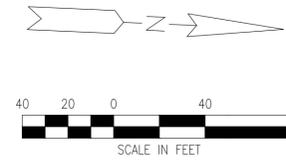
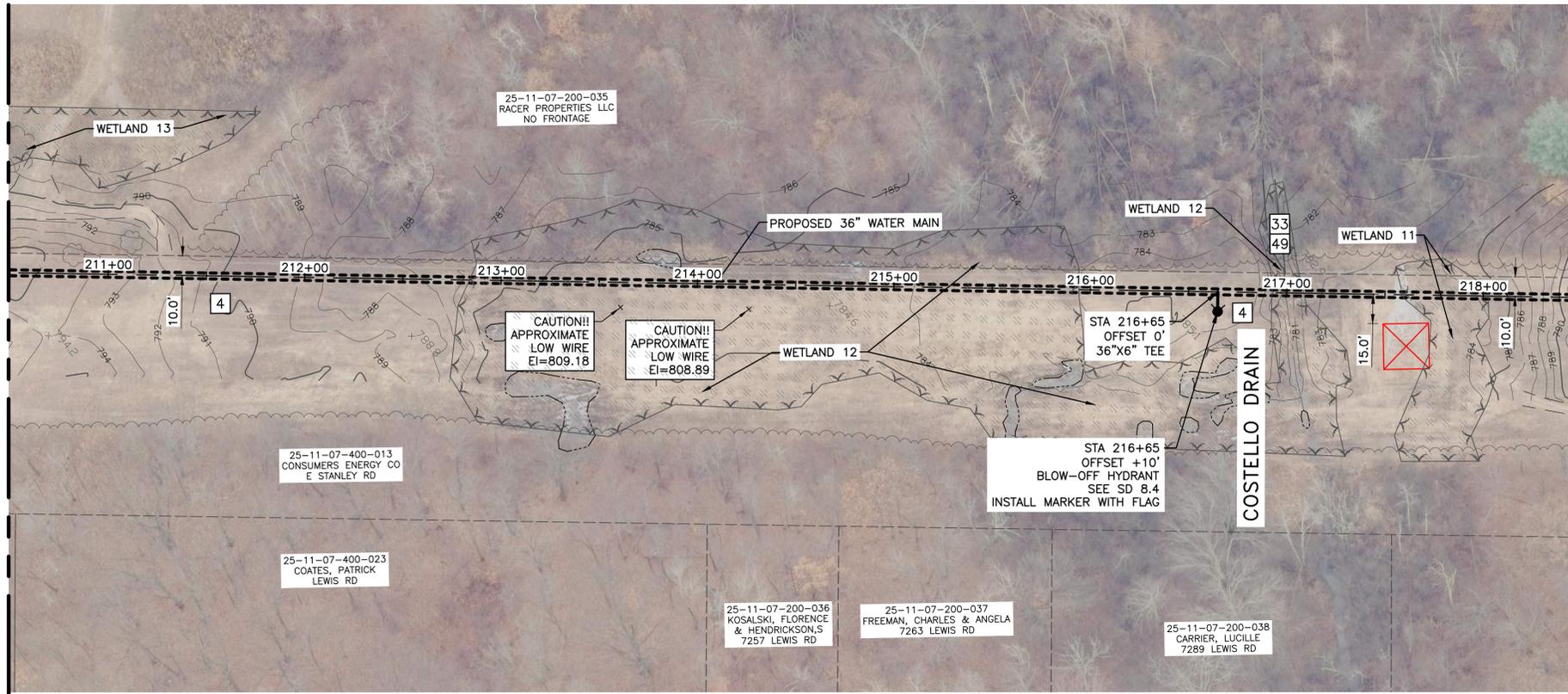
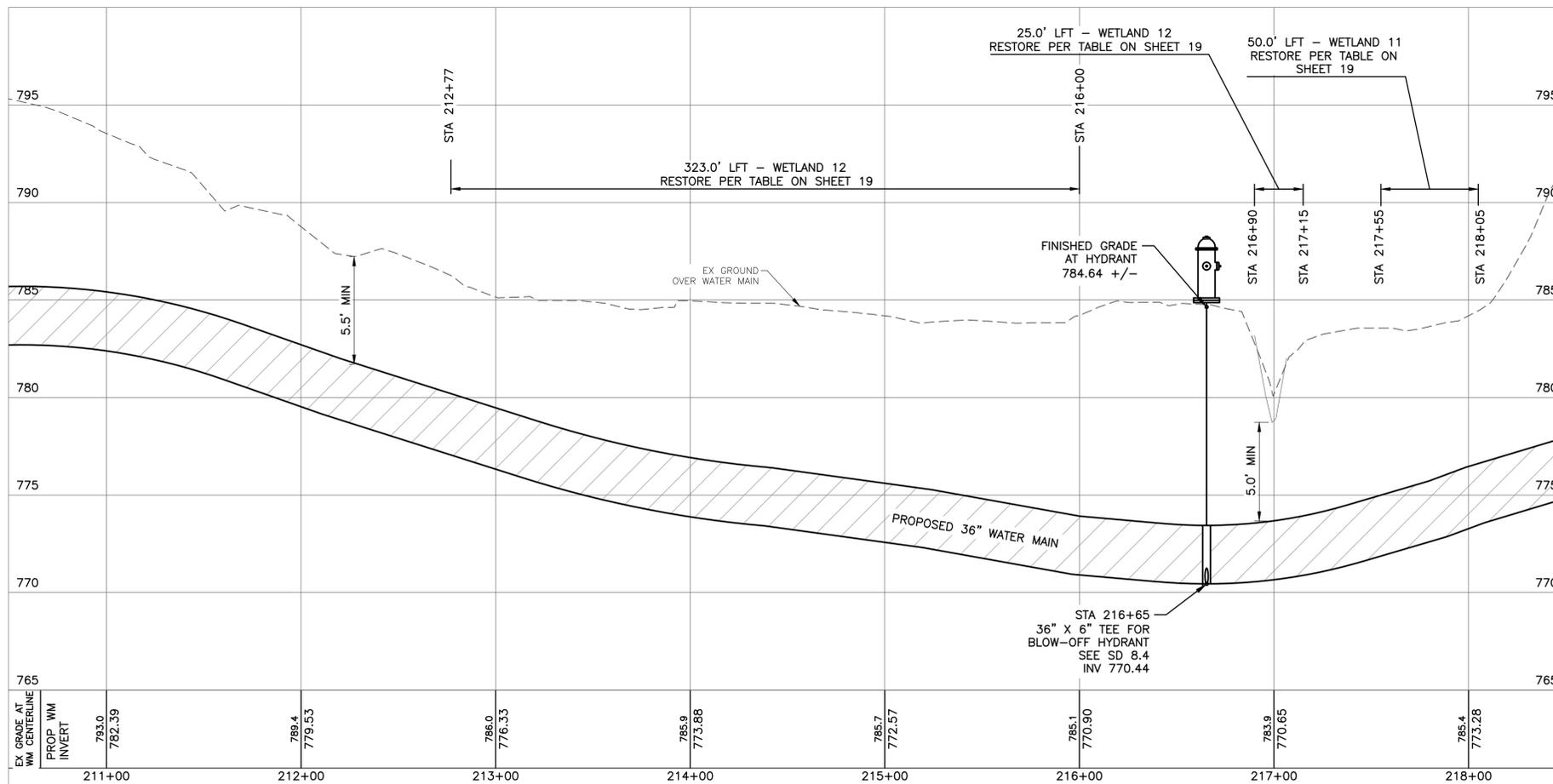


PROJECT MANAGER: JESSICA R. KEAYES, PE
 FIELD BOOK INFORMATION: PLOTTED: 2/7/2020, 10:44 AM BY: RUGGLES, TIMOTHY
 CA:\PW\WORK\200848235\CUP-FLIS-PLAN-PROF-4.DWG - PP-28 - PLOT

MATCH LINE STA 210+50 SEE SHEET 53



MATCH LINE STA 218+50 SEE SHEET 55



NOTES

1. THE CONTRACTOR SHALL USE A TRENCH BOX IN ANY LOCATION WHERE THE PROPOSED WATER MAIN IS TO BE CONSTRUCTED LESS THAN 20' FROM AN EXISTING ELECTRIC POWER POLE OR TOWER.
2. PRIOR TO BEGINNING THE WORK, THE CONTRACTOR SHALL BE REQUIRED TO EXPOSE ALL EXISTING UTILITIES THAT CROSS OR ARE WITHIN THE INFLUENCE OF THE PROPOSED CONSTRUCTION, SO THE ENGINEER MAY DETERMINE IF A CONFLICT EXISTS BETWEEN AN EXISTING UTILITY AND THE PROPOSED WORK. ALL LABOR REQUIRED TO UNCOVER THE EXISTING UTILITY SHALL BE CONSIDERED INCLUSIVE TO THE UNIT PRICE OF THE WATER MAIN. THE CONTRACTOR SHALL VERIFY THE UTILITY SIZE, MATERIAL, DEPTH AND HORIZONTAL LOCATION OF ALL UTILITIES IN SUFFICIENT TIME SUCH THAT ANY CONFLICTS CAN BE RESOLVED BEFORE WORK IS STARTED.
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REV#	DATE	DESCRIPTION	BY

555 S. Saginaw Street, Suite 201
 Flint, MI 48502
 www.wadetrिम.com

CITY OF FLINT
1101 S. SAGINAW STREET
FLINT, MI 48502
 36" SECONDARY WATER SUPPLY
 PLAN AND PROFILE SHEET 28

ISSUED FOR: DATE: BY:

JOB NO.
COF1068.01F

SHEET
54

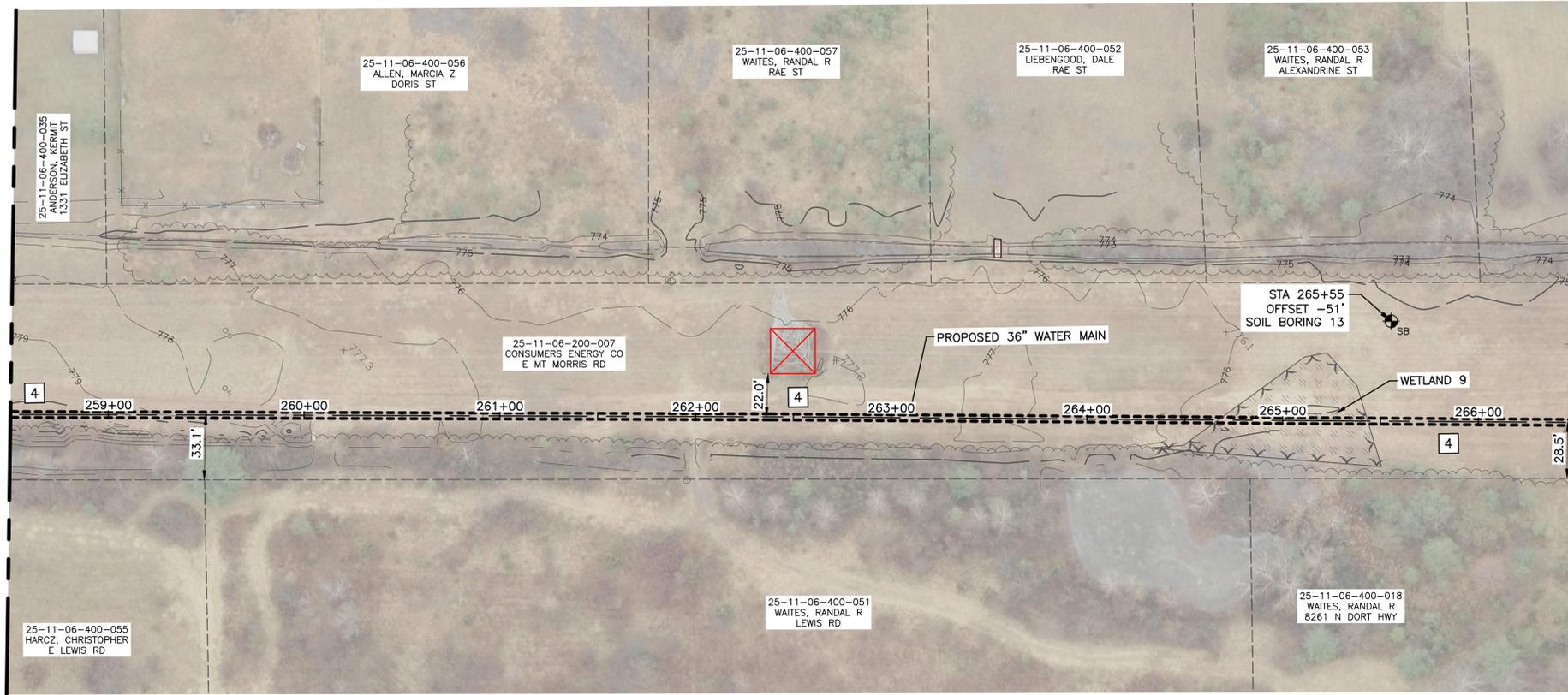
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PROJECT MANAGER: JESSICA R. KAYNES, PE
 CA P/W WORKSHEET: 00348235, CUP-PLTS-PLAN-PROF-5, DWG - PP-34 - PLOTTED: 2/7/2020, 10:47 AM, BY: RUGGLES, TIMOTHY

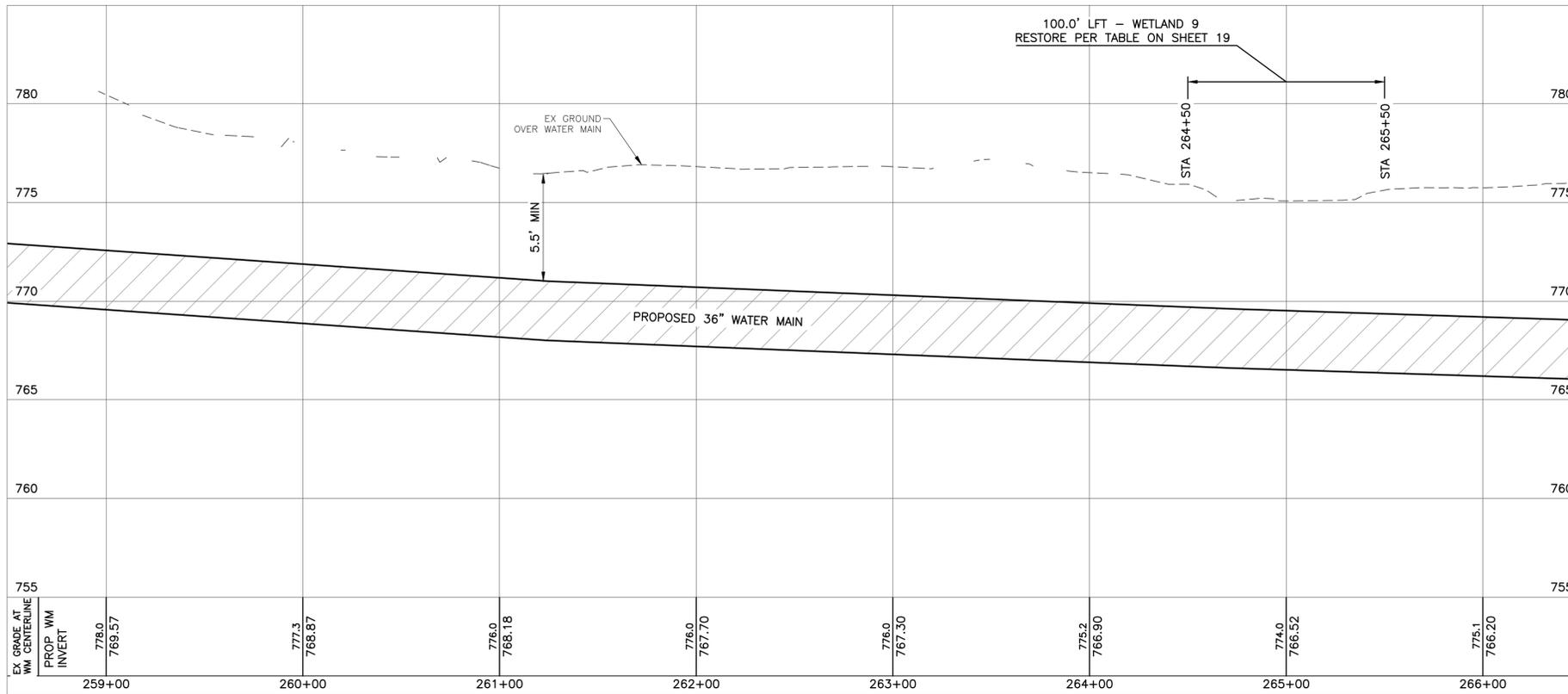
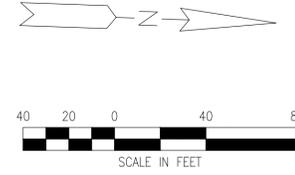


Know what's below.
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MATCH LINE STA 258+50 SEE SHEET 59



MATCH LINE STA 266+50 SEE SHEET 61



NOTES

1. THE CONTRACTOR SHALL USE A TRENCH BOX IN ANY LOCATION WHERE THE PROPOSED WATER MAIN IS TO BE CONSTRUCTED LESS THAN 20' FROM AN EXISTING ELECTRIC POWER POLE OR TOWER.
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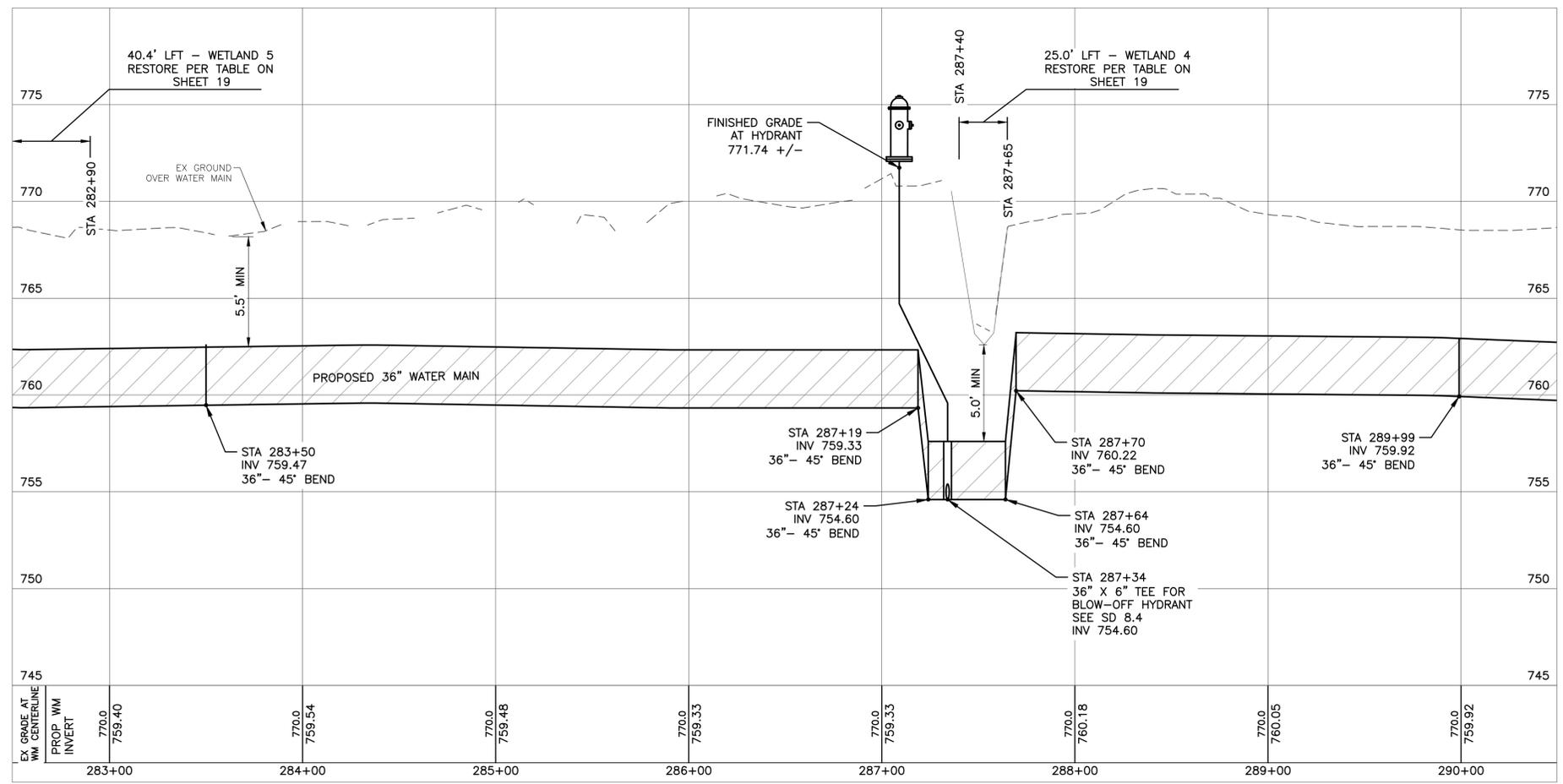
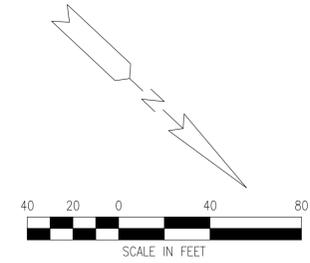
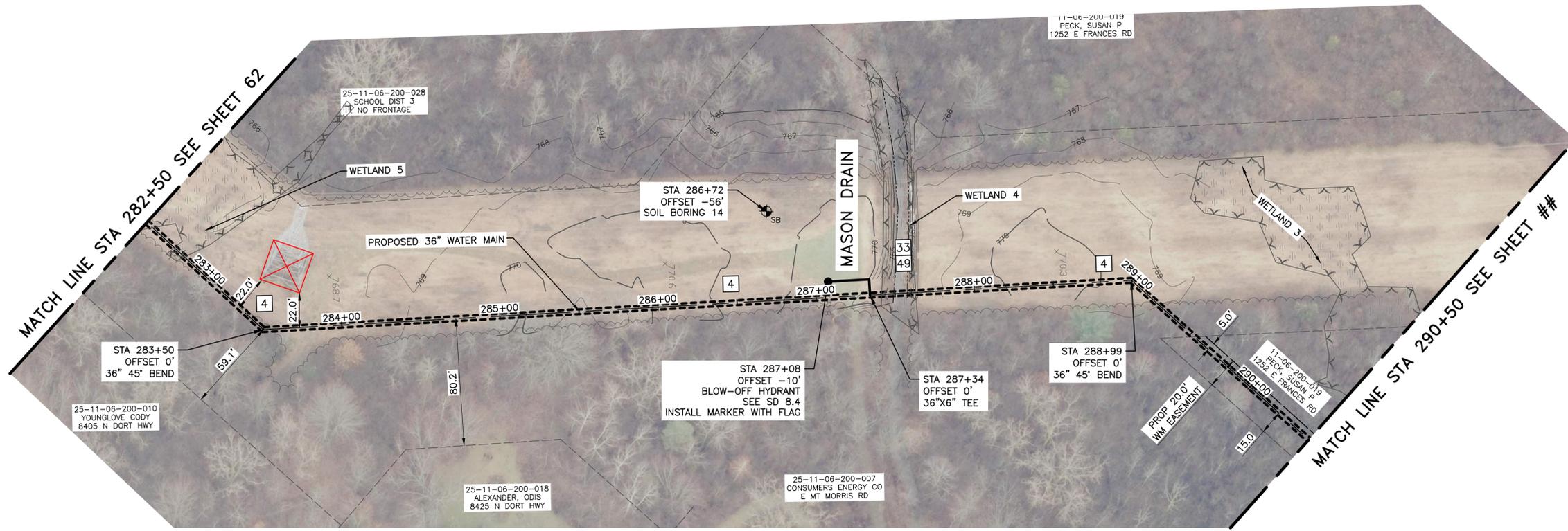
REV#	DATE	DESCRIPTION	BY

555 S. Saginaw Street, Suite 201
 Flint, MI 48502
 www.wadetrिम.com

CITY OF FLINT
1101 S. SAGINAW STREET
FLINT, MI 48502
 36" SECONDARY WATER SUPPLY
 PLAN AND PROFILE SHEET 34

ISSUED FOR:	DATE:	BY:
JOB NO.	COF1068.01F	
SHEET	60	

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NOTES

1. THE CONTRACTOR SHALL USE A TRENCH BOX IN ANY LOCATION WHERE THE PROPOSED WATER MAIN IS TO BE CONSTRUCTED LESS THAN 20' FROM AN EXISTING ELECTRIC POWER POLE OR TOWER.
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PROJECT MANAGER: JESSA R. KENYON, PE
 FIELD BOOK INFORMATION: FIELD BOOK 2, 7/2020, 10:48 AM, BY: RUGGLES, TIMOTHY
 CA:\PW\WORK\2020\48235\CUP-FLIS-PLAN-PROF-5.DWG - PP-37 - PLOTTED: 2/7/2020, 10:48 AM, BY: RUGGLES, TIMOTHY



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CITY OF FLINT
1101 S. SAGINAW STREET
FLINT, MI 48502
36" SECONDARY WATER SUPPLY
PLAN AND PROFILE SHEET 37

ISSUED FOR: _____ DATE: _____ BY: _____

JOB NO. **COF1068.01F**

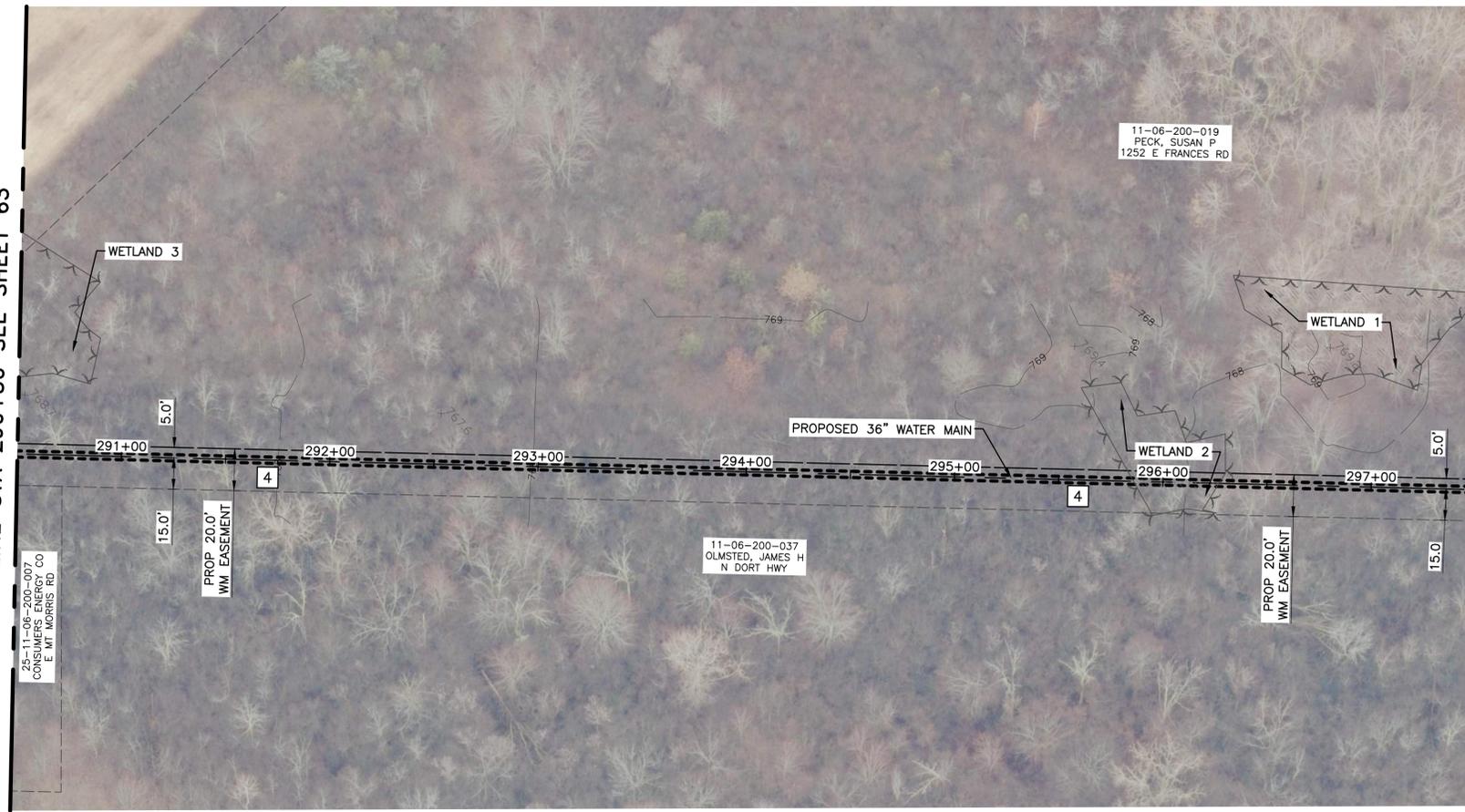
SHEET **63**

PROJECT MANAGER: JESSICA R. KENYON, PE
 FIELD BOOK INFORMATION: FIELD BOOK INFORMATION: 2/7/2020, 10:49 AM, BY: RUGGLES, TIMOTHY
 CA:\PW\WORK\2020\48235\CUP-FLTS-PLAN-PROF-5.DWG - PP-38 - PLOTTED: 2/7/2020, 10:49 AM, BY: RUGGLES, TIMOTHY

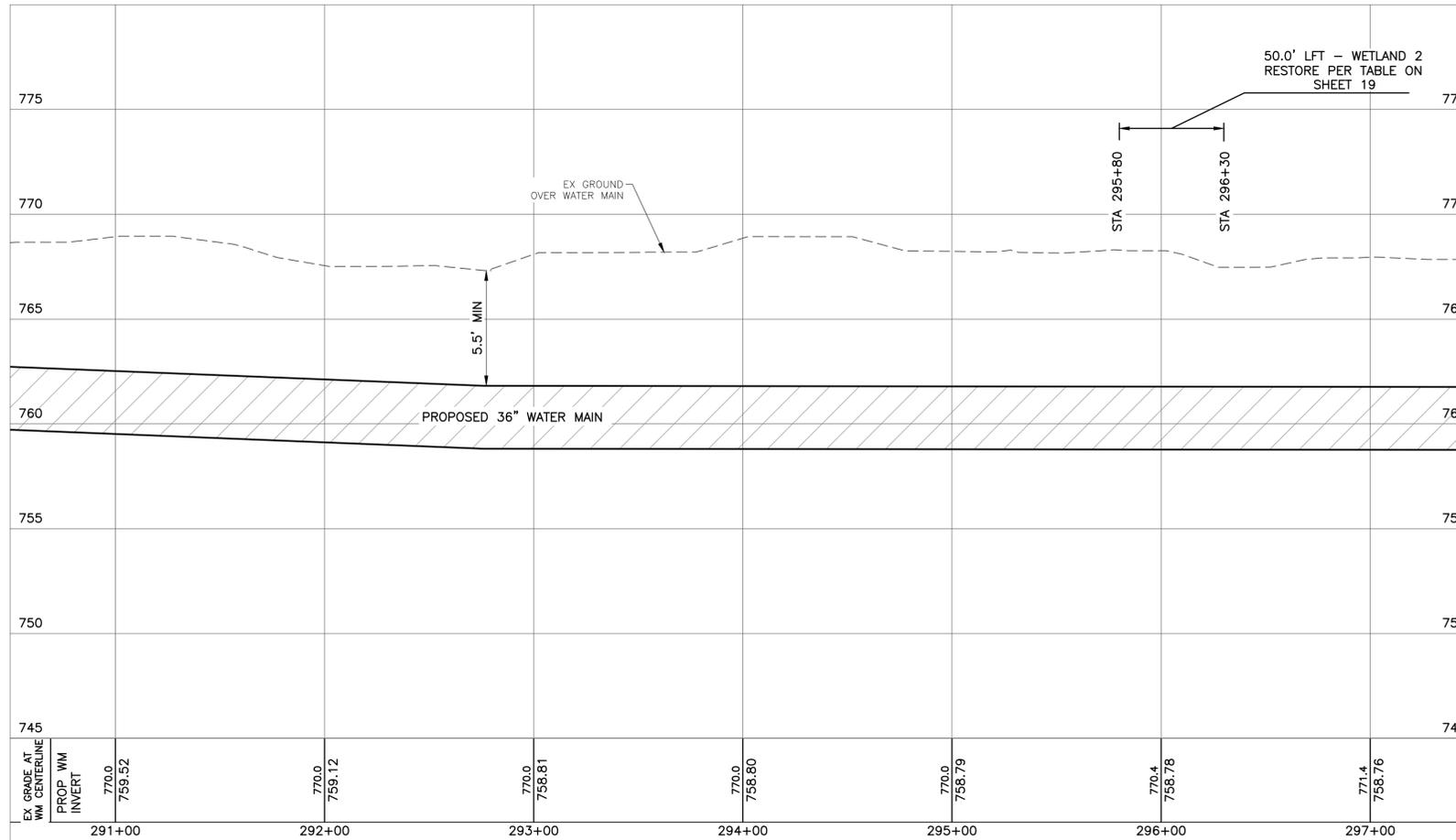


Know what's below.
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MATCH LINE STA 290+50 SEE SHEET 63



MATCH LINE STA 297+50 SEE SHEET 65



NOTES

1. THE CONTRACTOR SHALL USE A TRENCH BOX IN ANY LOCATION WHERE THE PROPOSED WATER MAIN IS TO BE CONSTRUCTED LESS THAN 20' FROM AN EXISTING ELECTRIC POWER POLE OR TOWER.
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REV#	DATE	DESCRIPTION	BY

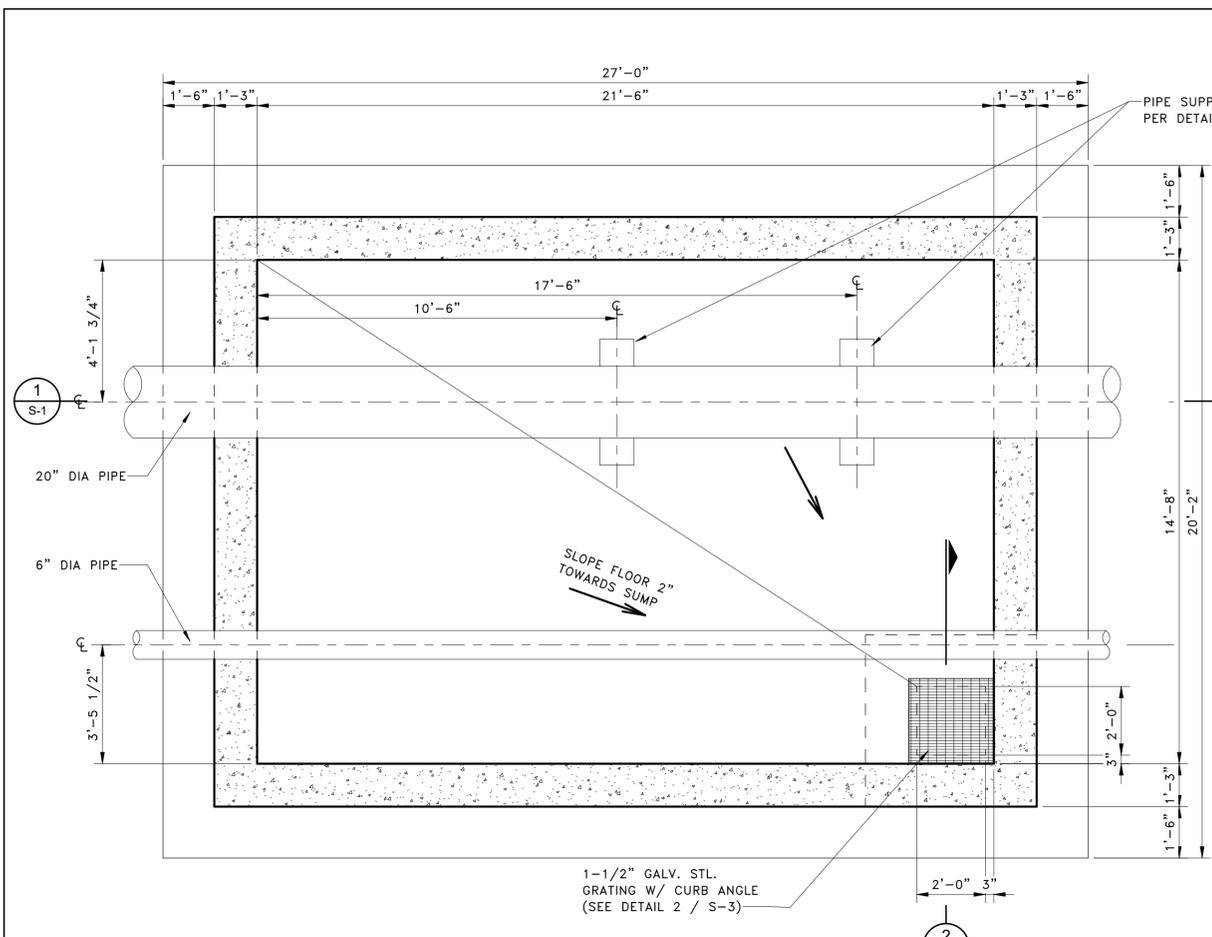
555 S. Saginaw Street, Suite 201
 Flint, MI 48502
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CITY OF FLINT
1101 S. SAGINAW STREET
FLINT, MI 48502
 36" SECONDARY WATER SUPPLY
 PLAN AND PROFILE SHEET 38

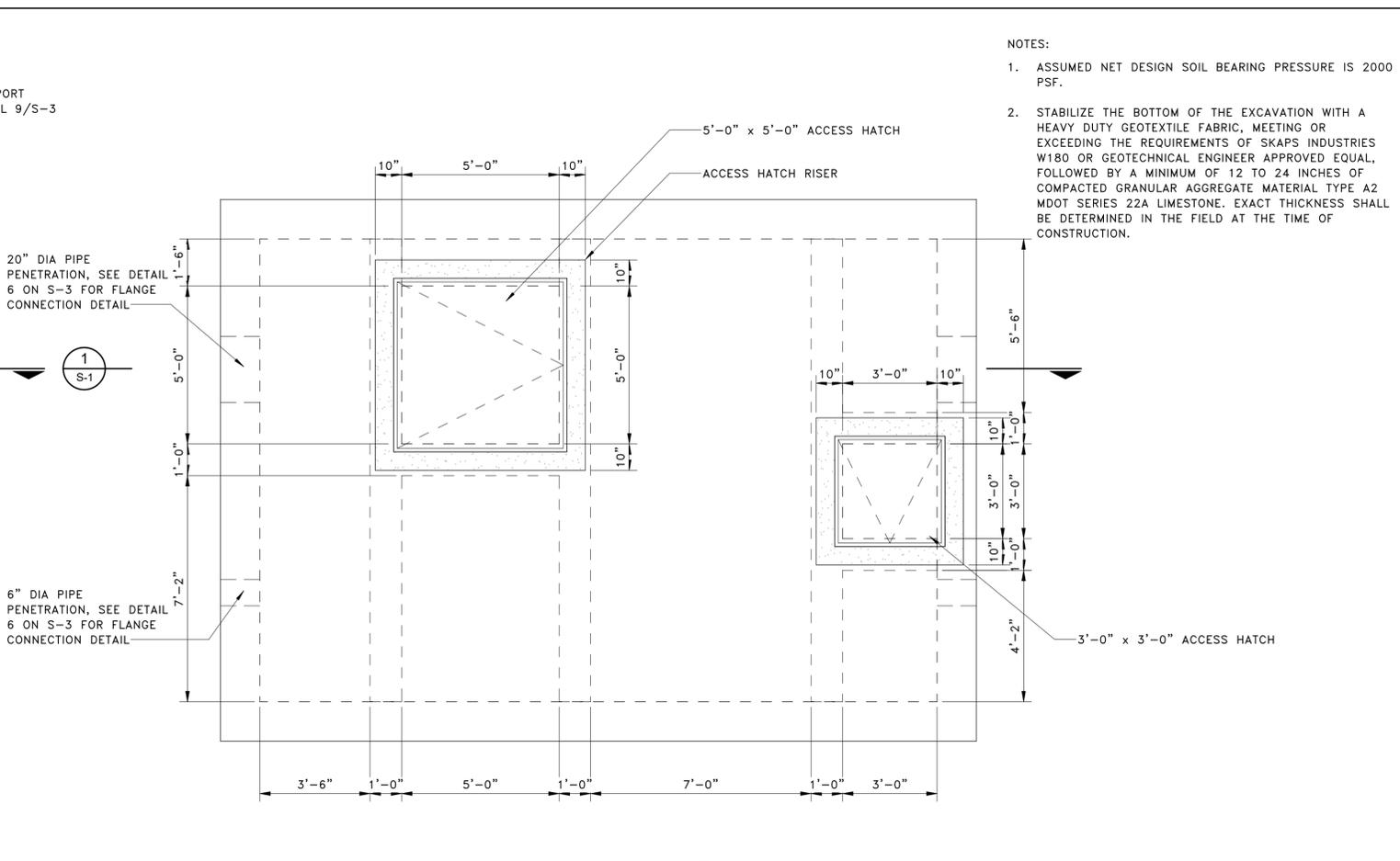
ISSUED FOR: DATE: BY:

JOB NO.
COF1068.01F

SHEET
64

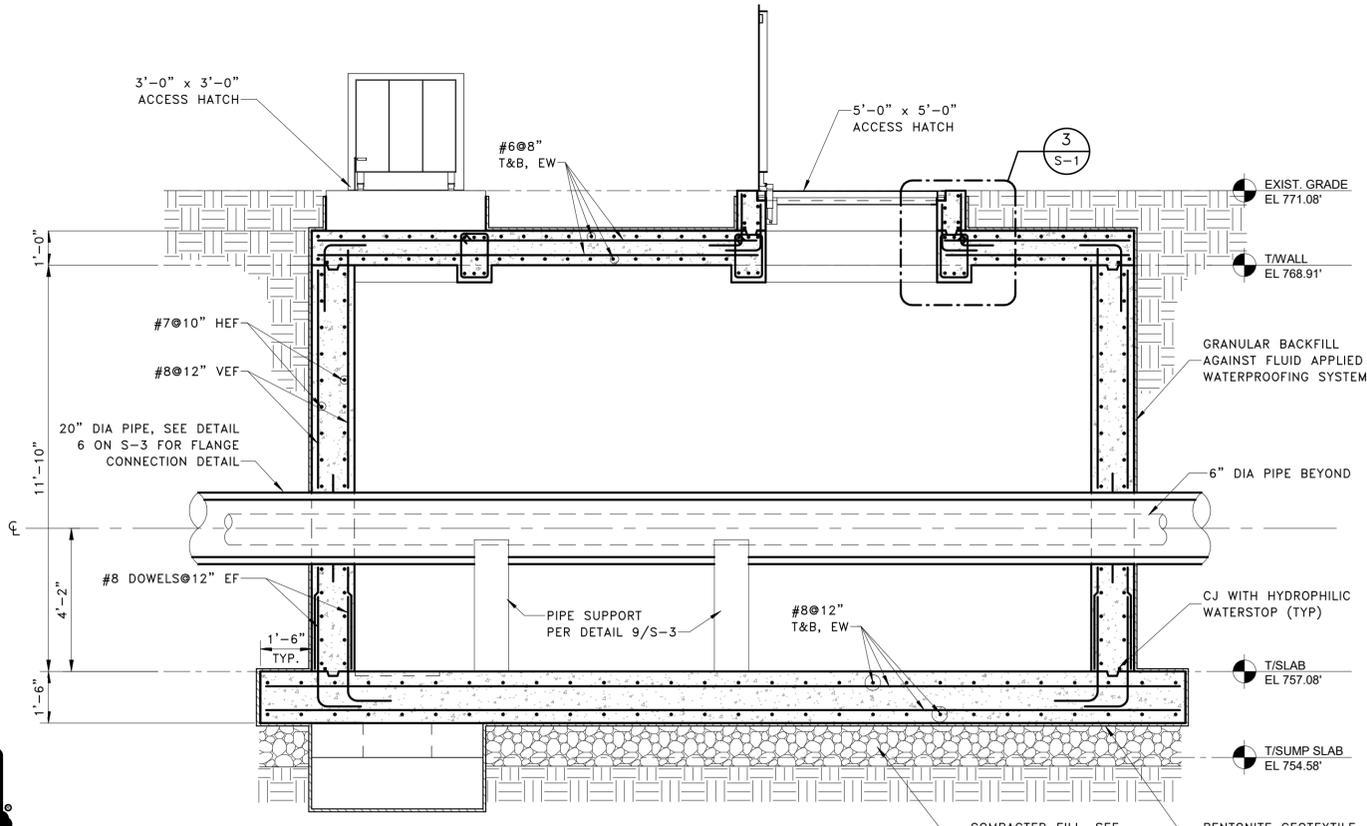


T/SLAB PLAN
SCALE: 3/8" = 1'-0"

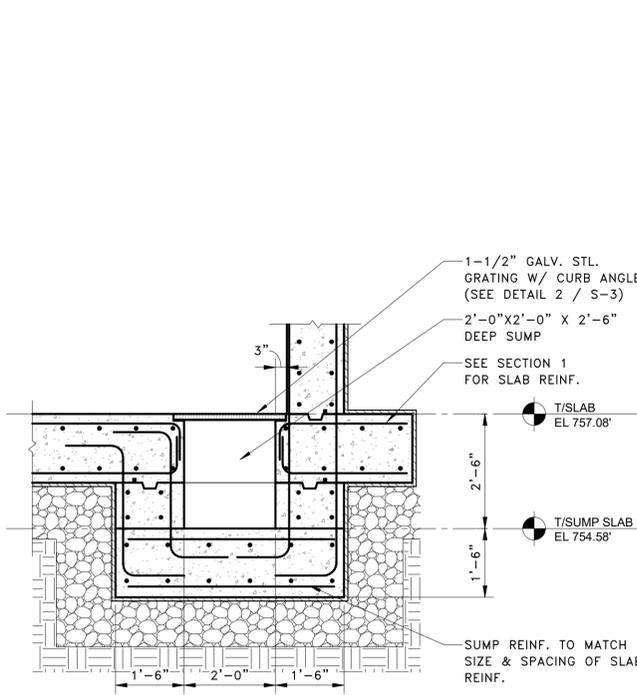


GRADE PLAN
SCALE: 3/8" = 1'-0"

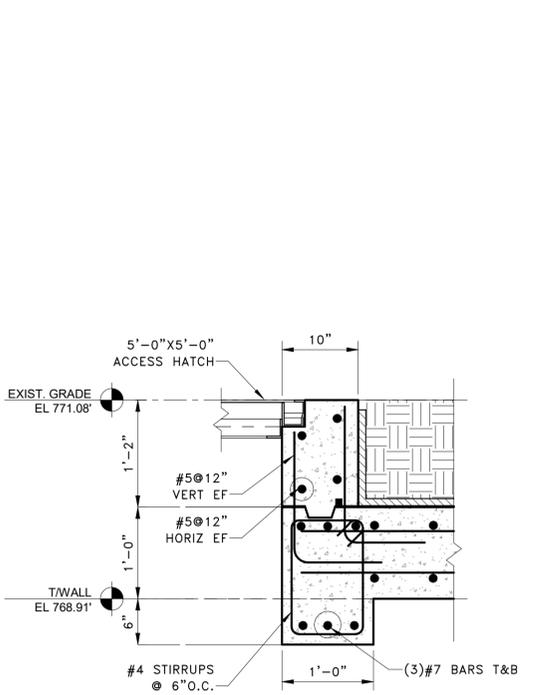
- NOTES:
1. ASSUMED NET DESIGN SOIL BEARING PRESSURE IS 2000 PSF.
 2. STABILIZE THE BOTTOM OF THE EXCAVATION WITH A HEAVY DUTY GEOTEXTILE FABRIC, MEETING OR EXCEEDING THE REQUIREMENTS OF SKAPS INDUSTRIES W180 OR GEOTECHNICAL ENGINEER APPROVED EQUAL, FOLLOWED BY A MINIMUM OF 12 TO 24 INCHES OF COMPACTED GRANULAR AGGREGATE MATERIAL TYPE A2 MDOT SERIES 22A LIMESTONE. EXACT THICKNESS SHALL BE DETERMINED IN THE FIELD AT THE TIME OF CONSTRUCTION.



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



SECTION 2
SCALE: 1/2" = 1'-0"



SECTION 3
SCALE: 1" = 1'-0"

P:\AA\1000\BURKE\DRAWING\FLINT\METER STRUCTURES\BORDER.DWG - MODEL - PLOTTED 8/30/2019 12:12 PM BY BURKE, TREVOR



REV#	DATE	DESCRIPTION	BY

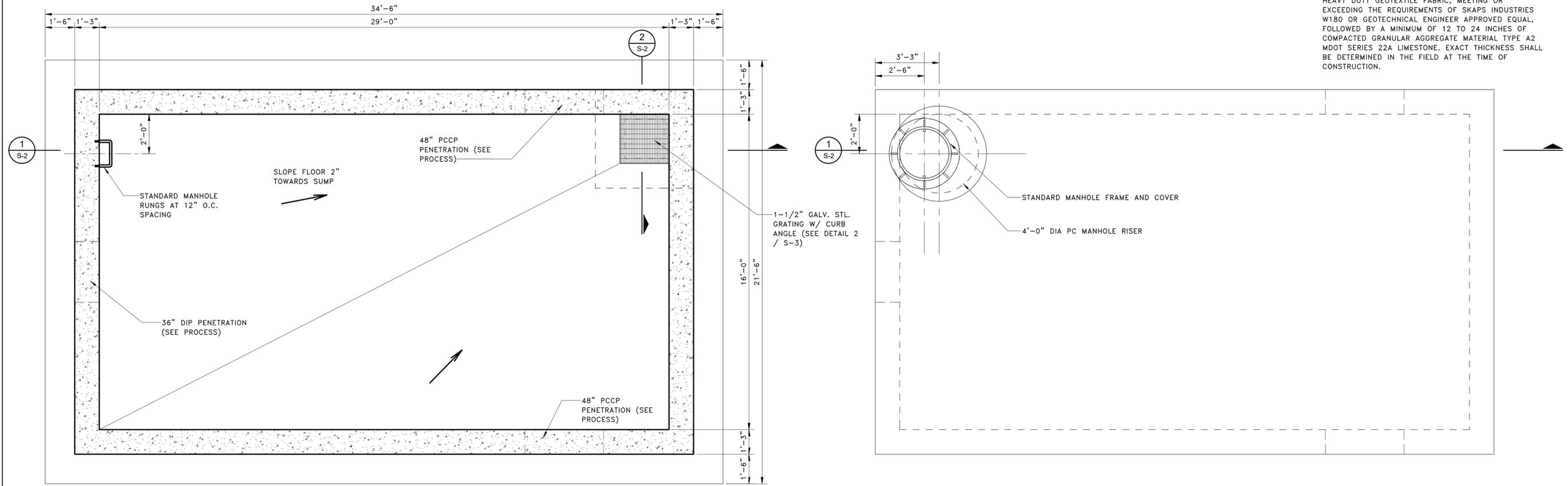
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CITY OF FLINT
1101 S. SAGINAW STREET
FLINT, MI 48502
36" SECONDARY WATER SUPPLY
STRUCTURAL
GCDC METER VAULT PLAN AND SECTION

ISSUED FOR:	DATE:	BY:
JOB NO. COF1068.01F		
SHEET	S-1	

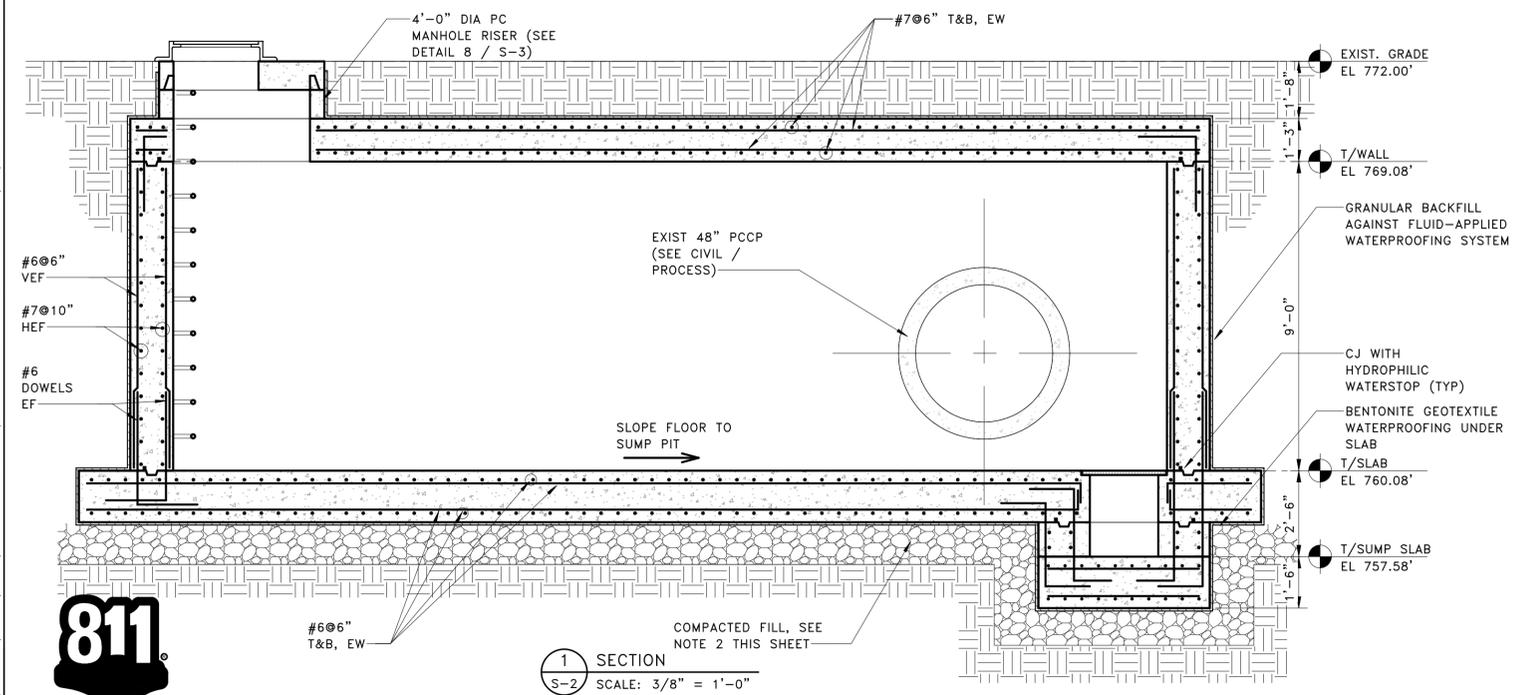
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- NOTES:
1. ASSUMED NET DESIGN SOIL BEARING PRESSURE IS 2000 PSF.
 2. STABILIZE THE BOTTOM OF THE EXCAVATION WITH A HEAVY DUTY GEOTEXTILE FABRIC, MEETING OR EXCEEDING THE REQUIREMENTS OF SKAPS INDUSTRIES W180 OR GEOTECHNICAL ENGINEER APPROVED EQUAL, FOLLOWED BY A MINIMUM OF 12 TO 24 INCHES OF COMPACTED GRANULAR AGGREGATE MATERIAL TYPE A2 MDOT SERIES 22A LIMESTONE. EXACT THICKNESS SHALL BE DETERMINED IN THE FIELD AT THE TIME OF CONSTRUCTION.

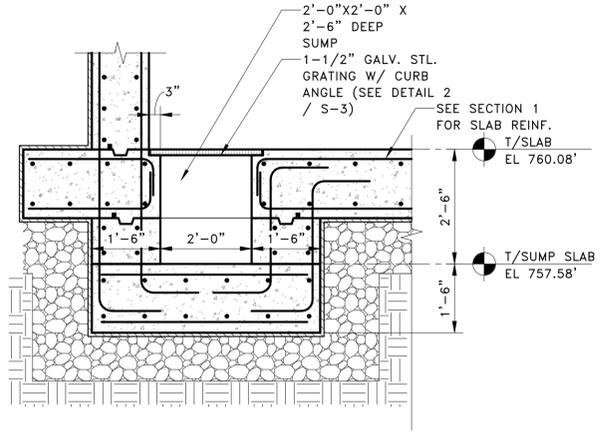


1 T/SLAB
SCALE: 3/8" = 1'-0"

EXIST. GRADE
SCALE: 3/8" = 1'-0"



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



2 SUMP DETAIL
SCALE: 1/2" = 1'-0"

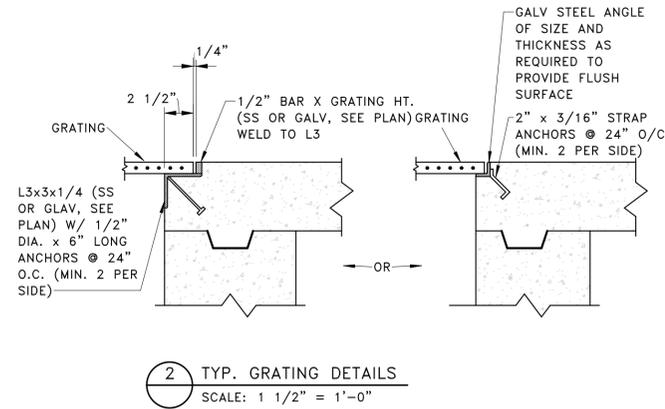
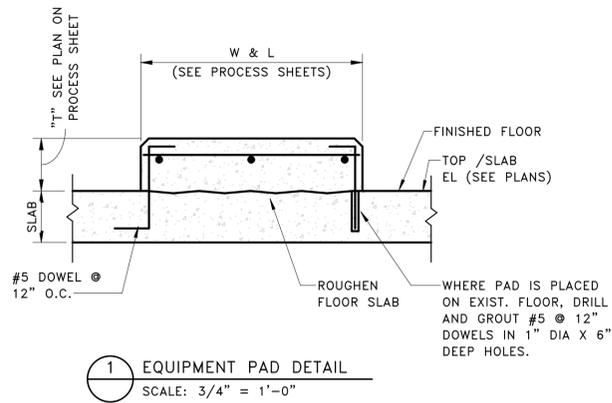


ISSUED FOR:	DATE:	BY:
JOB NO. COF1068.01F		
SHEET		
S-2		

CITY OF FLINT
1101 S. SAGINAW STREET
FLINT, MI 48502
36" SECONDARY WATER SUPPLY
STRUCTURAL METER VAULT PLAN AND SECTION

555 S. Saginaw Street, Suite 201
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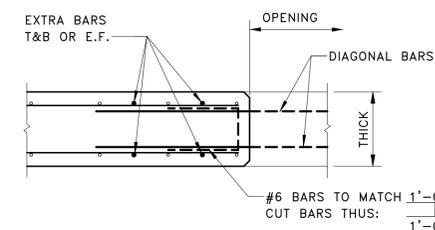
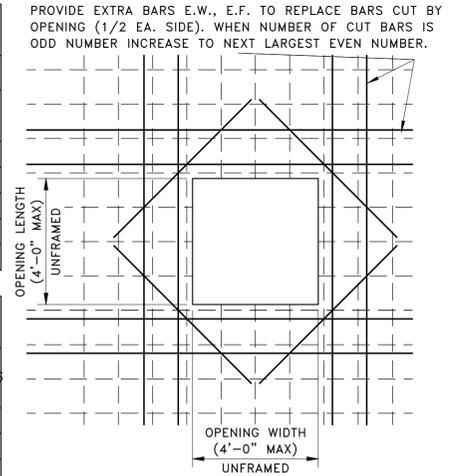
REV#	DATE	DESCRIPTION	BY



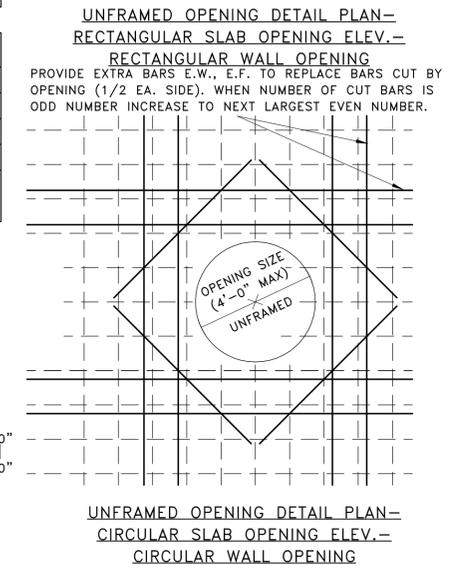
DIAGONAL BARS ALL OPENINGS				
SLAB OR WALL THICKNESS		DIAG. BARS - (4) SIDES OF OPENING E.F.; EQUAL SPACING		
FROM	TO & INCLUDING	NO.	BAR SIZE	LENGTH
0	8"	1	#4	3'-0"
8"	16"	2	#5	4'-0"
16"	24"	2	#6	5'-0"
24"	32"	3	#6	5'-0"
32"	40"	3	#7	6'-0"

LENGTH OF EXTRA BARS CENTERED ON Q. OF OPENING			
BAR SIZE	LENGTH = OPENING PLUS	BAR SIZE	LENGTH = OPENING PLUS
#4	3'-0"	#8	10'-0"
#5	4'-0"	#9	12'-0"
#6	6'-0"	#10	16'-0"
#7	8'-0"	#11	20'-0"

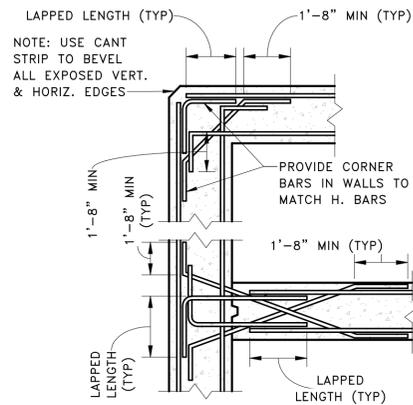
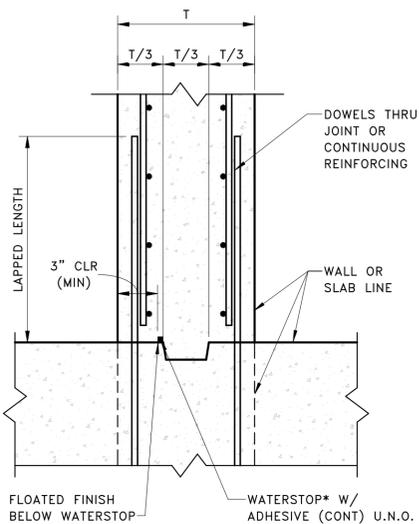
OPENING REINFORCEMENT SCHEDULE				
TYPE OF OPENING	THICKNESS	REINFORCEMENT REQUIRED		
		EXTRA	DIAGONAL [- BARS	
UNFRAMED	16" OR LESS	YES	YES	NO
	16" TO 4'-0"	YES	YES	YES
FRAMED (BEAMS)	ALL	NO	YES	NO



3 ADD'L REINFORCING STEEL AT OPENINGS IN WALLS AND SLABS
SCALE: 3/8" = 1'-0"



4 STANDARD JOINT
SCALE: 1 1/2" = 1'-0"



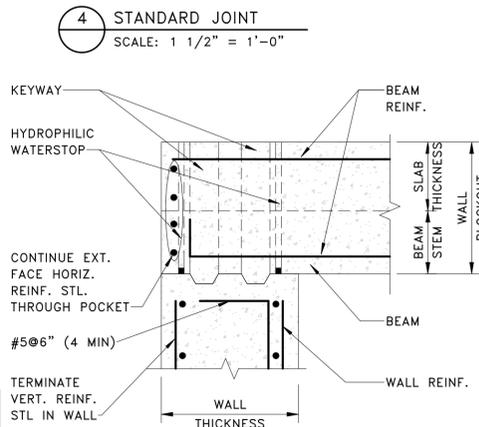
5 WALL CORNER / INTERSECTION DETAIL
SCALE: 1" = 1'-0"

6 CAST-IN PIPE FLANGE DETAIL
SCALE: 1" = 1'-0"

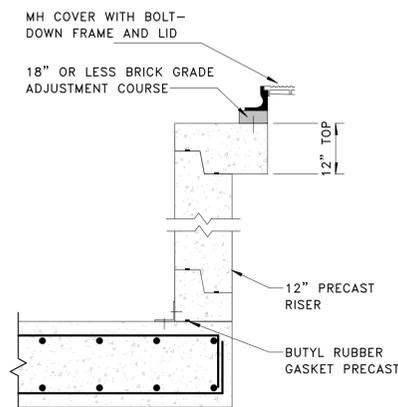
(FOR MEMBERS UP TO 18" THICK) EITHER SHOWN ON SECTION OR NOTED AS C.J. ON PLAN

*NOTE

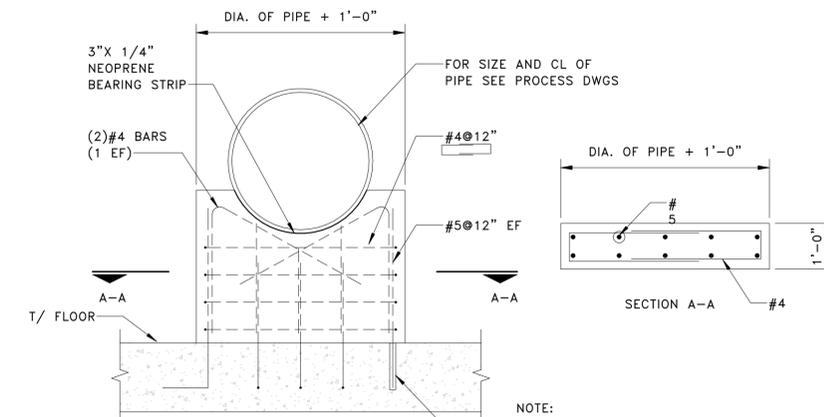
1. HYDROPHILIC RUBBER WATERSTOP SHALL BE USED IN ALL CAST-IN-PLACE CONCRETE BELOW GROUNDWATER TABLE.
2. BENTONITE WATERSTOP (NSF 61 CERTIFIED) MAY BE USED AT ALL OTHER JOINTS IN CAST-IN-PLACE CONCRETE CONSTRUCTION.
3. ALL UNFORMED SURFACES WHERE WATERSTOP IS TO BE ADHERED SHALL HAVE A FLOATED FINISH.
4. ALL KEYWAYS SHALL BE CONSTRUCTED USING WOOD FORM EMBEDDED IN PLASTIC CONCRETE AND REMOVED AFTER CURING.



7 TYPICAL BEAM POCKET DETAIL
SCALE: 3/4" = 1'-0"



8 STANDARD MH RISER DETAIL
SCALE: 3/4" = 1'-0"



9 TYPICAL PIPE SUPPORT PIER
SCALE: 1/2" = 1'-0"

NOTE:
WHERE SUPPORT PIER IS PLACED ON EXIST. CONCRETE FLOOR, DRILL AND GROUT #5@12" DOWELS IN 1" DIA. X 10" DEEP HOLES. CLEAN AND ROUGHEN EXISTING CONCRETE SURFACE AND APPLY A CEMENT SLURRY PRIOR TO PLACING NEW CONCRETE.

P:\AAA1000\TBURKE\DRAWING\FLINT\METER STRUCTURES\BORDER.DWG - MODEL - PLOTTED 8/30/2019 12:12 PM BY BURKE, TREVOR



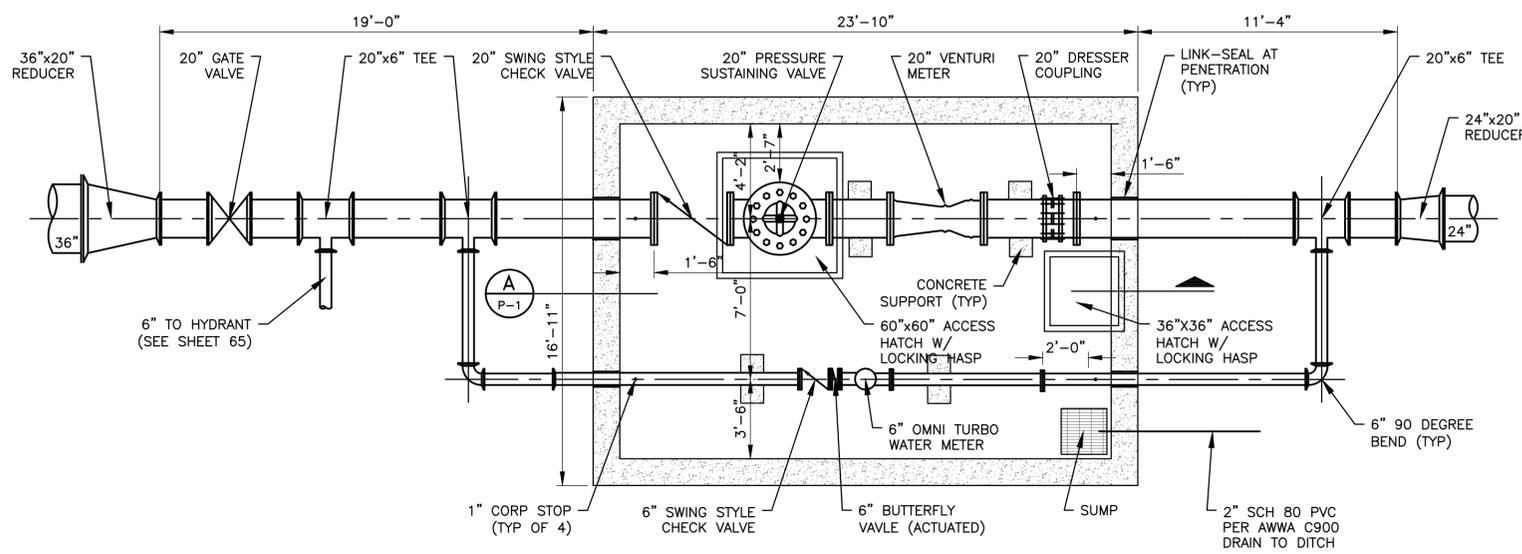
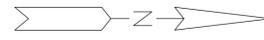
REV#	DATE	DESCRIPTION	BY

655 S. Saginaw Street, Suite 201
Flint, MI 48502
810.232.2585
www.wadetrिम.com

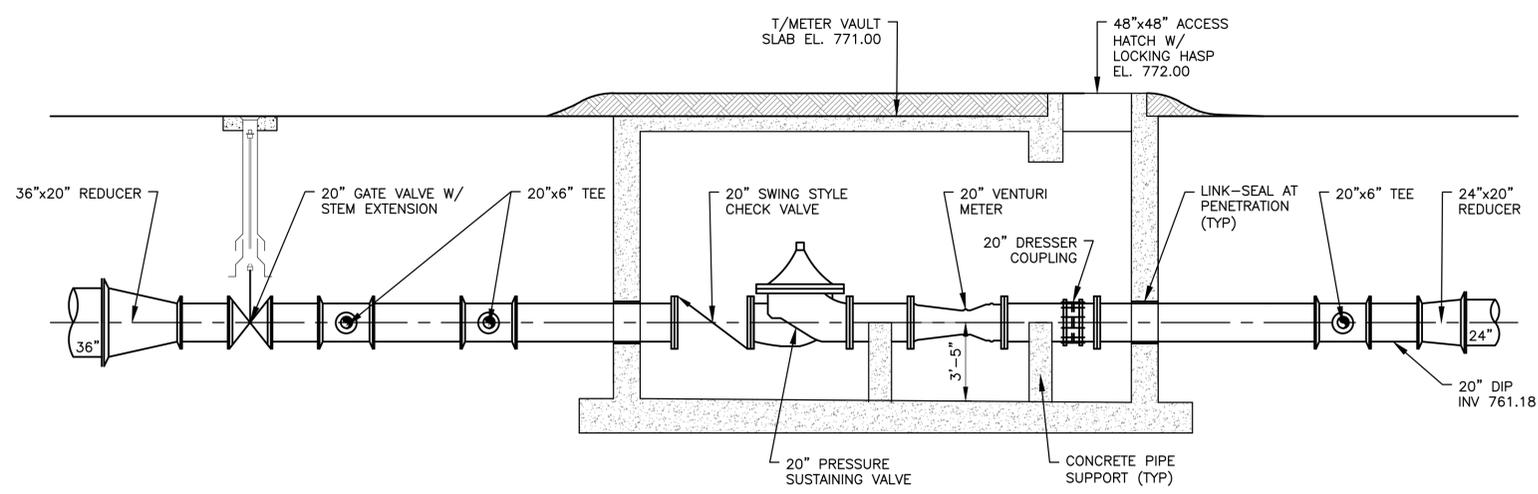
CITY OF FLINT
1101 S. SAGINAW STREET
FLINT, MI 48502
36" SECONDARY WATER SUPPLY
STRUCTURAL
METER VAULT TYPICAL DETAILS

ISSUED FOR:	DATE:	BY:
JOB NO. COF1068.01F		
SHEET	S-3	

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METER VAULT - PLAN
SCALE: 1/4"=1'-0"



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

PROJECT MANAGER: JESSA R. KAYNES, PE
CA P/W WORK: D0969948 PFP-PLTS-PROC-PLAN/DWG - SHEET 1 - PLOTTED 2/10/2020 8:57 AM BY HARRISON, TIFFANY



Know what's below.
Call before you dig.

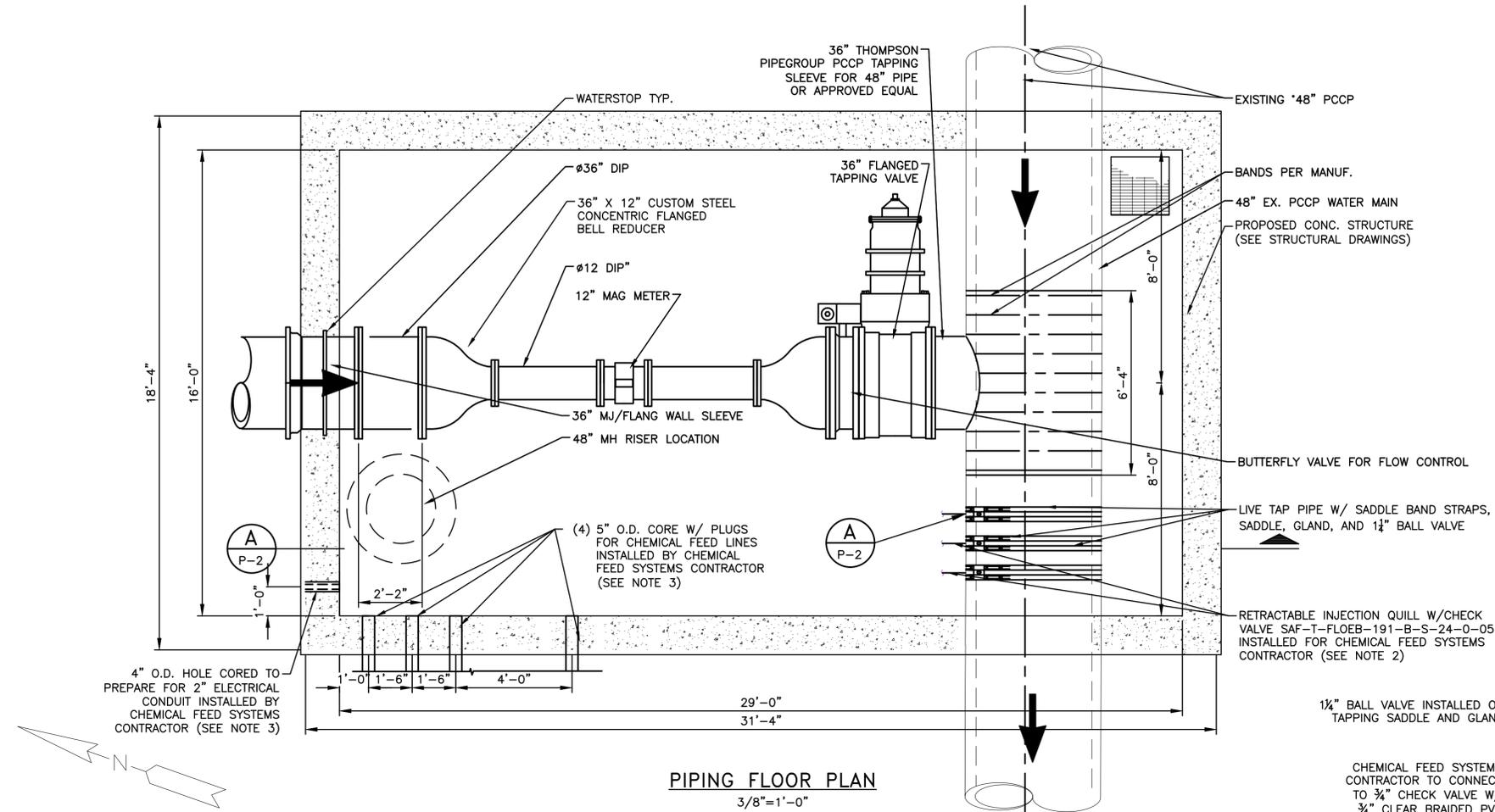
REV#	DATE	DESCRIPTION	BY

555 S. Saginaw Street, Suite 201
Flint, MI 48502
www.wadetrim.com

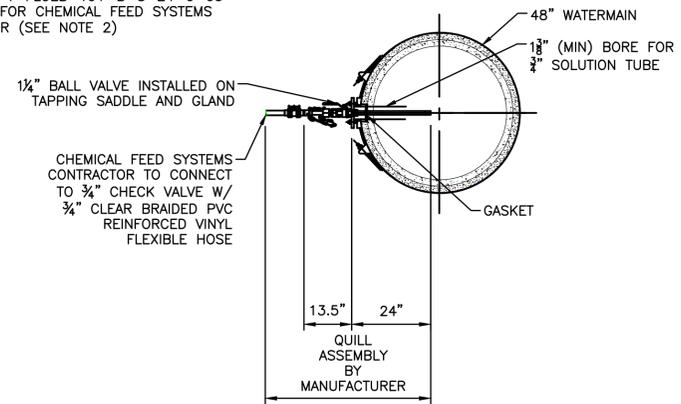
CITY OF FLINT
1101 S. SAGINAW STREET
FLINT, MI 48502
36" SECONDARY WATER SUPPLY
PROPOSED - GCDC METER VAULT AT FRANCES RD

ISSUED FOR:	DATE:	BY:
JOB NO. COF1068.01F		
SHEET P-1		

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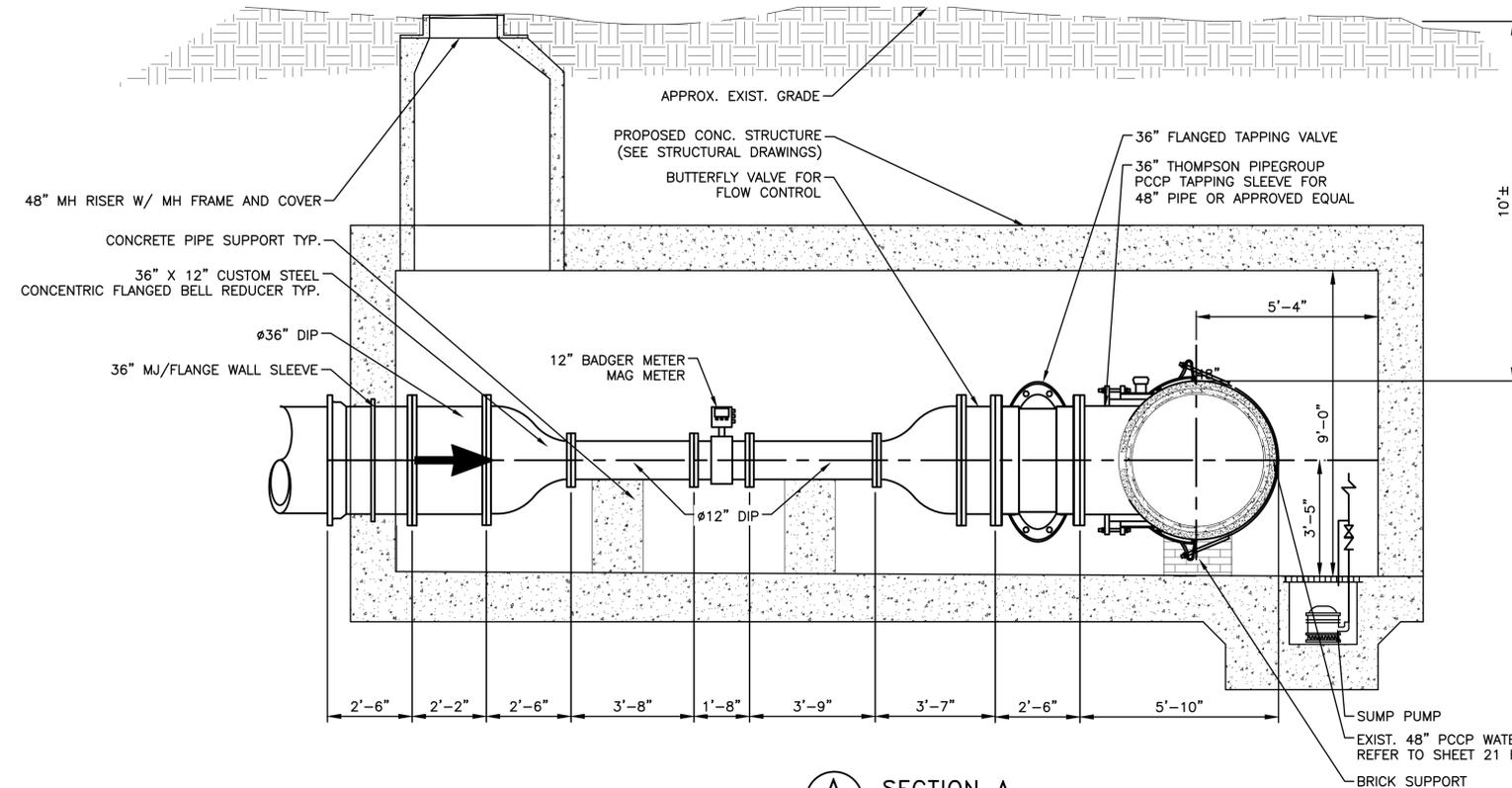


PIPING FLOOR PLAN
3/8"=1'-0"



RETRACTABLE INJECTION QUILL ASSEMBLY

DETAIL
3/8"=1'-0" A
P-2



SECTION A
3/8"=1'-0" A
P-2

NOTES:

- GCDC METERING AND CHEMICAL INJECTION PIPING TO BE DESIGNED BY CDM SMITH UNDER CHEMICAL SYSTEMS FEED BUILDING CONTRACT
- SECONDARY WATER SUPPLY CONTRACTOR TO CONFIRM CHEMICAL INJECTION QUILL SELECTION WITH CHEMICAL SYSTEMS FEED BUILDING CONTRACT PRIOR TO PROCUREMENT AND TAPPING WATER MAIN.
- SECONDARY WATER SUPPLY CONTRACTOR TO CONFIRM WALL OPENING DIAMETER AND LOCATION WITH CHEMICAL FEED BUILDING CONTRACT PRIOR TO INSTALLATION.

PROJECT MANAGER: JESSA R. KAYNES, PE
CA P.W. WORKSHEET: 00848736, CUP-PLTS-PROPOSED-48-INCH-PCCP-TAP-STRUCTURE.DWG - P-2 - PLOTTED 2/7/2020 10:50 AM BY: RUGGLES, TIMOTHY



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Call before you dig.

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CITY OF FLINT
1101 S. SAGINAW STREET
FLINT, MI 48502
36" SECONDARY WATER SUPPLY
PROPOSED CITY OF FLINT METER VAULT
CONNECTION TO EXISTING 48" WATER MAIN

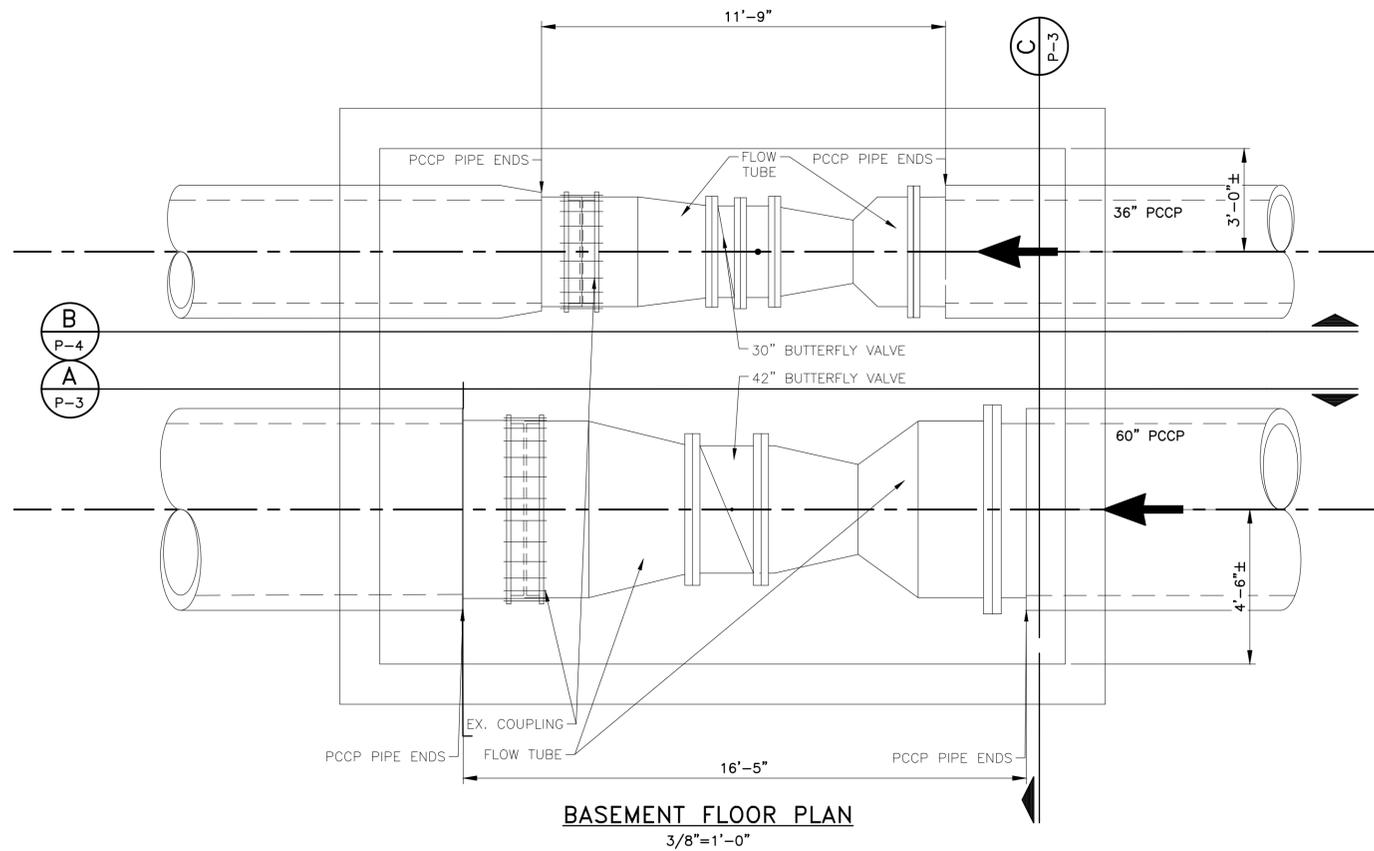
ISSUED FOR:	DATE:	BY:
JOB NO.	COF1068.01F	
SHEET	P-2	

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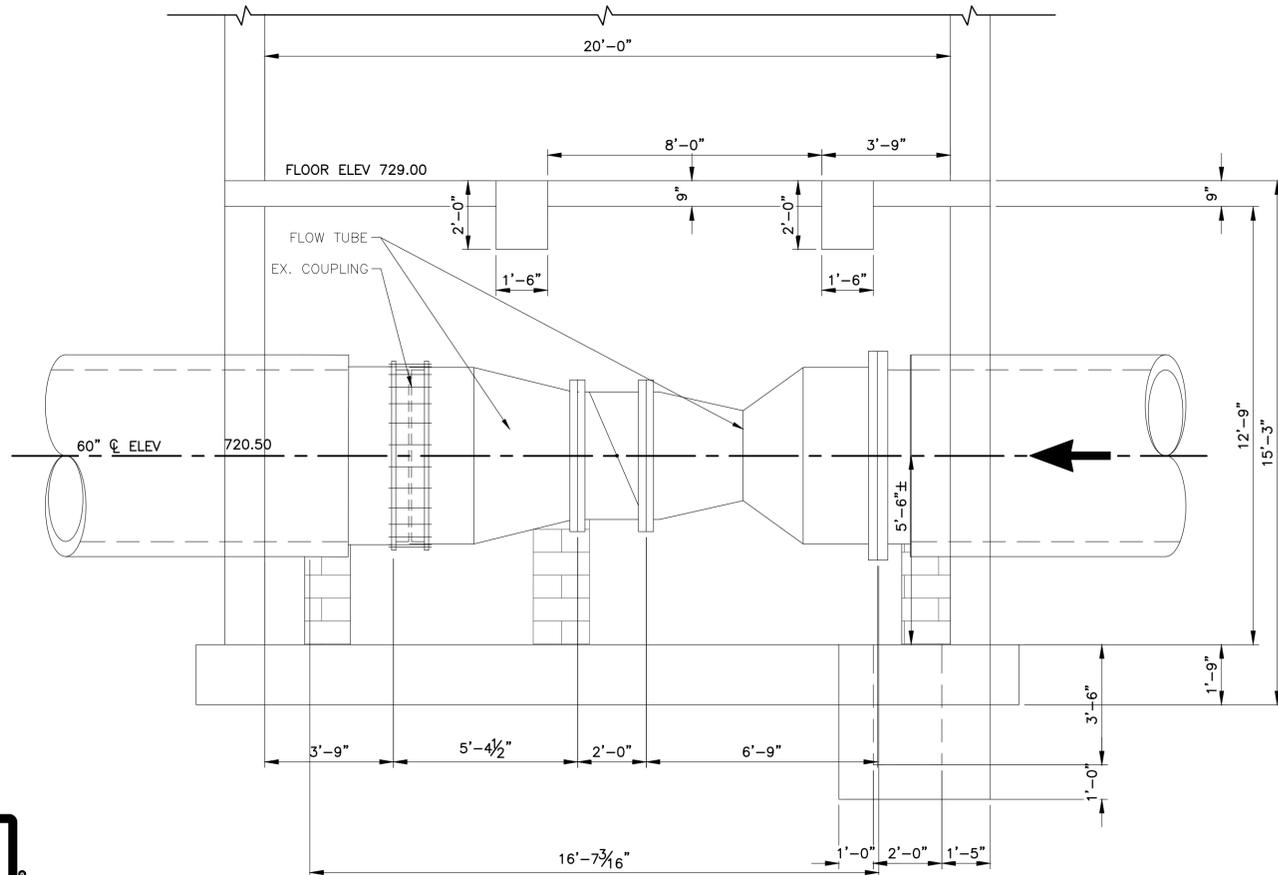
PROJECT MANAGER: Jason R. Kenyon, PE
 C:\P\WORK2\10948736\CUP-FLTS-COINT-STA-2-UPDATES.DWG - P-3 - PLOTTED 2/7/2020 10:50 AM BY: RUGGLES, TIMOTHY



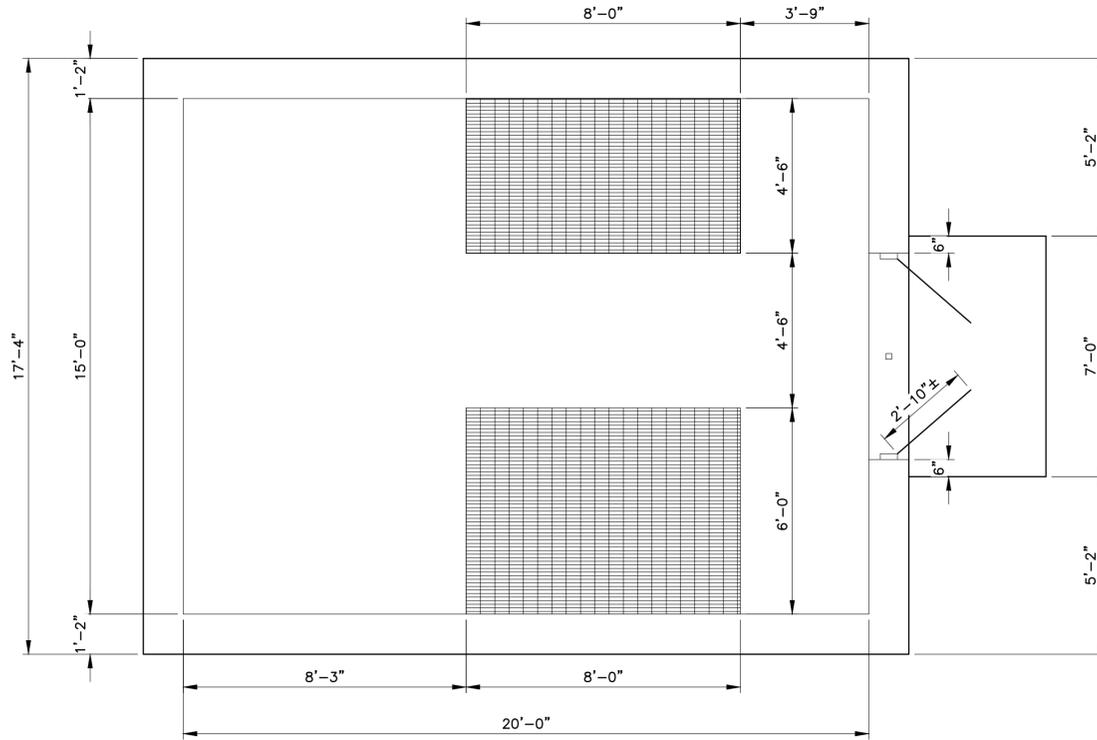
Know what's below.
 Call before you dig.



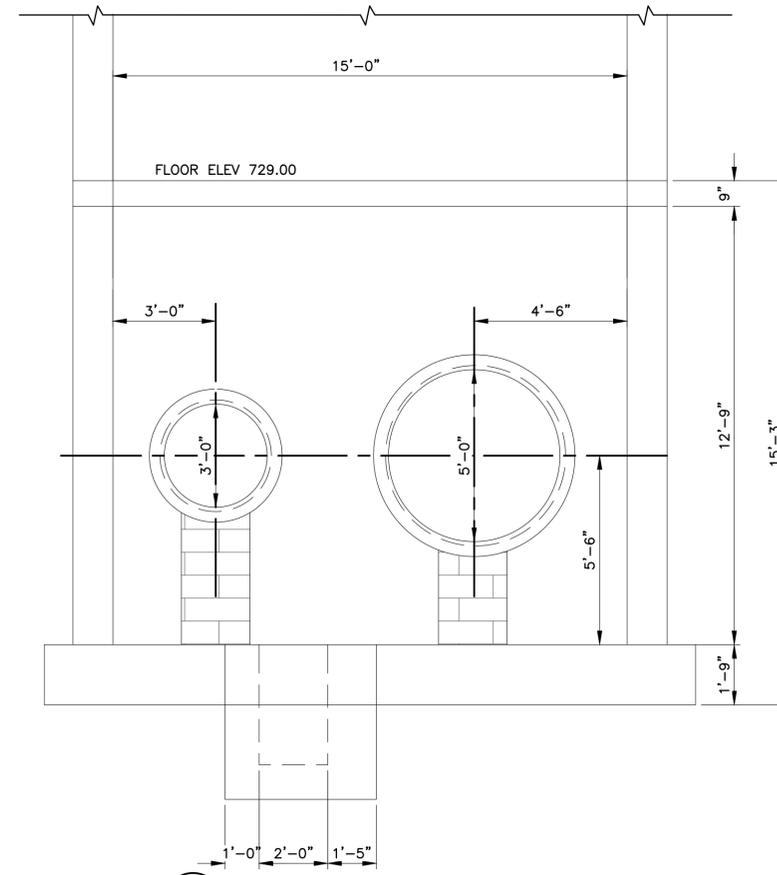
BASEMENT FLOOR PLAN
 3/8"=1'-0"



A SECTION A
 P-3 3/8"=1'-0"



GRADE FLOOR PLAN
 3/8"=1'-0"



C SECTION C
 P-3 3/8"=1'-0"

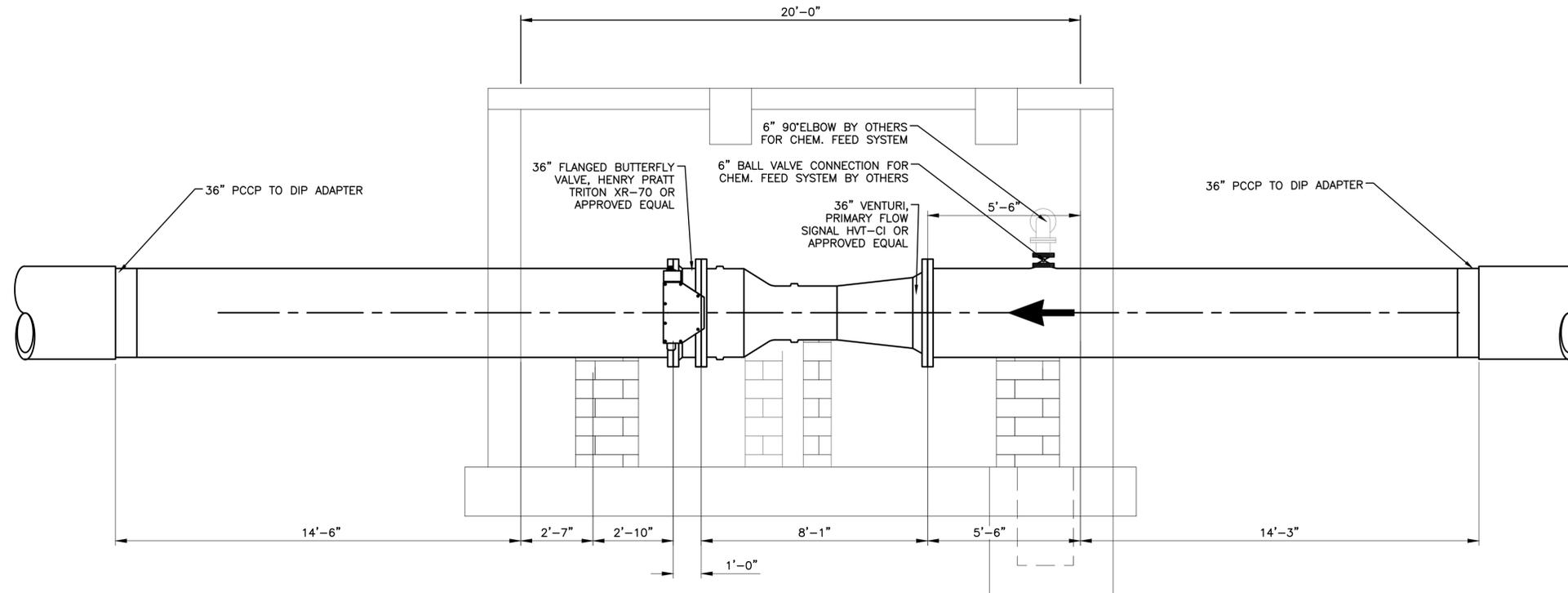
REV#	DATE	DESCRIPTION	BY

555 S. Saginaw Street, Suite 201
 Flint, MI 48502
 810.259.2565
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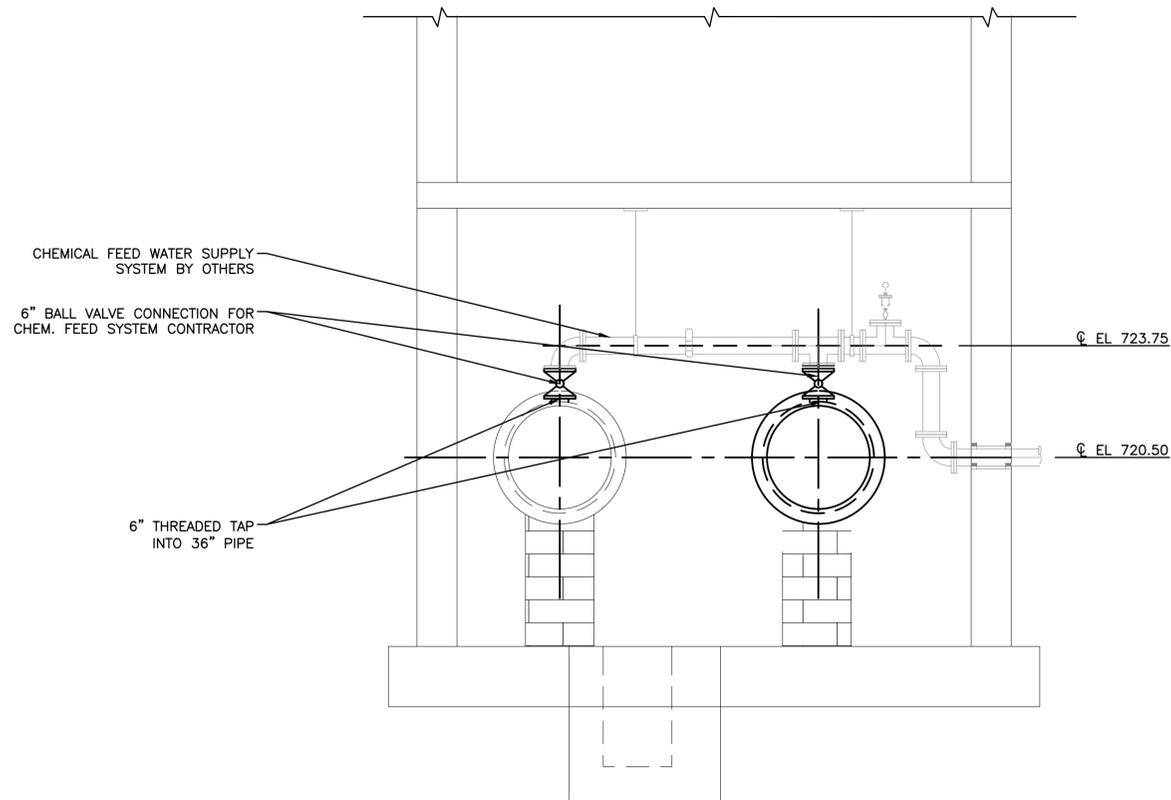
CITY OF FLINT
1101 S. SAGINAW STREET
FLINT, MI 48502
 36" SECONDARY WATER SUPPLY
 CONTROL STATION 2
 EXISTING CONDITIONS SHEET 1

ISSUED FOR:	DATE:	BY:
JOB NO. COF1068.01F		
SHEET P-3		

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B SECTION B
P-5 3/8"=1'-0"



C SECTION C
P-5 3/8"=1'-0"

PROJECT MANAGER: JESSA R. KAYNS, PE
CA:\PW\WORK\2\0948736\CUP-FLTS-COINT-STA-2-UPDATES.DWG - P-6 - PLOTTED 2/7/2020 10:50 AM BY: RUGGLES, TIMOTHY



Know what's below.
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CITY OF FLINT
1101 S. SAGINAW STREET
FLINT, MI 48502
36" SECONDARY WATER SUPPLY
CONTROL STATION 2
PROPOSED IMPROVEMENTS SHEET 2

ISSUED FOR: DATE: BY:

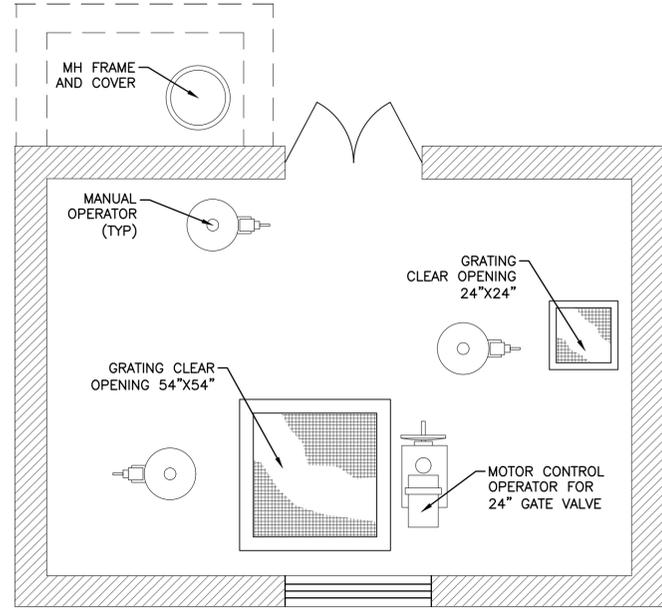
JOB NO.
COF1068.01F

SHEET

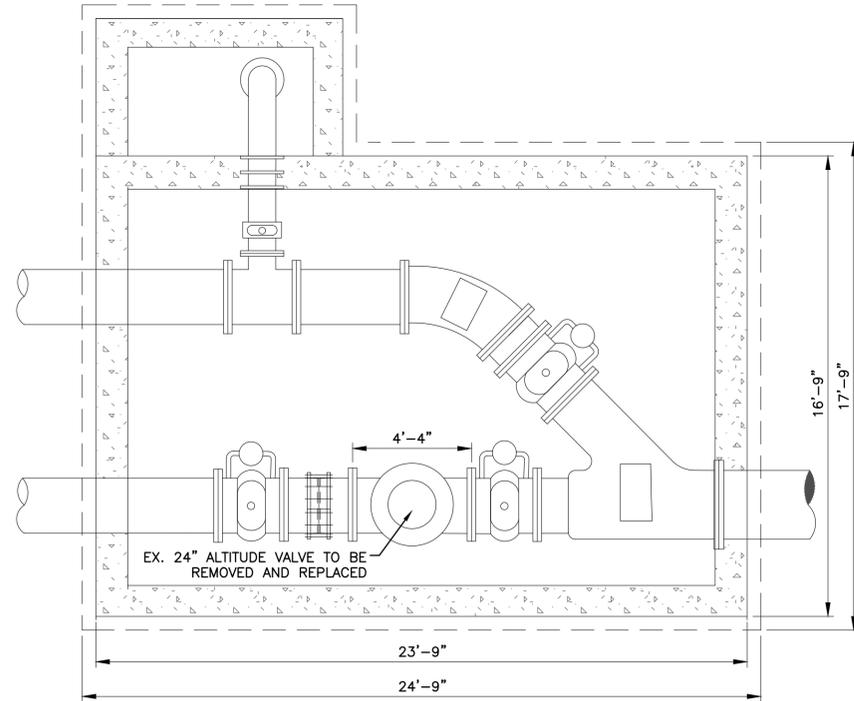
P-6

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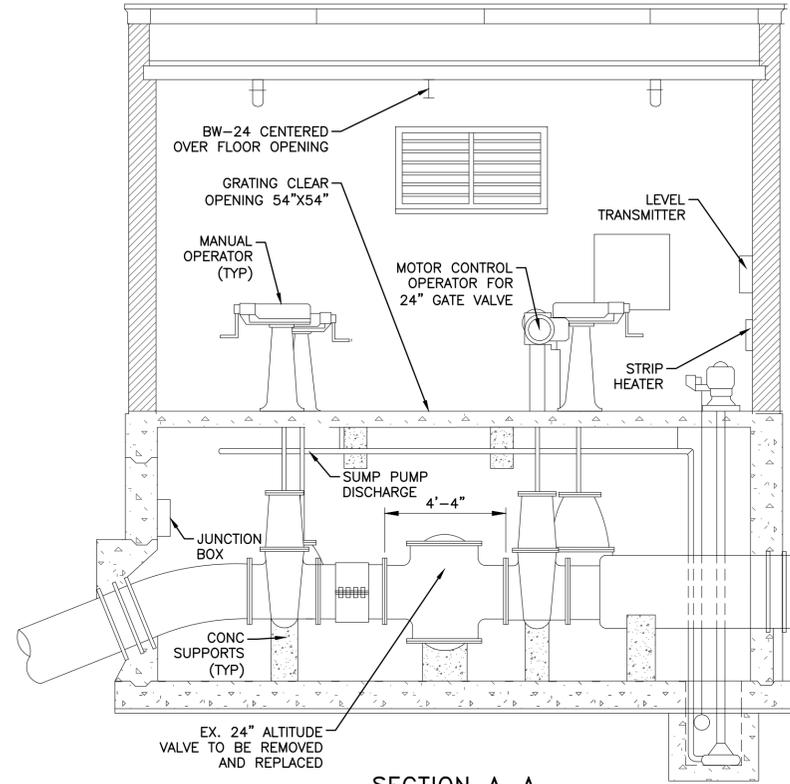
PROJECT MANAGER: Jason R. Kenyon, PE
 C:\P\WORK\2\10948736\CUP-PLTS-PRESSURE REDUCING PRT.DWG -- P-7 -- PLOTTED 2/17/2020 5:08 PM BY RUGGLES, TIMOTHY



FLOOR PLAN
 SCALE: 1:40



BASEMENT PLAN
 SCALE: 1:40



SECTION A-A
 SCALE: 1:40

NOTES:

1. CONTRACTOR SHALL COORDINATE WITH THE CITY OF FLINT WATER DEPARTMENT IN TO SHUT DOWN AND DRAIN THE ELEVATED STORAGE TANK PRIOR TO THE REMOVAL AND REPLACEMENT OF THE 24-INCH ALTITUDE VALVE LOCATED INSIDE THE BASEMENT OF THE TANK HOUSE. CONTRACTOR SHALL ALLOW THE CITY UP TO 2 WEEKS (14 CALENDAR DAYS) TO EMPTY THE TANK, AND THEREFORE SHALL PLAN ACCORDINGLY.
2. ONCE THE ELEVATED STORAGE TANK IS DRAINED, CONTRACTOR SHALL REMOVE AND REPLACE THE EXISTING 24-INCH ALTITUDE VALVE FROM THE TANK HOUSE BUILDING, ALONG WITH ITS ANCILLARY EQUIPMENT, WIRING, ETC.
3. CONTRACTOR SHALL THEN INSTALL A NEW 24-INCH DOUBLE-ACTING ALTITUDE VALVE, INCLUDING REQUIRED ANCILLARY EQUIPMENT, WIRING, ETC. THE VALVE SHALL BE MANUFACTURED BY ROSS VALVE MFG. CO., INC. OR A ENGINEER-APPROVED EQUAL.
4. REFER TO SHEET E.XX FOR INFORMATION RELATED TO THE ELECTRICAL AND CONTROL WIRING FOR THE NEW ALTITUDE VALVE.

REV#	DATE	DESCRIPTION	BY

555 S. Saginaw Street, Suite 201
 Flint, MI 48502
 810.235.2565
 www.wadetrिम.com



CITY OF FLINT
1101 S. SAGINAW STREET
FLINT, MI 48502
 36" SECONDARY WATER SUPPLY
 TANK HOUSE
 ALTITUDE VALVE REMOVAL & REPLACEMENT

ISSUED FOR: DATE: BY:

JOB NO.
 COF1068.01F

SHEET

P-7

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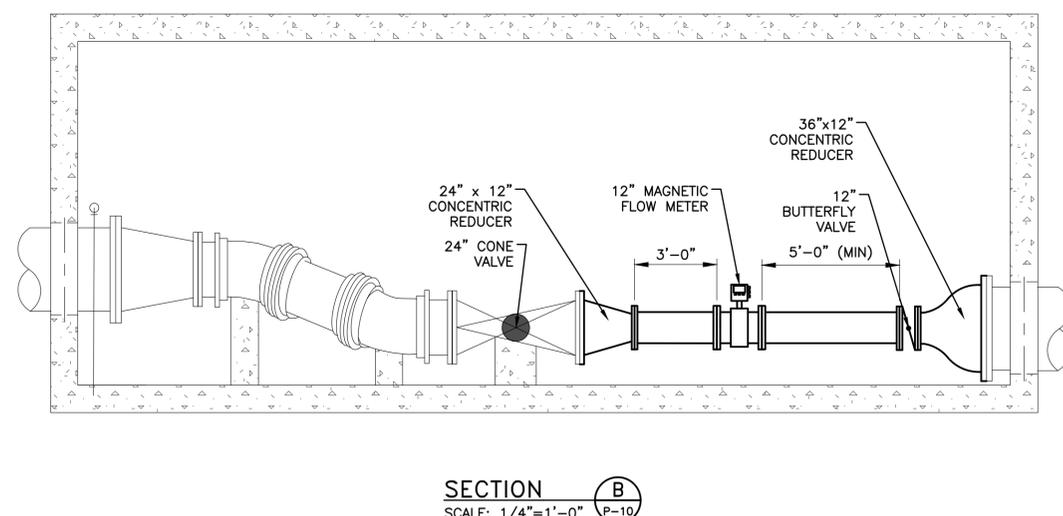
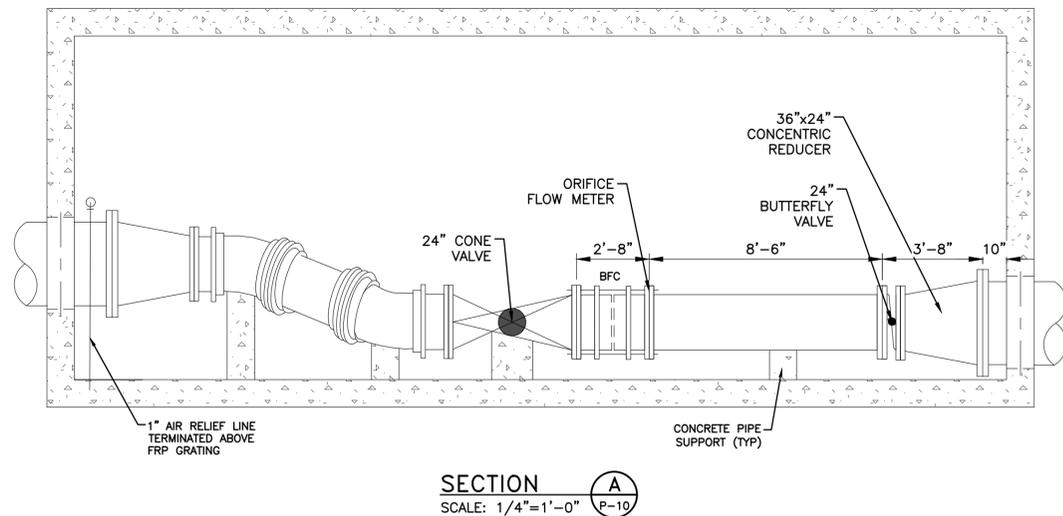
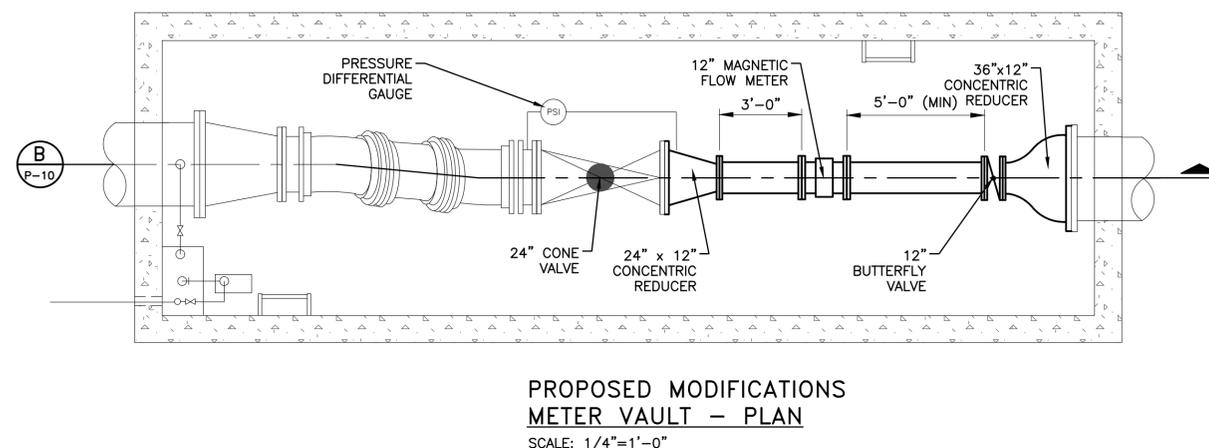
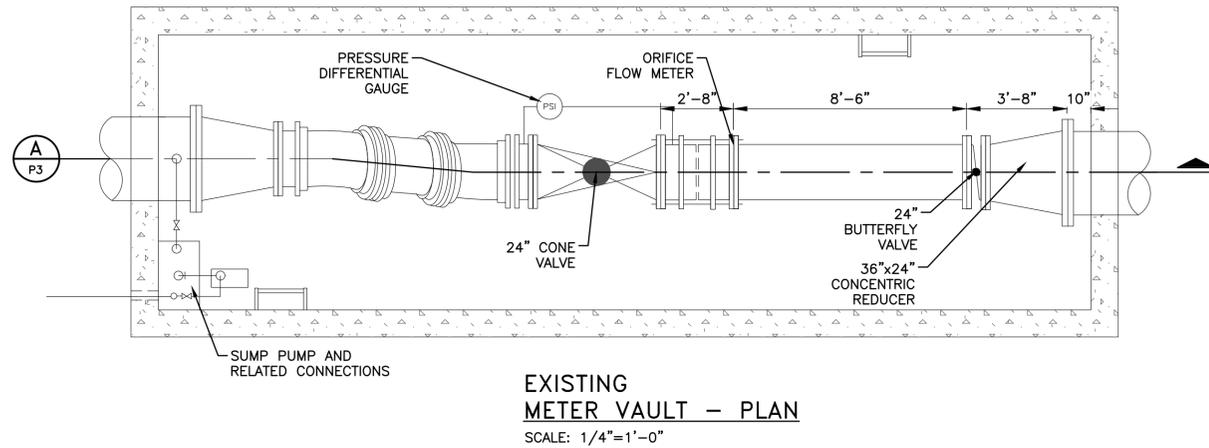
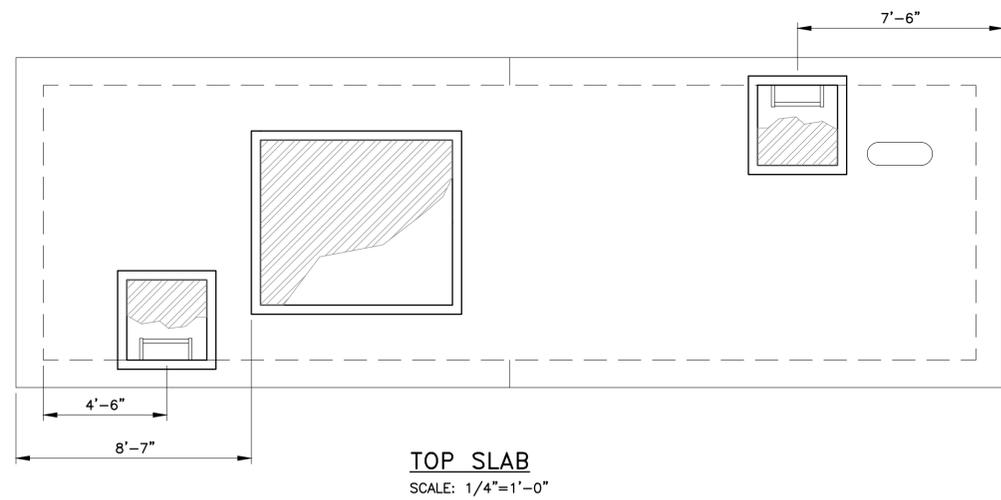


Know what's below.
 Call before you dig.

PROJECT MANAGER: Jason R. Kenyon, PE
 C:\P\WORK\2\10948736\CUP-PLTS-PRESSURE REDUCING PIT.DWG -- P-8 -- PLOTTED 2/17/2020 5:08 PM BY RUGGLES, TIMOTHY



Know what's below.
 Call before you dig.



- NOTES:**
1. CONTRACTOR SHALL COORDINATE WITH THE CITY OF FLINT WATER DEPARTMENT IN TO SHUT DOWN AND DRAIN THE LINE TO THE PRESSURE REDUCING PIT.. CONTRACTOR SHALL ALLOW THE CITY UP TO 1 WEEK (7 CALENDAR DAYS) TO EMPTY THE TANK, AND THEREFORE SHALL PLAN ACCORDINGLY.
 2. ONCE THE LINE IS DRAINED, CONTRACTOR SHALL REMOVE AND REPLACE THE EXISTING PIT PRIOR TO THE REMOVAL AND REPLACEMENT OF THE EXISTING 24-INCH PIPING AND VALVING INDICATED ON THIS SHEET, ALONG WITH ANY ANCILLARY EQUIPMENT, WIRING, ETC.
 3. CONTRACTOR SHALL THEN INSTALL A NEW 36-IN x 12-IN REDUCER, 12-INCH BUTTERFLY VALVE, 12-INCH MAGNETIC FLOW METER, 12-INCH PIPING, AND 24-IN x 12-IN REDUCER, INCLUDING REQUIRED ANCILLARY EQUIPMENT, WIRING, ETC.
 4. REFER TO SHEET E.XX FOR INFORMATION RELATED TO THE ELECTRICAL AND CONTROL WIRING FOR THE 12-INCH MAGNETIC FLOW METER.

REV#	DATE	DESCRIPTION	BY

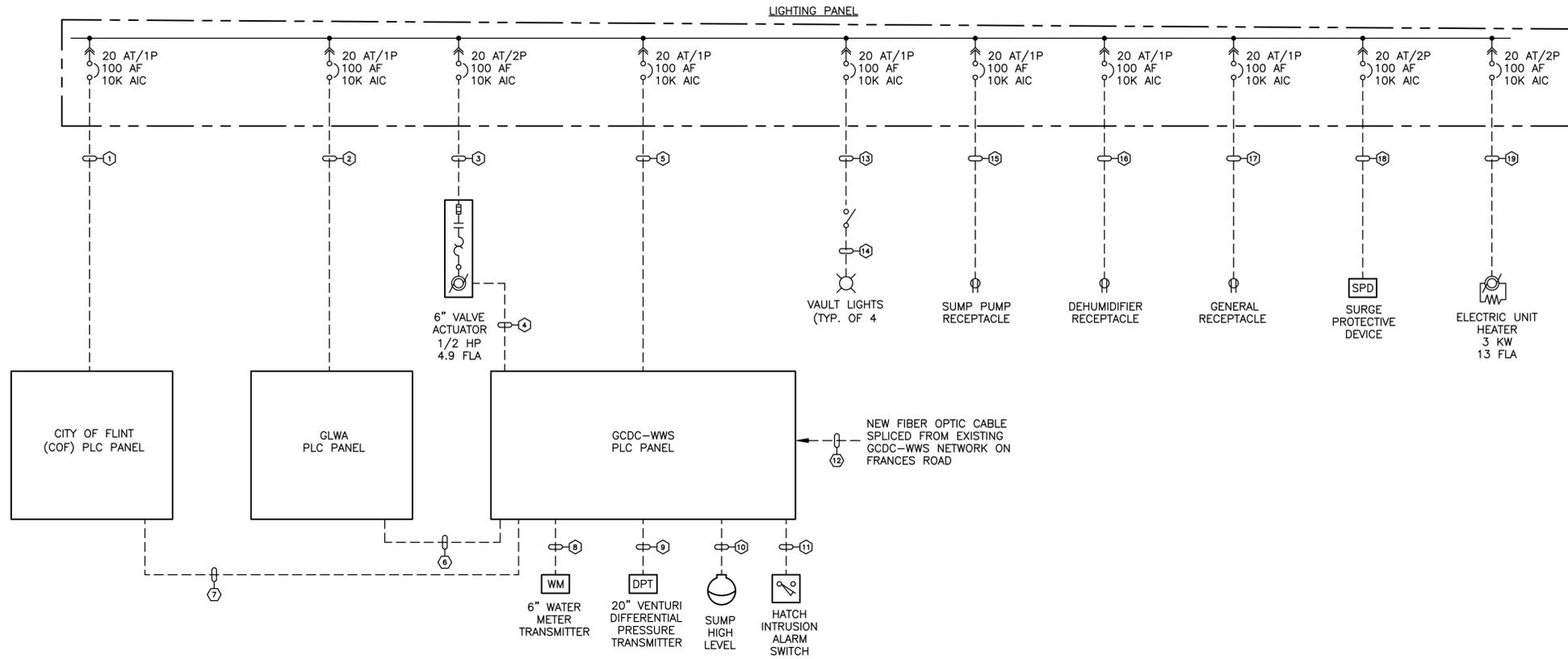
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CITY OF FLINT
1101 S. SAGINAW STREET
FLINT, MI 48502
 36" SECONDARY WATER SUPPLY
 RESERVOIR METER VAULT
 EX CONDITIONS & PROPOSED MODIFICATIONS

ISSUED FOR:	DATE:	BY:
JOB NO.	COF1068.01F	
SHEET	P-8	

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RISER DIAGRAM



CABLE SCHEDULE										
NO.	CONDUIT LABEL	FROM	TO	CONDUIT		CABLE		VOLT	TYPE	COMMENTS
				SIZE	TYPE	QTY. AND SIZE	TYPE			
1	COFPLC-PWR-1	LIGHTING PANEL	COF PLC PANEL	3/4"	RGS	2#12 + 1#12 GND	600	THWN-2	120V. POWER	
2	GLWAPLC-PWR-1	LIGHTING PANEL	GLWA PLC PANEL	3/4"	RGS	2#12 + 1#12 GND	600	THWN-2	120V. POWER	
3	VA6-PWR-1	LIGHTING PANEL	6" ACTUATOR	3/4"	RGS	2#12 + 1#12 GND	600	THWN-2	240V. POWER	
4	VA6-CTRL-1	GCDC PLC PANEL	6" ACTUATOR	3/4"	RGS	10#14	600	THWN-2	120V. CONTROL	
5	GCDCPLC-PWR-1	LIGHTING PANEL	GCDC PLC PANEL	3/4"	RGS	2#12 + 1#12 GND	600	THWN-2	120V. POWER	
6	GCDC/GLWA-COM-1	GLWA PLC PANEL	GCDC PLC PANEL	3/4"	RGS	1#16 TWIST. SHIELD PAIR	600	PVC	24V. 20" FLOW	
						1#16 TWIST. SHIELD PAIR	600	PVC	24V. 6" FLOW	
						1#16 TWIST. SHIELD PAIR	600	PVC	24V. 20" FLOW	
7	GCDC/COF-COM-1	COF PLC PANEL	GCDC PLC PANEL	3/4"	RGS	1#16 TWIST. SHIELD PAIR	600	PVC	24V. 6" FLOW	
						1#16 TWIST. SHIELD PAIR	600	PVC	24V. 6" FLOW	
						1#16 TWIST. SHIELD PAIR	600	PVC	24V. 20" FLOW	
8	WM6-CTRL-1	6" WM	GCDC PLC PANEL	3/4"	RGS	1#16 TWIST. SHIELD PAIR	600	PVC	24V. 6" FLOW	
9	DPT20-CTRL-1	20" DPT	GCDC PLC PANEL	3/4"	RGS	1#16 TWIST. SHIELD PAIR	600	PVC	24V. 20" FLOW	
10	GCDCPLC-CTRL-1	FLOAT SWITCH	GCDC PLC PANEL	3/4"	RGS	2#14	600	THWN-2	120V. CONTROL	
11	GCDCPLC-CTRL-2	LIMIT SWITCH	GCDC PLC PANEL	3/4"	RGS	2#14 + 1#14 GND	600	THWN-2	120V. CONTROL	
12	GCDC-COM-1	CCDC	GCDC PLC PANEL	2"	PVC	FIBER OPTIC CABLE	N/A	-	COMMUNICATION	
13	LIGHTS-PWR-1	LIGHTING PANEL	LIGHT SWITCH	3/4"	RGS	2#12 + 1#12 GND	600	THWN-2	120V. POWER	
14	LIGHTS-PWR-2	LIGHTS (TYP.)	LIGHT SWITCH	3/4"	RGS	2#12 + 1#12 GND	600	THWN-2	120V. POWER	
15	SPRECP-PWR-1	LIGHTING PANEL	SUMP PUMP REC.	3/4"	RGS	2#12 + 1#12 GND	600	THWN-2	120V. POWER	
16	DHRECP-PWR-1	LIGHTING PANEL	DEHUMID. RECP.	3/4"	RGS	2#12 + 1#12 GND	600	THWN-2	120V. POWER	
17	GENRECP-PWR-1	LIGHTING PANEL	GENERAL RECP.	3/4"	RGS	2#12 + 1#12 GND	600	THWN-2	120V. POWER	
18	SPD-PWR-1	LIGHTING PANEL	SPD	3/4"	RGS	3#12 + 1#12 GND	600	THWN-2	120V. POWER	
19	EUH-PWR-1	LIGHTING PANEL	UNIT HEATER	3/4"	RGS	2#12 + 1#12 GND	600	THWN-2	240V. POWER	

PANEL: LIGHTING PANEL										
100A BUS (10K AIC)										
VOLTAGE: 240/120 VAC PHASE: 1 WIRE: 3 MAIN: 100 AMP/2P TYPE: NEMA 4X STAINLESS STEEL MOUNTING: SURFACE										
CKT	BKR	LOAD	VA	PH	VA	LOAD	BKR	CKT		
1	20A/2P	ELECTRIC UNIT HEATER	1560	A	0	SURGE PROTECTIVE DEVICE (SPD)	20A/2P	2		
3			1560	B	0				4	
5	20A/2P	6" VALVE ACTUATOR	588	A	1176	SUMP PUMP RECEPTACLE	20A/1P	6		
7			588	B	600	DEHUMIDIFIER RECEPTACLE	20A/1P	8		
9	20A/1P	METER PIT LIGHTS	200	A	180	GENERAL RECEPTACLE	20A/1P*	10		
11	20A/1P	GCDC-WWS PLC PANEL	600	B	600	CITY OF FLINT PLC PANEL	20A/1P	12		
13	20A/1P	GLWA PLC PANEL	600	A	0	SPARE	20A/1P	14		
15	20A/1P	SPARE	0	B	0	SPARE	20A/1P	16		
17	SPACE	SPACE	0	A	0	SPACE	SPACE	18		
19	SPACE	SPACE	0	B	0	SPACE	SPACE	20		
TOTAL:			A=4304		B=3948					
TOTAL CONNECTED LOAD:			8252							

* GFCI CIRCUIT BREAKER

PROJECT MANAGER: JAMES B. SCHWAB, PE FIELD BCDW INFORMATION: E-2 - PLOTTED 2/7/2020 9:30 PM BY: SCHWAB, ALAN



Know what's below.
Call before you dig.

REV#	DATE	DESCRIPTION	BY

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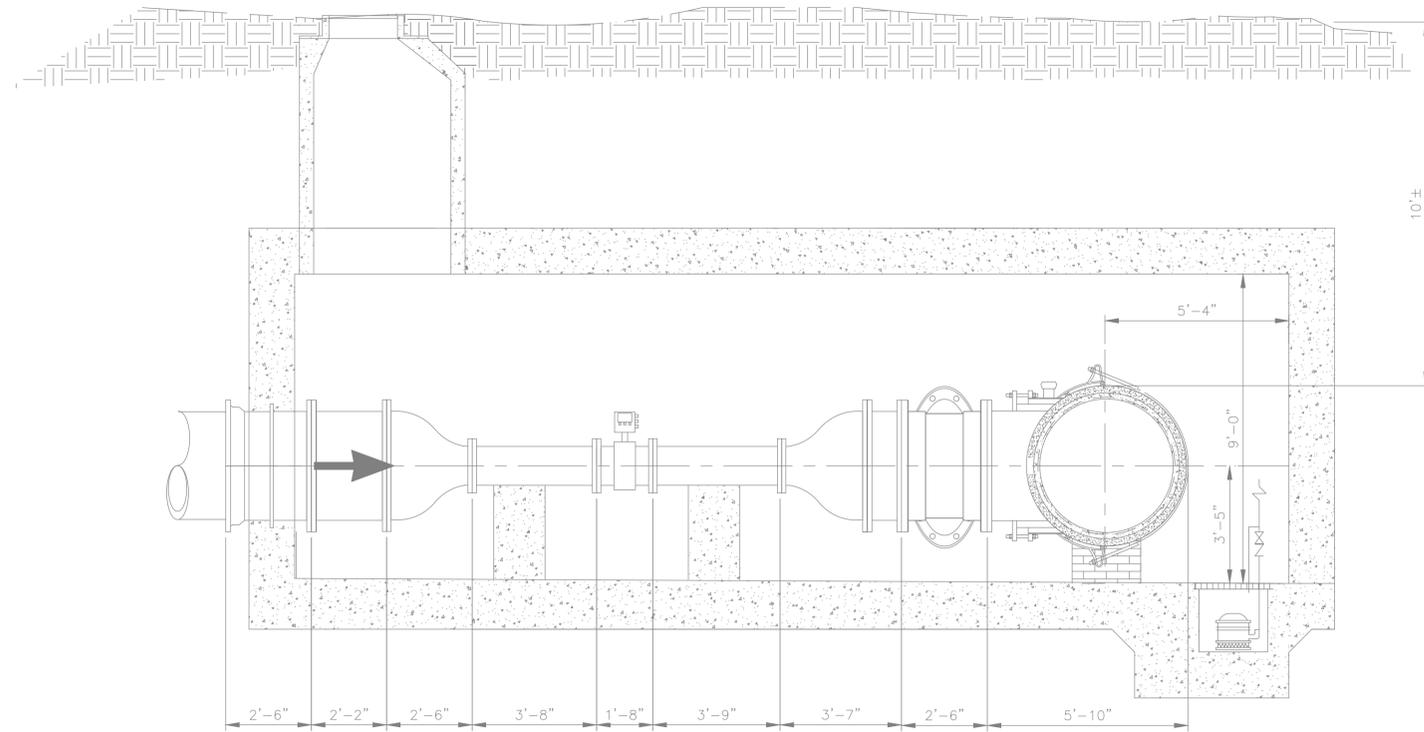
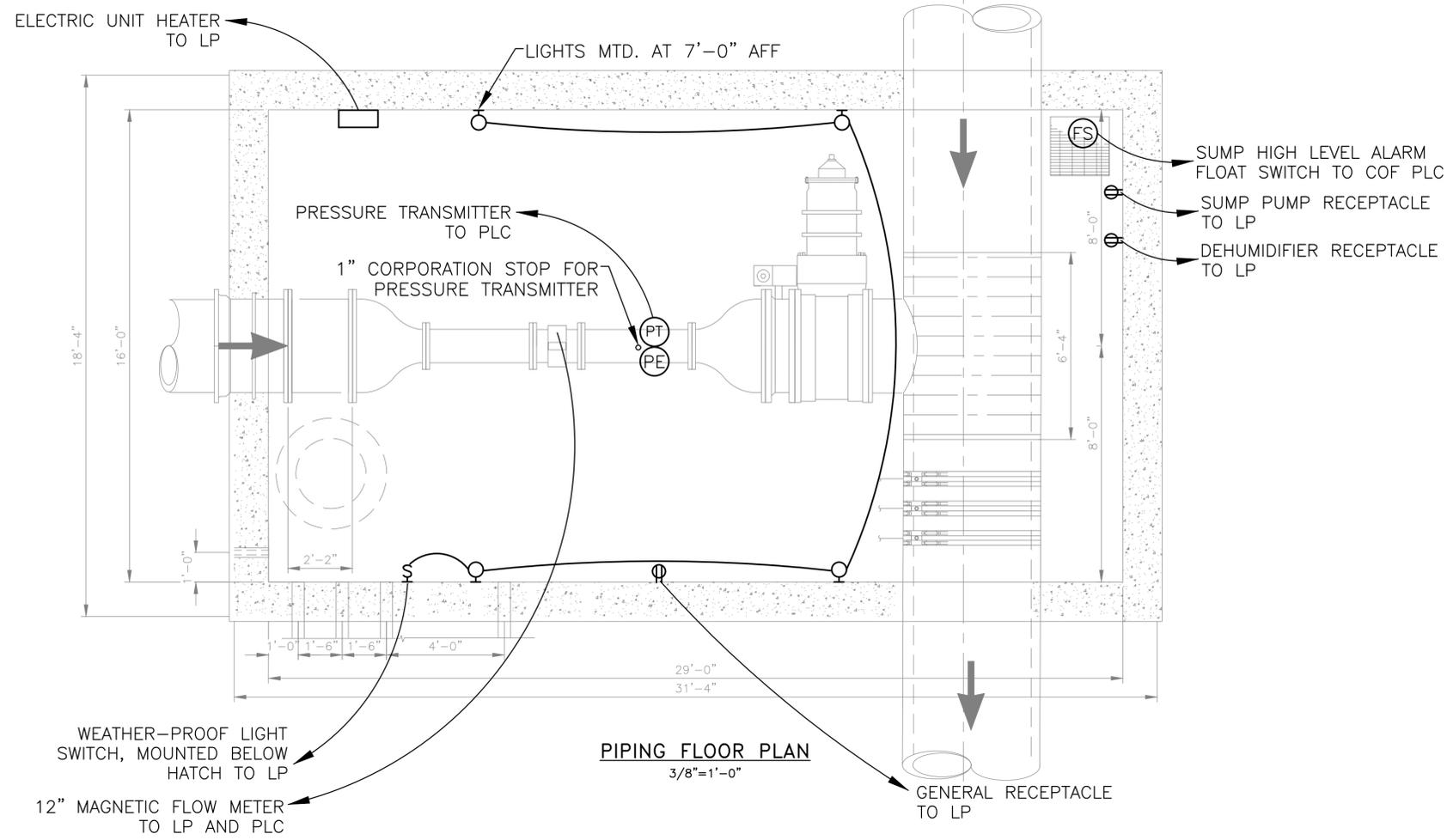
CITY OF FLINT
1101 S. SAGINAW STREET
FLINT, MI 48502
36" SECONDARY WATER SUPPLY
PROPOSED - GCDC METER VAULT AT FRANCES RD
ELECTRICAL DIAGRAM AND SCHEDULES

ISSUED FOR:	DATE:	BY:
JOB NO. COF1068.01F		
SHEET E-2		

PROJECT MANAGER: JESSIE B. KENYON, PE
 CA:\P\WORK\ASCHWAB\00248736\EUP-PLTS-PROPOSED-48-INCH-PCCP-TAP-STRUCTURE.DWG - E-4 - PLOTTED 2/7/2020 6:15 PM BY: SCHWAB, ALAN



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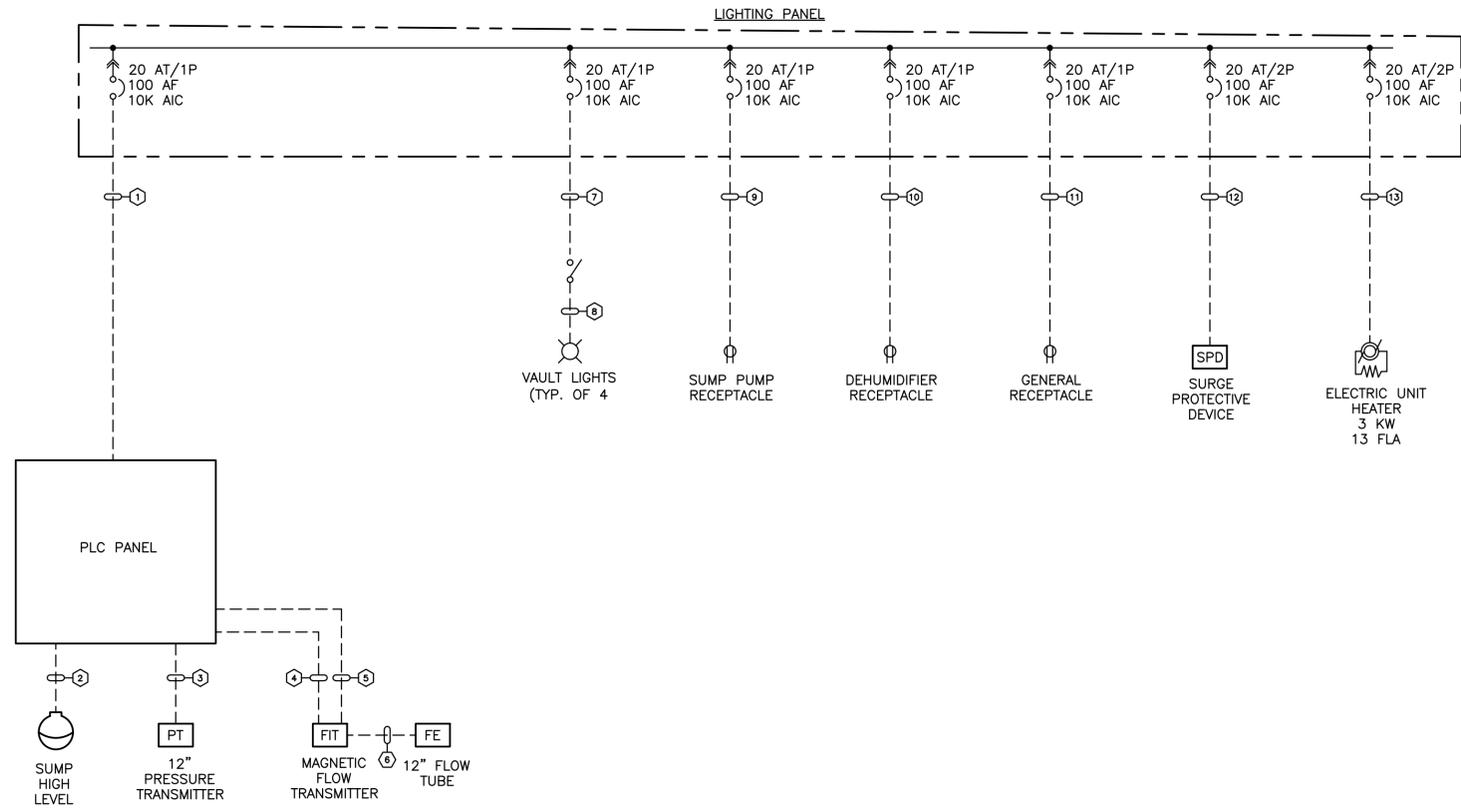
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 Flint, MI 48502
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 www.wadeftrim.com

CITY OF FLINT
1101 S. SAGINAW STREET
FLINT, MI 48502
 36" SECONDARY WATER SUPPLY
 PROPOSED CITY OF FLINT METER VAULT
 ELECTRICAL PLAN

ISSUED FOR:	DATE:	BY:
JOB NO. COF1068.01F		
SHEET E-4		

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RISER DIAGRAM



CABLE SCHEDULE									
NO.	CONDUIT LABEL	FROM	TO	CONDUIT		CABLE		VOLT	COMMENTS
				SIZE	TYPE	QTY. AND SIZE	TYPE		
1	PLC-PWR-1	LIGHTING PANEL	PLC PANEL	3/4"	RGS	2#12 + 1#12 GND	600 THWN-2	120V.	POWER
2	PLC-CTRL-1	FLOAT SWITCH	PLC PANEL	3/4"	RGS	2#14	600 THWN-2	120V.	CONTROL
3	PT12-CTRL-1	12" PT	PLC PANEL	3/4"	RGS	1#16 TWIST. SHIELD PAIR	600 PVC	24V.	12" PRESSURE
4	FIT-PWR-1	PLC PANEL	FLOW XMTR.	3/4"	RGS	2#12 + 1#12 GND	600 THWN-2	120V.	POWER
5	FIT-CTRL-1	PLC PANEL	FLOW XMTR.	3/4"	RGS	1#16 TWIST SHIELD PAIR	600 THWN-2	24V.	12" FLOW
6	FIT-CTRL-2	FLOW TUBE	FLOW XMTR.	3/4"	RGS	MANUFACTURER CABLE	600 THWN-2	600V.	POWER AND SIGNAL
7	LIGHTS-PWR-1	LIGHTING PANEL	LIGHT SWITCH	3/4"	RGS	2#12 + 1#12 GND	600 THWN-2	120V.	POWER
8	LIGHTS-PWR-2	LIGHTS (TYP.)	LIGHT SWITCH	3/4"	RGS	2#12 + 1#12 GND	600 THWN-2	120V.	POWER
9	SPRECP-PWR-1	LIGHTING PANEL	SUMP PUMP REC.	3/4"	RGS	2#12 + 1#12 GND	600 THWN-2	120V.	POWER
10	DHRECP-PWR-1	LIGHTING PANEL	DEHUMID. RECP.	3/4"	RGS	2#12 + 1#12 GND	600 THWN-2	120V.	POWER
11	GENRECP-PWR-1	LIGHTING PANEL	GENERAL RECP.	3/4"	RGS	2#12 + 1#12 GND	600 THWN-2	120V.	POWER
12	SPD-PWR-1	LIGHTING PANEL	SPD	3/4"	RGS	3#12 + 1#12 GND	600 THWN-2	120V.	POWER
13	EUH-PWR-1	LIGHTING PANEL	UNIT HEATER	3/4"	RGS	2#12 + 1#12 GND	600 THWN-2	240V.	POWER

PANEL: LIGHTING PANEL 100A BUS (10K AIC)									
VOLTAGE: 240/120 VAC PHASE: 1 WIRE: 3 MAIN: 100 AMP/2P TYPE: NEMA 4X STAINLESS STEEL MOUNTING: SURFACE									
CKT	BKR	LOAD	VA	PH	VA	LOAD	BKR	CKT	
1			1560	A	0			2	
3	20A/2P	ELECTRIC UNIT HEATER	1560	B	0	SURGE PROTECTIVE DEVICE (SPD)	20A/2P	4	
5	20A/1P	METER PIT LIGHTS	200	A	1176	SUMP PUMP RECEPTACLE	20A/1P	6	
7	20A/1P	CITY OF FLINT PLC PANEL	600	B	600	DEHUMIDIFIER RECEPTACLE	20A/1P	8	
9	20A/1P	SPARE	0	A	180	GENERAL RECEPTACLE	20A/1P*	10	
11	20A/1P	SPARE	0	B	0	SPARE	20A/1P	12	
13	SPACE	SPACE	0	A	0	SPARE	20A/1P	14	
15	SPACE	SPACE	0	B	0	SPACE	SPACE	16	
17	SPACE	SPACE	0	A	0	SPACE	SPACE	18	
19	SPACE	SPACE	0	B	0	SPACE	SPACE	20	
TOTAL:			A=3116		B=2760				
TOTAL CONNECTED LOAD:			5876						

* GFCI CIRCUIT BREAKER

PROJECT MANAGER: Jesse B. Kenney, PE
 C:\P\WORK\ASCHWAB\00948736\EUP-PLTS-PROPOSED-48-INCH-PCCP-TAP-STRUCTURE.DWG - E-5 - PLOTTED 2/7/2020 6:17 PM BY: SCHWAB, ALAN



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555 S. Saginaw Street, Suite 201
 Flint, MI 48902
 www.wadeftrim.com



CITY OF FLINT
 1101 S. SAGINAW STREET
 FLINT, MI 48902
 36" SECONDARY WATER SUPPLY
 PROPOSED CITY OF FLINT METER VAULT
 ELECTRICAL DIAGRAM AND SCHEDULES

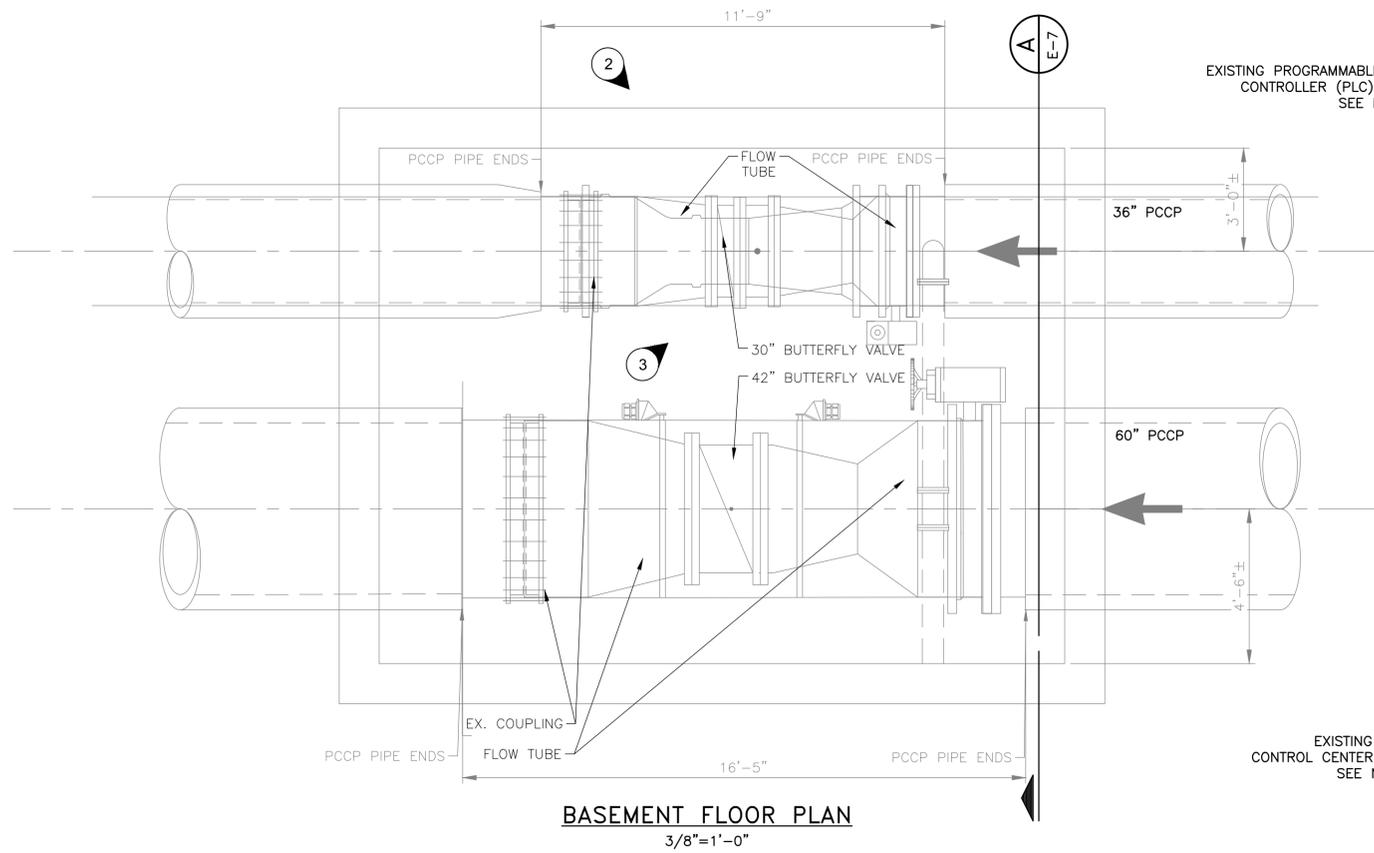
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JOB NO.	COF1068.01F	
SHEET	E-5	

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PROJECT MANAGER: Jesse B. Korynski, PE
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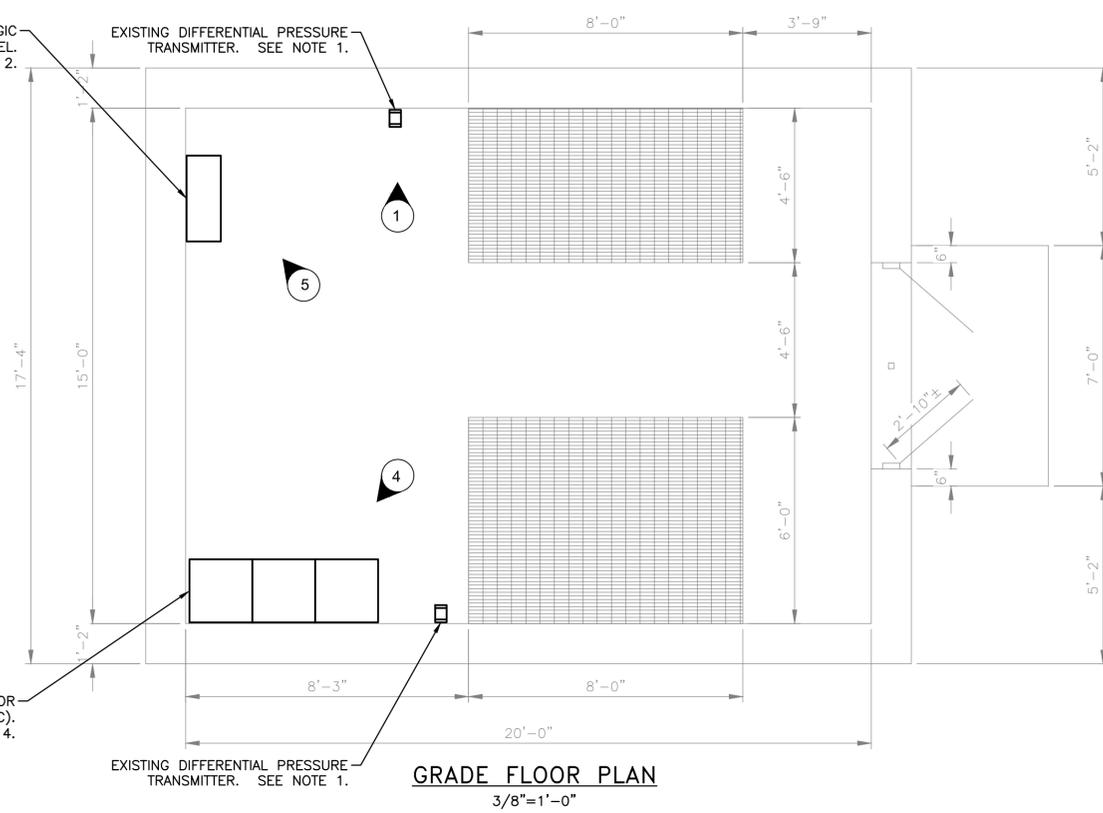
BASEMENT FLOOR PLAN
 3/8"=1'-0"

EXISTING PROGRAMMABLE LOGIC CONTROLLER (PLC) PANEL. SEE NOTE 2.

EXISTING DIFFERENTIAL PRESSURE TRANSMITTER. SEE NOTE 1.

EXISTING MOTOR CONTROL CENTER (MCC). SEE NOTE 4.

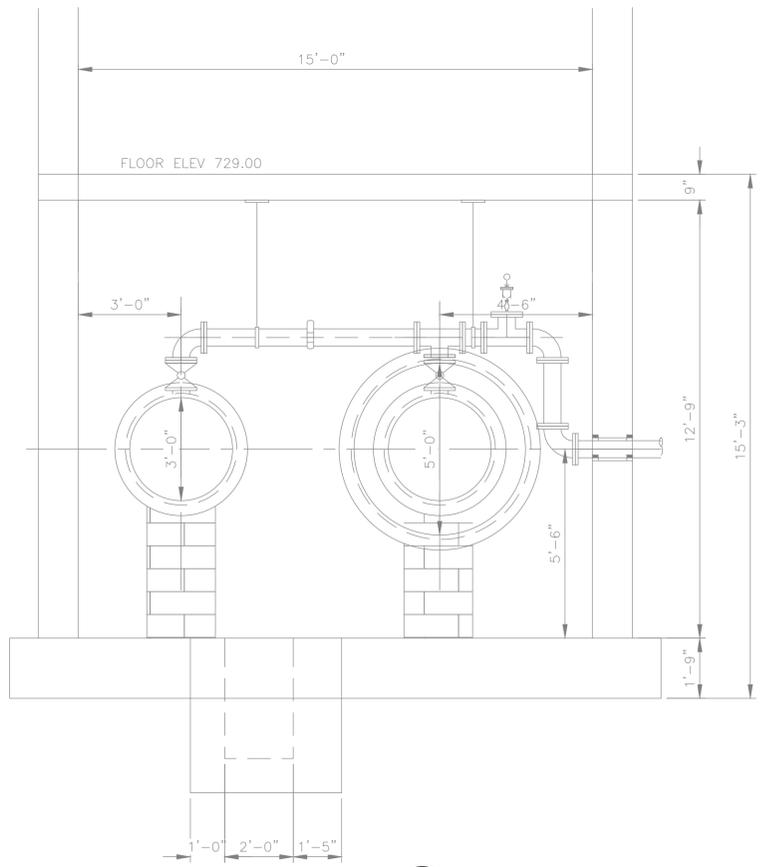
EXISTING DIFFERENTIAL PRESSURE TRANSMITTER. SEE NOTE 1.



GRADE FLOOR PLAN
 3/8"=1'-0"

X REFERS TO A NUMBERED PICTURE. THE DIRECTION OF THE ARROW INDICATES THE CAMERA ANGLE. SEE SHEET E-8 FOR PICTURES.

- NOTES:**
- 1** EXISTING DIFFERENTIAL PRESSURE TRANSMITTER: REPLACE EXISTING DIFFERENTIAL PRESSURE TRANSMITTER, 3-WAY VALVE MANIFOLD, AND PRESSURE GAUGES. REPLACE 1/2" COPPER PIPING FROM THE PRESSURE TRANSMITTER TO THE NEW VENTURI. REPLACE THE EXISTING WIRING FROM THE PRESSURE TRANSMITTER TO THE PLC PANEL. TYPICAL FOR 2 LOCATIONS.
 - 2** EXISTING PLC PANEL: TERMINATE NEW WIRING FOR THE DIFFERENTIAL PRESSURE TRANSMITTERS AND BUTTERFLY VALVE ACTUATORS. PROGRAM THE ALLEN-BRADLEY SLC 5/04 PROCESSOR TO CONTROL THE TWO BUTTERFLY VALVE ACTUATORS AND RE-SCALE THE PRESSURE TRANSMITTER SIGNALS IF NEEDED.
 - 3** EXISTING MOTOR CONTROL CENTER: INSTALL NEW 20A/3P FEEDER FUSED DISCONNECT SWITCH BUCKET INTO THE EXISTING ALLEN-BRADLEY CENTERLINE MCC FOR THE 60" VALVE ACTUATOR.



A SECTION A
 E-7 3/8"=1'-0"

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CITY OF FLINT
1101 S. SAGINAW STREET
FLINT, MI 48502
 36" SECONDARY WATER SUPPLY CONTROL STATION 2
 ELECTRICAL PLAN

ISSUED FOR: DATE: BY:

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COF1068.01F

SHEET
E-7

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REPLACE THE EXISTING DIFFERENTIAL PRESSURE TRANSMITTER, 3-WAY MANIFOLD VALVE, GAUGES, AND 1/2" COPPER PIPING CONDUIT, AND WIRING.

PRESSURE TRANSMITTER
TYPICAL OF 2

1
E-7

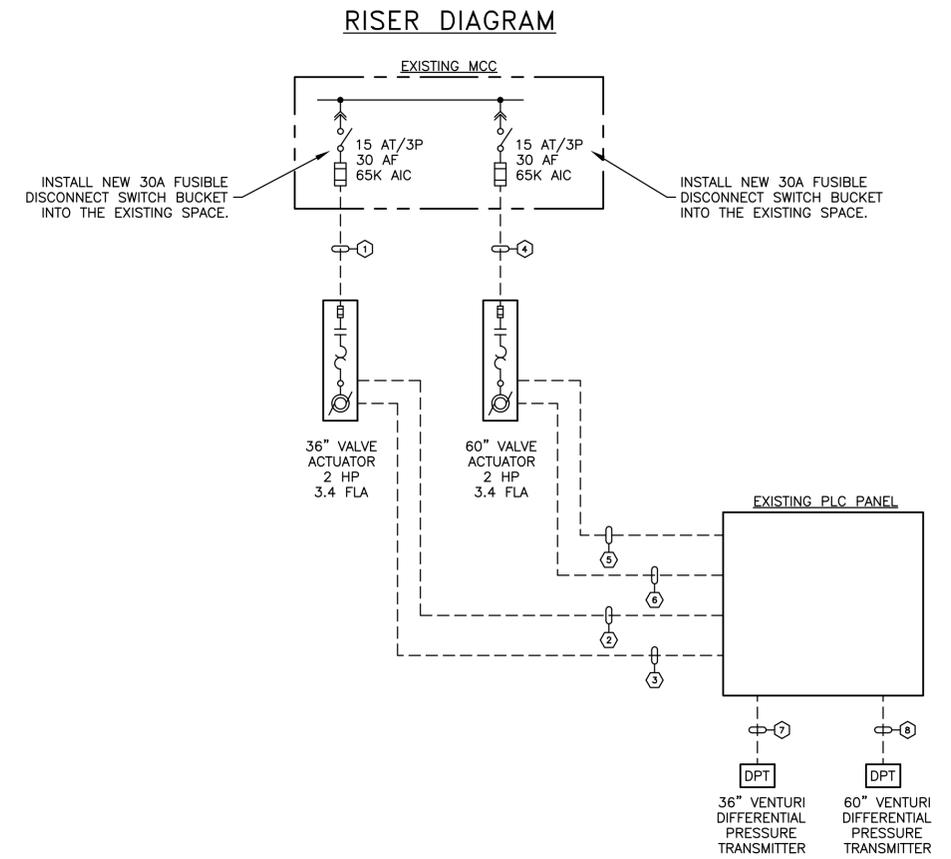


REPLACE THE EXISTING 60" VALVE ACTUATOR, CONDUIT, AND WIRING.

REPLACE EXISTING 36" VALVE ACTUATOR, CONDUIT, AND WIRING.

VALVE ACTUATORS

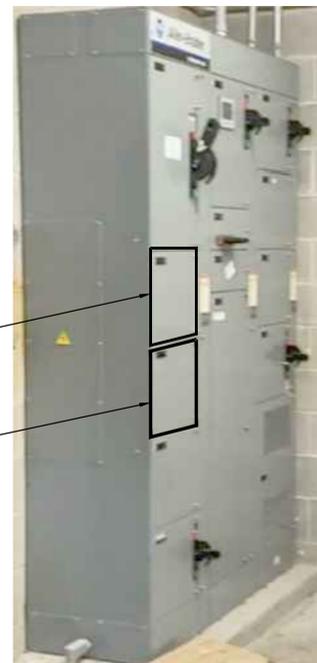
2
E-7



REPLACE EXISTING 36" VALVE ACTUATOR, CONDUIT, AND WIRING.

VALVE ACTUATOR

3
E-7



INSTALL A NEW 1.0 SPACE FACTOR (12") MCC BUCKET WITH 30 AMP FUSIBLE DISCONNECT SWITCH TO FEED THE 36" VALVE ACTUATOR.

INSTALL A NEW 1.0 SPACE FACTOR (12") MCC BUCKET WITH 30 AMP FUSIBLE DISCONNECT SWITCH TO FEED THE 60" VALVE ACTUATOR.

MOTOR CONTROL CENTER

4
E-7

CABLE SCHEDULE									
NO.	CONDUIT LABEL	FROM	TO	CONDUIT		CABLE			
				SIZE	TYPE	QTY. AND SIZE	VOLT	TYPE	COMMENTS
1	VA36-PWR-1	MCC DISCONNECT	36" ACTUATOR	3/4"	RGS	3#10 + 1#10 GND	600	THWN-2	480V. POWER
2	VA36-CTRL-1	PLC PANEL	36" ACTUATOR	3/4"	RGS	2#14	600	THWN-2	120V. ACTUATOR IN REMOTE
						2#14	600	THWN-2	120V. ACTUATOR IN REMOTE
3	VA36-CTRL-2	PLC PANEL	36" ACTUATOR	3/4"	RGS	1#16 TWIST. SHIELD PAIR	600	PVC	24V. ACTUATOR POS SETPOINT
4	VA60-PWR-1	MCC DISCONNECT	60" ACTUATOR	3/4"	RGS	3#10 + 1#10 GND	600	THWN-2	480V. POWER
						2#14	600	THWN-2	120V. ACTUATOR IN REMOTE
5	VA60-CTRL-1	PLC PANEL	60" ACTUATOR	3/4"	RGS	2#14	600	THWN-2	120V. ACTUATOR IN REMOTE
						2#14	600	THWN-2	120V. ACTUATOR IN REMOTE
6	VA60-CTRL-2	PLC PANEL	60" ACTUATOR	3/4"	RGS	1#16 TWIST. SHIELD PAIR	600	PVC	24V. ACTUATOR POS SETPOINT
7	DP36-CTRL-1	PLC PANEL	36" DPT	3/4"	RGS	1#16 TWIST. SHIELD PAIR	600	PVC	24V. 36" FLOW
						1#16 TWIST. SHIELD PAIR	600	PVC	24V. 60" FLOW
8	DP60-CTRL-1	PLC PANEL	60" DPT	3/4"	RGS	1#16 TWIST. SHIELD PAIR	600	PVC	24V. 60" FLOW



PLC PANEL

5
E-7

PROJECT MANAGER: Jesse B. Korynski, PE
CA:\P\WORK\ASCHWAB\00948736\EUP-PLTS-CONT-STA-2-UPDATES.DWG - E-8 - PLOTTED 2/9/2020 11:02 PM BY SCHWAB, ALAN
FIELD BOOK INFORMATION:
811



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1101 S. SAGINAW STREET
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36" SECONDARY WATER SUPPLY
CONTROL STATION 2
PHOTOS AND DIGRAMS

ISSUED FOR: DATE: BY:

JOB NO.
COF1068.01F

SHEET

E-8

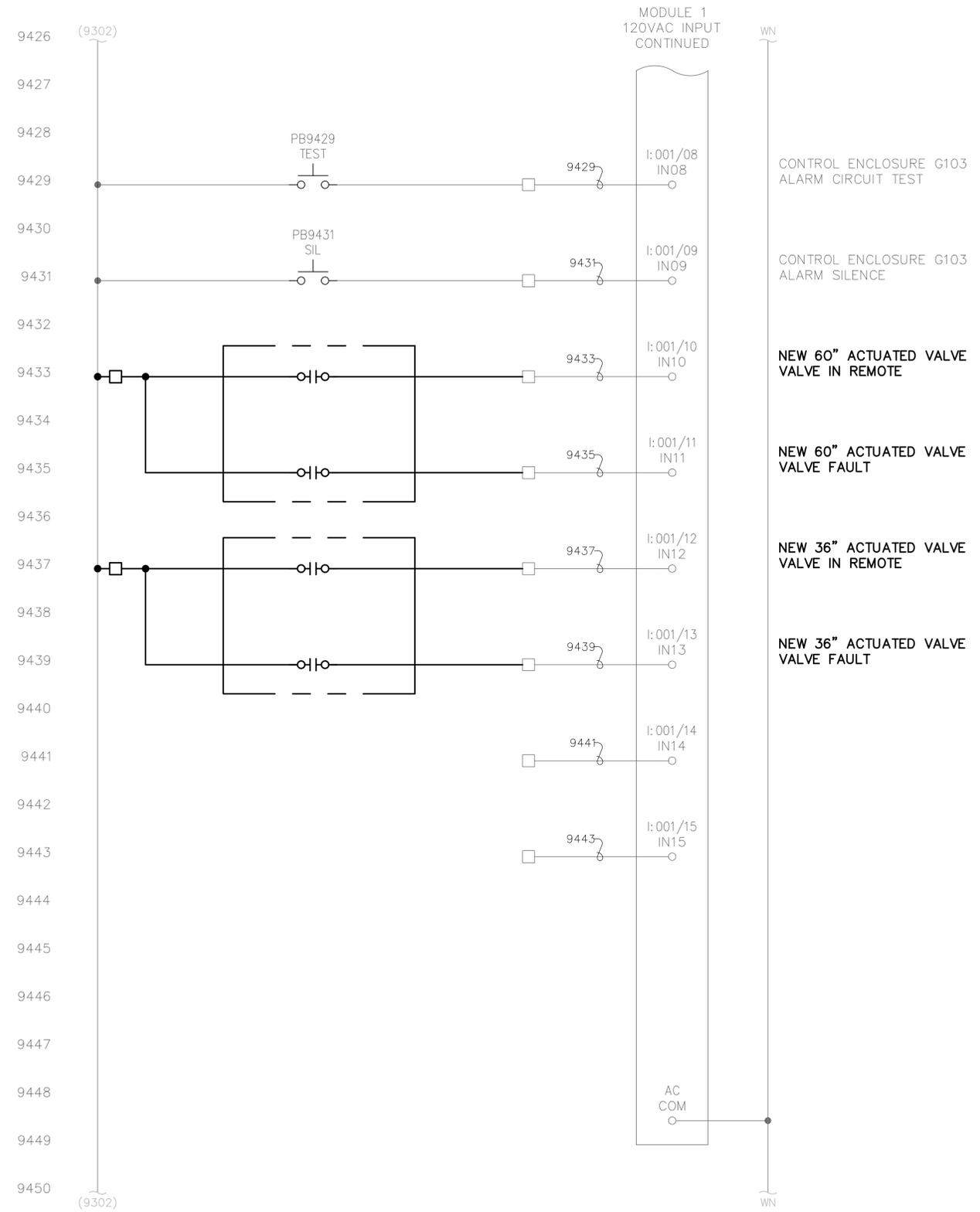
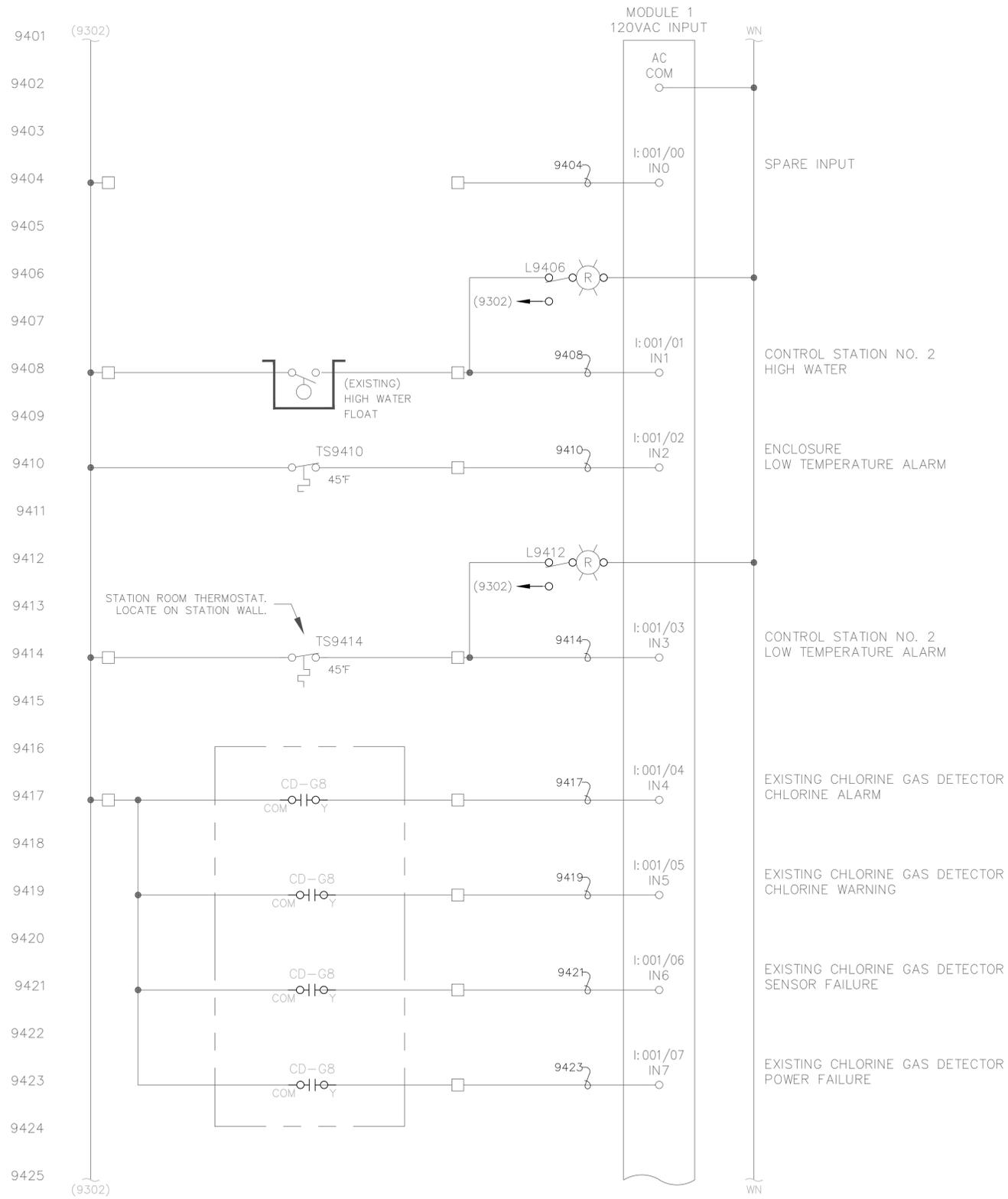
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CITY OF FLINT
1101 S. SAGINAW STREET
FLINT, MI 48502
 36" SECONDARY WATER SUPPLY
 CONTROL STATION 2
 PLC DIGITAL INPUT MODIFICATIONS

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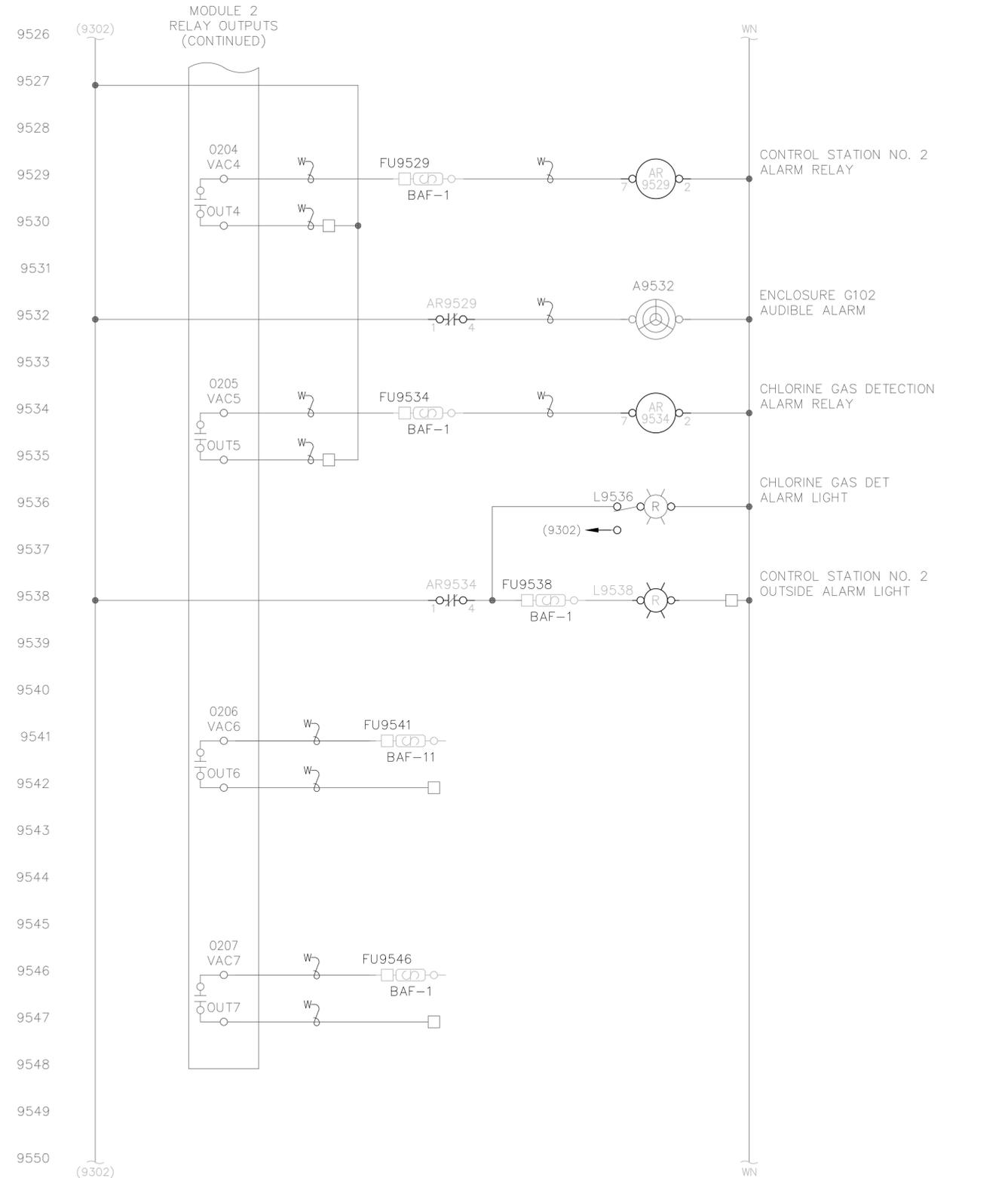
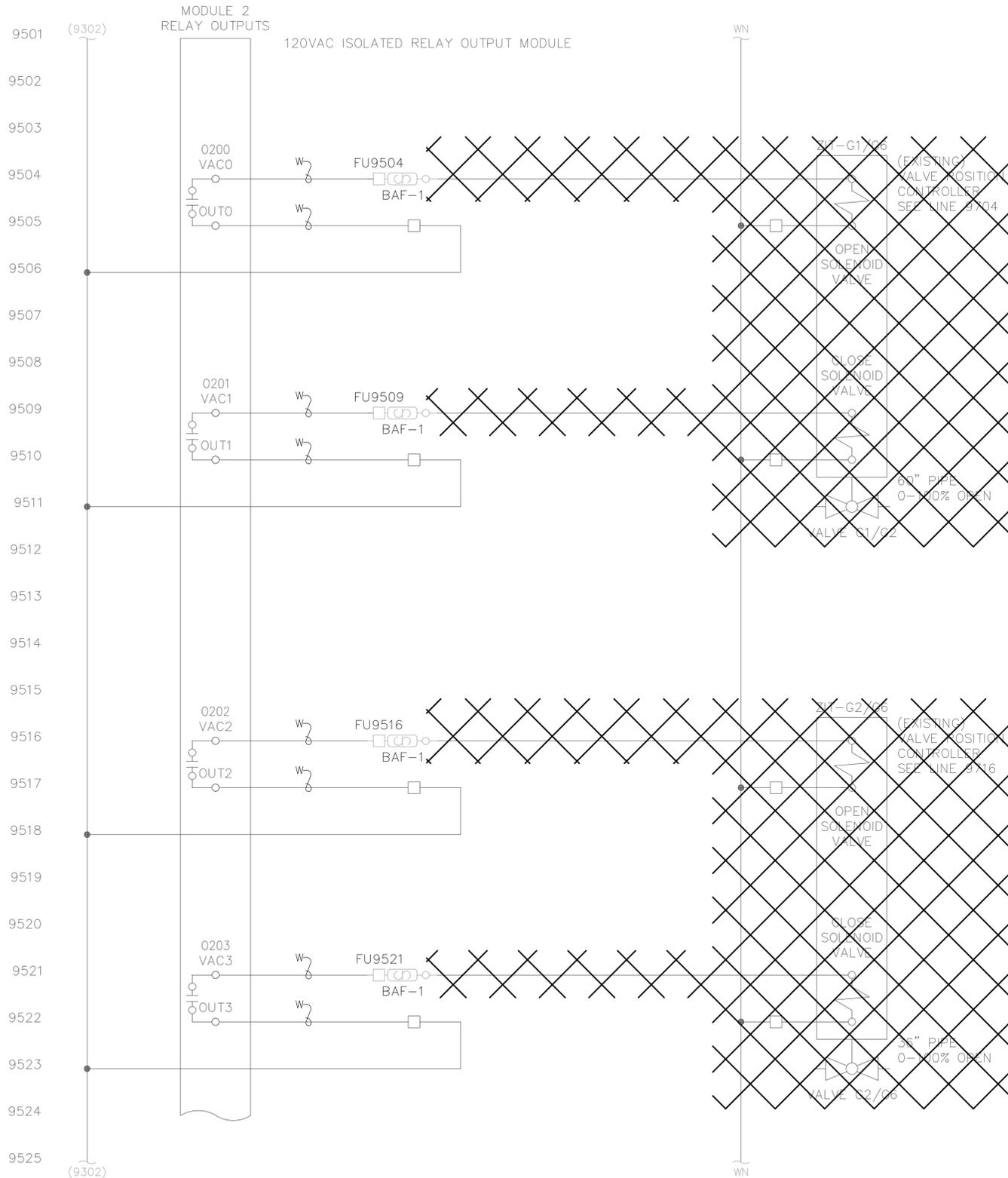
SHEET
F-9

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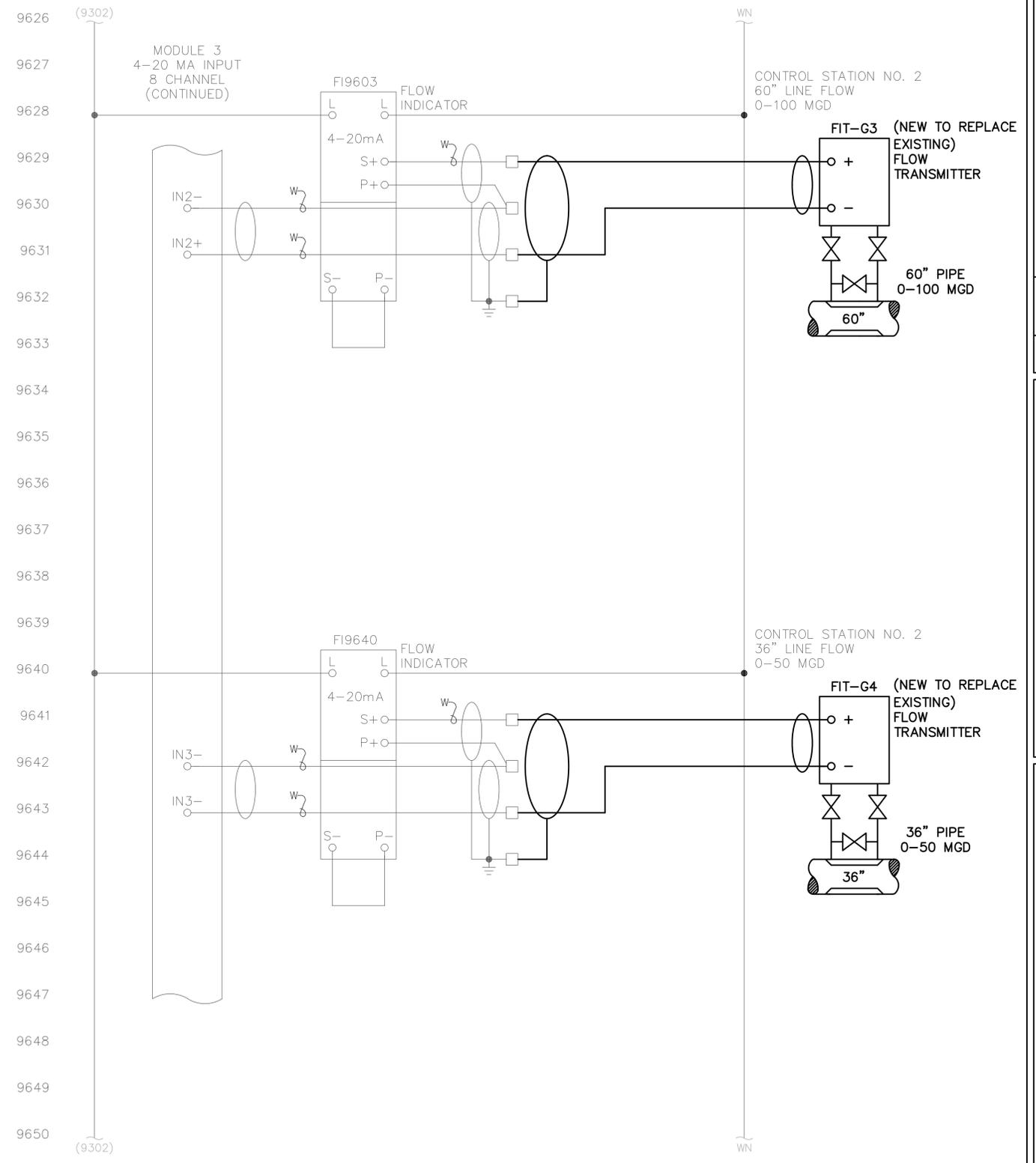
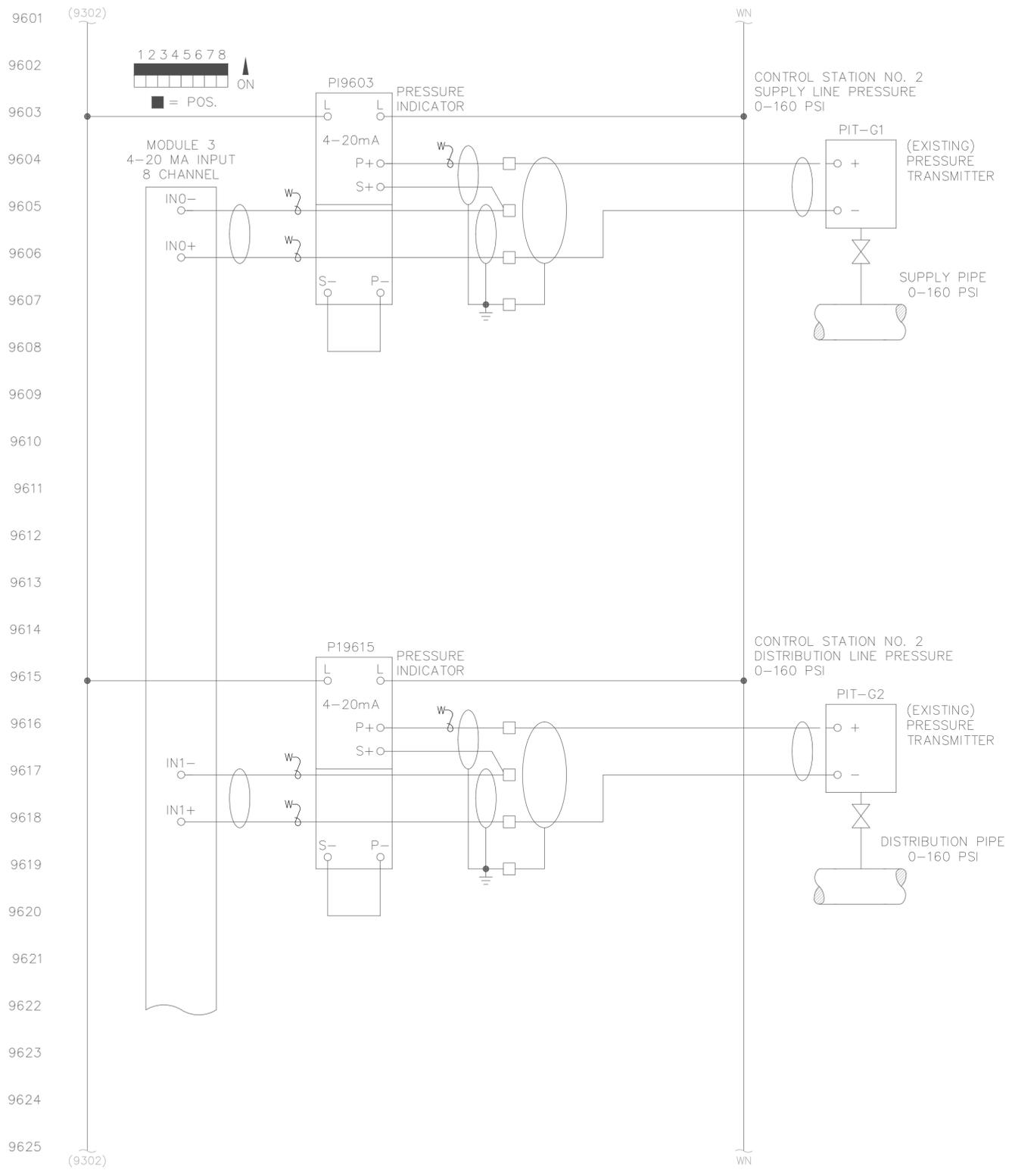
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CITY OF FLINT
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FLINT, MI 48502
 36" SECONDARY WATER SUPPLY
 CONTROL STATION 2
 PLC DIGITAL OUTPUT MODIFICATIONS

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CITY OF FLINT
1101 S. SAGINAW STREET
FLINT, MI 48502
 36" SECONDARY WATER SUPPLY
 CONTROL STATION 2
 PLC ANALOG INPUT MODIFICATIONS

ISSUED FOR: DATE: BY:

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E-11

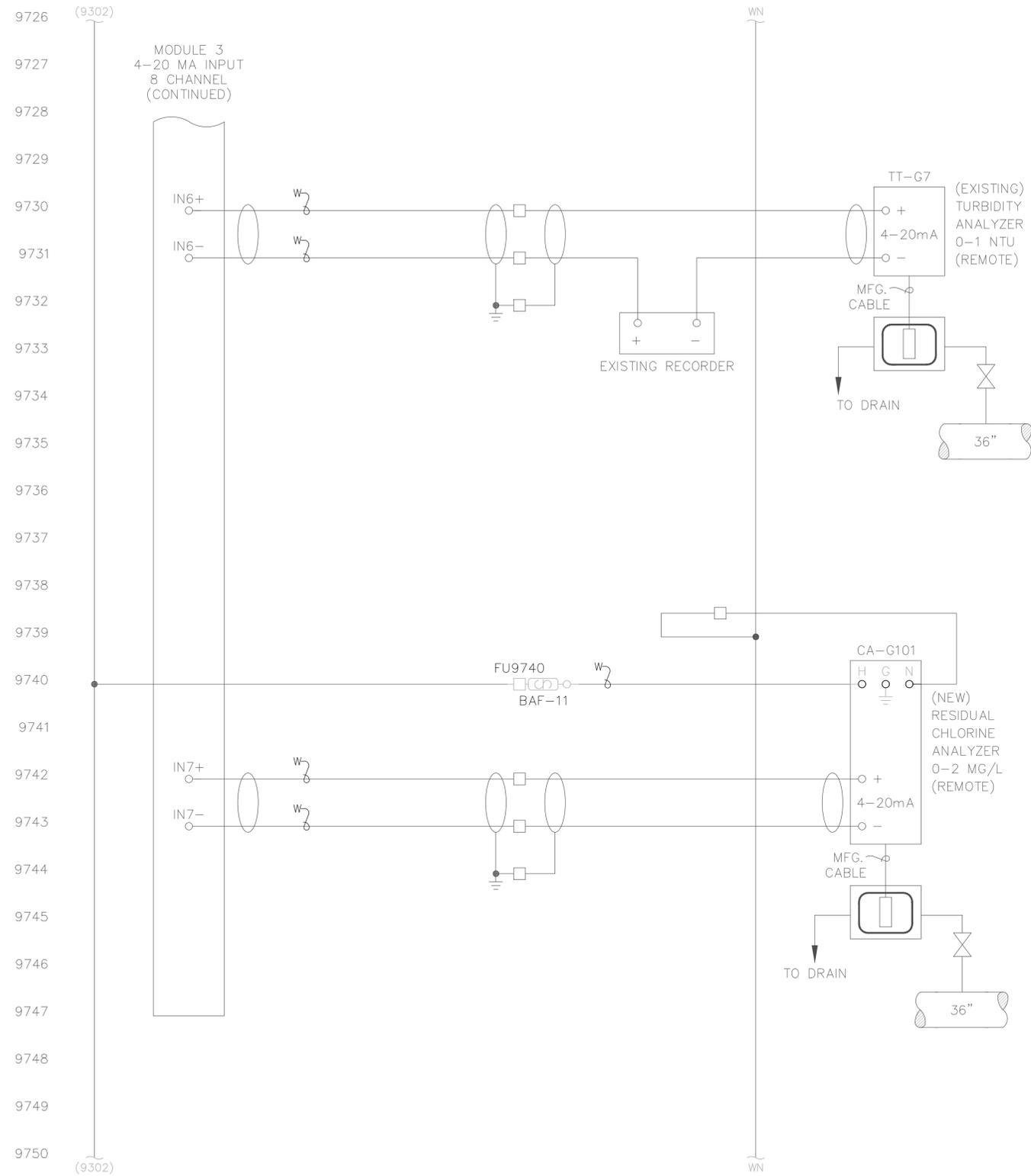
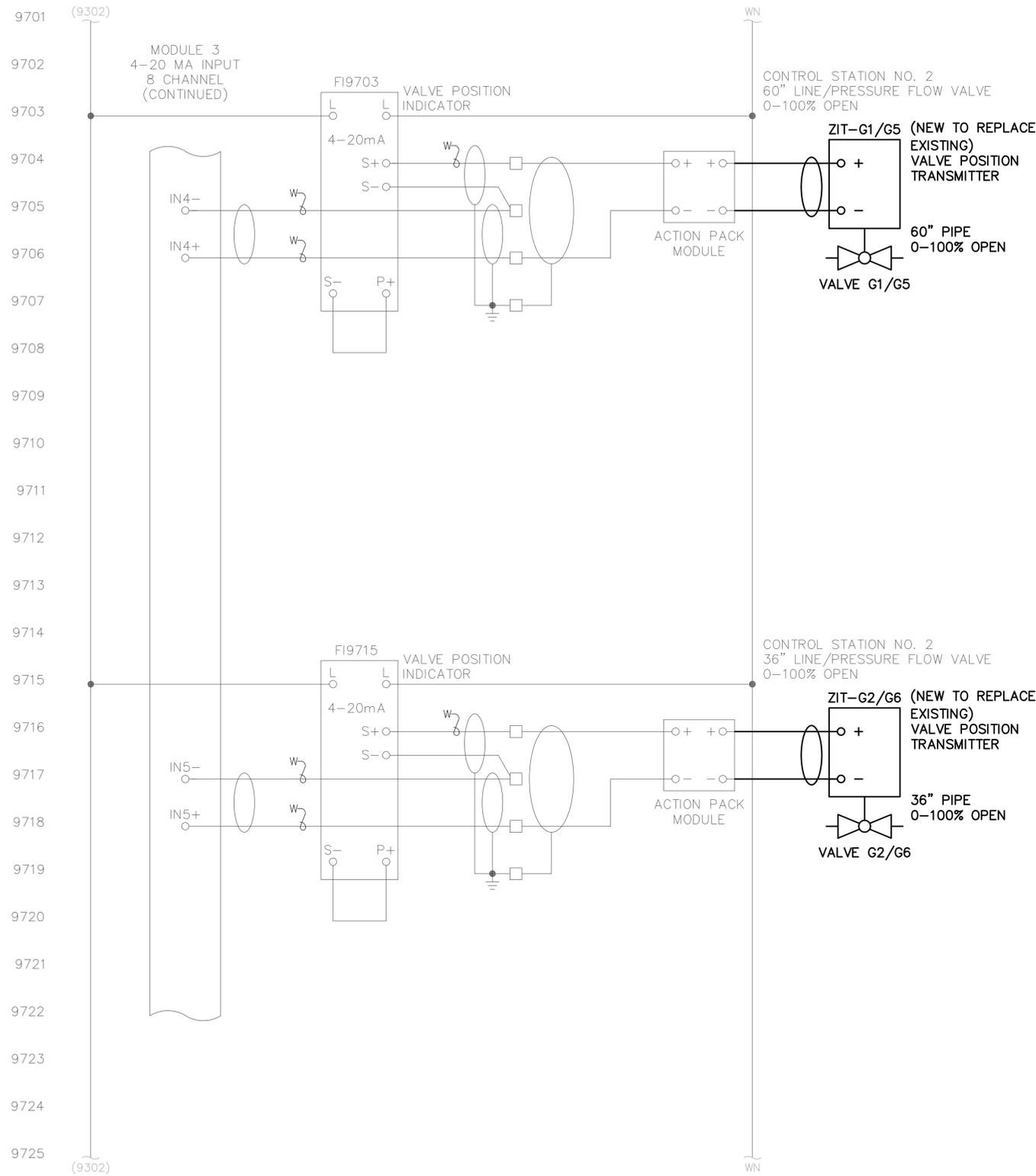
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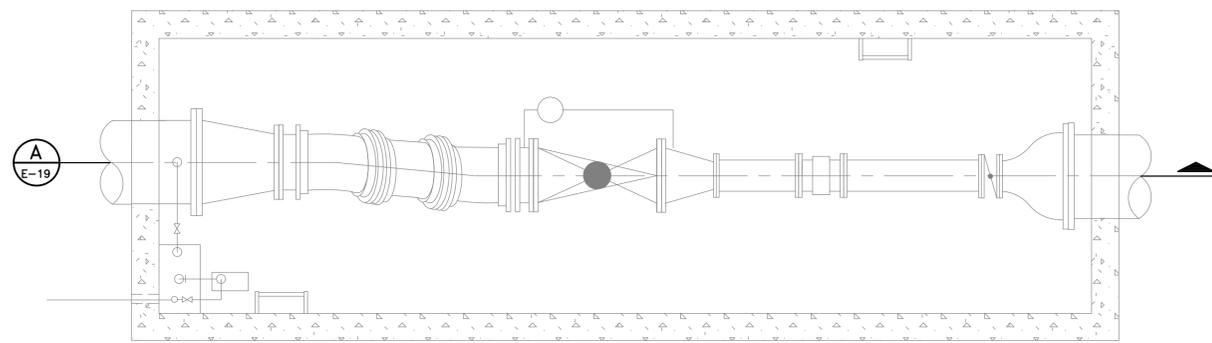
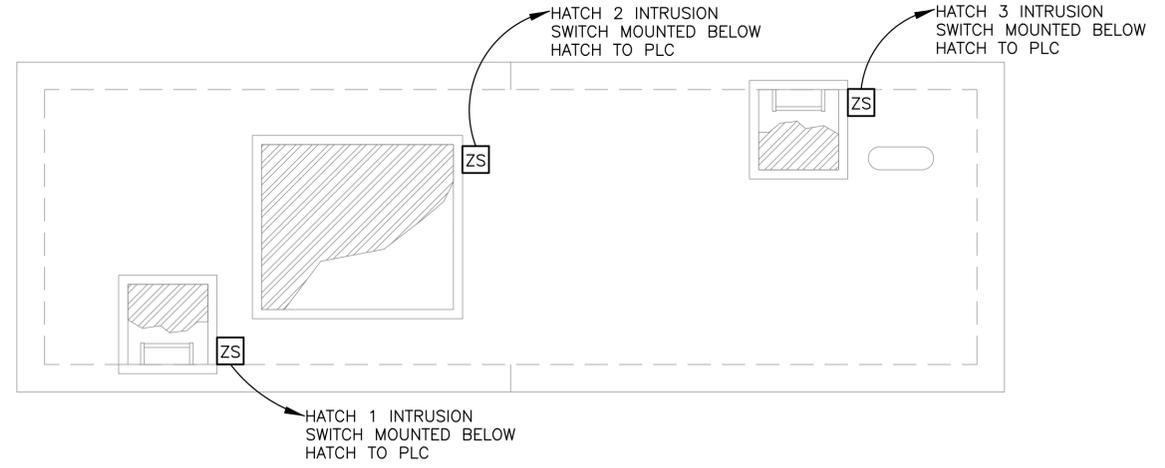
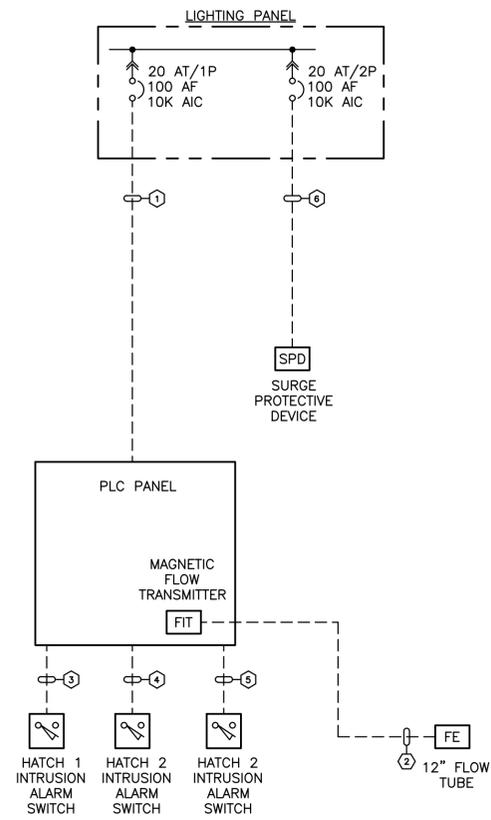
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CITY OF FLINT
 1101 S. SAGINAW STREET
 FLINT, MI 48502
 36" SECONDARY WATER SUPPLY
 CONTROL STATION 2
 PLC ANALOG INPUT MODIFICATIONS

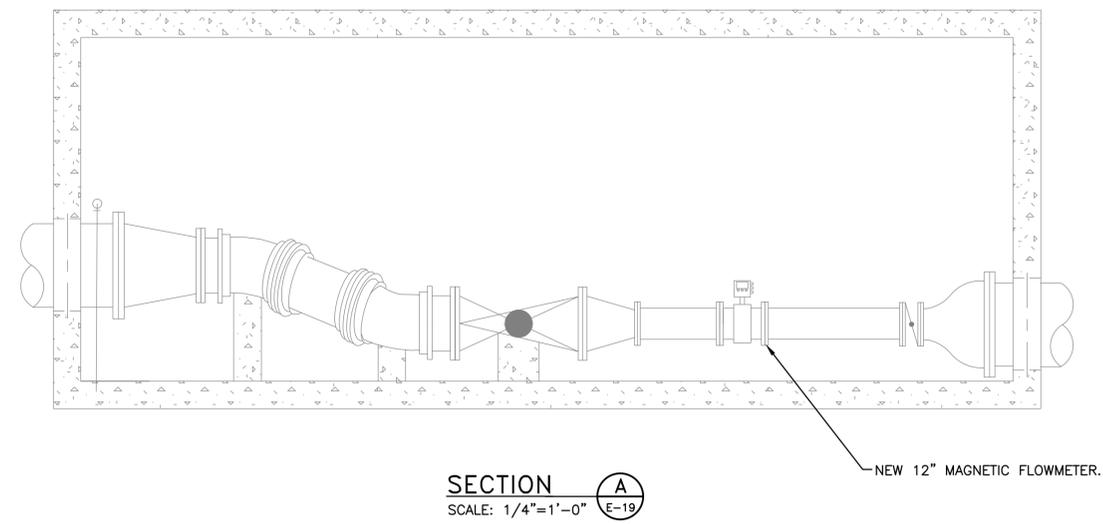
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SHEET	E-12	

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RISER DIAGRAM



**PROPOSED MODIFICATIONS
METER VAULT – PLAN**
SCALE: 1/4"=1'-0"



SECTION A-A
SCALE: 1/4"=1'-0" E-19

CABLE SCHEDULE									
NO.	CONDUIT LABEL	FROM	TO	CONDUIT		CABLE			
				SIZE	TYPE	QTY. AND SIZE	VOLT	TYPE	COMMENTS
1	PLC-PWR-1	LIGHTING PANEL	PLC PANEL	3/4"	RGS	2#12 + 1#12 GND	600	THWN-2	120V. POWER
2	FIT-CTRL-1	FLOW TUBE	FLOW XMTR.	3/4"	RGS	MANUFACTURER CABLE	600	THWN-2	POWER AND SIGNAL
3	ZS1-CTRL-1	LIMIT SWITCH 1	PLC PANEL	3/4"	RGS	2#14 + 1#14 GND	600	THWN-2	120V. CONTROL
4	ZS2-CTRL-1	LIMIT SWITCH 2	PLC PANEL	3/4"	RGS	2#14 + 1#14 GND	600	THWN-2	120V. CONTROL
5	ZS3-CTRL-1	LIMIT SWITCH 3	PLC PANEL	3/4"	RGS	2#14 + 1#14 GND	600	THWN-2	120V. CONTROL
6	SPD-PWR-1	LIGHTING PANEL	SPD	3/4"	RGS	3#12 + 1#12 GND	600	THWN-2	120V. POWER

PANEL:		LOAD		VA		PH		VA		LOAD		BKR		CKT	
LIGHTING PANEL		CITY OF FLINT PLC PANEL		600		A		0		SURGE PROTECTIVE DEVICE (SPD)		20A/2P		2	
100A BUS (10K AIC)		SPARE		0		B		0		SPACE		SPACE		4	
20A/1P		SPARE		0		A		0		SPACE		SPACE		6	
20A/1P		SPACE		0		B		0		SPACE		SPACE		8	
SPACE		SPACE		0		A		0		SPACE		SPACE		10	
SPACE		SPACE		0		B		0		SPACE		SPACE		12	
SPACE		SPACE		0		A		0		SPACE		SPACE		14	
SPACE		SPACE		0		B		0		SPACE		SPACE		16	
SPACE		SPACE		0		A		0		SPACE		SPACE		18	
SPACE		SPACE		0		B		0		SPACE		SPACE		20	
TOTAL:		A=600		600		B=0									
TOTAL CONNECTED LOAD:				600											

* GFCI CIRCUIT BREAKER

PROJECT MANAGER: Jesse B. Korynski, PE
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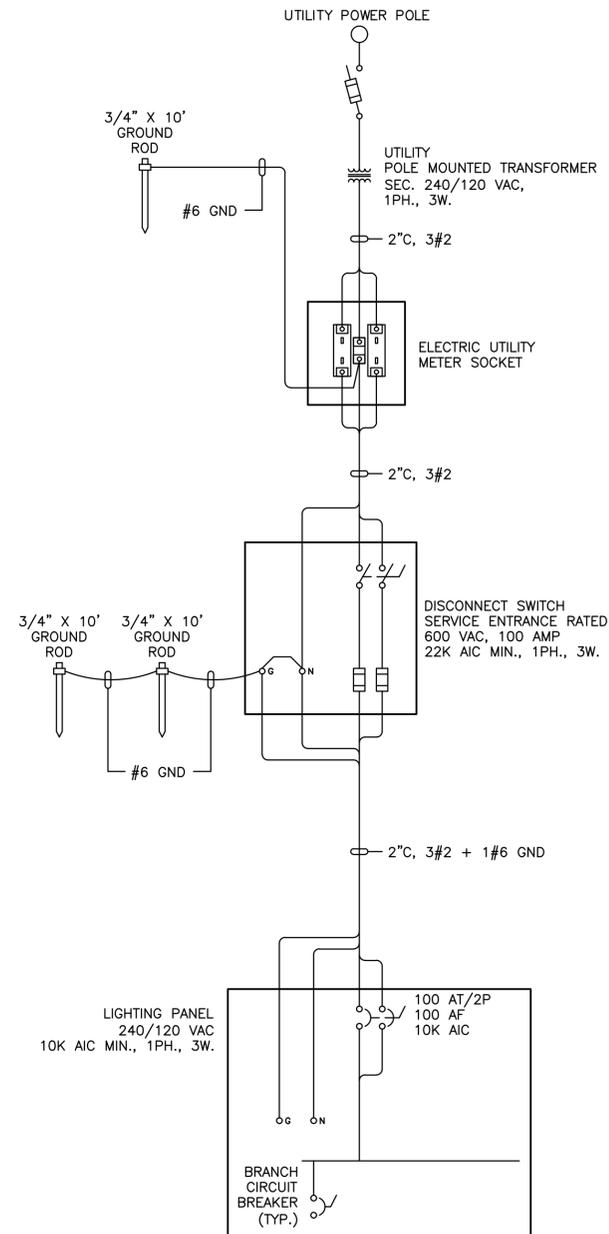
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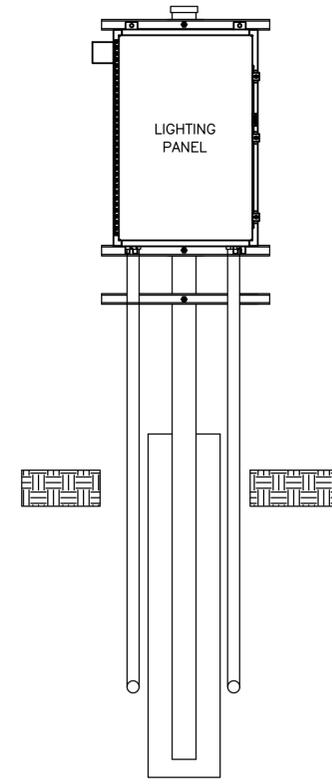
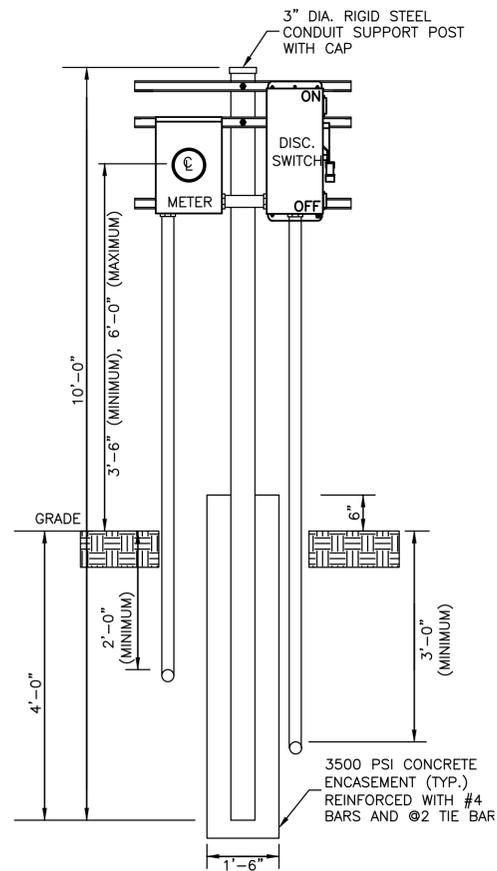
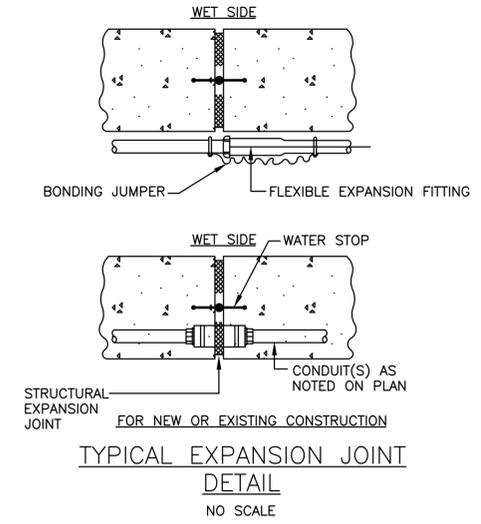
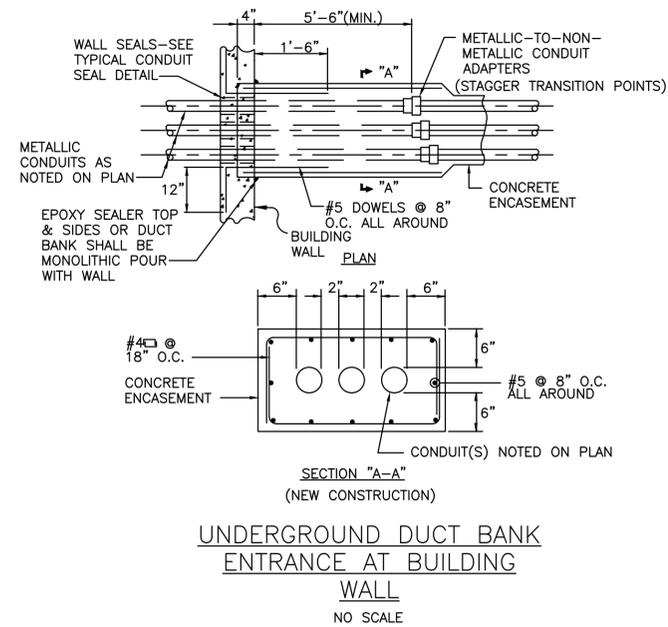
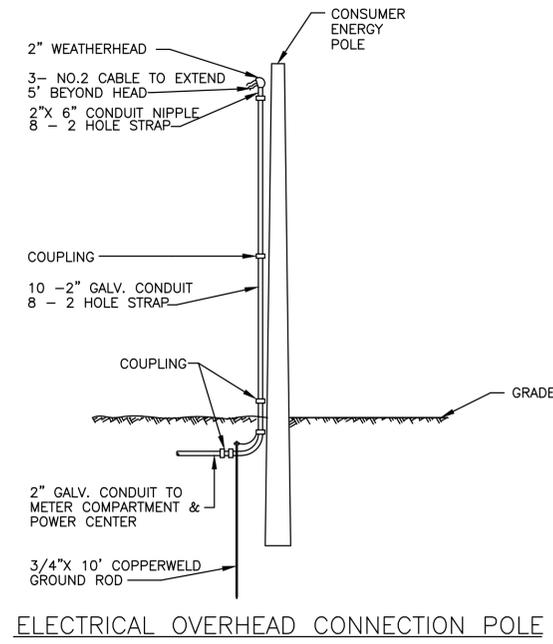
CITY OF FLINT
1101 S. SAGINAW STREET
FLINT, MI 48502
36" SECONDARY WATER SUPPLY
RESERVOIR METER VAULT
ELECTRICAL PLAN

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ELECTRICAL SERVICE RISER DIAGRAM



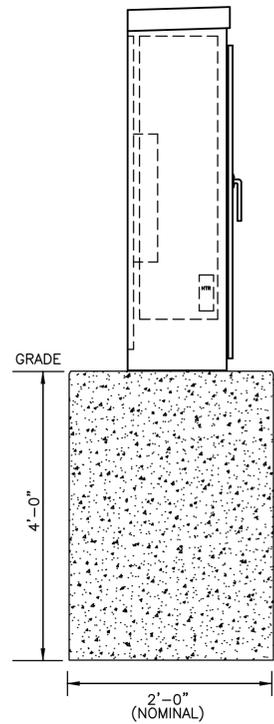
NOTES:

1. PROVIDE CONDUIT SEAL WITH WATERPROOFING MEMBRANE FOR ALL CONDUITS INSTALLED THROUGH CORED HOLES IN METER WALLS.

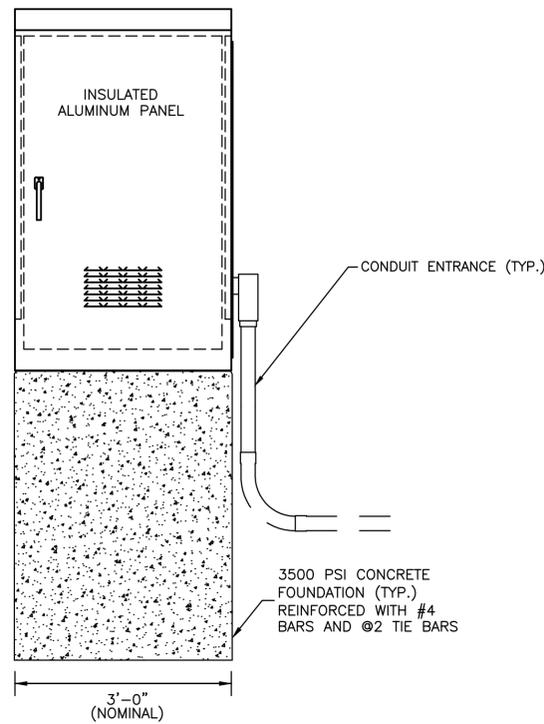
PROJECT MANAGER: Jesse B. Kopyov, PE
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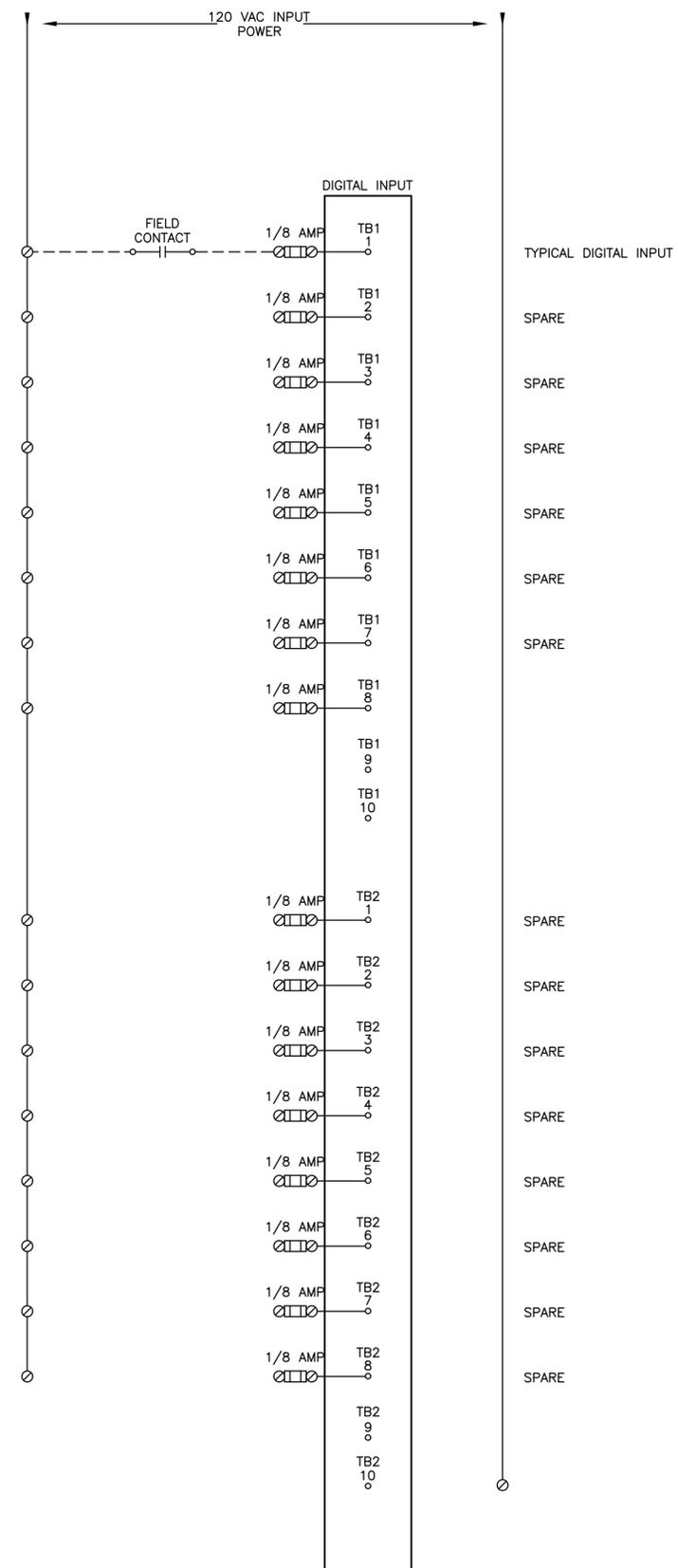
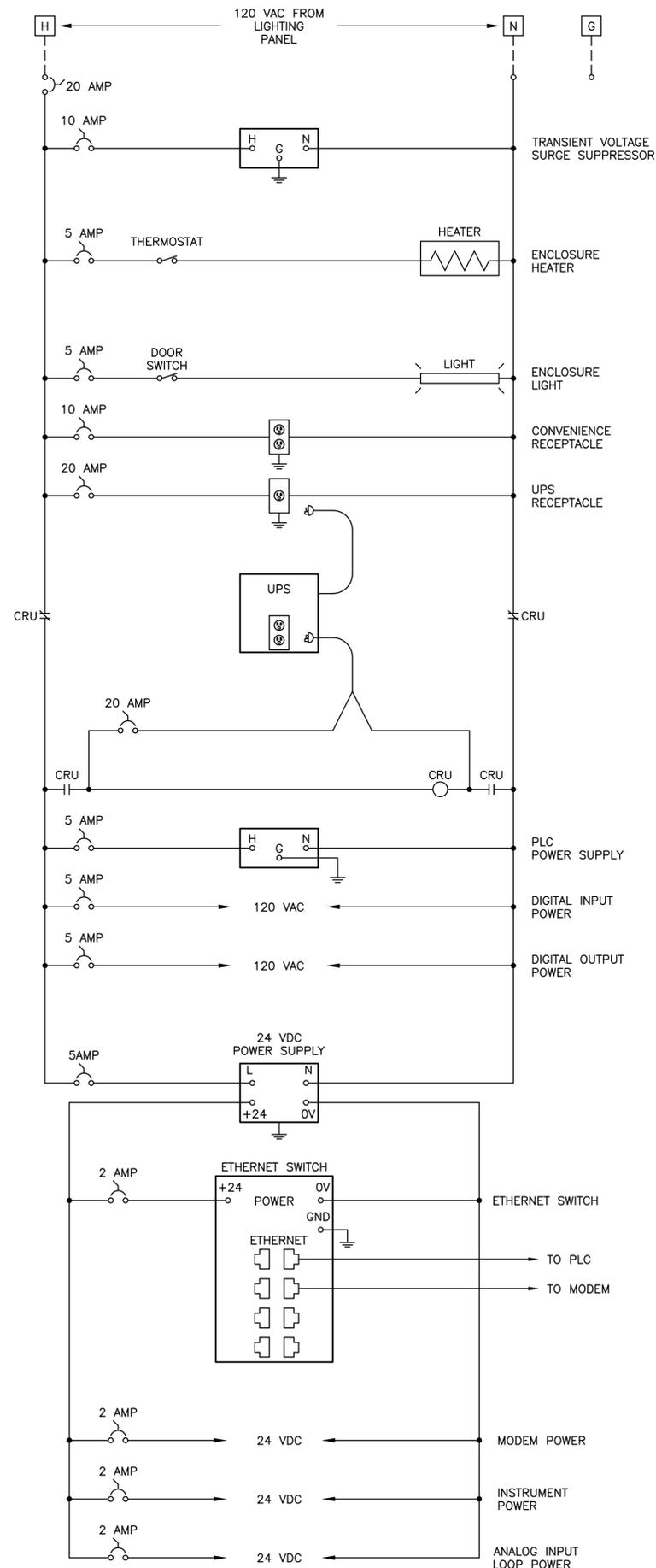
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DATE	
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<p>CITY OF FLINT 1101 S. SAGINAW STREET FLINT, MI 48502 36" SECONDARY WATER SUPPLY ELECTRICAL DETAILS</p>	
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FLINT PLC PANEL (TYP.)
SIDE VIEW
N.T.S.



FLINT PLC PANEL (TYP.)
FRONT VIEW
N.T.S.



PROJECT MANAGER: Jesse B. Korynski, PE
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FLINT, MI 48502
36" SECONDARY WATER SUPPLY
PLC PANEL
TYPICAL DETAILS

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