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GREEN INFRASTRUCTURE NOTES

GENERAL STORMWATER NOTES:

1. THE CONTRACTOR SHALL VERIFY BY FIELD MEASUREMENT THE EXISTING AND REQUIRED LOCATIONS OF ALL PIPES, FITTINGS, DUCT BANKS, SITE UTILITIES, EQUIPMENT AND STRUCTURES TO ASSURE PROPER CLEARANCE AND SPACING PRIOR TO FABRICATION OR INSTALLATION.
2. PRIOR TO REMOVING ANY EXISTING PIPING, EQUIPMENT, STRUCTURES, FACILITIES OR WORK FROM SERVICE, THE CONTRACTOR SHALL DEMONSTRATE THAT ALL NEW ITEMS AND WORK ARE AVAILABLE FOR CONSTRUCTION AND INSTALLATION. ONCE EXISTING ITEMS ARE REMOVED FROM SERVICE, THE CONTRACTOR SHALL WORK DILIGENTLY AND CONTINUOUSLY IN ACCORDANCE WITH HIS APPROVED CONSTRUCTION SCHEDULE TO MINIMIZE THE TIME PERIOD THAT ANY EXISTING ITEM IS OUT OF SERVICE. EXISTING ITEMS SHALL BE RETURNED TO SERVICE AS QUICKLY AS POSSIBLE.
3. THE CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES TO CONFIRM ALL UTILITIES SHOWN AS ABANDONED ARE NO LONGER ACTIVE UTILITIES PRIOR TO REMOVAL.
4. ALL COSTS ASSOCIATED WITH COMPLIANCE WITH THESE GENERAL NOTES SHALL BE INCLUDED IN THE VARIOUS CONTRACT ITEMS AND NO SEPARATE PAYMENT WILL BE MADE THEREFORE.
5. THE CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGE TO EXISTING UTILITIES. IF ANY UNDERGROUND UTILITY IS DAMAGED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER. ANY DAMAGE SUSTAINED TO UTILITIES ABOVE AND BELOW GROUND SHALL BE REPAIRED BY CONTRACTOR AT HIS OWN EXPENSE TO THE SATISFACTION OF THE ENGINEER.
6. EXISTING PAVEMENT COMPOSITION AND DEPTH VARIES THROUGHOUT PITTSBURGH. THE CONTRACTOR SHALL REMOVE AND DISPOSE VARYING TYPES AND DEPTHS OF EXISTING PAVEMENT AS NECESSARY. NO ADDITIONAL COMPENSATION WILL BE PAID FOR REMOVING AND DISPOSING VARYING PAVEMENT COMPOSITION AND DEPTH.
7. ANY UNCHARTED FOOTINGS, STRUCTURES, UTILITIES, ETC. ENCOUNTERED DURING EXCAVATION SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE ANY ACTION IS TAKEN. ANY WORK REQUIRED FOR THESE UNCHARTED ITEMS IS PART OF THE BASIC DEMOLITION WORK.
8. ALL WORK SHALL BE PERFORMED ACCORDING TO PWSA AND CITY OF PITTSBURGH STANDARDS UNLESS OTHERWISE SPECIFIED.
9. THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND LEGAL DISPOSAL OF ALL DEBRIS RESULTING FROM DEMOLITION AND SITE CLEARING.
10. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DEVIATION FROM THESE PLANS PRIOR TO ANY CHANGES BEING MADE. ANY DEVIATIONS FROM THESE PLANS WITHOUT WRITTEN CONSENT FROM THE OWNER WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
11. POSITIVE DRAINAGE SHALL BE MAINTAINED DURING ALL PHASES OF CONSTRUCTION. PONDING OR STANDING WATER WILL NOT BE PERMITTED.
12. UPON INSTALLATION, KEEP ALL DRAINAGE STRUCTURES, PRETREATMENT DEVICES (E.G., TRASH RACKS AND SUMPS), AND STORMWATER IMPROVEMENTS IN CLEAN AND WORKING ORDER. TRANSPORT AND DISPOSAL OF ACCUMULATED SEDIMENT OFF-SITE SHALL BE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL GUIDELINES AND REGULATIONS.
13. THE CONTRACTOR SHALL MAINTAIN ALL EXISTING WATER AND SEWERAGE FACILITIES IN OPERATION DURING THE WORK. THE CONTRACTOR IS OBLIGED TO COMMUNICATE AND COORDINATE TO ENSURE SMOOTH, CONTINUOUS DAILY OPERATION OF THE SEWER SYSTEM. THE CONTRACTOR SHALL CONTINUALLY UPDATE HIS PROPOSED PLAN AND SCHEDULE FOR TEMPORARY FLOW CONTROLS AND SHALL OBTAIN APPROVAL FROM PWSA PRIOR TO IMPLEMENTING ANY ACTIVITIES WHICH AFFECT OPERATION OF THE SEWER SYSTEM AT LEAST 24 HOURS PRIOR TO SUCH ACTIVITY.
14. EXCAVATION FOR STORMWATER TRENCHES IS COVERED BY PAY ITEM 02976.03, IS INCIDENTAL TO AASHTO #57 STONE AND IS DEFINED IN THE TECHNICAL PROVISIONS, PWSA SECTION 02976 - SUBSURFACE STORAGE BEDS.

EROSION AND SEDIMENT CONTROL NOTES:

1. INFILTRATION SYSTEM CONSTRUCTION: UNLESS OTHERWISE NOTED, THE IN-SITU SOILS SHALL NOT BE DISTURBED OR COMPACTED WITHIN 12 INCHES OF THE FINAL DESIGN EXCAVATION OF THE BOTTOM OF ANY INFILTRATION OR UNLINED TRENCH. IF THE SUB-GRADE IS IMPACTED THE IMPACTED AREA SHALL BE TILLED TO A DEPTH OF 12-INCHES BELOW THE BOTTOM OF THE RESERVOIR LAYER. INFILTRATION TESTS SHALL BE PERFORMED PRIOR TO THE INSTALLATION OF INFILTRATION TRENCHES TO ENSURE THE INFILTRATION RATE IS STILL ACCEPTABLE. IF THERE IS A LOSS IN INFILTRATION RATE, DEEP TILLING AND/OR OTHER RESTORATION PRACTICES WILL BE REQUIRED TO RESTORE THE RATE.
2. UNLESS OTHERWISE NOTED, KEEP THE STORMWATER IMPROVEMENTS OFF-LINE UNTIL CONSTRUCTION IS COMPLETE. PREVENT SEDIMENT FROM ENTERING THE STORMWATER IMPROVEMENTS BY USING SUPER SILT FENCE, COIR LOGS, DIVERSION BERMS, SAND BAGS OR OTHER MEANS.

NOT UPDATED - 90%

NOT UPDATED - 90%

STORMWATER MANAGEMENT PLANS INDEX	
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SWM34	LANDSCAPE PLANS
SWM35	LANDSCAPE PLANS
SWM36	LANDSCAPE PLANS
SWM37	LANDSCAPE PLANS

[SEE BRT PLAN SET FOR CONSTRUCTION DRAWINGS]



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5th Floor
Pittsburgh, PA 15219



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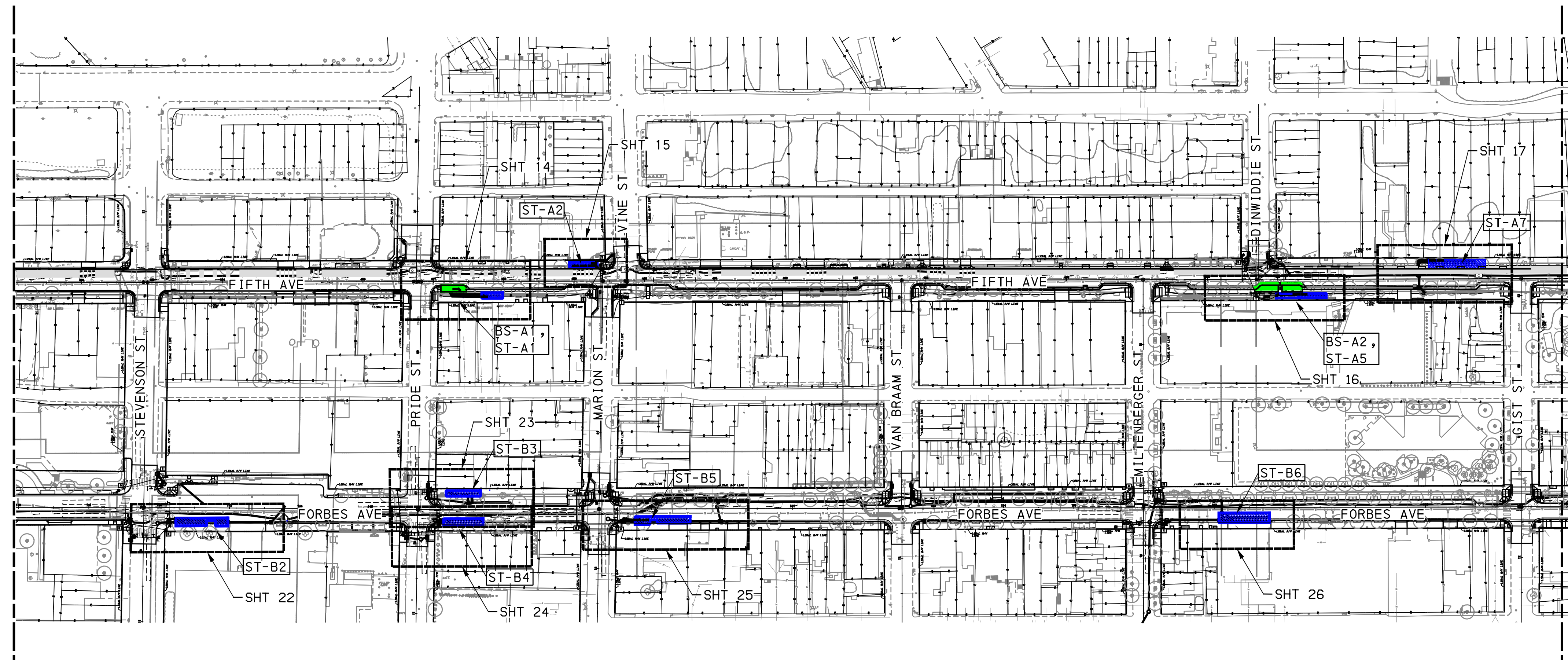
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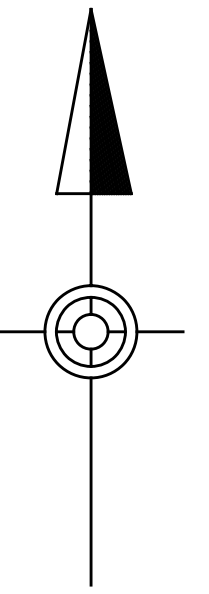
BUS RAPID TRANSIT UPTOWN TO OAKLAND
STORMWATER MANAGEMENT PLANS
GREEN INFRASTRUCTURE NOTES AND INDEX

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DWG. NO. **SWM1** SHT. **1**

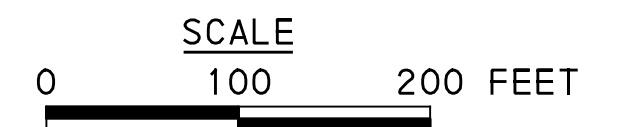


MATCH LINE SEE SWM 3



LEGEND

- A01-1 DRAINAGE STRUCTURE IDENTIFICATION
- DRAINAGE STRUCTURE
- GI STORAGE TRENCH (ST)
- GI BIORETENTION (BR) OR BIOSWALE (BS)
- CURB RAMP
- PROPOSED TREE



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GREEN
INFRASTRUCTURE**

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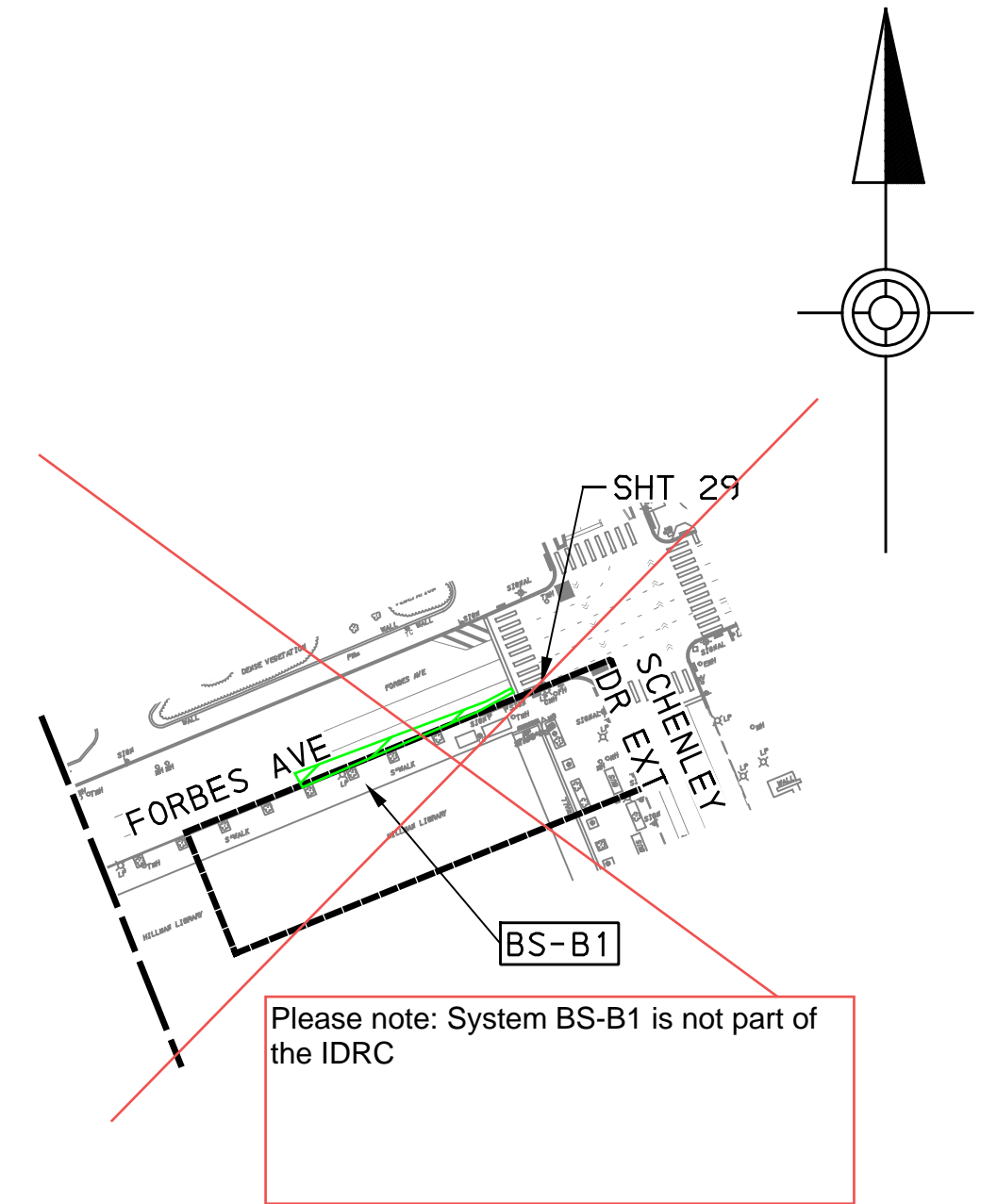
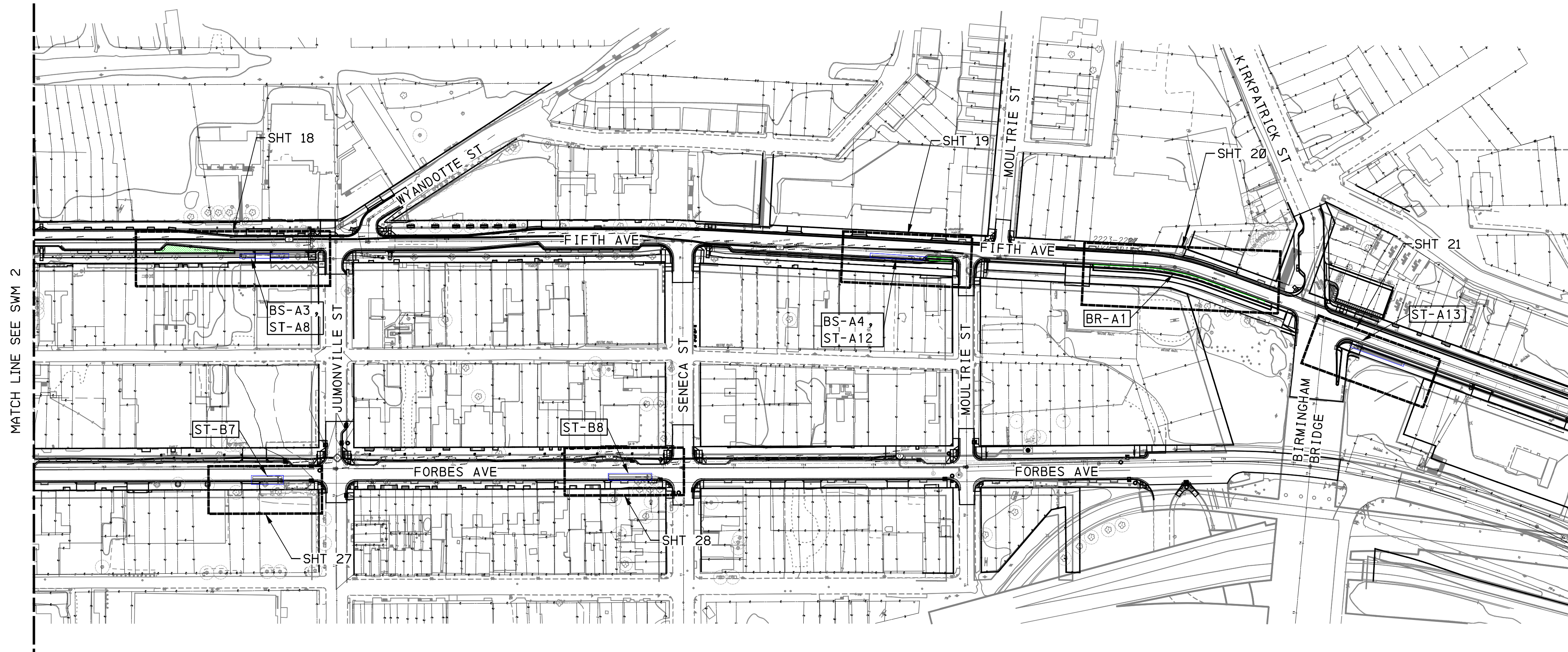
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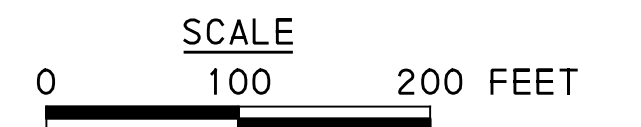
**BUS RAPID TRANSIT UPTOWN TO OAKLAND
STORMWATER MANAGEMENT PLANS
KEY PLAN**

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LEGEND	
	DRAINAGE STRUCTURE IDENTIFICATION
	DRAINAGE STRUCTURE
	GI STORAGE TRENCH (ST)
	GI BIORETENTION (BR) OR BIOSWALE (BS)
	CURB RAMP
	PROPOSED TREE



SEE BRT PLAN SET FOR CONSTRUCTION DRAWINGS

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**BUS RAPID TRANSIT UPTOWN TO OAKLAND
STORMWATER MANAGEMENT PLANS
KEY PLAN**

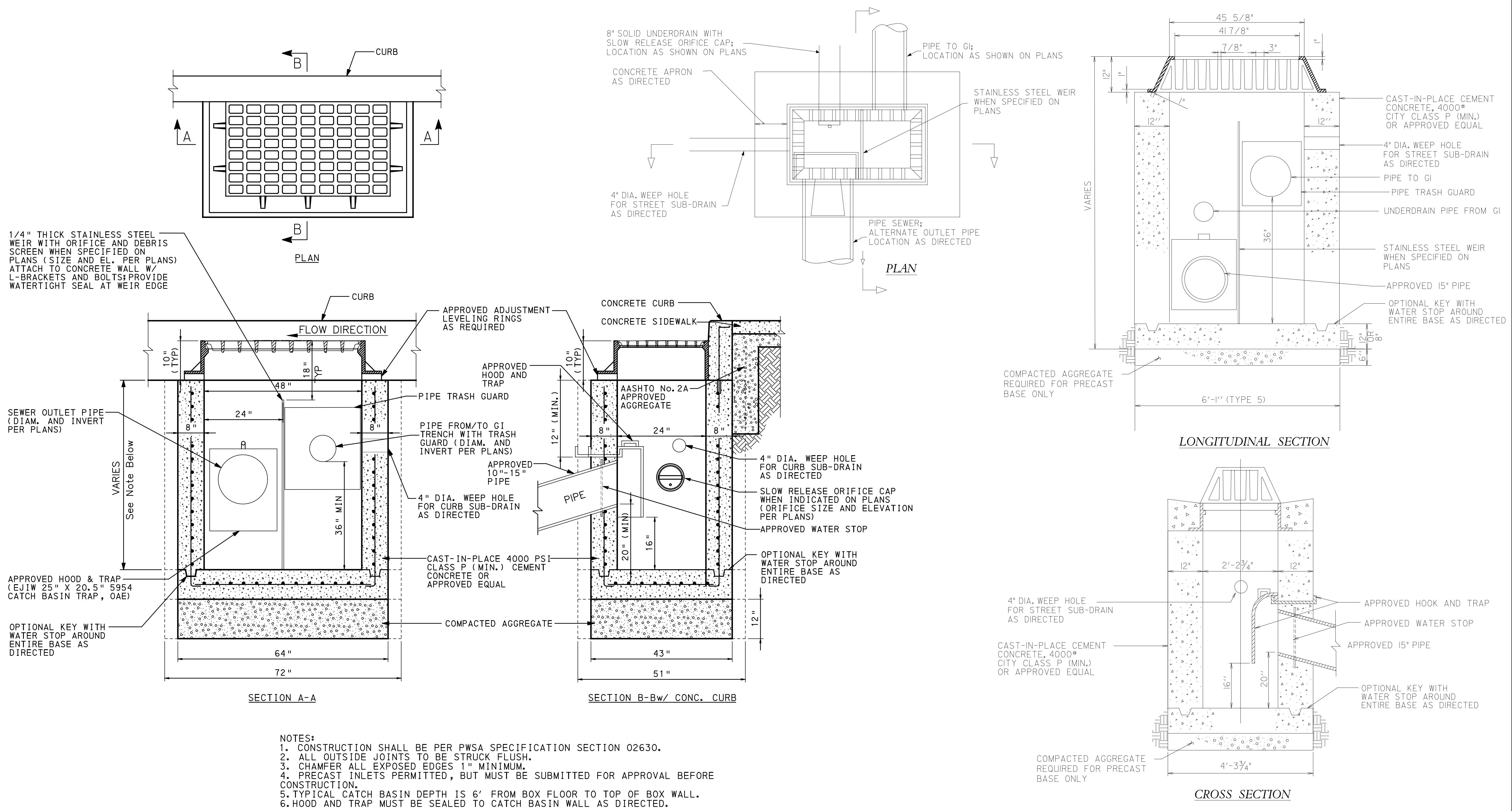
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- NOTES:**
- CONSTRUCTION SHALL BE PER PWSA SPECIFICATION SECTION 02630.
 - ALL OUTSIDE JOINTS TO BE STRUCK FLUSH.
 - CHAMFER ALL EXPOSED EDGES 1" MINIMUM.
 - PRECAST INLETS PERMITTED, BUT MUST BE SUBMITTED FOR APPROVAL BEFORE CONSTRUCTION.
 - TYPICAL CATCH BASIN DEPTH IS 6' FROM BOX FLOOR TO TOP OF BOX WALL.
 - HOOD AND TRAP MUST BE SEALED TO CATCH BASIN WALL AS DIRECTED.

GREEN INFRASTRUCTURE (GI) CONTROL STRUCTURE (PWSA TYPE 13 CATCH BASIN)
NOT TO SCALE

GREEN INFRASTRUCTURE (GI) CONTROL STRUCTURE (PWSA TYPE 5 STORM/CATCH BASIN)
NOT TO SCALE

SEE BRT PLAN SET FOR CONSTRUCTION DRAWINGS

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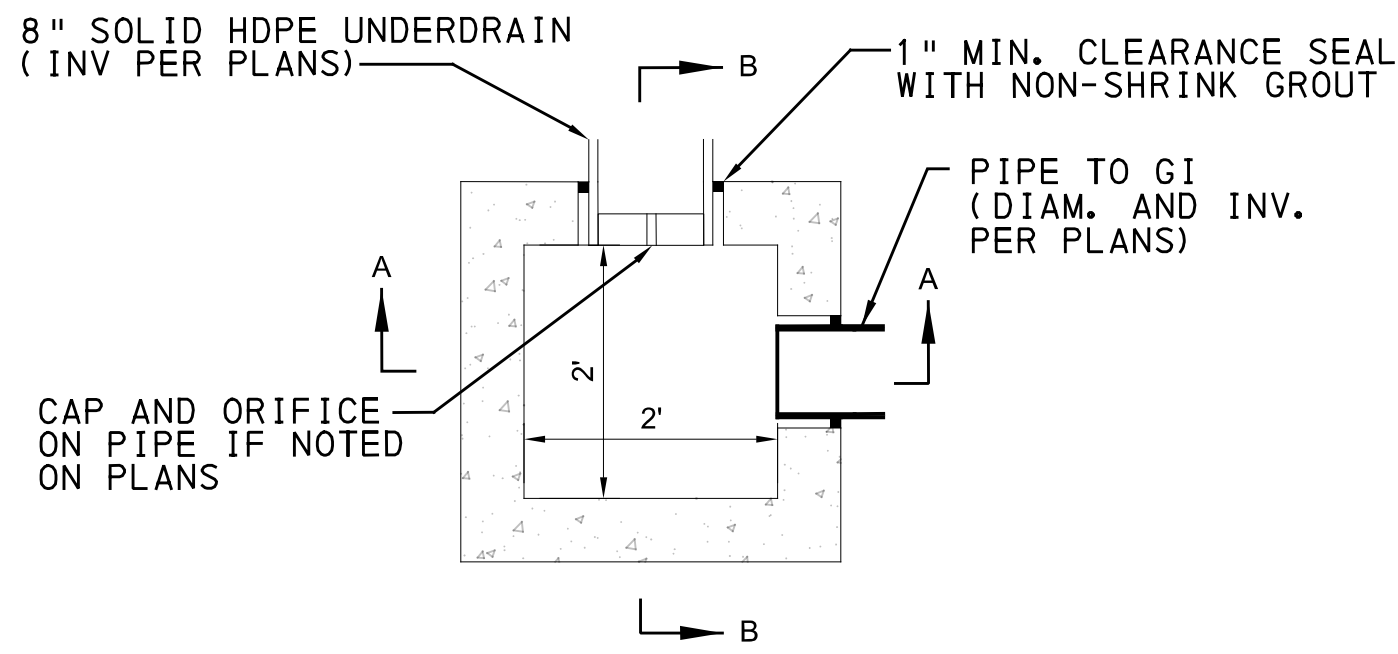
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BUS RAPID TRANSIT ROADWAY STORMWATER MANAGEMENT PLANS
GI DETAILS

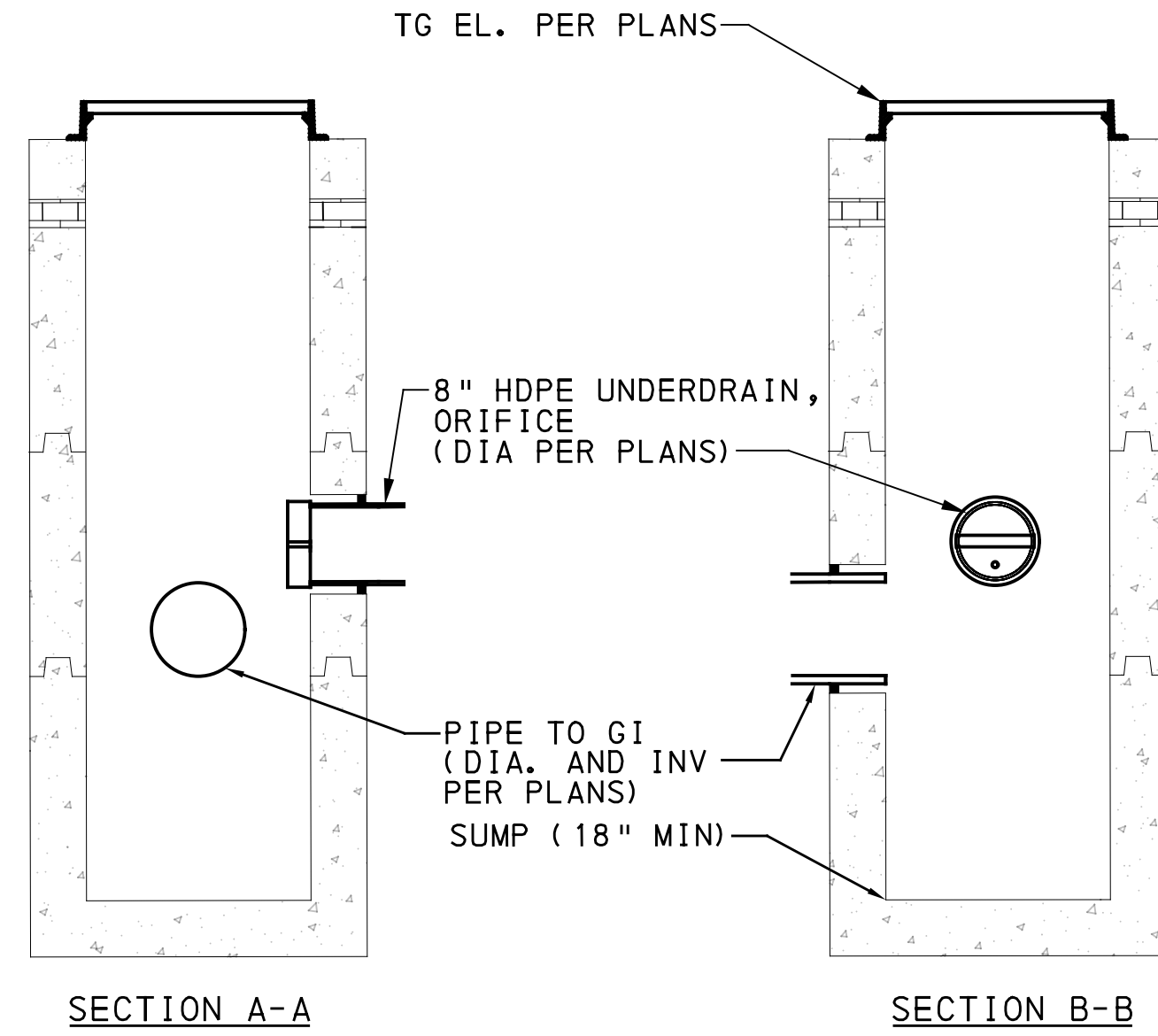
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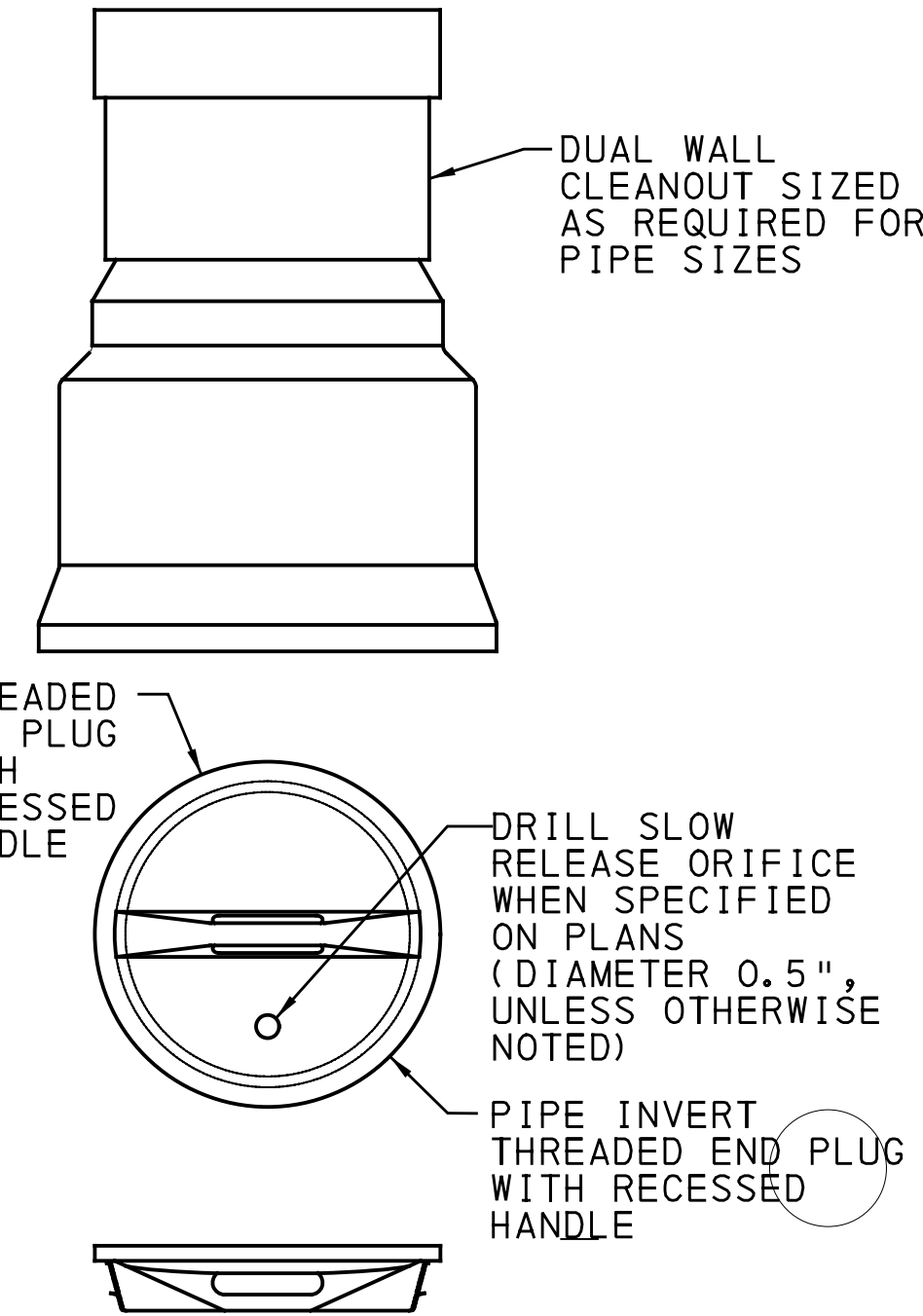
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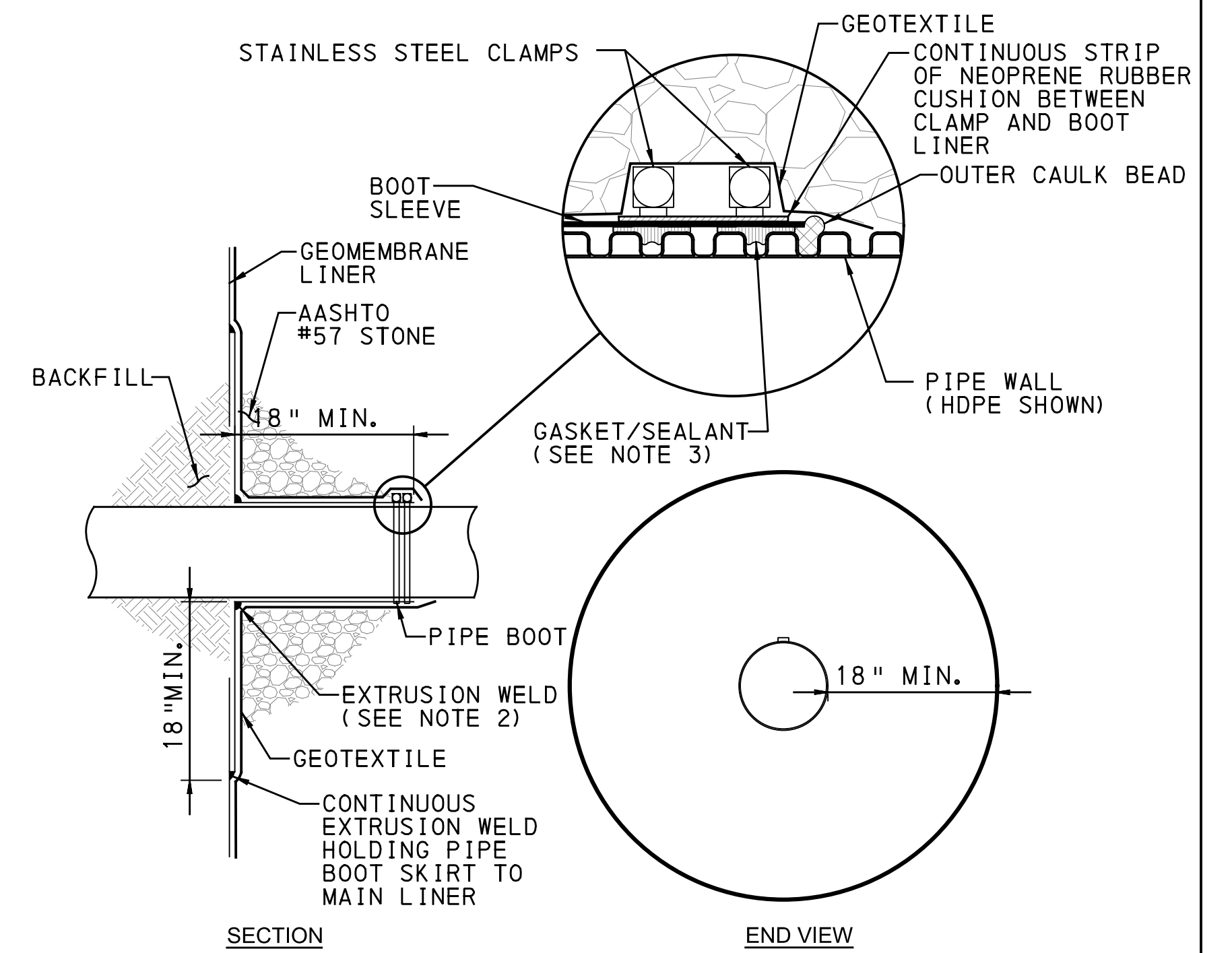
- NOTES:**
- 2' X 2' JUNCTION BOX WITH LOCKABLE STEEL FRAME AND HS-20 COVER; SEE SPECIFICATIONS.
 - INLET / OUTLET PIPES TO BE LOCATED AS INDICATED ON PLANS.
 - TOTAL EXTENSION OF PIPE AND CAP ASSEMBLY INTO INLET TO BE 0'-3" FROM INLET WALL TO END OF CAP.



2' X 2' PRECAST CONCRETE INLET
NOT TO SCALE

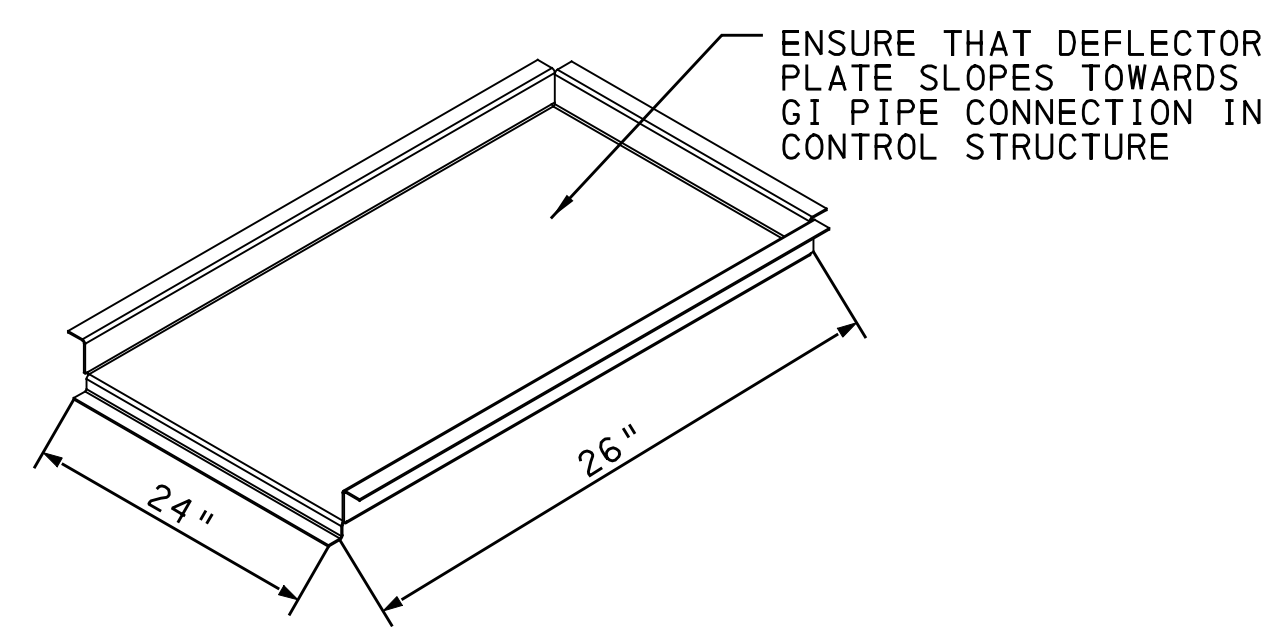


SLOW RELEASE ORIFICE CAP
NOT TO SCALE



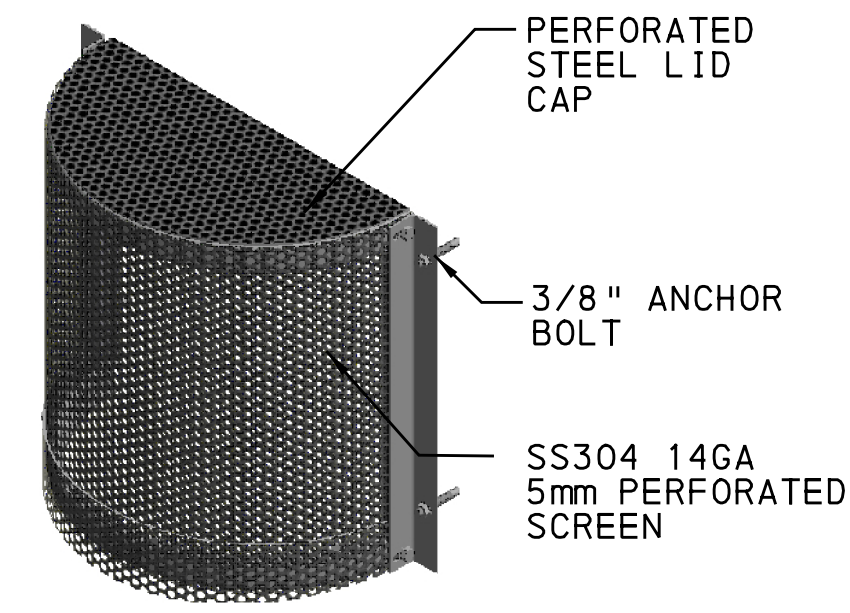
- NOTES:**
- THIS DETAIL APPLIES TO ALL PIPE PENETRATIONS THROUGH GEOMEMBRANE LINER. SEE PLANS FOR LOCATION, PIPE SIZE, PIPE MATERIAL, AND PIPE ANGLE.
 - WELD CONNECTING PIPE BOOT TO SKIRT NOT NECESSARY IF PREFABRICATED.
 - FOR CORRUGATED PIPE, INSERT PIPE ADAPTERS TO CREATE SMOOTH SURFACE FOR CLAMPS.

GEOMEMBRANE PIPE PENETRATION
NOT TO SCALE

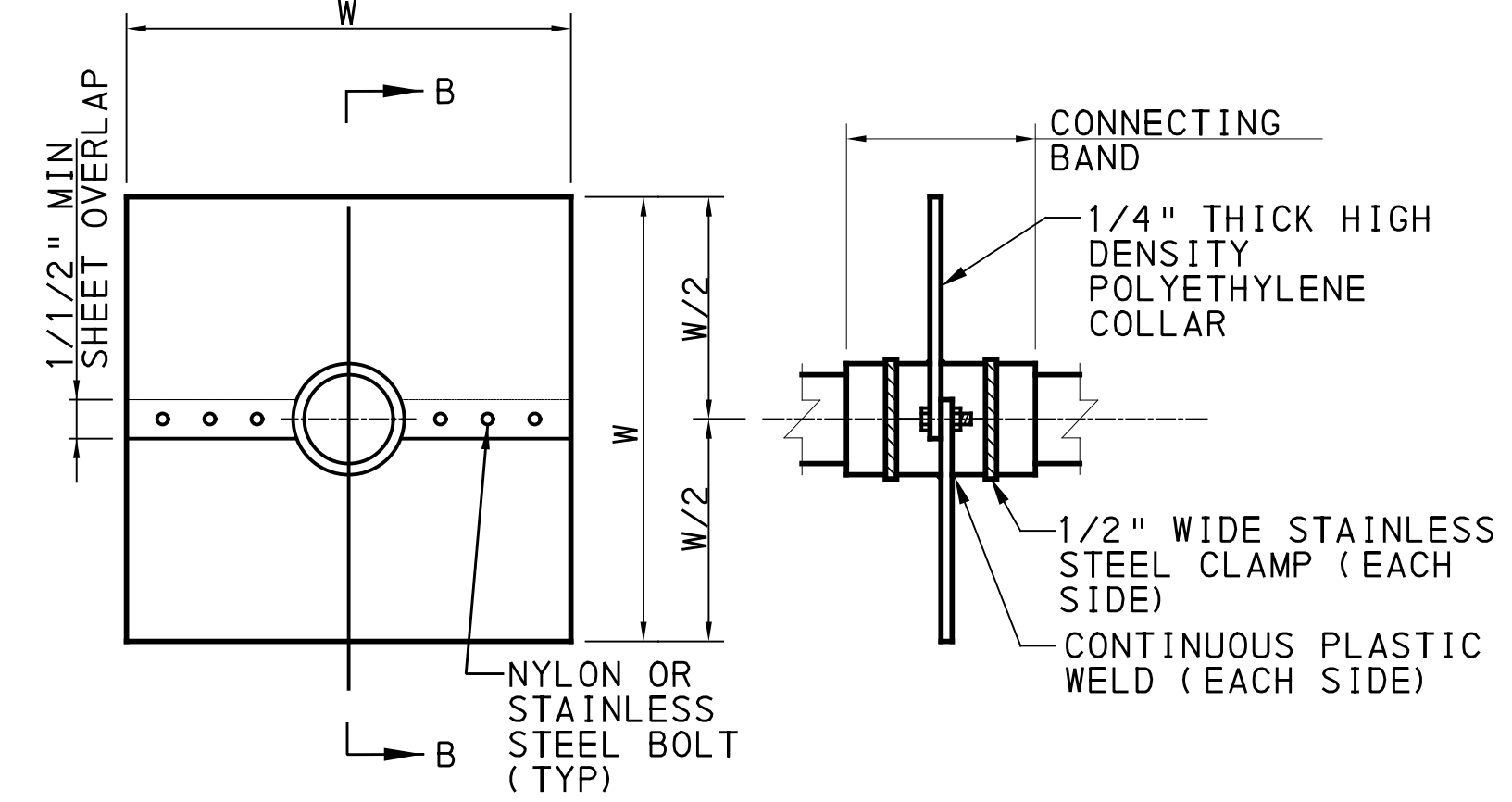


**STEEL DEFLECTOR PLATE
INLET DEFLECTION PAN**
NOT TO SCALE

- NOTE:**
TRASH GUARD TO BE INSTALLED ON ALL DISTRIBUTION PIPES DIRECTLY CONNECTED TO GREEN INFRASTRUCTURE STORMWATER TRENCHES, UNLESS OTHERWISE NOTED ON PLANS.

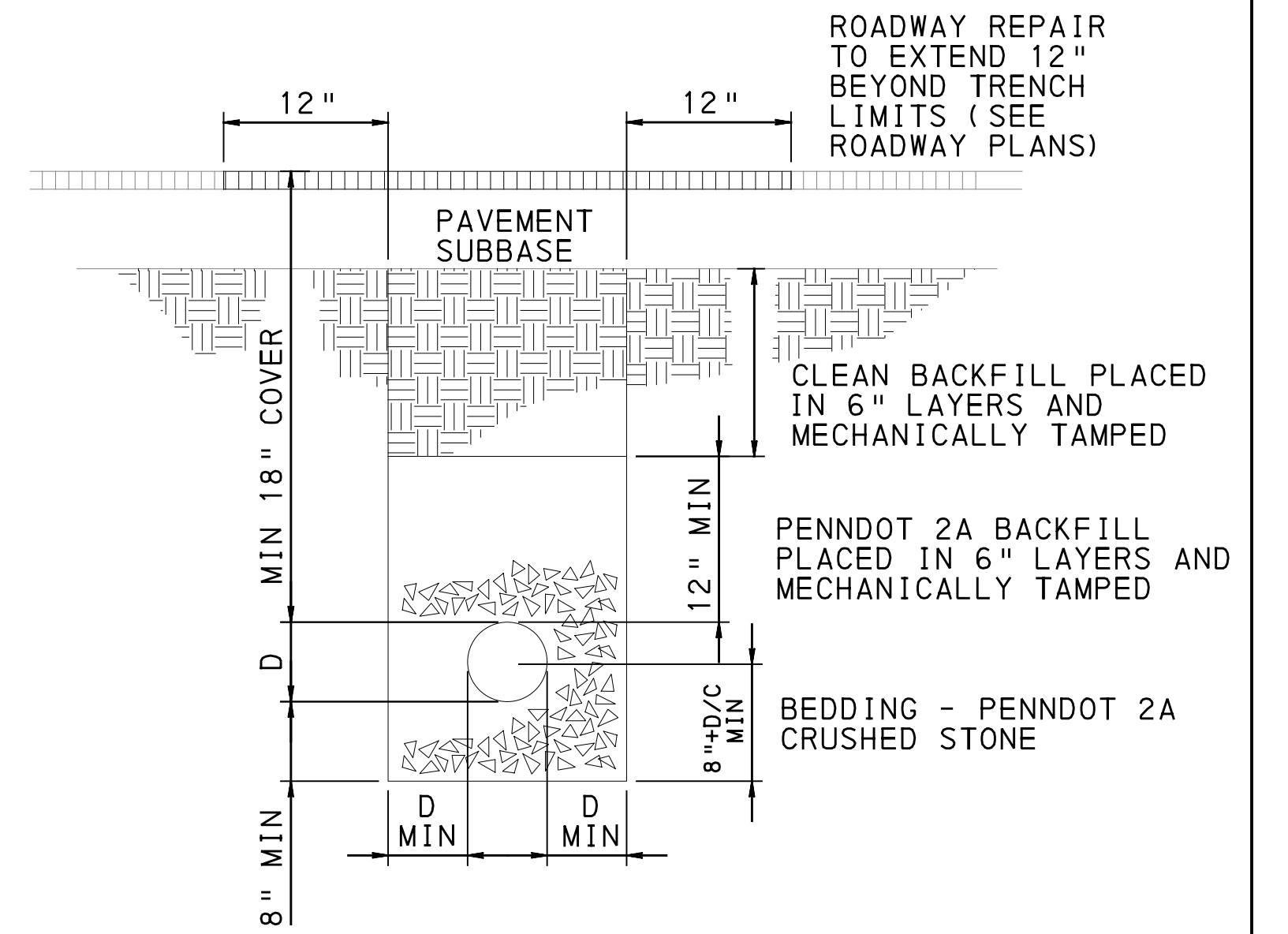


**CONNECTOR PIPE SCREEN
WITH CLOSED TOP AND BOTTOM
PIPE TRASH GUARD**
NOT TO SCALE



- UPSTREAM ELEVATION** **SECTION A-A**
- NOTES:**
- DIMENSION "W" SHALL BE THREE TIMES THE DIAMETER OF THE INTERSECTING PIPE.
 - CONNECTING BAND SHALL BE SEALED AT BOTH ENDS WITH NON-SHRINK GROUT.
 - COLLAR MATERIAL SHALL BE RIGID POLYETHYLENE SHEET MATERIAL.
 - STAINLESS STEEL SHALL BE GRADE 304 OR BETTER.
 - AS MANUFACTURED BY LANE ENTERPRISES, OR APPROVED EQUAL. TO BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS.

ANTI-SEEP COLLAR
NOT TO SCALE



- NOTE:**
INSTALL SOLID COPPER TRACER WIRE W/ HMWPE INSULATION ALONG LENGTH OF PIPE, ACCORDING TO MANUFACTURER'S RECOMMENDATION.

**SOLID STORM PIPE TRENCHING
(UNDER PAVEMENT)**
NOT TO SCALE

[SEE BRT PLAN SET FOR CONSTRUCTION DRAWINGS]

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**BUS RAPID TRANSIT ROADWAY
STORMWATER MANAGEMENT PLANS
GI DETAILS**

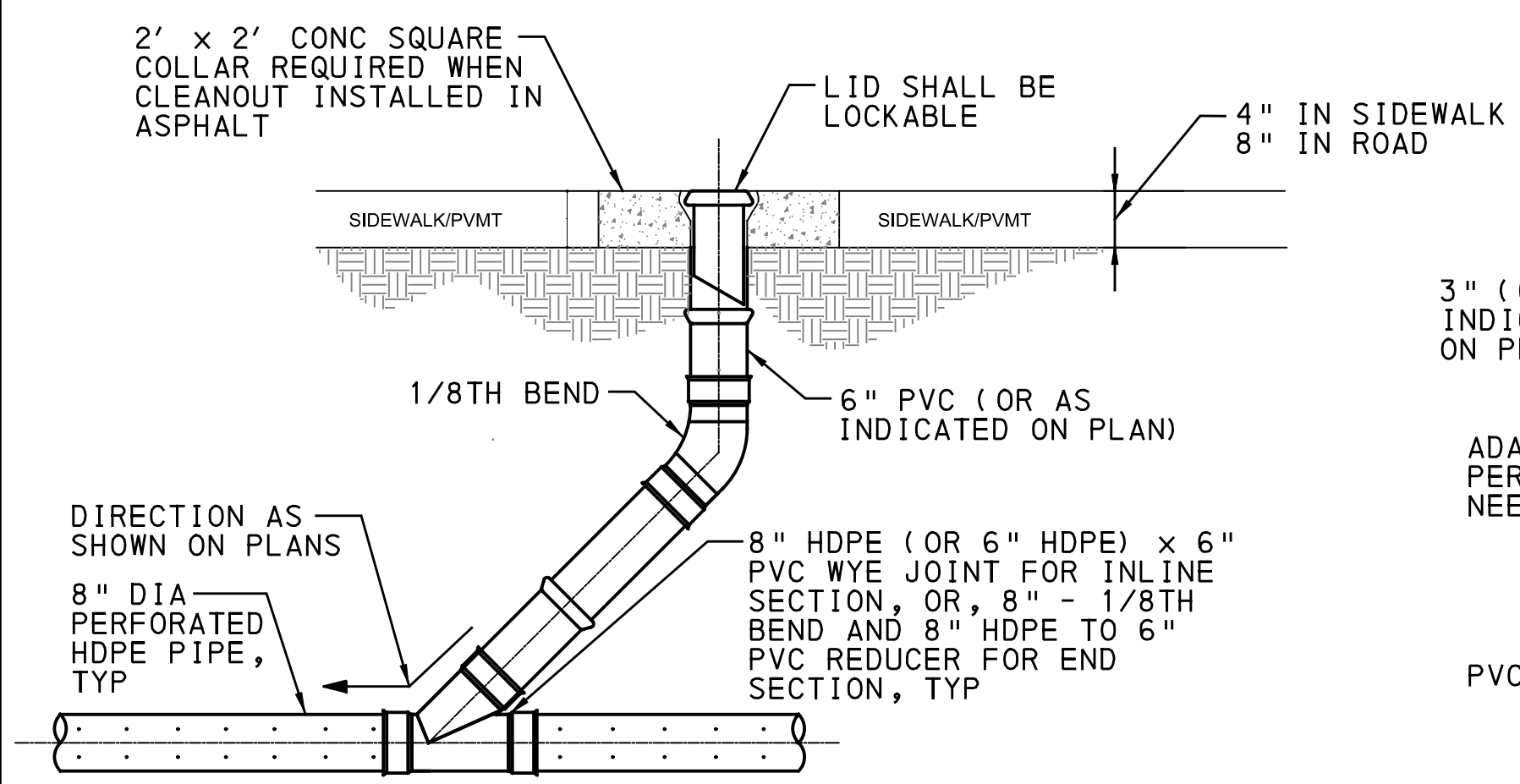
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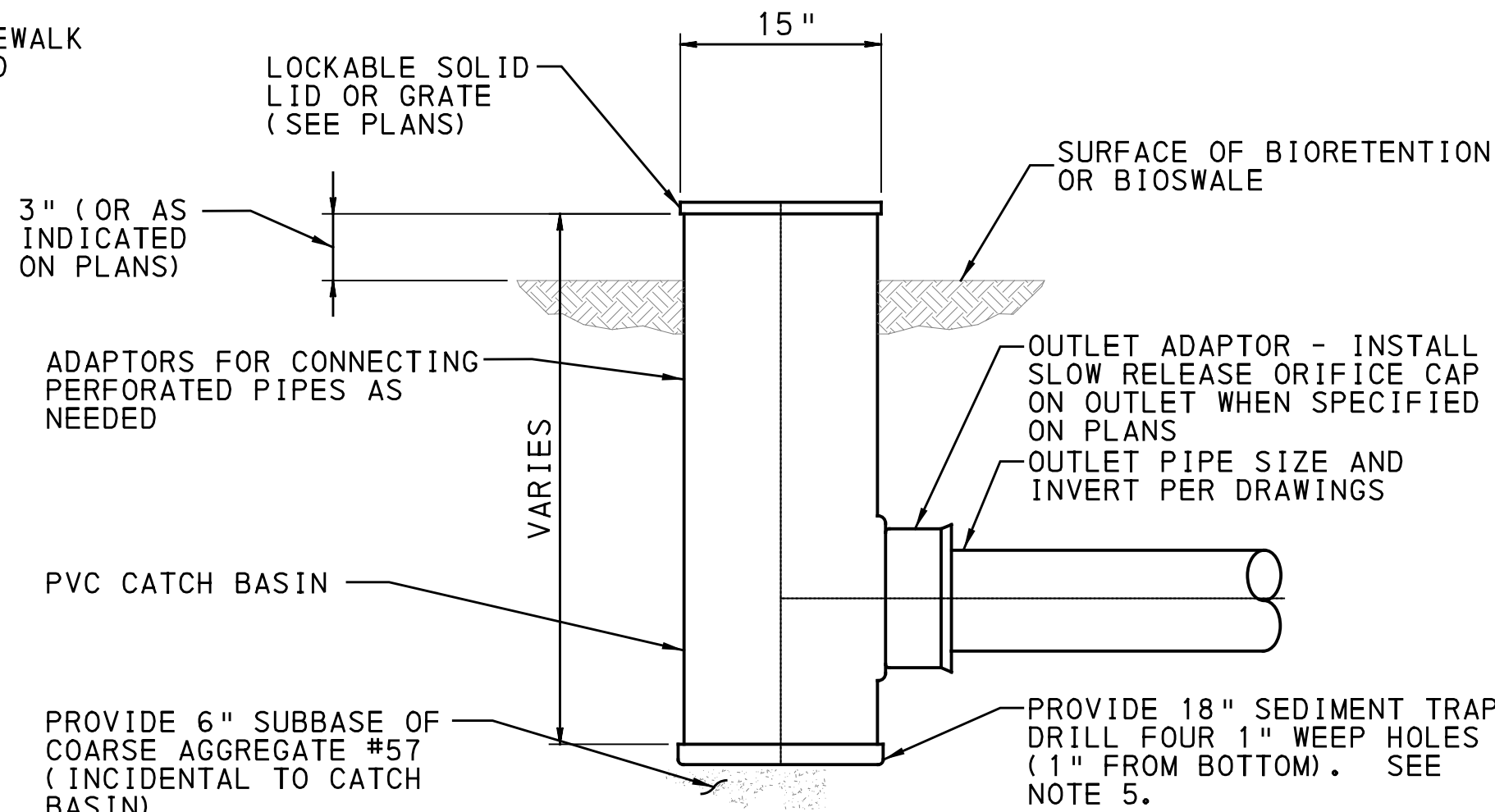
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- NOTES:
1. INSTALL HEAVY DUTY GRATE ON CLEANOUT IN PAVED AREAS.
 2. ALL STEEL (LIDS) SHALL BE DOCUMENTED MADE IN THE USA

CLEANOUT, SOLID LID IN PAVED AREAS AND SOLID LID IN NON-PAVED AREAS

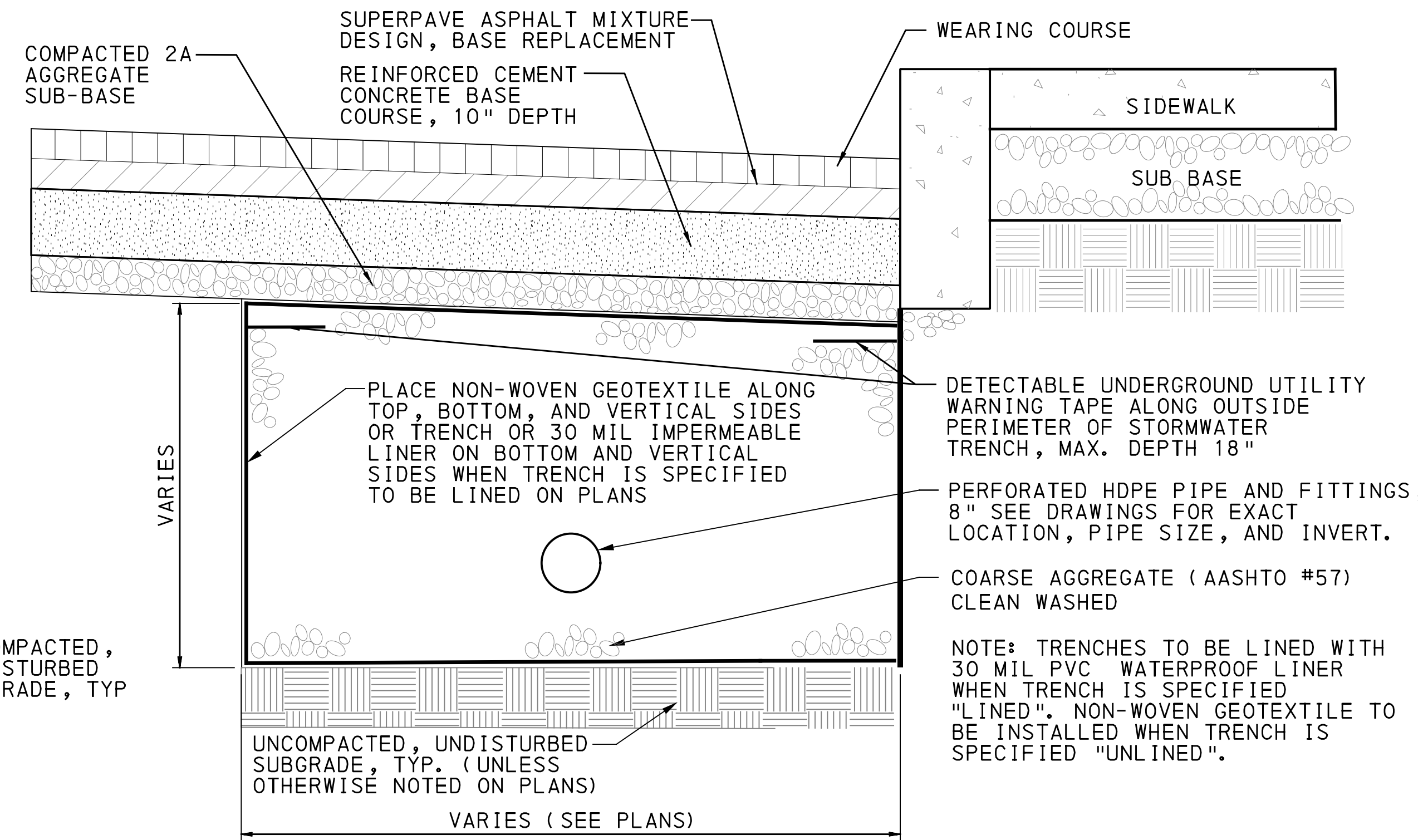
NOT TO SCALE



- NOTES:
1. BASE AND BACKFILL SHALL BE HAND PLACED AND TAMPED IN 6" LIFTS. PLACE ALL CATCH BASINS ON 6" THICK AGGREGATE LEVELING COURSE ON COMPACTED SUBGRADE.
 2. SEE DRAWINGS FOR RIM AND INVERT ELEVATIONS.

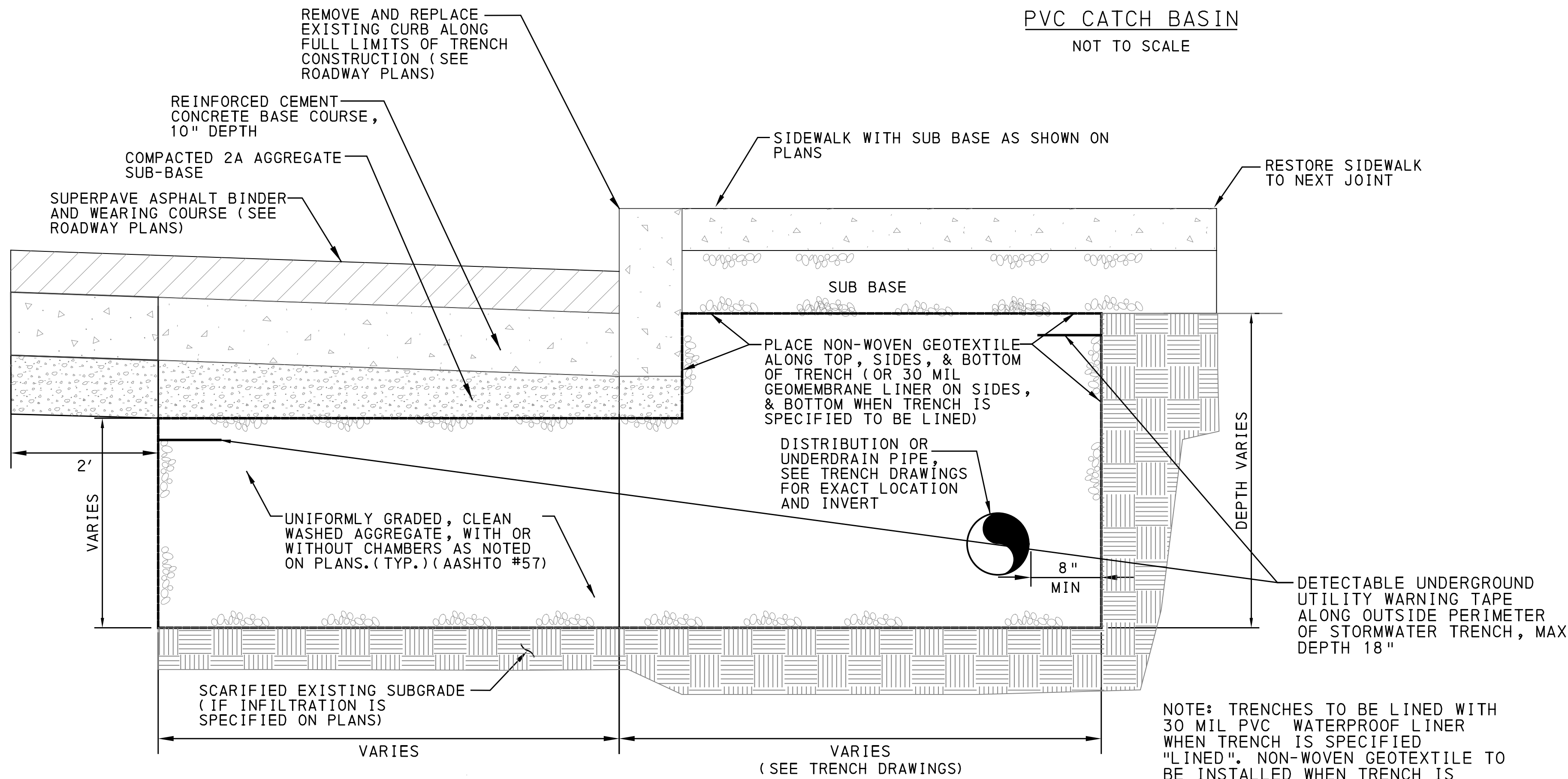
PVC CATCH BASIN

NOT TO SCALE



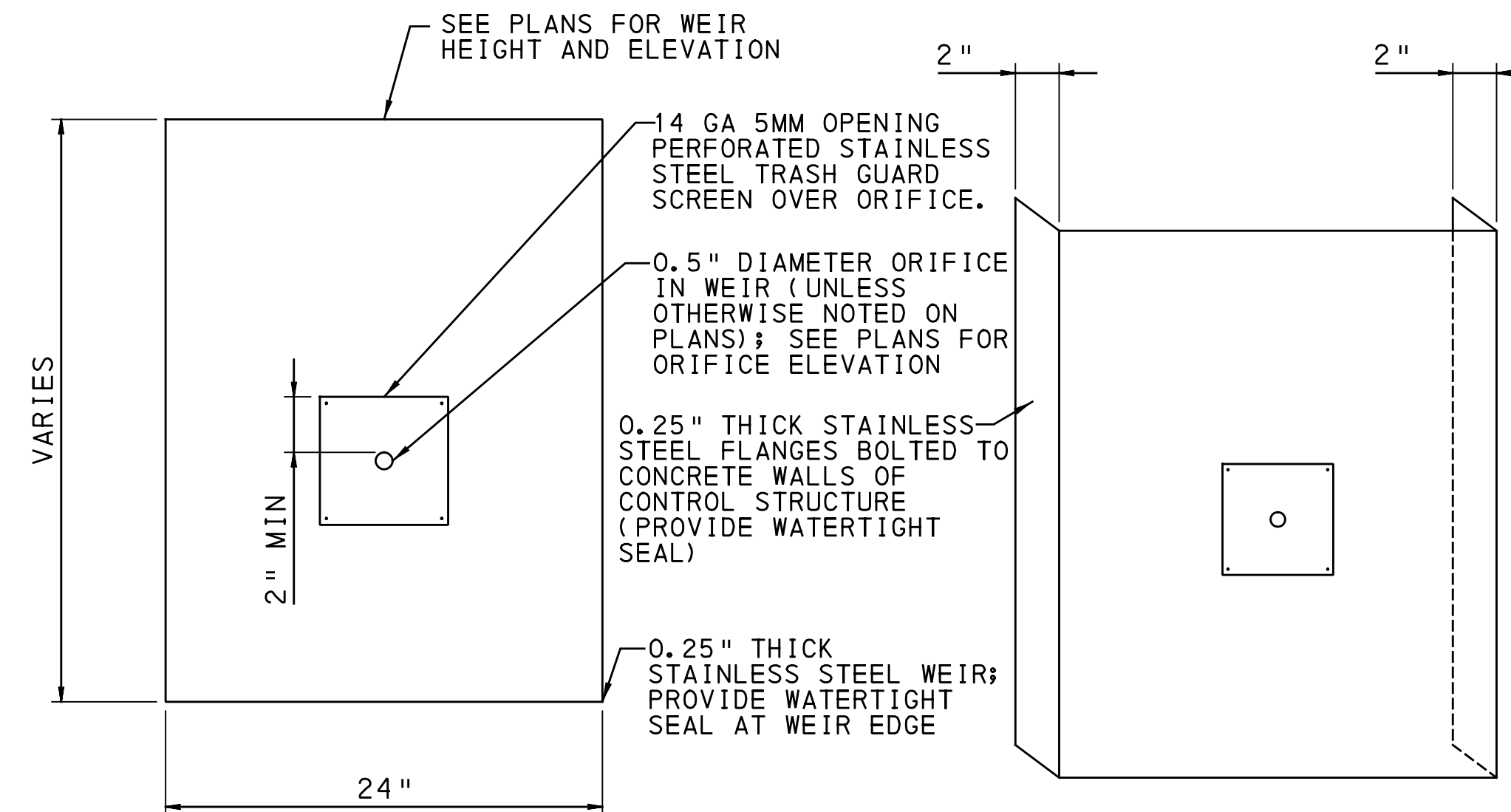
TYPICAL STONE STORAGE TRENCH UNDER STREET (NO CHAMBERS) - SECTION

NOT TO SCALE



TYPICAL STORMWATER TRENCH UNDER SIDEWALK AND STREET

NOT TO SCALE



PLAN

ISOMETRIC

- NOTE:
- ALL SCREWS, NUTS, AND BOLTS SHALL BE STAINLESS STEEL UNLESS OTHERWISE SPECIFIED.

SS WEIR WITH ORIFICE AND TRASH SCREEN

NOT TO SCALE

SEE BRT PLAN SET FOR CONSTRUCTION DRAWINGS

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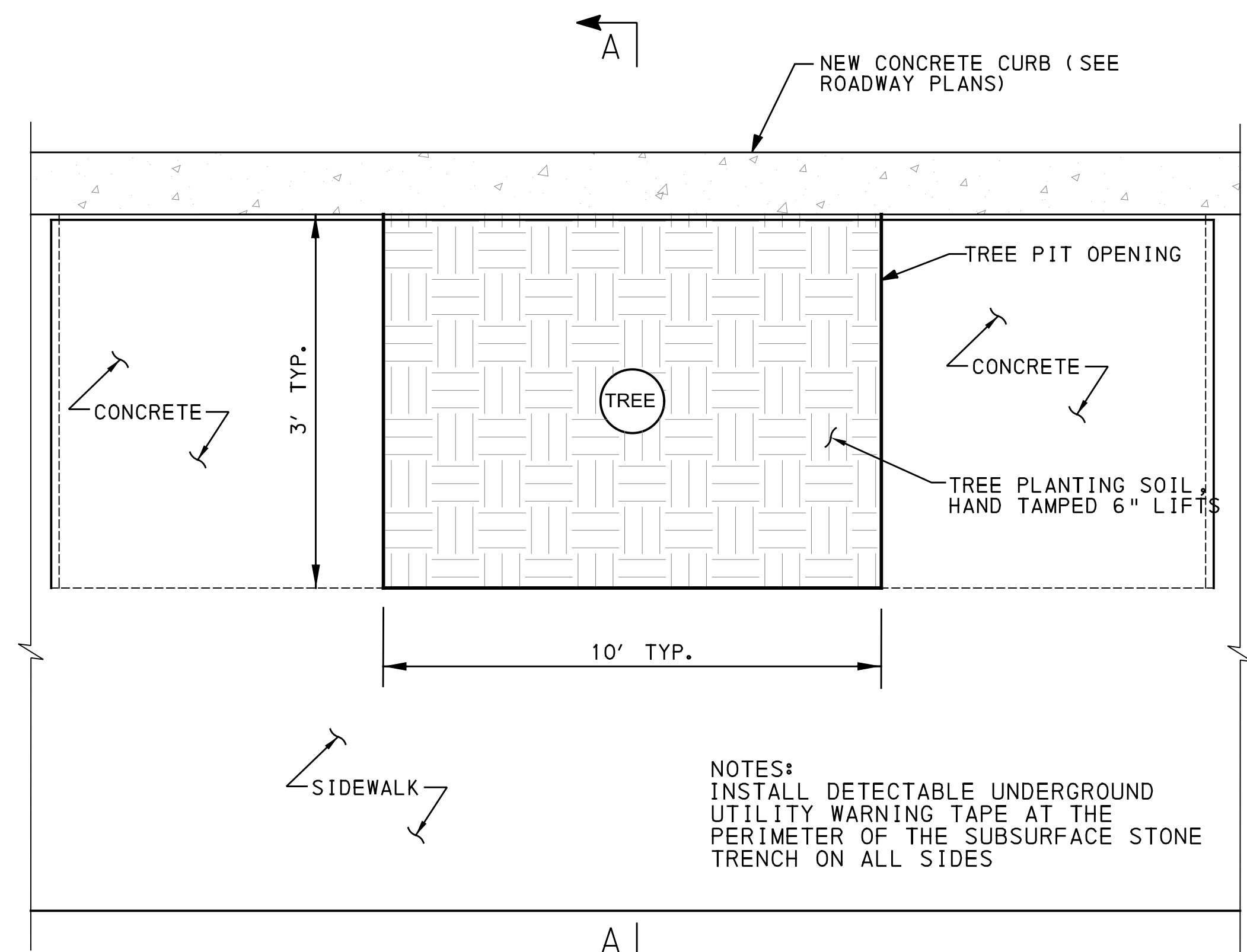
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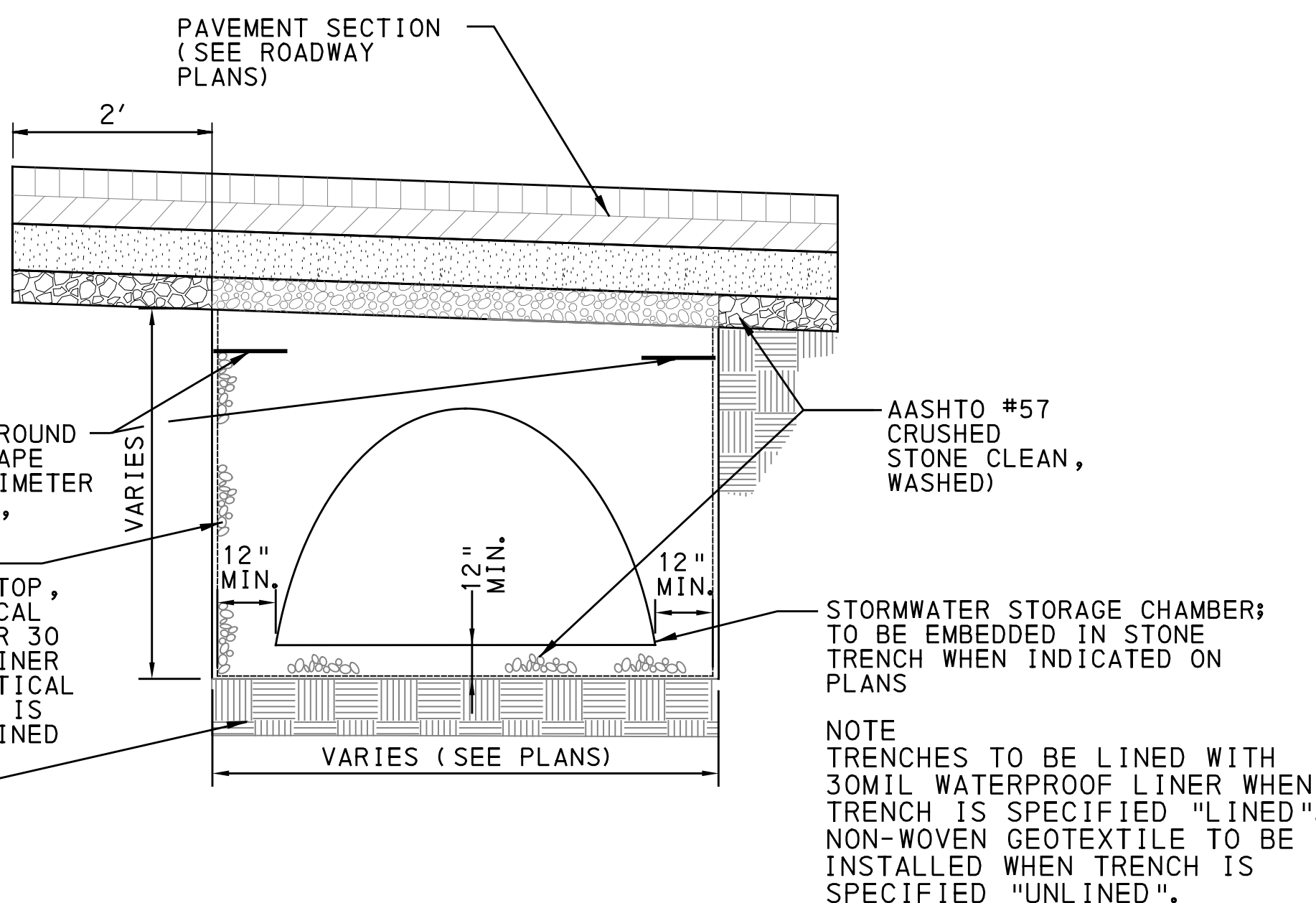
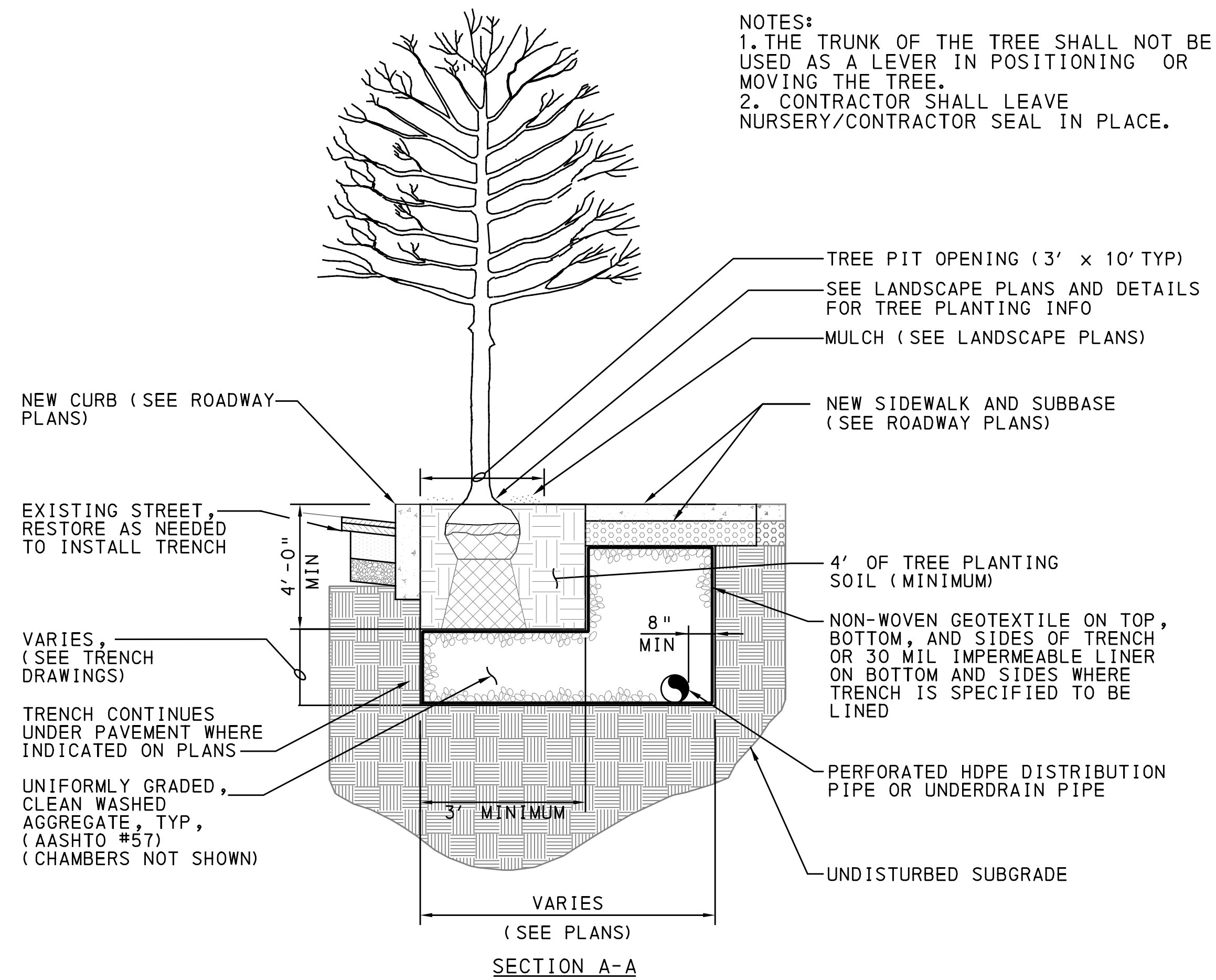
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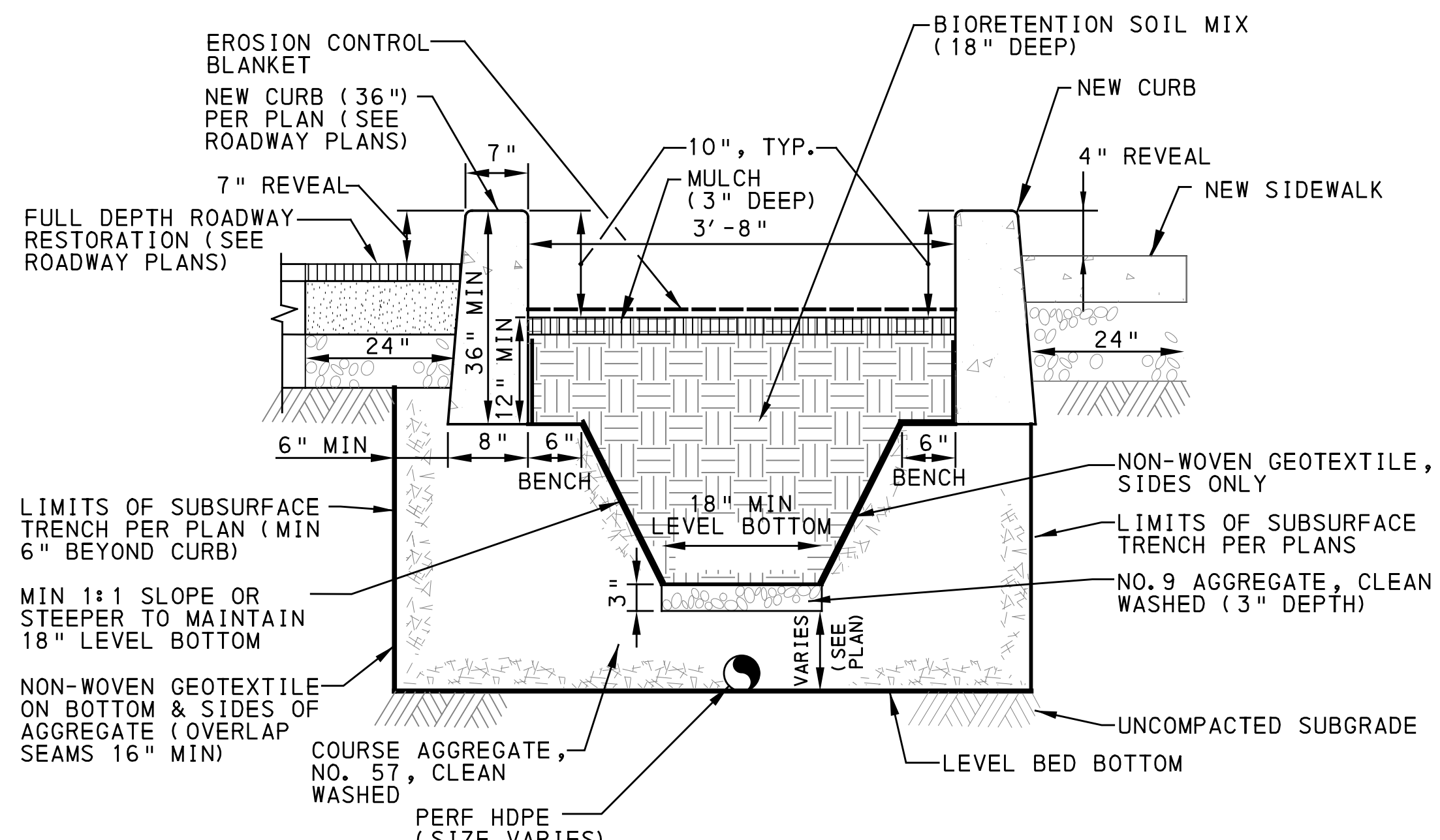
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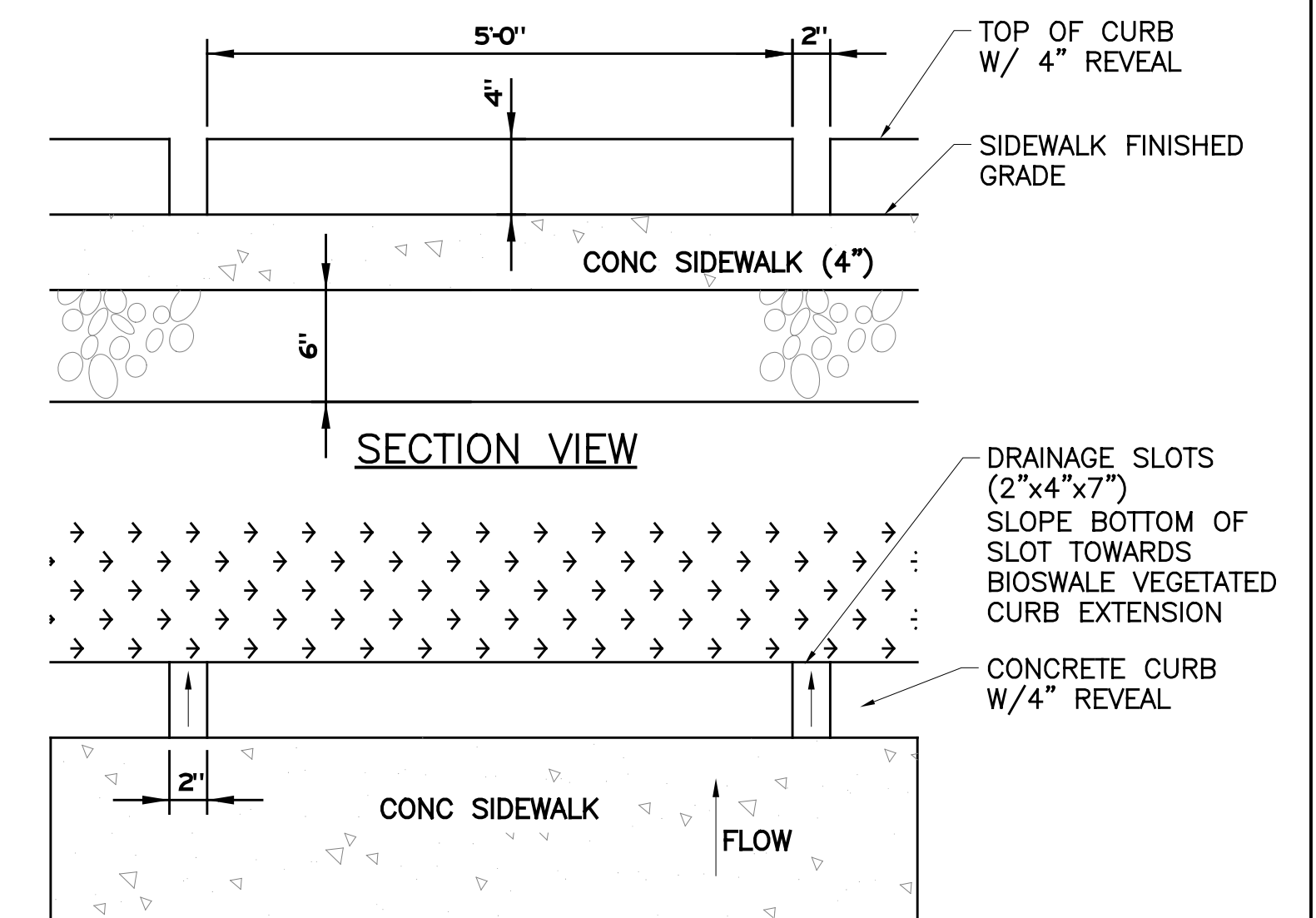
TYPICAL TREE TRENCH DETAIL
NOT TO SCALE



TYPICAL CHAMBER AND STONE STORAGE TRENCH UNDER STREET - SECTION
NOT TO SCALE



BIORETENTION (BR-A1) SECTION
NOT TO SCALE



DRAINAGE SLOTS AT BIOSWALES
NOT TO SCALE

SEE BRT PLAN SET FOR CONSTRUCTION DRAWINGS



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IN CHARGE	ALP
DATE	09/29/20
SCALE	AS SHOWN

PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

BUS RAPID TRANSIT ROADWAY
STORMWATER MANAGEMENT PLANS
GI DETAILS

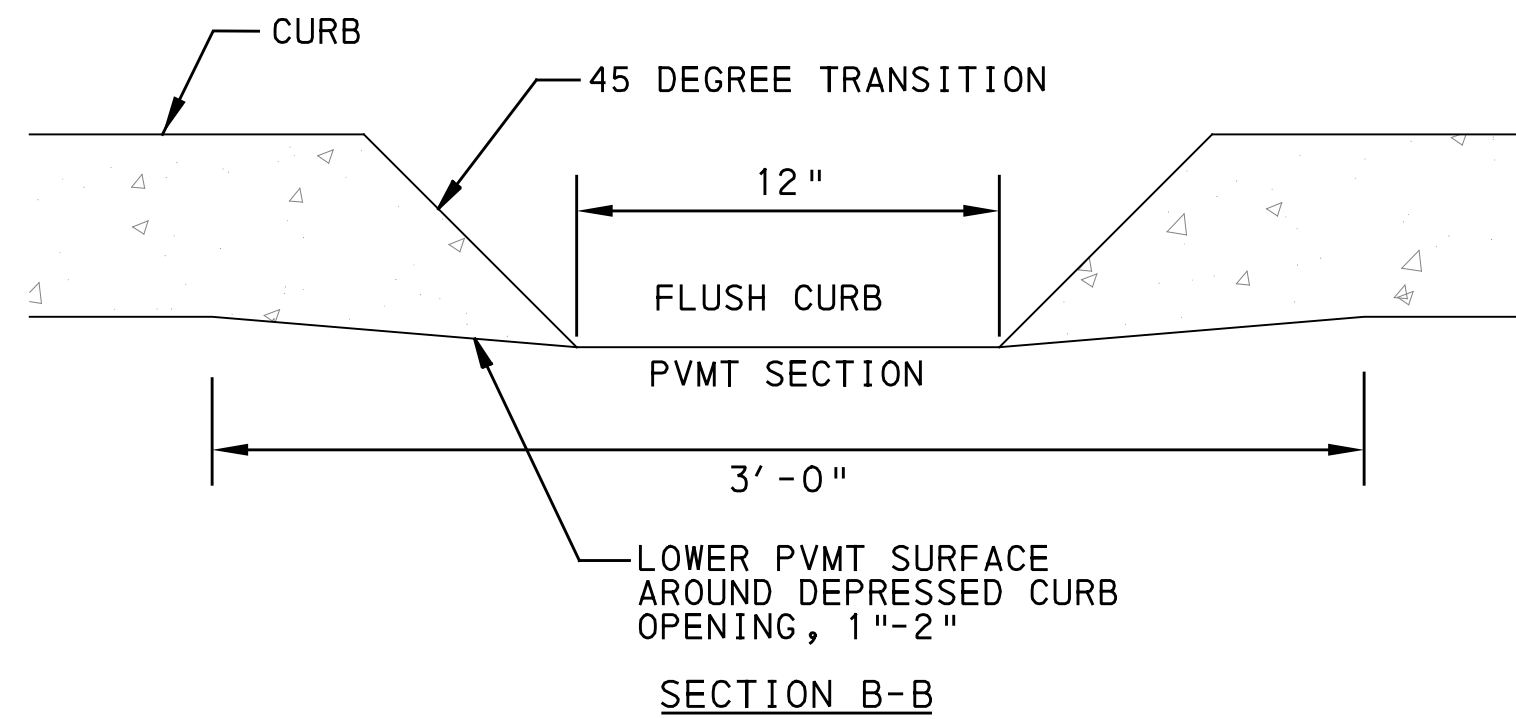
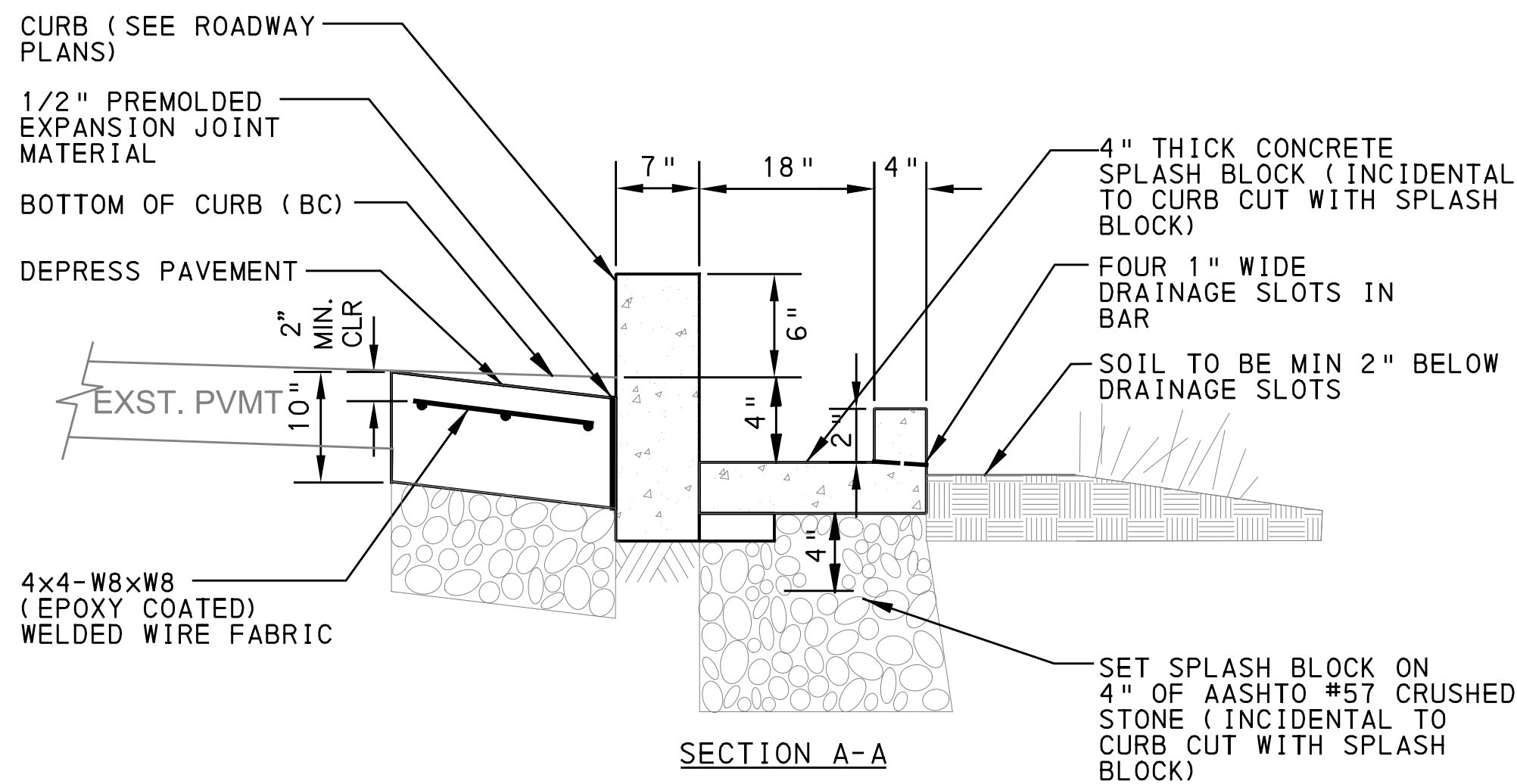
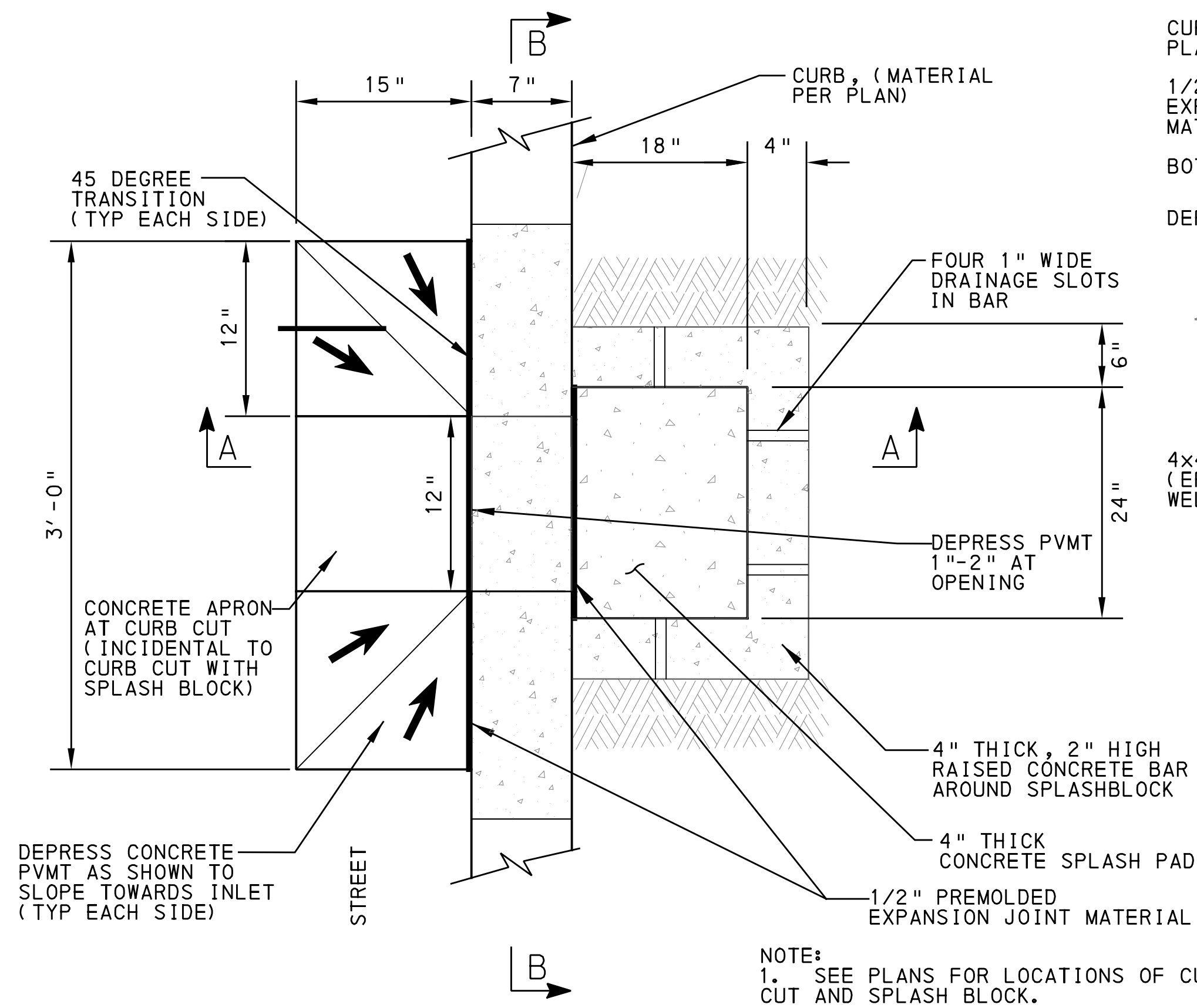


CONTRACT NO. BRT-001

DWG. NO. SWM7 SHT. 7

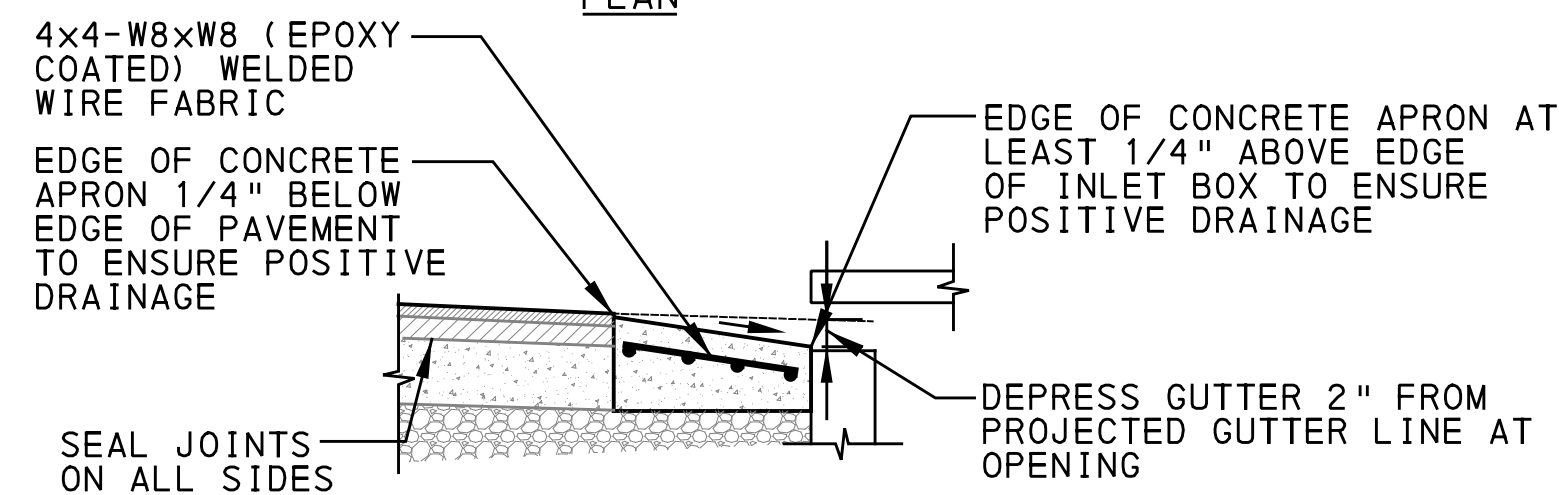
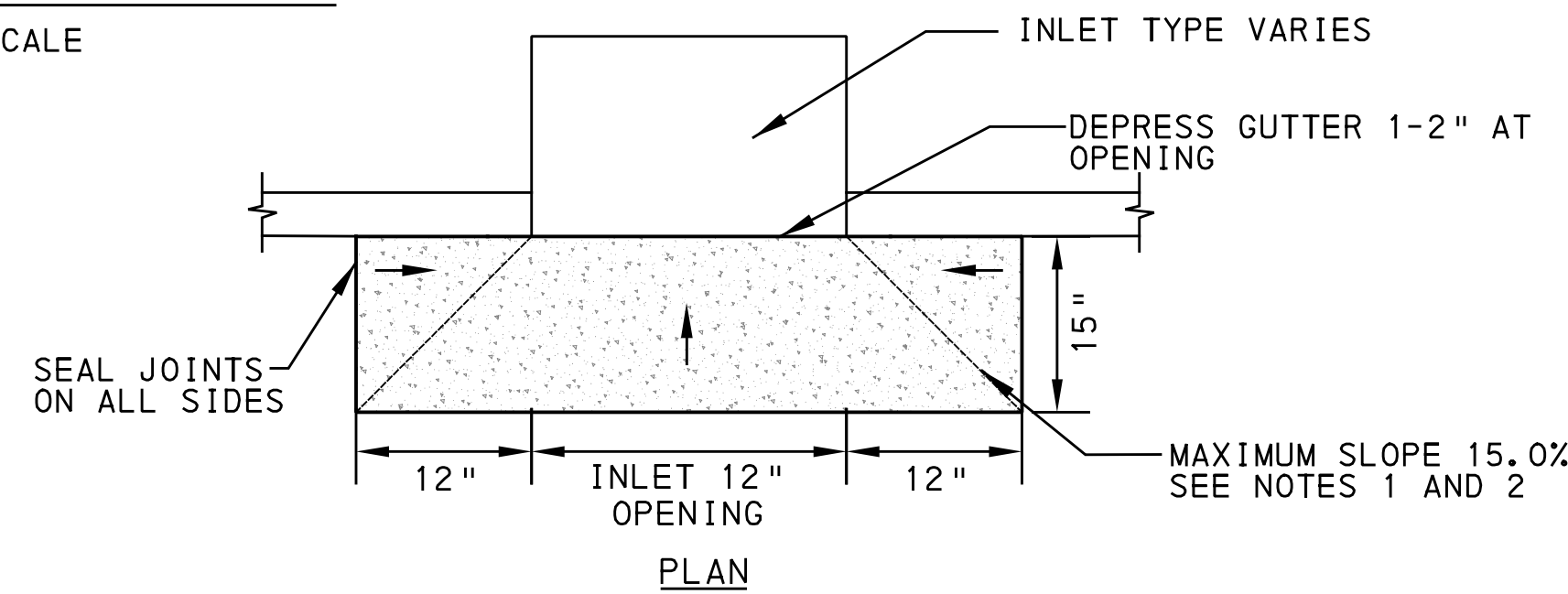
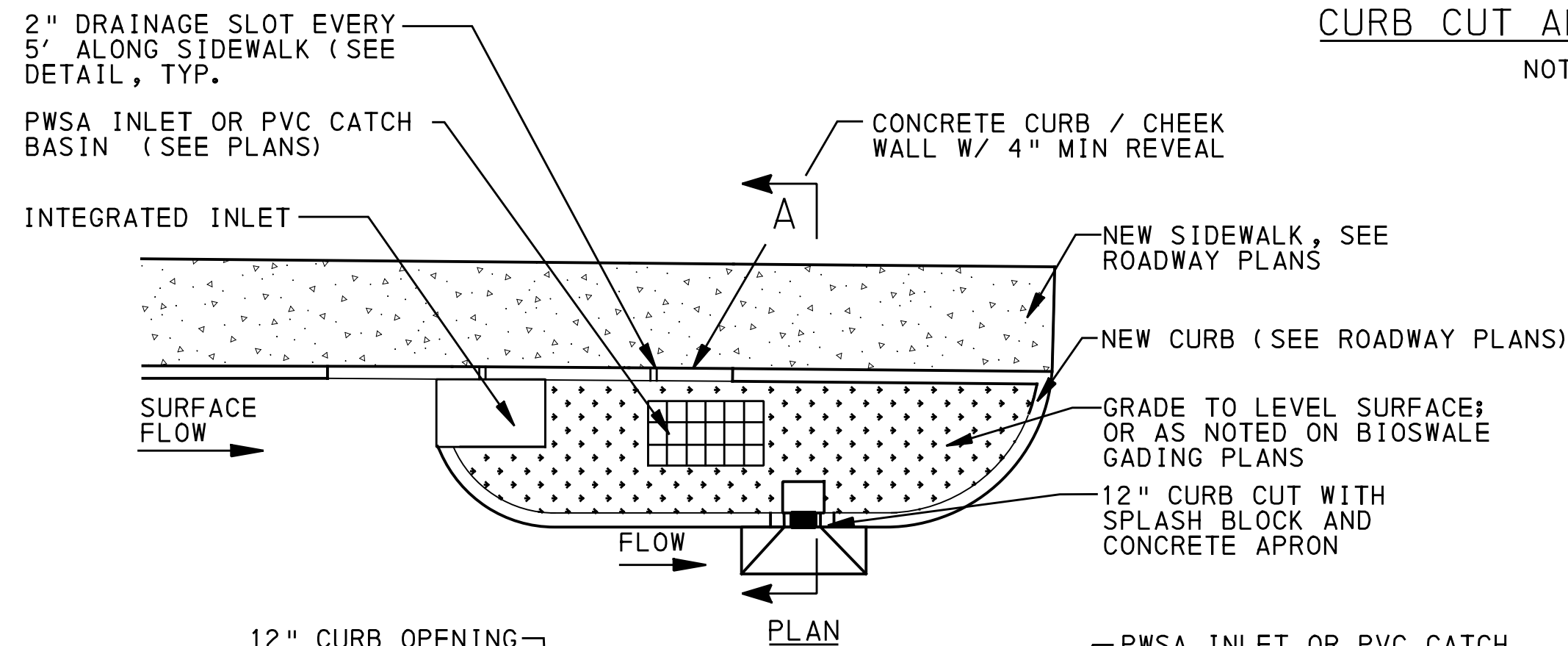
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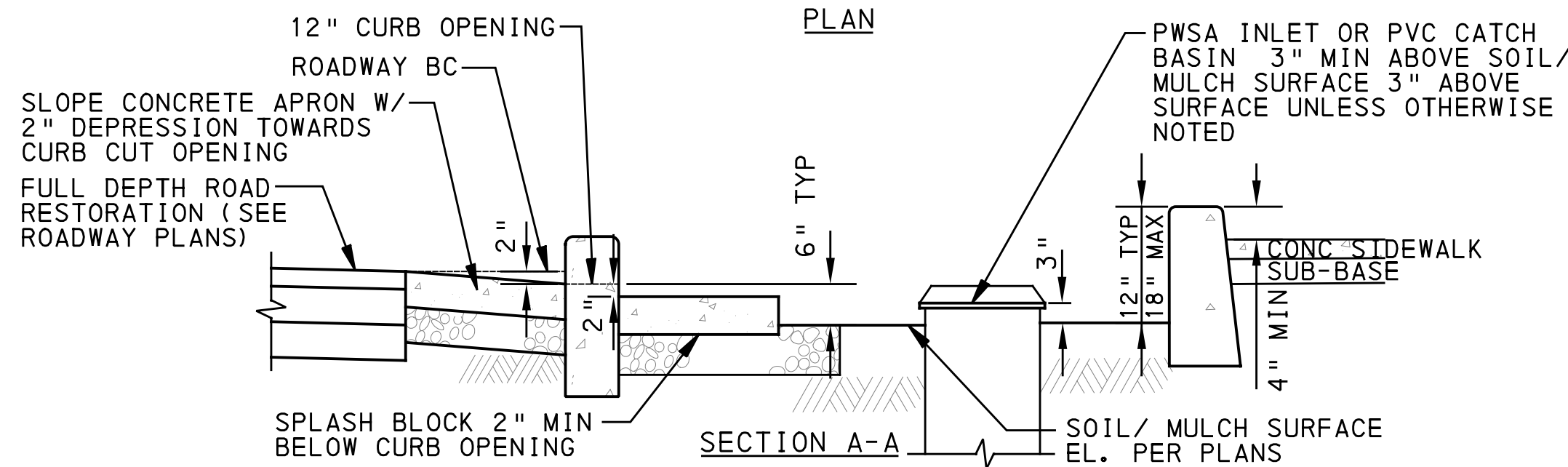
4' x 2' JXN BOX
DETAIL TO BE
ADDED

CURB CUT AND SPLASH BLOCK
NOT TO SCALE



NOTE
 1. MAXIMUM SLOPE OF APRON PARALLEL TO CURB IS 7H:1V (15.0%), 12H:1V (8.5%) IS PREFERRED.
 2. MAXIMUM SLOPE OF APRON PERPENDICULAR TO CURB IS 7H:1V (15.0%), 12H:1V (8.5%) IS PREFERRED.
 3. CONCRETE APRON THICKNESS TO MATCH BOTTOM OF EXISTING CONCRETE BASE COURSE.
 4. CONCRETE BASE COURSE MINIMUM THICKNESS IS 10" ON CITY STREETS.

CONCRETE APRON
NOT TO SCALE



TYPICAL BIOSWALE SECTIONS W/ RELATIVE ELEVATIONS
NOT TO SCALE

SEE BRT PLAN SET FOR CONSTRUCTION DRAWINGS



Gulf Tower
707 Grant Street
5th Floor
Pittsburgh, PA 15219



400 Industry Dr.
Pittsburgh, PA 15275

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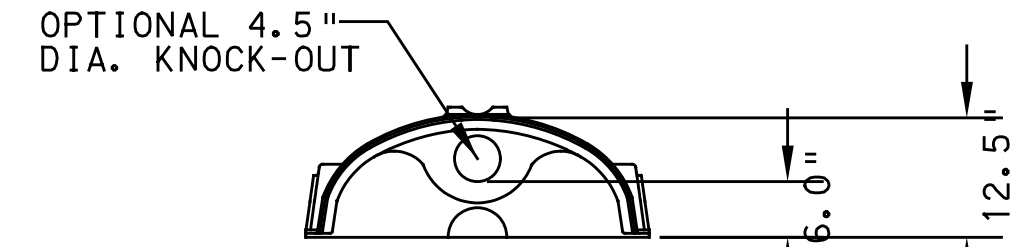
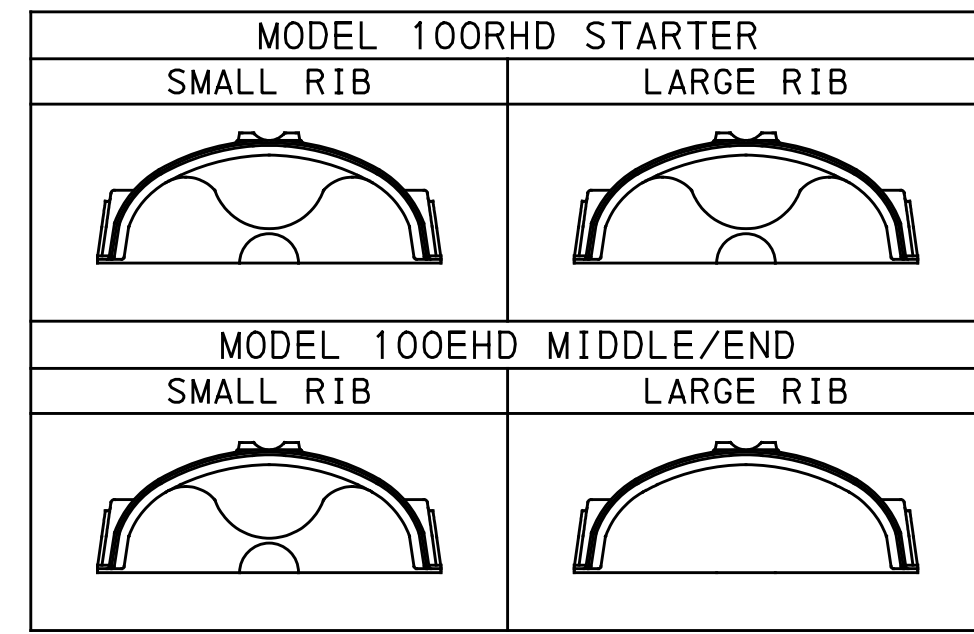
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DATE	09/29/20
SCALE	AS SHOWN

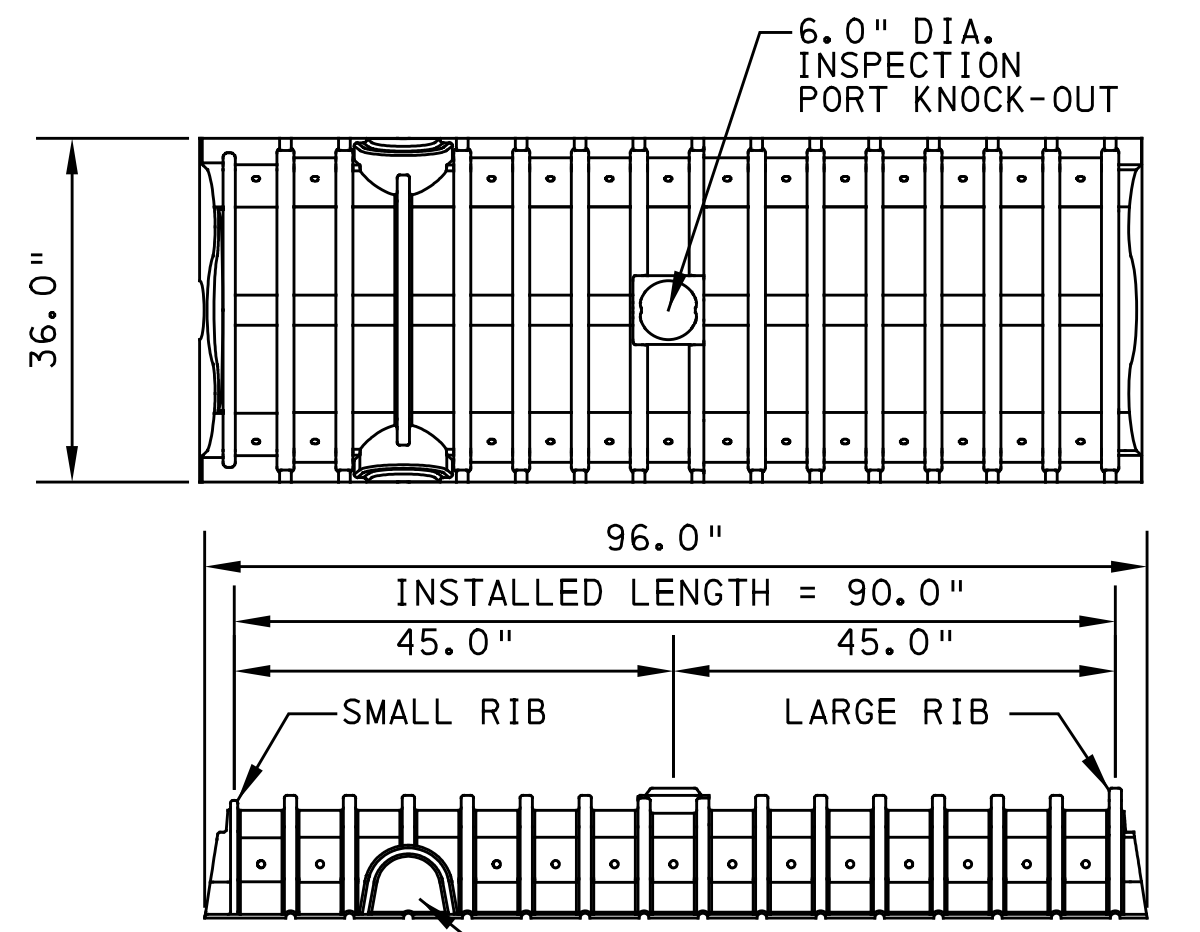
PORT AUTHORITY OF ALLEGHENY COUNTY PITTSBURGH PENNSYLVANIA	
BUS RAPID TRANSIT ROADWAY STORMWATER MANAGEMENT PLANS GI DETAILS	
Port Authority <small>connecting people to life</small>	CONTRACT NO. BRT-001
	DWG. NO. SWM8 SHT. 8

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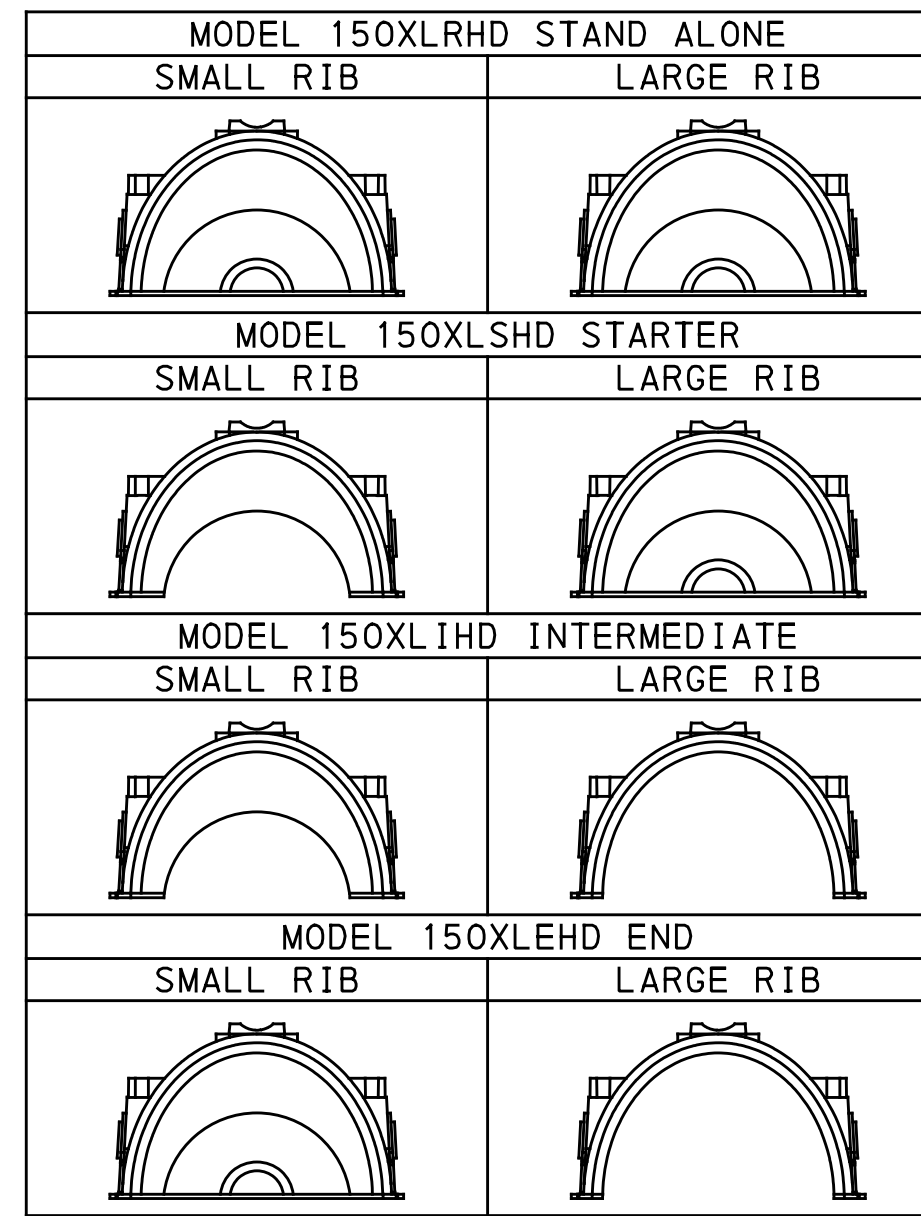
CULTEC CONTACTOR 100HD CHAMBER STORAGE = 1.866 CF/FT
 INSTALLED LENGTH ADJUSTMENT = 0.5'
 ALL CONTACTOR 100HD HEAVY DUTY UNITS ARE MARKED WITH A COLORED STRIPE FORMED INTO THE PART ALONG THE LENGTH OF THE CHAMBER. TOTAL SYSTEM LENGTH VARIES (SEE PLANS)



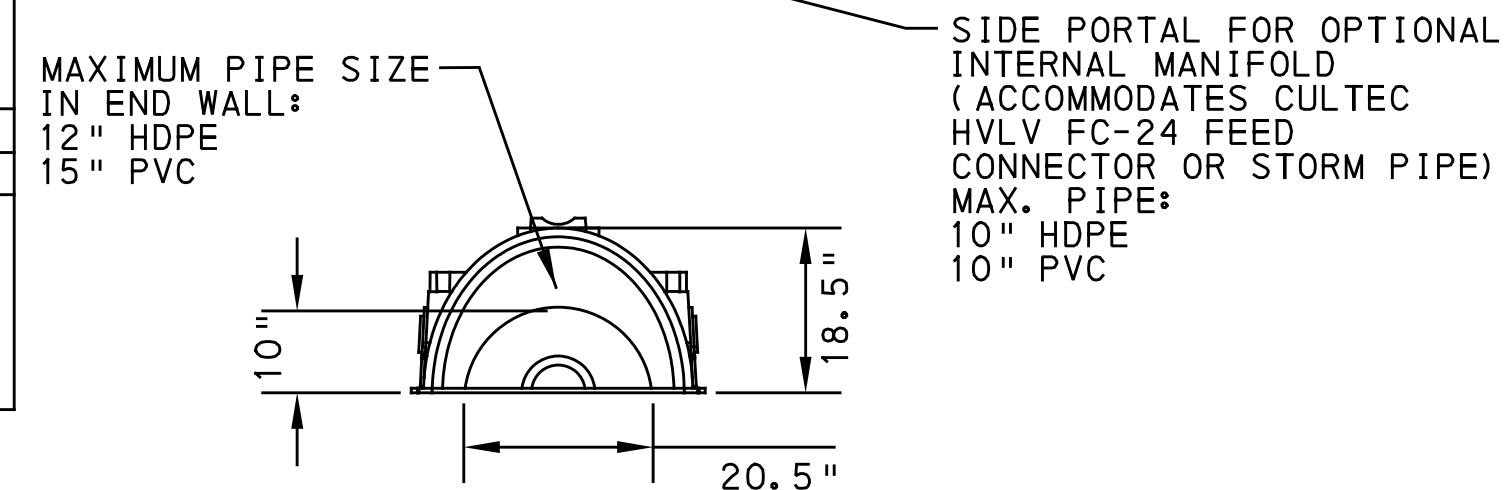
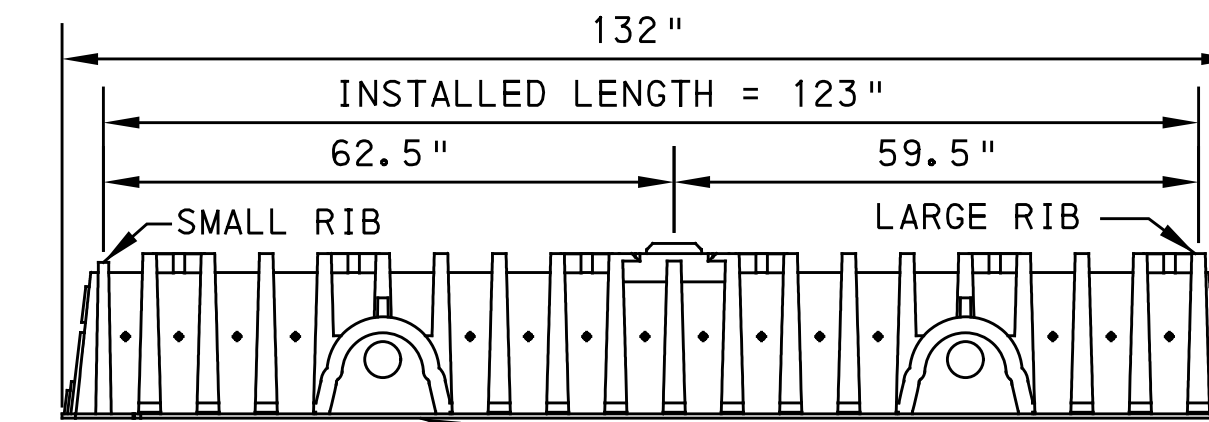
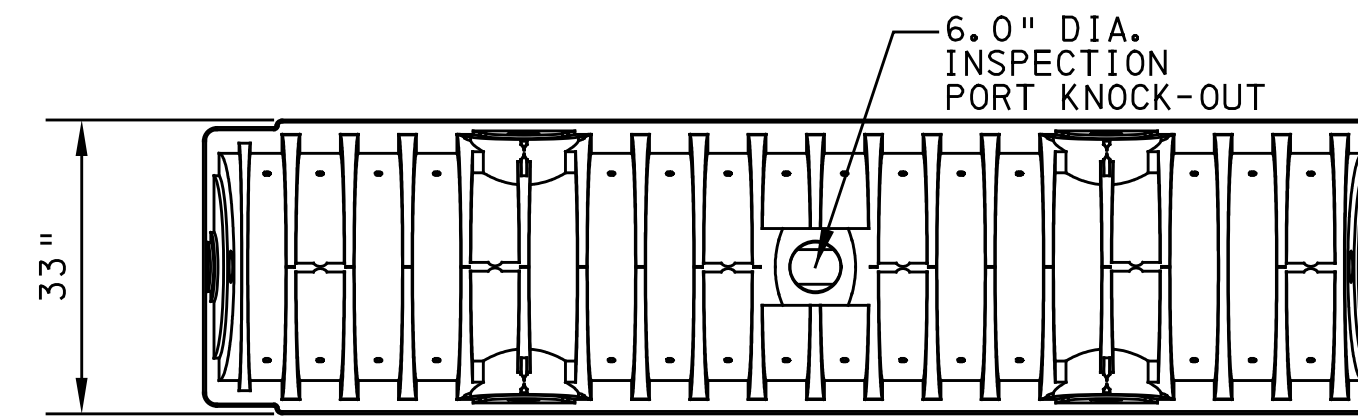
SIDE PORTAL FOR OPTIONAL INTERNAL MANIFOLD (ACCOMMODATES CULTEC HVLV SFCx2 FEED CONNECTOR OR STORM PIPE)
 MAX. PIPE:
 6" HDPE
 6" PVC

12" HEAVY DUTY CHAMBER UNIT THREE VIEW (CULTEC CONTACTOR 100HD, OAE)

NOT TO SCALE

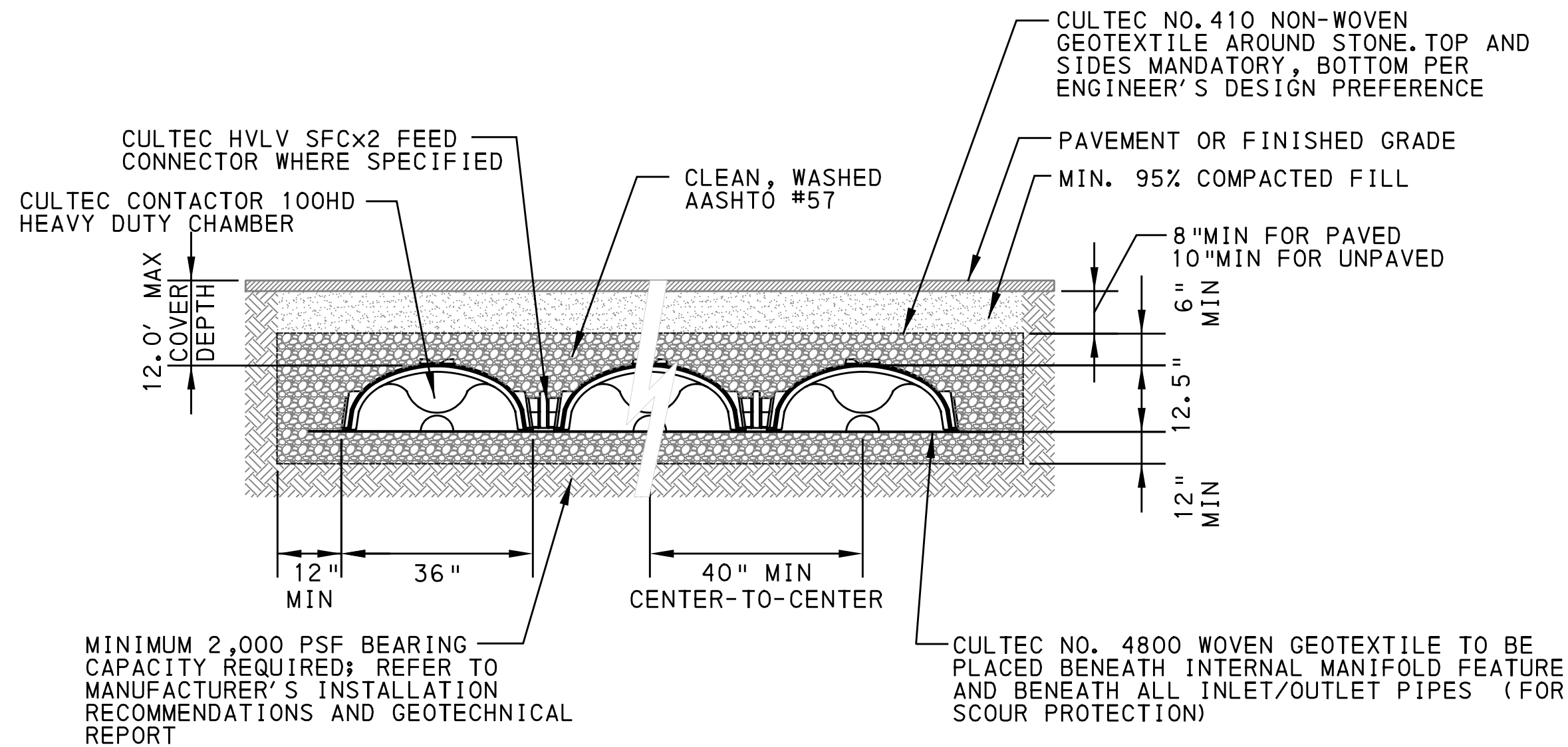


CULTEC RECHARGER 150XLHD CHAMBER STORAGE = 2.65 CF/FT
 INSTALLED LENGTH ADJUSTMENT = 0.75'
 TOTAL SYSTEM LENGTH VARIES (SEE PLANS)



18" HEAVY DUTY CHAMBER UNIT THREE VIEW (CULTEC RECHARGER 150XLHD, OAE)

NOT TO SCALE

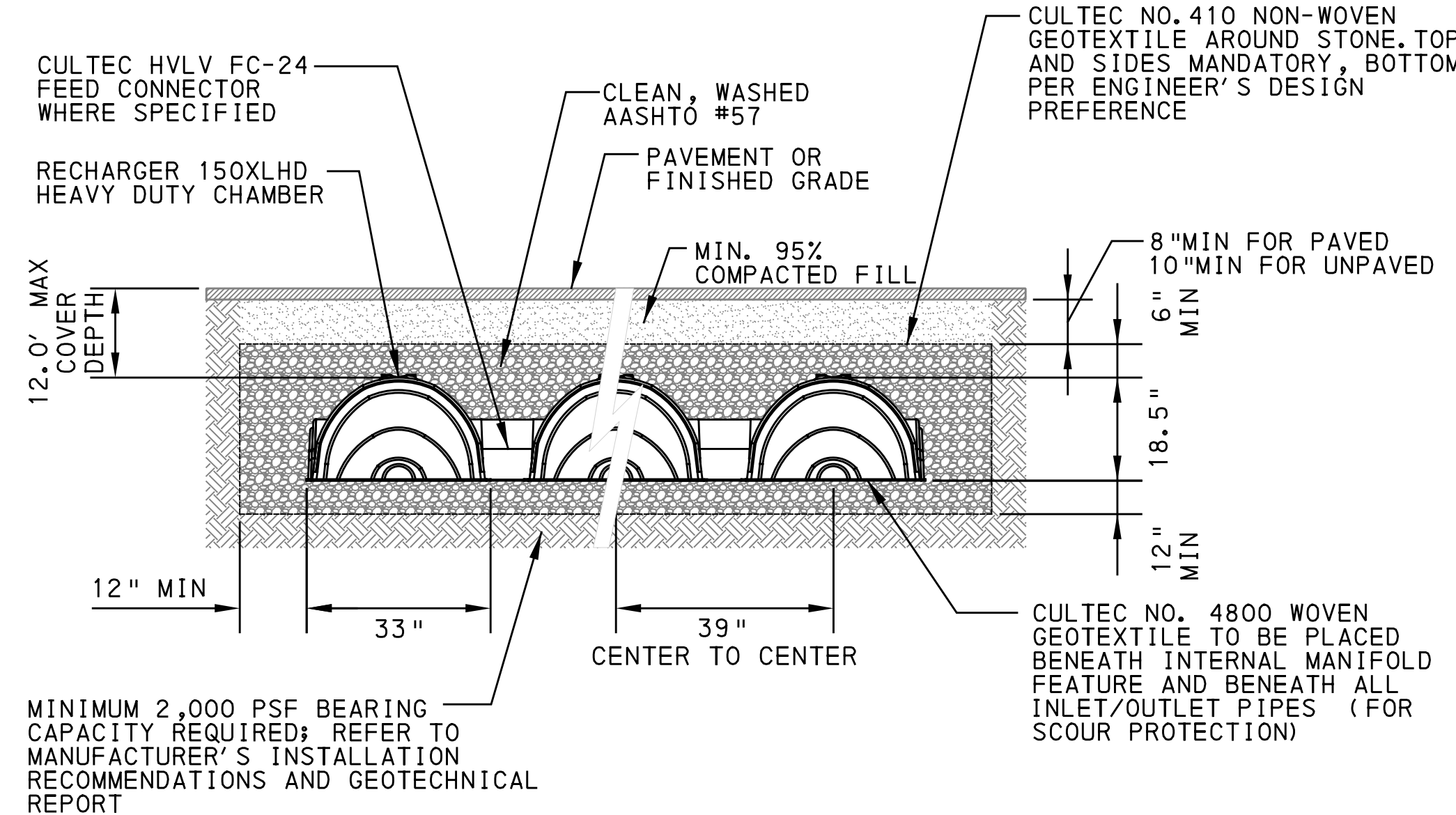


MINIMUM 2,000 PSF BEARING CAPACITY REQUIRED; REFER TO MANUFACTURER'S INSTALLATION RECOMMENDATIONS AND GEOTECHNICAL REPORT

CULTEC NO. 4800 WOVEN GEOTEXTILE TO BE PLACED BENEATH INTERNAL MANIFOLD FEATURE AND BENEATH ALL INLET/OUTLET PIPES (FOR SCOUR PROTECTION)

12" HEAVY DUTY CHAMBER UNIT SYSTEM CROSS SECTION (CULTEC CONTACTOR 100HD, OAE)

NOT TO SCALE



MINIMUM 2,000 PSF BEARING CAPACITY REQUIRED; REFER TO MANUFACTURER'S INSTALLATION RECOMMENDATIONS AND GEOTECHNICAL REPORT

CULTEC NO. 4800 WOVEN GEOTEXTILE TO BE PLACED BENEATH INTERNAL MANIFOLD FEATURE AND BENEATH ALL INLET/OUTLET PIPES (FOR SCOUR PROTECTION)

18" HEAVY DUTY CHAMBER UNIT SYSTEM CROSS SECTION (CULTEC RECHARGER 150XLHD, OAE)

NOT TO SCALE

CHAMBER SYSTEM NOTES:
 INDIVIDUAL SYSTEMS MAY BE DESIGNED WITH SINGLE OR MULTIPLE ROWS OF CHAMBERS.
 WHEN TRENCH IS SPECIFIED AS "LINED, TRENCH SLOW RELEASE SYSTEMS SHALL BE COMPLETELY WRAPPED IN IMPERMEABLE MEMBRANE.
 TOP AND SIDES OF CHAMBERS TO BE LINED WITH HDPE GEOMEMBRANE ROOT-INTRUSION BARRIER IN TREE TRENCHES AS SPECIFIED ON PLANS.

SEE BRT PLAN SET FOR CONSTRUCTION DRAWINGS



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 5th Floor
 Pittsburgh, PA 15219



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 Pittsburgh, PA 15275

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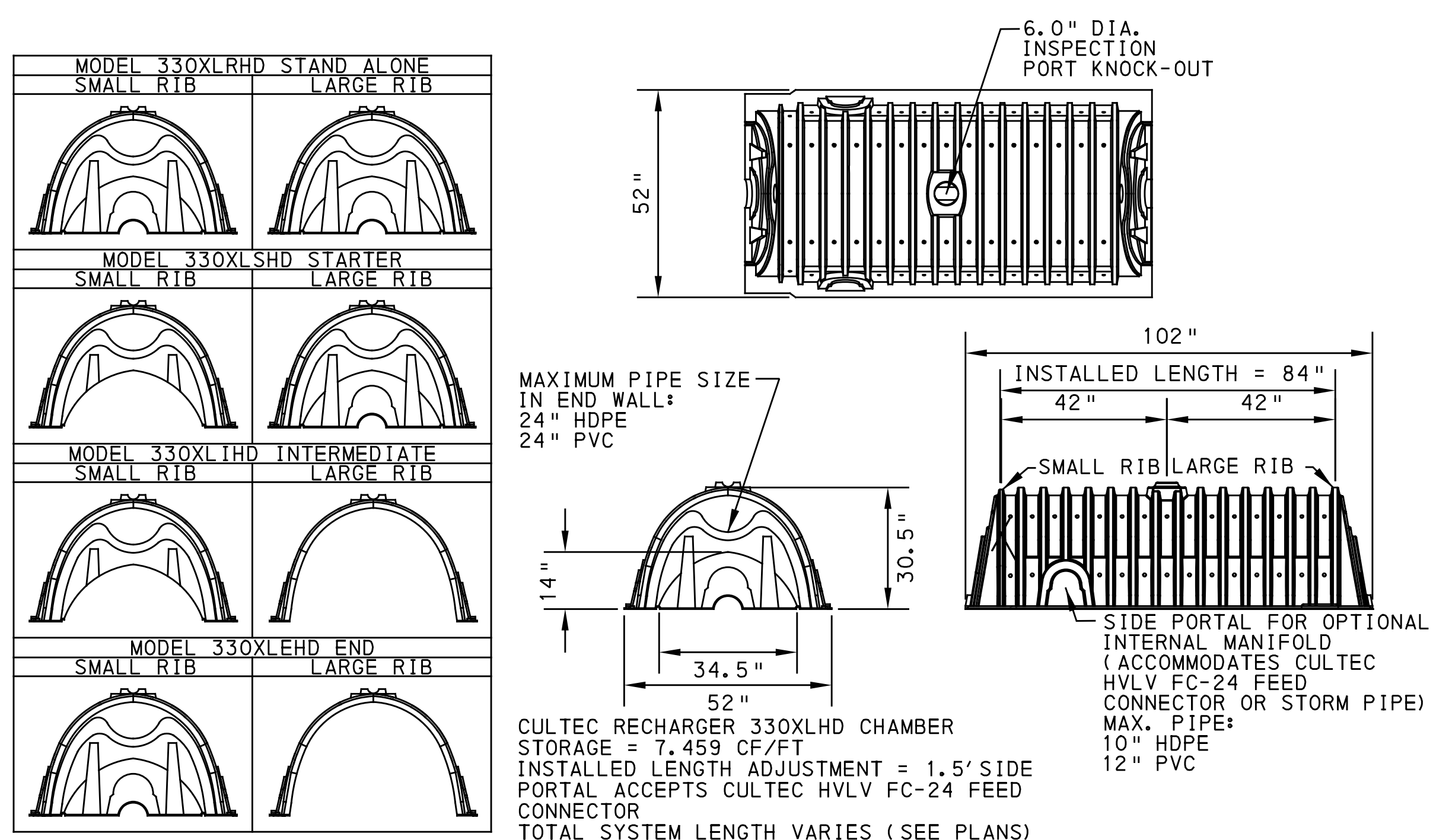
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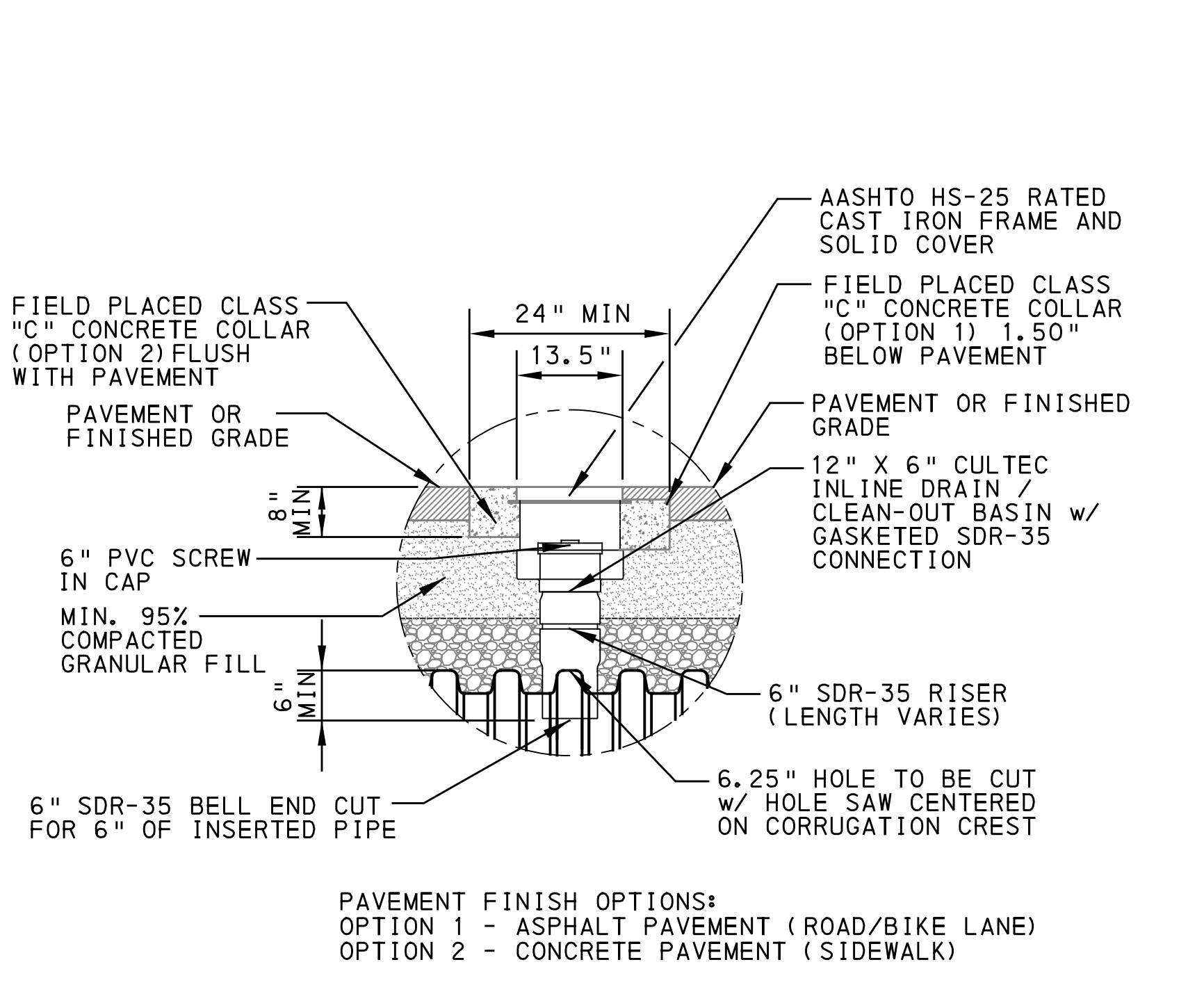
PORT AUTHORITY OF ALLEGHENY COUNTY PITTSBURGH PENNSYLVANIA	
BUS RAPID TRANSIT ROADWAY STORMWATER MANAGEMENT PLANS GI DETAILS	
Port Authority <small>connecting people to life</small>	CONTRACT NO. BRT-001
	DWG. NO. SWM9 SHT. 9

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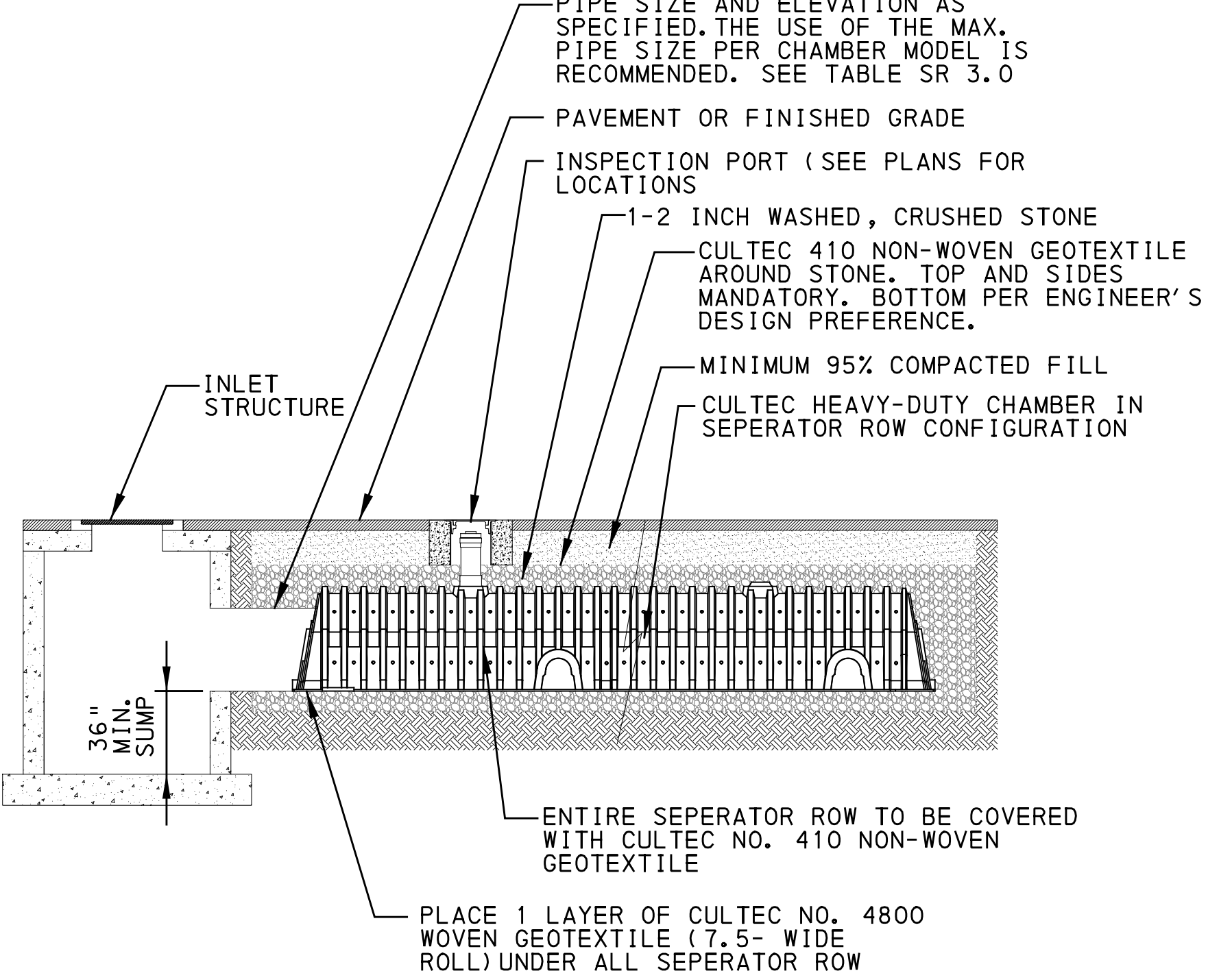
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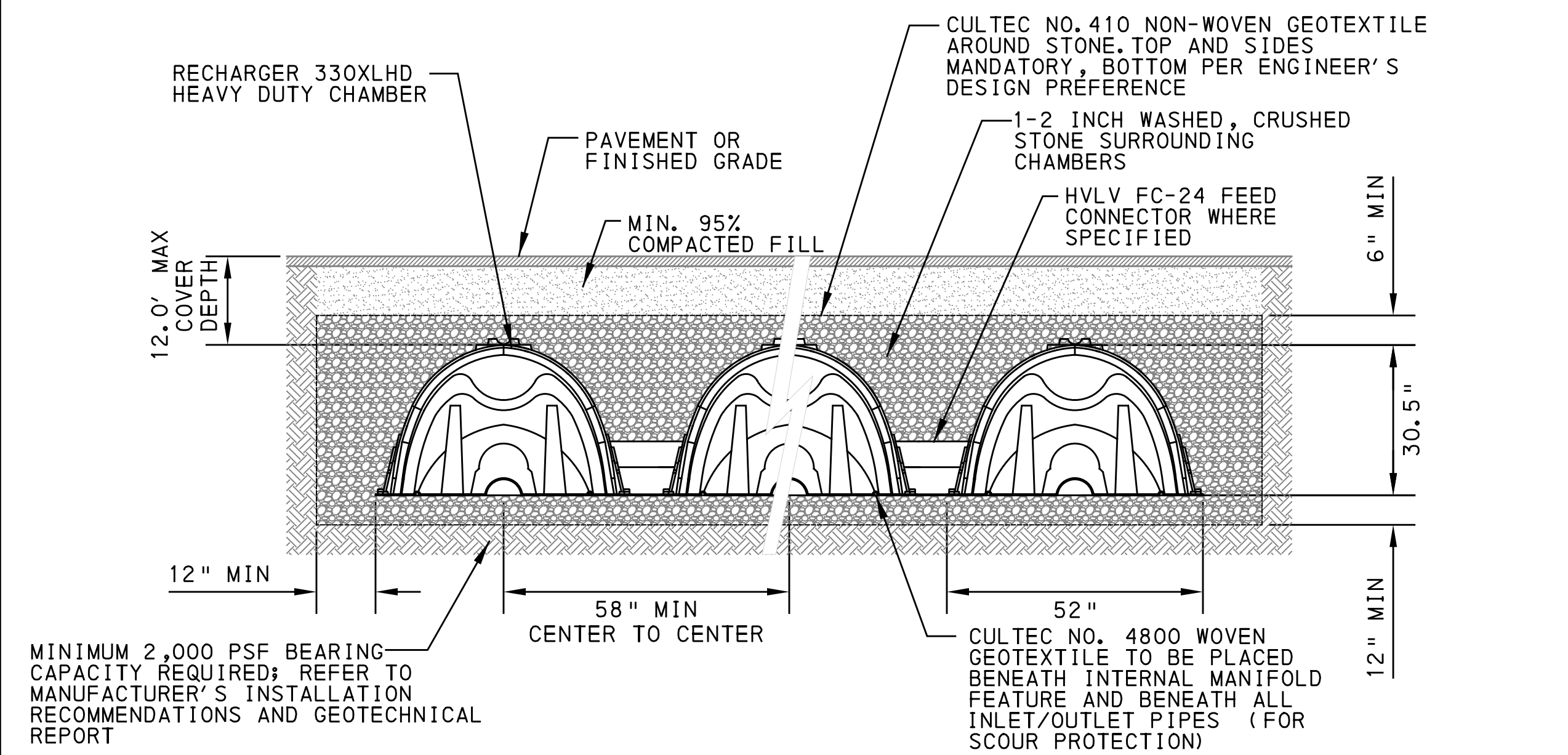
30" HEAVY DUTY CHAMBER UNIT THREE VIEW (CULTEC RECHARGER 330XLHD, OAE)
NOT TO SCALE



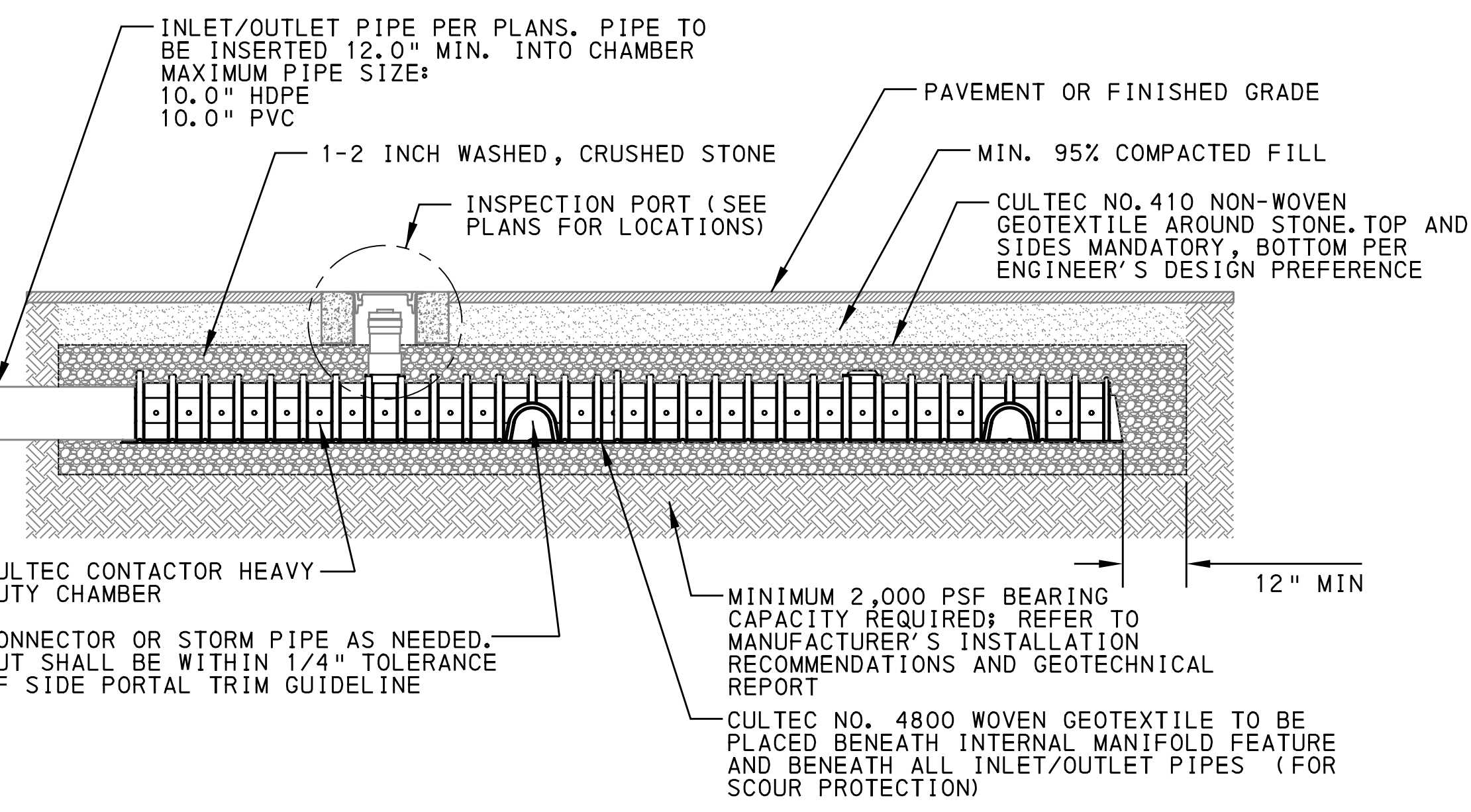
CHAMBER SYSTEM INSPECTION PORT - ZOOM DETAIL
NOT TO SCALE



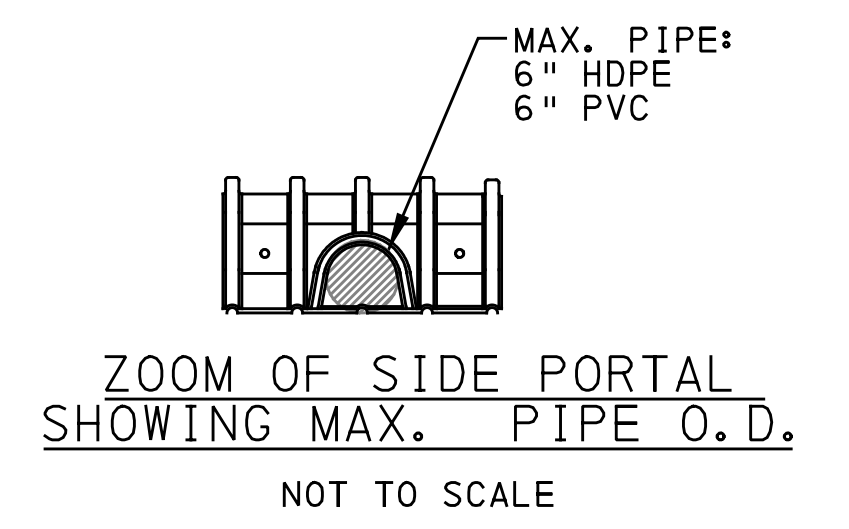
TYPICAL SEPARATOR ROW CONFIGURATION CROSS SECTION WITH INSPECTION PORT
NOT TO SCALE



30" HEAVY DUTY CHAMBER UNIT CROSS SECTION (CULTEC RECHARGER 330XLHD, OAE)
NOT TO SCALE



CHAMBER SYSTEM MANIFOLD - TYPICAL PROFILE
NOT TO SCALE



ZOOM OF SIDE PORTAL SHOWING MAX. PIPE O.D.
NOT TO SCALE

CHAMBER SYSTEM NOTES:
INDIVIDUAL SYSTEMS MAY BE DESIGNED WITH SINGLE OR MULTIPLE ROWS OF CHAMBERS. WHEN TRENCH IS SPECIFIED AS "LINED", TRENCH SLOW RELEASE SYSTEMS SHALL BE COMPLETELY WRAPPED IN IMPERMEABLE MEMBRANE. TOP AND SIDES OF CHAMBERS TO BE LINED WITH HDPE GEOMEMBRANE ROOT-INTRUSION BARRIER IN TREE TRENCHES AS SPECIFIED ON PLANS.

SEE BRT PLAN SET FOR CONSTRUCTION DRAWINGS

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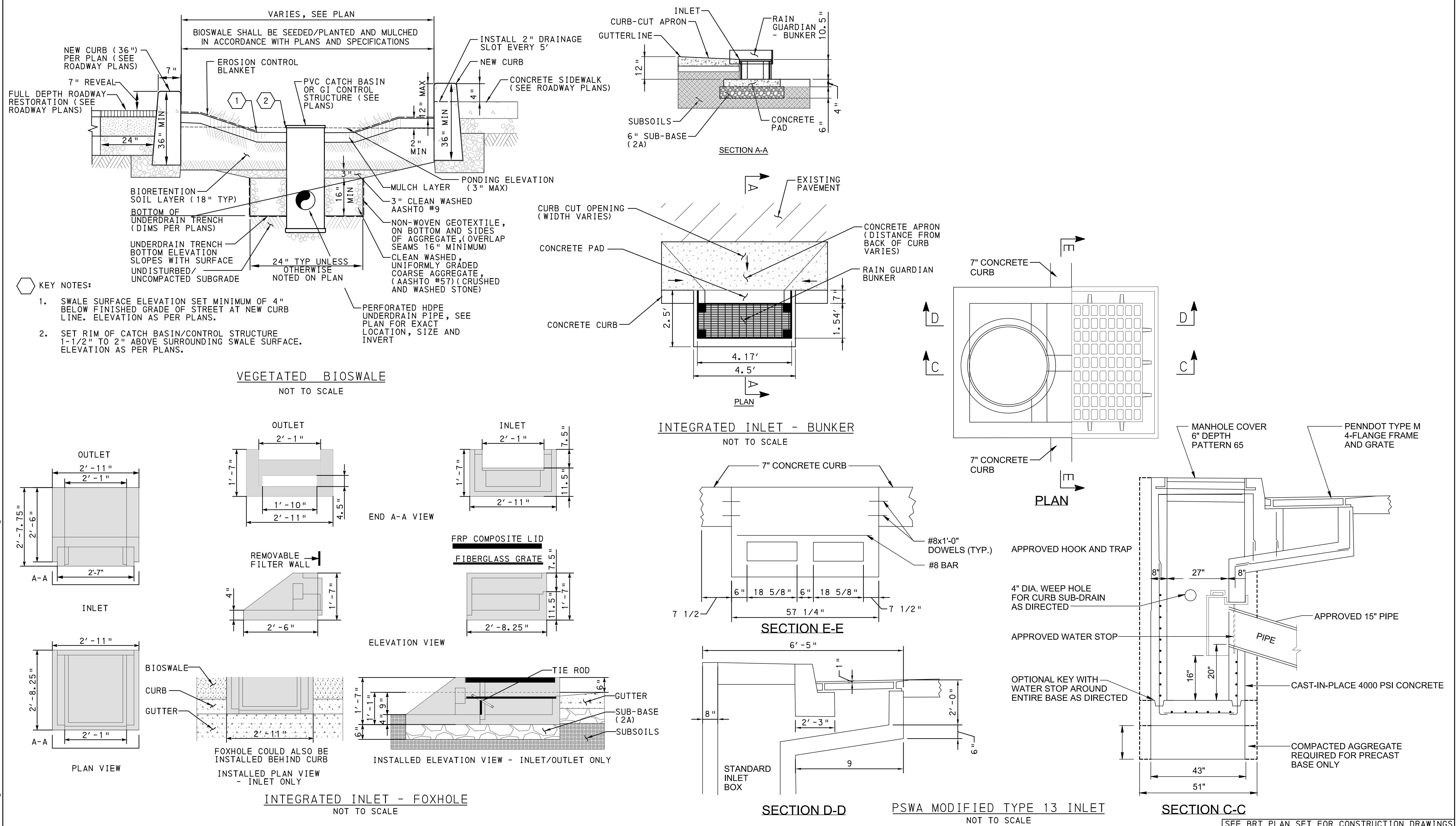
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DATE	09/29/20
SCALE	AS SHOWN

PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA
BUS RAPID TRANSIT ROADWAY STORMWATER MANAGEMENT PLANS
GI DETAILS
Port Authority connecting people to life
CONTRACT NO. BRT-001
DWG. NO. SWM10 SHT. 10

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[SEE BRT PLAN SET FOR CONSTRUCTION DRAWINGS]

PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

BUS RAPID TRANSIT ROADWAY STORMWATER MANAGEMENT PLANS
GI DETAILS

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 Gulf Tower 707 Grant Street 5th Floor Pittsburgh, PA 15219	 400 Industry Dr, Pittsburgh, PA 15275			THE PREPARATION OF THIS DOCUMENT HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE FEDERAL TRANSIT ADMINISTRATION, U.S. DEPARTMENT OF TRANSPORTATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1984, AS AMENDED, FOR THE PORT AUTHORITY OF ALLEGHENY COUNTY, PENNSYLVANIA.	100% DESIGN SUBMITTAL (NOT FOR CONSTRUCTION) _____ SIGNATURE	_____ APPROVED	DESIGNED <u>KCF</u>	PORT AUTHORITY OF ALLEGHENY COUNTY PITTSBURGH PENNSYLVANIA	
							DRAWN <u>IDL</u>		BUS RAPID TRANSIT ROADWAY STORMWATER MANAGEMENT PLANS STRUCTURE TABLES - FIFTH AVENUE
							CHECKED <u>DPW</u>		
							DATE <u>09/29/20</u>		CONTRACT NO. BRT-001
							SCALE AS SHOWN	DWG. NO. SWM12	SHT. 12
		NO. DATE DESCRIPTION	REVISIONS						

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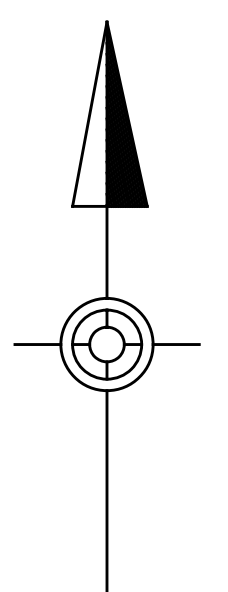
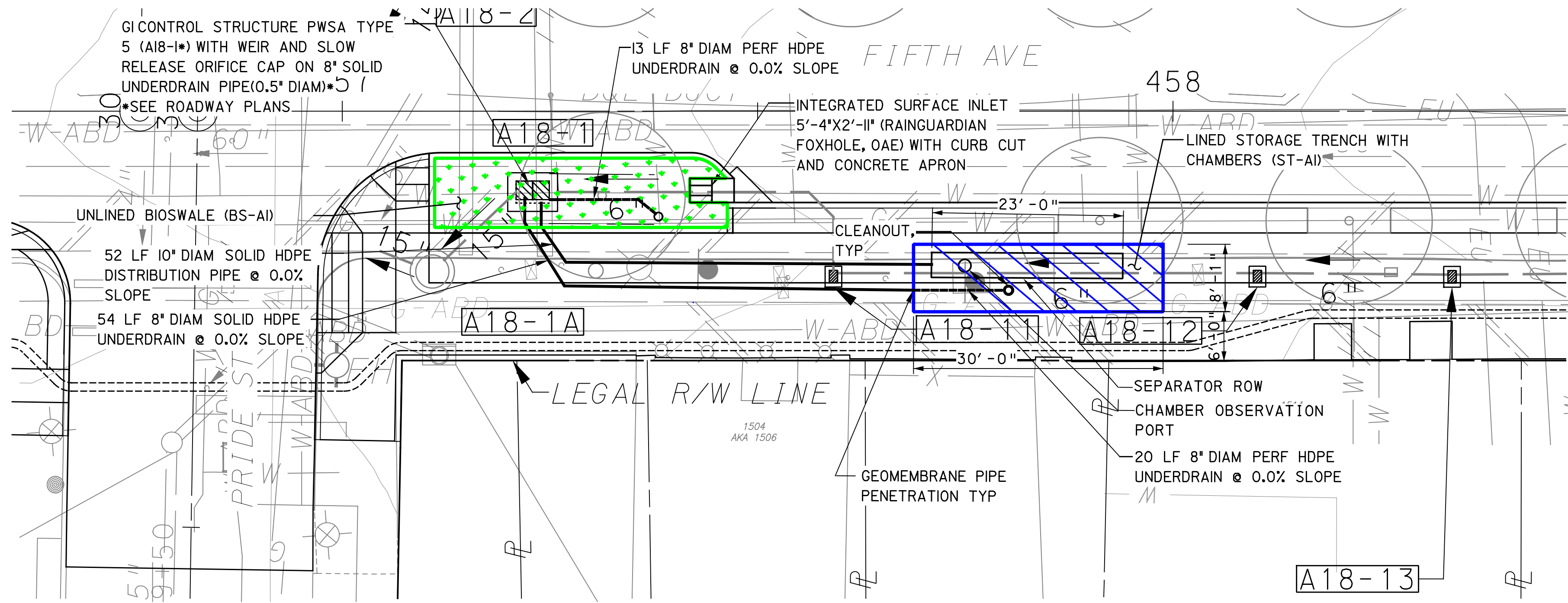
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PITTSBURGH PENNSYLVANIA

BUS RAPID TRANSIT ROADWAY
STORMWATER MANAGEMENT PLANS
STRUCTURE TABLES - FORBES AVENUE



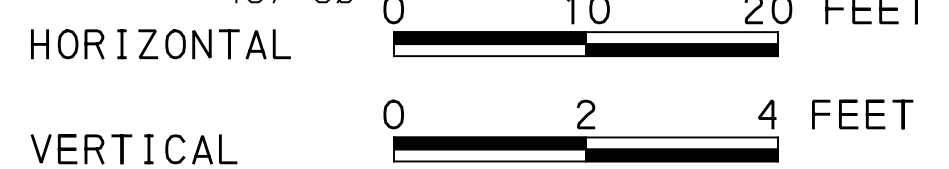
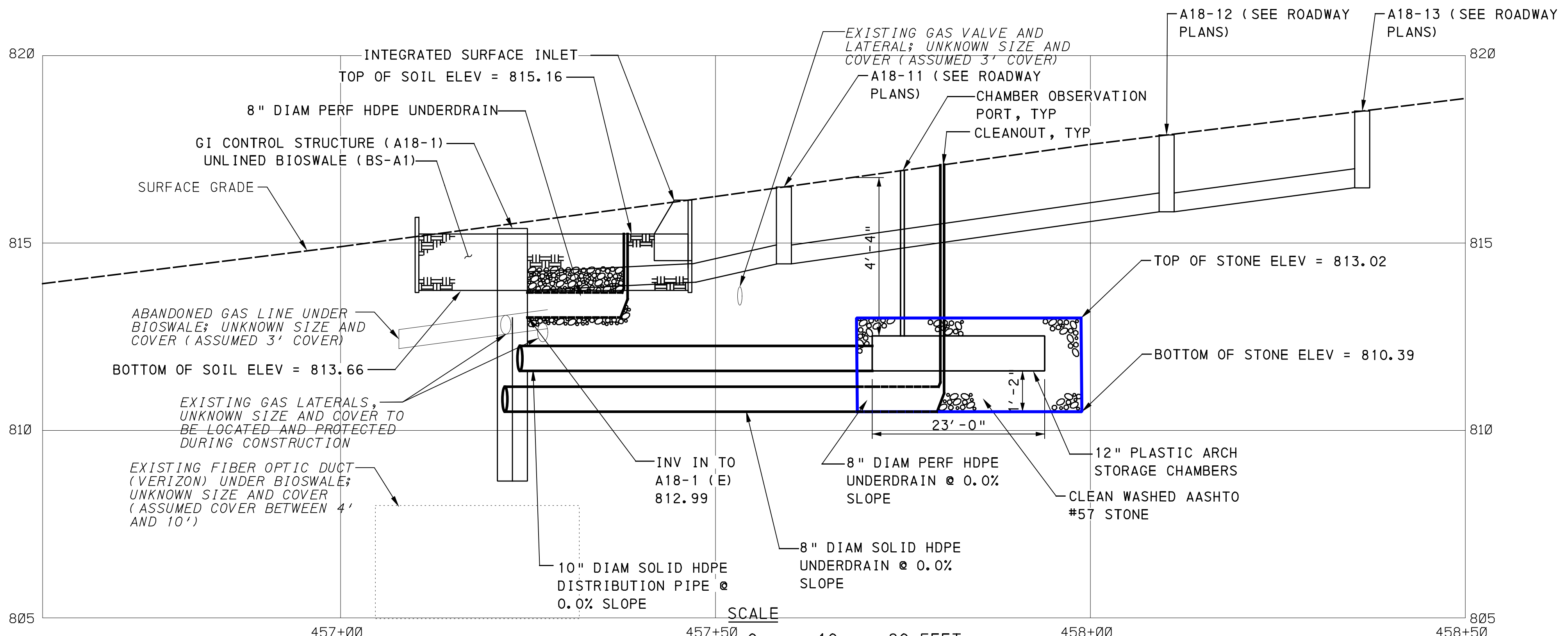
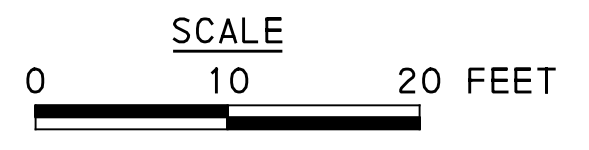
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LEGEND

	DRAINAGE STRUCTURE IDENTIFICATION
	DRAINAGE STRUCTURE
	GI STORAGE TRENCH (ST)
	GI BIORETENTION (BR) OR BIOSWALE (BS)
	CURB RAMP
	PROPOSED TREE



GI ID 1	Structure ID	Rim Elevation [ft] **Refer to roadway plans	Invert Elevation out to Sewer [ft] **Refer to roadway plans	Invert Elevation out to GI [ft]	Invert Elevation in from GI [ft]	Structure Bottom Elevation [ft]	Weir Elevation [ft]	Orifice Diameter [in]	Orifice Elevation [ft]
BS-A1	A18-1	**	**	811.48	810.39	808.48	813.02	0.5	810.39

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BRT-001 GREEN INFRASTRUCTURE
APPROVED _____ DATE _____

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IN CHARGE	ALP
DATE	02/24/23
SCALE	AS SHOWN

PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

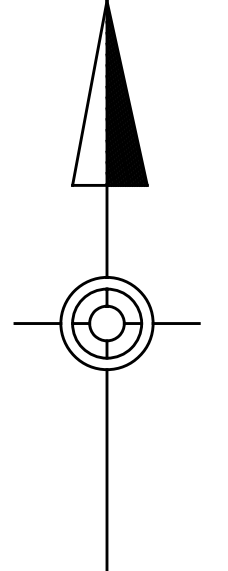
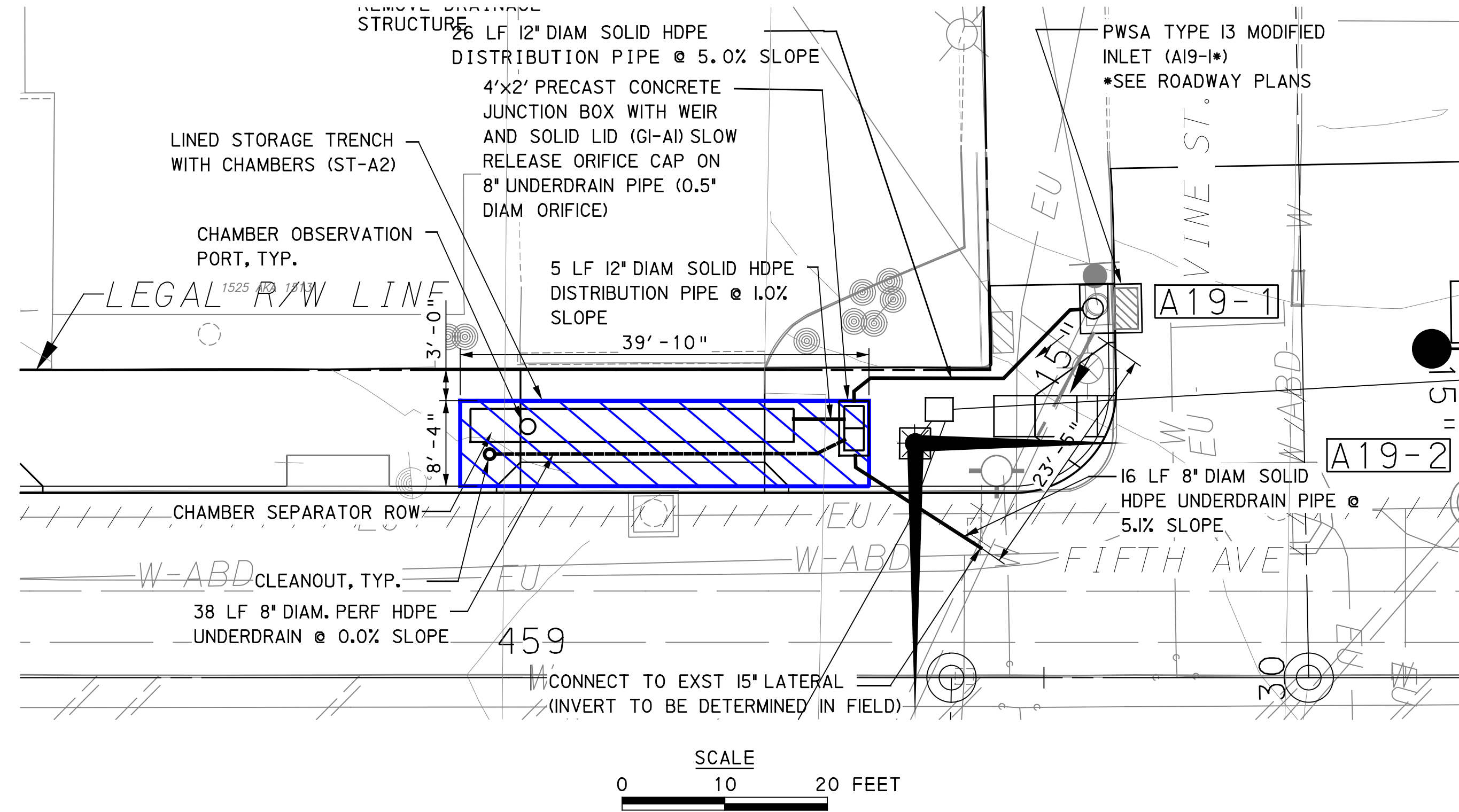
BUS RAPID TRANSIT UPTOWN TO OAKLAND
STORMWATER MANAGEMENT PLANS
FIFTH AVE - STA 456+50 TO STA 458+50

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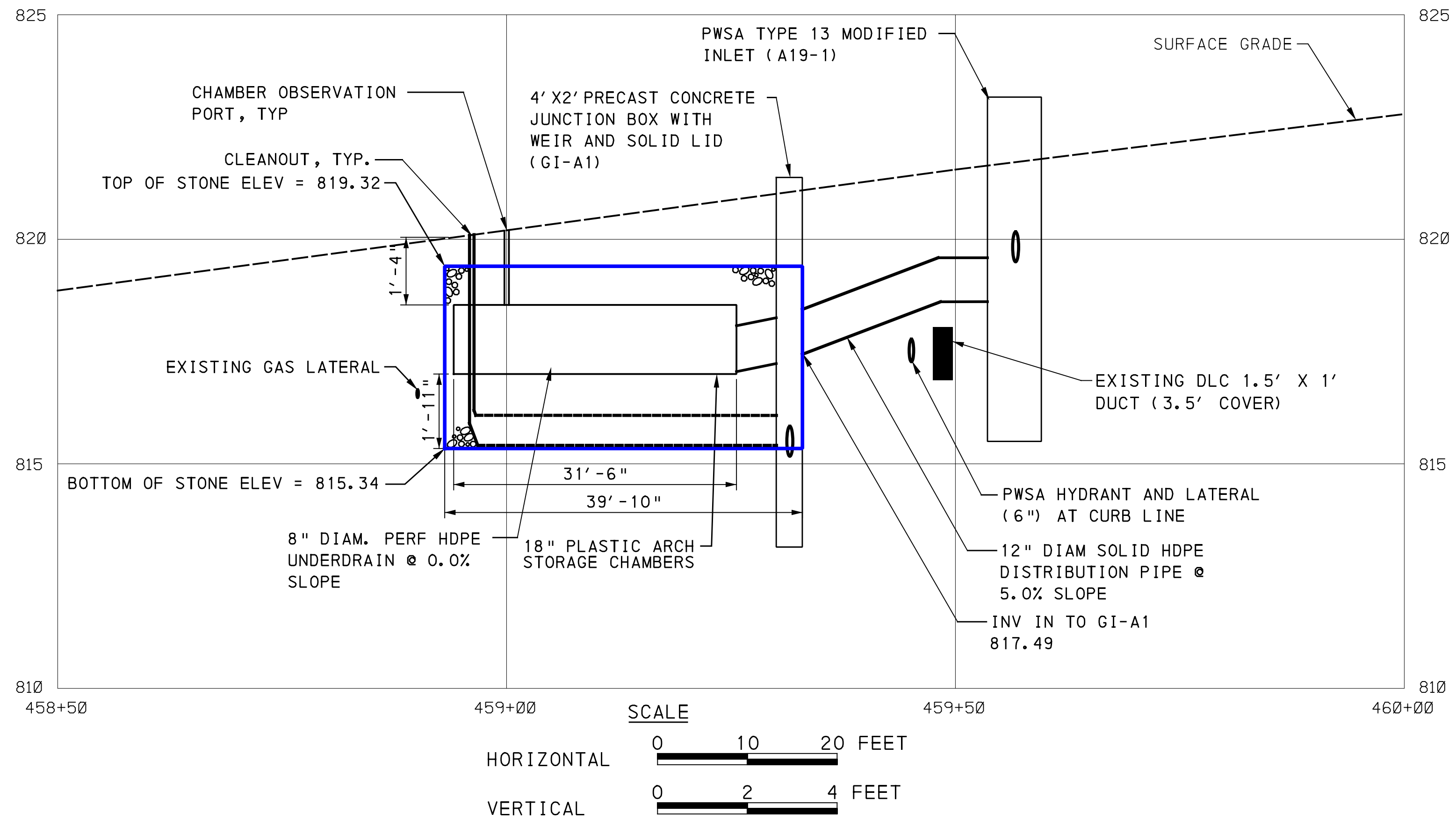
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LEGEND	
	DRAINAGE STRUCTURE IDENTIFICATION
	DRAINAGE STRUCTURE
	GI STORAGE TRENCH (ST)
	GI BIORETENTION (BR) OR BIOSWALE (BS)
	CURB RAMP
	PROPOSED TREE



GI ID 1	Structure ID	Rim Elevation [ft] **Refer to roadway plans	Invert Elevation out to Sewer [ft] **Refer to roadway plans	Invert Elevation out to GI [ft]	Invert Elevation in from GI [ft]	Structure Bottom Elevation [ft]	Weir Elevation [ft]	Orifice Diameter [in]	Orifice Elevation [ft]
ST-A2	GI-A1	821.40	815.17	817.32	815.34	813.51	N/A	0.5	815.51
ST-A2	A19-1	**	**	818.84	N/A	815.84	N/A	N/A	N/A

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IN CHARGE	ALP
DATE	02/24/23
SCALE	AS SHOWN

FIFTH AVE & VINE ST
[SEE BRT PLAN SET FOR CONSTRUCTION DRAWINGS]

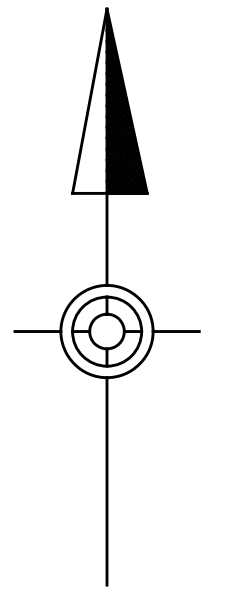
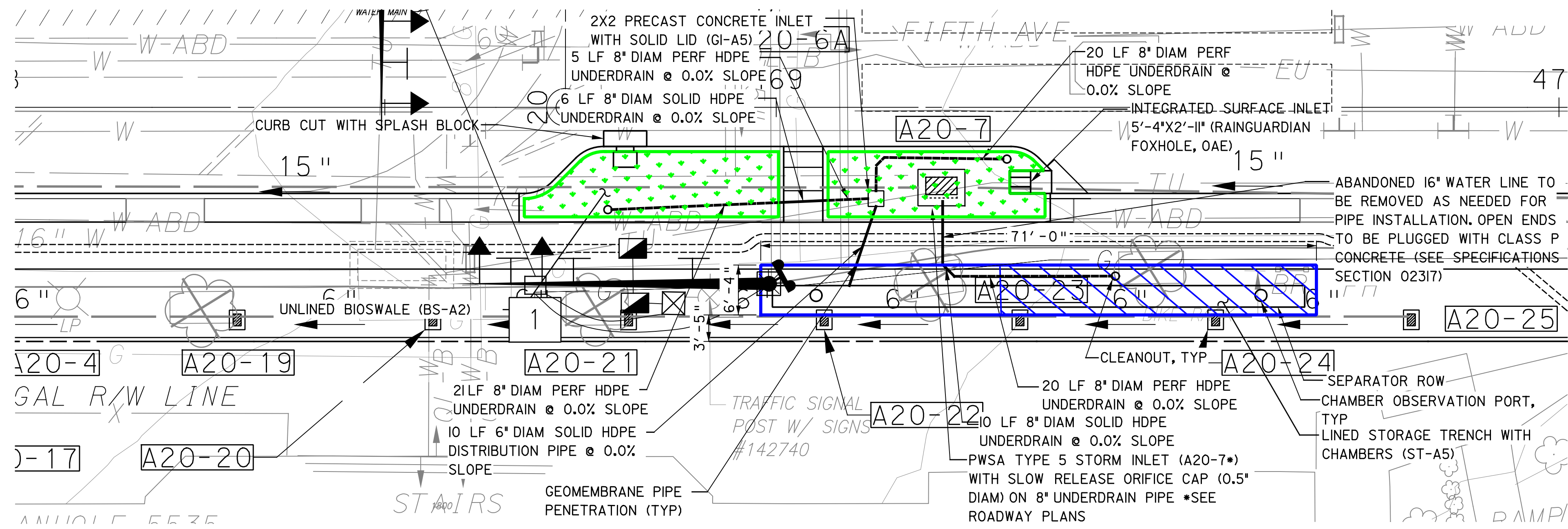
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PITTSBURGH PENNSYLVANIA

BUS RAPID TRANSIT UPTOWN TO OAKLAND
STORMWATER MANAGEMENT PLANS
FIFTH AVE - STA 458+50 TO STA 460+00

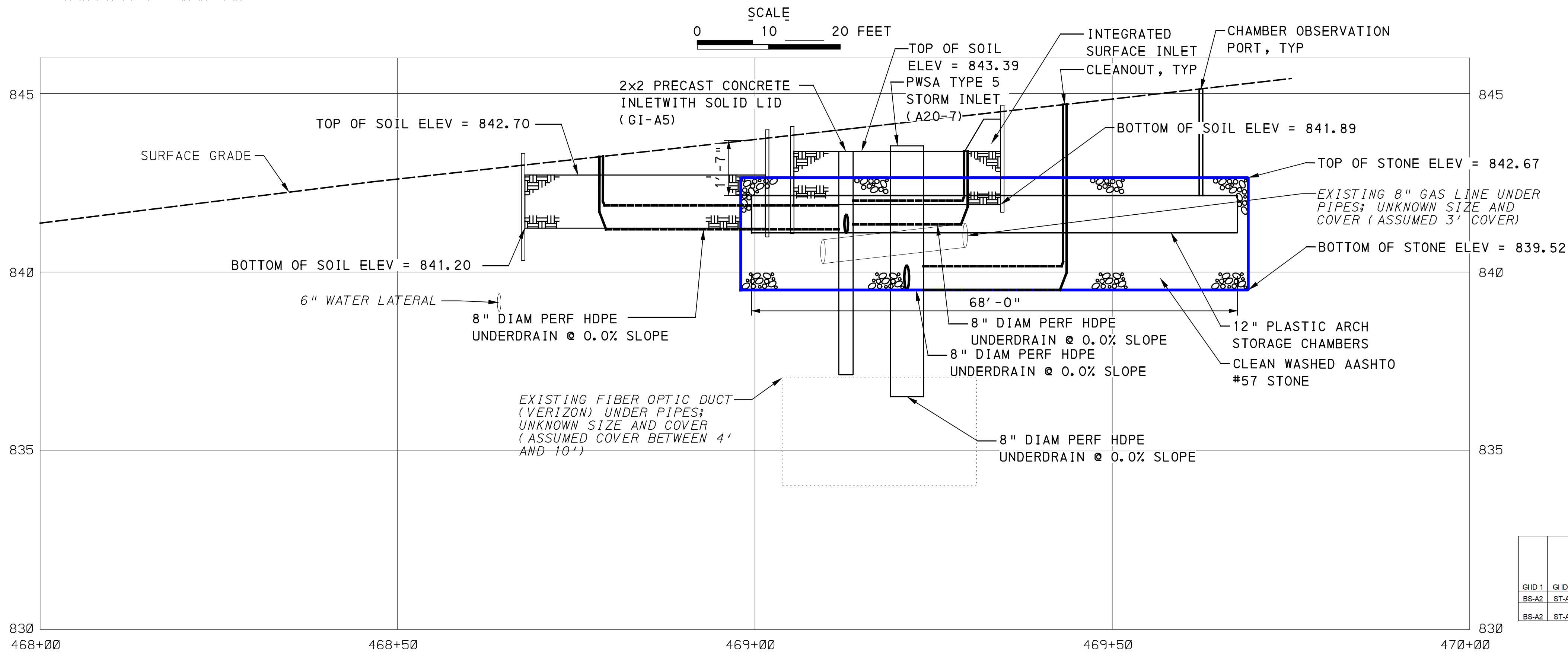
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DWG. NO. SWM15	SHT. 15

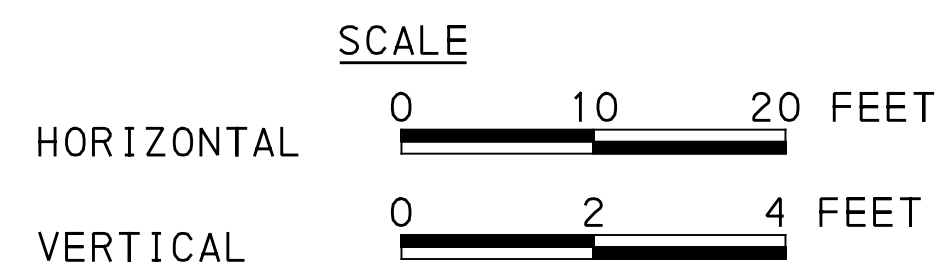
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LEGEND	
A20-1	DRAINAGE STRUCTURE IDENTIFICATION
	DRAINAGE STRUCTURE
	GI STORAGE TRENCH (ST)
	GI BIORETENTION (BR) OR BIOSWALE (BS)
	CURB RAMP
	PROPOSED TREE



GI ID 1	GI ID 2	Structure ID	Structure Type	Station - Offset	Rim Elevation [ft]	Invert Elevation out to Sewer [ft]	Invert Elevation out to GI [ft]	Invert Elevation in from GI [ft]	Structure Bottom Elevation [ft]	Weir Elevation [ft]	Orifice Diameter [in]	Orifice Elevation [ft]
BS-A2	ST-A5	A20-7	PWSA TYPE 5 STORM INLET	469+21.05 - 10.04 FT	**	**	N/A	839.52	837.85	N/A	0.9	839.68
BS-A2	ST-A5	GI-A5	2' X 2' PRECAST CONCRETE INLET	468+12.65 - 10.46 FT	843.39	N/A	841.13	841.13	838.13	N/A	N/A	N/A



SEE BRT PLAN SET FOR CONSTRUCTION DRAWINGS

AECOM

Gulf Tower
707 Grant Street
5th Floor
Pittsburgh, PA 15219

Jacobs

400 Industry Dr,
Pittsburgh, PA 15275

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SIGNATURE

BRT-001
GREEN
INFRASTRUCTURE

APPROVED DATE

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IN CHARGE	ALP
DATE	02/24/23
SCALE	AS SHOWN

PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

BUS RAPID TRANSIT UPTOWN TO OAKLAND
STORMWATER MANAGEMENT PLANS
FIFTH AVE - STA 468+00 TO STA 470+00

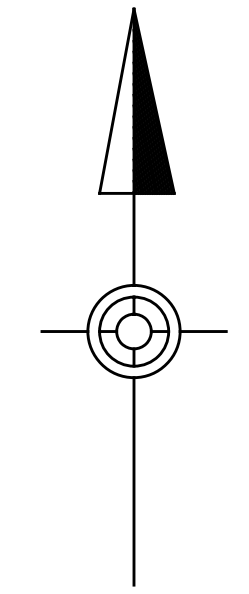
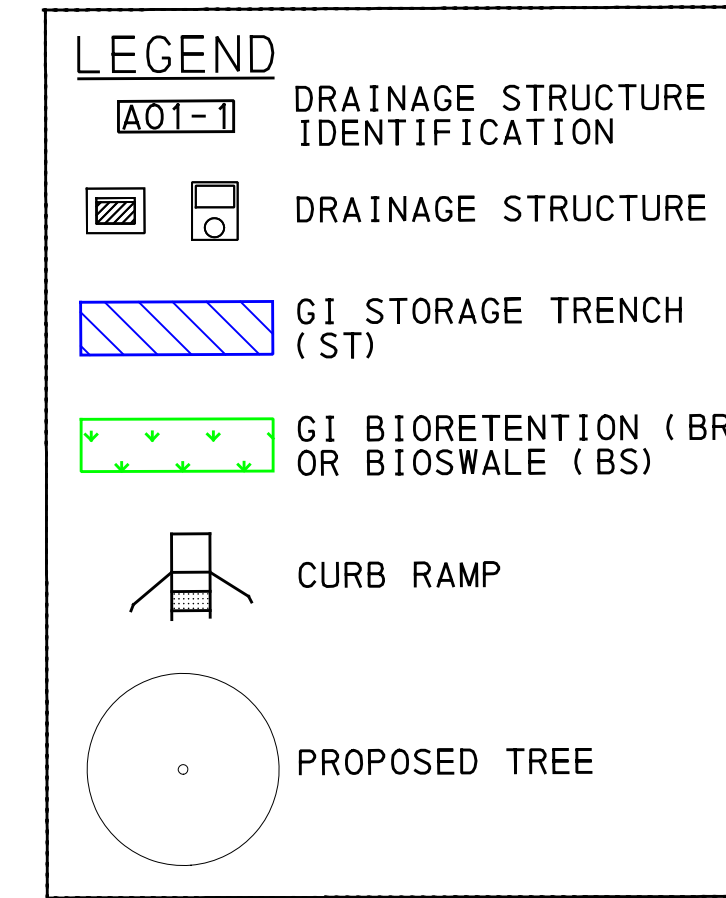
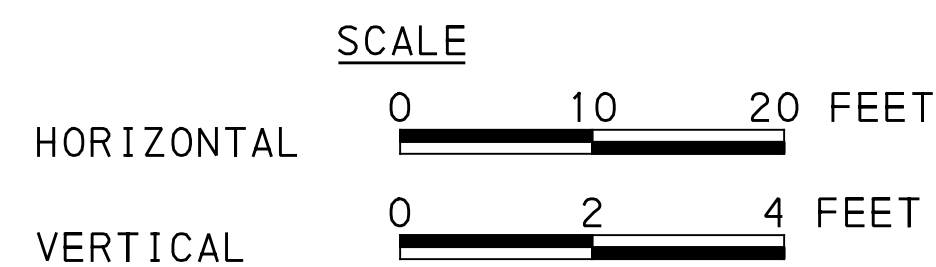
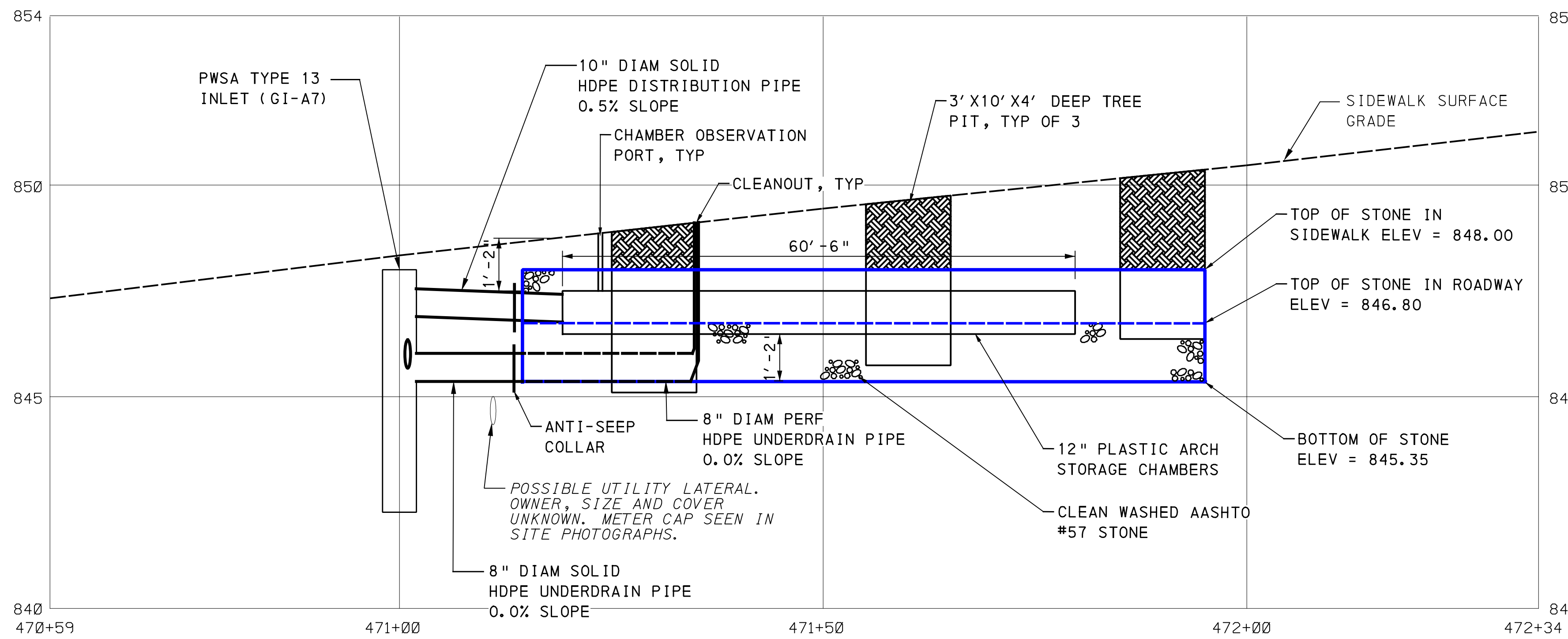
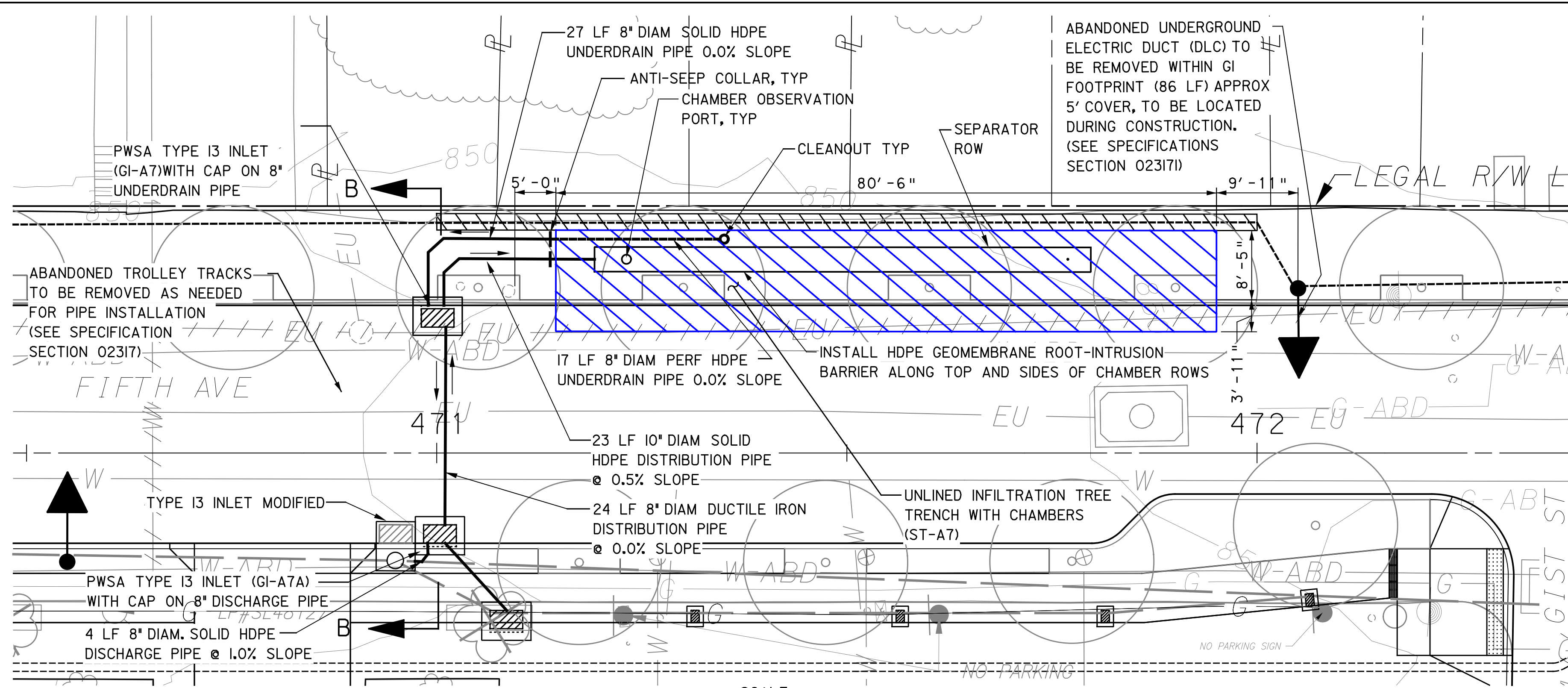
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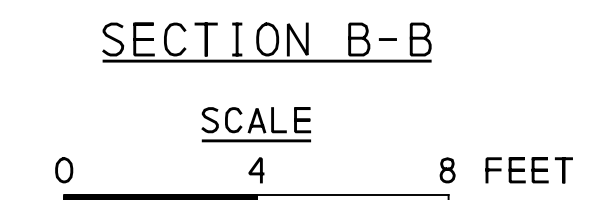
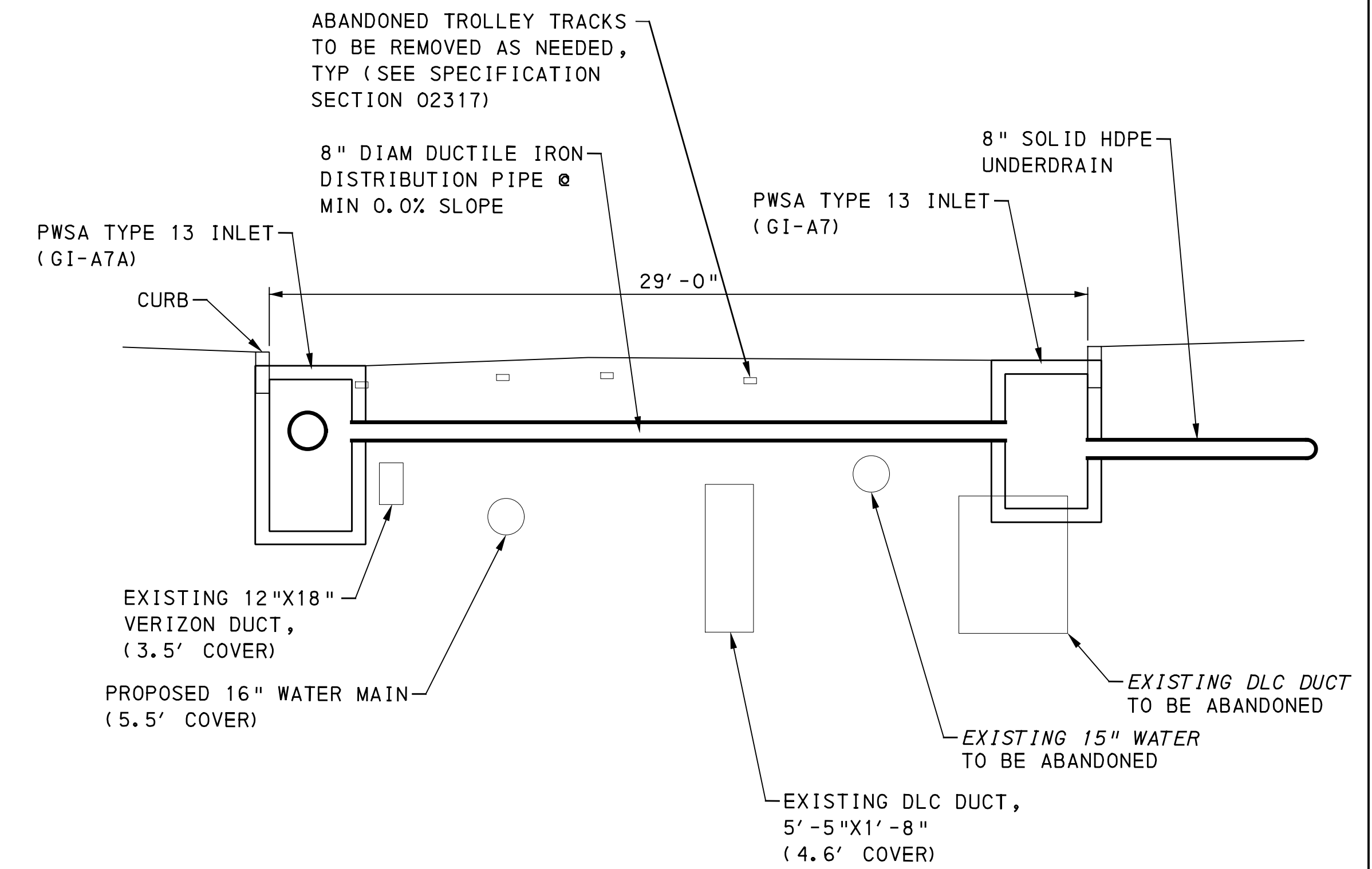
DWG. NO.	SWM16	SHT.	16
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OPERATOR: \$USER\$ FILE PATH: \$FILEL\$

PLOTTED: \$DATE\$ \$TIME\$



GI ID 1	Structure ID	Rim Elevation [ft] **Refer to roadway plans	Invert Elevation out to Sewer [ft] **Refer to roadway plans	Invert Elevation out to GI [ft]	Invert Elevation in from GI [ft]	Structure Bottom Elevation [ft]	Weir Elevation [ft]	Orifice Diameter [in]	Orifice Elevation [ft]
ST-A7	GI-A7	848.00	845.36	846.56	845.36	843.56	N/A	N/A	Solid cap
ST-A7	GI-A7A	848.16	845.19	845.36	845.36	842.36	N/A	N/A	N/A



FIFTH AVE & GIST ST

SEE BRT PLAN SET FOR CONSTRUCTION DRAWINGS

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5th Floor
Pittsburgh, PA 15219

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Pittsburgh, PA 15275

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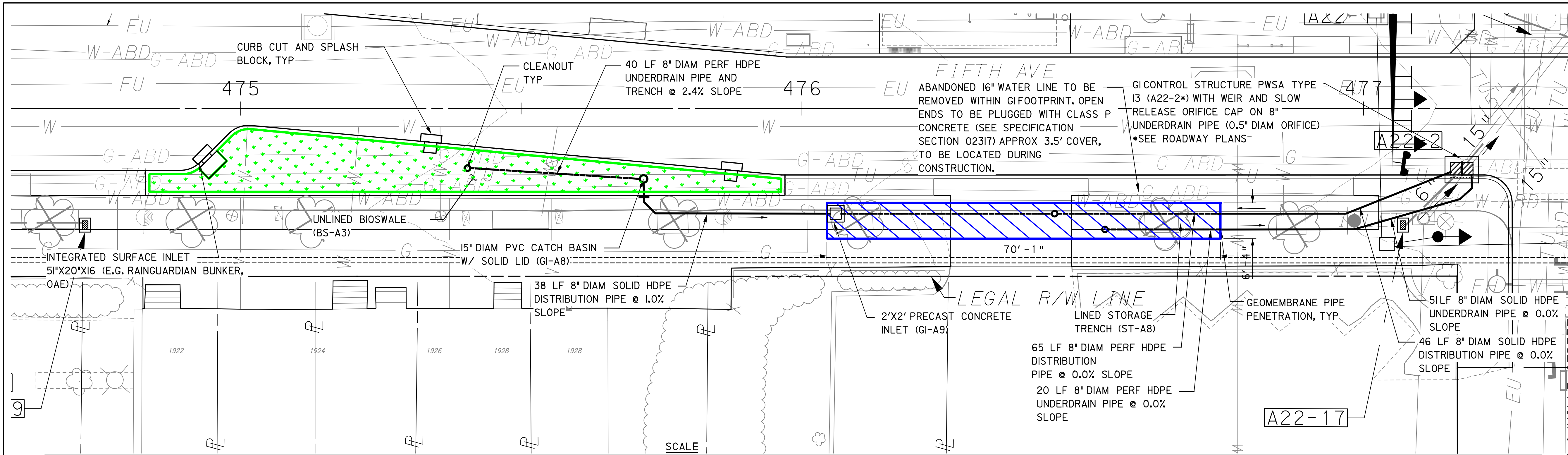
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DATE	02/24/23
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PORT AUTHORITY OF ALLEGHENY COUNTY PITTSBURGH PENNSYLVANIA	
BUS RAPID TRANSIT UPTOWN TO OAKLAND STORMWATER MANAGEMENT PLANS FIFTH AVE - STA 470+50 TO STA 472+50	
Port Authority connecting people to life	CONTRACT NO. BRT-001 DWG. NO. SWM17 SHT. 17

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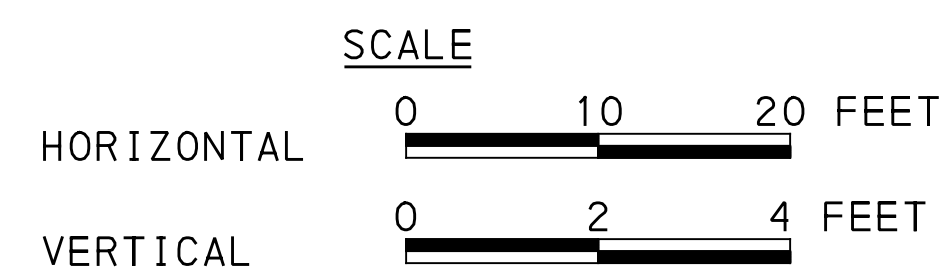
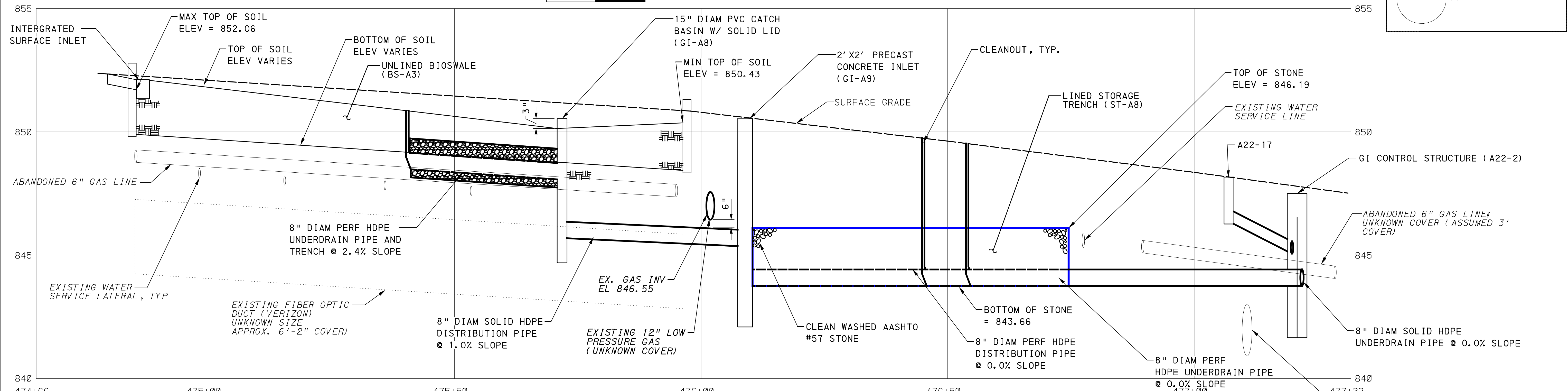
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LEGEND

- A01-1 DRAINAGE STRUCTURE IDENTIFICATION
- DRAINAGE STRUCTURE
- GI STORAGE TRENCH (ST)
- GI BIORETENTION (BR) OR BIOSWALE (BS)
- CURB RAMP
- PROPOSED TREE



GI ID 1	Structure ID	Rim Elevation [ft]	Invert Elevation out to Sewer [ft]	Invert Elevation out to GI [ft]	Invert Elevation in from GI [ft]	Structure Bottom Elevation [ft]	Weir Elevation [ft]	Orifice Diameter [in]	Orifice Elevation [ft]
BS-A3	GI-A8	850.58	N/A	845.68	848.21	844.18	N/A	N/A	N/A
BS-A3	A22-2	**	**	843.66	843.66	836.93	846.19	0.5	843.83
BS-A3	GI-A9	850.45	N/A	843.66	845.30	842.16	N/A	N/A	N/A

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Pittsburgh, PA 15275

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DATE: 02/24/23
SCALE: AS SHOWN

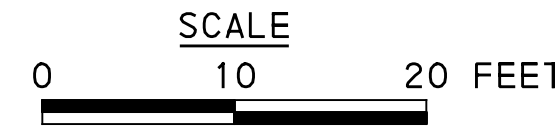
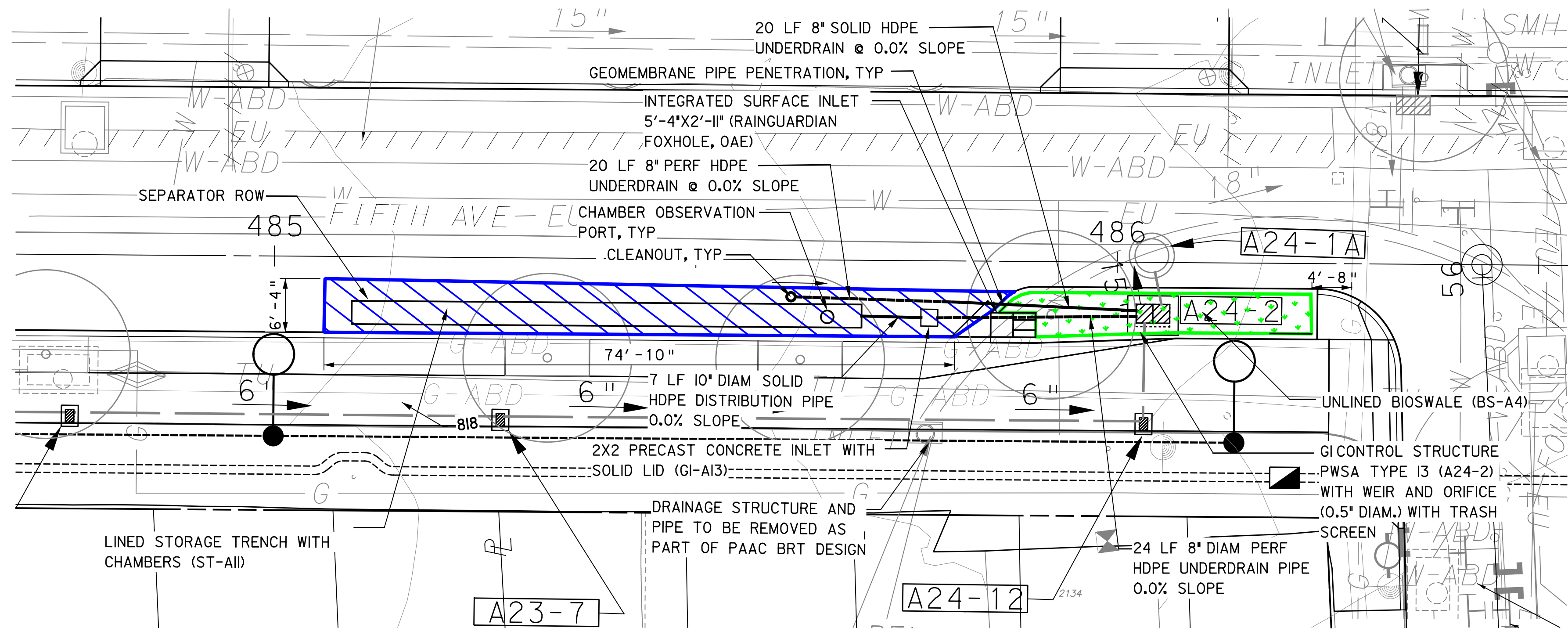
PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

BUS RAPID TRANSIT UPTOWN TO OAKLAND
STORMWATER MANAGEMENT PLANS
FIFTH AVE - STA 474+50 TO 477+50

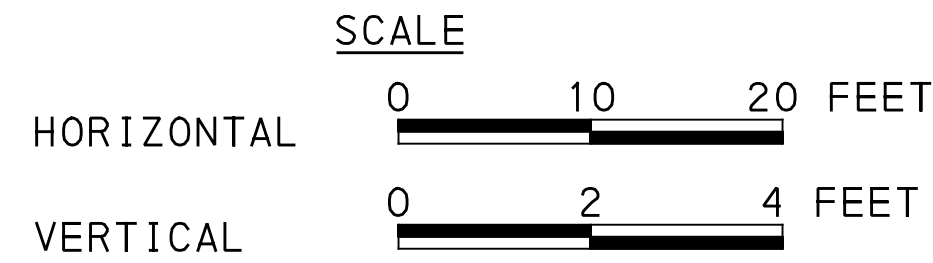
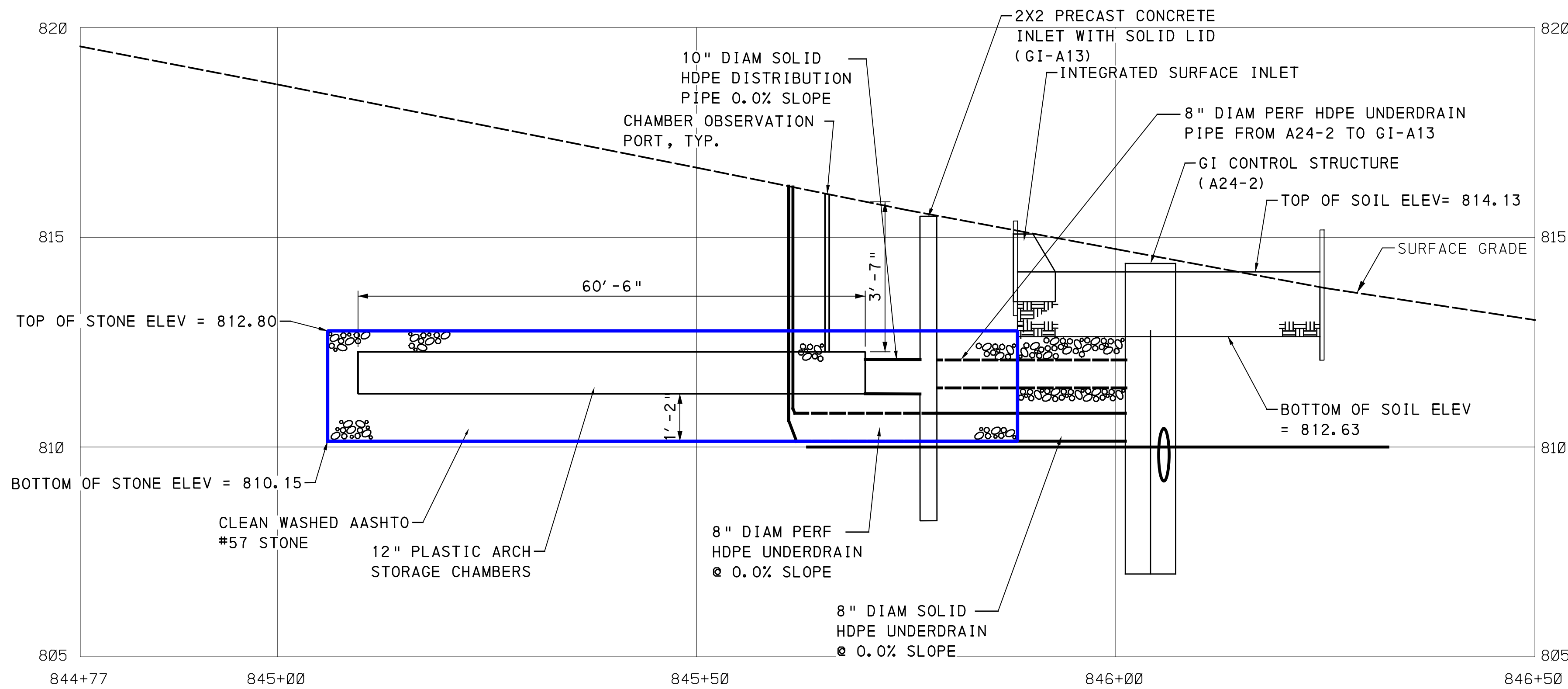
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DWG. NO. SWM18 SHT. 18

PLOTTED: \$DATE\$ \$TIME\$



LEGEND	
	DRAINAGE STRUCTURE IDENTIFICATION
	DRAINAGE STRUCTURE
	GI STORAGE TRENCH (ST)
	GI BIORETENTION (BR) OR BIOSWALE (BS)
	CURB RAMP
	PROPOSED TREE



GI ID 1	Structure ID	Rim Elevation [ft] **Refer to roadway plans	Invert Elevation out to Sewer [ft] **Refer to roadway plans	Invert Elevation out to GI [ft]	Invert Elevation in from GI [ft]	Structure Bottom Elevation [ft]	Weir Elevation [ft]	Orifice Diameter [in]	Orifice Elevation [ft]
BS-A4	GI-A13	815.48	n/a	811.26	811.26	808.26	N/A	N/A	N/A
BS-A4	A24-2	**	**	811.26	810.15	807.43	812.80	0.5	810.31

FIFTH AVE & MOULTRIE ST
BIOSWALE A4 (BS-A4)

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Pittsburgh, PA 15219

Jacobs

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SIGNATURE

**BRT-001
GREEN
INFRASTRUCTURE**

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DATE	02/24/23
SCALE	AS SHOWN

PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

BUS RAPID TRANSIT UPTOWN TO OAKLAND
STORMWATER MANAGEMENT PLANS
FIFTH AVE - STA 484+50 TO 486+50

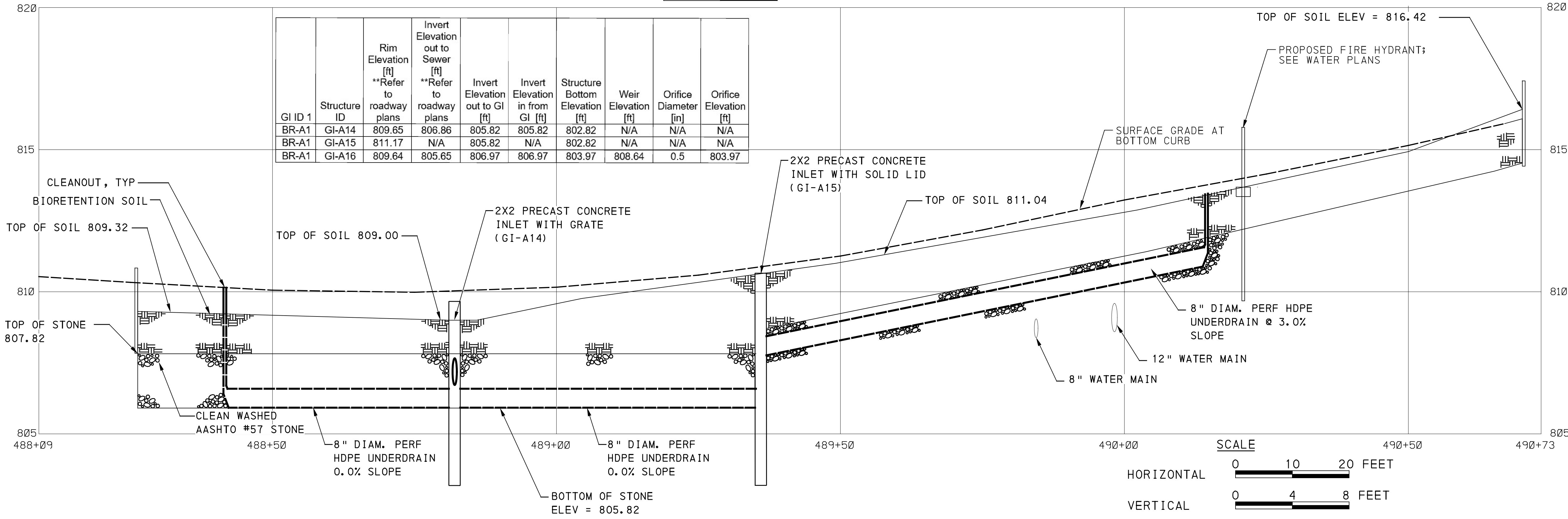
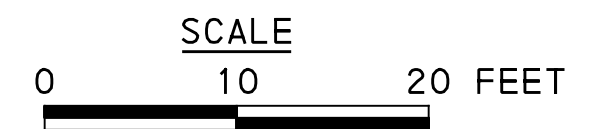
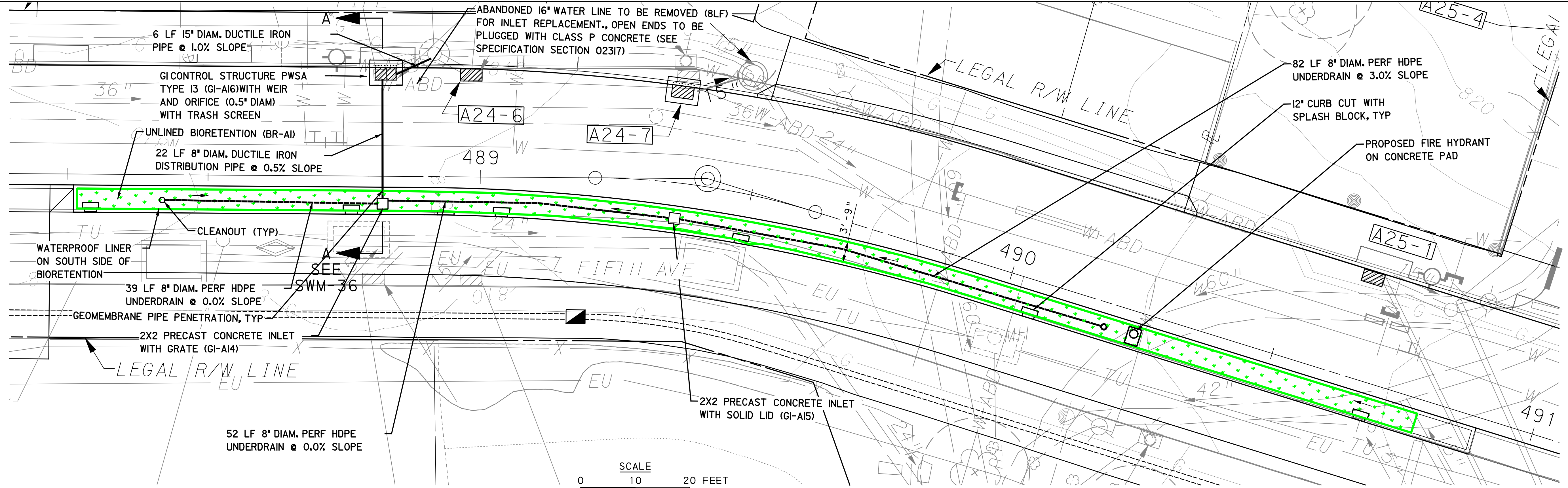
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SHT.	19

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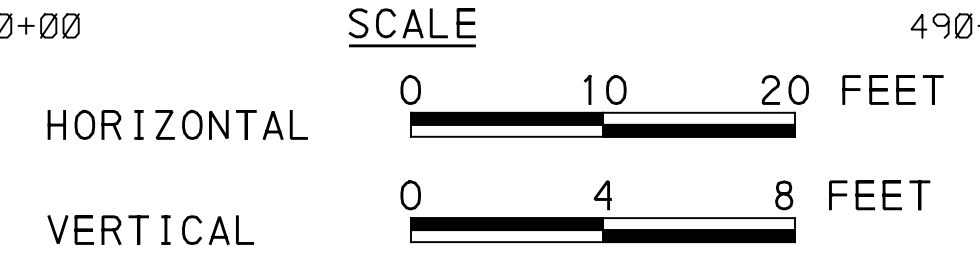
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GI ID 1	Structure ID	Rim Elevation [ft] **Refer to roadway plans	Invert Elevation out to Sewer [ft] **Refer to roadway plans	Invert Elevation out to GI [ft]	Invert Elevation in from GI [ft]	Structure Bottom Elevation [ft]	Weir Elevation [ft]	Orifice Diameter [in]	Orifice Elevation [ft]
BR-A1	GI-A14	809.65	806.86	805.82	805.82	802.82	N/A	N/A	N/A
BR-A1	GI-A15	811.17	N/A	805.82	N/A	802.82	N/A	N/A	N/A
BR-A1	GI-A16	809.64	805.65	806.97	806.97	803.97	808.64	0.5	803.97

LEGEND

- A01-1 DRAINAGE STRUCTURE IDENTIFICATION
- DRAINAGE STRUCTURE
- GI STORAGE TRENCH (ST)
- GI BIORETENTION (BR) OR BIOSWALE (BS)
- CURB RAMP
- PROPOSED TREE



AECOM
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 707 Grant Street
 5th Floor
 Pittsburgh, PA 15219

Jacobs
 400 Industry Dr.
 Pittsburgh, PA 15275

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DATE	02/24/23
SCALE	AS SHOWN

FIFTH AVENUE & KIRKPATRICK STREET

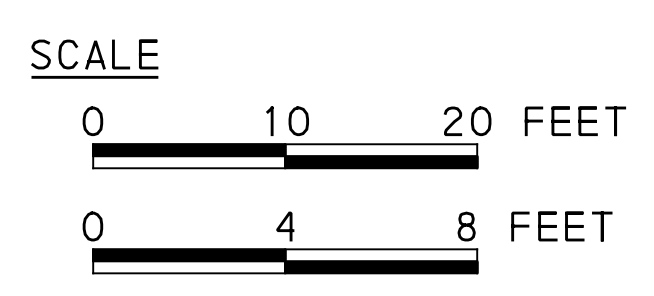
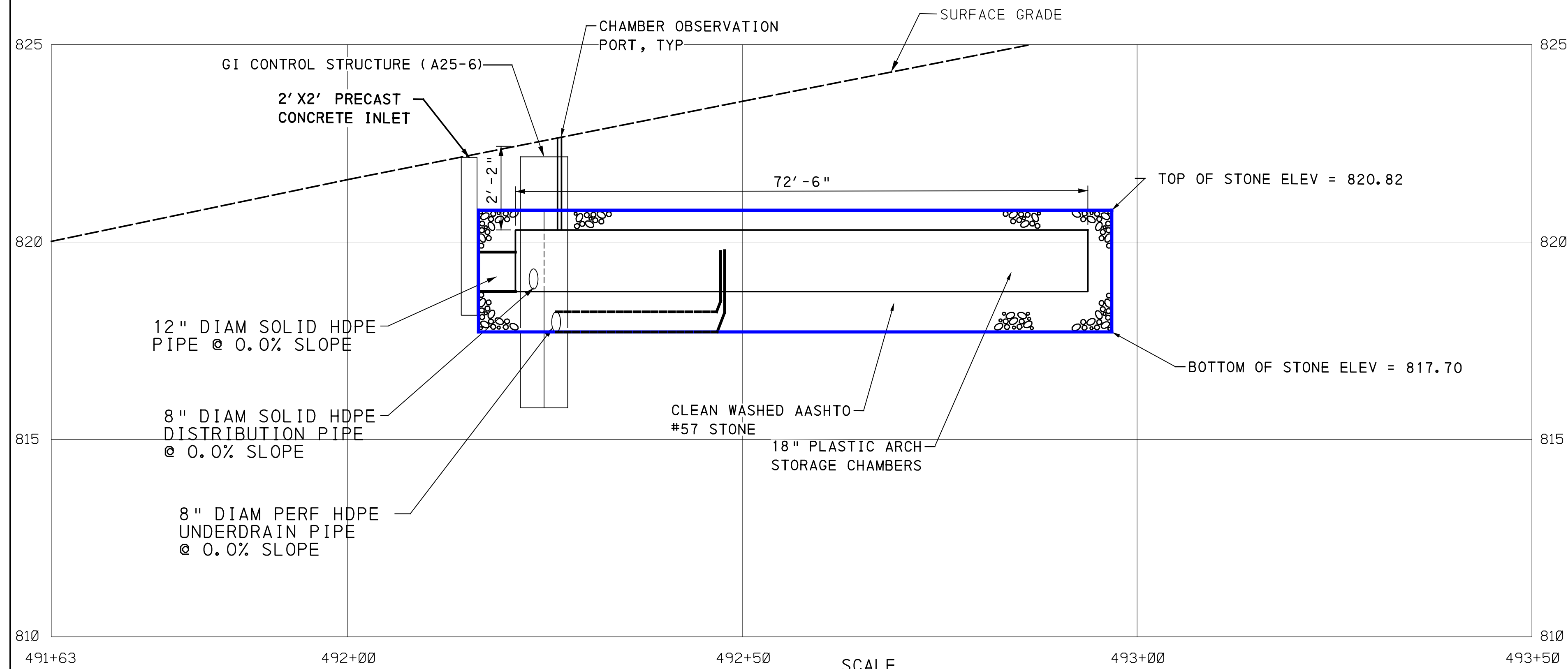
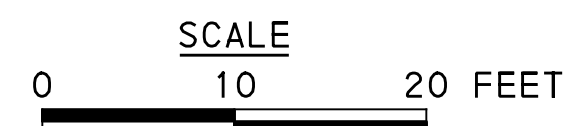
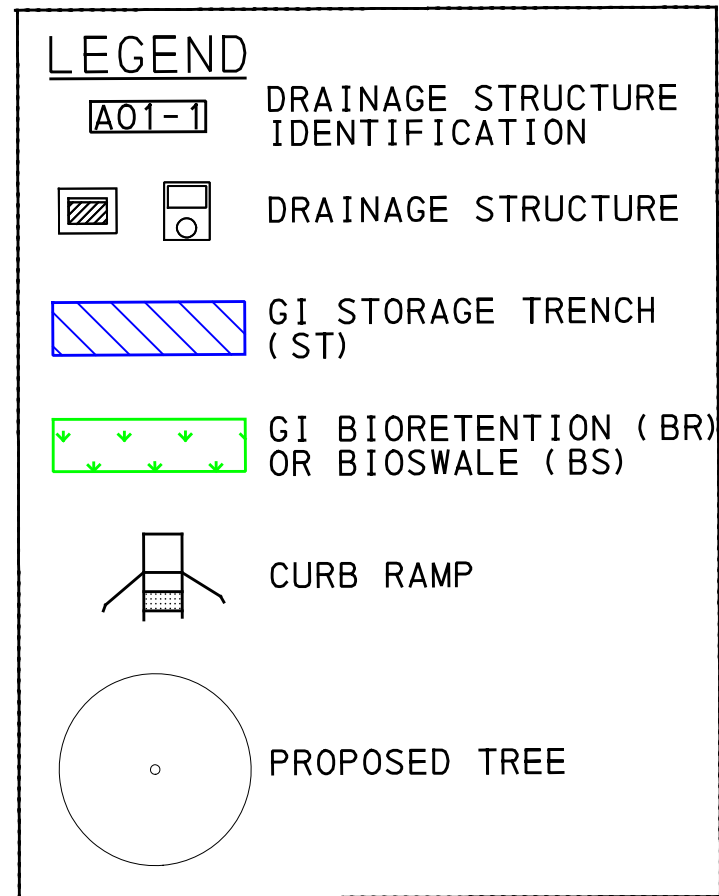
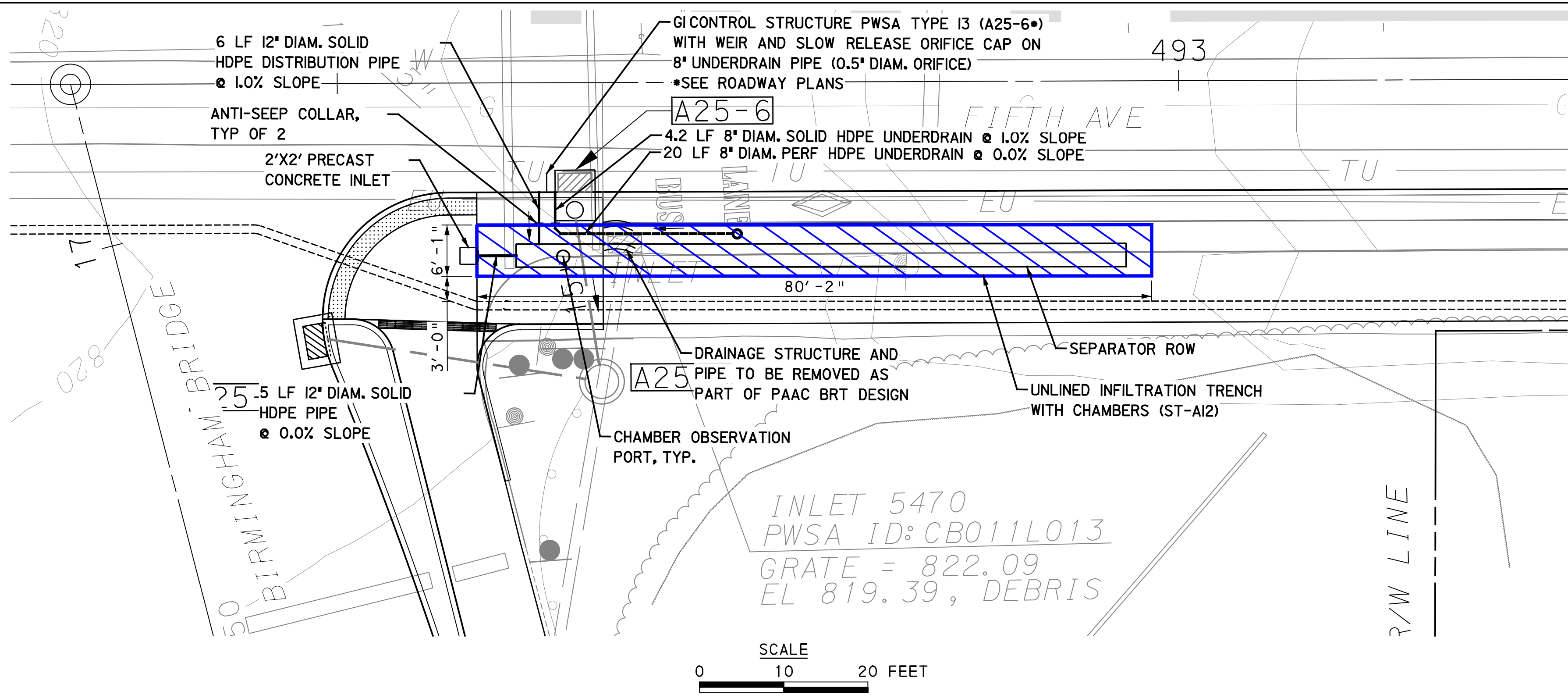
PORT AUTHORITY OF ALLEGHENY COUNTY
 PITTSBURGH PENNSYLVANIA
BUS RAPID TRANSIT UPTOWN TO OAKLAND

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CONTRACT NO. BRT-001
 DWG. NO. _____ 20

NOT UPDATED - 90%

PLOTTED: \$DATE\$ \$TIME\$



GI ID 1	GI ID 2	Structure ID	Structure Type	Station - Offset	Rim Elevation [ft] **Refer to roadway plans	Invert Elevation out to Sewer [ft] **Refer to roadway plans	Invert Elevation out to GI [ft]	Invert Elevation in from GI [ft]	Structure Bottom Elevation [ft]	Weir Elevation [ft]	Orifice Diameter [in]	Orifice Elevation [ft]
ST-A12	-	A25-6	GI CONTROL STRUCTURE (TYPE 13)	492+24.86 - 13.00' RT	**	**	818.84	817.66	815.84	820.82	0.5	817.82

[SEE BRT PLAN SET FOR CONSTRUCTION DRAWINGS]

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5th Floor
Pittsburgh, PA 15219

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Pittsburgh, PA 15275

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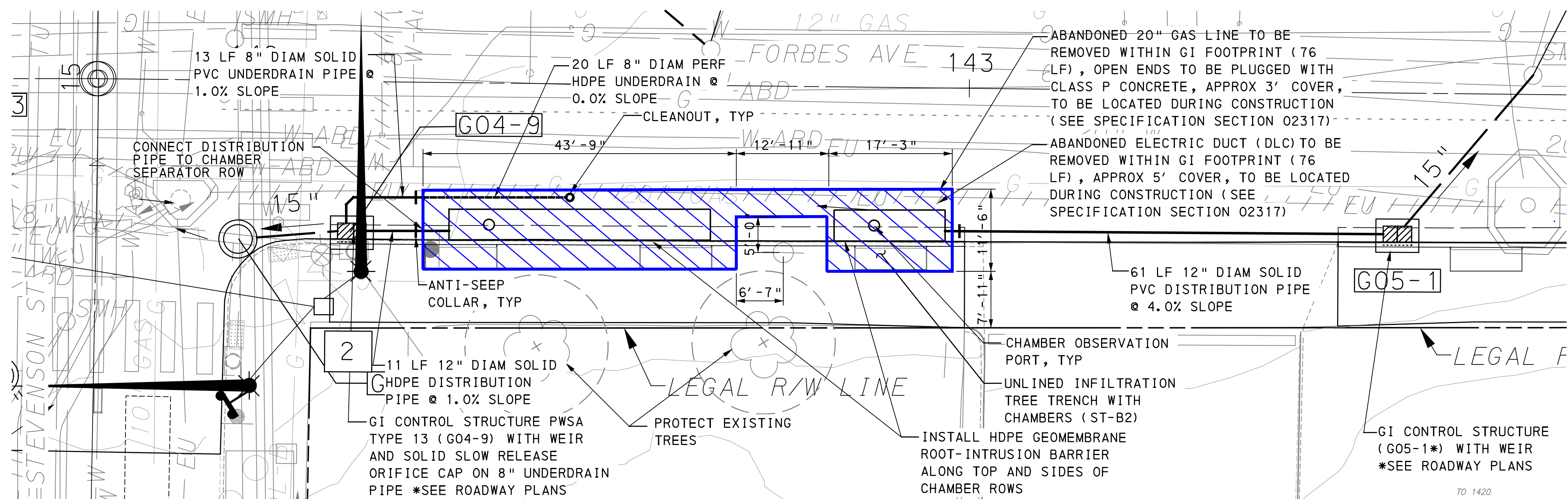
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PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA
BUS RAPID TRANSIT UPTOWN TO OAKLAND
STORMWATER MANAGEMENT PLANS
FIFTH AVE - STA 491+50 TO 493+50

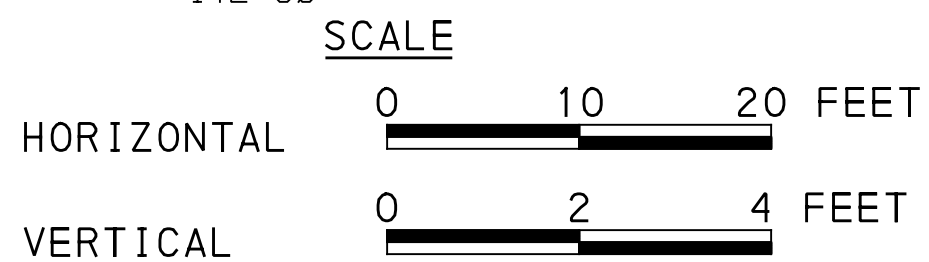
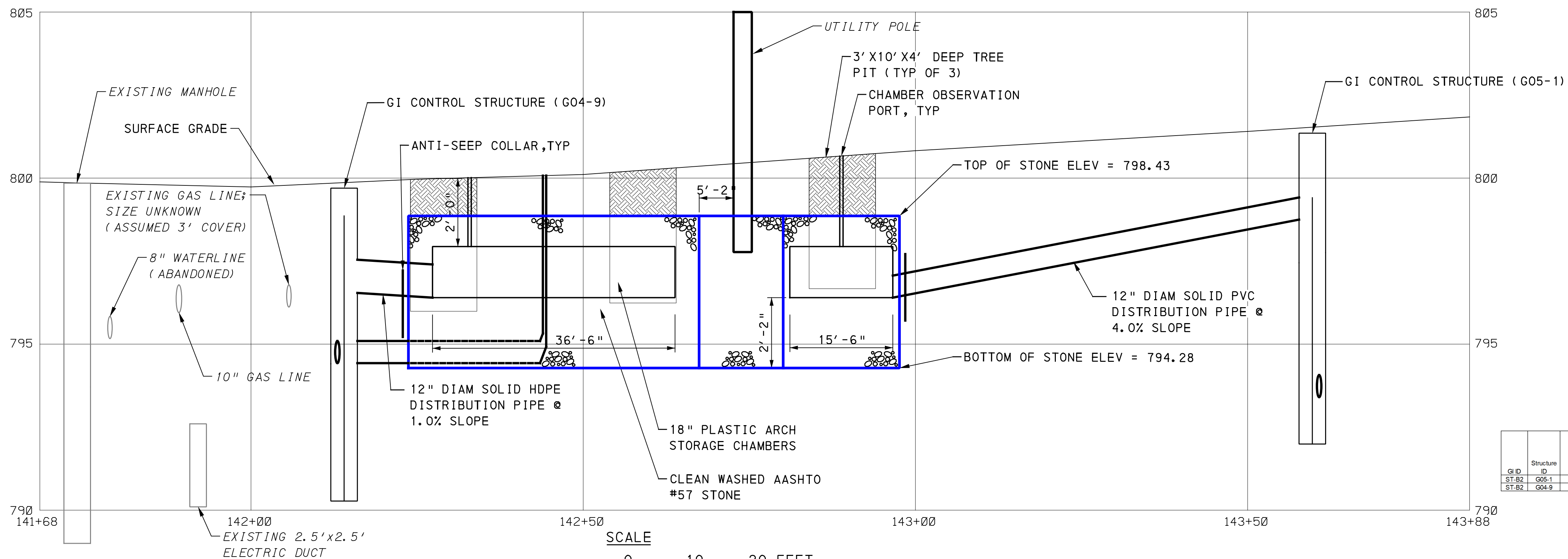
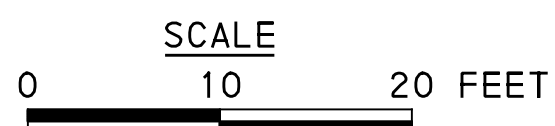
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DWG. NO. SWM21 SHT. 21

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LEGEND

- DRAINAGE STRUCTURE IDENTIFICATION
- DRAINAGE STRUCTURE
- GI STORAGE TRENCH (ST)
- GI BIORETENTION (BR) OR BIOSWALE (BS)
- CURB RAMP
- PROPOSED TREE



GI ID	Structure ID	Structure Type	Station - offset	Rim Elevation [ft] **Refer to roadway plans	Invert Elevation out to Sewer [ft] **Refer to roadway plans	Invert Elevation out to GI [ft]	Invert Elevation ft from GI [ft]	Structure Bottom Elevation [ft]	Weir Elevation [ft]	Orifice Diameter [in]	Orifice Elevation [ft]
ST-B2	G05-1	GI CONTROL STRUCTURE (TYPE 13)	143+60.00 - 20.9' RT	**	**	796.74	NA	791.74	799.41	NA	NA
ST-B2	G04-9	GI CONTROL STRUCTURE (TYPE 13)	141+98.10 - 22.2' RT	**	**	796.50	794.28	790.26	798.43	SOLID CAP	NA

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707 Grant Street
5th Floor
Pittsburgh, PA 15219

Jacobs

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PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

BUS RAPID TRANSIT UPTOWN TO OAKLAND
STORMWATER MANAGEMENT PLANS
FORBES AVE - STA 142+00 TO STA 144+00

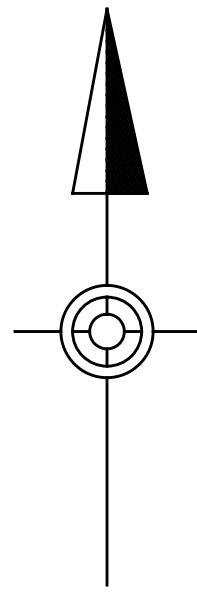
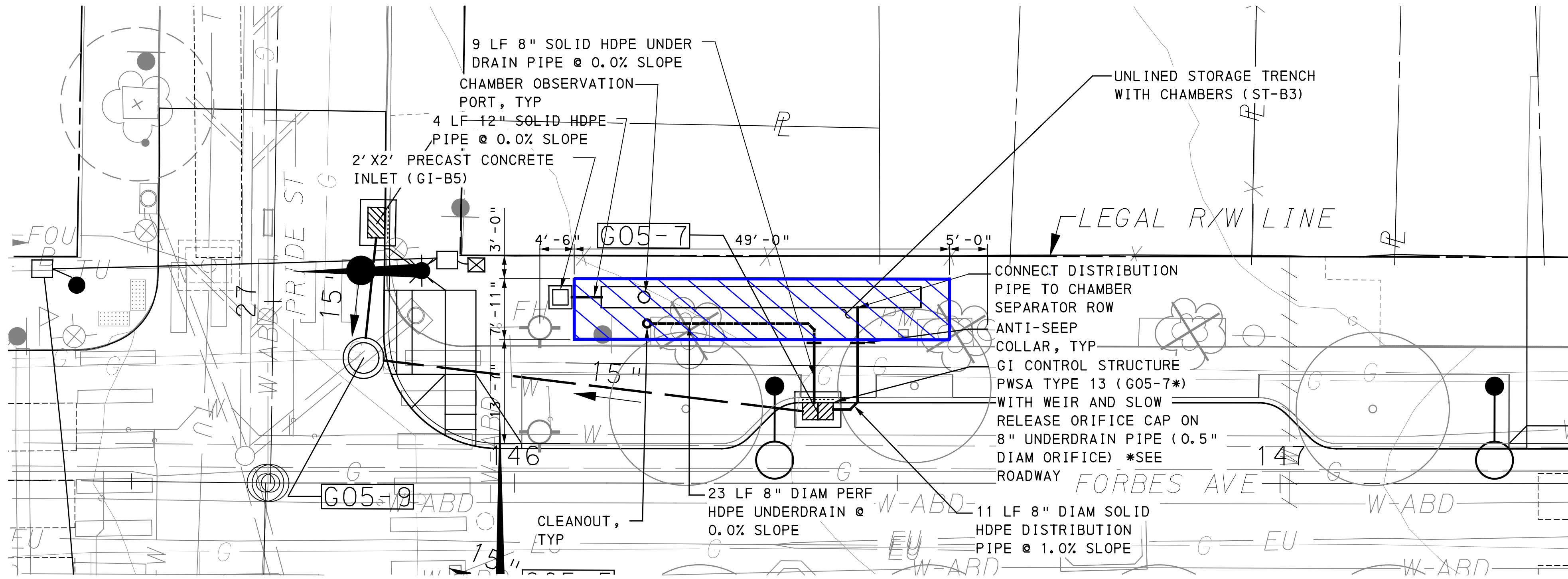
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DWG. NO. SWM22 SHT. 22

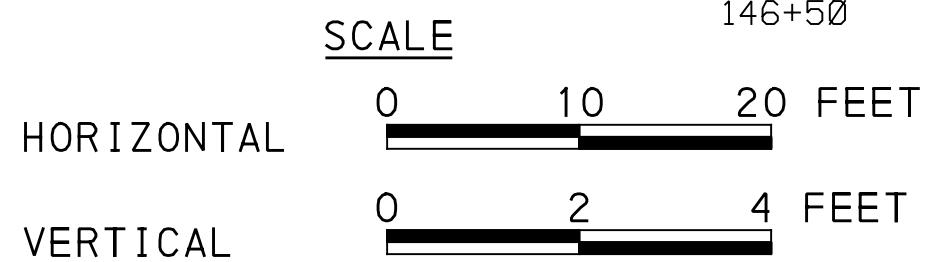
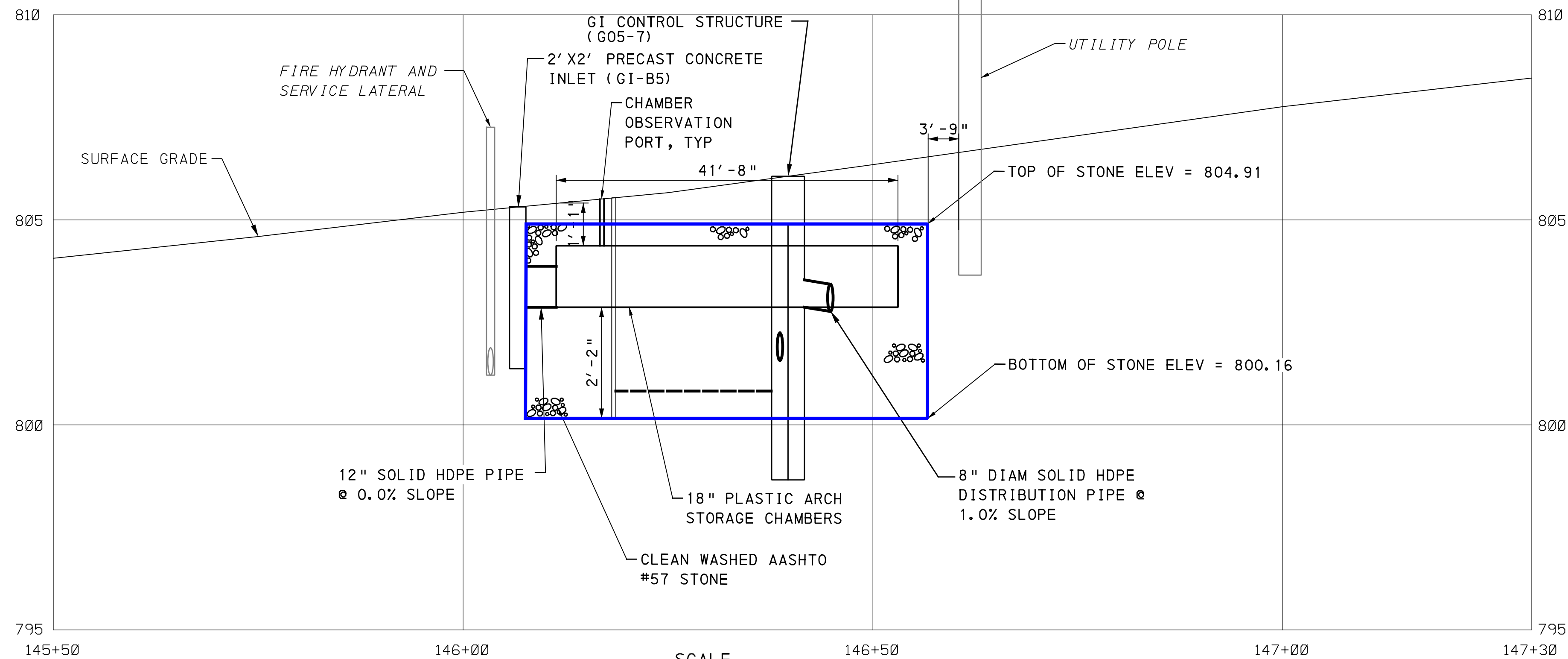
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LEGEND

- A01-1 DRAINAGE STRUCTURE IDENTIFICATION
- DRAINAGE STRUCTURE
- GI STORAGE TRENCH (ST)
- GI BIORETENTION (BR) OR BIOSWALE (BS)
- CURB RAMP
- PROPOSED TREE



GI ID	Structure ID	Rim Elevation [ft] **Refer to roadway plans	Invert Elevation out to Sewer [ft] **Refer to roadway plans	Invert Elevation out to GI [ft]	Invert Elevation in from GI [ft]	Structure Bottom Elevation [ft]	Weir Elevation [ft]	Orifice Diameter [in]	Orifice Elevation [ft]
ST-B3	G05-7	**	**	802.99	800.16	798.50	804.91	0.5	800.33
ST-B3	GI-B5	805.90	N/A	802.87	N/A	801.37	N/A	N/A	N/A

FORBES AVE & PRIDE ST

SEE BRT PLAN SET FOR CONSTRUCTION DRAWINGS



Gulf Tower
707 Grant Street
5th Floor
Pittsburgh, PA 15219



400 Industry Dr.
Pittsburgh, PA 15275

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PITTSBURGH PENNSYLVANIA

BUS RAPID TRANSIT UPTOWN TO OAKLAND
STORMWATER MANAGEMENT PLANS
FORBES AVE - STA 145+50 TO STA 147+50

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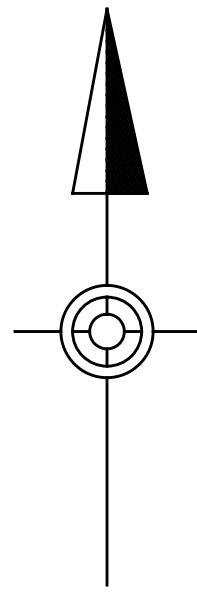
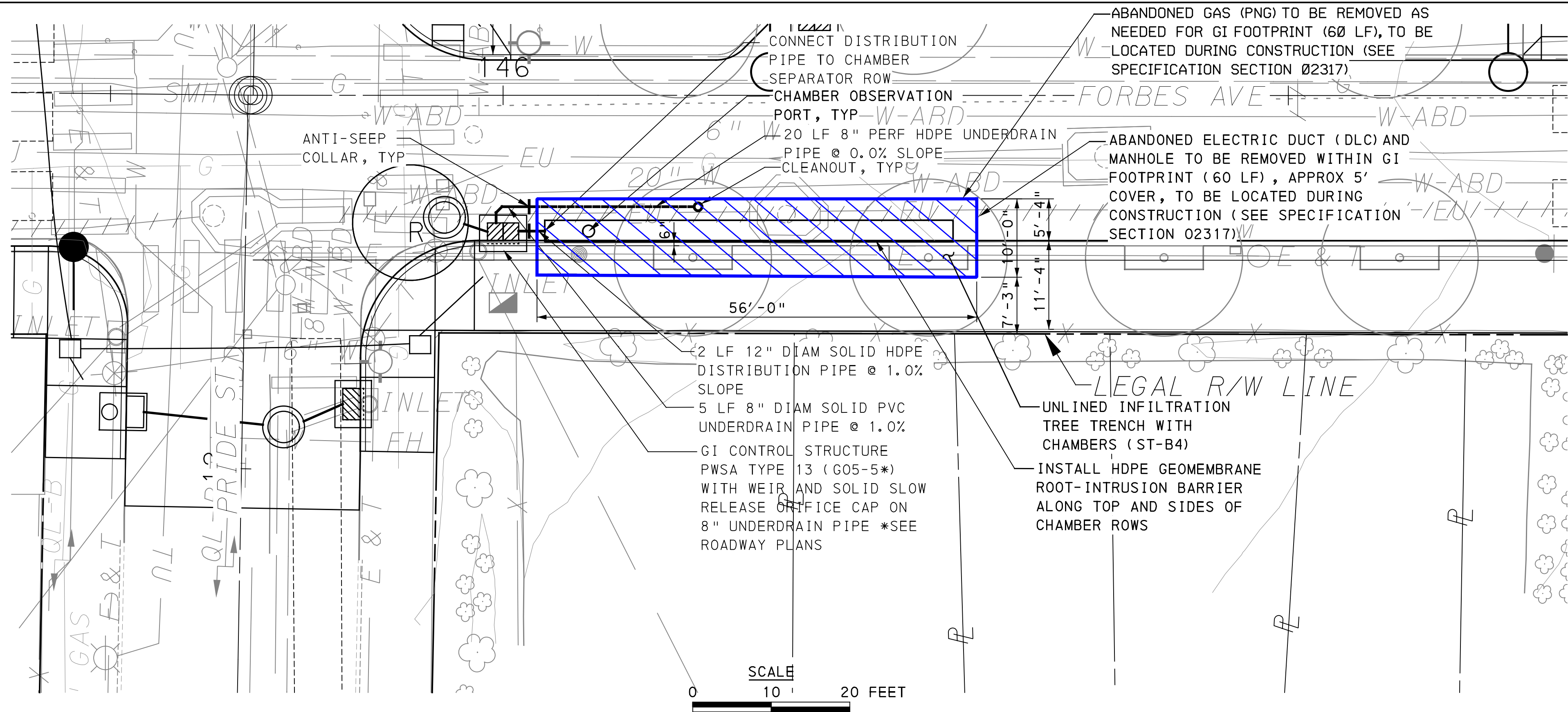
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DWG. NO. SWM23 SHT. 23

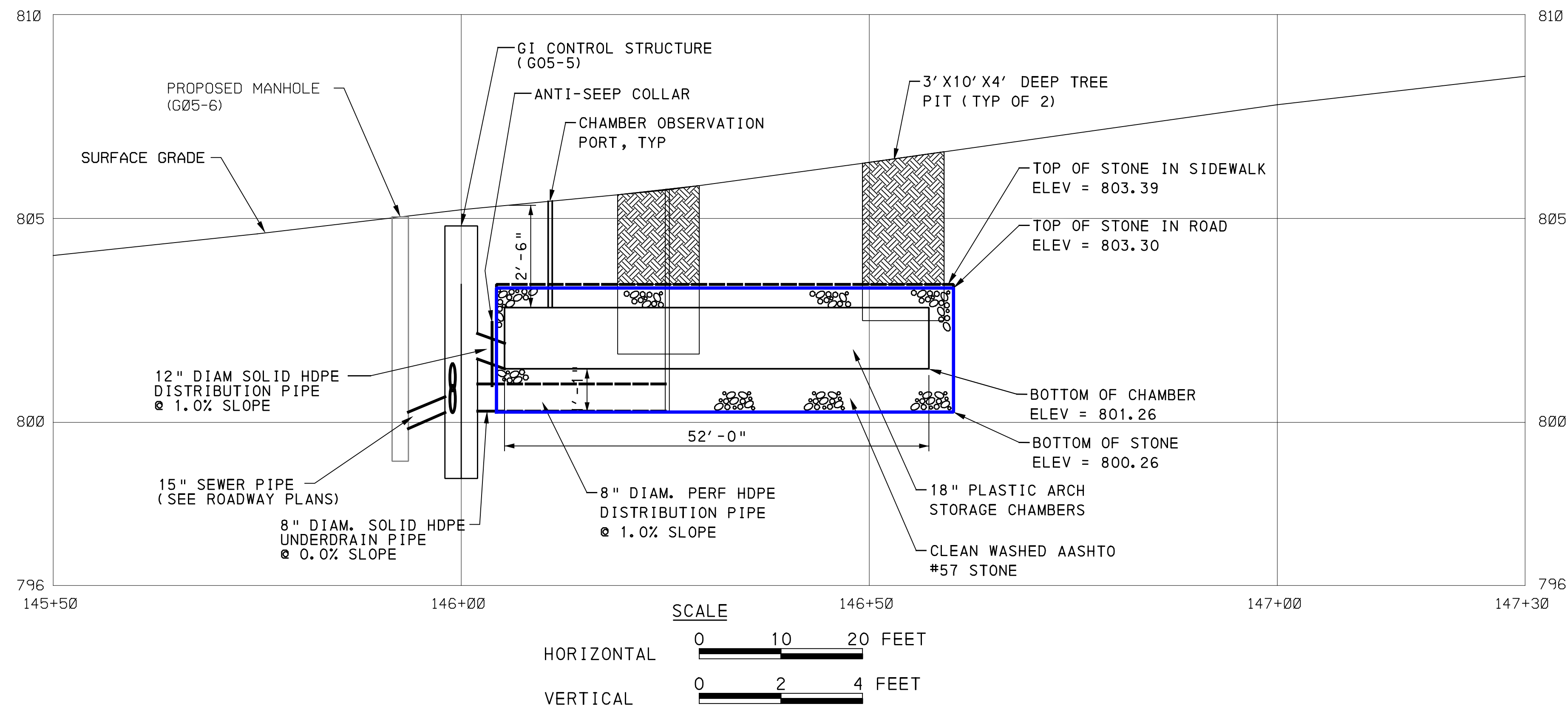
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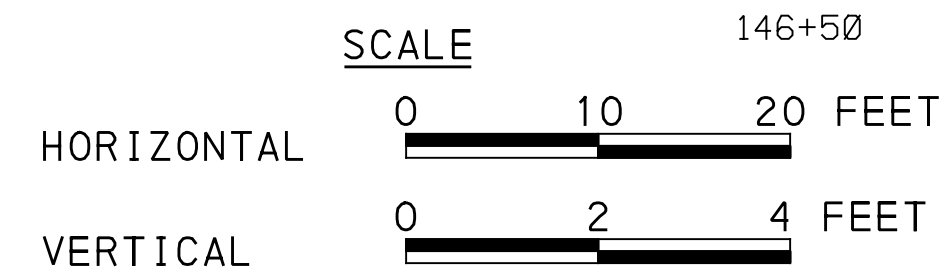


LEGEND

- DRAINAGE STRUCTURE IDENTIFICATION
- DRAINAGE STRUCTURE
- GI STORAGE TRENCH (ST)
- GI BIORETENTION (BR) OR BIOSWALE (BS)
- CURB RAMP
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GI ID	Structure ID	Rim Elevation [ft] **Refer to roadway plans	Invert Elevation out to Sewer [ft] **Refer to roadway plans	Invert Elevation out to GI [ft]	Invert Elevation in from GI [ft]	Structure Bottom Elevation [ft]	Weir Elevation [ft]	Orifice Diameter [in]	Orifice Elevation [ft]
ST-B4	G05-5	**	**	801.29	800.26	798.29	803.35	SOLID CAP	N/A



FORBES AND PRIDE

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BRT-001 GREEN INFRASTRUCTURE

DESIGNED	SAB
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IN CHARGE	ALP
DATE	02/24/23
SCALE	AS SHOWN

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PITTSBURGH PENNSYLVANIA

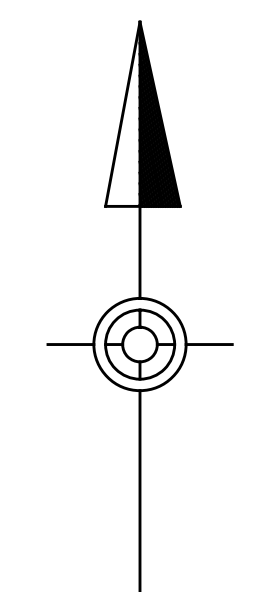
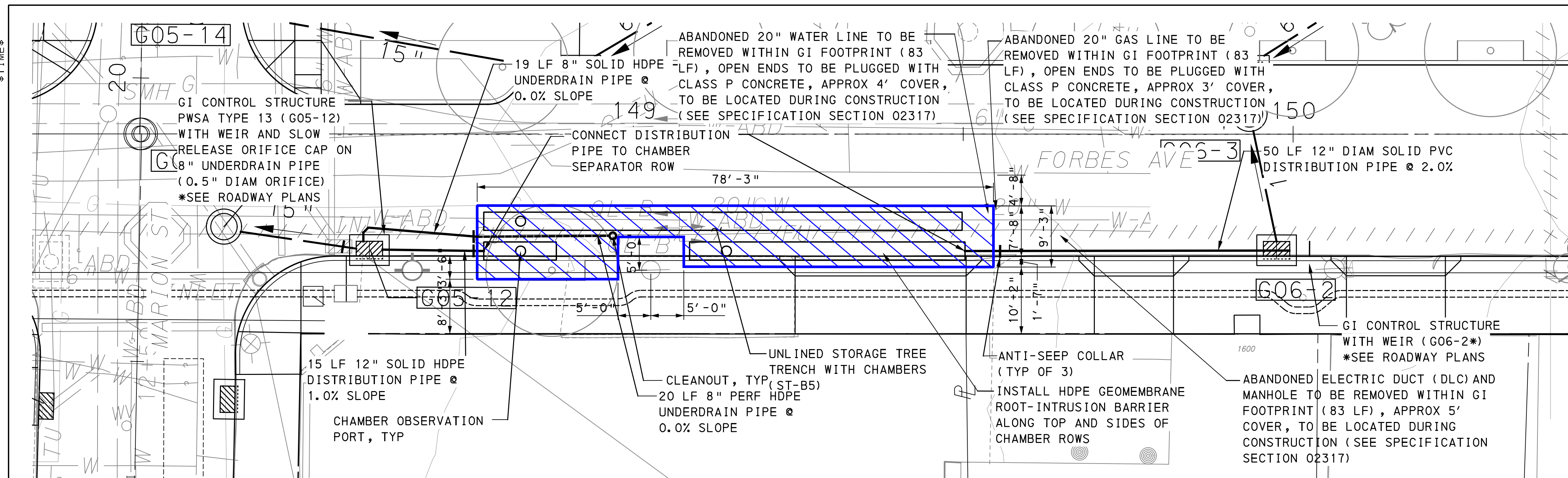
BUS RAPID TRANSIT UPTOWN TO OAKLAND
STORMWATER MANAGEMENT PLANS
FORBES AVE - STA 145+50 TO STA 147+50

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DWG. NO. SWM24	SHT. 24

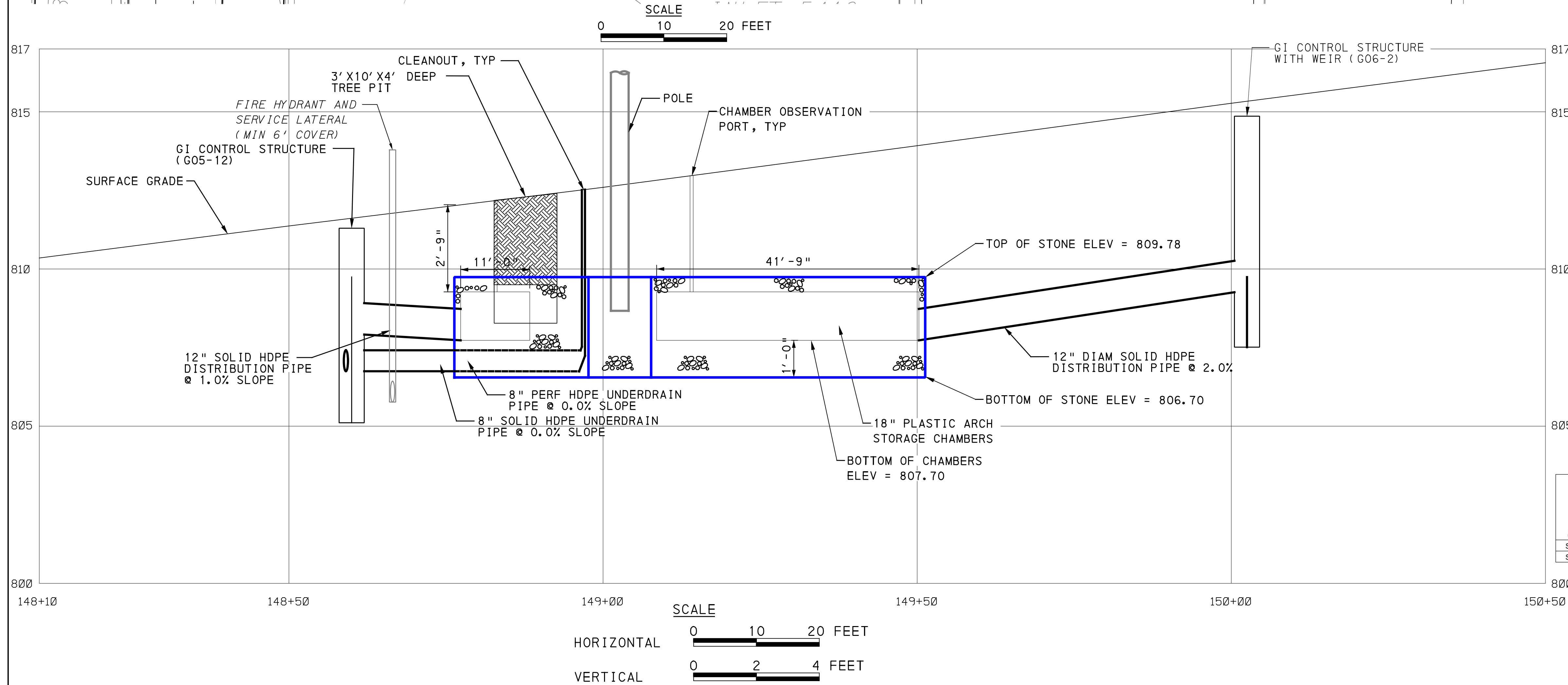
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\$TIME\$



LEGEND

	DRAINAGE STRUCTURE IDENTIFICATION
	DRAINAGE STRUCTURE
	GI STORAGE TRENCH (ST)
	GI BIORETENTION (BR) OR BIOSWALE (BS)
	CURB RAMP
	PROPOSED TREE



GI ID	Structure ID	Rim Elevation [ft] **Refer to roadway plans	Invert Elevation out to Sewer [ft] **Refer to roadway plans	Invert Elevation out to GI [ft]	Invert Elevation in from GI [ft]	Structure Bottom Elevation [ft]	Weir Elevation [ft]	Orifice Diameter [in]	Orifice Elevation [ft]
ST-B5	G05-12	**	**	807.91	806.70	804.63	809.78	0.5	806.87
ST-B5	G06-2	**	**	808.78	N/A	805.78	809.78	N/A	N/A

OPERATOR: \$USER\$
FILE PATH: \$FILEL\$

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[SEE BRT PLAN SET FOR CONSTRUCTION DRAWINGS]

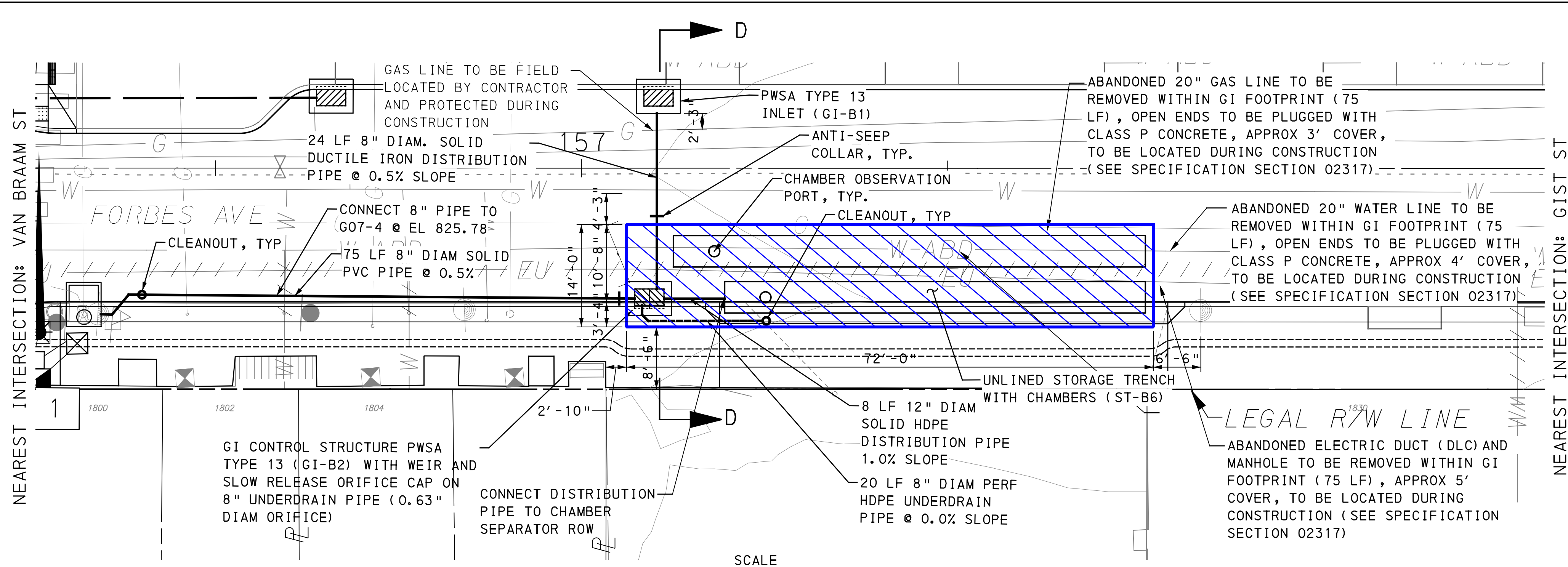
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BUS RAPID TRANSIT UPTOWN TO OAKLAND
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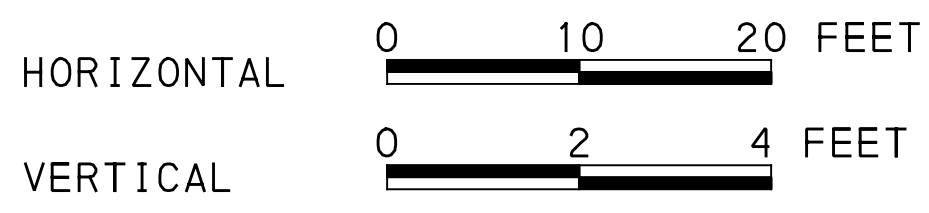
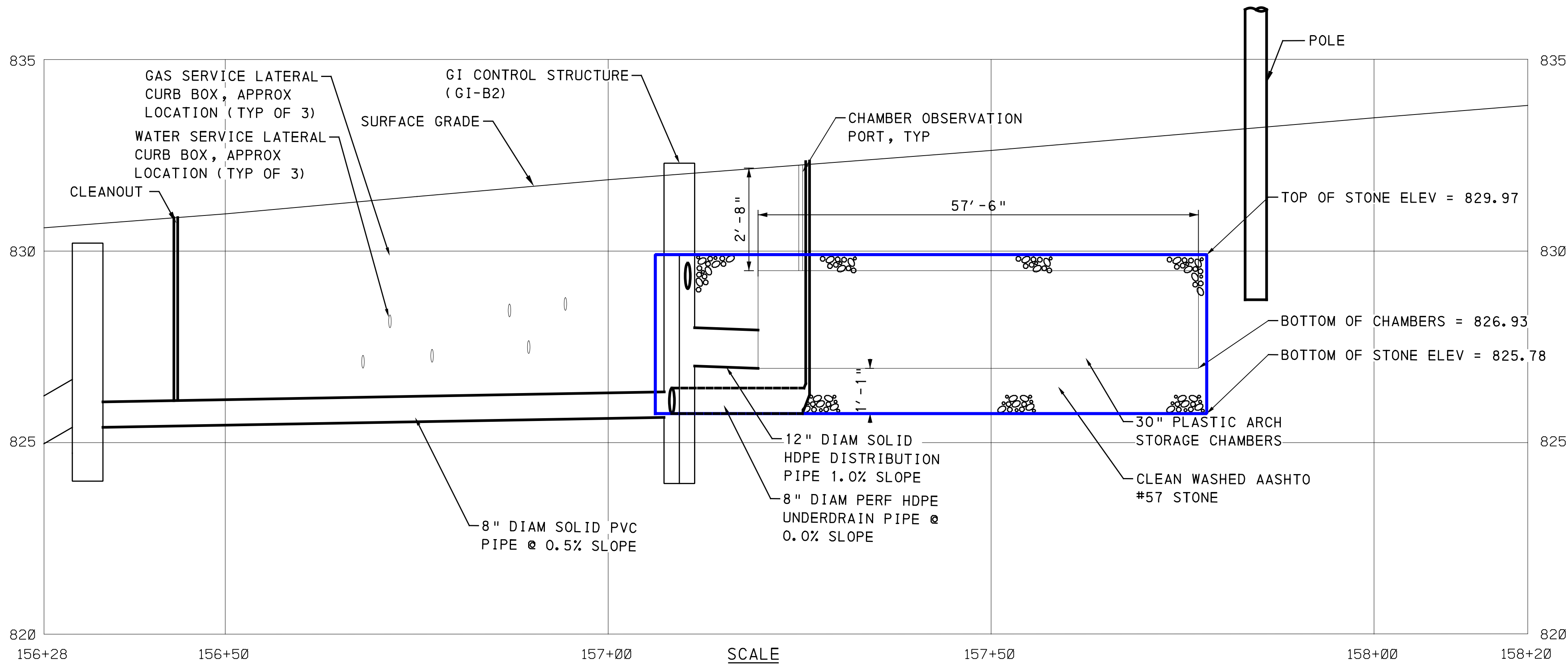
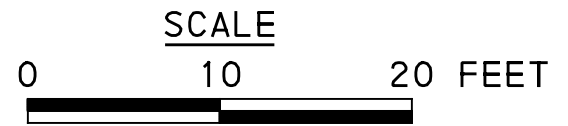
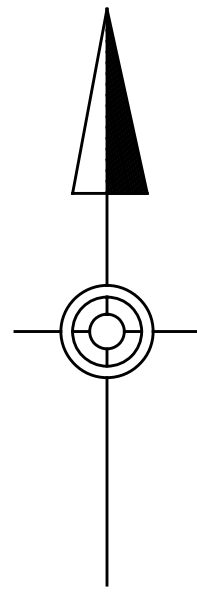
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DWG. NO. SWM25	SHT. 25

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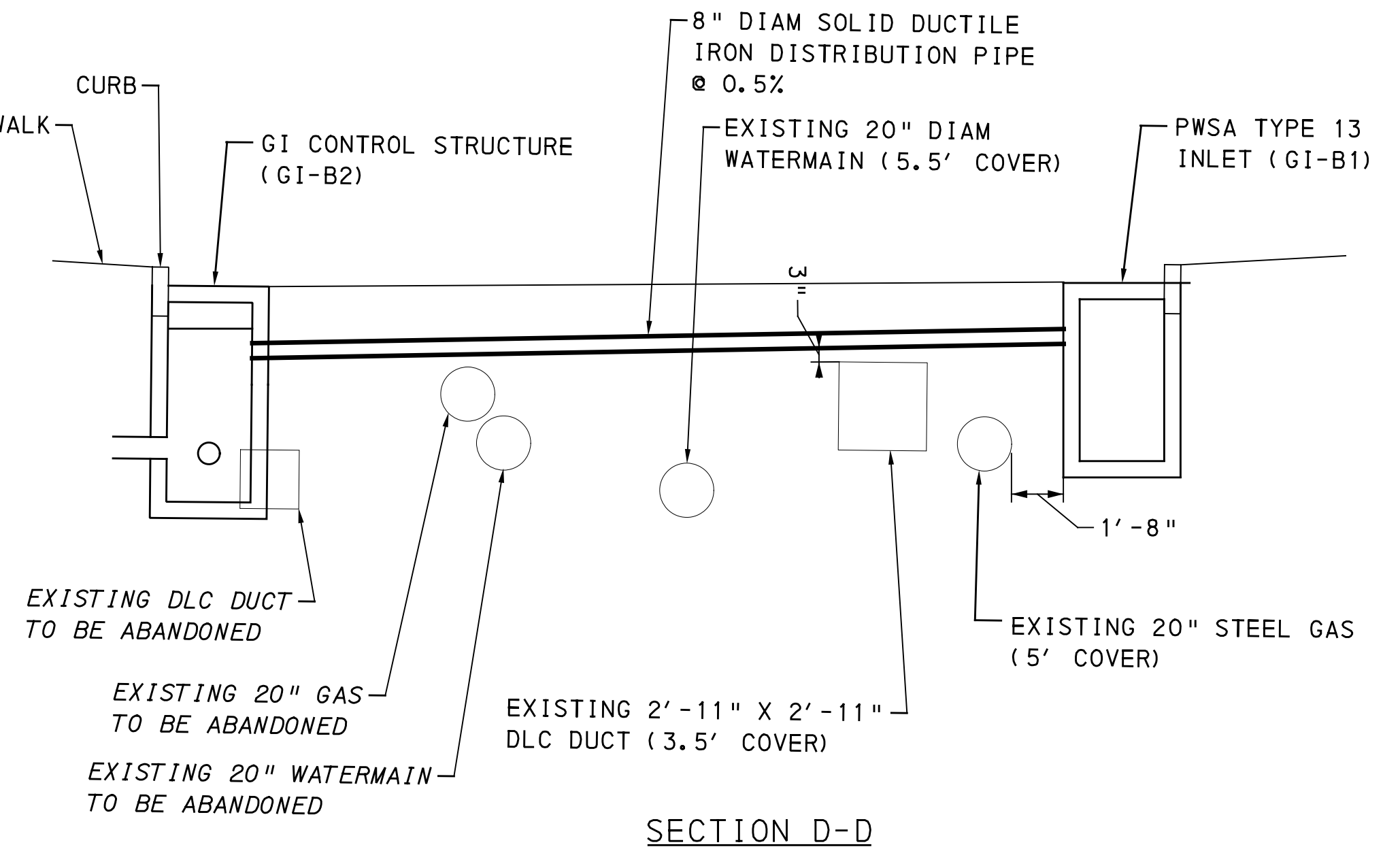


LEGEND

- DRAINAGE STRUCTURE IDENTIFICATION
- DRAINAGE STRUCTURE
- GI STORAGE TRENCH (ST)
- GI BIORETENTION (BR) OR BIOSWALE (BS)
- CURB RAMP
- PROPOSED TREE



GI ID	Structure ID	Rim Elevation [ft] **Refer to roadway plans	Invert Elevation out to Sewer [ft] **Refer to roadway plans	Invert Elevation out to GI [ft]	Invert Elevation in from GI [ft]	Structure Bottom Elevation [ft]	Weir Elevation [ft]	Orifice Diameter [in]	Orifice Elevation [ft]
ST-B6	GI-B1	831.81	N/A	829.64	N/A	826.14	N/A	N/A	N/A
ST-B6	GI-B2	831.47	825.78	827.01	825.78	824.01	829.97	0.63	825.95



SECTION D-D



FORBES AVE & VAN BRAAM ST STORAGE TRENCH B6 (ST-B6)

SEE BRT PLAN SET FOR CONSTRUCTION DRAWINGS

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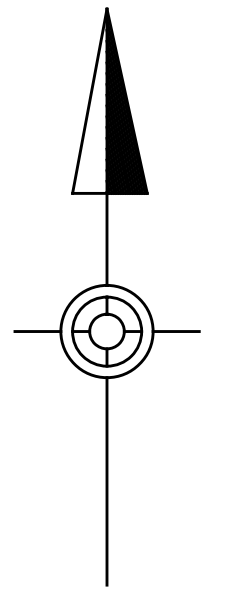
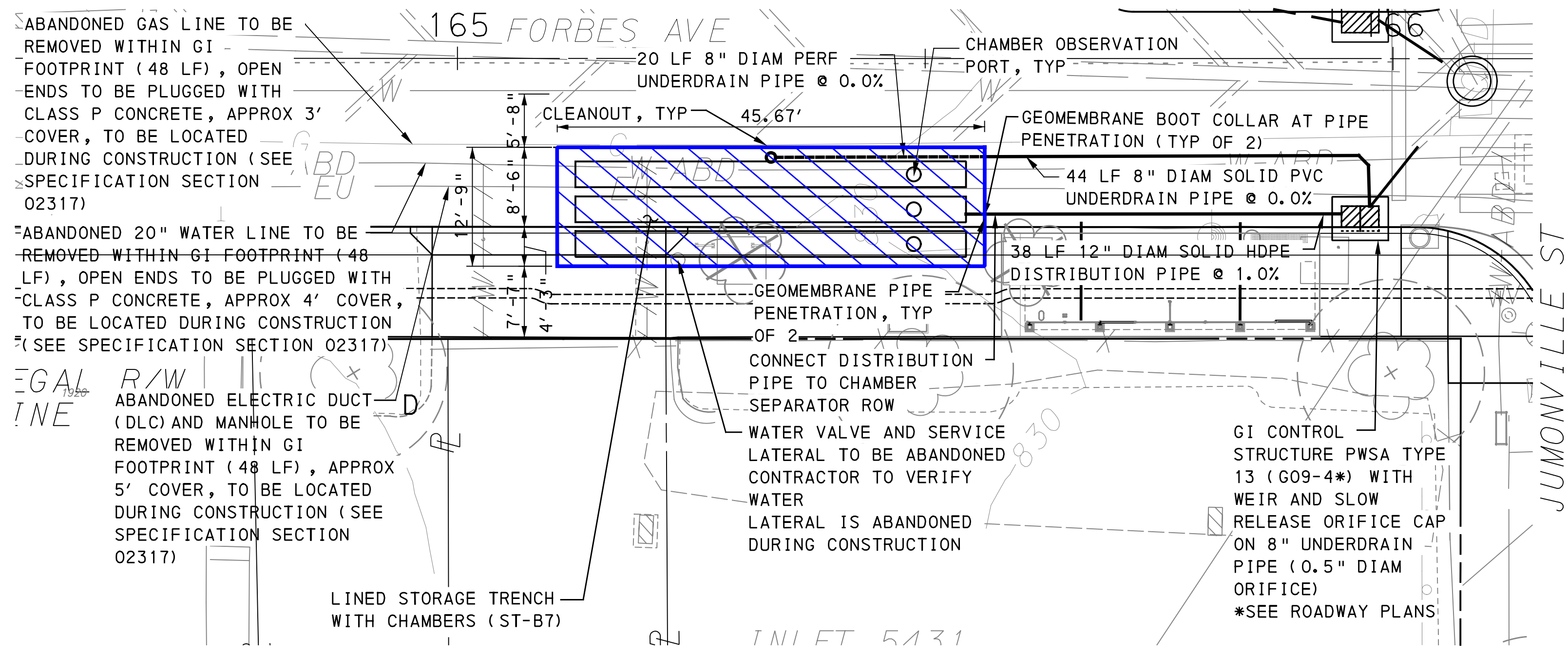
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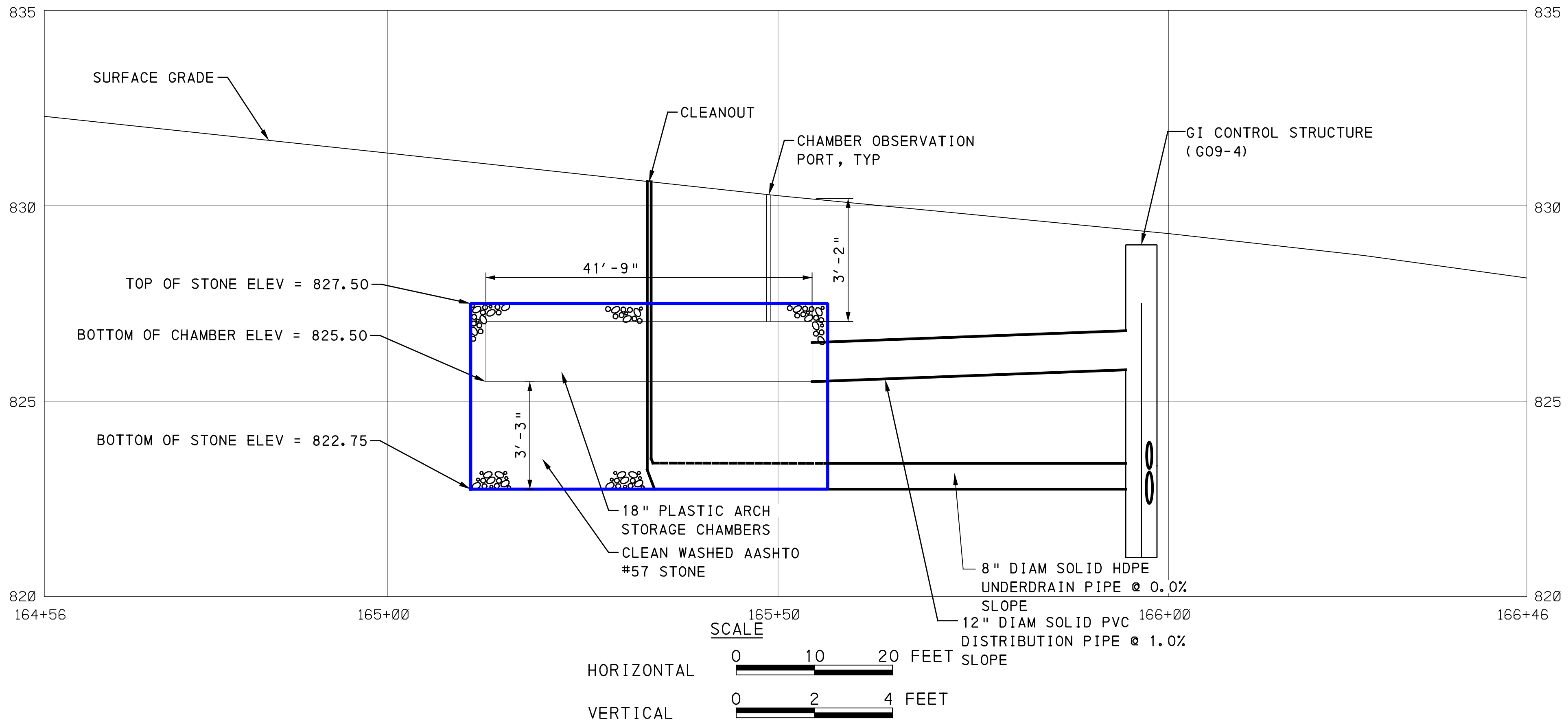
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DWG. NO. SWM26 SHT. 26

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LEGEND	
	DRAINAGE STRUCTURE IDENTIFICATION
	DRAINAGE STRUCTURE
	GI STORAGE TRENCH (ST)
	GI BIORETENTION (BR) OR BIOSWALE (BS)
	CURB RAMP
	PROPOSED TREE



GI ID	Structure ID	Rim Elevation [ft] **Refer to roadway plans	Invert Elevation out to Sewer [ft] **Refer to roadway plans	Invert Elevation out to GI [ft]	Invert Elevation in from GI [ft]	Structure Bottom Elevation [ft]	Weir Elevation [ft]	Orifice Diameter [in]	Orifice Elevation [ft]
ST-B7	G09-4	**	**	825.84	822.75	821.08	827.50	0.5	822.92

FORBES AVE & JUMONVILLE ST
STORAGE TRENCH B7 (ST-B7)
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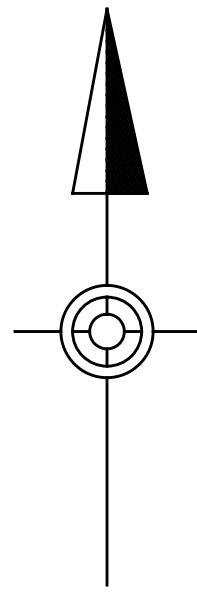
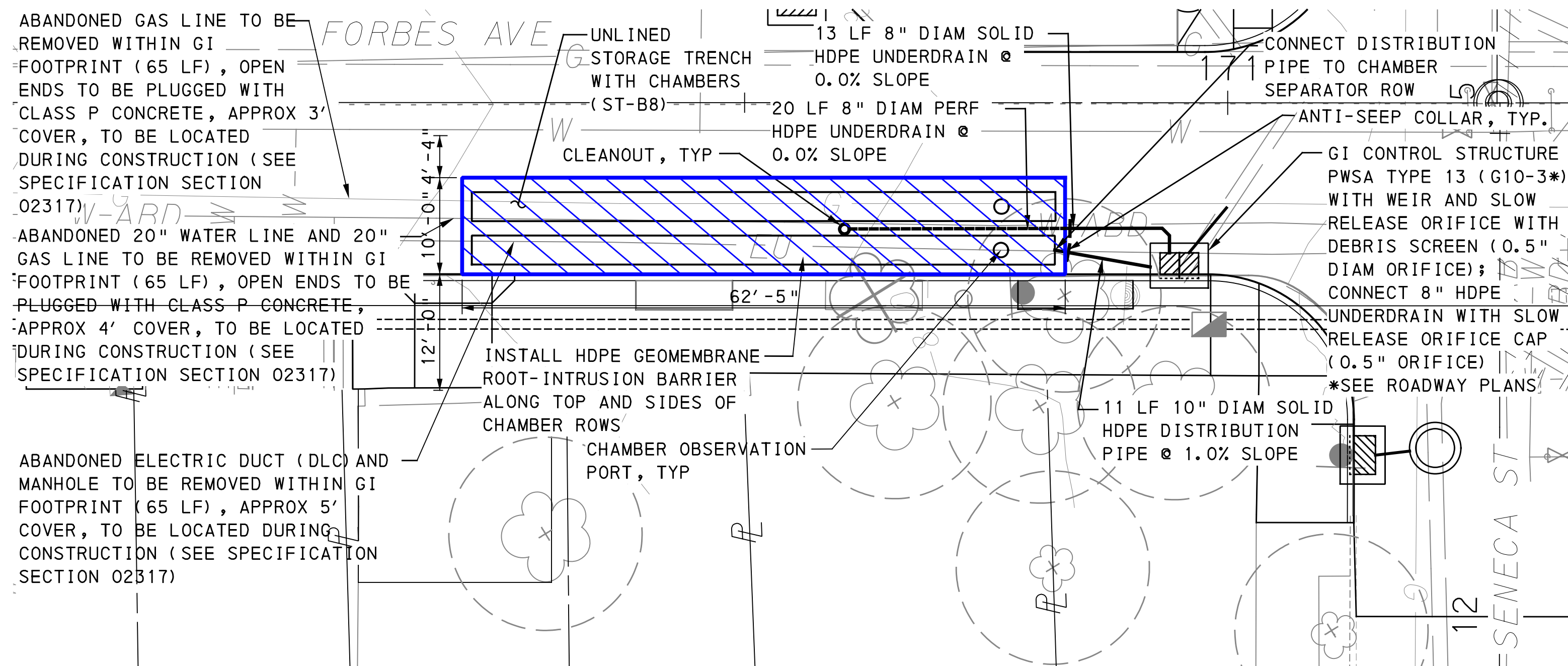
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**BUS RAPID TRANSIT UPTOWN TO OAKLAND
STORMWATER MANAGEMENT PLANS
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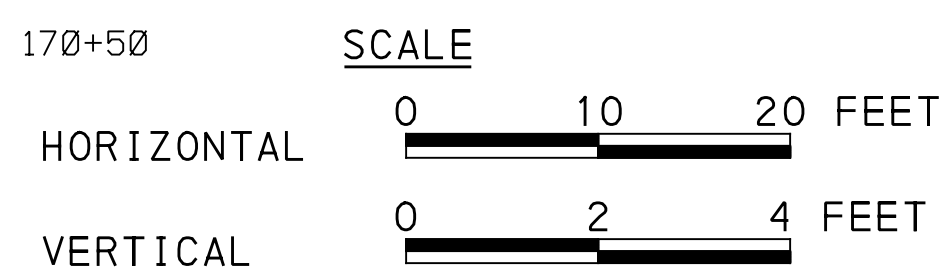
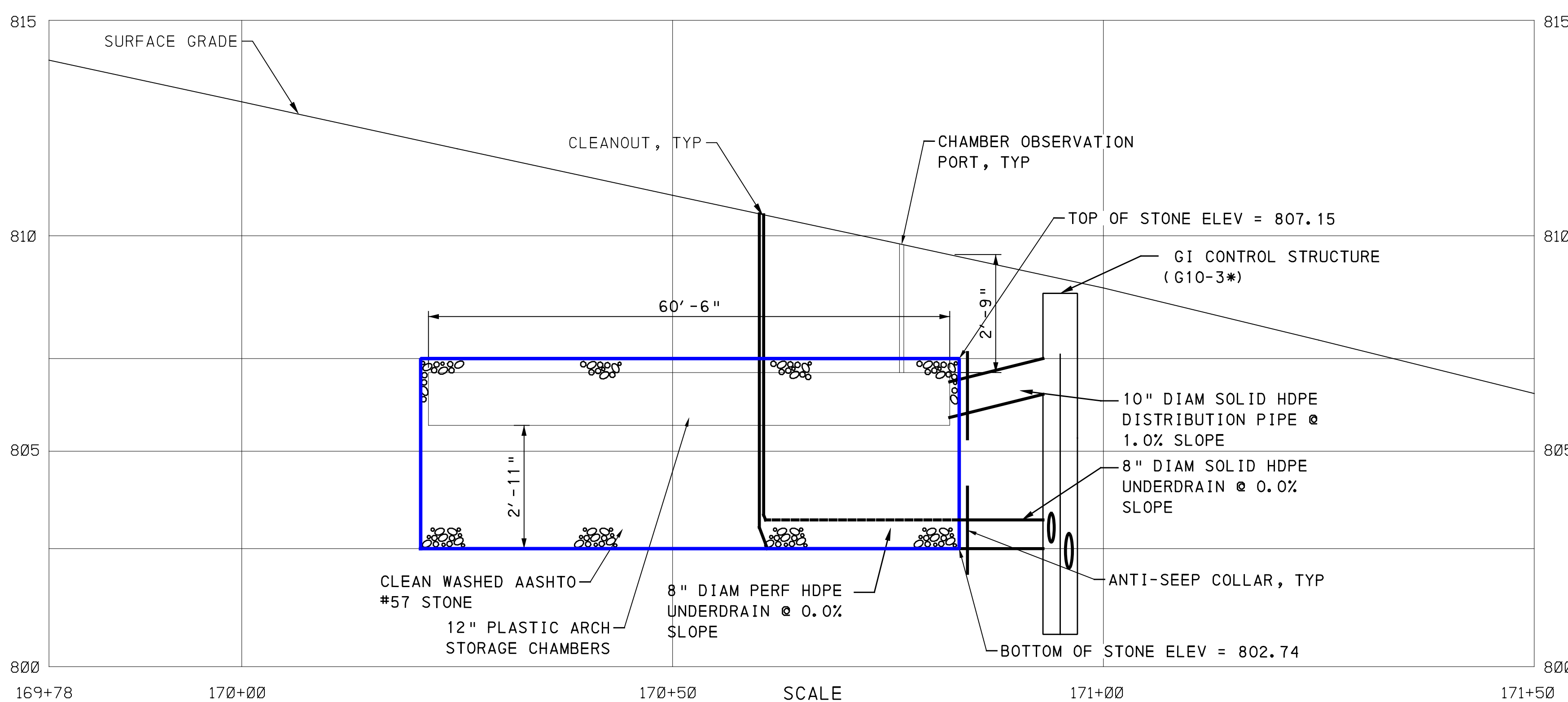
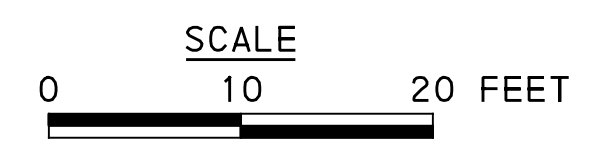
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DWG. NO. SWM27 SHT. 27

PLOTTED: \$DATE\$ \$TIME\$



LEGEND

	DRAINAGE STRUCTURE IDENTIFICATION
	DRAINAGE STRUCTURE
	GI STORAGE TRENCH (ST)
	GI BIORETENTION (BR) OR BIOSWALE (BS)
	CURB RAMP
	PROPOSED TREE



GI ID	Structure ID	Rim Elevation [ft] **Refer to roadway plans	Invert Elevation out to Sewer [ft] **Refer to roadway plans	Invert Elevation out to GI [ft]	Invert Elevation in from GI [ft]	Structure Bottom Elevation [ft]	Weir Elevation [ft]	Orifice Diameter [in]	Orifice Elevation [ft]
ST-B8	G10-3	**	**	805.72	802.74	800.75	807.15	0.5	802.91

FORBES AVE & SENECA ST
STORAGE TRENCH B8 (ST-B8)
SEE BRT PLAN SET FOR CONSTRUCTION DRAWINGS

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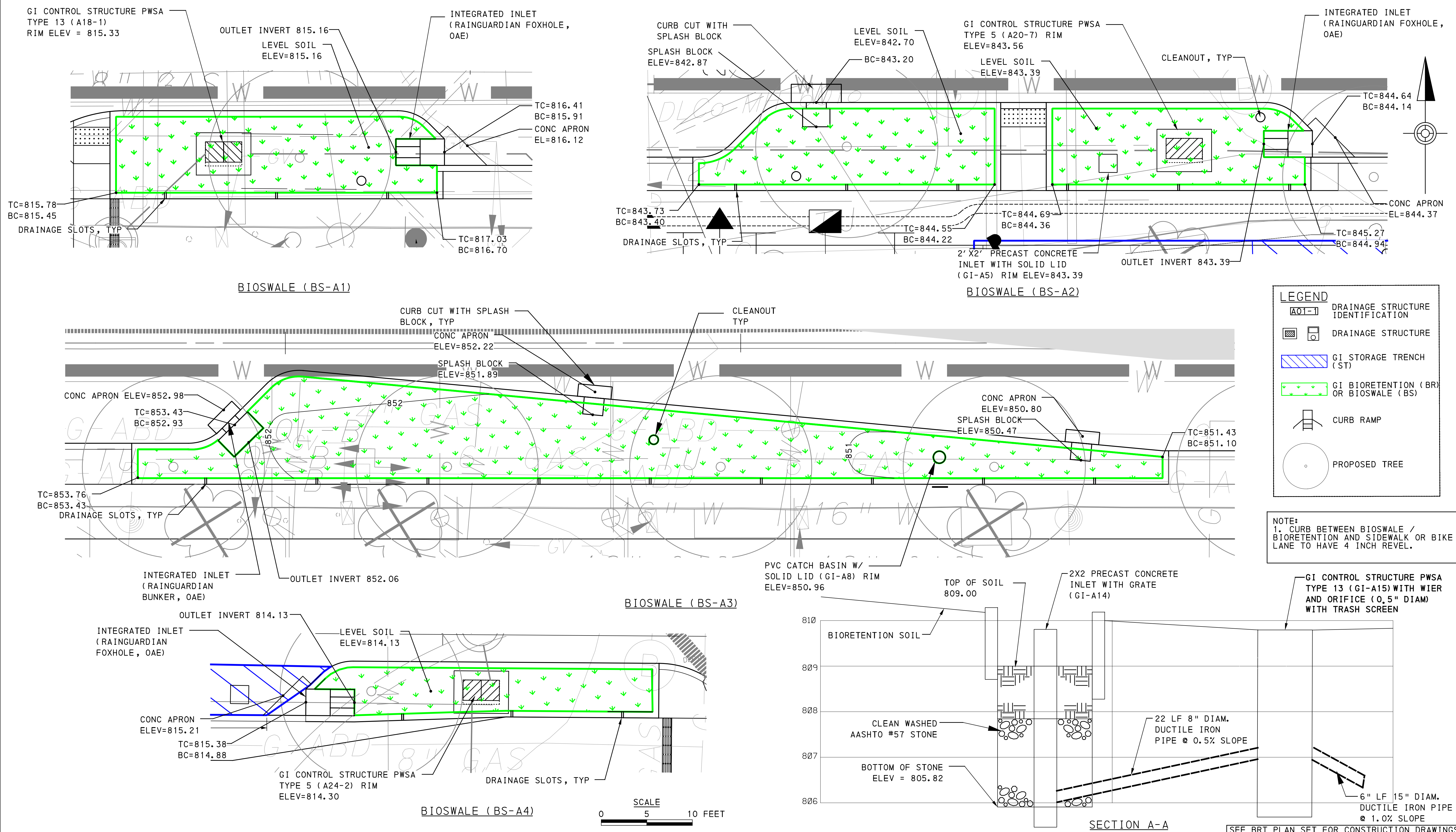
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BUS RAPID TRANSIT UPTOWN TO OAKLAND STORMWATER MANAGEMENT PLANS BIOSWALE GRADING PLANS

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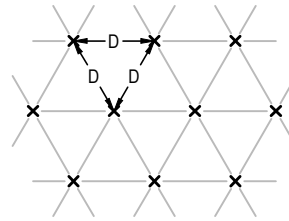
PLANT LIST

KEY	BOTANICAL NAME	COMMON NAME	QUANTITY	SIZE	NOTES/ SPACING
ORNAMENTAL GRASSES					
CA	CALMAGROSTIS X ACUTIFLORA 'KARL FORESTER'	KARL FOERSTER FEATHER REED GRASS	373	#3 CONT.; FULL	18" OC
PV	PANICUM VIRGATUM 'SHENANDOAH'	SHENANDOAH SWITCHGRASS	1078	#3 CONT.; FULL	24" OC
MULCH					
	DOUBLE SHREDDED NATURAL WOOD BARK MULCH (SY)		363		

1 QUANTITIES

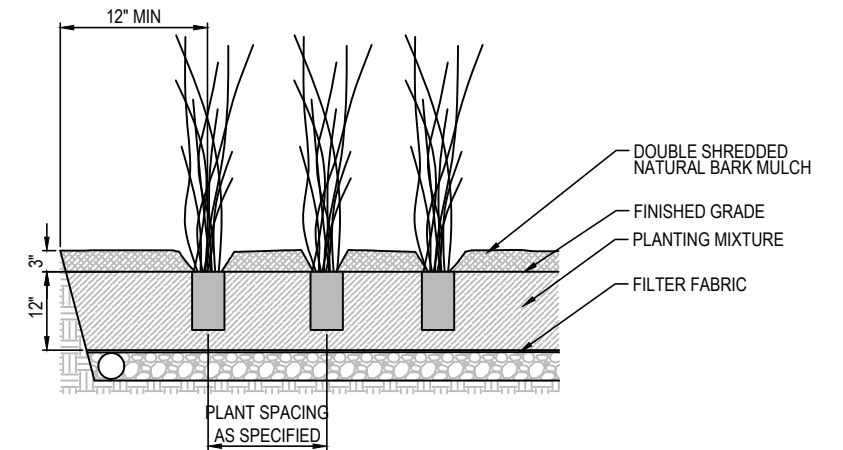
1. ALL PLANT MATERIAL SHALL BE OF NURSERY STOCK QUALITY AS DEFINED BY THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION AND GUARANTEED PER THE SPECIFICATIONS.
2. ALL DISTURBED AREAS SHALL BE SEEDED AND PLANTED WITHIN 30 DAYS OF CONSTRUCTION COMPLETION.
3. REFER TO EROSION AND SEDIMENTATION CONTROL PLANS FOR TEMPORARY SCHEDULES.
4. NO UNDERGROUND UTILITIES HAVE BEEN SHOWN ON THESE PLANS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO USE CARE AND NOT DISRUPT ANY EXISTING UTILITY, ABOVE OR BELOW GROUND.
5. SHOULD DISCREPANCY ARISE BETWEEN THE LANDSCAPE PLAN AND PLANT SCHEDULE, THE PLAN SHALL GOVERN AS TO THE QUANTITY OF PLANT MATERIAL.
6. HAND WATER TO ESTABLISH PLANTINGS. NO PERMANENT IRRIGATION IS REQUIRED. WATER WELL AFTER PLANTING, SOAKING THE ENTIRE AREA. NEW PLANTS WILL REQUIRE AN INCH OF WATER PER WEEK. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THE HEALTH OF THE PLANTS.
7. DO NOT PLANT OVER CLEANOUTS, INLETS, OR OTHER SURFACE FEATURES.

2 LANDSCAPE NOTES



- NOTES:**
1. "D" = PLANT SPACING CENTER LINE TO CENTER LINE. REFER TO PLANT SCHEDULE FOR ON CENTER (OC) SPACING.

3 TYPICAL TRIANGULAR PLANT SPACING DIAGRAM NOT TO SCALE



4 TYPICAL PLANTING - ORNAMENTAL GRASSES NOT TO SCALE

SHENANDOAH SWITCHGRASS



KARL FOERSTER FEATHER REED GRASS



5 PLANT IMAGES



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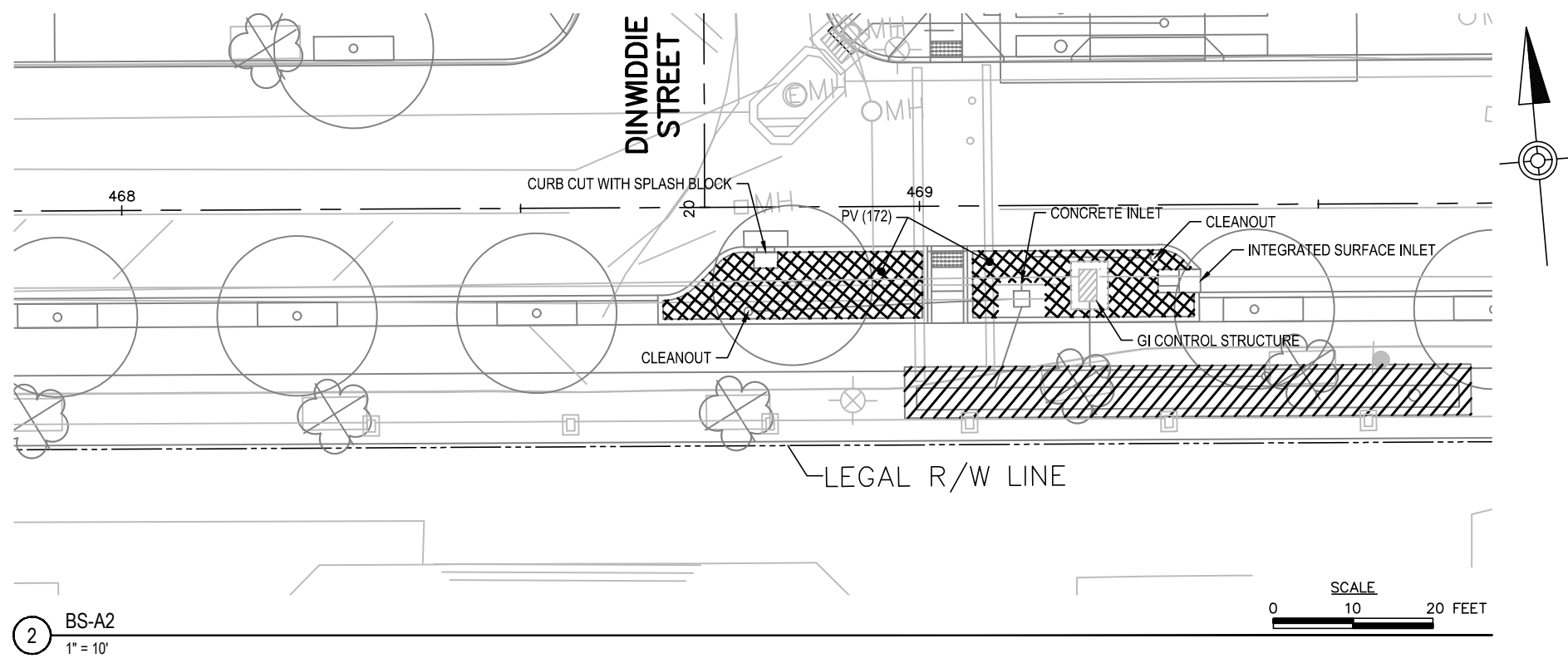
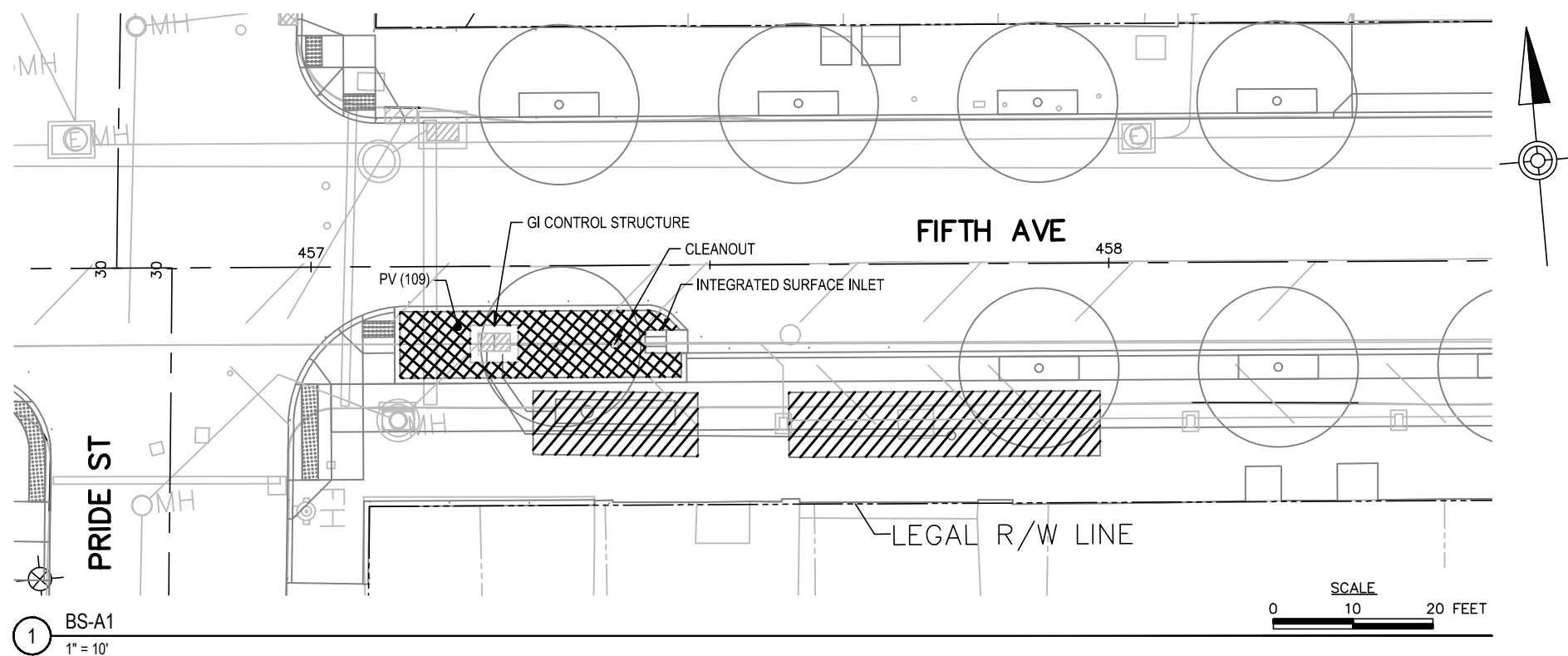
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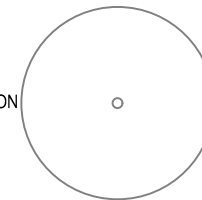
LEGEND

SEE AECOM / KLAVON LANDSCAPE SHEETS FOR TREE TYPES, SIZES AND QUANTITIES.

EXISTING TREE TO BE REMOVED (REFER TO AECOM/KLAVON DRAWINGS)



PROPOSED TREE (REFER TO AECOM/KLAVON DRAWINGS)



PROPOSED GI LEGEND

GI BIORETENTION (BR) OR BIOSWALE (BS)



GI STORAGE TRENCH (ST)



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IN CHARGE	MDA
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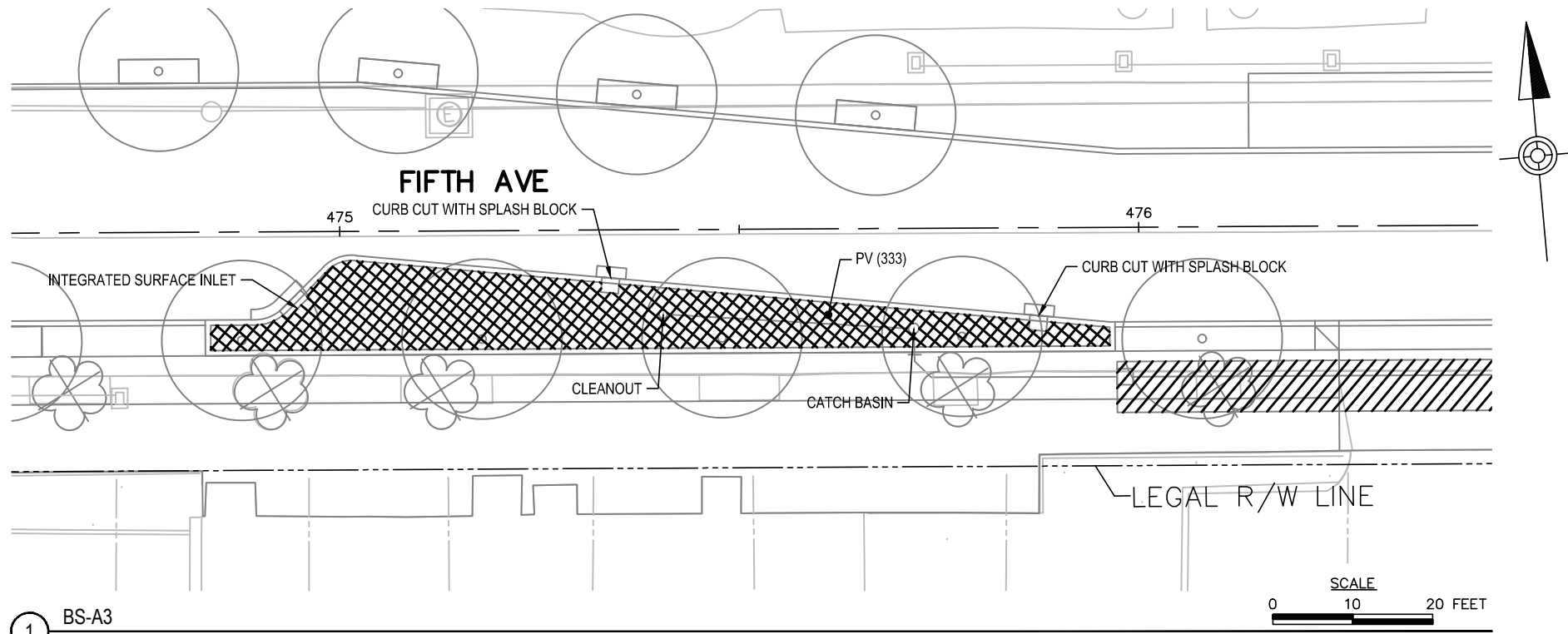
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**BUS RAPID TRANSIT
GREEN INFRASTRUCTURE
LANDSCAPE PLANS**

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1 BS-A3
1" = 10'

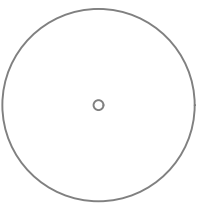
LEGEND

SEE AECOM / KLAVON LANDSCAPE SHEETS FOR TREE TYPES, SIZES AND QUANTITIES.

EXISTING TREE TO BE REMOVED (REFER TO AECOM/KLAVON DRAWINGS)



PROPOSED TREE (REFER TO AECOM/KLAVON DRAWINGS)

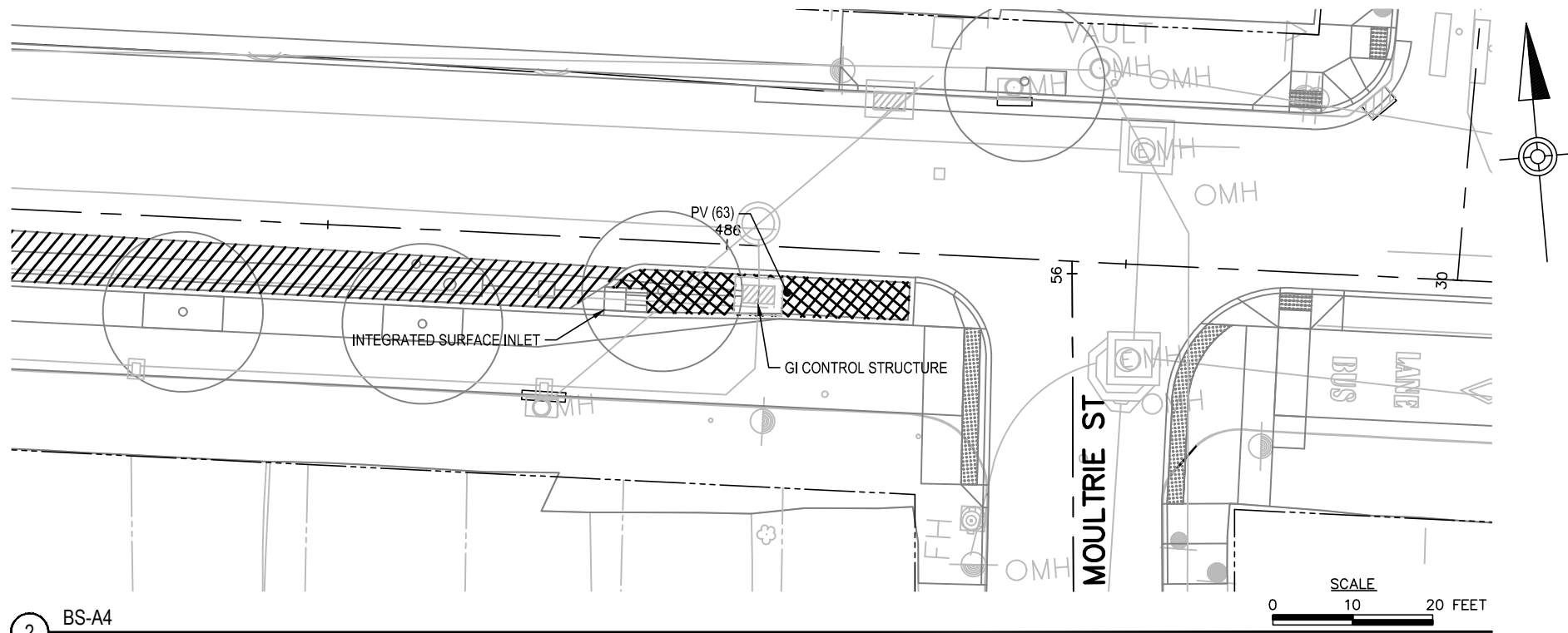


PROPOSED GI LEGEND

GI BIORETENTION (BR) OR BIOSWALE (BS)



GI STORAGE TRENCH (ST)



2 BS-A4
1" = 10'

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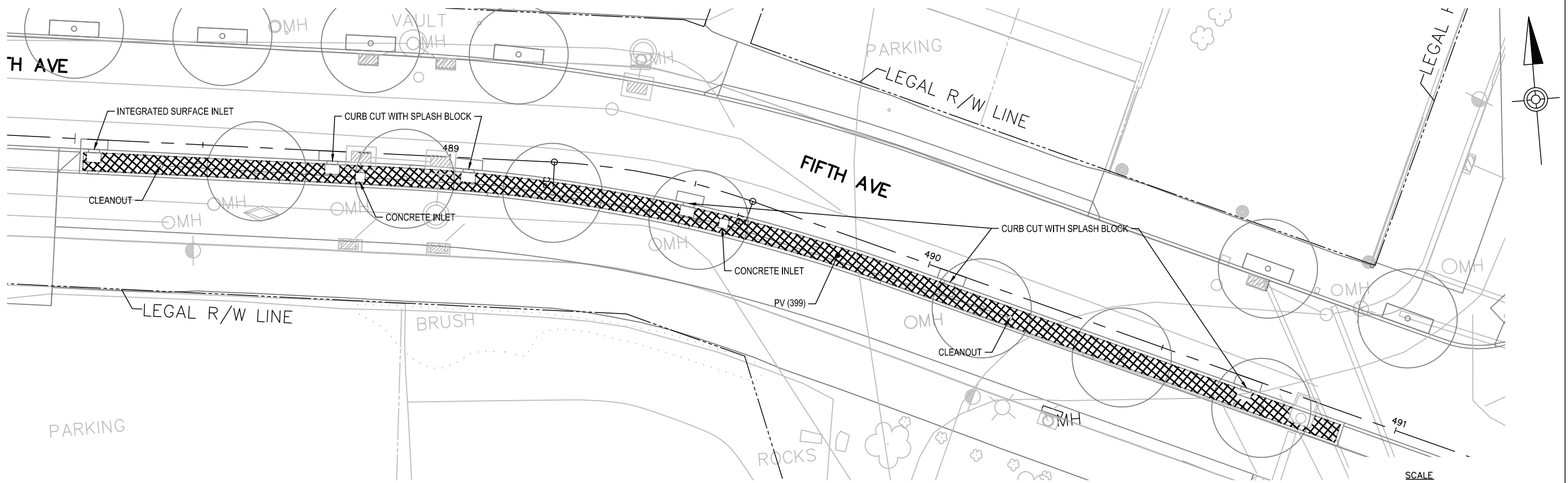
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**BUS RAPID TRANSIT
GREEN INFRASTRUCTURE
LANDSCAPE PLANS**

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DWG. NO.	SWM40	SHT.	34
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1 BR-A1
1" = 10'

- LEGEND**
- SEE AECOM / KLAVON LANDSCAPE SHEETS FOR TREE TYPES, SIZES AND QUANTITIES.
 - EXISTING TREE TO BE REMOVED (REFER TO AECOM/KLAVON DRAWINGS)
 - PROPOSED TREE (REFER TO AECOM/KLAVON DRAWINGS)
 - PROPOSED GI LEGEND**
 - GI BIORETENTION (BR) OR BIOSWALE (BS)
 - GI STORAGE TRENCH (ST)

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**BUS RAPID TRANSIT
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LANDSCAPE PLANS**

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Green Infrastructure Landscape Design Alternative Summary 60% Submission

Green Infrastructure Landscape (GIL) Basis of Design

The GIL Basis of Design is documented on Moore Design Associates' 60% Design Development documents. The GIL Basis of Design is coordinated with and complements the overall Bus Rapid Transit Landscape Design, prepared by Klavon Design Associates, a subconsultant to AECOM.

Ground Plane

Ornamental grasses are extremely hardy and excellent plants for difficult cultural situations: inundation, drought, urban conditions, and winter road salt. Grasses grow quickly and require relatively simple maintenance—cutting back annually. For these reasons, ornamental grasses are the choice for both the overall Bus Rapid Transit Design and the GIL Basis of Design.

The Bus Rapid Transit Landscape Design proposes a consistent, uniform stand of Shenandoah Switchgrass for the entire project area. Similarly, the GIL Basis of Design proposes a uniform stand of Shenandoah Switchgrass, which is a reddish burgundy color, for most of the GI practices.

The advantages of a uniform stand of a single grass include a clean, consistent look, particularly when viewed from a moving vehicle. Simplicity of maintenance is also an advantage. Maintenance staff would only need to be familiarized with the growth cycle and requirements of one grass type. As new growth emerges in the spring, weeds could be easily identified from the single ornamental grass type.

There is one exception to the use of Shenandoah Switchgrass in the GIL Basis of Design documents. At Bigelow Station, Karl Foerster Feather Reed Grass is planned to coordinate with the plantings at Bigelow Plaza. Karl Foerster Feather Reed Grass' height of 5'-6' was considered and determined not to block vehicle or pedestrian sight distances at the crossing, but will provide buffer between vehicular traffic and pedestrians.

Street Trees

Street Trees are documented entirely by Klavon Design Associates to provide design continuity and ease of calculation regarding demolished tree replacements (required by the City of Pittsburgh). To help assure that Street Tree plantings are compatible with the GI practices, Moore Design Associates is coordinating closely with Klavon Design Associates regarding construction GI details, structure locations, inundation depth and duration.

Plant and Design Alternatives

Alternatives to the Basis of Design have been considered by Moore Design Associates. Alternative #1 would be a uniform grass stand, but of a different type. Alternative #2 is a mix of ornamental grasses within a single GI practice. The following chart summarizes the GIL Basis of Design, Alternative #1 and Alternative #2.

	Basis of Design	Alternative #1	Alternative #2
Design Philosophy	<ul style="list-style-type: none"> Uniform stand of single ornamental grass Clean, simple aesthetic Coordinated with overall BRT landscape design 	<ul style="list-style-type: none"> Uniform stand of single ornamental grass Clean, simple aesthetic 	<ul style="list-style-type: none"> Combination of 2 or 3 ornamental grasses Greater diversity and complexity
Sample Planting Plan	100% Shenandoah Switchgrass 	100% Hameln Fountain Grass Or 100% Little Blue Stem 	50% Hameln Fountain Grass 25% Shenandoah Switchgrass 25% Little Bluestem
Ornamental Grass	Shenandoah Switchgrass 	Hameln Fountain Grass 	Combination of <ul style="list-style-type: none"> Hameln Fountain Grass Shenandoah Switchgrass and/or Little Bluestem See photos left
Grass Characteristics	<ul style="list-style-type: none"> 2'- 4' height Reddish/burgundy color 	<ul style="list-style-type: none"> 2' - 3' height Plumes arch above foliage 	See characteristics left
Ornamental Grass Option	NA	Little Bluestem 	See photo left
Grass Option Characteristics	<ul style="list-style-type: none"> NA 	<ul style="list-style-type: none"> 2' - 4' Height Tinge of blue color 	See characteristics left
Advantages	<ul style="list-style-type: none"> Ease of maintenance Coordination with overall BRT landscaping 	<ul style="list-style-type: none"> Ease of maintenance Grass type variation distinguishes GI practices 	<ul style="list-style-type: none"> Greater plant diversity
Disadvantages	<ul style="list-style-type: none"> NA 	<ul style="list-style-type: none"> Less coordinated with BRT landscaping 	<ul style="list-style-type: none"> More complex maintenance Less coordinated with BRT landscaping

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Gulf Tower
707 Grant Street
5th Floor
Pittsburgh, PA 15219



400 Industry Dr,
Pittsburgh, PA 15275

NO.	DATE	DESCRIPTION
REVISIONS		

100%
DESIGN
SUBMITTAL
(NOT FOR
CONSTRUCTION)

SIGNATURE

APPROVED

DESIGNED	MG
DRAWN	BB
CHECKED	SM
IN CHARGE	MDA
DATE	09/29/20
SCALE	AS SHOWN

PORT AUTHORITY OF ALLEGHENY COUNTY
PITTSBURGH PENNSYLVANIA

BUS RAPID TRANSIT
GREEN INFRASTRUCTURE
LANDSCAPE PLANS

Port Authority

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