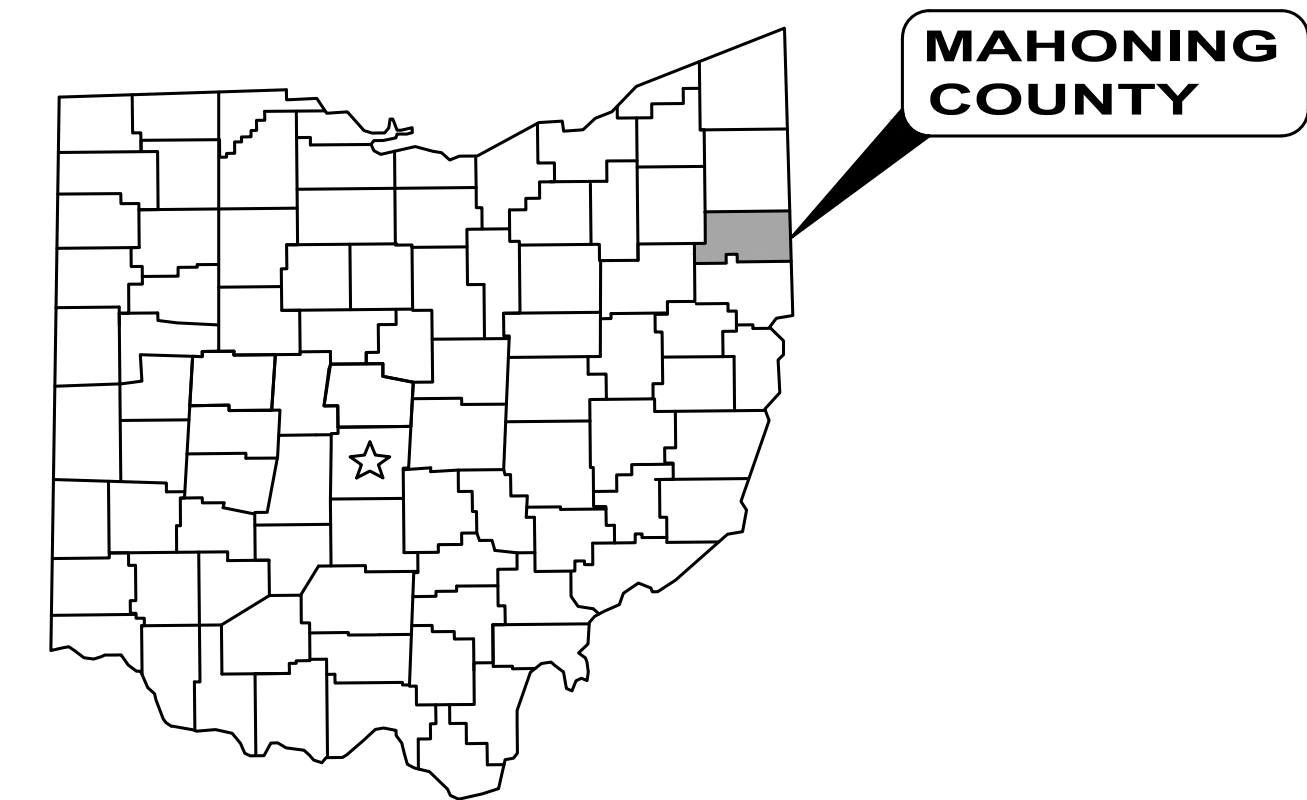


STATE OF OHIO  
PATRICK A.  
BLAKE  
E-88436  
REGISTERED  
PROFESSIONAL ENGINEER



# JUNE 2025

**OWNER:**

BOARD MEMBER

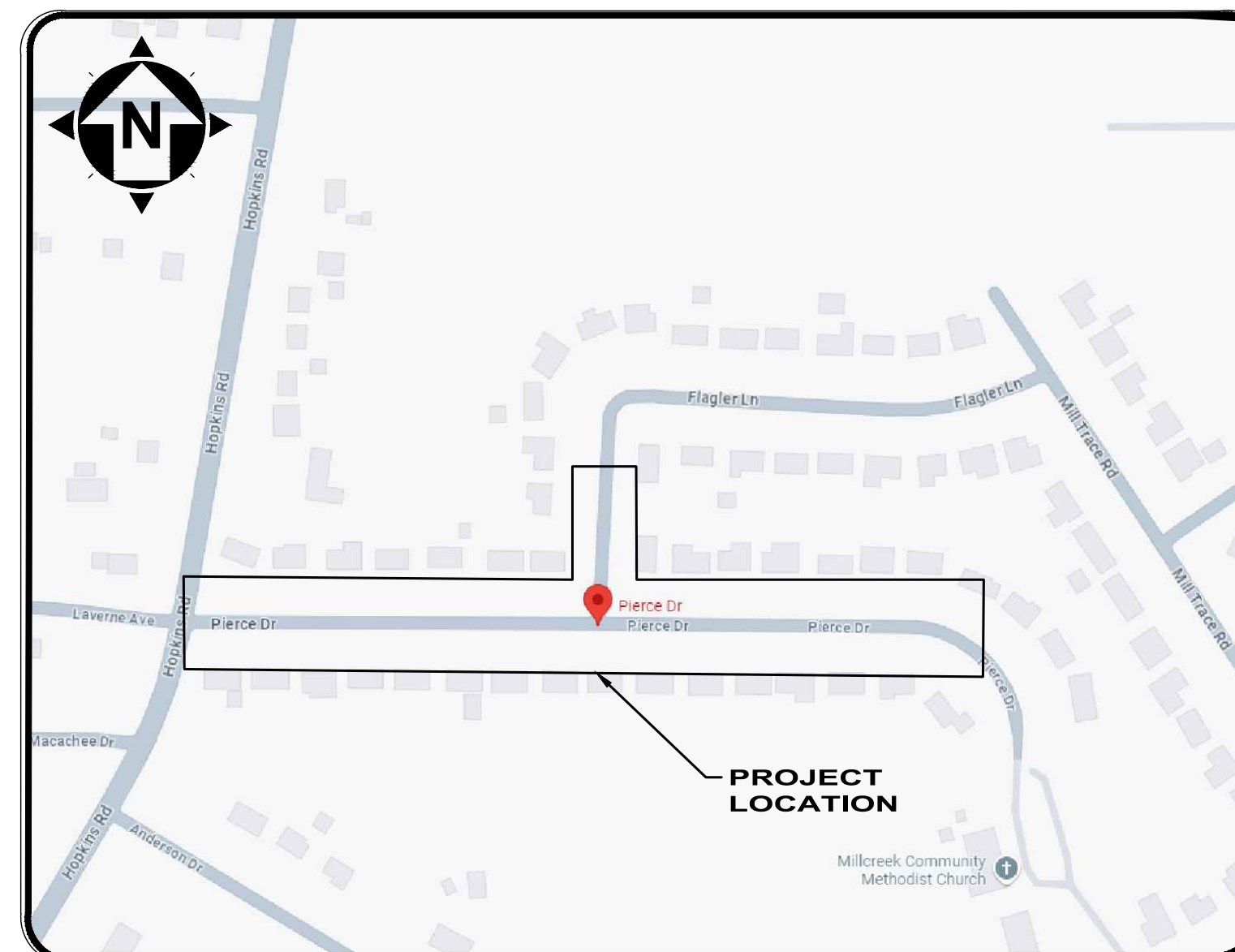
**OFFICE:**

BOARDMAN PROJECTS COORDINATOR  
MARILYN SFERRA KENNER, P.E.

**ENGINEER:**

**PROJECT SITE:**

THIS PROJECT INCLUDES A BASE BID AND AN ALTERNATIVE TO ADDRESS THE PRESENCE OF SINK HOLES ALONG THE STRETCH OF STORM SEWER ON PIERCE DRIVE. THE BASE BID IS A TOTAL REPLACEMENT OF THE STORM SEWER ON PIERCE DRIVE AND FLAGLER LANE. ALTERNATIVE ONE INVOLVES REPLACEMENT OF SOME STORM SEWER ON PIERCE DRIVE, CIPP LINING, JOINT REHABILITATION, POINT REPAIRS, AND REPLACEMENT OF STORM SEWER ON FLAGLER LANE.



## LOCATION MAP

NOT TO SCALE



  
PATRICK A. BLAKE, P.E.

PE NO. 88436

1. UNDERGROUND BUILDING SERVICE UTILITY LINES ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING, MAINTAINING AND REPLACING AS NECESSARY TO ENSURE CONTINUAL SERVICE TO BUILDINGS.
2. THE CONTRACTOR IS RESPONSIBLE TO CALL OHIO UTILITIES PROTECTION SERVICE AT 1-800-362-2764, THREE WORKING DAYS PRIOR TO CONSTRUCTION.

ENGINEER'S PROJECT No. 242260



SCALE:	AS NOTED	NO	REVISION	DATE
DATE:	6/04/25			
DESIGNED BY:	JBB			
DRAWN BY:	JBB			
CHECKED BY:	PAB			

**PIERCE DRIVE STORMWATER  
IMPROVEMENTS**

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**MAHONING COUNTY      BOARDMAN, OHIO**

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**COVER SHEET**

**PROJECT NO:**

242260

	<b>DRAWING NAME</b>
--	---------------------

**G-01**

<b>SHEET</b>	<b>OF</b>
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1	15
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DISCIPLINE INFORMATION:

IDENTIFIER:	DISCIPLINE:
G	GENERAL
C	CIVIL
S	STRUCTURAL

INDEX EXPLANATION:

INDEX OF SHEETS		
Sheet Number	Sheet Title	Sheet ID
1	TITLE	G-01
2	SHEET INDEX	G-02
3	GENERAL NOTES	G-03

SHEET NUMBER

SHEET TITLE

DISCIPLINE IDENTIFIER LETTER

SHEET NUMBER ORDER

GENERAL SYMBOLOGY NOTES:

- THIS IS A STANDARD SHEET SHOWING COMMONLY USED SYMBOLOGY.
- ALL SYMBOLS ARE NOT NECESSARILY USED ON THIS PROJECT.
- SCREENING OR SHADING OF WORK IS USED TO INDICATE EXISTING COMPONENTS OR TO DE-EMPHASIZE NEW IMPROVEMENTS SO AS TO HIGHLIGHT SPECIFIC TRADE WORK. REFER TO CONTEXT OF EACH SHEET FOR USAGE.
- SYMBOLOGY OR DIAGRAMMATICAL LEGENDS MAY BE SHOWN ON INDIVIDUAL SHEETS FOR SCHEDULES, DIAGRAMS, DETAILS, SCHEMATICS OR EQUIPMENT.

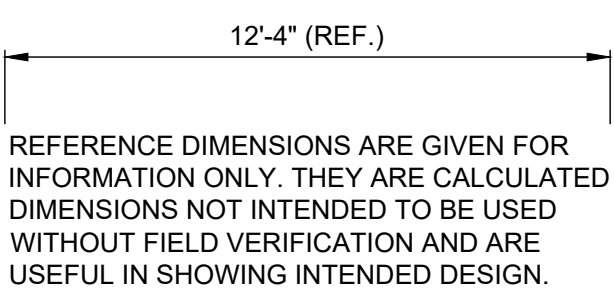
PLAN REVISIONS:

A	REVISION DESCRIPTION
B	REVISION DESCRIPTION

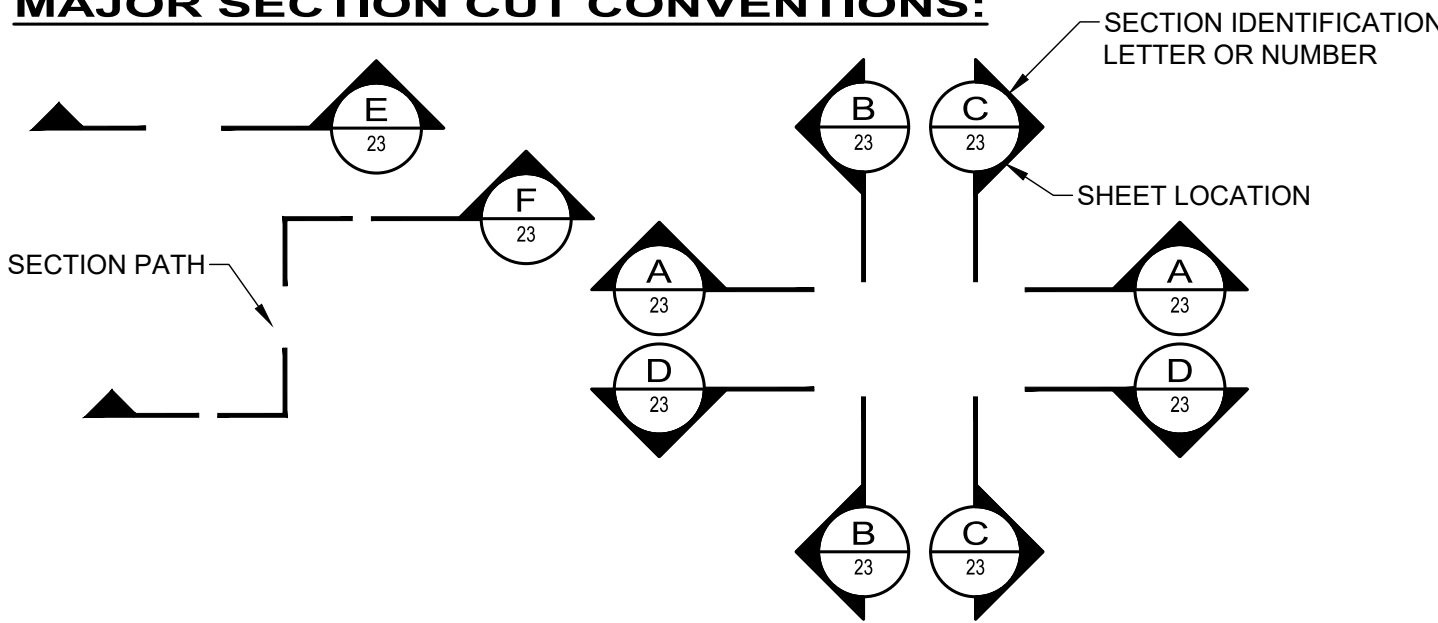
DEMOLITION CODED NOTES:

1	DEMOLITION DESCRIPTION
2	DEMOLITION DESCRIPTION

REFERENCE DIMENSION:



MAJOR SECTION CUT CONVENTIONS:



GENERAL ABBREVIATIONS:

AR	AIR RELEASE VALVE	FRP	FIBERGLASS REINFORCED PLASTIC	PT	PRESSURE TEMPERATURE RELIEF
AV	AIR & VACUUM VALVE	FTG	FITTING	PV	PLUG VALVE
BA	BALL VALVE	GL	GLOBE VALVE	PVC	POLYVINYL CHLORIDE PIPE
BFV	BUTTERFLY VALVE	GS	GALVANIZED STEEL	R/W	RIGHT OF WAY
BK	BACKPRESSURE VALVE	GV	GATE VALVE	RJ	RESTRAINED JOINT
BM	BENCH MARK	HDPE	HIGH-DENSITY POLYETHYLENE PIPE	SAN	SANITARY
BP	BACKFLOW PREVENTER	KG	KNIFE GATE VALVE	SCH	SCHEDULE
CB	CATCH BASIN	KN	KNIFE VALVE	SB	SOIL BORING
CL	CENTER LINE	MH	MANHOLE	SDR	STANDARD DIAMETER RATIO
CO	CONE VALVE	MIN	MINIMUM	SS	STAINLESS STEEL
CPP	CORRUGATED PLASTIC PIPE	MJ	MECHANICAL JOINT	STA	STATION
CV	CHECK VALVE	MV	MUD VALVE	STL	STEEL PIPE
DIP	DUCTILE IRON PIPE	N	NORTHING	STM	STORM
E	EASTING	OH	OVERHEAD	SU	SURGE VALVE
EG	EXISTING GRADE	PD	PLUG DRAIN VALVE	SV	SOLENOID VALVE
EL	ELEVATION	PF	PRESSURE RELIEF	TYP	TYPICAL
EX	EXISTING	PG	PRESSURE REGULATOR	UG	UNDERGROUND
FG	FINISHED GRADE	PI	PINCH VALVE	VB	VALVE BOX
FH	FIRE HYDRANT	PR	PROPOSED	WAT	WATER
FL	FLANGED	PRV	PRESSURE REDUCING VALVE	WV	WATER VALVE

SITE SYMBOL LEGEND:

EX:	PR:	
		POST, MAILBOX
		POST, SIGN
		POST, SIGN - DOUBLE
		POST, SIGN - DUAL
		BUSH
		TREE, DECIDUOUS
		TREE, EVERGREEN
		TREE, STUMP
		NAIL - MAG
		PIN - IRON
		PIPE - IRON
		SPIKE
		GAS METER
		GAS VALVE
		GAS VENT
		POLE - ELECTRIC (POWER)
		POLE - GENERAL
		POLE - GUY
		POLE - GUY ANCHOR
		POLE - LIGHT
		SANITARY MANHOLE - 48"
		CATCH BASIN - 2X2
		CURB INLET - 2X3
		STORM DRAIN
		STORM MANHOLE - 48"
		WATER HYDRANT, FDC
		WATER HYDRANT, FIRE
		WATER VALVE W/TEXT
		WATER METER
		WATER METER PIT

SITE LINE LEGEND:

EX:	
	RIGHT-OF-WAY (APPROXIMATE NOT SURVEYED)
	PROPERTY LINE (APPROXIMATE NOT SURVEYED)
	BUILDING OUTLINES
	CONTOURS - MAJOR
	CONTOURS - MINOR
	DITCH CENTERLINE
	SLOPE LINE
	SLOPE - BREAKLINE
	SLOPE - TOP
	SLOPE - TOE
	WATER EDGE
	EDGE OF ROAD
	FENCE - GENERAL
	FENCE - CHAIN LINK
	TREE LINE
	ELECTRIC LINE
	ELECTRIC LINE - OH
	ELECTRIC LINE - UG
	GAS LINE
	GAS SERVICE
	SANITARY LINE
	STORM LINE
	WATER LINE
	WATER SERVICE
	CENTERLINE

PR:

	PAVEMENT SAWCUT
	EDGE OF PAVEMENT
	CENTERLINE
	PERMANENT CONSTRUCTION EASEMENT LINE (PCE)
	TEMPORARY CONSTRUCTION EASEMENT LINE (TCE)
	WORK LIMITS
	DEMO - HASH

GENERAL MATERIAL HATCHES:

	PROPOSED ASPHALT ROADWAY (PLAN)
	PROPOSED ASPHALT DRIVEWAY (PLAN)
	DENOTES ITEM OR AREA FOR DEMOLITION

Sheet List Table		
Sheet Number	Sheet Title	Sheet Name
1	COVER SHEET	G-01
2	LEGENDS SYMBOLS & SHEET INDEX	G-02
3	GENERAL NOTES	G-03
4	CONSTRUCTION DETAILS - 01	C-01
5	CONSTRUCTION DETAILS - 02	C-02
6	CONSTRUCTION DETAILS - 03	C-03
7	CONSTRUCTION DETAILS - 04	C-04
8	CONSTRUCTION DETAILS - 05	C-05
9	BASE BID - PROPOSED STM REPLACEMENT (1 OF 3)	C-06
10	BASE BID - PROPOSED STM REPLACEMENT (2 OF 3)	C-07
11	BASE BID - PROPOSED STM REPLACEMENT (3 OF 3)	C-08
12	ALT ONE - PROPOSED REHAB (1 OF 2)	C-09
13	ALT ONE - PROPOSED LINING (2 OF 2)	C-10
14	PIERCE DR AND FLAGLER LN STORM REPLACEMENTS	C-11
15	SWPPP NOTES & DETAILS	C-12



SCALE:		AS NOTED	NO	REVISION		DATE
DATE:		6/04/25				
DESIGNED BY:		JBB				
DRAWN BY:		JBB				
CHECKED BY:		PAB				

PIERCE DRIVE STORMWATER IMPROVEMENTS

MAHONING COUNTY BOARDMAN, OHIO

LEGENDS SYMBOLS & SHEET INDEX

PROJECT NO:

242260

DRAWING NAME

G-02

SHEET

2

OF

15



1. THE STANDARD SPECIFICATIONS OF THE OHIO DEPARTMENT OF TRANSPORTATION, LATEST EDITION, INCLUDING ALL SUPPLEMENTAL SPECIFICATIONS AND STANDARD DRAWINGS SHALL GOVERN ALL WORK NOT COVERED BY THESE DRAWINGS. ALL WORK CONTEMPLATED SHALL BE COVERED BY THE PROJECT SPECIFIC CONTRACT DOCUMENTS.

20. CONTRACTOR IS RESPONSIBLE FOR THE PRESERVATION OF ALL EXISTING BARNs, SHEDs, STRUCTUREs, FENCEs, RETAINING WALLs, STEPS, UTILITY POLEs, MONUMENTs, UTILITY APPURTENANCEs, SIGNAGE AND LANDSCAPE BEDs. IF DAMAGED, THE CONTRACTOR IS RESPONSIBLE FOR THE REPLACEMENT OF THESE ITEMs AT NO ADDITIONAL COST TO THE OWNER.
21. AS BUILT RECORDS - THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING A SET OF PROJECT RECORD DOCUMENTs. THESE DOCUMENTs SHALL INCLUDE REVIEWED SHOP DRAWINGs, CHANGE ORDERs, EQUIPMENT OPERATING INSTRUCTIONs, FIELD TEST RECORDs, AND AS BUILT DRAWINGs. THE AS BUILT DRAWINGs SHALL BE MARKED LEGIBLY IN RED WITH THE ACTUAL LOCATION OF EQUIPMENT AND CONDUITs AS CONSTRUCTED. ALL EQUIPMENT AND UNDERGROUND CONDUITs INSTALLED SHALL HAVE LOCATIONs MARKED IN DISTANCE OFF A LANDMARK AT LEAST EVERY 25 FEET AND AS NECESSARY AT BENDs FOR LOCATING AT A LATER DATE. FINAL DOCUMENTs AND PLANS SHALL BE DELIVERED TO THE OWNER.

1. POSITIVE DRAINAGE OF ALL CONSTRUCTION AREAS SHALL BE MAINTAINED AT ALL TIMES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY SOIL EROSION AND SEDIMENT CONTROL IN ACCORDANCE WITH ODOT ITEM #32, OHIO RAINWATER AND LAND DEVELOPMENT MANUAL AND AS REQUIRED BY THE MAHONING COUNTY SOIL AND WATER CONSERVATION DISTRICT.
3. THE CONTRACTOR SHALL SUPPLY ALL LABOR, MATERIAL AND EQUIPMENT NECESSARY, SUCH AS CALCIUM CHLORIDE, WATER OR A MOTORIZED DUST-FREE STREET SWEEPING DEVICE PERFORMED DAILY OR AS DIRECTED BY THE OWNER, TO MAINTAIN ALL PAVED AREAS AFFECTED BY THE CONSTRUCTION.

1. THE REMOVAL AND DISPOSAL OF ALL SURPLUS EXCAVATED MATERIAL AND CONSTRUCTION DEBRIS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR FOR ULTIMATE DISPOSAL. THE DISPOSAL OF ALL CONSTRUCTION DEBRIS SHALL BE AT A LOCATION APPROVED BY THE OWNER. THE DISPOSAL OF ALL "CLEAN" WASTE MATERIAL SHALL BE AT APPROVED LANDFILLS, AND/OR OTHER SITES APPROVED BY THE OWNER. THE DISPOSAL OF EXISTING PIPELINE AND TANK SEDIMENTS AND WASTEWATER SLUDGE SHALL BE AT AN APPROVED LOCATION. THE CONTRACTOR SHALL OBTAIN ALL APPROVALS, PERMITS, LICENSES, ETC. FROM LOCAL, STATE AND FEDERAL AGENCIES AND/OR PRIVATE LANDOWNERS. THE CONTRACTOR SHALL FURNISH THE OWNER A COPY OF ALL APPROVALS OR WRITTEN PERMISSION PRIOR TO DISPOSING OF ANY WASTE AT SAID SITE.

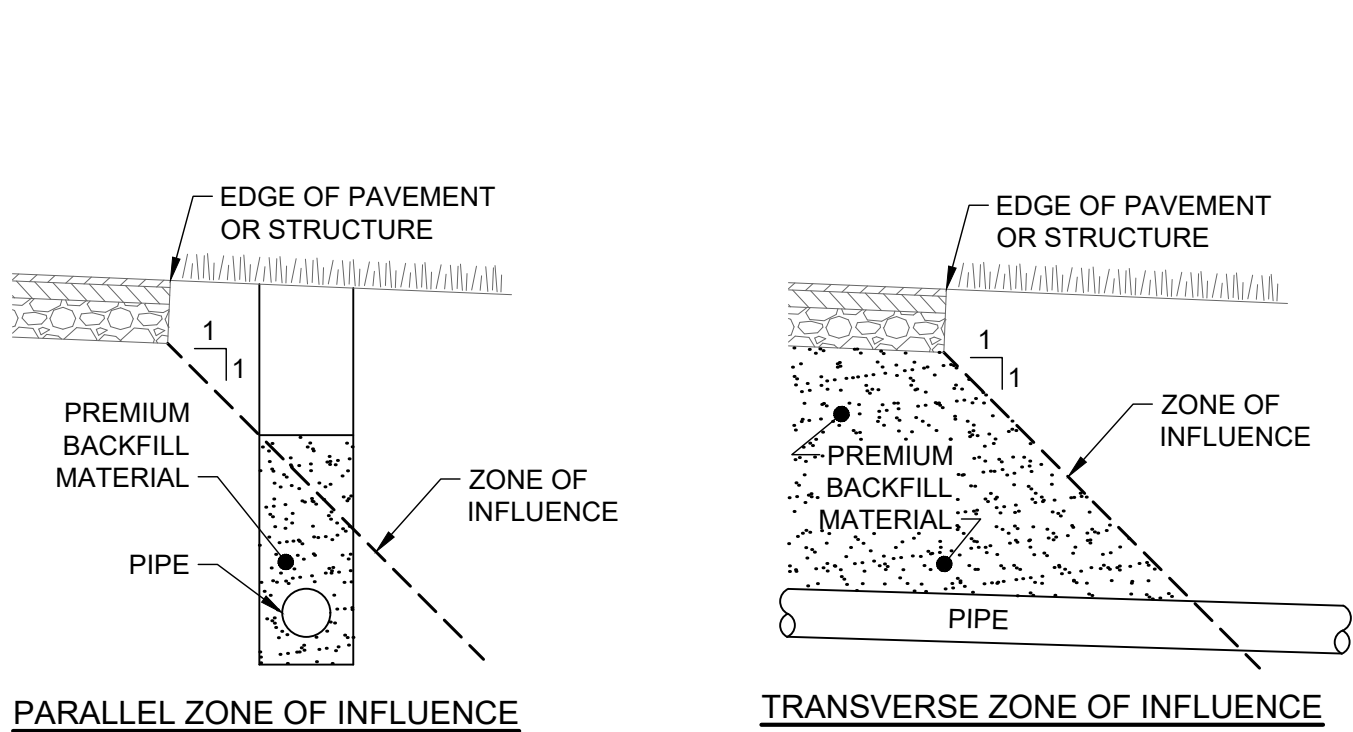
1. THE EXISTING UNDERGROUND UTILITIES WERE OBTAINED FROM VARIOUS SOURCES INCLUDING, BUT NOT LIMITED TO, FIELD OBSERVATIONS (E.G. ABOVE GROUND FEATURES, FLAGGED OR PAINTED MARKED UNDERGROUND UTILITIES) AND RECORDS MADE AVAILABLE (E.G. ORIGINAL CONSTRUCTION PLANS, AS-BUILT DRAWINGS, DISTRIBUTION AND SERVICE MAPS, GIS DATABASES) TO CREATE A COMPOSITE DRAWING OF EXISTING CONDITIONS. ALTHOUGH GRAPHICALLY SHOWN AS ACCURATELY AS POSSIBLE FROM THE INFORMATION MADE AVAILABLE, THERE IS NO GUARANTEE OR WARRANTY, EXPRESS OR IMPLIED, THAT THE COMPOSITE DRAWING IS COMPLETELY ACCURATE. THE CONTRACTOR SHALL INVESTIGATE THE AREA, EITHER IN SERVICE OR ABANDONED. THE CONTRACTOR SHALL PERFORM A FIELD INVESTIGATION TO CONFIRM LOCATIONS AND DEPTHS OF EXISTING UTILITIES AND STRUCTURES IN THE WORK AREA. IN THE EVENT UTILITY LOCATIONS OR DEPTHS DIFFER IN FILED FROM PLAN, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND THE OWNER. CONTRACTOR TO CALL OHIO811 (1-800-362-2764) 48 HOURS BEFORE YOU DIG" AND CALL OIL & GAS PRODUCERS PROTECTIVE (1-800-925-0888). CONTRACTOR SHALL ALSO TO COORDINATE HIS WORK WITH THE UTILITIES LISTED.

1. THE USE OF EXPLOSIVES WITHIN MUNICIPAL LIMITS, UNLESS A PERMIT IS ISSUED BY THE OWNER.

10. PRIOR TO ORDERING CATCH BASIN AND MANHOLE STRUCTURES FOR REPLACEMENT/INSTALLATION, THE CONTRACTOR SHALL INSPECT EACH LOCATION TO FIELD VERIFY EXISTING STORM CATCH BASIN AND MANHOLE SIZES AND INVERTS, AS WELL AS ALL PIPE MATERIALS, SIZES, ALIGNMENT AND INVERTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECONNECTION OF ALL EXISTING, ACTIVE SEWERS AT EACH STRUCTURE LOCATION. UNLESS OTHERWISE NOTED, THE COSTS FOR INSPECTIONS SHALL BE INCLUDED IN THE UNIT PRICE STIPULATED FOR STRUCTURES TO BE REMOVED AND REPLACED OR INSTALLED. THE RESULTS OF THE CONTRACTOR SURVEY SHALL ALSO BE SHARED WITH THE ENGINEER'S REPRESENTATIVE PRIOR TO ORDERING MATERIALS. AN ALLOWANCE OF 5 WORKING DAYS SHALL BE ALLOTTED FOR THE REVIEW OF THE MATERIAL PROVIDED BY THE CONTRACTOR.

- H:\2024\242260\DWG\SHEETSIG\_242260 - GENERAL NOTES.DWG - 2 - NOTES - 4/23/2025 10:44:29 AM - JARED BORDNER



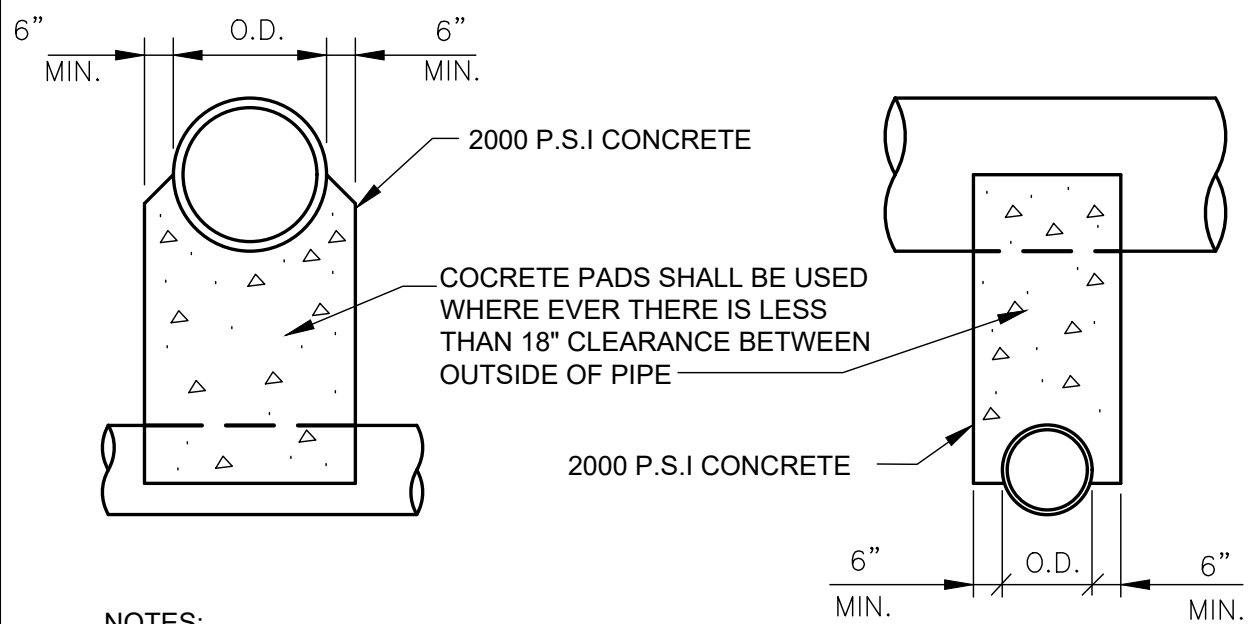


- [illegible]

1. INSTALL 1/2" PREFORMED JOINT MATERIAL AND USE 5/8"Ø X 18" LONG DOWELS INTO COLD JOINTS TOP AND BOTTOM WHERE NEW CURB MEETS EXISTING CURB.
2. PROVIDE CONTRACTION JOINTS AT 10' O.C.
3. APPLY LIQUID-MEMBRANE CURING COMPOUND.
4. THIS DETAIL SHOWS ASPHALT PAVEMENT FOR REFERENCE ONLY. SEE SITE PLAN FOR ACTUAL TYPE OF PAVEMENT.

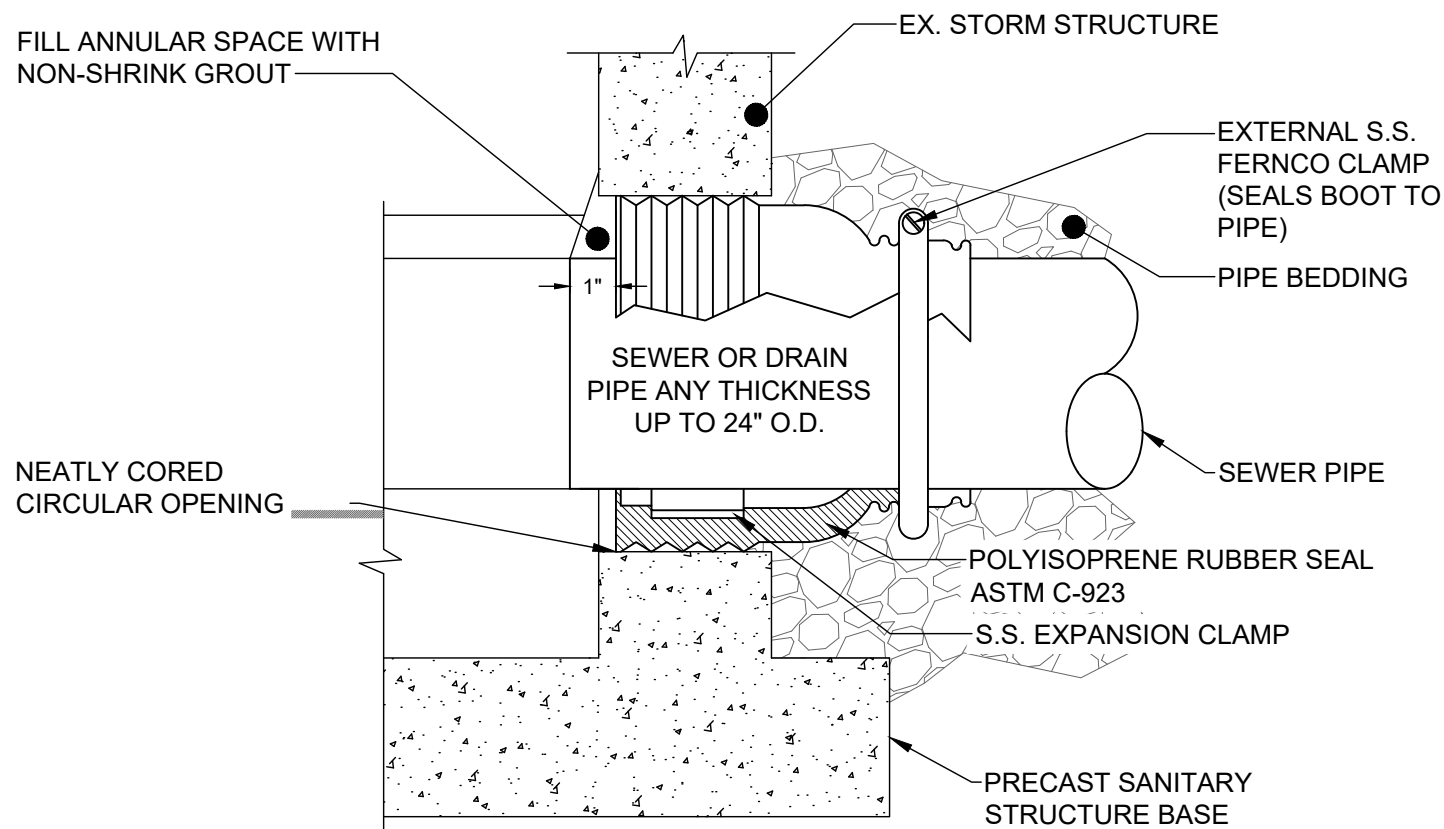
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NOT TO SCALE



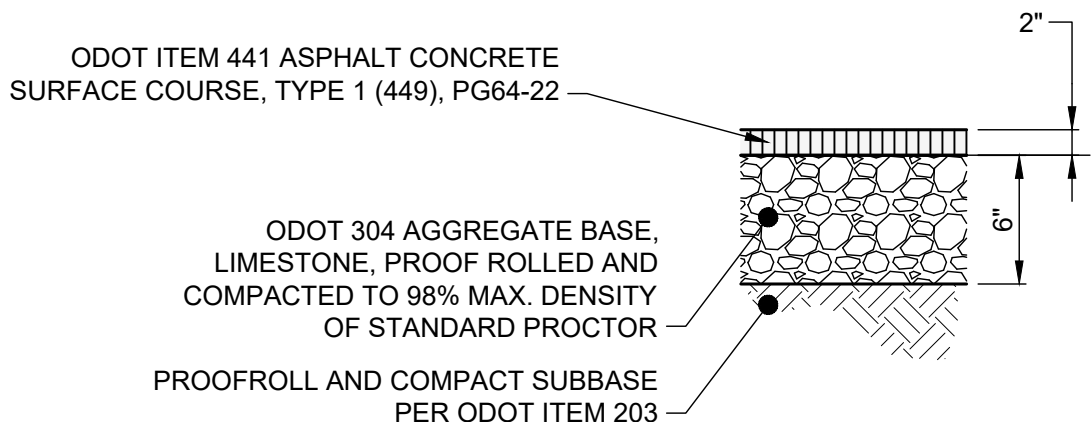
1. UNLESS OTHERWISE DIRECTED BY THE ENGINEER, WHERE TWO PIPES (SEWER & WATER) CROSS EACH OTHER, A CONCRETE PAD AND CRADLE SEPARATOR SHALL BE PLACED BETWEEN THEM AS INDICATED ABOVE. WHERE PERMISSION IS GRANTED TO OMIT THE CONCRETE PADS, GRANULAR BACKFILL SHALL BE TAMPED IN 6" LAYERS AROUND BOTH PIPES. SUCH TAMPED BACKFILL SHALL BE CONTINUOUS FROM THE CRADLE OF THE LOWER PIPE TO THE TOP OF THE UPPER PIPE AND AT THE BOTTOM SHALL EXTEND IN BOTH DIRECTIONS, FOR THE FULL WIDTH OF THE TRENCH.

NOT TO SCALE



NOT TO SCALE

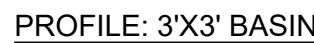
CONTRACTOR SHALL REFER TO MANUFACTURER DETAILS AND SPECIFICATIONS FOR SPECIFIC REQUIREMENTS NOT EXPLICITLY NOTED ON THESE DETAILS FOR INSTALLING NEW PIPE INTO AN EXISTING OR STRUCTURE.



NOT TO SCALE

SCALE:	AS NOTED	NO	REVISION	DATE
DATE:	6/04/25			
DESIGNED BY:	JBB			
DRAWN BY:	JBB			
CHECKED BY:	PAB			



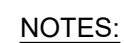


NOTES:

1. ALL CONCRETE SHALL BE ODOT ITEM 499, CLASS QC-1.
2. STRUCTURE SHALL MEET H-20 LOADING.
3. PRECAST CONCRETE STRUCTURE AND REINFORCEMENT SHALL CONFORM TO ASTM C-913.
4. INSTALL STEPS IF STRUCTURE IS MORE THAN 5' DEEP ( NOT SHOWN FOR CLARITY). USE REINFORCED PLASTIC MANHOLE STEPS. FIRST STEP SHALL NOT BE MORE THAN 2'-0" BELOW TOP OF FRAME.
5. ALL PIPE OPENINGS MUST BE PREFABRICATED WITH FLEXIBLE CONNECTIONS (Z-LOK OR A-LOK) PER ASTM C-923.
6. GRADE ADJUSTMENT BY PRE-CAST CONCRETE ADJUSTING COLLAR OR MAX. 2 COURSES ASTM C-32 BRICK MASONRY SET IN MORTAR.
7. (\*) IF TOP SECTION IS A SEPARATE CAST PIECE, 1/2"x6" x L DOWELS SHALL BE USED AT EACH CORNER TO ATTACH THE TOP TO THE BOTTOM SECTIONS OF BASIN.
8. FRAME AND GRATE SHALL BE EJ 7030 WITH TYPE M6 VANE GRATE AND T1 BACK FOR A 3'x3' BASIN, PER PLAN.
9. ALL GRATES SHALL INCLUDE LETTERING "DUMP NO WASTE" AND FISH IMAGE.

### **PRECAST CONCRETE 3'X3'** **CURB INLET BASIN DETAIL**

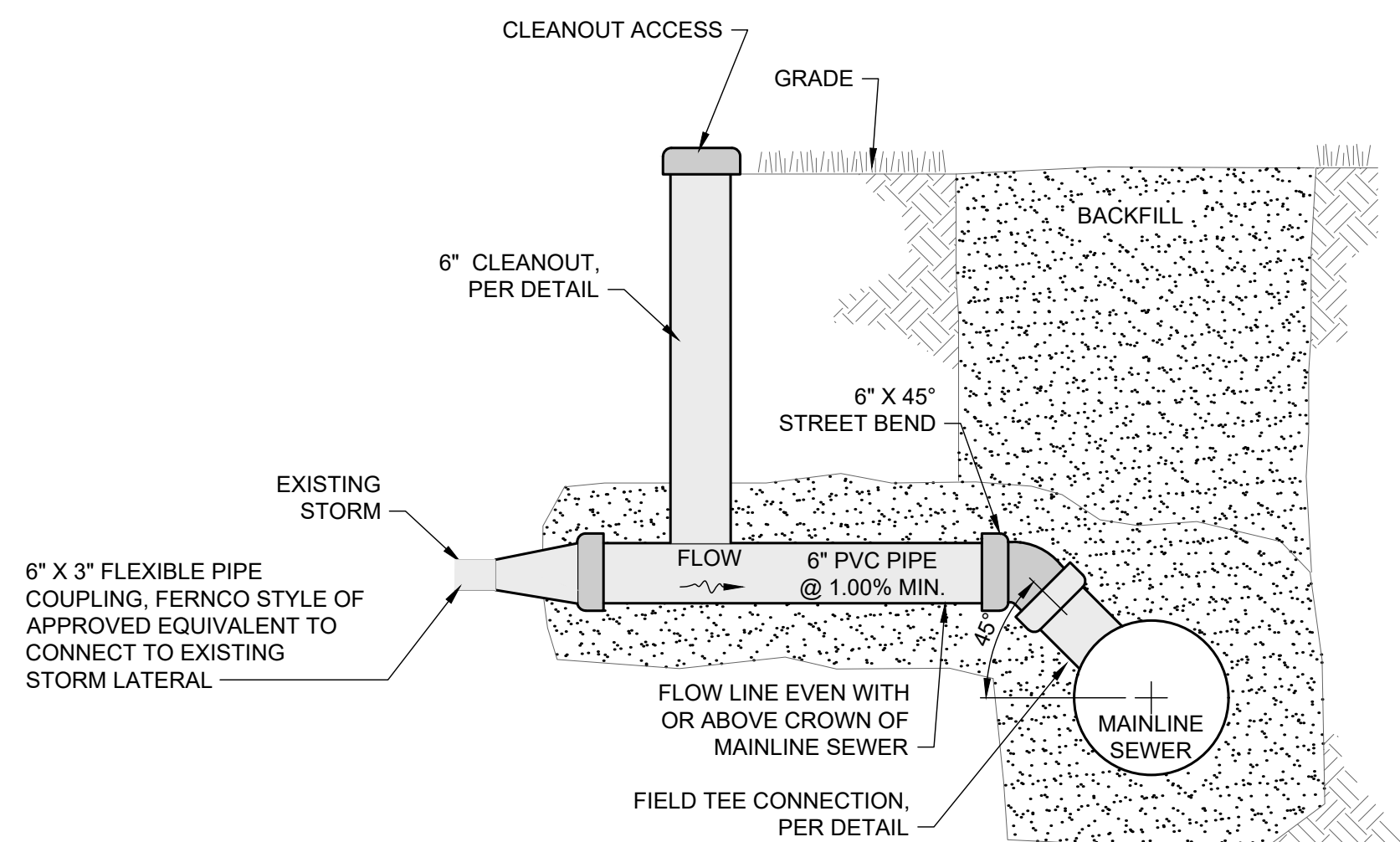
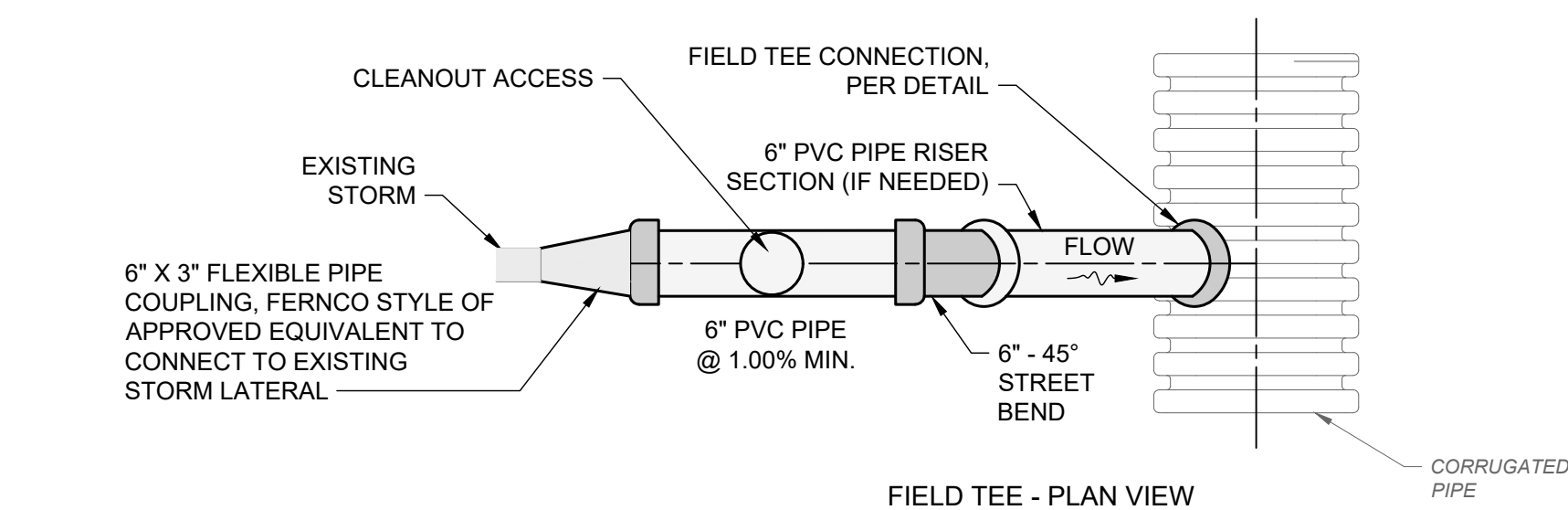
SCALE: NONE



1. HOLE IN HOST PIPE MUST BE FIELD CORED TO THE SIZE PER MANUFACTURER RECOMMENDATION USING INSERTA TEE HOLE SAW.

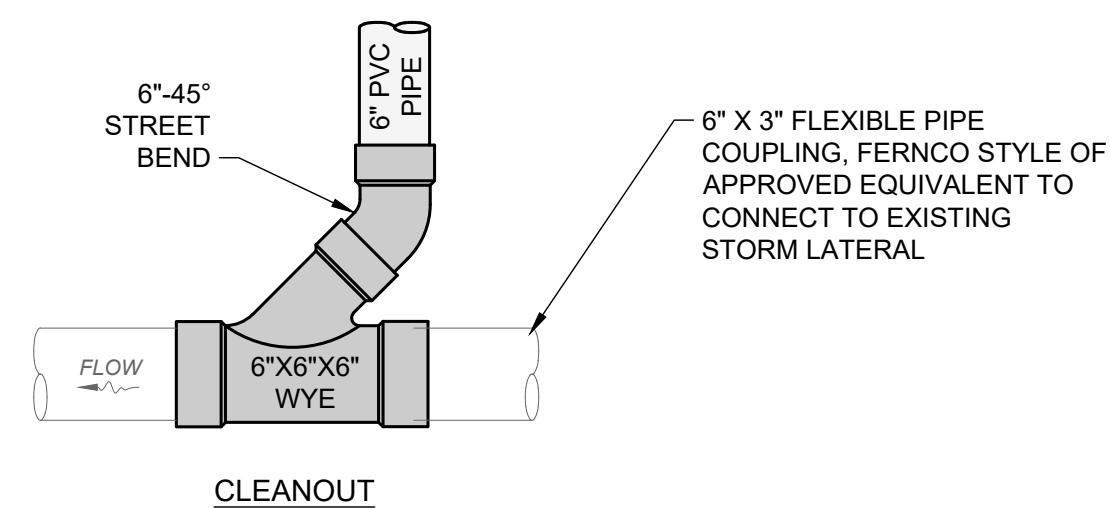
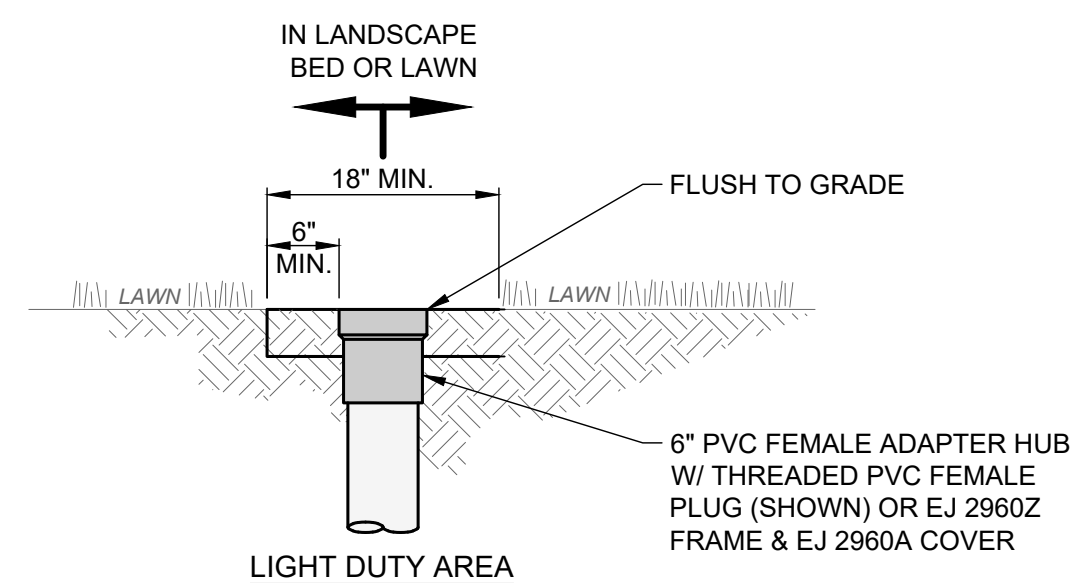
### STORM FIELD TEE CONNECTION DETAIL

SCALE: NONE



### STORM LATERAL CONNECTION DETAIL

SCALE: NONE



## STORM CLEANOUT DETAIL

SCALE: NONE

- NOTES:**
1. THIS DETAIL SHOWS A 6" CLEANOUT AND TEST TEE FOR REFERENCE ONLY.

[illegible]

<b>SCALE:</b>	AS NOTED
<b>DATE:</b>	6/04/25
<b>DESIGNED BY:</b>	JBB
<b>DRAWN BY:</b>	JBB
<b>CHECKED BY:</b>	PAB

**PIERCE DRIVE STORMWATER  
IMPROVEMENTS**

## CONSTRUCTION DETAILS - 02

PROJECT NO:	
242260	
DRAWING NAME	
C-02	
SHEET	OF
5	15



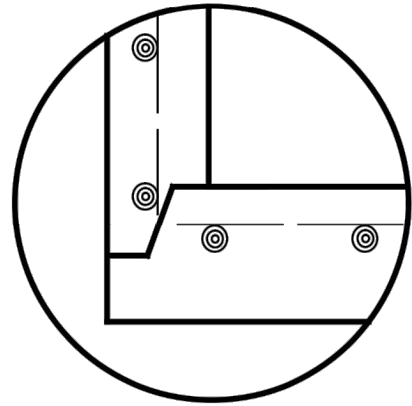


**PIERCE DRIVE STORMWATER  
IMPROVEMENTS**

**MAHONING COUNTY      BOARDMAN, OHIO**

## CONSTRUCTION DETAILS - 03

PROJECT NO:	
242260	
DRAWING NAME	
C-03	
SHEET	OF
6	15



**ALTERNATE CORNER  
DETAIL**

## NOTES

**GENERAL:** With normal soil and site conditions, this standard precast manhole may be used for any required manhole depth.

*Cast and assemble sections of the precast manhole with either all tongue or all groove ends up. Lift holes may be provided in each section for handling.*

*Leave handling device for the flat slab in place.*

**TOP:** Provide a flat slab for this section unless an eccentric cone is specified.

**TRANSITION (OR REDUCER):** This section can be either eccentric cone or flat slab.

**BASE:** Manhole No. 3 is shown with a monolithic floor and riser which may be cast in one or two operations. A permissible alternate is to cast and ship the floor and barrel separately. Provide openings for inlet and outlet pipes, either when the unit is cast or later, to meet project requirements. Bottom channels may be formed of concrete, precast in the base or field constructed as shown on **SCD MH-1 and MH-2.**

**RISER SECTIONS:** Openings for 18" and smaller inlet pipes may be either prefabricated or cut in the field provided the sides of the pipe at the springline do not project into the manhole.

**CONNECTIONS:** Connections between precast manhole sections and pipes on sanitary sewers may be sealed with resilient connectors conforming to ASTM C 923.

**JOINT SEAL:** Furnish resilient seal between precast manhole sections on sanitary sewers and flexible gasket joints per CMS 706.11.

**OPENINGS:** Ensure pipe openings are the O.D. of the pipe being supplied plus 2" when fabricated or field cut. Fill any voids per CMS 611.

**MATERIALS:** Provide materials for bases and other precast sections, including reinforcement not specified here, that meet the requirements of CMS 706.13.

**DROP PIPE:** When specified on the plans, construct drop pipe as shown on **SCD MH-2**.

**STEPS, FRAMES AND COVERS:** Meet the requirements shown on SCD MH-1.

**TOP SLAB REBAR:** Use epoxy coated reinforcing steel within the top slab.

### LEGEND

- 1** Approved materials are kept on file by the Office of Materials Management.
- 2** Grade rings cannot exceed 12" height when adjusting Drainage Structures to Grade per 611.10 D.  
  
Grade rings cannot exceed 6" height when reconstructing Drainage Structures to Grade per 611.10 C.  
  
Grade rings cannot exceed 6" height when constructing new Drainage Structures to Grade per 611.10 A&B.
- 3** Where frames are outside of the pavement; Mechanically connect the frame to the manhole top slab through the four bolt holes using 5/8" minimum stainless steel wedge anchor bolts. Embed the bolts a minimum of 3" into the slab. Secure the frame with stainless steel nuts and washers.

<b>MAXIMUM PIPE SIZES</b>		
<b>BASE I.D.</b>	<b>MIN. 4"</b>	<b>MAX. PIPE SIZE</b>
60"	5"	36"
72"	6"	48"
84"	7"	54"
90"	7½"	60"
96"	8"	66"
108"	9"	72"

OFFICE OF  
HYDRAULIC  
ENGINEERING

REVISIONS

1-20-2006
7-20-2012
1-18-2013
1-15-2016
7-16-2021
7-21-2023
1-19-2024
7-19-2024

STDS ENGINEER  
K. Brandon

STATE OF OHIO OFFICE OF HYDRAULIC  
ENGINEERING ADMINISTRATOR

Jeffery E. Syar

**AULIC CONSTRUCTION DRAWING  
MANHOLE No. 3**

DESIGN AGENCY



SCD NUMBER  
MH-3

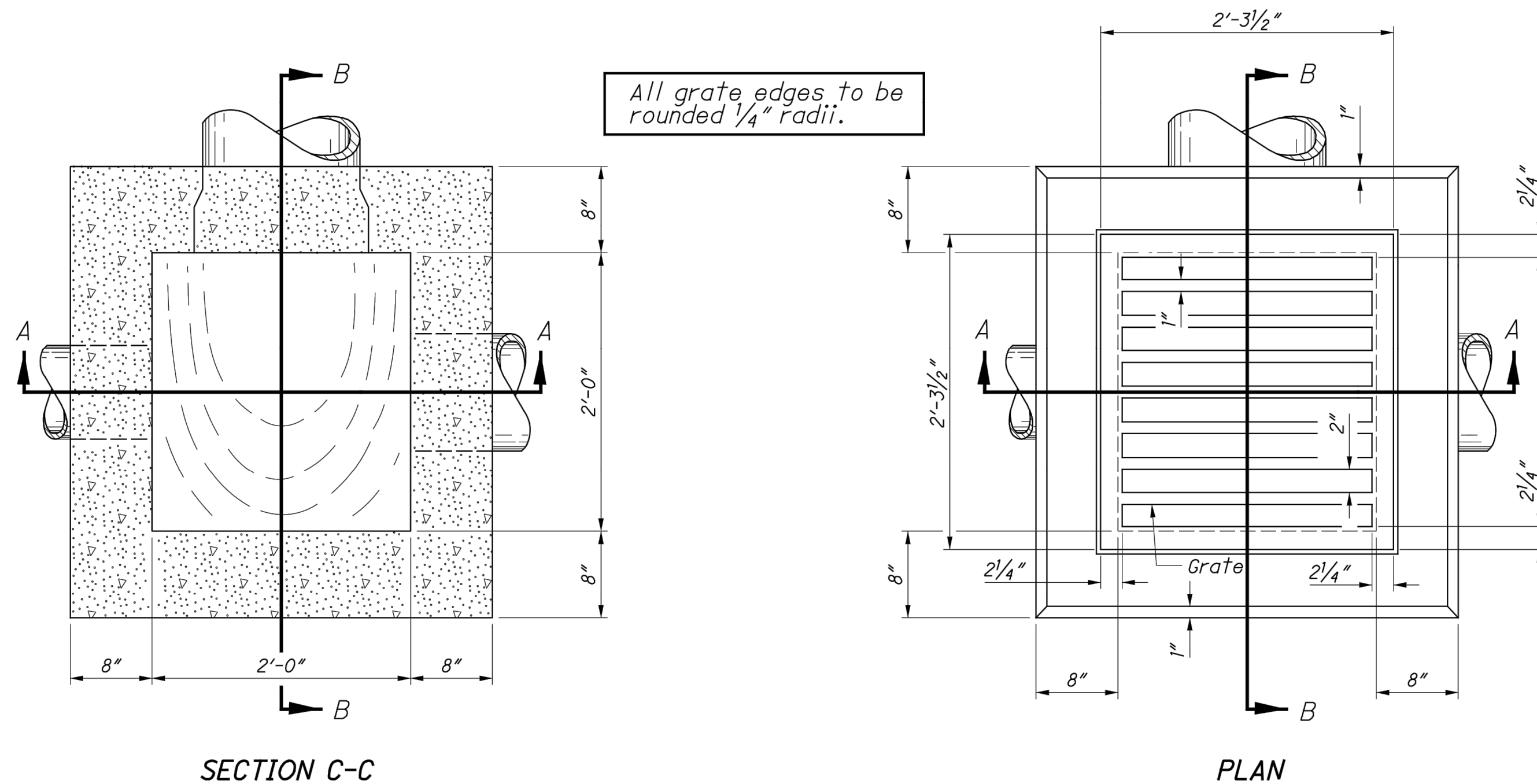
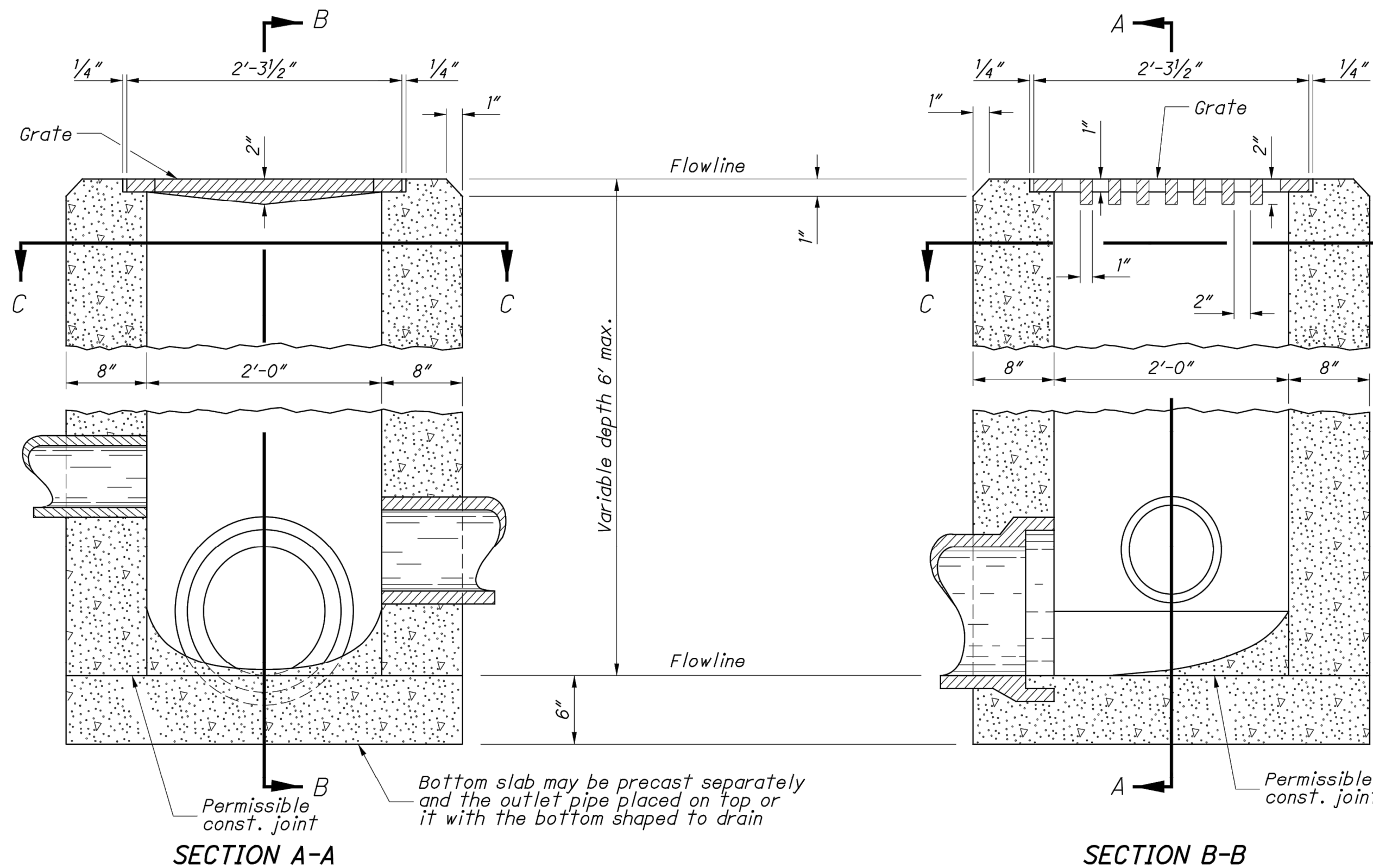
SHEET	TOTAL
P.1	2

**MH-3**

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CB-2-2A,2B,2C



CATCH BASIN No. 2-2B

**NOTES**

**CATCH BASINS 2-2A, 2-2B & 2-2C:** This sheet depicts Catch Basin 2-2B & 2-2C. See Sheet 1 of 2 for Catch Basin 2-2A.

**CB-2-2B GRATE:** Furnish a design essentially the same and equally as strong as the one shown (see Construction Information table), or meet the requirements of CMS 711.14. Provide grate openings and dimensions as shown here unless otherwise shown in the plans.

If necessary, bicycle safe grates will be specified in the plans. Furnish Neenah No. R-4859-S or EJ No. 5110M3 (00511043) grates or approved equals.

Place grate elevation 4" to 6" below normal ditch and return to normal 10' to 15' each side of inlet.

**CB-2-2C FRAME & GRATE:** Where the catch basin is specified for use in a parking lot, furnish Neenah No. R-1878-A5C or EJ No. V-5622 (45622010) frame and V-5622 (45622030) grate or approved equals. If necessary, bicycle safe grates will be specified in the plans. Furnish Neenah No. R-3405 grate or EJ No. 5250M (00525031) grate or approved equals.

**CB-2-2C APRON:** On cast-in-place and precast units, provide a level surface on the catch basin 4" below the plan grate elevation for setting the frame and grate assembly. Install a 4000 psi concrete apron to encase and secure the frame with a minimum width not less than the thickness of the catch basin walls. Slope the apron to provide a local depression. Include a 1" expansion joint where the apron abuts PCC pavement. The cost is included in the catch basin bid price.

**GRATE TEXT:** Cast the following text into the top of the grate:

**"DRAINS TO WATERWAY" and "DUMP NO WASTE"**

Print text in bold, capital letters at least 1/2" high. "WATERWAY" may be substituted with "STREAM", "RIVER", "LAKE", etc. Actual placement and logo may vary per manufacturer.

**WALLS:** Construct cast-in-place walls with a nominal 8" thickness. Provide precast walls at least 6" thick with sufficient reinforcement to permit shipping and handling without damage.

**CONCRETE:** Provide Class QCI concrete for cast-in-place structures. When precast, provide concrete meeting the requirements of CMS 706.13. Mark the catch basin number on the structure.

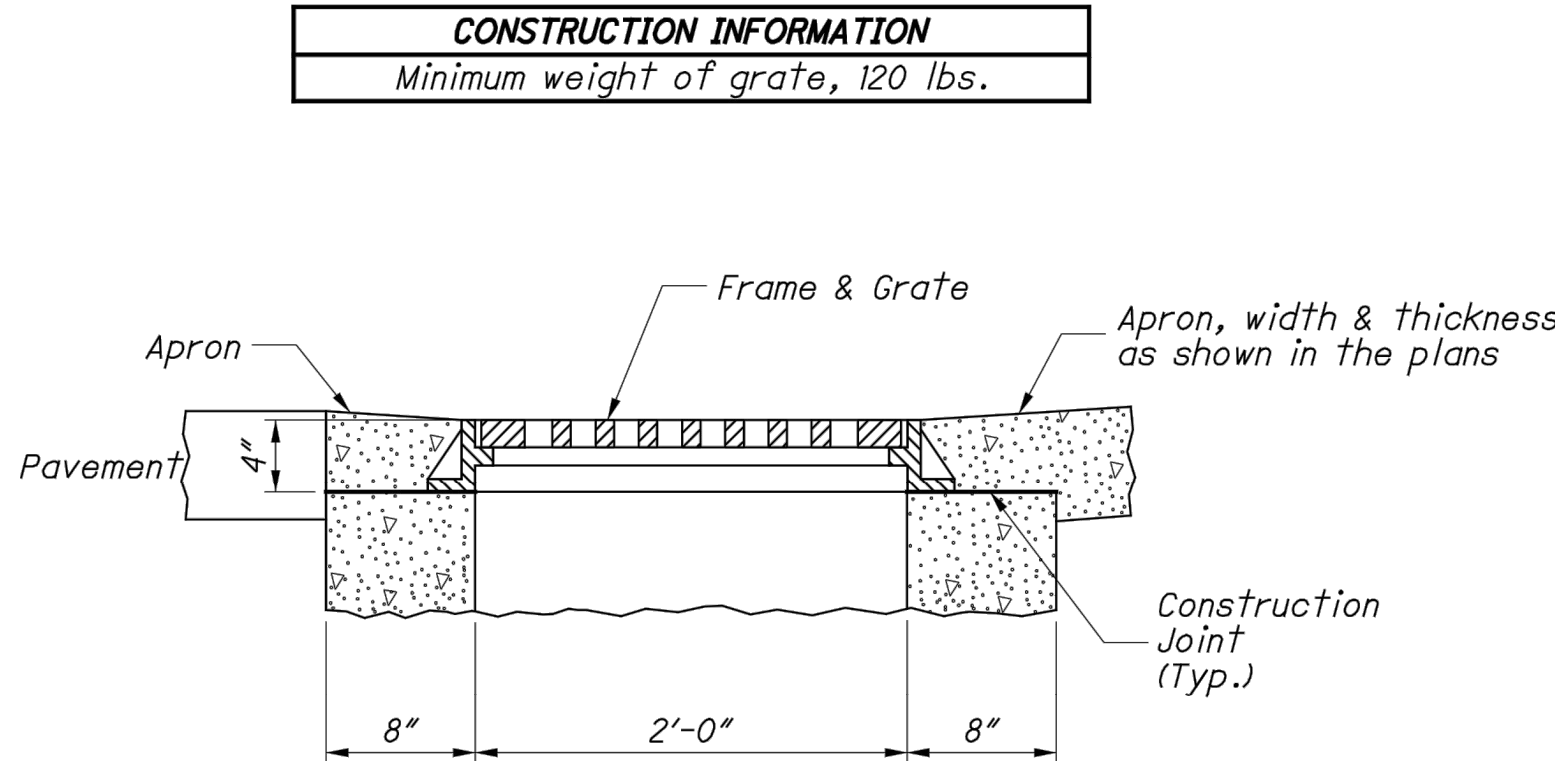
**PRECAST BASE:** If a precast base is used, set it deep enough so that the top can be placed on the base to provide the grate elevation specified in the plans. Do not use brick layers to adjust the top elevation.

**LOCATION AND ELEVATION:** When given on the plans, location and elevation are at the top center of the grate.

**MINIMUM DEPTH:** The minimum depth of CB No. 2-2B is the outside diameter (O.D.) of the outlet pipe plus 4". The minimum depth of CB No. 2-2C is the outside diameter (O.D.) of the outlet pipe plus 8".

**OPENINGS:** Ensure pipe openings are the O.D. of the pipe being supplied plus 2" when fabricated or field cut. Fill any voids per C&MS 611.

**PAYMENT:** All materials and labor, including excavation and backfilling, are paid for under **Item 611 - Catch Basin, No. 2-(2B or 2C).**



CATCH BASIN No. 2-2C

OFFICE OF  
HYDRAULIC  
ENGINEERING

REVISIONS  
1-15-2016  
7-20-2018  
7-19-2019  
1-18-2013  
7-16-2021  
7-15-2022  
1-20-2023  
7-19-2024

STDS ENGINEER  
K. Brandon

STATE OF OHIO OFFICE OF HYDRAULIC  
ENGINEERING ADMINISTRATOR  
Jeffery E. Syar

STANDARD HYDRAULIC CONSTRUCTION DRAWING  
CATCH BASIN No.'s 2-2A, 2-2B, 2-2C



SCD NUMBER  
CB-2-2A,2B,2C  
SHEET TOTAL  
P.2 2



verdantas

DATE	REVISION	NO

SCALE:	AS NOTED	DATE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
		6/04/25	JBB	JBB	PAB

PIERCE DRIVE STORMWATER  
IMPROVEMENTS  
MAHONING COUNTY BOARDMAN, OHIO  
CONSTRUCTION DETAILS - 04

PROJECT NO:	242260
DRAWING NAME	C-04
SHEET	OF
7	15





**verdantas**

SCALE:	AS NOTED	NO	REVISION	DATE
DATE:	6/04/25			
DESIGNED BY:	JBB			
DRAWN BY:	JBB			
CHECKED BY:	PAB			

MAHONING COUNTY BOARDMAN, OHIO

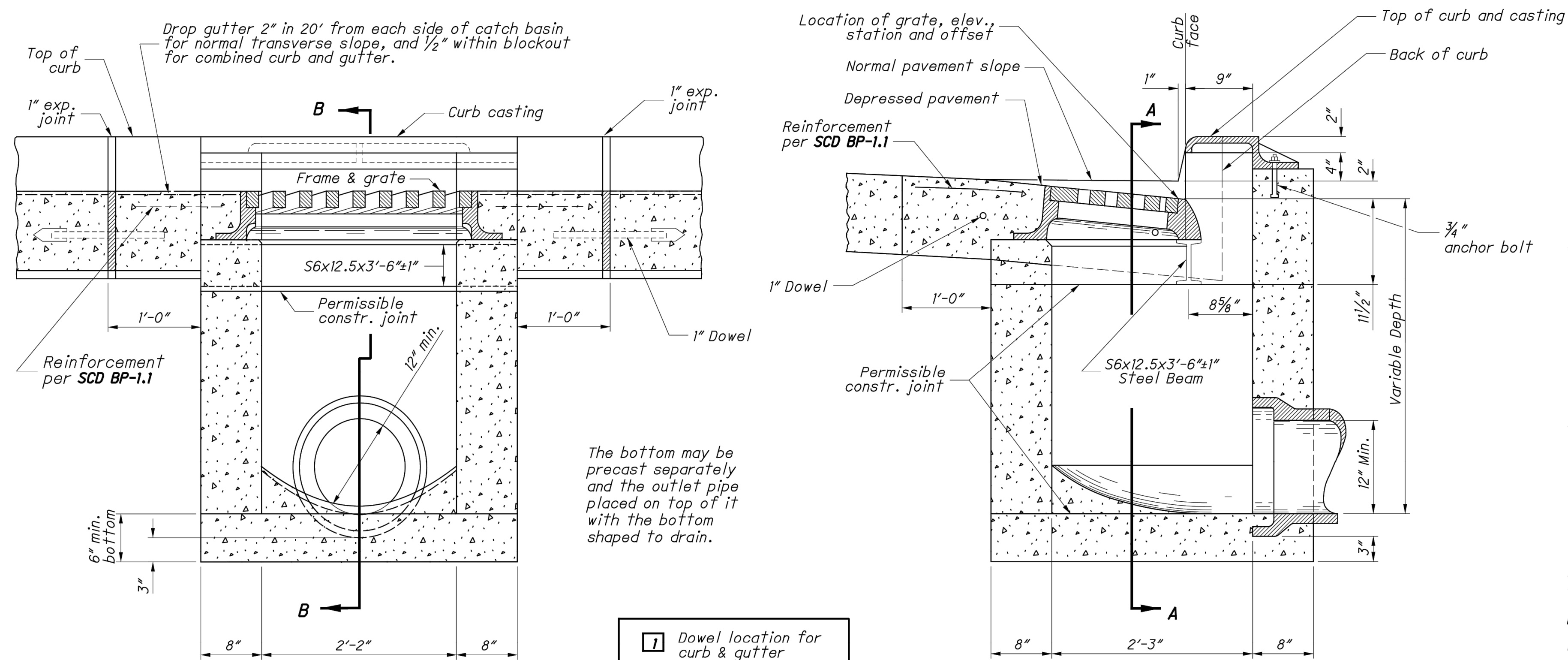
## CONSTRUCTION DETAILS - 05

**242260**

**C-05**

<b>SHEET</b>	<b>OF</b>
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3	15
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**GRATES:** Provide Grate "V" unless the plans specifically require the diagonal grate. If the diagonal grate is specified, place it so that the diagonal bars direct the drainage toward the curb.

**CASTINGS:** Provide a design essentially the same and equally as strong as the one shown. Minimum weight:

Curb Casting . . . . .	170 lbs.
Standard Grate . . . . .	127 lbs.
Frame . . . . .	320 lbs.
Grate "V" . . . . .	105 lbs.

Lighter weight frames and grates that meet the requirements of CMS 711.14 may also be provided. Provide grate openings and dimensions as shown here unless otherwise shown in the plans.

Cast the following text into the top of the curb casting:

**"DUMP NO WASTE" and "DRAINS TO WATERWAY"**

Print text in bold, capital letters at least 3/4" high. See example on Plan & Section. "WATERWAY" may be substituted with "STREAM", "RIVER", "LAKE", etc. Actual placement and logo may vary per manufacturer.

**BEARING AREAS:** Fit and finish the frame and grate to provide a firm and even seat. No projections are permitted on bearing areas, and the grate must seat in its frame without rocking.

**WALLS:** Provide Class QCI concrete for cast-in-place structures. When used in place of concrete, construct brick side walls with 8" nominal thickness.

**PRECAST CONSTRUCTION:** Permitted, except for the apron. Provide concrete meeting the requirements of CMS 706.13. Provide precast walls at least 6" thick with sufficient reinforcement to permit shipping and placement without damage. Reduce the wall thickness from the outside. Mark the catch basin number on the structure.

**MINIMUM DEPTH:** The minimum depth is per the cover requirements for that pipe type.

**OPENINGS:** Ensure pipe openings are the O.D. of the pipe being supplied plus 2" when fabricated or field cut. Fill any voids per CMS 611.

**DOWELS:** Furnish four 1"x18" dowels for concrete pavement or gutter blockout. See **SCD BP-2.2** for dowel details.

**BLOCKOUT:** **Pave blockouts with Class CCI concrete**  
in PCC pavement or gutter. Blockouts are paid for  
as part of the pavement or gutter with no deduction  
in pavement, curb or gutter quantities because of the  
castings. Cast a Class CCI concrete apron in place, the  
size of the 2'-0" gutter blockout, in asphalt pavement  
( no dowels required) with the cost included in the catch  
basin bid price. Provide the 1" expansion joint in the  
curb for all curb types with no deduction made in curb  
quantities.

**PAYMENT:** All materials and labor, including excavation and backfilling, are paid for under **Item 611 - Catch Basin, No. 3.**

REVISIONS

07-20-2012
01-18-2013
01-17-2014
01-15-2016
07-20-2018
01-15-2021
07-16-2021
07-19-2024

**Jeffery E. Syar**  
ENGINEERING ADMINISTRATOR

CATCH BASIN No. 3A



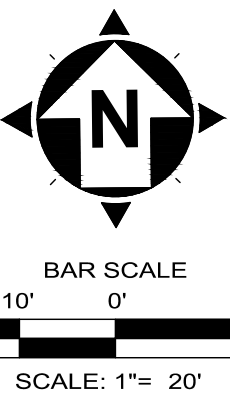
CD NUMBER	
CB-3A	
HEET	TOTAL
P.1	2

*CATCH BASIN No. 3A*



1. IN ADDITION TO THE REQUIREMENTS OF CMS 611.10.D FOR MANHOLES, THE CONTRACTOR WILL MAKE A CLEAN CIRCULAR CUT AROUND THE CASTING (A MINIMUM OF 1'-0" OUTSIDE OF THE CASTING) OR OUTSIDE OF THE FARTHEST EDGE OF THE EXISTING CONCRETE COLLAR, WHICHEVER IS GREATER. ADJUST THE EXISTING CASTING TO GRADE (ACCORDING TO TOLERANCES AS SHOWN ON STANDARD CONSTRUCTION DRAWINGS BP-3.1) AFTER THE PAVEMENT SURFACE COURSE HAS BEEN REPLACED.
2. CMS 499 CLASS QCMS CONCRETE WILL BE USED FOR BACKFILLING THE FULL PAVEMENT SECTION AND THE JOINT BETWEEN THE ASPHALT AND CONCRETE WILL BE SEALED WITH CMS 602.01 PG BINDER. EPOXY COATED REBAR SHALL BE PLACED IN THE CONCRETE AT 6" MAXIMUM ON CENTER AND A MINIMUM OF 3.5" CLEARANCE FROM THE TOP, BOTTOM AND SIDES. THE CONCRETE WILL BE VIBRATED SUFFICIENTLY TO ELIMINATE AIR POCKETS UNDER THE FRAME.
3. FOR STORM MANHOLE ADJUSTMENTS, IF DURING THE PROCESS OF ADJUSTING THE STORM MANHOLE IT IS FOUND THAT THE FRAME AND/OR LID IS DAMAGED, THE COUNTY MUST BE NOTIFIED, IMMEDIATELY. IF THE COUNTY DEEMS THE FRAME AND/OR LID NEEDS REPLACED, BY THE CONTRACTOR, AT NO ADDITIONAL COST. THE MAHONING COUNTY HIGHWAY ENGINEER'S OFFICE WILL BE RESPONSIBLE FOR PROVIDING THE FRAME AND/OR LID, FOR STORM MANHOLES, TO THE PROJECT SITE. THE CONTRACTOR MUST CONTACT THE MAHONING COUNTY HIGHWAY ENGINEER'S OFFICE TO COORDINATE THE DELIVERY OF THE MATERIAL. CONTACT AS FOLLOWS:

OFFICE OF THE MAHONING COUNTY HIGHWAY ENGINEER, 940 BEARS DEN ROAD, YOUNGSTOWN, OHIO 44511, MR. TONY GORVET, 330-799-1581, EXT. 8128



A circular professional engineer seal for the State of Ohio. The outer ring contains the text "STATE OF OHIO" at the top and "REGISTERED PROFESSIONAL ENGINEER" at the bottom, separated by tick marks. The inner circle contains the name "PATRICK A. BLAKE" and the registration number "E-88436".



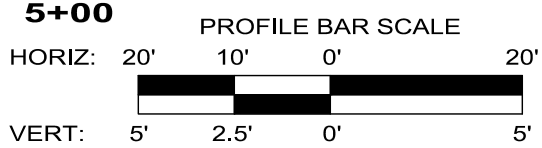
SCALE:	AS NOTED	NO	REVISION	DATE
DATE:	6/04/25			
DESIGNED BY:	JBB			
DRAWN BY:	JBB			
CHECKED BY:	PAB			

**PIERCE DRIVE STORMWATER  
IMPROVEMENTS**

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**BASE BID - PROPOSED STM  
REPLACEMENT (1 OF 3)**

PROJECT NO:	
242260	
DRAWING NAME	
C-06	
SHEET	OF
9	15



- 1 NOT USED
- 2 BEGIN CURB REPLACEMENT.
- 3 NOT USED
- 4 TYPE "C" ASPHALT PAVEMENT REPLACEMENT, (DRIVEWAY), PER DETAIL. SEE DETAIL ON SHEET 4.
- 5 TYPE "C" ASPHALT PAVEMENT REPLACEMENT, (ROADWAY), PER DETAIL. SEE DETAIL ON SHEET 4.

6. EXISTING SIGN SHALL BE REMOVED FOR CONSTRUCTION AND RESET.
7. PROPOSED ODOT MANHOLE NO. 3, AS PER PLAN. SEE DETAIL ON SHEET 6.
8. CONTRACTOR SHALL CONNECT EXISTING CURB LATERALS TO THE PROPOSED ST. SEWER. THE CONNECTION SHALL BE MADE WITHIN THE RIGHT OF WAY. CONTRACTOR SHALL INSTALL A CLEAN OUT FOR THESE LATERALS FOR PUMP MAINTENANCE. SEE DETAIL ON SHEET 5.
9. NOT USED
10. PRECAST CONCRETE 3'X3' CURB INLET BASIN, AS PER PLAN. SEE DETAIL ON SHEET 8.
11. NOT USED

1	NOT USED
2	NOT USED
3	NOT USED
4	NOT USED
5	NOT USED
6	CONTRACTOR SHALL CONFIRM THE LOCATIONS OF ALL SANITARY LATERAL CROSSINGS. ANY WORK CONDUCTED AROUND THE SANITARY UTILITIES SHALL BE SUPPORTED PROPERLY DURING CONSTRUCTION. MCSE SHALL BE NOTIFIED IF ANY DAMAGE IS INCURRED TO THE SANITARY UTILITIES DURING CONSTRUCTION AND SHALL BE AT THE COST OF THE CONTRACTOR. REPAIRS SHALL BE MADE ACCORDING THE THE STANDARDS SET BY MCSE.





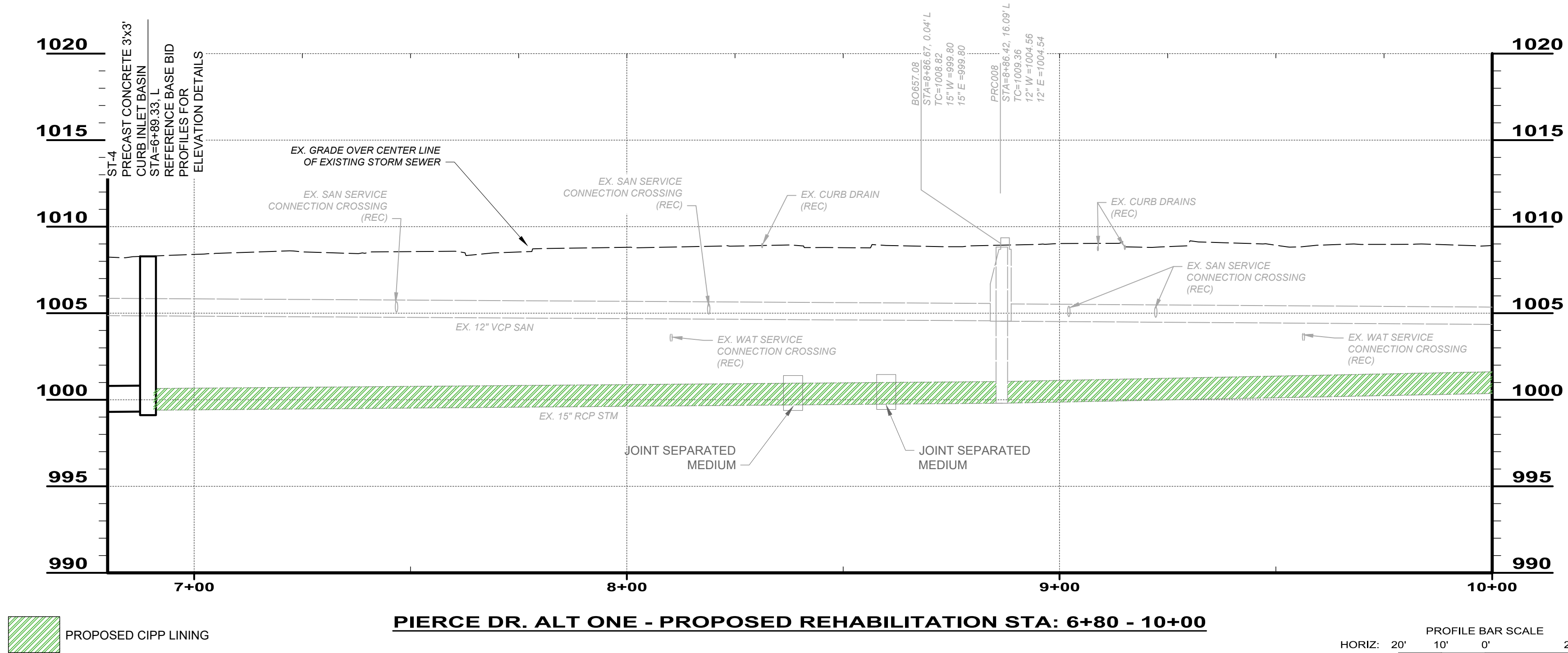
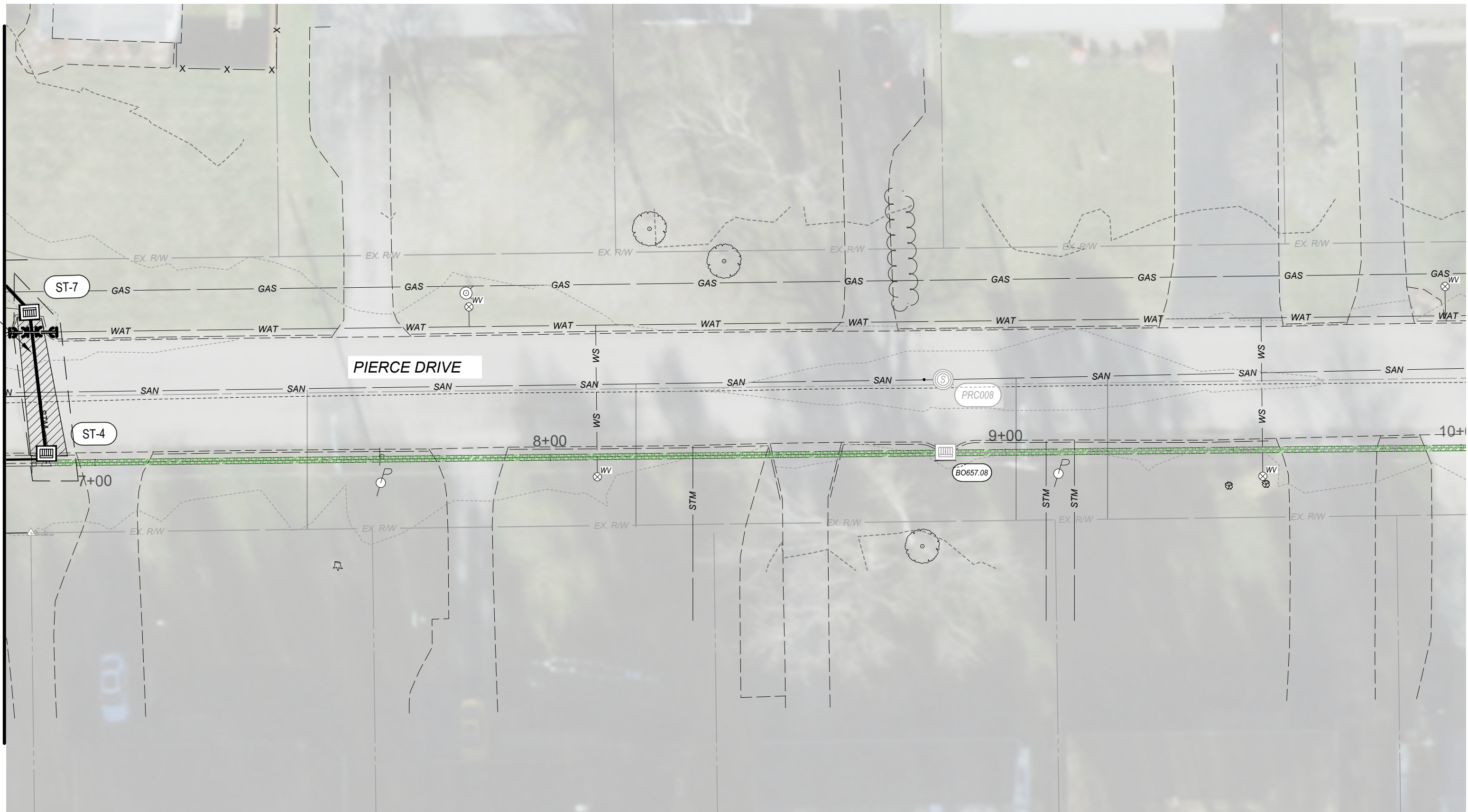




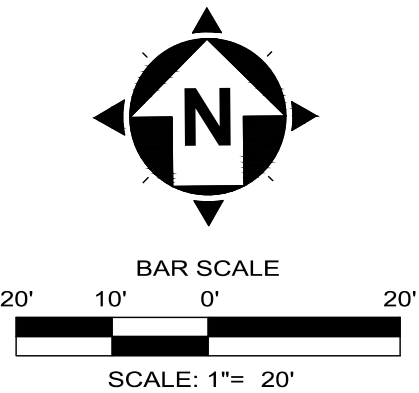


DETAILS ON THE STORM  
SEWER IMPROVEMENTS  
FOR FLAGLER LANE ARE  
SHOWN ON SHEET 14.

ALL PROPOSED WORK  
EAST OF STRUCTURE ST-4  
SHALL FOLLOW THE  
STORM SEWER  
REPLACEMENT AS  
DEPICTED ON SHEETS 9-11



\*SEE TABLE OF REHABILITATION VALUES ON NEXT SHEET



verdantas

NO	REVISION	DATE

SCALE: AS NOTED	DATE: 6/04/25	DESIGNED BY: JBB	DRAWN BY: JBB	CHECKED BY: PAB
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PIERCE DRIVE STORMWATER  
IMPROVEMENTS  
MAHONING COUNTY BOARDMAN, OHIO

ALT ONE - PROPOSED REHAB (1 OF 2)

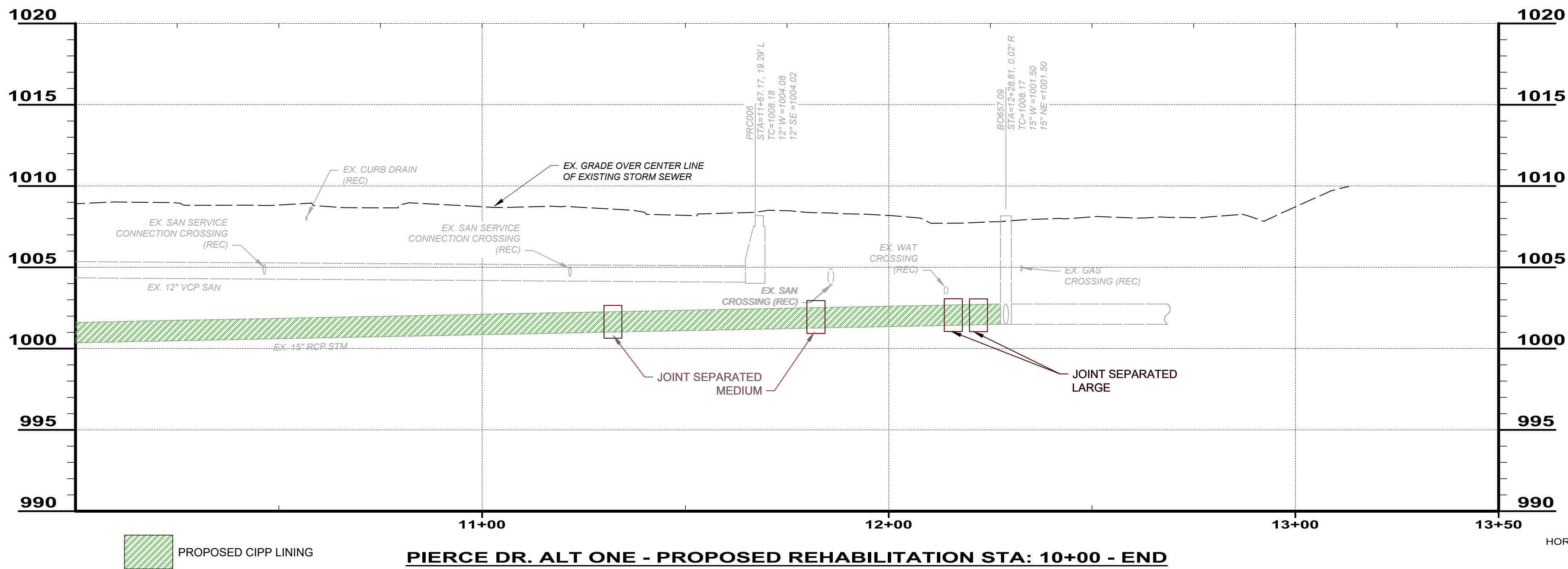
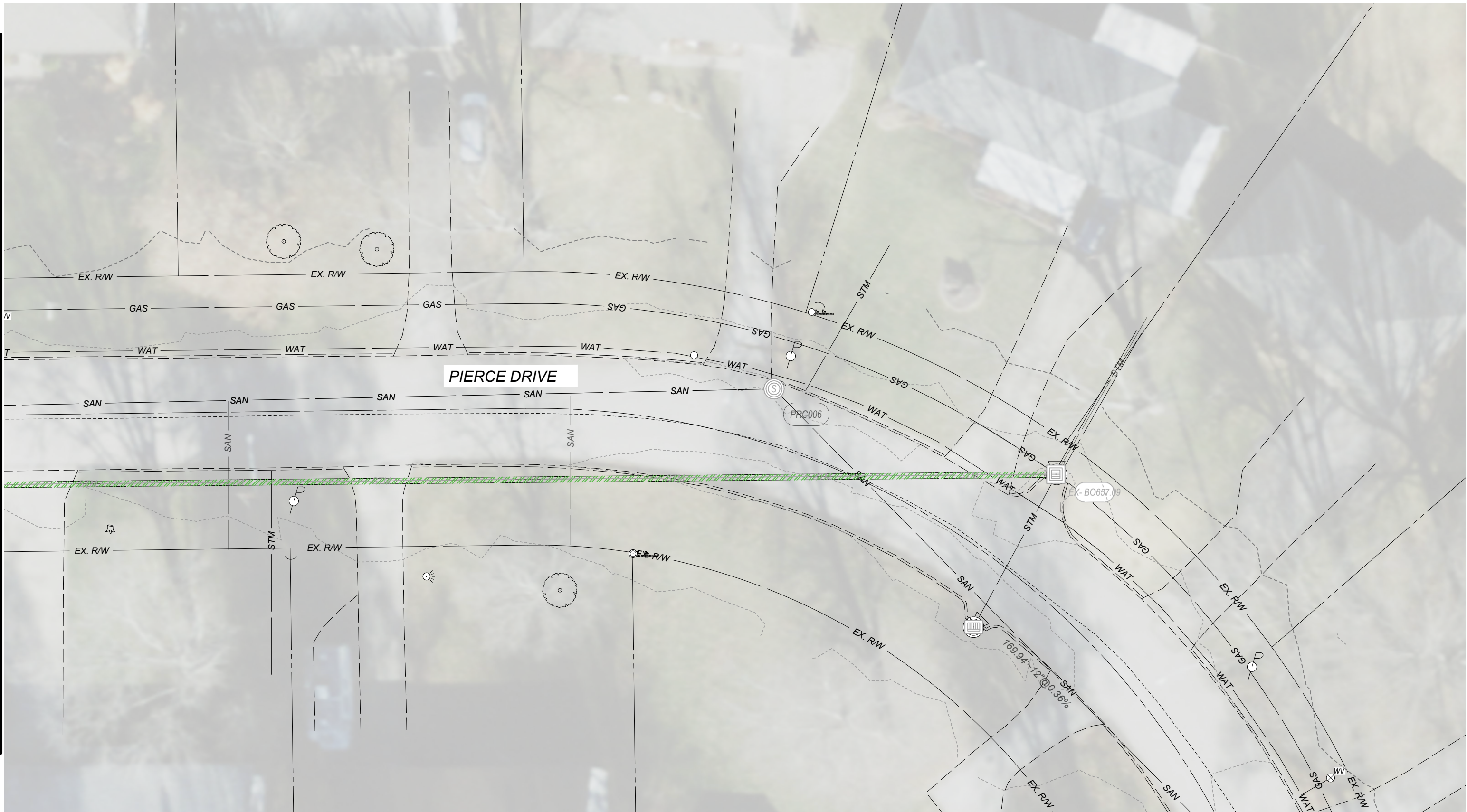
PROJECT NO: 242260	
DRAWING NAME C-09	
SHEET 12	OF 15



MATCHLINE

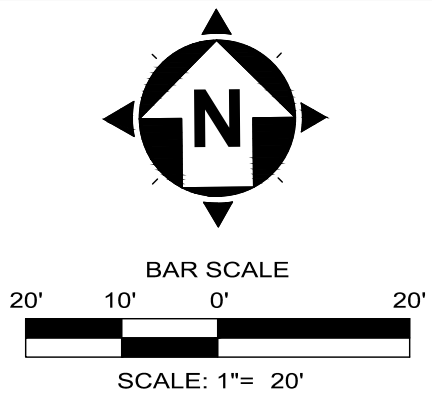
(SEE SHEET 12)

STA: 10+00



SEWER ID	DS MH ID	DS MH STA	US MH ID	US MH STA	LENGTH (FT)	DIAMETER (IN)	HOST MATERIAL	REPAIR IMPROVEMENTS					
								POINT REPAIR	POINT REPAIR STA	CIPP	CIPP LENGTH (FT)	CIPP THICKNESS (MM)	NOTES
BO657.08 TO BO657.05	BO657.05	6+89	BO657.08	8+86	197'	15"	RCP	YES	PACKER JOINT INJECTION - 8+38 & 8+60	YES	197'	8	MEDIUM JOINT OFFSETS
BO657.09 TO BO657.08	BO657.08	8+86	BO657.09	12+28	342'	15"	RCP	YES	PACKER JOINT INJECTION - 11+32, 11+82, 12+16 & 12+22	YES	342'	8	SEVERAL MEDIUM/LARGE JOINT OFFSETS

PIERCE DRIVE STORM SEWER REHABILITATION SCHEDULE



DATE	REVISION	NO	SCALE	AS NOTED
			DATE: 6/04/25	DESIGNED BY: JBB
			DRAWN BY: JBB	CHECKED BY: PAB

PIERCE DRIVE STORMWATER IMPROVEMENTS  
MAHoning COUNTY BOARDMAN, OHIO

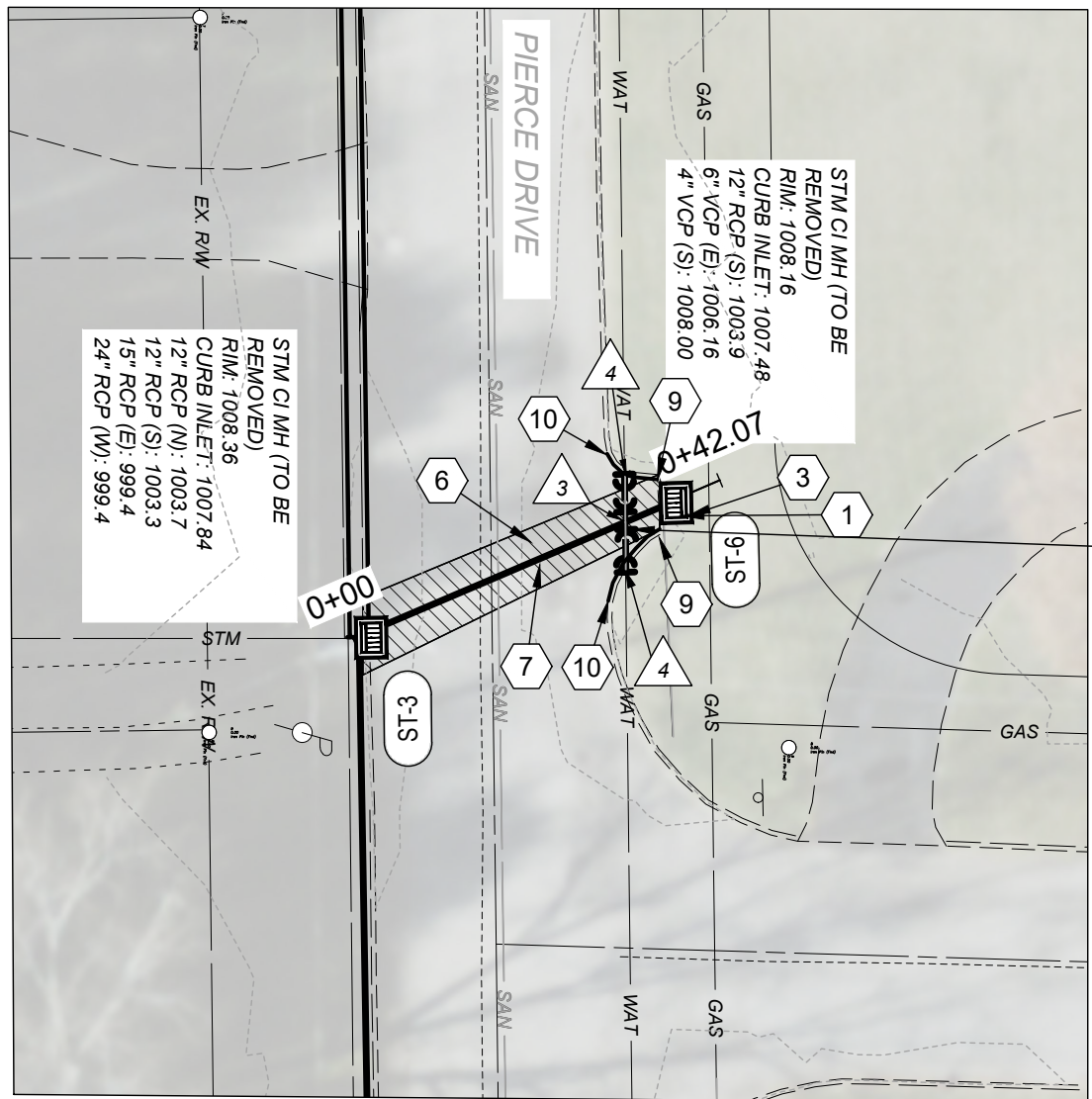
ALT ONE - PROPOSED REHAB (2 OF 2)

PROJECT NO:  
242260

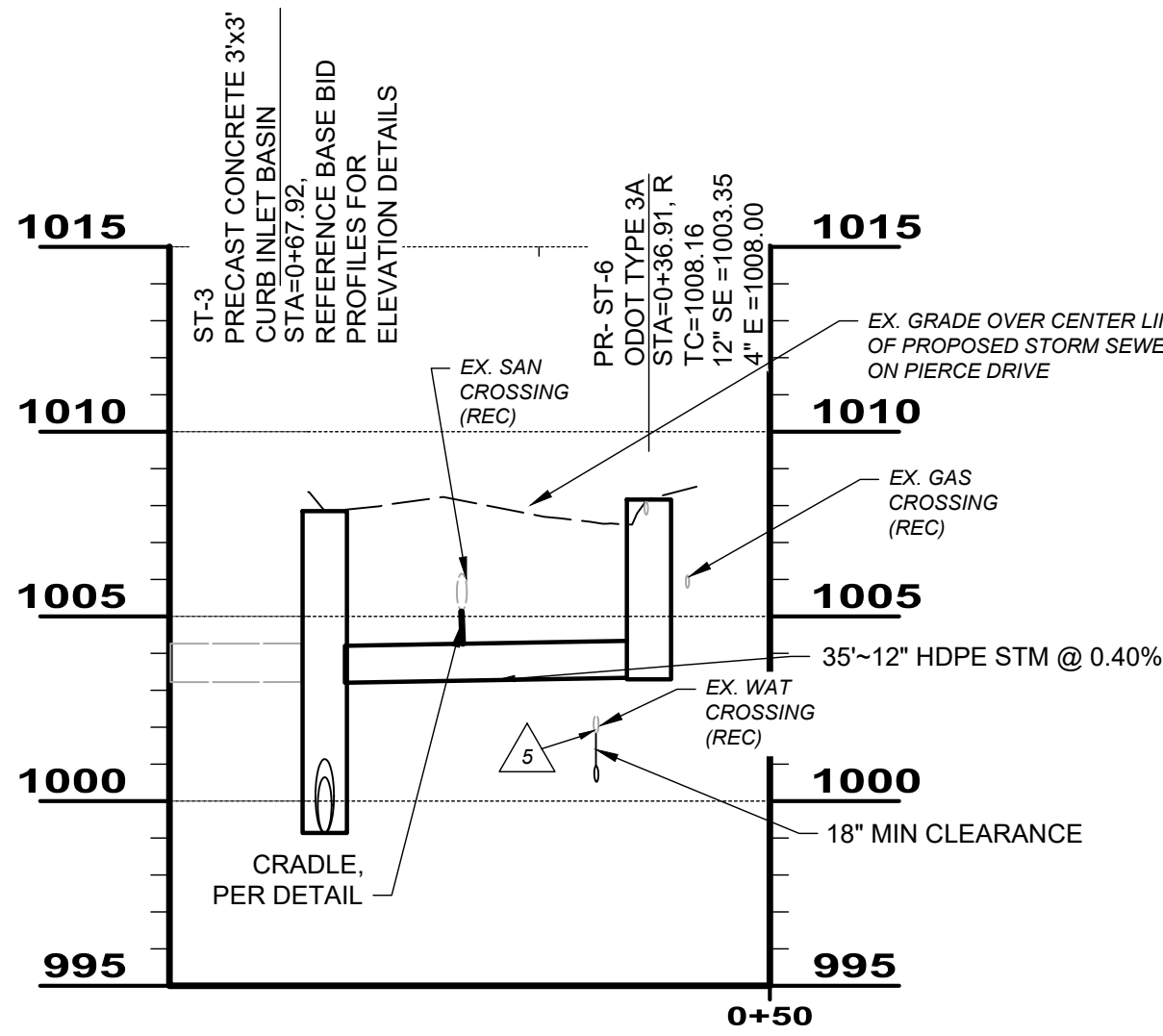
DRAWING NAME  
C-10

SHEET 13 OF 15

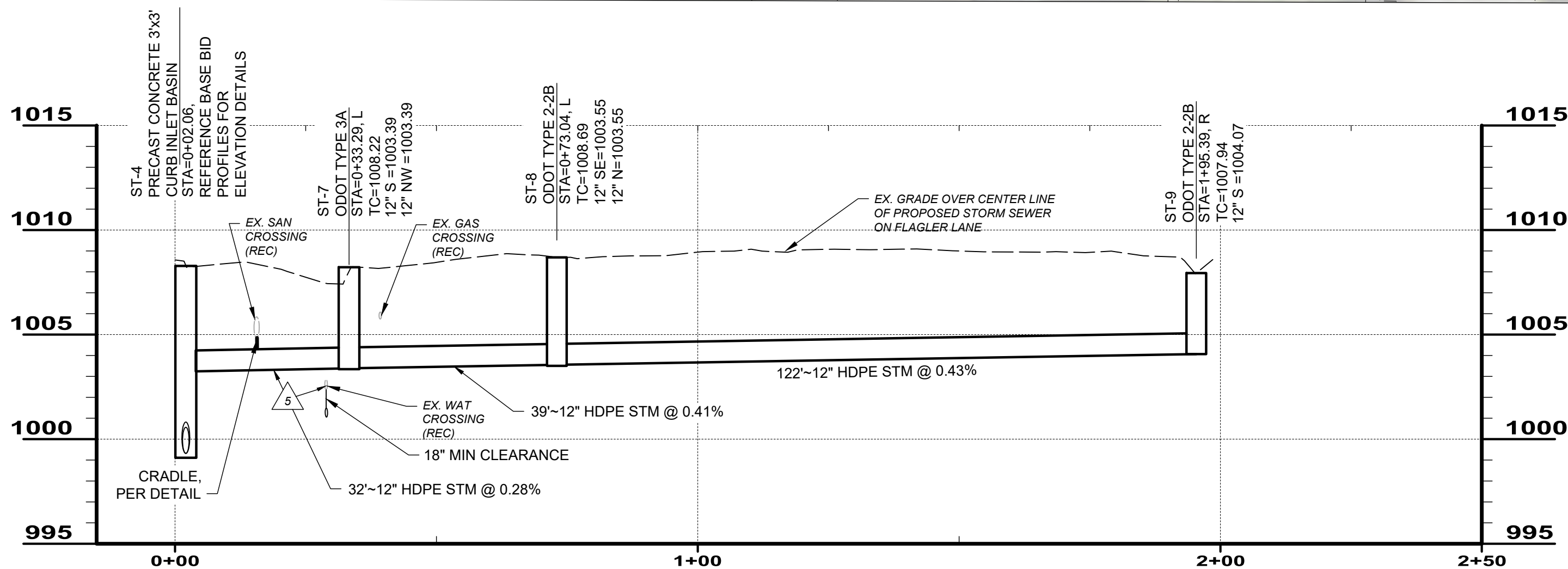
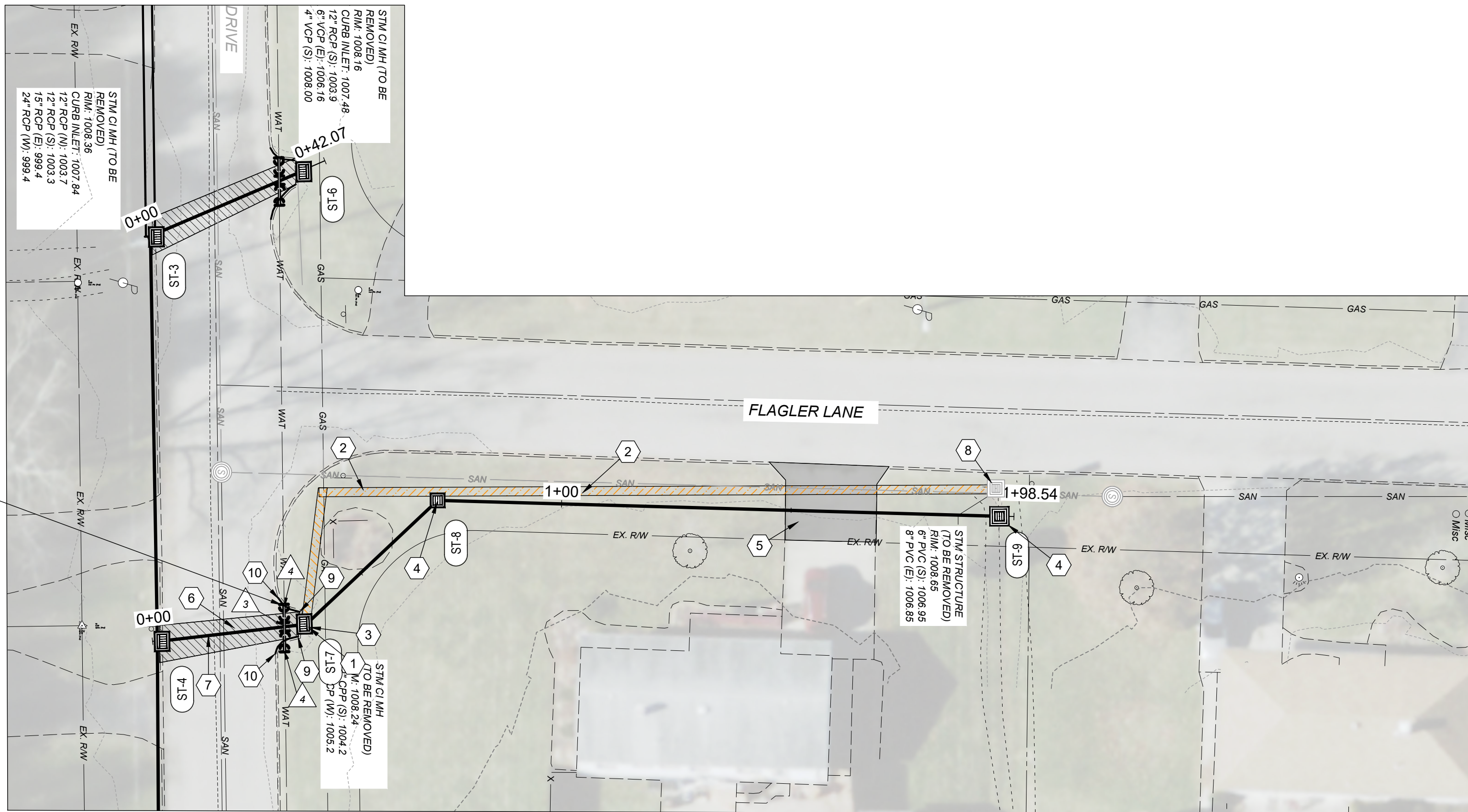
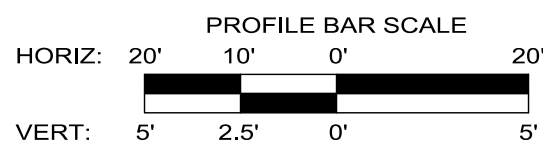




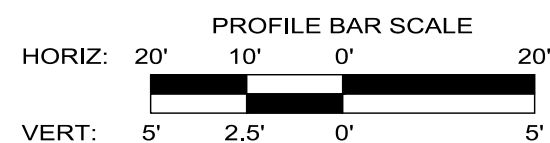
CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF EXISTING WATER UTILITIES WITHIN THE WORK AREA. THE CONTRACTOR SHALL SUPPORT THE EXISTING UTILITIES DURING THE STORM SEWER INSTALLATION. A BID ITEM HAS BEEN ADDED TO THE BID PROPOSAL IN THE EVENT THE WATERLINE HAS TO BE LOWERED TO MAINTAIN VERTICAL SEPARATION. IF WATERLINE LOWERING IS NOT REQUIRED, IT SHALL NOT BE PERFORMED.



PIERCE DR. CATCH BASIN REPLACEMENT



FLAGLER LANE STORM IMPROVEMENTS



SITE CODED NOTES:

- CONTRACTOR SHALL REMOVE NOTED CATCH BASIN AND RECONNECT ALL ACTIVE EXISTING DRAIN LINES. SEE DETAIL ON SHEET 4.
- 6" STORM SEWER TO BE REMOVED. LOCATION IS APPROXIMATE BASED UPON RECORD AND CCTV DATA. CONTRACTOR SHALL CONFIRM ALIGNMENT TO PIERCE DRIVE IN THE FIELD.
- PROPOSED ODOT CATCH BASINS NO. 3A. SEE DETAIL ON SHEET 8.
- PROPOSED ODOT 2-2B CATCH BASIN. SEE DETAIL ON SHEET 7.
- TYPE "C" ASPHALT PAVEMENT REPLACEMENT, (DRIVEWAY), PER DETAIL. SEE DETAIL ON SHEET 4.
- TYPE "C" ASPHALT PAVEMENT REPLACEMENT, (ROADWAY), PER DETAIL. SEE DETAIL ON SHEET 4.
- REMOVE AND REPLACE EXISTING 12" STORM SEWER
- REMOVE EXISTING CATCH BASIN
- BEGIN CURB REPLACEMENT.
- END CURB REPLACEMENT. SEE DETAIL ON SHEET 4.

SITE GENERAL NOTES:

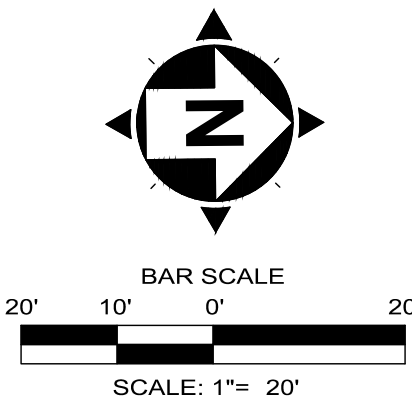
- EXISTING UNDERGROUND UTILITY ROUTING IS PER TOPOGRAPHIC SURVEY AND BEST AVAILABLE RECORD PLAN INFORMATION. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING EXISTING UTILITY LOCATIONS AND DEPTHS IN THE FIELD PRIOR TO CONSTRUCTION. IN THE EVENT UTILITY LOCATION DIFFERS IN FIELD FROM PLAN, CONTRACTOR SHALL CONTACT THE DESIGN ENGINEER.
- CONTRACTOR TO RECONNECT ALL ACTIVE EXISTING DRAIN LINES AND ROOF DRAINS, SHOWN OR NOT SHOWN IN THE PLANS, TO THE PROPOSED STORM SEWER SYSTEM - SEE 'DRAIN PIPE CONNECTION DETAIL'. ANY AND ALL STORM STRUCTURES, PIPES, DRAINS, ETC. NOT ILLUSTRATED IN THE PLANS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER AND DYE-TESTED TO DETERMINE THE FLOW PATH.
- ALL INTERFACES BETWEEN PROPOSED CONCRETE CURBING AND ASPHALT PAVEMENT, ASPHALT JOINTS AT PROPOSED SAWCUTS, AND BETWEEN PROPOSED CONCRETE AND ASPHALT SURFACES SHALL BE NEATLY SEALED WITH A RUBBERIZED ASPHALT SEALANT
- CONTRACTOR TO COORDINATE WITH HOMEOWNER(S) AND NOTIFY HOMEOWNER(S) OF TEMPORARY DISTURBANCES TO BE EXPECTED RESULTING FROM CONSTRUCTION INCLUDING START DATES AT LEAST 48 HOURS IN ADVANCE.

LEGEND:

- TYPE "C" REMOVE AND REPLACE (ASPHALT), DRIVEWAY PER DETAIL
- TYPE "C" REMOVE AND REPLACE (ASPHALT), ROADWAY PER DETAIL
- EXISTING 6" STORM SEWER TO BE REMOVED

UTILITY RELOCATION NOTES:

- CONTRACTOR SHALL COORDINATE AND COMMUNICATE WITH UTILITY COMPANIES PRIOR TO WORK IN AND AROUND BURIED UTILITIES.
- CITY OF YOUNGSTOWN WATERLINE RELOCATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, INCLUDING INSTALLATION AND DISINFECTION. CITY OF YOUNGSTOWN MUST BE ON THE SITE TO COORDINATE WITH HOMEOWNERS, FLUSH, AND SAMPLE THE SYSTEM.
- LOWERING EX 6" WATER LINE, USE 45° LONG SWEEPING BENDS, PLACE NEW 6" DIP WATER LINE (10-LF) W/ POLYWRAP INSIDE 12" DIAMETER STEEL CASING (5 LF) WITH SPACERS. COORDINATE LOWERING WITH YOUNGSTOWN WATER DEPARTMENT. CONTRACTOR SHALL ABIDE BY ALL CERTIFICATIONS, LAWS AND STATE REGULATIONS PERTAINING TO ASBESTOS PIPE CUTTING AND REMOVAL. LOWERING WILL REQUIRE CONTACTING YOUNGSTOWN WATER DEPARTMENT IN ADVANCE TO PLACE USERS UNDER A BOIL ADVISORY.
- MAKE NEW WATER PIPE CONNECTION TO EXISTING WATER LINE WITH A YOUNGSTOWN WATER DEPARTMENT APPROVED PIPE COUPLING (TYP 2)
- EXISTING WATER LINE TO BE LOWERED TO PROVIDE A MINIMUM 18" VERTICAL SEPARATION BETWEEN THE WATERLINE AND NEW SEWER. PROPOSED PIPE ELEVATION SHALL BE APPROVED THE YOUNGSTOWN WATER DEPARTMENT PRIOR TO RELOCATION.



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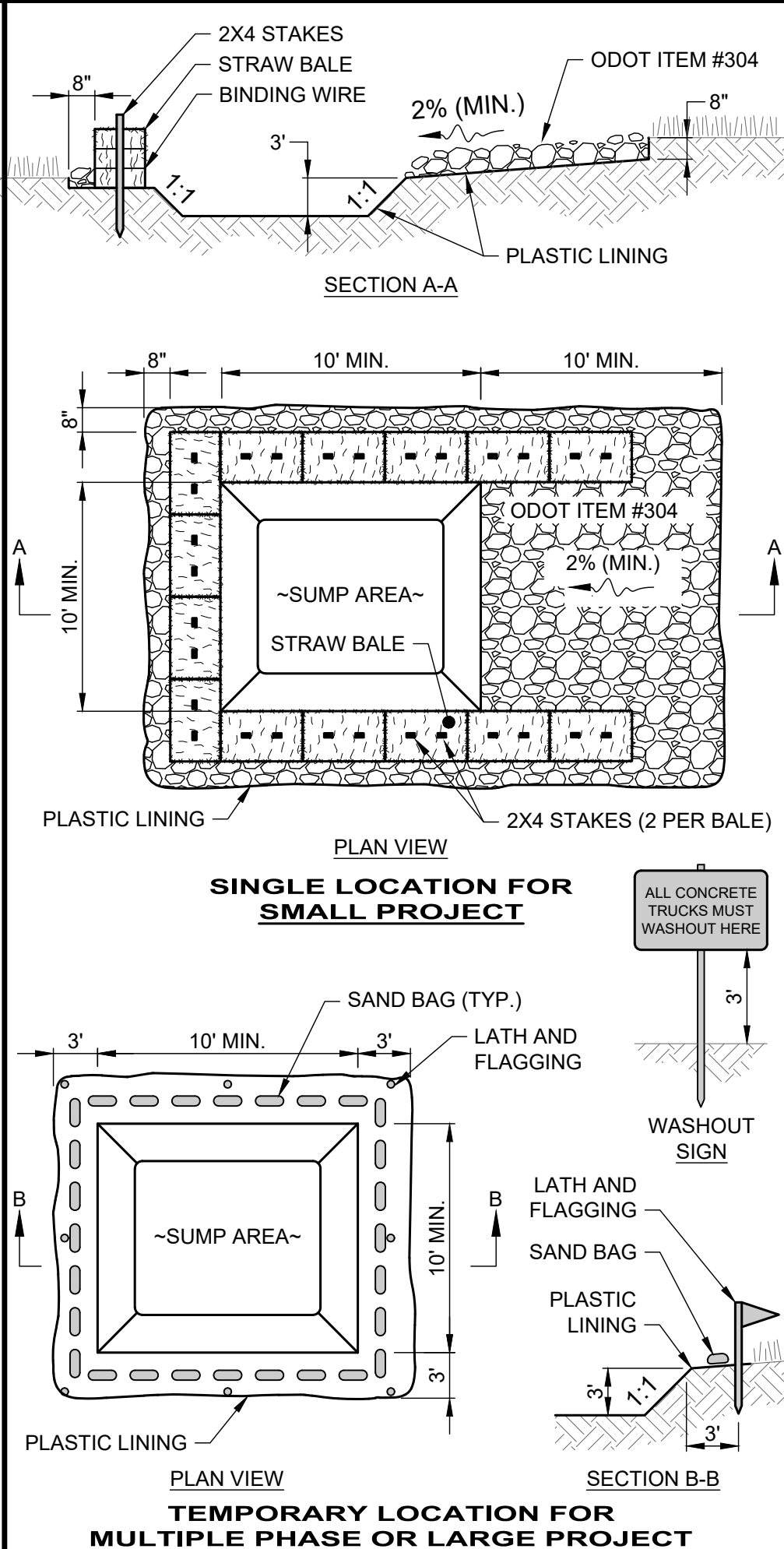
NO	REVISION	DATE

SCALE: AS NOTED	DATE: 6/04/25	DESIGNED BY: JBB	DRAWN BY: JBB	CHECKED BY: PAB
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PIERCE DRIVE STORMWATER IMPROVEMENTS  
MAHONING COUNTY BOARDMAN, OHIO  
PIERCE DR AND FLAGLER LN STORM REPLACEMENTS

PROJECT NO:	242260
DRAWING NAME	C-11
SHEET	OF
14	15

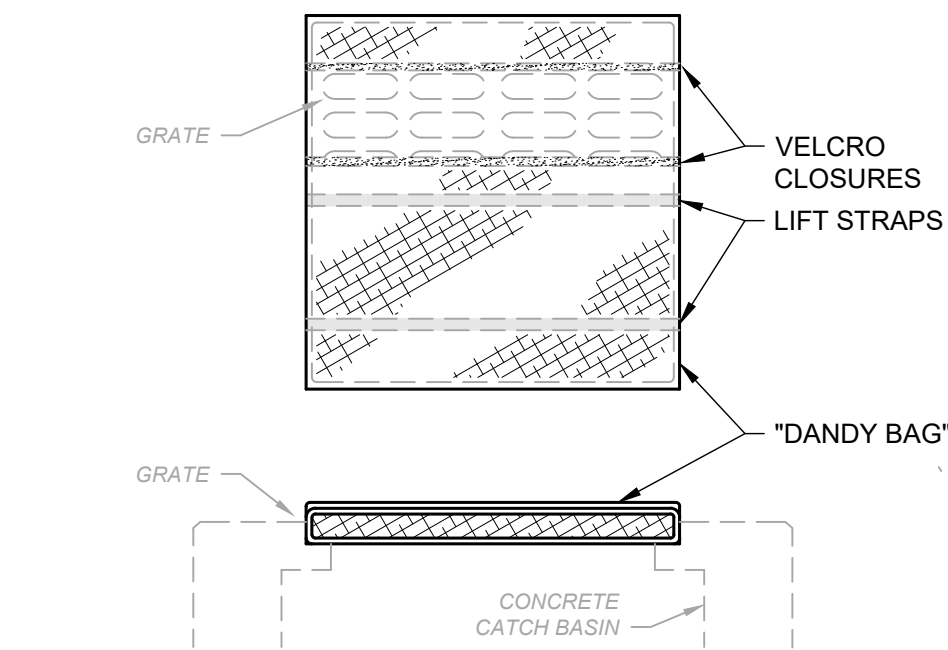
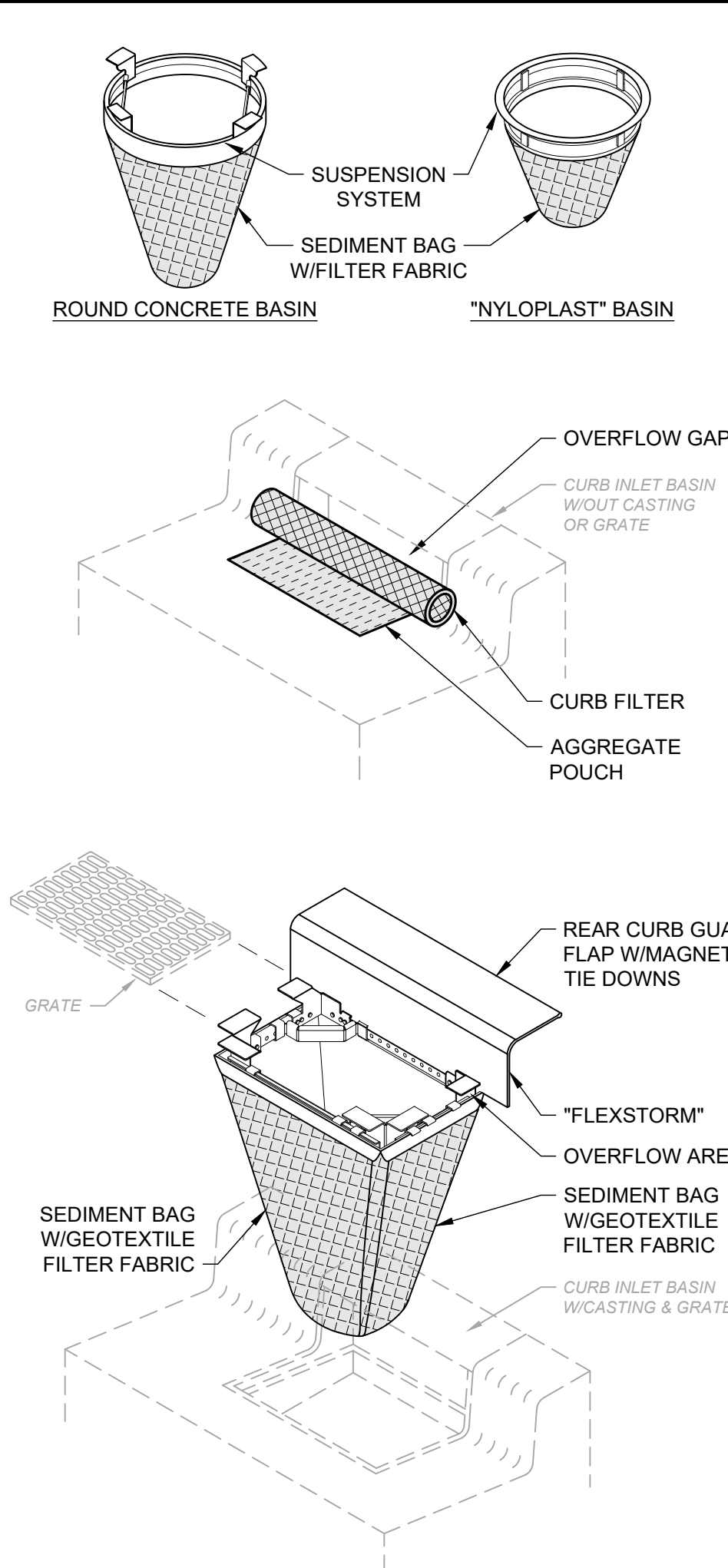




- NOTES:
- CONCRETE WASHOUT AREA SHALL BE LOCATED A MINIMUM OF 100' FROM STORM SEWER INLETS, STREAMS, WETLANDS OR ANY OTHER SURFACE WATERS.
  - IF CONCRETE WASHOUT AREA IS LOCATED AWAY FROM A PAVED SURFACE, CONSTRUCT A GRAVEL ACCESS ROUTE EQUAL IN COMPOSITION TO A CONSTRUCTION ENTRANCE.
  - CONCRETE WASHOUT AREA SHALL BE SUFFICIENT SIZE TO CONTAIN CONCRETE WASTE GENERATED. LARGE SITES MAY REQUIRE MULTIPLE CONCRETE WASHOUT AREAS.
  - PLASTIC LINING SHALL BE DOUBLE-LINED, CONTINUOUS 10-ML POLYETHYLENE SHEETING FREE OF HOLES, TEARS OR OTHER DEFECTS INSTALLED ON A SMOOTH, LEVEL SURFACE, FREE OF LARGE ROCKS AND DEBRIS.
  - CONCRETE WASHOUT SIGNAGE SHALL BE CLEARLY VISIBLE AND LOCATED WITHIN 30 FEET OF EACH WASHOUT AREA.
  - CONCRETE WASHOUT AREA SHALL BE COVERED DURING INCLEMENT WEATHER TO PREVENT OVERFLOW.
  - PREFABRICATED, PORTABLE AND RE-USABLE CONCRETE WASHOUT CONTAINERS ARE ACCEPTABLE.
  - CONCRETE WASHOUT AREA SHALL BE INSPECTED DAILY TO CHECK FOR DAMAGE AND DETERMINE IF IT NEEDS CLEANED OR REPLACED. ANY DAMAGE TO THE SIDEWALLS OR PLASTIC LINING SHALL BE REPAIRED IMMEDIATELY. REPLACE THE ENTIRE CONCRETE WASHOUT AREA WHEN IT IS 75% FULL.

#### CONCRETE WASHOUT DETAIL

SCALE: NONE



- NOTES:
- ALL NEW AND EXISTING STORM INLET BASINS WITHIN THE WORK LIMITS SHALL HAVE INLET PROTECTION INSTALLED.
  - INLET PROTECTION SHALL BE INSTALLED AS EACH STORM INLET IS CONSTRUCTED.
  - NOT ALL ITEMS SHOWN MAY APPLY OR DIFFERENT TYPES OR CONFIGURATIONS MAY BE REQUIRED. THE CONTRACTOR SHALL MEASURE EACH INLET TO CONFIGURE AND ASSEMBLE CUSTOMIZED INLET FILTERS.

#### INLET PROTECTION DETAIL

SCALE: NONE

**SITE INFORMATION**

PROJECT INFORMATION:  
FULL EXTENT OF ALL OF THE HOMES ON THE SOUTHERN END OF PIERCE DR., 606 PIERCE DR., 566 FLAGLER LN.  
TOWNSHIP OF BOARDMAN, MAHONING COUNTY, OHIO 44512

ENGINEER INFORMATION:  
VERDANTAS LLC  
8150 STERLING COURT  
MENTOR, OHIO 44060  
CONTACT: PATRICK BLAKE, PE  
PHONE: 440-530-2341

TYPE OF CONSTRUCTION:  
(x) NEW      ( ) MAINTENANCE      ( ) REDEVELOPMENT

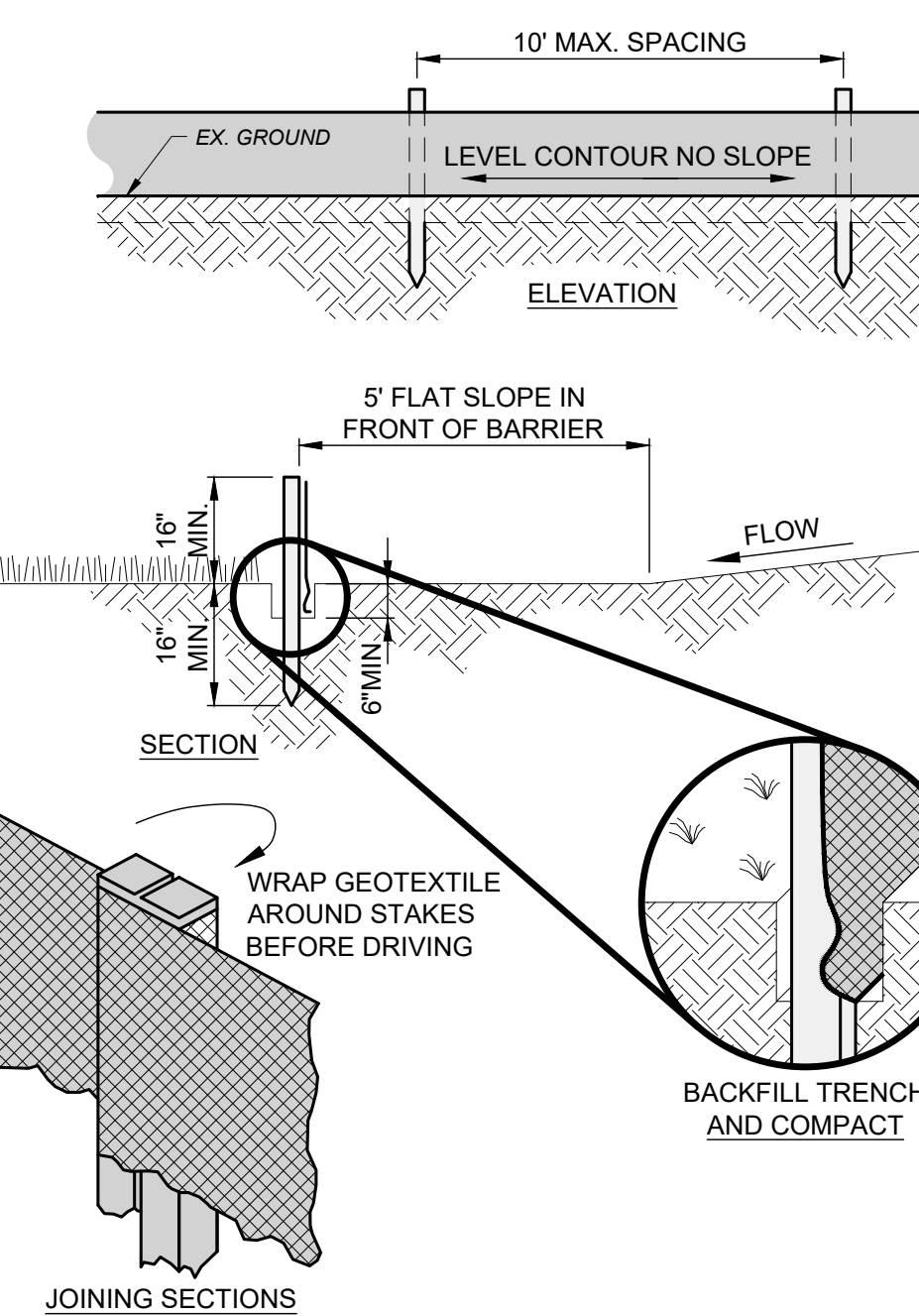
TYPE OF PROJECT:  
(x) UTILITY

DESCRIPTION OF PROJECT:  
BASE BID-  
REMOVE OF EXISTING 24"-15" STORM SEWER. INSTALL NEW SEWERS FROM WEST SIDE OF PIERCE DRIVE TO THE EAST END OF PIERCE DRIVE. REMOVE 6" & 12" STORM SEWER CROSSING PIERCE DRIVE. INSTALL NEW 12" STORM SEWER ACROSS PIERCE AND FLAGLER LANE.  
ALTERNATE ONE-  
PERFORM REHABILITATION OF SEGMENT OF EXISTING SEWERS. REMOVE OF EXISTING 24"-15" STORM SEWER. INSTALL NEW SEWERS FROM WEST SIDE OF PIERCE DRIVE TO THE EAST OF 573 PIERCE DRIVE. REMOVE 6" & 12" STORM SEWER CROSSING PIERCE DRIVE. INSTALL NEW 12" STORM SEWER ACROSS PIERCE AND FLAGLER LANE.

SOIL DISTURBING ACTIVITIES INCLUDE:  
EROSION AND SEDIMENT CONTROL INSTALLATION; REMOVAL OF VEGETATION, TOPSOIL, UTILITIES AND SOIL BENEATH PAVEMENT SUBBASE; EARTHWORK GRADING; AND INSTALL OF NEW UTILITIES

SITE AREA INFORMATION:  
PROJECT LIMIT/CONSTRUCTION AREA: 0.20 AC.  
AREA OF SOIL DISTURBANCE: 0.10 AC.  
INCREASE/DECREASE OF IMPERVIOUS AREA: 0 %

NAME OF RECEIVING STREAM, SURFACE WATER OR MS4:  
BOARDMAN TOWNSHIP MS4 TO UNNAMED DITCH EAST OF LOCKWOOD BLVD.



- NOTES:
- SILT FENCE MAY ONLY PASS RUNOFF AS DIFFUSE FLOW THROUGH THE GEOTEXTILE. IF RUNOFF OVERTOPS THE SILT FENCE, FLOWS UNDER OR AROUND THE ENDS, OR IN ANY OTHER WAY BECOMES A CONCENTRATED FLOW, THEN CHANGE THE LAYOUT OF THE SILT FENCE, REMOVE ACCUMULATED SEDIMENT OR INSTALL OTHER PRACTICES.
  - SILT FENCE SHALL BE INSPECTED FOR DEPTH OF SEDIMENT, TEARS, VERIFICATION FABRIC IS SECURELY ATTACHED TO FENCE POSTS, AND VERIFICATION FENCE POSTS ARE FIRMLY IN THE GROUND. BUILT UP SEDIMENT SHALL BE REMOVED FROM SILT FENCE WHEN IT HAS REACHED 1/3 THE FENCE HEIGHT.

#### SILT FENCE DETAIL

SCALE: NONE

EROSION CONTROL NOTES	
1. SPECIAL MEASURES SHALL BE TAKEN TO STABILIZE DRAINAGE CHANNELS AND STORM WATER OUTFALLS.	
2. DIVERT SURFACE RUNOFF AWAY FROM DISTURBED AREAS AND STEEP SLOPES WHEREVER PRACTICABLE.	
3. STABILIZATION OF DISTURBED AREAS SHALL BE INITIATED WITHIN THE TIME FRAMES IN THE FOLLOWING TABLES:	
AREA REQUIRING TEMPORARY STABILIZATION	TIME FRAME TO APPLY CONTROLS
ANY OTHER AREA TO BE DORMANT MORE THAN 14 DAYS, BUT LESS THAN 1 YEAR	WITHIN 7 DAYS OF MOST RECENT DISTURBANCE
AREA TO REMAIN IDLE OVER WINTER	PRIOR TO ONSET OF WINTER WEATHER
AREA TO BE PAVED	STABILIZE WITH STONE SUBBASE UNTIL PAVED
AREA REQUIRING PERMANENT STABILIZATION	TIME FRAME TO APPLY CONTROLS
ANY AREA AT FINAL GRADE	WITHIN 7 DAYS OF REACHING FINAL GRADE

- OTHER WASTE CONTROL NOTES**
- CONCRETE TRUCKS ARE NOT PERMITTED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE OR DRUM WASH WATER ONTO THE GROUND OR INTO STORM INLETS, DITCHES, STREAMS, WETLANDS OR ANY OTHER SURFACE WATERS. ALL EXCESS CONCRETE AND CONCRETE WASHOUT, INCLUDING FROM HAND MIXERS AND LIGHT EQUIPMENT, MUST BE DISPOSED OF IN A CONCRETE WASHOUT AREA TO COLLECT AND HARDEN.
  - OFF-SITE TRACKING OF SEDIMENT BY CONSTRUCTION VEHICLES MUST BE MINIMIZED. THE CONTRACTOR SHALL SWEEP ALL ADJACENT ROADS TO REMOVE MUD, DIRT OR ROCK TRACKED FROM THE SITE AT THE END OF EACH WORK DAY OR AS REQUIRED DURING THE DAY. DUMP TRUCKS HAULING MATERIAL FROM THE SITE SHALL BE COVERED WITH A TARPAULIN.
  - IT IS PROHIBITED TO BURN, BURY OR POUR ONTO THE GROUND OR INTO STORM INLETS, DITCHES, STREAMS, WETLANDS OR ANY OTHER SURFACE WATERS SOLID OR LIQUID WASTE INCLUDING TRASH, CONSTRUCTION DEBRIS, SOLVENTS, PAINT, DIESEL FUEL, GASOLINE, MOTOR OIL, HYDRAULIC FLUID, CEMENT CURING COMPOUND, ANTIFREEZE OR OTHER TOXIC OR HAZARDOUS WASTE. WASTE MATERIALS SHALL BE COLLECTED IN A SECURELY LIDDED DUMPSTER, DISPOSED OF IN AN APPROVED LANDFILL AND EMPTIED AS NECESSARY.
  - FUEL TANKS, DRUMS AND OTHER CONTAINERS HOLDING CHEMICALS MUST BE STORED WITHIN A DIKED AREA WITH A VOLUME OF AT LEAST 110% OF THE LARGEST TANK. A DIKED AREA IS NOT NECESSARY IF A SELF-CONTAINED SPILL PROOF TANK IS USED.
  - ANY TOXIC OR HAZARDOUS MATERIAL SPILL, REGARDLESS OF SIZE, MUST BE REPORTED WITHIN 30 MINUTES TO THE LOCAL FIRE DEPARTMENT AND OHIO EPA.
  - CONTAMINATED SOIL, SOIL WHERE CONSTRUCTION CHEMICALS HAVE BEEN SPILLED OR HAZARDOUS WASTE MATERIALS MUST BE REMOVED FROM THE SITE AND DISPOSED OF IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS.
  - STORM WATER THAT COMES IN CONTACT WITH CONTAMINATED SOIL OR HAS A VISIBLE SHEEN MUST BE COLLECTED BY A VACUUM TRUCK AND DISPOSED OF AS A WASTE WATER.

- GENERAL NOTES**
- THE CONTRACTOR SHALL REVIEW AND FOLLOW THE PRACTICES AND REQUIREMENTS PROVIDED IN THE CURRENT, ACTIVE OHIO EPA NPDES PERMIT NO. 3IN00000\*HD.
  - THIS SWP3 HAS BEEN PREPARED SHOWING THE ITEMS LISTED BELOW, BUT THE CONTRACTOR MAY NEED TO MOVE OR ADD ITEMS AS CONSTRUCTION PROGRESSES OR DURING THE VARIOUS STAGES OF CONSTRUCTION.
    - LIMITS OF EARTH DISTURBING ACTIVITY
    - EROSION AND SEDIMENT CONTROL MEASURES
    - INLET PROTECTIONS
    - CONCRETE WASHOUT PIT
    - ANY OTHER EROSION CONTROL REQUIRED
  - ALL WORK REQUIRED TO IMPLEMENT THE SW3P INCLUDING INSPECTION FEES, MAINTENANCE AND REPAIRS SHALL BE DONE BY AND AT THE EXPENSE OF THE CONTRACTOR.
  - THE CONTRACTOR SHALL AMEND THE SW3P WHEN THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION OR MAINTENANCE THAT REQUIRES INSTALLATION OF BMPs OR MODIFICATION TO EXISTING BMPs.
  - THE CONTRACTOR SHALL FOLLOW THE PRACTICES AND REQUIREMENTS PROVIDED IN THE OHIO EPA NPDES CONSTRUCTION SITE STORMWATER GENERAL PERMIT OH0000006 AND THE ODNr RAINWATER AND LAND DEVELOPMENT MANUAL.
  - THE CONTRACTOR SHALL SELECT INDIVIDUALS TO BE RESPONSIBLE FOR INSPECTIONS, MAINTENANCE AND REPAIR ACTIVITIES, AND COMPLETING INSPECTION AND MAINTENANCE REPORTS. THE CONTRACTOR SHALL COMPLETE A "DELEGATION OF AUTHORITY FOR STORMWATER POLLUTION PREVENTION PLAN" AND PROVIDE A COPY TO THE OWNER AND SWCD.
  - ALL PROCEDURES AND REQUIREMENTS CONTAINED IN THIS SW3P APPLY TO ALL GENERAL AND SUBCONTRACTORS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO IMPLEMENT, INFORM, REQUIRE AND ENFORCE ALL ASPECTS AND PROCEDURES OF THE SW3P. THE CONTRACTOR SHALL HAVE ALL SUBCONTRACTORS THAT ARE OR MAY BE ENGAGED IN ACTIVITIES THAT COULD IMPACT STORMWATER COMPLETE A "SUBCONTRACTOR AGREEMENT FOR EROSION AND SEDIMENT CONTROL", AND PROVIDE A COPY TO THE OWNER AND SWCD AS NEEDED. EACH CONTRACTOR SHALL ACCEPT FULL RESPONSIBILITY FOR ALL FINES, DAMAGES AND LIABILITY RESULTING FROM FAILURE TO PROVIDE THE REQUIRED POLLUTION CONTROL.
  - THE CONTRACTOR SHALL KEEP ON-SITE COPIES OF THE, SW3P AND INSPECTION LOGS/REPORTS.
  - ALL EROSION AND SEDIMENT CONTROL WORK SHALL BE SUBJECT TO INSPECTION BY THE SWCD.

- MAINTENANCE REQUIREMENTS**
- BMPs SHALL BE MAINTAINED IN GOOD WORKING ORDER UNTIL UPSLOPE AREAS THEY CONTROL ARE STABILIZED.
  - THE CONTRACTOR SHALL PROVIDE A QUALIFIED PERSON KNOWLEDGEABLE IN THE PRINCIPLES AND PRACTICES OF EROSION AND SEDIMENT CONTROLS. POSSESS THE TECHNICAL SKILLS TO ASSESS SITE CONDITIONS THAT COULD IMPACT STORM WATER QUALITY, AND CAN ASSESS THE EFFECTIVENESS OF ANY BMP SELECTED.
  - TO DETERMINE IF THE SWP3 WAS PROPERLY IMPLEMENTED.
  - THE QUALIFIED PERSON MUST PREPARE A WRITTEN REPORT AFTER EACH INSPECTION SUMMARIZING INSPECTION RESULTS INCLUDING THE FOLLOWING:
    - DATE OF INSPECTION
    - NAME AND QUALIFICATION OF THE INSPECTOR
    - WEATHER CONDITIONS
    - LOCATIONS WHERE IN-STREAM OR OFF-SITE SEDIMENTATION OR OTHER POLLUTANTS WERE OBSERVED.
    - LOCATIONS OF BMPs NEEDING MAINTENANCE.
    - LOCATIONS OF BMPs FAILING TO OPERATE CORRECTLY OR PROVIDE ADEQUATE PROTECTION.
    - LOCATION OF AREAS IN NEED OF ADDITIONAL BMPs NOT IN PLACE AT THE TIME OF INSPECTION.
    - CORRECTIVE ACTIONS REQUIRED, CHANGES TO THE SW3P AND IMPLEMENTATION DATES.
    - EROSION AND SEDIMENT CONTROL AMENDMENT LOG
  - ALL INCIDENTS OF NON-COMPLIANCE MUST BE IDENTIFIED IN THE REPORT. IF A REPORT DOES NOT IDENTIFY INCIDENTS OF NON-COMPLIANCE, IT MUST CONTAIN A CERTIFICATION THE SITE IS IN COMPLIANCE AT THE TIME OF INSPECTION.
  - THE INSPECTION FREQUENCY MAY BE REDUCED TO 1 TIME PER MONTH IF THE ENTIRE SITE IS TEMPORARILY STABILIZED OR RUNOFF IS UNLIKELY DUE TO WINTER WEATHER (I.E. SUSTAINED SNOW COVER OR FROZEN GROUND CONDITIONS). A WAIVER OF INSPECTION REQUIREMENTS IS AVAILABLE UNTIL 1 MONTH BEFORE THAWING CONDITIONS ARE EXPECTED IF ALL THE FOLLOWING CONDITIONS ARE MET:
  - FROZEN CONDITIONS ARE ANTICIPATED TO CONTINUE FOR EXTENDED PERIODS OF TIME (I.E. MORE THAN 1 MONTH).

- SEQUENCE OF MAJOR CONSTRUCTION ACTIVITIES**
- CONTRACTOR SUBMITS CONSTRUCTION SCHEDULE FOR CONSTRUCTION ACTIVITIES.
  - BEGIN INSPECTION, MAINTENANCE, RECORD KEEPING AND SITE POSTING OF BMPs.
  - ESTABLISH STAGING AREA AND NON-SEDIMENT BMPs.
  - INSTALL SILT FENCE, INLET PROTECTION
  - INSTALL OTHER TEMPORARY EROSION AND SEDIMENT CONTROL ITEMS AS SOON AS POSSIBLE, BUT NO LATER THAN 7 DAYS AFTER FIRST SOIL DISTURBANCE. INSPECT AND MAINTAIN BMPs FOR THE PROJECT DURATION UNTIL UPSLOPE AREAS ARE PERMANENTLY STABILIZED.
  - BEGIN SITE DEMOLITION AND CONSTRUCTION.
  - BEGIN EARTHWORK OPERATIONS.
  - APPLY TEMPORARY SEED.
  - INSTALL STORM SEWERS AND INLETS.
  - INSPECT AND CLEAN EXISTING AND NEW STORM SEWERS AND INLETS.
  - APPLY PERMANENT SEED.
  - INSTALL LANDSCAPING.
  - CONTINUE INSPECTIONS, MAINTENANCE, RECORD KEEPING, AND SITE POSTING UNTIL FINAL STABILIZATION ACHIEVED.
  - REMOVE TEMPORARY BMPs FROM STORM SEWER AND INLETS, AND OPEN GUTTERS AND DITCHES TO OBTAIN FREE DRAINAGE.
  - DISPOSE OF ALL DEBRIS AND WASTE MATERIAL.

EROSION CONTROL TIMETABLE												
STABILIZATION TYPE	YEAR											
	J	F	M	A	M	J	J	A	S	O	N	D
TEMPORARY SEEDING				○	○	⊗	⊗	⊗	⊗	○	○	
PERMANENT SEEDING					○	⊗	⊗	⊗	⊗	○	○	
SODDING					⊗	⊗	⊗	⊗	⊗	⊗	⊗	
MULCHING	○	○	○	○	○	○	○	○	○	○	○	○
PAVING						○	○	○	○	○	○	○
⊗ IRRIGATION NEEDED												

- SEDIMENT CONTROL NOTES**
- INLET PROTECTION AND SEDIMENT BARRIERS MUST BE INSTALLED PRIOR TO CLEARING AND GRUBBING.
  - PERIMETER SEDIMENT BARRIERS MUST BE INSTALLED AS THE FIRST STEP OF GRADING AND WITHIN 7 DAYS FROM THE START OF CLEARING AND GRUBBING, AND CONTINUE TO FUNCTION UNTIL ALL DISTURBED UPLAND AREAS ARE STABILIZED.
  - SEDIMENT CONTROLS MUST POND RUNOFF TO BE CONSIDERED FUNCTIONAL.
  - TRENCH AND GROUND WATER FREE FROM SEDIMENT OR OTHER POLLUTANTS MAY BE DISCHARGED WITHOUT TREATMENT, PROVIDED THIS WATER DOES NOT BECOME POLLUTANT-LADEN BY TRAVERSING OVER DISTURBED SOILS OR OTHER POLLUTANT SOURCES.
  - SETTLED MATERIAL SHALL BE DISPOSED OF IN A STABILIZED LOCATION WHERE IT WILL NOT BE CARRIED OFF-SITE OR INTO A STORM SEWER BY RAINFALL.

STATE OF OHIO  
PATRICK A. BLAKE  
E-88436  
REGISTERED  
PROFESSIONAL ENGINEER

verdantas

DATE																							
REVISION																							
NO																							
SCALE: AS NOTED	DATE: 6/04/25	DESIGNED BY: JBB	DRAWN BY: JBB	CHECKED BY: PAB																			
PIERCE DRIVE STORMWATER IMPROVEMENTS					BOARDMAN, OHIO					SWPPP NOTES & DETAILS													
MAHONING COUNTY																							
PROJECT NO: 242260																							
DRAWING NAME: C-12																							
SHEET 15					OF 15																		