

# CITY OF FLINT

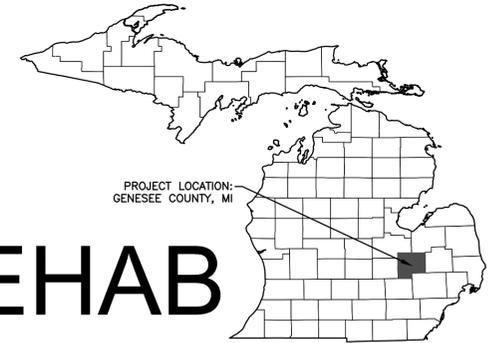
## GENESEE COUNTY, MICHIGAN

### CONSTRUCTION PLANS FOR

# WPC INFLUENT STRUCTURE & BATTERY A GRIT REHAB

## PRELIMINARY PLAN REVIEW

### SRF #5696-01



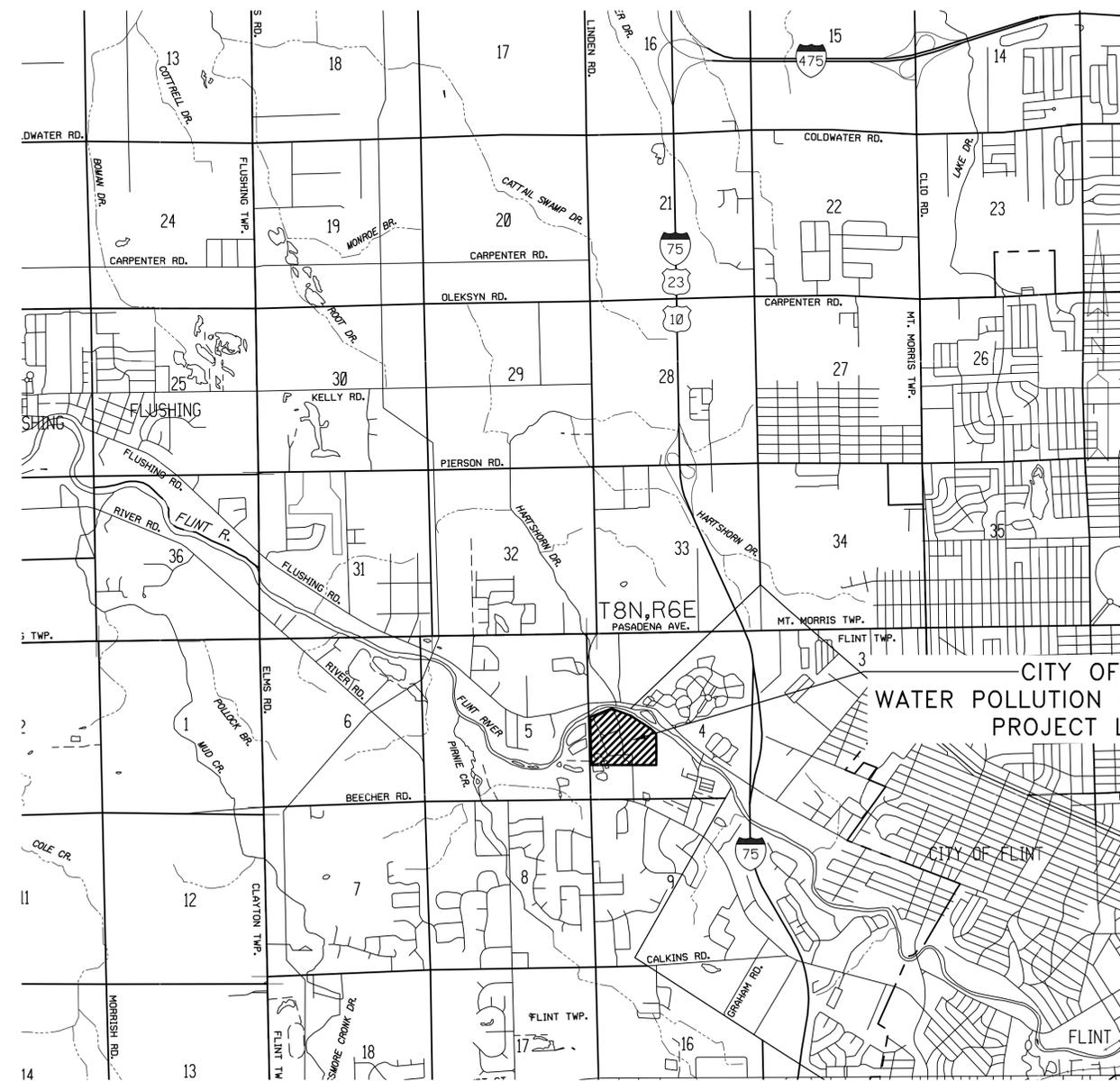
**KEY MAP**  
NOT TO SCALE

UTILITIES & MUNICIPALITIES

TELEPHONE AT&T ENGINEERING 54 NORTH MILL STREET, P.O. BOX 32 PONTIAC, MICHIGAN 48342 CONTACT: JEFF HEATH PHONE: 248.975.4588	CITY OF FLINT 702 WEST 12TH STREET TRANSPORTATION BUILDING FLINT, MI 48502 CONTACT: JOHN DALEY PHONE: 810.766.7343
CABLE TV COMCAST CABLEVISION 6095 WALL STREET STERLING HEIGHTS, MI 48312 CONTACT: TOM DICKINSON PHONE: 586.883.7412	CITY OF FLINT WATER SERVICE CENTER 3310 EAST COURT STREET FLINT, MICHIGAN 48506 CONTACT: ROB BINGSIK PHONE: 810.766.7202
ELECTRIC CONSUMERS ENERGY - ELECTRIC 3201 EAST COURT STREET FLINT, MICHIGAN 48501 CONTACT: MARCEY CONN PHONE: 810.760.3506	CITY OF FLINT ENGINEERING 702 WEST 12TH STREET FLINT, MI 48502 CONTACT: MARK ADAS PHONE: 810.766.7135
GAS CONSUMERS ENERGY 3201 EAST COURT STREET FLINT, MICHIGAN 48501 CONTACT: SALVATORE DELUSI PHONE: 810.760.3486	
SOIL EROSION & SEDIMENTATION CONTROL GCDC-WWS C-4610 BEECHER ROAD FLINT, MI 48532 CONTACT: MARK STEPHENS PHONE: 810.732.7870	

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**LOCATION MAP**  
SCALE: 1"=2640'  
CITY OF FLINT  
GENESEE COUNTY, MI  
SECTION 4, T7N, R6E

PROJECT MANAGER - TIFFANY HARRISON  
CA/PW/WORK/2/08/24/378/CGS-PLTS-COVER-SHEET.DWG - G1.0 - PLOTTED 4/10/2020 1:55 PM BY HARRISON, TIFFANY



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JOB NO. <b>COF1070.01F</b>	SHEET <b>G1.0</b>
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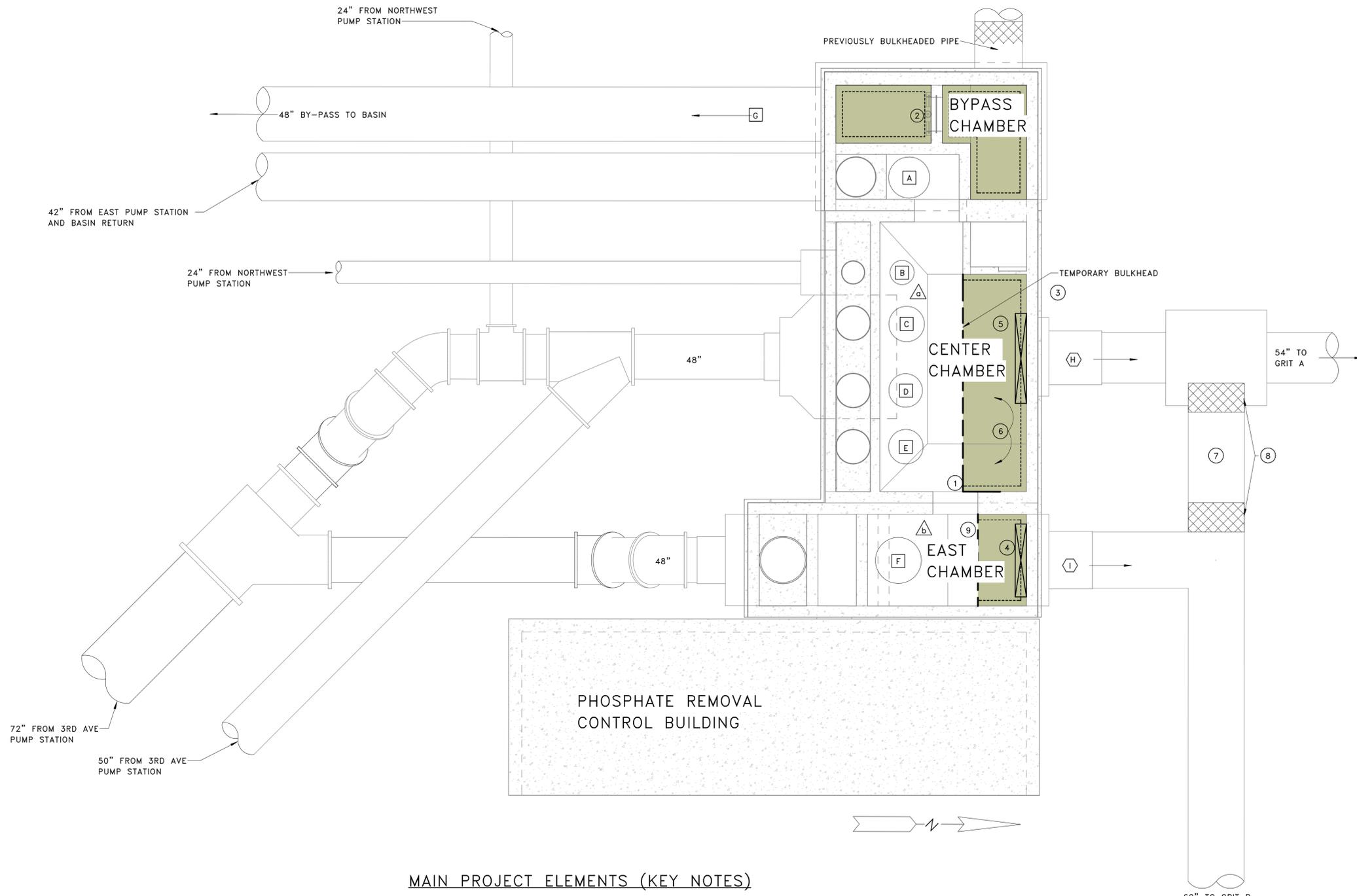
555 South Saginaw Street, Suite 201  
Flint, MI 48502  
810.226.2555/800.841.0342  
FAX: 810.235.4975

PREPARED UNDER THE SUPERVISION OF:

*Tiffany L. Harrison*

© Wade Trim Group, Inc. WPC INFLUENT STRUCTURE AND BATTERY A GRIT CHAMBER DESIGN RE-ENGINEERING





**MAIN PROJECT ELEMENTS (KEY NOTES)**

**INFLUENT SEWERS**

- A 42" INFLUENT FROM EAST PUMP STATION
- B 24" INFLUENT FROM NORTHWEST PUMP STATION
- C 32" INFLUENT FROM NORTHWEST AND 3RD AVE PUMP STATION
- D 32" INFLUENT FROM NORTHWEST AND 3RD AVE PUMP STATION
- E 36" INFLUENT LINE (POSSIBLY ABANDONED)
- F 48" INFLUENT FROM 3RD AVE
- G 48" BYPASS TO BASIN

**EFFLUENT SEWERS**

- H 54" RCP EFFLUENT TO GRIT A
- I 60" RCP EFFLUENT TO GRIT B

**PROJECT ELEMENTS**

- 1 4'-0" X 4'-0" WALL OPENING BETWEEN CENTER CHAMBER AND EAST CHAMBER (SEE DETAIL ON SHEET S5.0 FOR STOP PLATE GUIDE)
- 2 3'-0" X 3'-0" BASIN RETURN GATE
- 3 TEMPORARY BULKHEAD
- 4 NEW 6' X 6' SLIDE GATE
- 5 NEW 5' X 5" SLIDE GATE
- 6 EXISTING OVERFLOW TROUGH AND WIER TO BE REMOVED
- 7 INTERCONNECT SEWER TO BE FILLED WITH CLSM
- 8 NEW PERMANENT BULKHEAD
- 9 TEMPORARY BULKHEAD

**POTENTIAL LOCATION FOR BYPASS PUMPS**

- a POTENTIAL BY-PASS PUMP LOCATION IN CENTER CHAMBER
- b POTENTIAL BY-PASS PUMP LOCATION IN EAST CHAMBER

**SUGGESTED SEQUENCE OF CONSTRUCTION**

1. INSTALL TEMPORARY BULKHEAD (9) IN EAST CHAMBER (THIS WILL FORCE FLOWS TO BYPASS THROUGH THE EAST CHAMBER THROUGH THE WALL OPENING (1) INTO CENTER CHAMBER)
2. TEMPORARILY BULKHEAD 60" EFFLUENT LINE TO GRIT B (I) AND DEWATER ISOLATED AREA AND MAINTAIN
3. POWER WASH "EAST CHAMBER". INSTALL NEW REINFORCING STEEL AND WIRE MESH AND APPLY GEOPOLYMER COATING ON ALL EXPOSED CONCRETE SURFACES IN EAST CHAMBER
4. INSTALL NEW SLIDE GATE (4) IN EAST CHAMBER. START UP AND TEST SLIDE GATE
5. REMOVE TEMPORARY BULKHEADS (9) AND (I)
6. INSTALL BYPASS PUMPS FROM THE CENTER CHAMBER (a) TO GRIT "B". BYPASS PUMPS TO PUMP FLOWS UP TO 40 MGD FROM INFLUENT STRUCTURE TO GRIT "B"
7. INSTALL TEMPORARY BULKHEAD (3) IN CENTER CHAMBER TO ISOLATE NORTH PORTION OF CENTER CHAMBER
8. INSTALL TEMPORARY BULKHEAD (H) IN 54" EFFLUENT LINE TO GRIT "A". DEWATER ISOLATED AREA AND MAINTAIN
9. DEMOLISH EXISTING OVERFLOW TROUGH AND WIER (6)
10. POWER WASH "CENTER CHAMBER" AND "BYPASS CHAMBER", INSTALL NEW REINFORCING STEEL AND WIRE MESH, AND APPLY GEOPOLYMER COATING TO ALL EXPOSED CONCRETE SURFACES IN CENTER CHAMBER AND BYPASS CHAMBER
11. INSTALL NEW SLIDE GATE (5) IN CENTER CHAMBER. START UP AND TEST SLIDE GATE
12. BYPASS PUMP FLOWS TO GRIT "B" (UP TO 40 MGD, FOR WET WEATHER EVENTS THE WORK AREA MUST BE EVACUATED AND FLOWS IN EXCESS OF 40 MGD SHALL FLOW OVERTOP OF TEMPORARY BULKHEAD (3) AND FLOW TO GRIT "A" OR GRIT "B" OR BASIN. ISOLATE FLOWS THROUGH 60" AND 54" TO GRIT "A" AND GRIT "B"
13. INSTALL TEMPORARY BULKHEAD (9) IN THE EAST CHAMBER
14. POWERWASH AND CLEAN AREA FOR INSTALLATION OF NEW PERMANENT CMU BULKHEADS IN CONNECTING SEWER BETWEEN GRIT "A" AND GRIT "B" (8). FILL ABANDONED PIPE BETWEEN BULKHEADS WITH CLSM (7). DEWATER ISOLATED AREA TO CONTROL ANY LEAKAGE AS NEEDED.
15. INSTALL PIPE COATING IN SEWER TO GRIT "B" (I) PER LIMITS SHOWN ON SHEET S3.0
16. REMOVE TEMPORARY BULKHEAD (9)
17. INSTALL PIPE COATING IN SEWER TO GRIT "A" (H) PER LIMITS SHOWN ON SHEET S3.0
18. CLOSE GATE TO GRIT "A" (5). REMOVE REMAINING BULKHEADS IN THE INFLUENT STRUCTURE, AND REMOVE BYPASS PUMPING
19. REMOVE AND REPLACE FLOW METER IN 54" LINE TO GRIT "A" (H)
20. OPEN GATE (5) TO GRIT "A" TO RESUME NORMAL OPERATIONS CONTINGENT ON COMPLETION OF OTHER GRIT "A" WORK

**NOTES**

1. THE "SUGGESEED SEQUENCE OF CONSTRUCTION" DESCRIBED ABOVE IS FOR CONTRACTOR CONSIDERATION ONLY. CONTRACTOR IS ULTIMATELY REQUIRED TO ACCOMPLISH THE SPECIFIED WORK. FINAL SEQUENCE DEVELOPED BY THE CONTRACTOR SHALL BE SUBMITTED TO OWNER FOR REVIEW AND APPROVAL BEFORE BEGINNING WORK
2. CONTRACTOR SHALL NOT ALTER OR MODIFY BURRIED INFLUENT LINES INTO THE INFLUENT STRUCTURE
3. CONTRACTOR SHALL CONVEY A MINIMUM OF 40 MGD EITHER BY GRAVITY FLOW FROM THE INFLUENT STRUCTURE OR BY BYPASS PUMPING DURING THE ENTIRE DURRATION OF THE PROJECT.
4. CONTRACTOR IS RESPONSIBLE FOR ALL CLEAN UP IN THE EVENT OF A WET-WEATHER BULKHEAD EXCEEDANCE

**LEGEND**

- FLOOR SURFACE TO BE PREPARED AND COATED
- WALL SURFACE TO BE PREPARED AND COATED

REV#	DATE	DESCRIPTION	BY



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CITY OF FLINT  
 WPC INFLUENT STRUCTURE &  
 BATTERY A GRIT REHAB  
 SRF#5696-01  
 CONSTRUCTION SEQUENCE

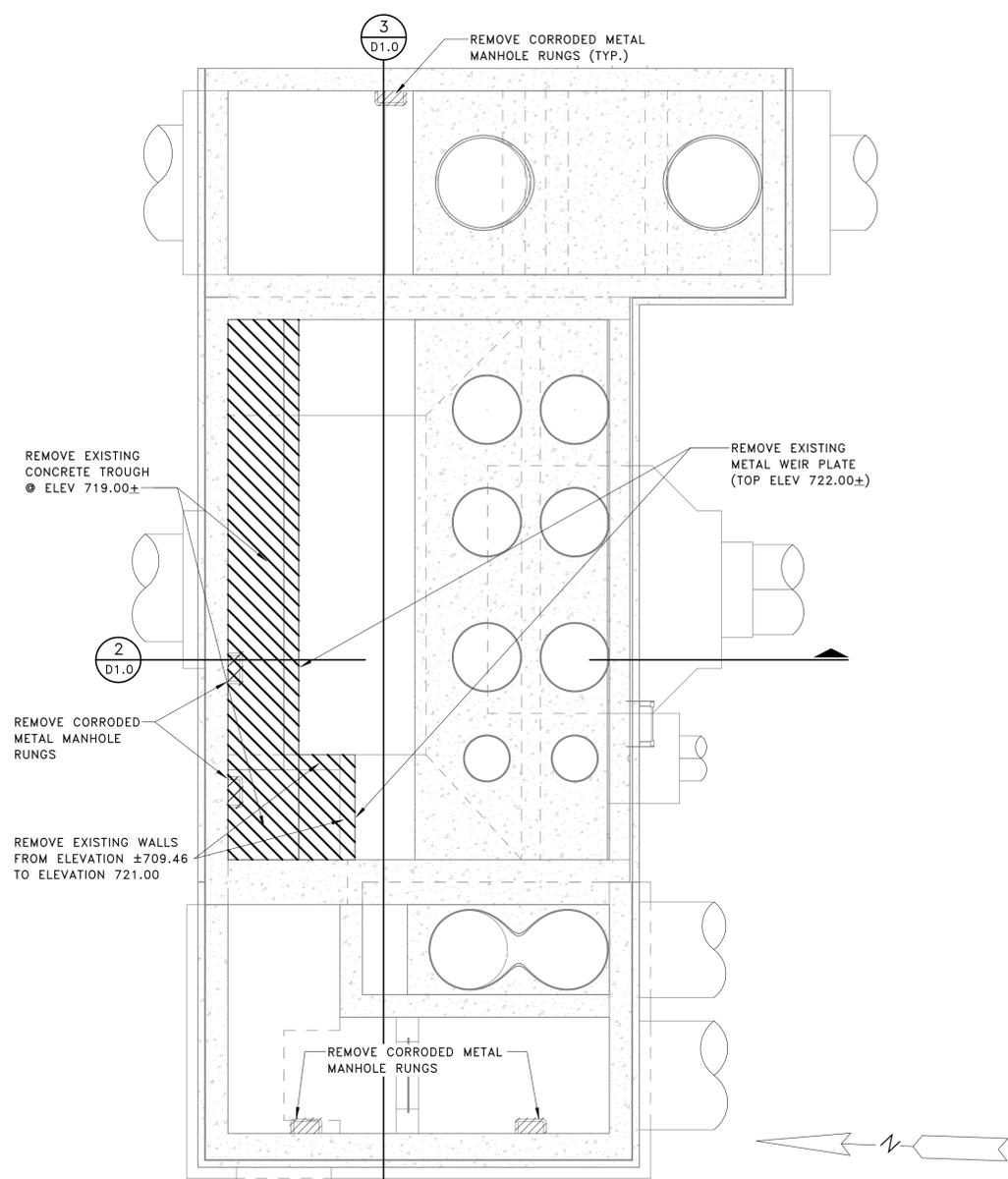
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90% DESIGN	12/6/19LH	
100% DESIGN	2/28/20LH	

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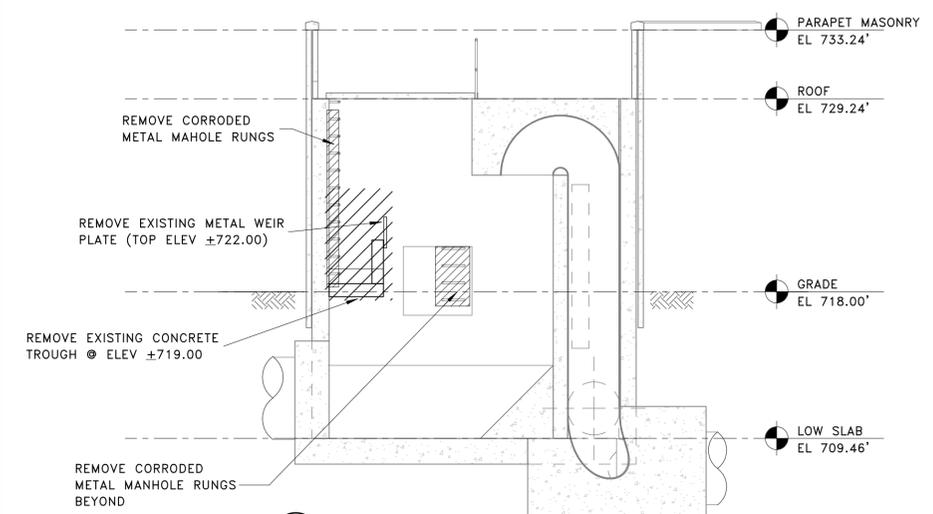
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G3.0

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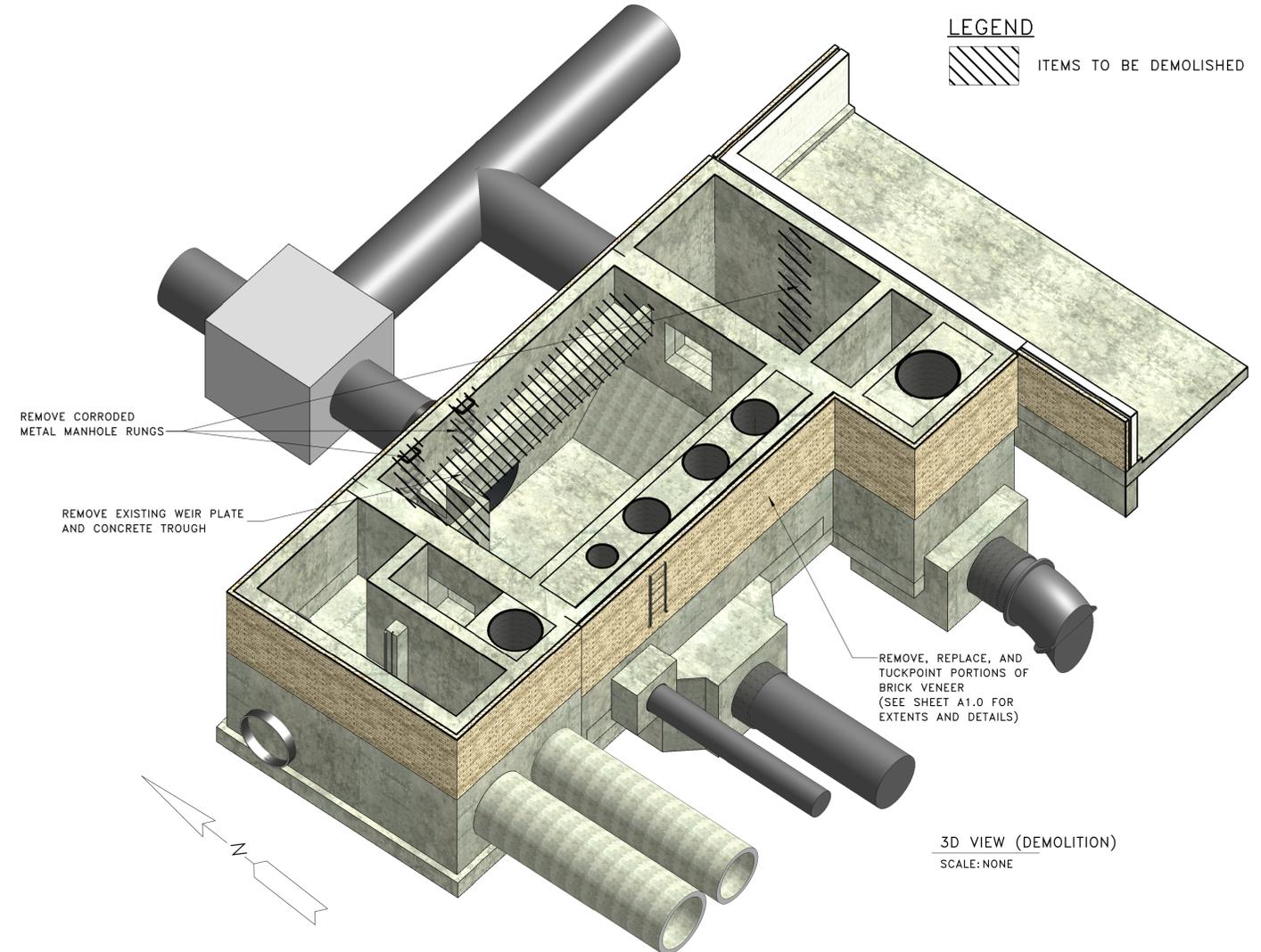
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**1 PLAN VIEW @ ELEV 726.00**  
 D1.0 SCALE: 1/4" = 1'-0"

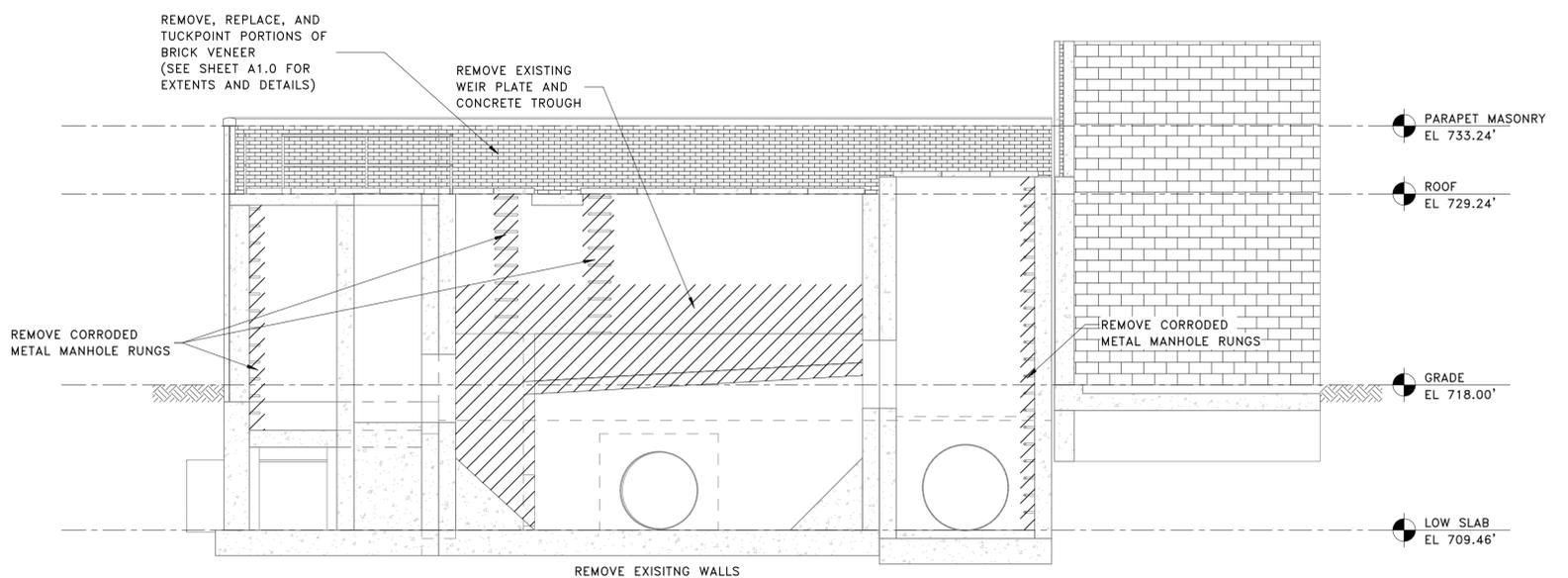


**2 TRANSVERSE SECTION**  
 D1.0 SCALE: 3/16" = 1'-0"



**LEGEND**  
 ITEMS TO BE DEMOLISHED

**3D VIEW (DEMOLITION)**  
 SCALE: NONE



**3 LONGITUDINAL SECTION**  
 D1.0 SCALE: 3/16" = 1'-0"

REV#	DATE	DESCRIPTION	BY



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CITY OF FLINT  
 WPC INFLUENT STRUCTURE &  
 BATTERY A GRIT REHAB  
 SRF#5696-01  
 INFLUENT STRUCTURE DEMOLITION

ISSUED FOR:	DATE:	BY:
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90% DESIGN	12/2/19TLH	
100% DESIGN	2/28/20TLH	

JOB NO.  
**COF1070.01F**

SHEET  
**D1.0**

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REMOVE AND REPLACE DETERIORATED, SPALLED, OR BROKEN BRICKS WITH NEW TO MATCH EXISTING (TYP.). TEMPORARILY SHORE EXISTING AS NECESSARY DURING DEMO AND CONSTRUCTION.



PHOTO NO. 01

CAREFULLY REMOVE AND REINSTALL LADDER AS REQ'D TO ACCOMMODATE BRICK REPAIR WORK

PROVIDE NEW FLUID APPLIED WATERPROOFING ROOFING COATING AT ROOF OF INFLUENT BUILDING - REFER TO SPEC SECTION 07 5600 FOR ADDITIONAL REQUIREMENTS AND INFORMATION (TYP.)



PHOTO NO. 02

CLEAN ALL DEBRIS FROM ROOF AND PREPARE SURFACES PER MFR. RECOMMENDATIONS AND REQUIREMENTS (TYP.)

REPOINT ALL CRACKED AND DETERIORATED MORTAR JOINTS AT BRICK MASONRY (TYP.)



PHOTO NO. 03

REMOVE DETERIORATED CAULK AND REPLACE AT ALL CORNERS, INTERSECTIONS AND CONTROL JOINTS (TYP.)

NOTE MULTIPLE EXISTING CRACKED BRICK ALONG THIS LINE (TYP.)

ONCE REPOINTING IS COMPLETE, EXISTING BRICK IS TO BE CLEANED AND A WATER REPELLANT COATING APPLIED TO ALL EXPOSED BRICK SURFACES. (TYP. FOR AFFECTED WALLS OF INFLUENT BLDG.)

ADD CONTROL JOINT - CAREFULLY SAWCUT AND REMOVE MATERIAL TO CREATE VERTICAL JOINT. FILL SAWCUT JOINT WITH SEALANT. CRACKED MORTAR THAT IS ADJACENT TO THE NEW SAWCUT LINE IS TO BE REPOINTED TO MATCH EXISTING MASONRY.

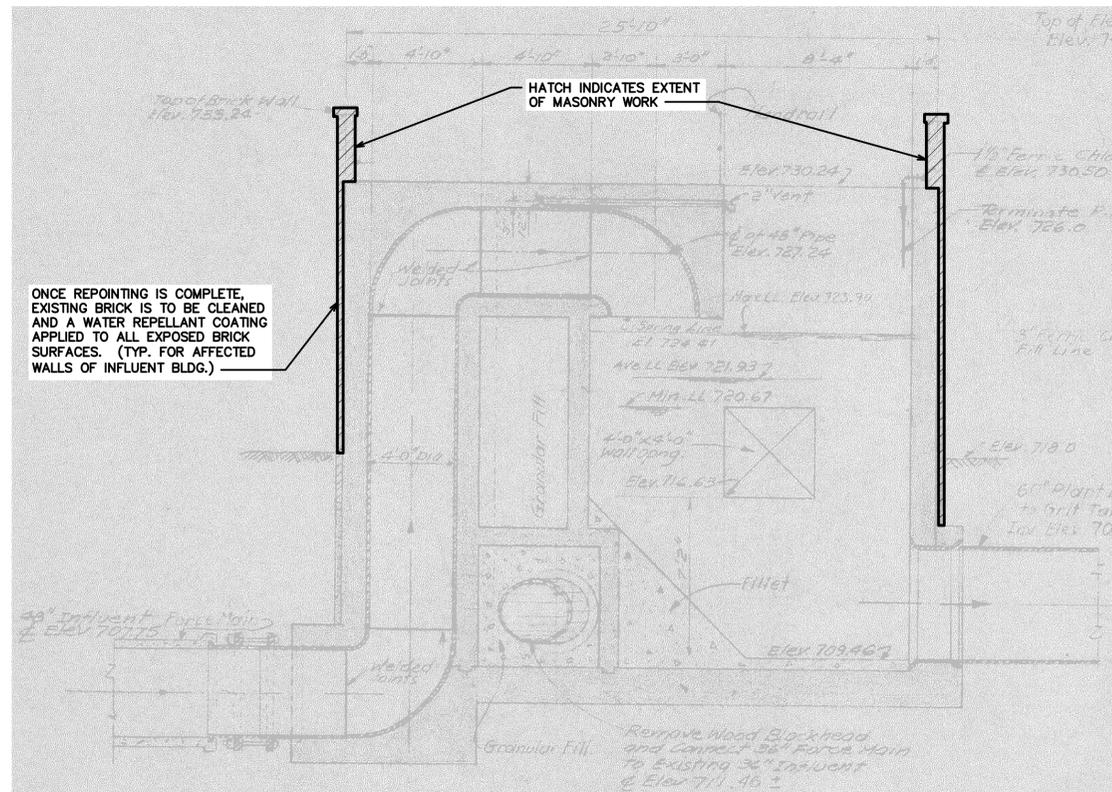
REMOVE AND REPLACE BROKEN BRICKS WITH NEW TO MATCH EXISTING (TYP.). TEMPORARILY SHORE EXISTING AS NECESSARY DURING DEMO AND CONSTRUCTION.



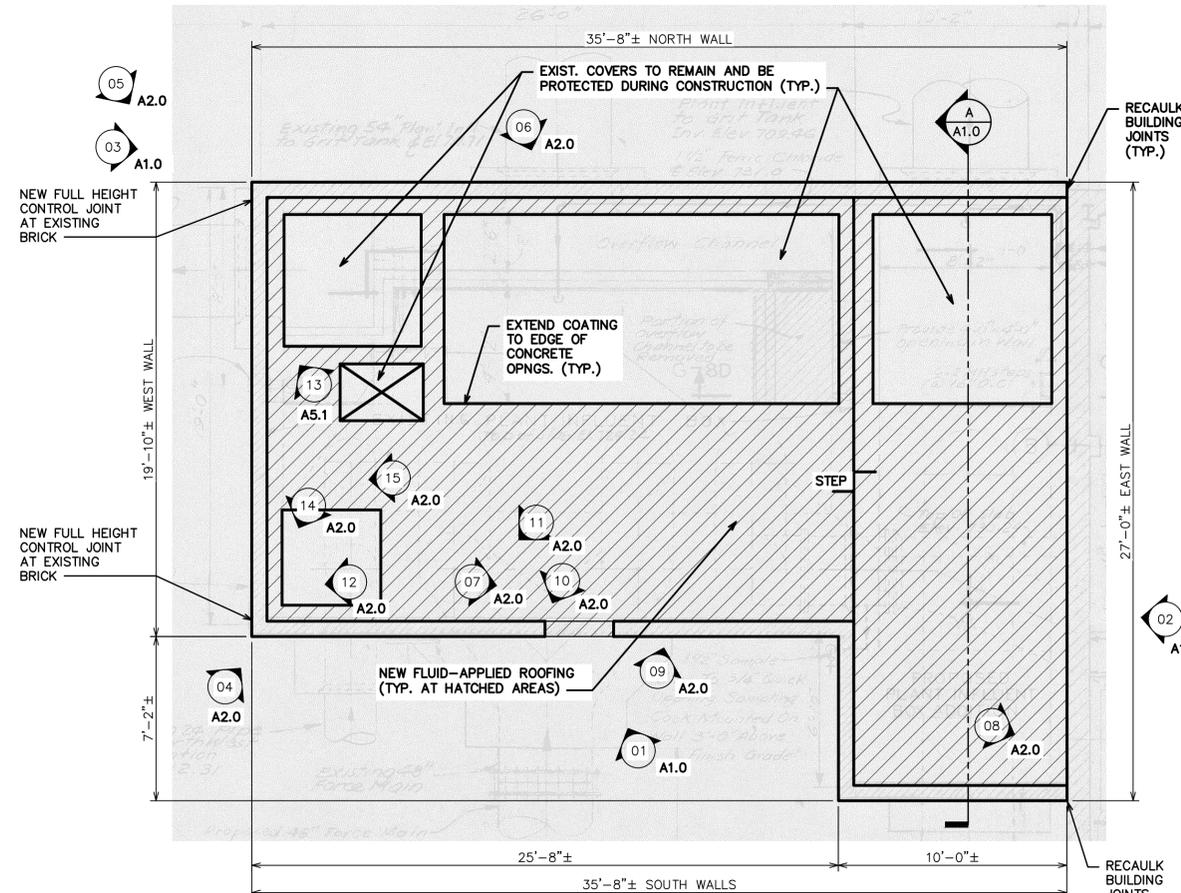
AERIAL IMAGE

WORK	FAÇADE WALLS				
	NORTH WALL	WEST WALL	SOUTH WALLS	EAST WALL	
BRICK REPLACEMENT (# OF BRICK)	20	20	60	5	INSIDE (TOP)
	65	30	120	N/A	OUTSIDE
	TOTAL: 320 BRICKS				
JOINT RE-POINTING (LINEAL FEET)	80	40	120	30	INSIDE (TOP)
	120	40	160	N/A	OUTSIDE
	TOTAL: 590 LIN. FT.				

ALL QUANTITIES TO BE FIELD VERIFIED W/ OWNER AND ARCHITECT.



BUILDING SECTION A  
SCALE: 1/4"=1'-0" A1.0



ROOF PLAN  
SCALE: 1/4"=1'-0"



CITY OF FLINT  
WPC INFLUENT STRUCTURE & BATTERY A GRIT REHAB  
SRF #5696-01  
INFLUENT STRUCTURE  
PLAN, SECTION, AND PHOTOS

ISSUED FOR: DATE: BY:  
50% DESIGN 10/25/19 TLH  
90% DESIGN 12/06/19 TLH  
FINAL EGLE 04/08/20 TSW

JOB NO.  
COF1070.01F

SHEET  
A1.0

ONCE REPOINTING IS COMPLETE, EXISTING BRICK IS TO BE CLEANED AND A WATER REPELLANT COATING APPLIED TO ALL EXPOSED BRICK SURFACES. (TYP. FOR AFFECTED WALLS OF INFLUENT BLDG.)



PHOTO NO. 04

REMOVE AND REPLACE DETERIORATED, SPALLED, OR BROKEN BRICKS WITH NEW TO MATCH EXISTING (TYP.). TEMPORARILY SHORE EXISTING AS NECESSARY DURING DEMO AND CONSTRUCTION.

NOTE MULTIPLE EXISTING CRACKED BRICK ALONG THIS LINE (TYP.)



PHOTO NO. 05

ADD CONTROL JOINT - CAREFULLY SAWCUT AND REMOVE MATERIAL TO CREATE VERTICAL JOINT. FILL SAWCUT JOINT WITH SEALANT. CRACKED MORTAR THAT IS ADJACENT TO THE NEW SAWCUT LINE IS TO BE REPOINTED TO MATCH EXISTING MASONRY.

REMOVE AND REPLACE DETERIORATED, SPALLED, OR BROKEN BRICKS WITH NEW TO MATCH EXISTING (TYP.). TEMPORARILY SHORE EXISTING AS NECESSARY DURING DEMO AND CONSTRUCTION.

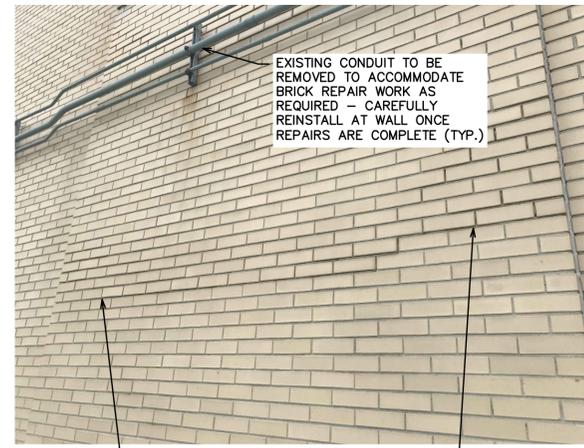


PHOTO NO. 06

EXISTING CONDUIT TO BE REMOVED TO ACCOMMODATE BRICK REPAIR WORK AS REQUIRED - CAREFULLY REINSTALL AT WALL ONCE REPAIRS ARE COMPLETE (TYP.)

REPOINT ALL CRACKED AND DETERIORATED MORTAR JOINTS AT BRICK MASONRY (TYP.)



PHOTO NO. 07

APPLY MASONRY WATERPROOFING TO PARAPET STONE CAP AND BRICK AT BOTH SIDES OF WALL (TYP. AT AFFECTED AREAS)

REMOVE AND REPLACE EXISTING JOINT SEALANT AT INTERSECTION OF WALLS (TYP.)

EXTEND MEMBRANE COATING UP & OVER BASE PLATES AND RAILS AT LADDER A MIN. OF 12" ABOVE ROOF SURFACE PER MFR. RECOMMENDATIONS (TYP.)



PHOTO NO. 08

REMOVE DETERIORATED CAULK AND SPALLED MORTAR. PREP. FOR SURFACES AND INFILL GAPS AS REQ'D FOR INSTALLATION OF NEW FLUID APPLIED ROOFING PER MFR. RECOMMENDATIONS.

REMOVE AND REPLACE DETERIORATED, SPALLED, OR BROKEN BRICKS WITH NEW TO MATCH EXISTING (TYP.). TEMPORARILY SHORE EXIST. AS NECESSARY DURING DEMO AND CONSTRUCTION.



PHOTO NO. 09

EXTEND NEW FLUID APPLIED MEMBRANE COATING TO EDGE OF ROOF SURFACE AND TO FACE OF WALL AT LADDER OPENING.

REMOVE EXISTING DETERIORATED MORTAR AND INFILL GAPS WITH NEW MORTAR. PREP SURFACES FOR INSTALLATION OF NEW COATING PER MFR. REQ'MNTS.

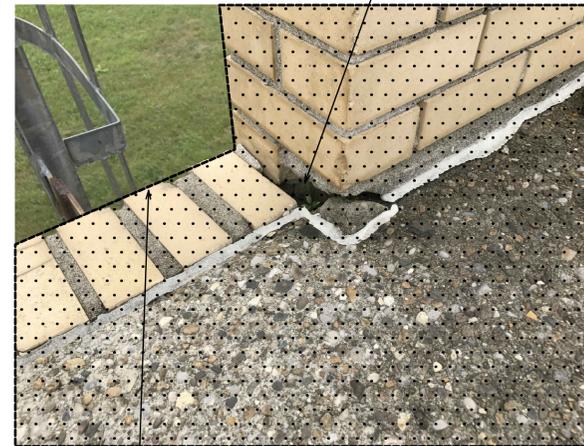


PHOTO NO. 10

NEW FLUID APPLIED COATING AT ROOF TO EXTEND 12" UP BRICK WALLS TO PROVIDE A WATERTIGHT ROOF CONDITION - INSTALL PER MFR. REQ'MNTS. (TYP.)

PROVIDE NEW FLUID APPLIED WATERPROOFING COATING AT ROOF OF INFLUENT BLDG. - REFER TO SPEC SECTION 07 5600 FOR ADDITIONAL REQUIREMENTS AND INFORMATION (TYP.)



PHOTO NO. 11

REMOVE AND REPLACE DETERIORATED, SPALLED, OR BROKEN BRICKS WITH NEW TO MATCH EXISTING (TYP.). TEMPORARILY SHORE EXISTING AS NECESSARY DURING DEMO AND CONSTRUCTION.



PHOTO NO. 12

REMOVE AND REPOINT ALL CRACKED AND DETERIORATED MORTAR JOINTS - PAY SPECIAL ATTENTION TO TOP 2-3 COURSES AND BOTTOM ROWLOCK COURSE OF BRICK (TYP.)



PHOTO NO. 13

REPLACE DETERIORATED CONDUITS WITH NEW STAINLESS STEEL CONDUIT.

EXISTING COVERS TO BE CAREFULLY REMOVED AND REINSTALLED TO ACCOMMODATE NEW WORK (TYP.)



PHOTO NO. 14

REPOINT ALL CRACKED AND DETERIORATED MORTAR JOINTS AT BRICK - TOP 2 TO 3 COURSES AT TOP OF WALL ARE TO BE REPOINTED IN THEIR ENTIRETY DUE TO DETERIORATION (TYP.)

REMOVE AND REPLACE DETERIORATED CONDUITS WITH NEW RIGID ALUMINUM CONDUITS (TYP. AT AFFECTED AREA)

TEMPORARILY REMOVE DISCONNECT DURING REPAIRS AND CAREFULLY REINSTALL ONCE REPAIRS ARE COMPLETE



PHOTO NO. 15

INSTALL FLUID APPLIED ROOFING OVER BASE PLATES AND UP POSTS 12" PER MANUF. RECOMMENDATIONS - PREPARE SURFACES AS REQ'D PRIOR TO INSTALLATION (TYP.)

PROJECT MANAGER: Tiffany L. Henders, PE  
 V:\201504\201504039\WPC\_FLINT\DWG - 22X34 - PLOTTED 4/4/2020 2:23 PM BY: MELCHIOR, ADRIANA M.  
 FIELD BOOK INFORMATION:  
 V:\201504\201504039\WPC\_FLINT\DWG - 22X34 - PLOTTED 4/4/2020 2:23 PM BY: MELCHIOR, ADRIANA M.



CITY OF FLINT  
 WPC INFLUENT STRUCTURE &  
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 SRF #5696-01  
 INFLUENT STRUCTURE  
 REFERENCE PHOTOS

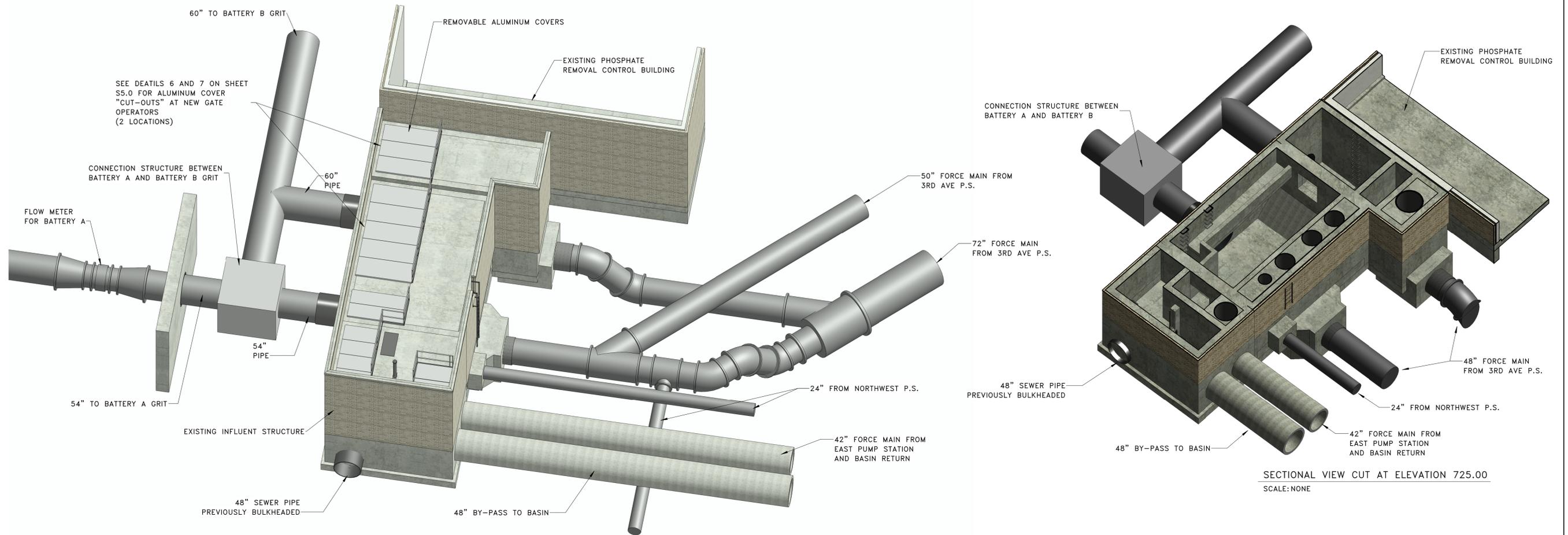
ISSUED FOR: DATE: BY:  
 50% DESIGN 10/25/19 TLH  
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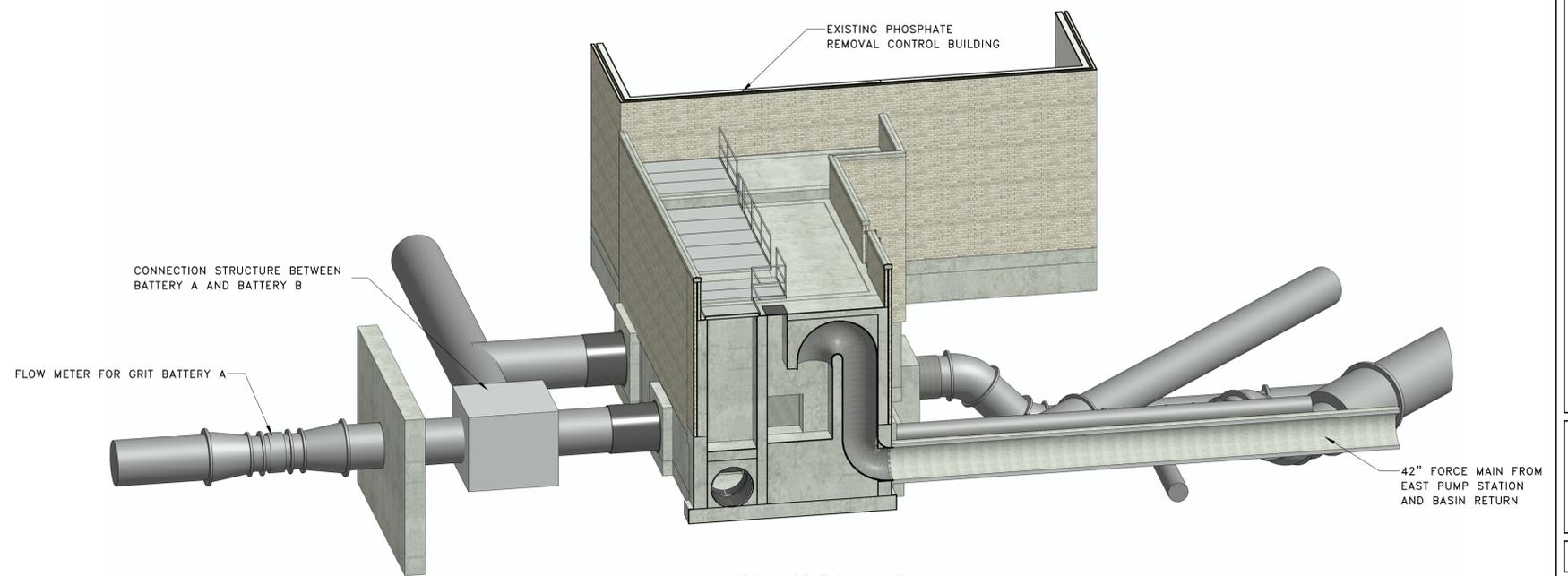
SHEET  
 A2.0

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INFLUENT STRUCTURE 3D VIEW  
SCALE: NONE



CROSS SECTIONAL VIEW  
SCALE: NONE

SECTIONAL VIEW CUT AT ELEVATION 725.00  
SCALE: NONE

REV#	DATE	DESCRIPTION	BY



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CITY OF FLINT  
WPC INFLUENT STRUCTURE &  
BATTERY A GRIT REHAB  
SRF#5696-01  
EXISTING STRUCTURE ISOMETRIC VIEWS

ISSUED FOR:	DATE:	BY:
50% DESIGN	10/25/19LH	
90% DESIGN	12/6/19TLH	
100% DESIGN	2/28/20TLH	

JOB NO.  
COF1070.01F

SHEET  
S2.0

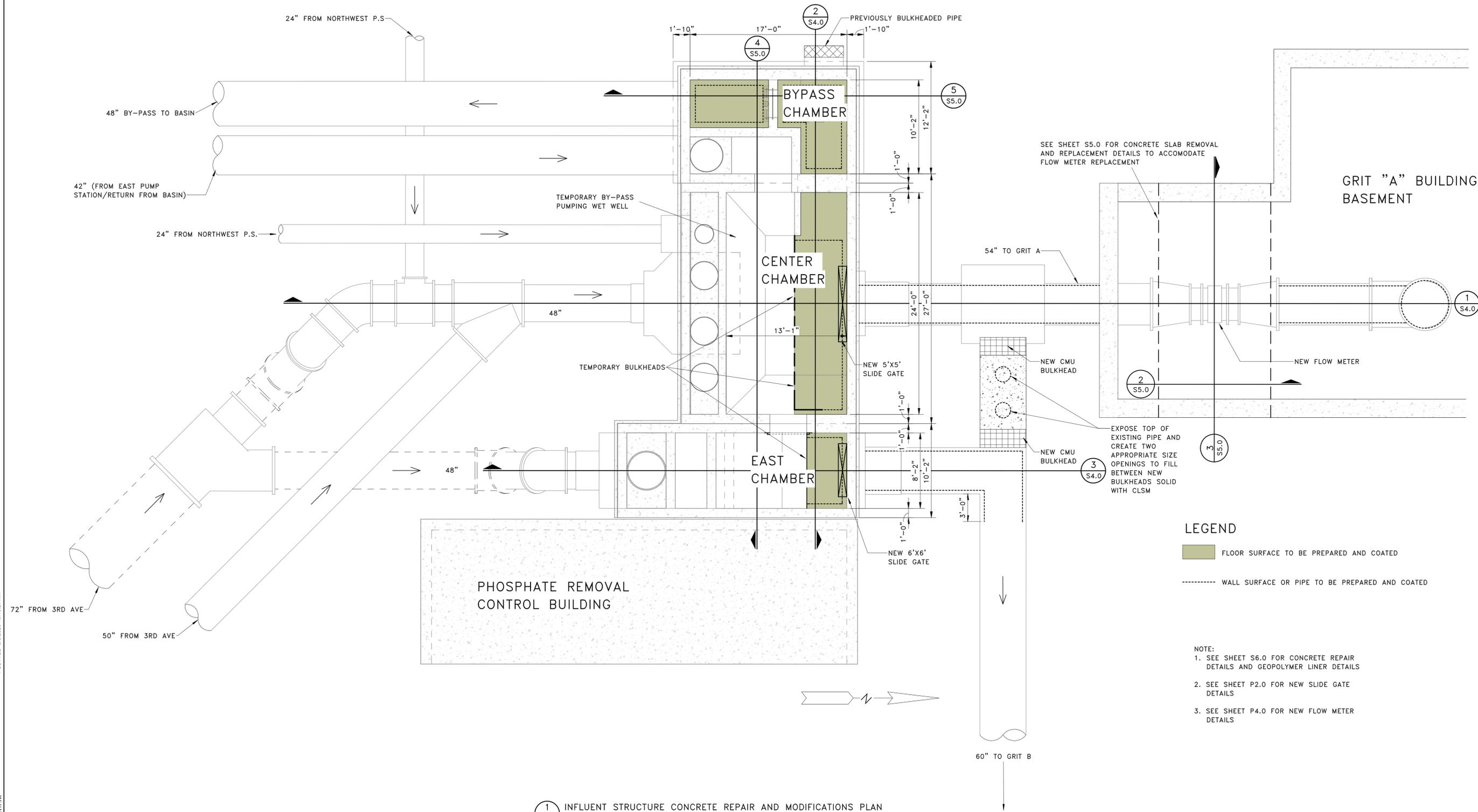
PLOTTED 3/6/2020 10:48:17 AM

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**LEGEND**

FLOOR SURFACE TO BE PREPARED AND COATED

WALL SURFACE OR PIPE TO BE PREPARED AND COATED

**NOTE:**

- SEE SHEET S6.0 FOR CONCRETE REPAIR DETAILS AND GEOPOLYMER LINER DETAILS
- SEE SHEET P2.0 FOR NEW SLIDE GATE DETAILS
- SEE SHEET P4.0 FOR NEW FLOW METER DETAILS

**1** INFLUENT STRUCTURE CONCRETE REPAIR AND MODIFICATIONS PLAN  
 D1.0 SCALE: 3/16" = 1'-0"

REV#	DATE	DESCRIPTION	BY



**WADE TRIM**

555 South Saginaw Street, Suite 201  
 Flint, MI 48502  
 810.235.2556/800.841.0342  
 FAX: 810.235.4975  
 www.wadetrिम.com

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 HUBBELL, ROTH & CLARK, INC.  
 CONSULTING ENGINEERS SINCE 1915

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 BLOOMFIELD HILLS, MICH. 48304-1824

PHONE: (248) 654-9300  
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CITY OF FLINT  
 WPC INFLUENT STRUCTURE &  
 BATTERY A GRIT REHAB  
 SRF#5696-01  
 STRUCTURE PLAN AND MODIFICATIONS LAYOUT

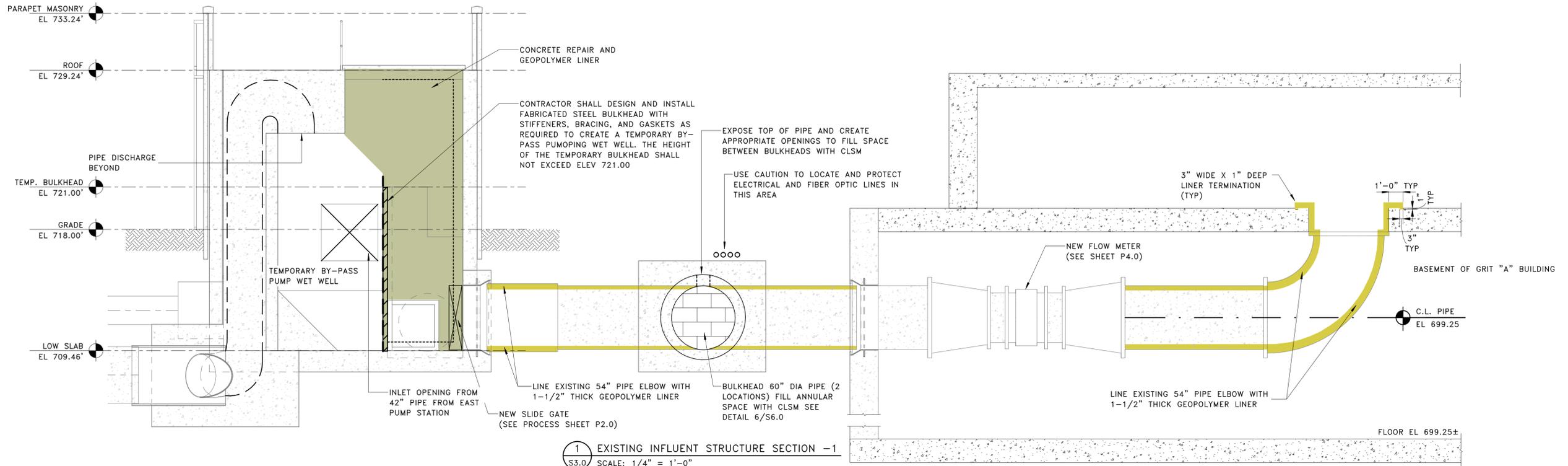
ISSUED FOR:	DATE:	BY:
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90% DESIGN	12/6/19TLH	
100% DESIGN	2/28/20TLH	

JOB NO.  
**COF1070.01F**

SHEET

**S3.0**

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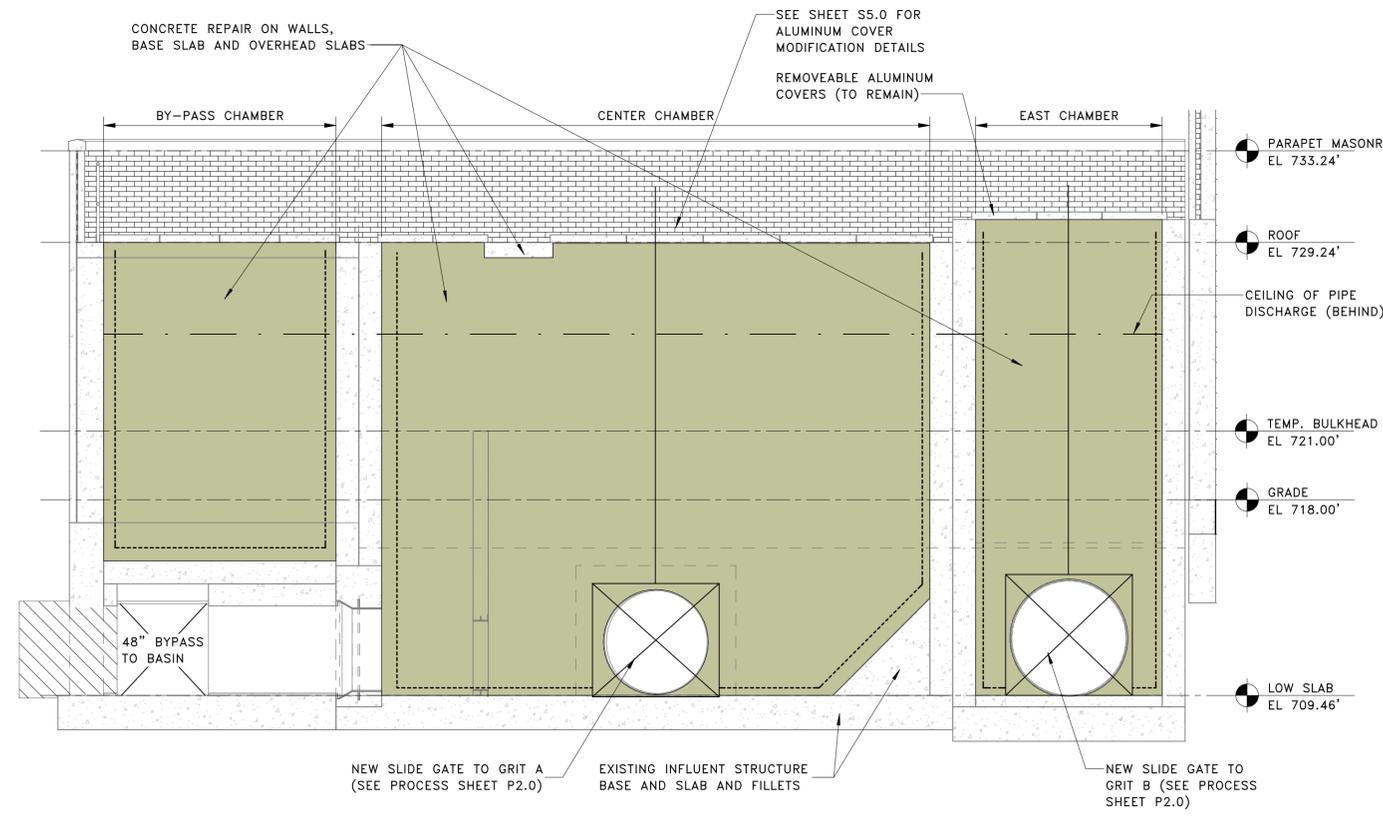


1 EXISTING INFLUENT STRUCTURE SECTION - 1  
 S3.0 SCALE: 1/4" = 1'-0"

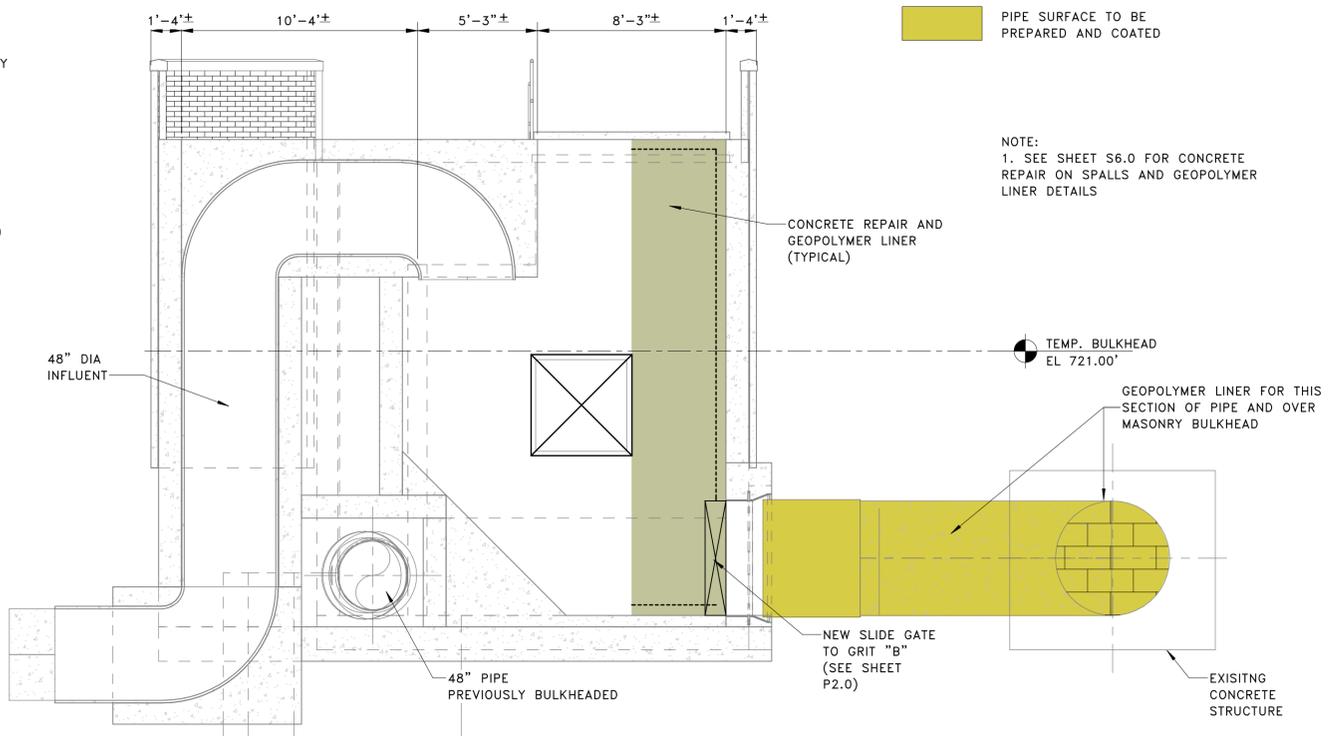
LEGEND

- WALL SURFACE TO BE PREPARED AND COATED
- WALL AND FLOOR SURFACE TO BE PREPARED AND COATED
- PIPE SURFACE TO BE PREPARED AND COATED

NOTE:  
 1. SEE SHEET S6.0 FOR CONCRETE REPAIR ON SPALLS AND GEOPOLYMER LINER DETAILS



2 INFLUENT STRUCTURE - NORTH WALLS  
 S3.0 SCALE: 1/4" = 1'-0"



3 EXISTING INFLUENT STRUCTURE - WEST WALL OF EAST CHAMBER  
 S3.0 SCALE: 1/4" = 1'-0"

REV#	DATE	DESCRIPTION	BY



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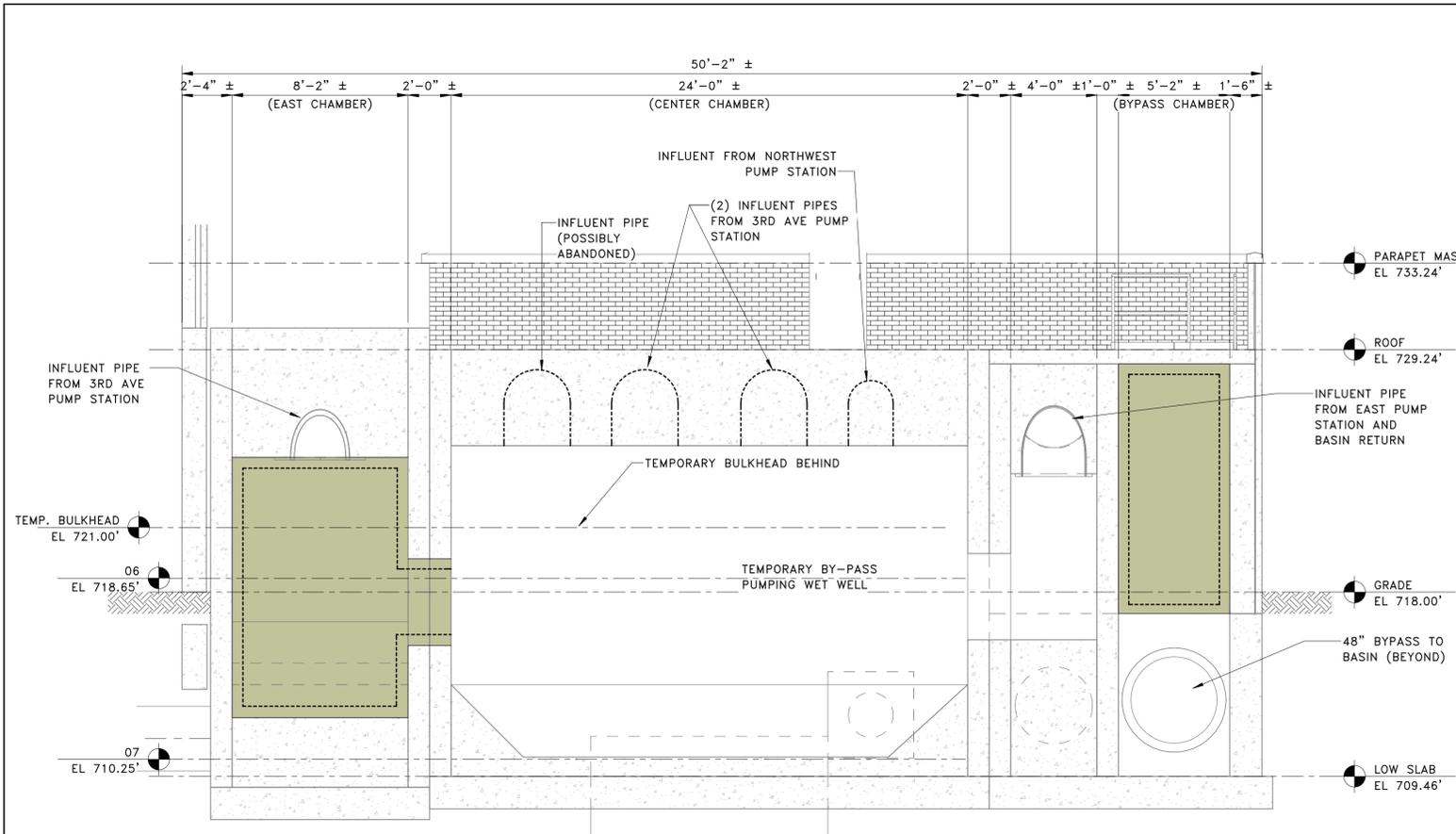
CITY OF FLINT  
 WPC INFLUENT STRUCTURE &  
 BATTERY A GRIT REHAB  
 SRF#5696-01  
 EXISTING STRUCTURE REPAIR CROSS SECTIONS 1

ISSUED FOR:	DATE:	BY:
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90% DESIGN	12/6/19ULH	
100% DESIGN	2/28/20ULH	

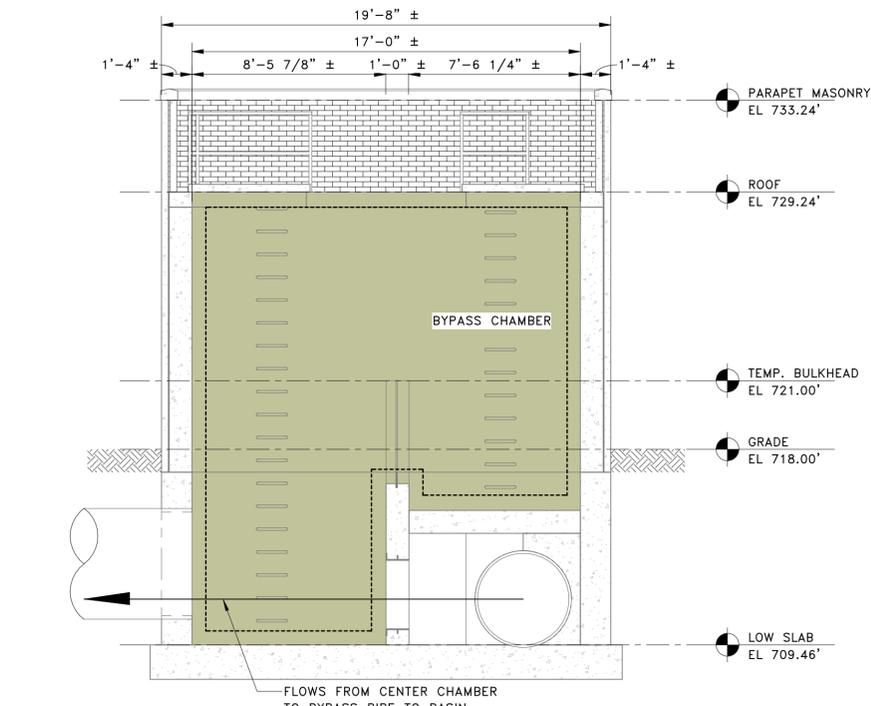
JOB NO.  
 COF1070.01F

SHEET  
 S4.0

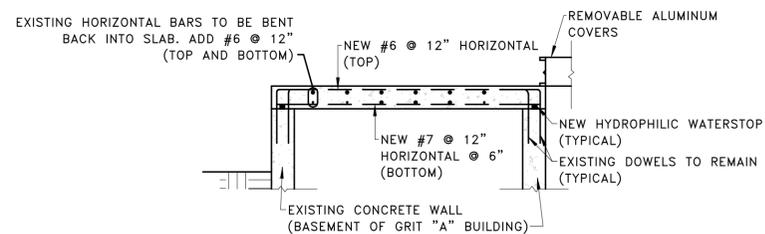
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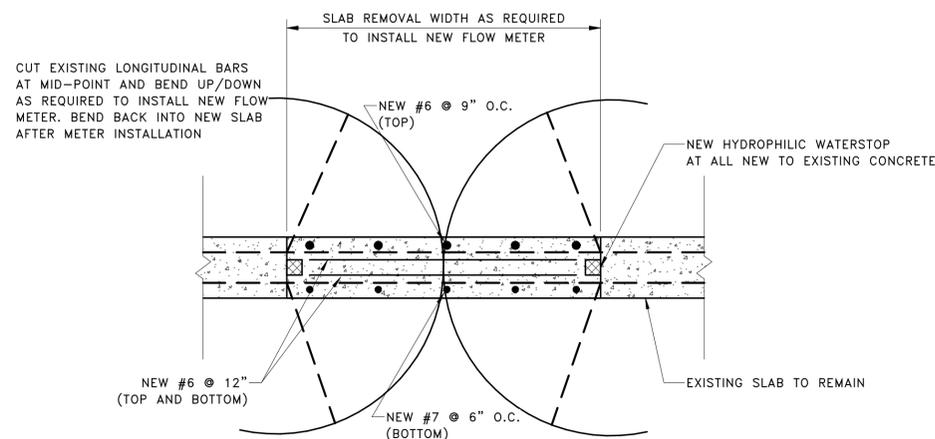
4 INFLUENT STRUCTURE - SOUTH WALLS  
S3.0 SCALE: 1/4" = 1'-0"



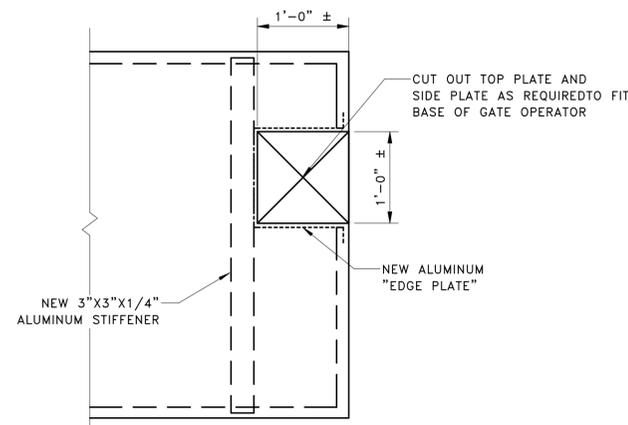
5 EXISTING INFLUENT STRUCTURE SECTION WEST WALL OF BYPASS CHAMBER  
S3.0 SCALE: 1/4" = 1'-0"



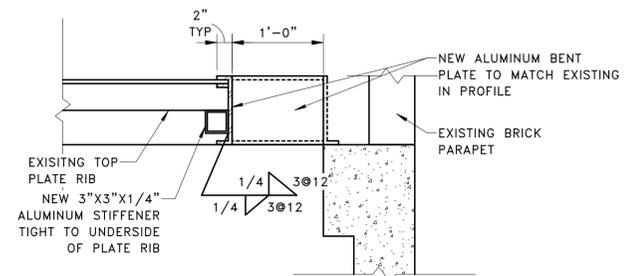
3 GRADE SLAB REMOVAL DETAIL - 1  
SCALE: 3/8" = 1'-0"



2 GRADE SLAB REMOVAL DETAIL - 2  
SCALE: 1" = 1'-0"



6 ALUMINUM COVER "CUT-OUT" DETAIL PLAN  
SCALE: 1" = 1'-0"



7 ALUMINUM COVER "CUT-OUT" SECTION  
SCALE: 1" = 1'-0"

LEGEND

- FLOOR SURFACE TO BE PREPARED AND COATED
- WALL SURFACE TO BE PREPARED AND COATED

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CITY OF FLINT  
WPC INFLUENT STRUCTURE &  
BATTERY A GRIT REHAB  
SRF#5696-01  
EXISTING STRUCTURE REPAIR CROSS SECTIONS 2

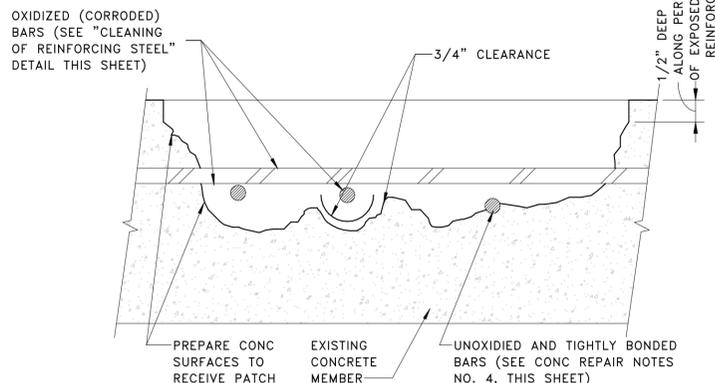
ISSUED FOR: DATE: BY:  
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90% DESIGN 12/6/19TLH  
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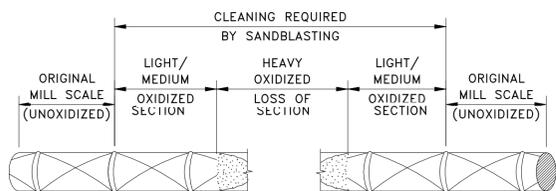
SHEET

S5.0

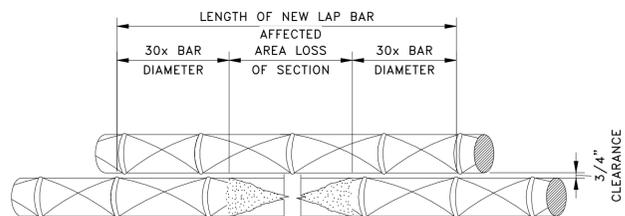
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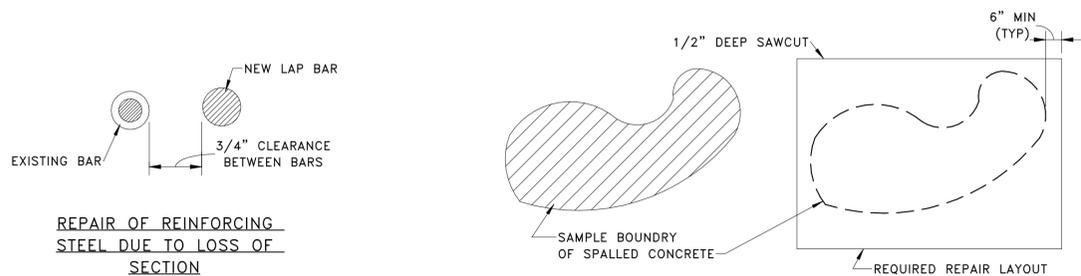
**EXPOSING, UNDERCUTTING REINFORCING STEEL AND CONDITIONING CONCRETE FOR PATCHING**



**CLEANING OF REINFORCING STEEL**



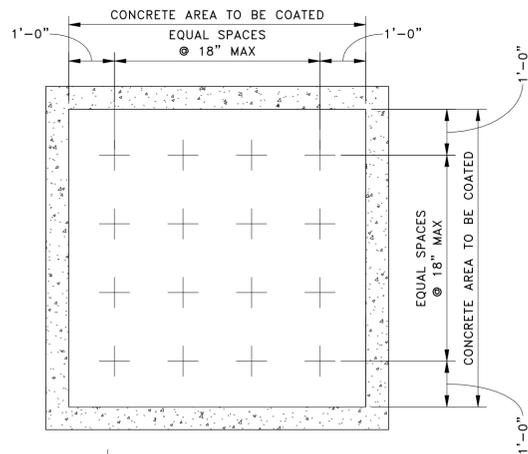
IF REBAR HAS LOST MORE THAN 25% OF ORIGINAL CROSS SECTION, PROVIDE NEW LAP BAR AS SHOWN



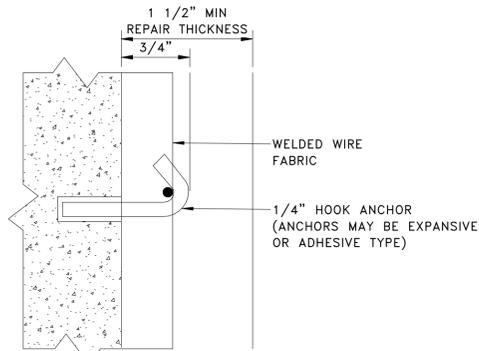
**1 CONCRETE SPALL REPAIR DETAIL**  
SCALE: 1" = 1'-0"

**CONCRETE REPAIR NOTES**

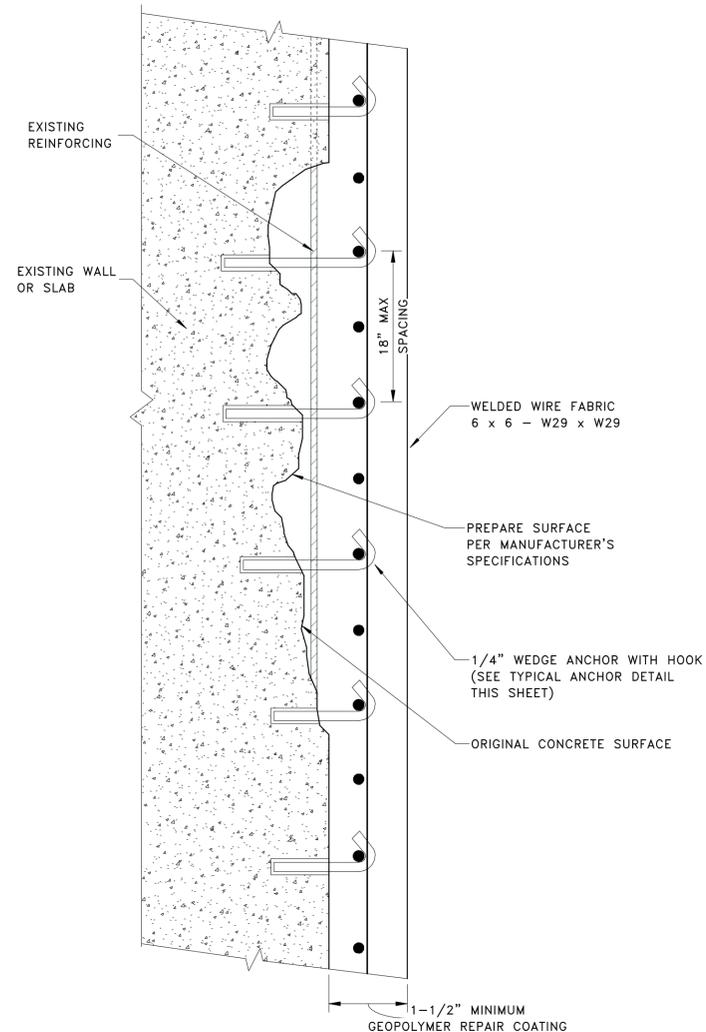
1. LOCATE AREAS OF CONCRETE WITH DELAMINATIONS, SPALLS, SCALING, AND UNSOUND CONCRETE. MARK ON SURFACE OF CONCRETE THE AREA TO BE REPAIRED AS SPECIFIED. PRIOR TO THE REMOVAL OF ANY CONCRETE PROVIDE 24 HOURS' NOTICE TO THE ENGINEER IN ORDER FOR ENGINEER AND CONTRACTOR TO VERIFY REPAIR LIMITS.
2. SAWCUT PERIMETER OF AREA TO BE REPAIRED TO DEPTH OF 1/2" AS SHOWN. THE REPAIRED AREAS SHALL BE IN A RECTANGULAR SHAPE, WITH SAW CUTS AT RIGHT ANGLES.
3. REMOVE LOOSE OR DELAMINATED CONCRETE ABOVE OXIDIZED REINFORCING STEEL. ONCE INITIAL REMOVALS ARE MADE, PROCEED WITH THE UNDERCUTTING OF EXPOSED OXIDIZED (CORRODED) BARS. PROVIDE A MINIMUM OF 3/4" CLEARANCE BETWEEN EXPOSED REBARS AND SURROUNDING CONCRETE.
4. IF UNOXIDIZED REINFORCING BARS ARE EXPOSED DURING UNDERCUTTING PROCESS, CARE SHALL BE TAKEN NOT TO DAMAGE THE BARS' BOND TO SURROUNDING CONCRETE. IF BOND BETWEEN BAR AND CONCRETE IS BROKEN, UNDERCUTTING OF THE BAR SHALL BE REQUIRED.
5. INSTALL NEW REINFORCING BARS TO SUPPLEMENT EXISTING BARS WHICH HAVE LOST MORE THAN 25% OF THEIR CROSS SECTIONAL AREA. NEW REINFORCING BARS SHALL BE THE SAME DIAMETER AS EXISTING BAR AND SHALL EXTEND A DISTANCE OF 30 TIMES THE BAR DIAMETER BEYOND BOTH SIDES OF THE AFFECTED AREA (SEE "REPAIR OF REINFORCING STEEL DUE TO LOSS OF SECTION" DETAIL THIS SHEET).
6. REMOVE RUST AND LAITANCE FROM EXPOSED REINFORCING STEEL TO EXPOSED BARE METAL BY SANDBLASTING AS SPECIFIED (SEE "CLEANING OF REINFORCING STEEL" DETAIL FOR EXTENT OF CLEANING REQUIRED).
7. REMOVE BOND INHIBITING MATERIALS FROM CONCRETE INCLUDING BUT NOT LIMITED TO DIRT, CONCRETE SLURRY, AND LOOSELY BONDED AGGREGATE, BY ABRASIVE BLASTING OR HIGH PRESSURE WATERBLASTING. CHECK THE SURFACE AFTER CLEANING TO ENSURE THAT SURFACE IS FREE FROM ADDITIONAL LOOSE AGGREGATE AND THAT ADDITIONAL DELAMINATIONS ARE NOT PRESENT.
8. COAT EXPOSED REINFORCING STEEL AND PREPARED CONCRETE SURFACES TO RECEIVE PATCHING MATERIAL WITH CORROSION INHIBITOR AND BONDING AGENT AND APPLY PATCH MATERIAL AS SPECIFIED.
9. CONCRETE REPAIR MORTAR FOR DEEP SPALLS SHALL BE SIKATOP 121 PLUS, 122 PLUS OR 123 PLUS (WHERE REPAIR DEPTH EXCEEDS LIMITS OF GEOPOLYMER).
10. DETAILS SHOWN ON THIS SHEET APPLY TO CONCRETE REPAIRS THROUGHOUT THE FACILITY.



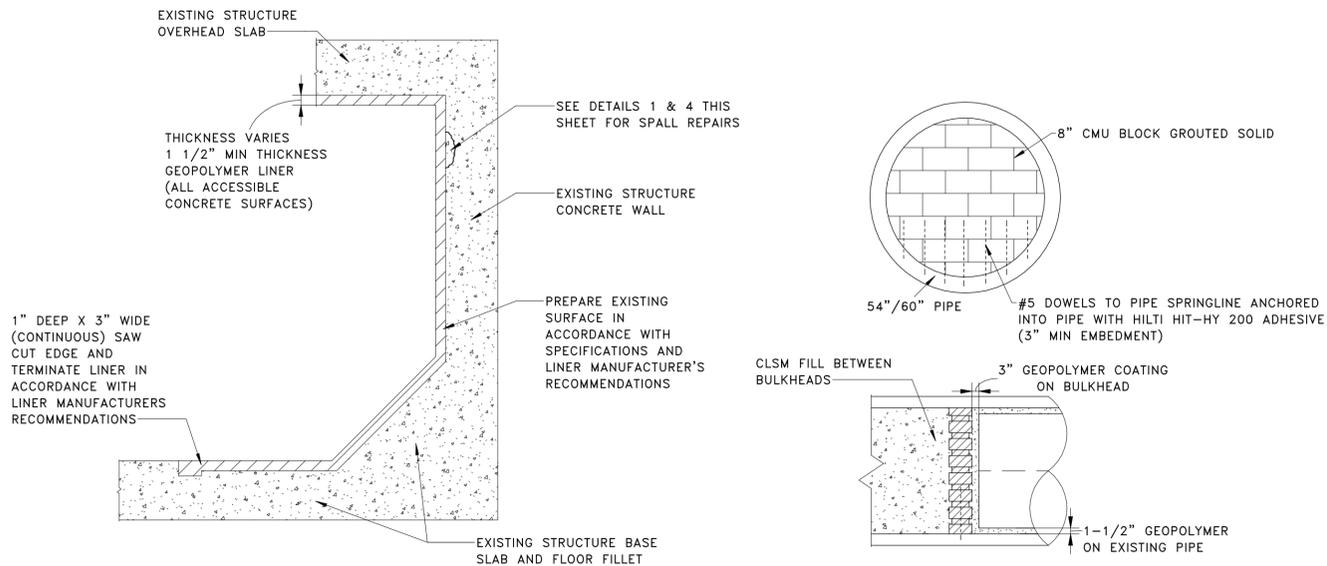
**2 TYPICAL ANCHOR LAYOUT**  
SCALE: 1/2" = 1'-0"



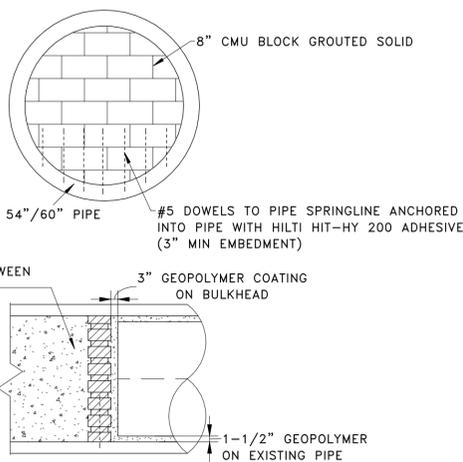
**3 TYPICAL ANCHOR DETAIL**  
SCALE: 12" = 1'-0"



**4 ENLARGED CONCRETE REPAIR AND GEOPOLYMER REPAIR DETAIL**  
SCALE: 1 1/2" = 1'-0"



**5 GEOPOLYMER REPAIR - GENERAL SECTION**  
SCALE: 1/4" = 1'-0"



**6 BULKHEAD INSTALLATION**  
SCALE: 1/8" = 1'-0"

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REV#	DATE	DESCRIPTION	BY



**CITY OF FLINT**  
**WPC INFLUENT STRUCTURE & BATTERY A GRIT REHAB**  
 SRF#5696-01  
**CONCRETE PREPARATION AND REPAIR DETAIL**

ISSUED FOR: DATE: BY:  
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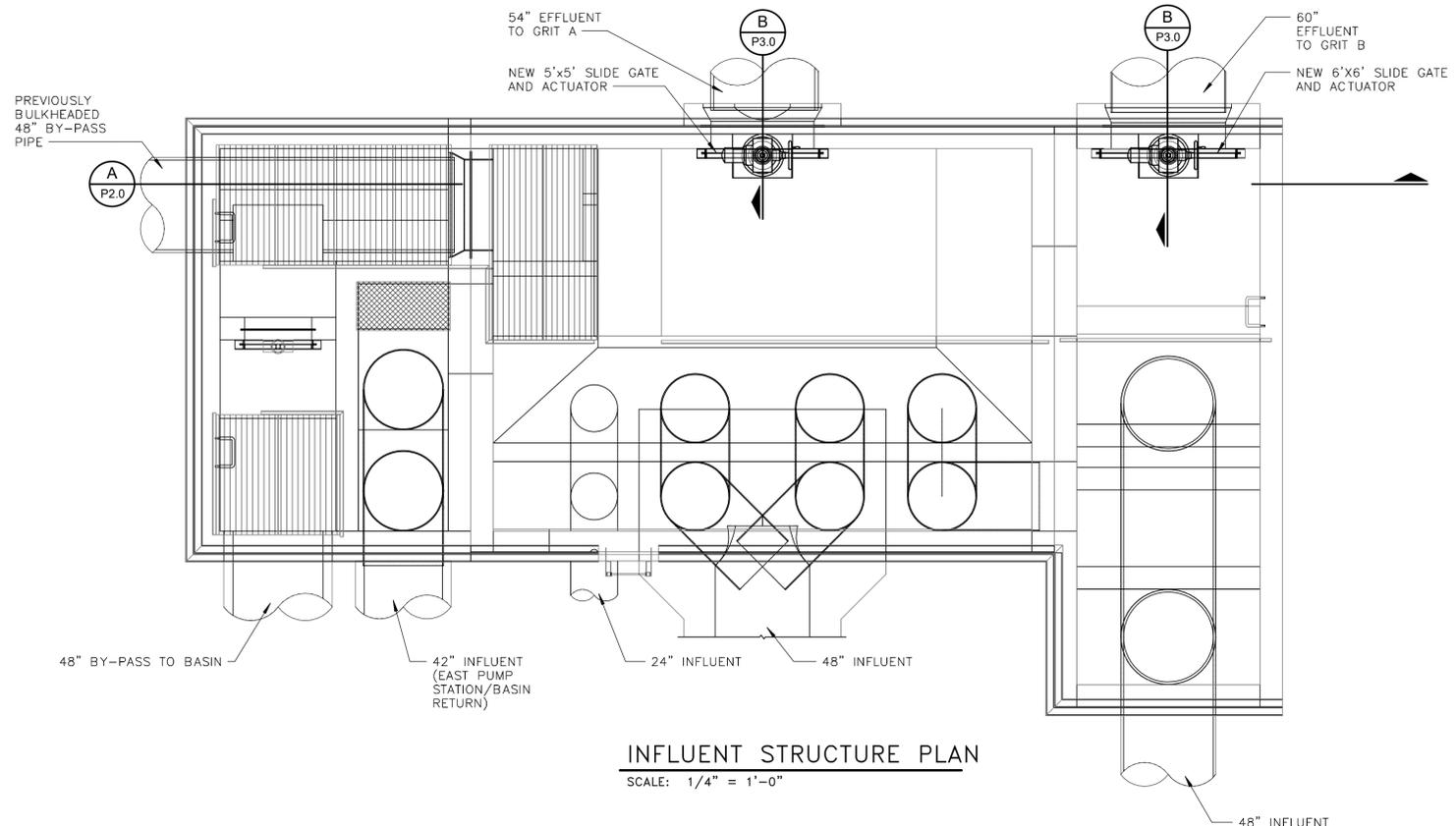
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SHEET

**S6.0**

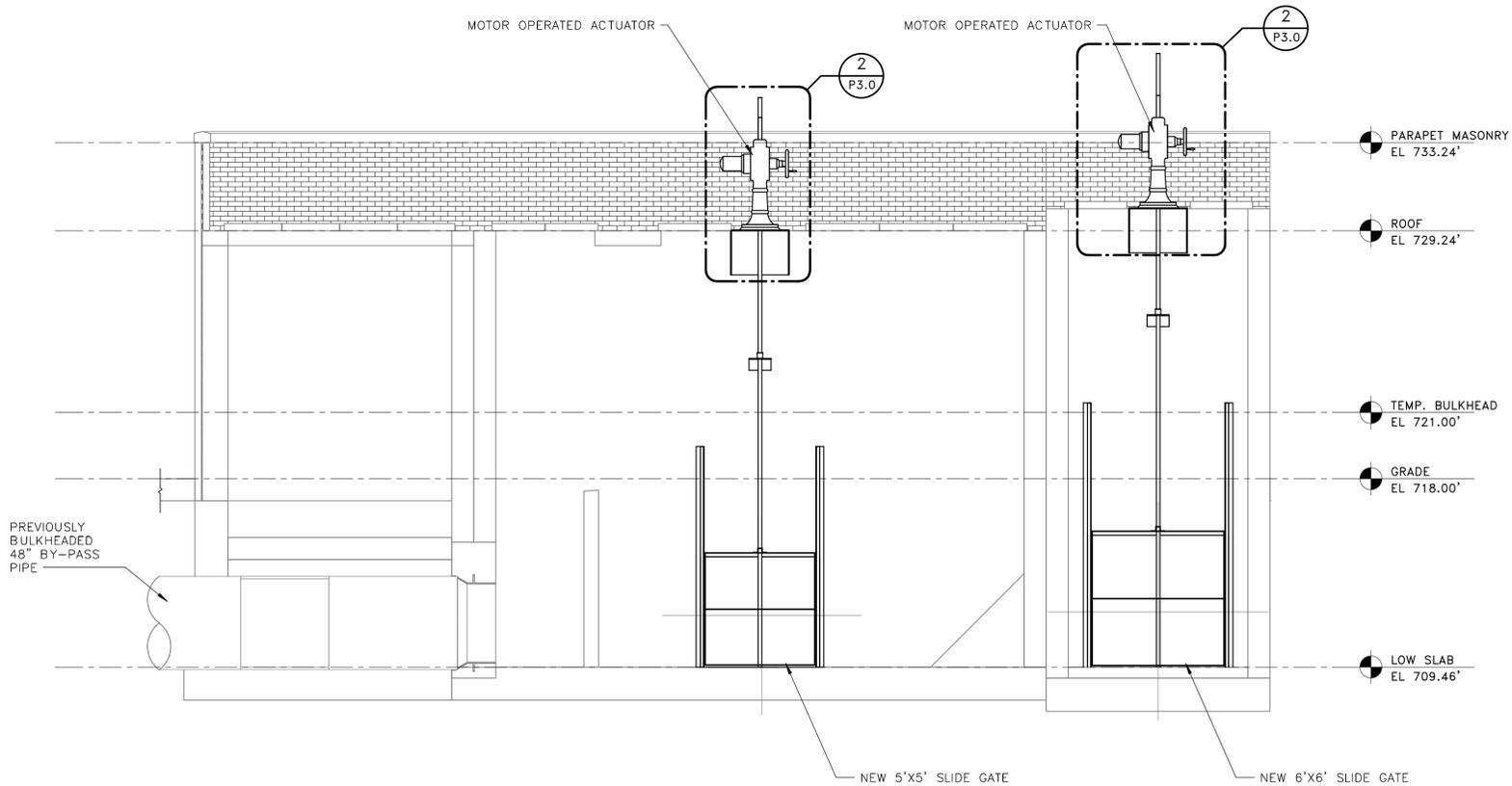
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**INFLUENT STRUCTURE PLAN**  
SCALE: 1/4" = 1'-0"

- NOTES:
1. INSTALL PROPOSED SLIDE GATES CENTERED ON EXISTING PIPE OPENING. POWERWASH OR CLEAN WALL AS REQUIRED FOR GROUT ADHERANCE. USE NOMINAL 2" GROUT.
  2. MOUNT GATE FRAME, STEM GUIDES AND ACTUATOR BRACKET ON EPOXY CHEMICAL ANCHOR BOLTS IN THE NUMBER AND SIZE RECOMMENDED BY GATE MANUFACTURER.
  3. ROTORK ELECTRIC MOTOR, FLOOR STAND AND ITS COMPONENTS TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. ELECTRICAL/CONTROL CONNECTIONS TO BE MADE BY OWNER.



**A SECTION**  
SCALE: 1/4" = 1'-0"

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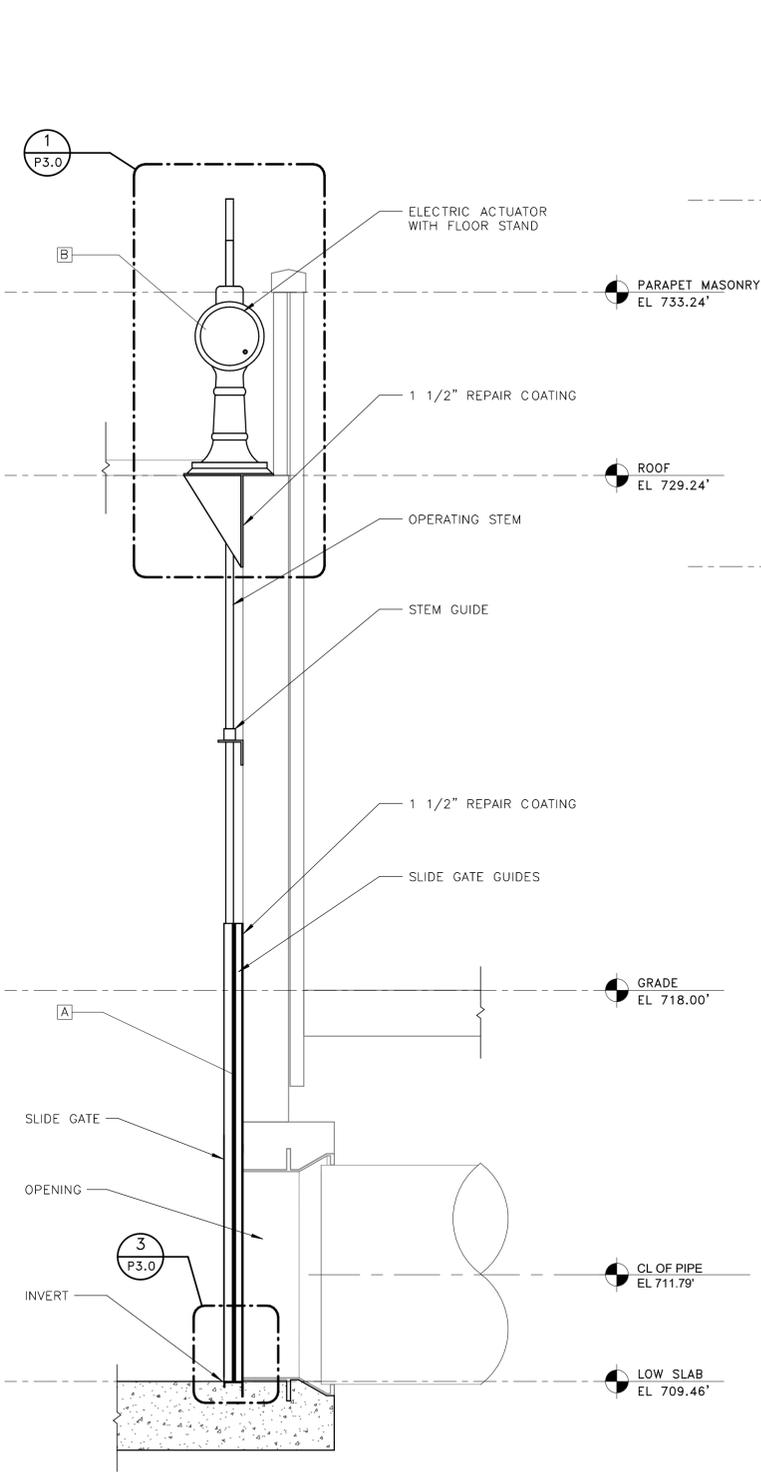
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CITY OF FLINT  
WPC INFLUENT STRUCTURE &  
BATTERY A GRIT REHAB  
SRF#5696-01  
NEW ISOLATION GATES PLAN AND SECTION

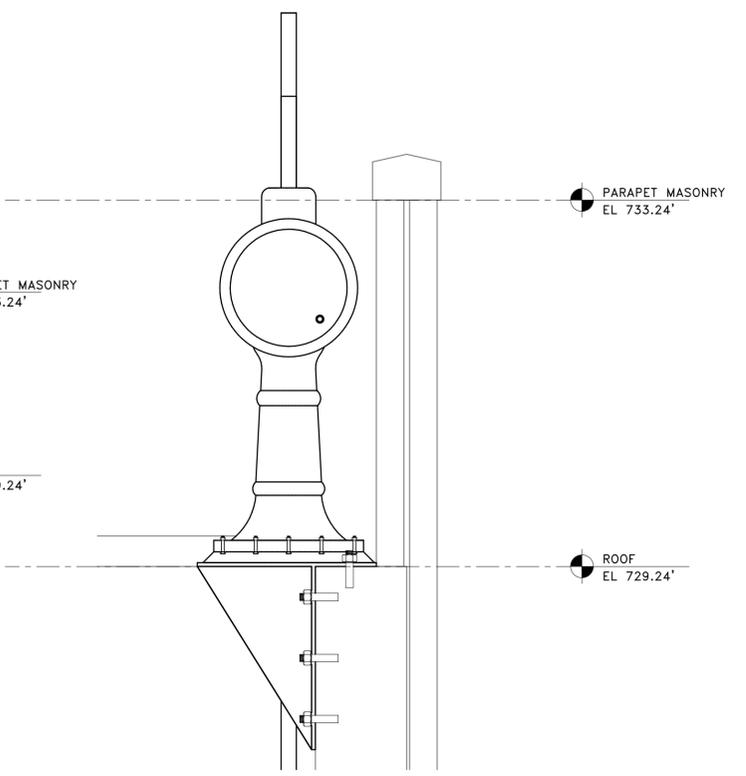
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90% DESIGN		TLH
100% DESIGN	3/2/20	TLH
JOB NO.	COF1070.01F	
SHEET	P2.0	

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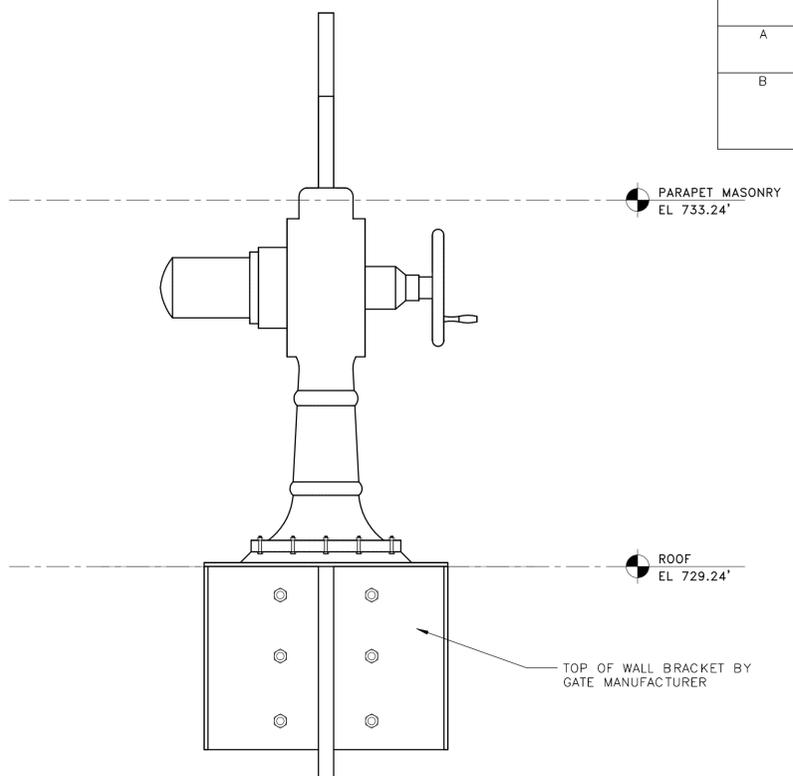
KEYNOTE LEGEND	
A	CLEAN EXISTING CONCRETE SURFACE FOR WALL MOUNTING OF NEW SLIDE GATE PER MANUFACTURER'S RECOMMENDATIONS.
B	ROTORK ELECTRIC MOTOR, FLOOR STAND, AND ITS COMPONENTS TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. ELECTRICAL/CONTROL CONNECTIONS TO BE MADE BY OWNER.



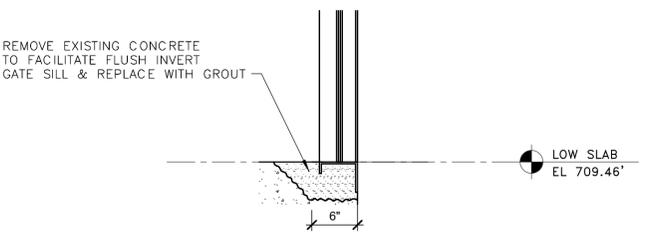
**B** SLIDE GATE SECTION  
P3.0 SCALE: 1/2" = 1'-0"



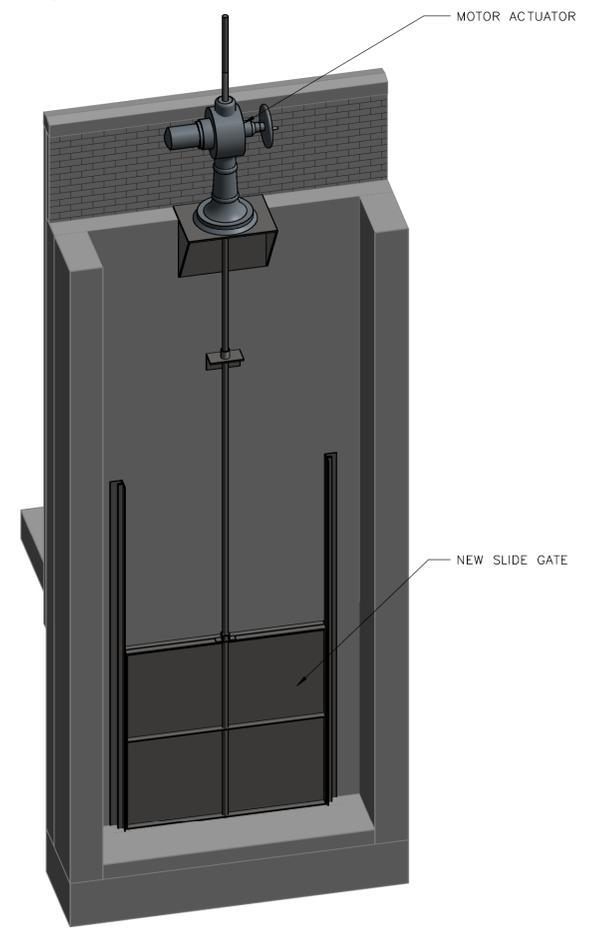
**1** ELECTRIC ACUATOR SIDE VIEW  
P3.0 SCALE: 1" = 1'-0"



**2** ELECTRIC ACTUATOR FRONT VIEW  
P3.0 SCALE: 1" = 1'-0"



**3** GATE SILL  
P3.0 SCALE: 1" = 1'-0"



SLIDE GATE AND ACTUATOR 3D ISO  
NOT TO SCALE

REV#	DATE	DESCRIPTION	BY



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48302 - 0824  
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FAX (248) 654-9312  
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CITY OF FLINT  
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BATTERY A GRIT REHAB  
ISOLATION GATES SECTIONS AND DETAILS  
SRF#5696-01

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50% DESIGN		TLH
90% DESIGN		TLH
100% DESIGN	3/2/20	TLH

JOB NO.  
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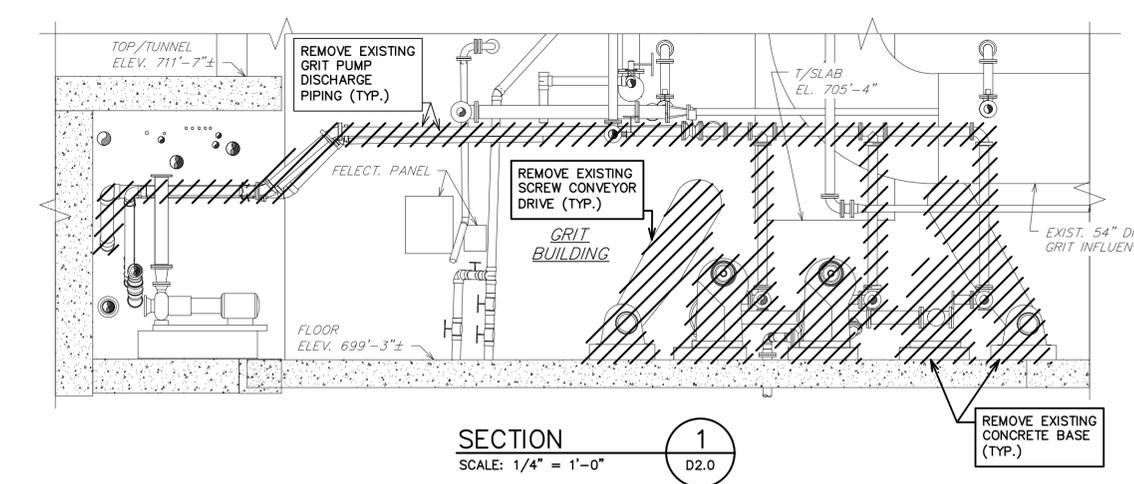
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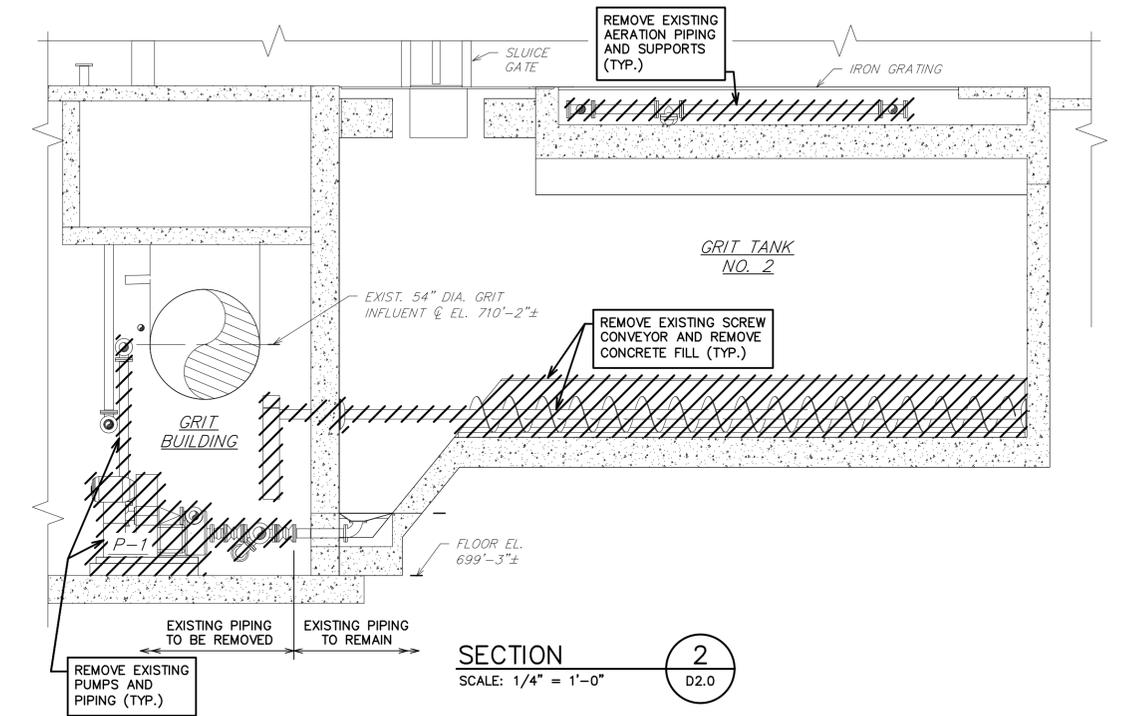
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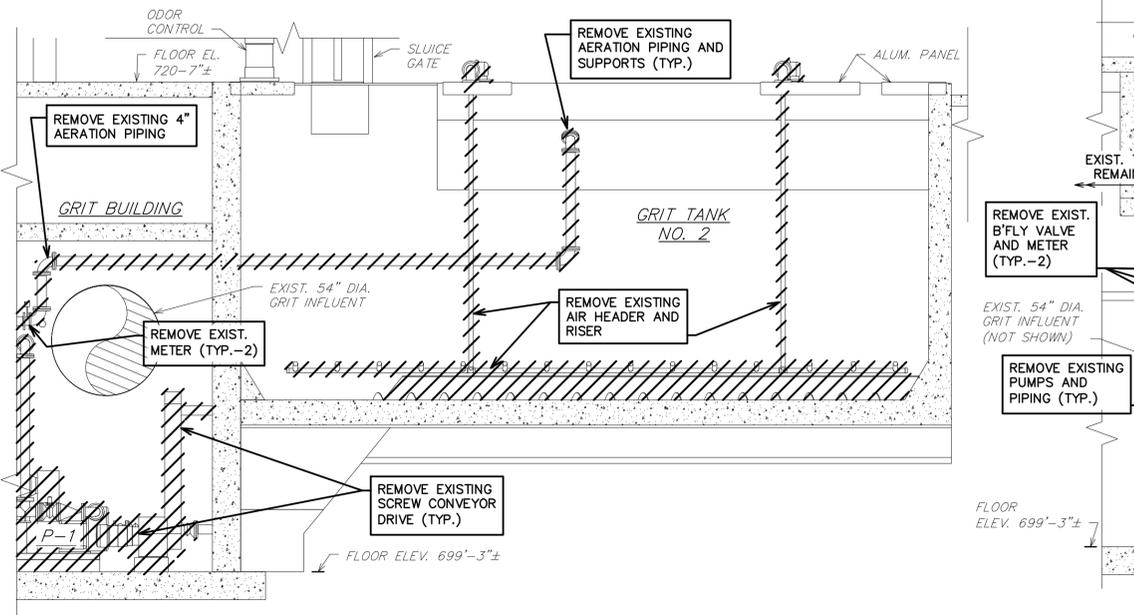
PROJECT MANAGER: STEVEN L. HARRIS, PE  
 VA 201504120150439 V/E/INT W/RT GRIT HANDLING IMPROVEMENTS/ORTHOS/UMS/002-PL01.DWG - TITLE BLOCK - PLOTTED 4/10/2020 9:08 AM BY ROBERTS TOM  
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 50% DESIGN 10/25/19 TLH  
 90% DESIGN 12/06/19 TLH  
 FINAL ECLF 04/08/20 TSW



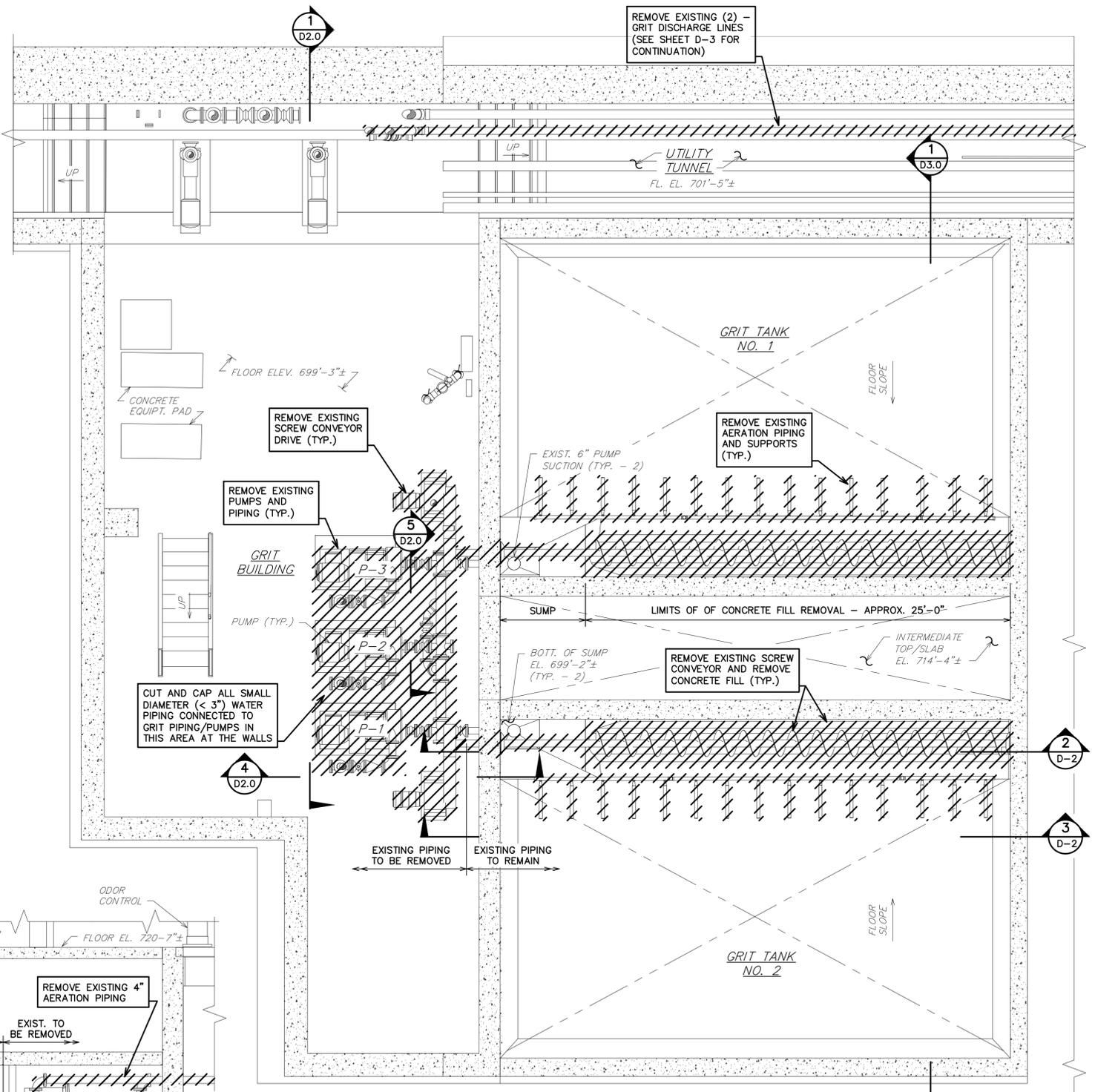
SECTION 1  
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 D2.0



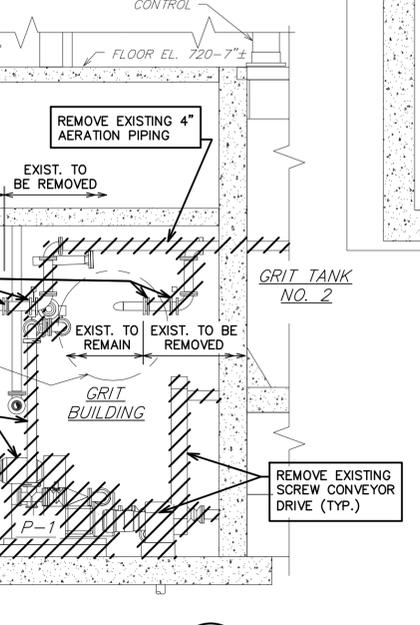
SECTION 2  
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 D2.0



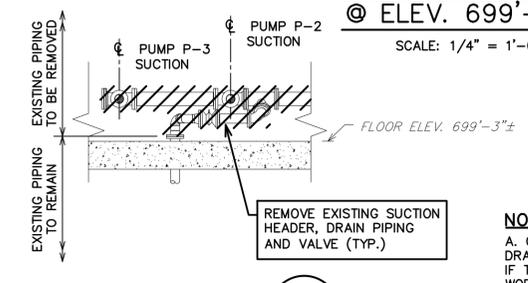
SECTION 3  
 SCALE: 1/4" = 1'-0"  
 D2.0



LOWER LEVEL PIPING  
 DEMOLITION PLAN  
 @ ELEV. 699'-3"±  
 SCALE: 1/4" = 1'-0"  
 D2.0



SECTION 4  
 SCALE: 1/4" = 1'-0"  
 D2.0



SECTION 5  
 SCALE: 1/4" = 1'-0"  
 D2.0

**NOTE:**  
 A. OTHER ITEMS NOT SPECIFICALLY SHOWN ON THE DRAWINGS TO BE REMOVED, STILL SHALL BE REMOVED IF THEY ARE NEEDED TO BE REMOVED TO INSTALL NEW WORK. THIS SHALL INCLUDE RELOCATION OF SMALL DIAMETER PIPES (<4") AND ELECTRICAL CONDUITS.

REV#	DATE	DESCRIPTION	BY
3-9-18			



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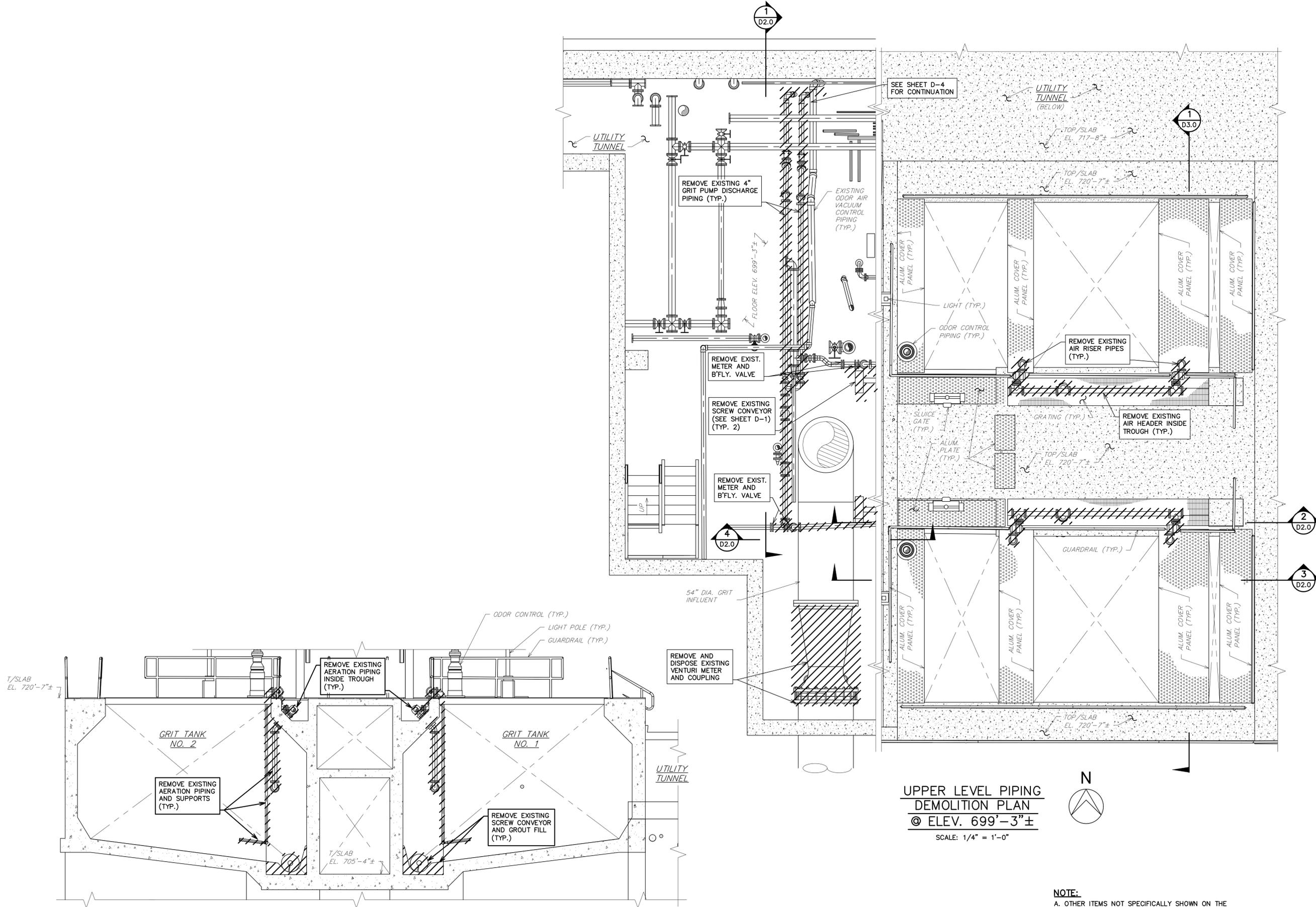
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CITY OF FLINT  
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 BATTERY A GRIT REHAB  
 SRF #5696-01  
 GRIT BUILDING DEMOLITION PLAN AND SECTION

ISSUED FOR:	DATE:	BY:
50% DESIGN	10/25/19	TLH
90% DESIGN	12/06/19	TLH
FINAL ECLF	04/08/20	TSW
JOB NO.	COF1070.01F	
SHEET	D2.0	

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PROJECT MANAGER: TERRY L. HANCOCK, PE  
 V:\201504\20150439\VEINT\WPC\GRIT HANDLING IMPROVEMENTS\ORTHOS\DWG\003-PLT.DWG - TITLE BLOCK - PLOTTED 4/8/2020 12:22 PM BY WILFONG, THOMAS



**UPPER LEVEL PIPING  
 DEMOLITION PLAN**  
 @ ELEV. 699'-3"±  
 SCALE: 1/4" = 1'-0"

**NOTE:**  
 A. OTHER ITEMS NOT SPECIFICALLY SHOWN ON THE DRAWINGS TO BE REMOVED, STILL SHALL BE REMOVED IF THEY ARE NEEDED TO BE REMOVED TO INSTALL NEW WORK. THIS SHALL INCLUDE RELOCATION OF SMALL DIAMETER PIPES (<4") AND ELECTRICAL CONDUITS.

**SECTION 1**  
 SCALE: 1/4" = 1'-0"  
 D2.0, D3.0

REV#	DATE	DESCRIPTION	BY
4-10-20	3-9-18	FINAL EGLE SUBMITTAL FOR REVIEW	



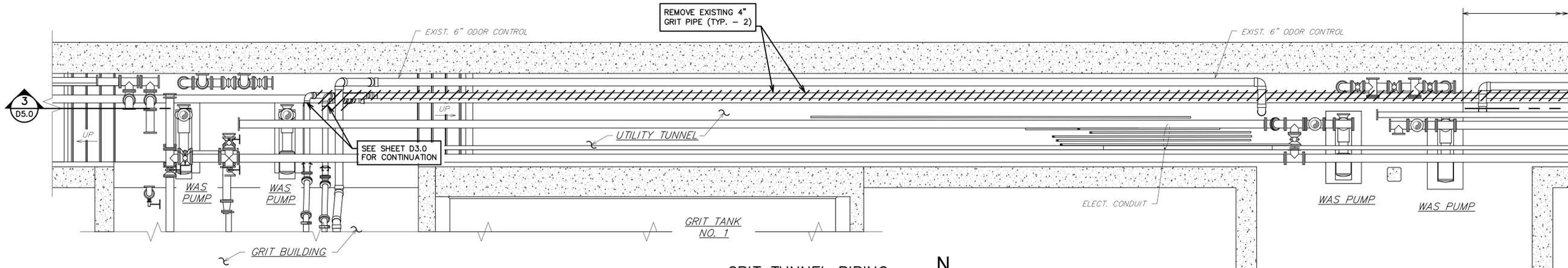
**WADE TRIM**  
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 810.235.2555/800.841.0342  
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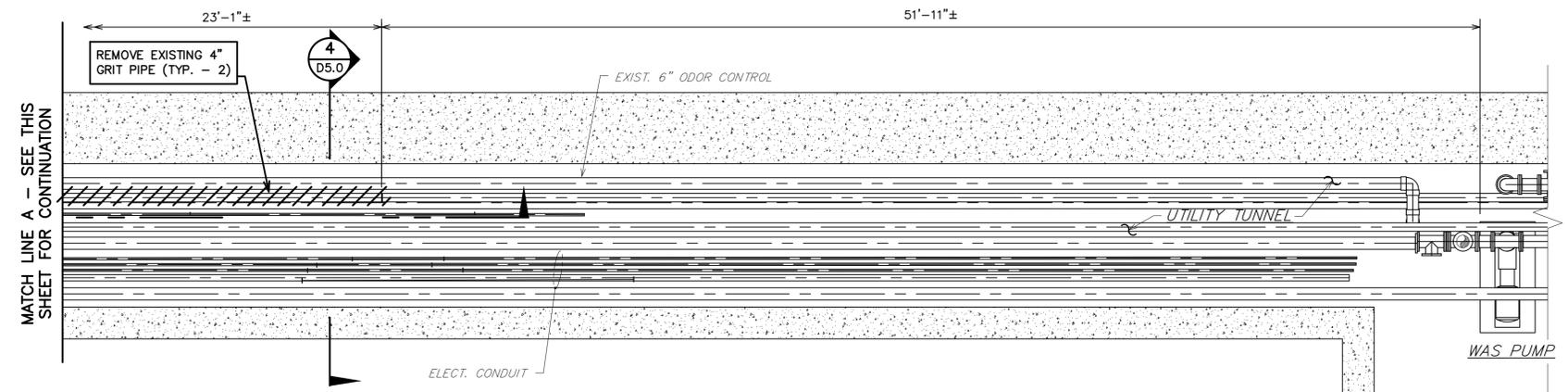
**CITY OF FLINT  
 WPC INFLUENT STRUCTURE &  
 BATTERY A GRIT REHAB**  
 SRF #5696-01  
 GRIT BUILDING DEMOLITION PLANS  
 WPC Influent Structure & Battery A Grit Rehab

ISSUED FOR: 50% DESIGN	DATE: 10/25/19	BY: TLH
DATE: 12/06/19	DATE: 12/06/19	DATE: 12/06/19
DATE: 04/08/20	DATE: 04/08/20	DATE: 04/08/20
JOB NO. COF1070.01F	SHEET <b>D3.0</b>	

PROJECT MANAGER: TERRY L. HARTMAN, PE  
 VA 201504.20150439.P\F\FLINT\_WAIF\_GRT\_HANDLING IMPROVEMENTS\ORTHOS\DWGS\004\_PLOT.DWG - TITLE BLOCK - PLOTTED 4/8/2020 12:25 PM BY WILFONG, THOMAS



**GRIT TUNNEL PIPING  
 DEMOLITION PLAN**  
 @ ELEV. 701'-4"±  
 SCALE: 1/4" = 1'-0"



**GRIT TUNNEL PIPING  
 DEMOLITION PLAN**  
 @ ELEV. 701'-4"±  
 SCALE: 1/4" = 1'-0"

MATCH LINE A - SEE THIS SHEET FOR CONTINUATION

MATCH LINE A - SEE THIS SHEET FOR CONTINUATION

REV#	DATE	DESCRIPTION
4-10-20	FINAL EGLE SUBMITTAL	
3-9-18	FOR REVIEW	



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 FAX (248) 654-6312  
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**CITY OF FLINT**  
**WPC INFLUENT STRUCTURE & BATTERY A GRIT REHAB**  
 SRF #5696-01  
**GRIT BUILDING TUNNEL DEMOLITION**  
 WPC Influent Structure & Battery A Grit Rehab

ISSUED FOR:	DATE:	BY:
50% DESIGN	10/25/19	TLH
90% DESIGN	12/06/19	TLH
FINAL EGLE	04/08/20	TSW

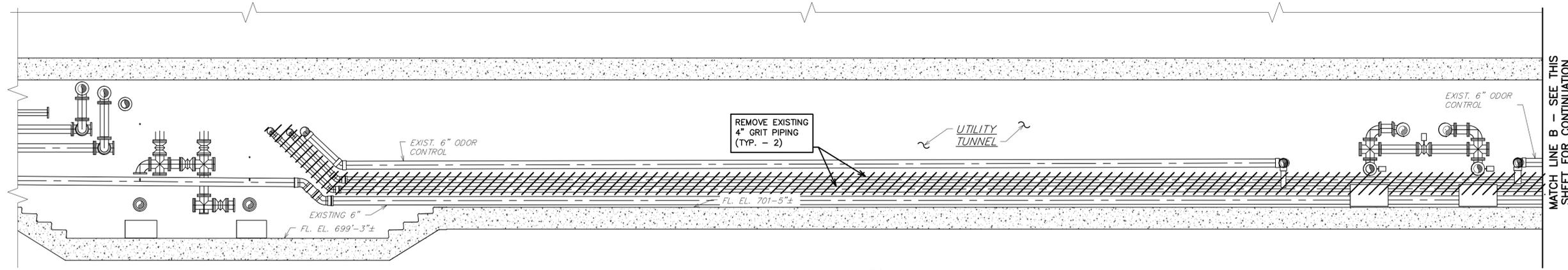
JOB NO.  
 COF1070.01F

SHEET  
**D4.0**

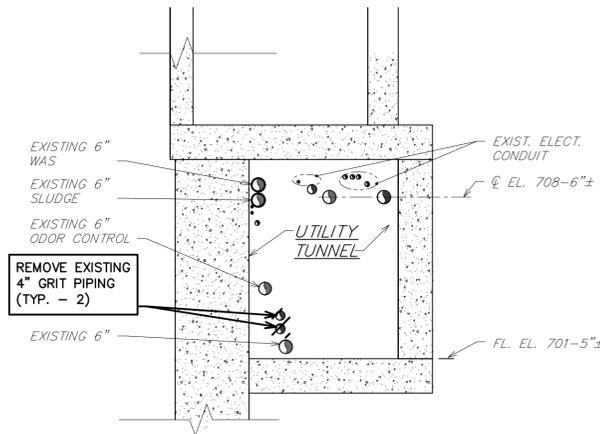
**NOTE:**  
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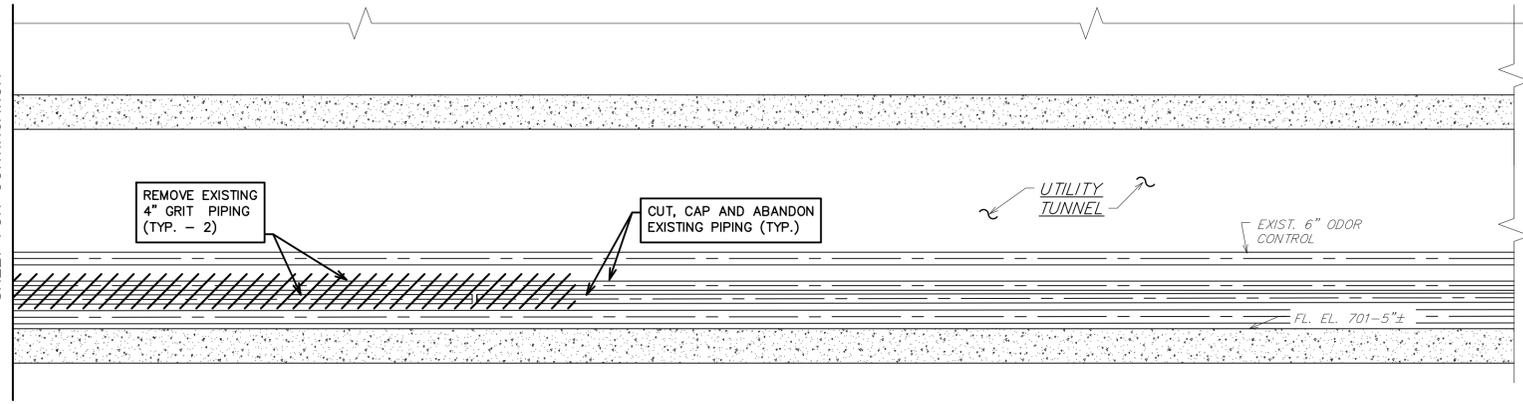
PROJECT MANAGER: STEVEN L. HANCOCK, PE  
 V:\201504\20150439\FLINT\WPC\GRIT HANDLING IMPROVEMENTS\GRIT\DWG\005\_PLOT.DWG - TITLE BLOCK - PLOTTED 4/8/2020 12:44 PM BY WILFONG, THOMAS



SECTION 3  
 SCALE: 1/8" = 1'-0"  
 D4.0



SECTION 4  
 SCALE: 1/8" = 1'-0"  
 D4.0



SECTION 3  
 SCALE: 1/8" = 1'-0"  
 D4.0

MATCH LINE B - SEE THIS SHEET FOR CONTINUATION

MATCH LINE B - SEE THIS SHEET FOR CONTINUATION

**NOTE:**  
 A. OTHER ITEMS NOT SPECIFICALLY SHOWN ON THE DRAWINGS TO BE REMOVED, STILL SHALL BE REMOVED IF THEY ARE NEEDED TO BE REMOVED TO INSTALL NEW WORK. THIS SHALL INCLUDE RELOCATION OF SMALL DIAMETER PIPES (<4") AND ELECTRICAL CONDUITS.

REV#	DATE	DESCRIPTION	BY
4-10-20		FINAL EGLE SUBMITTAL	
3-9-18		FOR REVIEW	



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 FAX (248) 654-0312  
 FAX (248) 654-0312  
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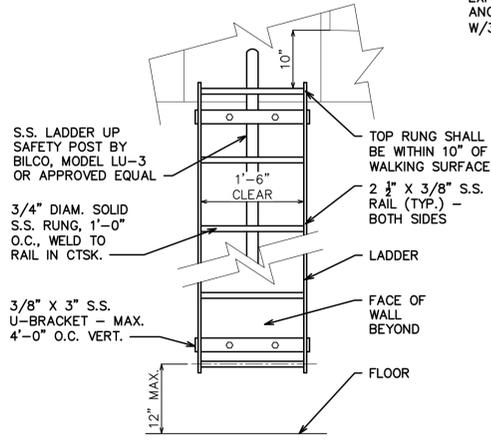
**CITY OF FLINT**  
**WPC INFLUENT STRUCTURE & BATTERY A GRIT REHAB**  
 SRF #5696-01  
 GRIT BUILDING DEMOLITION SECTION

ISSUED FOR:	DATE:	BY:
50% DESIGN	10/25/19	TLH
90% DESIGN	12/06/19	TLH
FINAL EGLE	04/08/20	TSW
JOB NO.	COF1070.01F	
SHEET	D5.0	

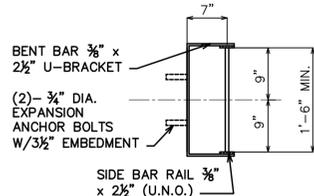
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**NOTES:**

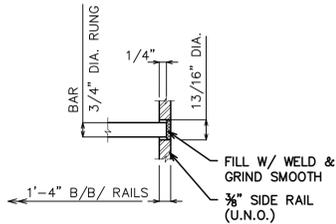
- LADDER SHALL CONFORM TO CURRENT DEPT. OF LABOR OCCUPATIONAL SAFETY & HEALTH STANDARD (O.S.H.A.).
- PROVIDE ENGINEERED SHOP DRAWINGS FOR REVIEW PRIOR TO FABRICATION, INCLUDING ALL COMPONENTS, CONNECTIONS AND FASTENERS.
- LADDER MATERIALS: STAINLESS STEEL.



**LADDER DETAIL**  
SCALE: 3/4" = 1'-0"



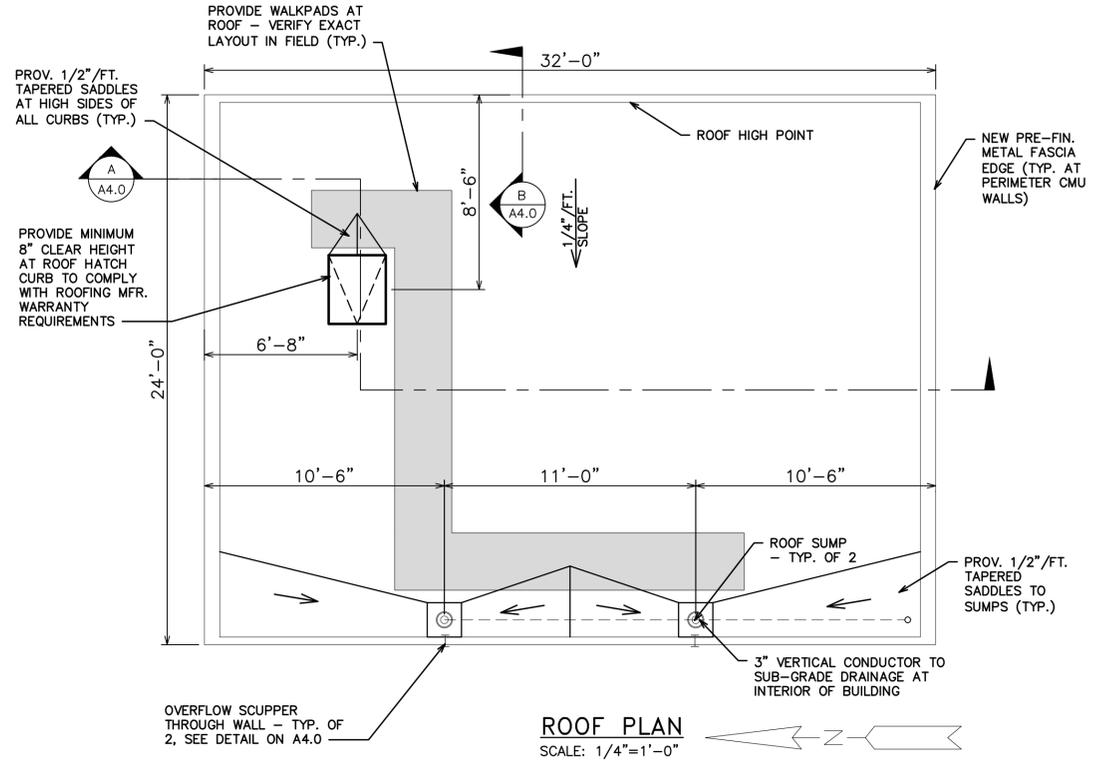
**PLAN**  
SCALE: 3/4" = 1'-0"



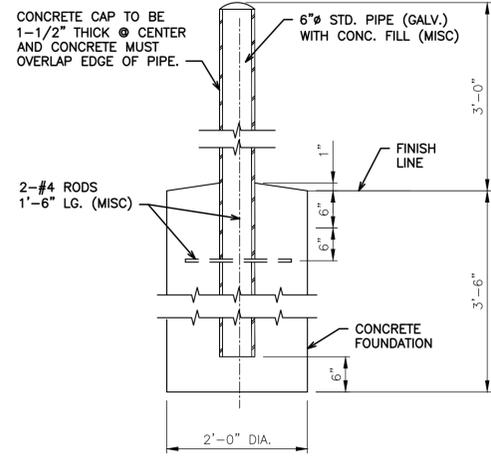
**LADDER RUNG DETAIL**  
SCALE: NO SCALE

**GENERAL ROOF & ROOFING DETAIL NOTES:**

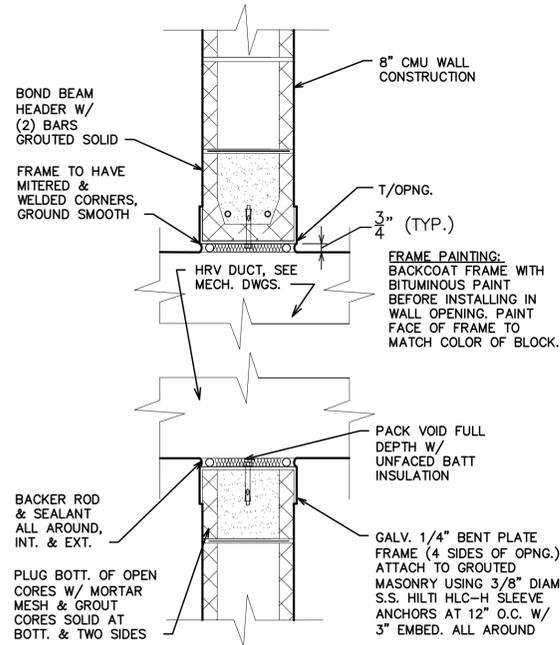
- DETAILS SHOWN ARE GENERIC WITH RESPECT TO FLASHING TERMINATIONS, CANTS, SADDLES, ETC. DIFFERENT ROOFING MFR'S HAVE DIFFERENT REQUIREMENTS FOR THESE TRANSITIONS & TERMINATIONS BASED ON WARRANTY REQUIRED. ALL FLASHING & TERMINATION DETAILS SHALL BE PER ROOFING MFR. REQ'TS. AS REQUIRED FOR WARRANTY SPECIFIED IN SECTION 07531 WHETHER SPECIFICALLY SHOWN ON THESE DRAWINGS OR NOT.
- WOOD USED IN ROOFING SHALL BE ACQ TREATED, SEE SPECS. FASTENERS SHALL BE TYPE 304 STAINLESS STEEL OR HOT DIPPED GALV. STEEL. ZINC OR CADMIUM PLATED NOT ACCEPTABLE FOR USE WITH ACQ TREATED LUMBER.
- NOT ALL MISC. ROOF OPENINGS ARE SHOWN - SEE MECH., ELECT., PROCESS DWGS. FOR PIPING, VENTS, CONDUITS ETC. NOT SHOWN.
- EXPOSED METAL TRIM PIECES SHALL HAVE 1/2" HEMMED EDGE WHETHER SPECIFICALLY SHOWN OR NOT. EXPOSED SURFACES OF METAL TRIM SHALL BE PAINTED TO MATCH ADJACENT MATERIAL (FINISH) COLOR UNLESS NOTED OTHERWISE (OR MATERIAL IS PRE-FINISHED)
- OPEN CORES ON EXPOSED ENDS OF PRECAST PLANKS SHALL BE GROUTED PRIOR TO COVERING OVER WITH TRIM CLOSURES OR OTHER WORK. SEE STRUCT. DWGS. FOR GROUTING.
- REFER TO SECTIONS FOR WOOD NAILER LOCATIONS, ROOF EDGE CONDITIONS, ETC.
- PROVIDE CRICKETS ON THE HIGH SIDES OF ALL CURBS FOR PROPER DRAINAGE.
- ALL PENETRATIONS THROUGH ROOF ARE TO BE INSTALLED SUCH THAT THERE IS A MINIMUM OF 8" CLEAR HEIGHT ABOVE THE FINISHED ROOF SURFACE AVAILABLE FOR INSTALLING ROOFING FLASHINGS & TERMINATIONS PER MFR. REQUIREMENTS.
- PROVIDE MIN. R-30 INSULATION AT ALL ROOF AREAS.



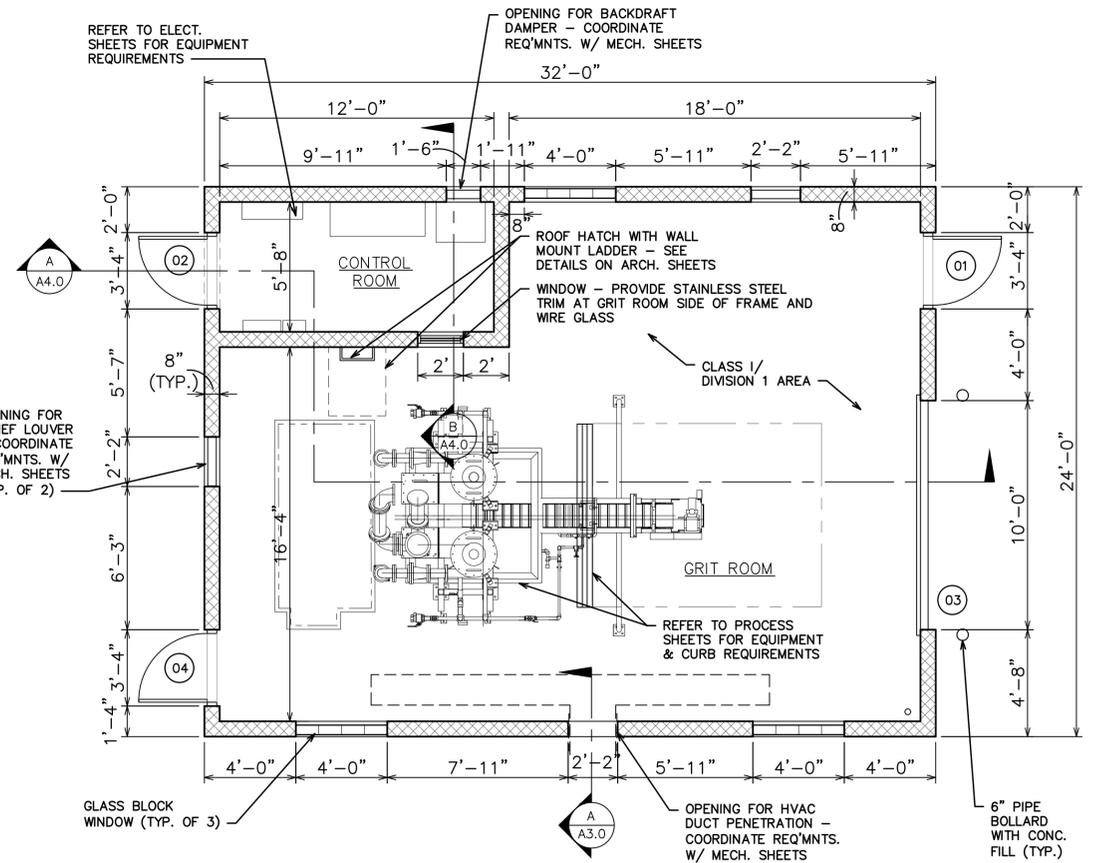
**ROOF PLAN**  
SCALE: 1/4"=1'-0"



**PIPE BOLLARD SECTION**  
NOT TO SCALE



**A 3.0 DUCT THROUGH WALL PENETRATION DETAIL**  
SCALE: 1-1/2"=1'-0"



**FLOOR PLAN**  
SCALE: 1/4"=1'-0"

PROJECT MANAGER: TRACY L. HARRISON, PE  
V:\201504\201504-30\A3.0\_DRAWING - 22X34 - PLOTTED 4/4/2020 2:35 PM BY: MELCHIOR, ADRIANNA M.

REV#	DATE	DESCRIPTION	BY



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**CITY OF FLINT**  
**WPC INFLUENT STRUCTURE & BATTERY A GRIT REHAB**  
SRF #5696-01  
GRIT BUILDING  
FLOOR PLAN AND ROOF PLAN  
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ISSUED FOR: DATE: BY:  
50% DESIGN 10/25/19 TLH  
90% DESIGN 12/06/19 TLH  
FINAL EGLE 04/08/20 TSW

JOB NO.  
**COF1070.01F**  
SHEET  
**A3.0**



PROJECT MANAGER: Tiffany L. Harpison, PE  
FIELD BOOK INFORMATION: - C2.0 - PLOTTED 4/10/2020 1:56 PM BY HARRISON, TIFFANY  
CA:\PW\WORK\2\0824378\03-PLTS-NOTES-LEGEND.DWG

EXISTING		PROPOSED		EXISTING		PROPOSED		EXISTING		PROPOSED		EXISTING		PROPOSED		
<b>CABLE TV</b>				<b>SANITARY SEWER</b>				<b>TOPOGRAPHIC FEATURES (CONT.)</b>				<b>WATER (DOMESTIC) (CONT.)</b>				
CABLE TV POLE				CLEAN OUT		HIGHWAY DELINEATOR		GATE VALVE & BOX								
CABLE TV PEDESTAL				PUMPSTATION MANHOLE		LIGHT POLE BASE		GATE VALVE & WELL								
OVERHEAD CABLE TELEVISION				SANITARY MANHOLE		MAIL BOX		GATE VALVE & WELL (DETROIT)								
UNDERGROUND CABLE TELEVISION				SEPTIC TANK		MERRY-GO-ROUND		INDICATOR VALVE POST								
<b>ELECTRICAL</b>				<b>SITE (MISCELLANEOUS)</b>				<b>WATER (MISC.)</b>				<b>PATTERNS (TYPICAL CROSS SECTIONS)</b>				
CIRCUIT BREAKER PANEL				ABANDON ITEM		RECLAIM WATER GATE VALVE										
HANDHOLE				ACCESSIBLE SYMBOL		SPRINKLER HEAD										
MANHOLE				ADJUST ITEM		SPRINKLER JUNCTION BOX										
OUTLET				FINISH GRADE		STATUE										
PEDESTAL				FLOW ARROW		SWING SET END										
TRANSFORMER BOX				PARKING COUNT		TETHER BALL POLE										
METER				RECONSTRUCT ITEM		TRAFFIC SIGNAL										
POWER POLE				RELOCATE ITEM		BUILDING UNDERGROUND MARKER										
TRANSFORMER TOWER				REMOVE ITEM		U/G MARKER CABLE										
OVERHEAD ELECTRIC				SLOPE LABEL		U/G MARKER ELECTRIC										
UNDERGROUND ELECTRIC				SPOT GRADE		U/G MARKER FIBER OPTIC										
<b>GAS</b>				<b>STORM SEWER/DRAINAGE</b>				<b>UNDERGROUND UTILITIES</b>				<b>LINE WORK</b>				
VENT				CATCH BASIN (ROUND GRATE)		UTILITY MANHOLE		BOUNDARY LINE								
BLOW OFF				CATCH BASIN (SQUARE GRATE)		FIBER OPTIC		BUILDING								
FILLER PIPE				CISTERN		OIL		BUILDING SETBACK								
MANHOLE				BOX CULVERT		UNDERGROUND CTV & TELEPHONE		CHAIN LINK FENCE								
METER				CULVERT HEADWALL		UNDERGROUND ELEC. & CABLE TV		CONTOUR (MAJOR)								
STOP BOX				CULVERT END SECTION		UNDERGROUND ELEC. & TELEPHONE		CONTOUR (MINOR)								
SHUTOFF VALVE				DOWN SPOUT		UNDERGROUND ELECTRIC, CABLE TV AND TELEPHONE		FIELD								
GAS				ROUND INLET						FLOODPLAIN						
<b>MONUMENTS</b>				<b>TELEPHONE</b>				<b>VEGETATION</b>				<b>PATTERNS (PLAN)</b>				
IRON (FOUND)				TELEPHONE POLE		CONIFEROUS BUSH		BOUNDARY LINE								
IRON (SET)				TELEPHONE MANHOLE		CONIFEROUS TREE		BUILDING								
BENCH MARK				TELEPHONE PEDESTAL		DECIDUOUS BUSH		BUILDING SETBACK								
BRASS PLATE				COMMUNICATIONS HANDHOLE		DECIDUOUS TREE		CHAIN LINK FENCE								
CONCRETE NAIL				FIRE CALL						CONTOUR (MAJOR)						
DRILL HOLE				POLICE CALL						CONTOUR (MINOR)						
GOVERNMENT CORNER				PHONE BOOTH						FIELD						
GPS MONUMENT				OVERHEAD TELEPHONE						FLOODPLAIN						
IRON PIPE				UNDERGROUND TELEPHONE						GARDEN						
MONUMENT BOX												GRAVEL				
MONUMENT												GUARDRAIL				
MERE STONE												LANDSCAPE				
NGS MONUMENT												PROPERTY LINE				
NAIL & TAG												RAILROAD TRACK CENTERLINE				
PINCH IRON												RIGHT OF WAY				
PK NAIL												SECTION LINE				
RAILROAD SPIKE												SHORE LINE				
RIGHT-OF-WAY MARKER												TO BE DEMOLISHED				
SPIKE												TOP OF BANK				
SHIPS SPIKE												UTILITY/ DRAINAGE EASEMENT				
T-IRON																
USGS MONUMENT																
CROSS CUT																
CROSS CUT IN MONUMENT																
WOOD STAKE																
<b>OVERHEAD UTILITIES</b>				<b>TOPOGRAPHIC FEATURES</b>				<b>WATER (DOMESTIC)</b>				<b>PATTERNS (PROFILE)</b>				
DEADMAN ANCHOR				AIR CONDITION UNIT UNIT		45° BEND		CONCRETE								
FLOOD LIGHT				ANTENNA		AIR RELEASE VALVE		PAVEMENT								
GUY WIRE ANCHOR				BASKET BALL POST		BACKFLOW PREVENTER		ADA DETECTABLE WARNING								
GUY POLE				BATTERY BOX		BLOW-OFF VALVE		ADA RAMP								
LAMP POLE				BILLBOARD SIGN BASE		FAUCET		REMOVAL								
METAL LIGHT POLE				CAMERA TOWER		FIRE DEPARTMENT CONNECTION		REMOVAL								
ORNAMENTAL LIGHT				CLIMBING BARS		FIRE HYDRANT		FILL TO GRADE WITH EARTHEN MATERIAL								
POLE BOX				COLUMN		ACCESS MANHOLE		ALT A REMOVAL								
POWER & LIGHT POLE				FENCE CORNER		GATE VALVE WITH OFFSET OPERATOR		SAND FILL								
POWER & TELEPHONE POLE				FILL PORT						BROKEN NON-REINFORCED CONCRETE FILL						
TELE, CTV, & LIGHT POLE				FLAG POLE												
TELE, CTV, & POWER POLE				FOUNTAIN												
TELE, & CTV POLE				GAS PUMP												
TELE, CTV, & LIGHT POLE				GAS TANK (UNDERGROUND)												
TELE, & LIGHT POLE																
TELE, POWER, & LIGHT POLE																
UTILITY POLE																
OVERHEAD CABLE TV & TELEPHONE																
OVERHEAD ELECTRIC & CABLE TV																
OVERHEAD ELECTRIC, CABLE TV AND TELEPHONE																

BY	
DESCRIPTION	
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REV#	
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<b>CITY OF FLINT WPC INFLUENT STRUCTURE &amp; BATTERY A GRIT REHAB</b> SRF #5696-01 CIVIL LEGEND	
<small>ISSUED FOR: DATE: BY: 50% DESIGN 10/25/19 TLH 90% DESIGN 12/06/19 TLH 100% DESIGN 02/28/20 TLH FINAL EGLE 04/08/20 TLH</small>	
JOB NO.	COF1070.01F
SHEET	C2.0

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