



**MANAGEMENT SERVICES DEPARTMENT**  
**Purchasing Division**  
 241 West South Street  
 Kalamazoo, MI 49007-4796  
 Phone: 269.337.8020  
 Fax: 269.337.8500  
[www.kalamazoo.org](http://www.kalamazoo.org)  
[purchasing@kalamazoo.org](mailto:purchasing@kalamazoo.org)

**ADDENDUM #1**  
 June 15, 2023

**TO: ALL Prospective Bidders**  
**PROJECT NAME: GPI Effluent Sewer Realignment**  
**BID REFERENCE #: 91345-004.0**  
**BID DUE/OPENING DATE: Tuesday, June 27, 2023 at 3:30 p.m. Local Time (ET)**

The purpose of this addendum is to clarify and/or modify the Bid Due/Opening Date, Bid Items, Plans and/or Specifications for this project. All work affected is subject to all applicable terms and conditions of the Bidding and Contract Documents.


- NOTE:** The **BID DUE/OPENING DATE** has been changed to:  
**Tuesday, June 27, 2023 at 3:30 p.m. Local Time (ET)**
- Jones & Henry Engineers Addendum No. 1 (included as Addendum #1, Attachment A)**  
 Please see Addendum #1, Attachment A for information provided by Jones & Henry Engineers and the City of Kalamazoo related to the project changes.

- REPLACE**  
 Replace SECTION II, BID AND AWARD pages 9-12 of the original Invitation for Bids (IFB) with the attached **REVISED**, SECTION II, BID AND AWARD pages 9-14 (included as **Addendum #1, Attachment B**). **The REVISED BID AND AWARD pages MUST be included in a bid for it to be considered responsive.**

The Addendum can be viewed and downloaded from the City’s website at <https://www.kalamazoo.org/bidopportunities>

**In order for a bid to be responsive, this addendum must be returned, signed and dated, with your bid.** If you have already submitted your bid, acknowledge receipt and acceptance of this addendum by signing in the place provided and returning it to the undersigned and it shall be incorporated in your bid. Please identify your return envelope with the bid reference number and project description.

Bidders shall address questions regarding the specifications to Sohil Manjiyani, PE at manjiyanis@kalamazoo.org or (269) 337-8595. Questions regarding terms, conditions and other related bid requirements may be addressed to Craig Hull, Buyer, at (269) 337-8444.

Sincerely,  
  
**Michelle Emig**  
*Purchasing Division Manager*

c: Sohil Manjiyani, Public Services  
 Ryan Stoughton, Public Services  
 Prevailing Wage File

FIRM: \_\_\_\_\_

SIGNED: \_\_\_\_\_

NAME: \_\_\_\_\_  
 (Type or Print)

DATE: \_\_\_\_\_



***ADDENDUM #1***

**Attachment A**

**JONES & HENRY ENGINEERS ADDENDUM  
01**

**GPI EFFLUENT SEWER REALIGNMENT**

**91345-004.0**

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City of Kalamazoo/GPI  
Effluent Sewer Realignment

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**ADDENDUM 01**

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06/09/2023

Plan holders for the City of Kalamazoo/GPI Effluent Sewer Re-Alignment Project are hereby notified of the following amendments to the Contract Documents. This Addendum is hereby made a part of the Contract Documents.

**NOTES**

Additional storm sewer work, concrete spillway and By-Pass Vault is included in Addendum 01.

The Base Bid includes items 1-48. The Alternate Bid includes adding Bid Item 50 Meter Vault and deducting Bid Item 8 Reconstruct Parshall Flume Liner.

**DRAWINGS**

Replace the following drawings, in their entirety, with the attached:

- G-0.1, G-0.2, G-0.3
- R-1.2
- C-0.2
- C-1.1, C-1.2
- SA-1.1, SA-1.2, ST-1.1
- S-1.2
- E-1.1, E-1.2

The following drawings are added to the plans:

C-2.1, ST-2.1

**SPECIFICATIONS**

Replace the following specifications, in their entirety, with the attached:

- 01010 Definition of Contract Items
- 05540 Iron Castings
- 08320 Floor Doors

Plan holders should update the Drawing Index to reflect the above changes.

**RECEIPT OF THIS ADDENDUM MUST BE ACKNOWLEDGED IN THE BID.**



Alignment Name: PROPOSED SANITARY  
 Description:  
 Station Range: Start: 0+00.00, End: 6+84.00

PI Station	Northing	Easting	Distance	Direction
0+00.00	296,180.59'	12,797,035.30'		
			13.42'	S87°E
0+13.42	296,179.87'	12,797,048.70'		
			44.46'	S86°E
0+57.88	296,176.94'	12,797,093.06'		
			112.56'	S34°E
1+70.44	296,083.86'	12,797,156.35'		
			286.45'	S22°E
4+56.89	295,817.91'	12,797,262.78'		
			194.86'	S1°W
6+51.75	295,623.09'	12,797,259.11'		
			6.65'	S1°W
6+58.40	295,616.43'	12,797,258.99'		
			25.59'	S66°E
6+84.00	295,605.95'	12,797,282.33'		

Alignment Name: PROPOSED STORM  
 Description:  
 Station Range: Start: 10+00.00, End: 13+00.00

PI Station	Northing	Easting	Distance	Direction
10+00.00	296,364.48'	12,797,223.13'		
			160.87'	S13°W
11+60.87	296,207.93'	12,797,186.12'		
			108.09'	S62°W
12+68.96	296,157.29'	12,797,090.63'		
			31.04'	N89°W
13+00.00	296,158.03'	12,797,059.60'		

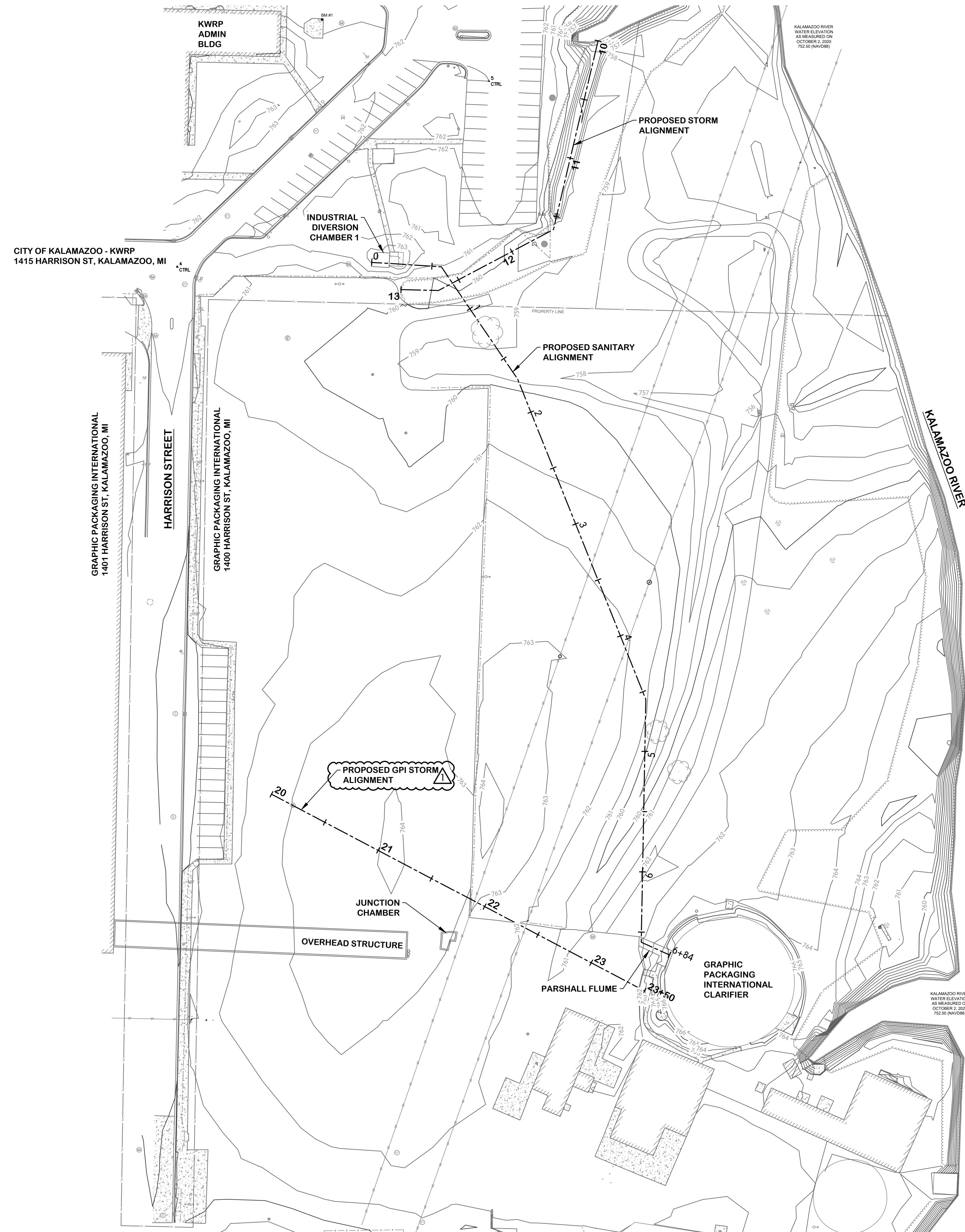
Alignment Name: PROPOSED GPI STORM  
 Description:  
 Station Range: Start: 20+00.00, End: 23+50.00

PI Station	Northing	Easting	Distance	Direction
20+00.00	295,739.28'	12,796,952.09'		
			350.00'	S62°E
23+50.00	295,576.07'	12,797,261.71'		

**SURVEYOR NOTES:**

- Utilities shown are approximate locations derived from actual measurements. They should not be interpreted to be exact locations nor should it be assumed that they are the only utilities in this area.
- Benchmark #1: Plastic tag stamped "763.76" near the NE corner of overflow chamber East of the Administration Building. ELEVATION: 763.30 (NAVD88).
- Basis of Coordinates: Michigan State Plane South, International feet.
- Control Point Information:

NO.	NORTHING	EASTING	ELEV	MAG NAIL	NOTE IN PLAN VIEW
1	296855.290	12797095.924	780.27	MAG NAIL	}
2	296626.441	12797089.940	781.54	MAG NAIL	
3	296403.981	12797084.294	781.92	MAG NAIL	
4	296177.009	12796873.824	761.58	MAG NAIL	
5	296331.126	12797132.506	762.99	MAG NAIL	



KAL-798200-EXISTING SITE PLAN AND SURVEY CONTROL  
 6/8/2023 4:20 PM - CFERRELL  
 6/8/2023 6:58 PM



**EXISTING PROJECT AREA  
 AND SURVEY CONTROL**

CITY OF KALAMAZOO, MI - KALAMAZOO/GPI EFFLUENT SEWER REALIGNMENT

NO.	DATE	BY	REVISIONS
1	06/08/2023		ISSUED FOR BID
2			REVISED AFTER ISSUED FOR BID



JOB NO.	017-7982.001	
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STATUS: ISSUE FOR BID		
DATE: MAY 2023		
SHEET NO.		
G-0.2		
2 OF 21		



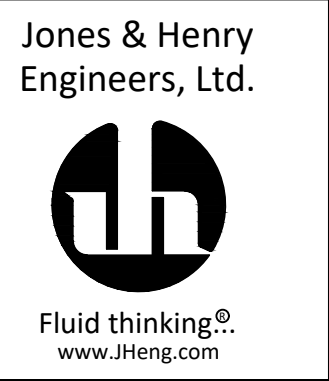
### GENERAL SUMMARY

Item No.	Plan Quantity	Unit	Description	G-0.1	G-0.2	G-0.3	R-1.1	R-1.2	R-1.3	C-0.1	C-0.2	C-0.3	C-1.1	C-1.2	SA-1.1	SA-1.2	ST-1.1	S-0.1	S-1.1	S-1.2	E-0.1	E-1.1	E-1.2	C-2.1	ST-2.1
1	1	LS	General Conditions/ Mobilization	1																					
2	1	LS	Audio/Video Recording	1																					
3	3	EA	Tree and Stump Removal 6 inches to 18 inches										3												
4	0.25	AC	Clearing and Grubbing											0.25											
5	1	LS	Reconstruct Industrial Diversion Chamber No. 1				0.45													0.45			0.05	0.05	
6	1	LS	Remove, Fill, and Abandon Existing Junction Chamber						1																
7	1	LS	Reconstruct Parshall Flume Piping					0.50													0.50				
8	1	LS	Reconstruct Parshall Flume Liner												1										
9	3	EA	5' Diameter Storm Manhole														2							1	
10	258	LF	30-inch Diameter HDPE Storm Sewer														258								
11	5	LF	6-inch Ductile Iron Storm Sewer, All Depths																					5	
12	303	LF	12-inch Ductile Iron Storm Sewer, All Depths																						303
13	1	EA	30-inch Concrete Storm Sewer Outlet Headwall														1								
14	1	EA	12-inch Ductile Iron Flanged Wye																					1	
15	1	EA	12-inch Ductile Iron Blind Flange																					1	
16	3	EA	12-inch Ductile Iron Flanged 45 Degree Bend																					3	
17	1	EA	12-inch Ductile Iron Flanged Plug Valve																					1	
18	1	EA	12-inch x 6-inch Flanged Tee																					1	
19	1	EA	6-inch Ductile Iron Male Cam Lock & Cap																					1	
20	2	EA	12-inch Ductile Iron MJ 45 Degree Bend																					2	
21	22	LF	6-inch Concrete Curb																					22	
22	47	SF	Concrete Spillway																					47	
23	1	EA	By-Pass Vault Structure																					1	
24	15	SY	6"-12" Rip Rap														15								
25	14	LF	12-inch Diameter Class 52 DI Sanitary Sewer (Labor Only)												14										
26	641	LF	24-inch Diameter Class 52 DI Sanitary Sewer (Labor Only)												443	198									
27	3	EA	24-inch Class 52 DI Flanged Tee (Labor Only)																						
28	1	EA	24-inch x12-inch Class 52 DI MJ Tee (Labor Only)									3													
29	3	EA	24-inch Blind Flange (Labor Only)												1										
30	3	EA	24-inch Flanged 45 Degree Bend (Labor Only)																						
31	2	EA	24-inch Flanged 11.25 Degree Bend (Labor Only)																						
32	1	EA	24-inch Flanged 22.5 Degree Bend (Labor Only)																						
33	9	EA	24-inch Mega-Flange Adapter (Labor Only)																						
34	9	EA	24-inch Nut & Bolt Gasket Set (NLA 24 304 SS 150# RR FF 1/8 FLG P) (Labor Only)																						
35	1	EA	24-inch MJ 90 Degree Bend (Labor Only)																						
36	6	EA	24-inch Megalug F/DI (Labor Only)																						
37	6	EA	24-inch MJ Bolt & Gasket Package Less Gland (Labor Only)																						
38	5	EA	12-inch Megalug F/DI																						
39	5	EA	12-inch MJ Bolt & Gasket Package Less Gland (Labor Only)																						
40	1	EA	12-inch MJ 90 Degree Bend (Labor Only)																						
41	3	EA	Type III Sanitary Sewer Manhole (8' Diameter)																						
42	641	EA	CIPP 24-inch sanitary Sewer																						
43	1	EA	Post-CCTV Inspection of Sewers	1																					
44	206	LF	Remove Chain Link Fence																						
45	156	LF	Chain Link Fence (6' High)																						
46	1	EA	Restoration	1																					
47	1	EA	Materials Testing	1																					
48	1	EA	Construction Staking	1																					
49	1	LS	Ductile Iron Sewer Material Advance Purchase (Sales and Use Tax)	1																					
			Base Bid (Items 1-48)																						
50	1	EA	Meter Vault Alternate Bid (Add)																						
8	1	EA	Reconstruct Parshall Flume Liner (Deduct)																						
			Alternate Bid (Items 49 and 50)																						

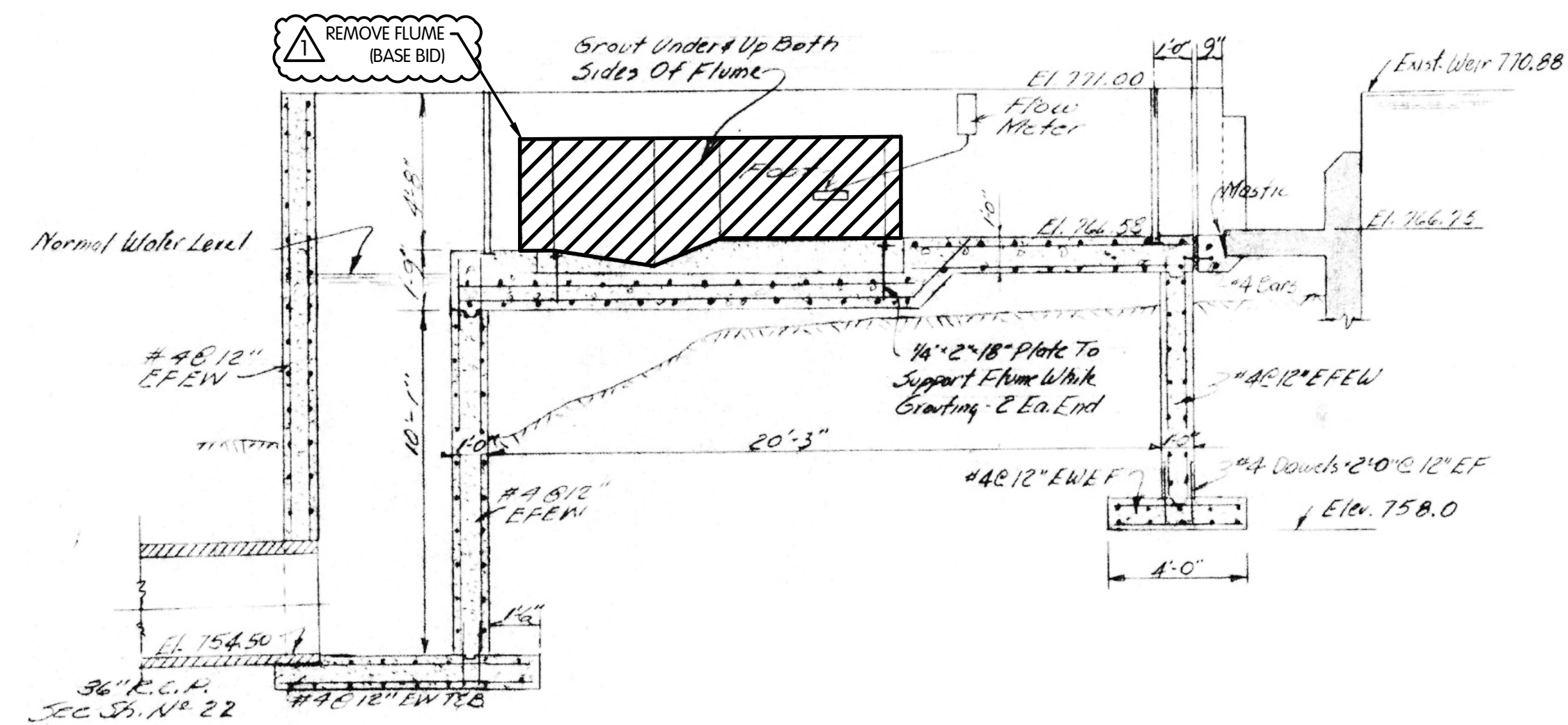
### GENERAL SUMMARY

CITY OF KALAMAZOO, MI - KALAMAZOO/GPI EFFLUENT SEWER REALIGNMENT

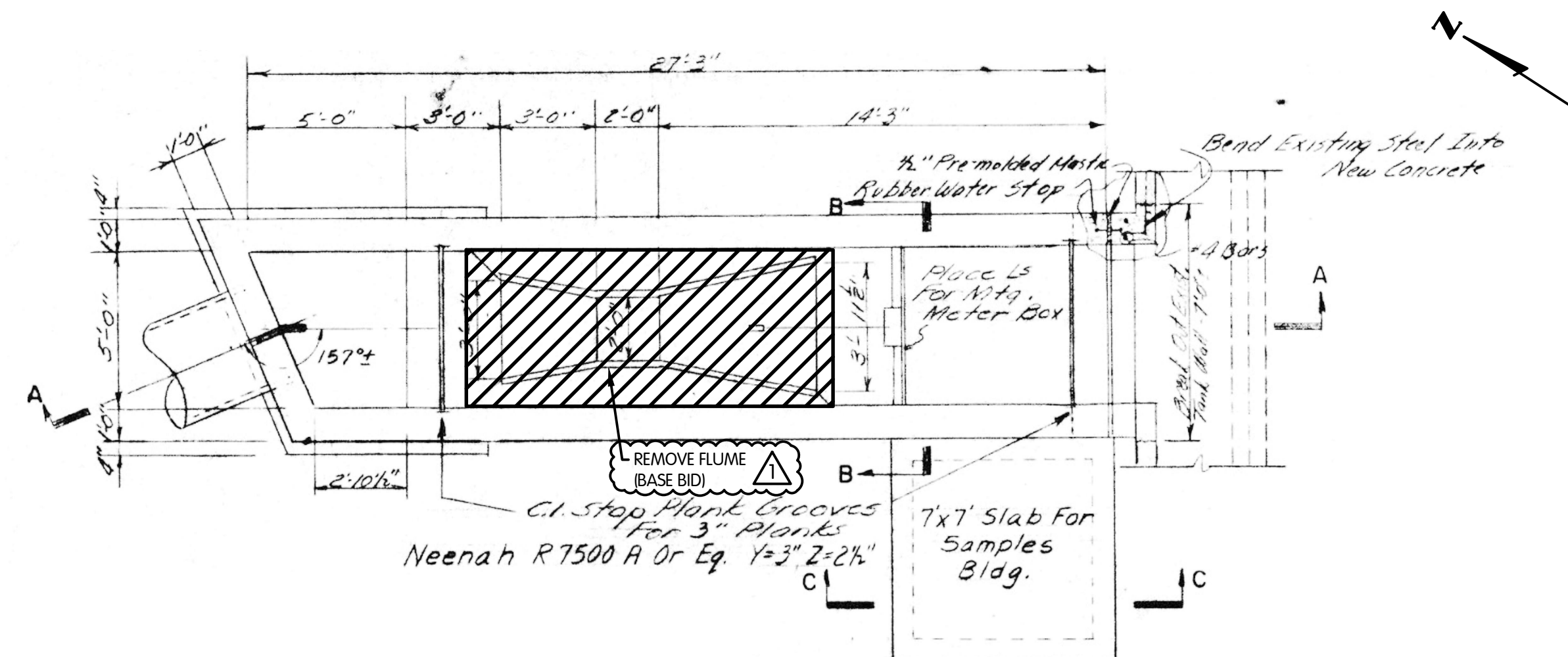
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 DATE 06/08/2023  
 ADDENDUM 01



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 DESIGNED RGE DRAWN CJAF CHECKED RGE  
 STATUS: ISSUE FOR BID  
 DATE: MAY 2023  
 SHEET NO. G-0.3  
 3 OF 21

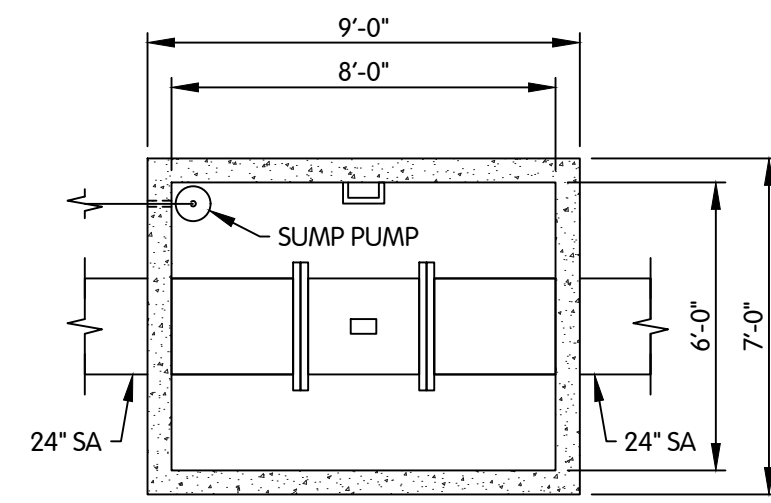


**SECTION A-A**

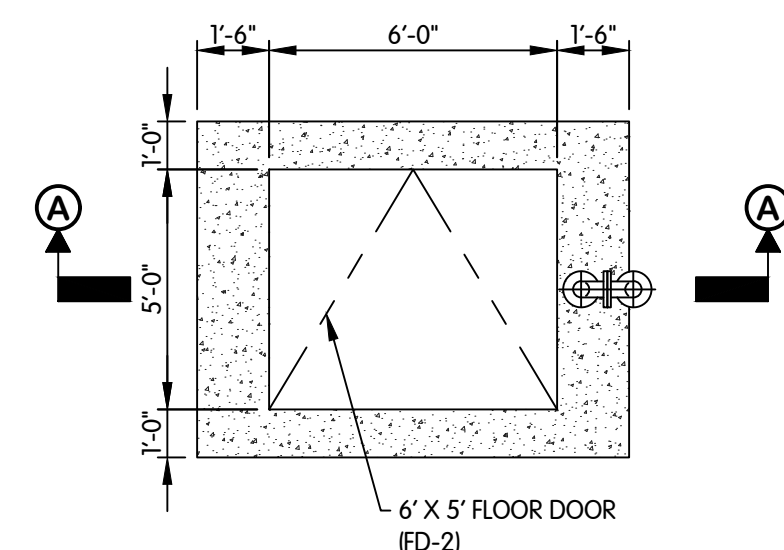


**REMOVAL PLAN VIEW**

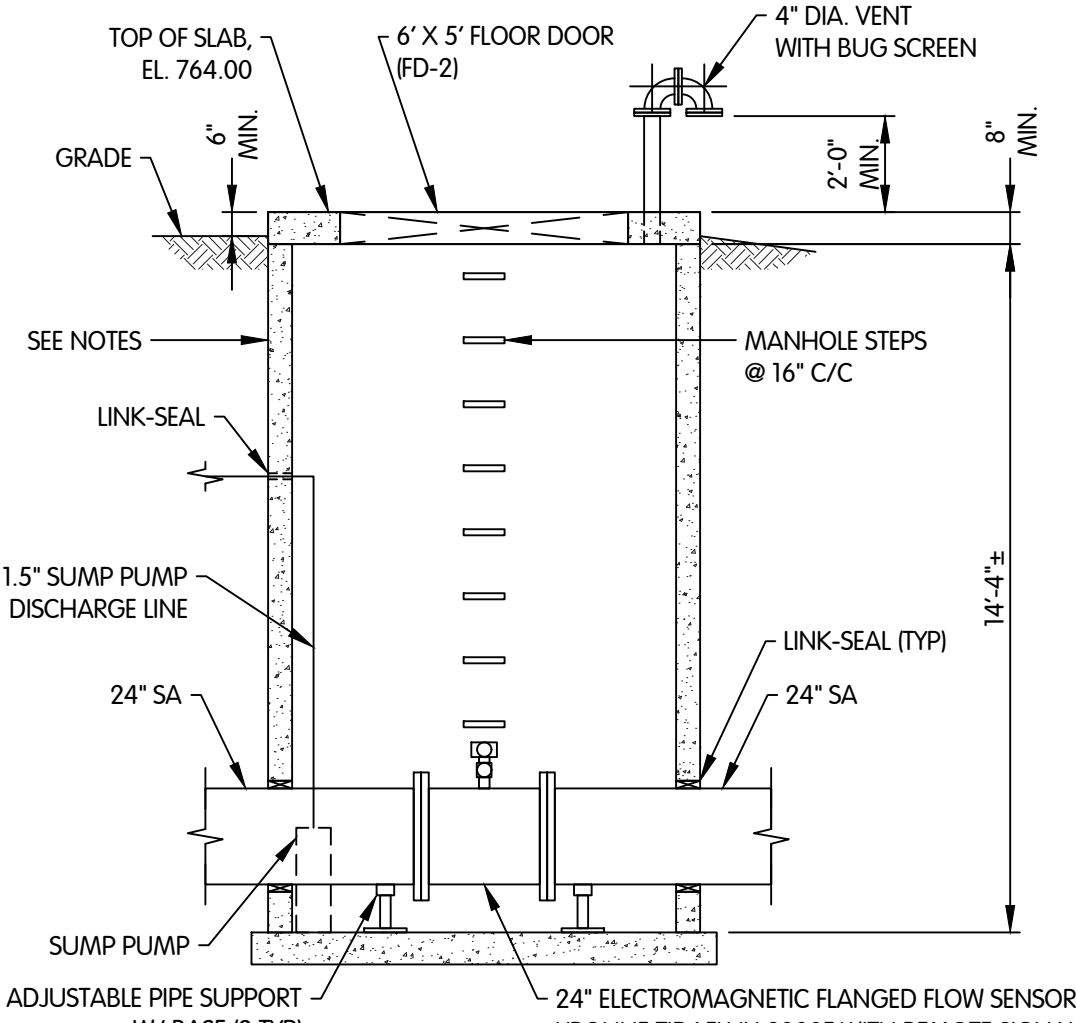
- NOTES:
1. ALL ELEVATIONS SHOWN ARE NGVD 29.
  2. VERIFY ALL EXISTING DIMENSIONS, ELEVATIONS AND CONDITIONS AT THE INTERFACE BETWEEN EXISTING AND NEW CONSTRUCTION PRIOR TO CONSTRUCTION. NOTIFY THE ENGINEER OF ANY DISCREPANCIES FOR RESOLUTION.
  3. ESTIMATED SCALE: 1/4" = 1'-0".



**PLAN ELEVATION 759.00**



**PLAN VIEW**

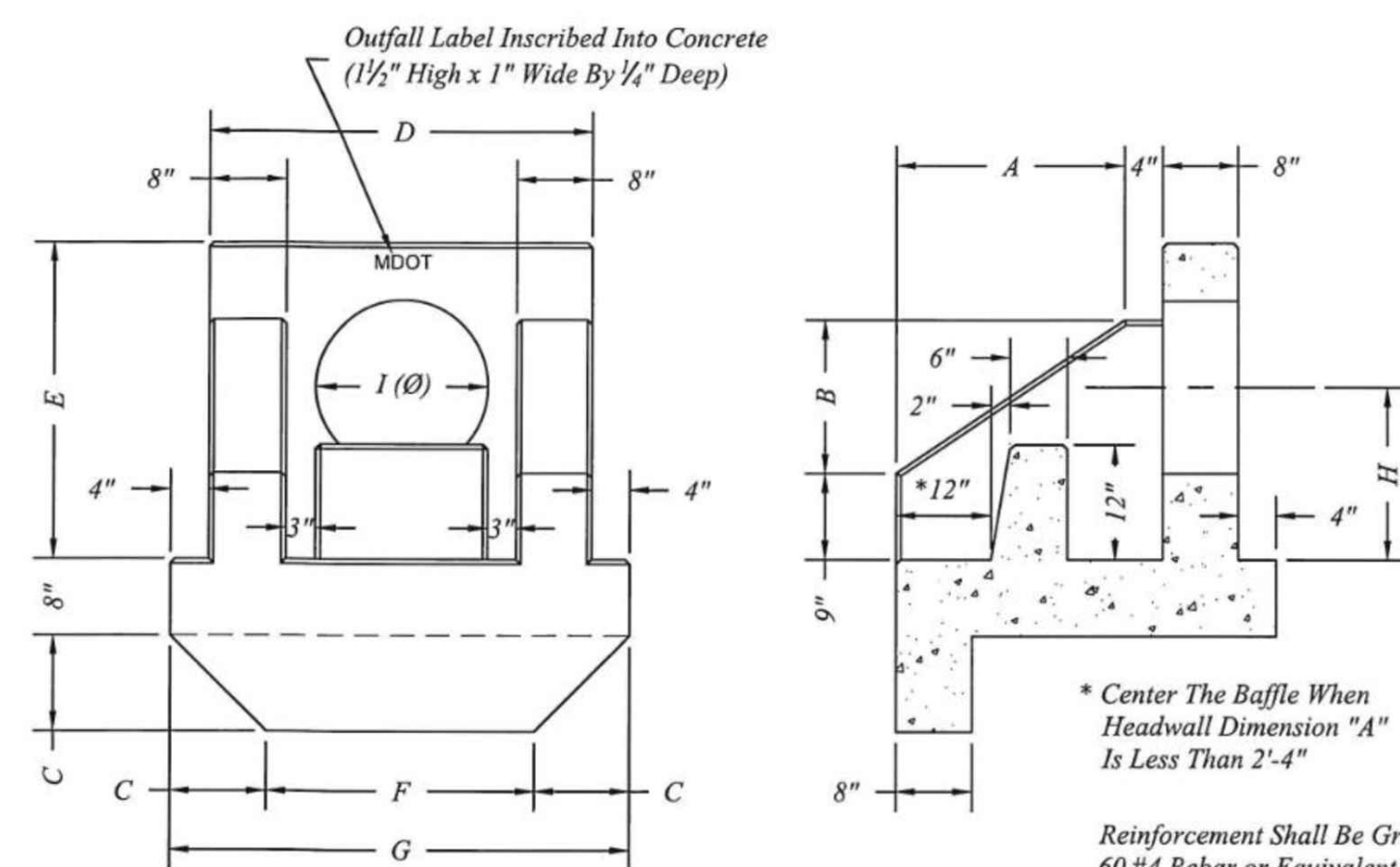


**SECTION VIEW A-A**

**NOTES:**

- LIFT HOLES SHALL BE FILLED IN WITH NON-SHRINK MORTAR.
- PREFORMED BITUMEN SEALS, KENT SEAL OR EQUAL, MAY BE USED BETWEEN ADJUSTING RINGS IN LIEU OF MORTAR.
- METER VAULT TO BE A PRECAST CONCRETE STRUCTURE.
- FILL AROUND STRUCTURE WITH SPECIAL BACKFILL.
- BED BASE SECTION IN 4" (MIN.) COMPACTED GRANULAR BEDDING MATERIAL.
- CONTRACTOR TO FIRST INSTALL A SPOOL SECTION THE SAME LENGTH AS THE ELECTROMAGNETIC FLOW SENSOR SO THE LINING CONTRACTOR CAN LINE THROUGH THE METER VAULT. ONCE THE LINING IS COMPLETE, THE CONTRACTOR WILL REMOVE THE SPOOL SECTION, CUT THE LINER AT THE FLANGES AND INSTALL THE ELECTROMAGNETIC FLOW SENSOR.

**METER VAULT (BID ALTERNATE)**  
1/4" = 1'-0"

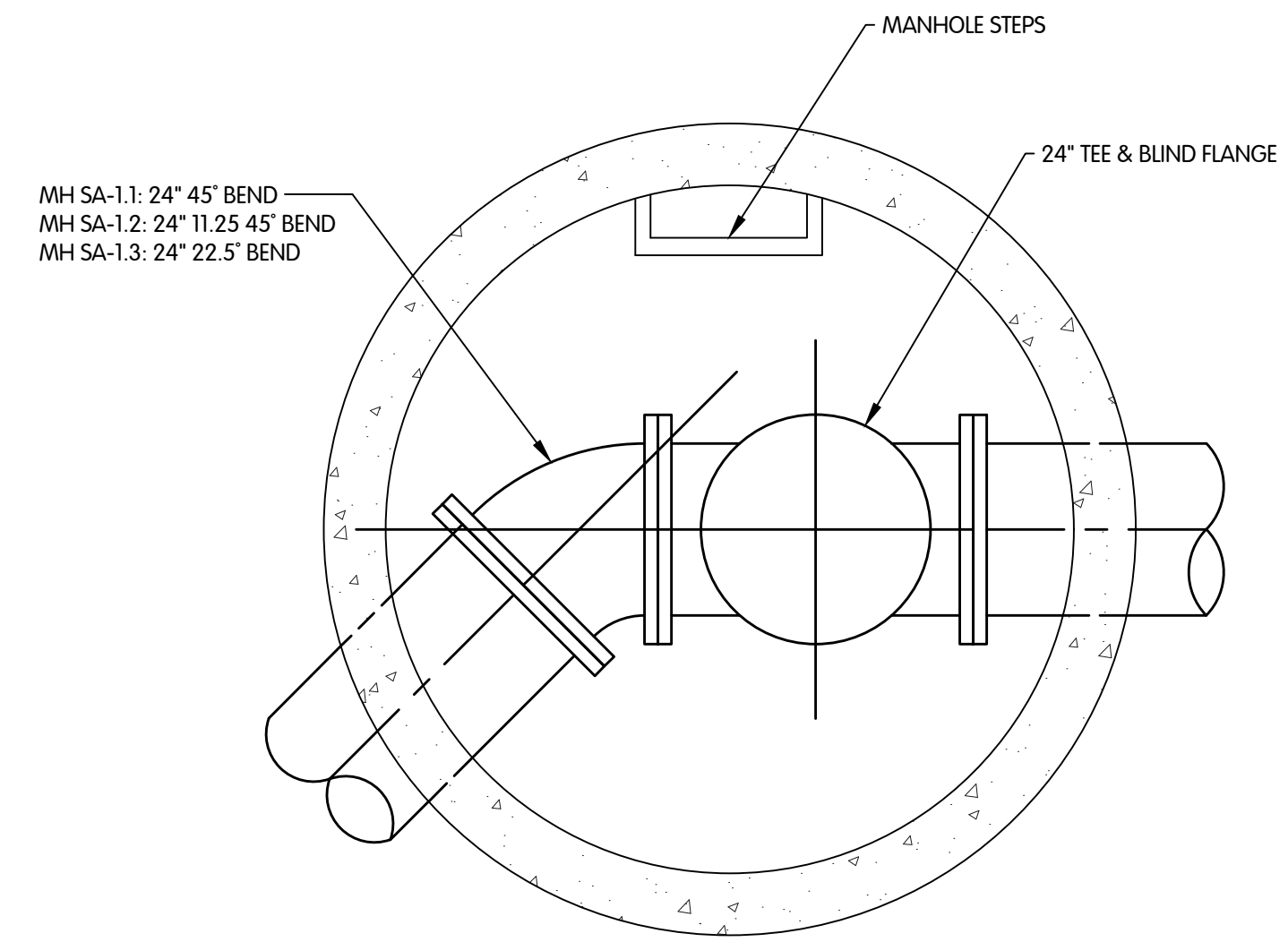


Outlet Headwall Dimensions										
Dia	A	B	C	D	E	F	G	H	I (Ø)	Weight
30"	4'-3"	2'-10"	1'-4"	4'-10"	4'-3"	2'-10"	5'-6"	2'-3"	42"	7,380

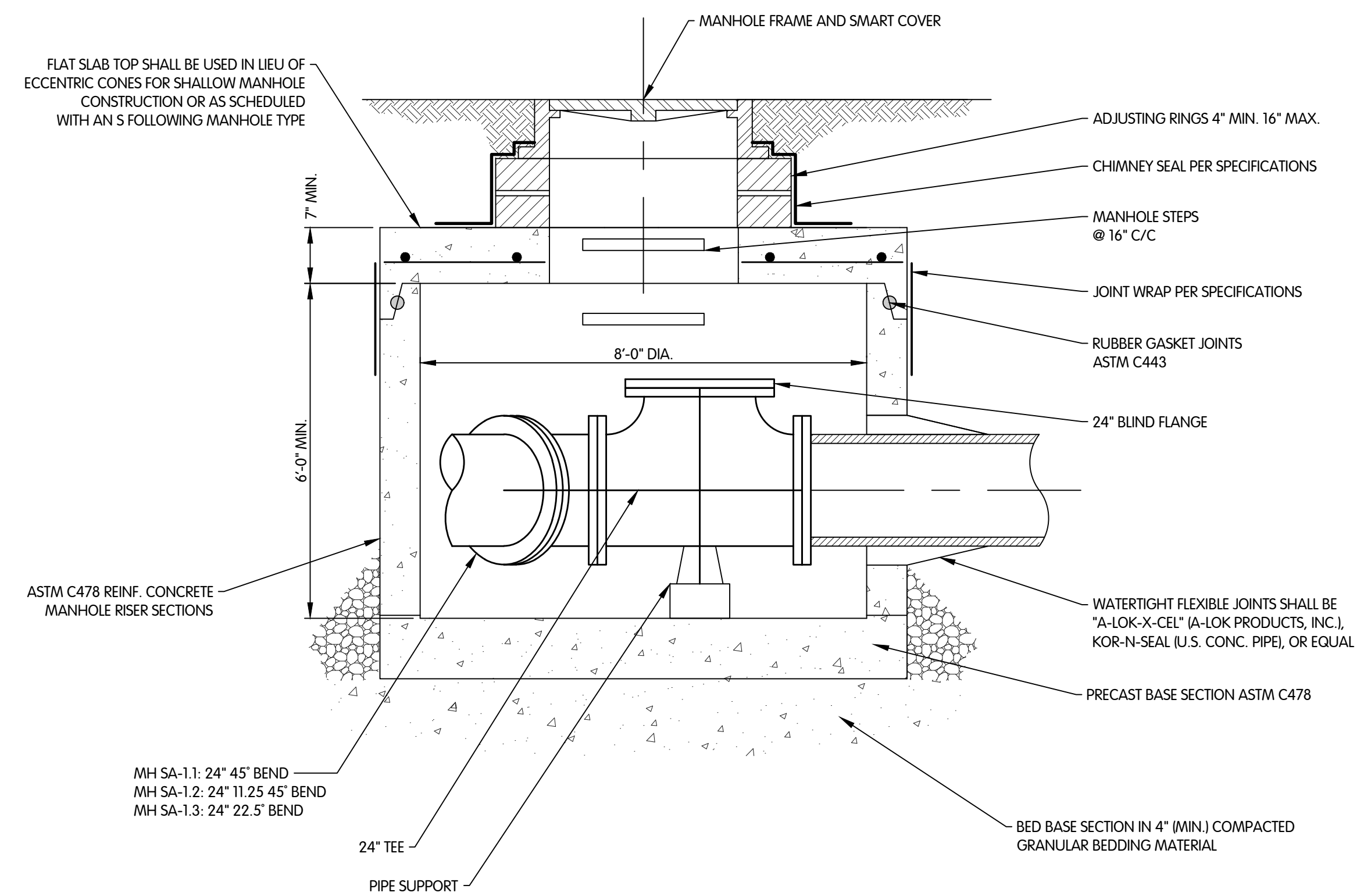
Reinforcement Shall Be Grade 60 #4 Rebar or Equivalent WWF per MDOT Standard Detail R-85-D.

Contractor To Complete Connection Between Pipe and Outlet Headwall w/Mortar Meeting MDOT 2012 Standard Specification for Construction, Section 702.

**OUTLET HEADWALL**  
NTS



**SECTIONAL PLAN**  
1/2" = 1'-0"



**NOTES:**

- LIFT HOLES SHALL BE FILLED IN WITH NON-SHRINK MORTAR.
- PREFORMED BITUMEN SEALS, KENT SEAL OR EQUAL, MAY BE USED BETWEEN ADJUSTING RINGS IN LIEU OF MORTAR.

**MANHOLE STRUCTURES SA-1.1, SA-1.2 & SA-1.3**  
1/2" = 1'-0"



**SANITARY AND STORM  
DETAILS**

CITY OF KALAMAZOO, MI - KALAMAZOO/GPI EFFLUENT SEWER REALIGNMENT

Jones & Henry  
Engineers, Ltd.



Fluid thinking.<sup>®</sup>  
www.jheng.com

JOB NO. 017-7982.001

SCALE AS NOTED

THIS LINE SCALES IF WHEN PLOTTED TO NOTED SCALE

DESIGNED	DRAWN	CHECKED
RGE	CJAF	RGE

STATUS: ISSUE FOR BID

DATE: MAY 2023

SHEET NO.

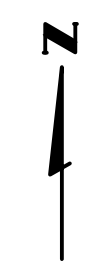
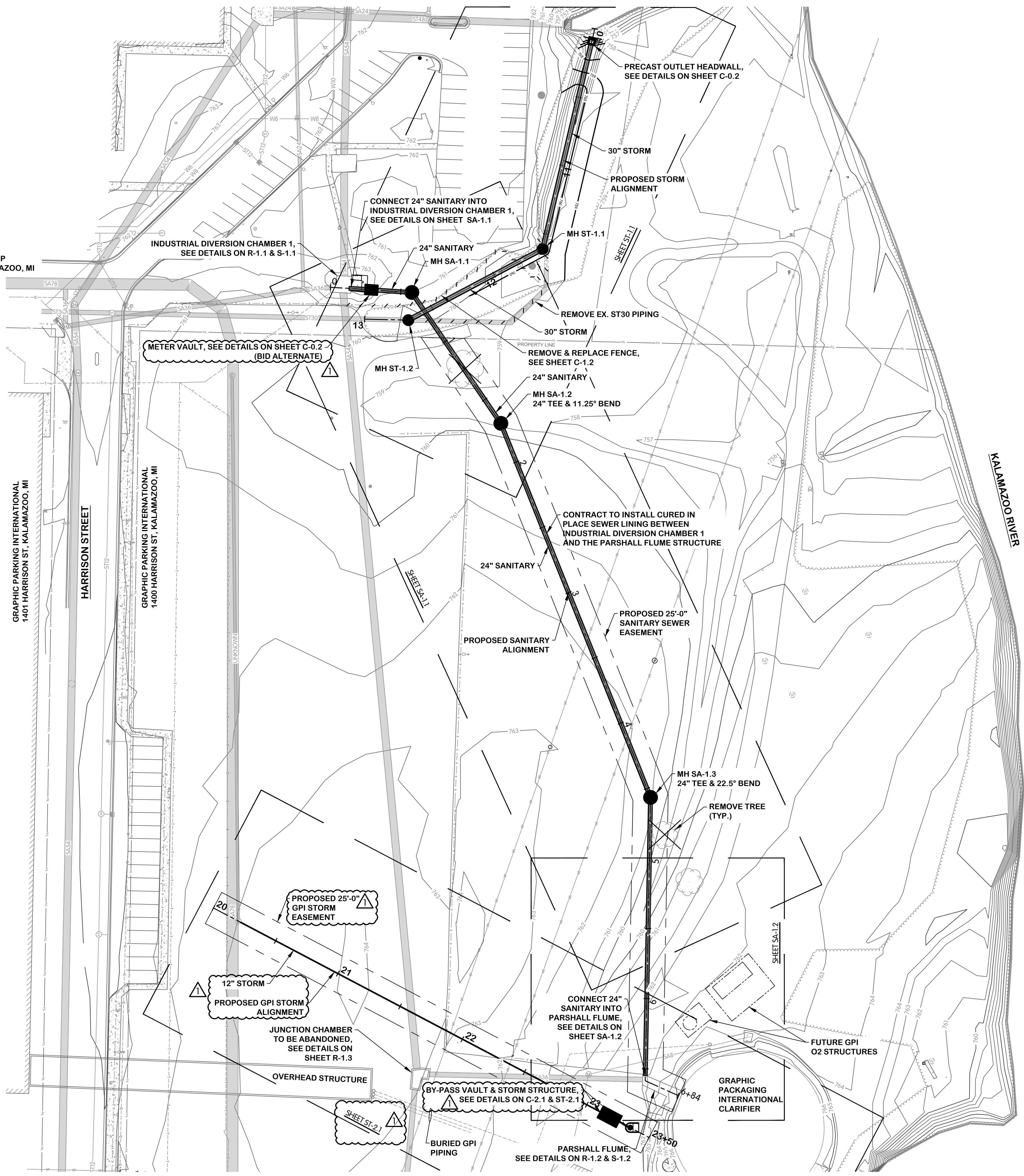
C-0.2

8 OF 21



KAL-7982001-001-SITE PLAN AND SHEET KEY  
 6/8/2023 5:20 PM - CERRELL  
 6/8/2023 6:58 PM

CITY OF KALAMAZOO - KWRP  
 1415 HARRISON ST, KALAMAZOO, MI



SITE PLAN AND SHEET KEY

CITY OF KALAMAZOO, MI - KALAMAZOO/GPI EFFLUENT SEWER REALIGNMENT

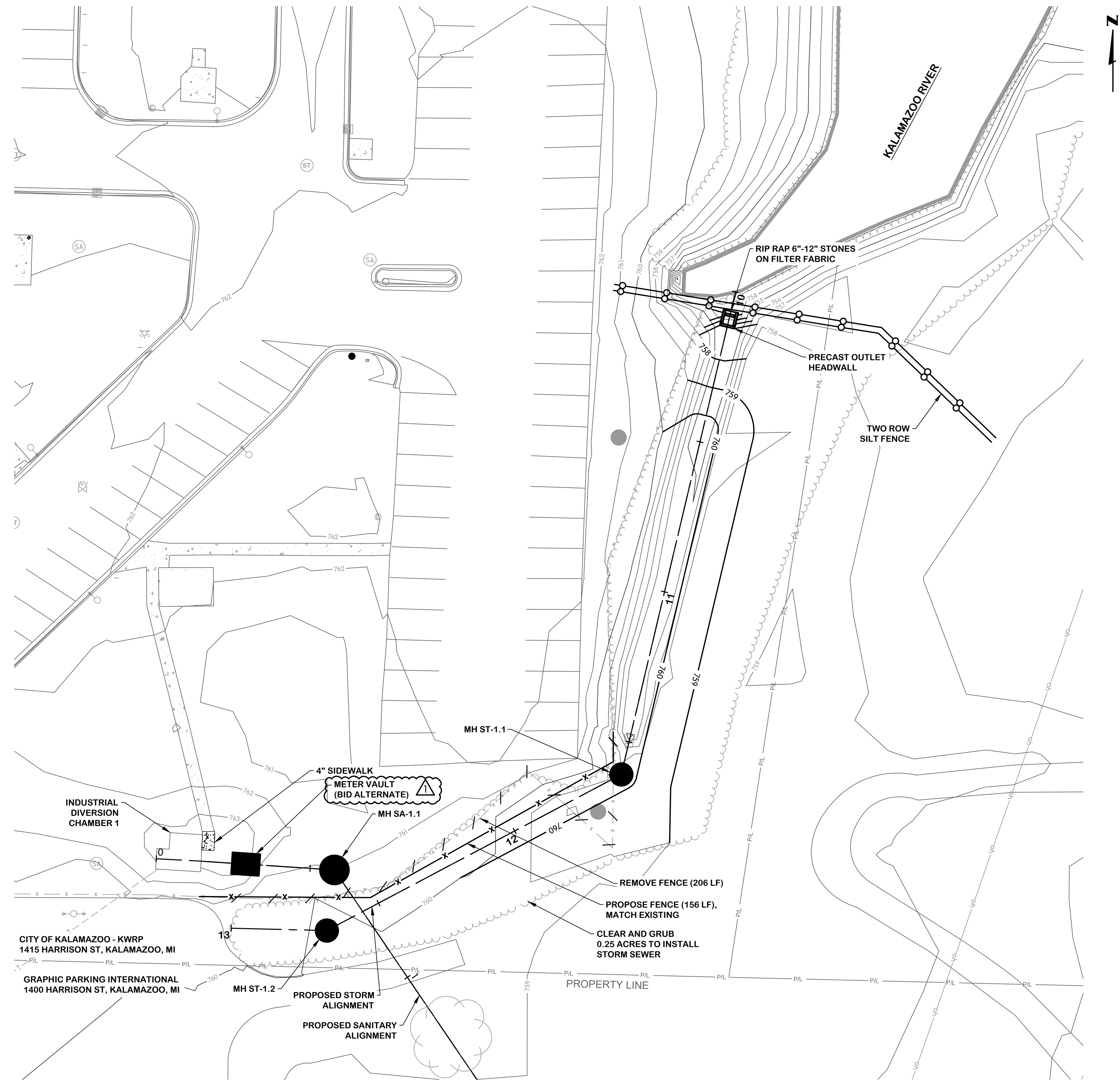
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3			
4			
5			

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JOB NO.	017-7982.001
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DESIGNED	RGE
DRAWN	CJAF
CHECKED	RGE
STATUS	ISSUE FOR BID
DATE	MAY 2023
SHEET NO.	C-1.1
	9 OF 21

KAL-7982001C05-GRADING AND EROSION CONTROL - PARTIAL SITE PLAN  
 6/8/2023 5:19 PM - CERRELL  
 6/8/2023 6:58 PM



GRADING AND EROSION CONTROL  
 PARTIAL SITE PLAN

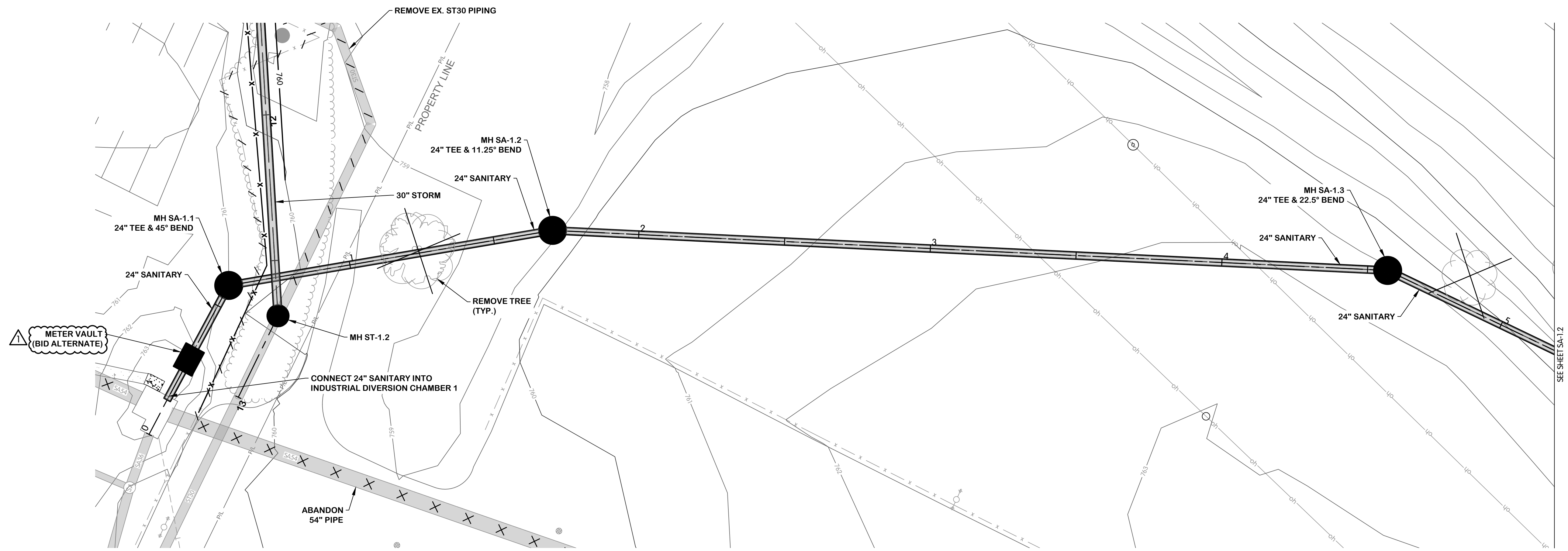
CITY OF KALAMAZOO, MI - KALAMAZOO/GPI EFFLUENT SEWER REALIGNMENT

NO.	DATE	REVISIONS AFTER ISSUED FOR BID	BY
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2		2	CJAF
3		3	RGE
4		4	RGE

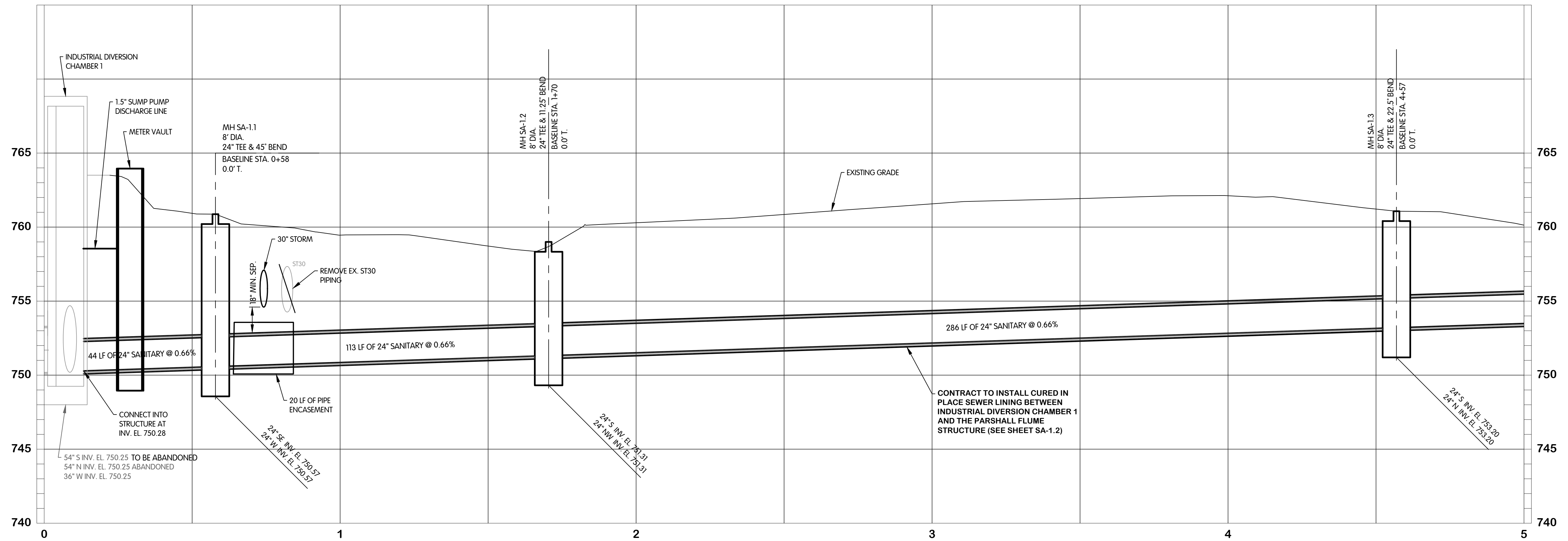
Jones & Henry  
 Engineers, Ltd.

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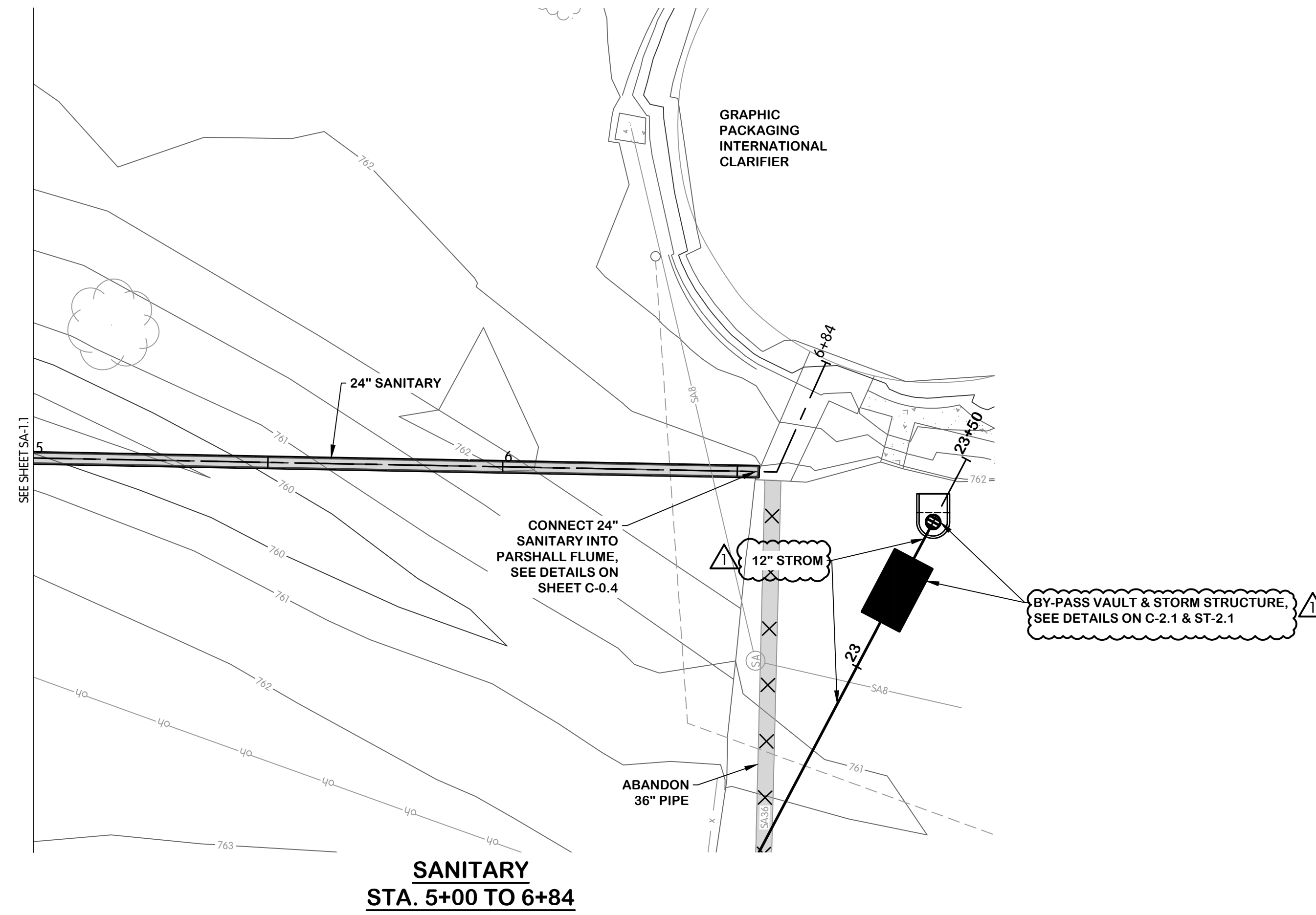
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DATE:	MAY 2023	
SHEET NO.	C-1.2	
	10 OF 21	



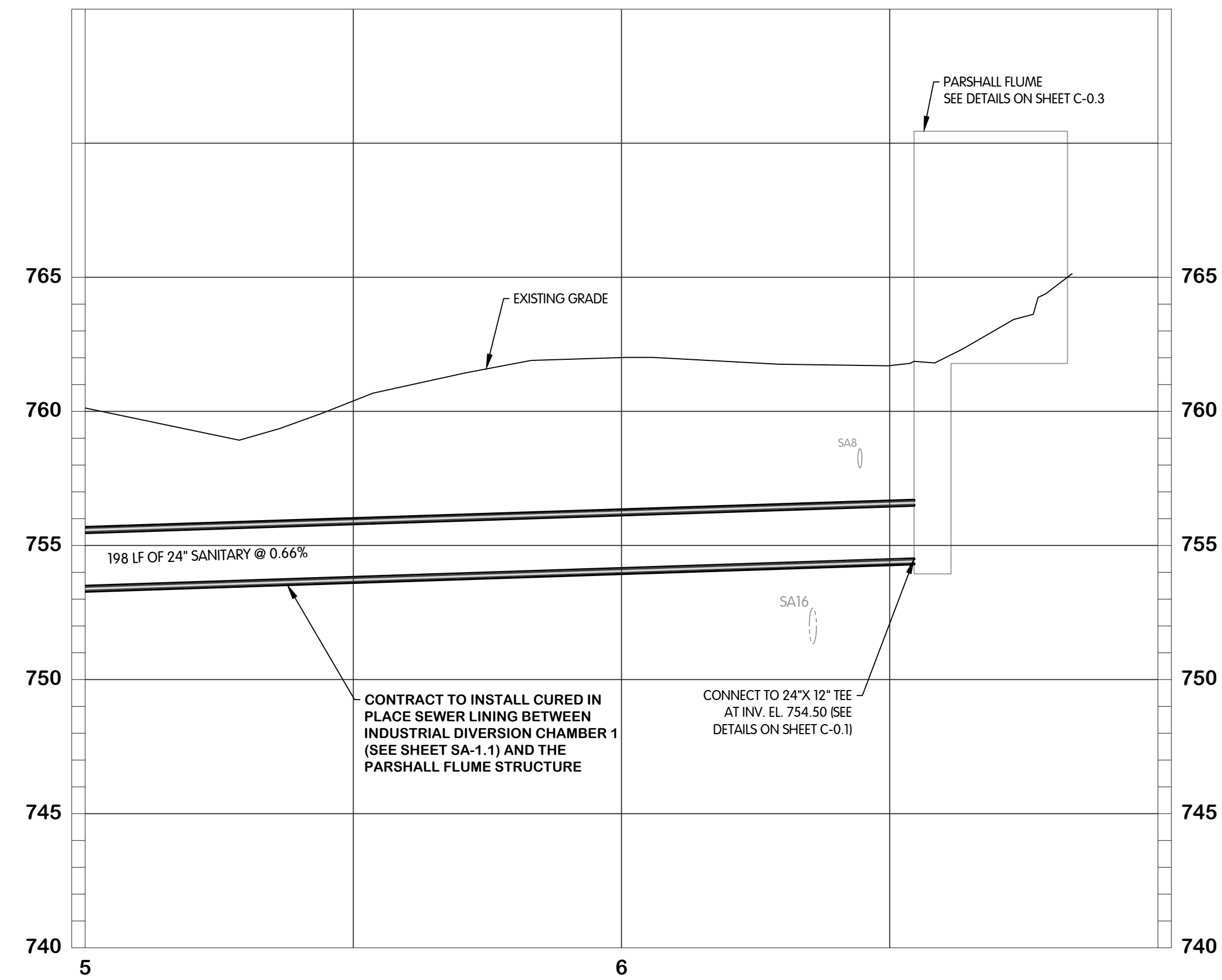
**SANITARY  
STA. 0+00 TO 5+00**



KAL-7982001SA03-SANITARY - PLAN & PROFILE STA 5+00 TO 6+84  
 6/8/2023 5:28 PM - CFERRELL  
 6/8/2023 6:58 PM



**SANITARY  
 STA. 5+00 TO 6+84**



**SANITARY  
 PLAN AND PROFILE  
 STA. 5+00 TO 6+84**

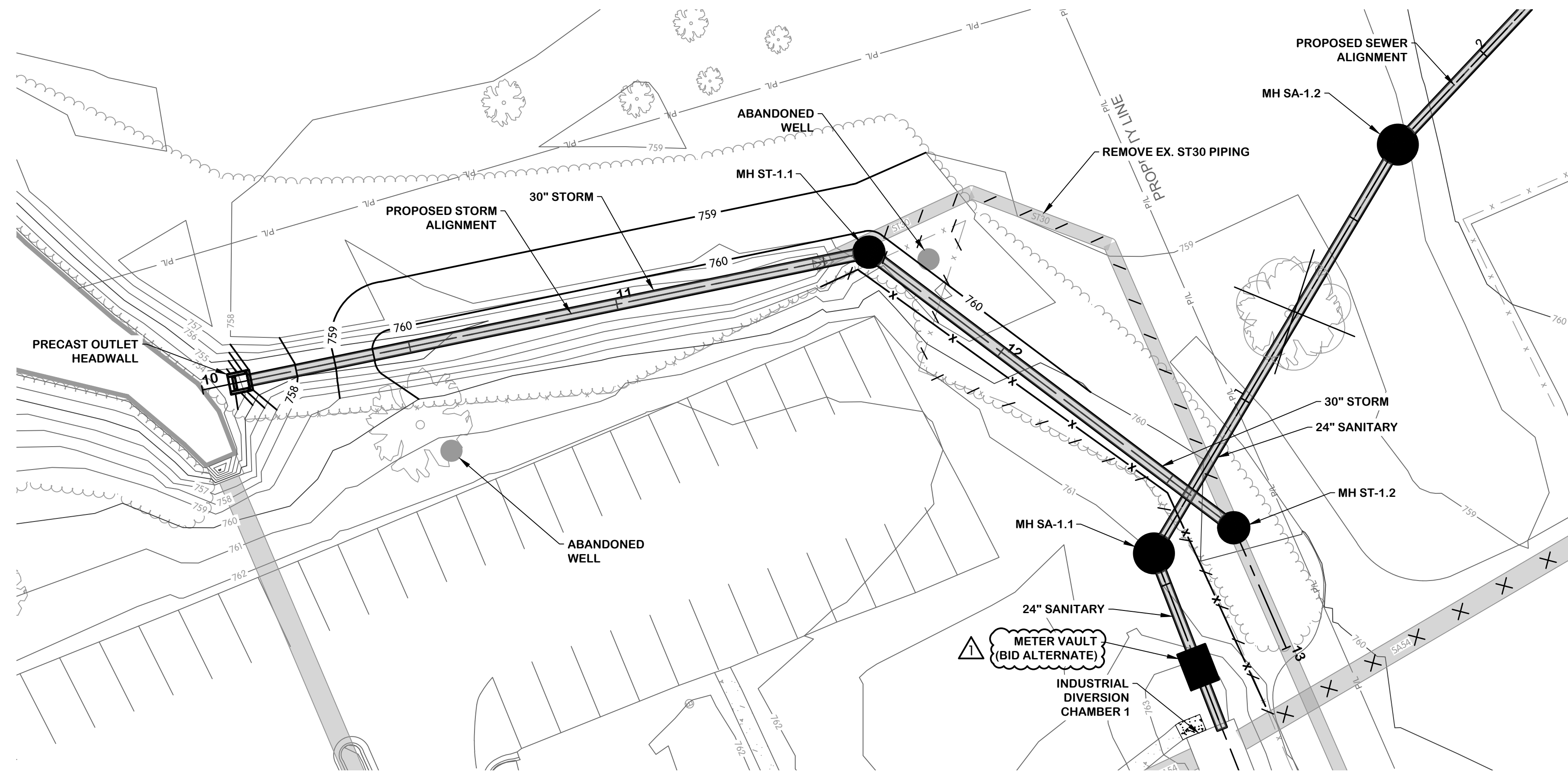
CITY OF KALAMAZOO, MI - KALAMAZOO/GPI EFFLUENT SEWER REALIGNMENT

NO.	DATE	REVISIONS AFTER ISSUED FOR BID	BY
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2		REVISIONS AFTER	
3			
4			

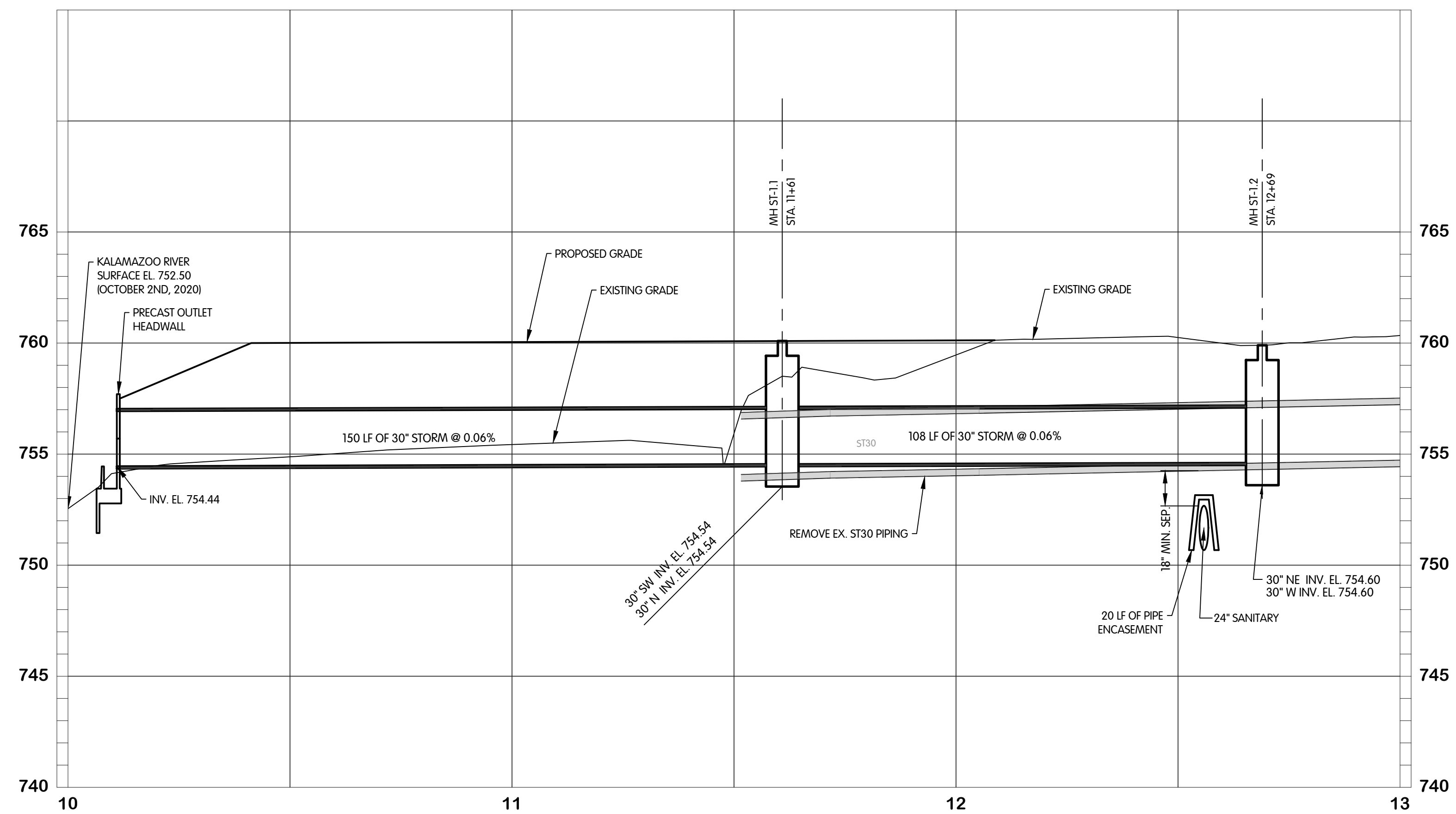
Jones & Henry  
 Engineers, Ltd.

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JOB NO.	017-7982.001	
SCALE	1"=20'H, 1"=4'V	
THIS LINE SCALES IF WHEN PLOTTED TO NOTED SCALE		
DESIGNED	DRAWN	CHECKED
RGE	CJAF	RGE
STATUS:	ISSUE FOR BID	
DATE:	MAY 2023	
SHEET NO.		



**STORM  
STA. 10+00 TO 13+00**



KAL-7982001-01-STORM - PLAN & PROFILE STA. 10+00 TO 13+00  
 6/8/2023 5:36 PM - CFERRELL  
 6/8/2023 6:58 PM



**STORM  
PLAN AND PROFILE  
STA. 10+00 TO 13+00**

CITY OF KALAMAZOO, MI - KALAMAZOO/GPI EFFLUENT SEWER REALIGNMENT

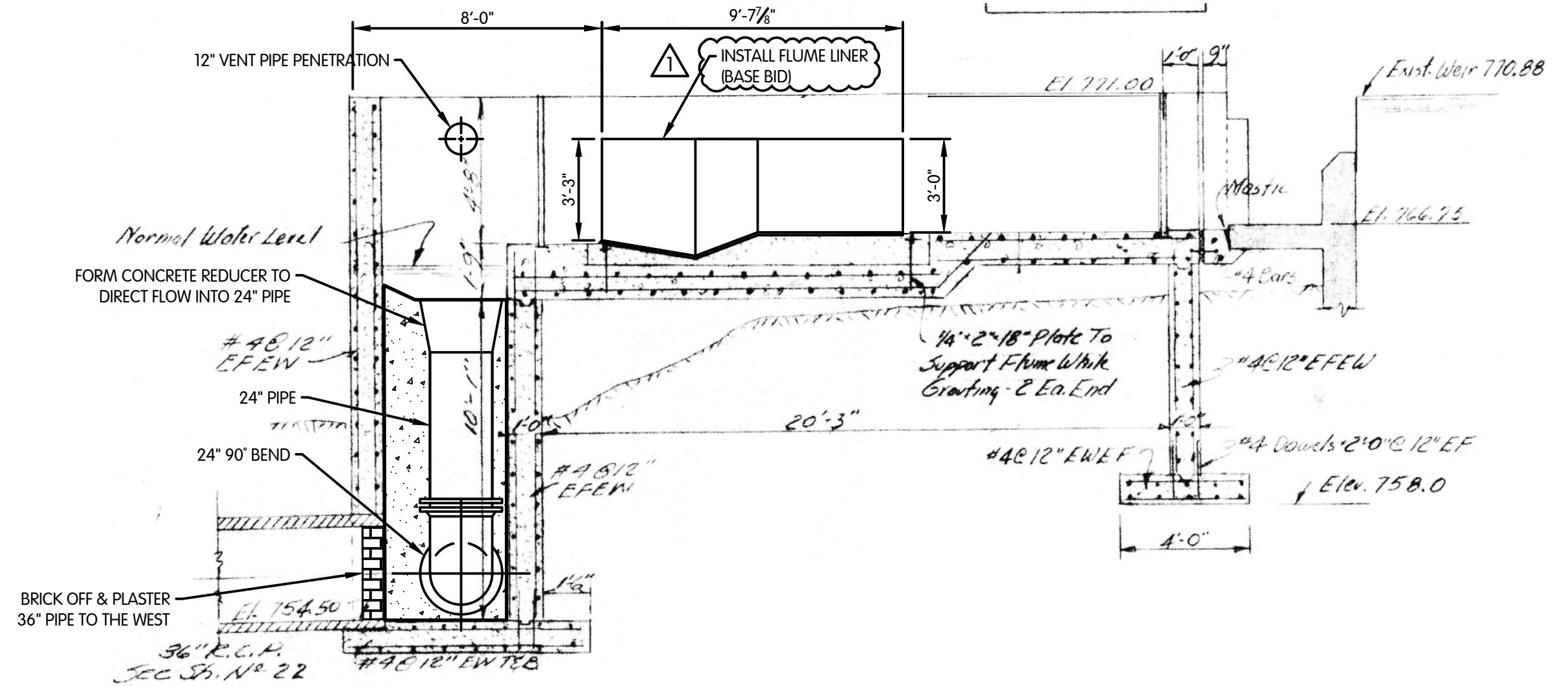
NO.	DATE	REVISIONS AFTER ISSUED FOR BID	BY
1	06/08/2023		
2			
3			
4			
5			

Jones & Henry  
Engineers, Ltd.

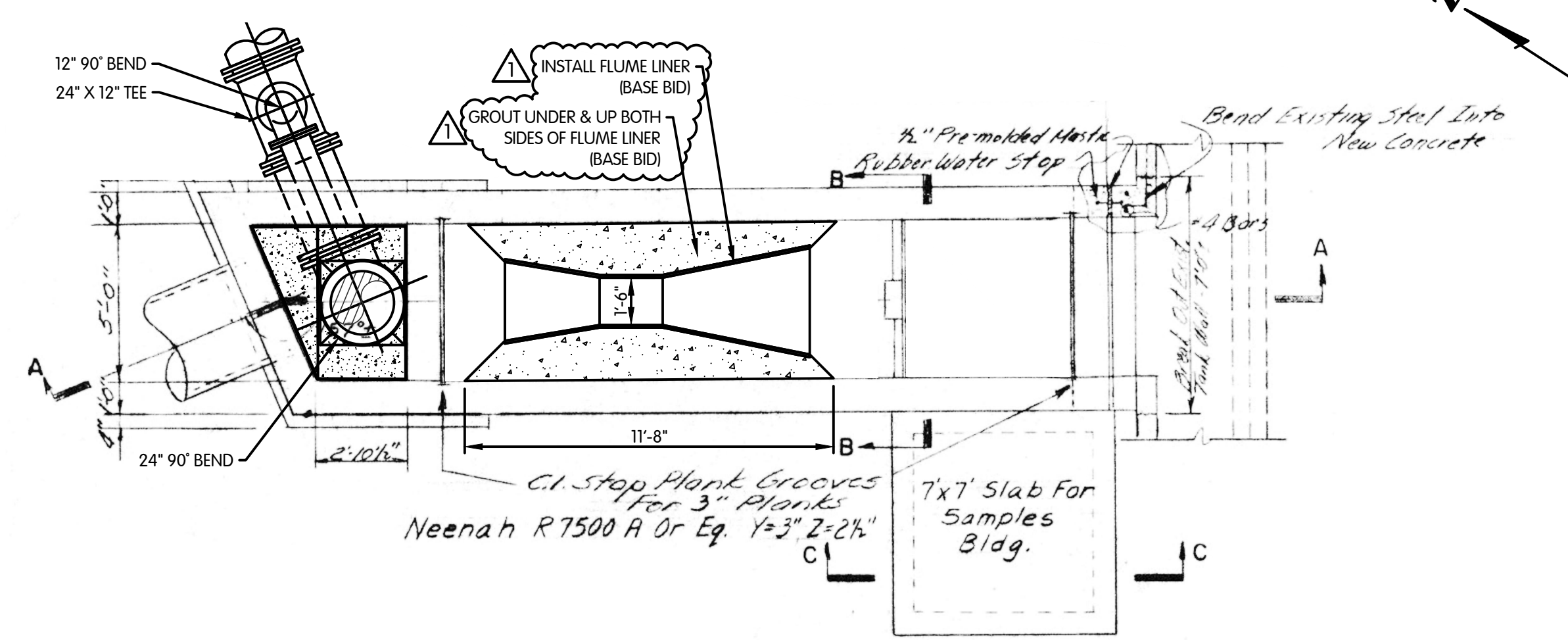
Fluid thinking.<sup>®</sup>  
www.jheng.com

JOB NO.	017-7982.001	
SCALE	1"=20'H, 1"=4'V	
THIS LINE SCALES IF WHEN PLOTTED TO NOTED SCALE		
DESIGNED	DRAWN	CHECKED
RGE	CJAF	RGE
STATUS:	ISSUE FOR BID	
DATE:	MAY 2023	
SHEET NO.		

**ST-1.1**  
13 OF 21



**SECTION A-A**



**PROPOSED PLAN VIEW**

- NOTES:
1. ALL ELEVATIONS SHOWN ARE NGVD 29.
  2. VERIFY ALL EXISTING DIMENSIONS, ELEVATIONS AND CONDITIONS AT THE INTERFACE BETWEEN EXISTING AND NEW CONSTRUCTION PRIOR TO CONSTRUCTION. NOTIFY THE ENGINEER OF ANY DISCREPANCIES FOR RESOLUTION.
  3. ESTIMATED SCALE: 1/4" = 1'-0".

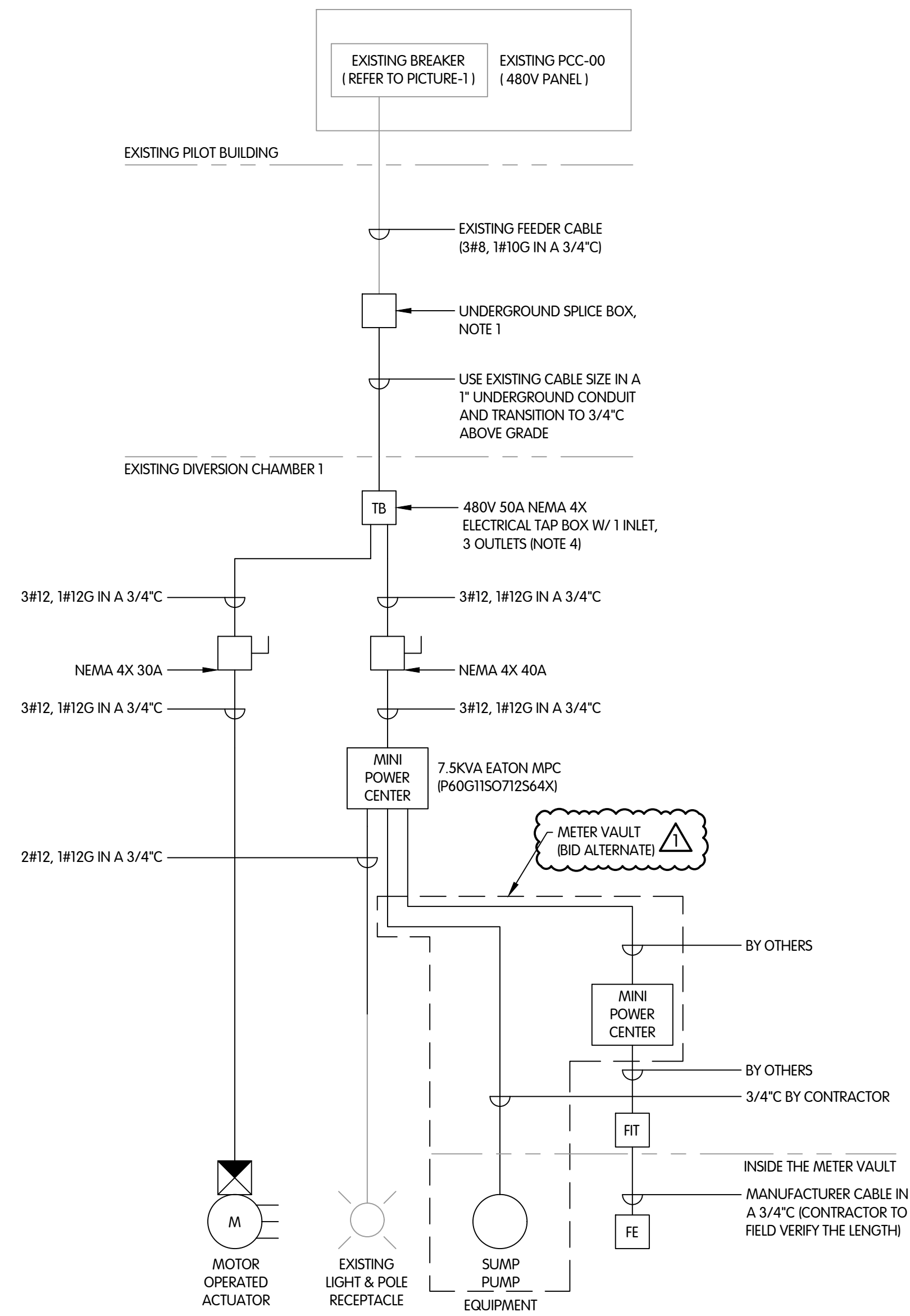
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6/8/2023 5:47 PM - CFERRELL  
6/8/2023 6:58 PM

NO.	DATE	ISSUED FOR	BY
1	06/08/2023	ISSUED FOR BID	
2		REVISIONS AFTER	
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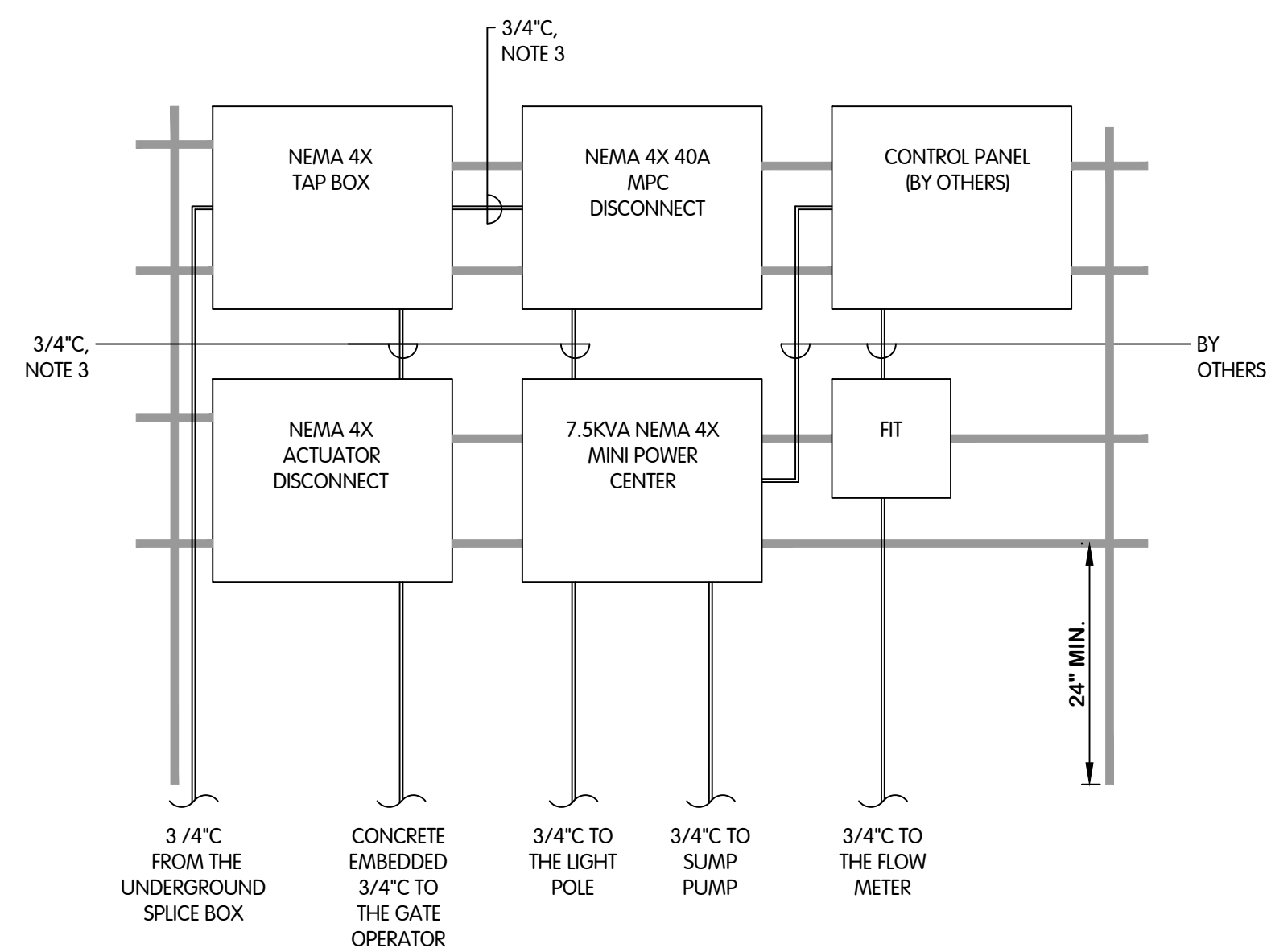
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JOB NO.	017-7982.001
SCALE	NONE
DESIGNED	DRC
DRAWN	CJAF
CHECKED	RGE
STATUS	ISSUE FOR BID
DATE	MAY 2023
SHEET NO.	S-1.2
	16 OF 21



**ONE-LINE DIAGRAM**



**EQUIPMENT RACK DETAIL**  
NTS

- NOTES:
- CONTRACTOR SHALL EXTEND THE EXISTING FEEDER CABLE USING A SPLICE BOX (BY QUAZITE OF SIZE 11L X 9"W X 6-3/4"D) AT THE DIVERSION CHAMBER #1 TO THE NEW ACTUATOR.
  - REFER TO PHOTOS ON THIS DRAWING SHEET FOR REFERENCE.
  - CONDUITS ARE SHOWN ONLY FOR DIAGRAMMATIC REFERENCE. CONTRACTOR SHALL INSTALL CONDUITS AS PER APPROVED OUTDOOR INSTALLATIONS.
  - CONTRACTOR SHALL INSTALL A TAP BOX WITH 3 OUTLETS TO FACILITATE WIRING FOR FUTURE FLOW METER/SUMP PUMP OR FLUME THAT IS TO BE PROVIDED AND INSTALLED BY OTHERS THROUGH A MINI POWER ZONE.

480V FEEDER BREAKER IN PCC-00 INSIDE PILOT BUILDING FEEDING THE INDUSTRIAL DIVERSION CHAMBER 1



**PICTURE-1**

CONTRACTOR SHALL REMOVE THE EXISTING JUNCTION BOX, SPLICE THE CABLES AND EXTEND THE CONDUIT AND WIRE TO THE NEW TAP BOX



**PICTURE-2**

KAL-798200102-ELECTRICAL SINGLE LINE DIAGRAM AND DETAILS  
6/8/2023 5:49 PM - CERRELL  
6/8/2023 6:58 PM



**ELECTRICAL  
SINGLE LINE DIAGRAM AND DETAILS**

CITY OF KALAMAZOO, MI - KALAMAZOO/GPI EFFLUENT SEWER REALIGNMENT

NO.	DATE	BY
1	06/08/2023	RGE
REVISIONS AFTER ISSUED FOR BID		
ADDITION 01		

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JOB NO. 017-7982.001

SCALE NONE

THIS LINE SCALES IF WHEN PLOTTED TO NOTED SCALE

DESIGNED	DRAWN	CHECKED
LR	CJAF	RGE

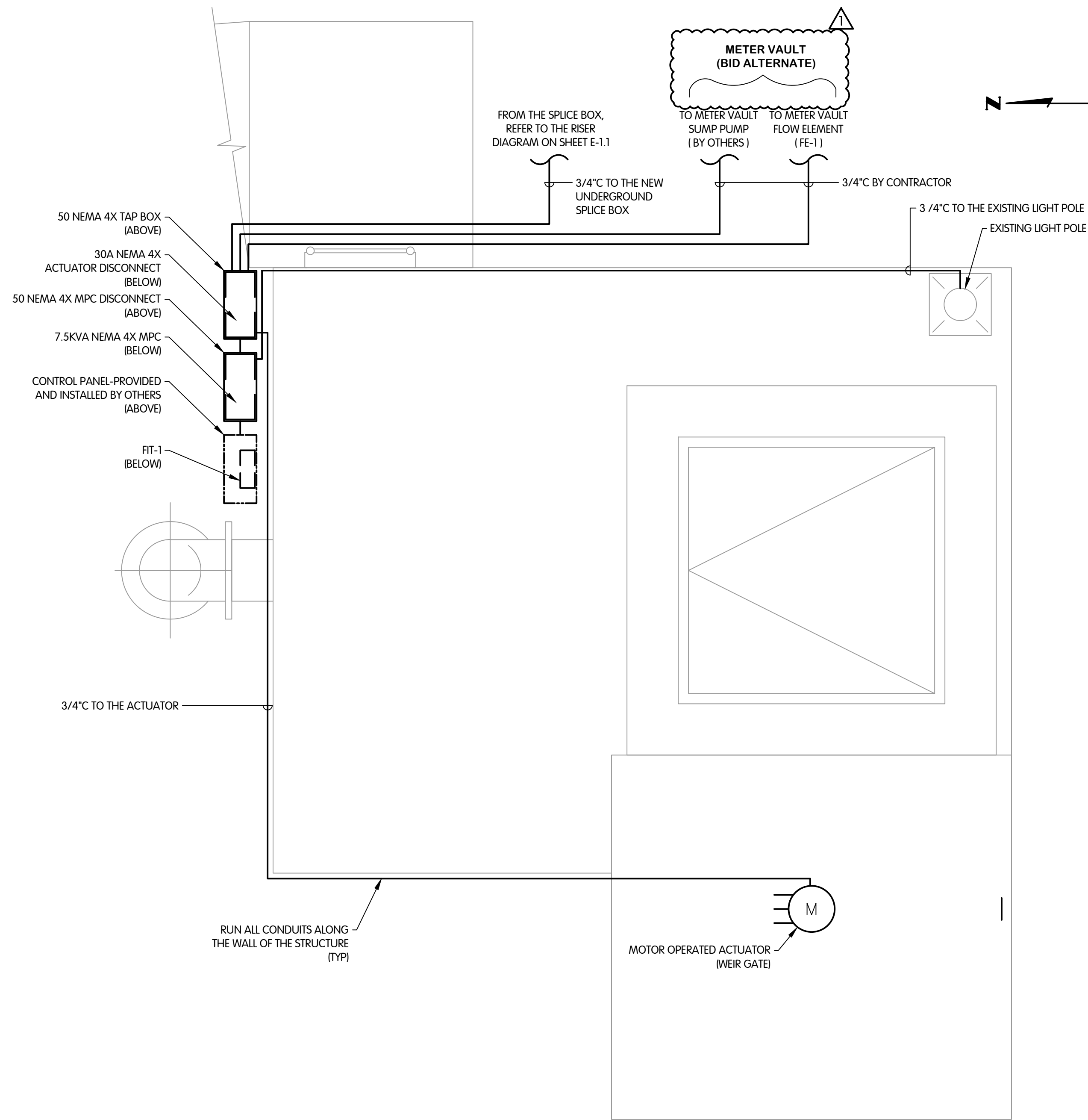
STATUS: ISSUE FOR BID

DATE: MAY 2023

SHEET NO.

E-1.1

18 OF 21



**PLAN VIEW**

- NOTES:
1. CONTRACTOR SHALL INSTALL ALL THE ELECTRICAL EQUIPMENT ON A RACK AGAINST THE WALL OF THE STRUCTURE. REFER TO THE EQUIPMENT RACK DETAIL ON SHEET E-1.1.
  2. REFER TO SPEC 16005 SECTION 2.08 AND 3.10 FOR SPLICE BOX/ SPLICING DETAILS.
  3. ALL ELEVATIONS SHOWN ARE NGVD 29.
  4. VERIFY ALL EXISTING DIMENSIONS, ELEVATIONS AND CONDITIONS AT THE INTERFACE BETWEEN EXISTING AND NEW CONSTRUCTION PRIOR TO CONSTRUCTION. NOTIFY THE ENGINEER OF ANY DISCREPANCIES FOR RESOLUTION.
  5. ESTIMATED SCALE: 3/4" = 1'-0".



**INDUSTRIAL DIVERSION CHAMBER 1  
 ELECTRICAL PLAN**

CITY OF KALAMAZOO, MI - KALAMAZOO/GPI EFFLUENT SEWER REALIGNMENT

NO.	DATE	REVISIONS AFTER ISSUED FOR BID	BY
1	06/06/2023	ADDITION 01	RGE
2		REVISIONS AFTER	
3			
4			

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JOB NO.	017-7982.001	
SCALE	AS NOTED	
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DESIGNED	DRAWN	CHECKED
LR	CJAF	RGE
STATUS:	ISSUE FOR BID	
DATE:	MAY 2023	
SHEET NO.	E-1.2	
	19 OF 21	

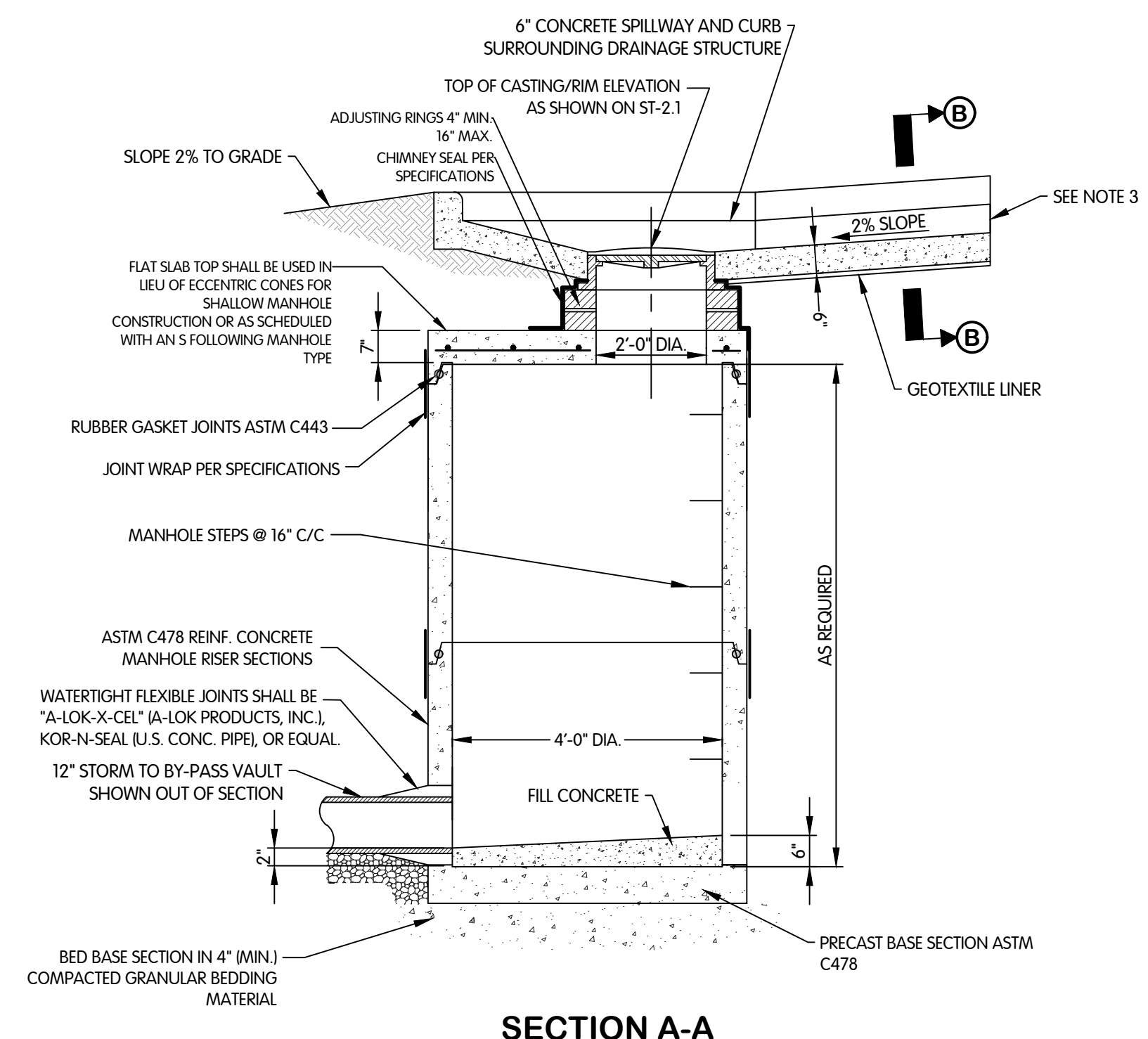


KAL-798200104-BY-PASS VAULT AND MISCELLANEOUS DETAILS  
 6/8/2023 6:49 PM - C FERRELL  
 6/8/2023 6:58 PM

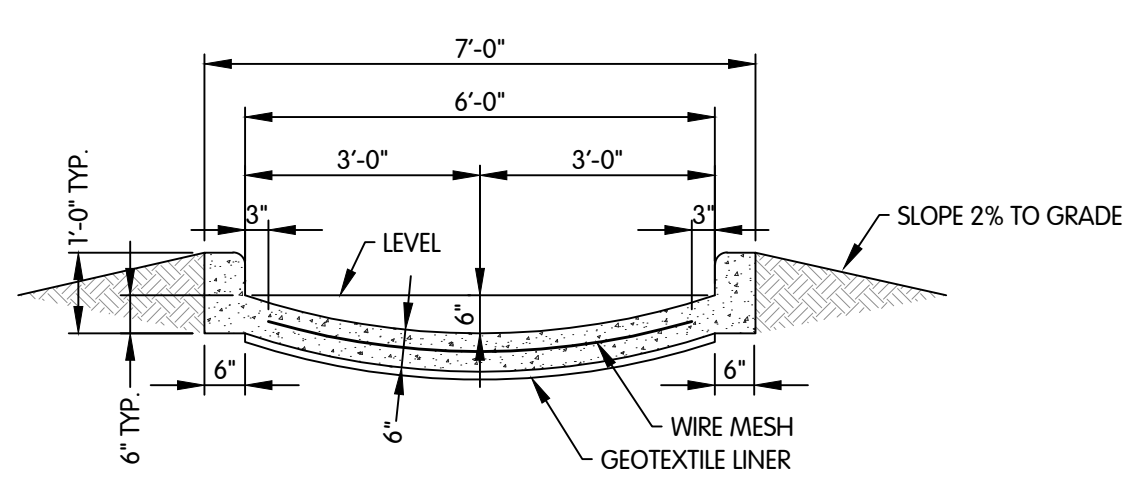


BY-PASS VAULT AND MISCELLANEOUS DETAILS

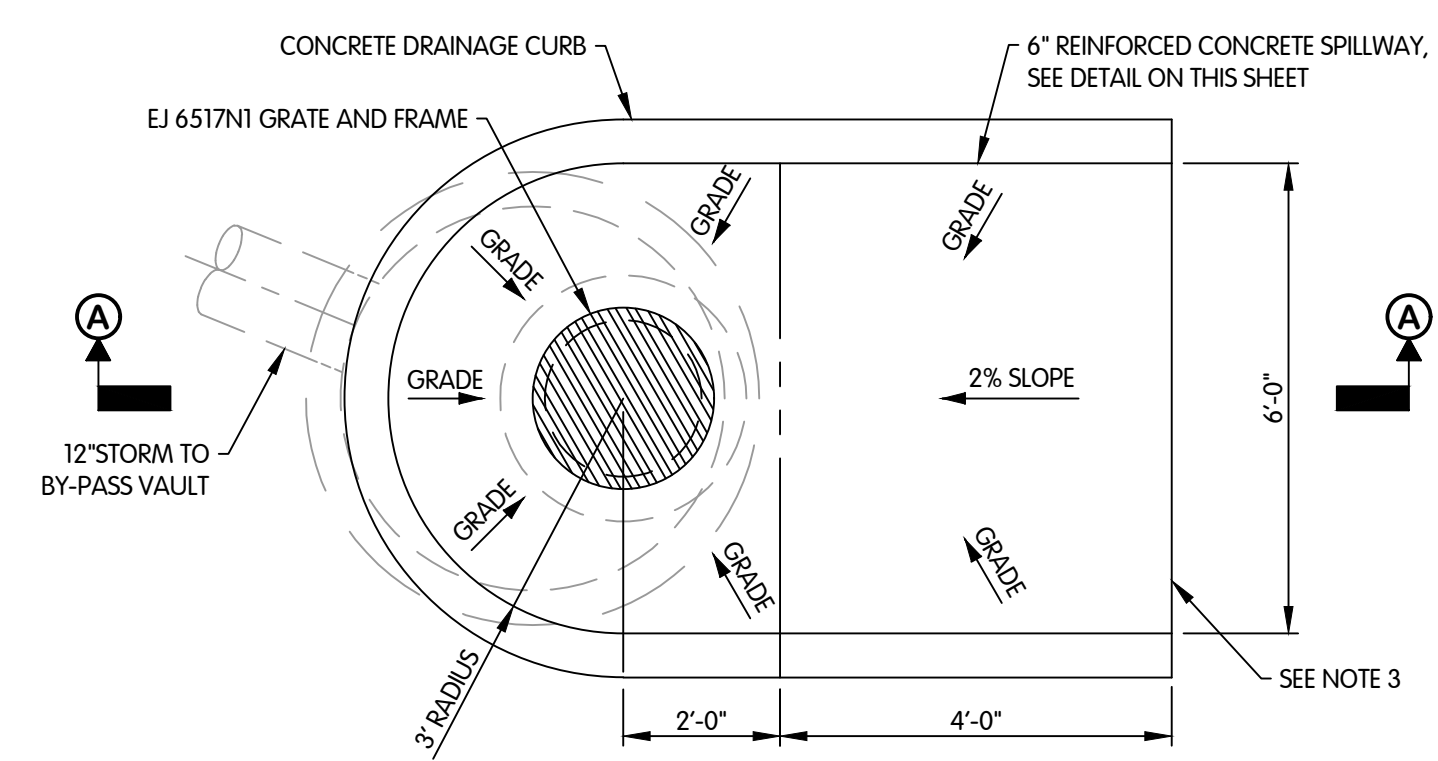
CITY OF KALAMAZOO, MI - KALAMAZOO/GPI EFFLUENT SEWER REALIGNMENT



SECTION A-A



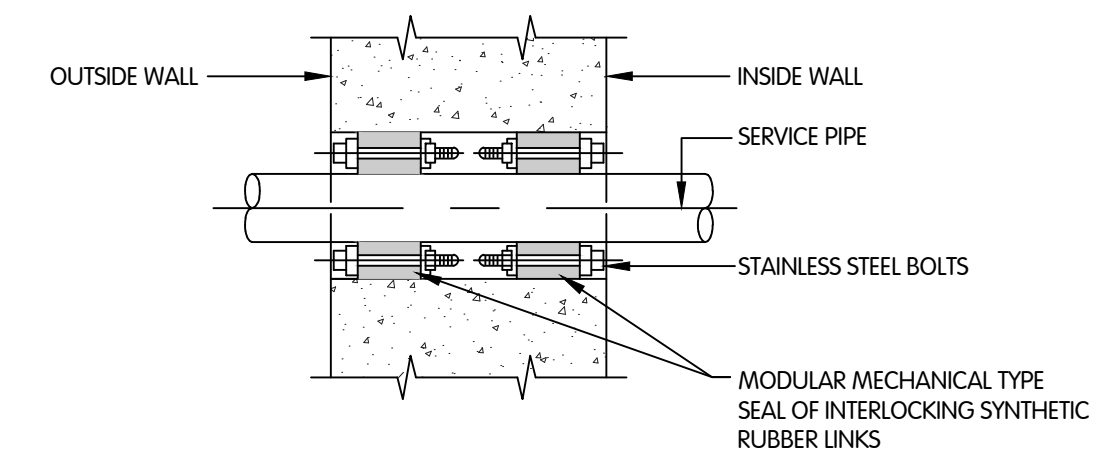
SECTION B-B



PLAN VIEW

- NOTES:
1. PREFORMED BITUMEN SEALS, KENT SEAL OR EQUAL, MAY BE USED BETWEEN ADJUSTING RINGS IN LIEU OF MORTAR.
  2. LIFT HOLES SHALL BE FILLED IN WITH NON-SHRINK MORTAR.
  3. CONNECTION LOCATION OF NEW SPILLWAY & CURB TO FUTURE SPILLWAY/CURB THAT WILL BE COMPLETED BY OTHERS.

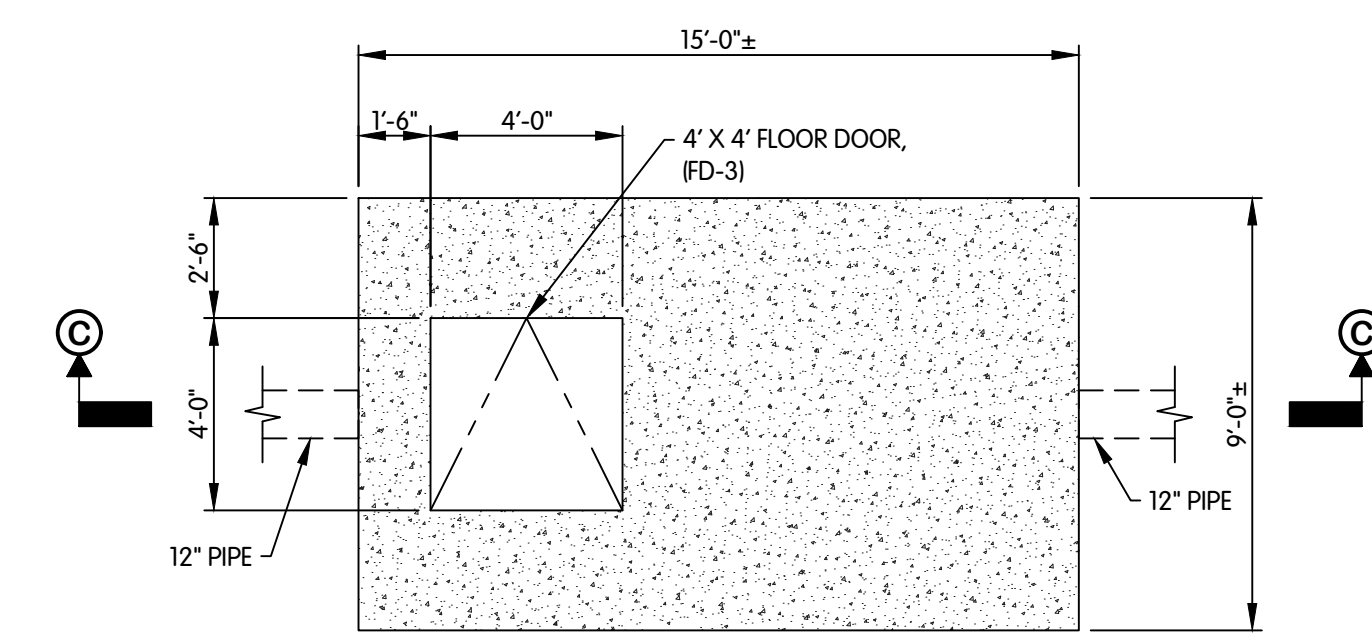
STORM MANHOLE (ST-2.1) AND SPILL WAY DETAIL  
 NTS



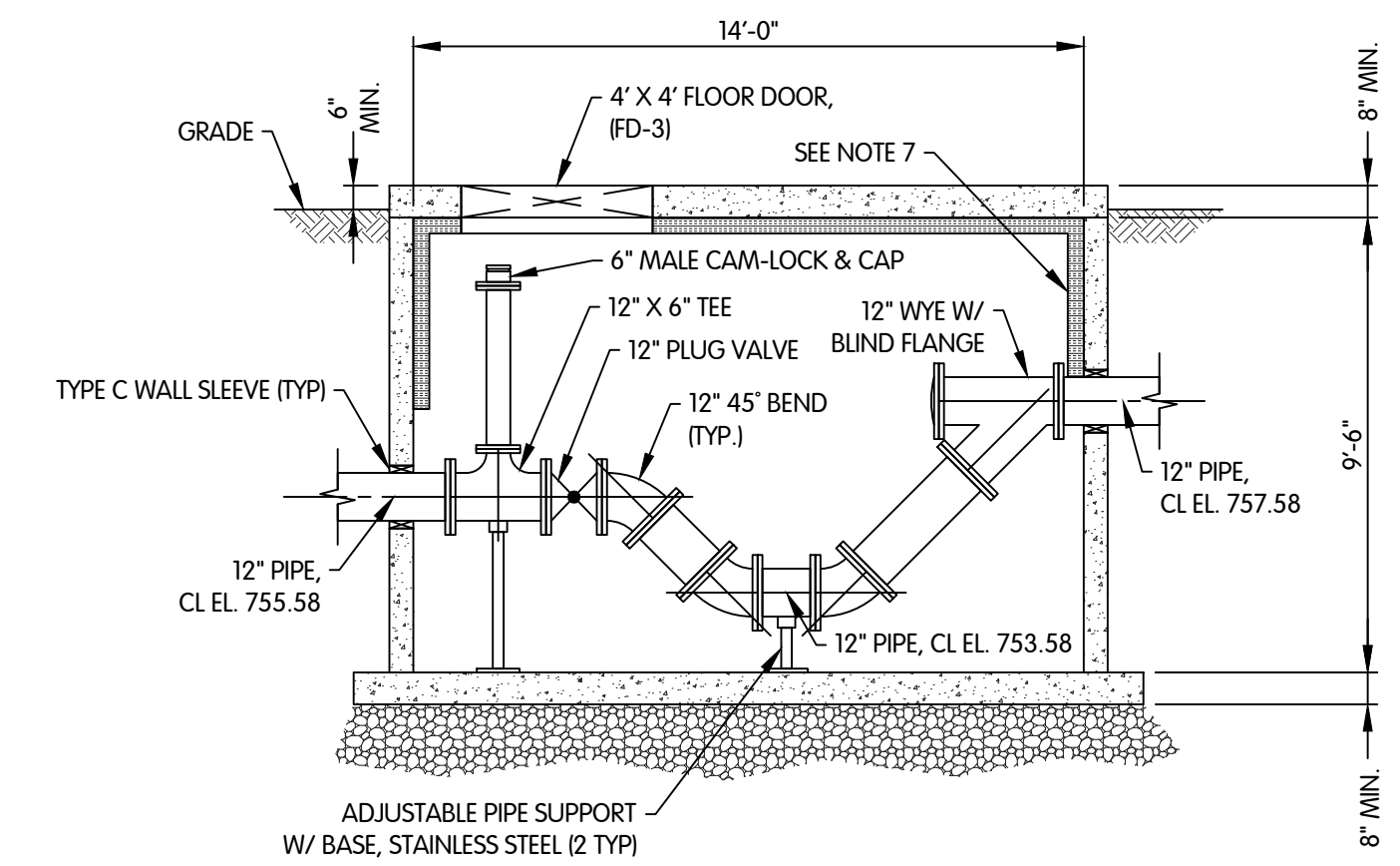
TYPE C

- NOTE:
1. EXISTING WALLS SHALL BE CORE DRILLED.
  2. CONCRETE SHALL BE WORKED IN AND VIBRATED TO ELIMINATE ALL VOIDS IN CONCRETE - IF VOIDS DO REMAIN, FILL WITH GROUT BEFORE INSTALLING CONDUIT AND RUBBER SEALS.
  3. UNLESS OTHERWISE SHOWN ON THE DRAWINGS ALL INTERIOR WALL PENETRATIONS SHALL USE TYPE C CONDUIT SLEEVE.

DUAL PIPE SLEEVE  
 NTS



PLAN VIEW



SECTION VIEW D-D

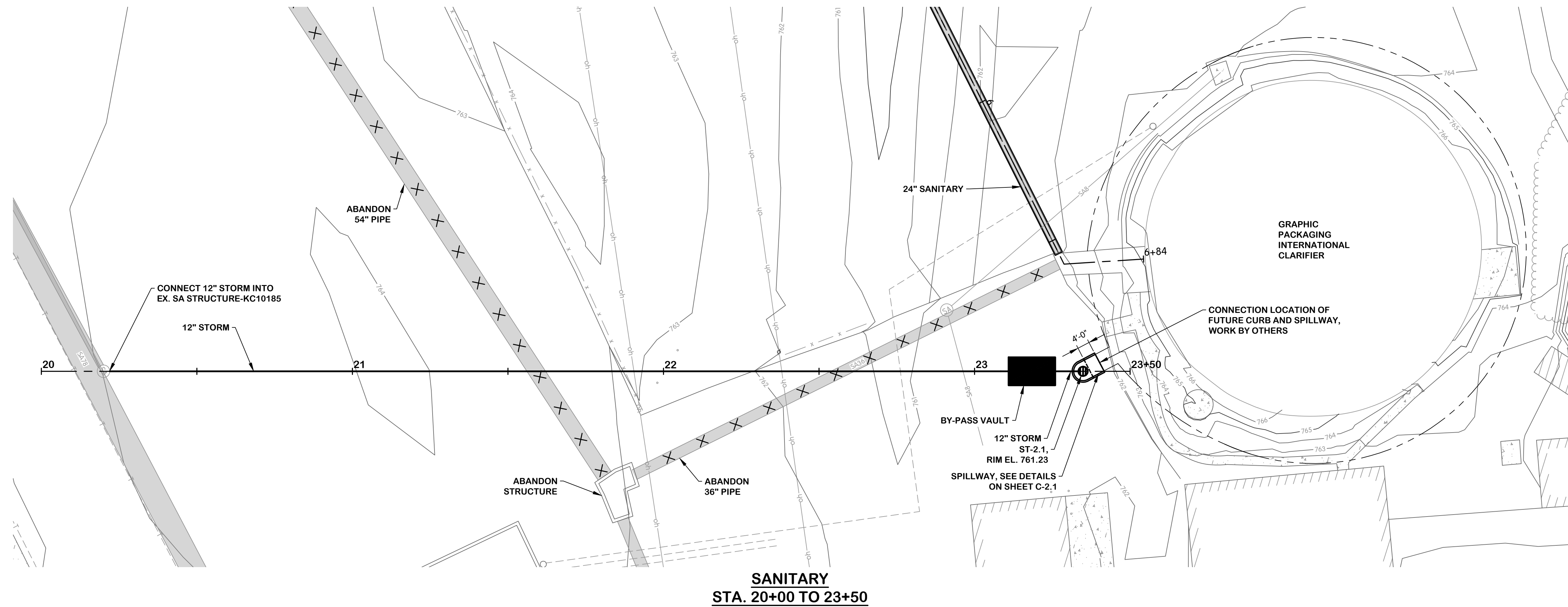
BY-PASS VAULT DETAIL  
 1/4" = 1'-0"

- NOTES:
1. LIFT HOLES SHALL BE FILLED IN WITH NON-SHRINK MORTAR.
  2. PREFORMED BITUMEN SEALS, KENT SEAL OR EQUAL, MAY BE USED BETWEEN ADJUSTING RINGS IN LIEU OF MORTAR.
  3. BY-PASS VAULT TO BE A PRECAST CONCRETE STRUCTURE.
  4. FILL AROUND STRUCTURE WITH SPECIAL BACKFILL.
  5. BED BASE SECTION IN 4" (MIN.) COMPACTED GRANULAR BEDDING MATERIAL.
  6. PRECAST CONCRETE VAULT AND FLOOR DOOR SHALL BE HS-20 LOAD RATED.
  7. AFFIX 4-INCH POLYSTYRENE BOARD INSULATION TO VAULT CEILING AND ALL WALLS TO 4 FEET BELOW GRADE.

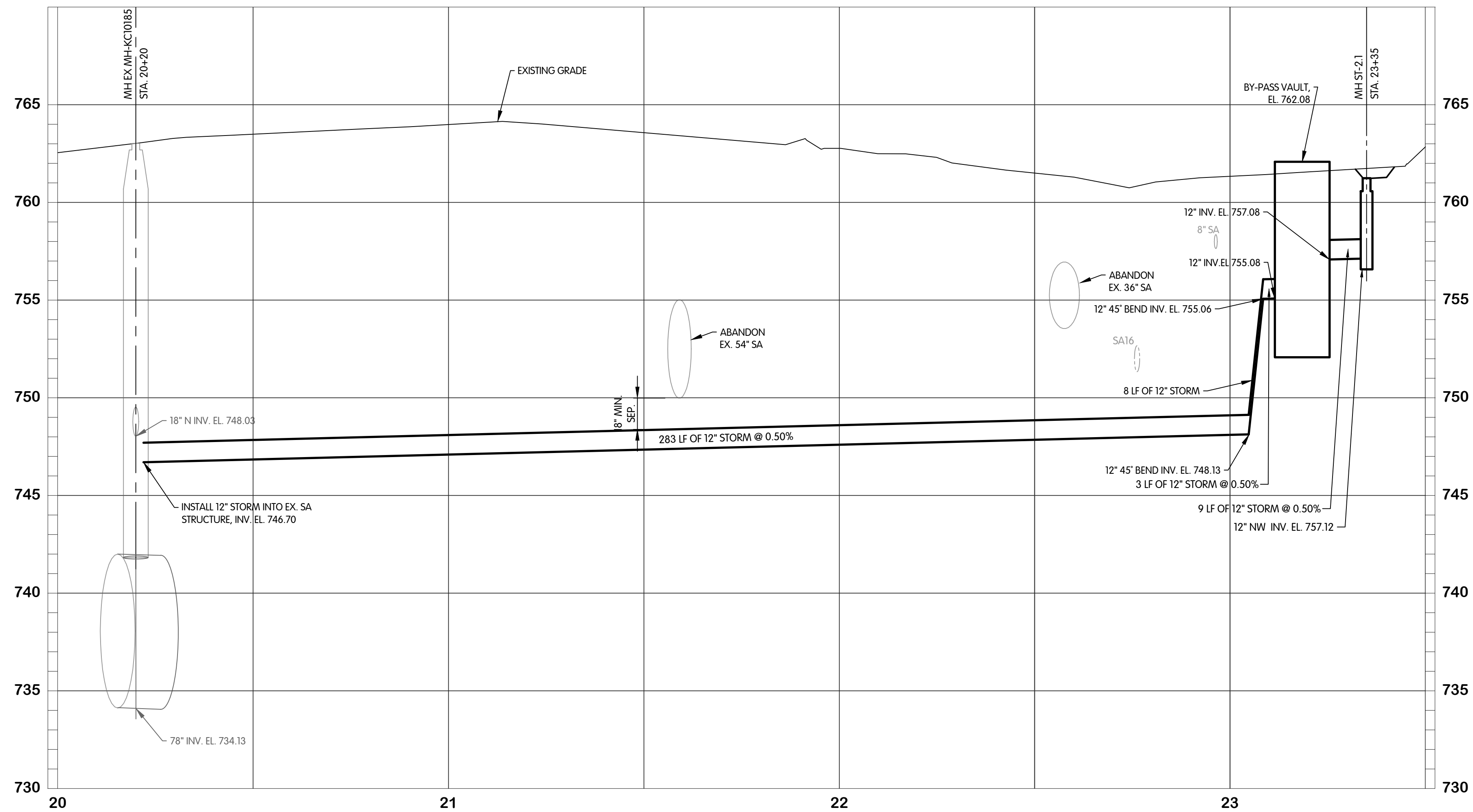
NO.	DATE	ISSUED FOR	BY
1	02/20/02	REVISED	RGE
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JOB NO.	017-7982.001
SCALE	AS NOTED
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DESIGNED	CJAF
DRAWN	RGE
CHECKED	RGE
STATUS	ISSUE FOR BID
DATE	MAY 2023
SHEET NO.	C-2.1
	20 OF 21



**SANITARY  
STA. 20+00 TO 23+50**



KAL-798200102-GPI STORM - PLAN & PROFILE STA 20+00 TO 23+50  
6/8/2023 6:46 PM - CERRELL  
6/8/2023 6:59 PM

NO. 1 20230602 DATE  
1 20230602 DATE  
ADDITION 01 REVISIONS AFTER ISSUED FOR BID

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JOB NO. 017-7982.001

SCALE 1"=20'H,  
1"=4'V

THIS LINE SCALES IF WHEN  
PLOTTED TO NOTED SCALE

DESIGNED RGE	DRAWN CJAF	CHECKED RGE
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STATUS: ISSUE FOR BID  
DATE: MAY 2023

SHEET NO.

**ST-2.1**

21 OF 21

**SECTION 01010**  
**DEFINITION OF CONTRACT ITEMS**

**PART 1 GENERAL**

**1.01 FOREWORD**

- A. This Section describes the various Contract Items listed in the Bid.

**1.02 WORK INCLUDED**

- A. Under each Item the Contractor shall furnish all labor, materials, tools, equipment, supplies, maintenance of equipment, heating, lighting and power, insurance and bonds, coordination, and all Work and in accordance with the Specifications Divisions 1 through 16 and the City of Kalamazoo *Standard Specifications for Wastewater Sewer Installation 2012* necessary to complete the Work in accordance with the obvious or expressed intent of the Contract Documents.

**1.03 WORKMANSHIP AND MATERIALS**

- A. The quality of workmanship and materials entering into any and all of the Items and the Work included shall conform to pertinent sections, paragraphs, sentences, and clauses, both directly and indirectly applicable thereto, contained in the Contract Documents, whether or not direct reference to such occurs under each Item in this Section.

**1.04 PAYMENT**

- A. The lump sum and unit prices stated in the Bid shall be payment in full for the completion of all Work specified and described or required to be included in the Contract, complete, and ready for use.

**PART 2 PRODUCTS**

Not used.

**PART 3 EXECUTION**

Not used.

**PART 4 SPECIAL PROVISIONS**

**4.01 CONTRACT ITEMS**

- A. The contract items are defined on the following pages.

**ITEM 1**  
**GENERAL CONDITIONS/MOBILIZATION**

**1.01 DESCRIPTION**

- A. This Item is intended to pay non-recurring cost to the Contractor not recovered under other pay Items of the Contract.
- B. This Item shall include, but not be limited to, the cost for moving equipment in and out, performance and payment bonds, insurance, permits, utility connection cost, and other expenses associated with preparation for construction in accordance with the requirements of the Contract Documents.

**1.02 WORK NOT INCLUDED**

- A. Any Work specifically included under other Bid Items.

**1.03 DEFINITION OF ITEM**

- A. Item 1 - Includes General Conditions/Mobilization.

**1.04 MEASUREMENT**

- A. The lump sum stated in the Bid shall be full compensation for all Work required under Item 1.
- B. Mobilization for Contractor and any tier of subcontractor(s) shall be considered collectively and shall not exceed 10 percent of the Contract Price.
- C. Mobilization shall be those costs associated with the initiation of the project and site work, including but not limited to, transporting of personnel, equipment, materials, supplies, incidental items; establishment of the field offices, temporary facilities necessary for the project, bonds and insurances, submittal requirements, permits, field supervision, final cleanup and demobilization. Mobilization does not include items such as contract negotiations and bid preparation.

**1.05 PAYMENT**

- A. General Conditions/Mobilization shall be those costs associated with the initiation of the project and site work, including but not limited to, transporting of personnel, equipment, materials, supplies, incidental items; establishment of the field offices, temporary facilities necessary for the project, bonds and insurances, submittal requirements, permits, field supervision, final cleanup and demobilization.
- B. The Engineer may reduce the amount to be paid under Item 1 if the percentage requested is not represented by the actual amount performed.

**ITEM 2**  
**AUDIO/VIDEO RECORDING**

**2.01 DESCRIPTION**

- A. Under this item, the Contractor shall produce and deliver to the Owner, color audio-video recordings of existing topography within the zone of influence along all water main and areas of pavement work as specified and directed.

**2.02 WORK NOT INCLUDED**

- A. Any Work specifically included under other Bid Items.

**2.03 DEFINITION OF ITEMS**

- A. Item 2 – Audio/Video Recording includes audio-video recording of the Zone of Influence (Construction Limits).

**2.04 MEASUREMENT**

- A. The lump sum stated in the Bid shall be full compensation for all Work required under Item 2.

**2.05 PAYMENT**

- A. The lump sum unit price stated in the Bid for Item 2 shall be full compensation for audio-video recording production as specified and required.

**ITEM 3**  
**TREE AND STUMP REMOVAL 6 INCHES TO 18 INCHES**

**3.01 DESCRIPTION**

- A. Under this Item, the Contractor shall perform all Work necessary for the removal of trees with trunk diameter 6 inches and greater, removal of tree cuttings and stumps, and the removal and disposal of all debris generated by tree cutting operations as specified and shown on the Drawings.
- B. This Item shall include the removal of stumps with trunk diameter greater than 6 inches as specified and shown on the Drawings.

**3.02 WORK NOT INCLUDED**

- A. Any work specifically included under other Bid Items.

**3.03 DEFINITION OF ITEMS**

- A. Item 3 – Tree and Stump Removal, shall be the cutting of trees with trunk diameter greater than 6 inches to 18 inches, including the removal of tree cuttings and stumps.

**3.04 MEASUREMENT**

- A. The quantities to be paid for under Item 3 - Tree and Stump Removal shall be measured by the quantity of trees with trunk of specified diameter measured 4 feet above ground height removed.

**3.05 PAYMENT**

- A. The unit price stated in the bid for Item 3 – Tree and Stump, Rem, 6-inch to 18-inch shall be full compensation for each tree removed and disposed of as specified and required.

**ITEM 4  
CLEARING & GRUBBING**

**4.01 DESCRIPTION**

- A. This Item shall include all clearing and grubbing of lands required to complete the Work as specified, shown in the Contract Documents, and as directed by the Engineer. This Work shall include, but not limited to, the complete removal and cutting of trees including stumps regardless of the size to install the new storm sewer. Clearing and grubbing includes the complete removal and disposal of all vegetation including plants, shrubs, generated by the clearing and grubbing operation as specified and shown on the Drawings.

**4.02 WORK NOT INCLUDED**

- A. Any Work specifically included under other Bid Items.

**4.03 DEFINITION OF ITEMS**

- A. Item 4 - Clearing and Grubbing includes the complete removal and disposal of all trees stumps and vegetation including plants, shrubs, generated by the clearing and grubbing operation.
  - 1. The wood generated by the clearing and grubbing operations shall become the property of the contractor to properly dispose of offsite.

**4.04 MEASUREMENT**

- A. The per acre price stated in the Bid shall be full compensation for all Work required under Item 4 - Clearing and Grubbing.

**4.05 PAYMENT**

- A. The unit price stated in the Bid for Item 4 shall be full compensation for each acre of clearing and grubbing within the prescribed limits as specified, so measured.

**ITEM 5  
RECONSTRUCT INDUSTRIAL DIVERSION CHAMBER NO. 1**

**5.01 DESCRIPTION**

- A. Under this item, the Contractor shall remove the existing electrical shed including its foundation, remove and replace the existing manhole steps outside the chamber, remove the existing slide gate and actuator, remove any necessary piping inside the structure, remove the diamond plat cover doors on top of the structure, infill the holes on top of the structure, install the new floor door with fall protection and new manhole steps inside the reconstructed structure.
- B. Bulkheading the existing 54" sewer and 12" vent pipe in the diversion chamber, install the new concrete sidewalk pad at the base of the new ladder, the new aluminum ladder section, railing, and two rail gate, install epoxy dowels and fill the structure with concrete as shown on the plans, install the new weir gate and weir gate actuator, connecting the new sewer to Industrial Diversion Chamber No. 1, constructing a new flow channel inside Industrial Diversion Chamber No. 1. The work also includes all electrical work including connecting to the 480V feeder breaker PC-00 inside the pilot building, removing the existing junction box, splicing the cables using a underground splice box and extending the conduit and wire to the new tap box, attaching conduits to the wall of the structure, connecting the existing light pole, installing the electrical equipment indicated on the electrical rack detail, and connecting the new weir gate actuator as shown on the plans.

**5.02 WORK NOT INCLUDED**

- A. Any Work specifically included under other Bid Items.

**5.03 DEFINITION OF ITEMS**

- A. Item 5 – Remove and Reconstruct Industrial Diversion Chamber No. 1

**5.04 MEASUREMENT**

- A. The lump sum stated in the Bid shall be full compensation for all Work required under Item 5 and as shown on the plans.

**5.05 PAYMENT**

- A. The lump sum unit price stated in the Bid for Item 5 shall be full compensation for remove and reconstruct Industrial Diversion Chamber No. 1 as specified and required, as shown on the plan drawings.

**ITEM 6  
REMOVE, FILL, AND ABANDON EXISTING JUNCTION CHAMBER**

**6.01 DESCRIPTION**

- A. Under this item, the Contractor shall brick off the existing 54" and 36" sewers in the Junction Chamber, fill the entire structure above the pipe crowns with MDOT flowable fill, fill the abandoned structure above the flowable fill with MDOT Class II sand, cut and cap the existing drain pipe, remove and salvage the existing valve operator for the City of Kalamazoo, saw cut the pavement around the existing structure, remove the top section of the structure 3 feet below grade, and restore the pavement surface in kind around the existing junction chamber upon completion of the removals.

**6.02 WORK NOT INCLUDED**

- A. Pavement damaged or destroyed beyond the specified limits shall be replaced at the Contractor's expense.
- B. Any Work specifically included under other Bid Items.

**6.03 DEFINITION OF ITEMS**

- A. Item 6 – Remove, Fill, Abandon Existing Junction Chamber.

**6.04 MEASUREMENT**

- A. The lump sum stated in the Bid shall be full compensation for all Work required under Item 6.

**6.05 PAYMENT**

- A. The lump sum unit price stated in the Bid for Item 6 shall be full compensation for remove Fill and Abandon existing Junction chamber as specified and required, as shown on the plan drawings.



**ITEM 7**  
**RECONSTRUCT PARSHALL FLUME PIPING**

**7.01 DESCRIPTION**

- A. Under this item, the Contractor shall perform all work necessary to connect the 24-inch piping as shown on sheet S-1.2. Work includes coring and connecting the proposed 24" Ductile Iron sanitary sewer with a flexible boot to the existing Parshall Flume Structure, bricking off and plastering the existing 36" sanitary sewer exiting the structure, installing concrete around the 90-degree bend and 24-inch vertical pipe, forming the 24-inch diameter snout as shown on the plans. Work also includes coring and plastering the structure for the installation of the 12" vertical vent pipe as shown on the plans.

**7.02 WORK NOT INCLUDED**

- A. Pavement damaged or destroyed beyond the specified limits shall be replaced at the Contractor's expense.
- B. Piping items included under other Bid items.
- C. Any Work specifically included under other Bid Items.

**7.03 DEFINITION OF ITEMS**

- A. Item 7 – Reconstruct Parshall Flume Piping.

**7.04 MEASUREMENT**

- A. The lump sum stated in the Bid shall be full compensation for all Work required under Item 7.

**7.05 PAYMENT**

- A. The lump sum unit price stated in the Bid for Item 7 shall be full compensation for all work necessary to Reconstruct the Parshall Flume Piping as specified, required, and as shown on the plans.

**ITEM 8**  
**RECONSTRUCT PARSHALL FLUME STRUCTURE**

**8.06 DESCRIPTION**

- A. Under this item, the Contractor shall perform all work necessary to remove the existing Parshall Flume and surrounding concrete to anchor, grout and install a new Fiberglass Parshall Flume with a new flow meter.

**8.07 WORK NOT INCLUDED**

- A. Pavement damaged or destroyed beyond the specified limits shall be replaced at the Contractor's expense.
- B. Piping items included under other Bid items.
- C. Any Work specifically included under other Bid Items.

**8.08 DEFINITION OF ITEMS**

- A. Item 8 – Reconstruct Parshall Flume Liner.

**8.09 MEASUREMENT**

- A. The lump sum stated in the Bid shall be full compensation for all Work required under Item 8.

**8.10 PAYMENT**

- A. The lump sum unit price stated in the Bid for Item 8 shall be full compensation for all work necessary to Reconstruct the Parshall Flume Liner as specified, required, and as shown on the plans.

**ITEM 9  
STORM MANHOLES**

**9.01 DESCRIPTION**

- A. Under these Items, the Contractor shall construct manholes and drops in locations and of types shown and scheduled on the Drawings and in accordance with the Contract Documents.
- B. The modification and connection of existing drop sewers to connect new sewers to existing manholes shall be included under these Items.
- C. Providing the appropriate casting per Section 05540 shall be included in the unit price to install the storm manholes.
- D. Work beyond the specified pay limits for the pipe trench, but necessary for the placement of the manholes, shall be included under this Item. Such Work shall include excavation of any material encountered, special backfill material, and pavement replacement.
- E. The temporary support of utilities as required to complete the Work, shall be included under these Items.
- F. The construction of shafts as needed to complete the Work is included under these Items.

- G. Restoration of landscape surface improvements including seeding, mulching, and fertilizing all disturbed lawn areas shall be included under these Items.

**9.02 WORK NOT INCLUDED**

- A. Replacement of existing manholes or catch basins removed or damaged for Contractor convenience of construction and which were not planned to be removed shall be done at the Contractor's expense.
- B. The furnishing and placing of special backfill in areas specified under Section 02200, is included under other Items.

**9.03 DEFINITION OF ITEMS**

- A. Item 9 - Includes Type II Storm Sewer Manholes.

**9.04 MEASUREMENT**

- A. The quantities to be paid for under Item 9 shall be for each structure installed.

**9.05 PAYMENT**

- A. The unit price stated in the Bid for Item 9 shall be full compensation for each manhole complete as specified, so measured.

**ITEMS 10 TO 20**  
**STORM SEWERS**

**10.01 DESCRIPTION**

- A. Under these Items, the Contractor shall perform all Work necessary for the installation of the sewer pipe as scheduled, shown on the Drawings and specified, in conformance with relevant sections of the Specifications.
- B. Under these Items, the Contractor shall furnish and perform all Work necessary for the installation of the Outlet Headwall as scheduled, shown on the Drawings and specified, in conformance with relevant sections of the Specifications.
- C. These Items shall include all Work under the Contract unless specifically included for payment under other Items.
- D. These Items shall include all work to install the outlet headwall, including but not limited to the following: excavation; removal and replacement of fences including fabric and posts; hauling excess spoil material from Site; all necessary backfill; compaction; bedding; pipe materials including any necessary concrete encasement as shown on the plans; fittings; connections to sewers or manholes; construction maintenance and

removal of temporary access to the Work area; and related Work such as performing material testing; deflection and infiltration tests.

- E. Connections of new sewers to the new headwall shall be included under this item.
- F. Sewer tap connection, for existing or new sewer pipe, to the new sewer shall be included under these Items.
- G. Maintaining existing sewers in operation and temporary flow stoppage, diversions and sewer flow by-pass connections shall be included under these Items.
- H. All Work required to dewater trenches is included under these Items.
- I. Temporary supporting existing utilities, locating of existing utilities, exploratory excavation and backfill required by the utility owner for existing utilities encountered during sewer construction is included under these Items.
- J. Vertical pipe sections and riser pipes shall be included under these Items.
- K. No additional compensation shall be considered for sewers installed within 2 feet of the elevation shown on the Drawings.
- L. The placement, compaction and grading of fill required for backfilling drainage ways enclosed in pipes is included under this Item.

#### **10.02 WORK NOT INCLUDED**

- A. Pavement replacement within the Contract limits is included under other Items.
- B. Closed circuit television inspection of new sewers 8-inches in diameter and larger installed as part of the Work are included under other Items.
- C. Sewers installed to convey sewage around or through the Work during construction will not be measured for payment.
- D. Damage to existing utilities shall be the responsibility of the Contractor.
- E. The furnishing and placing of special backfill in areas specified under Section 02200, is included under other Items.

#### **10.03 DEFINITION OF ITEMS**

- A. Item 10 – Includes 30-inch HDPE Storm Sewer, All Depths.
- B. Item 11 – Includes 6-inch Ductile Iron Storm Sewer, All Depths
- C. Item 12 – Includes 12-inch Ductile Iron Storm Sewer, All Depths
- D. Item 13 – Includes 30-inch Concrete Storm Sewer Outlet Headwall
- E. Item 14 - Includes 12-inch Ductile Iron Flanged Wye
- F. Item 15 - Includes 12-inch Ductile Iron Blind Flange
- G. Item 16 – Includes 12-inch Ductile Iron Flanged 45 Degree Bend

- H. Item 17 – Includes 12-inch Ductile Iron Flanged Plug Valve
- I. Item 18 – Includes 12-inch x 6-inch Ductile Iron Flanged Tee
- J. Item 19 - Includes 6-inch Male Cam Lock & Cap
- K. Item 20 - Includes 12-inch Ductile Iron Mechanical Joint 45 Degree Bend

**10.04 MEASUREMENT**

- A. The quantities to be paid under Items 10 to 12 shall be the horizontal length of pipe measured parallel to the axis of the line along the surface of the ground, with no deduction for laying length of fittings for the specified sizes and trench detail.
- B. The quantity paid for in Item 13 shall be for each 30-inch Concrete Storm Sewer Outlet Headwall, fitting, valve or bend furnished and installed.

**10.05 PAYMENT**

- A. The unit prices stated in the Bid for Items 10, 11, and 12 shall be full compensation for each linear foot of pipe of the sizes furnished and installed as specified, so measured. The unit prices stated in the Bid for Items 13-20 shall be full compensation for each headwall, fitting, valve, or bend furnished and installed.

**ITEM 21**  
**CURB**

**21.01 DESCRIPTION**

- A. Under this Item, the Contractor shall construct a 6” curb as shown on drawing C-2.1 connecting to the concrete spillway.

**21.02 WORK NOT INCLUDED**

- A. Any Work specifically included under other Bid Items.

**21.03 DEFINITION OF ITEMS**

- A. Item 21 – 6-inch concrete curb. No gutter pan is installed with this curb.

**21.04 MEASUREMENT**

- A. Quantities to be paid for under Item 21 shall be the actual quantity constructed, measured in place by linear foot at the back of the curb, within the limits as scheduled and shown on the Drawings, unless otherwise authorized by the Engineer, in which case measurement will be made to the authorized limits.

**21.05 PAYMENT**

- A. The unit price stated in the bid for Item 21 shall be full compensation for each linear foot of 6-inch Curb installed in accordance with the Specifications and Drawings.

**ITEM 22  
CONCRETE SPILLWAY**

**22.01 DESCRIPTION**

- A. Under these Items, the Contractor shall furnish and perform all Work necessary for the installation of the concrete spillway as scheduled, shown on the Drawings and specified, in conformance with relevant sections of the Specifications.
- B. These Items shall include all Work under the Contract unless specifically included for payment under other Items.
- C. These Items shall include all work to install the concrete spillway, including but not limited to the following: excavation; hauling excess spoil material from Site; all necessary backfill; compaction; and related Work such as performing material testing; deflection.

**22.02 WORK NOT INCLUDED**

- A. Any work specifically called out under other pay items.
- B. Damage to existing utilities shall be the responsibility of the Contractor.
- C. The furnishing and placing of special backfill in areas specified under Section 02200, is included under other Items.

**22.03 DEFINITION OF ITEMS**

- A. Item 22 – Includes furnishing and installing a Concrete Spillway as shown on the plans and relevant specifications.
- B. The quantities to be paid under Item 22 shall be for each square foot of concrete spillway furnished and installed.

**22.04 PAYMENT**

- A. The unit prices stated in the Bid for Item 22 shall be full compensation for each square foot of concrete spillway furnished and installed as specified, so measured.

**ITEM 23  
BYPASS VAULT**

**23.01 DESCRIPTION**

- A. Under these Items, the Contractor shall furnish and perform all Work necessary to furnish and install the By-Pass Vault as shown on the Drawings and specified including installing the new floor door with fall protection and new manhole steps inside the new structure.
- B. These Items shall include all work to furnish and install the By-Pass Vault, including but not limited to the following: installing the new floor door with fall protection, new manhole steps, excavation; hauling excess spoil material from site; all necessary backfill; compaction; bedding; connections to new sewers; dewatering; construction maintenance and removal of temporary access to the Work area.
- C. Connections of new sewers to the new By-Pass Vault shall be included under this item.
- D. Maintaining existing sewers in operation and temporary flow stoppage, diversions and sewer flow by-pass connections shall be included under these Items.
- E. All Work required to dewater trenches is included under these Items.
- F. Temporary supporting existing utilities, locating of existing utilities, exploratory excavation and backfill required by the utility owner for existing utilities encountered during sewer construction is included under these Items.
- G. The placement, compaction, and grading of fill required for backfill is included under this Item.
- H. Pavement replacement around the By-Pass structure in kind is included under this item.

**23.02 WORK NOT INCLUDED**

- A. Damage to existing utilities shall be the responsibility of the Contractor.
- B. The furnishing and placing of special backfill in areas specified under Section 02200, is included under other Items.

**23.03 DEFINITION OF ITEMS**

- A. Item 23 – Includes Bypass Vault.

**23.04 PAYMENT**

- A. The unit prices stated in the Bid for Item 23 shall be full compensation for each By-Pass Vault furnished and installed as specified, so measured.

**ITEM 24**  
**6"-12" RIP RAP**

**24.01 DESCRIPTION**

- A. Under this Item, the Contractor shall perform all Work necessary to install 6"-12" Rip Rap stones with filter fabric as specified and shown on the Drawings.
- B. This Item shall include the excavation grading and removal of excess spoil material for the installation on the proposed Rip Rap as specified and shown on the Drawings.

**24.02 WORK NOT INCLUDED**

- A. Any work specifically included under other Bid Items.

**24.03 DEFINITION OF ITEMS**

- A. Item 24 – shall include all Work necessary to install 6"-12" Rip Rap stones with filter fabric as specified and shown on the Drawings.

**24.04 MEASUREMENT**

- A. The quantities to be paid for under Item 24 shall be measured for each square yard of Rip Rap installed.

**24.05 PAYMENT**

- A. The unit price stated in the bid for Item 24 shall be full compensation for square yard of 6"-12" Rip Rap installed as specified and required.

**ITEMS 25 THROUGH 40**  
**SANITARY AND SEWERS**

**25.01 DESCRIPTION**

- A. Under these Items, the Contractor shall perform all Work necessary for the installation of the sewer pipe as scheduled, shown on the Drawings and specified, in conformance with relevant sections of the Specifications. Due to current supply chain issues in obtaining ductile iron pipe, fittings, and hardware, the City of Kalamazoo already purchased material items 25-40 including all gasket kits, mega-lugs, and stainless steel hardware necessary to construct the sewer pipe line.
- B. These Items shall include all Work under the Contract unless specifically included for payment under other Items.
- C. These Items shall include all Work to install the sewers, including but not limited to the following: excavation; removal and replacement of fences including fabric and posts;



hauling excess spoil material from Site; all necessary backfill; compaction; bedding; pipe materials including any necessary concrete encasement as shown on plan SA-1.1; fittings; connections to existing sewers or manholes; construction maintenance and removal of temporary access to the Work area; and related Work such as performing material testing; deflection and infiltration tests.

- D. Connections of new sewers to new and existing manholes or to new and existing sewers shall be included under these Items, unless specifically included under other items.
- E. Sewer tap connection, for existing or new sewer pipe, to the new sewer shall be included under these Items.
- F. Maintaining existing sewers in operation and temporary flow stoppage, diversions and sewer flow by-pass connections shall be included under these Items.
- G. All Work required to dewater trenches is included under these Items.
- H. Temporary supporting existing utilities, locating of existing utilities, exploratory excavation and backfill required by the utility owner for existing utilities encountered during sewer construction is included under these Items.
- I. Vertical pipe sections and riser pipes shall be included under these Items.
- J. No additional compensation shall be considered for sewers installed within 2 feet of the elevation shown on the Drawings.
- K. The placement, compaction and grading of fill required for backfilling drainage ways enclosed in pipes is included under this Item.

#### 25.02 WORK NOT INCLUDED

- A. Pavement replacement within the Contract limits is included under other Items.
- B. Closed circuit television inspection of new sewers 8-inches in diameter and larger installed as part of the Work are included under other Items.
- C. Sewers installed to convey sewage around or through the Work during construction will not be measured for payment.
- D. Damage to existing utilities shall be the responsibility of the Contractor.
- E. The furnishing and placing of special backfill in areas specified under Section 02200, is included under other Items.

#### 25.03 DEFINITION OF ITEMS

- A. Item 25 – Includes 12-inch Class 52 Ductile Iron Sanitary Sewer (Labor Only)
- B. Item 26 – Includes 24-inch Class 52 Ductile Iron Sanitary Sewer (Labor Only)
- C. Item 27 – Includes 24-inch Class 52 Ductile Iron Flanged Tee (Labor Only)
- D. Item 28 - Includes 24-inch x 12-inch Class 52 Ductile Iron MJ Tee (Labor Only)

- E. Item 29 - Includes 24-inch Class 52 Ductile Iron Blind Flange (Labor Only)
- F. Item 30 - Includes 24-inch Class 52 Ductile Iron Flanged 45 Degree Bend (Labor Only)
- G. Item 31 - Includes 24-inch Class 52 Ductile Iron Flanged 11.25 Degree Bend (Labor Only)
- H. Item 32 – Includes 24-inch Class 52 Ductile Iron Flanged 22.5 Degree Bend (Labor Only)
- I. Item 33 – Includes 24-inch Mega-Flange Adapter (Labor Only)
- J. Item 34 – 24-inch Nut & Bolt Gasket Set (NLA 24 304 SS 150# RR FF 1/8 FLG P) (Labor Only)
- K. Item 35 – Includes 24-inch Class 52 Ductile Iron Mechanical Joint 90 Degree Bend (labor Only)
- L. Item 36 – Includes 24-inch Mega-lug F/DI (Labor Only)
- M. Item 37 – Includes 24-inch MJ Bolt & Gasket Package Less Gland (Labor Only)
- N. Item 38 – Includes 12-inch Mega-lug F/DI (Labor Only)
- O. Item 39 – Includes 12-inch MJ Bolt & Gasket Package Less Gland (Labor Only)
- P. Item 40 – Includes 12-inch Class 52 Ductile Iron Mechanical Joint 90 Degree Bend (Labor Only)

#### **25.04 MEASUREMENT**

- A. The quantities to be paid under Items 25 and 26 shall be the horizontal length of pipe installed measured parallel to the axis of the line along the surface of the ground installed for the specified sizes and trench detail. (Labor Only)
- B. The quantities to be paid under Item 27 shall be the measured quantity of each 24-inch Class 52 Ductile Iron Flanged Tee installed. The City of Kalamazoo has already purchased the tee. (Labor Only)
- C. The quantities to be paid under Item 28 shall be the measured quantity of each 24-inch x 12-inch Class 52 Ductile Iron Mechanical Joint Tee installed. The City of Kalamazoo has already purchased the tee. (Labor Only)
- D. The quantities to be paid under Item 29 shall be the measured quantity of each 24-inch Class 52 Ductile Iron Blind Flange installed. The City of Kalamazoo has already purchased the blind flanges. (Labor Only)
- E. The quantities to be paid under Item 30 shall be the measured quantity of each 24-inch Class 52 Ductile Iron Flanged 45 Degree Bend installed. The City of Kalamazoo has already purchased the bend. (Labor Only)
- F. The quantities to be paid under Item 31 shall be the measured quantity of each 24-inch Class 52 Ductile Iron Flanged 11.25 Degree Bend installed. The City of Kalamazoo has already purchased the bend. (Labor Only)

- G. The quantities to be paid under Item 32 shall be the measured quantity of each 24-inch Class 52 Ductile Iron Flanged 22.5 Degree Bend installed. The City of Kalamazoo has already purchased the bend. (Labor Only)
- H. The quantities to be paid under Item 33 shall be the measured quantity of each 24-inch Mega-Flange Adapter installed. The City of Kalamazoo has already purchased the adapter. (Labor Only)
- I. The quantities to be paid under Item 34 shall be the measured quantity of each 24-inch Nut & Bolt Gasket Set installed. The City of Kalamazoo has already purchased the nut & bolt gasket set. (Labor Only)
- J. The quantities to be paid under Item 35 shall be the measured quantity of each 24-inch Class 52 Ductile Iron Mechanical Joint 90 Degree Bend installed. The City of Kalamazoo has already purchased the bend. (Labor Only)
- K. The quantities to be paid under Item 36 shall be the measured quantity of each 24-inch Mega-lug installed. The City of Kalamazoo has already purchased the Mega-lug. (Labor Only)
- L. The quantities to be paid under Item 37 shall be the measured quantity of each 24-inch Mechanical Joint Bolt & Gasket Package installed. The City of Kalamazoo has already purchased the Bolt & Gasket Package. (Labor Only)
- M. The quantities to be paid under Item 38 shall be the measured quantity of each 12-inch Mega-lug installed. The City of Kalamazoo has already purchased the Mega-lug.
- N. The quantities to be paid under Item 39 shall be the measured quantity of each 12-inch Mechanical Joint Bolt & Gasket Package installed. The City of Kalamazoo has already purchased the Bolt & Gasket Package. (Labor Only)
- O. The quantities to be paid under Item 40 shall be the measured quantity of each 12-inch Class 52 Ductile Iron Mechanical Joint 90 Degree Bend installed. The City of Kalamazoo has already purchased the bend. (Labor Only)

#### **25.05 PAYMENT**

- A. The unit prices stated in the Bid for Items 25 and 26 shall be full compensation (Labor Only) for each linear foot of pipe sizes installed as specified, so measured. The unit prices stated in the Bid for Items 26-40 shall be full compensation (labor Only) for each item installed. All pipe materials under items 26-40 shall be furnished by the City of Kalamazoo to the selected contractor to install.

**ITEM 41**  
**TYPE III SANITARY SEWER MANHOLE (8' DIAMETER)**

**41.01 DESCRIPTION**

- A. Under these Items, the Contractor shall construct manholes in locations and of types shown and scheduled on the Drawings and in accordance with the Contract Documents.
- B. The modification and connection of existing sewers to connect new sewers to existing manholes shall be included under these Items.
- C. Work beyond the specified pay limits for the pipe trench, but necessary for the placement of the manholes, shall be included under this Item. Such Work shall include excavation of any material encountered, backfill material, and pavement replacement.
- D. The temporary support of utilities as required to complete the Work, shall be included under these Items.
- E. The construction of shafts as needed to complete the Work is included under these Items.
- F. Restoration of landscape surface improvements including seeding, mulching, and fertilizing all disturbed lawn areas shall be included under other Items.

**41.02 WORK NOT INCLUDED**

- A. Replacement of existing manholes or catch basins removed or damaged for Contractor convenience of construction and which were not planned to be removed shall be done at the Contractor's expense.
- B. The furnishing and placing of special backfill in areas specified under Section 02200, is included under other Items.

**41.03 DEFINITION OF ITEMS**

- A. Item 41 - Includes Type III Sanitary Sewer Manhole (8' Diameter).

**41.04 MEASUREMENT**

- A. The quantities to be paid for under Items 41, shall be for each manhole installed regardless of the depth.

**41.05 PAYMENT**

- A. The unit price stated in the Bid for Item 41, shall be full compensation for each manhole complete as specified, so measured.

**ITEM 42**  
**CIPP 24-INCH SANITARY SEWER**

**42.01 DESCRIPTION**

- A. Under these Items, the Contractor shall furnish and perform all Work necessary for the installation of all Cured-in-Place Pipe (CIPP) as specified in conformance with relevant Sections of the Specifications.
- B. These Items shall include all Work to install the CIPP, including but not limited to the following: CIPP materials, fittings, connections to existing sewers, removal of protrusions; hydrophilic end seals; reinstatement of sanitary laterals; removal of manhole casting; and related Work such as sewer cleaning, acceptance testing.
- C. Connections of new CIPP to existing or new manholes shall be paid for under these Items.
- D. Tap connection for existing or new sewer pipe and to re-establish existing service connections to the new CIPP sewer shall be paid for under these Items.
- E. Maintaining existing sewers in operation and bypass pumping operation and making connections to new CIPP is included under these Items.

**42.02 WORK NOT INCLUDED**

- A. Pavement, curb, walks, damaged or destroyed shall be replaced at the Contractor's expense.

**42.03 DEFINITION OF ITEMS**

- A. Item 42 – Includes CIPP 24-inch Class 52 Ductile Iron Sanitary Sewer

**42.04 MEASUREMENT**

- A. The quantities to be paid for under the respective Items shall be the measured length of sewers of the specified sizes.
- B. Sewers installed to bypass sewage during construction will not be measured for payment.
- C. No pipe will be included in these measurements if specifically included for payment under other Items.

**42.05 PAYMENT**

- A. The unit prices stated in the Bid for Item 42 shall be full compensation for each linear foot of pipe liner installed as specified, so measured.

**ITEM 43**  
**POST-CCTV INSPECTION OF SEWERS**

**43.01 DESCRIPTION**

- A. Under this Item, the Contractor shall perform closed circuit television inspection of the new 24-inch sewer, installed as part of the Work, as specified.
- B. Cleaning of the sewers prior to the CCTV inspection shall be included under this Item.
- C. The preparation and submittal of video records and submission to the Owner and Engineer shall be included under this Item.

**43.02 WORK NOT INCLUDED**

- A. Not used.

**43.03 DEFINITION OF ITEM**

- A. Item 43 - Includes CCTV of Sewers 24-inch.

**43.04 MEASUREMENT**

- A. The quantities to be paid for under Item 43 shall be the horizontal length of sewer inspected as measured, parallel to the axis of the sewer line along the surface of the ground from the center of manholes. No deduction shall be made for manholes along the length of the sewer inspected.

**43.05 PAYMENT**

- A. The lump sum unit price stated in the Bid for Item 43 shall be full compensation for Post-CCTV inspection of sewers, as specified, so measured.

**ITEM 44**  
**REMOVE CHAIN LINK FENCE**

**44.01 DESCRIPTION**

- A. Under this Item, the Contractor shall remove the existing 6-foot High Chain link fence and posts as shown on the plans.

**44.02 WORK NOT INCLUDED**

- A. All other landscape surface improvements disturbed or damaged by the Contractor without prior approval from the Engineer shall be repaired or replaced at the Contractor's expense.

**44.03 DEFINITION OF ITEMS**

- A. Item 44 - Includes removing the existing fencing, posts and disposing off-site.

**44.04 MEASUREMENT**

- A. The quantities to be paid for under Item 44 shall be measured for each lineal foot of fencing removed.

**44.05 PAYMENT**

- A. The unit price stated in the bid for Item 44 shall be full compensation for each lineal foot of fencing removed as specified and required.

**ITEM 45  
CHAIN LINK FENCE (6' HIGH)**

**45.01 DESCRIPTION**

- A. Under this Item, the Contractor shall install a 6-foot chain link fence with a top rail and three strands of barb wire to match the existing fence in the locations shown on the plans. The contractor's surveyor shall stake the location for the City's review prior to relocating the existing fence.

**45.02 WORK NOT INCLUDED**

- A. All other landscape surface improvements disturbed or damaged by the Contractor without prior approval from the Engineer shall be repaired or replaced at the Contractor's expense.

**45.03 DEFINITION OF ITEMS**

- A. Item 45 - Includes surveying the proposed location of the fencing. Installing a 6-foot high chain link fence with a top rail and three strands of barb wire.

**45.04 MEASUREMENT**

- A. The quantities to be paid for under Item 45 shall be measured for each lineal foot of new fencing installed.

**45.05 PAYMENT**

- A. The unit price stated in the bid for Item 45 shall be full compensation for each lineal foot of new fencing installed as specified and required.

**ITEM 46  
RESTORATION**

**46.01 DESCRIPTION**

- A. Under this Item, the Contractor shall restore landscape surface improvements including topsoil, seeding, mulching, and fertilizing all disturbed lawn areas within the defined construction limits as shown on the Drawings and specified.

**46.02 WORK NOT INCLUDED**

- A. All other landscape surface improvements disturbed or damaged by the Contractor without prior approval from the Engineer shall be repaired or replaced at the Contractor's expense.
- B. Wetland restoration is included under other Bid Items.

**46.03 DEFINITION OF ITEMS**

- A. Item 46 - Includes Restoration.

**46.04 MEASUREMENT**

- A. The lump sum price stated in the Bid shall be full compensation for all Work required.

**46.05 PAYMENT**

- A. The lump sum unit price stated in the Bid for Item 46 shall be full compensation for restoration as specified and required.

**ITEM 47  
MATERIALS TESTING**

**47.01 DESCRIPTION**

- A. Under this Item, the Contractor shall coordinate with an independent laboratory to provide materials testing as specified and required.

**47.02 WORK NOT INCLUDED**

- A. Any Work specifically included under other Bid Items.

**47.03 DEFINITION OF ITEMS**

- A. Item 47 - Includes Materials Testing.



**47.04 MEASUREMENT**

- A. The lump sum stated in the Bid shall be full compensation for all Work required under Item 47.

**47.05 PAYMENT**

- A. The unit price stated in the Bid for Item 48 shall be full compensation for materials testing as specified and required.

**ITEM 48  
CONSTRUCTION STAKING**

**48.01 DESCRIPTION**

- A. Under this Item, the Contractor shall coordinate with a licensed Surveyor to provide construction staking as specified. The Surveyor shall coordinate the layout and staking for the project with the Engineer.

**48.02 WORK NOT INCLUDED**

- A. Any Work specifically included under other Bid Items.

**48.03 DEFINITION OF ITEMS**

- A. Item 48 - Includes Construction Staking.

**48.04 MEASUREMENT**

- A. The lump sum stated in the Bid shall be full compensation for all Work required under Item 48.

**48.05 PAYMENT**

- A. The lump sum unit price stated in the Bid for Item 48 shall be full compensation for construction staking as specified and required.

**ITEM 49  
DUCTILE IRON SEWER MATERIAL ADVANCE PURCHASE**

**49.01 DESCRIPTION**

- A. For the unit price per linear foot bid for the various sewer main, the Contractor shall do all work necessary to construct complete ready for service the sewer system and test the sewer as shown on the plans and as specified, except for work which is specifically

included under other contract items. This project is a unique project. The sanitary sewer will be constructed similar to a water main project by using ductile iron pipe bends and fittings as shown on the plans. All work shall be done in accordance with section 823 of the 2020 MDOT Standard Specifications for Construction and City of Kalamazoo Standard Specifications for Water Main and Service Installation 2021 available at [kalamazoo.org](http://kalamazoo.org), unless otherwise specified herein.

#### 49.02 MATERIALS

- A. Ductile Iron pipe, restrained joints, fittings, polyethylene encasement and associated appurtenances listed below shall be supplied new by the City of Kalamazoo from their selected supplier at no cost to the Contractor. The Contractor shall be responsible for coordinating delivery of materials by contacting the City's specified supplier a minimum of 10 working days prior to desired delivery. In advance of material delivery, a centralized delivery yard shall be established by the Contractor and agreed upon with the City and City's material supplier on or adjacent to the project site. The contractor shall supply any materials not explicitly listed below that are necessary to construct the project. These materials shall be incidental to construction. No second hand or salvaged materials shall be allowed or supplied. All supplied products shall be **"Buy American"** unless otherwise specified and shall comply with the conditions of this section.
1. Contractor shall review the plans and list of City supplied materials during bidding and throughout construction. If Contractor believes additional quantities will be required, Contractor shall immediately notify the City in writing, and the City shall provide the materials at no cost to the Contractor. City shall not be responsible for any downtime or construction delays associated with insufficient materials being available during construction as the Contractor shall notify the City of foreseen insufficient materials during the bid period. Contractor shall be responsible for all delays and downtime associated with Contractor supplied materials, and shall purchase, provide, and install materials not explicitly listed below that are necessary to construct the project as designed.
  2. All City provided materials, not used during construction, shall be returned to the City within one week of sewer installation completion, unless otherwise directed by the City's project manager. The Contractor shall be responsible for transporting any excess material from the project site to 415 E. Stockbridge Ave., Kalamazoo, MI. This includes, but is not limited to, partial and full sticks of pipe, partial and full rolls of copper (including tag ends of copper services), valves, fittings, gaskets, bolts, etc.
  3. City provided materials shall be used efficiently and waste from cutting pipes, etc. shall be minimized. City provided materials shall be handled with care and protected from damage, vandalism and thievery. City shall not be responsible for providing additional materials due to theft or mishandling by Contractor.

4. Contractor shall provide 2 year warranty as described in the City of Kalamazoo Standard Specifications for Water Main and Service Installation. Warranty shall cover all City and Contractor provided parts and materials; and associated contractor labor costs.
5. Contractor and Engineer shall track City provided material delivery and usage on a daily basis.
6. Unit pricing is included below for the City’s procurement of materials for the Contractor to account for sales and use tax per the Michigan Department of Treasury RAB 2016-18. Sales and use tax pricing shall be included in the major items of work.

<b>Material Cost Item</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Extended Price</b>
24-inch DIP Class 52	720	LF	\$171.25	\$123,300.00
24-inch DIP FLANGED TEE	3	EA	\$12,815.50	\$38,446.50
24-inch X 12-inch MJ TEE	1	EA	\$5,423.00	\$5,423.00
24-inch X BLIND FLANGE	3	EA	\$3,445.00	\$10,335.00
24-inch 45 DEGREE BEND	3	EA	\$8,808.00	\$26,424.00
24-inch 11.25 DEGREE BEND	2	EA	\$7,695.00	\$15,390.00
24-inch 22.5 DEGREE BEND	1	EA	\$5,719.00	\$5,719.00
24-inch MEGAFLANGE ADAPTER	9	EA	\$1,910.00	\$17,190.00
NLA 24 304 SS 150# RR FF 1/8 FLG P	9	EA	\$2,700.00	\$24,300.00
24-inch MJ 90 DEGREE BEND	1	EA	\$6,035.00	\$6,035.00
24-inch MEGALUG F/DI	6	EA	\$507.00	\$3,042.00
24-inch MJ BLT & GSKT PK L/GLAND	6	EA	\$96.25	\$577.50
12-inch MEGALUG F/DI	5	EA	\$98.50	\$492.50
12-inch MJ BLT & GSKT PK L/GLAND	5	EA	\$28.42	\$142.10
12-inch CLASS 52 TYTON JT PIPE	36	LF	\$71.90	\$2,588.40
12-inch MJ CLASS 153 90 DEG BEND L/A	1	EA	\$635.50	\$635.50
<b>TOTAL PRICE</b>				<b>\$ 280,040.50</b>

**49.03 MEASUREMENT AND PAYMENT**

- A. Payment for sewers shall be measured based on the sizes and trench details required, along the centerline of the pipe, with no deductions for fittings. The unit price of sewer, DI, includes the cost of the following:
  1. Excavation and backfill;
  2. Dewatering operations (trench and/or pipe), including pretreatment to remove sediment;
  3. Hydrostatic testing;
  4. All material not supplied by the City, labor and equipment necessary to remedy an unsatisfactory hydrostatic test, including removing and replacing any backfill;

- 5. Installing fittings, gaskets, bracing or sheeting, blocking and miscellaneous items for installing pipe and reconnecting to the existing Municipal system
- B. The City of Kalamazoo may withhold payment and/or final acceptance until the City of Kalamazoo accepts the as-built plans.
- C. The cost of dewatering of trenches, pipe, or both associated with alterations to the Municipal sewer system, is included in the unit price for relevant items of work.
- D. The cost of excavating, disposing of excess material, and providing, placing, and compacting the backfill, is included in the unit price for related items of work.
- E. The cost of removing or abandoning existing water mains, gate valve boxes, and other appurtenances to provide clearance for the proposed sanitary sewer or roadway, is included in the unit price for relevant items of work.

<b>Labor Cost Pay Item</b>	<b>Pay Unit</b>
24-inch DIP CLASS 52	LF
24-inch DIP FLANGED TEE	EA
24-inch X 12-inch MJ TEE	EA
24-inch X BLIND FLANGE	EA
24-inch 45 DEGREE BEND	EA
24-inch 11.25 DEGREE BEND	EA
24-inch 22.5 DEGREE BEND	EA
24-inch MEGAFLANGE ADAPTER	EA
NLA 24 304 SS 150# RR FF 1/8 FLG P	EA
24-inch MJ 90 DEGREE BEND	EA
24-inch MEGALUG F/DI	EA
24-inch MJ BLT & GSKT PK L/GLAND	EA
12-inch MEGALUG F/DI	EA
12-inch MJ BLT & GSKT PK L/GLAND	EA
12-inch CLASS 52 TYTON JT PIPE	LF
12-inch MJ CLASS 153 90 DEG BEND L/A	EA

- 1. The cost of excavating, disposing of excess material, and providing, placing and compacting the backfill, including concrete encasement is included in the unit price for related items of work.
- 2. The cost of removing or abandoning existing sewer to provide clearance for the proposed sewer, is included in the unit price for relevant items of work.
- 3. The cost for dewatering of trenches, pipe, or both associated with alterations to the Municipal Sewer System is included in the unit price for relevant items of work.

**ITEM 50  
METER VAULT**

**50.01 DESCRIPTION**

- A. Under this item, the Contractor shall furnish and install a 6' x 8' Meter Vault with a 24-inch Krohne Tidalux 2300 flow meter, 120V sump pump and a 1.5" sump pump discharge line to the existing Industrial Diversion Chamber No. 1. The work includes all piping inside the meter vault, a 4-inch diameter vent stack with bug screen, core & link the sump pump discharge line into the meter vault, installing a 5' x 6' floor door in the meter vault with fall protection with manhole steps to the bottom of the structure.
- B. The work also includes all electrical work for meter power, sump pump power, alarm float, flow meter signal, and conduit to the new meter vault, as shown on the plans.

**50.02 WORK NOT INCLUDED**

- A. Any Work specifically included under other Bid Items.

**50.03 DEFINITION OF ITEMS**

- A. Item 50 – Meter Vault.

**50.04 MEASUREMENT**

- A. The lump sum stated in the Bid shall be full compensation for all Work required under Item 50 and as shown on the plans.

**50.05 PAYMENT**

- A. The lump sum unit price stated in the Bid for Item 50 shall be full compensation for installing a fully functioning meter vault as specified and required, as shown on the plan drawings.

END OF SECTION

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**SECTION 05540  
IRON CASTINGS**

**PART 1 GENERAL**

**1.01 SCOPE**

- A. This Section includes manhole covers and frames, and other iron castings shown on Drawings.

**1.02 SUBMITTALS**

- A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:
  - 1. Shop Drawings for Review:
    - a. Product literature that shall be included; General Specifications, Surface Coating, Anchor Bolts, Machine Bearing Surface.
    - b. Independent Shop Drawings shall be submitted for the frame and the cover.
    - c. A submittal of a casting schedule that clearly notes either the structure number or in what circumstances the casting is intended to be installed, shall be included, i.e., roadway.
    - d. All dimensions for both the frame and the cover/grate shall be included.
  - 2. Information for the Record:
    - a. Material certification.
    - b. Proof-load test data.
    - c. Manufacturer's installation instructions.
    - d. Manufacturing Capabilities and Quality Control Measures.

**1.03 PRODUCT HANDLING**

- A. Castings shall be delivered in sufficient time to permit proper placement in pavement and slabs.
- B. Castings shall be stored in such a way as to prevent warping prior to installation.
- C. Additional product handling requirements are specified in Section 01350.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Castings shall be manufactured by East Jordan Iron Works, Inc., or approved equal.

### **2.02 MANHOLE COVER AND FRAME**

- A. Castings located in roadways, driveways, or other areas subject to vehicular traffic shall be suitable for heavy-duty service. Other castings shall be suitable for light-duty service.
- B. Unless indicated otherwise, sewer manhole shall have a minimum access opening of 24 inches.
- C. All sanitary manholes shall be a heavy duty manhole cover and frame per City of Kalamazoo drawing SA-2A.
- D. All storm sewer manholes shall be a heavy duty frame and cover, East Jordan 1045 frame with Type 02 beehive grate. he

### **2.03 RESERVED**

### **2.04 RESERVED**

### **2.05 PERFORMANCE REQUIREMENTS**

- A. Castings shall be gray iron conforming to ASTM A48, Class 35.

### **2.06 FABRICATION**

- A. Castings shall be free from pouring faults, sponginess, cracks, blowholes, blisters, shrinkage strains, and other defects. Plugging of defective castings is not permitted.
- B. Castings shall be true to pattern in form and dimension. Weight of castings shall not vary by more than 5% from published weight. Contractor shall submit invoices showing actual weight of casting as certified by manufacturer.
- C. Castings shall have machined bearing surfaces.
- D. All castings shall be coated with a non-toxic, nonflammable, water-based, asphalt paint.
- E. Lettering shall be cast on covers. Unless indicated otherwise, the manufacturer's name shall be cast in cover.
- F. Covers for water line manholes shall be solid lids and labeled "WATER".
- G. Covers for sanitary sewer manholes shall be solid lids and labeled "SANITARY".
- H. Covers for storm sewer manholes shall be solid lids and labeled "STORM".



- I. Covers shall be furnished with bolts, locks, hinges, perforations, lifting rings, and pick holes as specified, shown on Drawings, or as directed.

**PART 3 EXECUTION**

**3.01 PREPARATION**

- A. Contractor shall examine surfaces to receive castings and shall report unacceptable conditions to Engineer before proceeding with the Work.

**3.02 ERECTION AND INSTALLATION**

- A. Castings shall be accurately set, aligned, and anchored as shown on Drawings.
- B. Castings shall be installed in accordance with manufacturer's instructions or shown on the drawings. If any discrepancies exist, then the more stringent requirements shall take precedence.
- C. Stop plank grooves shall be square, set plumb, and securely anchored as shown. Grooves that are buckled, twisted, or otherwise prevent free insertion of stop plank shall be removed and replaced.

**PART 4 SPECIAL PROVISIONS**

Not used.

END OF SECTION

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**SECTION 08320  
FLOOR DOORS**

**PART 1 GENERAL**

**1.01 SCOPE**

- A. This Section includes furnishing and installing floor doors in the locations shown on the Drawings.
- B. Floor doors shall be aluminum interior, exterior diamond plate or interior recessed to receive carpet, composition or resilient flooring specified under other Items.
- C. Door arrangement shall be either single leaf or double leaf hinged as shown on the Drawings.
- D. Additional product requirements are specified in Section 01350.

**1.02 SUBMITTALS**

- A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:
  - 1. Shop Drawings for Review:
    - a. The Contractor shall indicate all variances from the requirements of the Contract Documents.
    - b. Manufacturer's literature.
    - c. Door Schedule.
    - d. Dimensional Drawing.
  - 2. Information for the Record:
    - a. Operation and maintenance manuals.

**1.03 GUARANTEE**

- A. The manufacturer shall guarantee proper operation and against defects in material and workmanship for a period of five years from date of shipment. The provisions of this warranty shall not be construed as relieving or reducing the obligations of the Contractor outlined in General Conditions of these Specifications.

**PART 2 PRODUCTS**

**2.01 RESERVED**

**2.02 RESERVED**

**2.03 EXTERIOR DOORS**

- A. Doors shall have channel frames and shall be 1/4-inch aluminum with an anchor flange around the perimeter.
- B. Door leaf shall be 1/4-inch aluminum diamond pattern plate reinforced with aluminum stiffeners designed to withstand a live load of HS20 and as required to prevent distortion of the leaf when in any position. Doors shall be equipped with heavy forged brass hinges, stainless steel pins, spring operators for easy operation, and automatic hold-open arm with release handle. A snap lock with removable handle shall be provided.
- C. A 1-1/2-inch drainage coupling shall be provided in the door frame. Drainage shall be piped by the Contractor to outlet with 1-1/2-inch PVC pipe to drain.
- D. Hardware shall be stainless steel throughout.
- E. Factory finish shall be mill finish with bituminous coating applied by the manufacturer to the exterior of the frame and all aluminum in contact with concrete.
- F. Doors shall be as manufactured by Bilco, or equal.

**2.04 ACCESS DOOR FALL PROTECTION**

- A. Each hatch shall be designed to combine covering of the opening, fall-through protection per OSHA standard 1910.23 and controlled confine space entry per OSHA standard 1910.146.
- B. The safety grate shall be made of 6061-T6 aluminum and designed per the "Specifications for Aluminum Structures", by the Aluminum Association, Inc. 5th Edition, December 1986 for "Bridge Type Structures."
- C. The grating shall be designed to withstand a live load of 300 pounds per square foot. Deflection shall not exceed 1/150th of the span.
- D. Grate openings shall allow for visual inspection, limited maintenance, and float adjustments while safety grate fall-through protection is left in place. The grating shall cover the full opening except for a maximum 6-inch width on each end of the opening.
- E. Design must assure that the fall-through protection is in place before the doors can be closed, thereby, protecting the next operator.
- F. Each grate shall be provided with a permanent hinging system, which will lock the grate in the 90-degree position once opened.
- G. Each grate supplied with a locking device (for Owner's padlock) that will prevent unauthorized entry to the confined space. The grating system will allow anyone to make visual inspection and float adjustments without entering the confined space.

- H. Grate shall be coated with an OSHA-type safety orange or yellow color, promoting visual awareness of the hazard. The aluminum safety grates shall receive a two-coat, powder coating system, applied by the electrostatic spray process. The base coat is a thermosetting epoxy powder coat finish with a minimum thickness of 2 to 4 mils. The top coat is a mar-resistant, TGIC polyester powder coating with a minimum thickness of 2 to 4 mils. Each coat shall be baked at 450 to 375 degrees F until cured.
- I. Welding shall be in accordance with ANSI/AWS D1.2-90 Structural Welding Code for Aluminum.

**PART 3 EXECUTION**

**3.01 GENERAL**

- A. The Contractor shall install the floor doors in the locations shown on the Drawings. Installation shall be in accordance with the manufacturer's recommendations.
- B. Doors shall be modified by the manufacturer as required when necessary to suit the installation shown on the Drawings.
- C. Doors shall be installed to open in the direction shown on the Drawings or as ordered by the Engineer.
- D. The bituminous coating on door frames shall be touched up by the Contractor if the coating has been damaged.

**PART 4 SPECIAL PROVISIONS**

**4.01 FLOOR DOOR SCHEDULE**

- A. All access floor doors shown on the Drawings and scheduled below shall be provided:

Mark	Size	Type	Location
FD1	4'X4' Inside Dimension	Access Hatch	MH-SA-1.1
FD2	5'x6' Inside Dimension	Access Hatch	Meter Vault
<u>FD3</u>	<u>4'x4' Inside Dimension</u>	<u>Access Hatch</u>	<u>By-Pass Vault</u>

- B. Schedules are not guaranteed to be complete. All floor doors shown on the Drawings or specified shall be furnished and installed by the Contractor whether or not listed in the above schedule.

END OF SECTION

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***ADDENDUM #1***

**Attachment B**

**REVISED**

**BID AND AWARD PAGES**

**(MUST BE USED WHEN SUBMITTING BIDS  
FOR THIS PROJECT)**

**GPI EFFLUENT SEWER REALIGNMENT**

**91345-004.0**

**REVISED**  
**SECTION II**  
**BID AND AWARD**

The undersigned having become thoroughly familiar with all of the bid/contract documents incorporated herein, the project site and the location conditions affecting the work, hereby proposes to perform everything required to be performed in strict conformity with the requirements of these documents, and to provide and furnish all the equipment, labor and materials necessary to complete, in a professional manner, the furnishing and installing of all of the following, meeting or exceeding the specifications as set forth herein for the prices as stated below.

**GPI EFFLUENT SEWER REALIGNMENT – PROJECT BASE BID**

Item	Description	Qty	Unit	Unit Price	Extended Price
1	General Conditions/ Mobilization	1	LS		
2	Audio/Video Recording	1	LS		
3	Tree and Stump Removal 6 inches to 18 inches	3	EA		
4	Clearing and Grubbing	.50	AC		
5	Reconstruct Industrial Diversion Chamber No. 1	1	LS		
6	Remove, Fill, and Abandon Existing Junction Chamber	1	LS		
7	Reconstruct Parshall Flume Piping	1	LS		
8	Reconstruct Parshall Flume Liner	1	LS		
9	5' Diameter Storm Manhole	3	EA		
10	30-inch Diameter HDPE Storm Sewer	258	LF		
11	6-inch Ductile Iron Storm Sewer, All Depths	5	LF		
12	12-inch Ductile Iron Storm Sewer, All Depths	303	LF		
13	30-inch Concrete Storm Sewer Outlet Headwall	1	EA		
14	12-inch Ductile Iron Flanged Wye	1	EA		
15	12-inch Ductile Iron Blind Flange	1	EA		
16	12-inch Ductile Iron Flanged 45 Degree Bend	3	EA		
17	12-inch Ductile Iron Flanged Plug Valve	1	EA		
18	12-inch x 6-inch Flanged Tee	1	EA		



19	6-inch Ductile Iron Male Cam Lock & Cap	1	EA		
20	12-inch Ductile Iron MJ 45 Degree Bend	2	EA		
21	6-inch Concrete Curb	22	LF		
22	Concrete Spillway	47	SF		
23	By-Pass Vault Structure	1	EA		
24	6"-12" Rip Rap	15	SY		
25	12-inch Diameter Class 52 DI Sanitary Sewer (Labor Only)	14	LF		
26	24-inch Diameter Class 52 DI Sanitary Sewer (Labor Only)	641	LF		
27	24-inch Class 52 DI Flanged Tee (Labor Only)	3	EA		
28	24-inch x12-inch Class 52 DI MJ Tee (Labor Only)	1	EA		
29	24-inch Blind Flange (Labor Only)	3	EA		
30	24-inch Flanged 45 Degree Bend (Labor Only)	3	EA		
31	24-inch Flanged 11.25 Degree Bend (Labor Only)	2	EA		
32	24-inch Flanged 22.5 Degree Bend (Labor Only)	1	EA		
33	24-inch Mega-Flange Adapter (Labor Only)	9	EA		
34	24-inch Nut & Bolt Gasket Set (NLA 24 304 SS 150# RR FF 1/8 FLG P) (Labor Only)	9	EA		
35	24-inch MJ 90 Degree Bend (Labor Only)	1	EA		
36	24-inch Megalug F/DI (Labor Only)	6	EA		
37	24-inch MJ Bolt & Gasket Package Less Gland (Labor Only)	6	EA		
38	12-inch Megalug F/DI	5	EA		
39	12-inch MJ Bolt & Gasket Package Less Gland (Labor Only)	5	EA		
40	12-inch MJ 90 Degree Bend (Labor Only)	1	EA		
41	Type III Sanitary Sewer Manhole (8' Diameter)	3	EA		
42	CIPP 24-inch sanitary Sewer	641	EA		
43	Post-CCTV Inspection of Sewers	1	EA		
44	Remove Chain Link Fence	206	LF		

45	Chain Link Fence (6' High)	156	LF		
46	Restoration	1	EA		
47	Materials Testing	1	EA		
48	Construction Staking	1	EA		
49	Ductile Iron Sewer Material Advance Purchase (Sales and Use Tax)	1	LS		
<b>Total Project Base Bid &amp; Items Base Bid</b>					
50	Meter Vault Alternate Bid (Add)	1	EA		
8	Reconstruct Parshall Flume Liner (Deduct)	1	EA		
<b>Total Project Base Bid &amp; Items Alternate Bid</b>					

**GPI EFFLUENT SEWER REALIGNMENT – PROJECT BID ALTERNATE 12-31-2024**  
**COMPLETION DATE**

Item	Description	Qty	Unit	Unit Price	Extended Price
1	General Conditions/ Mobilization	1	LS		
2	Audio/Video Recording	1	LS		
3	Tree and Stump Removal 6 inches to 18 inches	3	EA		
4	Clearing and Grubbing	.50	AC		
5	Reconstruct Industrial Diversion Chamber No. 1	1	LS		
6	Remove, Fill, and Abandon Existing Junction Chamber	1	LS		
7	Reconstruct Parshall Flume Piping	1	LS		
8	Reconstruct Parshall Flume Liner	1	LS		
9	5' Diameter Storm Manhole	3	EA		
10	30-inch Diameter HDPE Storm Sewer	258	LF		
11	6-inch Ductile Iron Storm Sewer, All Depths	5	LF		
12	12-inch Ductile Iron Storm Sewer, All Depths	303	LF		

13	30-inch Concrete Storm Sewer Outlet Headwall	1	EA		
14	12-inch Ductile Iron Flanged Wye	1	EA		
15	12-inch Ductile Iron Blind Flange	1	EA		
16	12-inch Ductile Iron Flanged 45 Degree Bend	3	EA		
17	12-inch Ductile Iron Flanged Plug Valve	1	EA		
18	12-inch x 6-inch Flanged Tee	1	EA		
19	6-inch Ductile Iron Male Cam Lock & Cap	1	EA		
20	12-inch Ductile Iron MJ 45 Degree Bend	2	EA		
21	6-inch Concrete Curb	22	LF		
22	Concrete Spillway	47	SF		
23	By-Pass Vault Structure	1	EA		
24	6"-12" Rip Rap	15	SY		
25	12-inch Diameter Class 52 DI Sanitary Sewer (Labor Only)	14	LF		
26	24-inch Diameter Class 52 DI Sanitary Sewer (Labor Only)	641	LF		
27	24-inch Class 52 DI Flanged Tee (Labor Only)	3	EA		
28	24-inch x12-inch Class 52 DI MJ Tee (Labor Only)	1	EA		
29	24-inch Blind Flange (Labor Only)	3	EA		
30	24-inch Flanged 45 Degree Bend (Labor Only)	3	EA		
31	24-inch Flanged 11.25 Degree Bend (Labor Only)	2	EA		
32	24-inch Flanged 22.5 Degree Bend (Labor Only)	1	EA		
33	24-inch Mega-Flange Adapter (Labor Only)	9	EA		
34	24-inch Nut & Bolt Gasket Set (NLA 24 304 SS 150# RR FF 1/8 FLG P) (Labor Only)	9	EA		
35	24-inch MJ 90 Degree Bend (Labor Only)	1	EA		
36	24-inch Megalug F/DI (Labor Only)	6	EA		
37	24-inch MJ Bolt & Gasket Package Less Gland (Labor Only)	6	EA		
38	12-inch Megalug F/DI	5	EA		

39	12-inch MJ Bolt & Gasket Package Less Gland (Labor Only)	5	EA		
40	12-inch MJ 90 Degree Bend (Labor Only)	1	EA		
41	Type III Sanitary Sewer Manhole (8' Diameter)	3	EA		
42	CIPP 24-inch sanitary Sewer	641	EA		
43	Post-CCTV Inspection of Sewers	1	EA		
44	Remove Chain Link Fence	206	LF		
45	Chain Link Fence (6' High)	156	LF		
46	Restoration	1	EA		
47	Materials Testing	1	EA		
48	Construction Staking	1	EA		
49	Ductile Iron Sewer Material Advance Purchase (Sales and Use Tax)	1	LS		
<b>Total Project Bid Alternate &amp; Items Base Bid</b>					
50	Meter Vault Alternate Bid (Add)	1	EA		
8	Reconstruct Parshall Flume Liner (Deduct)	1	EA		
<b>Total Project Bid Alternate &amp; Items Alternate Bid</b>					

**PLEASE NOTE: The only difference between the Project Base Bid and the Project Bid Alternate is the extension of the project completion date to 12/31/2024 for the Project Bid Alternate.**

Bidder shall provide all of the information as requested herein with their bid. Failure to do so and/or failure to provide post-bid requested information may be cause for rejecting the bid as non-responsive.

After receipt of Notice to Proceed by Contractor, work shall start within 10 business days, unless otherwise agreed to by the Project Manager, and shall be completed by **December 31, 2023**. Bid alternate completion date will be December 31, 2024.

Bidder/Contractor has examined and carefully studied the bidding documents and attachments, and acknowledges receipt of the following addenda:

Addendum No: \_\_\_\_\_

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

By my signature below, I certify that the firm bidding on this contract, when making hiring decisions, does not use a past criminal conviction as a bar to or preclude a person with a criminal conviction from being considered for employment with the bidding firm unless otherwise precluded by federal or state law. I further certify that I have read and agree to be bound by the provisions of the City’s Non-Discrimination Clause found in Appendix A as updated by City Ordinance 1856.

Signed: \_\_\_\_\_ Name: \_\_\_\_\_

Title: \_\_\_\_\_