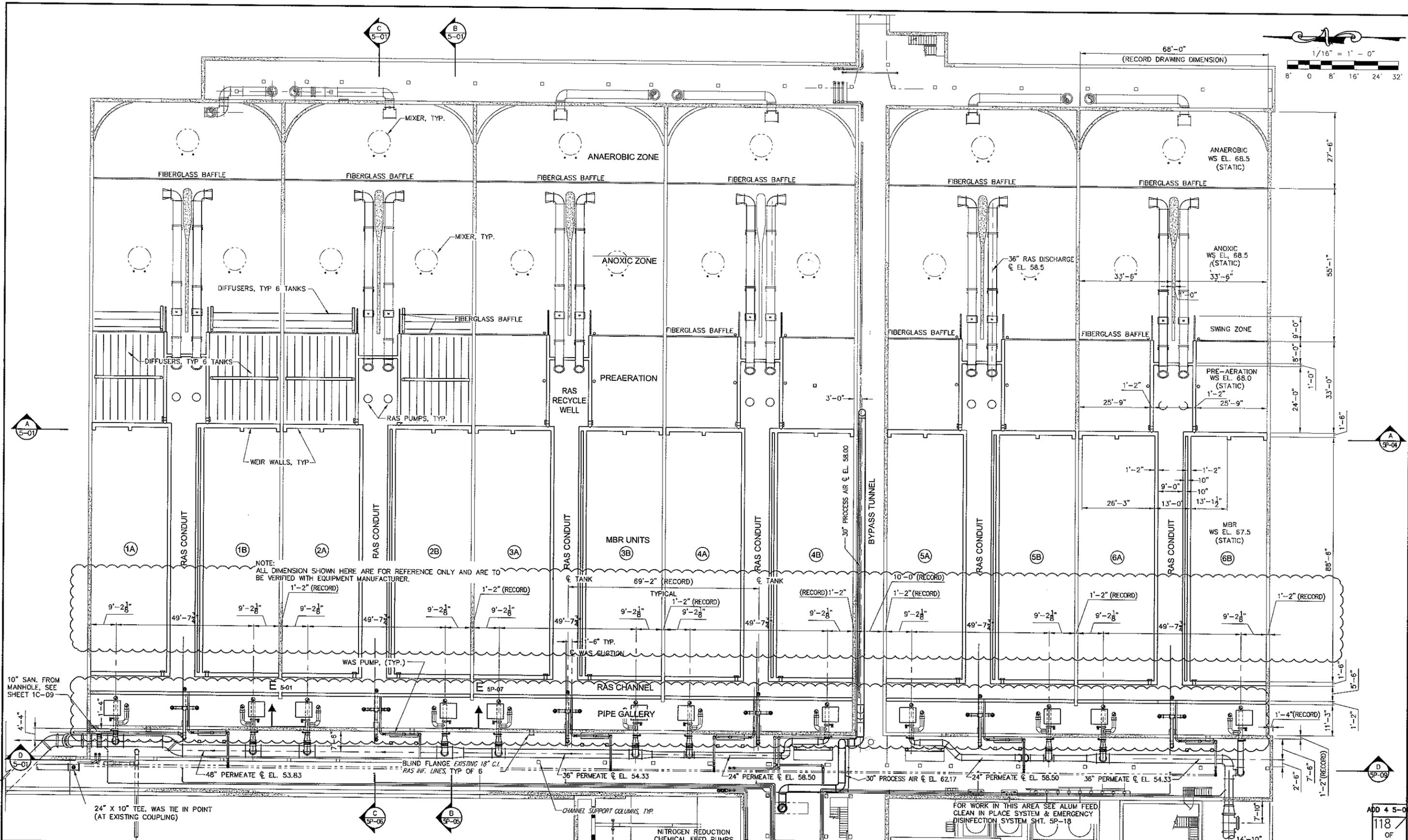
# 4

SKETCH

P-6

Drawing name: H:\2010\10182\DWG\Aeration-MBR Sections.dwg Layout: add 4 5P-06 by: marano

Copyright - Jan 02, 2014 - 11:34am CT Consultants, Inc.  
 Drawing name: H:\2010\10182\DWG\Aeration-MBR BOTTOM.dwg Layout: ADD 4 5-01 by: macraco



NOTE: ALL DIMENSION SHOWN HERE ARE FOR REFERENCE ONLY AND ARE TO BE VERIFIED WITH EQUIPMENT MANUFACTURER.

NO.	REVISION DATA	DATE	BY	APP'D
1	REVISED PERMEATE PIPING LAYOUT, ADD PUMP PIERS	12/13	RLM	CWJ



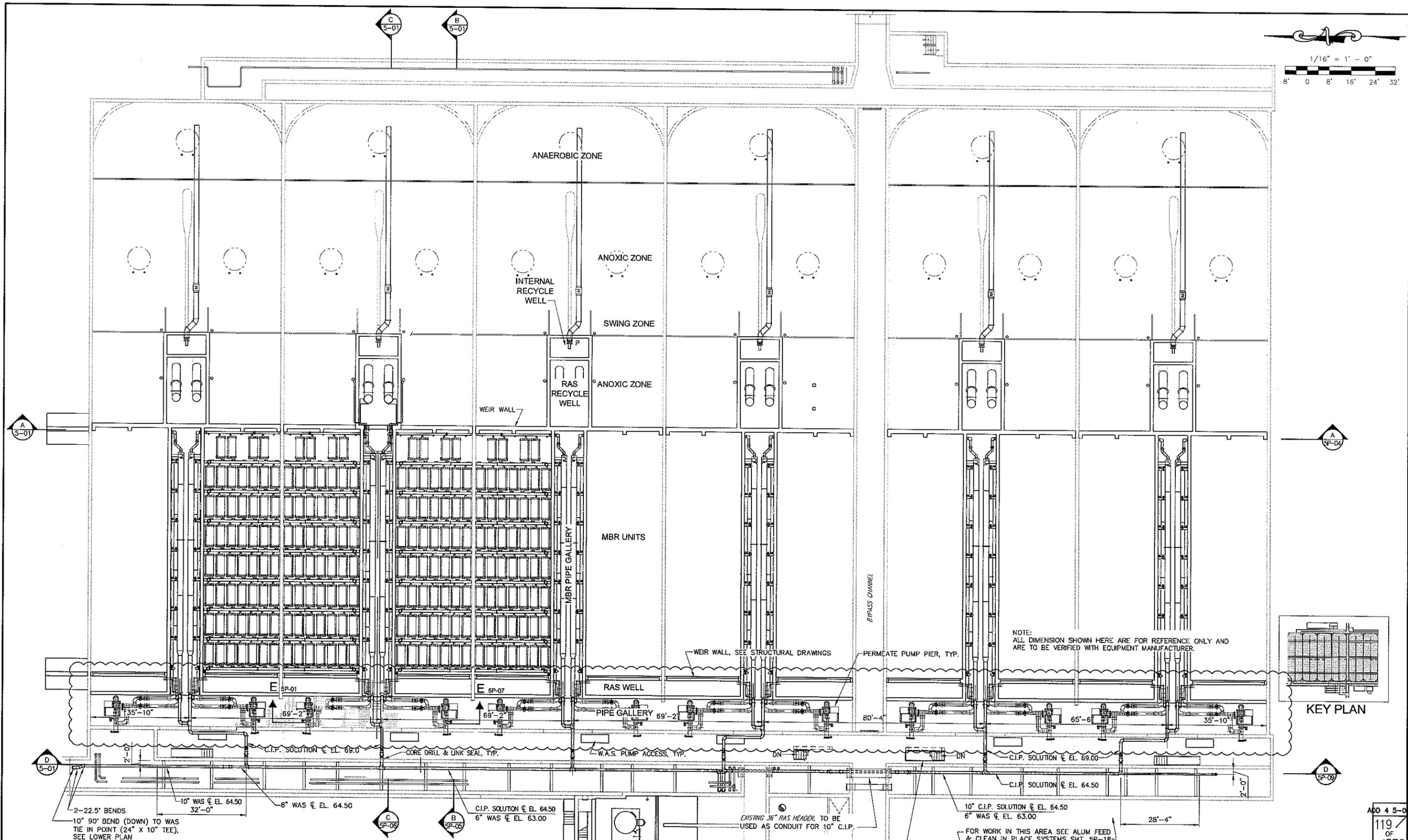
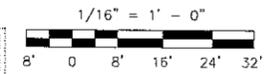
DATE	NOV. 2013
CT JOB NO.	10182
DRAWN BY:	ELE
CHECKED BY:	AGW
APPROVED BY:	CWJ

CANTON WATER RECLAMATION FACILITY  
 PHOSPHORUS/TOTAL NITROGEN PROJECT  
 CONTRACT NO. 26  
 CITY OF CANTON, STARK COUNTY, OHIO

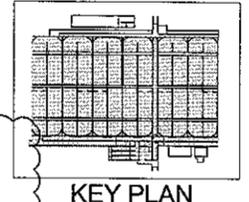
**SECONDARY TREATMENT  
 BNR/MBR ACTIVATED SLUDGE TANKS  
 BOTTOM PROPOSED PLAN**

ADD 4 5-01  
 118  
 OF  
 375

Copyright - Jan 02, 2014 - 12:37pm CT Consultants, Inc.  
 Drawing name: H:\2010\10182\DWG\Aeration-MBR MIDDLE.dwg Layout: ADD 4 5-02 by: morano



NOTE: ALL DIMENSION SHOWN HERE ARE FOR REFERENCE ONLY AND ARE TO BE VERIFIED WITH EQUIPMENT MANUFACTURER.



KEY PLAN

2-22.5" BENDS  
 10" 90° BEND (DOWN) TO WAS TIE IN POINT (24" X 10" TEE), SEE LOWER PLAN  
 10" WAS @ EL. 64.50  
 32'-0"

C.I.P. SOLUTION @ EL. 64.50  
 6" WAS @ EL. 63.00

10" C.I.P. SOLUTION @ EL. 64.50  
 6" WAS @ EL. 63.00

NO.	REVISION DATA	DATE	BY	APP'D
1	REVISED PERMEATE PIPING LAYOUT, ADD PUMP PIERS	12/13	RLM	CWJ

NITROGEN REDUCTION CHEMICAL STORAGE TANKS SEE SH 5P-15  
 FOR NITROGEN REDUCTION CHEMICAL FEED PUMP DISCHARGE PIPING PLAN SEE SH BOTTOM PLAN

OPENINGS IN CHANNEL FLOOR, SEE DETAILS SH. 5D-09

NOTE: C.I.P. = CLEAN IN PLACE

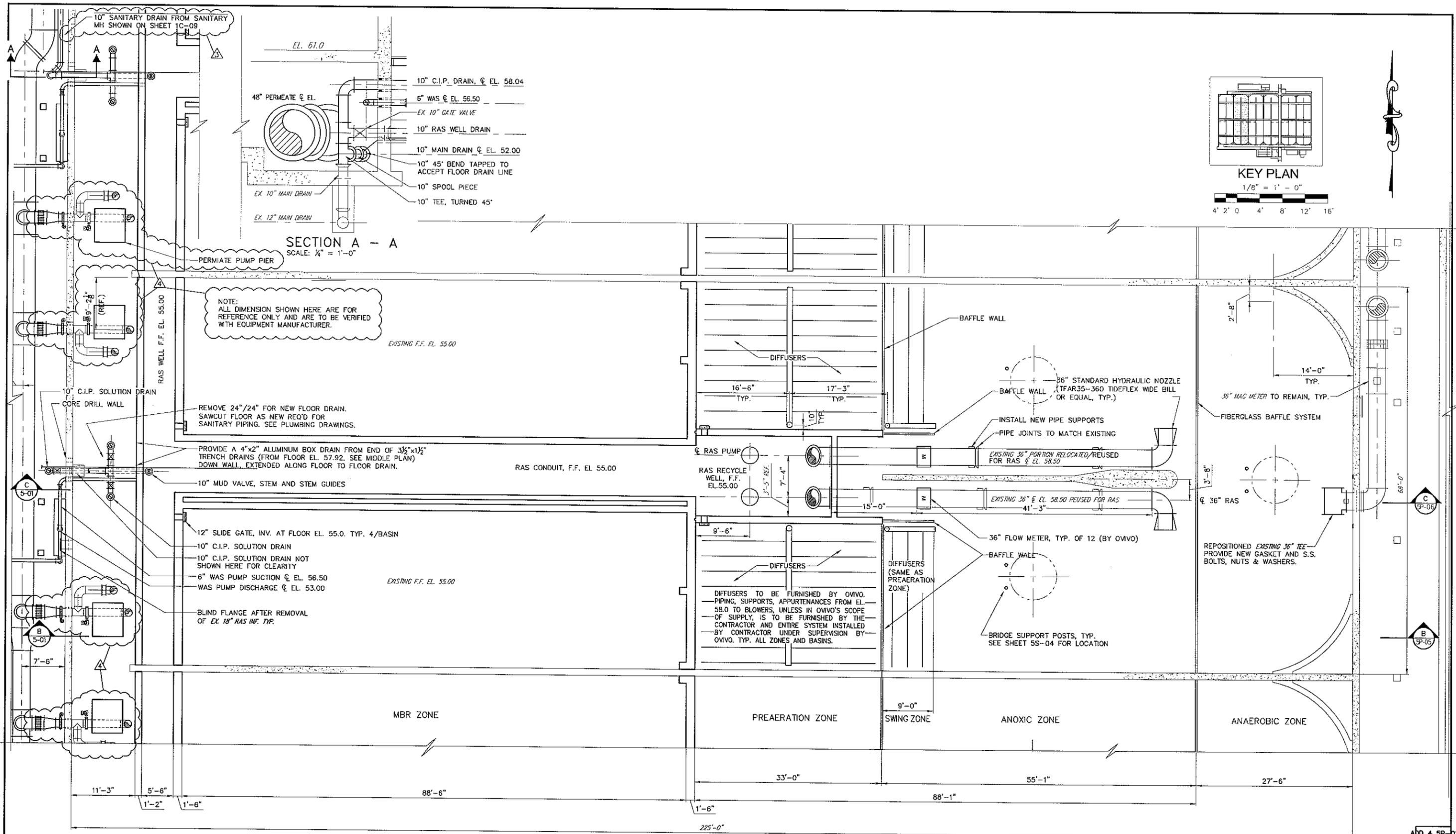
DATE	NOV. 2013
CT JOB NO.	10182
DRAWN BY:	RLM
CHECKED BY:	CWJ
APPROVED BY:	CWJ

CANTON WATER RECLAMATION FACILITY  
 PHOSPHORUS/TOTAL NITROGEN PROJECT  
 CONTRACT NO. 26  
 CITY OF CANTON, STARK COUNTY, OHIO

SECONDARY TREATMENT  
 BNR/MBR ACTIVATED SLUDGE TANKS  
 MIDDLE PROPOSED PLAN

ADD 4 5-02  
 119 OF 375

Copyright - Jan 02, 2014 - 11:28am CT Consultants, Inc.  
 Drawing name: H:\2010\10182\DWG\Aeration-MBR\_BOTTOM.dwg Layout: ADD 4 5P-01 by: marano



NOTE:  
 ALL DIMENSION SHOWN HERE ARE FOR  
 REFERENCE ONLY AND ARE TO BE VERIFIED  
 WITH EQUIPMENT MANUFACTURER.

REMOVE 24" / 24" FOR NEW FLOOR DRAIN.  
 SAWCUT FLOOR AS NEW REQ'D FOR  
 SANITARY PIPING. SEE PLUMBING DRAWINGS.

PROVIDE A 4"x2" ALUMINUM BOX DRAIN FROM END OF 3 1/2"x1 1/2"  
 TRENCH DRAINS (FROM FLOOR EL. 57.92, SEE MIDDLE PLAN)  
 DOWN WALL, EXTENDED ALONG FLOOR TO FLOOR DRAIN.

12" SLIDE GATE, INV. AT FLOOR EL. 55.0. TYP. 4/BASIN  
 10" C.I.P. SOLUTION DRAIN  
 10" C.I.P. SOLUTION DRAIN NOT  
 SHOWN HERE FOR CLARITY  
 6" WAS PUMP SUCTION @ EL. 56.50  
 WAS PUMP DISCHARGE @ EL. 53.00

BLIND FLANGE AFTER REMOVAL  
 OF EX. 18" RAS INF. TYP.

DIFFUSERS TO BE FURNISHED BY OVIVO.  
 PIPING, SUPPORTS, APPURTENANCES FROM EL.  
 58.0 TO BLOWERS, UNLESS IN OVIVO'S SCOPE  
 OF SUPPLY, IS TO BE FURNISHED BY THE  
 CONTRACTOR AND ENTIRE SYSTEM INSTALLED  
 BY CONTRACTOR UNDER SUPERVISION BY  
 OVIVO. TYP. ALL ZONES AND BASINS.

BRIDGE SUPPORT POSTS, TYP.  
 SEE SHEET 5S-04 FOR LOCATION

REPOSITIONED EXISTING 36" TEE  
 PROVIDE NEW GASKET AND S.S.  
 BOLTS, NUTS & WASHERS.

NOTE:  
 C.I.P. = CLEAN IN PLACE

PROPOSED SHOWN IS TYPICAL EACH TANK  
 TANK NO. 2 SHOWN

ADD 4 5P-01  
 135  
 OF  
 375

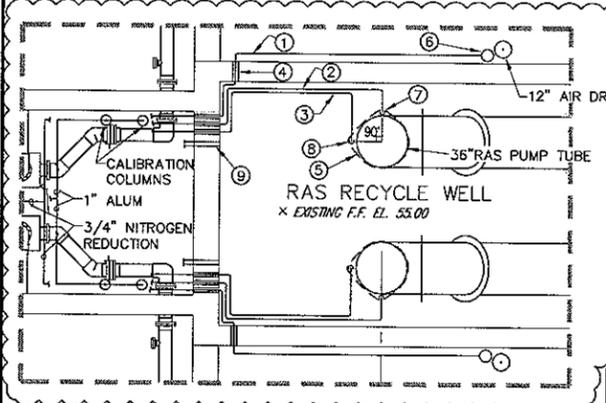
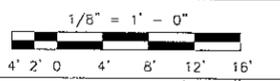
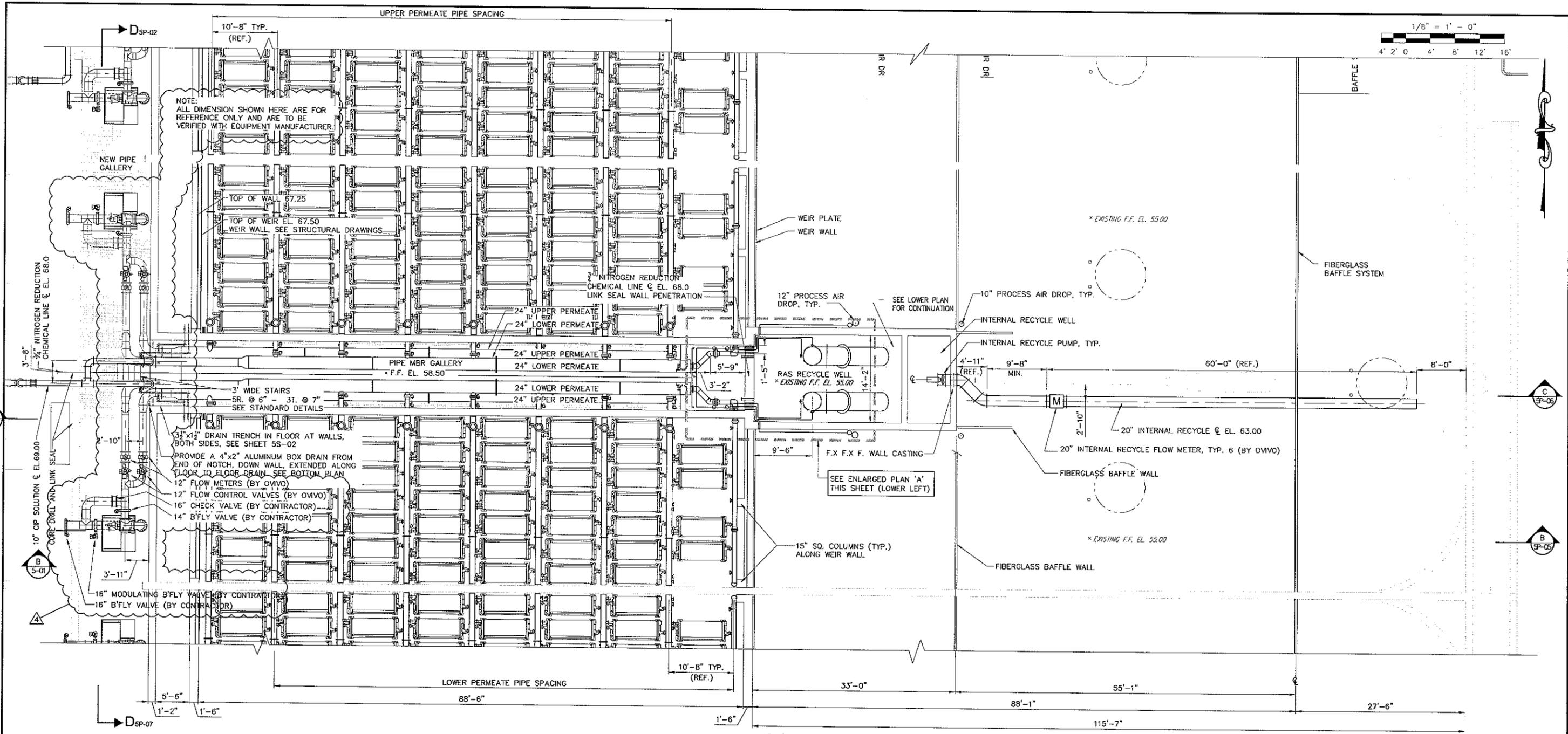


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1	(ADDENDUM 3) ADD NOTE TO 10" SAN. DRAIN	12/13	RLM	CWJ	NOV. 2013
2	REVISED PERMEATE PIPING LAYOUT, ADD PUMP PIERS	12/13	RLM	CWJ	
CT JOB NO. 10182					
DRAWN BY: RLM					
CHECKED BY: CWJ					
APPROVED BY: CWJ					

CANTON WATER RECLAMATION FACILITY  
 PHOSPHORUS/TOTAL NITROGEN PROJECT  
 CONTRACT NO. 26  
 CITY OF CANTON, STARK COUNTY, OHIO

**SECONDARY TREATMENT**  
 BNR/MBR ACTIVATED SLUDGE TANKS  
 ENLARGED BOTTOM PLAN - PROCESS

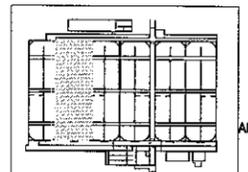
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 Drawing name: H:\2010\10182 DWG\Aeration-MBR MIDDLE.dwg Layout: ADD 4 SP-02 by: marcano



- NOTES:
- ① 3/4" SCH. 80 PVC ALUM FEED LINE TO PREAERATION ZONE.
  - ② 3/4" SCH. 80 PVC ALUM FEED LINE TO RAS RECYCLE WELL.
  - ③ 3/4" SCH. 80 PVC NITROGEN REDUCTION FEED LINE TO RECYCLE WELL.
  - ④ CORE DRILL AND LINK SEAL, TYP.
  - ⑤ 316 STAINLESS STEEL BANDING AS REQUIRED TO RIGIDLY SECURE DROP PIPE FROM MOVEMENT.
  - ⑥ 3/4" ALUM DROP PIPE TO DIFFUSERS.
  - ⑦ 3/4" ALUM DROP PIPE IN RAS RECYCLE WELL. BOTTOM OF OPEN PIPE END AT EL. 56.25
  - ⑧ 3/4" NITROGEN REDUCTION DROP PIPE IN RAS RECYCLE WELL. BOTTOM OF OPEN PIPE END AT EL. 56.25
  - ⑨ 3/4" SCH. 80 PVC VENT PIPE FOR ALUM AND NITROGEN REDUCTION AT EL. 70.33 AND 70.67, RESPECTIVELY (TYP.).

PROPOSED SHOWN IS TYPICAL EACH TANK  
 TANK NO. 2 SHOWN

NOTE:  
 C.I.P. = CLEAN IN PLACE



ADD 4 SP-02  
 136  
 OF  
 375

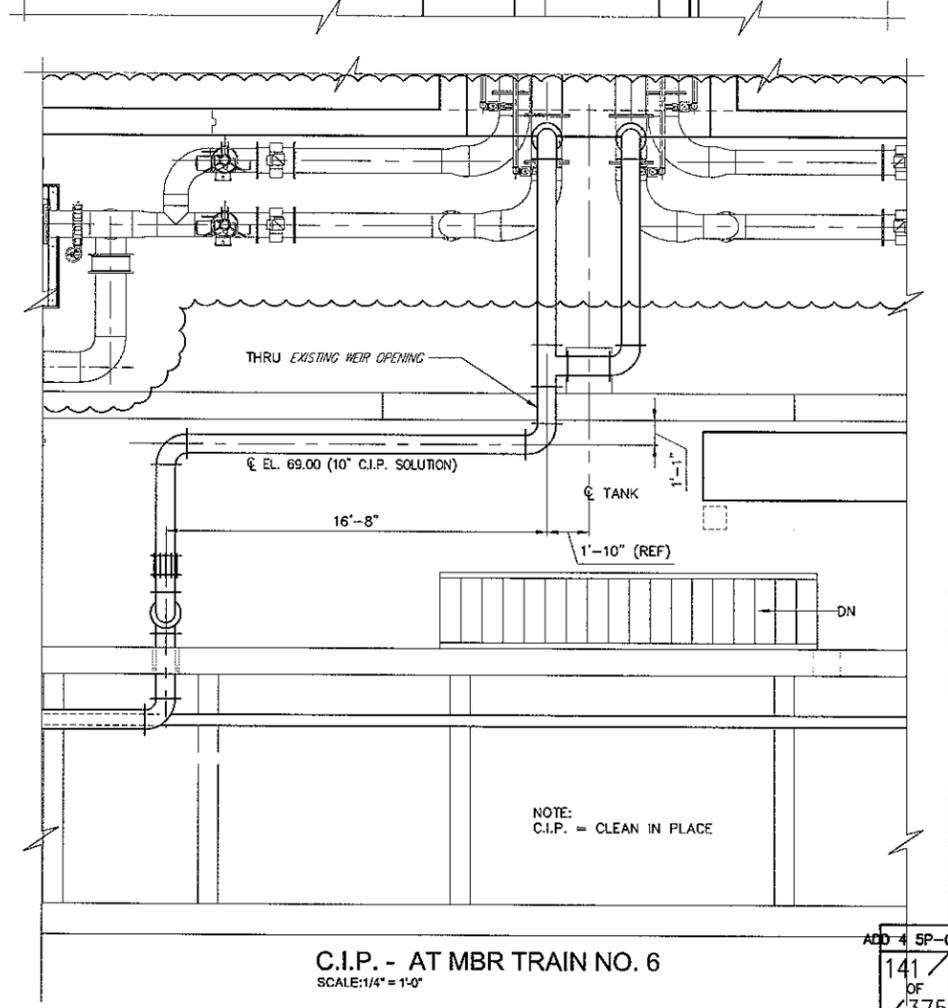
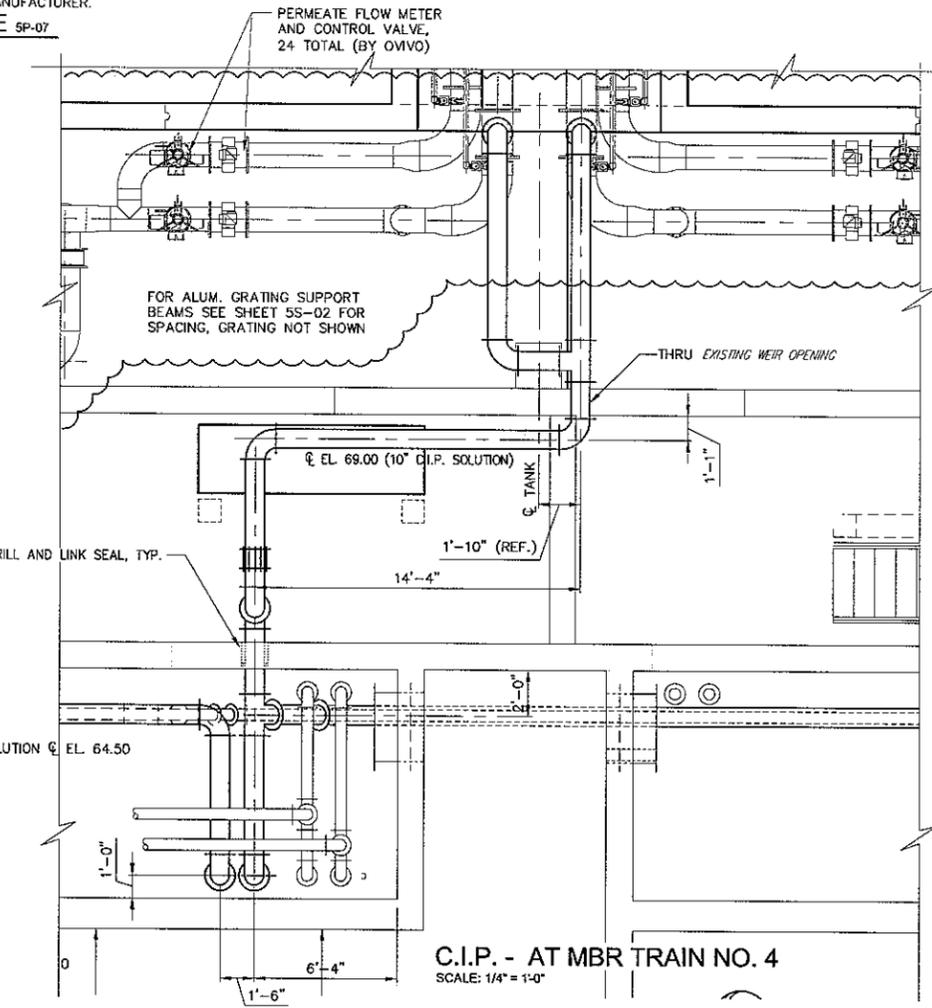
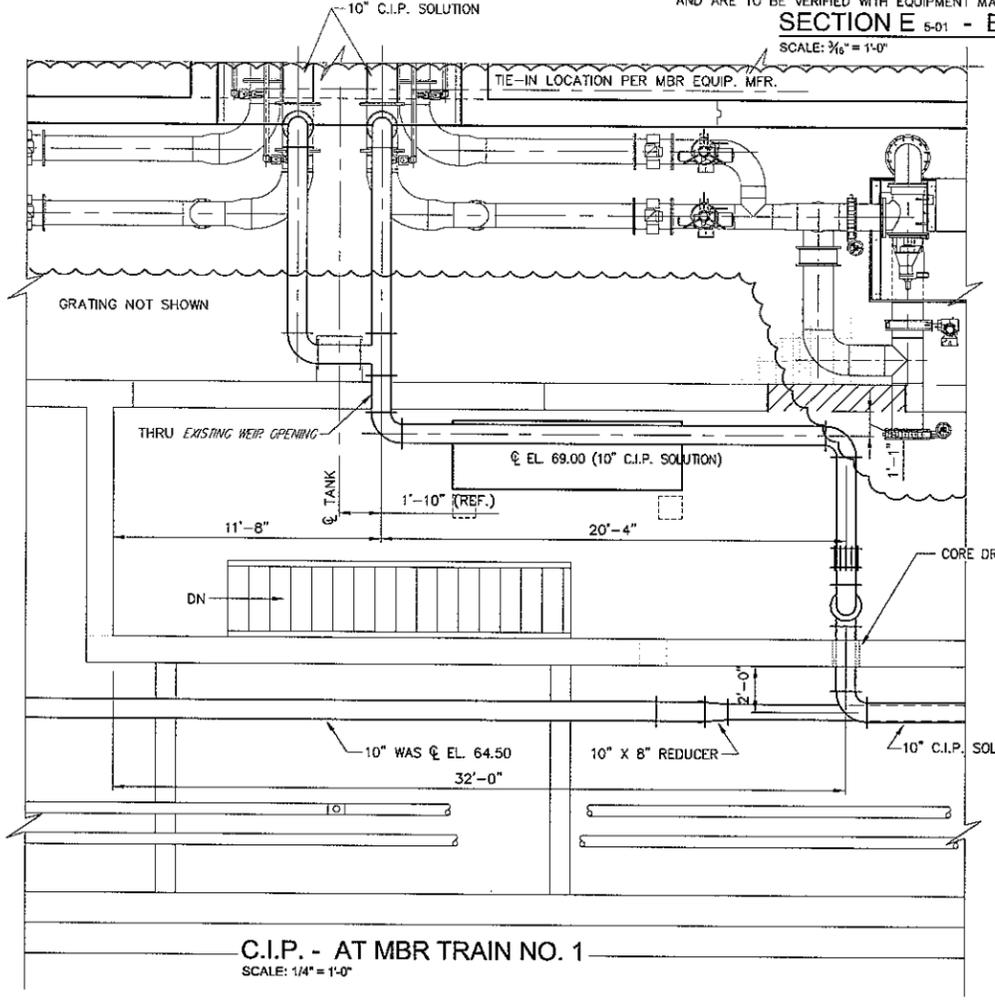
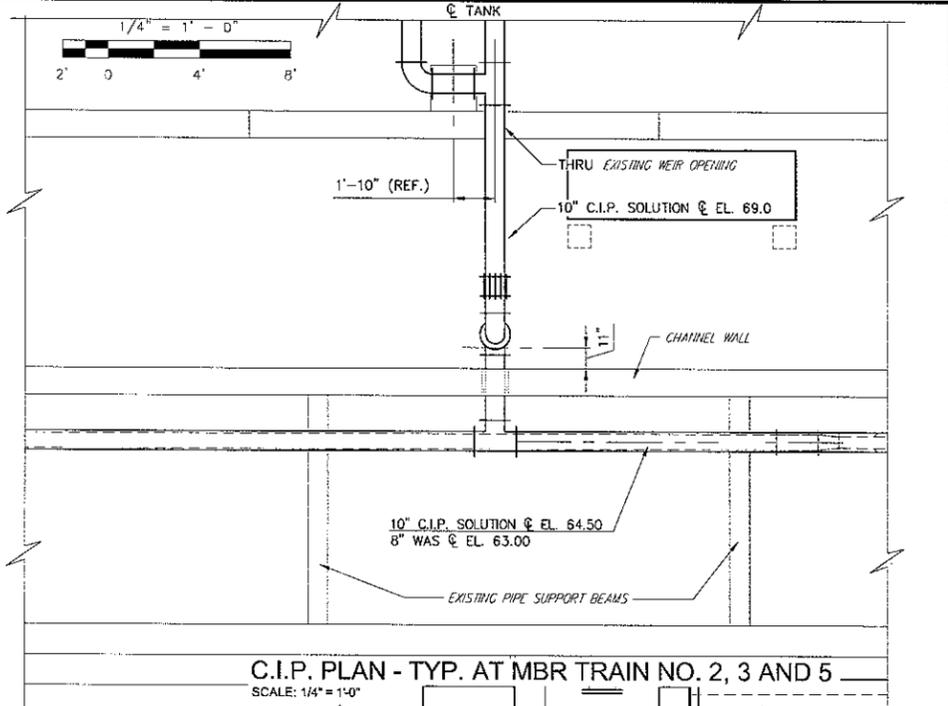
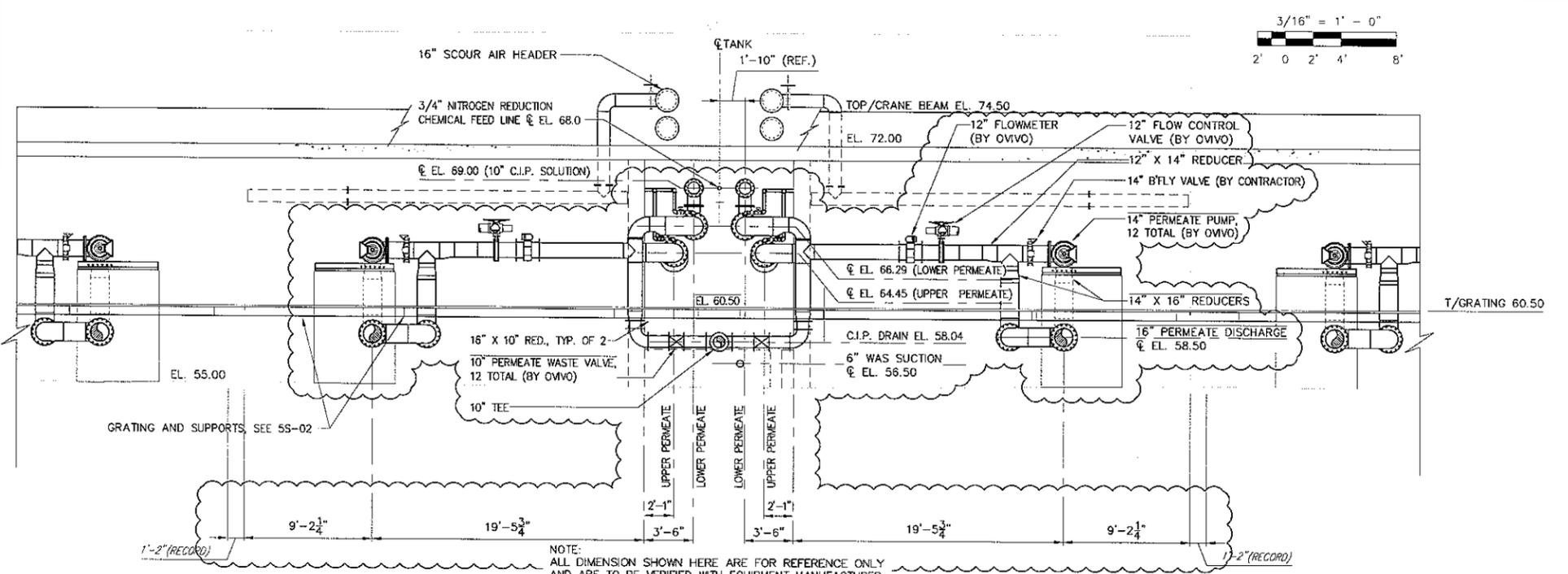


NO.	REVISION DATA	DATE	BY	APP'D	DATE
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2	REVISED PERMEATE PIPING LAYOUT, ADD PUMP PIERS	12/13	RLM	CWJ	CT JOB NO. 10182
					DRAWN BY: RLM
					CHECKED BY: CWJ
					APPROVED BY: CWJ

CANTON WATER RECLAMATION FACILITY  
 PHOSPHORUS/TOTAL NITROGEN PROJECT  
 CONTRACT NO. 26  
 CITY OF CANTON, STARK COUNTY, OHIO

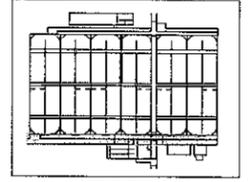
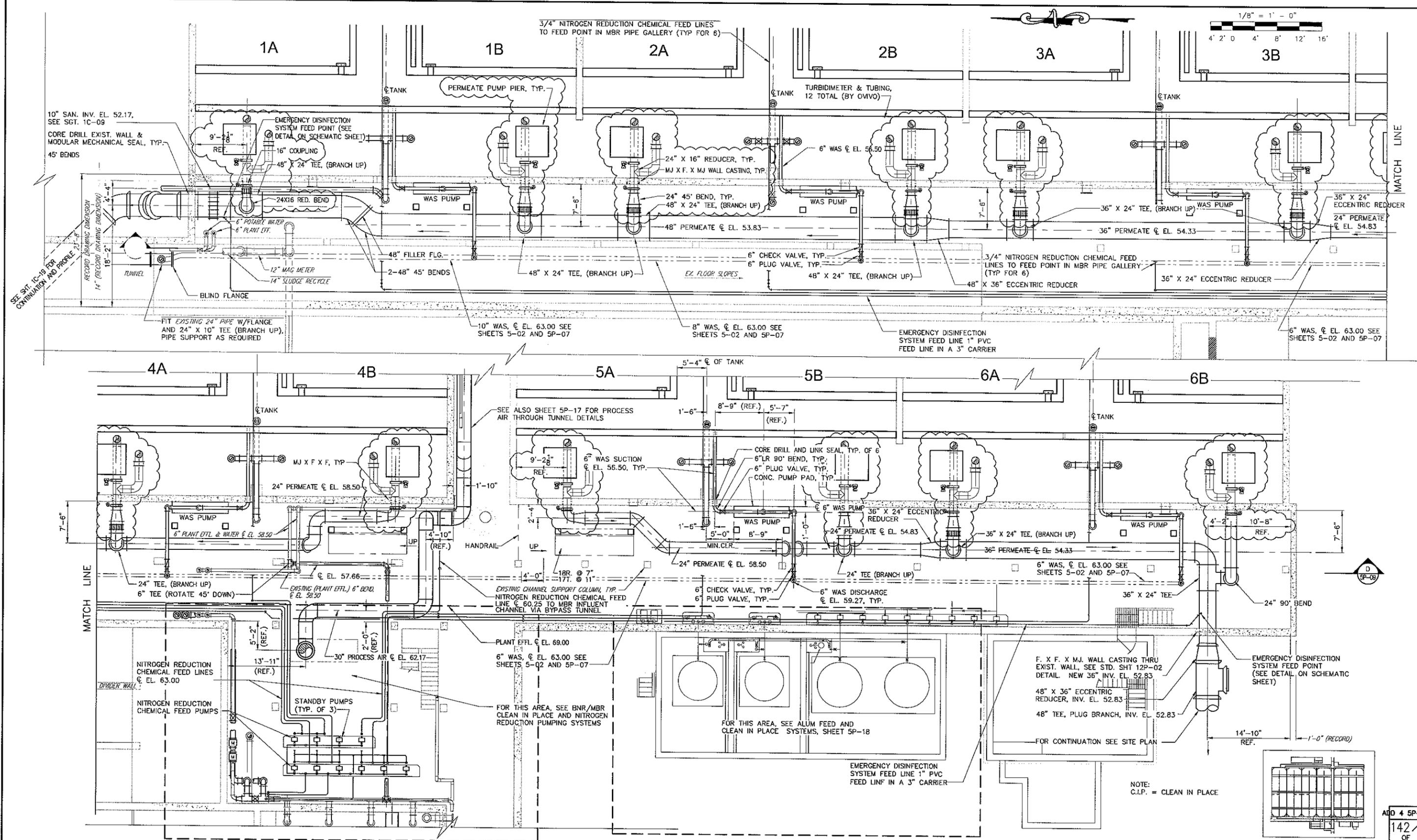
SECONDARY TREATMENT  
 BNR/MBR ACTIVATED SLUDGE TANKS  
 ENLARGED MIDDLE PLAN - PROCESS

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 <p><b>CT Consultants</b> engineers architects planners 8130 Sterling Court, Mentor, Ohio 44060 441.951.9990 www.ctconsultants.com</p>	<table border="1"> <thead> <tr> <th>NO.</th> <th>REVISION DATA</th> <th>DATE</th> <th>BY</th> <th>APP'D</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>REVISED PERMEATE PIPING LAYOUT, ADD PUMP PIERS</td> <td>12/13</td> <td>RLM</td> <td>CWJ</td> </tr> </tbody> </table>	NO.	REVISION DATA	DATE	BY	APP'D	1	REVISED PERMEATE PIPING LAYOUT, ADD PUMP PIERS	12/13	RLM	CWJ	<table border="1"> <thead> <tr> <th>DATE</th> <th>NOV. 2013</th> </tr> </thead> <tbody> <tr> <td>CT JOB NO.</td> <td>10182</td> </tr> <tr> <td>DRAWN BY:</td> <td>RLM</td> </tr> <tr> <td>CHECKED BY:</td> <td>CWJ</td> </tr> <tr> <td>APPROVED BY:</td> <td>CWJ</td> </tr> </tbody> </table>	DATE	NOV. 2013	CT JOB NO.	10182	DRAWN BY:	RLM	CHECKED BY:	CWJ	APPROVED BY:	CWJ	<p>CANTON WATER RECLAMATION FACILITY          PHOSPHORUS/TOTAL NITROGEN PROJECT          CONTRACT NO. 26          CITY OF CANTON, STARK COUNTY, OHIO</p> <p><b>SECONDARY TREATMENT          BNR/MBR ACTIVATED SLUDGE TANKS          SECTION &amp; C.I.P. PIPING DETAILS - PROCESS</b></p>
	NO.	REVISION DATA	DATE	BY	APP'D																		
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DATE	NOV. 2013																						
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CHECKED BY:	CWJ																						
APPROVED BY:	CWJ																						
		<p>ADD 4 5P-07          141          OF          375</p>																					

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 Drawing name: H:\2010\10182\DWG\Aeration-MBR BOTTOM.dwg Layout: ADD 4 5P-08 by: mariano



NOTE:  
 C.I.P. = CLEAN IN PLACE

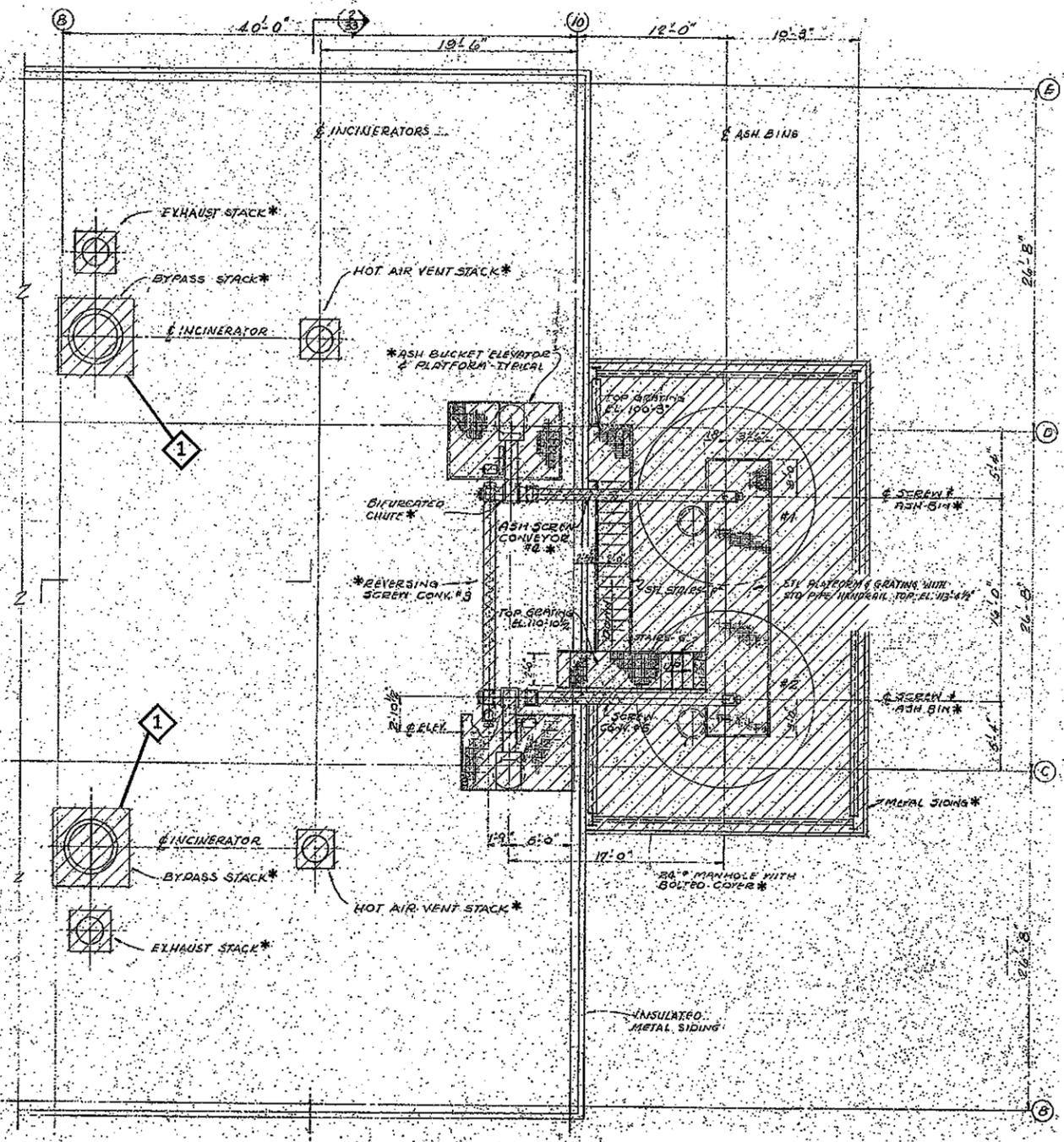
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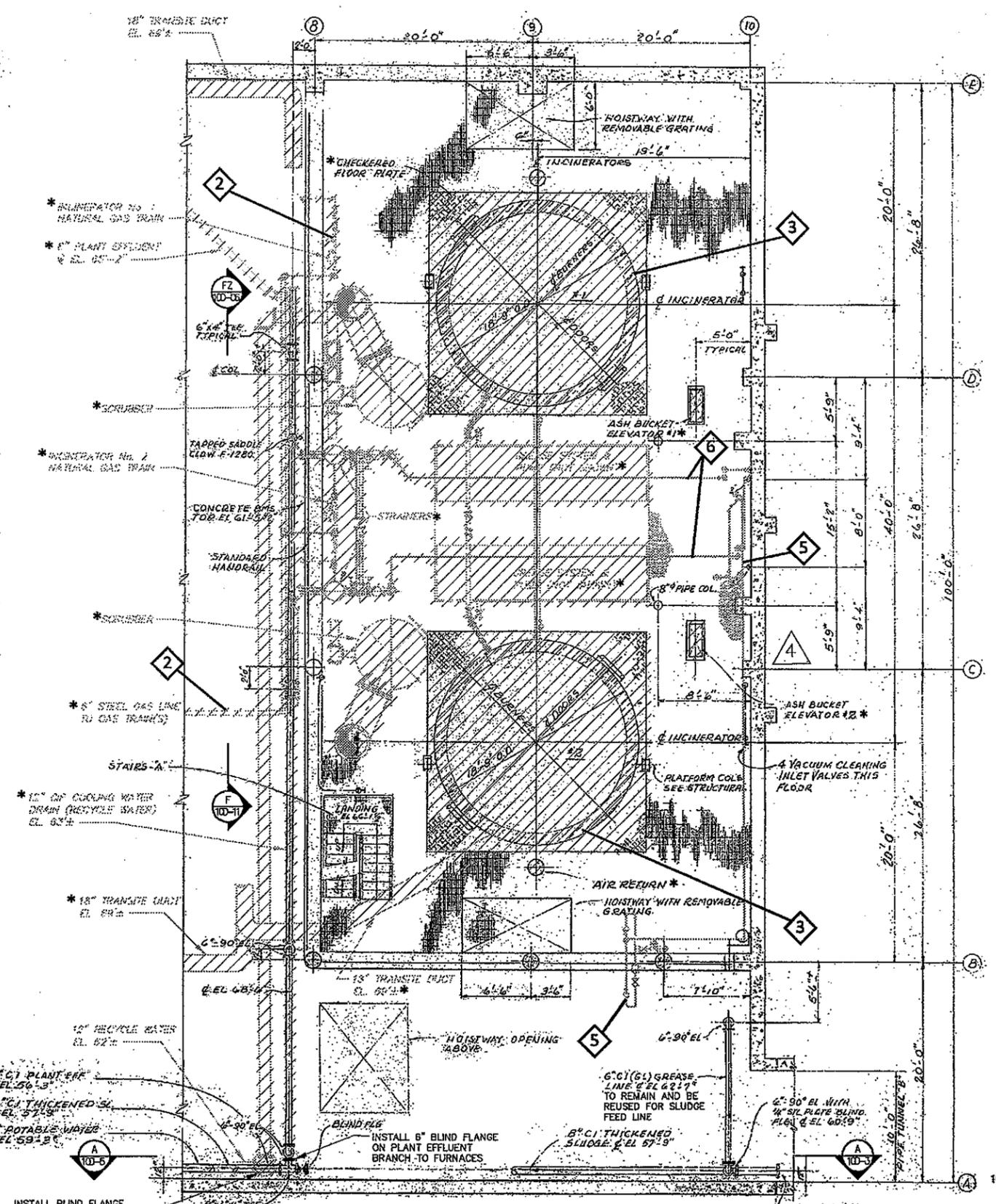
CANTON WATER RECLAMATION FACILITY  
 PHOSPHORUS/TOTAL NITROGEN PROJECT  
 CONTRACT NO. 26  
 CITY OF CANTON, STARK COUNTY, OHIO

SECONDARY TREATMENT  
 BNR/MBR PIPE GALLERY  
 BOTTOM PLAN - PROCESS





PLAN OVER ASH BINS & BUILDING ROOF



PLAN - GREASE PREPARATION PLATFORM

- NOTES:
- 1 ALL INCINERATOR STACKS TO BE REMOVED AND SEAL ALL ROOF PENETRATIONS, SEE ROOF PENETRATIONS DETAILS.
  - 2 NATURAL GAS LINE(S) OF VARIES SIZES TO BE REMOVED. CAP PIPE AT MAIN VALVE/REGULATOR STATION (OUTSIDE NORTH WALL) AND REMOVE ALL PIPING, INCLUDING GAS TRAINS TO FURNACES AND ALL PIPING TO FURNACE BURNERS.
  - 3 THE CITY'S ASBESTOS ASSESSMENT CONSULTANT AND THE ORIGINAL INCINERATOR EQUIPMENT SUPPLIER HAVE INDICATED THE POSSIBLE PRESENCE OF ASBESTOS IN THE INCINERATOR INTERNAL BRICK LINING AND POSSIBLY OTHER INCINERATOR COMPONENTS, SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
  - 5 REMOVE ALL AIR LINES FROM SCRUBBER AIR COMPRESSORS TO SCRUBBERS.
  - 6 REMOVE VENTURI STAGE CONTROL PANEL AND ALL WATER LINES FROM CONTROL PANEL TO SCRUBBERS.

\* - TO BE REMOVED

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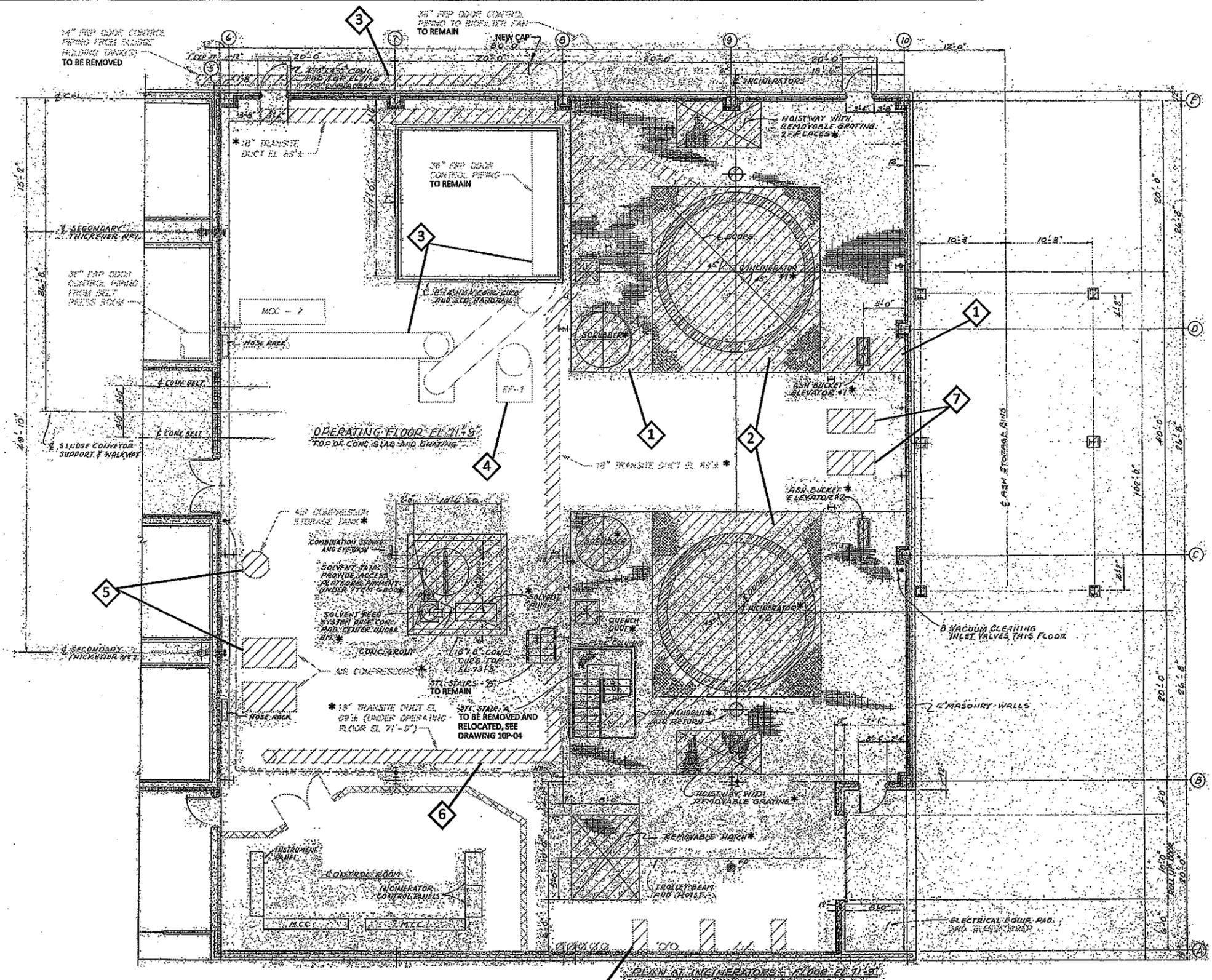


NO.	REVISION DATA	DATE	BY	APP'D	DATE
4	ADD. NO. 4-STRUCTURAL MODIFICATIONS				NOV. 2013
					CT JOB NO. 10182
					DRAWN BY: JAM
					CHECKED BY: WAD
					APPROVED BY: WAD

100-06 ADDENDUM	
208 OF 375	
CANTON WATER RECLAMATION FACILITY PHOSPHORUS/TOTAL NITROGEN PROJECT CONTRACT NO. 26 CITY OF CANTON, STARK COUNTY, OHIO	
<b>SOLIDS DEWATERING</b>	
<b>INCINERATORS - DEMOLITION</b>	
DEMOLITION	

NOTES:

- 1 REMOVE GRATING THIS AREA.
- 2 REMOVE STEEL PLATE AND SUPPORT FRAMING.
- 3 FRP ODOR CONTROL DUCTWORK, SCRUBBER ON LOWER LEVEL EL 51'-9", AND ALL ASSOCIATED SUPPORTS AND APPURTENANCES TO REMAIN. DUCTWORK RUNS FROM PRESS ROOM, THROUGH EXISTING INCINERATOR OPERATING ROOM TO OUTSIDE BIOFILTER FAN, TO BIOFILTER. 14" FRP FROM SLUDGE STORAGE TANKS TO BE REMOVED AND CAPPED AT 36" MAIN.
- 4 EF-1 (EXHAUST FAN) AND ASSOCIATED DUCTWORK, SUPPORTS, ETC TO REMAIN. EF-1 LOCATED ON OPERATING FLOOR EL 71'-9".
- 5 AIR COMPRESSORS (2) AND AIR TANK (1) ON OPERATING FLOOR EL 71'-9" TO BE REMOVED.
- 6 18" TRANSITE DUCTWORK LOCATED BELOW OPERATING FLOOR SUPPORT BEAMS (APPROX EL 69'-4") TO BE REMOVED. DUCTWORK RUNS FROM AREA(S) PROXIMITY OF OLD SECONDARY THICKENERS (2 PLACES) TO INCINERATORS #1 AND #2 (2 PLACES). SEE SPECIFICATIONS FOR ASBESTOS ABATEMENT REQUIREMENTS.
- 7 SCRUBBER CONTROL PANELS AND ALL ASSOCIATED APPURTENANCES AND PIPING (TYP 2) LOCATED ON OPERATING FLOOR 71'-9" TO BE REMOVED.
- 8 CEMS ANALYZER GAS SYSTEM AND APPURTENANCES TO BE REMOVED.



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100-07 ADDENDUM  
209 OF 375

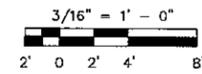
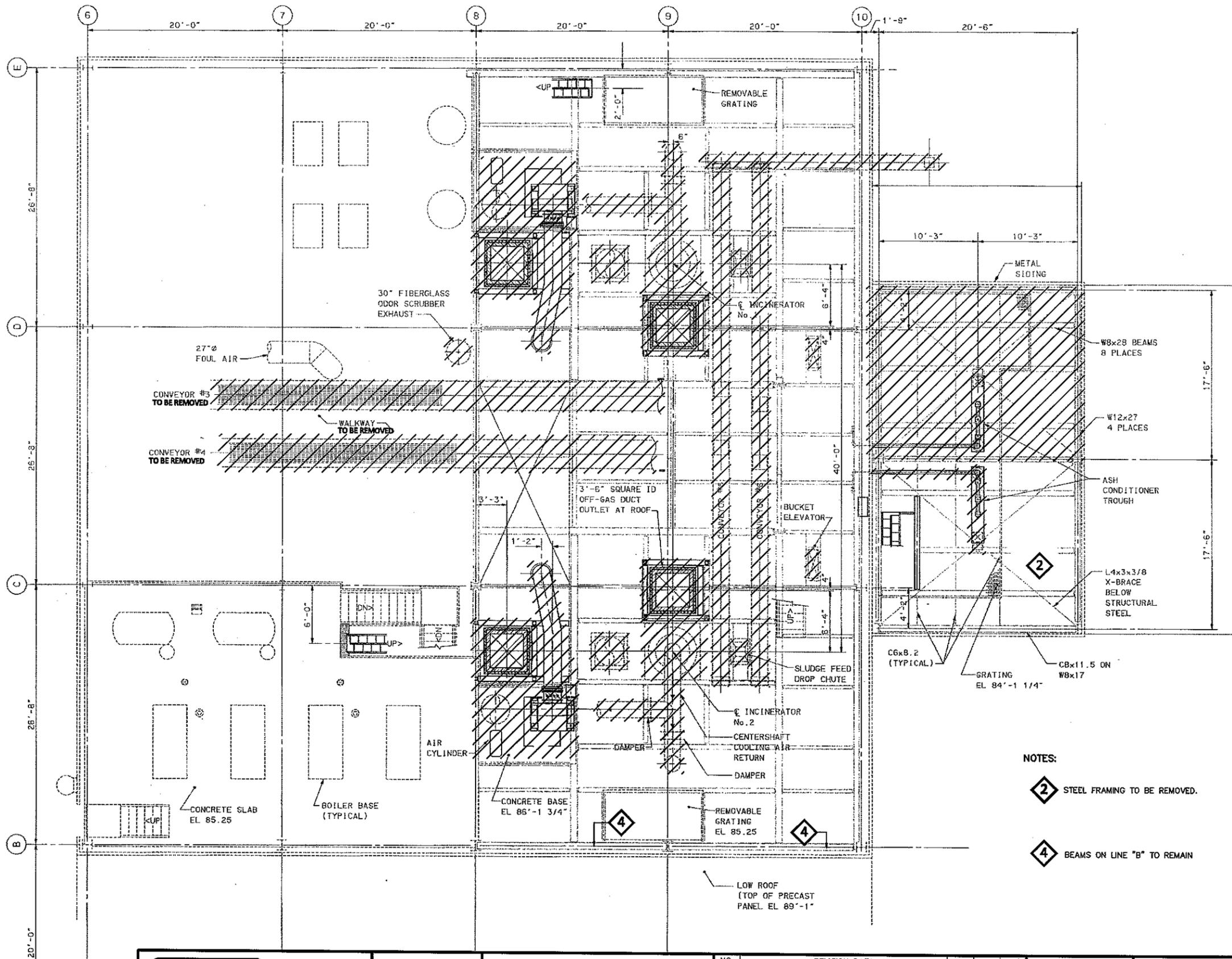
\* - TO BE REMOVED



NO.	REVISION DATA	DATE	BY	APP'D
ADD. NO. 4	STRUCTURAL MODIFICATIONS			

DATE	NOV. 2013	CANTON WATER RECLAMATION FACILITY PHOSPHORUS/TOTAL NITROGEN PROJECT CONTRACT NO. 26 CITY OF CANTON, STARK COUNTY, OHIO
CT JOB NO.	10182	
DRAWN BY:	JAM	
CHECKED BY:	WAD	
APPROVED BY:	WAD	
<b>SOLIDS DEWATERING INCINERATORS - DEMOLITION</b>		DEMOLITION

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- NOTES:
- 2 STEEL FRAMING TO BE REMOVED.
  - 4 BEAMS ON LINE "B" TO REMAIN



NO.	REVISION DATA	DATE	BY	APP'D
1	ADD. NO. 4-STRUCTURAL MODIFICATIONS			

DATE	NOV. 2013
CT JOB NO.	10182
DRAWN BY:	JAM
CHECKED BY:	WAD
APPROVED BY:	WAD

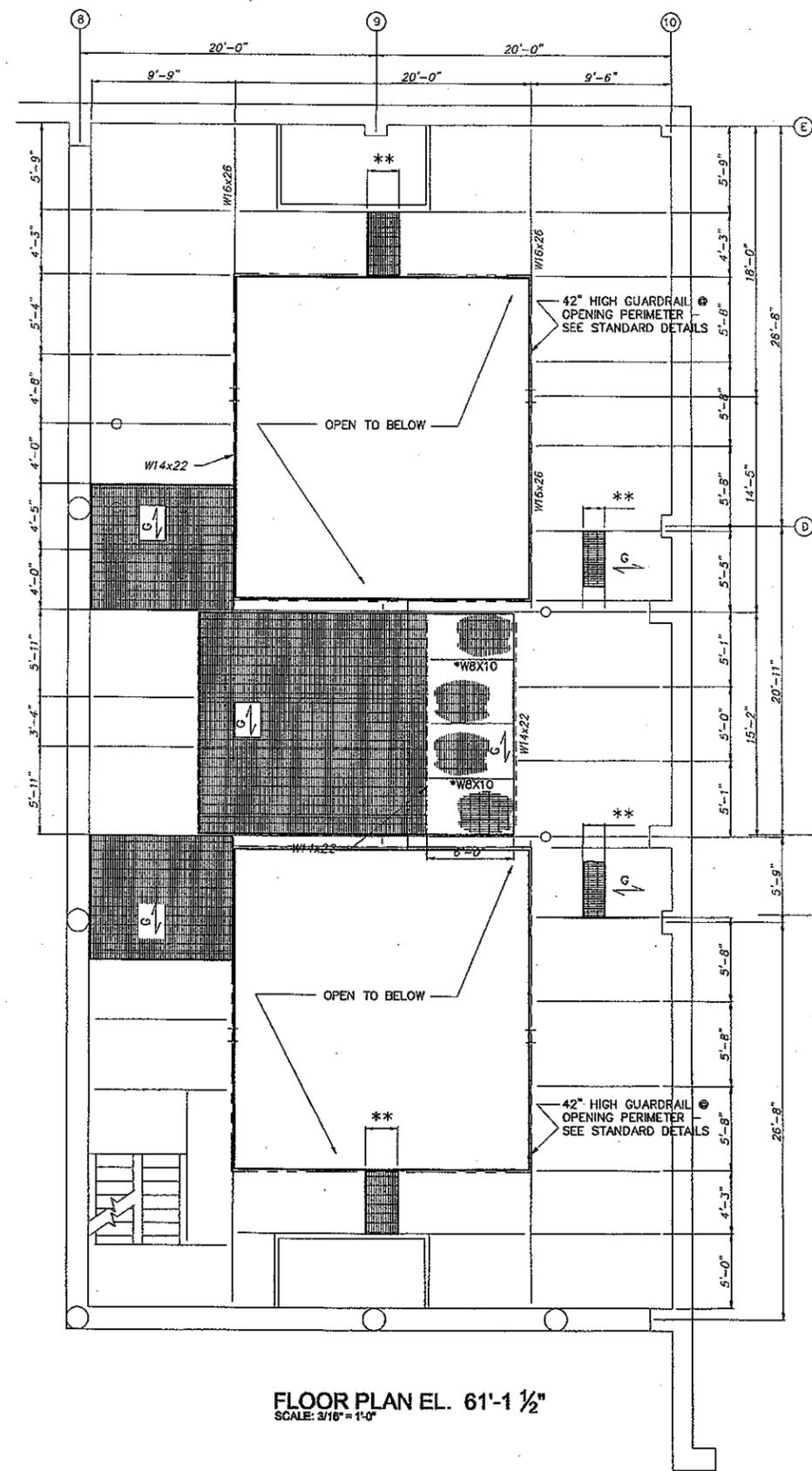
100-08 ADDENDUM  
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CANTON WATER RECLAMATION FACILITY  
 PHOSPHORUS/TOTAL NITROGEN PROJECT  
 CONTRACT NO. 26  
 CITY OF CANTON, STARK COUNTY, OHIO

**SOLIDS DEWATERING  
 INCINERATORS - DEMOLITION**

DEMOLITION

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 Drawing name: H:\2010\10182\DWG\CTI DWG\105-01.dwg Layout: 105-04 ADD NO. 4 by: terowski



- LEGEND**
- SPAN DIRECTION FOR NEW 1/4" X 3/16" STEEL GRATING
  - AREAS WHERE NEW GRATING IS TO BE INSTALLED
  - \*** NEW STEEL BEAM (ALL OTHER SIZES SHOWN ARE EXISTING)
  - \*\*** FIELD DETERMINE



NOTE:  
 CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS PRIOR TO SUBMITTING FABRICATED DRAWINGS FOR REVIEW

FLOOR PLAN EL. 61'-1 1/2"  
 SCALE: 3/16" = 1'-0"

105-04 ADD N  
 217  
 OF  
 375

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 ENGINEERS, INC.  
 220 MARKET AVE. SOUTH, SUITE 700  
 CANTON, OH 44702  
 330-452-7733

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 4150 S. Fry Cover, Mentor, Ohio 44060  
 440.551.9900 www.cticonsultants.com

NO.	REVISION DATA	DATE	BY	APP'D	DATE
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					DRAWN BY: JMD
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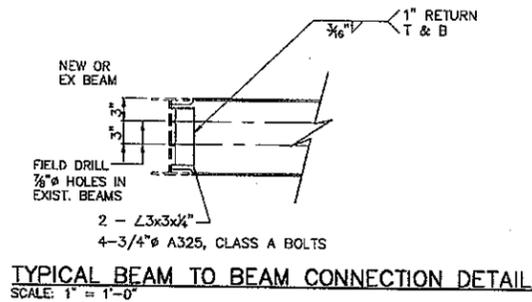
CANTON WATER RECLAMATION FACILITY  
 PHOSPHORUS/TOTAL NITROGEN PROJECT  
 CONTRACT NO. 26  
 CITY OF CANTON, STARK COUNTY, OHIO

**SOLIDS DEWATERING**  
 FLOOR PLAN EL. 61'-1 1/2"  
 STRUCTURAL

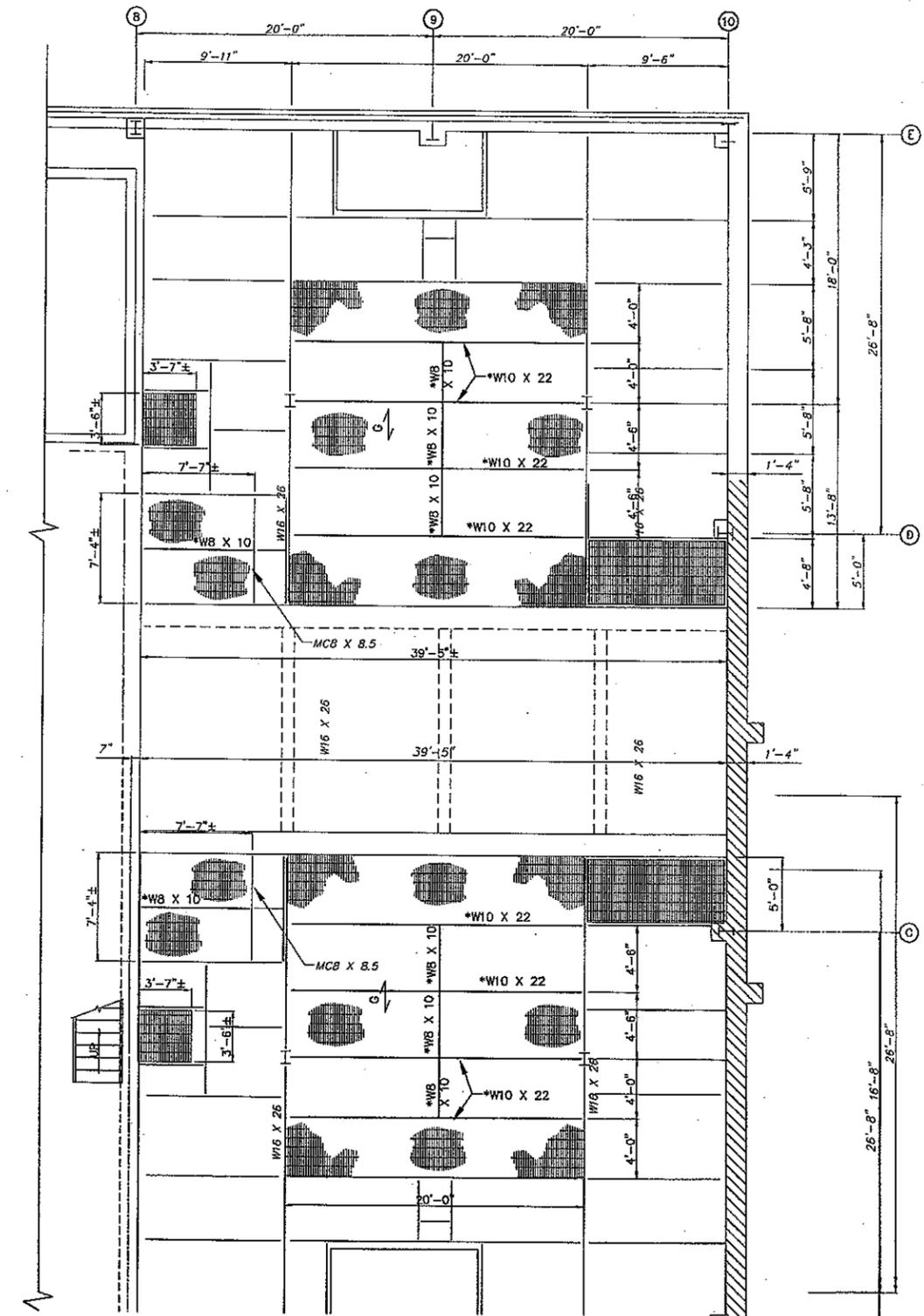
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**LEGEND**

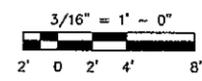
- SPAN DIRECTION FOR NEW 1/4"X3/8" STEEL GRATING
- AREAS WHERE NEW GRATING IS TO BE INSTALLED
- NEW STEEL BEAM (ALL OTHER SIZES SHOWN ARE EXISTING)
- RAISE DOOR 8"
- NEW 8" CONC./CMU WALL
- EXISTING CMU WALL



NOTE:  
 CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS PRIOR TO SUBMITTING FABRICATED DRAWINGS FOR REVIEW



**FLOOR PLAN EL. 71'-9"**  
 SCALE: 3/16" = 1'-0"



105-05 ADDENDUM  
 218 OF 375



NO.	REVISION DATA	DATE	BY	APP'D	DATE
1	STRUCTURAL MODIFICATIONS				NOV. 2013
					CT JOB NO. 10182
					DRAWN BY: JMD
					CHECKED BY: KGP
					APPROVED BY: KGP

CANTON WATER RECLAMATION FACILITY  
 PHOSPHORUS/TOTAL NITROGEN PROJECT  
 CONTRACT NO. 26  
 CITY OF CANTON, STARK COUNTY, OHIO

**SOLIDS DEWATERING**  
**FLOOR PLAN EL. 71'-9"**  
 STRUCTURAL