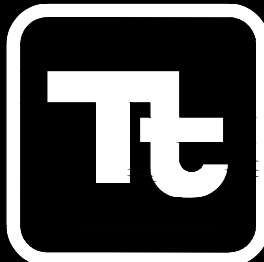


CITY OF KALAMAZOO, MICHIGAN

PHASE 1: CENTRAL PUMP STATION 1 FILTER MEDIA REPLACEMENT (AS NEEDED) AND MISC. FILTER IMPROVEMENTS

1136 OAK VALLEY DRIVE, SUITE 100
ANN ARBOR, MI 48108
PHONE: (734) 665-6000 FAX: (734) 213-3003

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TETRA TECH

PROJECT LOCATION:

215 WEST STOCKBRIDGE AVENUE
KALAMAZOO, MI 49001

CLIENT INFORMATION:

CITY OF KALAMAZOO
415 STOCKBRIDGE AVE.
KALAMAZOO, MI 49001

Tt PROJECT No.:

200-19743-24010

CLIENT PROJECT No.:

PROJECT DESCRIPTION / NOTES:

PHASE 1: FILTER MEDIA REPLACEMENT (AS NEEDED) AND MISC.
FILTER IMPROVEMENTS

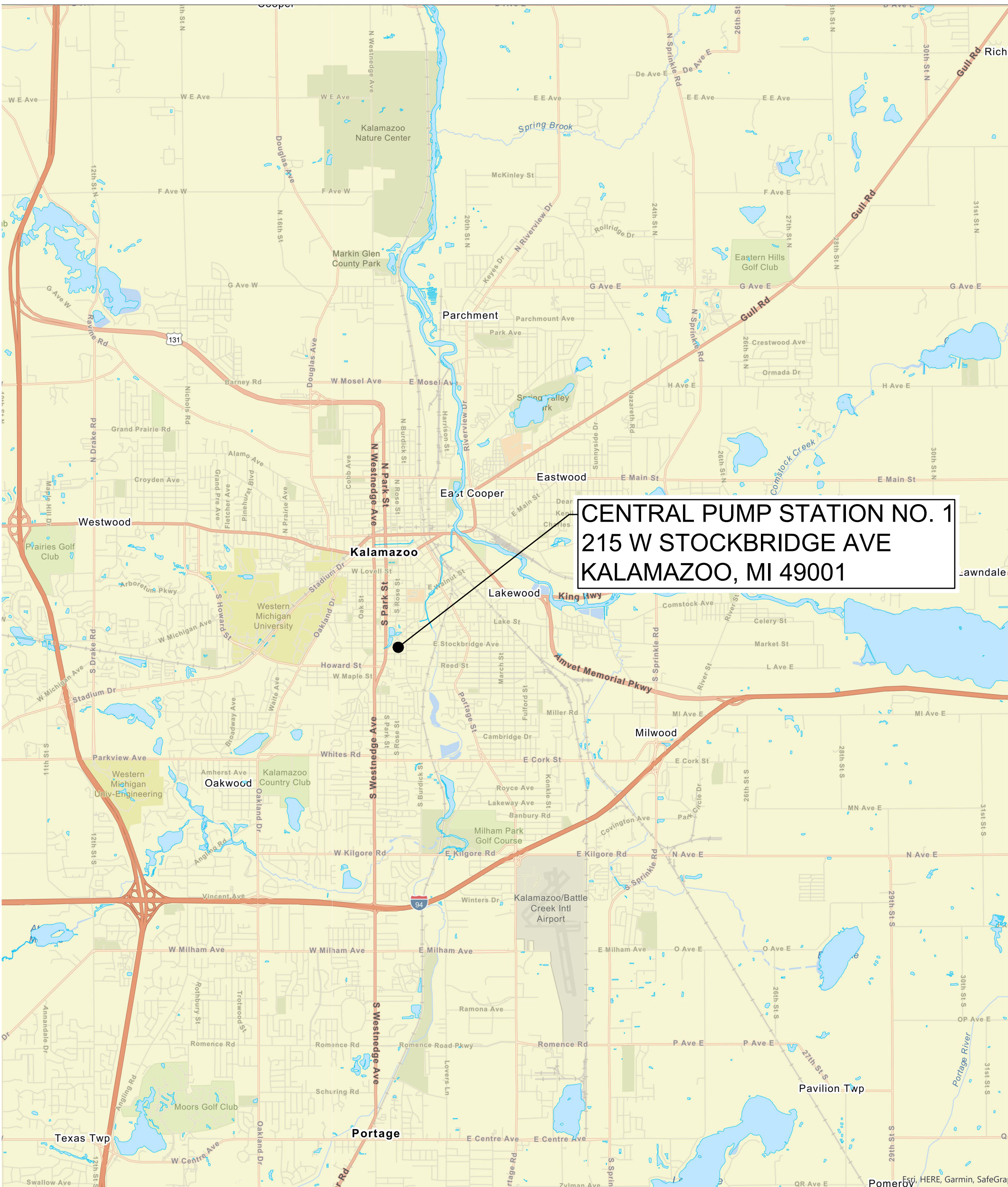
ISSUED:

5-8-2026 - EGLE SUBMITTAL

VICINITY MAP:



SHEET INDEX	
SHEET NO.	GENERAL
G-001	COVER SHEET AND SHEET INDEX
G-002	GENERAL NOTES AND ABBREVIATIONS
	PROCESS AND EQUIPMENT
D-001	PROCESS LEGEND
D-002	PROCESS SCHEMATIC
D-101	FILTER 1 AND 2 PLAN
D-301	FILTER SECTION
D-302	FILTER DETAILS
D-303	FILTER 1 AND 2 MANUFACTURER DRAWING (FOR REFERENCE ONLY)
D-801	FILTER 1 AND 2 MANUFACTURER DRAWING (FOR REFERENCE ONLY)
D-802	FILTER SECTION MANUFACTURER DRAWING (FOR REFERENCE ONLY)
D-803	FILTER SECTION AND DETAILS MANUFACTURER DRAWINGS (FOR REFERENCE ONLY)
D-804	FILTER DETAIL MANUFACTURER DRAWING (FOR REFERENCE ONLY)
D-805	FILTER DETAIL MANUFACTURER DRAWING (FOR REFERENCE ONLY)
DD-101	FILTER 1 AND 2 DEMOLITION PLAN
DD-301	FILTER DEMOLITION SECTION
DD-302	FILTER DEMOLITION SECTION



APPROVED BY:
THE CITY OF KALAMAZOO

— *John C. Smith* — DATE: 05/15/2026

DEPARTMENT OF PUBLIC SERVICES
ASSISTANT CITY ENGINEER



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VALVE DESIGNATIONS

SYMBOL	MARK	TYPE
PIPEWORK DRAWINGS	FLOW DIAGRAMS	
		A GATE VALVE
		B BUTTERFLY VALVE
		CC CUSHION CHECK VALVE
		P PLUG VALVE
		BV BALL VALVE

PIPING AND EQUIPMENT SYMBOLS

(SCHEMATICS ONLY)

SYMBOL	DESCRIPTION
	VENT TO ROOF
	ELBOW UP
	ELBOW DOWN
	TEE UP
	TEE DOWN
	REDUCER
	WYE STRAINER
	UNION
	FLEX CONNECTION
	CAM LOCK CONNECTION
	FLOOR DRAIN
	EQUIPMENT DRAIN
	CLEANOUT-FLOOR
	CLEANOUT-HORIZONTAL
	PIPE TO DRAIN
	FLOW METER XX = M = MAGNETIC
	VALVE WITH DIAPHRAGM SEAL
	PRESSURE SAFETY VALVE
	PRESSURE GAUGE XX - YY = RANGE Z = D = GAUGE WITH DIAPHRAGM = P = GAUGE WITH PULSATION DAMPENER
	PUMP

JOINT DESIGNATIONS

SYMBOLS	MARK	TYPE
	FJ	FLANGED JOINT
	MJ	MECHANICAL JOINT
	SJ	SCREWED JOINT
	POJ	PUSH ON JOINT
	BFC	BOLTED FLEXIBLE COUPLING
	GC	GROOVED COUPLING
	WJ	SHOP WELDED JOINT (STEEL PIPE)
	FWJ	FIELD WELDED JOINT (STEEL PIPE)
	STJ	SOCKET TYPE JOINT (FRP OR PVC PIPE)
	EJ	EXPANSION JOINT
	BF	BLIND FLANGE
	AFC	ADAPTER FLANGE COUPLING

PROCESS ABBREVIATIONS

AIR	LOW PRESSURE AIR
BP	BYPASS
CE	CHLORINATED EFFLUENT
CIP	CLEAN IN PLACE
CON	CONCENTRATE
D	DRAIN
FE	FILTER EFFLUENT
FI	FILTER INFLUENT
FTW	FILTER TO WASTE
HS	HIGH SERVICE
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
OF	OVERFLOW
PE	POLYETHYLENE
PW	POTABLE WATER
PO	PHOSPHATE
RC	RECYCLED
RW	RAW WATER
SAM	SAMPLE
SPD	SUMP PUMP DISCHARGE
SWW	SURFACE WASHWATER
V	VENT
W	WATER MAIN
WTP	WATER TREATMENT PLANT
WW	WASTEWATER

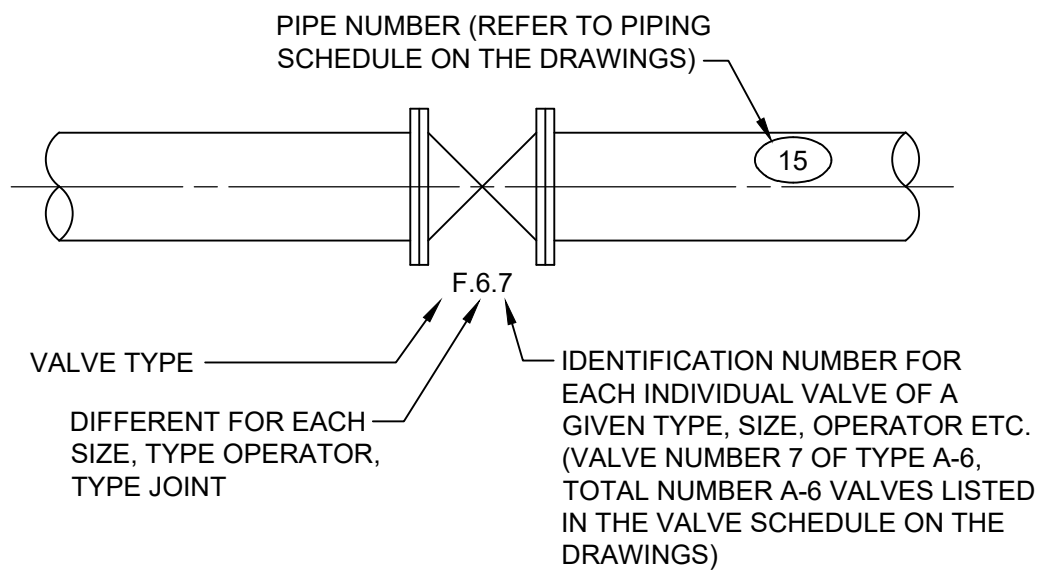
SLEEVE AND WALL PIPE DESIGNATIONS

SYMBOL	DESCRIPTION
	CORED HOLE IN EXISTING WALL
	WALL SLEEVE W/WATER COLLAR (STANDARD)
	FLANGE X PLAIN END WALL PIPE
	FLANGE X PLAIN END WALL PIPE
	FLANGE X FLANGE WALL PIPE
	MECHANICAL JOINT X MECHANICAL JOINT WALL PIPE
	MECHANICAL JOINT X PLAIN END WALL PIPE
	PUSH ON BELL JOINT X PLAIN END WALL PIPE

SYSTEM MONITORING SYMBOLS

	LEVEL ELEMENT / TRANSMITTER
	PRESSURE ELEMENT / TRANSMITTER
	PRESSURE SWITCH HIGH

VALVE & PIPE IDENTIFICATION



GENERAL NOTES (ALL SHEETS)

- FIELD VERIFY ALL DIMENSIONS PRIOR TO SHOP DRAWING SUBMITTAL.
- PIPE SUPPORTS ARE GRAPHICAL, IN NATURE AND INTENDED TO INDICATE THE GENERAL TYPE REQUIRED. THE PROPER SUPPORT OF THE PIPING SYSTEMS IS THE CONTRACTOR'S RESPONSIBILITY INCLUDING THE EXACT QUANTITY AND SPACING OF SUPPORTS, ADEQUATE BRACING, THRUST RESTRAINTS, AND OTHER REQUIREMENTS.
- ALL HARDWARE TO BE 316 STAINLESS STEEL INCLUDING NUTS, BOLTS, WASHERS, ANCHORS, STRUT, HANGERS SUPPORTS, ETC.
- DIELECTRIC ISOLATION SLEEVES SHALL BE PROVIDED ON ALL NUTS AND BOLTS IN CONTACT WITH NON-STAINLESS STEEL PIPE, FITTINGS, SUPPORTS, HANGERS, ETC. ANTI-GALLING LUBRICANT SHALL BE APPLIED TO ALL STAINLESS STEEL NUTS AND BOLTS.
- ALL EQUIPMENT AND COMPONENTS IN CONTACT WITH THE WATER SHALL BE LEAD FREE AND SHALL BE IN COMPLIANCE WITH NSF/ANSI 61 AND NSF ANSI 372 DRINKING WATER SYSTEM COMPONENTS - LEAD CONTENT.
- INSTALL ALL PIPING SUPPORTS AND PIPING IN ACCORDANCE WITH THE LATEST EDITION OF THE ASME ANSI POWER PIPING CODE B 31.1.
- LOCATE PRESSURE TAPS ON THE TOP OF PROCESS PIPES.
- LOCATE SAMPLE TAPS ON THE TOP OF PROCESS PIPES.
- LOCATE DRAIN TAPS ON THE BOTTOM OF PROCESS PIPES.
- UNLESS OTHERWISE NOTED PIPE ELEVATIONS SHOWN ON PIPING DRAWINGS REFER TO CENTERLINE OF THE PIPE.
- ALL WATERWORKS PLUMBING SHALL BE INSTALLED IN ACCORDANCE WITH CITY OF KALAMAZOO STANDARD SPECIFICATIONS FOR WATER MAIN AND SERVICE INSTALLATION 2021 AND THE PROJECT PLANS AND SPECIFICATIONS
- INSTALL ALL PLUG, BUTTERFLY, AND BALL VALVES WITH THE SHAFT IN THE HORIZONTAL POSITION, UNLESS OTHERWISE DIRECTED. VALVE ACTUATORS SHALL BE ORIENTED SO THAT DISPLAY IS VISIBLE FROM OPERATING LEVEL.
- ALL PIPING SHALL BE LABELED AND HAVE AN ARROW DENOTING THE FLOW DIRECTION.
- ALL NEW PIPING AND VALVES TO BE PAINTED UNLESS SPECIFICALLY NOTES OTHERWISE.

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	5/8/2026	EGLE SUBMITTAL	

CITY OF KALAMAZOO, MICHIGAN
PHASE 1: CENTRAL PUMP STATION 1 FILTER MEDIA
REPLACEMENT (AS NEEDED) & MISC. FILTER IMPROVEMENTS

PROCESS LEGEND

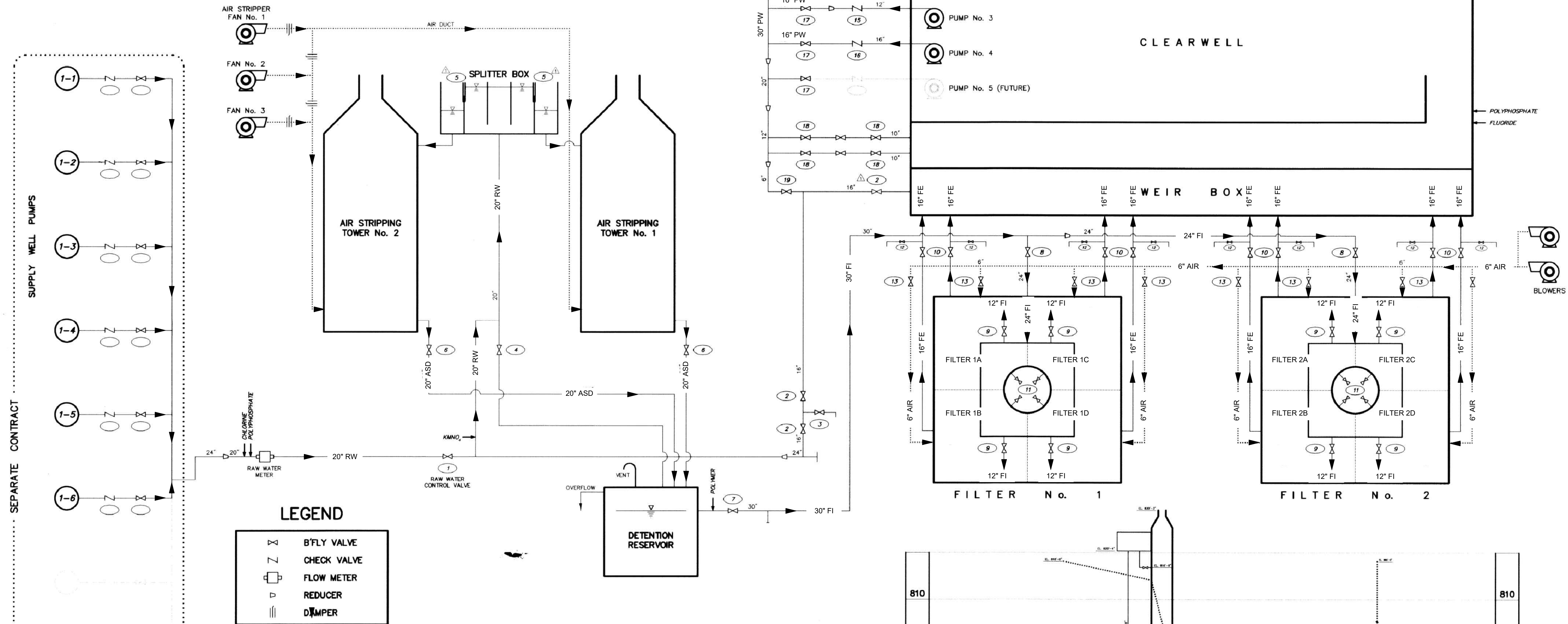
Project No.: 200-19743-24010
Designed By: M. TEITSMA
Drawn By: R. POHLMAN
Checked By:

D-001

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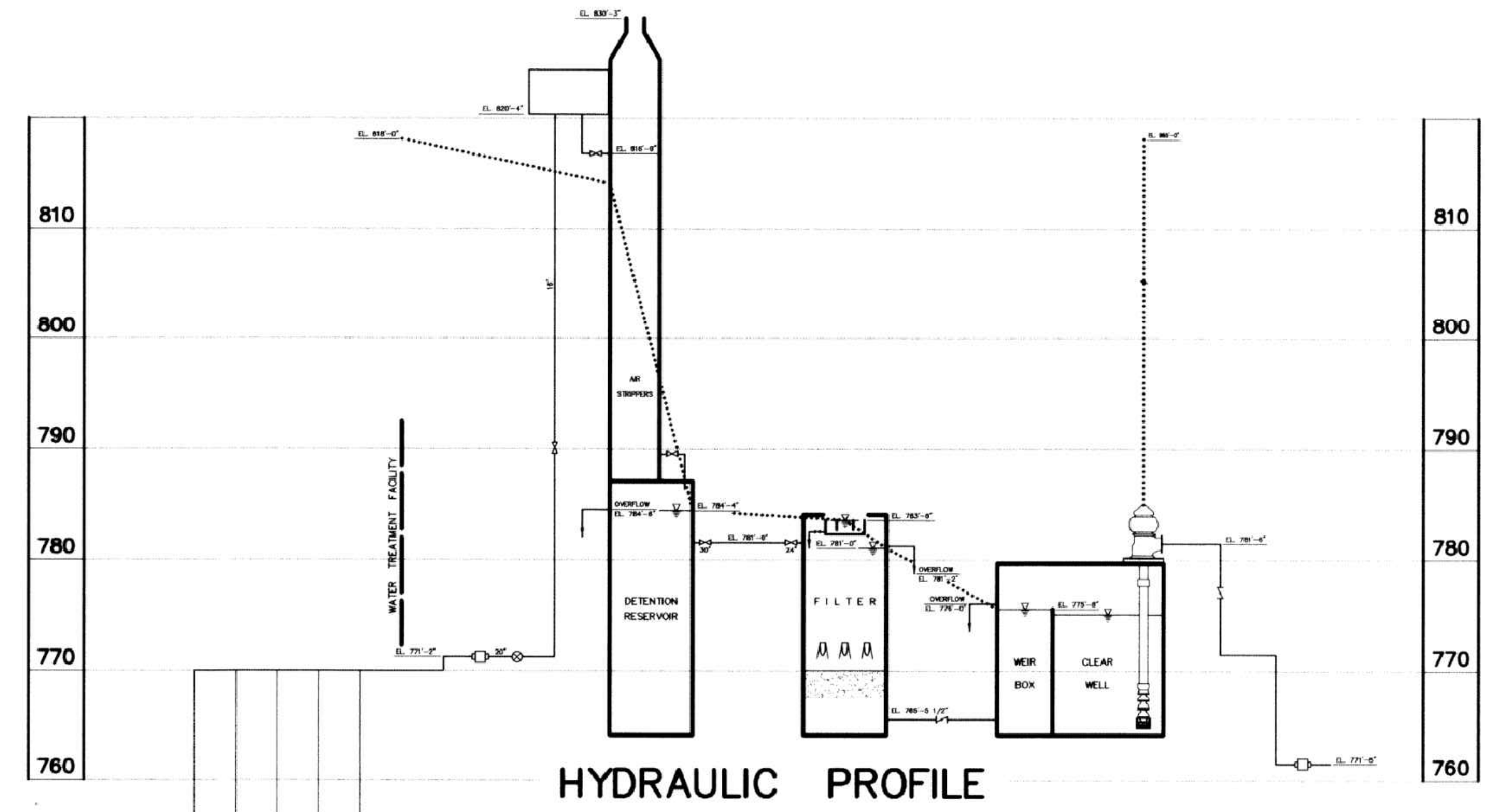
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PROCESS FLOW DIAGRAM



VALVE SCHEDULE

No.	QTY.	SIZE	TYPE	CLASS	CONTROL	FUNCTION	OPERATOR	REMARKS
1	1	20"	BALL	150 psi	AUTO	BACKUP CLEARWELL LEVEL CONTROL	HYDRAULIC CYLINDER	RAW WATER CONTROL
2	2	16"	BUTTERFLY	75B	MANUAL	BYPASS TREATMENT	HANDWHEEL	
3	1	6"	BUTTERFLY	75B	MANUAL	DRAIN	HANDWHEEL	
4	1	20"	BUTTERFLY	25B	MANUAL	AIR STRIPPER BYPASS	HANDWHEEL	
5	2	--	SLIDE GATE	25B	MANUAL	AIR STRIPPER ISOLATION	--	OPEN & CLOSED LIMIT SWITCHES
6	2	20"	BUTTERFLY	25B	MANUAL	AIR STRIPPER DISCHARGE	HANDWHEEL	
7	1	30"	BUTTERFLY	25B	MANUAL	DETENTION RESERVOIR ISOLATION	HANDWHEEL	
8	2	24"	BUTTERFLY	25B	MANUAL	FILTER ISOLATION	HANDWHEEL	
9	8	12"	BUTTERFLY	25B	AUTO	FILTER CELL INLET	PNEUMATIC CYLINDER	SUPPLIED BY FILTER MANUFACTURER
10	8	16"	BUTTERFLY	25B	AUTO	FILTER EFFLUENT ISOLATION	PNEUMATIC CYLINDER	SUPPLIED BY FILTER MANUFACTURER
11	8	12"	BUTTERFLY	25B	AUTO	BACKWASH WASTE	PNEUMATIC CYLINDER	SUPPLIED BY FILTER MANUFACTURER
12	8	8"	BUTTERFLY	25B	AUTO	FILTER TO WASTE	PNEUMATIC CYLINDER	SUPPLIED BY FILTER MANUFACTURER
13	8	6"	BUTTERFLY	150B	AUTO	AIR WASH SUPPLY	PNEUMATIC CYLINDER	SUPPLIED BY FILTER MANUFACTURER
14	1	10"	BALL	150 psi	AUTO	PUMP CHECK	HYDRAULIC CYLINDER	
15	2	12"	BALL	150 psi	AUTO	PUMP CHECK	HYDRAULIC CYLINDER	
16	1	16"	BALL	150 psi	AUTO	PUMP CHECK	HYDRAULIC CYLINDER	
17	5	16"	BUTTERFLY	150B	MANUAL	PUMP ISOLATION	HANDWHEEL	
18	4	10"	BUTTERFLY	150B	MANUAL	SURGE RELIEF ISOLATION	HANDWHEEL	
19	1	3"	BUTTERFLY	150B	AUTO	BACKWASH MAKE-UP	PNEUMATIC CYLINDER	SUPPLIED BY FILTER MANUFACTURER
20	1	30"	BUTTERFLY	150B	MANUAL	PLANT ISOLATION	2" ANNA NUT	BURIED SERVICE / OPEN CCW



NO.	REVISIONS	BY	DATE	DRAWN	SMYTH
1	REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS				
	DATE: 1-16-97 BY: S.R.W.				
	CHECKED: R.J.R.				
	DATE: JAN. '94				

PREIN & NEWHOF
CONSULTING ENGINEERS
GRAND RAPIDS, MICHIGAN 49505

CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
CENTRAL WELL FIELD RESTORATION
WATER TREATMENT PLANT
CONTRACT NO. 1
PROCESS FLOW DIAGRAM

PROJECT NO. 86132
SHEET NO. 2 OF 66

BACKGROUND DRAWING WAS ORIGINALLY PREPARED AS PART OF CONTRACT "CENTRAL WELL FIELD RESTORATION WATER TREATMENT PLANT CONTRACT NO. 1", CITY OF KALAMAZOO, JANUARY 1997, SHEET 2 OF 66, PROJECT 86132, PRIEN & NEWHOF. DRAWING NOT TO SCALE.

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CITY OF KALAMAZOO, MICHIGAN
PHASE 1: CENTRAL PUMP STATION 1 FILTER MEDIA REPLACEMENT (AS NEEDED) & MISC. FILTER IMPROVEMENTS
PROCESS SCHEMATIC

Project No.: 200-19743-24010
Designed By: M. TEITSMA
Drawn By: R. POHLMAN
Checked By:

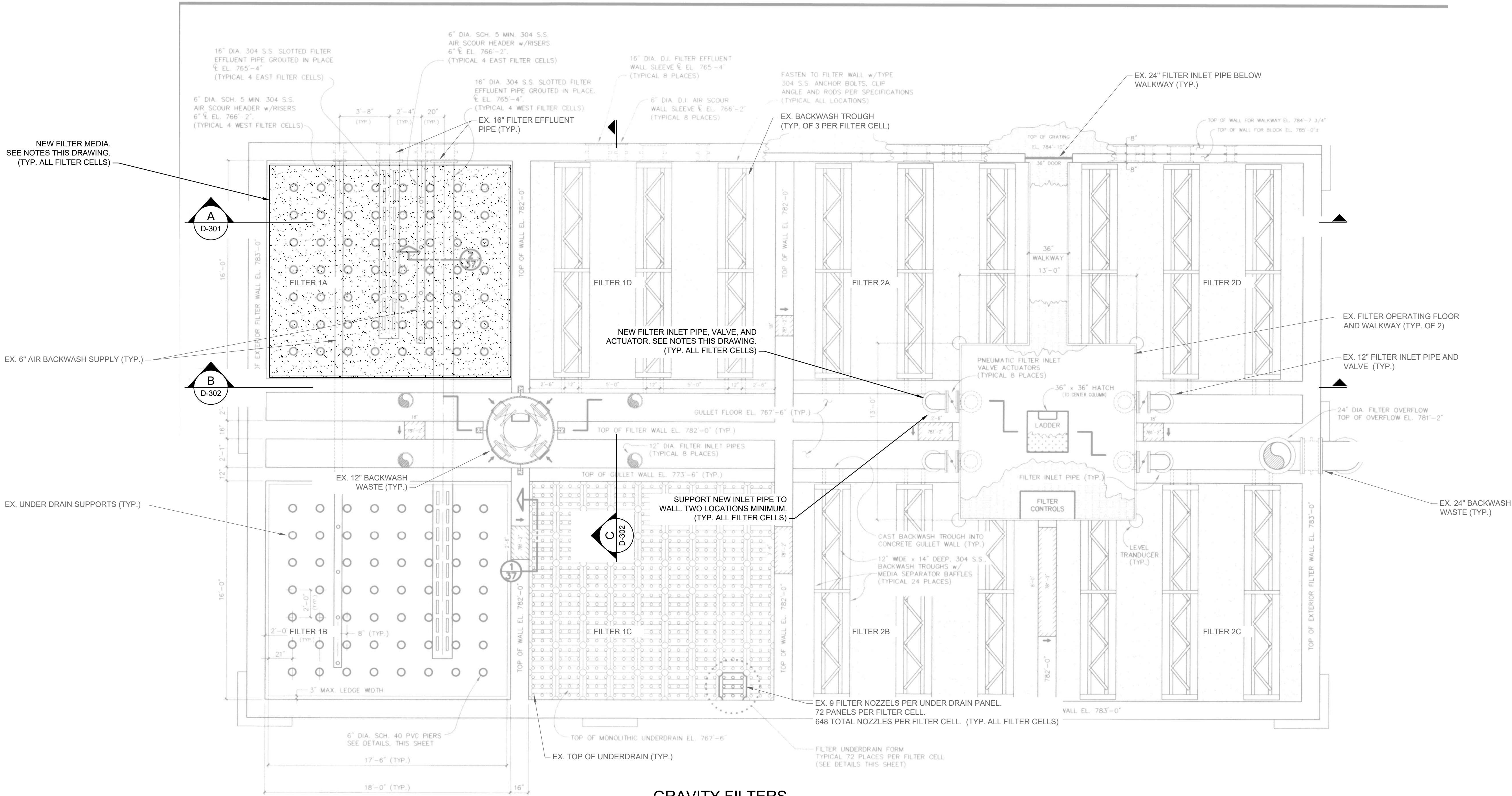
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Bar Measures 1 inch

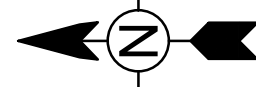
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GRAVITY FILTERS
MULTI-LEVEL PLAN

SCALE: NTS



NOTES:

- IN GENERAL, EACH FILTER CELL SHALL HAVE MEDIA REMOVED AND REPLACED, FILTER INLET PIPE, VALVE, AND ACTUATOR REMOVED AND REPLACED. UNDER DRAIN AND NOZZLES SHALL BE CLEANED AND INSPECTED PER THE ALLOWANCE. DAMAGED NOZZLES SHALL BE REPLACED AND PAID BY ALLOWANCE AND AS DIRECTED BY THE CITY. ALL WORK SHALL BE AS DIRECTED BY THE CITY. HOWEVER, CITY MAY CHOOSE TO EXCLUDE FILTER WORK AS THEY SEE FIT.
- SEE SPECIFICATION 01110 - SUMMARY OF WORK FOR FILTER CELL MEDIA DEMOLITION AND NEW MEDIA, AND FILTER INLET PIPE, VALVE, AND ACTUATOR DEMOLITION AND NEW WORK. WORK FOR ALL 8 FILTER CELLS SHALL BE INCLUDED IN THE BID. HOWEVER CITY MAY CHOOSE TO EXCLUDE FILTER WORK AS THEY SEE FIT.
- REMOVE ALL FILTER CELL MEDIA FOR EACH FILTER CELL AS DIRECTED BY THE CITY. CURRENT MEDIA EXTENDS FROM BOTTOM OF FILTER CELL TO TOP OF TROUGH. NOTE TAKE CAUTION NEAR UNDER DRAIN AND NOZZLES AS SHOVELS AND SPADES CAN DAMAGE THE UNDERDRAIN AND NOZZLES. DO NOT STEP ON THE NOZZLES. EXISTING MEDIA IS BALLED, CLUMPED, SEMI-FUSED/CEMENTED TOGETHER. THE MEDIA REMOVAL EFFORT WILL BE MORE THAN JUST SHOVELING OR VACUUMING THE MEDIA OUT OF THE FILTER CELL. CONTRACTOR SHALL PLAN ACCORDINGLY FOR THIS WORK. SITE REVIEW PRIOR TO BIDS IS REQUIRED.
- ALL MEDIA SHALL BE REMOVED THROUGH THE ACCESS DOORS FROM THE FILTER ROOM INTO THE MAIN ROOM AND THEN THROUGH THE BUILDING GARAGE DOOR. PROVIDE REMOVAL PLAN THAT IS TO BE REVIEWED BY CITY AND TO NOT CONFLICT WITH CITY STANDARD OPERATIONS.
- SEE PROJECT MANUAL APPENDIX FOR TESTING RESULTS OF THE EXISTING FILTER MEDIA. CONTRACTOR RESPONSIBLE FOR DISPOSAL OF FILTER MEDIA.
- ONLY ONE FILTER CELL MAY BE TAKEN OUT OF SERVICE AT A TIME. NOTE ALL 7 OTHER FILTER CELLS SHALL REMAIN IN OPERATION DURING THE WORK. THE FILTERS SHALL BE PROTECTED FROM DISRUPTION AND ANY DEBRIS INTO THE FILTERS. PROTECT ALL FILTER COMPONENTS AS PART OF THE WORK.

- FOR THE NEW FILTER WORK, CITY MAY SELECT FROM FILTER MEDIA ALTERNATES 1 OR 2. FILTER MEDIA ALTERNATES 1 OR 2 ARE SHOWN ON THE DRAWINGS AND INDICATED IN THE SPECIFICATIONS. THE ALTERNATES LOCATIONS SHOWN ON D-301 DO NOT REPRESENT THE SPECIFIC FILTER CELLS. ALTERNATES SHALL BE USED AS DESCRIBED IN SPECIFICATION 01110 - SUMMARY OF WORK AND AS DIRECTED BY THE CITY.
- BELOW ARE DESCRIPTIONS OF THE TWO ALTERNATES:
 - ALTERNATE 1: 30" MANGANESE GREENSAND.
 - ALTERNATE 2: 30" GRANULAR ACTIVATED CARBON.
- SEE SPECIFICATIONS FOR MEDIA PARAMETERS.
- PROVIDE NEW INLET PIPE, VALVE, AND ACTUATOR. EACH FILTER INLET PIPE SHALL BE REPLACED AS DIRECTED BY THE CITY. NOTE CITY MAY CHOOSE TO EXCLUDE WORK AS THEY SEE FIT. SEE SPECIFICATION 01110 - SUMMARY OF WORK FOR ADDITIONAL INFORMATION. PIPE SHALL BE CPVC SCHEDULE 80 AND ACTUATOR SHALL BE AIR OPERATED. RECONNECT TO EXISTING AIR PIPING AND CONTROL WIRES. NOTE NEW VALVE SHALL BE CAPABLE OF MODIFICATION FROM AIR OPERATED ACTUATOR TO ELECTRIC ACTUATOR.
- FOR FILTER MEDIA WORK, INLET PIPE AND VALVE WORK TO EACH FILTER CELL, THIS MAY REQUIRE THE SHUTDOWN OF THE ENTIRE FILTER. THE TIME FOR DEMOLITION AND AND INSTALLING THE NEW PIPE AND VALVE SHALL BE LIMITED TO 4 HOURS. THIS SHALL BE COMPLETED DURING LOW WATER DEMAND TIMES. THIS WORK SHALL BE SCHEDULED WITH THE CITY ONE WEEK IN ADVANCE.
- UNDER DRAIN NOZZLES SHALL BE CLEANED AND INSPECTED. DAMAGED NOZZLES SHALL BE REPLACED. THIS WORK SHALL BE COMPLETED THROUGH AN ALLOWANCE. SEE SPECIFICATION 01210 - ALLOWANCES. NOZZLE CLEANING SHALL INCLUDE REMOVAL OF ALL MEDIA AND VACUUM ANY RESIDUAL MEDIA. NOZZLE CLEANING INCLUDES REMOVAL OF ANY MATERIAL OR BUILDUP IN THE AIR METERING ORIFICES RESTRICTING THE OPENING. DO NOT ALLOW RESIDUAL WATER OR MATERIAL TO ENTER INTO THE NOZZLE INSERT WHEN NOZZLE IS REMOVED. THIS COULD RESULT IN UNDER DRAIN CONTAMINATION. REMOVE ONE ROW AT A TIME, CLEAN EACH NOZZLE, AND REMOVE ANY DEBRIS. DISASSEMBLE NOZZLE IF NECESSARY BY REMOVING NOZZLE SCREWS. WASH NOZZLES COMPLETELY AND THEN

- REASSEMBLE AND REINSTALL WITH O-RING. UNDERDRAINS SHALL BE CLEANED TO THE EXTENT POSSIBLE. SEE WESTECH CLEANING DOCUMENTATION IN APPENDIX B AND SHOP DRAWING NOTES ON DRAWING D-805. THIS WORK SHALL BE COMPLETED AS DIRECTED BY THE CITY AND PROCEDURE VERIFIED WITH UNDER DRAIN MANUFACTURER.
- SEE DRAWING D-801 THROUGH D-805 FOR EXISTING FILTER MANUFACTURER SHOP DRAWINGS. THESE ARE PROVIDED FOR INFORMATION ONLY.

BACKGROUND DRAWING WAS ORIGINALLY PREPARED AS PART OF CONTRACT "CENTRAL WELL FIELD RESTORATION WATER TREATMENT PLANT CONTRACT NO. 1", CITY OF KALAMAZOO, JANUARY 1997, SHEET 37 OF 66, PROJECT 86132, PRIEN & NEWHOF. DRAWING NOT TO SCALE.

MARK	DATE	DESCRIPTION	BY
	5/9/2026	EGLE SUBMITTAL	

CITY OF KALAMAZOO, MICHIGAN
PHASE 1: CENTRAL PUMP STATION 1 FILTER MEDIA
REPLACEMENT (AS NEEDED) & MISC. FILTER IMPROVEMENTS

Project No.: 200-19743-24010
Designed By: M. TEITSMA
Drawn By: R. POHLMAN
Checked By:

D-101



PROVING THE FACTS OF LIFE: A REVIEW OF THE LITERATURE ON THE EFFECTS OF THE ABUSE OF SUBSTANCES ON THE ABUSE OF POWER IN THE WORKPLACE

1. NO

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CITY OF KALAMAZOO, MICHIGAN PHASE 1: CENTRAL PUMP STATION 1 FILTER MEDIA REPLACEMENT (AS NEEDED) & MISC. FILTER IMPROVEMENTS		FILTER SECTION	
Project No.:		200-19743-24010	
Designed By:		M. TEITSMA	
Drawn By:		R. POHLMAN	
Checked By:			
D-301			

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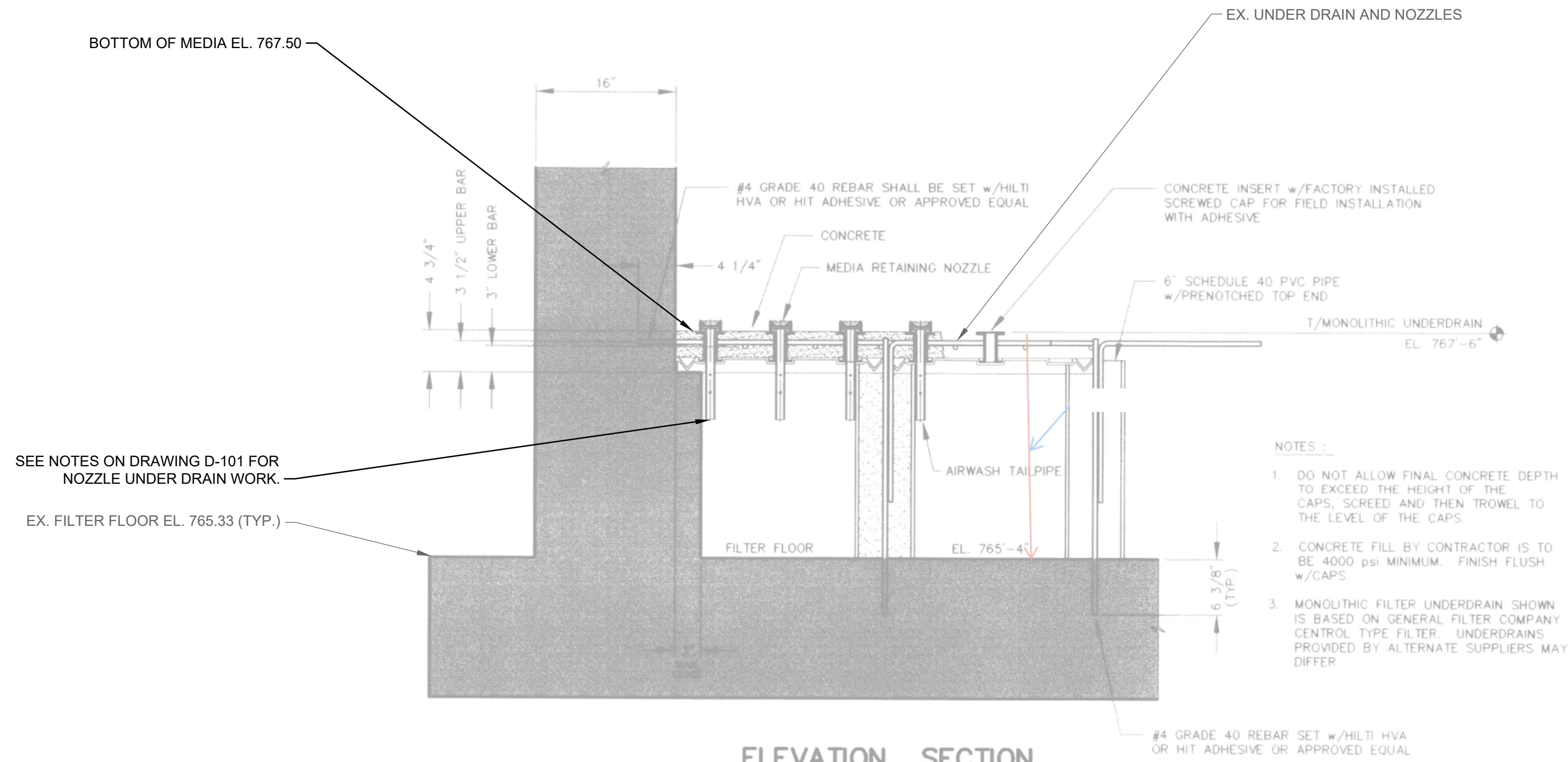
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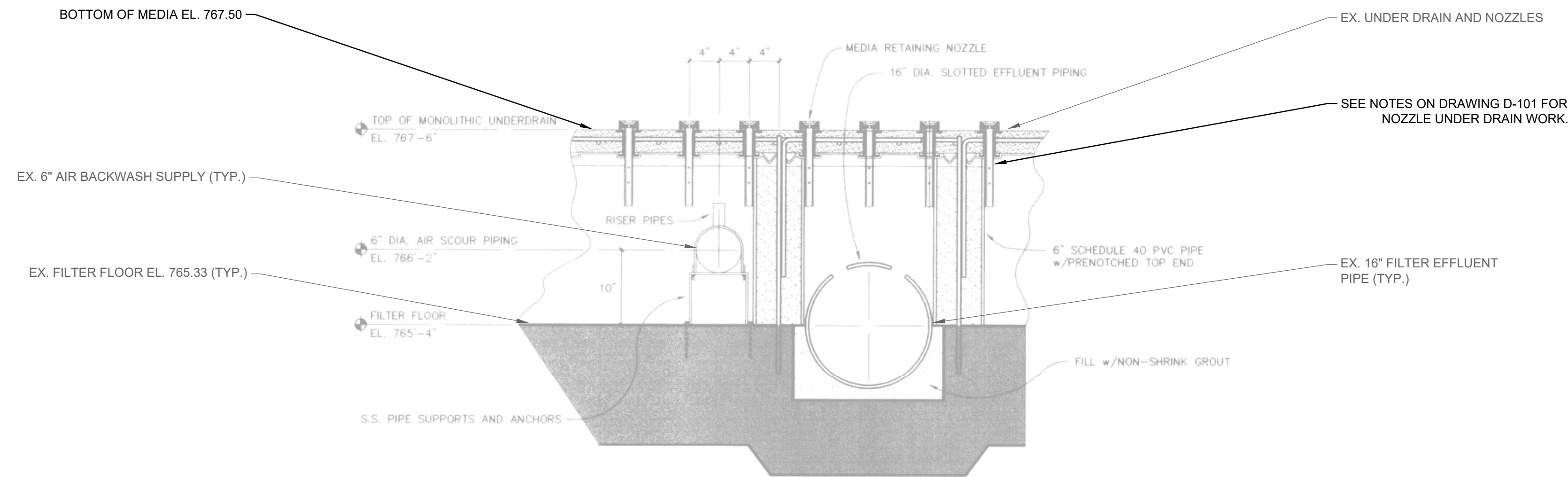
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ELEVATION SECTION

GRAVITY FILTER
UNDER DRAIN DETAILS

SCALE: NTS



GRAVITY FILTER
UNDER DRAIN DETAILS

SCALE: NTS

NOTES:

1. SEE NOTES ON DRAWING D-101.

BACKGROUND DRAWING WAS ORIGINALLY PREPARED AS PART OF
CONTRACT "CENTRAL WELL FIELD RESTORATION WATER
TREATMENT PLANT CONTRACT NO. 1", CITY OF KALAMAZOO,
JANUARY 1997, SHEET 37 OF 66, PROJECT 86132, PRIEN & NEWHOF.
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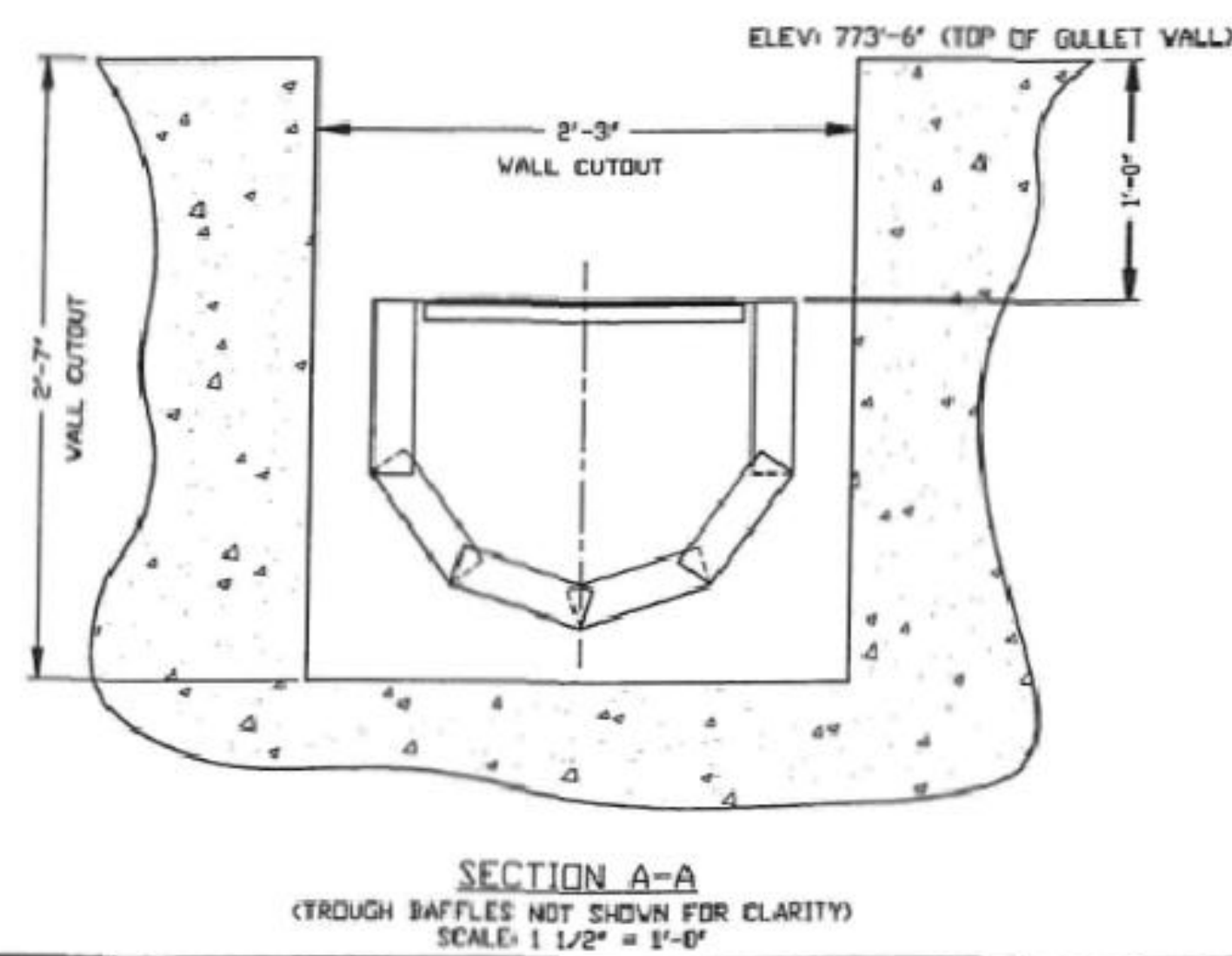
FILTER DETAILS

Project No.: 200-19743-24010
Designed By: M. TEITSMA
Drawn By: R. POHLMAN
Checked By:

D-303

Bar Measures 1 inch

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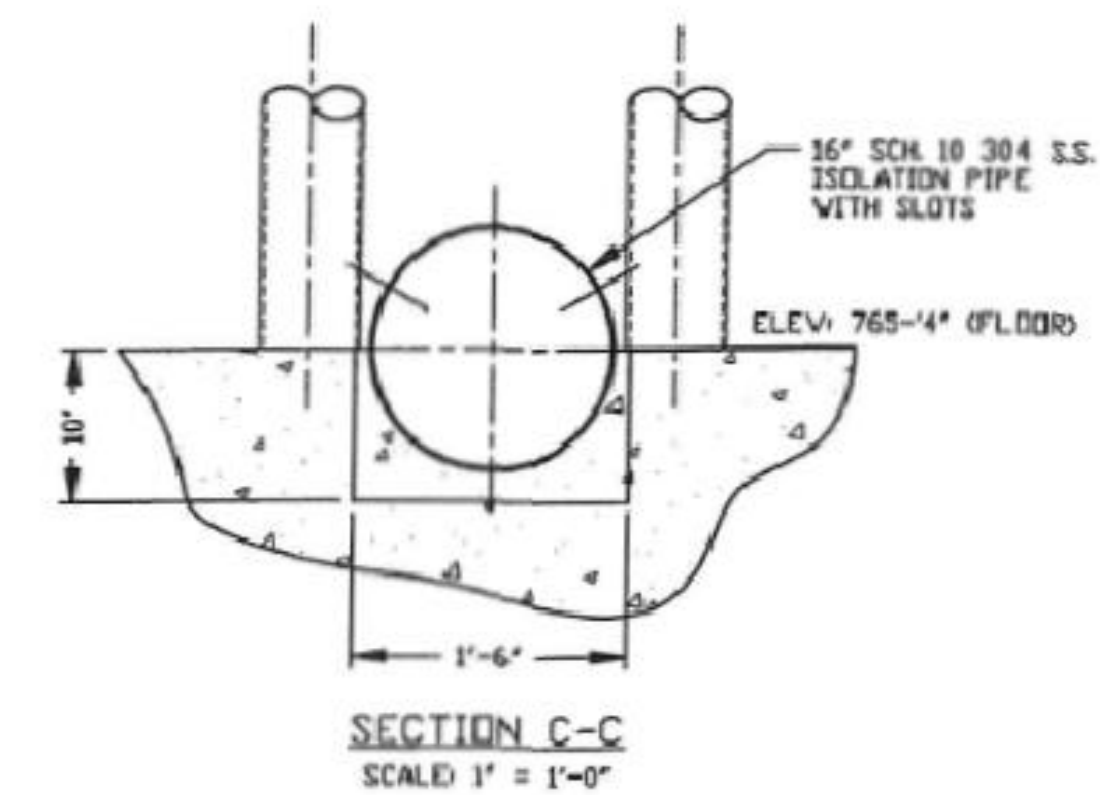
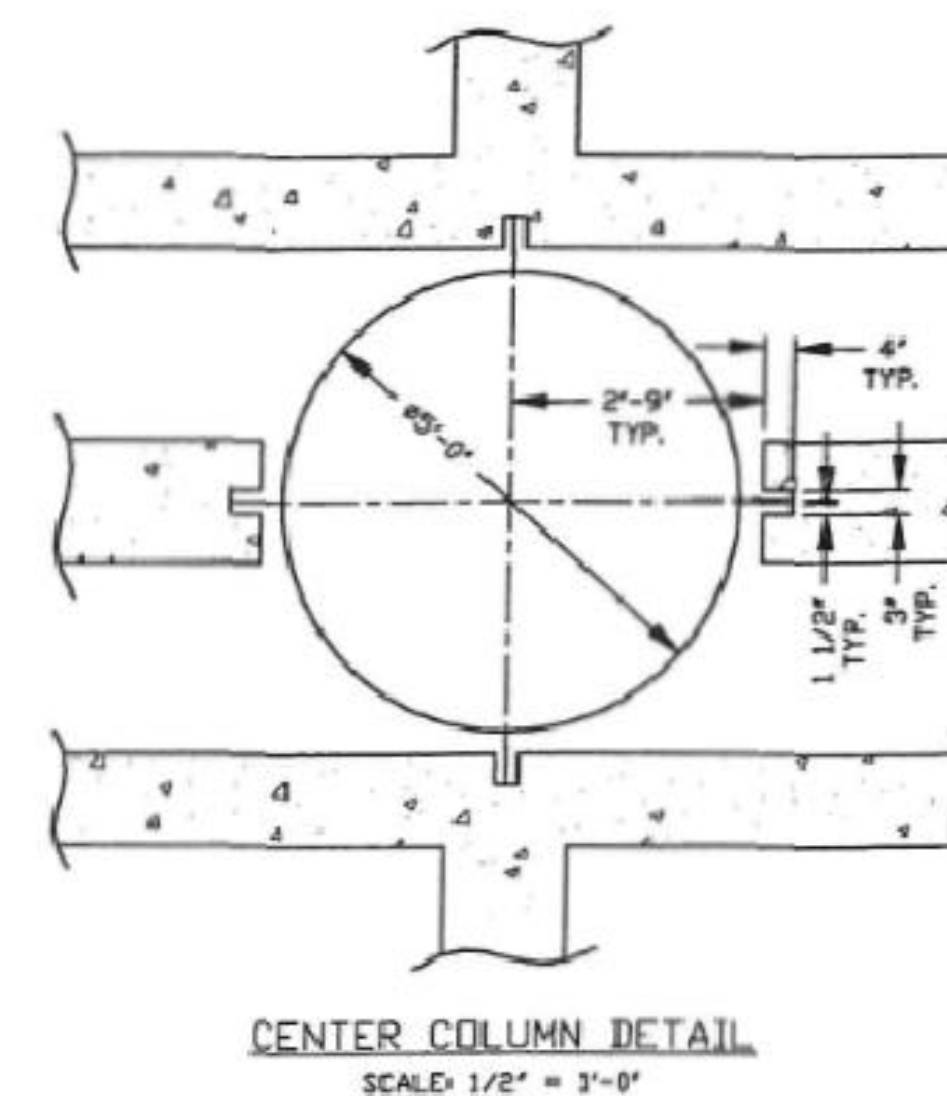


6" SCH. 5 304 S.S. AIRWASH
HEADER W/ RISERS

STAINLESS STEEL
HEADER SUPPORT
BRACKET

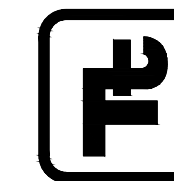
1/2" S.S. WEDGE ANCHOR
(2 REQ'D PER BRACKET)

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



⑤						JOB NAME (MAXIMUM 80 CHAR)
⑥						QTC NO. & 105-12
⑦						CUSTOMER ORDER MECHANICAL CONTRACT NO.
⑧	HYDRA BATTLE VENT PIPES	5-9	7-29-94			CUST. NO. & 105-12
⑨	WATER DISTRIBUTION SYSTEMS	5-9	8-10-94			ENGINEER DESIGN & REVIEW
⑩	NO. 317A BNC REVISION DESCRIPTION	BY	DATE	CHK'D	DATE	SPEC SECT 15.4
RELEASE FOR FABRICATION		SCHEDULE # = 214		RELEASE FOR SHEDDING		
215	DATE 6-1-94	COPIED FROM	BY	DATE		
216	DATE 6-22-94	SHEDDING	CHK'D	DATE		
217	DATE	APPROV	DATE			
						CONTRACTOR INSTALLATION
						SIZE: DRAWING NUMBER D 95013101

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CITY OF KALAMAZOO, MICHIGAN

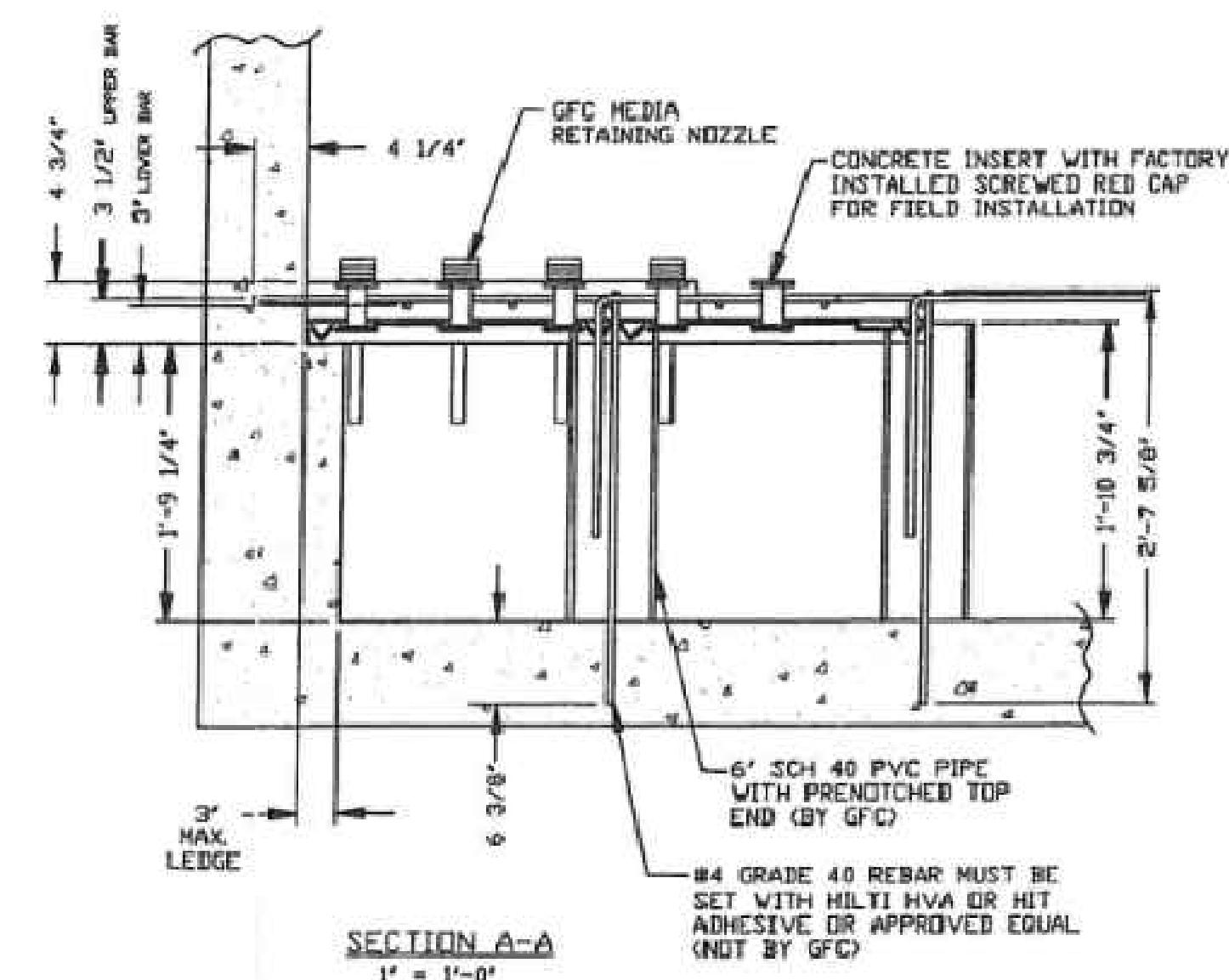
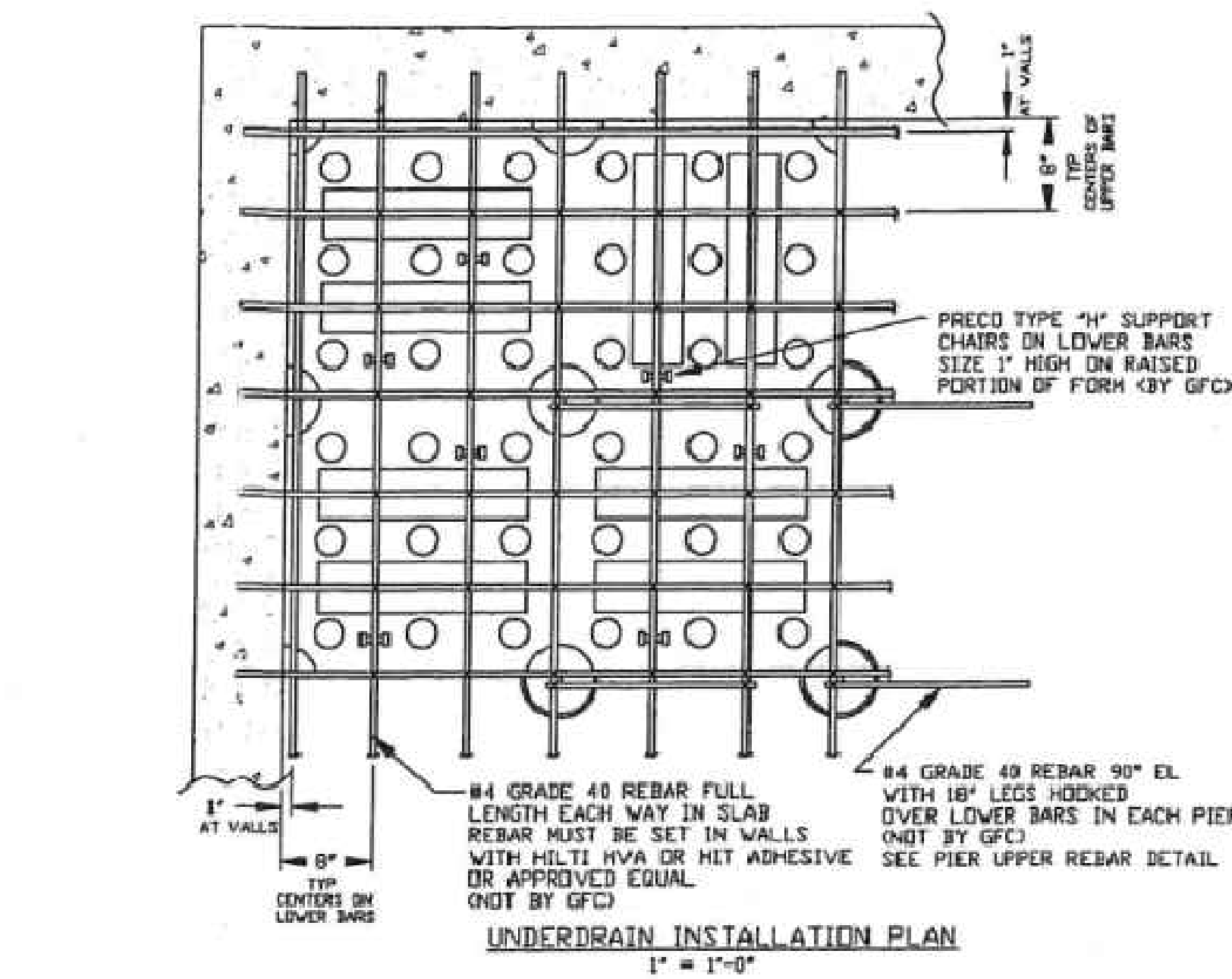
PHASE 1: CENTRAL PUMP STATION 1 FILTER MEDIA
REPLACEMENT (AS NEEDED) & MISC. FILTER IMPROVEMENTS

FILTER 1 AND 2

MANUFACTURER DRAWING
(FOR REFERENCE ONLY)

Project No.:	200-19743-24010
Designed By:	M. TEITSMAN
Drawn By:	R. POHLMAN
Checked By:	

D-801



SHEET PROVIDED FOR
REFERENCE ONLY

()					JOB NAME KALAMAZOO MEDIAN
()					GFC #B # INS-13
()					CUSTOMER BOSCH MECHANICAL CONTRACTORS
()					DWYF, 140' X 200' VELL. #
()	CHANGES PER RETURNED APPROVALS	E.D.	7-28-94		ENGINEER PRINCE & NEWBY
NO.	STD. ENG. REVISION DESCRIPTION	BY	DATE	CHK'D	DATE
	RELEASE FOR FABRICATION SCALE 1/8" = 1'-0"			RELEASE FOR STANDARD	
3TH E.D.	DATE: 8-3-94	DESIGNED FROM	3TH	DATED:	
CFD REC.	DATE: 6-22-94	DRAWING	CFD	DATED:	
VPRN	DATE:		APPROV	DATED:	
IGF GENERAL FILTER Company					SIZE
					DRAWING NUMBER
					D 95013104

THIS SHEET IS FROM FILTER SHOP DRAWING BY GENERAL
FILTER COMPANY, DRAWING NUMBER 95013104, 1994.
DRAWING NOT TO SCALE.

100% SUBMITTAL

NOT FOR
CONSTRUCTION

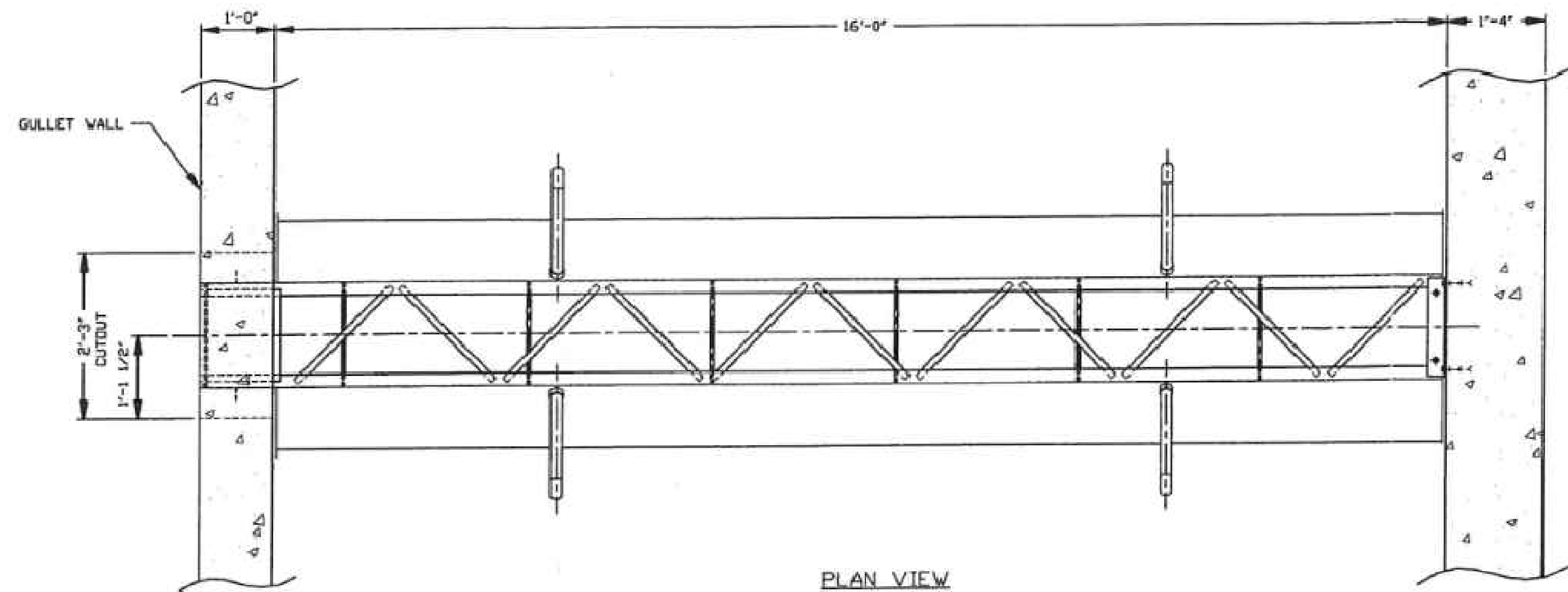
MARK	DATE	DESCRIPTION	BY
	5/8/2026	EGLE SUBMITTAL	

CITY OF KALAMAZOO, MICHIGAN
PHASE 1: CENTRAL PUMP STATION 1 FILTER MEDIA
REPLACEMENT (AS NEEDED) & MISC. FILTER IMPROVEMENTS
FILTER 1 AND 2
MANUFACTURER DRAWING
(FOR REFERENCE ONLY)

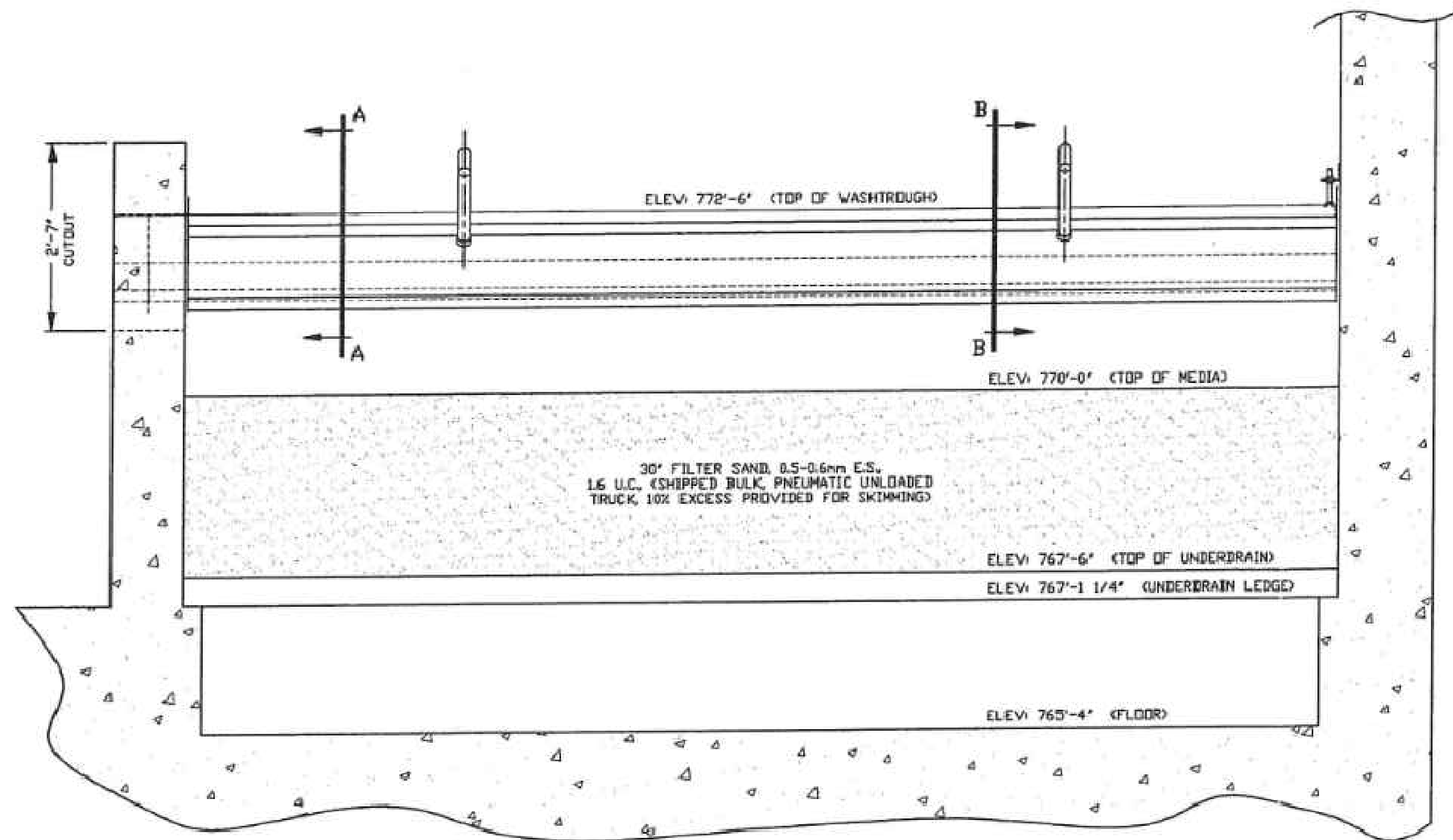
Project No.:	200-19743-24010
Designed By:	M. TEITSMA
Drawn By:	R. POHLMAN
Checked By:	

5/7/2026 10:27:42 PM - C:\P2000-19743-24010\CAD\SHEETFILES\804.DWG - TEITSMA, MARC

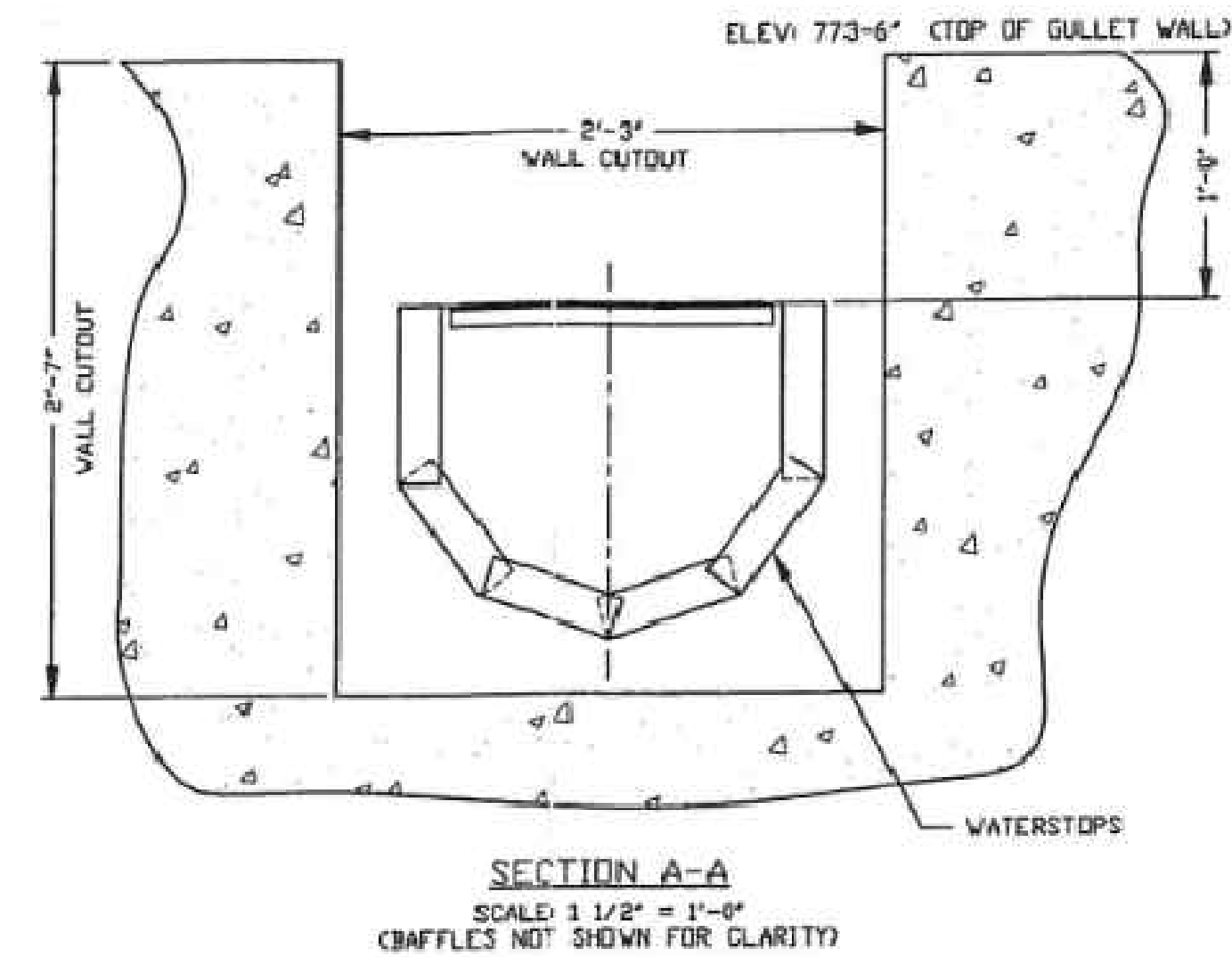
PROPERTY OF GENERAL FILTER COMPANY - FOR U.S. VIEW ONLY - TO BE RETURNED UPON REQUEST



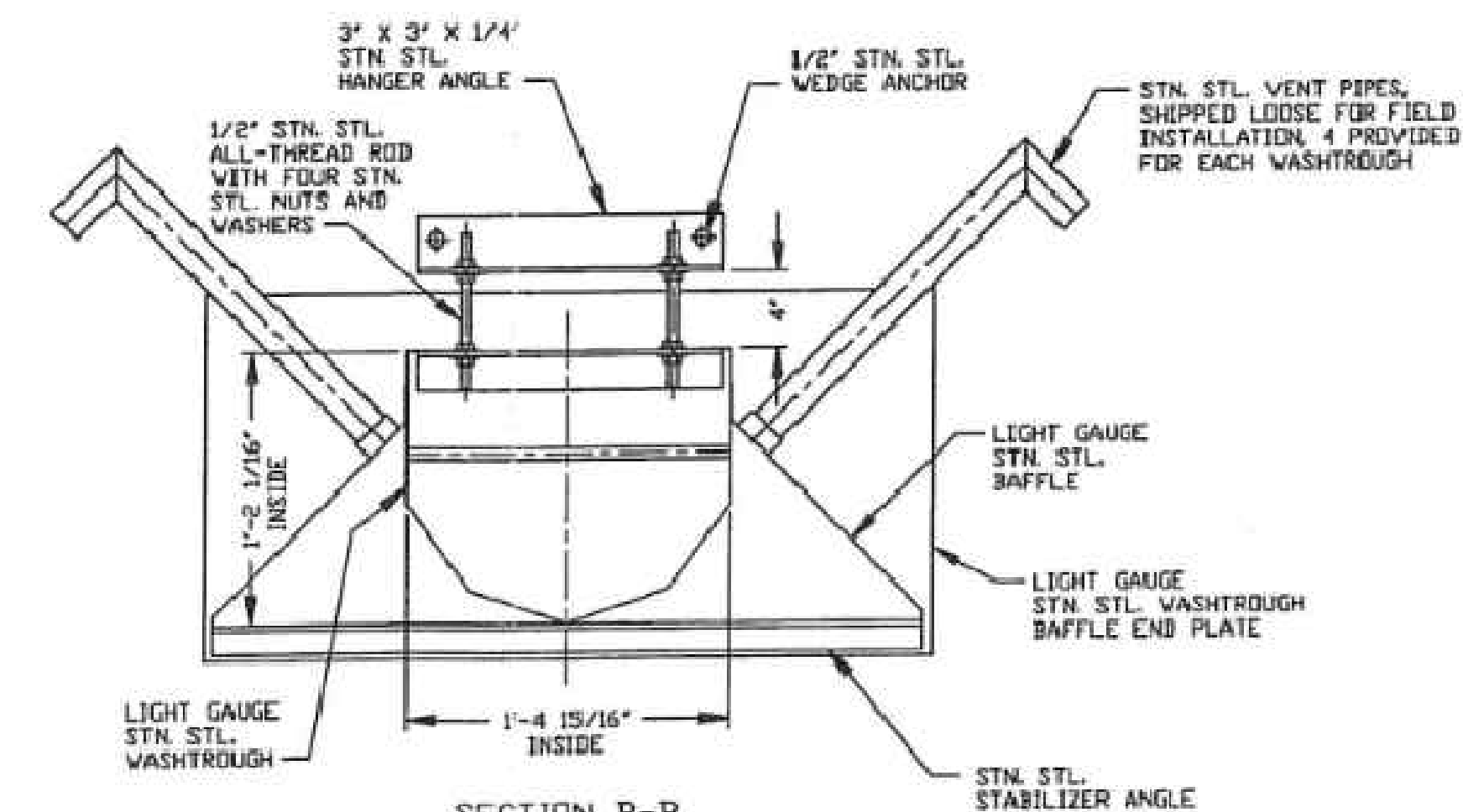
PLAN VIEW



ELEVATION VIEW



SECTION A-A
SCALE: 1 1/2" = 1'-0"
(BAFFLES NOT SHOWN FOR CLARITY)



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

NOTES:

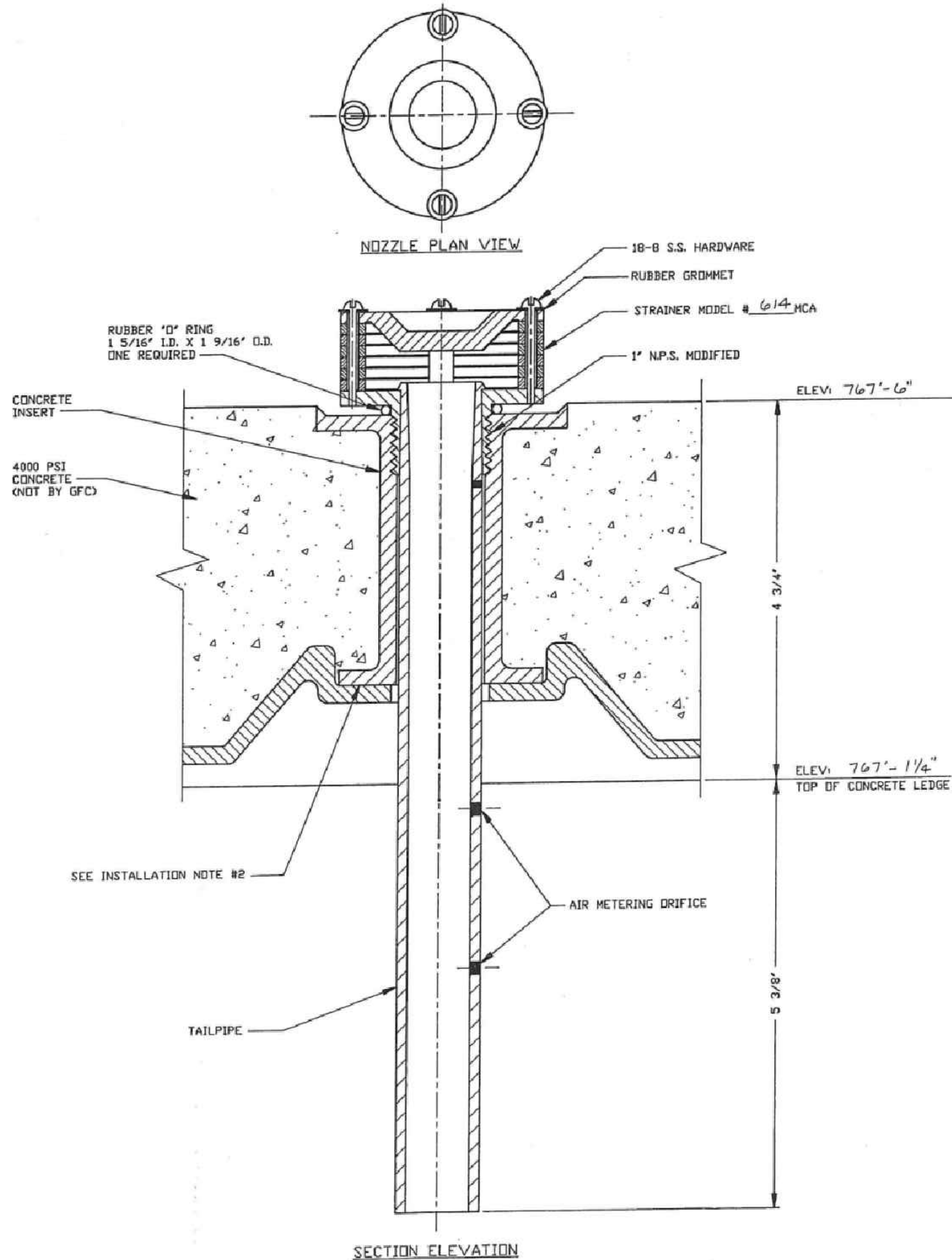
- 24 ASSEMBLIES PROVIDED.
- REFER TO DRAWING 95013101 FOR POSITIONING OF WASHTROUGHS HORIZONTALLY IN THE CELL.
- ALL STN. STL. IS EITHER TYPE 18-B OR 304.
- GROUT FOR INSTALLATION OF WASHTROUGHS INTO GULLET WALL IS NOT BY GFC.

SHEET PROVIDED FOR
REFERENCE ONLY

1 2 3 4 5				JOB NAME: KALAMAZOO MIDDLE					
				GFC NO. 8-199-10					
				CUSTOMER: NOTCH MECHANICAL CONTRACTORS					
				CUST. REQ. WELL 4					
NEVER RUFFLE VENT PIPES				S.D. 7-29-94		CHECKED: PRESH & MEHAF			
REL. STD. ENG. REVISION DESCRIPTION				BY DATE (CHK'D) DATE		PROD. SECT. 81.4			
RELEASE FOR FABRICATION				RELEASE FOR STANDARDS					
BY: S.D.		DATE: 6-3-94		COPIES / FOR DRAWING		BY: S.D.		DATE: 6-3-94	
APPD. SCS		DATE: 6-22-94		COPIES / FOR DRAWING		BY: S.D.		DATE: 6-22-94	
APPD.		DATE:		COPIES / FOR DRAWING		BY: S.D.		DATE: 6-22-94	
AGF GENERAL FILTER Company UNIT 100						SIZE:		DRAWING NUMBER	
						D		95013106	

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THIS SHEET IS FROM FILTER SHOP DRAWING BY GENERAL FILTER COMPANY, DRAWING NUMBER 95013109, 1994. DRAWING NOT TO SCALE.

GENERAL NOTES:

1. ALL STRAINER MATERIAL IS G.S.M. CYCOLAC UNLESS OTHERWISE NOTED
2. NUMBER OF STRAINER ASSEMBLIES TO BE FURNISHED: 5184 TOTAL (0 ARE SPARE)
3. STRAINER HEAD AND TAILPIPE SHIPPED SHOP ASSEMBLED

INSTALLATION NOTES:

1. AREA BELOW UNDERDRAIN TO BE VACUUM CLEANED AND ALL PIPING FROM SOURCE OF BACKWASH WATER TO BE CLEANED OF ALL FOREIGN MATERIAL WHICH COULD PLUG THE STRAINERS DURING WATER WASH
2. USE ABS CEMENT (NOT BY GFC) TO SECURE INSERT TO PANEL
3. INSTALLER IS TO CHECK TO BE CERTAIN A PLASTIC THREAD PROTECTOR IS IN EACH STRAINER INSERT DURING INSERT PLACEMENT.
4. REMOVE ALL DIRT AND FOREIGN MATERIAL AT BEARING SURFACE OF STRAINER PRIOR TO INSTALLATION
5. INSTALL STRAINERS AFTER ALL FILTER PAINTING HAS BEEN COMPLETED AND AFTER INSTALLATION OF UNDERDRAIN HAS BEEN COMPLETED. SEE ENGINEER'S SPECIFICATIONS.
6. TIGHTEN STRAINER ASSEMBLIES HAND TIGHT TO INSERT SURFACE. STRAINERS MUST NOT TIGHTEN IN THREADS BUT MUST TIGHTEN FIRMLY AGAINST THE O-RING. IF DIFFICULTY IS ENCOUNTERED, RUN A STIFF NYLON BRUSH INTO STRAINER INSERT TO CLEAN THREADS.
7. DO NOT USE ANY POWER TOOL OR WRENCH TO INSTALL STRAINERS.
8. DO NOT USE PIPE DOPE, OR ANY OTHER THREAD SEALER ON THE STRAINERS. STRAINERS SHOULD BE INSTALLED DRY.
9. BE VERY CAREFUL NOT TO STEP ON, KICK, OR OTHERWISE DAMAGE THE STRAINERS DURING OR AFTER INSTALLATION.
10. DO NOT HIT STRAINER ASSEMBLIES WITH ANY SHOVEL OR OTHER HEAVY TOOL.
11. TAKE SPECIAL NOTICE OF NOTES 9 AND 10 ABOVE WHEN INSTALLING FILTER MEDIA
12. PROTECT STRAINERS FROM ALL FOREIGN MATERIALS WHICH MAY ADVERSELY EFFECT THE PLASTIC. THIS IS PARTICULARLY TRUE OF PAINTS, SOLVENTS, OILS, GREASES, ETC.

WARNING

FILTER MEDIA RETAINING STRAINERS, FURNISHED BY GENERAL FILTER COMPANY, ARE DESIGNED FOR USE IN MUNICIPAL AND INDUSTRIAL WATER AND WASTE WATER TREATMENT FILTERS. ALL FILTERS UTILIZING THESE STRAINERS WILL REQUIRE BACKWASHING WITH FILTERED WATER ONLY. SHOULD ANY FILTER EQUIPPED WITH OUR MEDIA RETAINING STRAINERS BE BACKWASHED WITH UNFILTERED, DIRTY, DEBRIS LADEN BACKWASH SUPPLY WATER, THE STRAINERS WILL BECOME PLUGGED. UNDERDRAIN FAILURE IS POSSIBLE UNLESS THE STRAINERS ARE MAINTAINED IN A CLEAN, FREE FLOW STATE.

AS A MANUFACTURER OF FILTER UNDERDRAIN COMPONENTS, WE ADVISE ALL ENGINEERS AND CONTRACTORS TO REVIEW EACH INSTALLATION IN ADVANCE OF CONSTRUCTION FOR FILTER BACKWASH SUPPLY WATER CONTAMINATION SOURCES.

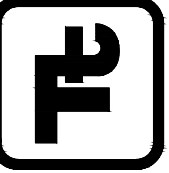
STRAINERS EQUIPPED WITH AIR WASH TAIL PIPE

IF THERE IS INTERFERENCE BETWEEN THE UNDERDRAIN SUPPORT STRUCTURE AND A STRAINER TAIL PIPE, THE INTERFERENCE MUST BE REMOVED OR THE STRAINER TAKEN OUT AND THE HOLE PLUGGED COMPLETELY. THIS PROCEDURE CAN BE PERFORMED ON NO MORE THAN ONE PERCENT OF THE STRAINERS. NO MODIFICATIONS WHATEVER CAN BE MADE TO THE STRAINER TAIL PIPE. IF FITTING PROBLEMS OCCUR, CONSULT THE GENERAL FILTER COMPANY FACTORY.

SHEET PROVIDED FOR
REFERENCE ONLY

⑤						JOB NAME: KALAMAZOO, MICHIGAN
④						DWG NO. + N95-13
③						CUSTOMER: BOSCH MECHANICAL CONTRACTORS
②						CUST. NO. K200 WELL 4
①						ENGINEER: PREN & NEWHOFF
NO.	STD. DWG. REVISION DESCRIPTION	BY	DATE	CHK'D	DATE	SPEC SECT. 11.4
RELEASE FOR FABRICATION SCALE: 1" = 1'		RELEASE FOR STANDARD				
BY: SJB	DATE: 5-27-94	COPIED FROM	BY:	DATE:	GFC MODEL# 614-MCA MEDIA	
CHK'D: BES	DATE: 6-22-94	DRAWING	CHK'D:	DATE:	RETAINING STRAINER FOR	
APPRO:	DATE:	C-26085	APPRO:	DATE:	MULTICRETE II UNDERDRAIN	
GF GENERAL FILTER Company AMES, IOWA						SIZE: C DRAWING NUMBER: 95013109

www.tetra-tech.com
1136 OAK VALLEY DRIVE, SUITE 100
ANN ARBOR, MI 48108
TEL: (734) 665-6000 FAX: (734) 213-3003



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CONSTRUCTION

MARK	DATE	DESCRIPTION	BY
5/8/2026		EGLE SUBMITTAL	

CITY OF KALAMAZOO, MICHIGAN
PHASE 1: CENTRAL PUMP STATION 1 FILTER MEDIA
REPLACEMENT (AS NEEDED) & MISC. FILTER IMPROVEMENTS
FILTER DETAIL
MANUFACTURER DRAWING
(FOR REFERENCE ONLY)

Project No.: 200-19743-24010
Designed By: M. TEITSMA
Drawn By: R. POHLMAN
Checked By:

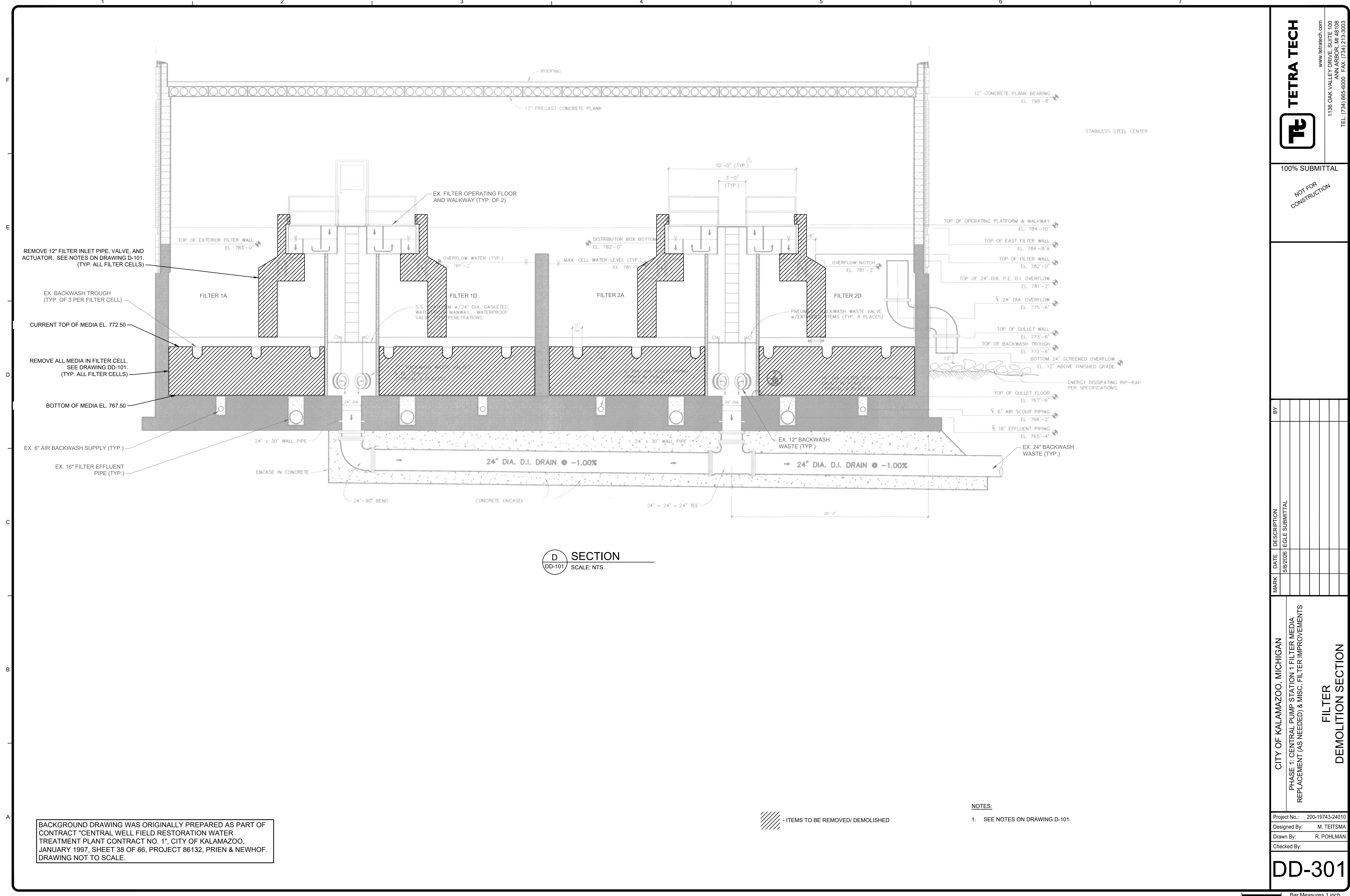
D-805

Bar Measures 1 inch

Copyright: Tetra Tech



5/7/2026 11:08:39 PM - C:\P\200-19743-24010\CAD\SHEETFILES\DD-301.DWG - TETSMA, MARC



BACKGROUND DRAWING WAS ORIGINALLY PREPARED AS PART OF CONTRACT "CENTRAL WELL FIELD RESTORATION WATER TREATMENT PLANT CONTRACT NO. 1", CITY OF KALAMAZOO, JANUARY 1997, SHEET 38 OF 66, PROJECT 86132, PRIEN & NEWHOF. DRAWING NOT TO SCALE.

- ITEMS TO BE REMOVED/ DEMOLISHED

NOTES:
1. SEE NOTES ON DRAWING D-101.

TETRA TECH
www.tetratech.com
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	5/6/2026	EGLE SUBMITTAL	

CITY OF KALAMAZOO, MICHIGAN

PHASE 1: CENTRAL PUMP STATION 1 FILTER MEDIA REPLACEMENT (AS NEEDED) & MISC. FILTER IMPROVEMENTS

FILTER DEMOLITION SECTION

Project No.: 200-19743-24010

Designed By: M. TEITSMA

Drawn By: R. POHLMAN

Checked By:

DD-301

Copyright: Tetra Tech

Bar Measures 1 inch



NOTES:

1. SEE NOTES ON DRAWING D-101.

 - ITEMS TO BE REMOVED/ DEMOLISHED

Project No.:	200-19743-24010
Designed By:	M. TEITSMA
Drawn By:	R. POHLMAN
Checked By:	

DD-302