

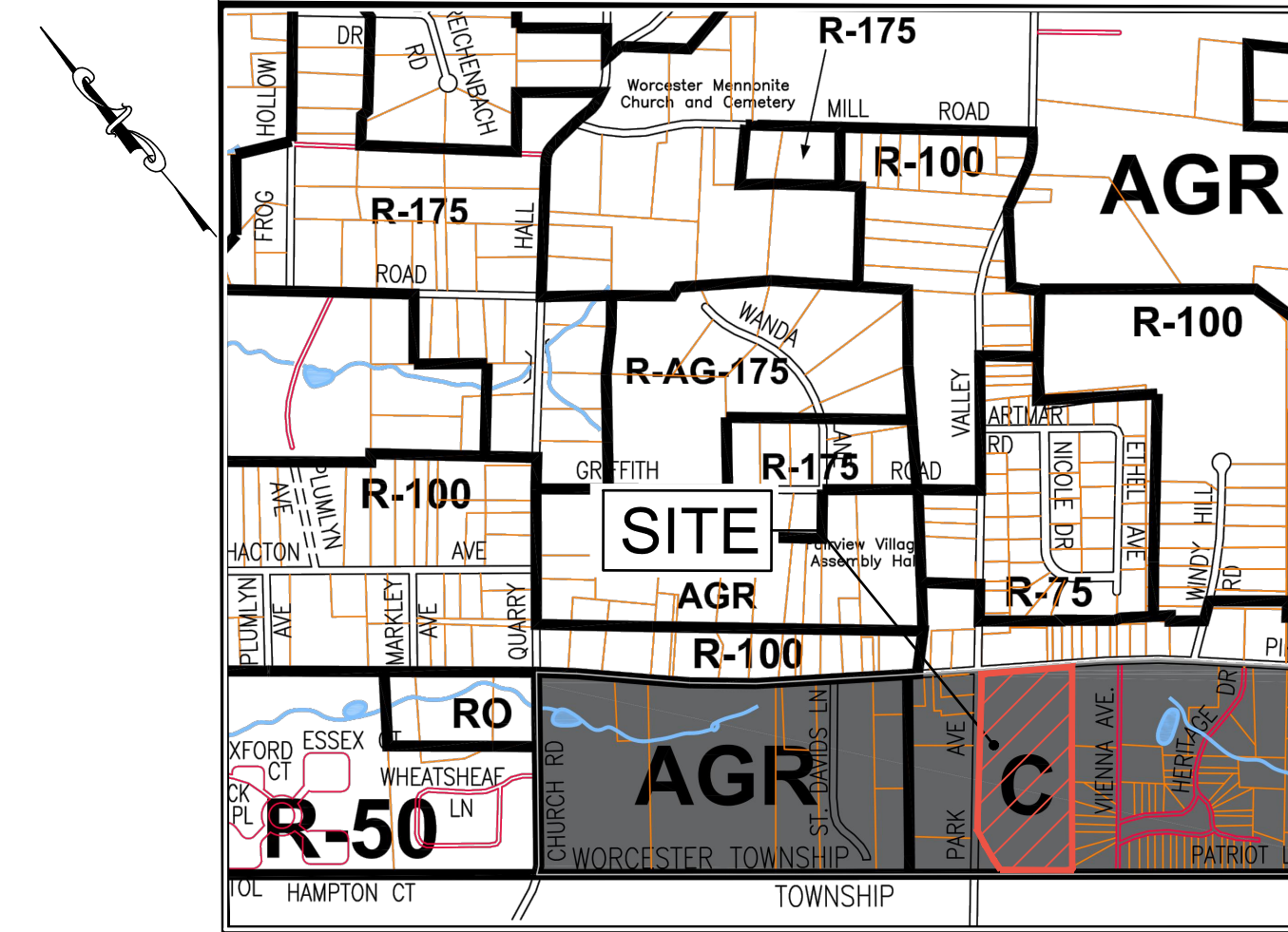
PRELIMINARY LAND DEVELOPMENT PLANS FOR CITY VIEW

WORCESTER TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA

SHEET INDEX		
SHEET NUMBER	DESCRIPTION	
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3	EXISTING FEATURES	
4	EXISTING RESOURCES PLAN	
5	NATURAL RESOURCES PROTECTION PLAN	
6	TREE SURVEY PLAN	
7	DEMOLITION PLAN	
8	SITE PLAN	*
9	GRADING PLAN	*
9A	DRAINAGE PLAN	
10	UTILITY PLAN	
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12	LIGHTING PLAN	
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15	STORM SEWER PROFILES	
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33	POST CONSTRUCTION STORMWATER MANAGEMENT NOTES	*
34	LANDSCAPE AND LIGHTING DETAILS	
** SHEETS INDICATED TO BE INCLUDED IN RECORD PLAN SET		
THE POST CONSTRUCTION STORMWATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL REPORT, SUBMITTED UNDER SEPARATE COVER, SHALL BE CONSIDERED PART OF THE LAND DEVELOPMENT SUBMISSION FOR THIS PROJECT.		



CONTEXT MAP
SCALE: 1"=4,00'



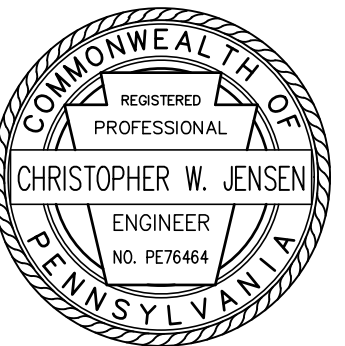
ZONING MAP
SCALE: 1"=1,000'

SITE & ADJACENT ZONING DISTRICT	
DESIGNATION	ZONING CLASSIFICATION
AGR	AGRICULTURAL
R-175	RESIDENTIAL
R-150	RESIDENTIAL
R-100	RESIDENTIAL
R-75	RESIDENTIAL
R-50	RESIDENTIAL
RO	RESIDENTIAL OFFICE
R-AG-175	RESIDENTIAL AGRICULTURAL
R-AG-200	RESIDENTIAL AGRICULTURAL
C	COMMERCIAL
LI	LIMITED INDUSTRIAL
LPD	LAND PRESERVATION DISTRICT
SC	SHOPPING CENTER
MH	MOBILE HOME DEVELOPMENT
	MULTI-RESIDENTIAL USE OVERLAY DISTRICT
AQRC	AGE QUALIFIED RESIDENTIAL COMMUNITY

ATTENTION: ALL CONTRACTORS LOCATIONS OF ALL EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM UTILITY COMPANY RECORDS AND/OR ABOVE-GROUND EXPOSURES OF THE CITY. COMPLETENESS OR ACCURACY OF THE SIZE, DEPTH OR HORIZONTAL LOCATION OF UNDERGROUND UTILITIES OR STRUCTURES CANNOT BE GUARANTEED. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES AND FACILITIES PRIOR TO START OF WORK. SEE SHEET 10 FOR UTILITY LOCATIONS.
20213502293

NO.	DATE	REVISIONS	BY	CHKD
4	3/7/2024	PER GIS REVIEW LETTER DATED 01/24/2024	PRG	DS
3	11/11/2023	PER GIS REVIEW LETTER DATED 11/22/2023	PRG	DS
2	4/3/2023	REVISED ENTRANCE ON GERMANTOWN PIKE	POP	DS
1	10/04/2022	PER GIS REVIEW LETTER DATED 03/11/2022	PRG	DS

CHRISTOPHER W. JENSEN, P.E.
LICENSED PROFESSIONAL ENGINEER



4/3/2023
LICENSED PROFESSIONAL ENGINEER
STATE OF PA LICENSE NO. PE076464

OWNER/APPLICANT:

BT WORCESTER, LLC
200 DRYDEN ROAD, SUITE 2000
DRESHER, PA 19025
(215) 938-7300
INFO@BETINVESTMENTS.COM

APPROVED

APPROVED THIS _____ DAY OF _____, 20____, BY THE BOARD OF SUPERVISORS OF WORCESTER TOWNSHIP, MONTGOMERY COUNTY, PA

ATTEST: _____
SIGNATURE, CHAIRMAN
DATE SIGNED _____
SIGNATURE, SECRETARY
DATE SIGNED _____

(TOWNSHIP NOTARY SEAL)

REVIEWED

REVIEWED THIS _____ DAY OF _____, 20____, BY THE PLANNING COMMISSION OF WORCESTER TOWNSHIP, MONTGOMERY COUNTY PA,

ATTEST: _____
SIGNATURE
DATE SIGNED _____

REVIEWED BY THE TOWNSHIP ENGINEER OF WORCESTER TOWNSHIP, MONTGOMERY COUNTY, PA

TOWNSHIP ENGINEER: _____ DATE: _____

MONTGOMERY COUNTY PLANNING COMMISSION APPROVAL

RECORDED IN THE MONTGOMERY COUNTY COURTHOUSE THIS _____ DAY OF _____ OF 20____ IN PLAN BOOK _____, PAGE _____.

MCPC No. _____
PROCESSED AND REVIEWED. A REPORT HAS BEEN PREPARED BY THE MONTGOMERY COUNTY PLANNING COMMISSION IN ACCORDANCE WITH THE MUNICIPALITIES PLANNING CODE. CERTIFIED THIS DATE: _____
FOR THE DIRECTOR
MONTGOMERY COUNTY PLANNING COMMISSION

UTILITY USER LIST ACT NUMBER 287 OF 1974 AS AMENDED	
COMCAST 440 WAYNE AVENUE PHILADELPHIA, PA 19140 CONTACT: ROBERT HARVEY EMAIL: BOB_HARVEY@CABLE.COMCAST.COM	PECO ENERGY C/O USIC LLC 450 S HENDERSON RD SUITE B KING OF PRUSSIA, PA 19406 CONTACT: NIKKIA SIMPSON EMAIL: NIKKIASIMPSON@USICLLC.COM PHONE: 610-292-8057
COMCAST 1 APOLLO RD PLYMOUTH MEETING, PA 19462 CONTACT: TOM DEMSEY PHONE: 215-285-8738	VERIZON BUSINESS FORMERLY MCI 700 WESTON PKWY CARY, NC 27513 CONTACT: VICTOR WOOD EMAIL: VICTOR.S.WOOD@VERIZON.COM
PENNSYLVANIA AMERICAN WATER 171 W JOHNSON HIGHWAY NORRISTOWN, PA 19401 CONTACT: NOEL GIESSLER EMAIL: NOEL.GIESSLER@PAAMWATER.COM PHONE: 610-292-3575	WORCESTER TOWNSHIP 1721 SOUTH VALLEY FORGE ROAD P.O. BOX 767 WORCESTER, PA 19490 CONTACT: ROBERT DHULSTER EMAIL: BDHULSTER@WORCESTERTWP.COM
VERIZON PENNSYLVANIA LLC 1050 VIRGINIA DR FORT WASHINGTON, PA 19034 CONTACT: DARLINE LEPPERD JOHNSON PHONE: 215-591-6354	

CERTIFICATE OF CONFORMANCE -- P.E.

I HEREBY CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE, THESE PLANS ARE IN CONFORMITY WITH ENGINEERING, ZONING, BUILDING, SANITATION AND OTHER APPLICABLE TOWNSHIP ORDINANCES AND REGULATIONS.

CHRISTOPHER W. JENSEN, P.E.
LICENSE NO. PE076464

ENGINEER'S STORMWATER CERTIFICATION:

I, ZACHARY H. RANSTEAD, ON THIS DATE _____ HEREBY CERTIFY TO THE BEST OF MY KNOWLEDGE THAT THE STORMWATER MANAGEMENT SITE PLAN MEETS ALL DESIGN STANDARDS AND CRITERIA OF THE WORCESTER TOWNSHIP STORMWATER ORDINANCE, CHAPTER 206

ZACHARY H. RANSTEAD
LICENSE # PE063078

APPLICANT'S STORMWATER CERTIFICATION:

THE APPLICANT HEREBY ACKNOWLEDGES THAT ANY REVISION TO THE APPROVED STORMWATER MANAGEMENT SITE PLAN SHALL BE SUBMITTED TO AND APPROVED BY THE MUNICIPALITY, AND THAT A REVISED EROSION AND SEDIMENT CONTROL PLAN SHALL BE SUBMITTED TO, AND APPROVED BY, THE CONSERVATION DISTRICT OR MUNICIPALITY (AS APPLICABLE) FOR A DETERMINATION OF ADEQUACY PRIOR TO CONSTRUCTION OF THE REVISED FEATURES.

BY: _____
BT WORCESTER, LLC

COMMONWEALTH OF PENNSYLVANIA, COUNTY OF MONTGOMERY:

ON THIS THE _____ DAY OF _____, 20____, BEFORE ME, THE SUBSCRIBER, PERSONALLY APPEARED BT WORCESTER, LLC, AND THAT AS MUCH TO DO SO, HE/SHE EXECUTED THE FOREGOING PLAN BY SIGNING THE NAME OF SAID CORPORATION BY HIMSELF/HERSELF AS _____, THAT THE SAID CORPORATION IS THE OWNER OF THE DESIGNATED LAND, THAT ALL NECESSARY APPROVAL OF THE PLAN HAS BEEN OBTAINED AND ENDORSED THEREON AND THAT THE SAID CORPORATION DESIRES THAT THE FOREGOING PLAN MAY BE DULY RECORDED.

BY: _____
OWNER
BT WORCESTER, LLC

NOTARY PUBLIC

MY COMMISSION EXPIRES ON THIS _____ DAY OF _____, 20____.

PROJECT INFORMATION: C:\Projects\BETI\00056\Plans\ FILE PATH: C:\Projects\BETI\00056\Plans\ FILE NAME: BETI00056_SHT001_CDR.dwg DATE PLOTTED: 06 Apr 2024, 11:22AM LAST SAVE BY: FGBIR

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BT WORCESTER, LLC
CITY VIEW - APN #67-00-01606-001
2974 GERMANTOWN PIKE, WORCESTER TOWNSHIP,
MONTGOMERY COUNTY, COMMONWEALTH OF PENNSYLVANIA
COVER SHEET



1700 MARKET STREET, SUITE 3110
PHILADELPHIA, PA 19103
TEL 215-282-7850
FAX 215-627-3499

OFFICES LOCATED IN:
CALIFORNIA, INDIANA, KENTUCKY,
MASSACHUSETTS, MICHIGAN, NEW JERSEY,
OHIO AND PENNSYLVANIA

DESIGNED BY CGG/JPK/ROP	DRAWING CVR
CHECKED BY DS	SHEET 1
DRAWN BY PG/SR/ROP	DATE 1/27/22
SCALE 1" = 50'	PROJ. NO. BETI00056
	OF 34

GENERAL NOTES

- 1. A HIGHWAY OCCUPANCY PERMIT IS REQUIRED FOR THIS PROJECT BEFORE ACCESS IS GRANTED TO THE STATE ROAD (SR0363).
- 2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW ALL OF THE DRAWINGS, SPECIFICATIONS, AND REFERENCED DOCUMENTS ASSOCIATED WITH THE PROJECT WORK SCOPE PRIOR TO THE INITIATION OF CONSTRUCTION...

GRADING NOTES

- 1. VERTICAL DATUM IS NAVD 1988 AND ESTABLISHED BY OBSERVATIONS REFERENCED TO THE NGS CORRS NETWORK.
- 2. THE MINIMUM SLOPE IN GRASSED AREAS SHALL NOT BE LESS THAN 2% AND THE MINIMUM IN PAVED AREAS SHOULD NOT BE LESS THAN 1%.

GENERAL DEMOLITION NOTES

- 1. ALL DEMOLITION ACTIVITIES ARE TO BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AS WELL AS ALL FEDERAL, STATE AND LOCAL REGULATIONS.
- 2. THE FIRM OR ENGINEER OF RECORD IS NOT RESPONSIBLE FOR JOB SITE SAFETY OR SUPERVISION. CONTRACTOR IS TO PROCEED WITH THE DEMOLITION IN A SYSTEMATIC AND SAFE MANNER...

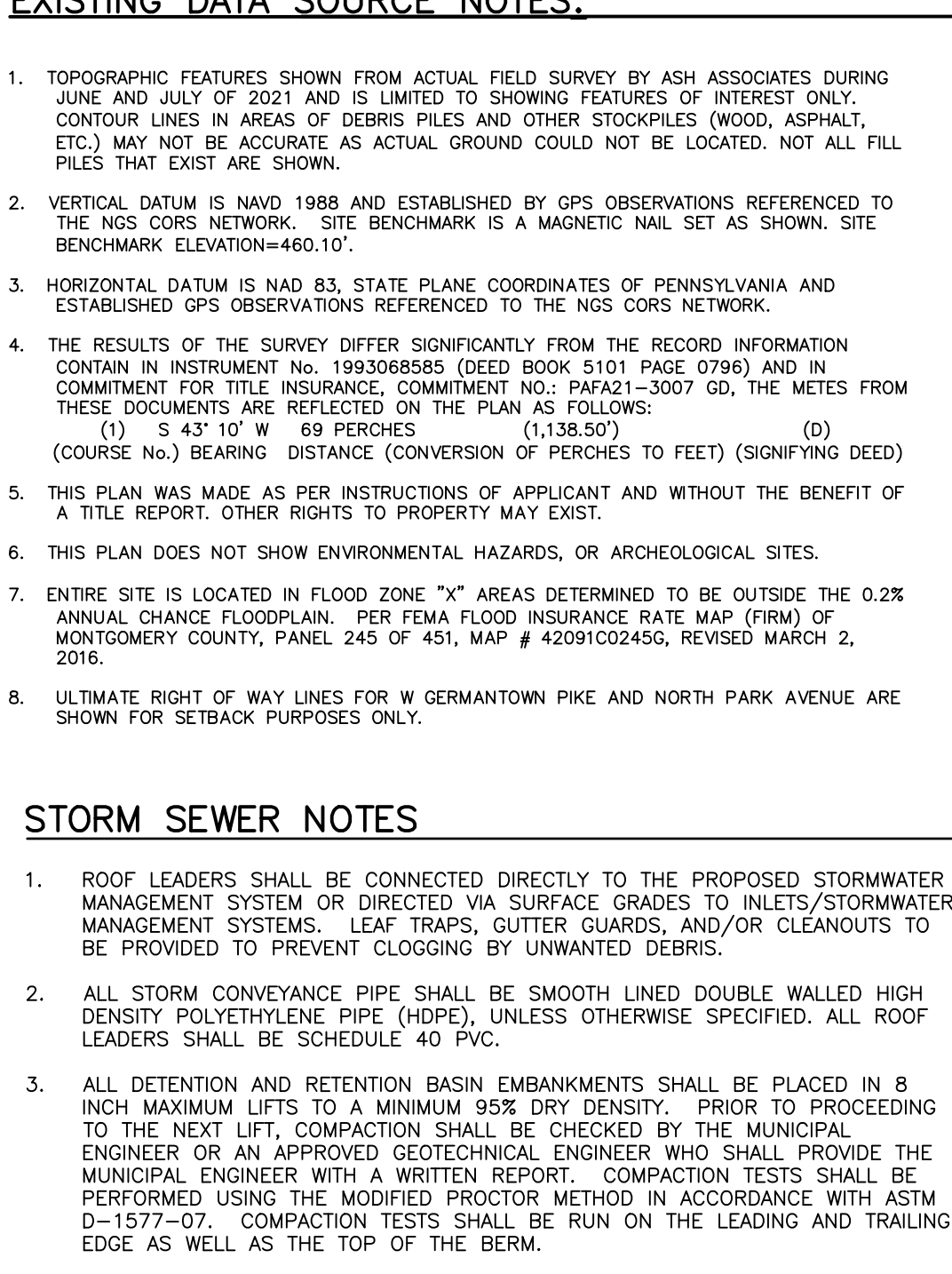
EXISTING DATA SOURCE NOTES:

- 1. TOPOGRAPHIC FEATURES SHOWN FROM ACTUAL FIELD SURVEY BY ASH ASSOCIATES DURING JUNE AND JULY OF 2021 AND IS LIMITED TO SHOWING FEATURES OF INTEREST ONLY.
- 2. VERTICAL DATUM IS NAVD 1988 AND ESTABLISHED BY GPS OBSERVATIONS REFERENCED TO THE NGS CORRS NETWORK.

STORM SEWER NOTES

- 1. ROOF LEADERS SHALL BE CONNECTED DIRECTLY TO THE PROPOSED STORMWATER MANAGEMENT SYSTEM OR DIRECTED VIA SURFACE GRADES TO INLETS/STORMWATER MANAGEMENT SYSTEMS.
- 2. ALL STORM CONVEYANCE PIPE SHALL BE SMOOTH LINED DOUBLE WALLED HIGH DENSITY POLYETHYLENE PIPE (HDPE).

STANDARD LEGEND



SITE STATISTICS

- 1. APPLICANT/OWNER OF RECORD: BT WORCESTER, LLC, 200 DREYER ROAD, SUITE 2000, DREYER, PA 19025.
- 2. EXISTING PROPERTY IDENTIFICATION: TAX MAP PARCEL REFERENCE - TWP 07-04-56 APRN 07-00-01606-001.

RECORD NOTES

- 1. PLAN SHEETS IN THIS SET, WHICH ARE NOT BEING RECORDED, WHICH ARE ON FILE AT WORCESTER TOWNSHIP SHALL BE CONSIDERED PART OF THE FINAL RECORD PLAN AS IF RECORDED WITH SAME.
- 2. A BLANKET EASEMENT IS HEREBY PROPOSED ACROSS THE ENTIRE SITE FOR STORMWATER MANAGEMENT INFLECTIONS AND MAINTENANCE.

ZONING DATA

Table with columns: ZONING (BY DISTRICT), COMMERCIAL (C), MULTI RESIDENTIAL (MR), REQUIRED, PROPOSED. Rows include Minimum Lot Area, Minimum Lot Width, Maximum Building Coverage, etc.

LEGEND AND NOTES

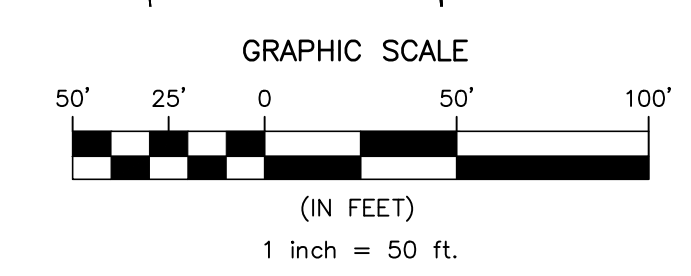
Professional Engineer seal for Christopher W. Jensen, P.E., License No. PC076464. Includes project title 'CITY VIEW - APN #67-00-01606-001' and 'LEGEND AND NOTES'.

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BT WORCESTER, LLC. CITY VIEW - APN #67-00-01606-001. 2974 GERMANTOWN PIKE, WORCESTER TOWNSHIP, MONTGOMERY COUNTY, COMMONWEALTH OF PENNSYLVANIA. LEGEND AND NOTES.

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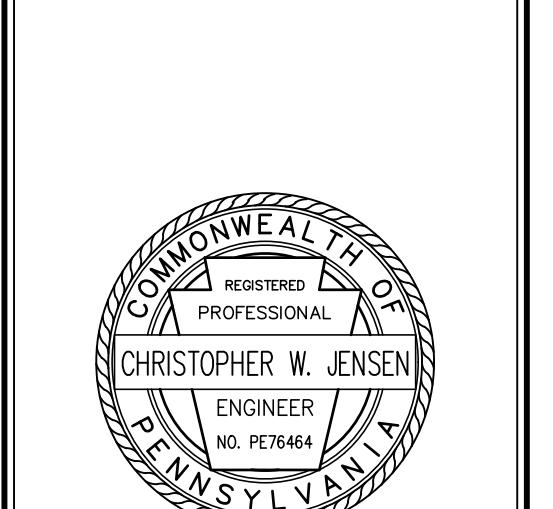
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ATTENTION: ALL CONTRACTORS, LOCATIONS OF ALL EXISTING UTILITIES
 SHOWN HEREON HAVE BEEN DEVELOPED FROM UTILITY COMPANIES
 RECORDS AND/OR FIELD SURVEYS. THE LOCATION, DEPTH OR
 COMPLETION OF ACCURACY OF THE SIZE, DEPTH OR HORIZONTAL
 LOCATION OF INDIVIDUAL UTILITIES OF UNIDENTIFIED OWNERS IS
 UNGUARANTEED. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL
 LEGISLATIVE ACT NUMBER 287 OF 1974 AS AMENDED BY ACT 121 OF
 2008 CONTRACTORS MUST VERIFY LOCATION AND DEPTH OF ALL
 UNDERGROUND UTILITIES AND FACILITIES PRIOR TO START OF WORK.
 20215002293

NO.	DATE	REVISIONS	BY	CHKD
4	3/7/2024	PER GIS REVIEW LETTER DATED 01/24/2024	PRG	DS
3	11/17/2023	PER GIS REVIEW LETTER DATED 11/22/2023	PRG	DS
2	4/3/2023	REVISED ENTRANCE ON GERMAN TOWN PIKE	PRG	DS
1	10/04/2022	PER GIS REVIEW LETTER DATED 03/11/2022	PRG	DS

CHRISTOPHER W. JENSEN, P.E.
 LICENSED PROFESSIONAL ENGINEER



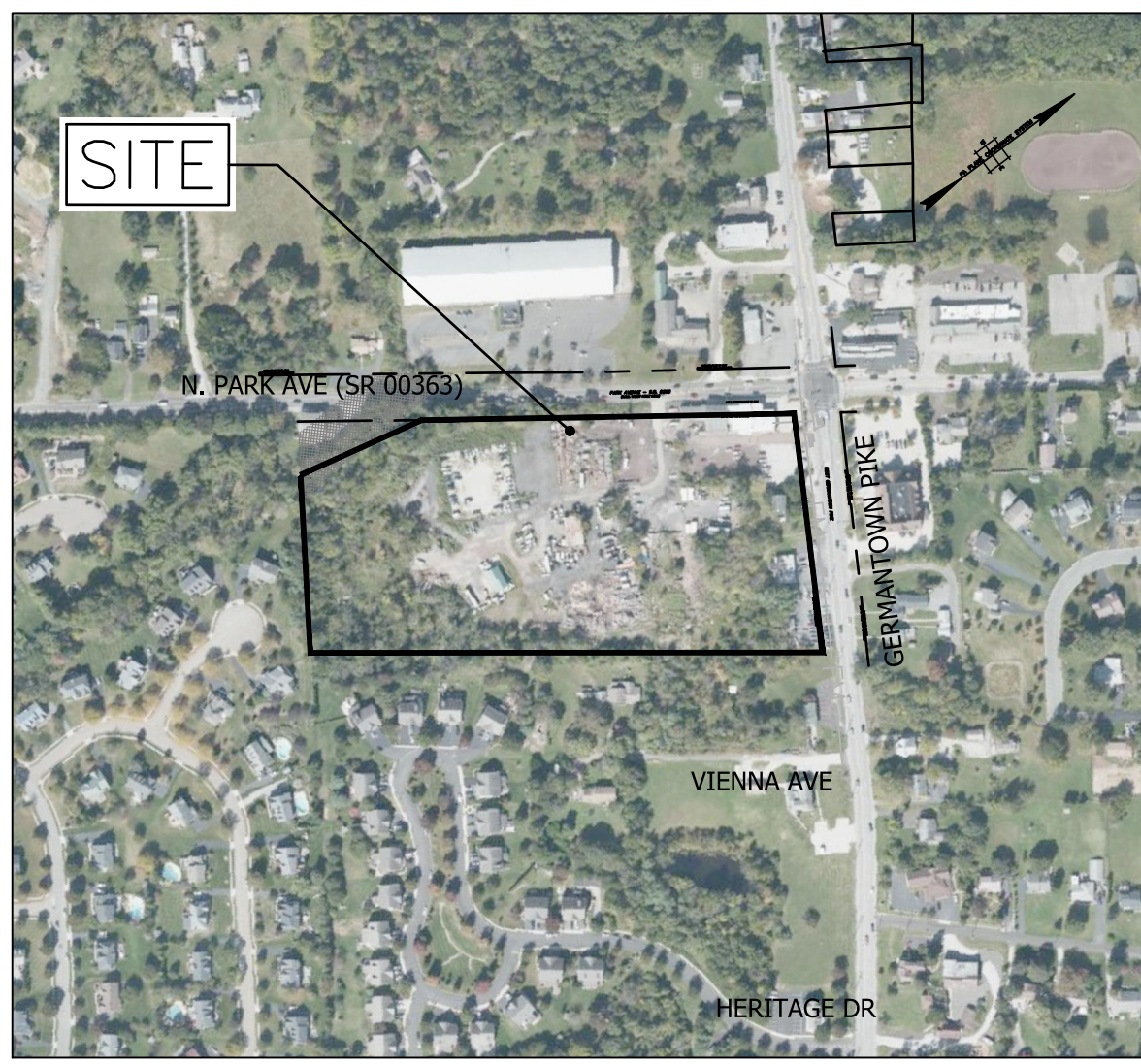
4/3/2023
 LICENSED PROFESSIONAL ENGINEER
 STATE OF PA LICENSE NO. PE076464

BT WORCESTER, LLC
CITY VIEW - APN #67-00-01606-001
 2974 GERMAN TOWN PIKE, WORCESTER TOWNSHIP,
 MONTGOMERY COUNTY, COMMONWEALTH OF PENNSYLVANIA
EXISTING FEATURES PLAN

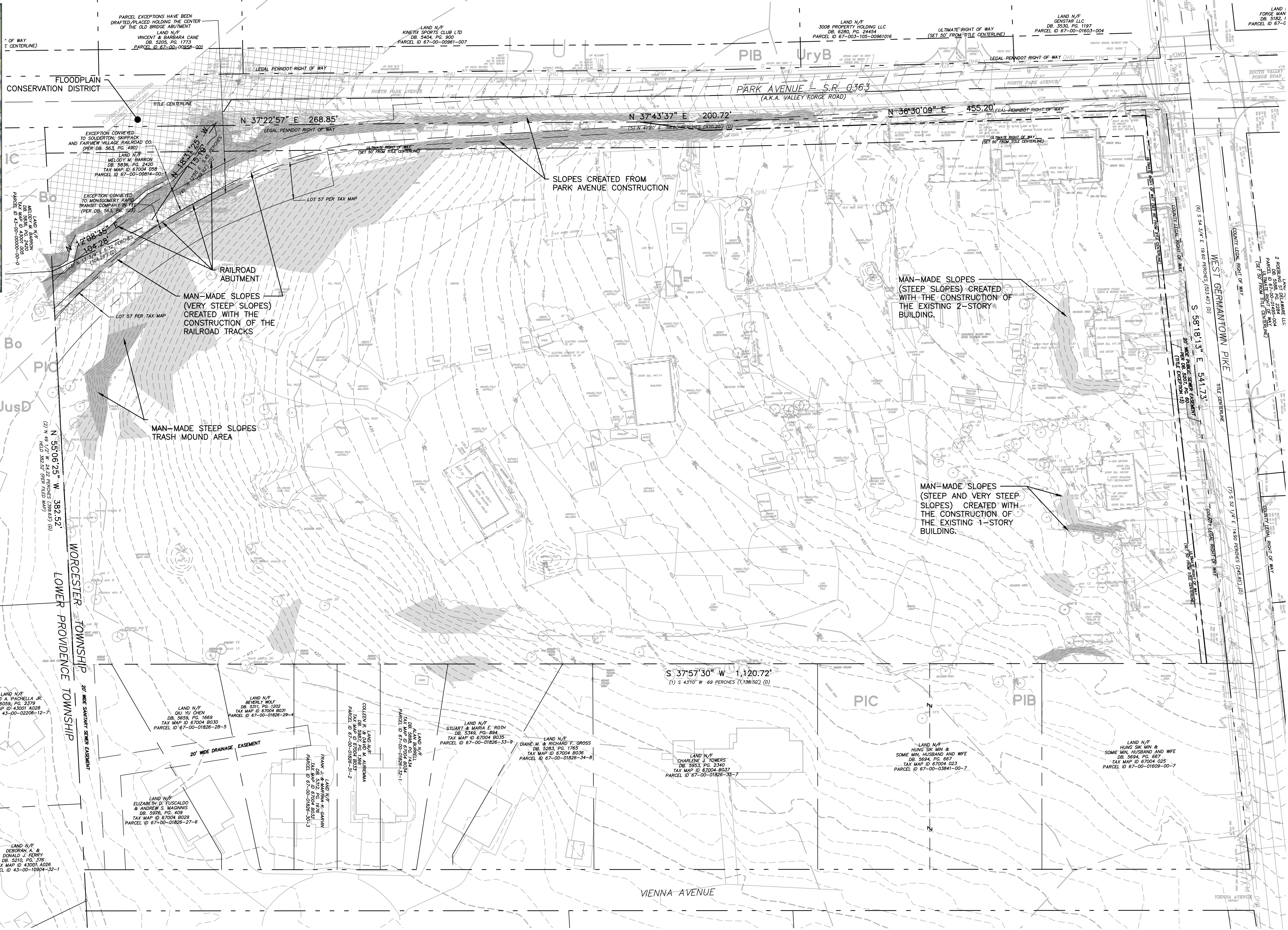
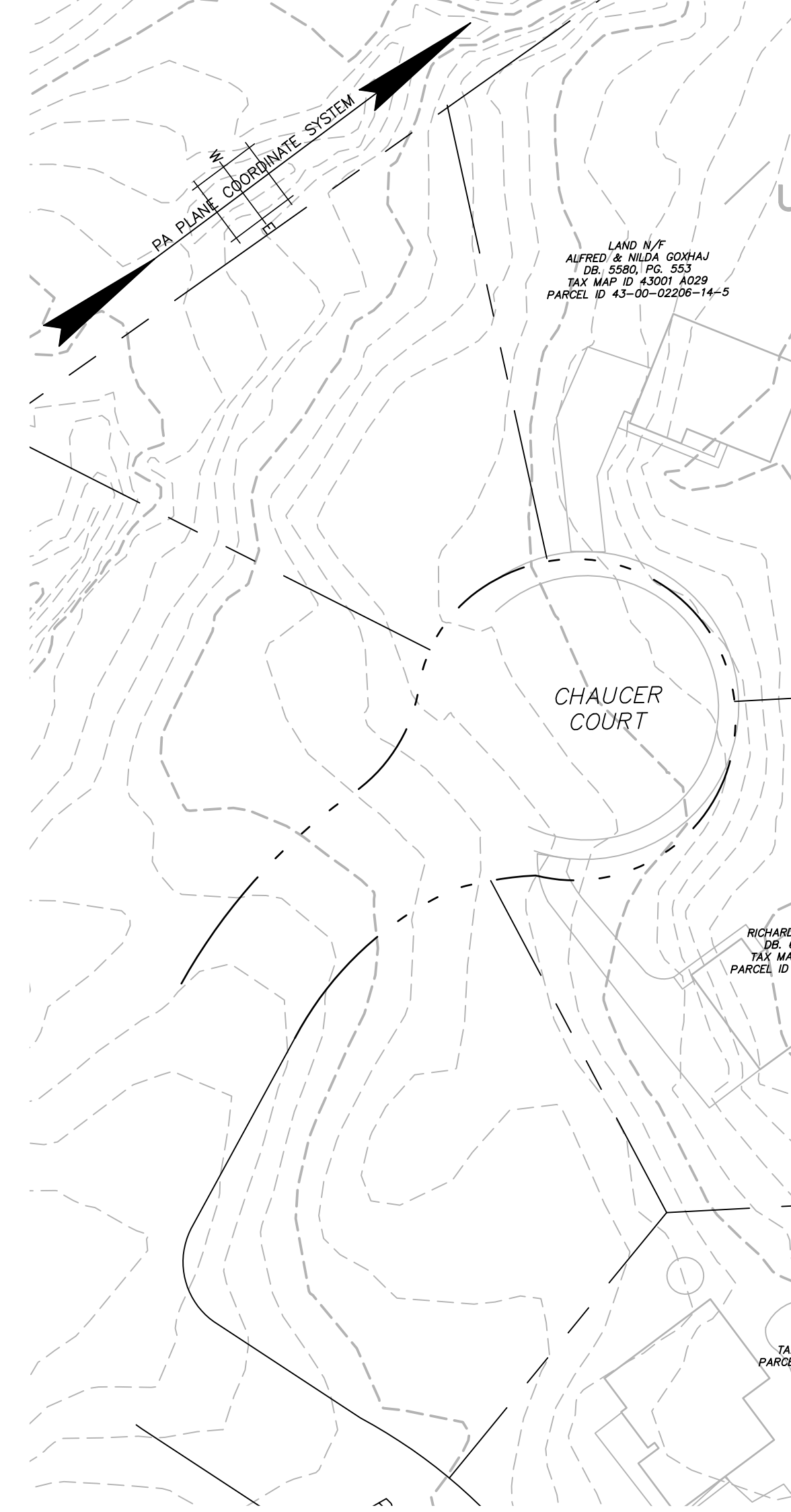


OFFICES LOCATED IN:
 CALIFORNIA, INDIANA, KENTUCKY,
 MASSACHUSETTS, MICHIGAN, NEW JERSEY,
 OHIO AND PENNSYLVANIA

DESIGNED BY CGG/JPK/RP	DRAWING EXC
CHECKED BY DS	SHEET
DRAWN BY PG/SR/RP	3
DATE 1/27/22	OF 34
SCALE 1" = 50'	
PROJ. NO. BET00056	



LOCATION MAP
SCALE: 1"=400'



PROJECT INFORMATION: BT WORCESTER, LLC (0056) Plans
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 FILE NAME: BT WORCESTER, LLC (0056) Plans
 DATE: 10 Aug 2023, 1:05PM
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LEGEND
(ORIENTATION & SIZE MAY VARY)

- FLOODPLAIN CONSERVATION DISTRICT
- STEEP SLOPES (15% - 25%)
- VERY STEEP SLOPES (>25%)
- EX. TREE GREATER THAN 12" IN CALIPER
- EX. SHRUB, BUSH, OR TREE LESS THAN 12" IN CALIPER

EXISTING DATA SOURCE NOTES:

- EXISTING FEATURES SHOWN ARE BASED ON A SURVEY PLAN PREPARED BY ASH ASSOCIATES, INC., DATED JULY 13, 2021. BOUNDARY INFORMATION SHOWN IS FROM ACTUAL FIELD SURVEYS PERFORMED BY ASH ASSOCIATES, INC. PHYSICAL FEATURES SHOWN WERE COMPILED PHOTOGRAMMETRICALLY BY QUANTUM SPATIAL DILLES VIA GROUND CONTROL AND SUPPLEMENTED WITH FIELD SURVEYS BY ASH ASSOCIATES, INC.
- ULTIMATE RIGHT OF WAY LINES FOR W GERMANTOWN PIKE AND NORTH PARK AVENUE ARE SHOWN FOR SETBACK PURPOSES ONLY.

GENERAL ERSA NOTES

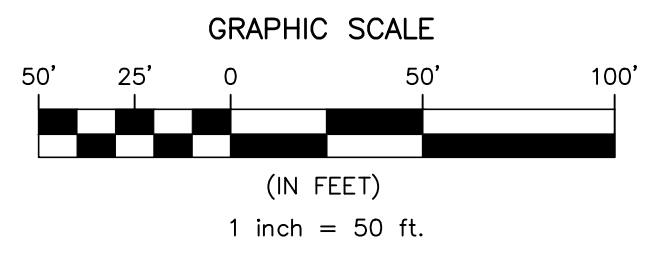
- BOWMANVILLE (BO) SILT LOAM IS LOCATED AT THE WESTERN CORNER OF THE PROPERTY. BOWMANVILLE SILT LOAM IS CONSIDERED PART OF THE FLOOD PLAN CONSERVATION DISTRICT. THE 100-YEAR FLOOD PLAN IS NOTED IN THE PLANS.
- THE PROPOSED SITE DOES NOT INCLUDE ANY SCENIC OR VIEW SHED AREAS AS SHOWN IN THE TOWNSHIP MASTER PLAN.
- THE PROPOSED SITE DOES HAVE VERIFIED WETLAND AREAS. WETLANDS ARE DELINEATED IN THE PLANS.

Map Unit Symbol	Map Unit Name	Acres in ACI	Percent of ACI
Bo	Bowmanville-Clauses silt loams	1.1	3.7%
PiB	Penn-Landsdale complex, 3 to 8 percent slopes	8.7	29.2%
PiC	Penn-Landsdale complex, 8 to 15 percent slopes	7.0	23.5%
UryB	Urban land-woodlands complex, 0 to 8 percent slopes	8.7	29.2%
UusD	Urban land-woodlands, shale and sandstone complex, 8 to 25 percent slopes	4.3	14.5%
Totals for Area of Interest		29.8	100.0%

TABLE E.1
LIMITATIONS OF PENNSYLVANIA SOILS PERTAINING TO EARTH-MOVING PROJECTS

SOIL NAME	CONSTRUCTIVE USE	CONSTRUCTIVE USE	CONSTRUCTIVE USE	CONSTRUCTIVE USE	CONSTRUCTIVE USE	CONSTRUCTIVE USE	CONSTRUCTIVE USE	CONSTRUCTIVE USE	CONSTRUCTIVE USE	CONSTRUCTIVE USE	CONSTRUCTIVE USE	CONSTRUCTIVE USE	CONSTRUCTIVE USE	CONSTRUCTIVE USE	CONSTRUCTIVE USE	CONSTRUCTIVE USE	CONSTRUCTIVE USE	CONSTRUCTIVE USE	CONSTRUCTIVE USE
BOWMANVILLE-KNUVERS SILT LOAMS (Bo)																			
BOWMANVILLE-KNUVERS SILT LOAMS (Bo)	X	C/S																	
PENN-LANDSDALE COMPLEX, 3 TO 8 PERCENT SLOPES (PiB)	X	C/S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
PENN-LANDSDALE COMPLEX, 8 TO 15 PERCENT SLOPES (PiC)	X	C	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
URBAN LAND-WOODLANDS COMPLEX, 0 TO 8 PERCENT SLOPES (UryB)	X	C/S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
URBAN LAND-WOODLANDS, SHALE AND SANDSTONE COMPLEX, 8 TO 25 PERCENT SLOPES (UusD)	X	C/S	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

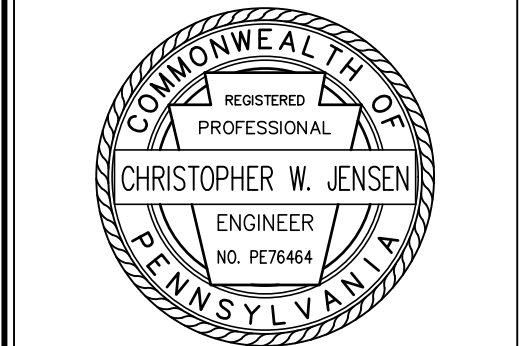
PROPERTY INFORMATION
 OWNER OF RECORD: BT WORCESTER, LLC
 TAX PARCELS: 67-00-01606-001
 LOT AREA: 12.42 ACRES
 SITUATE: 2974 WEST GERMANTOWN PIKE, NORRISTOWN, PA



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20213502293

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CHRISTOPHER W. JENSEN, P.E.
LICENSED PROFESSIONAL ENGINEER



4/3/2023
LICENSED PROFESSIONAL ENGINEER
STATE OF PA LICENSE NO. PE076464

BT WORCESTER, LLC
CITY VIEW - APN #67-00-01606-001
 2974 GERMANTOWN PIKE, WORCESTER TOWNSHIP,
 MONTGOMERY COUNTY, COMMONWEALTH OF PENNSYLVANIA
EXISTING RESOURCES PLAN



1700 MARKET STREET, SUITE 3110
 PHILADELPHIA, PA 19103
 TEL 215-282-7850
 FAX 215-627-3459

OFFICES LOCATED IN:
 CALIFORNIA, INDIANA, KENTUCKY,
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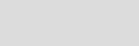



DESIGNED BY: CCG/JPK/RDP
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 SCALE: 1" = 50'
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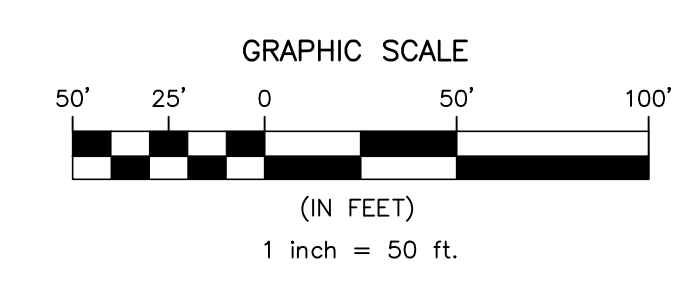
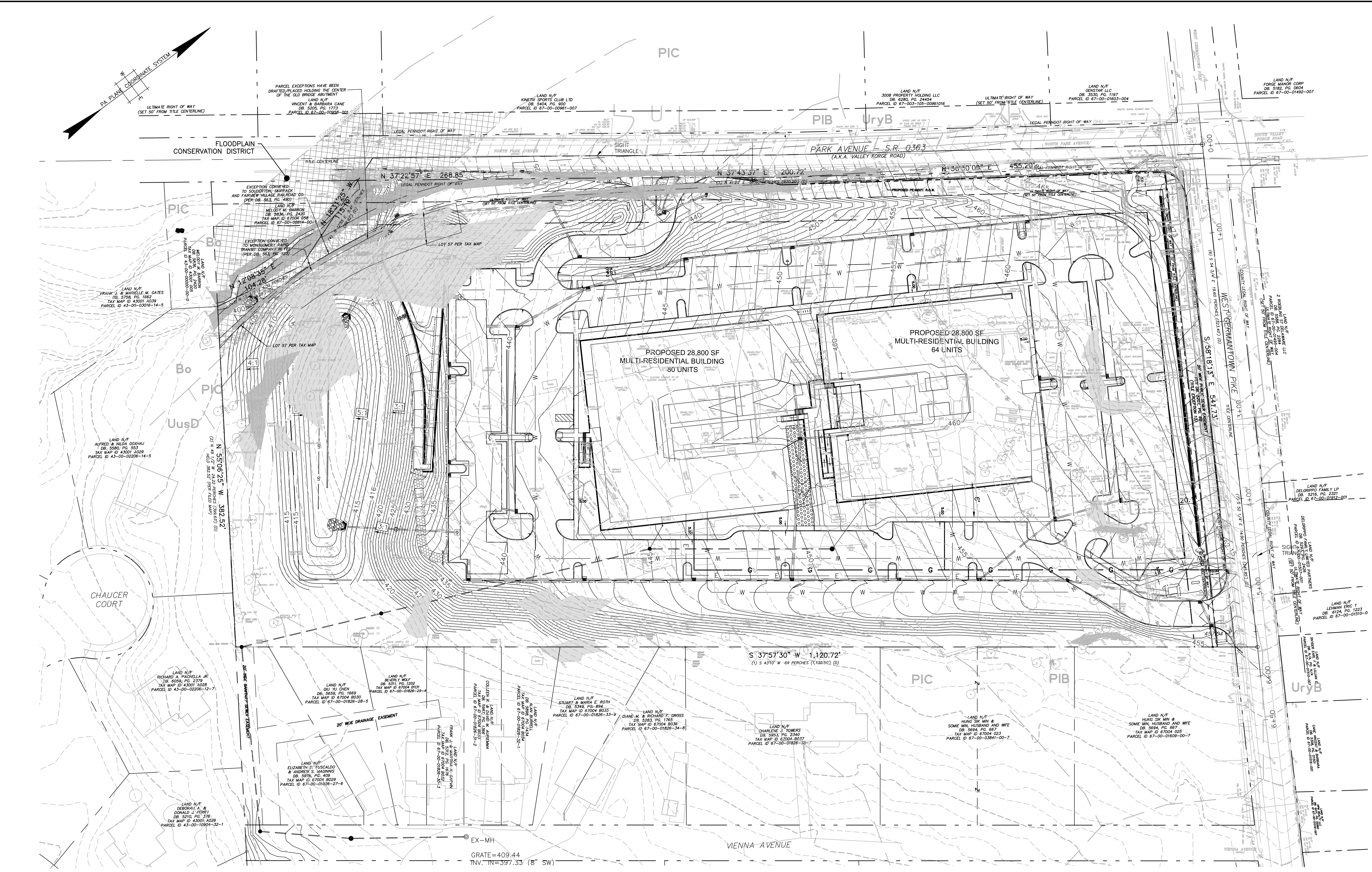
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PROJECT INFORMATION:
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 DATE: 21 Nov 2023, 3:35PM
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LEGEND
 (ORIENTATION & SIZE MAY VARY)

	FLOODPLAIN CONSERVATION DISTRICT
	STEEP SLOPES (15%-25%)
	VERY STEEP SLOPES (>25%)
	EX. TREE GREATER THAN 12" IN CALIPER
	EX. SHRUB, BUSH, OR TREE LESS THAN 12" IN CALIPER



NO.	DATE	REVISIONS	BY	CHKD
4	3/7/2024	PER GIS REVIEW LETTER DATED 01/24/2024	PRG	DS
3	11/17/2023	PER GIS REVIEW LETTER DATED 11/22/2023	PRG	DS
2	4/3/2023	REVISED ENTRANCE ON GERMANTOWN PIKE	PRG	DS
1	10/04/2022	PER GIS REVIEW LETTER DATED 03/11/2022	PRG	DS

CHRISTOPHER W. JENSEN, P.E.
 LICENSED PROFESSIONAL ENGINEER
 STATE OF PA LICENSE NO. PED76464

4/3/2023
 LICENSED PROFESSIONAL ENGINEER
 STATE OF PA LICENSE NO. PED76464

BT WORCESTER, LLC

CITY VIEW - APN #67-00-01606-001
 2974 GERMANTOWN PIKE, WORCESTER TOWNSHIP,
 MONTGOMERY COUNTY, COMMONWEALTH OF PENNSYLVANIA

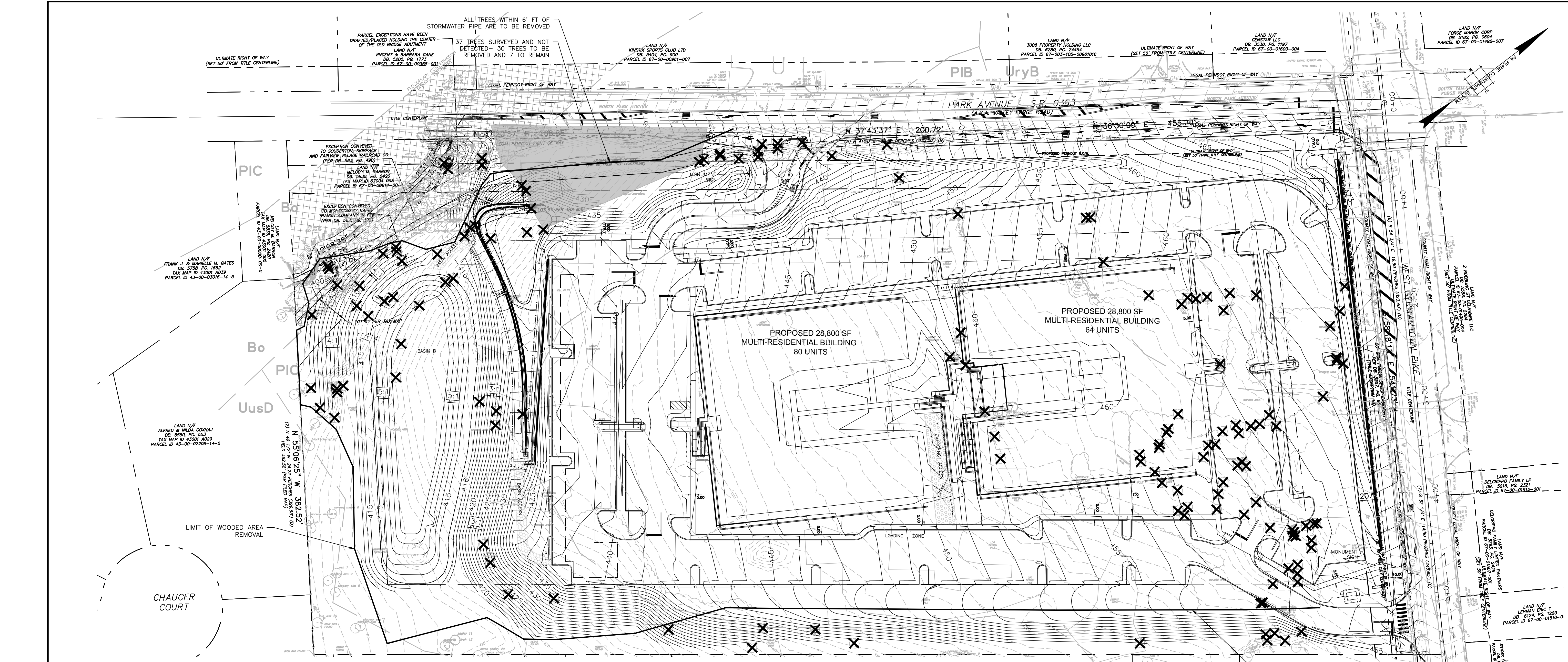
NATURAL RESOURCES PROTECTION PLAN

T&M
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1700 MARKET STREET, SUITE 3110
 PHILADELPHIA, PA 19103
 TEL 215-282-7850
 FAX 215-627-3499

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DESIGNED BY CGG/JPK/ROP	DRAWING NR
CHECKED BY DS	SHEET
DRAWN BY PG/SR/ROP	5
DATE 1/27/22	OF 34
SCALE 1" = 50'	
PROJ. NO. BET00056	



PROJECT INFORMATION:
 FILE PATH: G:\Projects\BET\00056\Plans\...
 FILE NAME: BET00056_SIT000...
 DATE: 21 Nov 2023, 3:38PM
 LAST SAVE BY: C5602040

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Species	Caliper Size	To Be Removed
1 red cedar	6	To be Removed
2 unidentified	6	To be Removed
3 ash	7	To be Removed
4 ash	7	To be Removed
5 ash	7	To be Removed
6 ash	7	To be Removed
7 ash	7	To be Removed
8 ash	7	To be Removed
9 ash	7	To be Removed
10 ash	7	To be Removed
11 ash	7	To be Removed
12 elm	7	To be Removed
13 elm	7	To be Removed
14 norway maple	7	To be Removed
15 norway maple	7	To be Removed
16 norway maple	7	To be Removed
17 norway maple	7	To be Removed
18 norway maple	7	To be Removed
19 aspen	7.2	To be Removed
20 norway maple	7.3	To be Removed
21 elm	7.5	To be Removed
22 norway maple	7.5	To be Removed
23 ash	8	To be Removed
24 ash	8	To be Removed
25 ash	8	To be Removed
26 ash	8	To be Removed
27 ash	8	To be Removed
28 ash	8	To be Removed
29 ash	8	To be Removed
30 elm	8	To be Removed
31 elm	8	To be Removed
32 elm	8	To be Removed
33 elm	8	To be Removed
34 slippery elm	8	To be Removed
35 ash	8	To be Removed
36 ash	8	To be Removed
37 ash	8.5	To be Removed
38 norway maple	8.5	To be Removed
39 norway maple	8.5	To be Removed
40 elm	9	To be Removed

41 elm	9	To be Removed
42 locust	9	To be Removed
43 mulberry	9	To be Removed
44 Norway maple	9	To be Removed
45 elm	9	To be Removed
46 ash	9	To be Removed
47 ash	9	To be Removed
48 Norway maple	9	To be Removed
49 ash	9.5	To be Removed
50 elm	9.5	To be Removed
51 ash	10	To be Removed
52 ash	10	To be Removed
53 ash	10	To be Removed
54 ash	10	To be Removed
55 norway maple	10	To be Removed
56 elm	10	To be Removed
57 ash	10	To be Removed
58 norway maple	10	To be Removed
59 elm	10	To be Removed
60 ash	11	To be Removed
61 ash	11	To be Removed
62 ash	11	To be Removed
63 ash	11	To be Removed
64 norway maple	11	To be Removed
65 ash	11	To be Removed
66 ash	11	To be Removed
67 norway maple	11	To be Removed
68 mulberry	11.5	To be Removed
69 norway maple	11.5	To be Removed
70 ash	12	To be Removed
71 ash	12	To be Removed
72 ash	12	To be Removed
73 elm	12	To be Removed
74 elm	12	To be Removed
75 norway maple	12	To be Removed
76 norway maple	12	To be Removed
77 norway maple	12	To be Removed
78 norway maple	12	To be Removed
79 ash	12	To be Removed
80 ash	12	To be Removed

81 ash	13	To be Removed
82 ash	13	To be Removed
83 elm	13	To be Removed
84 elm	13	To be Removed
85 green ash	13	To be Removed
86 red maple	13	To be Removed
87 ash	14	To be Removed
88 black cherry	14	To be Removed
89 black cherry	14	To be Removed
90 elm	14	To be Removed
91 norway maple	14.5	To be Removed
92 ash	15	To be Removed
93 ash	15	To be Removed
94 elm	15	To be Removed
95 tree of heaven	15	To be Removed
96 norway maple	15	To be Removed
97 ash	16	To be Removed
98 cherry	16	To be Removed
99 norway maple	16	To be Removed
100 slippery elm	16	To be Removed
101 norway maple	16.5	To be Removed
102 ash	17	To be Removed
103 norway maple	17	To be Removed
104 slippery elm	17	To be Removed
105 slippery elm	17	To be Removed
106 norway maple	18	To be Removed
107 norway maple	18	To be Removed
108 elm	19	To be Removed
109 ash	20	To be Removed
110 ash	20	To be Removed
111 ash	20	To be Removed
112 magnolia	20	To be Removed
113 magnolia	20	To be Removed
114 ash	21	To be Removed
115 ash	22	To be Removed
116 black cherry	22	To be Removed
117 magnolia	22	To be Removed
118 maple	23	To be Removed
119 ash	24	To be Removed
120 norway maple	24	To be Removed

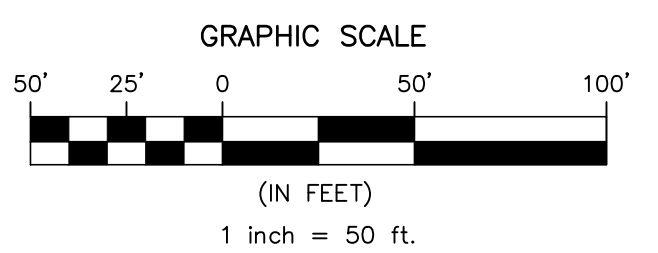
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123 elm	25	To be Removed
124 ash	26	To be Removed
125 black cherry	26	To be Removed
126 ash	27	To be Removed
127 elm	27	To be Removed
128 black cherry	28	To be Removed
129 elm	28	To be Removed
130 elm	29	To be Removed
131 magnolia	29	To be Removed
132 elm	30	To be Removed
133 bur oak	35	To be Removed
134 unidentified	10'	To be Removed
135 unidentified	10' / 11'	To be Removed
136 Ash	20" / 10"	To be Removed
137 unidentified	21"	To be Removed
138 black cherry	26"	To be Removed
139 unidentified	33"	To be Removed
140 unidentified	7"	To be Removed
141 unidentified	8"	To be Removed
142 unidentified	clump	To be Removed
143 unidentified	clump	To be Removed
144 unidentified	clump	To be Removed
145 norway maple	6	To be Removed
146 norway maple	6.5	To be Removed
147 ash	7	To be Removed
148 ash	7	To be Removed
149 norway maple	7	To be Removed
150 Slippery Elm	7	To be Removed
151 Slippery Elm	7	To be Removed
152 Slippery Elm	7	To be Removed
153 ash	8	To be Removed
154 ash	8	To be Removed
155 Norway maple	8	To be Removed
156 Norway maple	8	To be Removed
157 norway maple	8	To be Removed
158 norway maple	8	To be Removed
159 Slippery Elm	8	To be Removed
160 ash	8.8	To be Removed

161 ash	9	To be Removed
162 ash	9	To be Removed
163 ash	9	To be Removed
164 ash	9	To be Removed
165 ash	9	To be Removed
166 Black cherry	9	To be Removed
167 Black cherry	9	To be Removed
168 elm	9	To be Removed
169 elm	9	To be Removed
170 Norway maple	9	To be Removed
171 norway maple	9	To be Removed
172 norway maple	9	To be Removed
173 Slippery Elm	9	To be Removed
174 ash	10	To be Removed
175 Norway maple	10	To be Removed
176 ash	10	To be Removed
177 ash	10	To be Removed
178 black cherry	10	To be Removed
179 elm	10	To be Removed
180 mulberry	10	To be Removed
181 Norway maple	10	To be Removed
182 sweet birch	10	To be Removed
183 ash	10.5	To be Removed
184 ash	11	To be Removed
185 ash	11	To be Removed
186 ash	11	To be Removed
187 ash	11	To be Removed
188 ash	11	To be Removed
189 black cherry	11	To be Removed
190 black cherry	11	To be Removed
191 norway maple	11	To be Removed
192 norway maple	11	To be Removed
193 norway maple	11	To be Removed
194 norway maple	11	To be Removed
195 poplar	11	To be Removed
196 ash	12	To be Removed
197 elm	12	To be Removed
198 Norway maple	12	To be Removed
199 ash	12	To be Removed
200 elm	12	To be Removed

201 Norway maple	12	To be Removed
202 birch	13	To be Removed
203 ash	13	To be Removed
204 slippery elm	13	To be Removed
205 sweet birch	13	To be Removed
206 poplar	14	To be Removed
207 ash	14	To be Removed
208 elm	14	To be Removed
209 poplar	14	To be Removed
210 Norway maple	15	To be Removed
211 black cherry	15	To be Removed
212 elm	16	To be Removed
213 ash	16	To be Removed
214 slippery elm	17	To be Removed
215 black cherry	20	To be Removed
216 unidentified	21	To be Removed
217 ash	21	To be Removed
218 maple	23	To be Removed
219 mulberry	24	To be Removed
220 ash	26	To be Removed
221 mulberry	26	To be Removed
222 black cherry	28	To be Removed
223 pin oak	29	To be Removed
224 elm	31	To be Removed
225 bur oak	35	To be Removed
226 sweet gum		To be Removed

NOTES:

- TOTAL 226 TREES SURVEYED ON SITE
- 144 ARE TO BE REMOVED AND PORTRAYED ON TREE SURVEY CHART
- 37 TREES ARE SURVEYED BUT NOT SHOWN ON PLANS NOR ON TS CHART, 30 ARE TO BE REMOVED AND 7 TO REMAIN
- TOTAL NUMBER TO BE REMOVED IS 174
- TOTAL NUMBER TO REMAIN IS 52
- TOTAL NUMBER PROPOSED TO BE REPLACED ON PLANS IS 90
- TOTAL NUMBER OF TREES TO BE PLANTED OFF SITE OR ON TOWNSHIP LANDS OUTSIDE OF DEVELOPMENT AREA IS 27.



4/3/2023
 LICENSED PROFESSIONAL ENGINEER
 STATE OF PA LICENSE NO. PED76464

BT WORCESTER, LLC

CITY VIEW - APN #67-00-01606-001
 2974 GERMAN TOWNSHIP PIKE, WORCESTER TOWNSHIP,
 MONTGOMERY COUNTY, COMMONWEALTH OF PENNSYLVANIA

TREE SURVEY PLAN

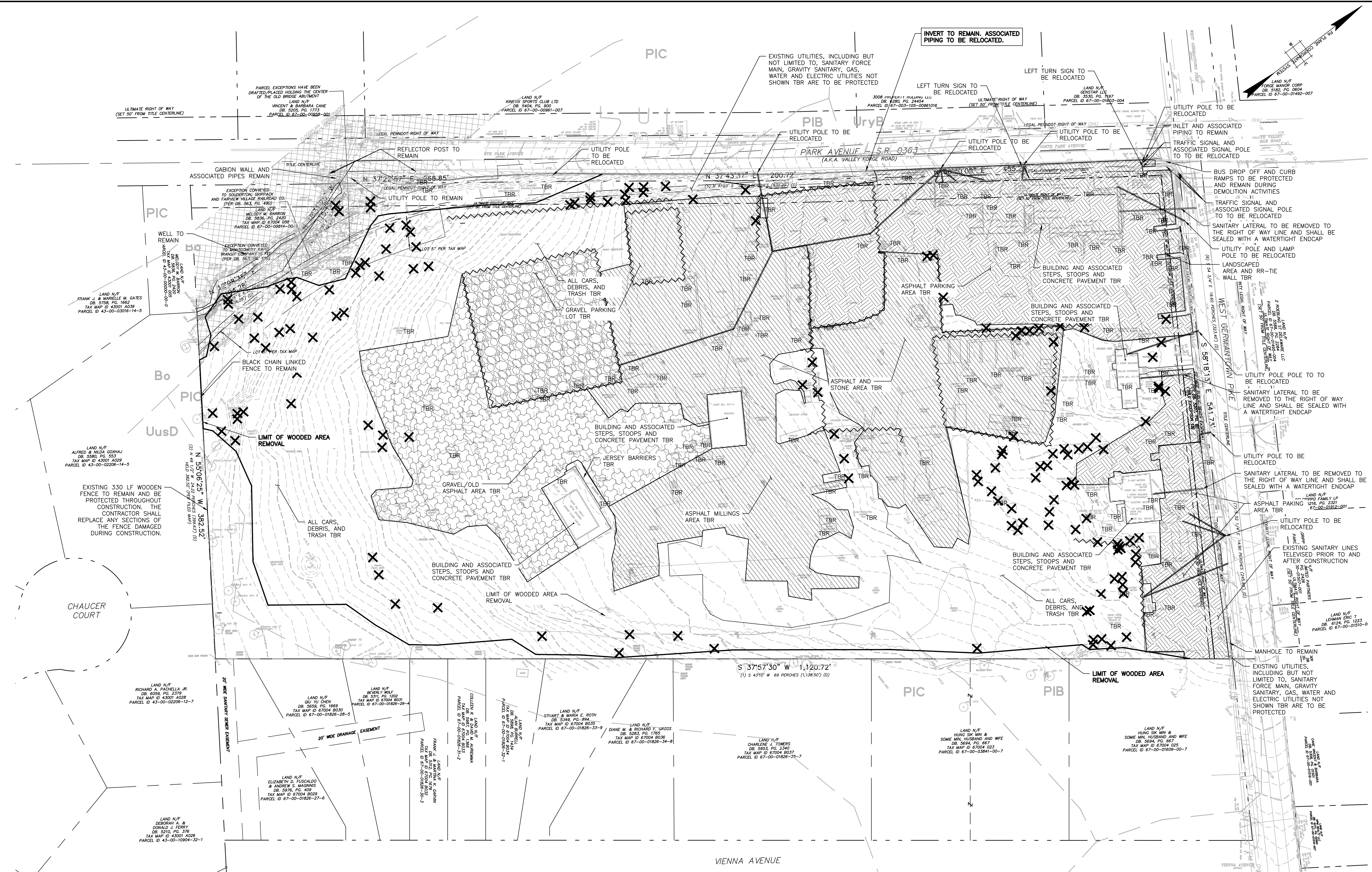
1700 MARKET STREET, SUITE 3110
 PHILADELPHIA, PA 19103
 TEL 215-282-7850
 FAX 215-627-3459

OFFICES LOCATED IN:
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DESIGNED BY CGG/JPK/RDP	DRAWING
CHECKED BY DS	TS
DRAWN BY PG/SR/RDP	SHEET
DATE 1/27/22	6
SCALE 1" = 50'	OF 34
PROJ. NO. BET00056	

PROJECT INFORMATION:
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 DATE: 05/03/2024 12:23PM
 LAST SAVE BY: FCGIB

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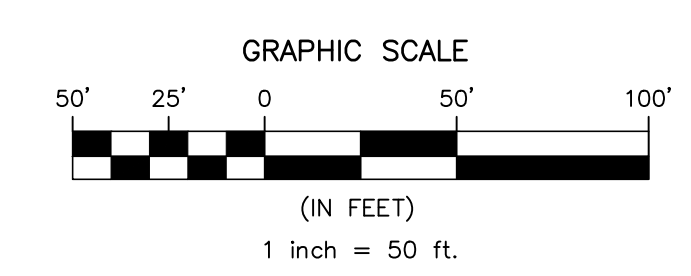


LEGEND
 (ORIENTATION & SIZE MAY VARY)

	GRAVEL/OLD ASPHALT		TREE TO BE REMOVED
	ASPHALT/STONE AREA		UTILITY LINE TO BE REMOVED
	ASPHALT PARKING AREA		FENCE LINE TO BE REMOVED
	GRAVEL PARKING AREA		EXISTING FEATURE TO BE REMOVED

DEMOLITION NOTES

- EXISTING SANITARY LATERALS SHALL BE REMOVED TO THE RIGHT-OF-WAY LINE WHERE THEY SHALL BE SEALED WITH WATERTIGHT END-CAPS.
- EXISTING SANITARY SEWER PIPING AT THE PROPOSED CONSTRUCTION ENTRANCE ON WEST GERMANTOWN PIKE (GRAVITY AND FORCE MAIN) SHALL BE PROTECTED DURING THE DURATION OF CONSTRUCTION ACTIVITIES. THE GRAVITY SEWER SHALL BE TELEVIEWED PRIOR TO THE INITIATION OF CONSTRUCTION AND THEN TELEVIEWED AFTER TO MAKE CERTAIN THAT THE PIPE HAS NOT BEEN DAMAGED DURING CONSTRUCTION. ANY DAMAGE TO THE FORCE MAIN AND/OR THE GRAVITY SEWER DURING CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.



NO.	DATE	REVISIONS	BY	CHKD
4	3/7/2024	PER GIS REVIEW LETTER DATED 01/24/2024	PRG	DS
3	11/17/2023	PER GIS REVIEW LETTER DATED 11/22/2023	PRG	DS
2	4/3/2023	REVISED ENTRANCE ON GERMANTOWN PIKE	ROP	DS
1	10/04/2022	PER GIS REVIEW LETTER DATED 03/11/2022	PRG	DS

NO.	DATE	REVISIONS	BY	CHKD
4	3/7/2024	PER GIS REVIEW LETTER DATED 01/24/2024	PRG	DS
3	11/17/2023	PER GIS REVIEW LETTER DATED 11/22/2023	PRG	DS
2	4/3/2023	REVISED ENTRANCE ON GERMANTOWN PIKE	ROP	DS
1	10/04/2022	PER GIS REVIEW LETTER DATED 03/11/2022	PRG	DS

CHRISTOPHER W. JENSEN, P.E.
 LICENSED PROFESSIONAL ENGINEER
 STATE OF PA LICENSE NO. PED76464

4/3/2023

BT WORCESTER, LLC

CITY VIEW - APN #67-00-01606-001
 2974 GERMANTOWN PIKE, WORCESTER TOWNSHIP,
 MONTGOMERY COUNTY, COMMONWEALTH OF PENNSYLVANIA

DEMOLITION PLAN

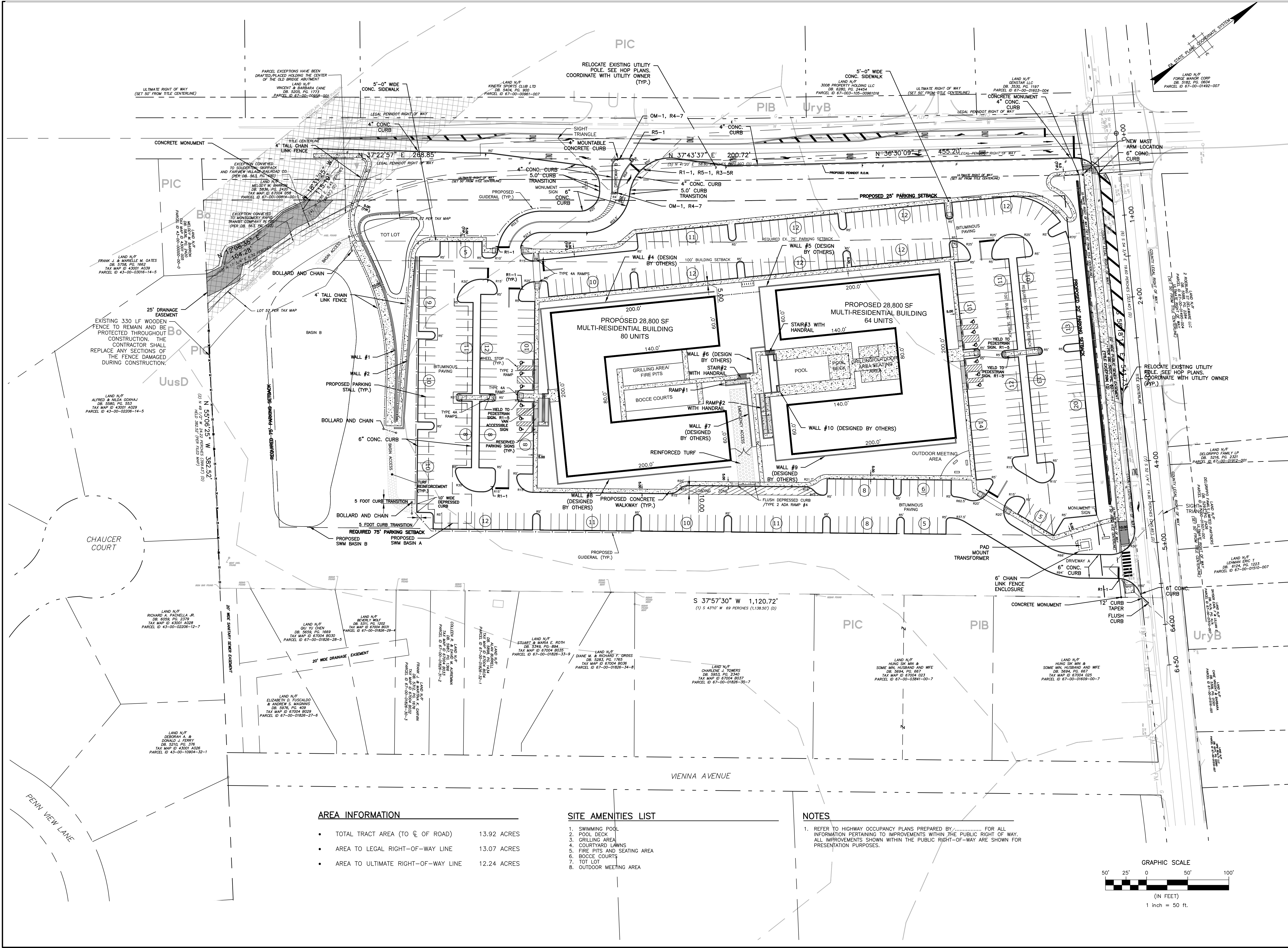
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 OHIO AND PENNSYLVANIA

DESIGNED BY CGG/JPK/ROP	DRAWING DEM
CHECKED BY DS	SHEET 7
DRAWN BY PG/SR/ROP	OF 34
DATE 1/27/22	
SCALE 1" = 50'	
PROJ. NO. BET00056	

ATTENTION: ALL CONSTRUCTION LOCATIONS OF ALL EXISTING UTILITIES SHOWN HEREON HAVE BEEN OBTAINED FROM UTILITY COMPANIES. THE ACCURACY OF THESE DATA IS THE RESPONSIBILITY OF THE USER. THE USER SHALL BE RESPONSIBLE FOR OBTAINING THE NECESSARY PERMISSIONS FROM THE UTILITIES TO EXCAVATE OR LOCATE UTILITIES. THE USER SHALL BE RESPONSIBLE FOR OBTAINING THE NECESSARY PERMISSIONS FROM THE UTILITIES TO EXCAVATE OR LOCATE UTILITIES. THE USER SHALL BE RESPONSIBLE FOR OBTAINING THE NECESSARY PERMISSIONS FROM THE UTILITIES TO EXCAVATE OR LOCATE UTILITIES.



AREA INFORMATION

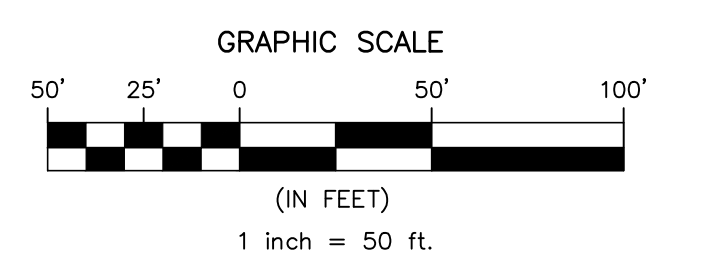
TOTAL TRACT AREA (TO ϕ OF ROAD)	13.92 ACRES
AREA TO LEGAL RIGHT-OF-WAY LINE	13.07 ACRES
AREA TO ULTIMATE RIGHT-OF-WAY LINE	12.24 ACRES

SITE AMENITIES LIST

1. SWIMMING POOL
2. POOL DECK
3. GRILLING AREA
4. COURTYARD LAWNS
5. FIRE PITS AND SEATING AREA
6. BOCCIE COURTS
7. TOT LOT
8. OUTDOOR MEETING AREA

NOTES

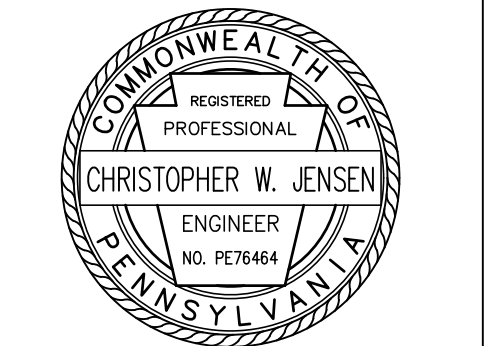
1. REFER TO HIGHWAY OCCUPANCY PLANS PREPARED BY..... FOR ALL INFORMATION PERTAINING TO IMPROVEMENTS WITHIN THE PUBLIC RIGHT OF WAY. ALL IMPROVEMENTS SHOWN WITHIN THE PUBLIC RIGHT-OF-WAY ARE SHOWN FOR PRESENTATION PURPOSES.



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2.	4/3/2023	REVISED ENTRANCE ON GERMANTOWN PIKE	PRG DS	
3.	11/17/2023	PER CIS REVIEW LETTER DATED 11/22/2023	PRG DS	
4.	3/7/2024	PER CIS REVIEW LETTER DATED 01/24/2024	PRG DS	

CHRISTOPHER W. JENSEN, P.E.
LICENSED PROFESSIONAL ENGINEER



4/3/2023
LICENSED PROFESSIONAL ENGINEER
STATE OF PA LICENSE NO. PE076464

BT WORCESTER, LLC
CITY VIEW - APN #67-00-01606-001
2974 GERMANTOWN PIKE, WORCESTER TOWNSHIP,
MONTGOMERY COUNTY, COMMONWEALTH OF PENNSYLVANIA



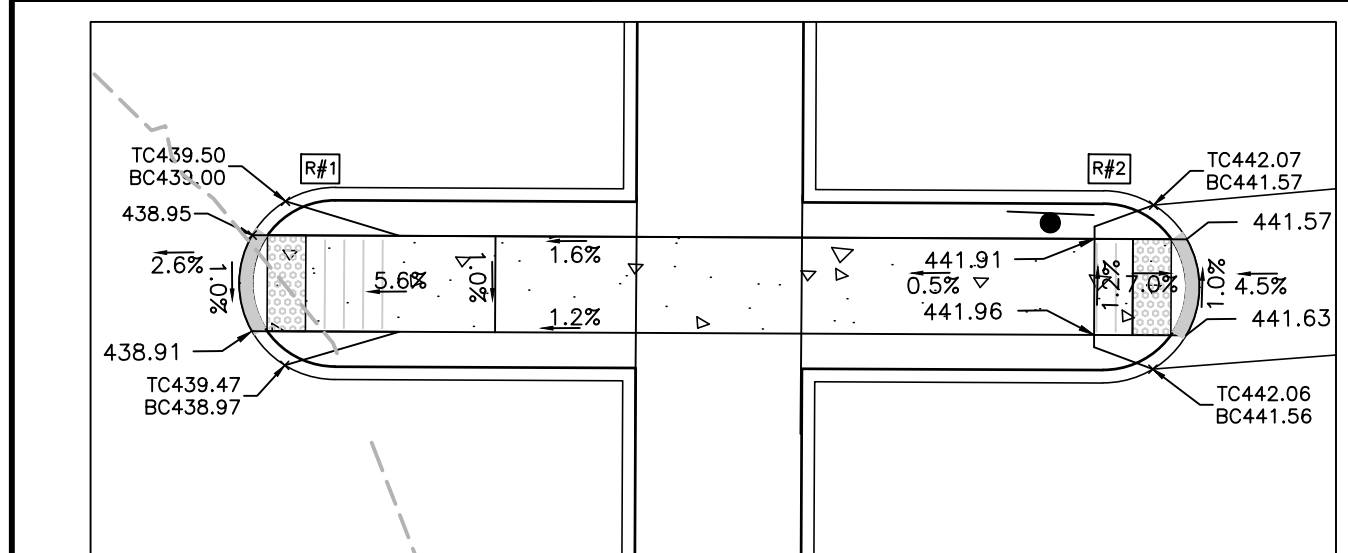
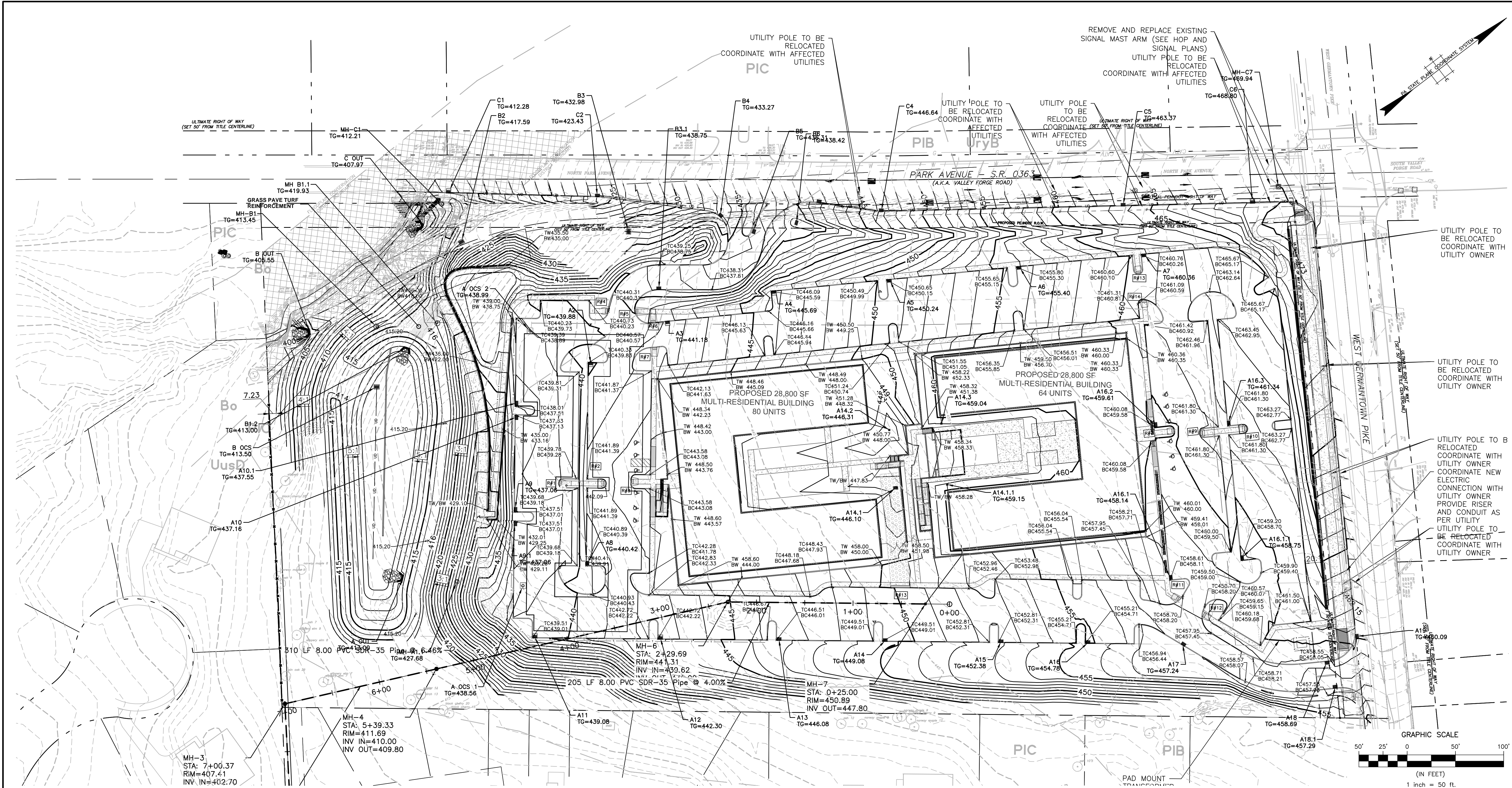
1700 MARKET STREET, SUITE 3110
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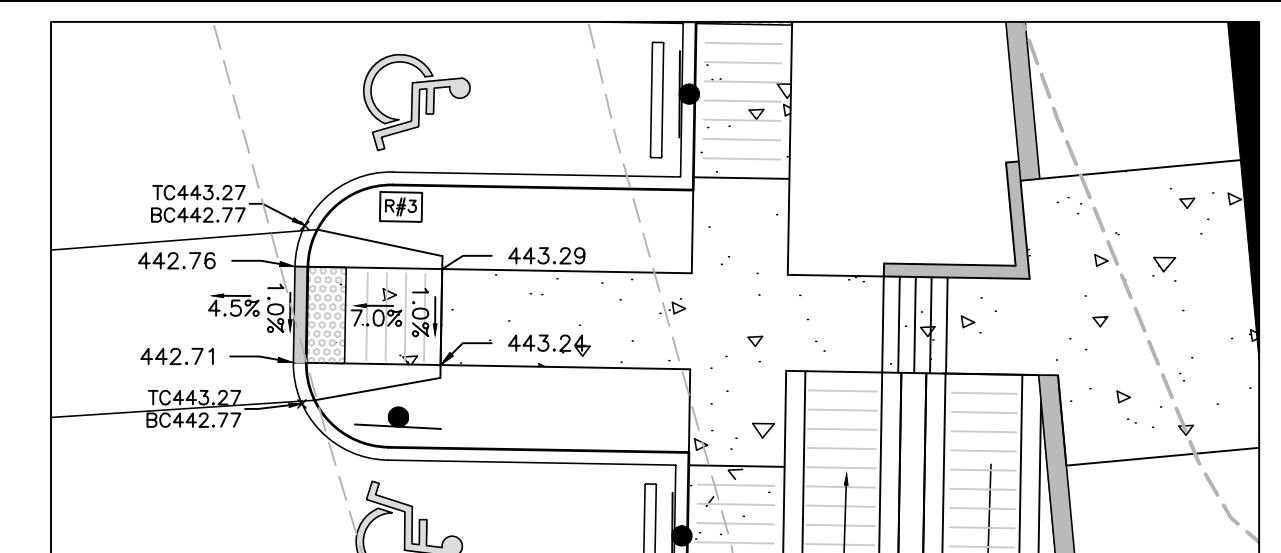
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PROJ. NO.	BET00056		OF 34

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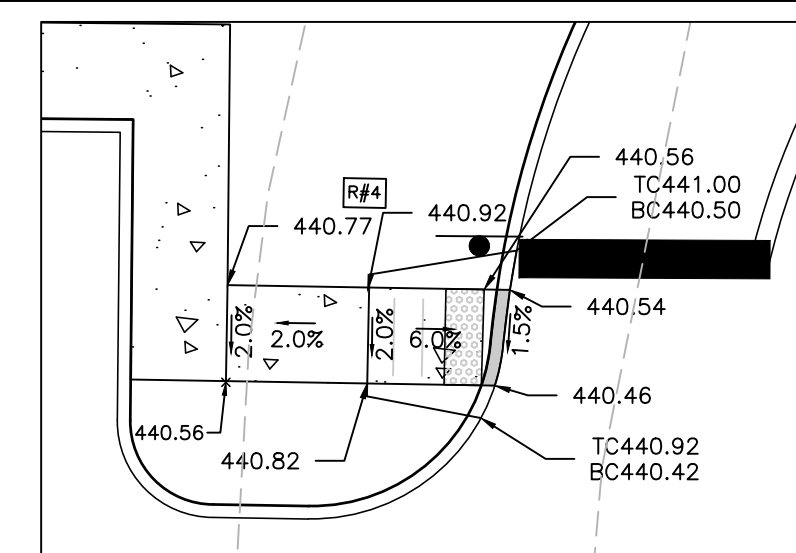
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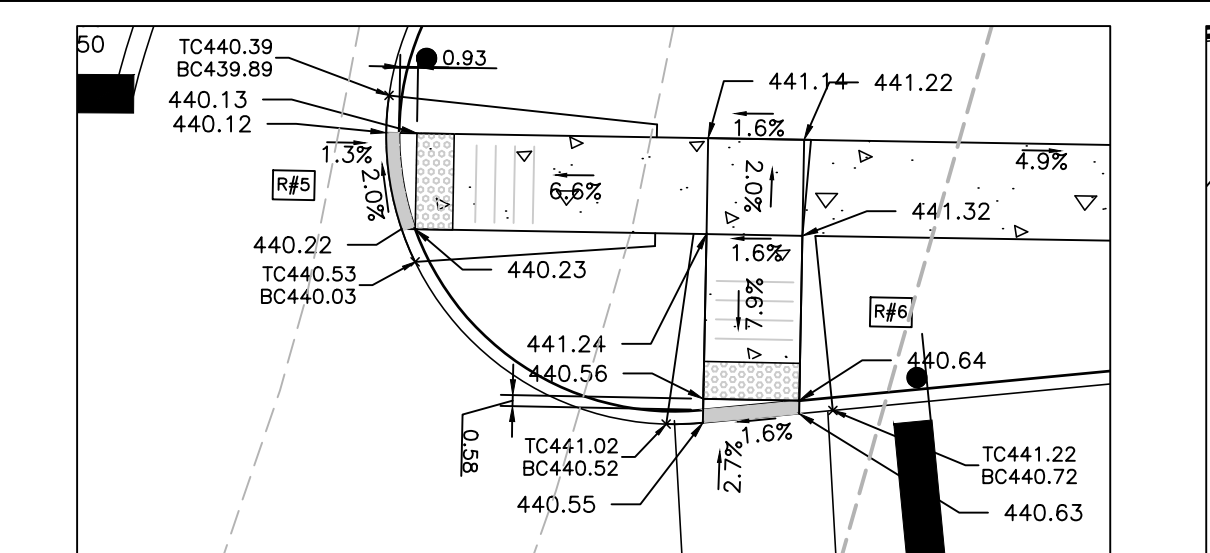
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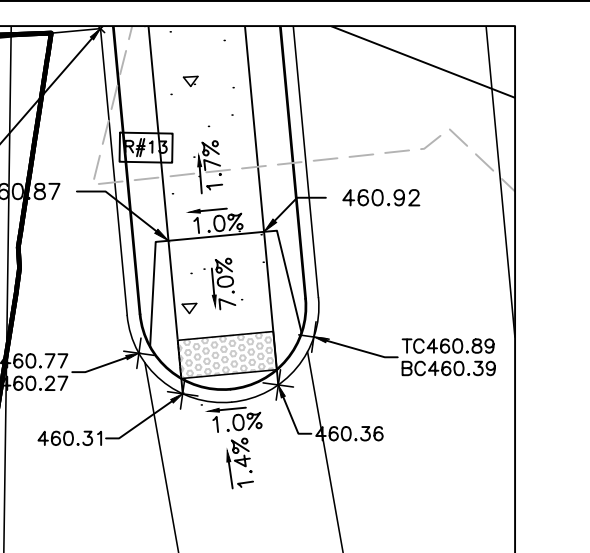
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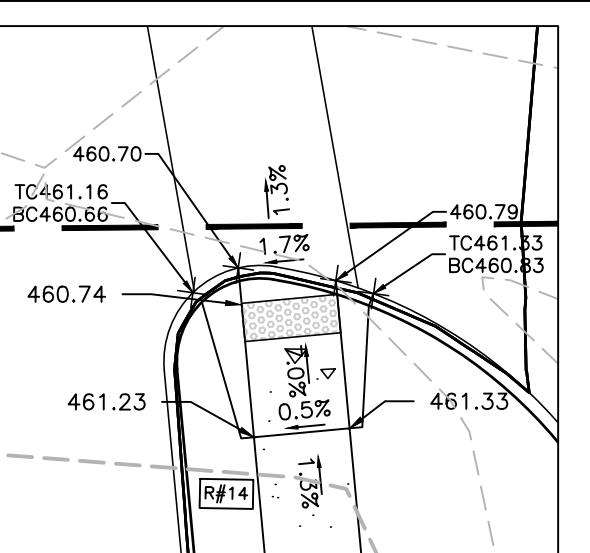
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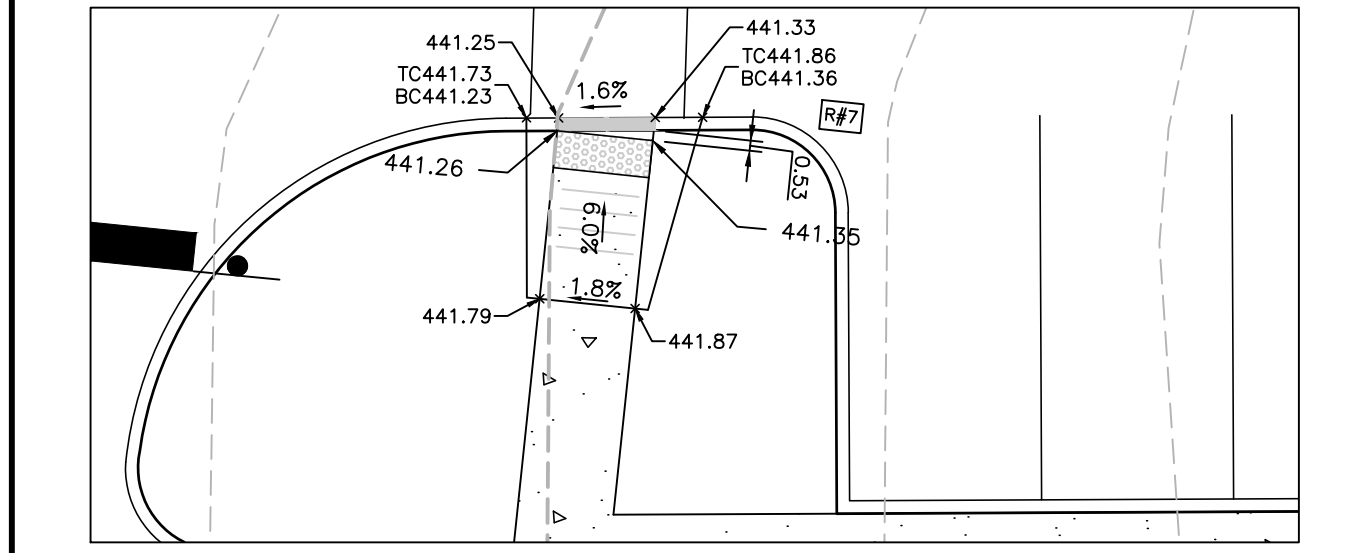
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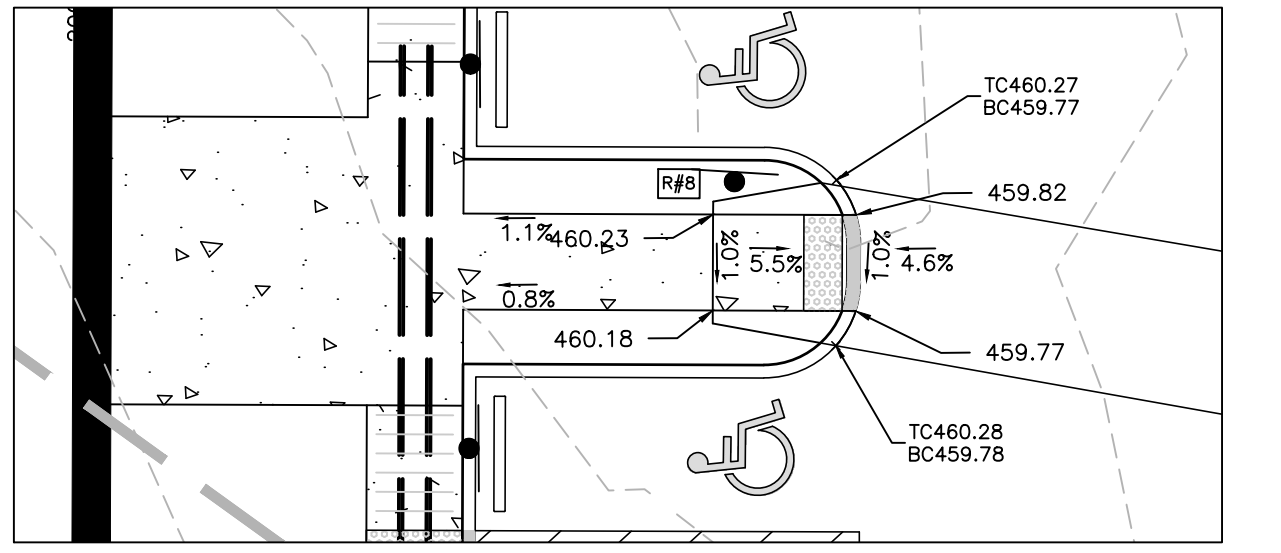
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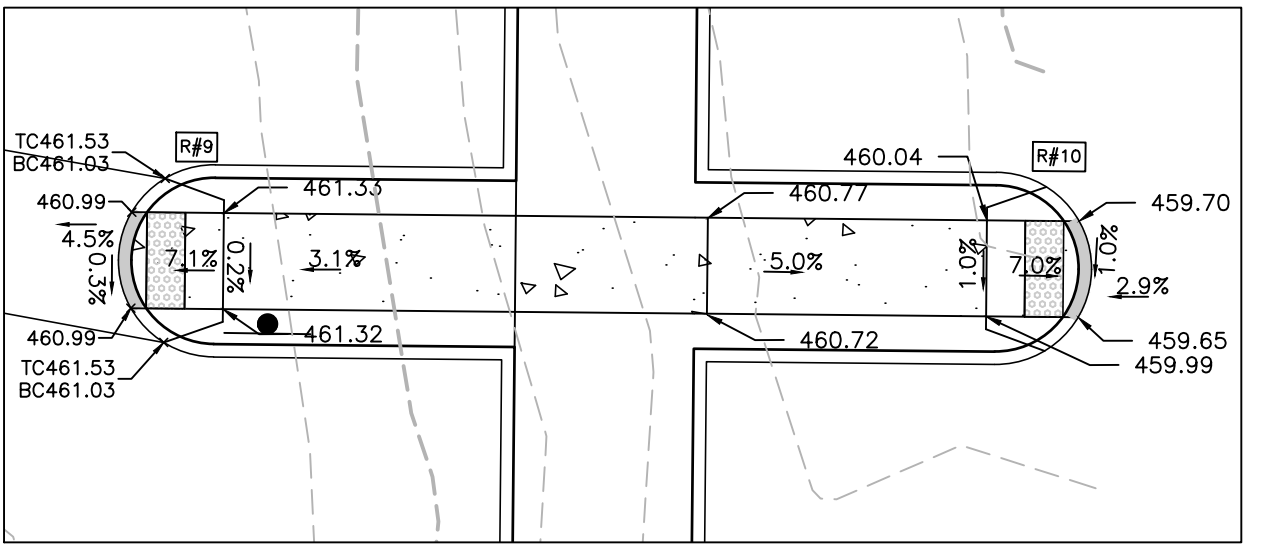
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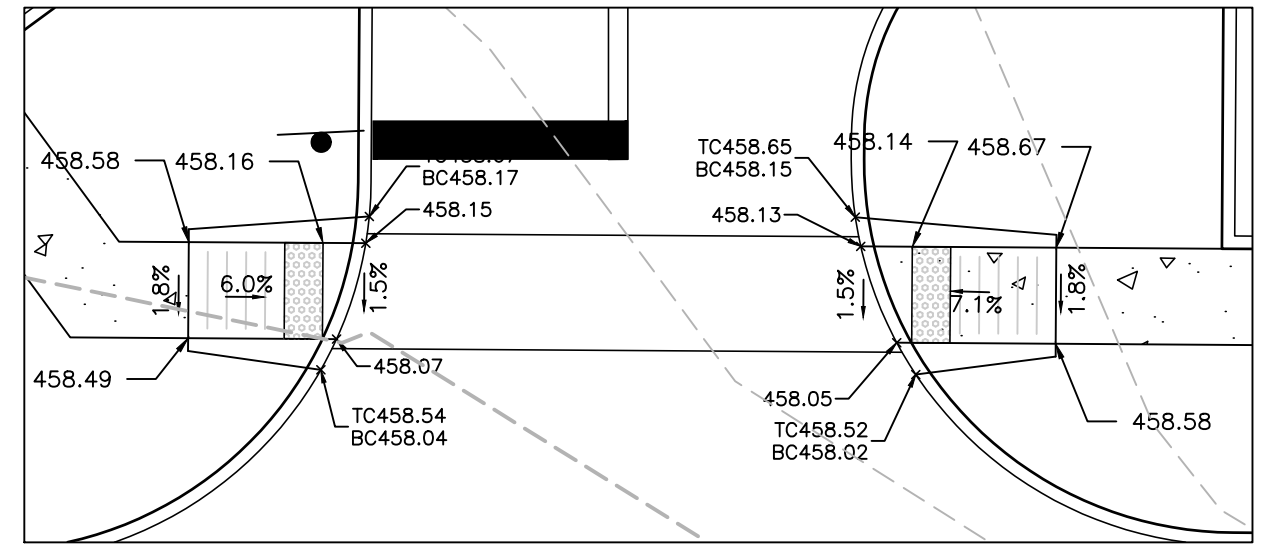
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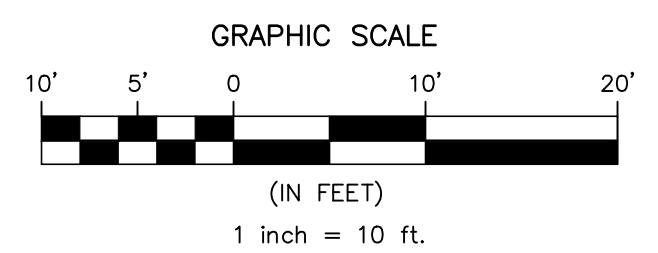
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RAMP #9 & #10



RAMP #11 & #12

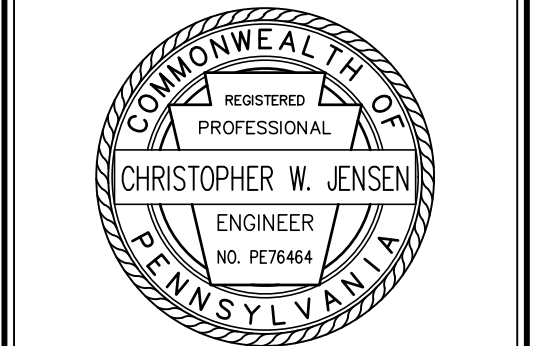


GRAPHIC SCALE
 1 inch = 10 feet

NO.	DATE	REVISIONS	BY	CHKD
1	10/04/2023	PER CIS REVIEW LETTER DATED 03/11/2022	DS	DS
2	4/3/2023	REVISED ENTRANCE ON GERMANTOWN PIKE	DS	DS
3	11/17/2023	PER CIS REVIEW LETTER DATED 11/22/2022	PRG	DS
4	3/7/2024	PER CIS REVIEW LETTER DATED 01/24/2024	PRG	DS

NO.	DATE	REVISIONS	BY	CHKD
1	10/04/2023	PER CIS REVIEW LETTER DATED 03/11/2022	DS	DS
2	4/3/2023	REVISED ENTRANCE ON GERMANTOWN PIKE	DS	DS
3	11/17/2023	PER CIS REVIEW LETTER DATED 11/22/2022	PRG	DS
4	3/7/2024	PER CIS REVIEW LETTER DATED 01/24/2024	PRG	DS

CHRISTOPHER W. JENSEN, P.E.
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 STATE OF PA LICENSE NO. PE076464

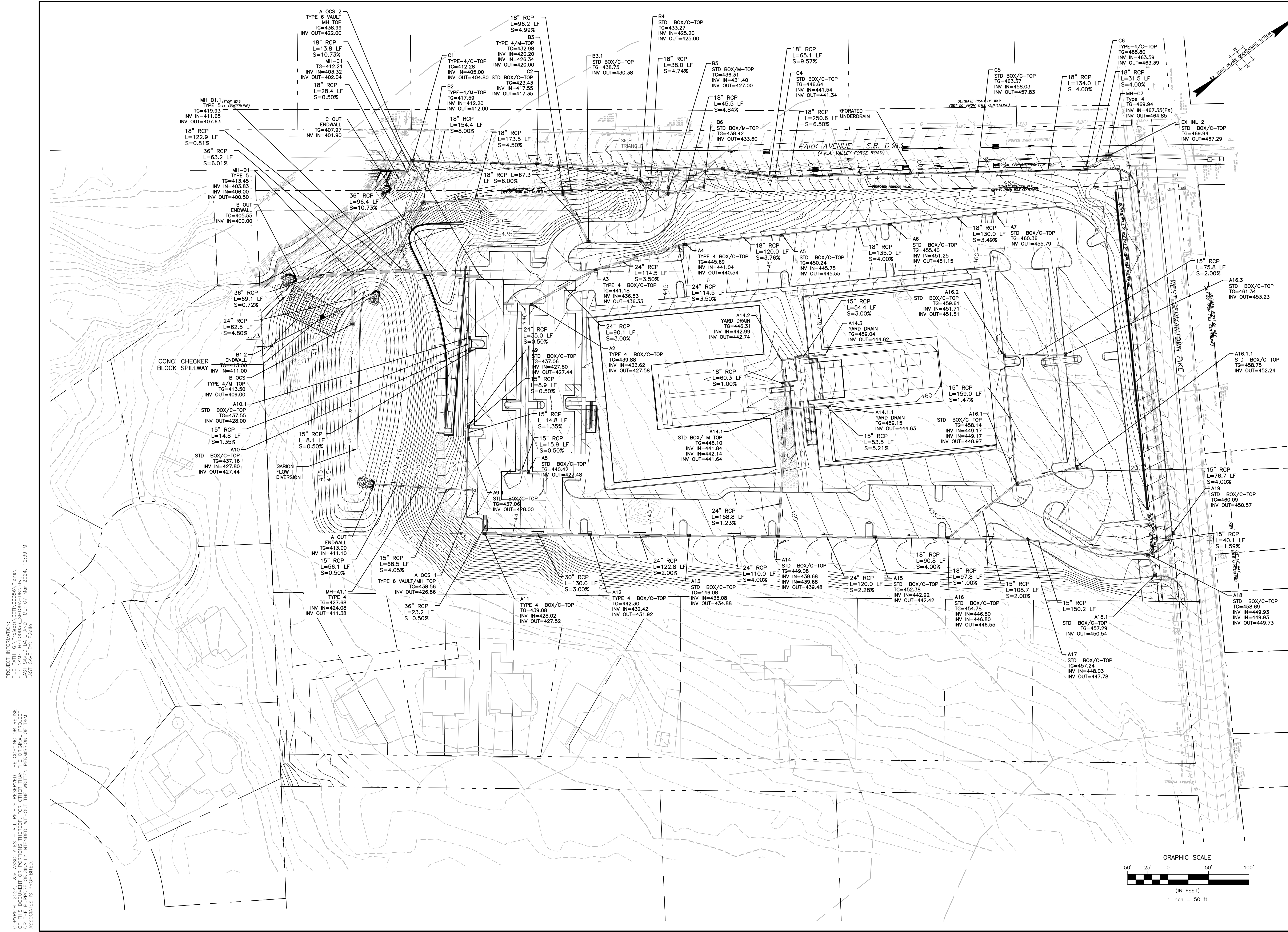
BT WORCESTER, LLC
 CITY VIEW - APN #67-00-01606-001
 2974 GERMANTOWN PIKE, WORCESTER TOWNSHIP,
 MONTGOMERY COUNTY, COMMONWEALTH OF PENNSYLVANIA



1700 MARKET STREET, SUITE 3110
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OFFICES LOCATED IN:
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DESIGNED BY CGG/JPK/RDP	DRAWING GRD
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DRAWN BY PG/SR/RDP	OF 34
DATE 1/27/22	
SCALE SEE PLAN SCALE NOTE	
PROJ. NO. BET00056	



PROJECT INFORMATION:
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 DATE: 07/11/2024 12:39PM
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1	10/04/2023	PER GIS REVIEW LETTER DATED 03/11/2022	PG	DS
2	4/3/2023	REVISED ENTRANCE ON GERMANTOWN PIKE	PG	DS
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CHRISTOPHER W. JENSEN, P.E.
 LICENSED PROFESSIONAL ENGINEER



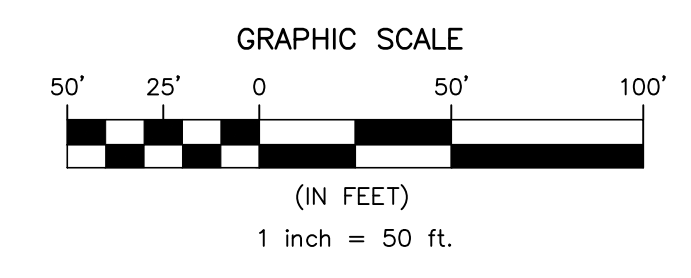
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BT WORCESTER, LLC
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DRAWN BY PG/SR/ROP	SCALE 1" = 50'
DATE 1/27/22	PROJ. NO. BET00056
	OF 34





ATTENTION: ALL CONTRACTORS LOCATING OR ALL EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM UTILITY COMPANY RECORDS AND/OR FIELD SURVEY. THE LOCATION, DEPTH, AND CHARACTERISTICS OF UTILITIES SHOWN ON THIS PLAN ARE BASED ON THE INFORMATION PROVIDED BY THE UTILITY COMPANIES AND/OR FIELD SURVEY. THE CONTRACTOR SHALL VERIFY THE LOCATION, DEPTH, AND CHARACTERISTICS OF ALL UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND COORDINATION WITH ALL UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL UTILITIES NOT SHOWN ON THIS PLAN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND COORDINATION WITH ALL UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL UTILITIES NOT SHOWN ON THIS PLAN.

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CHRISTOPHER W. JENSEN, P.E.
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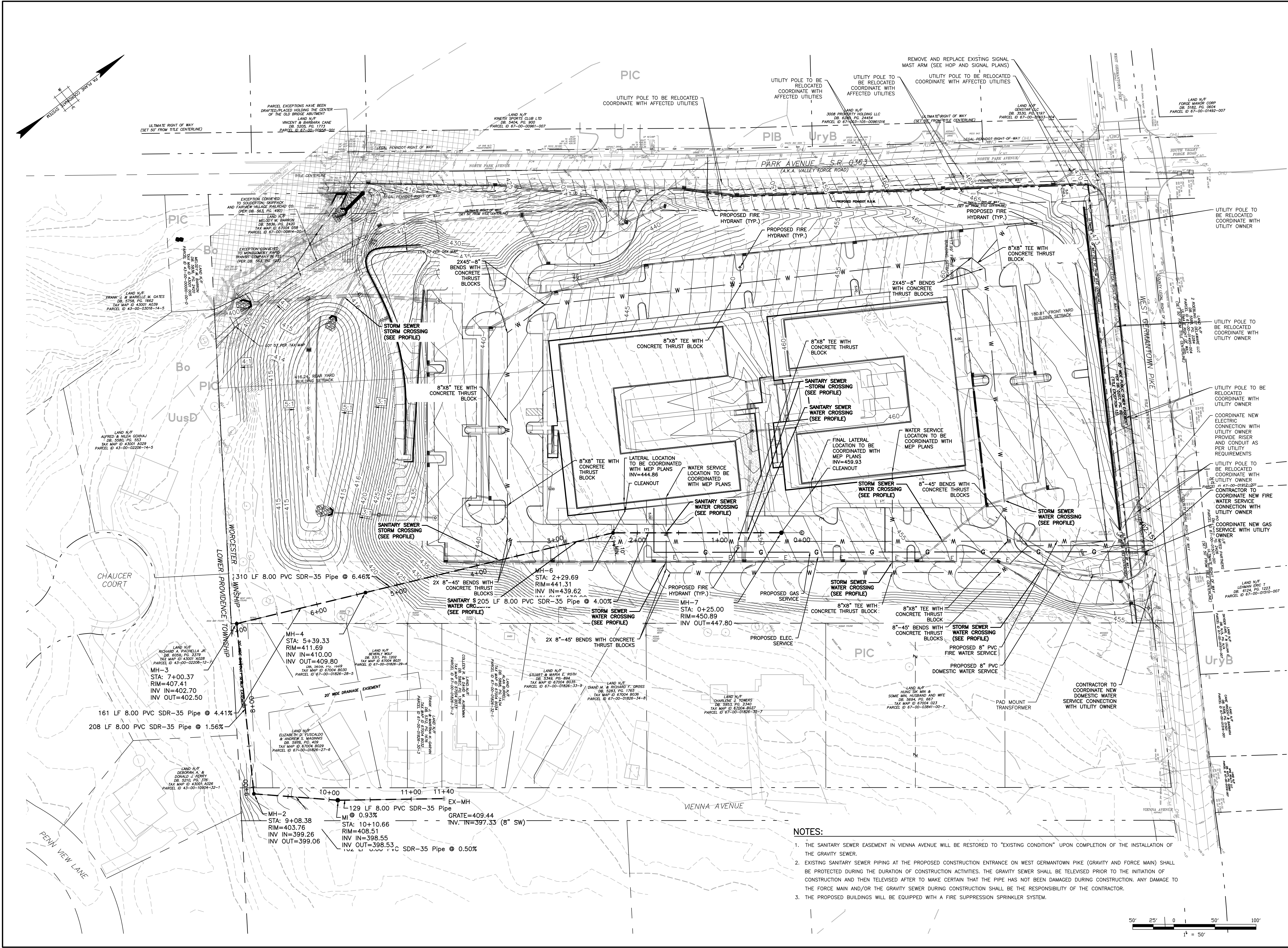
4/3/2023
LICENSED PROFESSIONAL ENGINEER
STATE OF PA LICENSE NO. PED76464

UTILITY PLAN
CITY VIEW - APN #67-00-01606-001
2974 GERMANTOWN PIKE, WORCESTER TOWNSHIP,
MONTGOMERY COUNTY, COMMONWEALTH OF PENNSYLVANIA

AND
YOUR GOALS. OUR MISSION.
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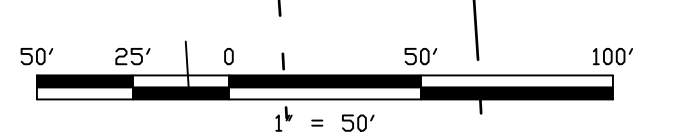
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DRAWN BY	PG/SR/RDP	DATE	1/27/22
SCALE	1" = 50'	PROJ. NO.	BET00056



- NOTES:**
- THE SANITARY SEWER EASEMENT IN VIENNA AVENUE WILL BE RESTORED TO "EXISTING CONDITION" UPON COMPLETION OF THE INSTALLATION OF THE GRAVITY SEWER.
 - EXISTING SANITARY SEWER PIPING AT THE PROPOSED CONSTRUCTION ENTRANCE ON WEST GERMANTOWN PIKE (GRAVITY AND FORCE MAIN) SHALL BE PROTECTED DURING THE DURATION OF CONSTRUCTION ACTIVITIES. THE GRAVITY SEWER SHALL BE TELEVIEWED PRIOR TO THE INITIATION OF CONSTRUCTION AND THEN TELEVIEWED AFTER TO MAKE CERTAIN THAT THE PIPE HAS NOT BEEN DAMAGED DURING CONSTRUCTION. ANY DAMAGE TO THE FORCE MAIN AND/OR THE GRAVITY SEWER DURING CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
 - THE PROPOSED BUILDINGS WILL BE EQUIPPED WITH A FIRE SUPPRESSION SPRINKLER SYSTEM.

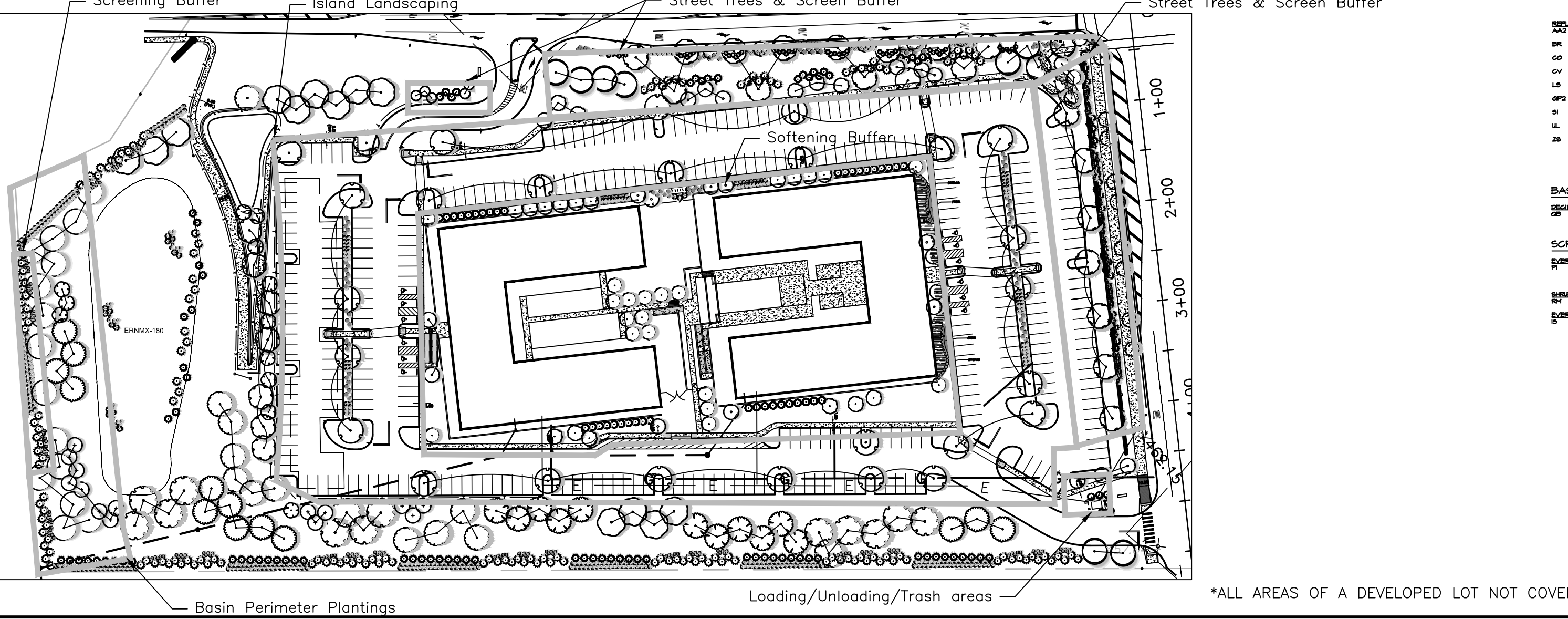
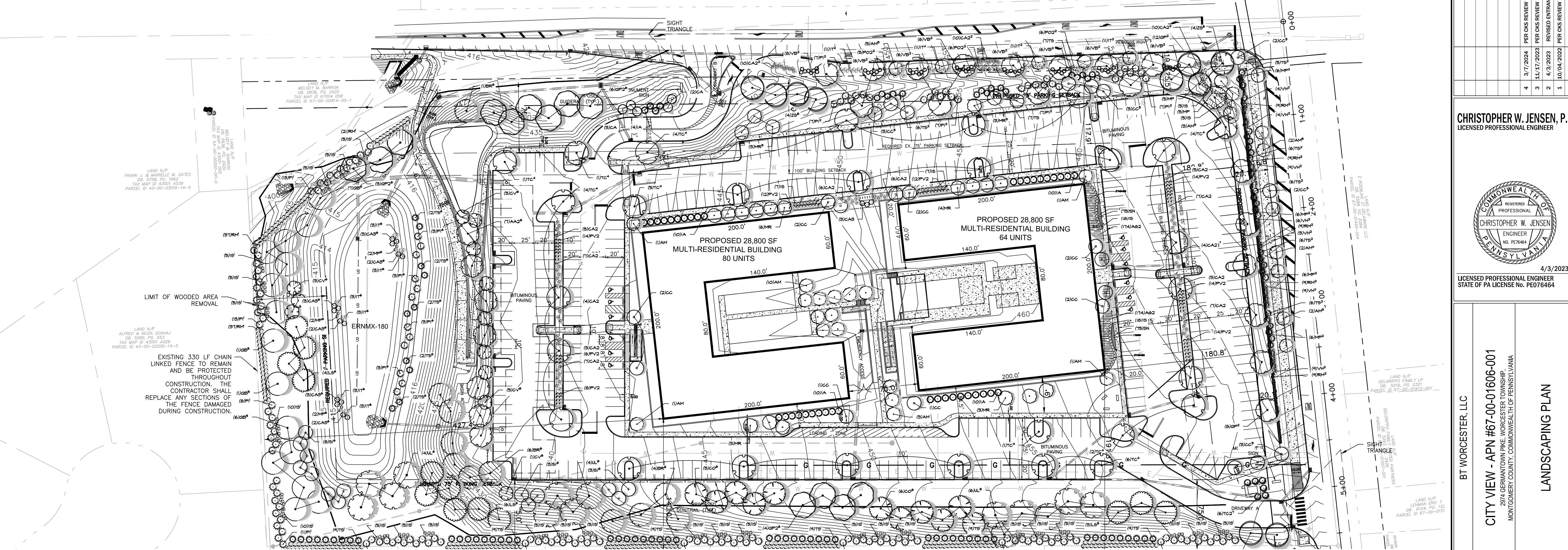
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SYMBOL	QTY	BOTANICAL NAME	COMMON NAME	BOLE	GAULT	SEED	REMARKS
10	28	LITTELEAF LINDEN	LITTELEAF LINDEN	B 1 B	12"-14"		FALL CANOPY, T BRANCHING HT.
11	8	GERARD BUCKLER	BROWN WHITE OAK	B 1 B	8"-10"		
12	4	LEUCODENDRON STRYMONIUM	WHEAT OAK	B 1 B	4"-6"		
13	2	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	2"-3"		
14	4	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	4"-6"		
15	4	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	4"-6"		
16	4	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	4"-6"		
17	4	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	4"-6"		
18	4	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	4"-6"		
19	4	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	4"-6"		
20	4	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	4"-6"		
21	4	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	4"-6"		
22	4	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	4"-6"		
23	4	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	4"-6"		
24	4	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	4"-6"		
25	4	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	4"-6"		
26	4	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	4"-6"		
27	4	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	4"-6"		
28	4	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	4"-6"		
29	4	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	4"-6"		
30	4	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	4"-6"		
31	4	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	4"-6"		
32	4	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	4"-6"		
33	4	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	4"-6"		
34	4	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	4"-6"		
35	4	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	4"-6"		
36	4	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	4"-6"		
37	4	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	4"-6"		
38	4	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	4"-6"		
39	4	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	4"-6"		
40	4	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	4"-6"		
41	4	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	4"-6"		
42	4	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	4"-6"		
43	4	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	4"-6"		
44	4	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	4"-6"		
45	4	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	4"-6"		
46	4	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	4"-6"		
47	4	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	4"-6"		
48	4	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	4"-6"		
49	4	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	4"-6"		
50	4	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	4"-6"		

Botanical Name	Common Name	Price/lb
<i>Schizanthus scarpium</i> , 'Zasca', MN Ecotype	Little Bluestem, 'Zasca', MN Ecotype	11.66
<i>Stipa virginica</i> , PA Ecotype	Virginia Wildrice, PA Ecotype	11.19
<i>Carex vulpinoidea</i> , PA Ecotype	Fox Sedge, PA Ecotype	26.40
<i>Chamaenerion adnigrum</i> , WV Ecotype	River Oats, WV Ecotype	88.00
<i>Gibberna repens</i>	Purple Coneflower	39.60
<i>Chamaenerion adnigrum</i> , PA Ecotype	Purple Coneflower	26.40
<i>Panicum clandestinum</i> , Togo	Doerflinger's Togo	18.90
<i>Panicum paniculatum</i> , PA Ecotype	Redtop Panicum, PA Ecotype	52.80
<i>Andropogon scoparius</i> , Coastal Plain NC Ecotype	Black-eyed Susan, Coastal Plain NC Ecotype	22.00
<i>Hibiscus latifolius</i> , PA Ecotype	Blue Verbena, PA Ecotype	33.20
<i>Andropogon scoparius</i> , PA Ecotype	Orange Sulfur, PA Ecotype	33.80
<i>Andropogon scoparius</i> , PA Ecotype	Swamp Milkweed, PA Ecotype	176.00
<i>Carex scoparia</i> , PA Ecotype	Blunt Brown Sedge, PA Ecotype	79.20
<i>Sonchus oleraceus</i> , VA & WV Ecotype	Blue Field Sedge, VA & WV Ecotype	26.40
<i>Aster novae-angliae</i> , PA Ecotype	New England Aster, PA Ecotype	396.00
<i>Aster praealtissimus</i> , PA Ecotype	Zigzag Aster, PA Ecotype	396.00
<i>Ruellia australis</i> , Southern WV Ecotype	Blue Flower Sedge, Southern WV Ecotype	88.00
<i>Pycnanthemum tenuifolium</i>	Narrowleaf Mountainmint	154.00
<i>Coreopsis</i>	Golden Alexander	264.00
<i>Alouatta latifolia</i> , Fort Indiantown Gap PA Ecotype	Wild Bergamot, Fort Indiantown Gap PA Ecotype	105.60
<i>Eupatorium coelestinum</i> , VA Ecotype	Midwinter, VA Ecotype	288.00
<i>Eupatorium perfoliatum</i> , PA Ecotype	Boneset, PA Ecotype	330.00
<i>Hibiscus autumnalis</i> , PA Ecotype	Common Soursweet, PA Ecotype	198.00
<i>Juncus tenuis</i> , PA Ecotype	Path Rush, PA Ecotype	72.60
<i>Juncus tenuis</i> , PA Ecotype	Soft Rush	44.00
<i>Solidago nemoralis</i> , PA Ecotype	Gay Goldenrod, PA Ecotype	396.00
<i>Solidago rigida</i> , PA Ecotype	Whiteleaf Goldenrod, PA Ecotype	462.00



SYMBOL	QTY	BOTANICAL NAME	COMMON NAME	BOLE	GAULT	SEED	REMARKS
1	150-146.28(1)	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	12"-14"		FALL CANOPY, T BRANCHING HT.
2	130-286(4)(b)	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	12"-14"		FALL CANOPY, T BRANCHING HT.
3	130-286(5)(b)(1)	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	12"-14"		FALL CANOPY, T BRANCHING HT.
4	130-286(6)(c)	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	12"-14"		FALL CANOPY, T BRANCHING HT.
5	130-286(7)(e)(1)	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	12"-14"		FALL CANOPY, T BRANCHING HT.
6	128-14(24)(2)	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	12"-14"		FALL CANOPY, T BRANCHING HT.
7	130-286(8)	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	12"-14"		FALL CANOPY, T BRANCHING HT.
8	130-286(7)(b)	SEMI-PANICULATA	SEMI-PANICULATA	B 1 B	12"-14"		FALL CANOPY, T BRANCHING HT.

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 LICENSED PROFESSIONAL ENGINEER
 STATE OF PA LICENSE NO. PED76464

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4/3/2023
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LANDSCAPING PLAN

BT WORCESTER, LLC

CITY VIEW - APN #67-00-01606-001
 2974 GERMANTOWN PIKE, WORCESTER TOWNSHIP,
 MONTGOMERY COUNTY, COMMONWEALTH OF PENNSYLVANIA

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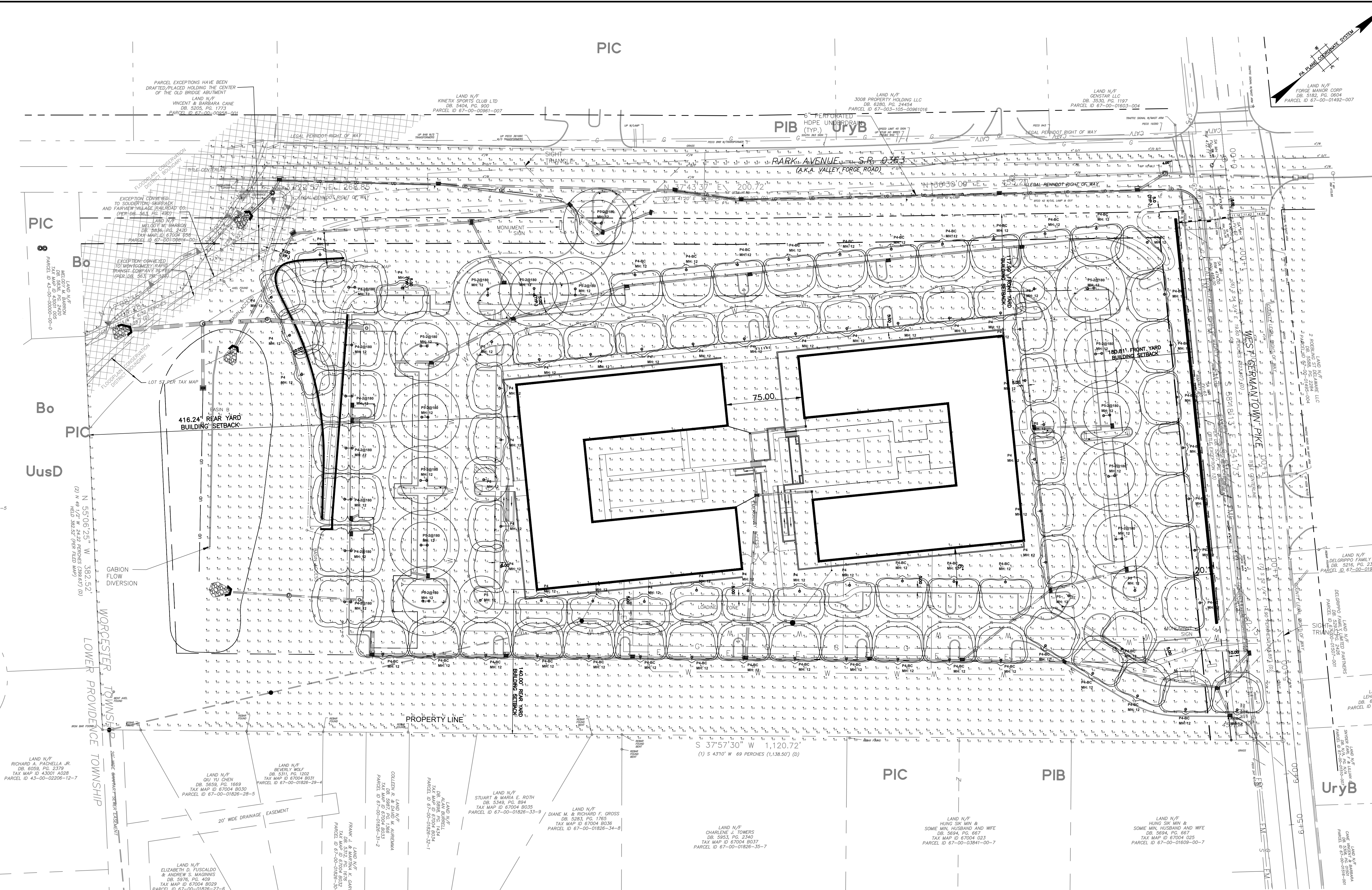
1700 MARKET STREET, SUITE 3110
 PHILADELPHIA, PA 19103
 TEL 215-282-7850
 FAX 215-627-3459
 www.landassociates.com

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DRAWN BY	PG/SR/RDP	SHEET	
DATE	1/27/22	11	
SCALE	1" = 50'	OF	34
PROJ. NO.	BET00056		

*ALL AREAS OF A DEVELOPED LOT NOT COVERED BY BUILDINGS AND/OR IMPERVIOUS PAVING MATERIALS SHALL BE COVERED WITH LAWN.

- LIGHTING NOTES:**
- REFER TO SEPARATE ELECTRICAL ENGINEERING PLANS FOR CIRCUITRY DESIGN AND SPECIFICATIONS.
 - SEE LANDSCAPE AND LIGHTING DETAIL SHEET FOR LUMINAIRE SPECIFICATIONS AND POLE INSTALLATION DETAILS.
 - A STRUCTURAL ANALYSIS FOR THE LIGHT FOUNDATIONS, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER, SHALL BE SUBMITTED FOR REVIEW PRIOR TO CONSTRUCTION.
 - THE ANTICIPATED HOURS OF LIGHTING OPERATION ARE DUSK UNTIL DAWN. PER THE MONTGOMERY TOWNSHIP STREET LIGHTING SPECIFICATIONS, LIGHTING FOR COMMERCIAL, INDUSTRIAL, PUBLIC RECREATION, AND INSTITUTIONAL APPLICATIONS SHALL BE CONTROLLED BY AUTOMATIC SWITCHING DEVICES SUCH AS TIME CLOCKS OR COMBINATION MOTION DETECTORS AND PHOTOCELLS, TO PREVENT EXCESSIVE OUTDOOR LIGHTING FIXTURES BETWEEN 10 P.M. AND DAWN. FOR LIGHTING PROPOSED AFTER 10 P.M., OR AFTER NORMAL HOURS OF OPERATION, WHICH IS EARLIER, THE LIGHTING SHALL BE REDUCED BY AT LEAST 50% FROM THEN UNTIL DAWN, UNLESS SUPPORTING A SPECIFIC PURPOSE AND APPROVED BY THE APPROPRIATE OFFICERS OR AGENTS OF THE MUNICIPALITY.
 - ALL ILLUMINATION FOR ADVERTISING SIGNS, BUILDING, AND/OR SURROUNDING LANDSCAPES FOR DECORATIVE, ADVERTISING, OR ESTHETIC PURPOSES IS PROHIBITED BETWEEN 10 P.M. AND SUNRISE, EXCEPT THAT SUCH LIGHTING SITUATED ON THE PREMISES OF A COMMERCIAL ESTABLISHMENT MAY REMAIN ILLUMINATED WHILE THE ESTABLISHMENT IS ACTUALLY OPEN FOR BUSINESS, AND UNTIL ONE HOUR AFTER CLOSING.
 - ALL OUTSIDE LIGHTING, INCLUDING SIGN LIGHTING, SHALL BE ARRANGED, DESIGNED AND SHIELDED OR DIRECTED SO AS TO PROTECT THE ABUTTING STREETS AND HIGHWAYS AND ADJOINING PROPERTY FROM THE GLARE OF LIGHTS. IN NO CASE SHALL ILLUMINATION CAST BY A SOURCE OR SOURCES ONTO AN ADJACENT RESIDENTIAL PROPERTY EXCEED 0.1 VERTICAL FOOT-CANDLE MEASURED LINE-OF-SIGHT, FROM ANY POINT ON THE ADJACENT RESIDENTIAL PROPERTY.
 - ALL LANDSCAPING SHALL BE TRIMMED AS NECESSARY TO MAINTAIN REQUIRED LIGHT LEVELS.
 - THE DEVELOPER AND CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH ALL APPLICABLE MONTGOMERY TOWNSHIP PERSONNEL AND CONSULTANTS/INSPECTORS PRIOR TO COMMENCING CONSTRUCTION.
 - THE TOWNSHIP RESERVES THE RIGHT TO CONDUCT POST-INSTALLATION DURING AND NIGHTTIME INSPECTIONS TO VERIFY COMPLIANCE WITH THE TOWNSHIP LIGHTING STANDARDS. IF THE INSPECTION REVEALS A NON-COMPLIANCE TO TOWNSHIP STANDARDS, THE TOWNSHIP SHALL TAKE DIRECT CORRECTIVE ACTION WHICH SHALL BE EXECUTED BY THE PROPERTY OWNER AT NO EXPENSE TO THE TOWNSHIP. RECTIFICATION MUST BE COMPLETED WITHIN THIRTY (30) DAYS OF NOTIFICATION FROM THE TOWNSHIP.
 - CONTRACTOR TO SUBMIT SHOP DRAWINGS AND/OR CUT SHEETS FOR ALL PROPOSED LIGHTS, POLES, AND FOUNDATIONS IN ACCORDANCE WITH THE APPROVED LAND DEVELOPMENT PLANS FOR APPROVAL BY MONTGOMERY TOWNSHIP DEPARTMENT OF PUBLIC WORKS AND THE MUNICIPAL STREET LIGHTING ENGINEER PRIOR TO INSTALLATION.
 - PRIOR TO CONSTRUCTION, THE CONTRACTOR AND DEVELOPER SHALL SUBMIT FOR REVIEW AND APPROVAL TO MONTGOMERY TOWNSHIP ANY AND ALL DEVIATIONS FROM THE APPROVED LIGHTING PLANS.
 - ALL UTILITIES AND BELOW GRADE STRUCTURES SHOWN FOR REFERENCE. SEE ENGINEER'S PLANS FOR LOCATION OF ALL UTILITIES. CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES AND BELOW GRADE STRUCTURES PRIOR TO COMMENCEMENT OF WORK.
 - LIGHTING TO BE INSTALLED TO MEET ALL APPROPRIATE NATIONAL, LOCAL, AND TOWNSHIP CODES.
 - ALL LIGHTING TO BE INSTALLED ACCORDING TO MANUFACTURERS' RECOMMENDATIONS.
 - PROVIDE SEPARATE ELECTRICAL CERTIFICATIONS FOR SITE PARKING LOT LIGHTING FROM SITE BUILDING INSPECTIONS IF APPLICABLE. THESE CERTIFICATIONS SHALL INCLUDE THE FOLLOWING:
 - ALL UNDERGROUND CONDUIT AND WIRE HAS BEEN OBSERVED AND INSPECTED TO BE IN CONFORMANCE WITH THE CURRENT NATIONAL ELECTRIC CODE (NEC) AND TOWNSHIP REQUIREMENTS.
 - ALL CONNECTIONS AND TERMINATIONS HAVE BEEN OBSERVED AND INSPECTED TO BE IN CONFORMANCE WITH THE CURRENT NEC AND TOWNSHIP REQUIREMENTS.
 - ALL EQUIPMENT HAS BEEN OBSERVED AND FOUND TO BE U.L. LISTED AND ACCEPTED.
 - THE SPECIFIC NUMBER OF LUMINAIRES AND THE LOCATIONS WHICH WERE OBSERVED AND INSPECTED.
 - ALL POST-CONSTRUCTION LIGHT POLE AND FIXTURE FINISHES SHALL MATCH.
 - LIGHTING FIXTURES AND EQUIPMENT SHALL BE MAINTAINED SO AS TO CONTINUOUSLY MEET TOWNSHIP REQUIREMENTS. THIS INCLUDES CLEANING OF THE LIGHTING COMPONENTS TO MAINTAIN THE LUMEN VALUE. LUMINAIRES MUST BE REPLACED AS SOON AS THEY HAVE REACHED THE END OF THEIR SERVICE LIFE OR WHEN THEY ARE UNABLE TO OPERATE PROPERLY.



ATTENTION: ALL CONTRACTORS, SUBCONTRACTORS, AND ALL EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM UTILITY COMPANIES RECORDS AND/OR FIELD SURVEYS. THE USER OF THESE PLANS SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION, DEPTH, AND CHARACTERISTICS OF ALL UTILITIES. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND LEGISLATIVE ACT NUMBER 287 OF 1974 AS AMENDED BY ACT 151 OF 2008. CONTRACTORS MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES PRIOR TO START OF WORK. DATE: 02/21/2023

NO.	DATE	REVISIONS	BY	CHKD
4	3/7/2024	PER CIS REVIEW LETTER DATED 01/24/2024	PRG	DS
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CHRISTOPHER W. JENSEN, P.E.
LICENSED PROFESSIONAL ENGINEER



4/3/2023
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STATE OF PA LICENSE NO. PE076464

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2974 GERMAN TOWN PIKE, WORCESTER TOWNSHIP,
MONTGOMERY COUNTY, COMMONWEALTH OF PENNSYLVANIA
LIGHTING PLAN

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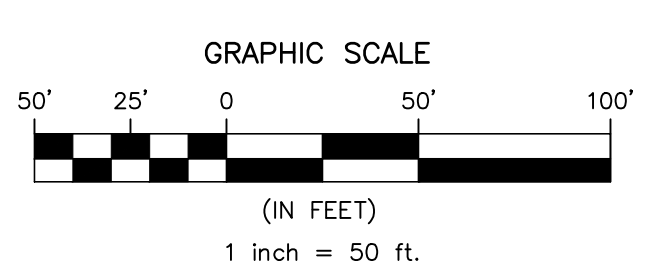
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CHECKED BY DS	LTP
DRAWN BY PG/SR/RDP	SHEET
DATE 1/27/22	12
SCALE 1" = 50'	OF 34
PROJ. NO. BET00056	

LUMINAIRE SCHEDULE "REFER TO LIGHTING FIXTURE CUTSHEETS FOR COMPLETE CATALOG NUMBERS"

Symbol	Qty	Arrangement	Fixture Type	Description	Manufacturer	Luminaire Catalog Number	Pole Catalog Number	CCT	LLF	Total Watts	Delivered Lumens	Mounting Height	Filename
⊙	31	Single	P4	20 INCH DIAMETER ARM MOUNTED AREA LIGHT, TYPE 4 DISTRIBUTION, MOUNTED 12FT ABOVE FINISHED GRADE	KIM LIGHTING	UR20-24L-25-3K7-4-UNV-A34-(FINISH)	RSA-(HEIGHT)-40-A-1-K2-(FINISH)-VM2	3000K	0.900	25	3118	12	UR20-24L-25-3K7-4-IES
⊙	7	Back-Back	P4-2@180	20 INCH DIAMETER ARM MOUNTED AREA LIGHT, TYPE 4 DISTRIBUTION, (2) BACK-TO-BACK FIXTURES MOUNTED 12FT ABOVE FINISHED GRADE	KIM LIGHTING	(2) UR20-24L-25-3K7-4-UNV-A34-(FINISH)	RSA-(HEIGHT)-40-A-1-K2-(FINISH)-VM2	3000K	0.900	50	6236	12	UR20-24L-25-3K7-4-IES
⊙	40	Single	P4-BC	20 INCH DIAMETER ARM MOUNTED AREA LIGHT, TYPE 4 DISTRIBUTION WITH INTERNAL BACKLIGHT CONTROL, MOUNTED 12FT ABOVE FINISHED GRADE	KIM LIGHTING	UR20-24L-65-3K7-4-UNV-A34-(FINISH)-BC	RSA-(HEIGHT)-40-A-1-K2-(FINISH)-VM2	3000K	0.900	65	5133	12	UR20-24L-65-3K7-4-BC-IES
⊙	7	Single	P5	20 INCH DIAMETER ARM MOUNTED AREA LIGHT, TYPE 5 WIDE DISTRIBUTION, MOUNTED 12FT ABOVE FINISHED GRADE	KIM LIGHTING	UR20-24L-25-3K7-5W-UNV-A34-(FINISH)	RSA-(HEIGHT)-40-A-1-K2-(FINISH)-VM2	3000K	0.900	25	3059	12	UR20-24L-25-3K7-5W-IES
⊙	14	Back-Back	P5-2@180	20 INCH DIAMETER ARM MOUNTED AREA LIGHT, TYPE 5 WIDE DISTRIBUTION, (2) BACK-TO-BACK FIXTURES MOUNTED 12FT ABOVE FINISHED GRADE	KIM LIGHTING	(2) UR20-24L-25-3K7-5W-UNV-A34-(FINISH)	RSA-(HEIGHT)-40-A-2-K2-(FINISH)-VM2	3000K	0.900	50	6118	12	UR20-24L-25-3K7-5W-IES

CALCULATION SUMMARY

Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min	PISpLr	PISpTb
PARKING LOT & DRIVES_Ground	Illuminance	Fc	1.7	5.4	0.5	3.4	10.8	10	10
PROPERTY LINE_Ground	Illuminance	Fc	0.0	0.0	0.0	N.A.	N.A.	10	N.A.
TOT LOT PATHWAY_Ground	Illuminance	Fc	1.7	3.4	0.5	3.5	6.8	10	N.A.
TOT Lot_Ground	Illuminance	Fc	1.6	3.0	0.7	2.3	4.3	10	10

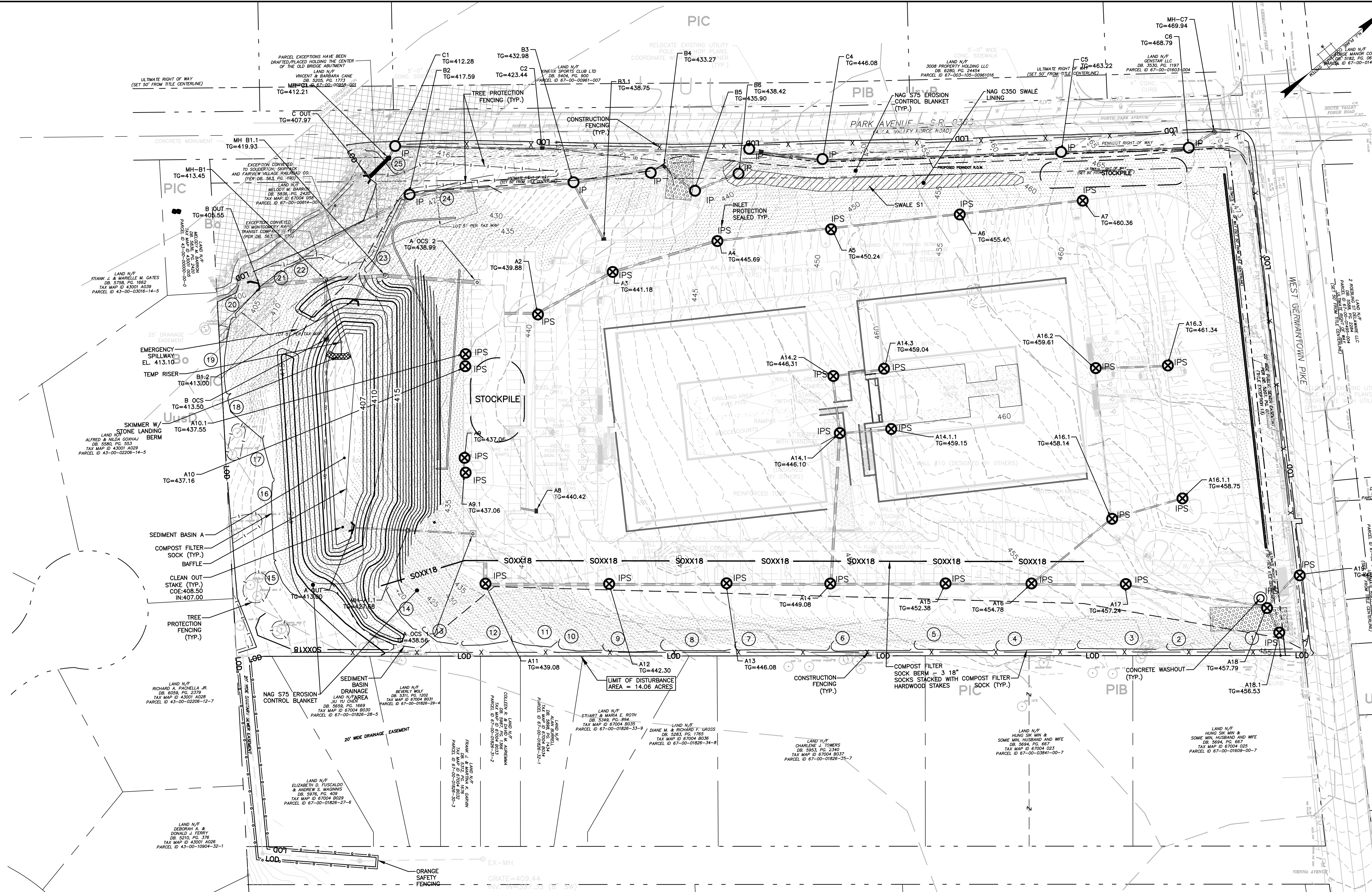


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 DATE: 1/27/22
 TIME: 06:48:24
 LAST SAVE BY: J.KEHR



E&S GENERAL NOTES:

1. THE SANITARY SEWER EASEMENT IN VIENNA AVENUE SHALL BE RESTORED TO "EXISTING CONDITION" UPON COMPLETION OF THE INSTALLATION OF THE GRAVITY SEWER.

NO.	DATE	REVISIONS	BY	CHKD
1	10/04/2022	PER GIS REVIEW LETTER DATED 03/11/2022	PG	DS
2	4/3/2023	REVISED ENTRANCE ON GERMANTOWN PIKE	PG	DS
3	11/17/2023	PER GIS REVIEW LETTER DATED 11/22/2023	PG	DS
4	3/7/2024	PER GIS REVIEW LETTER DATED 01/24/2024	PG	DS

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CHRISTOPHER W. JENSEN, P.E.
 LICENSED PROFESSIONAL ENGINEER

4/3/2023
 LICENSED PROFESSIONAL ENGINEER
 STATE OF PA LICENSE NO. PED76464

BT WORCESTER, LLC

CITY VIEW - APN #67-00-01606-001
 2974 GERMANTOWN PIKE, WORCESTER TOWNSHIP,
 MONTGOMERY COUNTY, COMMONWEALTH OF PENNSYLVANIA

EROSION AND SEDIMENT CONTROL PLAN

AND

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 PHILADELPHIA, PA 19103
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 FAX 215-627-3499

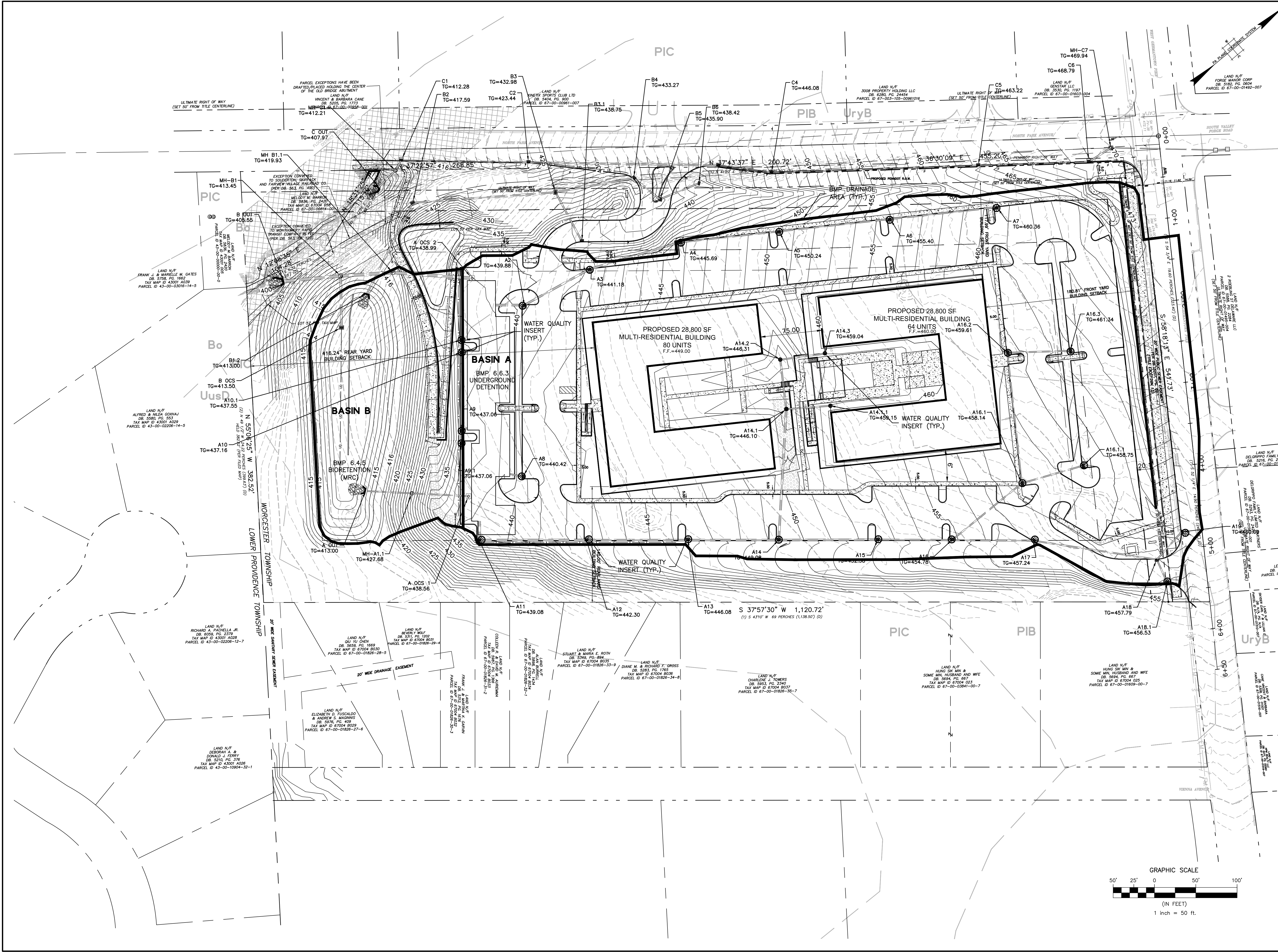
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DESIGNED BY: CCG/JPK/ROP
 CHECKED BY: DS
 DRAWN BY: PG/SR/ROP
 DATE: 1/27/22
 SCALE: 1" = 50'
 PROJ. NO.: BET00056

DRAWING: **ENS**
 SHEET: **13**
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3	11/17/2023	PER GIS REVIEW LETTER DATED 11/22/2023	PRG	DS
2	4/3/2023	REVISED ENTRANCE ON GERMANTOWN PIKE	PRG	DS
1	10/04/2022	PER GIS REVIEW LETTER DATED 03/11/2022	PRG	DS

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CHRISTOPHER W. JENSEN, P.E.
LICENSED PROFESSIONAL ENGINEER

4/3/2023
LICENSED PROFESSIONAL ENGINEER
STATE OF PA LICENSE NO. PED76464

BT WORCESTER, LLC

CITY VIEW - APN #67-00-01606-001
2974 GERMANTOWN PIKE, WORCESTER TOWNSHIP,
MONTGOMERY COUNTY, COMMONWEALTH OF PENNSYLVANIA

**POST CONSTRUCTION
STORMWATER MANAGEMENT PLAN**

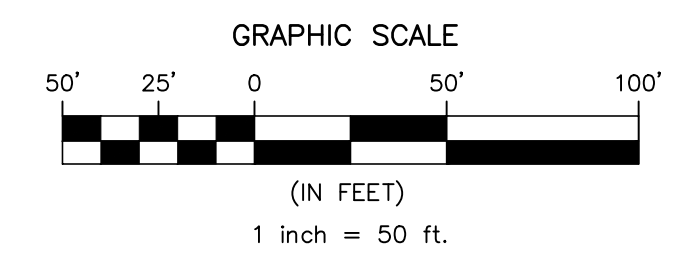
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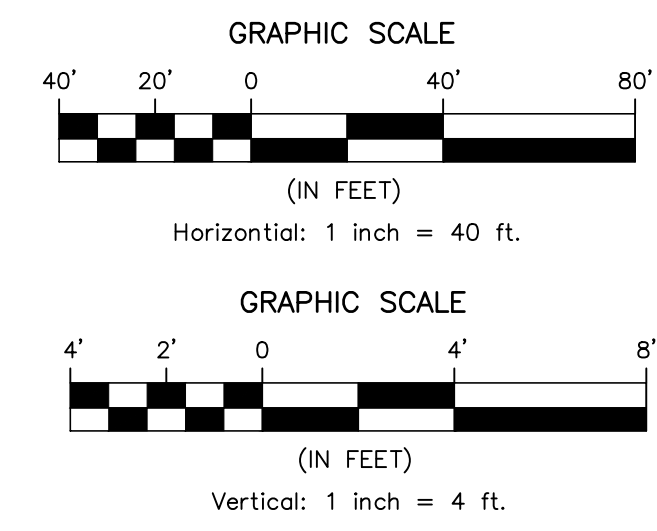
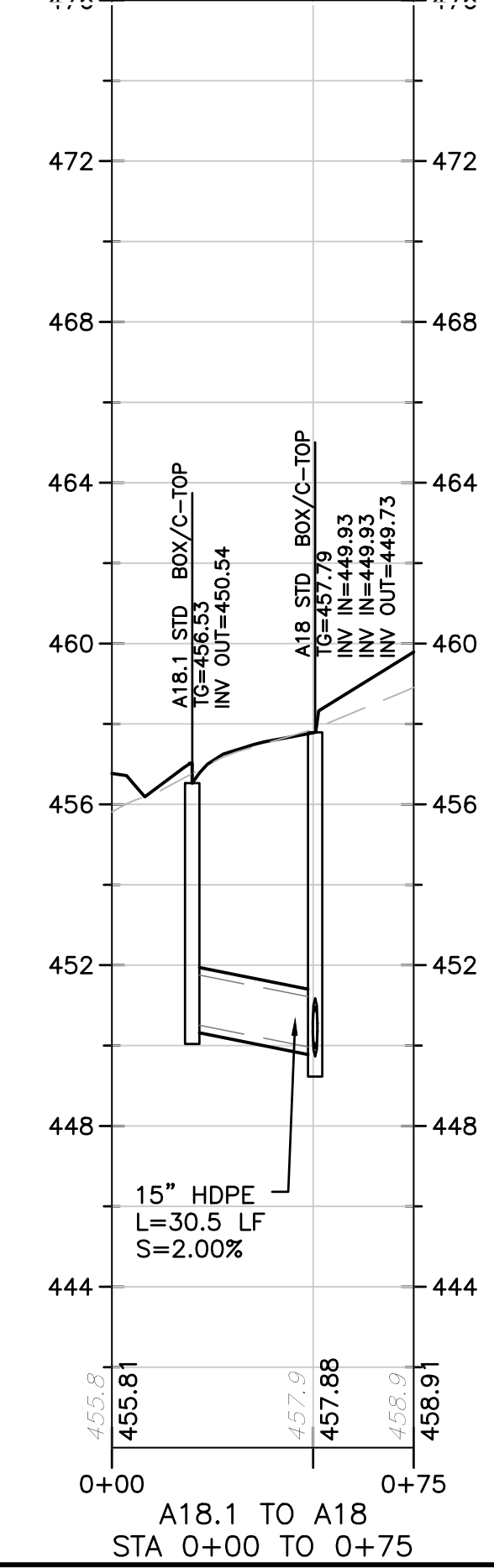
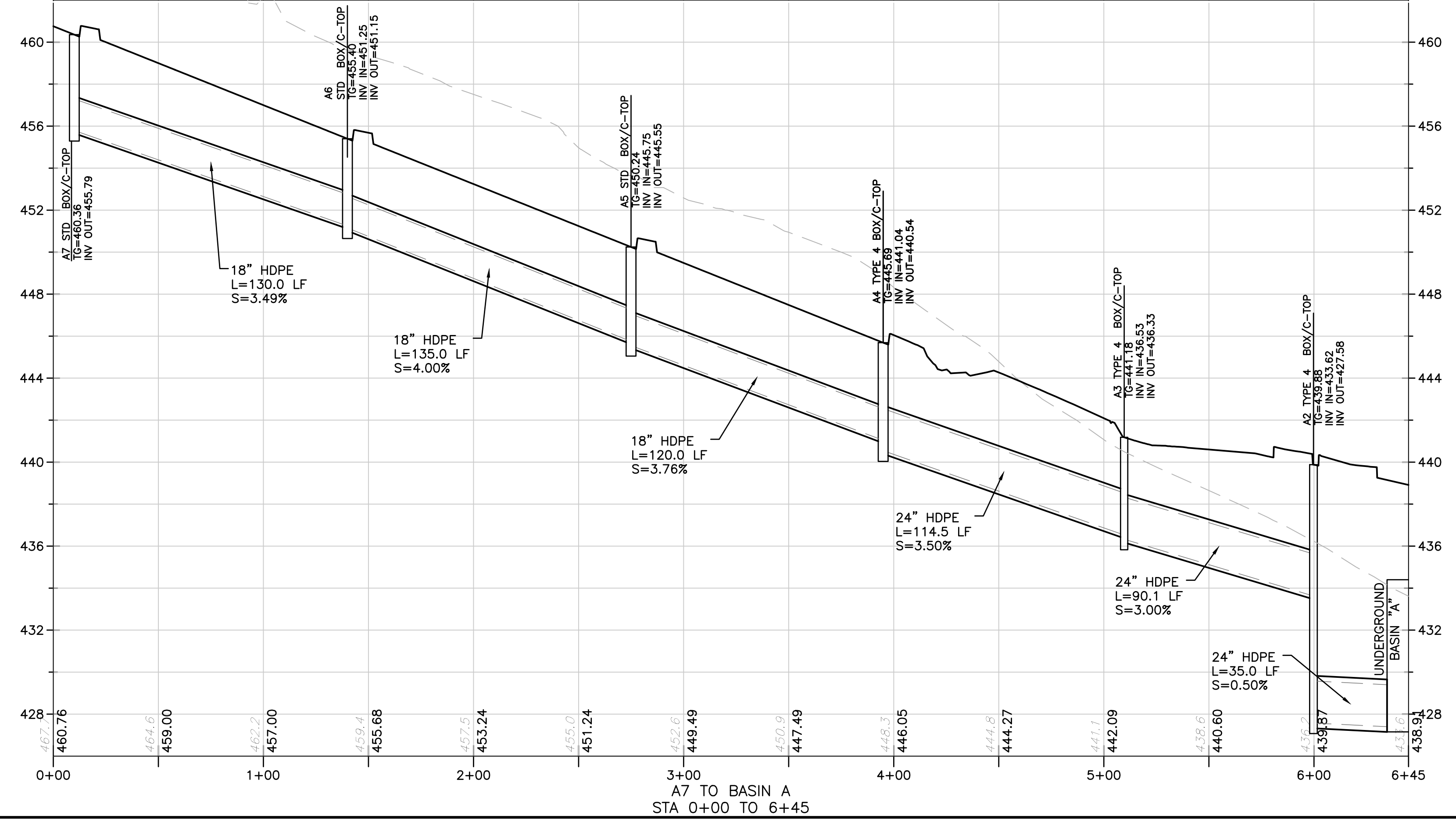
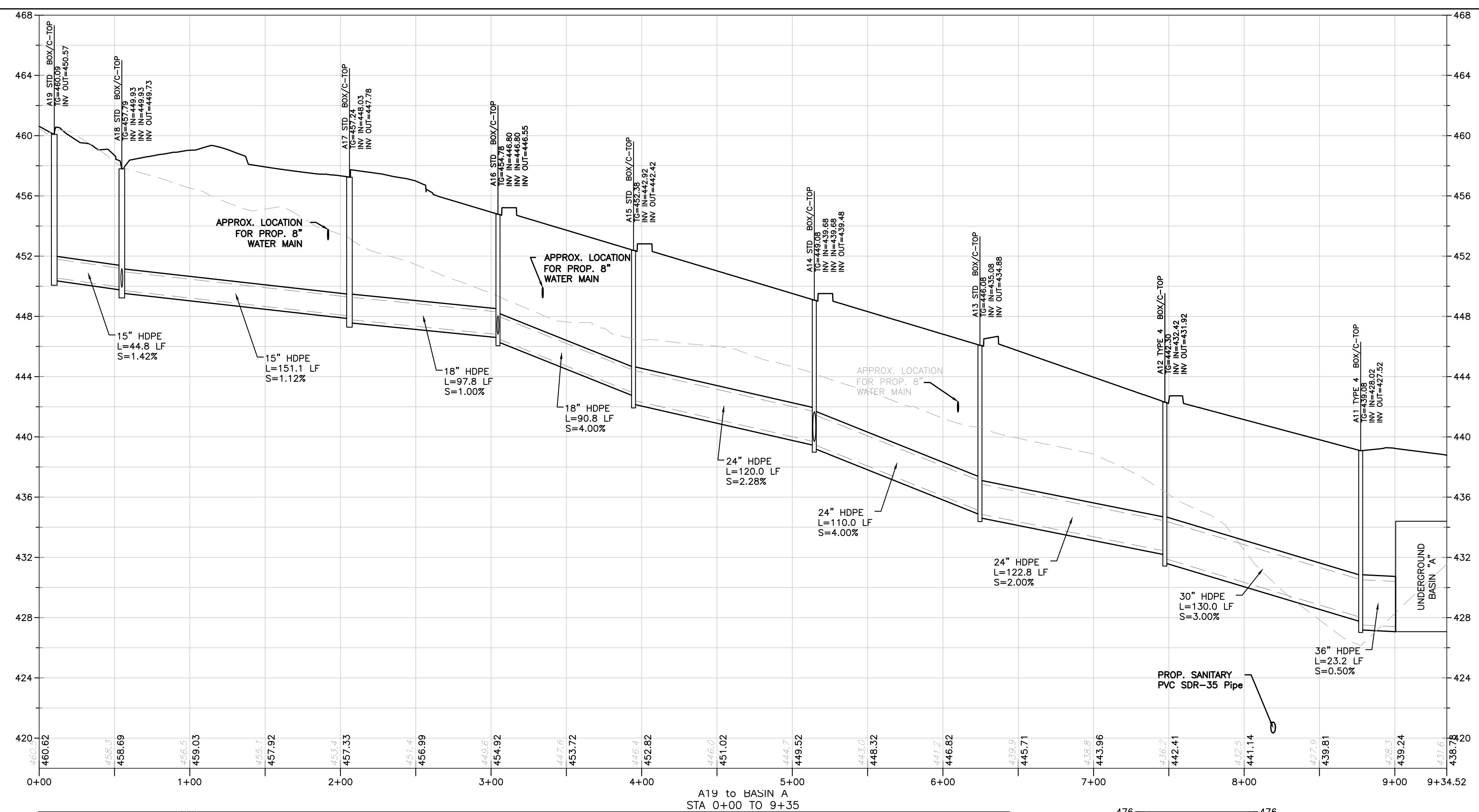
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DATE: 1/27/22
SCALE: 1" = 50'
PROJ. NO.: BET00056

DRAWING: **PSM**
SHEET: **14**
OF **34**



PROJECT INFORMATION:
 FILE PATH: G:\Projects\BET\00056\Plans\
 FILE NAME: BET00056_SHT015-019_PFS.dwg
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 OTHER CONTRACTORS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
 LEGISLATIVE ACT NUMBER 287 OF 1974 AS AMENDED BY ACT 121 OF
 2008 CONTRACTORS MUST VERIFY THE LOCATION AND DEPTH OF ALL
 UNDERGROUND UTILITIES AND FACILITIES PRIOR TO START OF WORK.
 DATE: 03/11/2024

NO.	DATE	REVISIONS	BY	CHKD
4	3/7/2024	PER GIS REVIEW LETTER DATED 01/24/2024	PRG	DS
3	11/17/2023	PER GIS REVIEW LETTER DATED 11/22/2023	PRG	DS
2	4/3/2023	REVISED ENTRANCE ON GERMANTOWN PIKE	PRG	DS
1	10/04/2022	PER GIS REVIEW LETTER DATED 03/11/2022	PRG	DS

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 2974 GERMANTOWN PIKE, WORCESTER TOWNSHIP,
 MONTGOMERY COUNTY, COMMONWEALTH OF PENNSYLVANIA

STORM SEWER PROFILES



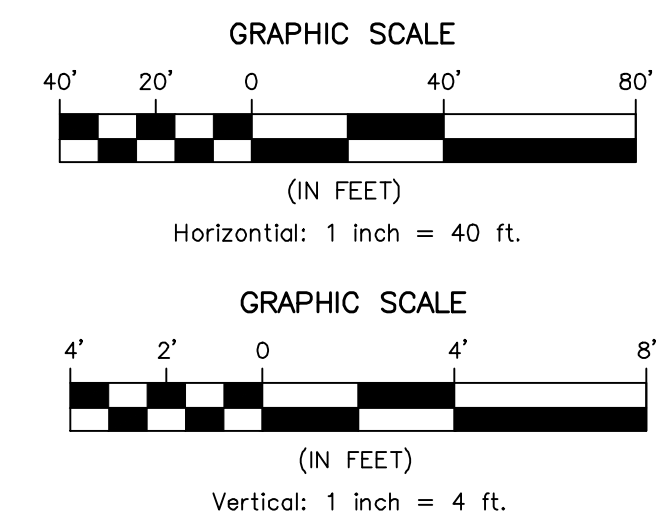
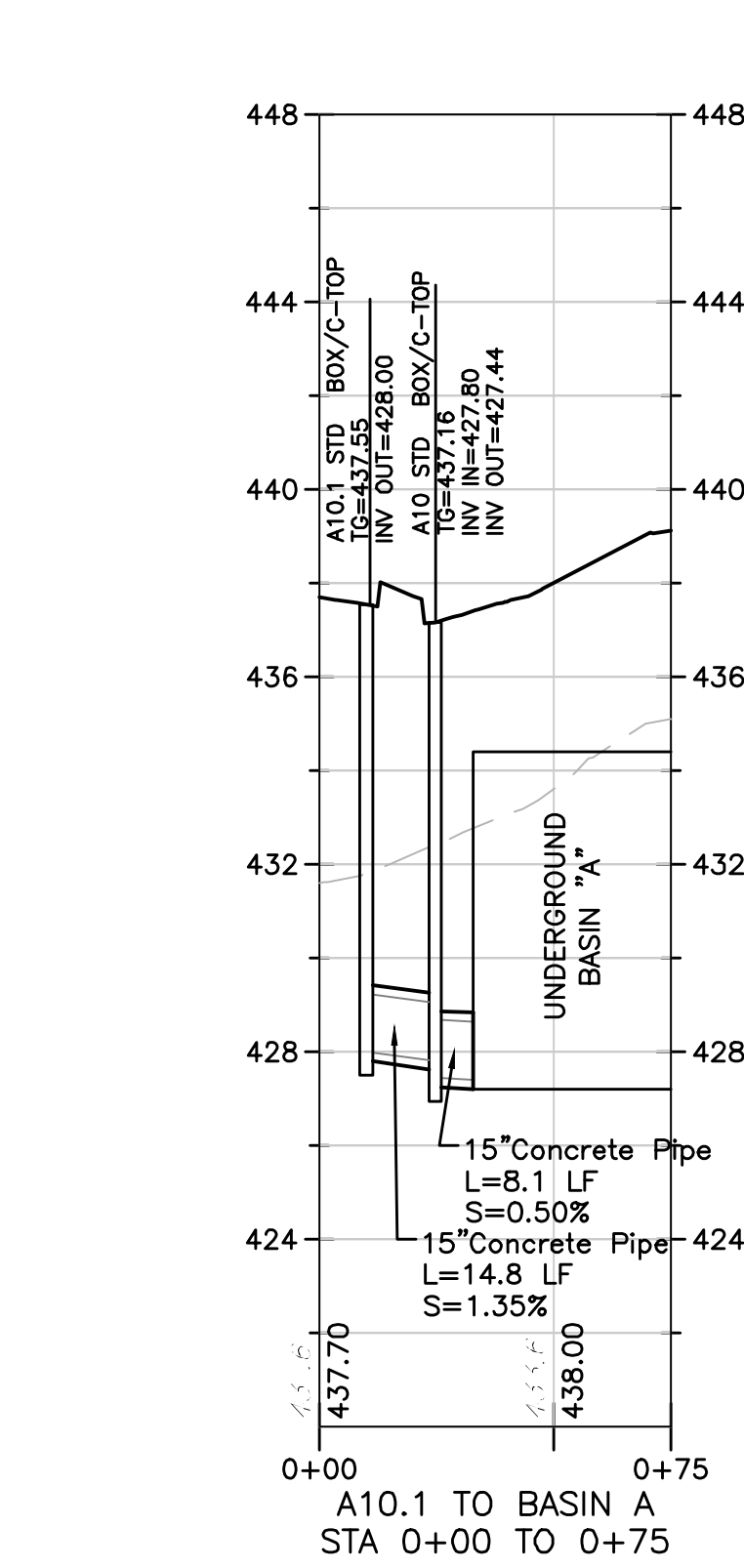
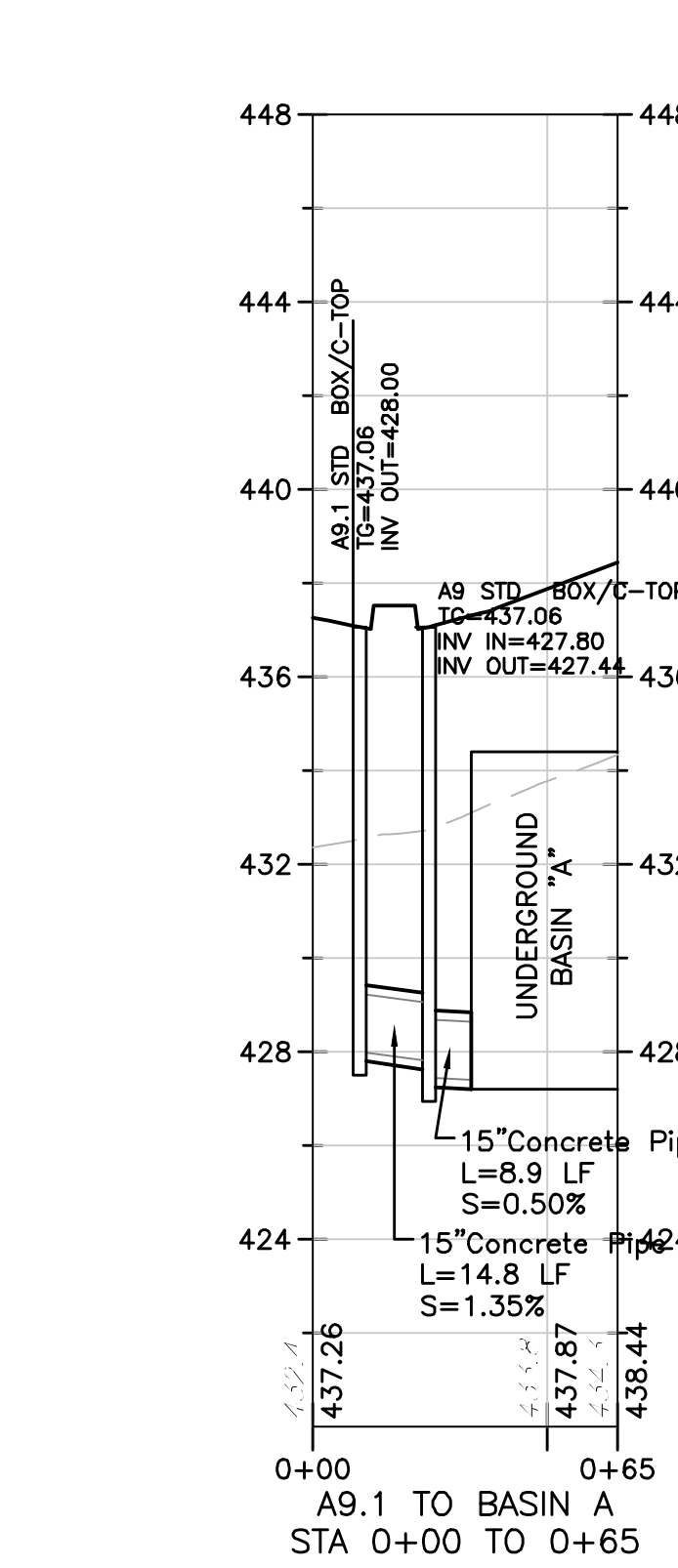
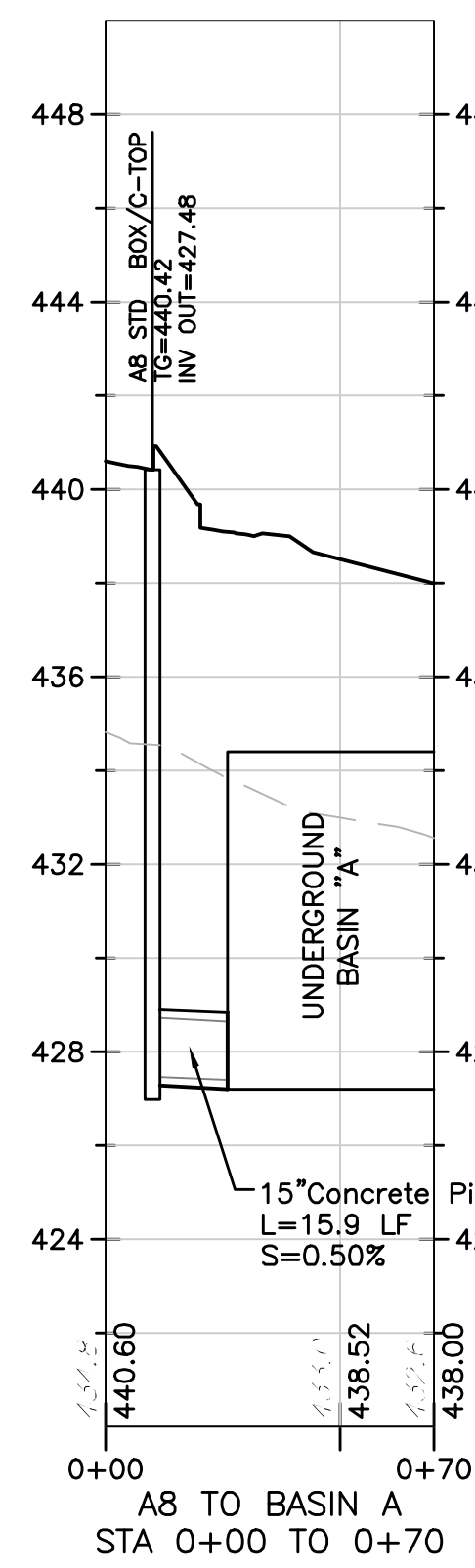
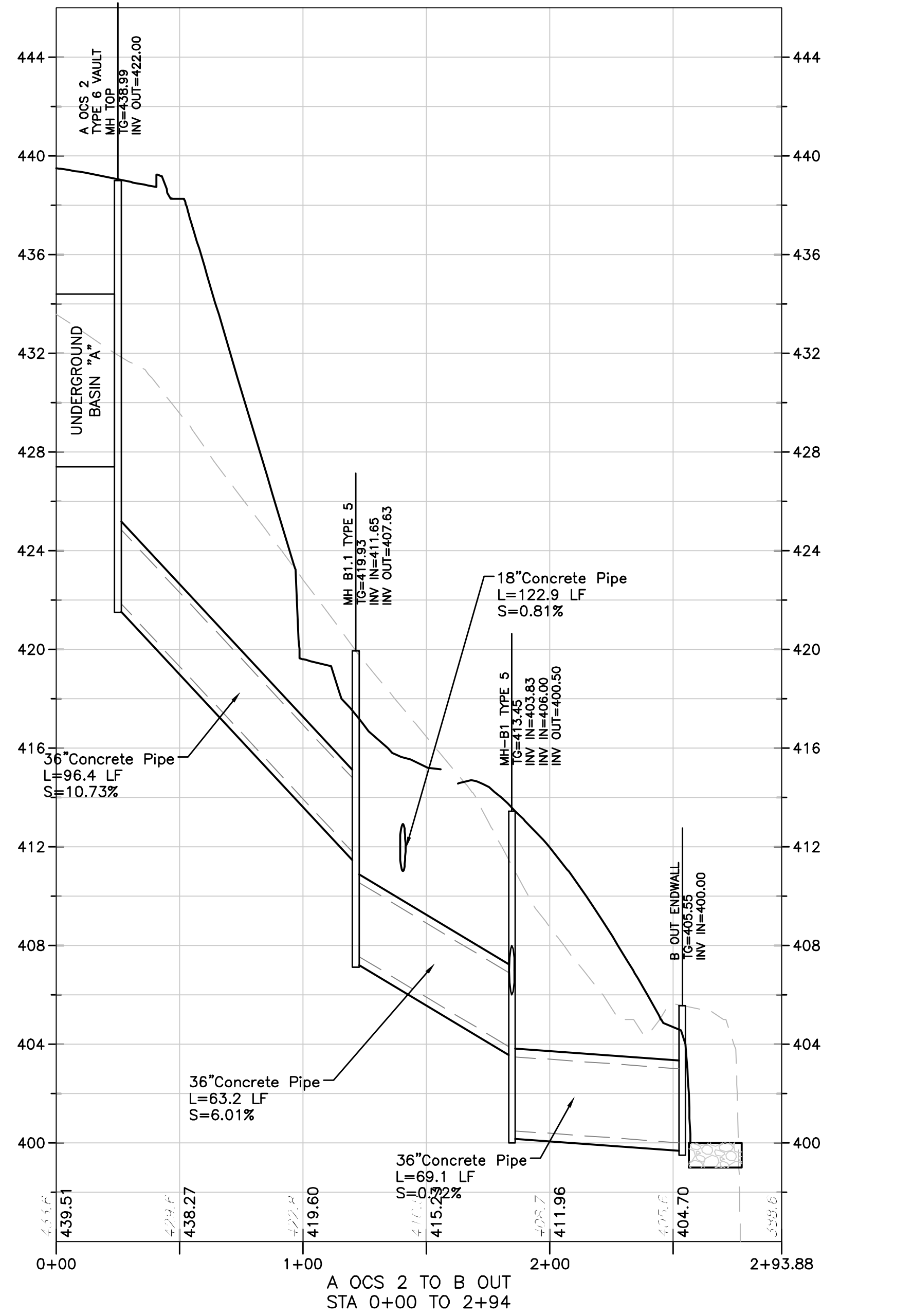
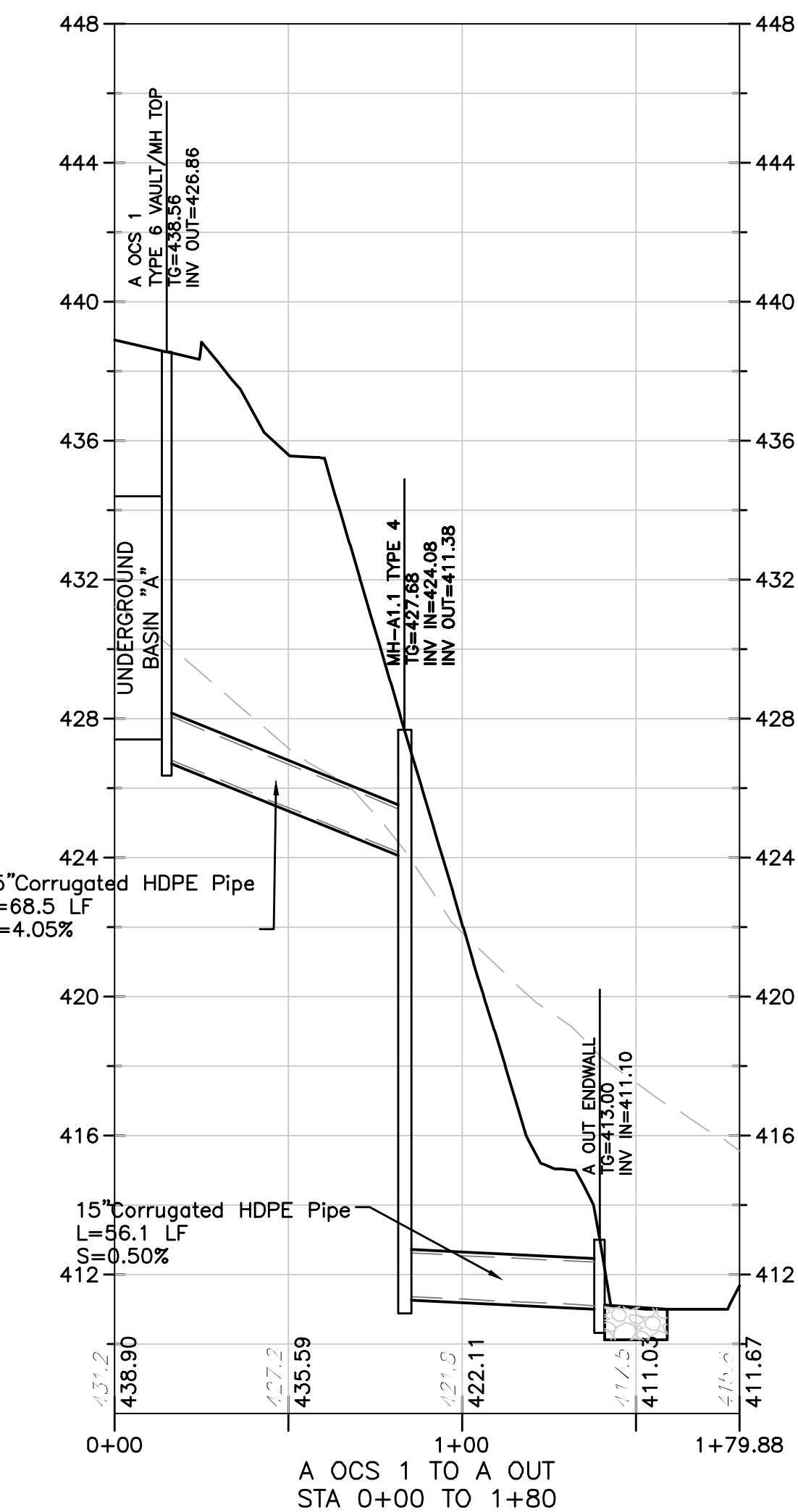
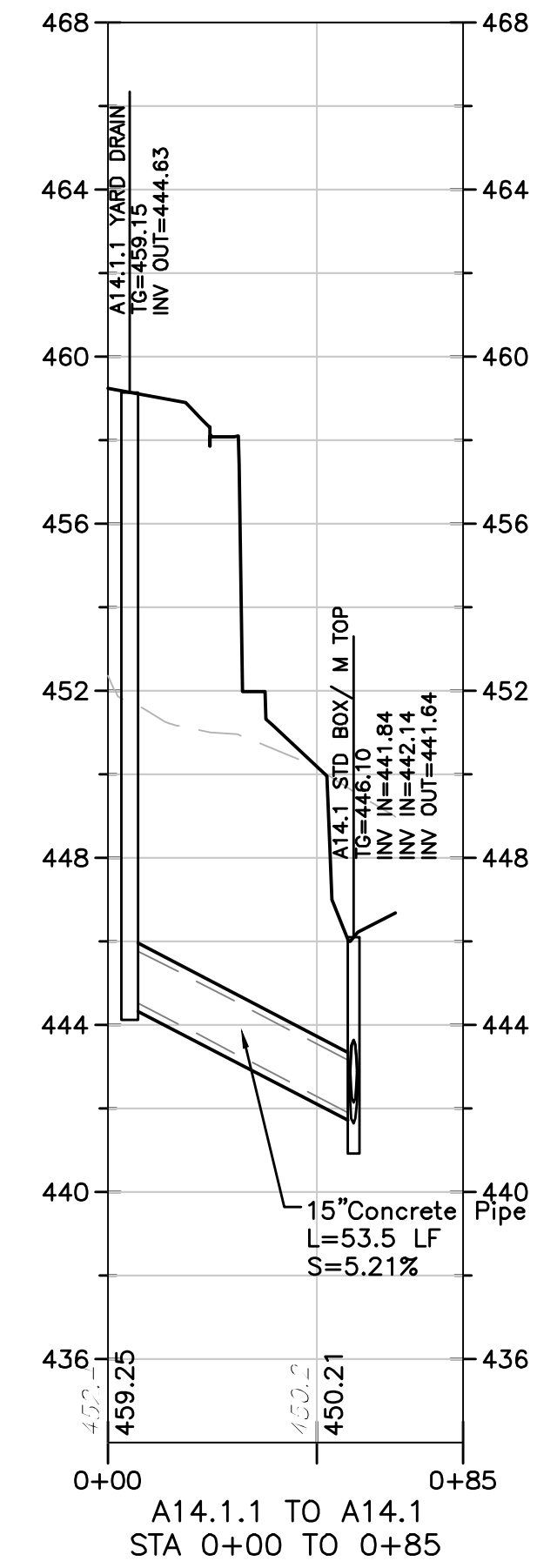
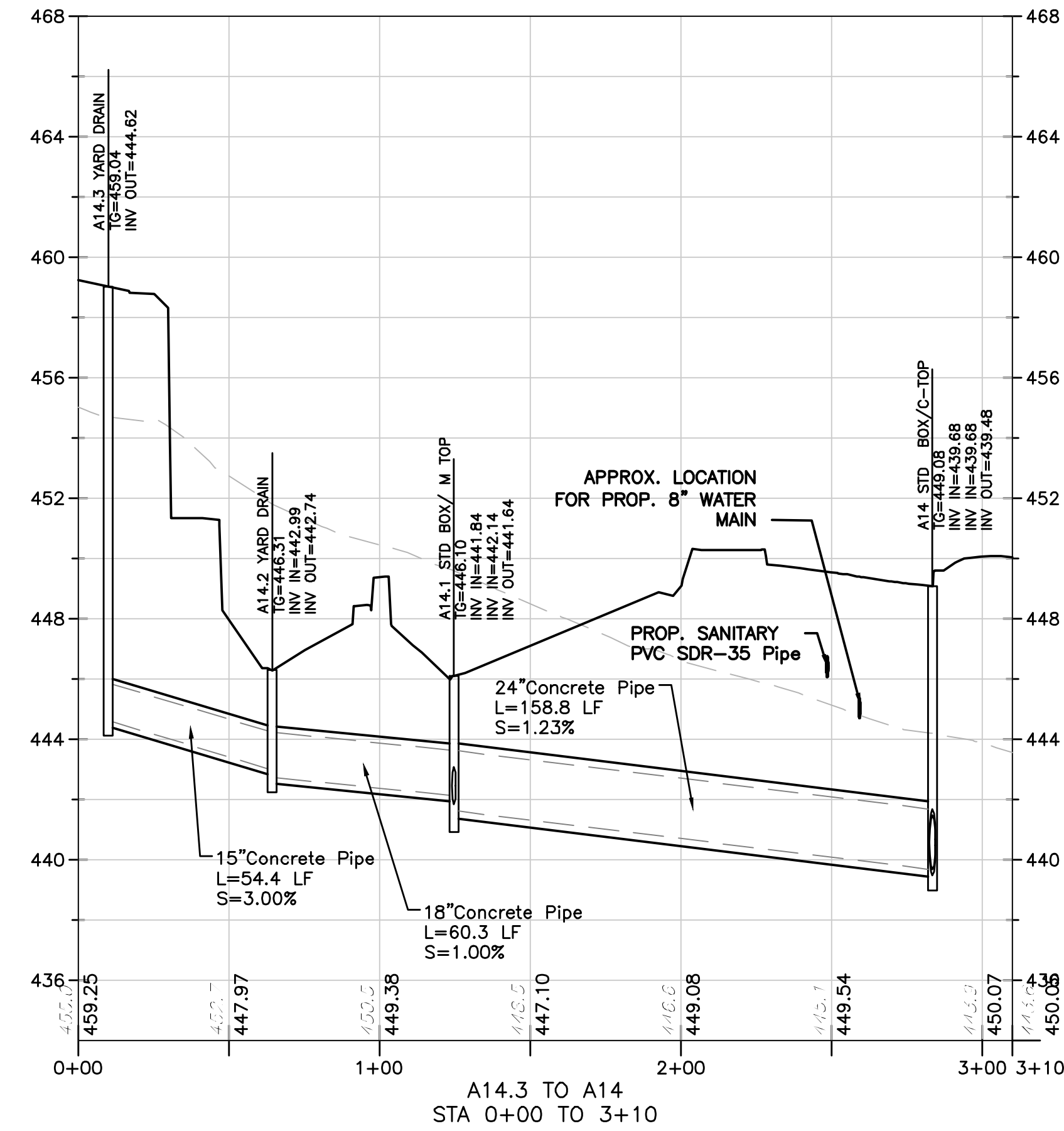
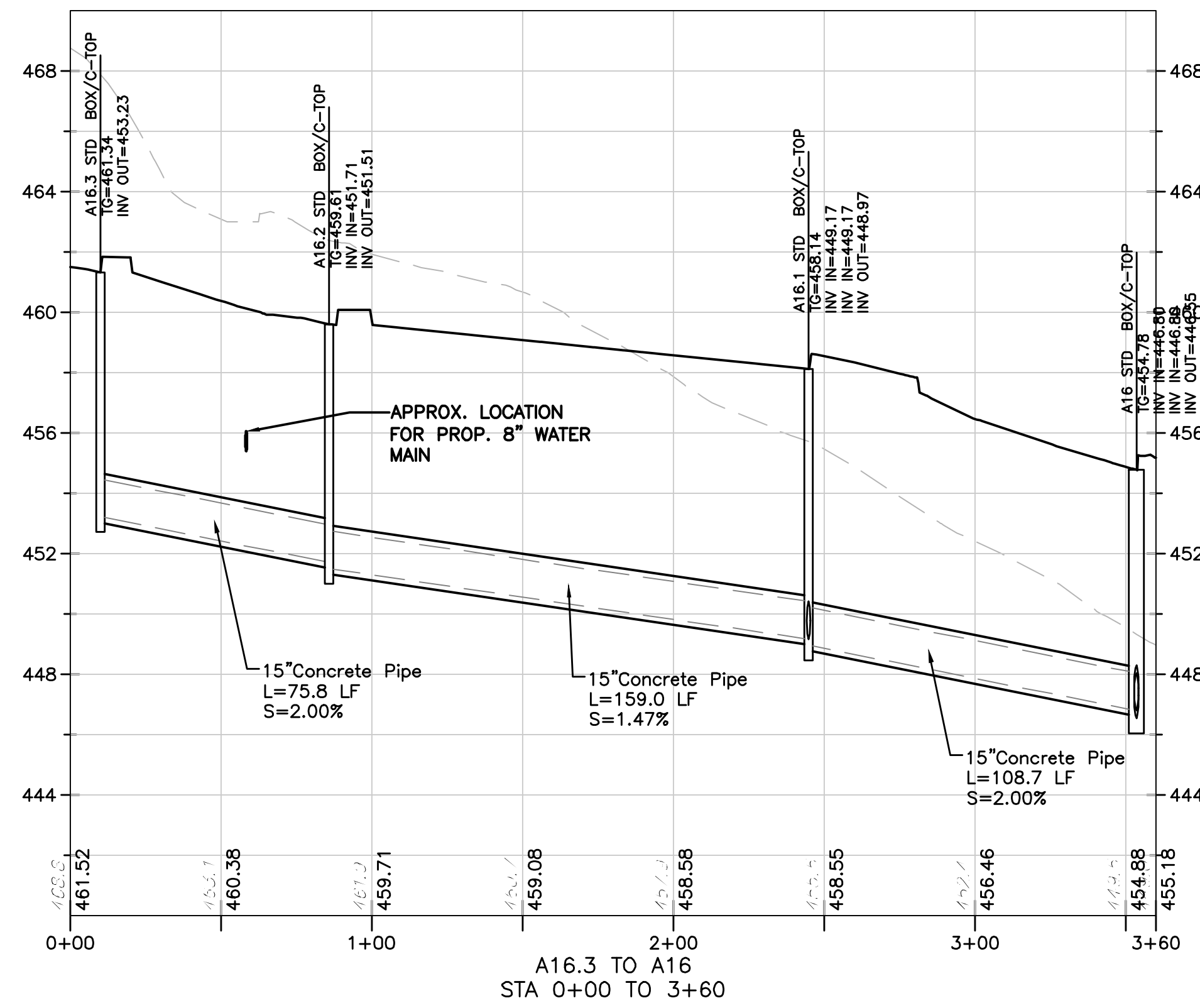
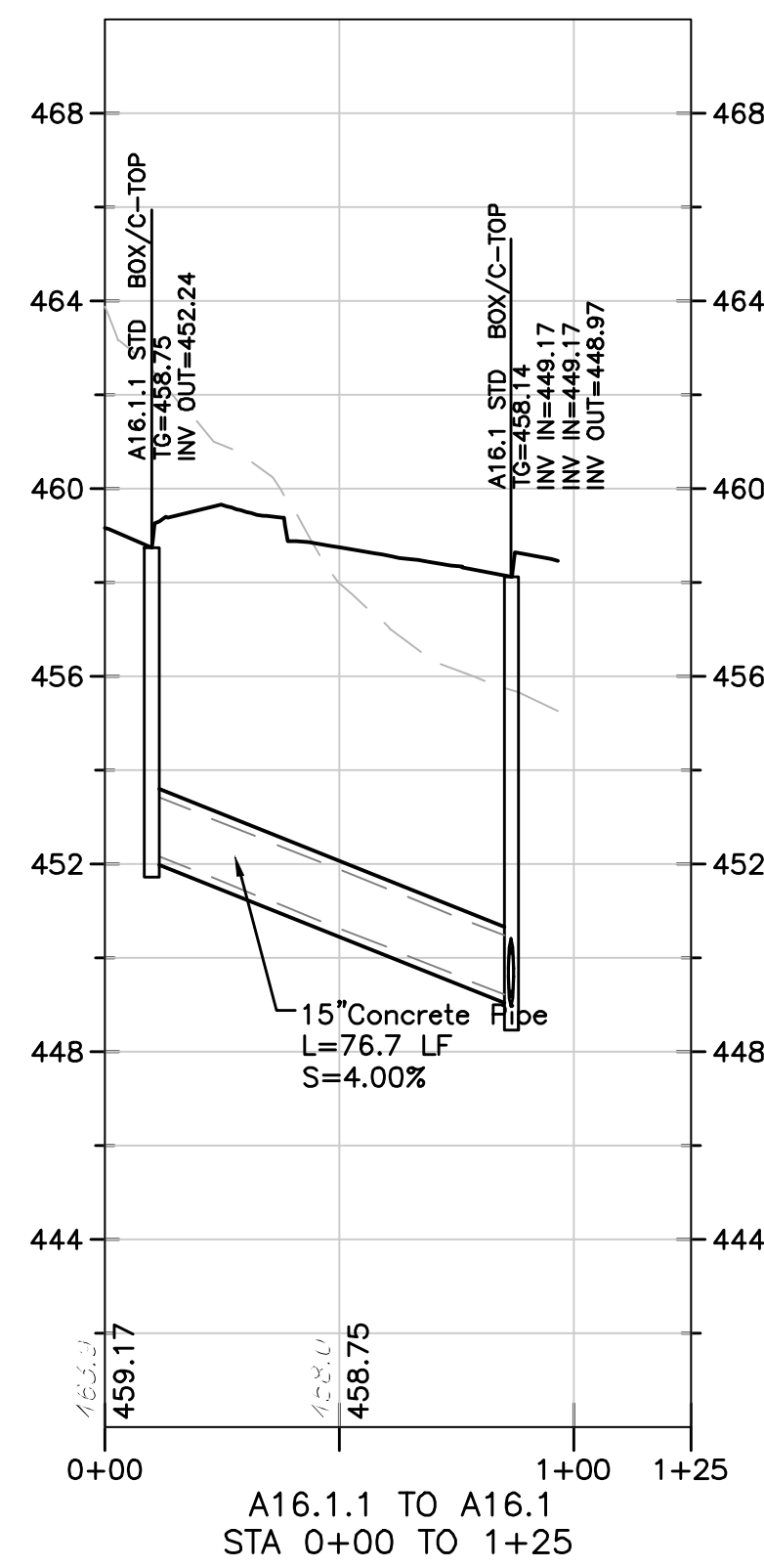
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CHECKED BY PG/SR/RDP	SHEET 15
DRAWN BY PG/SR/RDP	DATE 1/27/22
SCALE AS NOTED	PROJ. NO. BET00056
	OF 34

PROJECT INFORMATION:
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 FILE NAME: BET00056_SHT015-019_PFS.dwg
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 UNDERGROUND UTILITIES AND FACILITIES PRIOR TO START OF WORK.
 DATE: 04/03/2024

NO.	DATE	REVISIONS	BY	CHKD
4	3/7/2024	PER CIS REVIEW LETTER DATED 01/24/2024	PRG	DS
3	11/17/2023	PER CIS REVIEW LETTER DATED 11/22/2023	PRG	DS
2	4/3/2023	REVISED ENTRANCE ON GERMANTOWN PIKE	PRG	DS
1	10/04/2022	PER CIS REVIEW LETTER DATED 03/11/2022	PRG	DS

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 STATE OF PA LICENSE NO. PE076464
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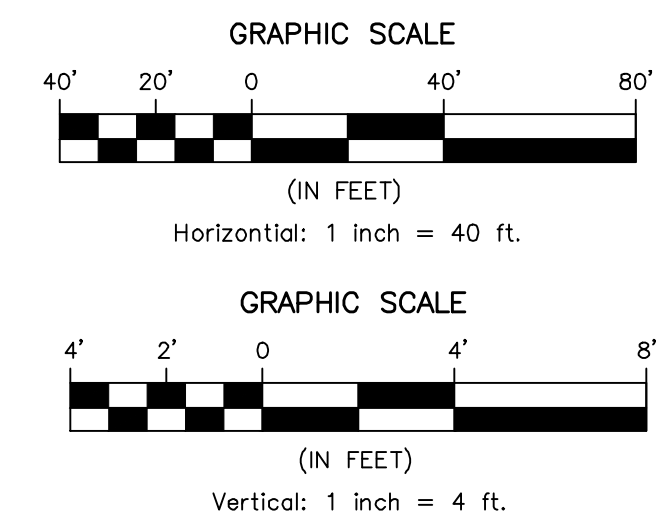
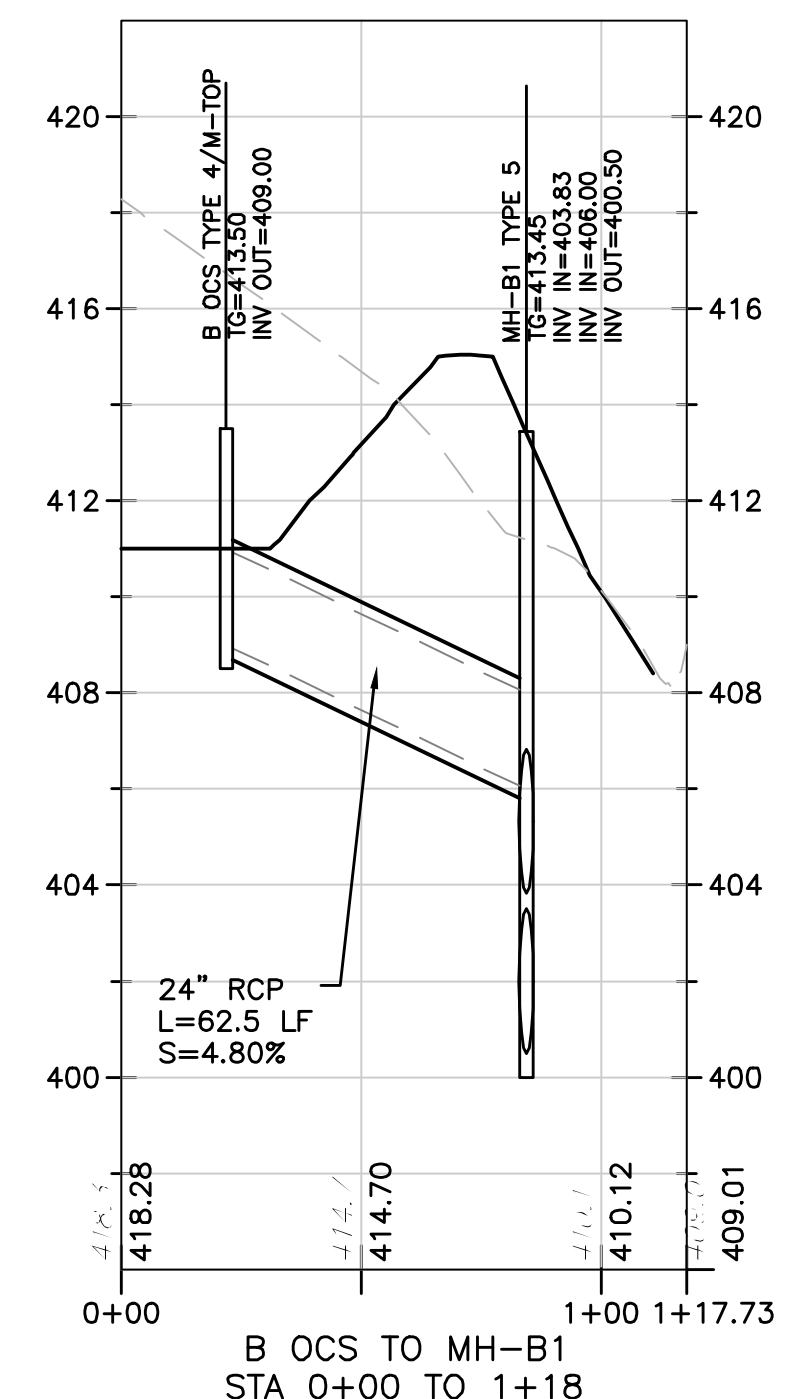
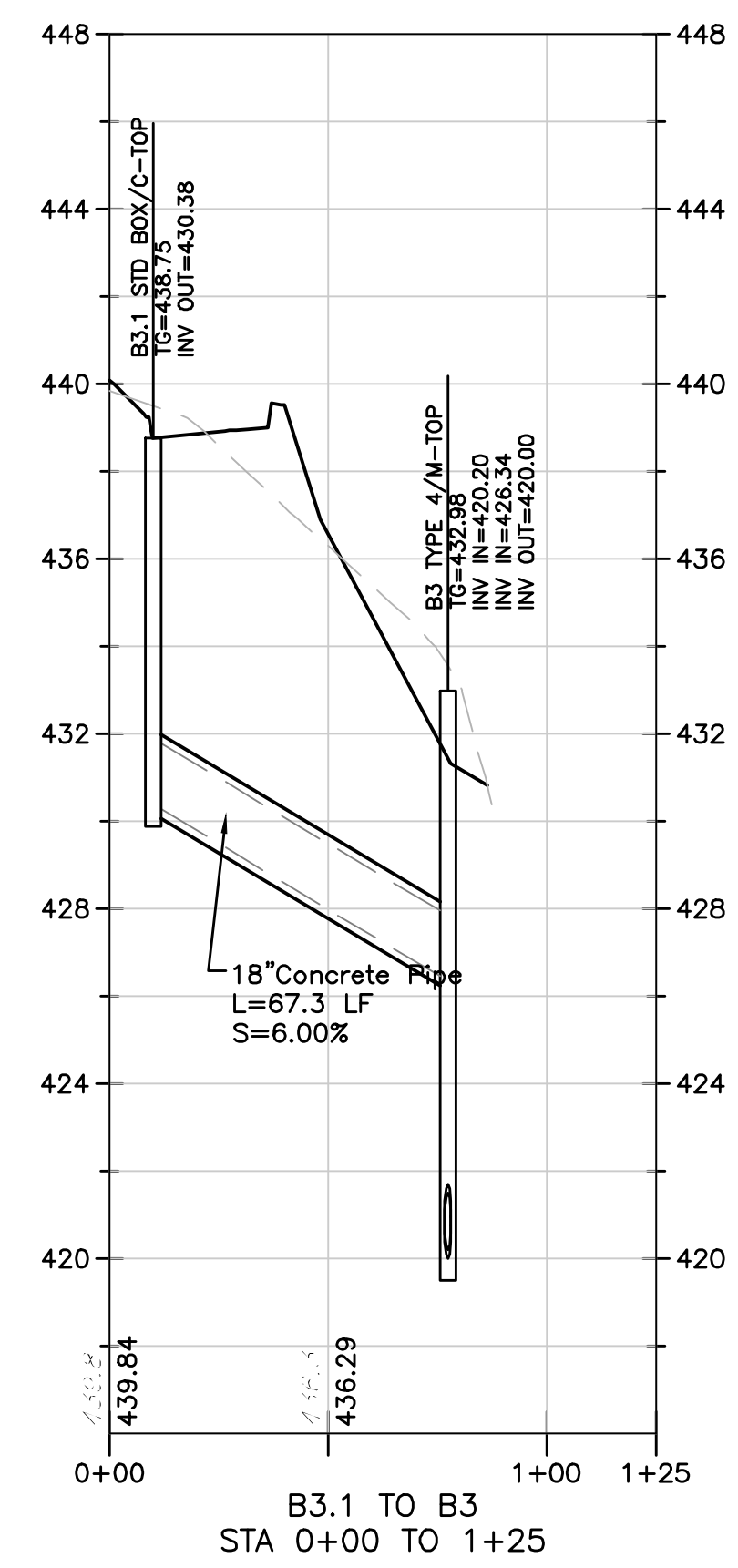
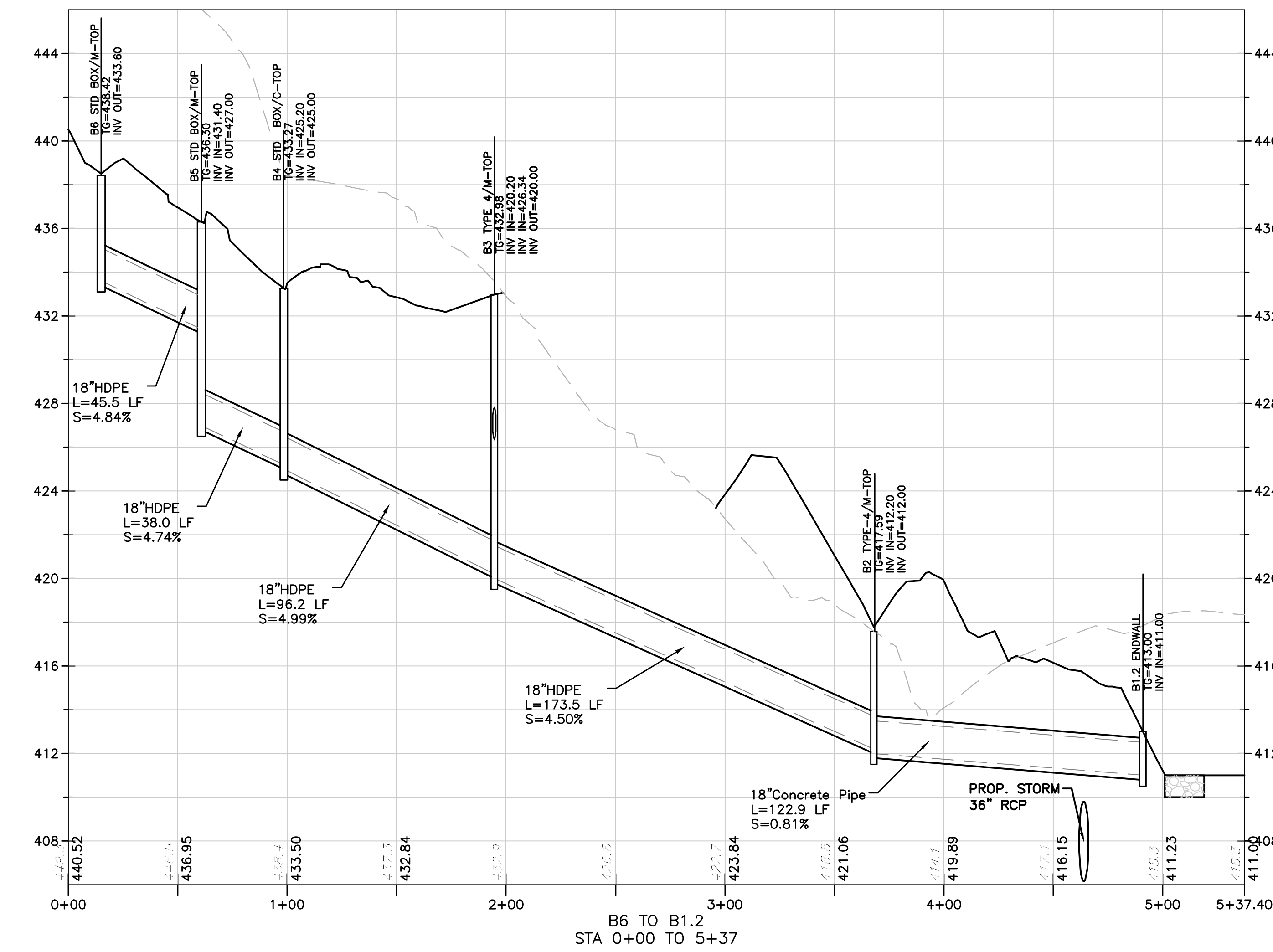
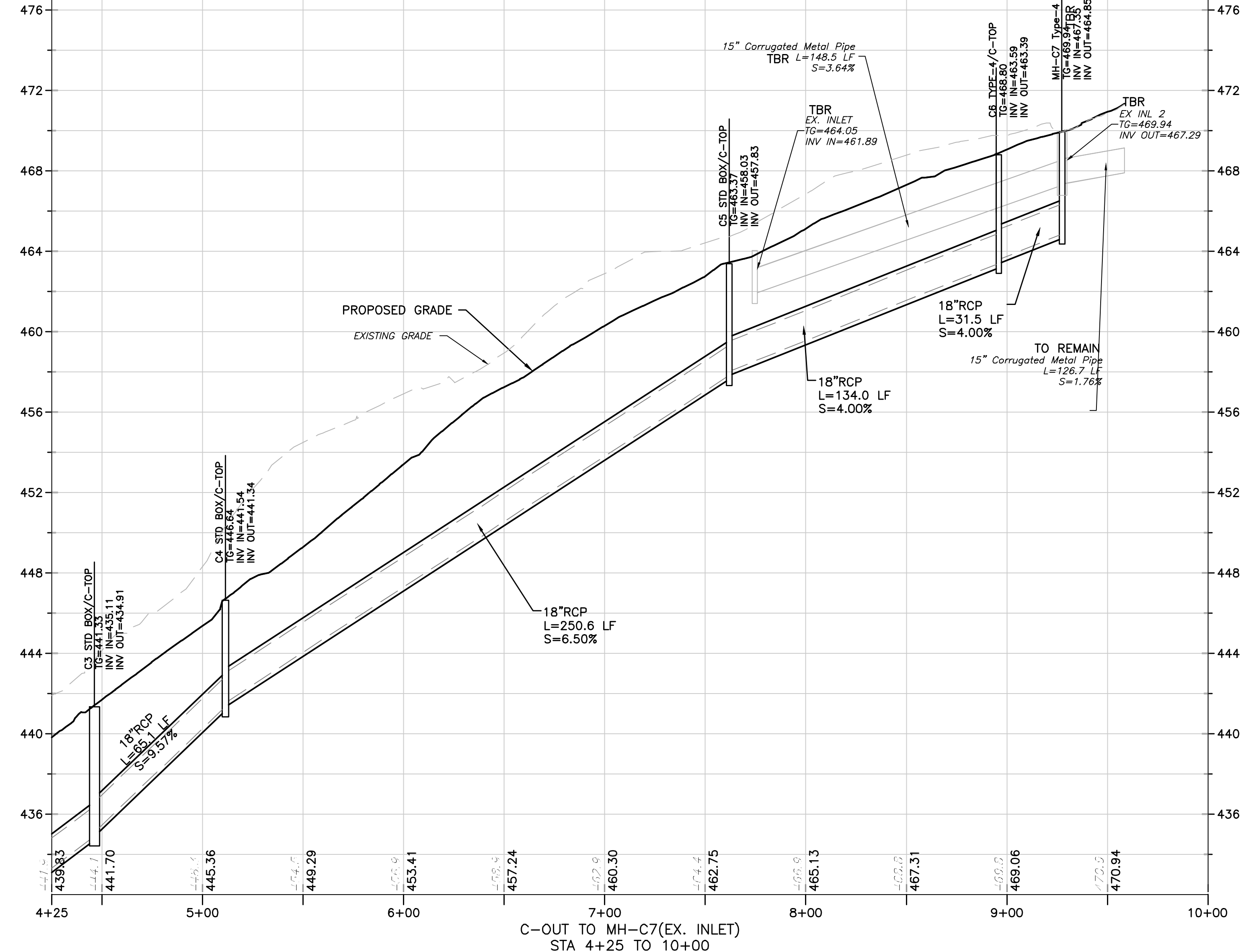
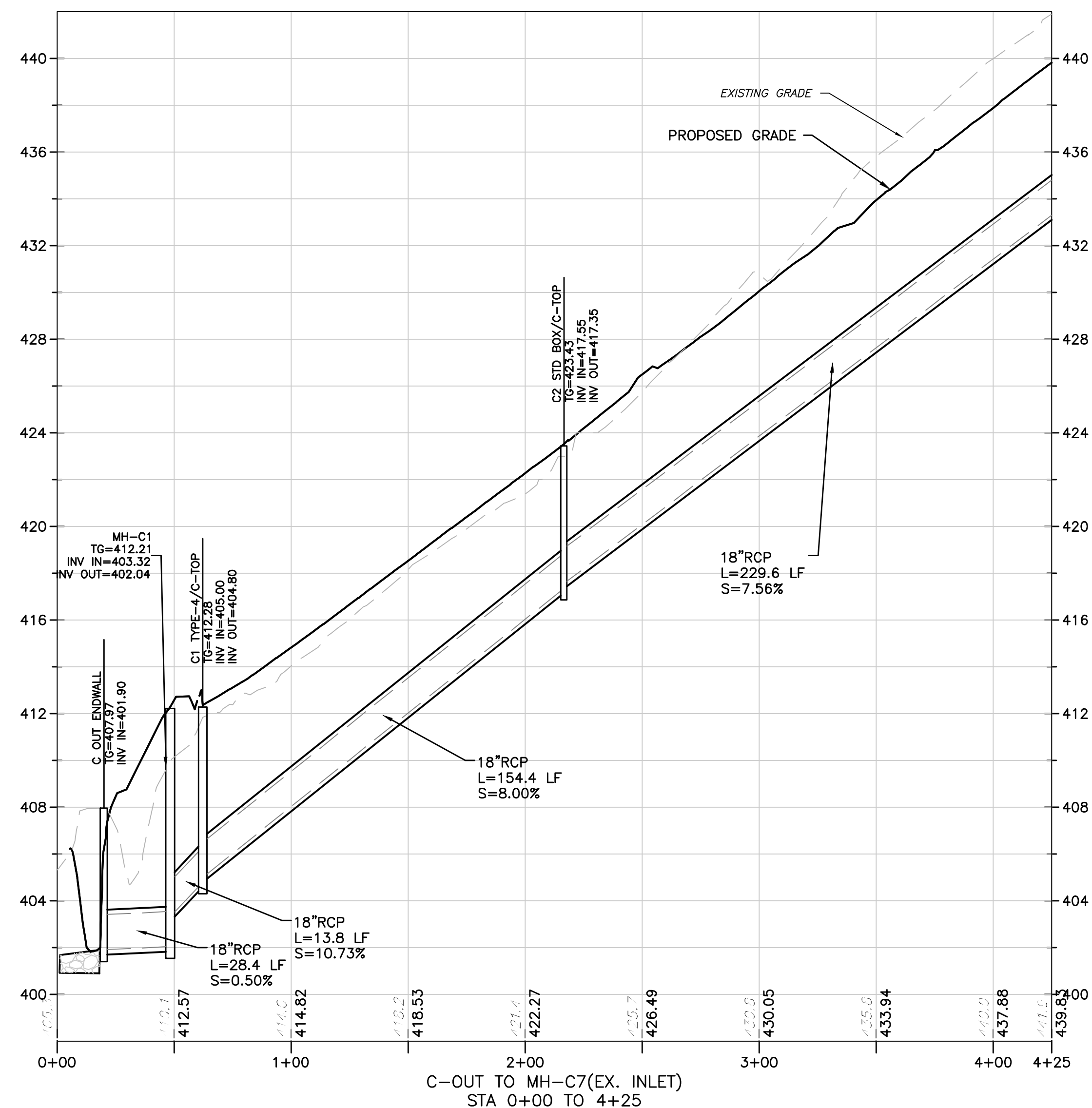
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 CITY VIEW - APN #67-00-01606-001
 2974 GERMANTOWN PIKE, WORCESTER TOWNSHIP,
 MONTGOMERY COUNTY, COMMONWEALTH OF PENNSYLVANIA
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DESIGNED BY: CCG/PK/RPP
 CHECKED BY: DS
 DRAWN BY: PG/RPP
 DATE: 1/27/22
 SCALE: SEE PLAN
 PROJ. NO.: BET00056
 DRAWING: PRF2
 SHEET: 16
 OF 34

PROJECT INFORMATION:
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2	4/3/2023	REVISED ENTRANCE ON GERMANTOWN PIKE	POP	DS
1	10/04/2022	PER CIS REVIEW LETTER DATED 03/11/2022	PRG	DS

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CITY VIEW - APN #67-00-01606-001
 2974 GERMANTOWN PIKE WORCESTER TOWNSHIP,
 MONTGOMERY COUNTY, COMMONWEALTH OF PENNSYLVANIA

STORM SEWER PROFILES



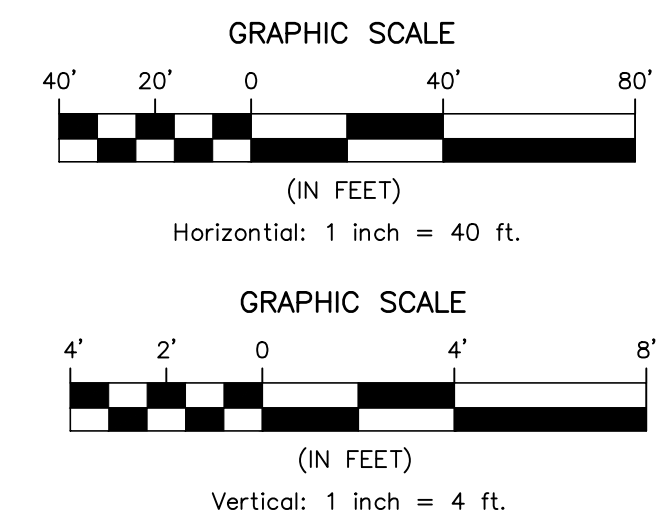
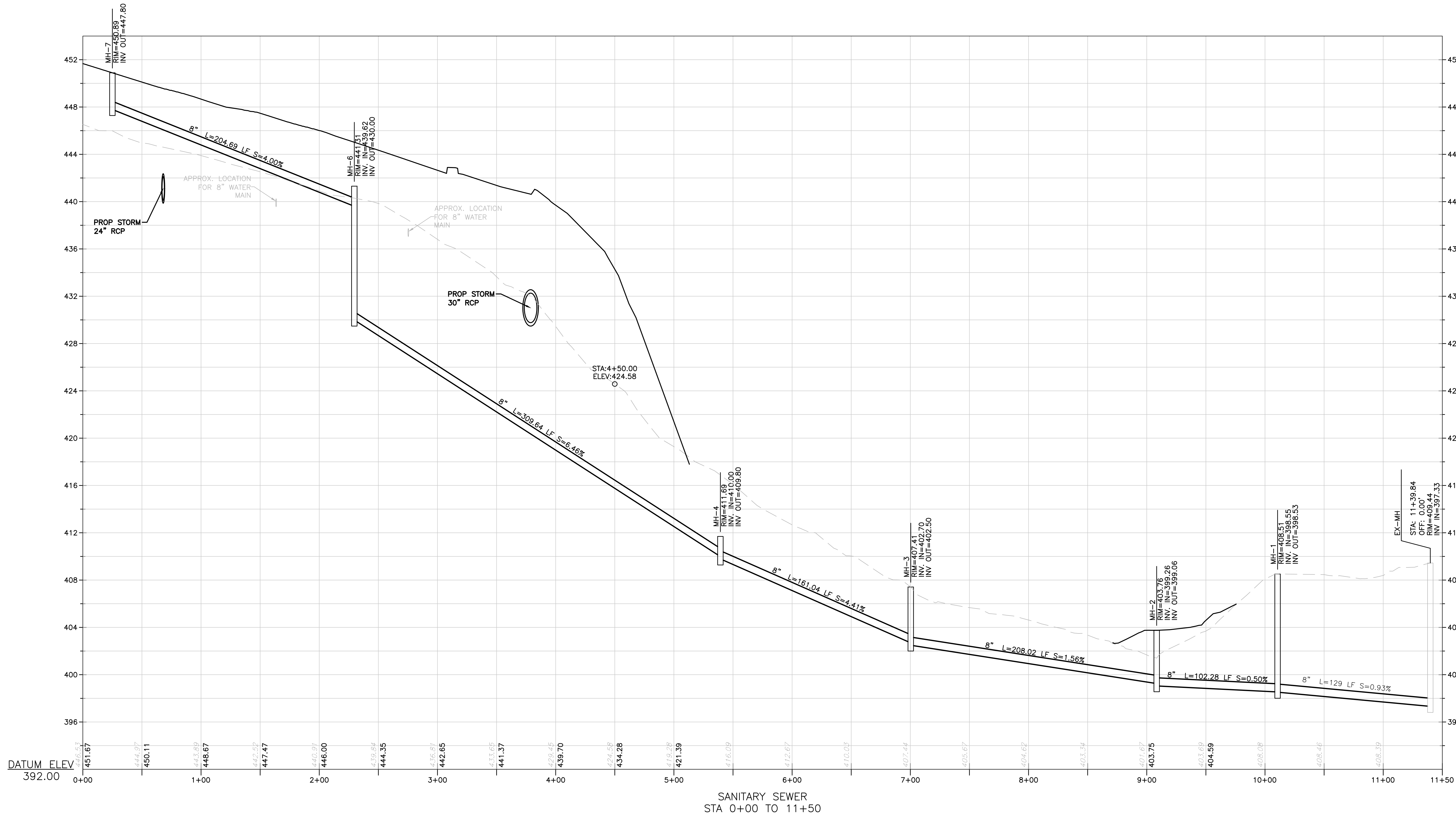
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DRAWN BY PG/SR/ROP	SHEET
DATE 1/27/22	17
SCALE SEE PLAN	OF 34
PROJ. NO. BET00056	

PROJECT INFORMATION:
 FILE PATH: G:\Projects\BET\00056\Plans\
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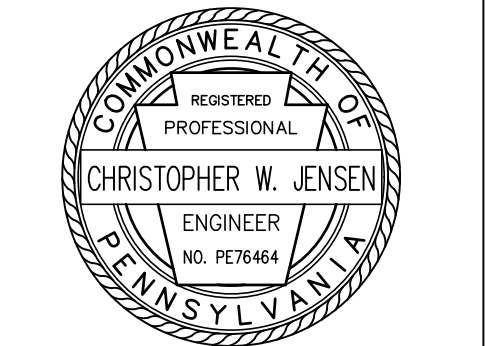
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 LOCATION OF UNDERGROUND UTILITIES OR SERVICES OWNED BY
 OTHERS IS NOT GUARANTEED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR
 LEGISLATIVE ACT NUMBER 287 OF 1974 AS AMENDED BY ACT 121 OF
 2002 CONTRACTORS MUST VERIFY LOCATION AND DEPTH OF ALL
 UNDERGROUND UTILITIES AND FACILITIES PRIOR TO START OF WORK.
 DATE: 04/03/2024

NO.	DATE	REVISIONS	BY	CHKD
4	3/7/2024	PER GIS REVIEW LETTER DATED 01/24/2024	PRG	DS
3	11/17/2023	PER GIS REVIEW LETTER DATED 11/22/2023	PRG	DS
2	4/3/2023	REVISED ENTRANCE ON GERMANTOWN PIKE	ROP	DS
1	10/04/2022	PER GIS REVIEW LETTER DATED 03/11/2022	PRG	DS

CHRISTOPHER W. JENSEN, P.E.
 LICENSED PROFESSIONAL ENGINEER



4/3/2023
 LICENSED PROFESSIONAL ENGINEER
 STATE OF PA LICENSE No. PE076464

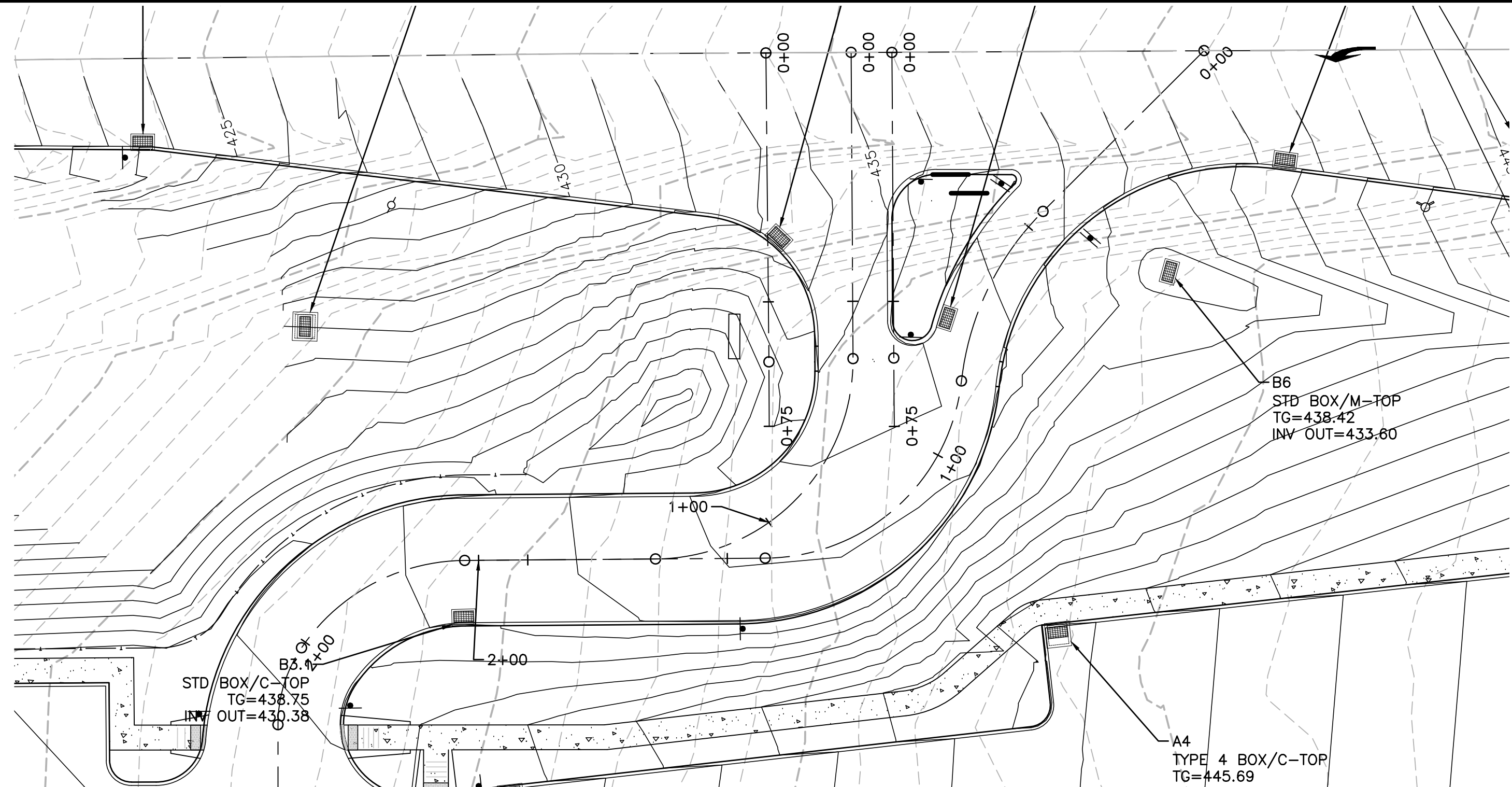
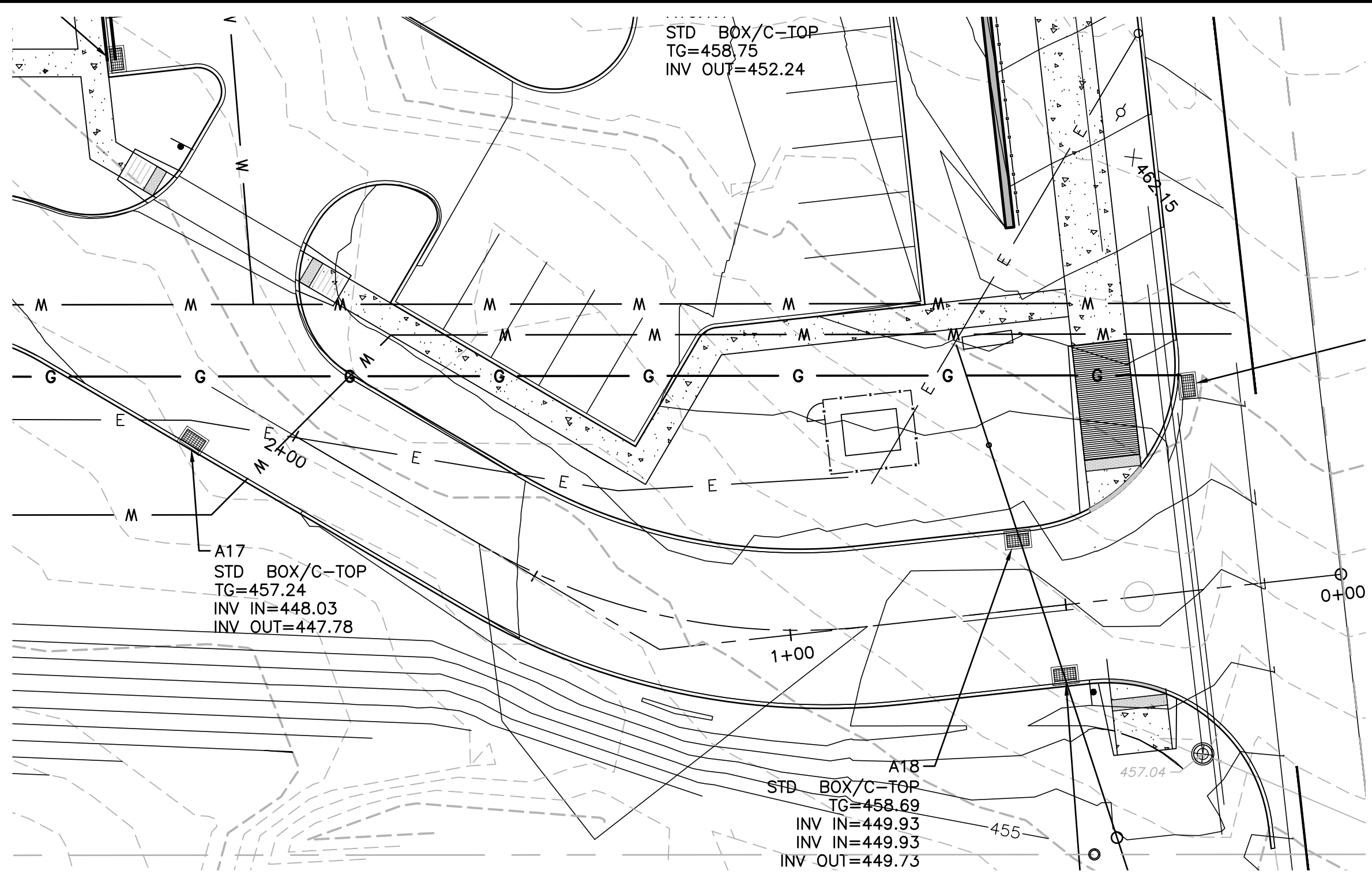
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 2974 GERMANTOWN PIKE, WORCESTER TOWNSHIP,
 MONTGOMERY COUNTY, COMMONWEALTH OF PENNSYLVANIA
 SANITARY SEWER PROFILE



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 DATE: 1/27/22
 SCALE: SEE PLAN
 PROJ. NO.: BET00056

DRAWING: PRF4
 SHEET: 18
 OF 34

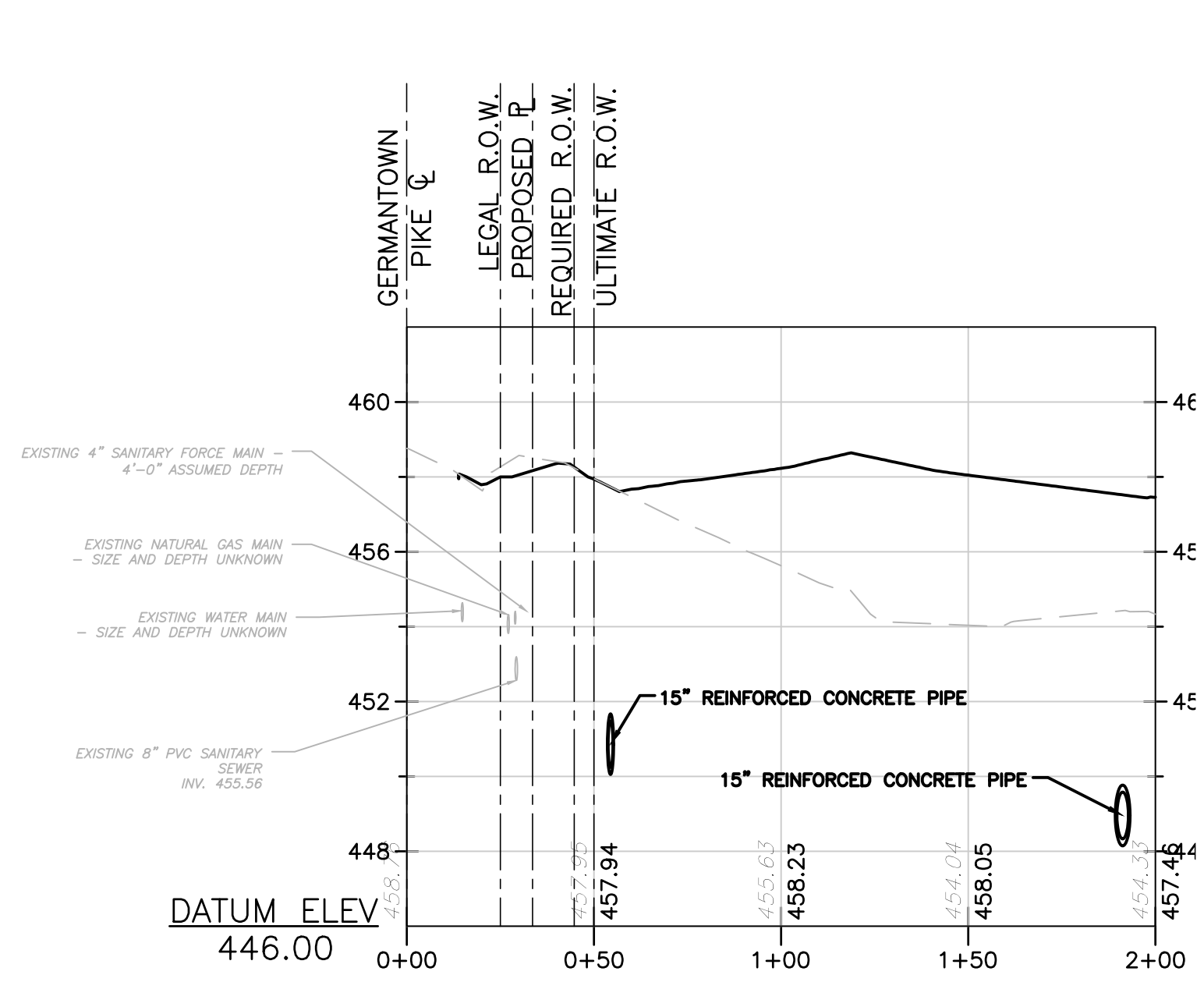


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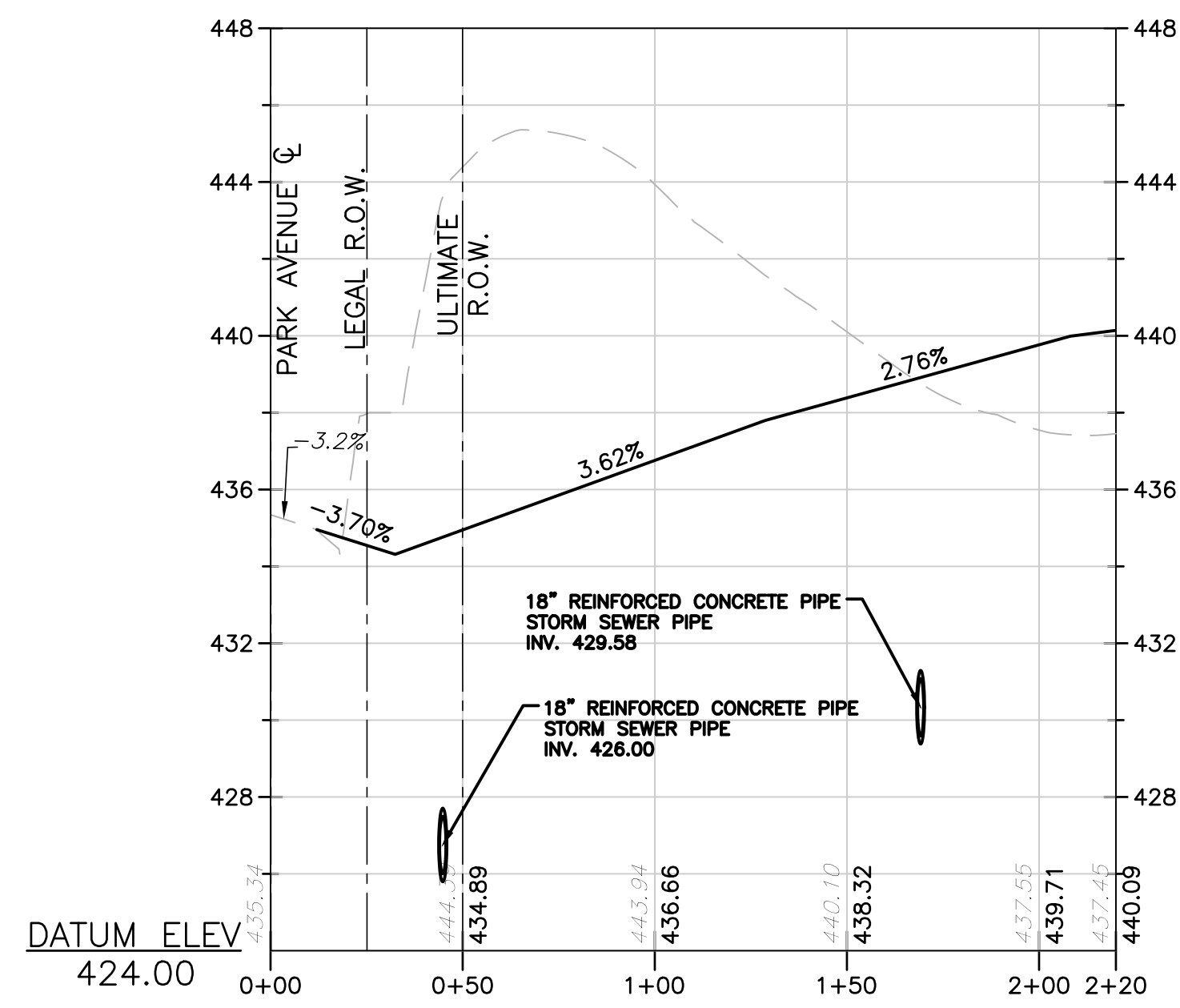
DRIVEWAY B

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 LAST SAVE BY: J. Kelly

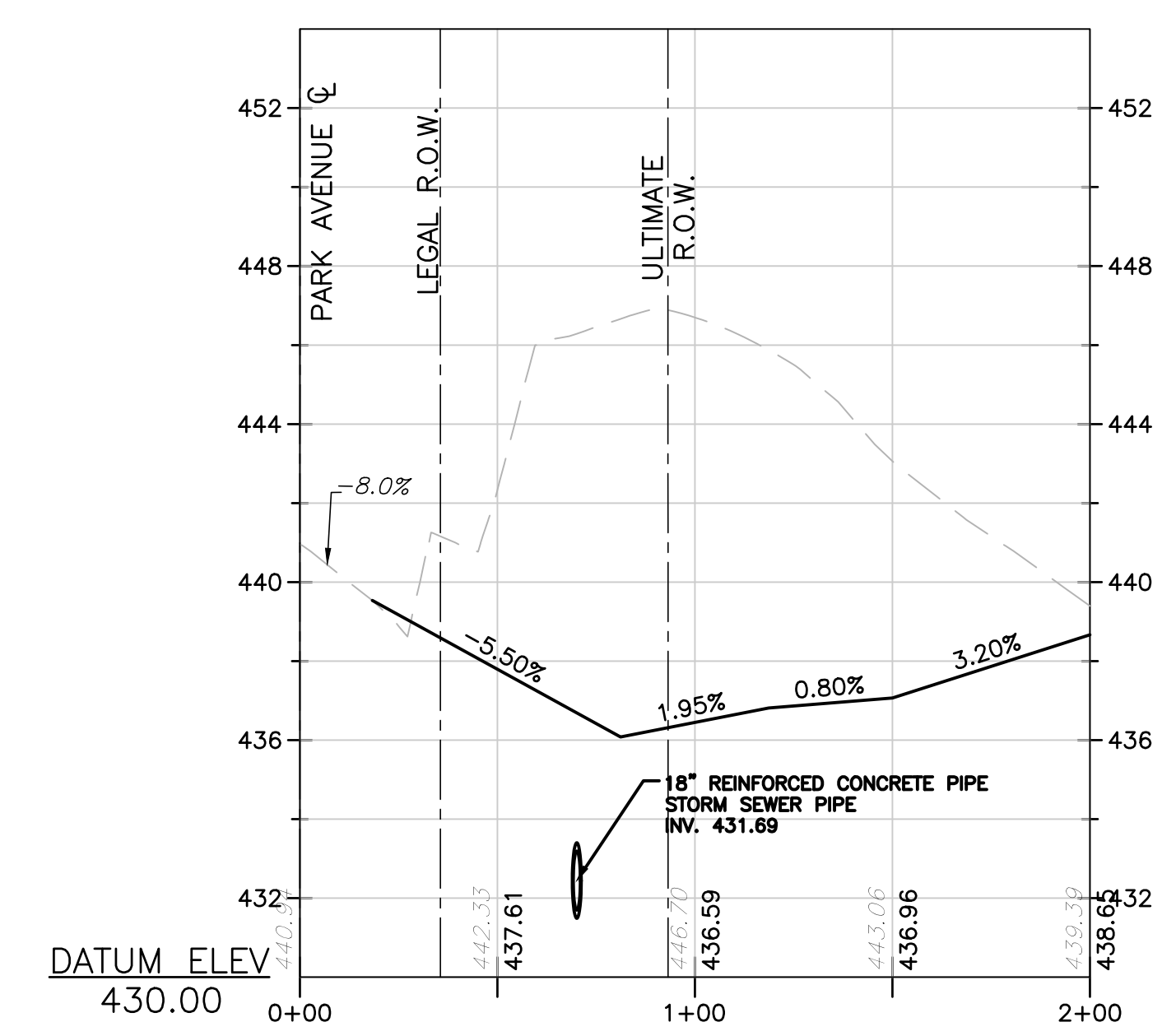
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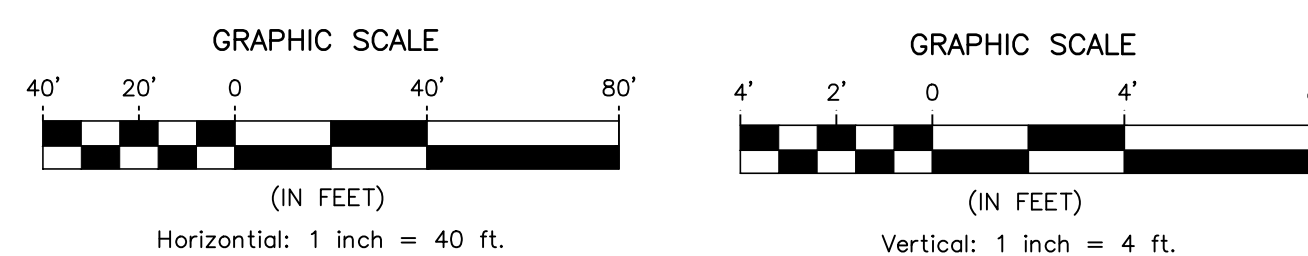
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 STA 0+00 TO 2+00



DRIVEWAY B1
 STA 0+00 TO 2+20



DRIVEWAY B2
 STA 0+00 TO 2+00

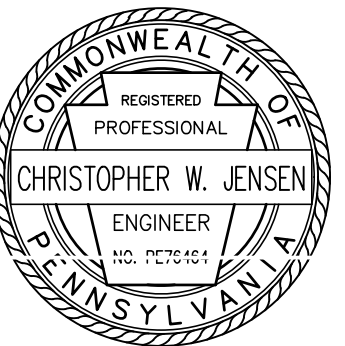


ATTENTION: ALL CONTRACTORS LOCATING OR EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM UTILITY COMPANIES RECORDS AND/OR MEASUREMENTS. THE USER OF THIS DRAWING ACCEPTS THE ACCURACY OF THE SIZE, DEPTH OR HORIZONTAL LOCATION OF UNDERGROUND UTILITIES OR STRUCTURES SHOWN HEREON. THE USER OF THIS DRAWING ACCEPTS THE ACCURACY OF THE LEGISLATIVE ACT NUMBER 28 OF 1974 AS AMENDED BY ACT 121 OF 2006. CONTRACTORS MUST VERIFY THE LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES PRIOR TO START OF WORK. SEE PLAN.

20213502293

NO.	DATE	REVISIONS	BY	CHKD
4	3/7/2024	PER GIS REVIEW LETTER DATED 01/24/2024	PRG DS	
3	11/17/2023	PER GIS REVIEW LETTER DATED 11/22/2023	PRG DS	
2	4/3/2023	REVISED ENTRANCE ON GERMANTOWN PIKE	ROP DS	
1	10/04/2022	PER GIS REVIEW LETTER DATED 03/11/2022	PRG DS	

CHRISTOPHER W. JENSEN, P.E.
 LICENSED PROFESSIONAL ENGINEER



4/3/2023
 LICENSED PROFESSIONAL ENGINEER
 STATE OF PA LICENSE No. PED76464

BT WORCESTER, LLC
 CITY VIEW - APN #67-00-01606-001
 2974 GERMANTOWN PIKE, WORCESTER TOWNSHIP,
 MONTGOMERY COUNTY, COMMONWEALTH OF PENNSYLVANIA

DRIVEWAY PROFILES



OFFICES LOCATED IN:
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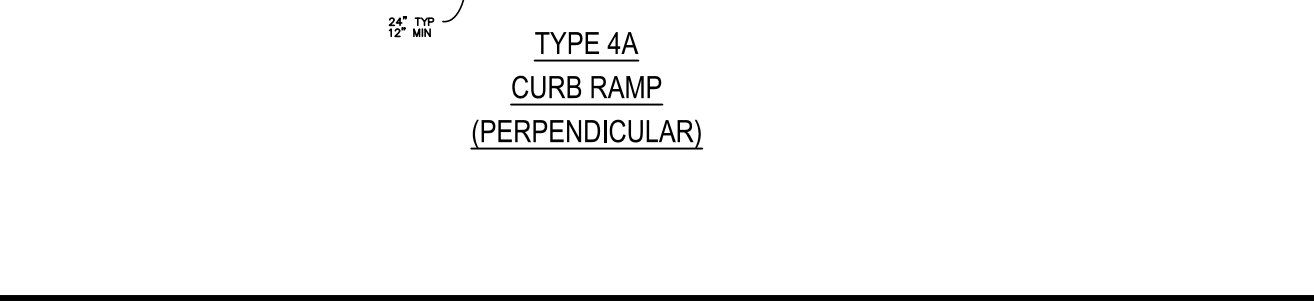
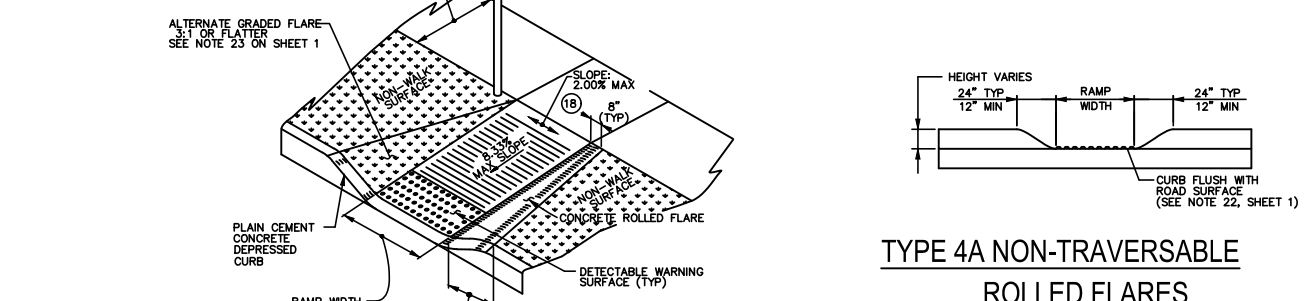
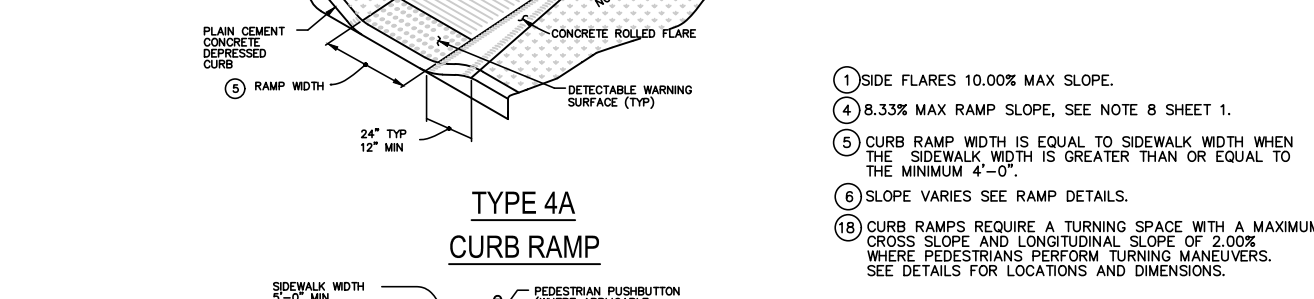
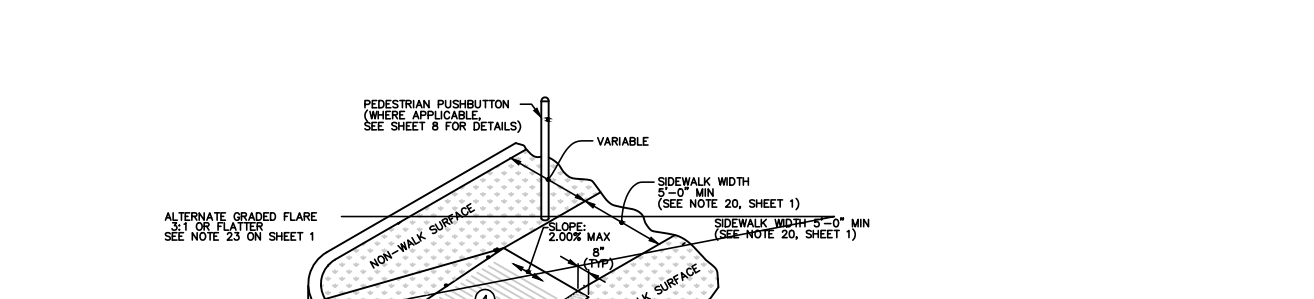
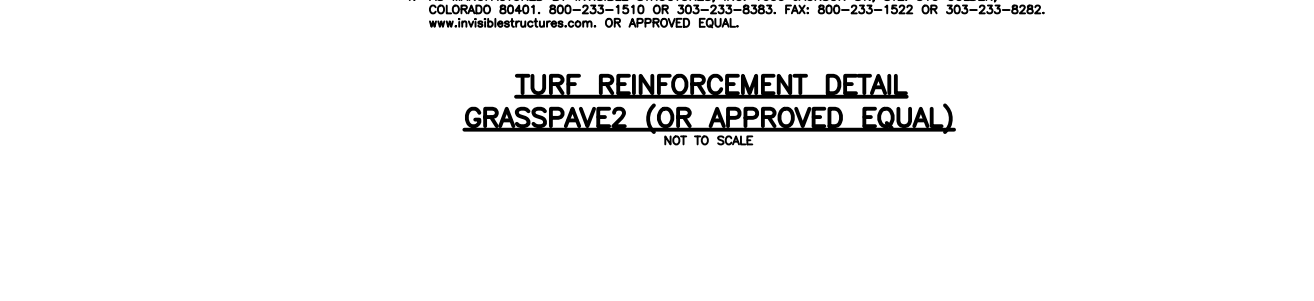
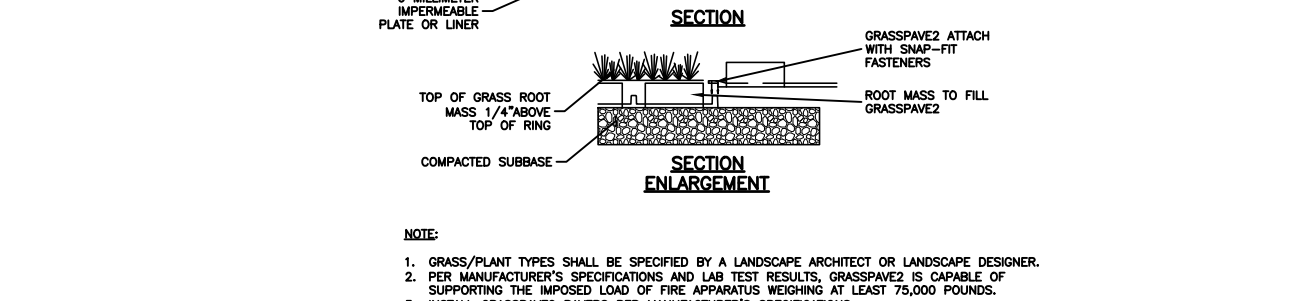
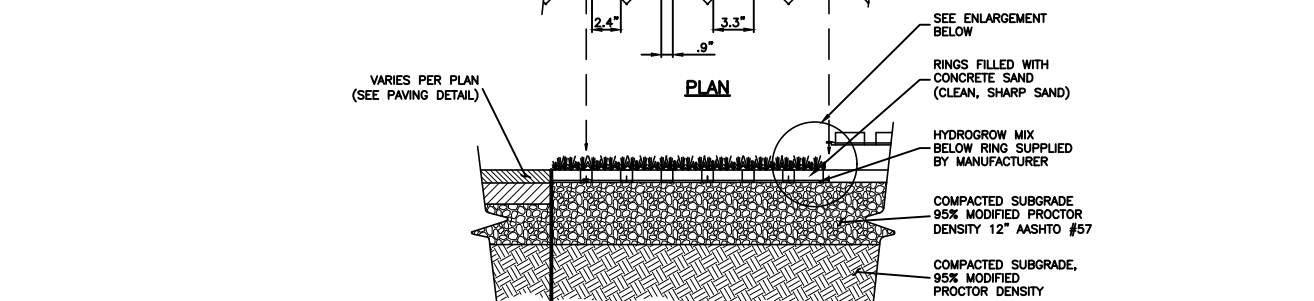
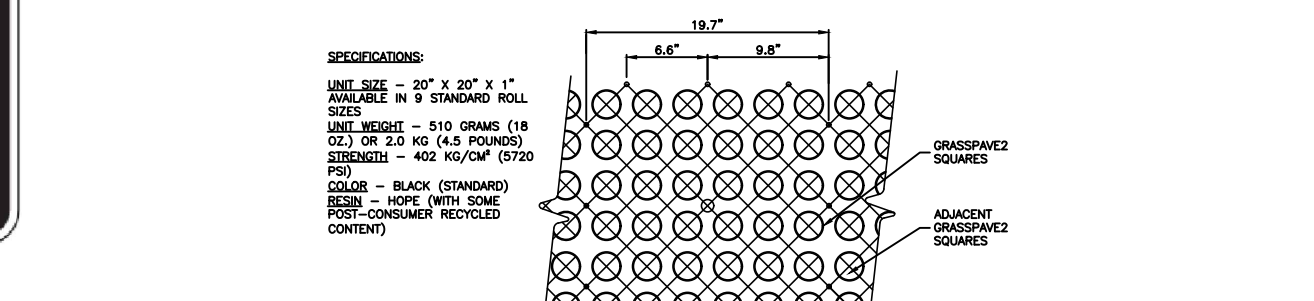
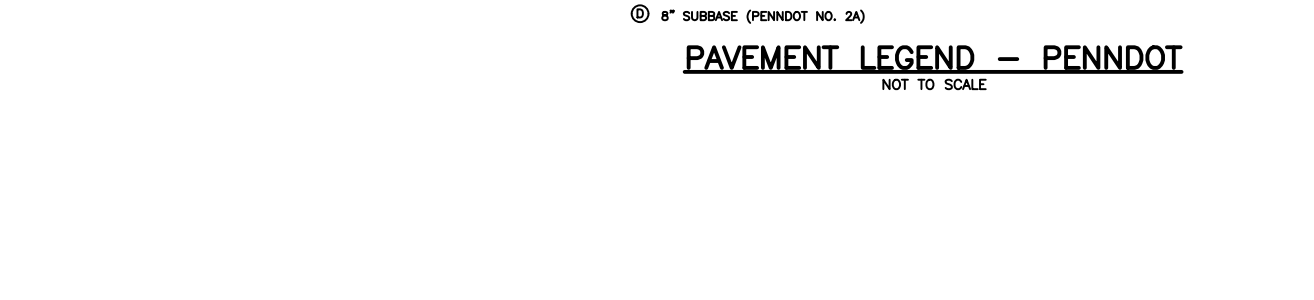
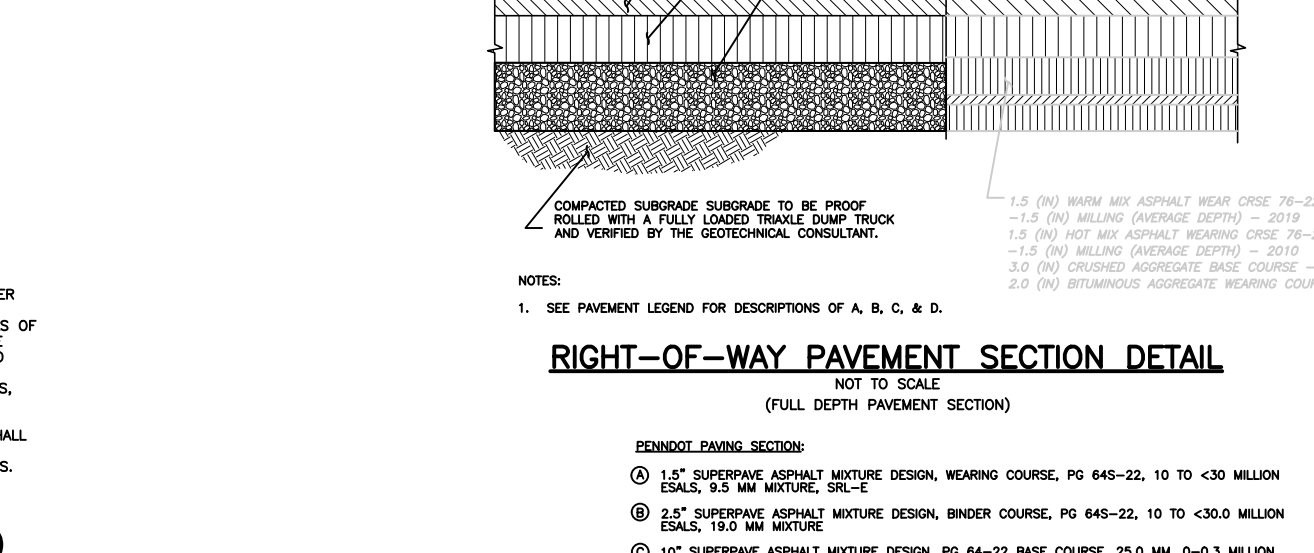
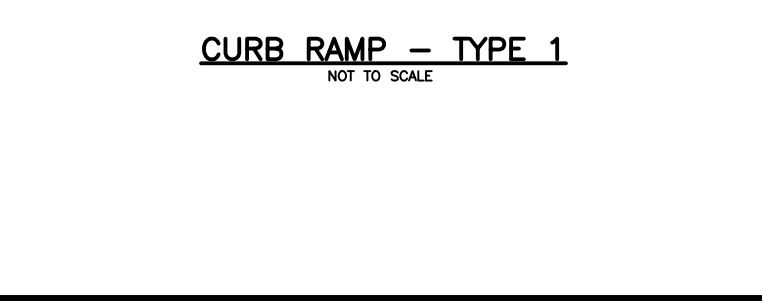
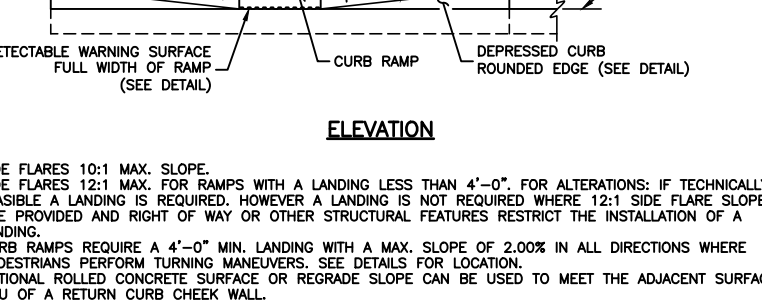
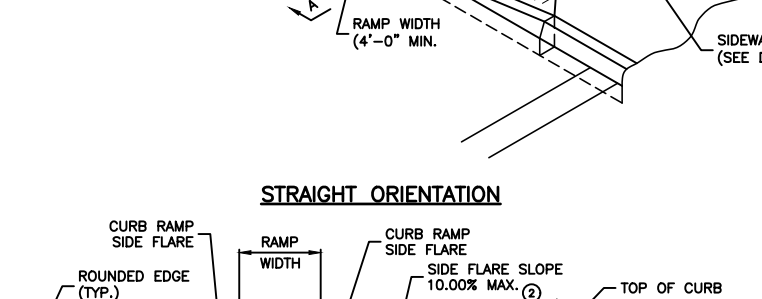
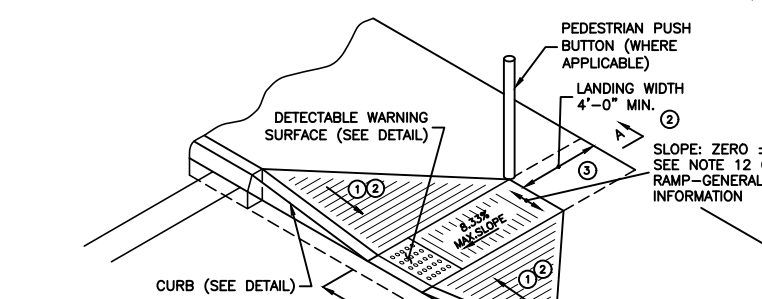
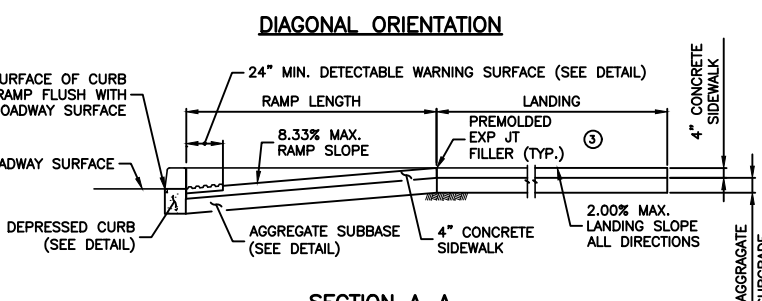
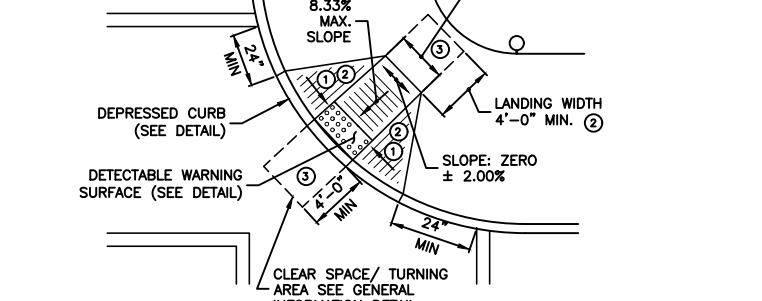
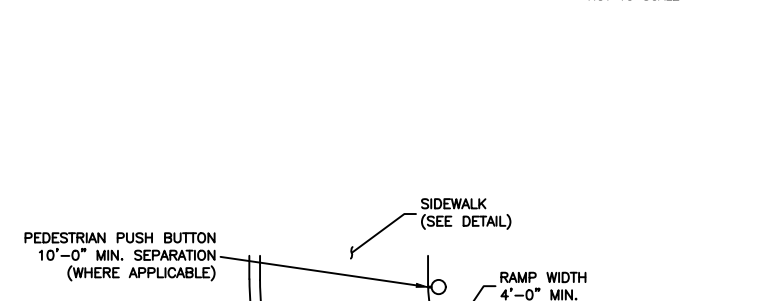
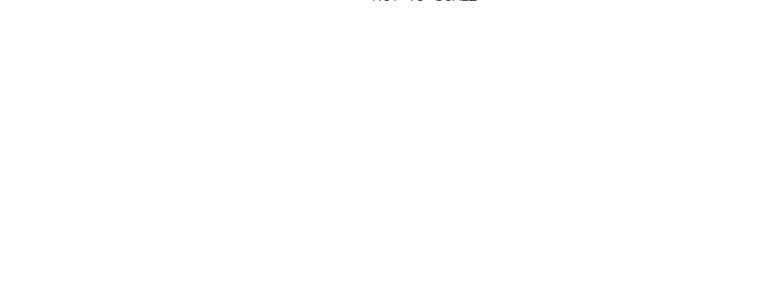
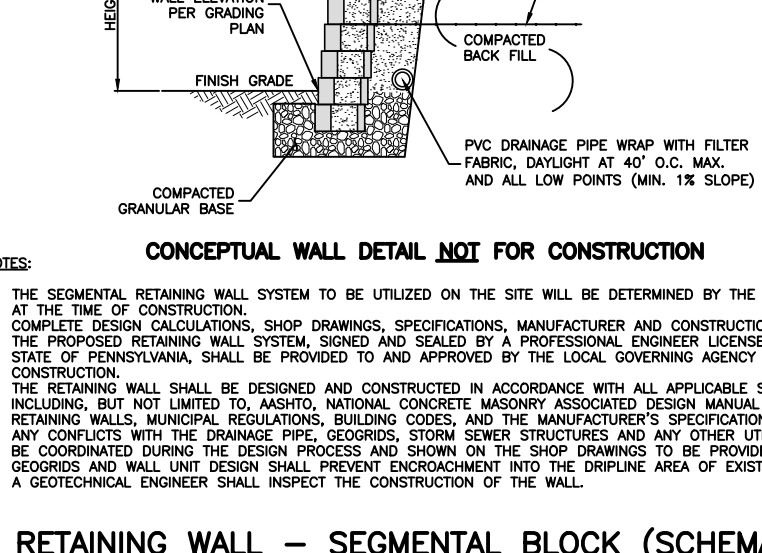
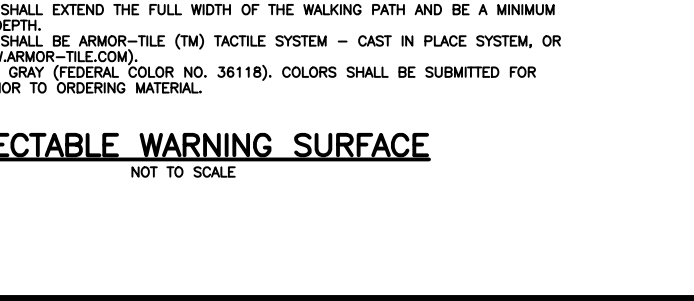
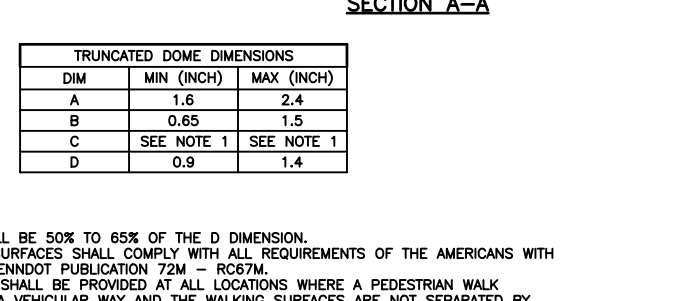
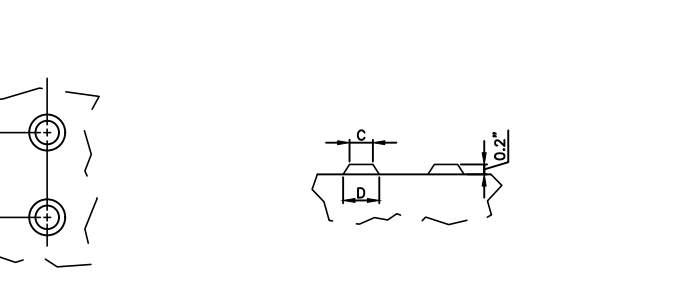
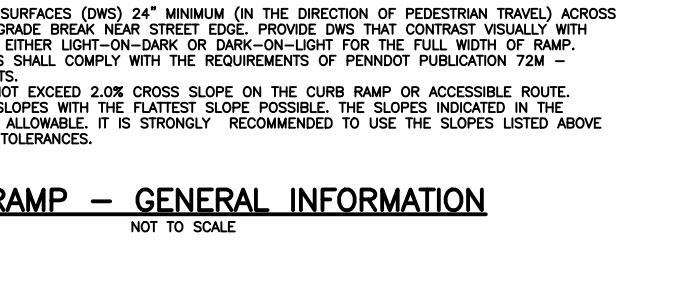
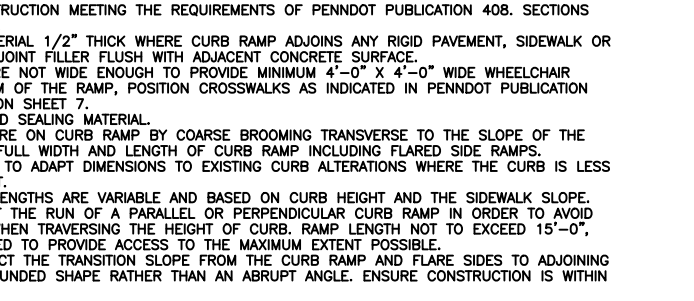
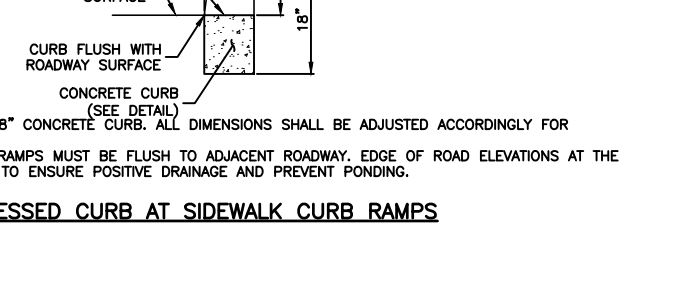
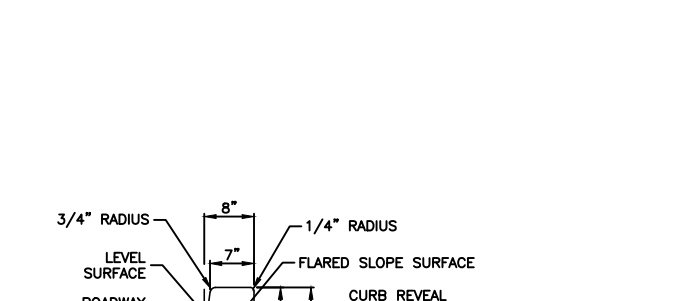
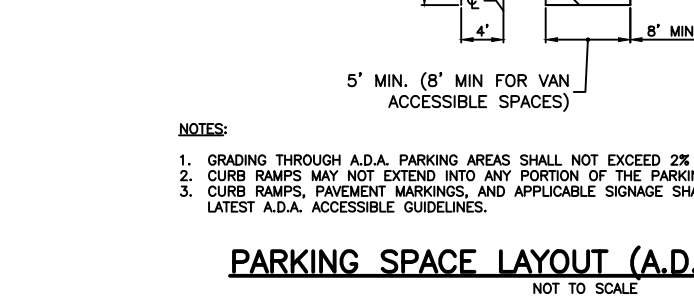
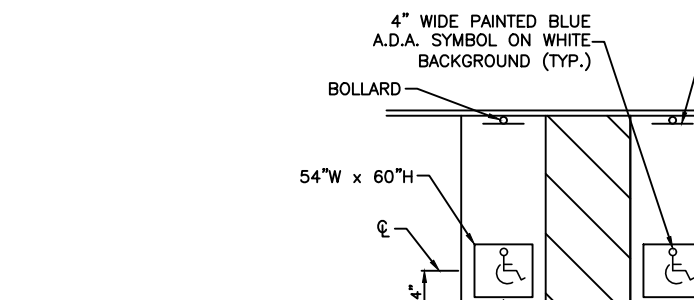
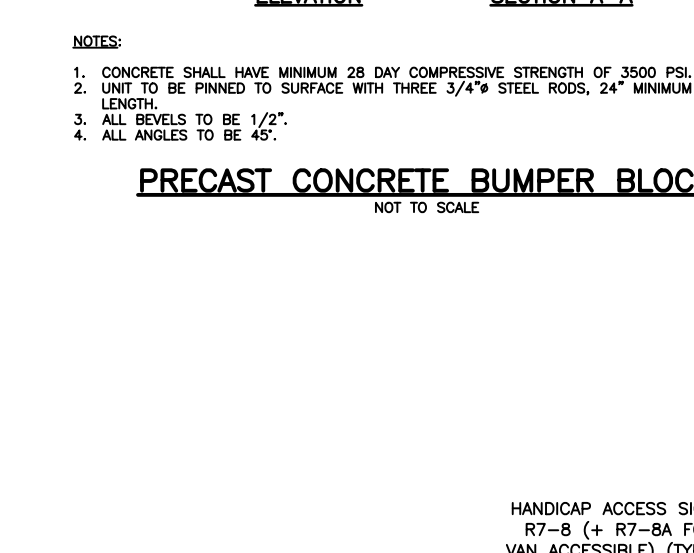
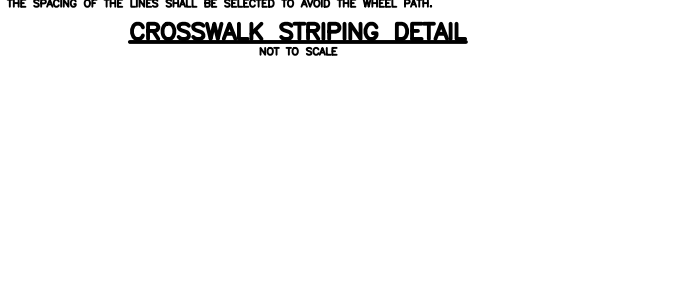
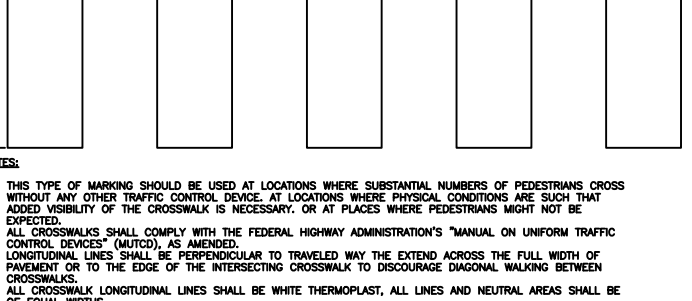
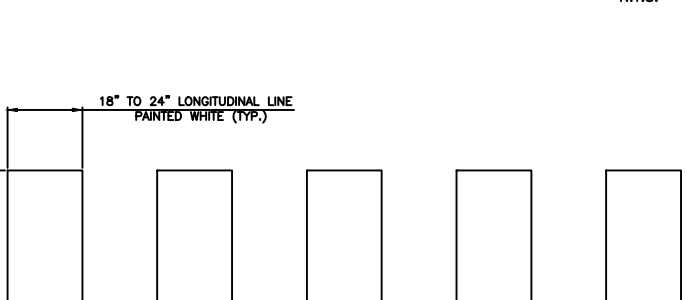
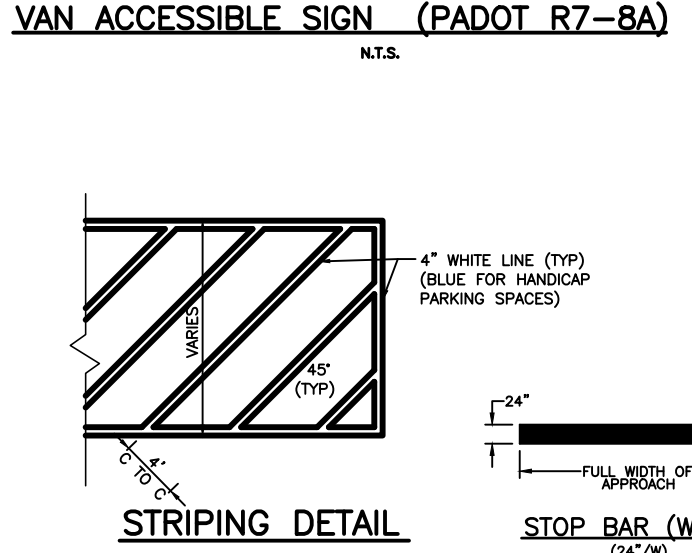
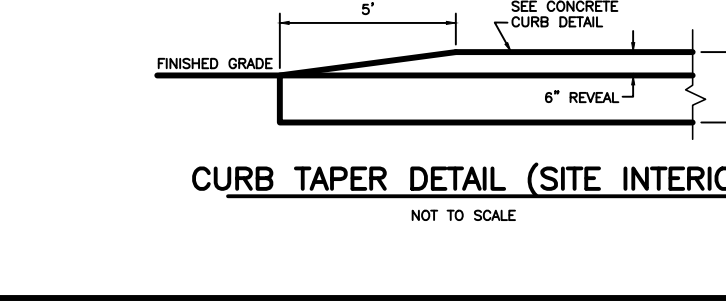
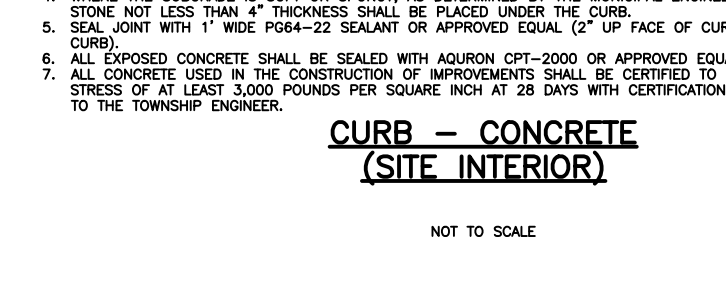
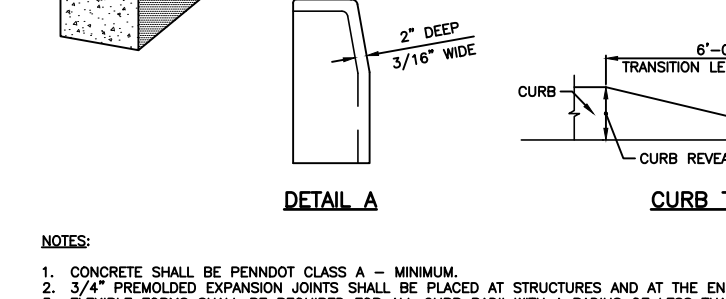
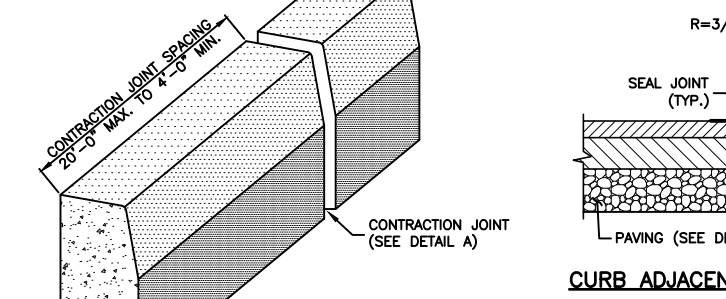
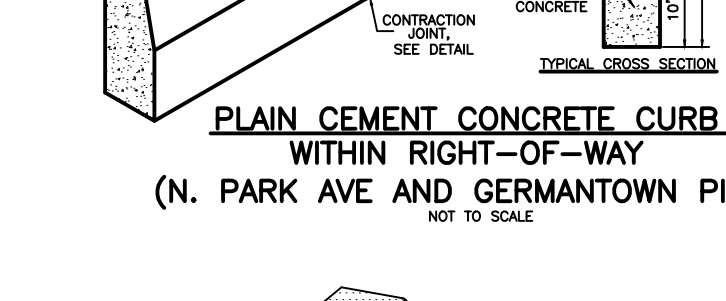
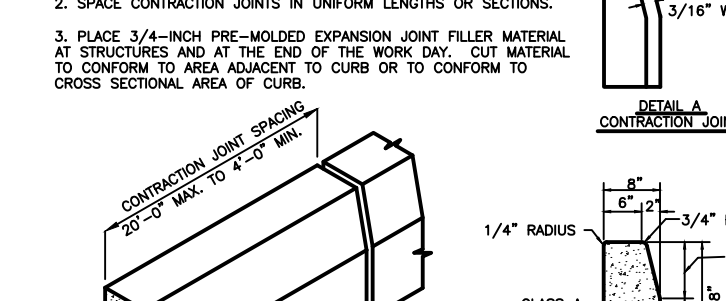
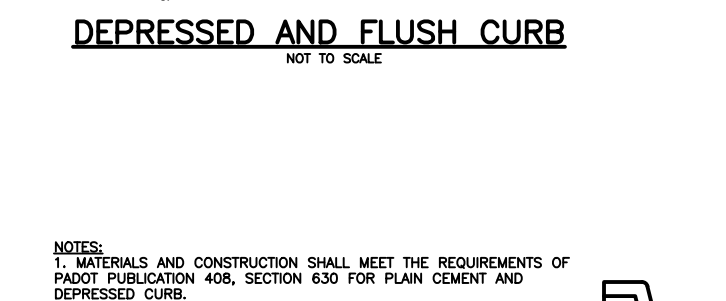
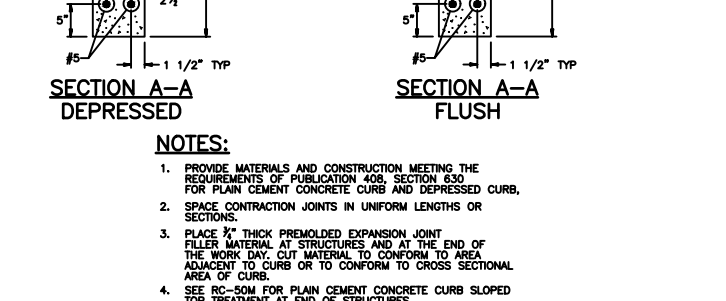
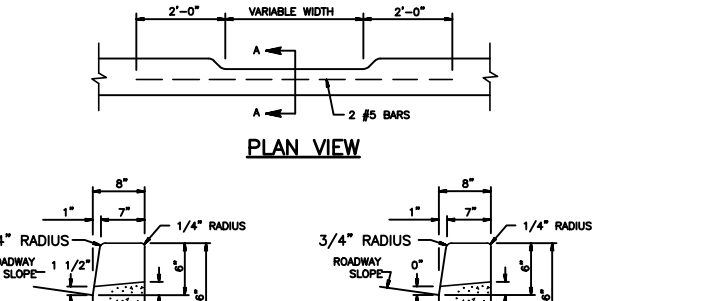
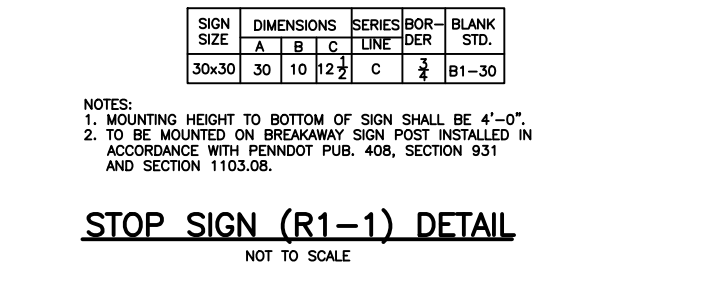
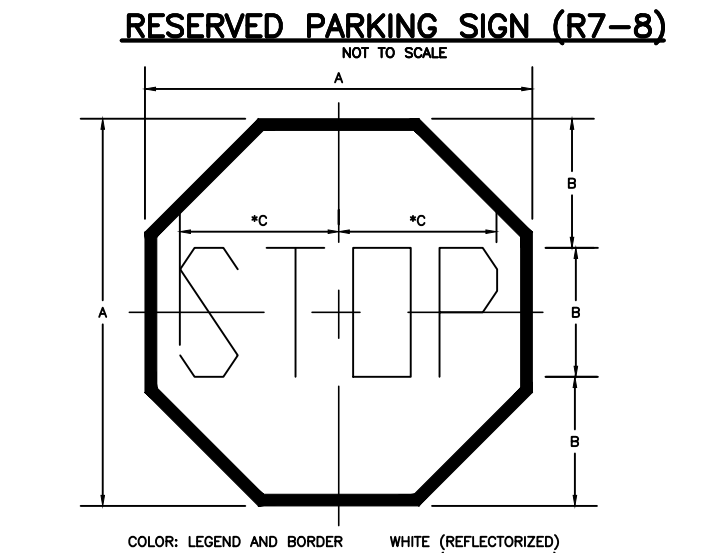
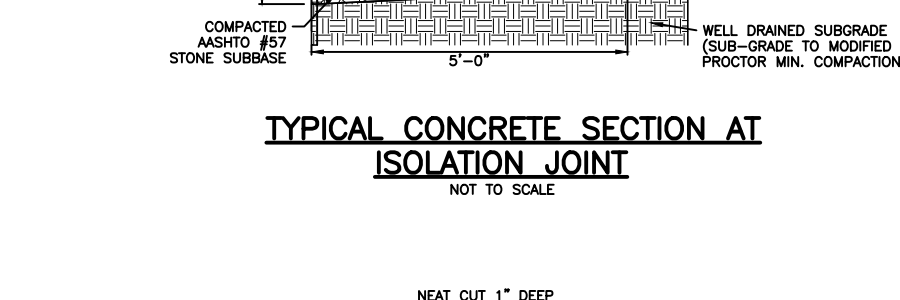
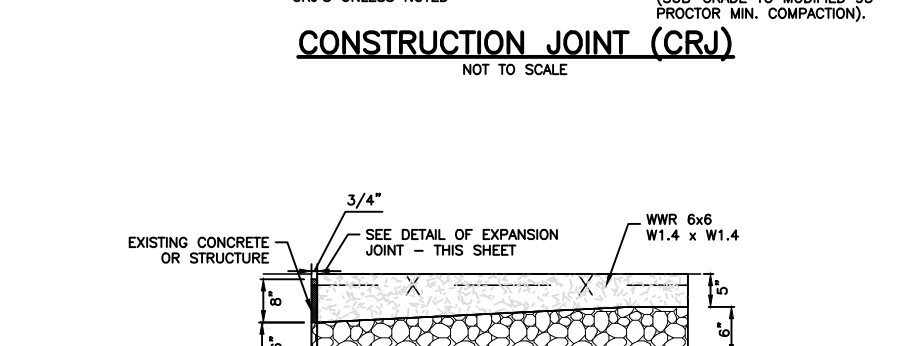
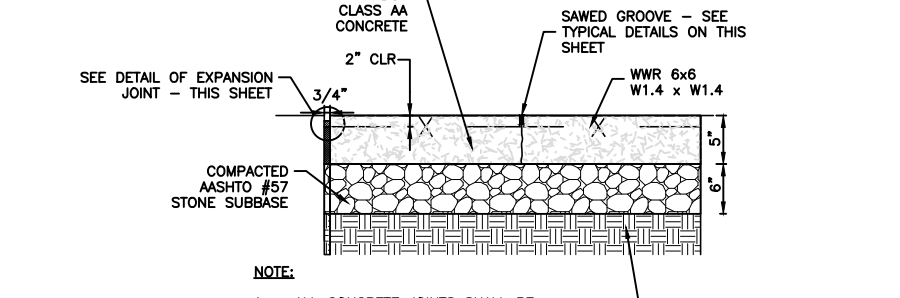
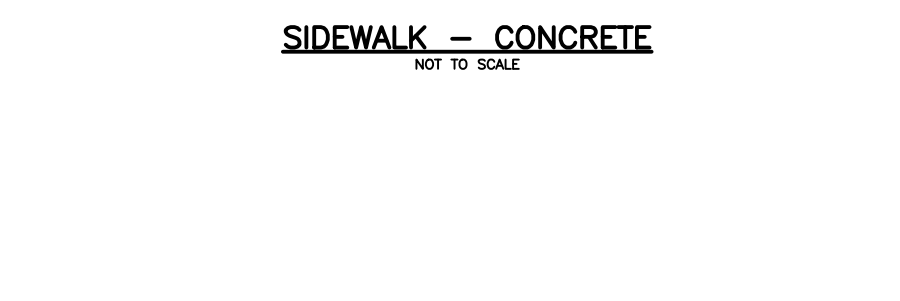
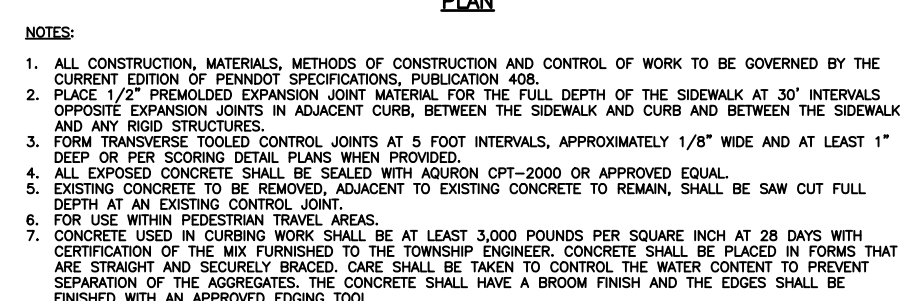
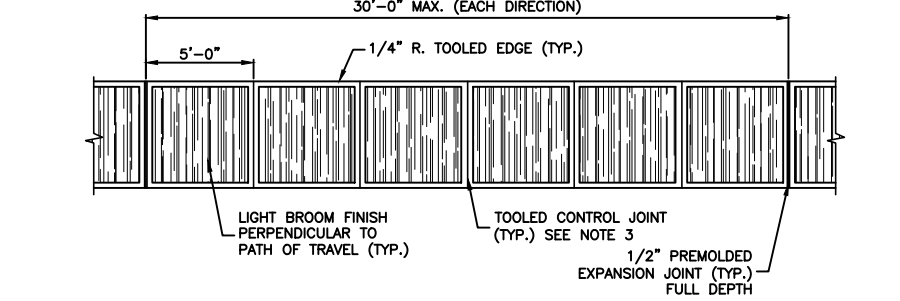
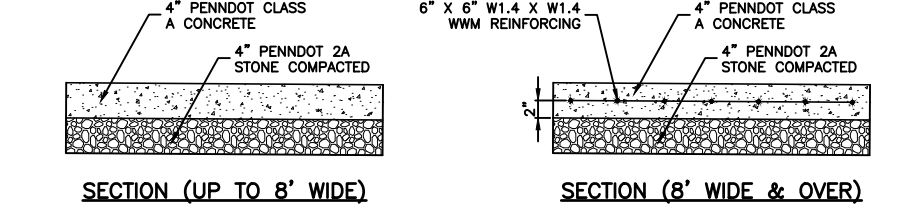
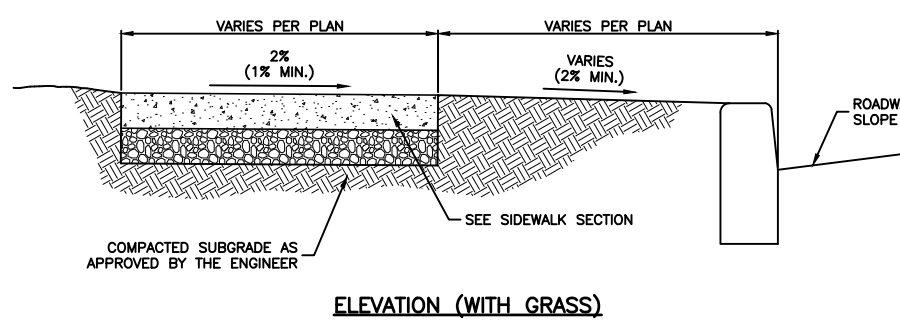
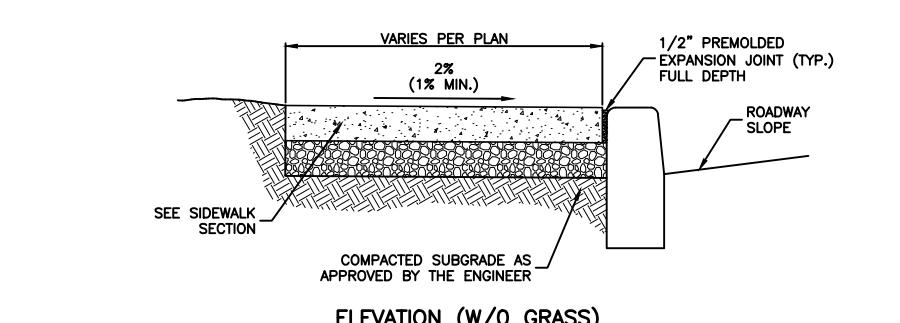
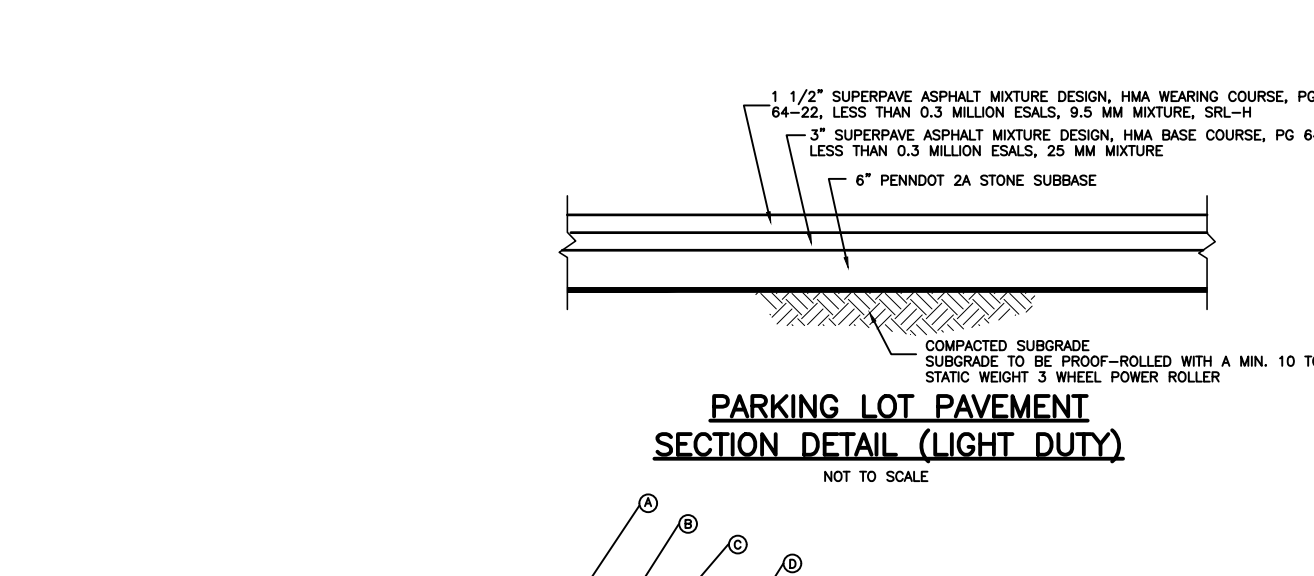
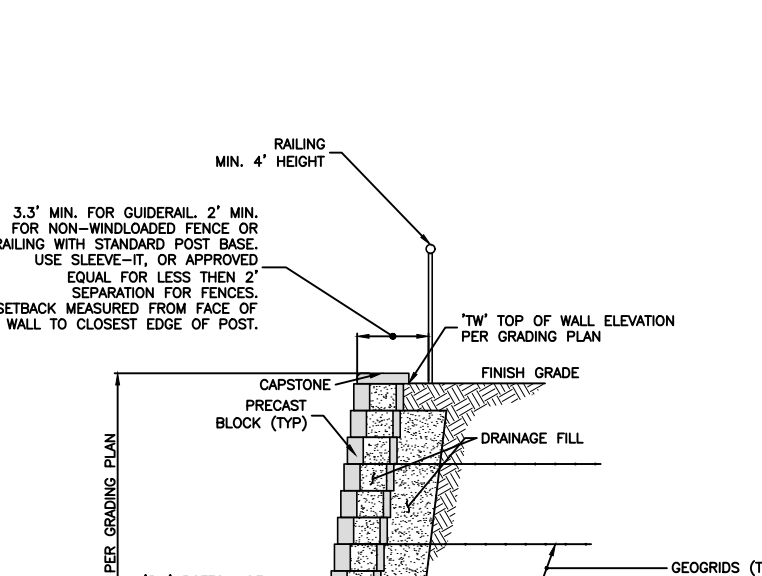
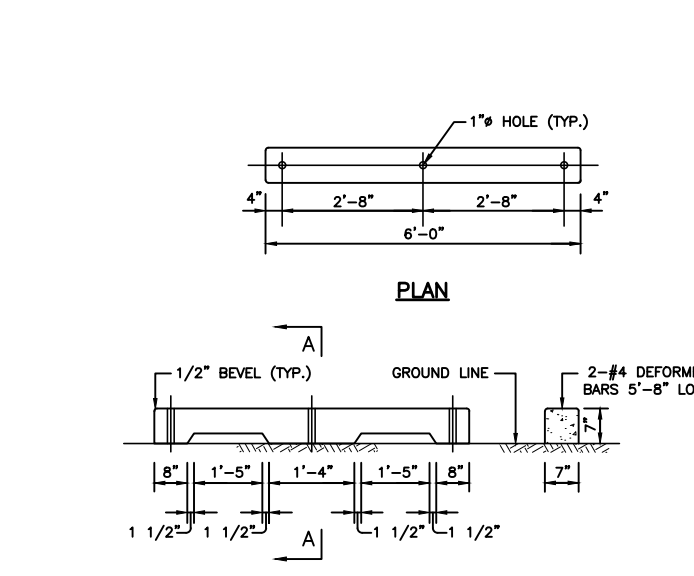
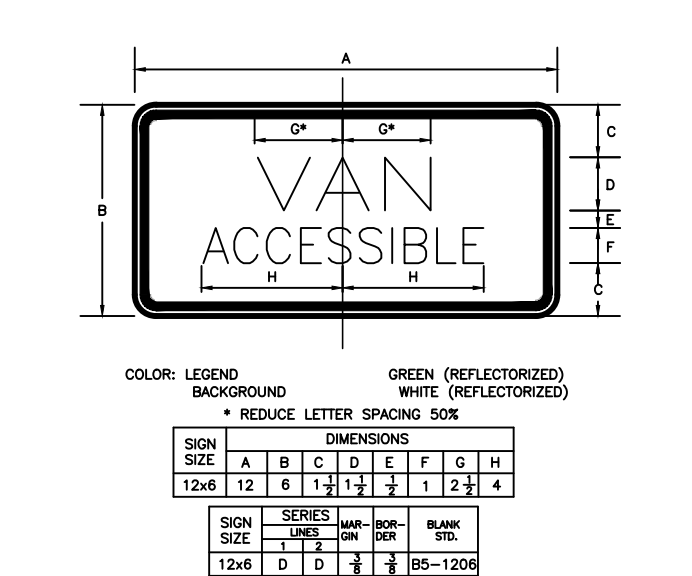
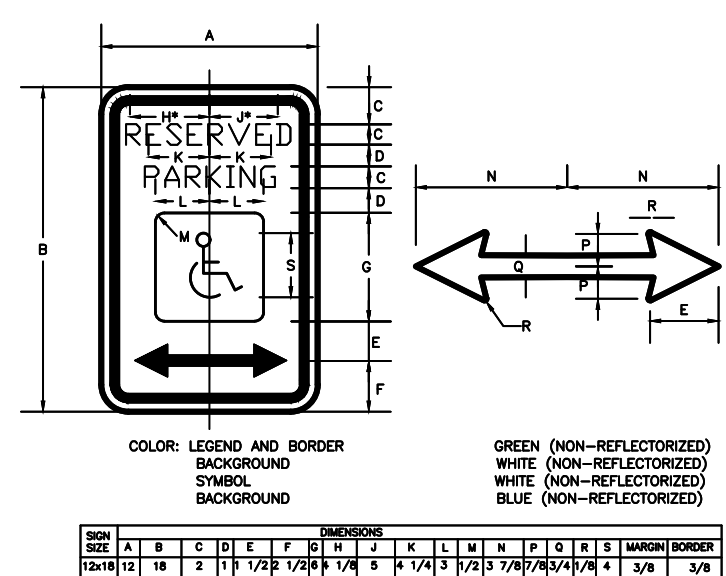
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 CHECKED BY: DS
 DRAWN BY: PG/SR/ROP
 DATE: 1/27/22
 SCALE: SEE PLAN
 PROJ. NO.: BET00056

DRAWING: PRF5
 SHEET: 19
 OF 34

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FILE NAME: BET100056_SHT20-30-DETAILS.dwg
 DATE: 06 May 2024, 1:30pm
 LAST SAVE BY: J.King



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20213502293

NO.	DATE	REVISIONS	BY	CHKD
1.	10/04/2022	REVISED LETTER DATED 03/11/2022	PRG	DS
2.	4/3/2023	REVISED ENTRANCE ON GERMANTOWN PIKE	PRG	DS
3.	11/17/2023	PER GIS REVIEW LETTER DATED 11/22/2023	DS	DS
4.	3/7/2024	PER GIS REVIEW LETTER DATED 01/24/2024	PRG	DS

CHRISTOPHER W. JENSEN, P.E.
 LICENSED PROFESSIONAL ENGINEER

REGISTERED PROFESSIONAL ENGINEER
 COMMONWEALTH OF PENNSYLVANIA
 ENGINEER NO. PTC#644

4/3/2023
 LICENSED PROFESSIONAL ENGINEER
 STATE OF PA LICENSE NO. PED76464

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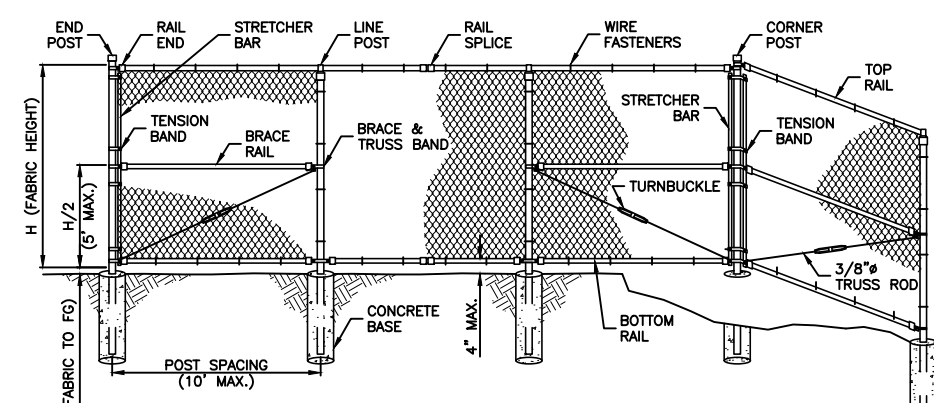
1700 MARKET STREET, SUITE 3110
 PHILADELPHIA, PA 19103
 TEL 215-282-7850
 FAX 215-627-3459

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 OHIO AND PENNSYLVANIA

PROJECT INFORMATION:
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 DATE: 06/11/2024 11:05:00 AM
 TIME: 06 May 2024, 1:39PM
 LAST SAVE BY: J.Kelley

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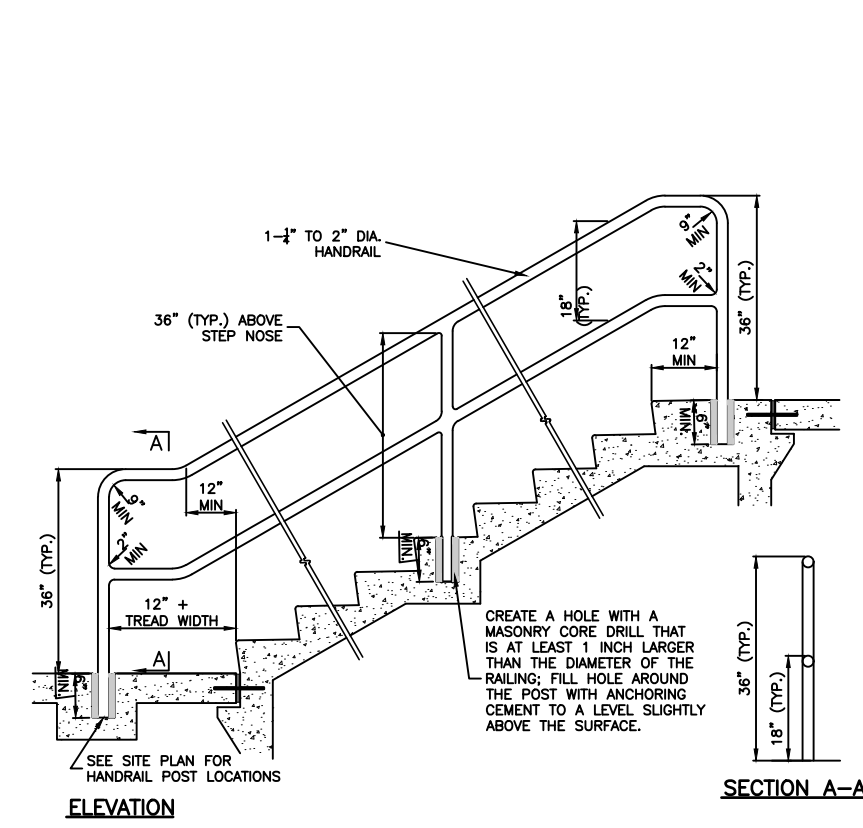
CONCRETE BASE		
FABRIC HEIGHT H	DEPTH	DIA.
3 THRU 6	48	12
7 THRU 9	72	14
10 THRU 12	96	16

ROUND PIPE	O.D.	WALL THICK.	WEIGHT LB./FT.
1.25	1.660	0.140	2.27
1.50	1.900	0.145	2.72
2.00	2.375	0.154	3.65
2.50	2.875	0.203	5.79
3.00	3.500	0.216	7.56
3.50	4.000	0.226	9.11
4.00	4.500	0.237	10.70
4.50	5.063	0.258	14.67
5.00	5.625	0.280	18.97
6.00	6.625	0.322	28.50

FENCE MATERIAL			
FABRIC HEIGHT	ENL. CORNER & LINE BRACE POSTS	LINE POSTS	TOP & BRACE RAILS
H FEET	ROUND PIPE I.D. INCHES	ROUND PIPE I.D. INCHES	ROUND PIPE I.D. INCHES
3 THRU 6	2.5	2.0	1.25
7 THRU 9	3.0	2.5	1.25
10 THRU 12	3.0	3.0	1.25

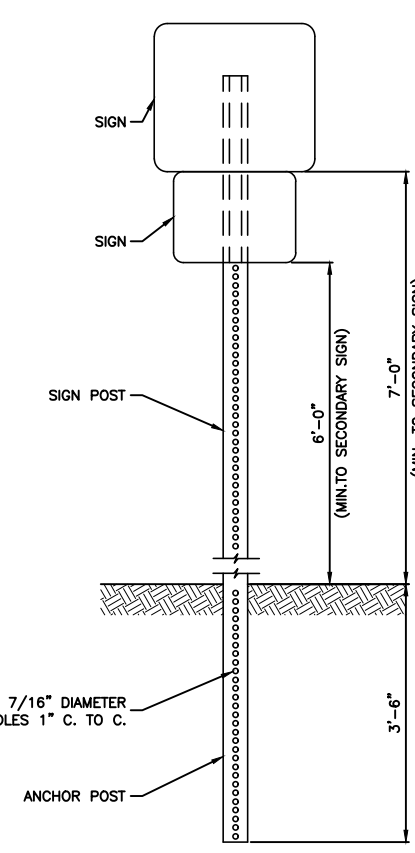
- NOTES:
- H (HEIGHT OF FABRIC) SHALL BE AS SHOWN ON THE PLANS.
 - CHAIN LINK FENCE SHALL CONFORM TO THE REQUIREMENTS OF ASTM F 181.
 - STANDARD CHAIN LINK FABRIC SHALL BE 2" HIGH X 4" GAUGE WIRE SECURELY FASTENED TO LINE POSTS, RAILS, BRACES, AND STRETCHER BARS SPACED AS SHOWN HEREON.
 - ATTACH FABRIC TO ALL FENCE AND GATE STRUCTURES AT 12" INTERVALS VERTICALLY AND AT 20" HORIZONTALLY.
 - STEEL POSTS, RAILS, AND GATE FRAMES SHALL CONFORM TO ASTM A 181 TYPE 1, GRADE 1 OR GRADE 2.
 - CONCRETE FOOTINGS SHALL HAVE TOPS FINISHED AT GRADE LEVEL AND SHALL BE PENNDOT CLASS B.
 - CHAIN LINK FABRIC SHALL BE ENCLOSED IN THE TOP AND BOTTOM BELLS.
 - BRACE RAIL WILL NOT BE REQUIRED FOR 36", 42" OR 48" FABRIC HEIGHTS.
 - FINISH (FABRIC, POSTS, AND RAIL): BLACK PVC COATED.

FENCE - CHAIN LINK
NOT TO SCALE



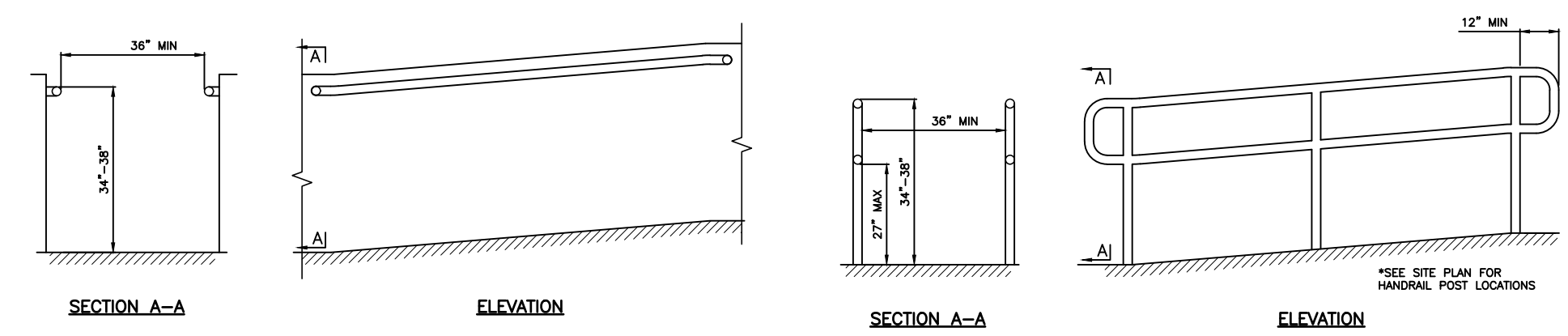
- NOTES:
- SEE CONCRETE STEP DETAIL FOR REINFORCEMENT AND ADDITIONAL INFORMATION.
 - SEE SPECIFICATIONS FOR FINISH.
 - STAIR AND HANDRAIL SHALL MEET ALL APPLICABLE CODES INCLUDING ADA AND LOCAL CODE REQUIREMENTS.
 - INTERMEDIATE HANDRAIL POST SPACING SHALL BE 6' MAX. C.C.
 - HANDRAILS SHALL BE PROVIDED FOR EXTERNAL STAIRS WITH THREE OR MORE STEPS. RAILS SHALL BE PROVIDED ON BOTH SIDES OF EACH SET OF STAIRS. THE STEEL PIPE STAIR HANDRAIL DETAIL SHALL PREVAIL OVER THE CONCRETE STAIRS DETAILS REGARDING ASPECTS OF THE HAND RAIL (POST LOCATIONS, ETC.).

STEEL PIPE STAIR HANDRAIL
NOT TO SCALE



- NOTES:
- POSTS TO BE TYPE "T" BREAKAWAY CHANNEL BAR POSTS. (SEE PENNDOT TRAFFIC CONTROL SIGNING STANDARDS 10-7000 SERIES FOR INSTALLATION PROCEDURES)
 - SIGN POST LOCATIONS TO BE SELECTED IN THE FIELD UNDER THE DIRECT SUPERVISION OF THE ENGINEER.
 - TO BE INSTALLED IN ACCORDANCE WITH PENNDOT PUB. 408, SECTION 932

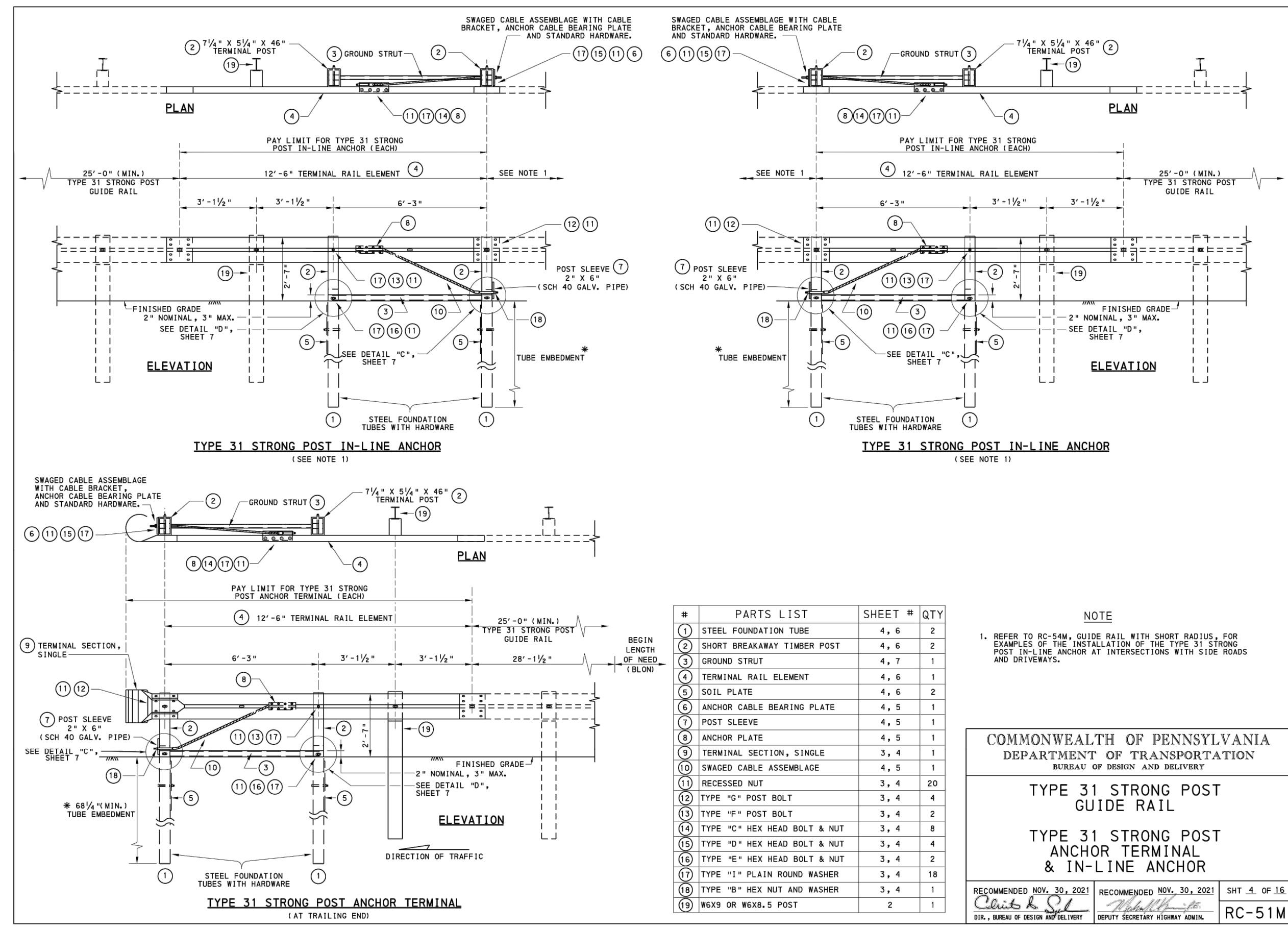
SIGN POST - PENNDOT
NOT TO SCALE



- NOTES:
- IF THE SLOPE OF A RAMP IS BETWEEN 1:12 AND 1:16, THE MAXIMUM RISE SHALL BE 30 INCHES AND THE MAXIMUM HORIZONTAL RUN SHALL BE 30 FEET. IF THE SLOPE OF THE RAMP IS BETWEEN 1:16 AND 1:20, THE MAXIMUM RISE SHALL BE 30 INCHES AND THE MAXIMUM HORIZONTAL RUN SHALL BE 40 FEET.
 - IF THE SLOPE OF A RAMP IS BETWEEN 1:12 AND 1:16, THE MAXIMUM RISE SHALL BE 30 INCHES AND THE MAXIMUM HORIZONTAL RUN SHALL BE 30 FEET. IF THE SLOPE OF THE RAMP IS BETWEEN 1:16 AND 1:20, THE MAXIMUM RISE SHALL BE 30 INCHES AND THE MAXIMUM HORIZONTAL RUN SHALL BE 40 FEET.

HANDRAIL - RAMP - WALL MOUNTED
NOT TO SCALE

HANDRAIL - RAMP - STEEL
NOT TO SCALE



NO.	PARTS LIST	SHEET #	QTY
1	STEEL FOUNDATION TUBE	4, 6	2
2	SHORT BREAKAWAY TIMBER POST	4, 6	2
3	GROUND STRUT	4, 7	1
4	TERMINAL RAIL ELEMENT	4, 6	1
5	SOIL PLATE	4, 6	2
6	ANCHOR CABLE BEARING PLATE	4, 5	1
7	POST SLEEVE	4, 5	1
8	ANCHOR PLATE	4, 5	1
9	TERMINAL SECTION, SINGLE	3, 4	1
10	SWAGED CABLE ASSEMBLY	4, 5	1
11	RECESSED NUT	3, 4	20
12	TYPE "C" POST BOLT	3, 4	4
13	TYPE "C" POST BOLT	3, 4	2
14	TYPE "C" HEX HEAD BOLT & NUT	3, 4	8
15	TYPE "D" HEX HEAD BOLT & NUT	3, 4	4
16	TYPE "E" HEX HEAD BOLT & NUT	3, 4	2
17	TYPE "F" PLAIN ROUND WASHER	3, 4	18
18	TYPE "G" HEX NUT AND WASHER	3, 4	1
19	WEXS OR WEXS-D POST	2	1

NOTE:
 1. REFER TO RC-51M, GUIDE RAIL WITH SHORT RADIUS, FOR SAMPLES OF THE INSTALLATION OF THE TYPE 31 STRONG POST IN-LINE ANCHOR AT INTERSECTIONS WITH SIDE ROADS AND DRIVEWAYS.

COMMONWEALTH OF PENNSYLVANIA
 DEPARTMENT OF TRANSPORTATION
 BUREAU OF DESIGN AND DELIVERY

TYPE 31 STRONG POST
 GUIDE RAIL

TYPE 31 STRONG POST
 ANCHOR TERMINAL
 & IN-LINE ANCHOR

RECOMMENDED NOV. 30, 2021
 CAROL A. O'NEILL
 DIR., BUREAU OF DESIGN AND DELIVERY

RECOMMENDED NOV. 30, 2021
 DEPUTY SECRETARY ADRIAN ADAM

SHT. 4. OF 16
 RC-51M

GUIDE RAIL DETAIL
NOT TO SCALE

ATTENTION: ALL CONTRACTORS LOCATIONS OF ALL EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM UTILITY COMPANY RECORDS AND OF ADEQUATE QUALITY. THE ACCURACY OF THE SIZE, DEPTH OR HORIZONTAL LOCATION OF UNDERGROUND UTILITIES OR STRUCTURES CAN BE GUARANTEED. CONTRACTORS MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES PRIOR TO START OF WORK. SEE SHEET 05.

20213502293

NO.	DATE	REVISIONS	BY	CHKD
4	3/7/2024	PER OIS REVIEW LETTER DATED 01/24/2024	PRG	DS
3	11/17/2023	PER OIS REVIEW LETTER DATED 11/22/2023	PRG	DS
2	4/3/2023	REVISED ENTRANCE ON GERMANTOWN PIKE	ROP	DS
1	10/04/2022	PER OIS REVIEW LETTER DATED 03/11/2022	PRG	DS

CHRISTOPHER W. JENSEN, P.E.
 LICENSED PROFESSIONAL ENGINEER



4/3/2023
 LICENSED PROFESSIONAL ENGINEER
 STATE OF PA LICENSE NO. PC076464

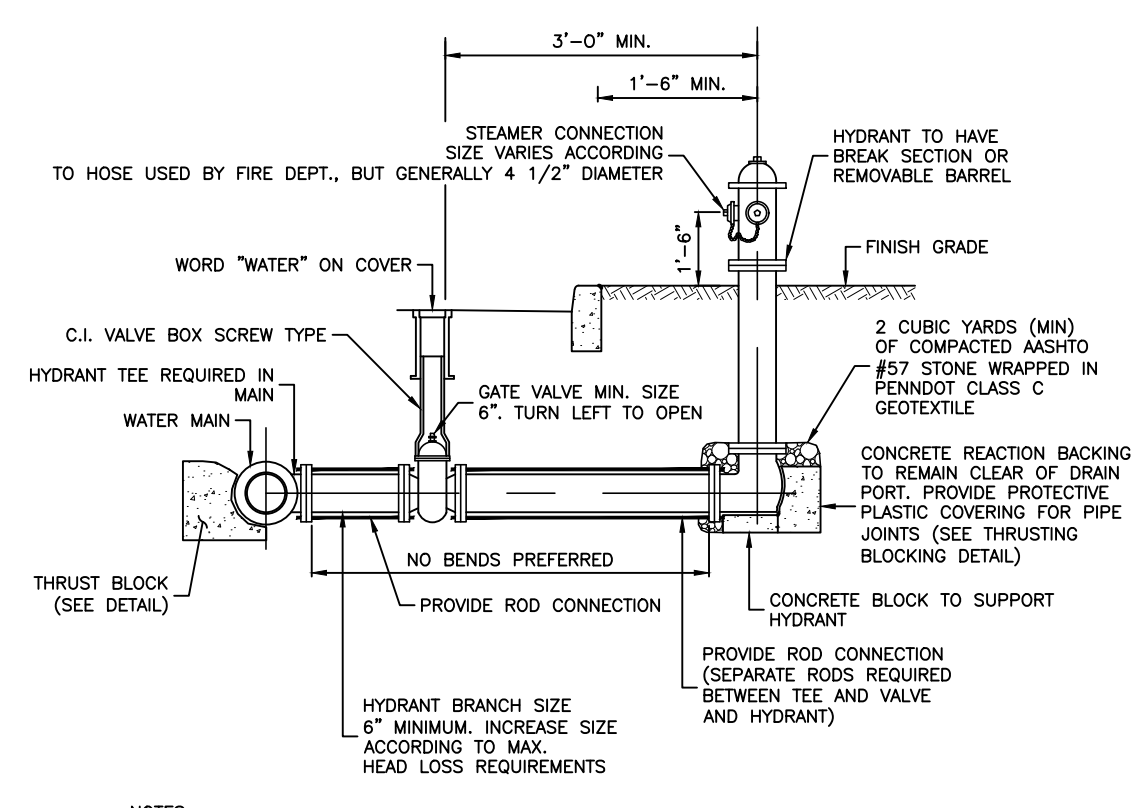
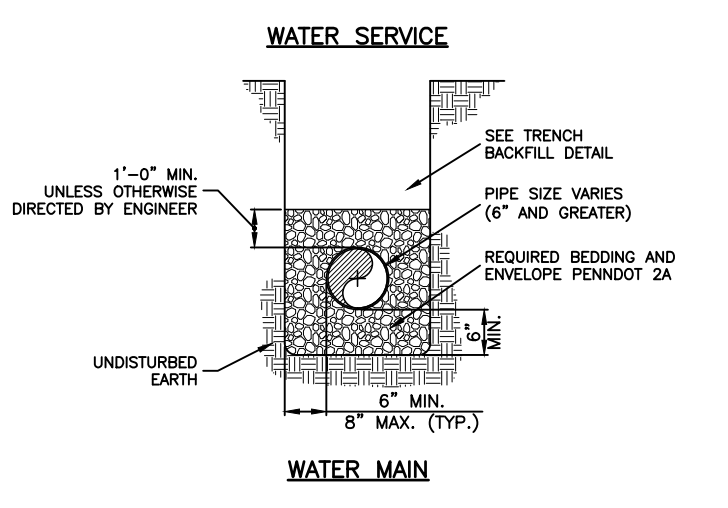
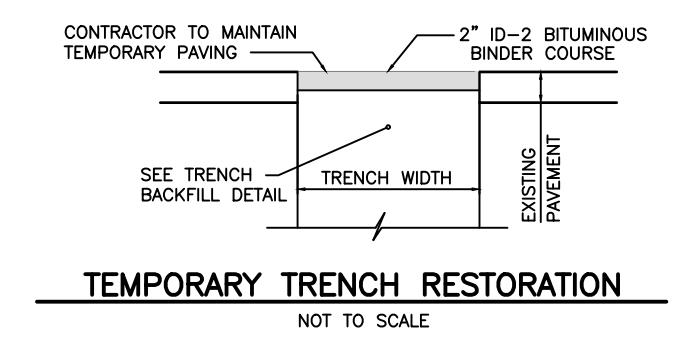
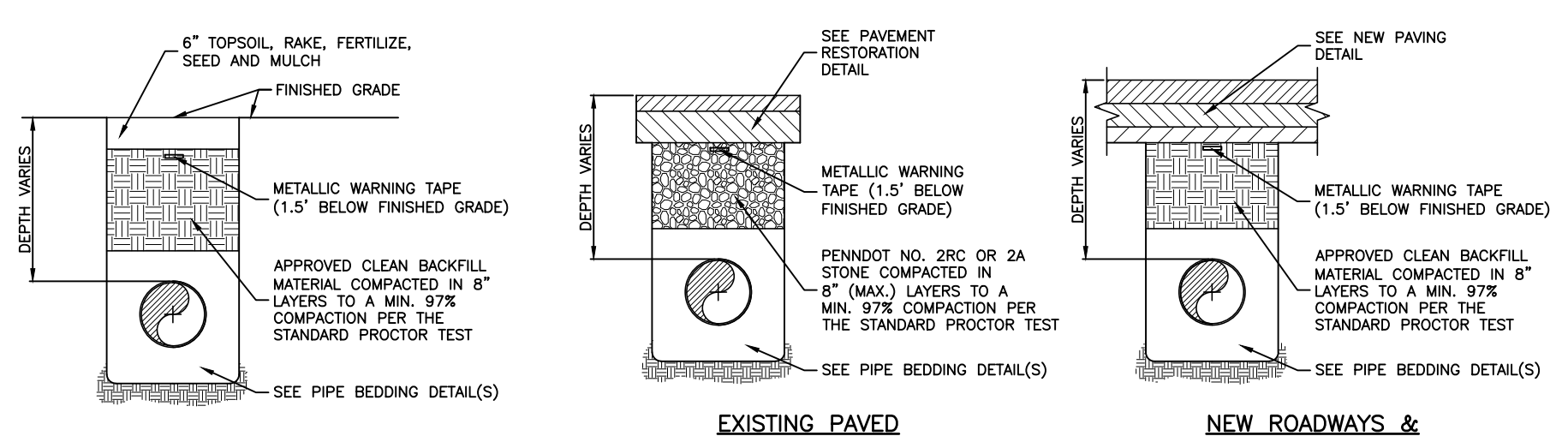
BT WORCESTER, LLC
 CITY VIEW - APN #67-00-01606-001
 2974 GERMANTOWN PIKE, WORCESTER TOWNSHIP,
 MONTGOMERY COUNTY, COMMONWEALTH OF PENNSYLVANIA

CONSTRUCTION DETAILS



DESIGNED BY CGG/JPK/ROP	DRAWING DET-2
CHECKED BY DS	SHEET
DRAWN BY PG/SR/ROP	21
DATE 1/27/22	OF 34
SCALE AS NOTED	
PROJ. NO. BET00056	

ATTENTION: ALL CONTRACTORS LOCATIONS OF ALL EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM UTILITY COMPANY RECORDS AND OF INDICATED DEPTHS OF THE BEST COMPLETENESS OR ACCURACY OF THE SIZE, DEPTH OR HORIZONTAL LOCATION OF UNDERGROUND UTILITIES OR STRUCTURES CANNOT BE GUARANTEED. CONTRACTORS SHALL BE RESPONSIBLE FOR PRELIMINARY LEGISLATIVE ACT NUMBER 287 OF 1974 AS AMENDED BY ACT 131 OF 2008. CONTRACTORS MUST VERIFY THE LOCATION OF ALL UTILITIES AND UNDERGROUND UTILITIES AND FACILITIES PRIOR TO START OF WORK. 20213502293

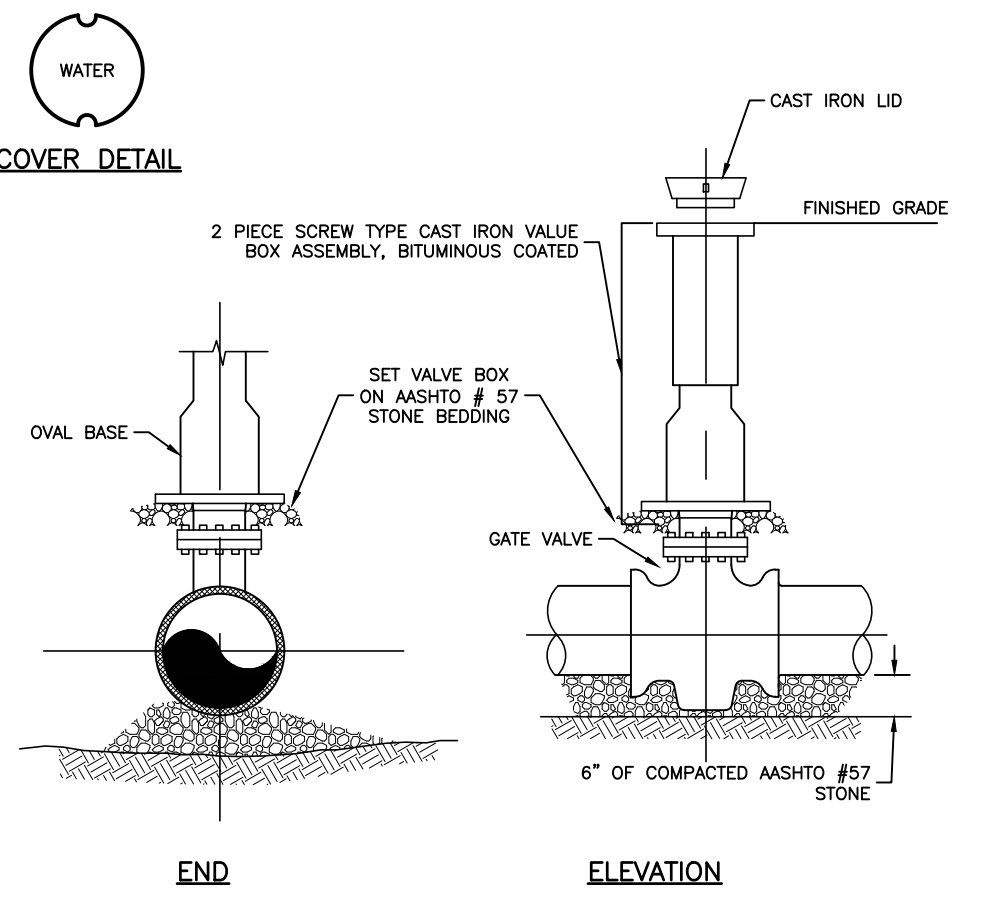


- NOTES:**
- TRENCH COMPACTION TO BE TESTED, AT THE DEVELOPER'S EXPENSE, IN ACCORDANCE WITH PENNDOT PUB 408, LATEST REVISION, AS REQUIRED BY THE MUNICIPALITY/AUTHORITY HAVING JURISDICTION.
 - CLEAN FILL MUST BE APPROVED BY THE MUNICIPALITY/AUTHORITY HAVING JURISDICTION PRIOR TO PLACEMENT IN THE TRENCH.
 - AREAS AROUND MANHOLES, INLETS, AND OTHER APPURTENANCES SHALL BE HAND COMPACTED AS DIRECTED BY THE MUNICIPALITY/AUTHORITY HAVING JURISDICTION.
 - NO SLAG MATERIAL PERMITTED.
 - IF WATER IS ENCOUNTERED IN THE EXCAVATION TRENCH, AASHTO #57 AGGREGATE MUST BE USED.
 - ALL MATERIALS AND CONSTRUCTION METHODS SHALL COMPLY WITH PENNDOT SPECIFICATIONS, PUBLICATION 408 AND 67 PA CODE SECTION 459.
 - UNDER NO CIRCUMSTANCES SHALL WATER BE ALLOWED TO COLLECT IN EXCAVATED TRENCHES. ANY WATER IN THE TRENCHES SHALL BE REMOVED THROUGH A PUMPED WATER FILTER BAG.

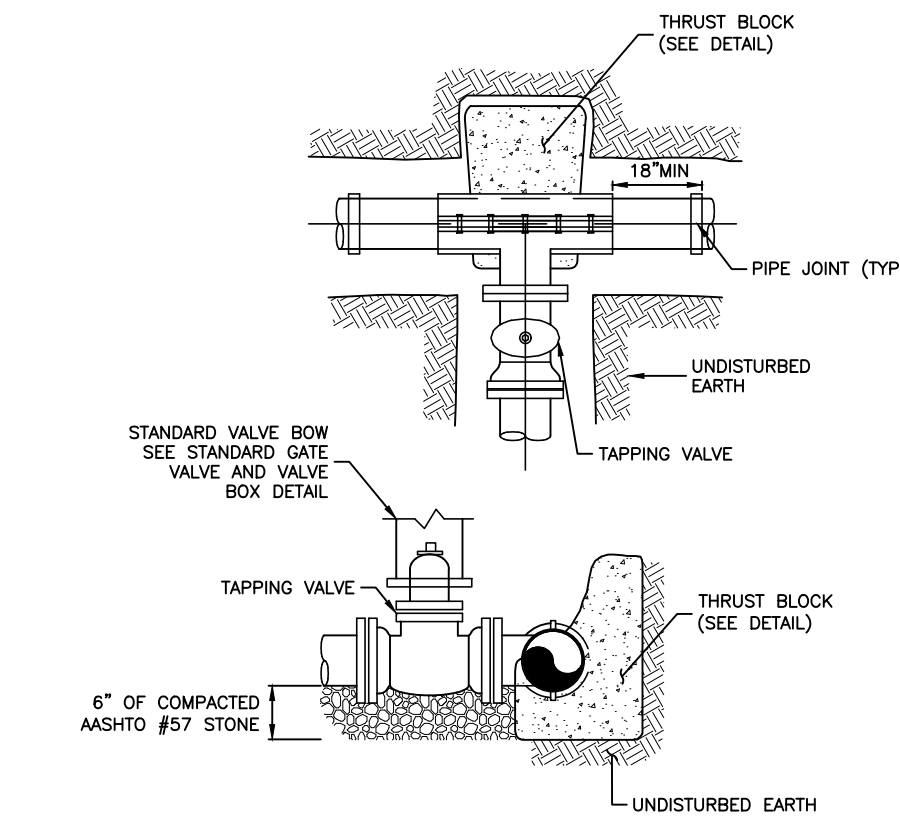
BACKFILL (TRENCH)
NOT TO SCALE

- NOTES:**
- MAXIMUM HEAD LOSS 5 PSI BETWEEN MAIN AND HYDRANT OUTLET FOR 750 GPM FLOW.
 - HYDRANT TO BE PLACED WITH STREAMER CONNECTION FACING STREET @ 1'-4" BEHIND FACE OF CURB OR E.O.P. (TYP.)
 - NECA-LID REQUIRED AT VALVE (ON HYDRANT SIDE ONLY IF HYDRANT TEE IS UTILIZED) AND AT HYDRANT.
 - ALL PROPOSED PLUMBING TO BE INSTALLED IN STRICT ACCORDANCE WITH SPECIFICATIONS OF AUTHORITY HAVING JURISDICTION.
 - MINIMUM OF 4'-0" OF COVER OVER ALL PIPES.
 - HYDRANT TO HAVE 5 1/2" SEAT OPENING.

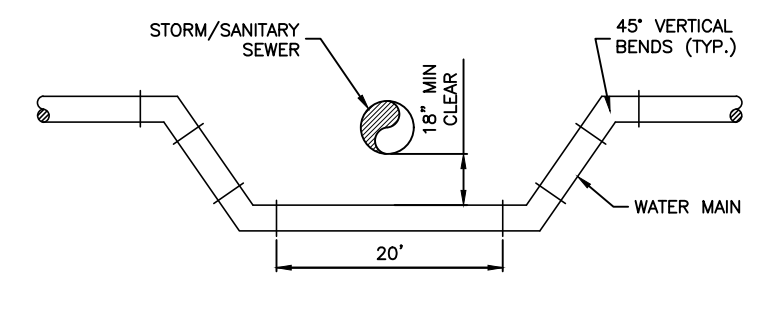
FIRE HYDRANT
NOT TO SCALE



STANDARD GATE VALVE AND VALVE BOX
NOT TO SCALE



TAPPING SLEEVE AND VALVE
NOT TO SCALE

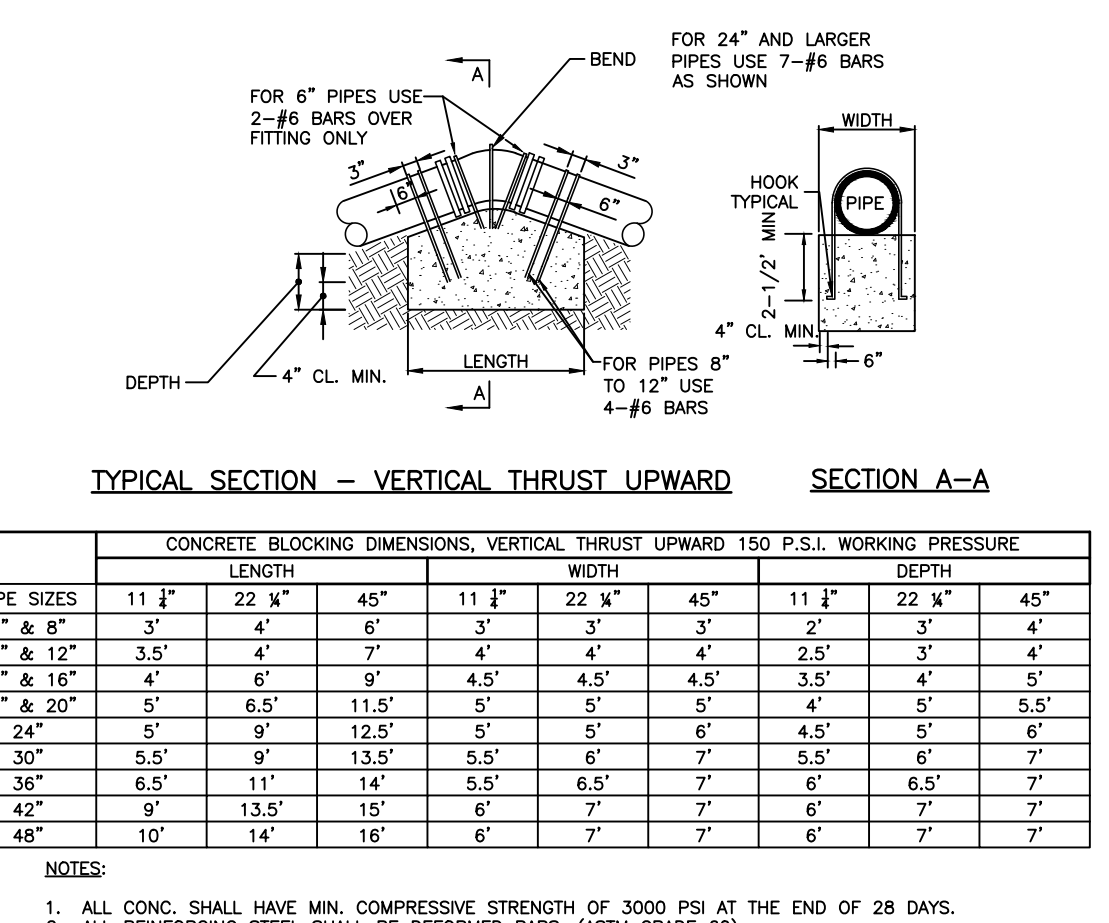


- NOTES:**
- ALL PIPE AND FITTINGS SHALL BE RESTRAINED PER AUTHORITY SPECIFICATIONS AND BY DIRECTION OF THE ENGINEER.
 - THE USE OF CONCRETE THRUST BLOCK SHALL BE PER THE DIRECTION OF THE AUTHORITY AND ENGINEER.

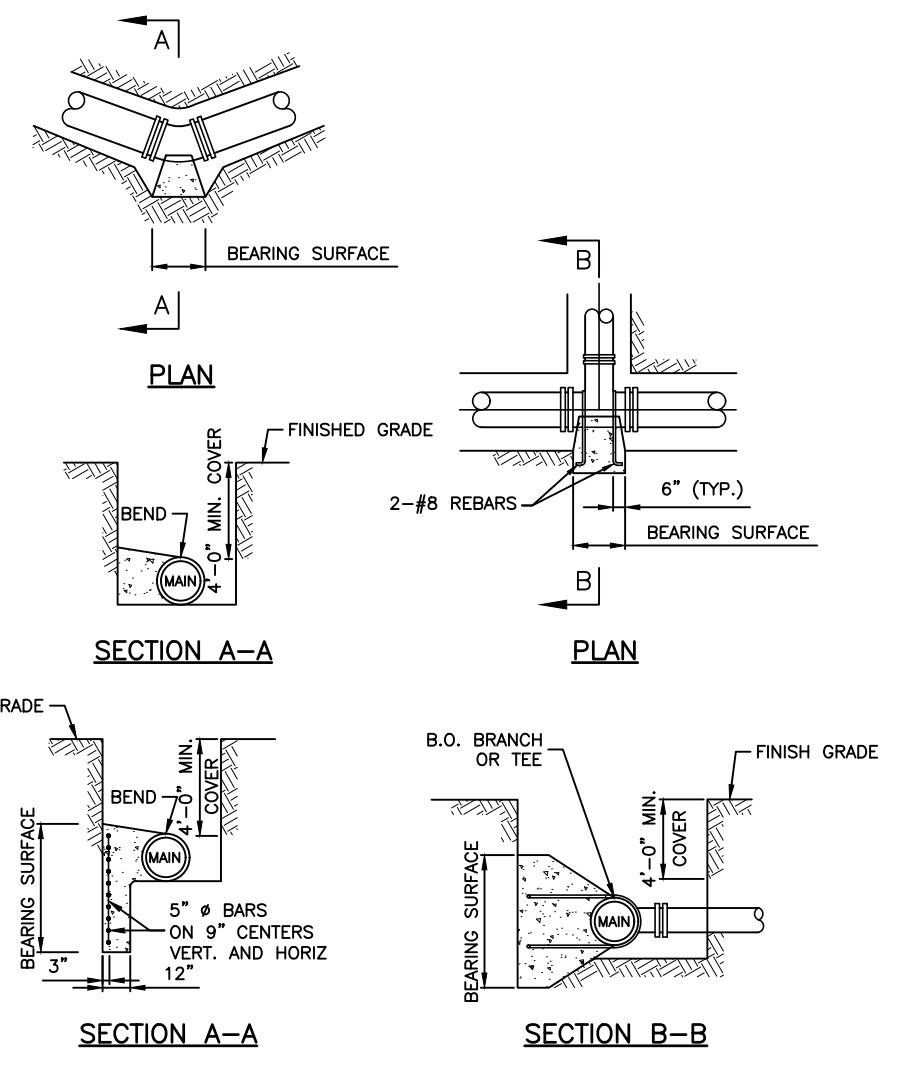
STORM SEWER - SANITARY SEWER WATER CROSSING
NOT TO SCALE

PIPE SIZE	6" & 8"				10" & 12"				16" 18" 20"				24"			
	DEGREE OF BEND OR DEFLECTION															
TYPE OF BEARING MATERIAL AND ALLOWABLE LOADS	22.5'	45'	90'	D.E.	22.5'	45'	90'	D.E.	22.5'	45'	90'	D.E.	22.5'	45'	90'	D.E.
SAND 0.75 TON/SQ.FT.	3.4	6.0	11.0	6.4	6.7	12.8	23.4	14.2	14.8	28.8	52.9	34.4	26.1	48.3	89.7	64.0
SOFT CLAY 1 TON/SQ.FT.	2.6	4.6	8.2	4.8	5.0	9.6	17.9	10.7	11.2	21.7	39.7	28.2	19.6	36.3	67.3	48.0
SAND AND GRAVEL 2 TON/SQ.FT.	1.3	2.3	4.1	2.4	2.5	4.8	8.8	5.3	5.6	10.8	20.0	14.1	9.8	13.1	33.6	24.0
CLAY 4 TON/SQ.FT.	1.0	1.2	2.1	1.3	1.3	2.4	4.4	2.7	2.8	5.4	10.0	7.2	4.9	9.1	16.8	12.0
SOFT ROCK 5 TON/SQ.FT.	1.0	1.0	1.6	1.0	1.0	1.9	3.5	2.2	1.6	4.4	8.0	5.7	3.9	7.3	13.5	9.6
ROCK 15 TON/SQ.FT.	-	-	1.0	0.4	-	1.0	1.2	0.8	1.0	1.4	2.6	1.9	1.3	2.4	4.5	3.2
PIPE SIZE	36"															
TYPE OF BEARING MATERIAL AND ALLOWABLE LOADS	22.5'	45'	90'	D.E.	22.5'	45'	90'	D.E.	22.5'	45'	90'	D.E.	22.5'	45'	90'	D.E.
SAND 0.75 TON/SQ.FT.	40.3	76.5	139.0	99.1	55.5	107.5	197.5	140.0	74.3	144.7	266.5	188.7	83.2	182.3	336.2	238.0
SOFT CLAY 1 TON/SQ.FT.	30.2	57.4	104.3	74.3	41.6	80.6	148.0	105.0	55.7	108.5	200.0	141.6	70.0	136.7	252.1	178.0
SAND AND GRAVEL 2 TON/SQ.FT.	15.1	28.7	52.1	37.2	20.8	40.3	74.0	52.5	27.9	54.3	100.0	70.8	35.0	68.3	126.1	89.2
CLAY 4 TON/SQ.FT.	7.6	14.6	26	18.6	10.4	20.2	37.0	26.3	14.0	27.0	50.0	35.3	17.5	34.2	63.0	44.6
SOFT ROCK 5 TON/SQ.FT.	6.0	11.5	20.9	14.9	8.3	16.1	29.6	21.0	11.2	21.7	40.0	28.3	14.0	27.3	50.4	35.7
ROCK 15 TON/SQ.FT.	2.0	3.8	7.0	5.0	1.4	2.8	5.4	7.0	3.7	7.2	13.3	9.4	4.7	9.1	16.8	12.0

WATER-THRUST BLOCKING TABLE
NOT TO SCALE



THRUST BLOCKING TABLE-VERTICAL-UPWARD
NOT TO SCALE

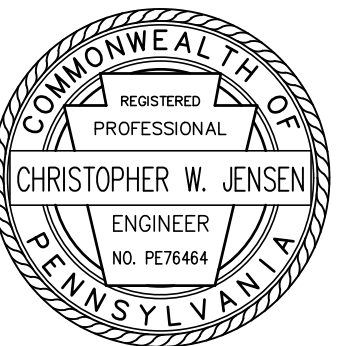


WATER-HORIZONTAL THRUST BLOCKING
NOT TO SCALE

- NOTES:**
- ALL CONC. SHALL HAVE MIN. COMPRESSIVE STRENGTH OF 3000 PSI AT THE END OF 28 DAYS.
 - ALL REINFORCING STEEL SHALL BE DEFORMED BARS (ASTM GRADE 60).
 - ALL FITTINGS AND JOINTS SHALL BE COVERED WITH POLYETHYLENE FILM BEFORE PLACING CONC.
 - PAIN ALL EXPOSED STEEL WITH TWO COATS OF BITUMASTIC PAINT OR EPOXY COATING.
 - FOR THE REQUIRED BEARING SURFACE SEE STANDARD THRUST BLOCKING DETAIL.
 - BEARING SURFACE MUST BE UNDISTURBED EARTH.

PROJECT INFORMATION: BT WORCESTER, LLC
 FILE PATH: G:\Projects\BET\00056\Plans
 FILE NAME: BT00056_SHT20-30-DETAILS.dwg
 PLOT DATE: 06/03/2024 11:53:00 AM
 PLOT TIME: 06 May 2024, 1:53PM
 LAST SAVE BY: J.Kelley
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CHRISTOPHER W. JENSEN, P.E.
LICENSED PROFESSIONAL ENGINEER



4/3/2023
LICENSED PROFESSIONAL ENGINEER
STATE OF PA LICENSE NO. PE076464

BT WORCESTER, LLC
CITY VIEW - APN #67-00-01606-001
2974 GERMANTOWN PIKE, WORCESTER TOWNSHIP,
MONTGOMERY COUNTY, COMMONWEALTH OF PENNSYLVANIA

WATER DETAILS



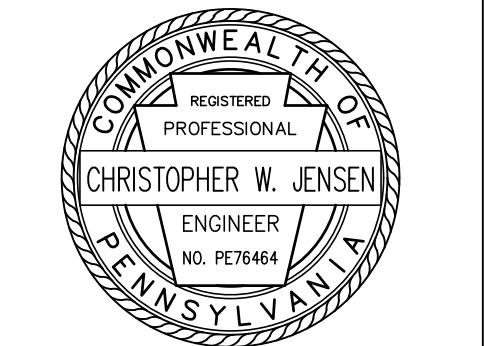
1700 MARKET STREET, SUITE 3110
PHILADELPHIA, PA 19103
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DESIGNED BY CGG/JPK/ROP	DRAWING DET-3
CHECKED BY DS	SHEET
DRAWN BY PG/SR/ROP	22
DATE 1/27/22	OF 34
SCALE AS NOTED	
PROJ. NO. BET00056	

NO.	DATE	REVISIONS	BY	CHKD
1.	10/04/2023	PER CIS REVIEW LETTER DATED 03/11/2022	DS	DS
2.	4/3/2023	REVISED ENTRANCE ON GERMANTOWN PIKE	ROP	DS
3.	11/17/2022	PER CIS REVIEW LETTER DATED 11/22/2022	PRG	DS
4.	3/7/2024	PER CIS REVIEW LETTER DATED 01/24/2024	DS	DS

CHRISTOPHER W. JENSEN, P.E.
LICENSED PROFESSIONAL ENGINEER



4/3/2023
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STATE OF PA LICENSE NO. PE076464

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MONTGOMERY COUNTY, COMMONWEALTH OF PENNSYLVANIA

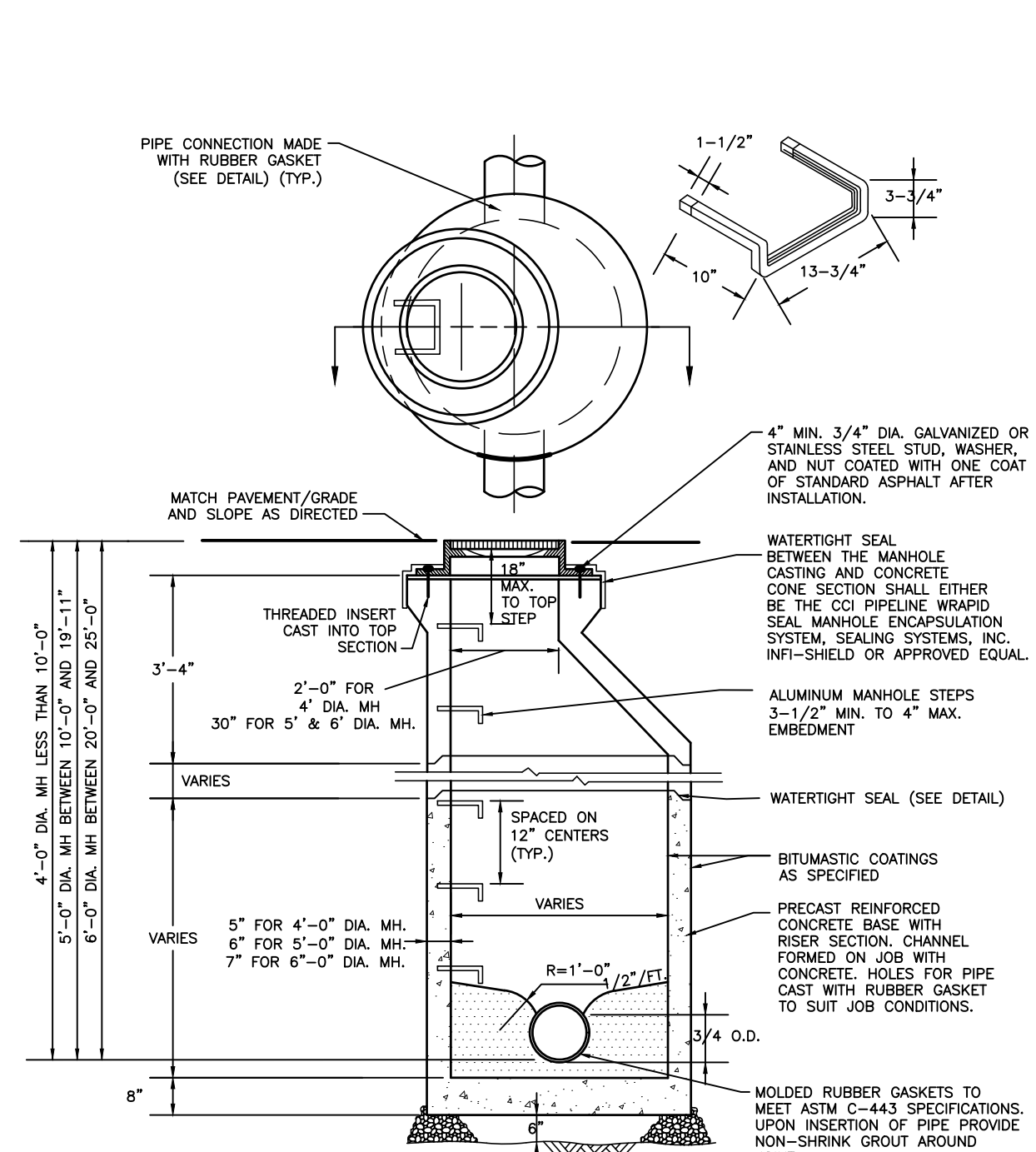
SANITARY SEWER DETAILS



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OHIO AND PENNSYLVANIA

DESIGNED BY CGG/JPK/ROP	DRAWING DET-4
CHECKED BY DS	SHEET
DRAWN BY PG/SR/ROP	23
DATE 1/27/22	SCALE AS NOTED
PROJ. NO. BET00056	OF 34



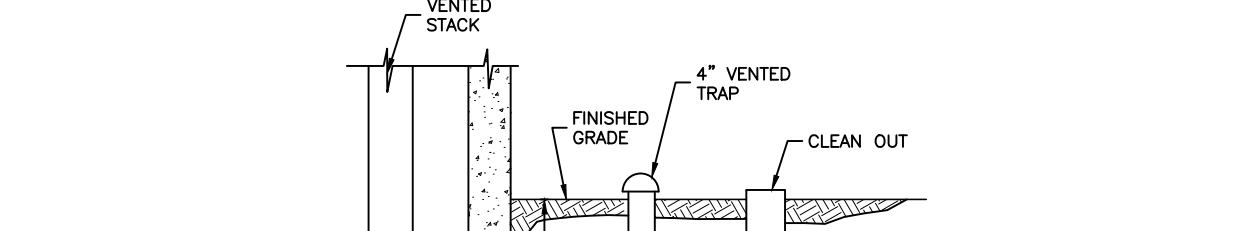
PRECAST CONCRETE SANITARY MANHOLE WITH PRECAST CONCRETE BASE
NOT TO SCALE

NOTES:
1. BOLTING OF MANHOLE FRAME AND COVER NOT REQUIRED FOR MANHOLES.
2. ALL STONE GRADATIONS ARE ASHTO CLASSIFICATION.
3. PIPES SHALL PROTRUDE 2" INSIDE MANHOLE WALL.
4. FOR NEW PIPE CONNECTIONS THAT ARE TO BE MADE IN THE FIELD, USE FERROD OR EQUAL CONCRETE MANHOLE ADAPTER. PRIOR TO PLACING GROUT AROUND PIPE CONNECTION.
5. WHERE CASTINGS ARE EXPOSED TO SURFACE RUNOFF, CHAINING GASKETS WILL BE REQUIRED.
6. G-RING & MOLDED RUBBER GASKETS PERTAIN STRICTLY TO SANITARY SEWERS.
7. FOR SEWER PIPE GREATER THAN 30" DIA., CONFORM TO ASTM SPEC. C-478 (CURRENT VERSION).
8. A HAT STRIP ENCLOSURE SYSTEM SHALL BE PLACED OVER THE EXTERNAL AREA OF THE BRICK COURSE. CCI WRAPD SEAL ONLY.

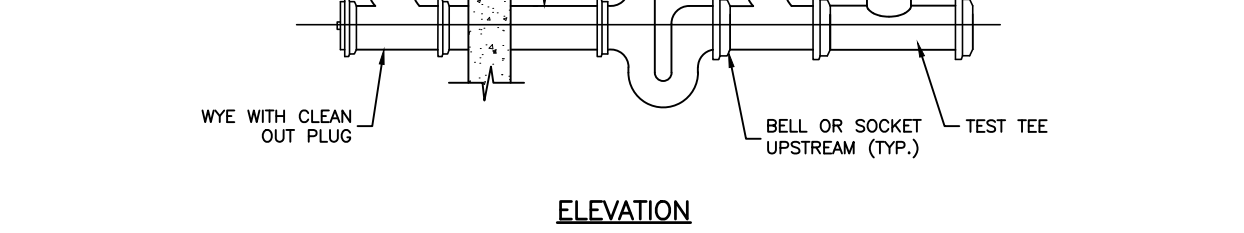


CLEAN-OUT PROTECTION SLEEVE
NOT TO SCALE

NOTES:
1. FRAME AND COVER SHALL BE NEEHAH FOUNDRY COMPANY MODEL R-1976 OR APPROVED EQUAL.

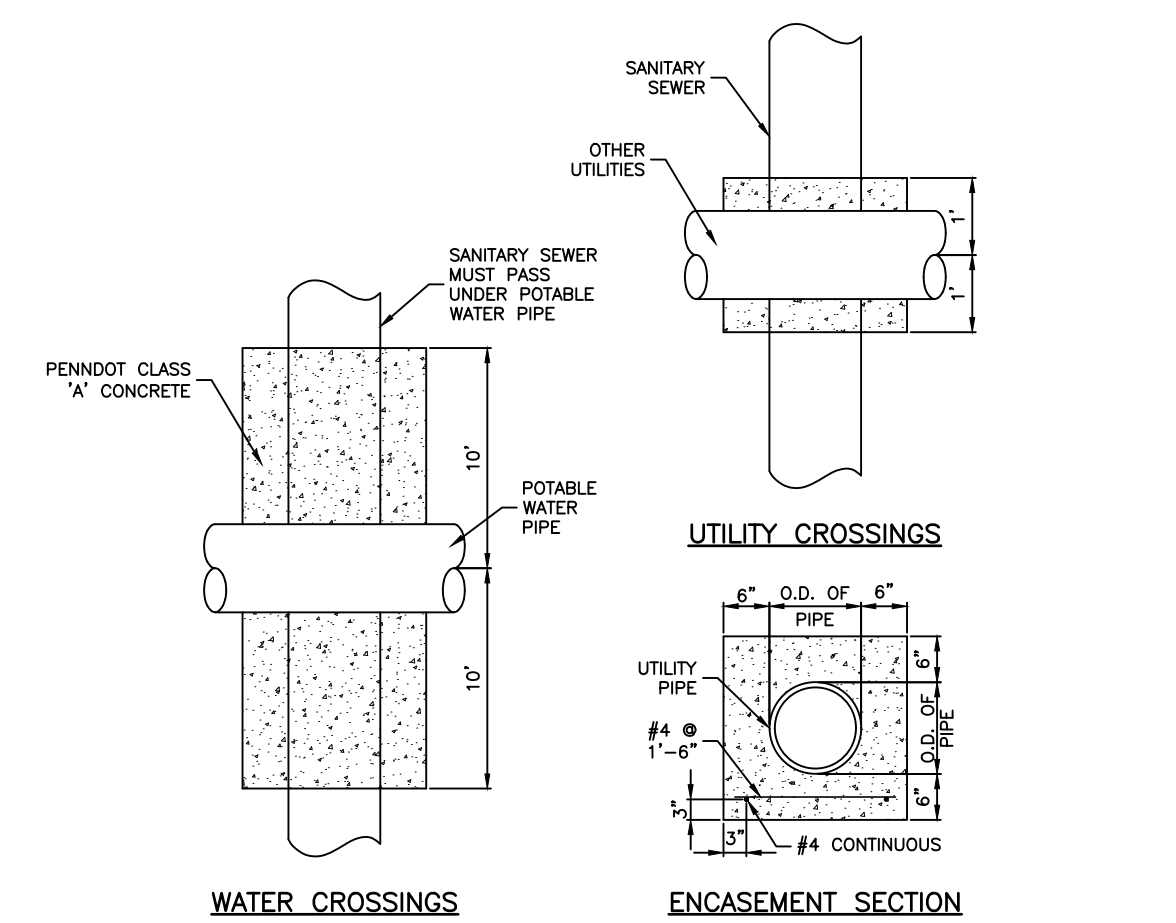


SEWER - BUILDING
NOT TO SCALE



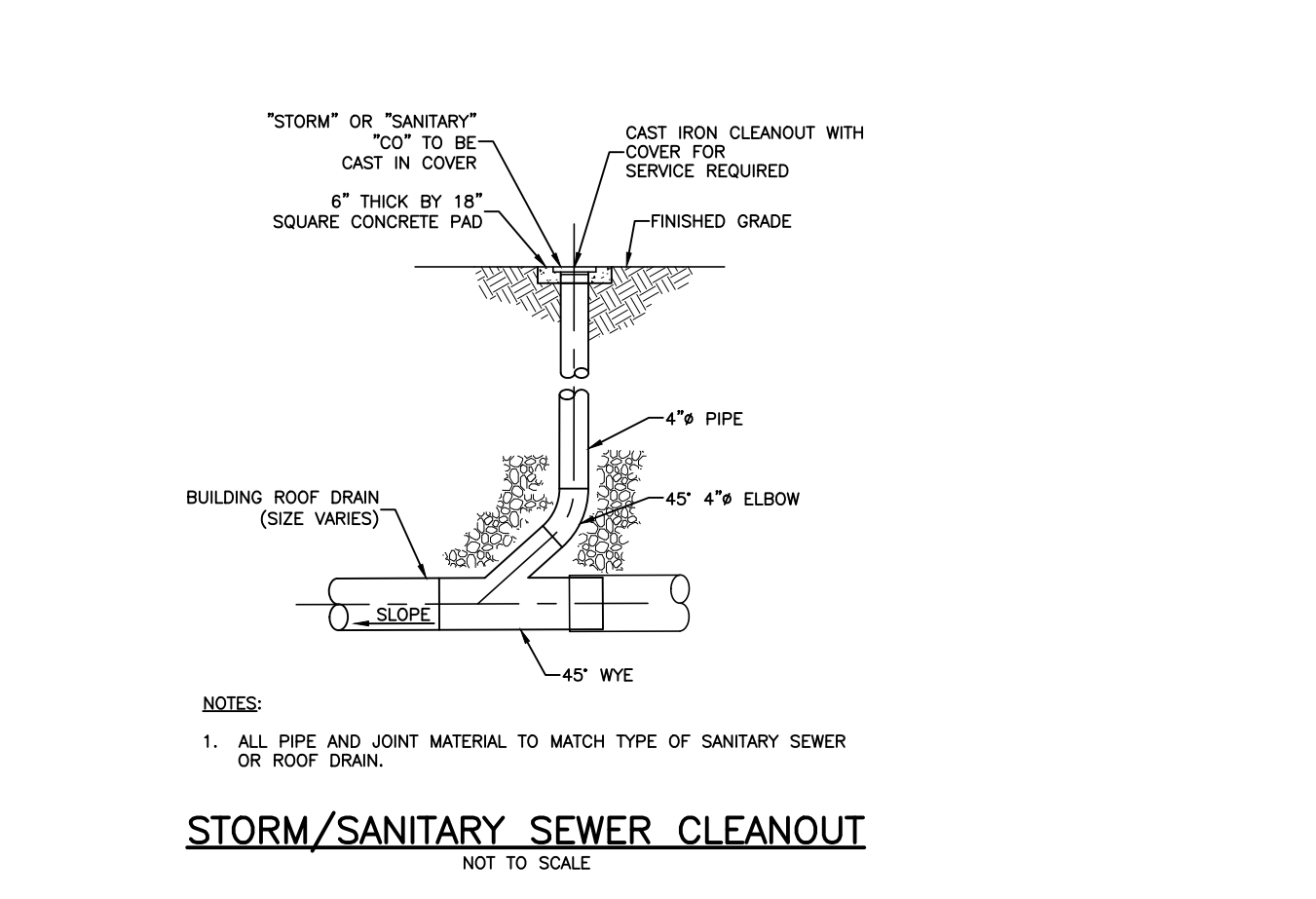
POLYPROPYLENE MANHOLE STEP
NOT TO SCALE

NOTES:
1. STEPS TO BE FABRICATED FROM COPOLYMER POLYPROPYLENE PLASTIC.
2. STEP SPACING SHALL BE 1 FOOT CENTER TO CENTER.



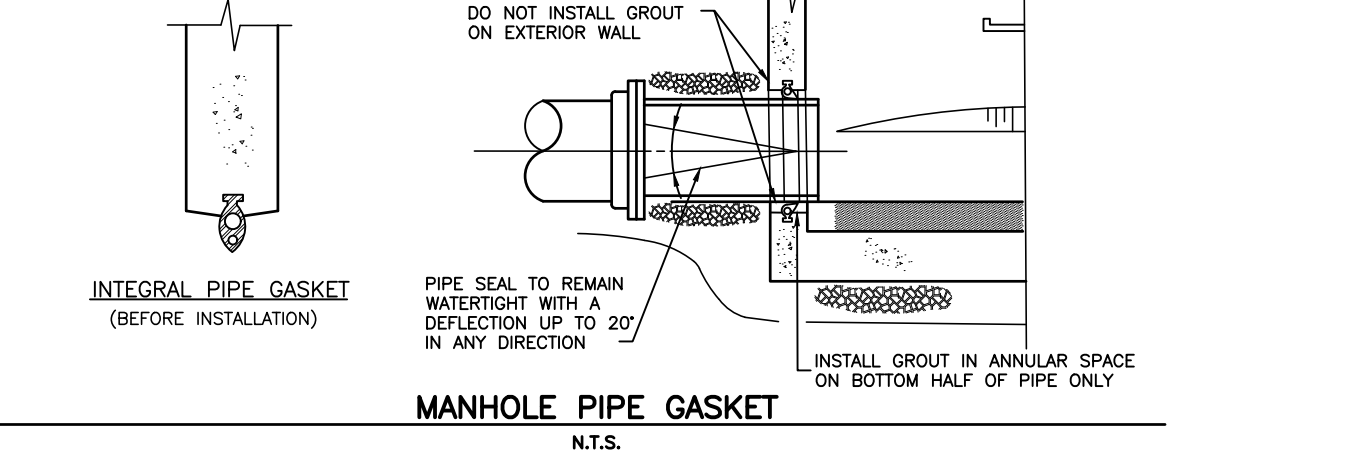
UTILITY CROSSING (CONCRETE ENCASEMENT)
NOT TO SCALE

NOTES:
1. PROVIDE REINFORCEMENT AT UTILITY CROSSINGS OR AS DIRECTED BY THE MUNICIPALITY/AUTHORITY HAVING JURISDICTION.



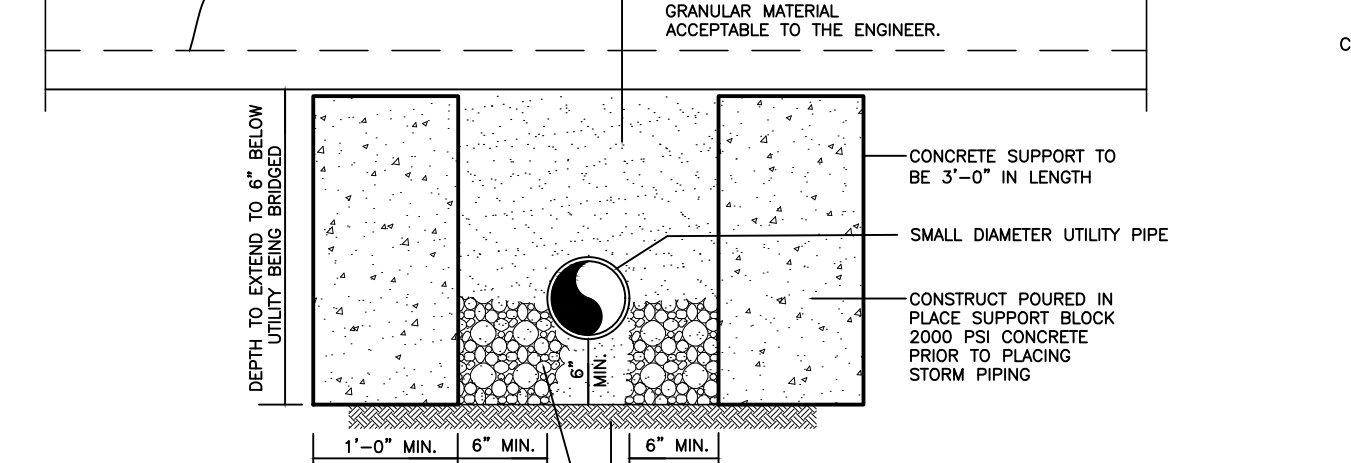
STORM/SANITARY SEWER CLEANOUT
NOT TO SCALE

NOTES:
1. ALL PIPE AND JOINT MATERIAL TO MATCH TYPE OF SANITARY SEWER OR ROOF DRAIN.



MANHOLE PIPE GASKET
NOT TO SCALE

NOTES:
1. USE CONCRETE SUPPORT BLOCKS IF SEPARATION BETWEEN BOTTOM OF THE STORM TRENCH AND THE TOP OF THE UTILITY BEING BRIDGED IS LESS THAN 12\"/>



CONCRETE SUPPORT BLOCK
NOT TO SCALE

NOTES:
1. MANHOLE FRAME AND COVER SHALL BE EAST JORDAN IRON WORKS PATTERN NO. 104521, WITH SELF-SEALING GASKET TYPE COVER OR APPROVED EQUAL.
2. ALL MATERIAL SHALL BE GRAY CAST IRON, ASTM 148-83 CL35.
3. CASTINGS SHALL BE DESIGNED FOR ASHTO HIGHWAY LOADING CLASS HS-20.
4. PROVIDE FOUR (4) ANCHOR BOLT HOLES IN FRAME TO ACCOMMODATE 3/4\"/>



SANITARY MANHOLE FRAME AND COVER
NOT TO SCALE

NOTES:
1. MANHOLE FRAME AND COVER SHALL BE EAST JORDAN IRON WORKS PATTERN NO. 104521, WITH SELF-SEALING GASKET TYPE COVER OR APPROVED EQUAL.
2. ALL MATERIAL SHALL BE GRAY CAST IRON, ASTM 148-83 CL35.
3. CASTINGS SHALL BE DESIGNED FOR ASHTO HIGHWAY LOADING CLASS HS-20.
4. PROVIDE FOUR (4) ANCHOR BOLT HOLES IN FRAME TO ACCOMMODATE 3/4\"/>

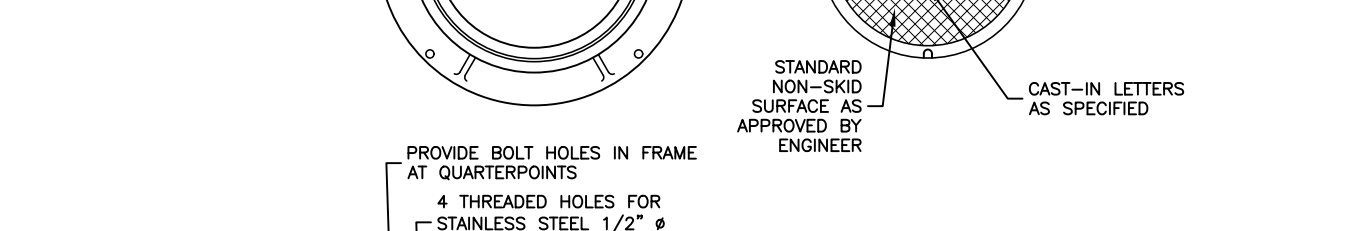
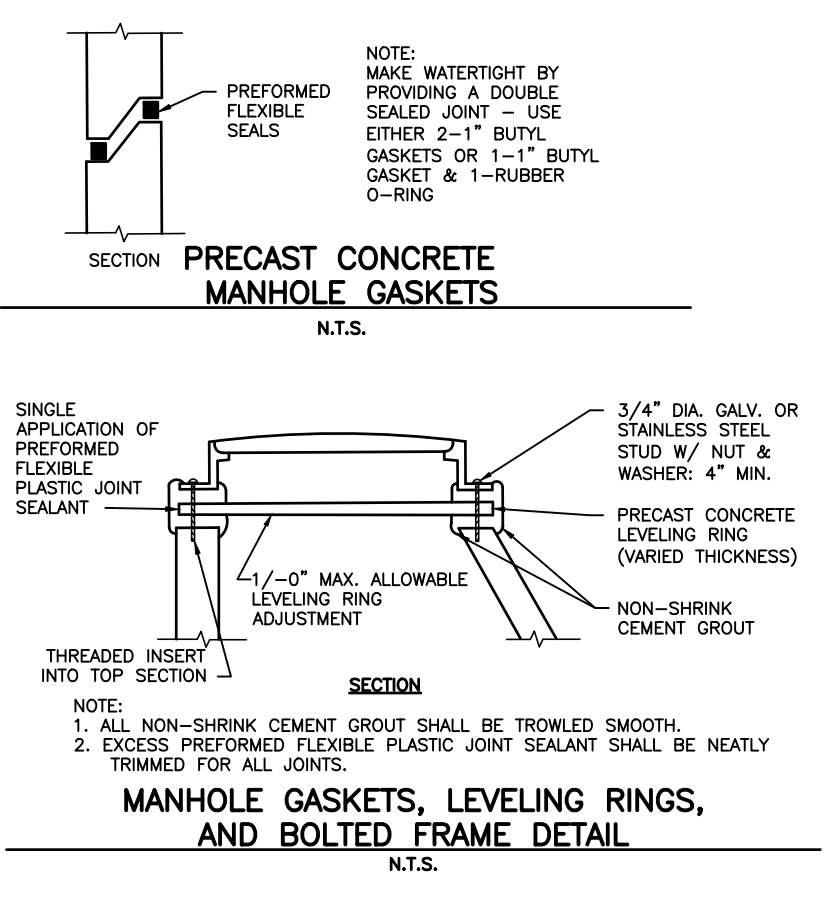


PLATE - NO DUMP
NOT TO SCALE

NOTE:
ALL INLETS MUST BE STENCILED "NO DUMPING - DRAINS TO WATERWAY"



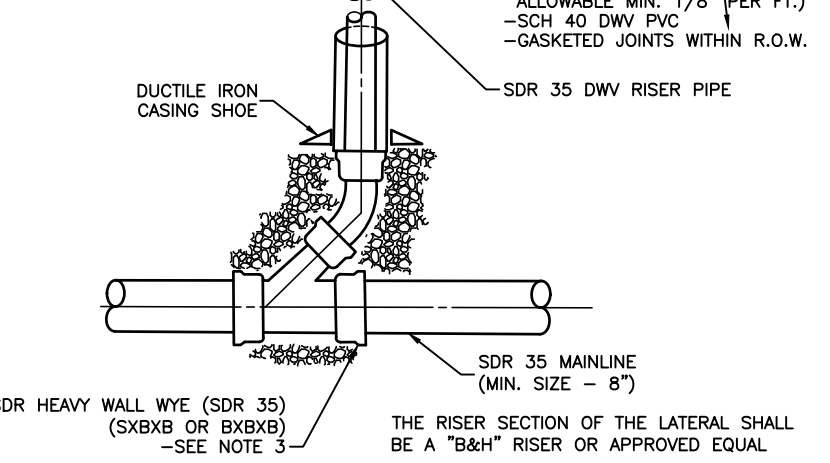
MANHOLE GASKETS, LEVELING RINGS, AND BOLTED FRAME DETAIL
NOT TO SCALE

NOTE:
1. ALL NON-SHRINK CEMENT GROUT SHALL BE TROWLED SMOOTH.
2. EXCESS PREFORMED FLEXIBLE JOINT SEALANT SHALL BE NEATLY TRIMMED FOR ALL JOINTS.



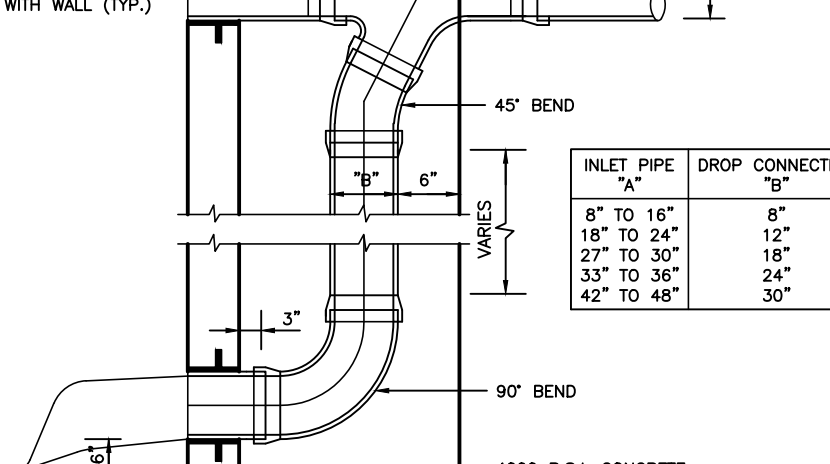
DEEP CUT LATERAL
NOT TO SCALE

NOTE:
DROP PIPE TO BE USED IN ALL CASES WHERE DIFFERENCE BETWEEN INLET AND LOWEST OUTLET INVERT IS 2.0 FEET OR GREATER



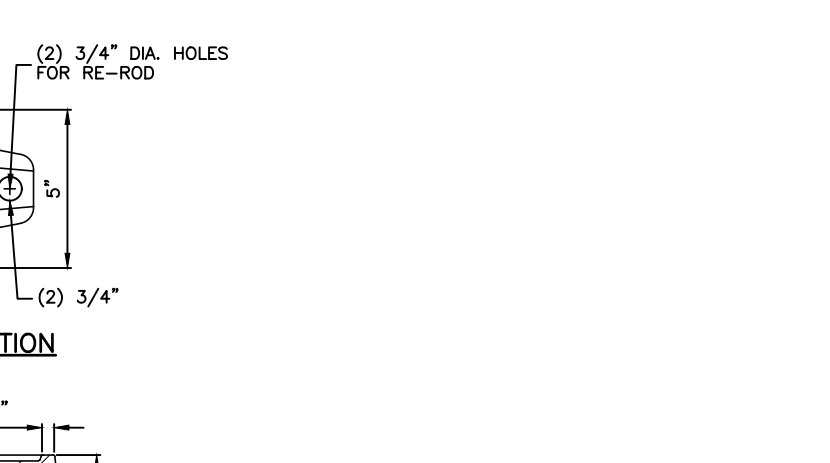
OUTSIDE DROP MANHOLE CONNECTION
NOT TO SCALE

NOTE:
DROP PIPE TO BE USED IN ALL CASES WHERE DIFFERENCE BETWEEN INLET AND LOWEST OUTLET INVERT IS 2.0 FEET OR GREATER



PIPE GASKET (MANHOLE)
NOT TO SCALE

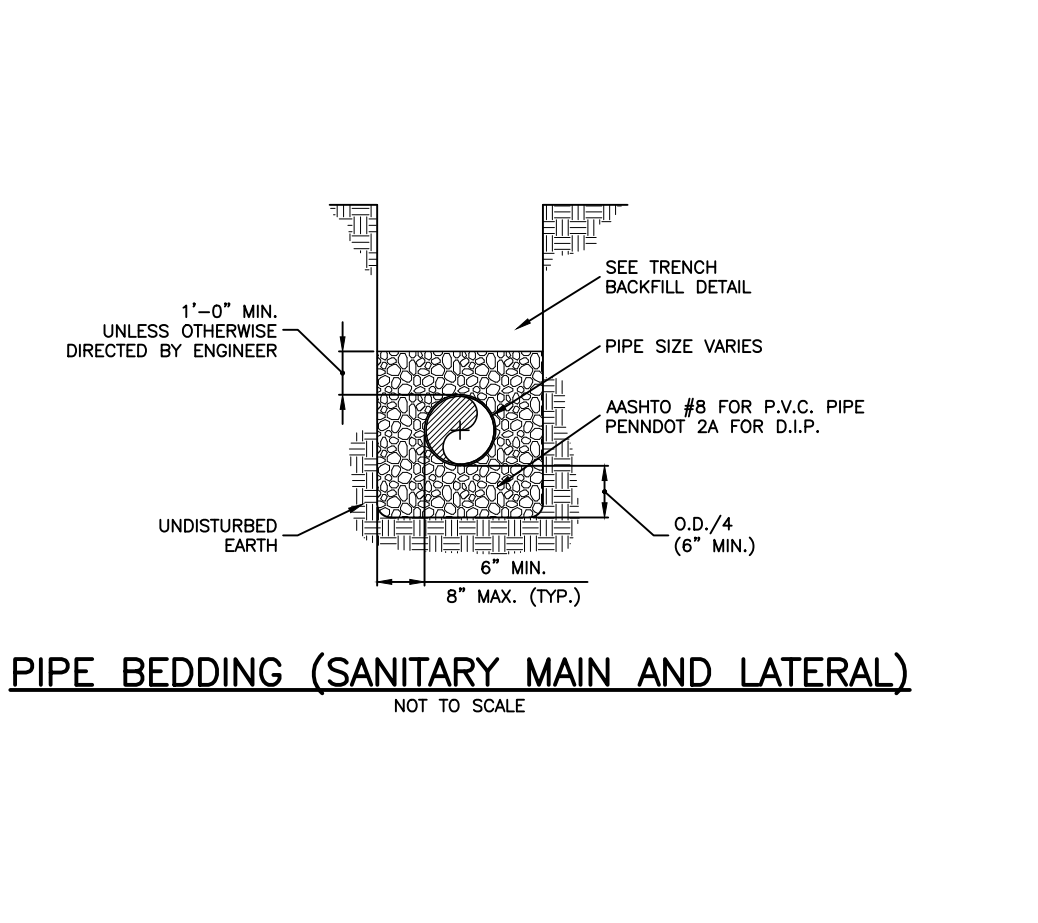
NOTE:
DO NOT INSTALL GROUT ON EXTERIOR WALL



PRECAST CONCRETE MANHOLE GASKETS
NOT TO SCALE

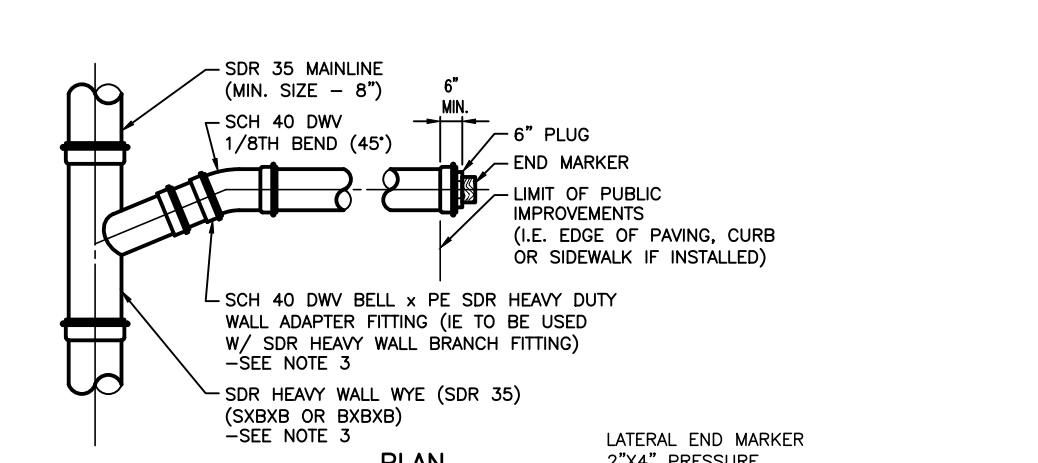
NOTE:
MAKE WATERTIGHT BY PROVIDING A DOUBLE SEALED JOINT - USE EITHER 2-1\"/>

NOTE:
MAKE WATERTIGHT BY PROVIDING A DOUBLE SEALED JOINT - USE EITHER 2-1\"/>



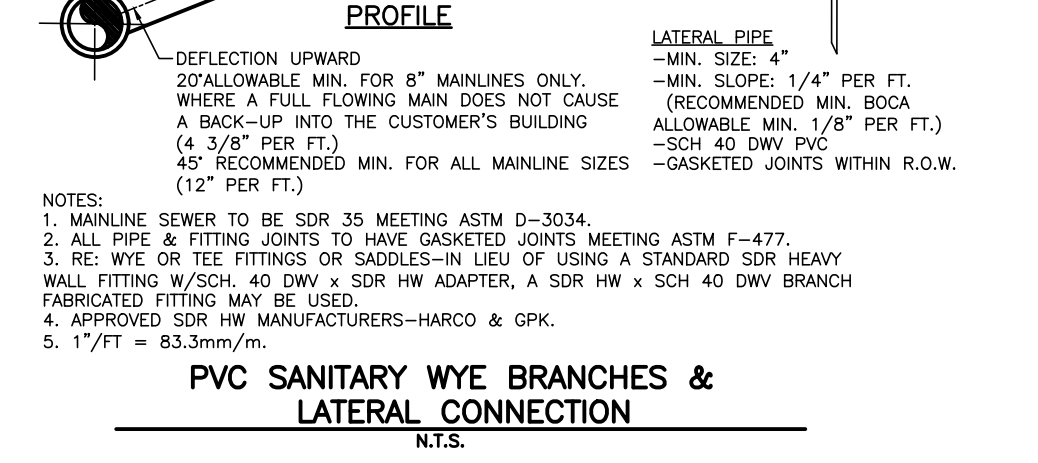
PIPE BEDDING (SANITARY MAIN AND LATERAL)
NOT TO SCALE

NOTE:
1. MANLINE SEWER TO BE SDR 35 MEETING ASTM D-3034.
2. ALL PIPE & FITTING JOINTS TO HAVE GASKETED JOINTS MEETING ASTM F-477.
3. RE: WYE OR TEE FITTINGS OR SADDLES-IN LINE USING A STANDARD SDR HEAVY WALL FITTING W/SCH. 40 DWV x SDR HW ADAPTER, A SDR HW x SCH. 40 DWV BRANCH FABRICATED FITTING MAY BE USED.
4. APPROVED SDR HW MANUFACTURERS-HARCO & GPK.
5. 1\"/>



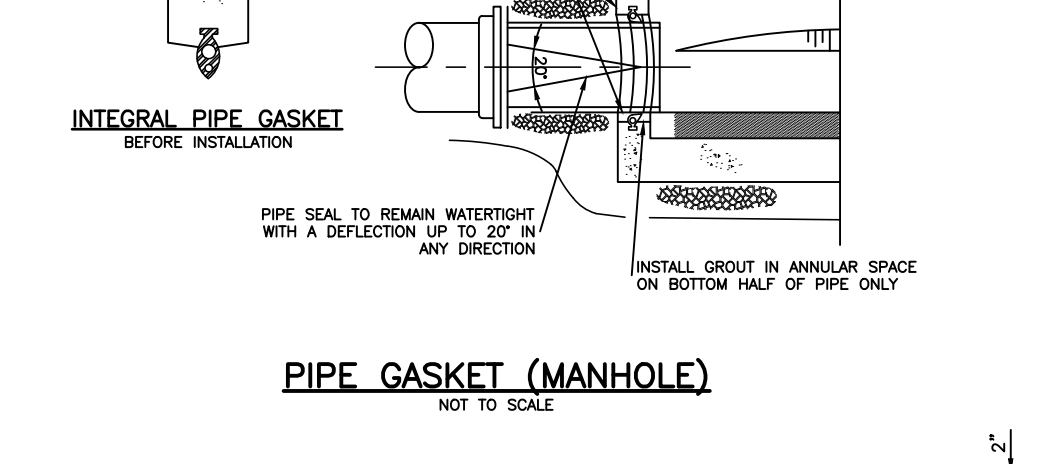
PVC SANITARY WYE BRANCHES & LATERAL CONNECTION
NOT TO SCALE

NOTE:
1. MANLINE SEWER TO BE SDR 35 MEETING ASTM D-3034.
2. ALL PIPE & FITTING JOINTS TO HAVE GASKETED JOINTS MEETING ASTM F-477.
3. RE: WYE OR TEE FITTINGS OR SADDLES-IN LINE USING A STANDARD SDR HEAVY WALL FITTING W/SCH. 40 DWV x SDR HW ADAPTER, A SDR HW x SCH. 40 DWV BRANCH FABRICATED FITTING MAY BE USED.
4. APPROVED SDR HW MANUFACTURERS-HARCO & GPK.
5. 1\"/>



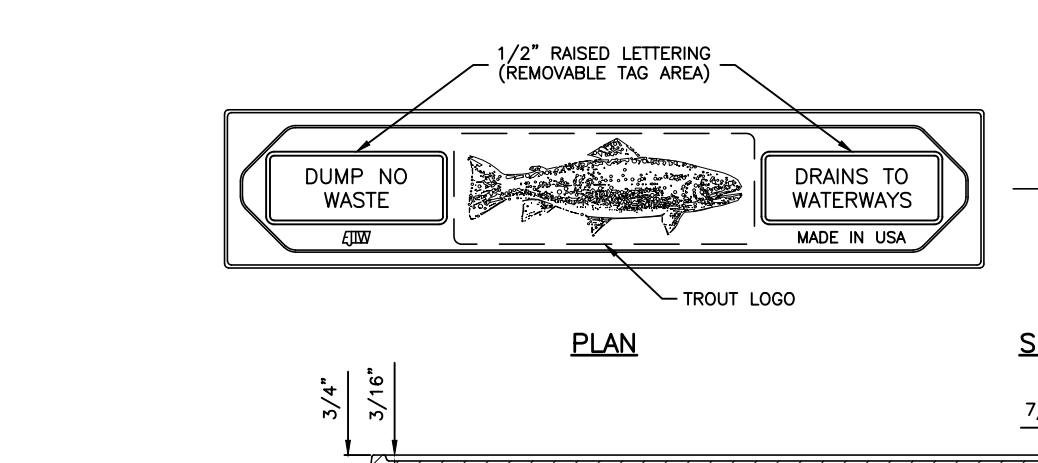
MANHOLE PIPE GASKET
NOT TO SCALE

NOTE:
DO NOT INSTALL GROUT ON EXTERIOR WALL



PRECAST CONCRETE MANHOLE GASKETS
NOT TO SCALE

NOTE:
MAKE WATERTIGHT BY PROVIDING A DOUBLE SEALED JOINT - USE EITHER 2-1\"/>



PRECAST CONCRETE MANHOLE GASKETS
NOT TO SCALE

NOTE:
MAKE WATERTIGHT BY PROVIDING A DOUBLE SEALED JOINT - USE EITHER 2-1\"/>

NOTE:
MAKE WATERTIGHT BY PROVIDING A DOUBLE SEALED JOINT - USE EITHER 2-1\"/>

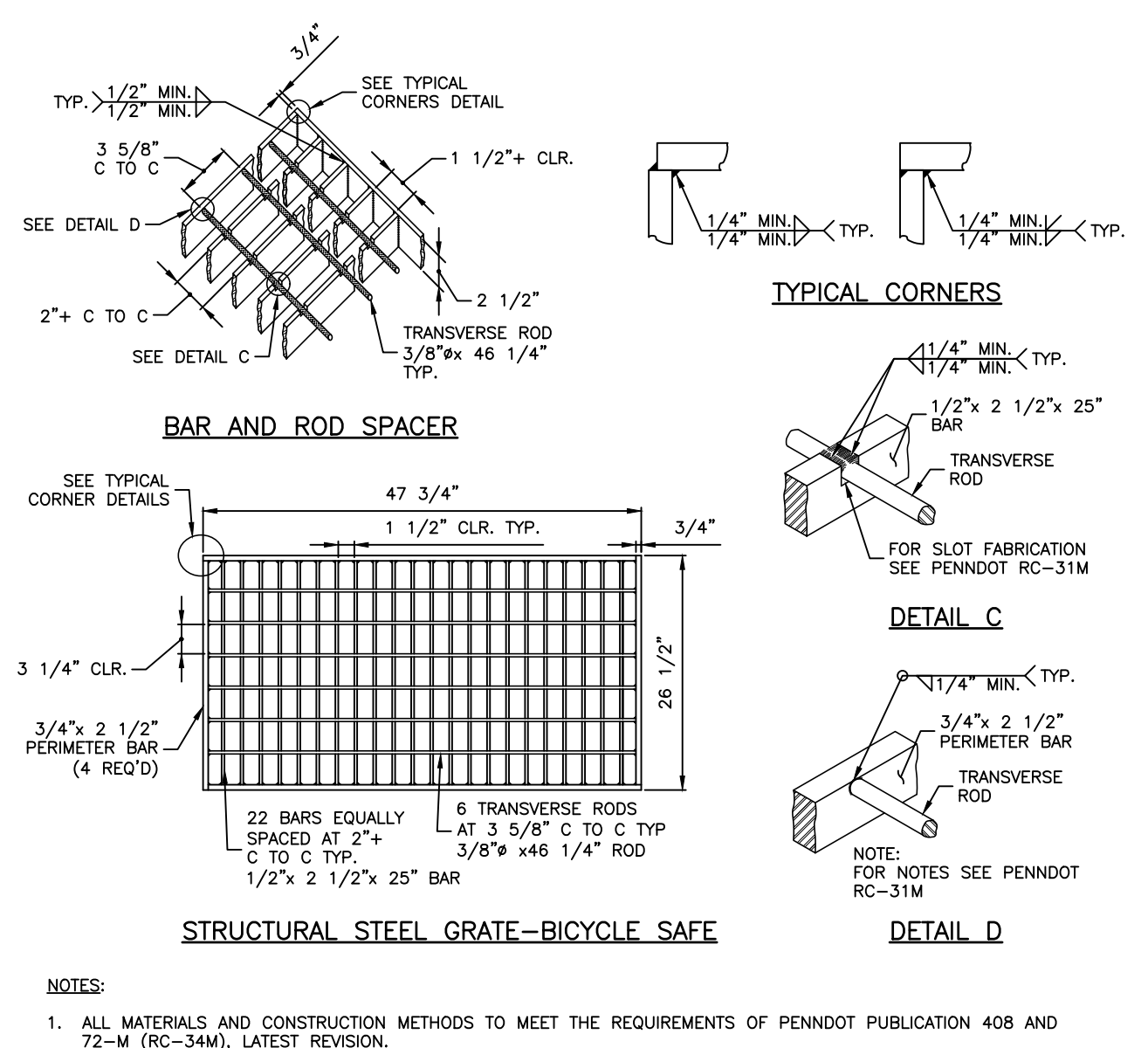
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FILE PATH: G:\Projects\BET\00056\Plans\MEET 20-30-DETAILS.dwg
FILE NAME: BET00056_SHT20-30-DETAILS.dwg
DRAWN BY: JPK/ROP
DATE: 06/11/2024
LAST SAVE BY: JPK/ROP

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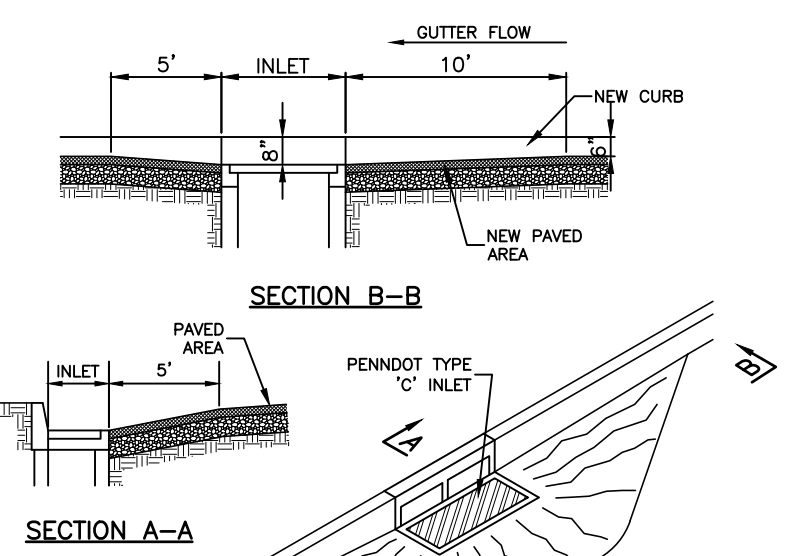
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 PLOT TIME: 06 May 2024, 1:59PM
 LAST SAVE BY: J.Kelley

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STRUCTURAL STEEL GRATE-BICYCLE SAFE

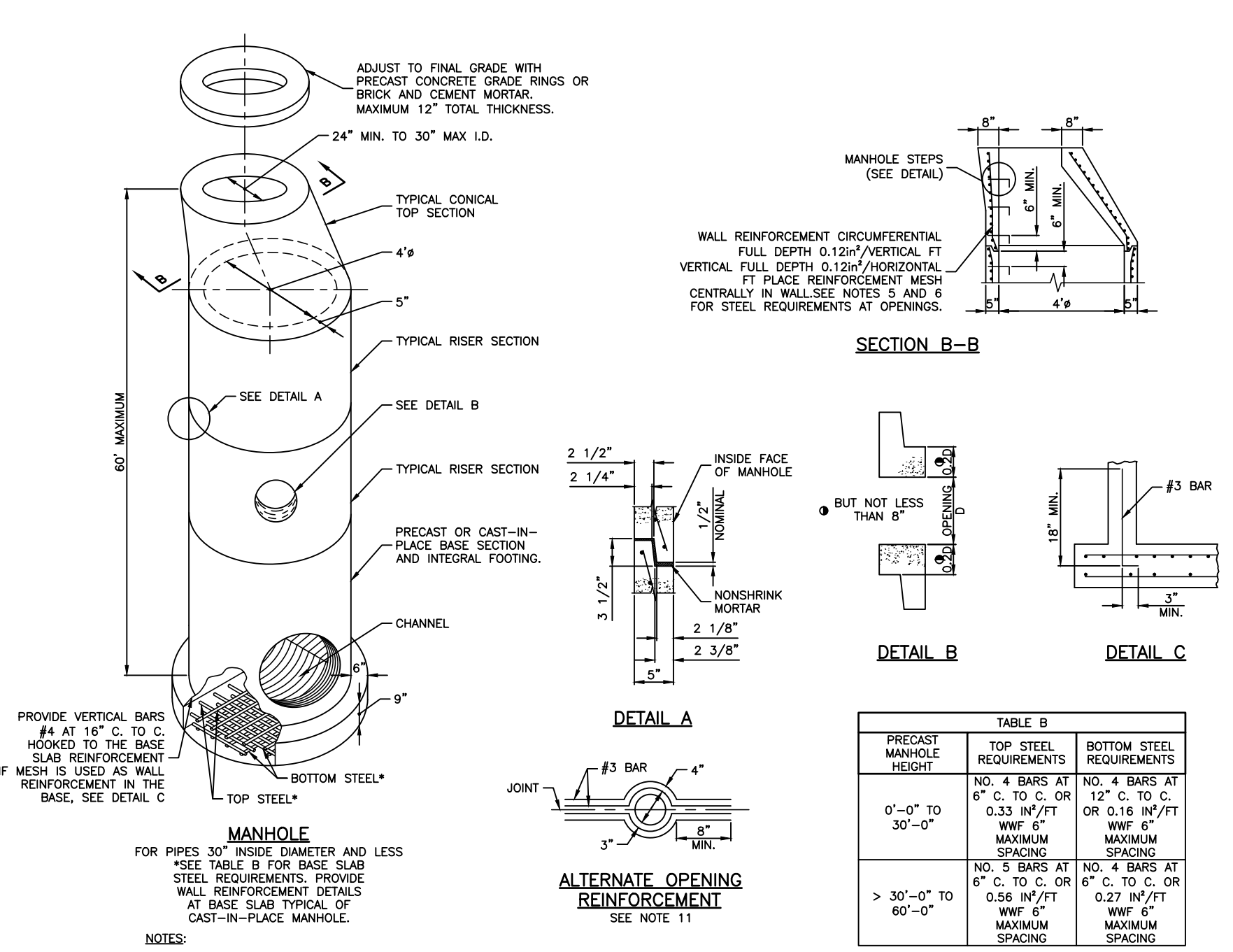
STRUCTURAL STEEL GRATE (BICYCLE SAFE)



INLET PAVING TAPER

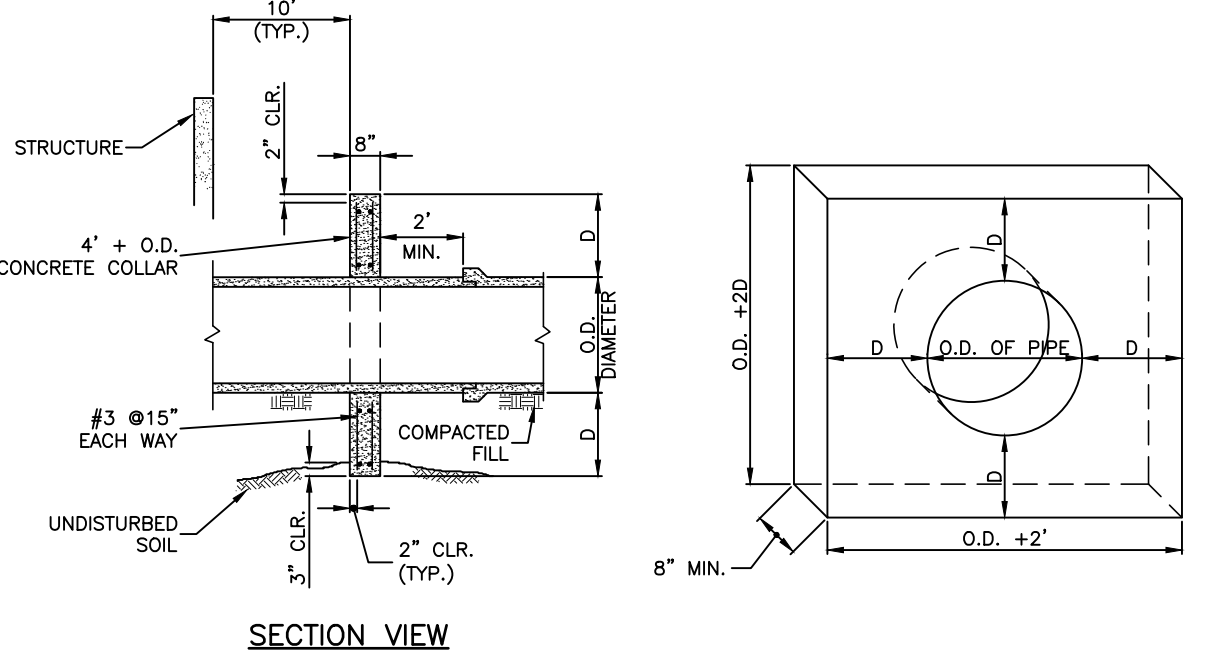
- NOTES:
1. THE NUMBER OF ROWS AND LENGTH OF REBAR REQUIRED DEPENDS ON OPENINGS.
 2. REBAR TO COVER THE ENTIRE SIZE OF THE OPENING.
 3. TYPICAL FOR ALL OUTLET OPENING SHAPES (CIRCULAR SHOWN GRAPHICALLY).
 4. ALL MATERIAL TO BE EPOXY COATED.
 5. CHILD SAFETY GRATES SHALL BE PROVIDED ON ALL ENDWALLS. (SEE DETAIL).

CHILD SAFETY GRATE



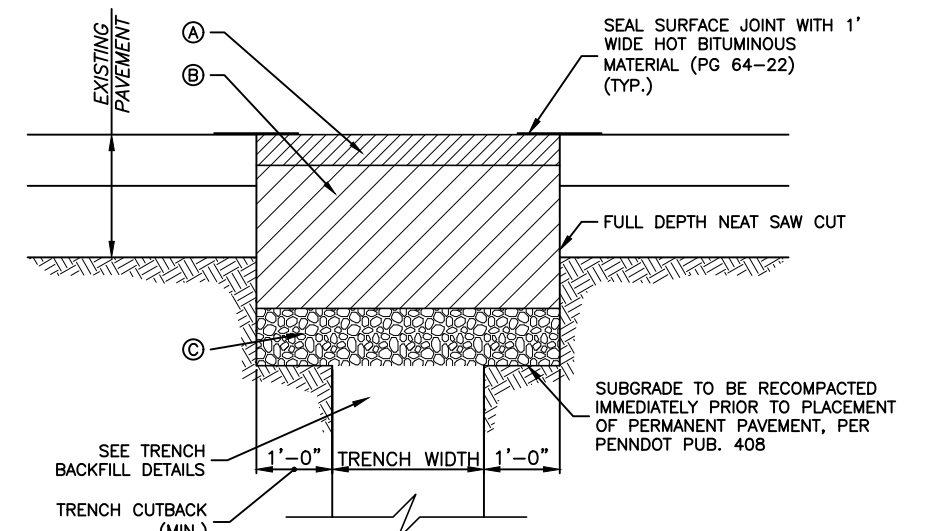
MANHOLE (PRECAST)

- NOTES:
1. PRECAST MANHOLES MEETING THE REQUIREMENTS OF PUBLICATION 408, SECTION 714, MAY BE SUBSTITUTED FOR THE STANDARD CAST-IN-PLACE MANHOLE. FOR DEVIATION OR MODIFICATION OF THE STANDARDS, SUBMIT SHOP DRAWINGS FOR APPROVAL.
 2. FOR RISERS OR BASE SECTIONS WITH OPENINGS, PROVIDE A MINIMUM HEIGHT OF SECTION 50 AS TO PROVIDE AN UNCLUT WALL EQUAL TO 20% OF THE OPENING, BUT NO LESS THAN 4\"/>



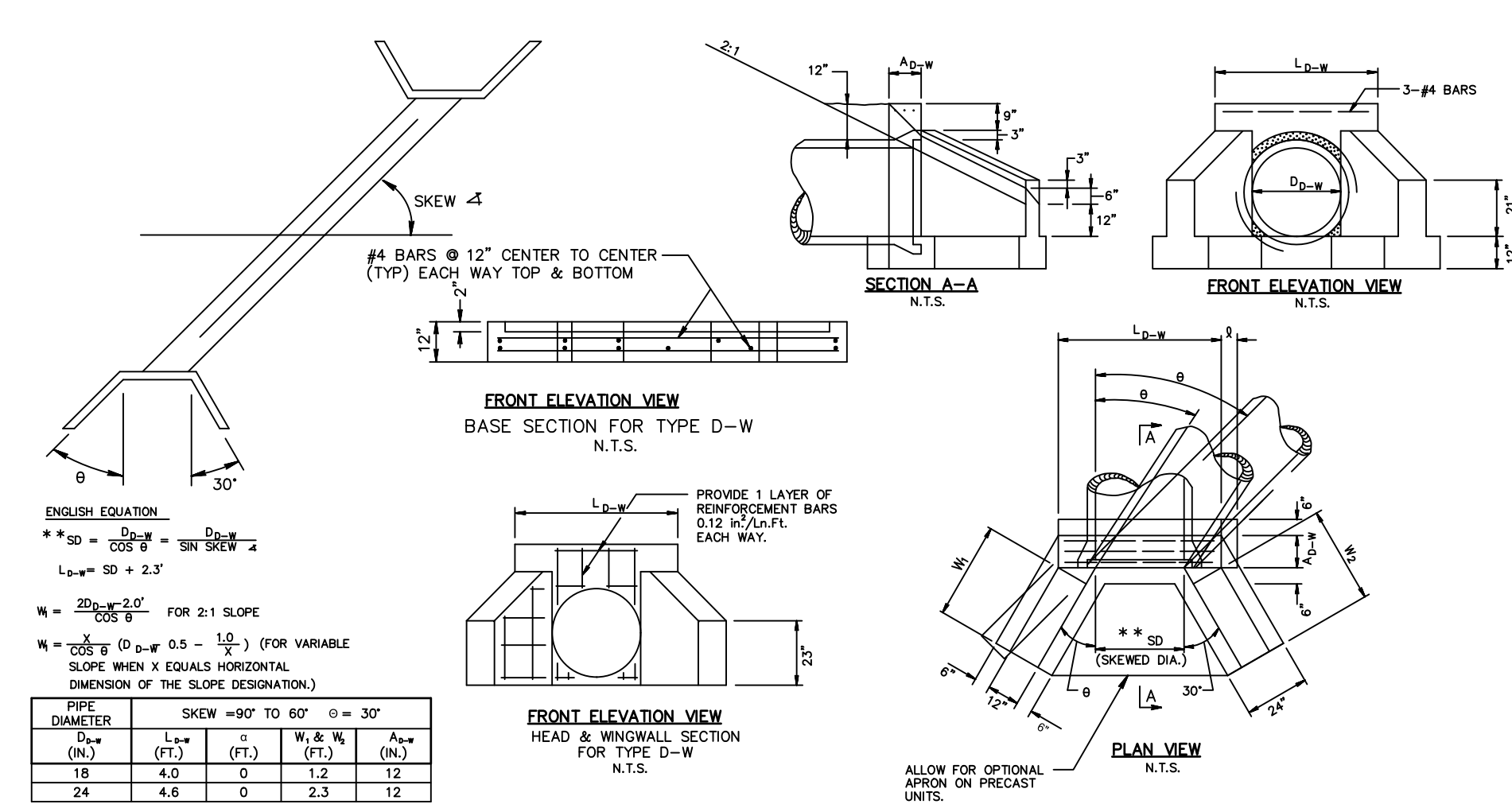
ANTI-SEEP COLLAR

- NOTES:
1. USE PENNDOT CLASS A CONCRETE.
 2. MAINTAIN A MINIMUM 6\"/>



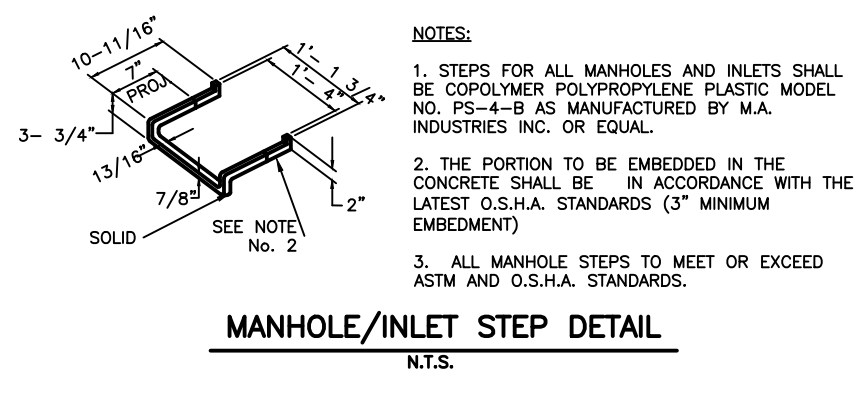
PAVEMENT RESTORATION (BITUMINOUS)

- NOTES:
1. EXPOSED VERTICAL AND HORIZONTAL SURFACES SHALL BE PREPARED AS STATED IN PENNDOT PUB. 408, SECT. 401.3(1).
 2. TACK COAT MATERIAL SHALL BE APPLIED TO THE ENTIRE SURFACE PRIOR TO APPLICATION OF THE WEARING SURFACE UNLESS WAIVED BY PENNDOT.



TYPE D-W ENDWALL

- NOTES:
1. ALL MATERIALS AND CONSTRUCTION METHODS TO MEET THE REQUIREMENTS OF PENNDOT PUBLICATION 408 AND 72-M (RC-31M), LATEST REVISION.
 2. CHILD SAFETY GRATES SHALL BE PROVIDED ON ALL ENDWALLS.



MANHOLE/INLET STEP DETAIL

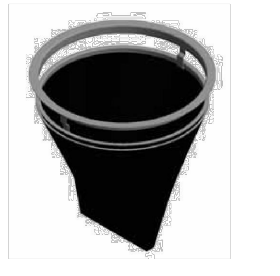
- NOTES:
1. STEPS FOR ALL MANHOLES AND INLETS SHALL BE COPOLYMER POLYPROPYLENE PLASTIC MODEL NO. PS-4-B AS MANUFACTURED BY M.A. INDUSTRIES INC. OR EQUAL.
 2. THE PORTION TO BE EMBEDDED IN THE CONCRETE SHALL BE IN ACCORDANCE WITH THE LATEST O.S.H.A. STANDARDS (3\"/>

88 FLEXSTORM

FLEXSTORM®
INLET FILTERS
 FLEXSTORM PURE (PERMANENT) FILTERS
 (OR APPROVED EQUAL)

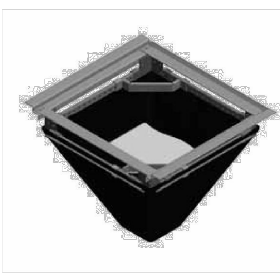
FILTERS FOR ROUND FRAMES/GRATES*

Sizing Guidelines (Opening diameter up to)	Storage Capacity (ft³ (m³))	FX-Large Sediment + Trash	FX+ Trash + Oils	PC-Oils, Fine Sediments & TSS	PC+ Excessive Oils, Fine Sediments & TSS
18" (450 mm)	1.6 (0.05)	62SHDRFX	62SHDRFXP	62SHDRPC	62SHDRPCP
24" (600 mm)	2.1 (0.06)	62MHDRFX	62MHDRFXP	62MHDRPC	62MHDRPCP
36" (900 mm)	3.8 (0.11)	62LHDRFX	62LHDRFXP	62LHDRPC	62LHDRPCP
42" (1050 mm)	4.2 (0.12)	62XLHDRFX	62XLHDRFXP	62XLHDRPC	62XLHDRPCP



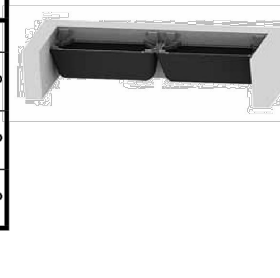
FILTERS FOR RECTANGULAR/SQUARE FRAMES/GRATES*

Sizing Guidelines (Up to)	Storage Capacity (ft³ (m³))	FX-Large Sediment + Trash	FX+ Trash + Oils	PC-Oils, Fine Sediments & TSS	PC+ Excessive Oils, Fine Sediments & TSS
18" x 18" (400 x 400 mm)	1.6 (0.05)	62SHDFX	62SHDFXP	62SHDFPC	62SHDFPCP
24" x 24" (600 x 600 mm)	2.1 (0.06)	62MHDFX	62MHDFXP	62MHDFPC	62MHDFPCP
36" x 24" (900 x 600 mm)	3.8 (0.11)	62LHDFX	62LHDFXP	62LHDFPC	62LHDFPCP
48" x 48" (1200 x 1200 mm)	6.6 (0.18)	62XLHDFX	62XLHDFXP	62XLHDFPC	62XLHDFPCP



FILTERS FOR OPEN TROUGH CURB INLETS

Sizing Guidelines	Storage Capacity (ft³ (m³))	FX-Large Sediment + Trash	FX+ Trash + Oils	PC-Oils, Fine Sediments & TSS	PC+ Excessive Oils, Fine Sediments & TSS
Up to 4' (1.2 m)	3.3 (0.09)	6HDWM1FX	6HDWM1FXP	6HDWM1PC	6HDWM1PCP
Between 4' & 8' (1.2 & 2.4 m)	6.6 (0.18)	62HDWM2FX	62HDWM2FXP	62HDWM2PC	62HDWM2PCP
Between 8' & 12' (2.4 & 3.7 m)	9.9 (0.28)	62HDWM3FX	62HDWM3FXP	62HDWM3PC	62HDWM3PCP
Between 12' & 18' (3.6 m & 4.9 m)	13.2 (0.37)	62HDWM4FX	62HDWM4FXP	62HDWM4PC	62HDWM4PCP



*Custom sizes and bag depths available. Typical depth is 22" (550 mm).



NO.	DATE	REVISIONS	BY	CHKD
1	10/04/2022	PER CIS REVIEW LETTER DATED 03/11/2022	PRG	DS
2	4/3/2023	REVISED ENTRANCE ON GERMANTOWN PIKE	PRG	DS
3	11/17/2023	PER CIS REVIEW LETTER DATED 11/22/2023	PRG	DS
4	3/7/2024	PER CIS REVIEW LETTER DATED 01/24/2024	PRG	DS

CHRISTOPHER W. JENSEN, P.E.
 LICENSED PROFESSIONAL ENGINEER



4/3/2023
 LICENSED PROFESSIONAL ENGINEER
 STATE OF PA LICENSE NO. PD076464

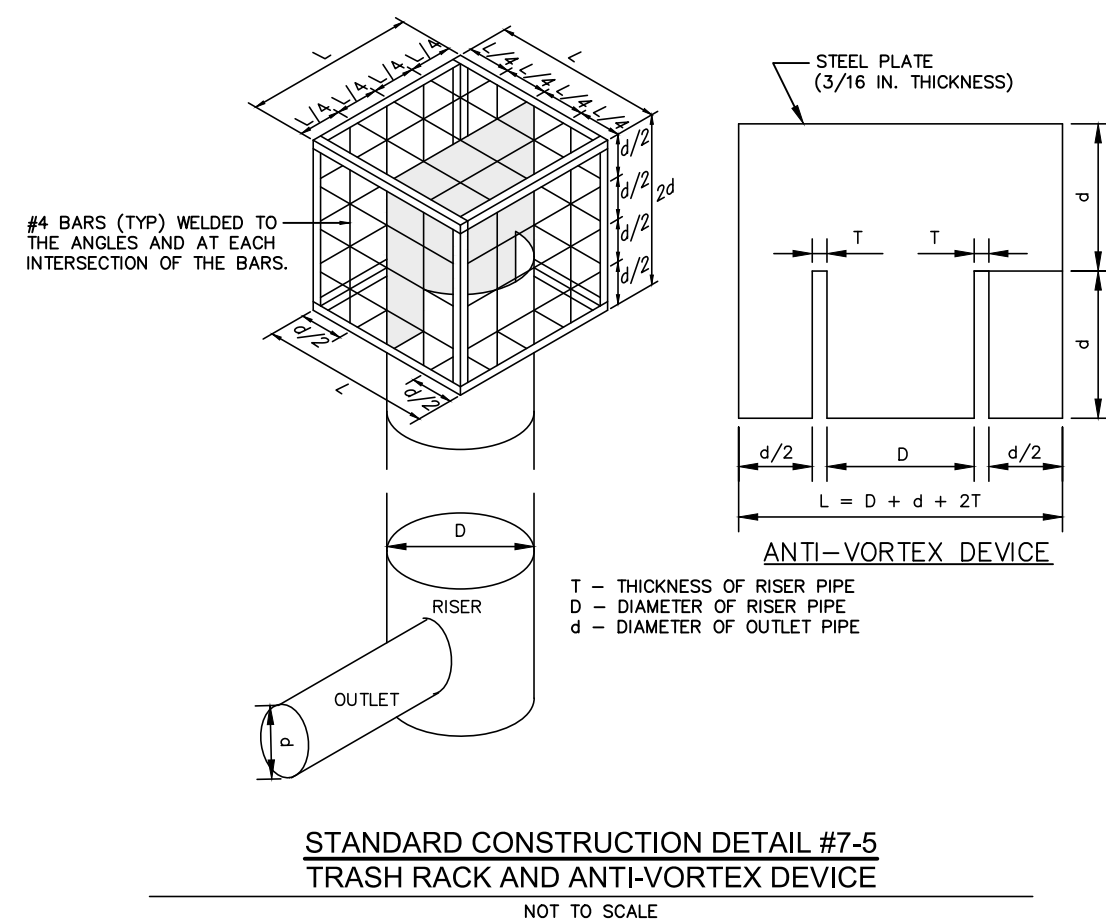
BT WORCESTER, LLC
 CITY VIEW - APN #67-00-01606-001
 2974 GERMANTOWN PIKE, WORCESTER TOWNSHIP,
 MONTGOMERY COUNTY, COMMONWEALTH OF PENNSYLVANIA
 STORM SEWER DETAILS



1700 MARKET STREET, SUITE 3110
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 TEL 215-282-7850
 FAX 215-627-3459
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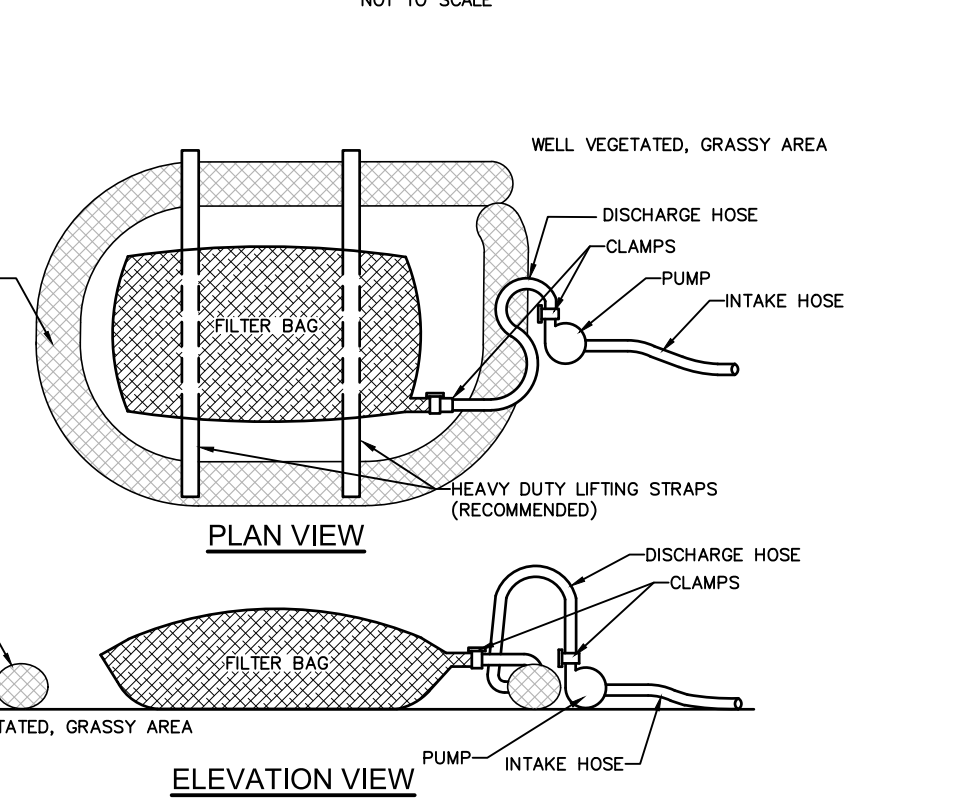
OFFICES LOCATED IN:
 CALIFORNIA, INDIANA, KENTUCKY,
 MASSACHUSETTS, MICHIGAN, NEW JERSEY,
 OHIO AND PENNSYLVANIA

DESIGNED BY CGG/JPK/ROP	DRAWING DET-6
CHECKED BY DS	SHEET
DRAWN BY PG/SR/ROP	DATE 1/27/22
DATE 1/27/22	SCALE AS NOTED
PROJ. NO. BETH00056	OF 34

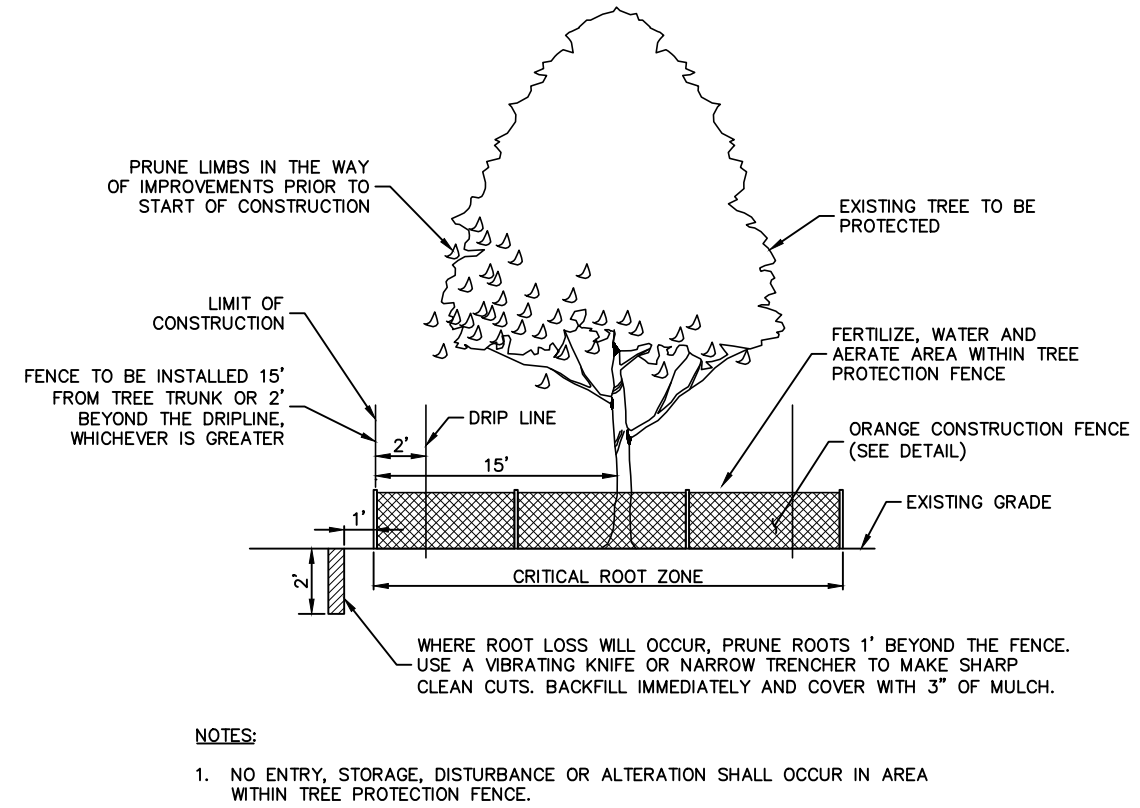


STANDARD CONSTRUCTION DETAIL #7-5
TRASH RACK AND ANTI-VORTEX DEVICE
NOT TO SCALE

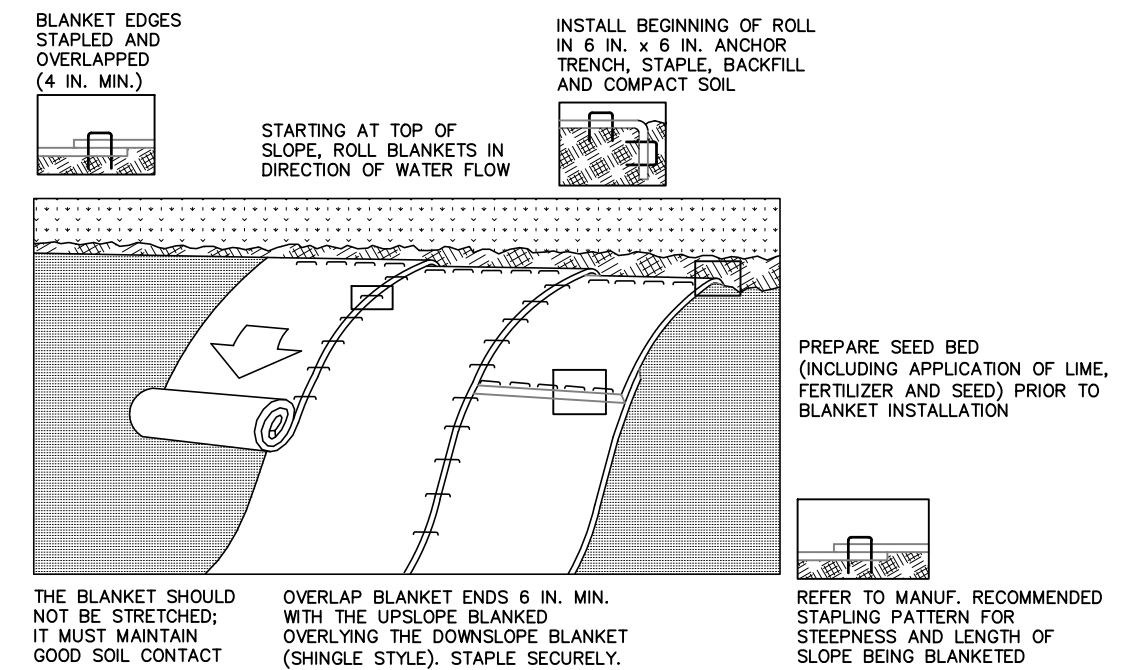
TOPSOIL STOCKPILE AND MAINTENANCE
NOT TO SCALE



STANDARD CONSTRUCTION DETAIL #4-16
FILTER BAG INLET PROTECTION - TYPE M INLET
NOT TO SCALE

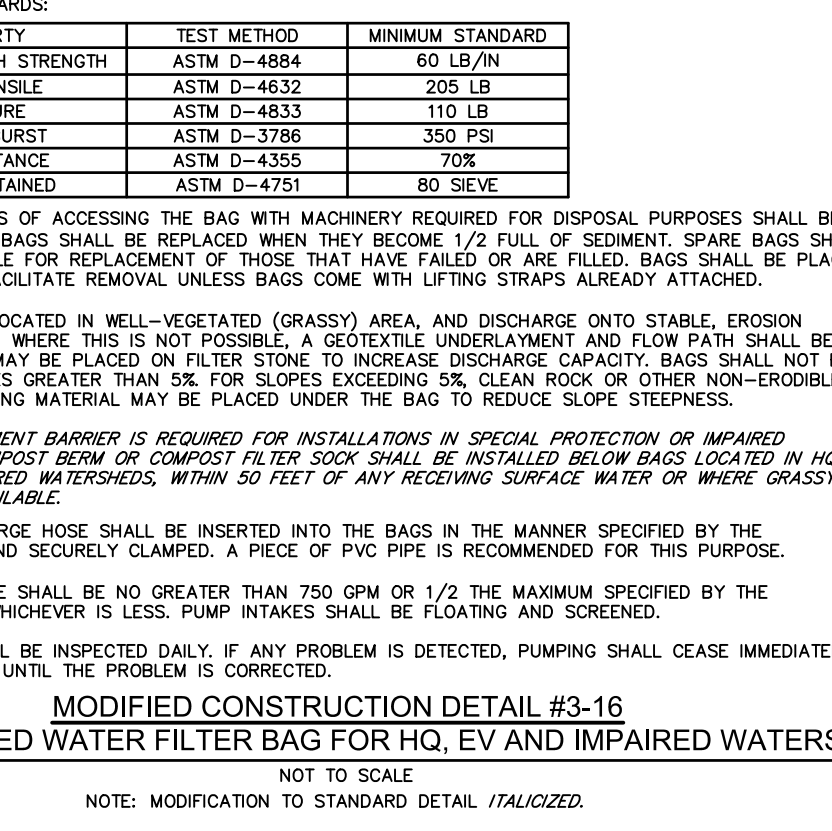


TREE PROTECTION AND PRUNING
NOT TO SCALE

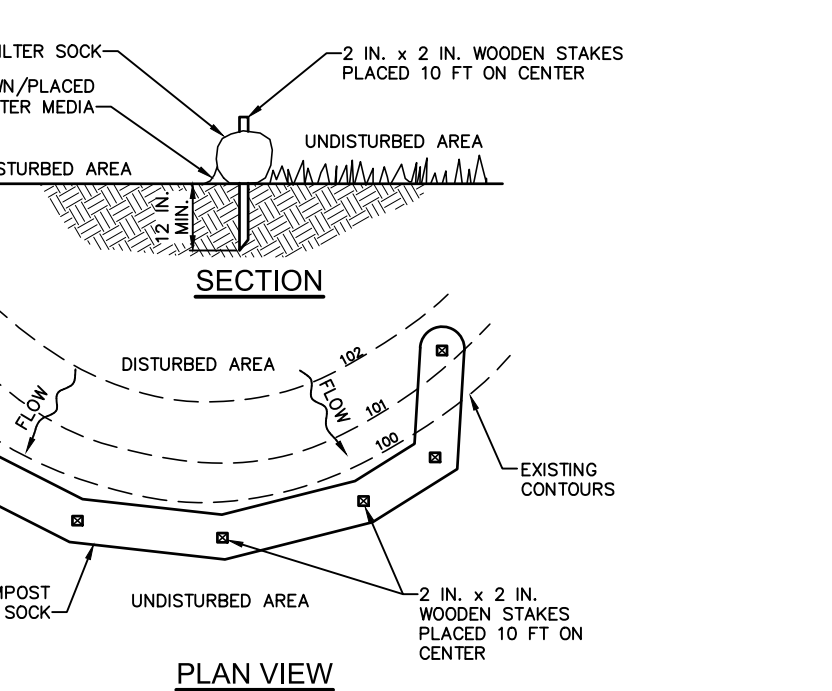


STANDARD CONSTRUCTION DETAIL #11-1
EROSION CONTROL BLANKET INSTALLATION
NOT TO SCALE

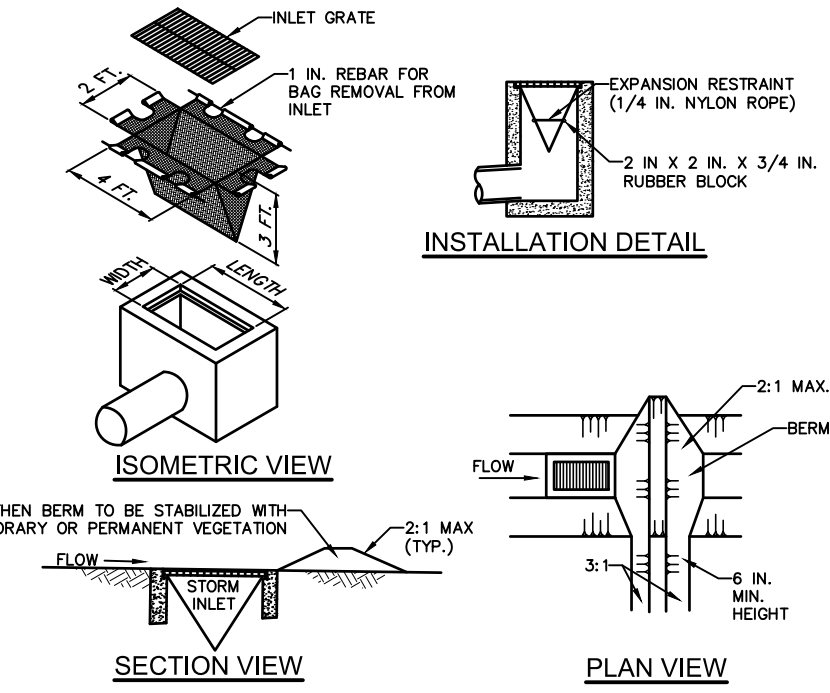
SOCK NO.	DIAMETER (in.)	LOCATION	SLOPE (%)	SLOPE LENGTH ABOVE BARRIER (ft.)
1	12	SEE ESC PLANS	33.0	15
2	12	SEE ESC PLANS	33.0	19
3	12	SEE ESC PLANS	33.0	30
4	12	SEE ESC PLANS	33.0	26
5	12	SEE ESC PLANS	33.0	21
6	12	SEE ESC PLANS	33.0	26
7	12	SEE ESC PLANS	33.0	34
8	12	SEE ESC PLANS	33.0	38
9	12	SEE ESC PLANS	33.0	33
10	18	SEE ESC PLANS	33.0	50
11	18	SEE ESC PLANS	33.0	60
12	18	SEE ESC PLANS	33.0	54
13	18	SEE ESC PLANS	33.0	63
14	18	SEE ESC PLANS	33.0	55
15	12	SEE ESC PLANS	33.0	15
16	12	SEE ESC PLANS	33.0	15
17	12	SEE ESC PLANS	33.0	17
18	18	SEE ESC PLANS	33.0	50
19	18	SEE ESC PLANS	33.0	41
20	18	SEE ESC PLANS	33.0	41
21	18	SEE ESC PLANS	33.0	35
22	12	SEE ESC PLANS	33.0	83
23	12	SEE ESC PLANS	33.0	30
24	12	SEE ESC PLANS	33.0	30
25	12	SEE ESC PLANS	33.0	35



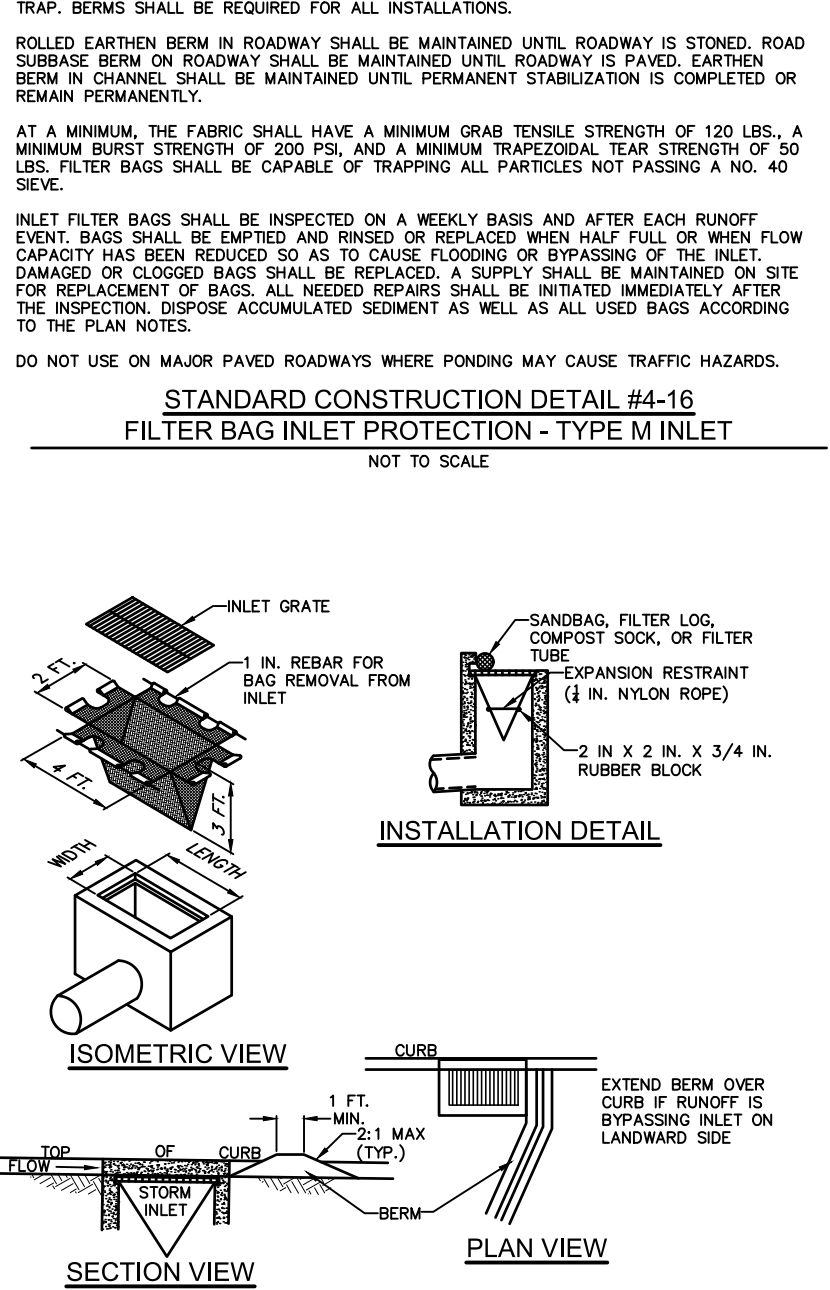
MODIFIED CONSTRUCTION DETAIL #3-16
ABACT PUMPED WATER FILTER BAG FOR HQ, EV AND IMPAIRED WATERSHEDS
NOT TO SCALE



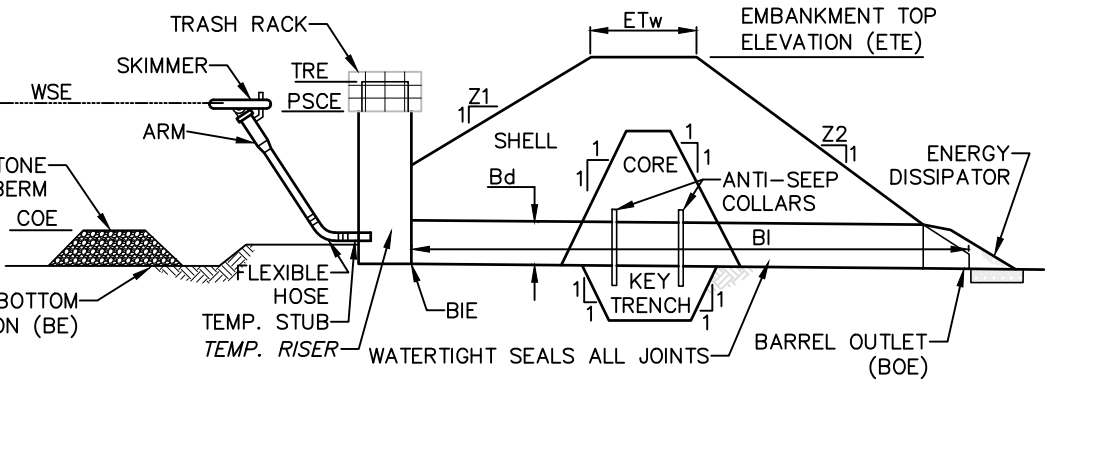
STANDARD CONSTRUCTION DETAIL #4-1
COMPOST FILTER SOCK
NOT TO SCALE



STANDARD CONSTRUCTION DETAIL #4-16
FILTER BAG INLET PROTECTION - TYPE M INLET
NOT TO SCALE



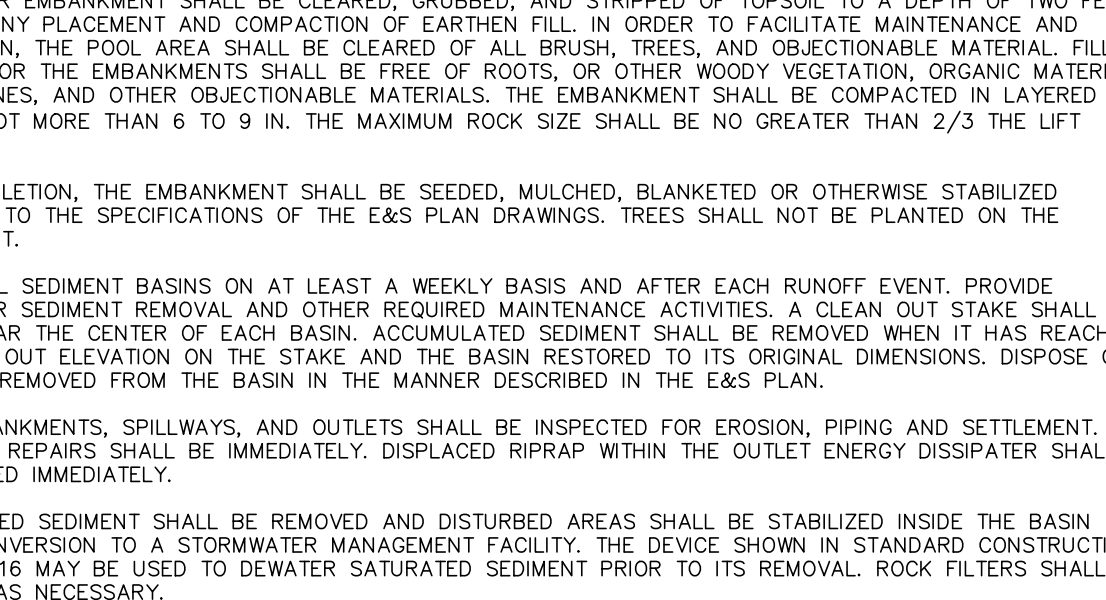
STANDARD CONSTRUCTION DETAIL #4-15
FILTER BAG INLET PROTECTION - TYPE C INLET
NOT TO SCALE



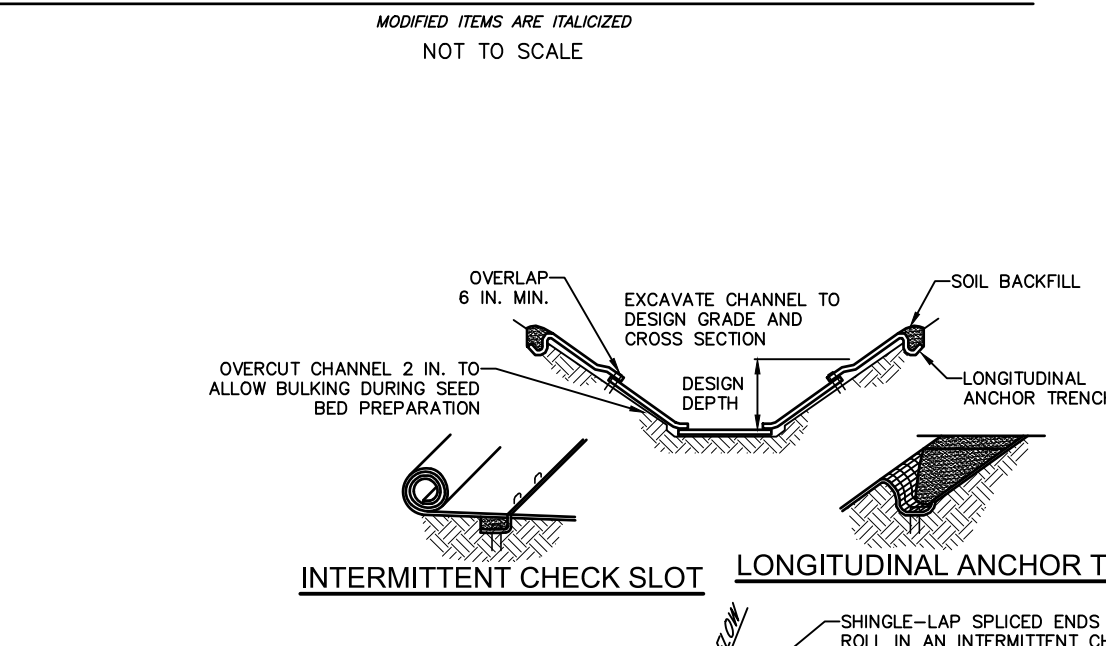
MODIFIED CONSTRUCTION DETAIL #7-4
SEDIMENT BASIN EMBANKMENT AND SPILLWAY DETAILS - SKIMMER
NOT TO SCALE

BASIN NO.	Z1 (FT)		TEMP RISER DIA (IN)	TEMP RISER ELEV (FT)	TEMP RISER TRG (IN)	EMBANKMENT		CLEAN OUT ELEV COE (FT)	BOTTOM ELEV BE (FT)	
	Z1	Z2				TOP ELEV ETE (FT)	KEY TRENCH DEPTH (FT)			
A	3	3	48	412.20	HDPE	415.50	10	2	408.3	407.0

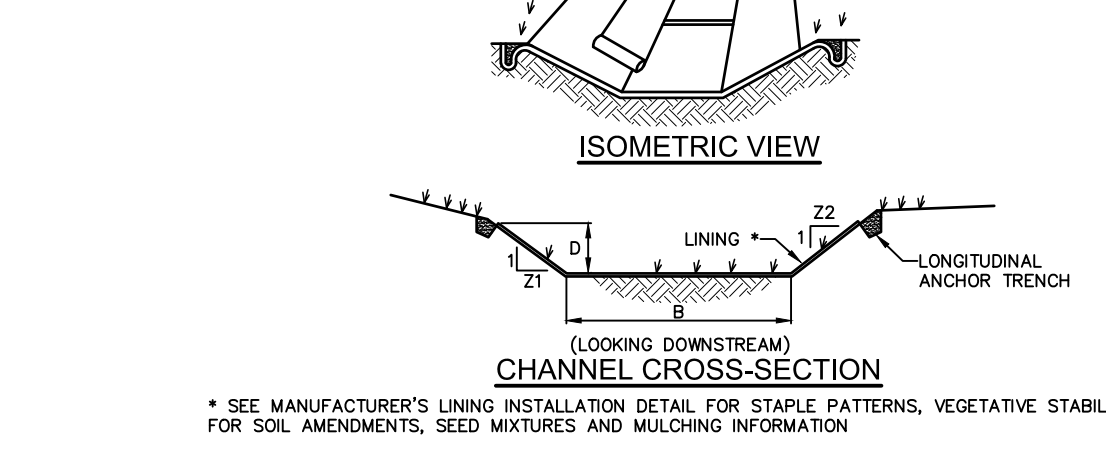
SKIMMER				OUTLET BARREL			
DIA S&S (IN)	LENGTH (FT)	MAT'L	DIA (IN)	INLET ELEV BE (FT)	LENGTH (FT)	OUTLET ELEV BOE (FT)	
4	10	PVC	24	407	HDPE	406	



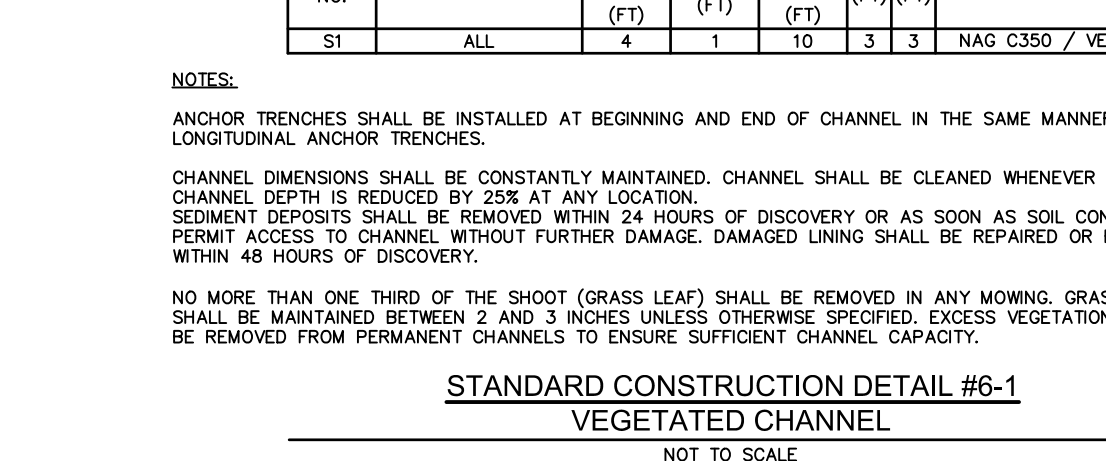
STANDARD CONSTRUCTION DETAIL #6-1
VEGETATED CHANNEL
NOT TO SCALE



STANDARD CONSTRUCTION DETAIL #6-2
CHANNEL CROSS-SECTION
NOT TO SCALE



MODIFIED CONSTRUCTION DETAIL #6-3
ABACT ROCK CONSTRUCTION ENTRANCE / STREET SWEEPING
NOT TO SCALE



STANDARD CONSTRUCTION DETAIL #6-1
VEGETATED CHANNEL
NOT TO SCALE

ATTENTION: ALL CONTRACTORS LOCATIONS OF ALL EXISTING UTILITIES SHOWN HEREON HAVE BEEN OBTAINED FROM UTILITY COMPANIES RECORDS AND/OR BY VISUAL SURVEY. THE ACCURACY OF THE HORIZONTAL LOCATION OF UNDERGROUND UTILITIES OR SERVICES CANNOT BE GUARANTEED. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES AND SERVICES PRIOR TO START OF WORK. PENNSYLVANIA PROFESSIONAL ENGINEERING ACT NUMBER 49 OF 1978 AS AMENDED BY ACT 131 OF 2006. CONTRACTORS MUST VERIFY LOCATIONS OF ALL UTILITIES AND SERVICES PRIOR TO START OF WORK. DATE: 11/11/2022 20213502293

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CHRISTOPHER W. JENSEN, P.E.
LICENSED PROFESSIONAL ENGINEER

4/3/2023
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STATE OF PA LICENSE NO. PE076464

BT WORCESTER, LLC
CITY VIEW - APN #67-00-01606-001
2974 GERMAN TOWN PIKE, WORCESTER TOWNSHIP,
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OFFICES LOCATED IN:
CALIFORNIA, INDIANA, KENTUCKY,
MASSACHUSETTS, MICHIGAN, NEW JERSEY,
OHIO AND PENNSYLVANIA

DESIGNED BY: CCG/JPK/RDP
CHECKED BY: DS
DRAWN BY: PG/SR/DP
DATE: 1/27/22
SCALE: AS NOTED
PROJ. NO.: BET00056

DRAWING: DET-7
SHEET: 26
OF 34

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GENERAL EROSION & SEDIMENT CONTROL PROCEDURES

1. ALL EARTH DISTURBANCES INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED ERS PLAN ASSOCIATES. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
2. AT LEAST SEVEN (7) DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL NOTIFY ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES OF THE APPROVED ERS PLAN ASSOCIATES. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
3. AT LEAST THREE (3) DAYS PRIOR TO THE START OF ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL NOTIFY ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES OF THE APPROVED ERS PLAN ASSOCIATES. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.

MAINTENANCE OF EROSION CONTROL FACILITIES

1. THE OPERATOR SHALL BE RESPONSIBLE FOR THE PROPER CONSTRUCTION, STABILIZATION AND MAINTENANCE OF ALL EROSION AND SEDIMENTATION CONTROLS AND RELATED ITEMS INCLUDED WITHIN THE PLAN. THE OPERATOR SHALL BE RESPONSIBLE FOR THE PROPER CONSTRUCTION, STABILIZATION AND MAINTENANCE OF ALL EROSION AND SEDIMENTATION CONTROLS AND RELATED ITEMS INCLUDED WITHIN THE PLAN AND NARRATIVE.
2. THE OPERATOR SHALL BE RESPONSIBLE FOR THE PROPER CONSTRUCTION, STABILIZATION AND MAINTENANCE OF ALL EROSION AND SEDIMENTATION CONTROLS AND RELATED ITEMS INCLUDED WITHIN THE PLAN AND NARRATIVE.
3. ALL EROSION AND SEDIMENTATION POLLUTION CONTROL MEASURES MUST BE MAINTAINED IN PLACE UNTIL THE SITE IS STABILIZED, REGARDLESS IF CONSTRUCTION IS TAKING PLACE OR NOT.
4. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENTATION CONTROLS (BMPs) MUST BE PROPERLY MAINTAINED. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENTATION CONTROLS EACH RUNOFF EVENT AND ON A WEEKLY BASIS. A WRITTEN REPORT OF EACH INSPECTION MUST BE LOGGED INTO DEP FORM 3150-M-BMWQ03 DATED 2/2012 AND KEPT ON SITE AT ALL TIMES. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING, AND RENEWING, MUST BE PERFORMED IMMEDIATELY IF EROSION AND SEDIMENT CONTROL BMPs FAIL TO PERFORM AS EXPECTED. REPLACEMENT CONTROLS OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.

CONSTRUCTION SEQUENCE

GENERAL SEQUENCE NOTES

AT LEAST 7 DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, THE OPERATOR SHALL NOTIFY ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES, THE LANDOWNER, ALL APPROPRIATE AGENCIES, AND THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION CONSERVATION DISTRICT TO AN ON-SITE MEETING. ALSO, AT LEAST 3 WORKING DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, THE OPERATOR SHALL NOTIFY THE PENNSYLVANIA ONE-CALL SYSTEM INCORPORATED AT 1-800-242-1776 FOR BURIED UTILITIES LOCATIONS.
EROSION AND SEDIMENT BMPs MUST BE CONSTRUCTED, STABILIZED, AND FUNCTIONAL BEFORE SITE DISTURBANCE BEGINS WITHIN THE TRI-BUTARY AREA OF THOSE BMPs.

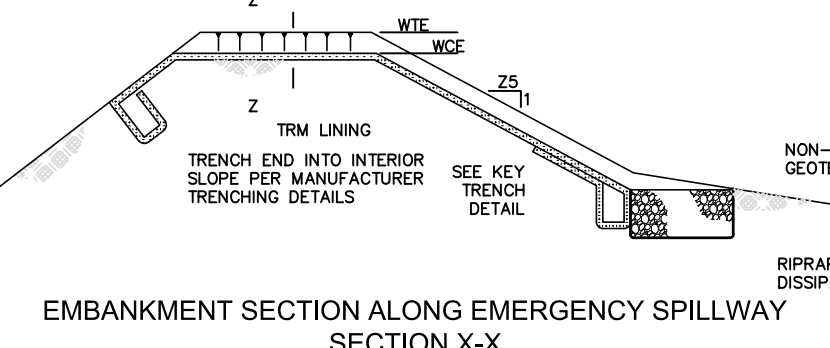
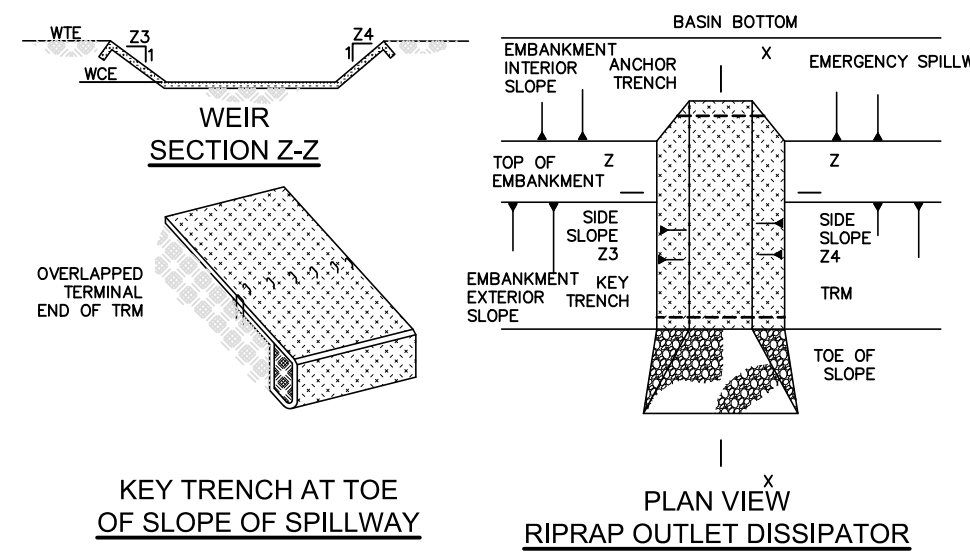
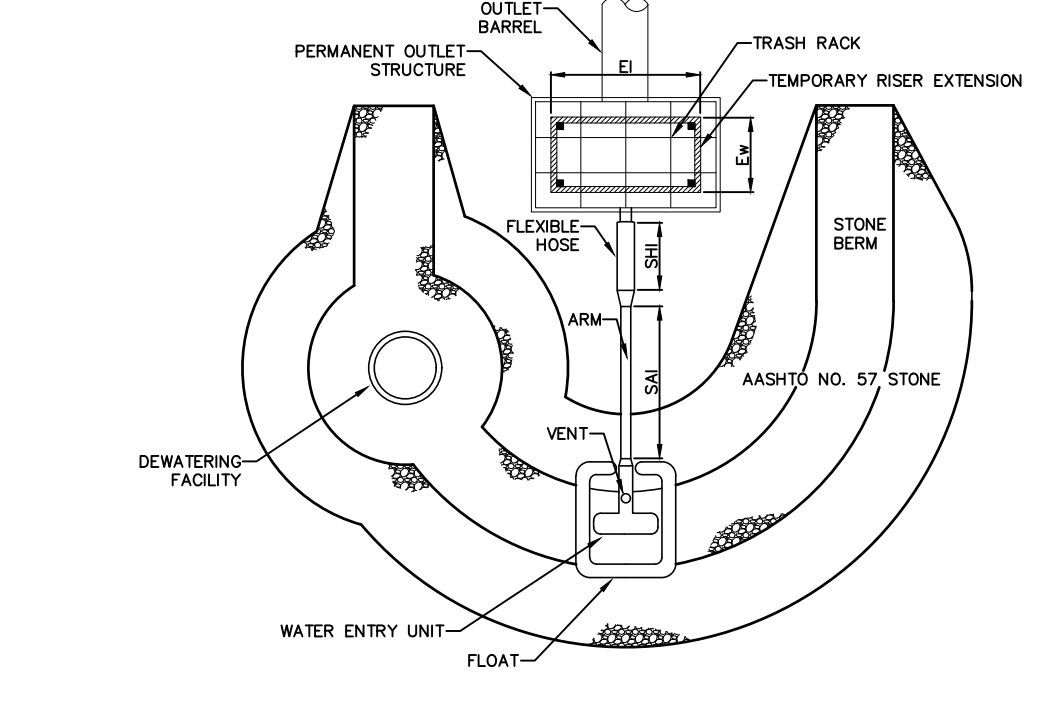
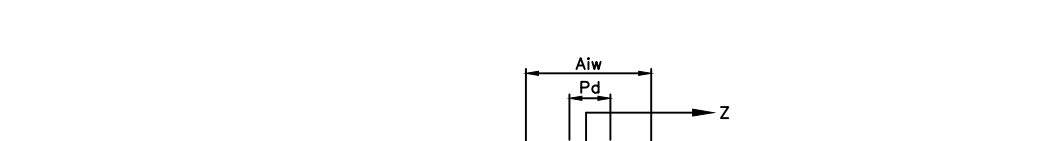
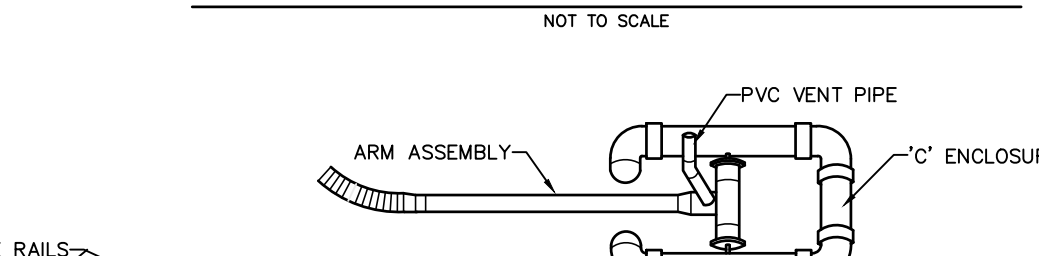


Table with 13 columns: Basin No., 23 (FT), 24 (FT), Crest Elev. (FT), Width (FT), Lining, Channel, Depth (FT), Length (FT), Width (FT), Riprap Size (ft), Riprap Thickness (ft).

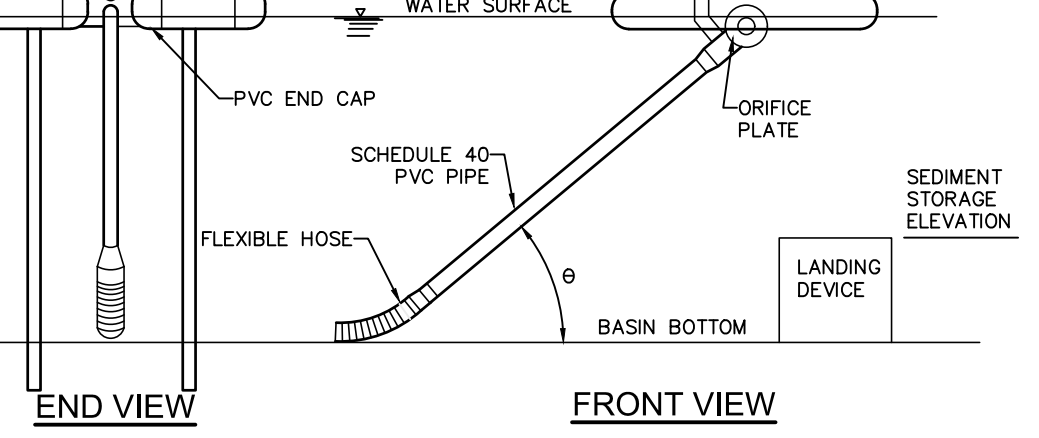
CRITICAL STAGE - INSPECT CONSTRUCTION ENTRANCE AND COMPOST SOCK
CRITICAL STAGE - INSURE CONSTRUCTED INLETS ARE PROPERLY INSTALLED, STABILIZED AND PROTECTED



STANDARD CONSTRUCTION DETAIL #7-3 SKIMMER WITH STONE LANDING BERM
NOT TO SCALE



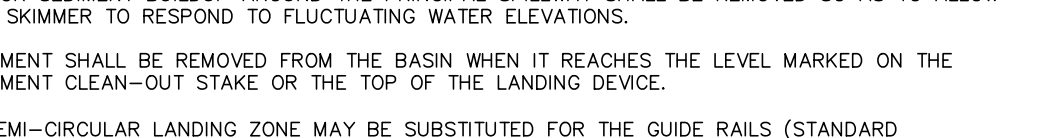
STANDARD CONSTRUCTION DETAIL #7-13 SEDIMENT BASIN EMERGENCY SPILLWAY WITH TRM LINING
NOT TO SCALE



STANDARD CONSTRUCTION DETAIL #7-14 BAFFLE
NOT TO SCALE

Table with 7 columns: Outlet No., Pipe Dia (in), Arm Length (ft), Arm Dia (in), Orifice Dia (in), Top of Landing Device Elevation (ft), Flexible Hose Length (ft).

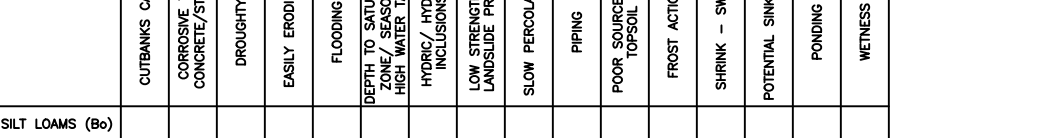
ORIFICE DIAMETER MUST BE EQUAL TO OR LESS THAN ARM DIAMETER
A ROPE SHALL BE ATTACHED TO THE SKIMMER ARM TO FACILITATE ACCESS TO THE SKIMMER ONCE INSTALLED.



STANDARD CONSTRUCTION DETAIL #7-1 SKIMMER
NOT TO SCALE

Table with 10 columns: Basin No., Water Surface Elevation (ft), Arm Length (ft), Arm Dia (in), Orifice Dia (in), Top of Landing Device Elevation (ft), Flexible Hose Length (ft), Flexible Hose Attachment Elevation (ft).

ORIFICE DIAMETER MUST BE EQUAL TO OR LESS THAN ARM DIAMETER
A ROPE SHALL BE ATTACHED TO THE SKIMMER ARM TO FACILITATE ACCESS TO THE SKIMMER ONCE INSTALLED.



STANDARD CONSTRUCTION DETAIL #7-1 SKIMMER
NOT TO SCALE

Table with 10 columns: Basin No., Water Surface Elevation (ft), Arm Length (ft), Arm Dia (in), Orifice Dia (in), Top of Landing Device Elevation (ft), Flexible Hose Length (ft), Flexible Hose Attachment Elevation (ft).

ORIFICE DIAMETER MUST BE EQUAL TO OR LESS THAN ARM DIAMETER
A ROPE SHALL BE ATTACHED TO THE SKIMMER ARM TO FACILITATE ACCESS TO THE SKIMMER ONCE INSTALLED.

Professional Engineer seal for Christopher W. Jensen, P.E., License No. PE076404, State of PA.

Revision table with columns: No., Date, Description of Revision.

CHRISTOPHER W. JENSEN, P.E.
LICENSED PROFESSIONAL ENGINEER

Professional Engineer seal for Christopher W. Jensen, P.E., License No. PE076404, State of PA.

LICENSED PROFESSIONAL ENGINEER
STATE OF PA LICENSE NO. PE076404

Professional Engineer seal for Christopher W. Jensen, P.E., License No. PE076404, State of PA.

LICENSED PROFESSIONAL ENGINEER
STATE OF PA LICENSE NO. PE076404

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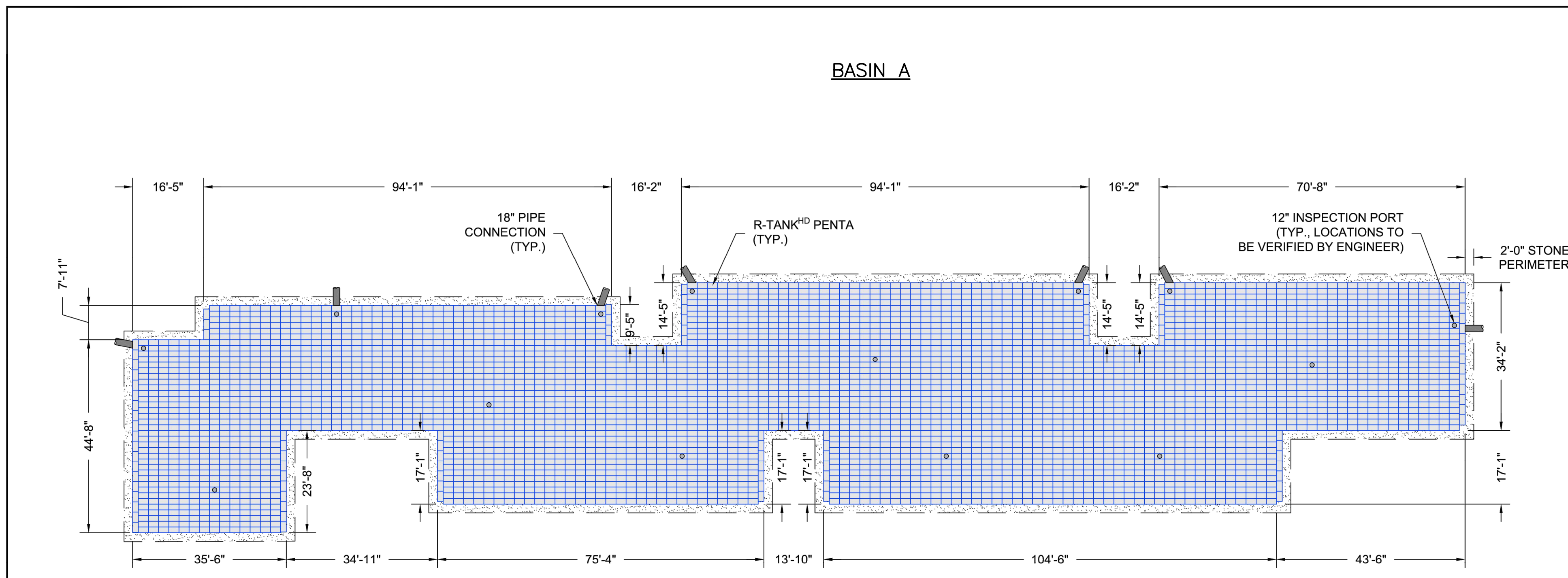
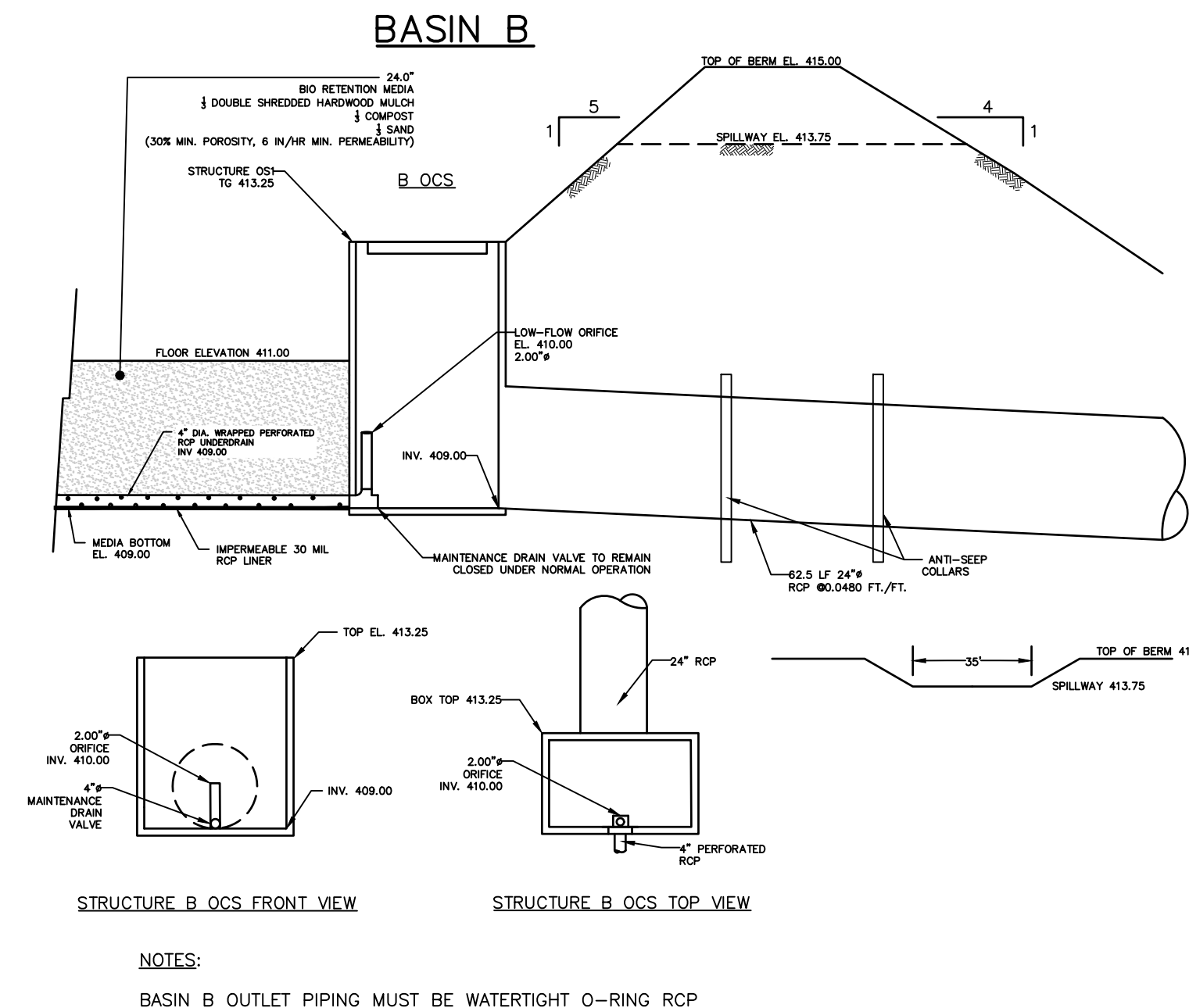
EROSION AND SEDIMENT CONTROL DETAILS

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LAST SAVE DATE: 06 May 2024, 1:53PM

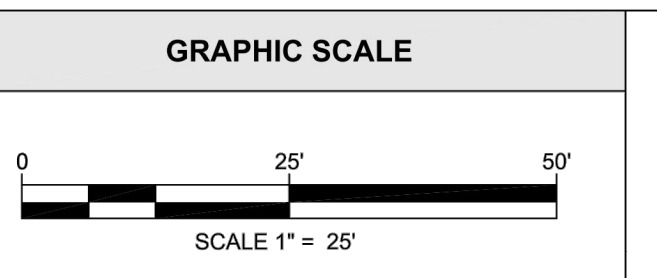
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 DATE: 08/30/2023 11:53 AM
 LAST SAVE BY: J.Keith

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R-TANK QUANTITIES	
R-TANK ^{HD} MODULE TYPE	PENTA
TRAFFIC LOAD	HS-20
# OF PENTA R-TANKS	4301
TOTAL SYSTEM STORAGE	99,749 CF
R-TANK STORAGE VOLUME	87,496 CF
STONE STORAGE VOLUME (40% VOID RATIO)	12,253 CF
STONE BED FOOTPRINT	14,958 SF
STONE QUANTITY	1,135 CY
N080 NON-WOVEN GEOTEXTILE TANK WRAP	4,136 SY
N080 NON-WOVEN GEOTEXTILE EXCAVATION WRAP	4,727 SY
ACF BX-12 GEOGRID	2,246 SY
12" INSPECTION PORTS	14
GEOTEXTILE PIPE BOOTS (18")	7
STORMRING CPS (18")	5
NOTE: STONE QUANTITY INCLUDES 12" OF COVER AND 3" OF BASE	
NOTE: GEOTEXTILE / LINER QUANTITIES INCLUDE A 15% WASTE FACTOR.	
SEE SHEETS 3 - 6 FOR DETAILS AND ADDITIONAL INFORMATION	

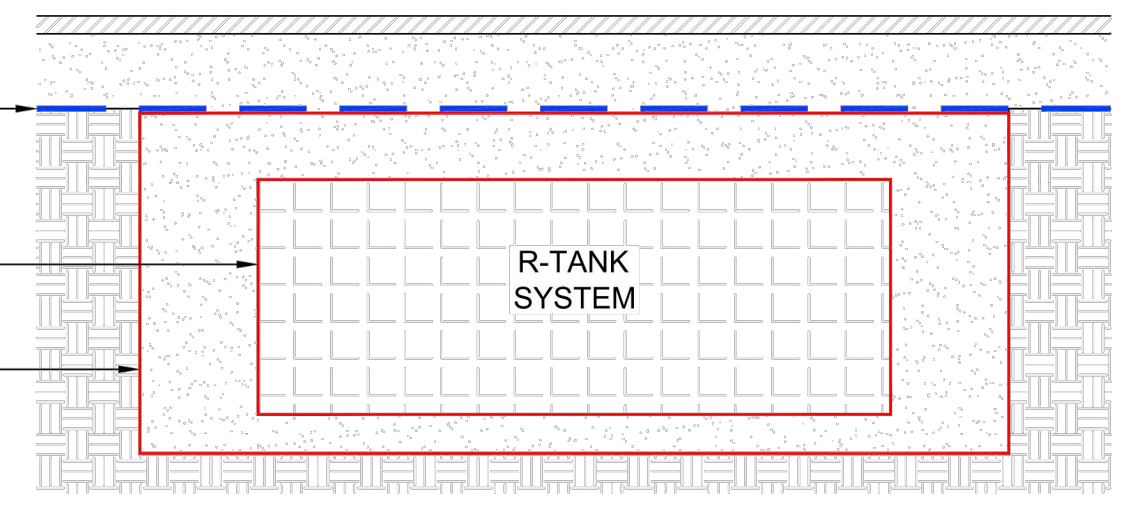


R-TANK ELEVATIONS	
DESCRIPTION	ELEVATION
BASE INV.	427.15
TANK INV.	427.40
TOP OF TANK	434.36
GEOGRID	435.36
MIN. ALLOW. FINAL GRADE	436.03
MAX. ALLOW. FINAL GRADE	441.35

GEOGRID (ACF BX-12) PLACED 12" ABOVE THE R-TANK^{HD} SYSTEM. OVERLAP ADJACENT PANELS BY 18" MIN. GEOGRID SHOULD EXTEND 3' BEYOND THE EXCAVATION FOOTPRINT.

R-TANK^{HD} UNITS WRAPPED WITH N080 NON-WOVEN GEOTEXTILE (OR EQUAL)

EXCAVATION WRAPPED WITH N080 NON-WOVEN GEOTEXTILE (OR EQUAL)



R-TANK^{HD} SYSTEM LAYOUT
 CITY VIEW APN 67
 WORCESTER, PA

FERGUSON WATERWORKS
 FOR ADDITIONAL INFORMATION PLEASE CONTACT:
 FERGUSON WATERWORKS,
 1-800-448-3636, www.ferguson.com

R-TANK^{HD}
 ENGINEER OF RECORD TO REVIEW, APPROVE AND ENDORSE FINAL SITE SPECIFIC DESIGN.

SCALE 1" = 25'

DRAWN BY JKB

DATE 08/30/2023

SHEET NO. 2 of 6

BASIN A
 *FERGUSON R-TANK (OR APPROVED EQUAL)

ATTENTION: ALL CONTRACTORS LOCATING OR ALL EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM UTILITY COMPANY RECORDS AND/OR NON-CRITICAL REVISIONS OF THE SET. COMPLETENESS OR ACCURACY OF THE SIZE, DEPTH OR HORIZONTAL LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES PRIOR TO START OF WORK. SEE SHEET 02.

20213502293

NO.	DATE	REVISIONS	BY	CHKD
4	3/7/2024	PER OCS REVIEW LETTER DATED 01/24/2024	PRG DS	
3	11/17/2023	PER OCS REVIEW LETTER DATED 11/22/2023	PRG DS	
2	4/3/2023	REVISED ENTRANCE ON GERMANTOWN PIKE	PRG DS	
1	10/04/2022	PER OCS REVIEW LETTER DATED 03/11/2022	PRG DS	

CHRISTOPHER W. JENSEN, P.E.
 LICENSED PROFESSIONAL ENGINEER

COMMONWEALTH OF PENNSYLVANIA
 REGISTERED PROFESSIONAL ENGINEER
 CHRISTOPHER W. JENSEN
 NO. PE-6844
 4/3/2023
 LICENSED PROFESSIONAL ENGINEER
 STATE OF PA LICENSE NO. PE076464

BT WORCESTER, LLC

CITY VIEW - APN #67-00-01606-001
 2974 GERMANTOWN PIKE, WORCESTER TOWNSHIP,
 MONTGOMERY COUNTY, COMMONWEALTH OF PENNSYLVANIA

POST CONSTRUCTION STORMWATER
 MANAGEMENT DETAILS

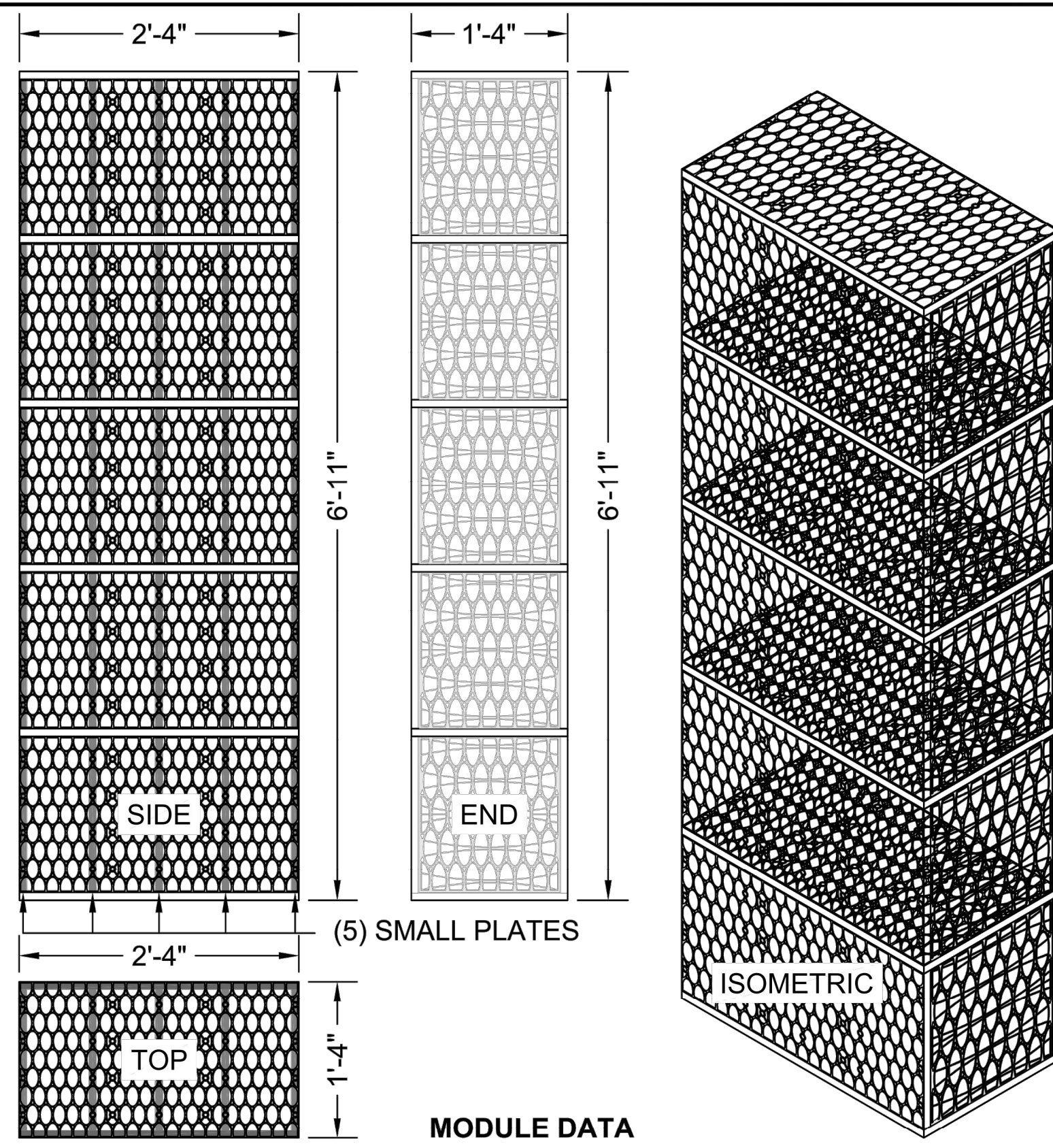
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DESIGNED BY CCG/JPK/ROP
 CHECKED BY DS
 DRAWN BY PG/SR/ROP
 DATE 1/27/22
 SCALE AS NOTED
 PROJ. NO. BET00056

DRAWING
DET-9
 SHEET
28
 OF 34



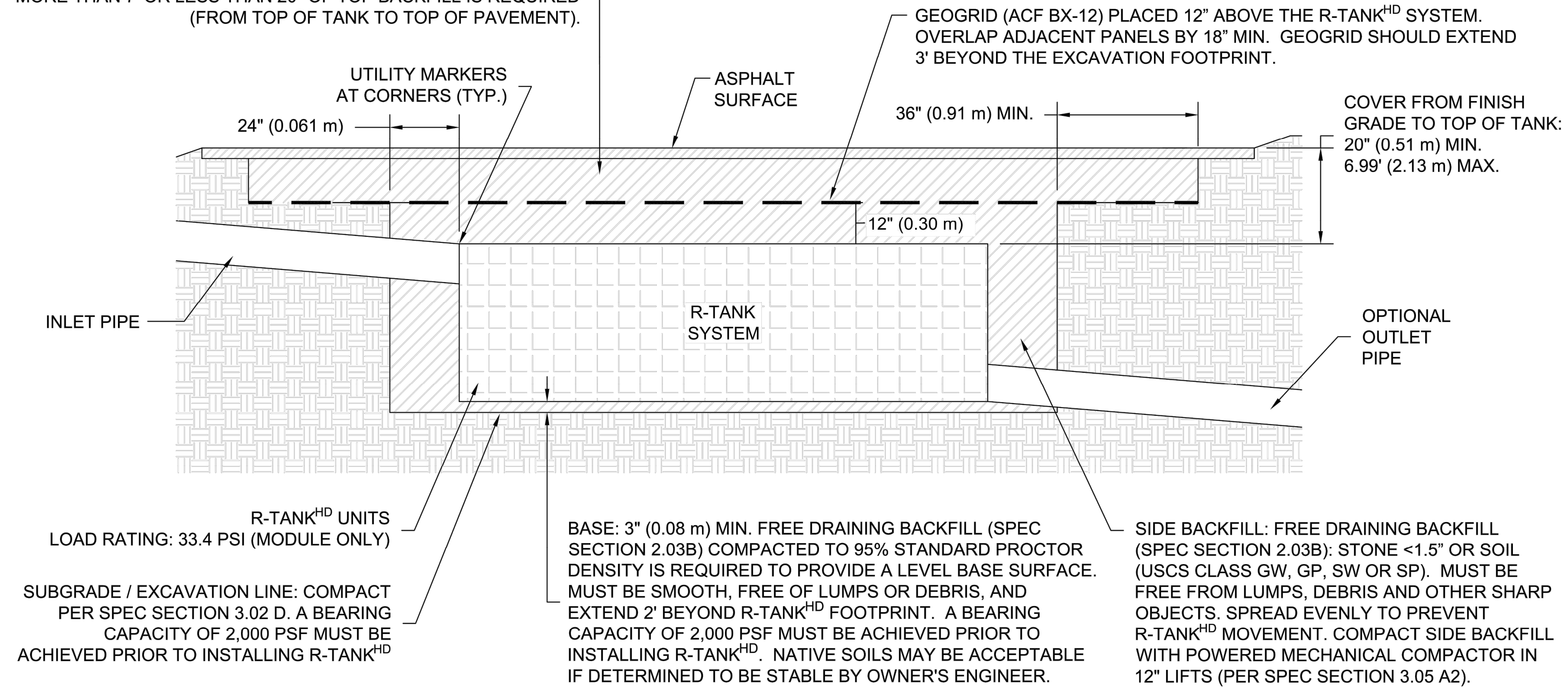
GEOMETRY:	LOAD RATING:
LENGTH = 28.15 IN. (715 MM)	33.4 PSI, (MODULE ONLY)
WIDTH = 15.75 IN. (400 MM)	HS20/HS25 - SEE SPEC FOR COVER REQUIREMENTS
HEIGHT = 83.46 IN. (2120 MM)	MATERIAL:
TANK VOLUME = 21.41 CF	100% RECYCLED POLYPROPYLENE
STORAGE VOLUME = 20.34 CF	SMALL PLATES REQUIRED:
VOID INTERNAL VOLUME: 95%	5/SEGMENT, 25/MODULE
VOID SURFACE AREA: 90%	

PENT R-TANK^{HD} - MODULE DETAIL

TOTAL COVER: 20" MINIMUM AND 84" MAXIMUM. FIRST 12" MUST BE FREE DRAINING BACKFILL (SPEC SECTION 2.03B): STONE <1.5" OR SOIL (USCS CLASS GW, GP, SW OR SP). ADDITIONAL FILL MAY BE STRUCTURAL FILL (SPEC SECTION 2.03C): STONE OR SOIL (USCS CLASS SM, SP, SW, GM, GP OR GW) WITH MAX CLAY CONTENT <10%, MAX 25% PASSING NO. 200 SIEVE, AND MAX PLASTICITY INDEX OF 4. A MIN. 12" COVER MUST BE MAINTAINED BETWEEN BACKFILL EQUIPMENT AND THE TOP OF THE R-TANKTM SYSTEM AT ALL TIMES. TOTAL HEIGHT OF TOP BACKFILL SHOULD NOT EXCEED 7'. CONTACT FERGUSON WATERWORKS IF MORE THAN 7' OR LESS THAN 20" OF TOP BACKFILL IS REQUIRED (FROM TOP OF TANK TO TOP OF PAVEMENT).

NOTES:

- FOR COMPLETE MODULE DATA, SEE APPROPRIATE R-TANK^{HD} MODULE SHEET.
- INSTALLATIONS PER THIS DETAIL MEET GUIDELINES OF HL-93 LOADING PER THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, CUSTOMARY U.S. UNITS, 7TH EDITION, 2014 WITH 2015 AND 2016 INTERIM REVISIONS.
- PRE-TREATMENT STRUCTURES NOT SHOWN.
- FOR INFILTRATION APPLICATIONS, GEOTEXTILE ENVELOPING R-TANK SHALL BE ACF M200 (PER SPEC SECTION 2.02A) AND BASE SHALL BE 4" MIN. UNCOMPACTED FREE DRAINING BACKFILL (SPEC SECTION 2.03A) TO PROVIDE A LEVEL BASE. SURFACE MUST BE SMOOTH, FREE OF LUMPS OR DEBRIS, AND EXTEND 2' BEYOND R-TANK^{HD} FOOTPRINT.



R-TANK^{HD} UNITS
LOAD RATING: 33.4 PSI (MODULE ONLY)

SUBGRADE / EXCAVATION LINE: COMPACT PER SPEC SECTION 3.02 D. A BEARING CAPACITY OF 2,000 PSF MUST BE ACHIEVED PRIOR TO INSTALLING R-TANK^{HD}

BASE: 3" (0.08 m) MIN. FREE DRAINING BACKFILL (SPEC SECTION 2.03B) COMPACTED TO 95% STANDARD PROCTOR DENSITY IS REQUIRED TO PROVIDE A LEVEL BASE SURFACE. MUST BE SMOOTH, FREE OF LUMPS OR DEBRIS, AND EXTEND 2' BEYOND R-TANK^{HD} FOOTPRINT. A BEARING CAPACITY OF 2,000 PSF MUST BE ACHIEVED PRIOR TO INSTALLING R-TANK^{HD}. NATIVE SOILS MAY BE ACCEPTABLE IF DETERMINED TO BE STABLE BY OWNER'S ENGINEER.

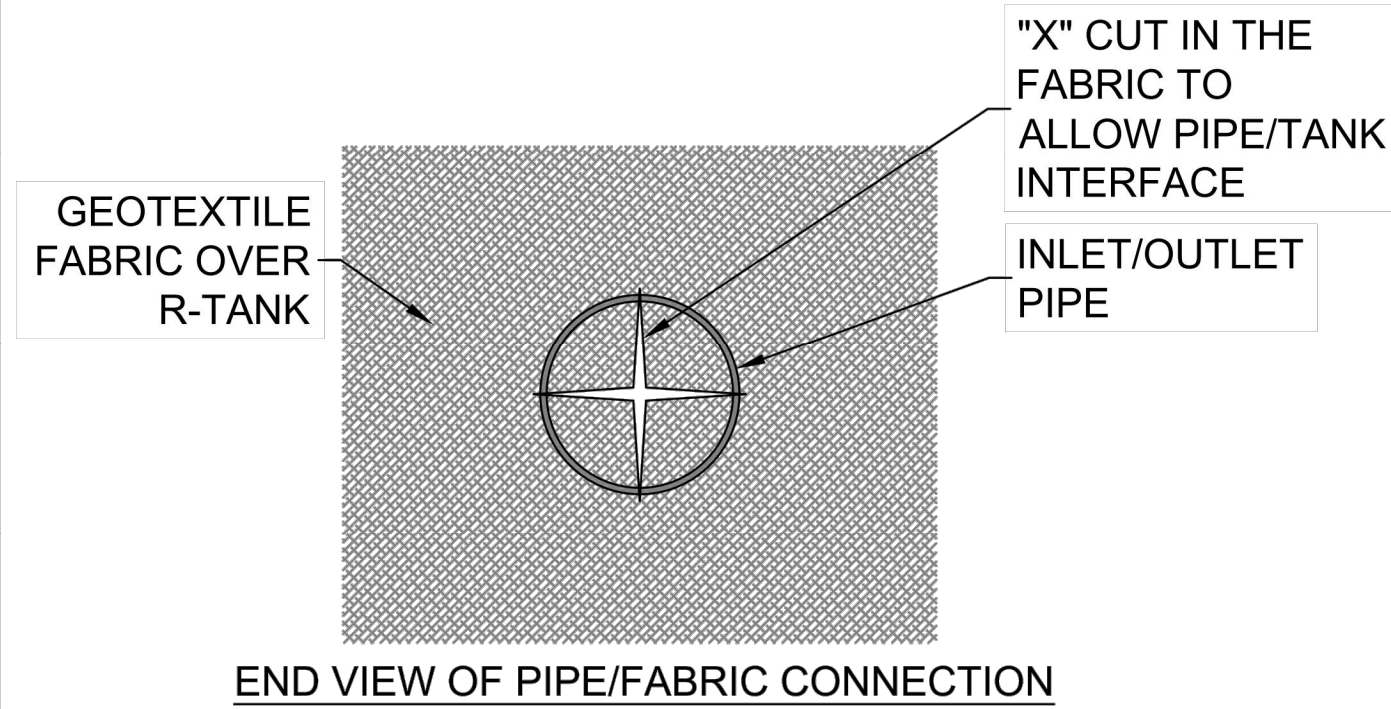
SIDE BACKFILL: FREE DRAINING BACKFILL (SPEC SECTION 2.03B): STONE <1.5" OR SOIL (USCS CLASS GW, GP, SW OR SP). MUST BE FREE FROM LUMPS, DEBRIS AND OTHER SHARP OBJECTS. SPREAD EVENLY TO PREVENT R-TANK^{HD} MOVEMENT. COMPACT SIDE BACKFILL WITH POWERED MECHANICAL COMPACTOR IN 12" LIFTS (PER SPEC SECTION 3.05 A2).

R-TANK^{HD} & HS-20 LOADS - SECTION VIEW

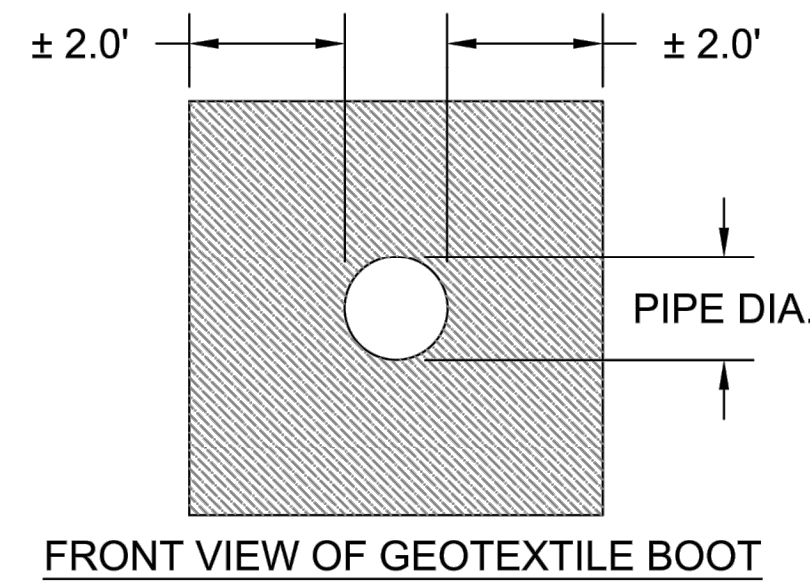
NOTE:

- PIPE BOOTS ARE AVAILABLE IN THE FOLLOWING STANDARD SIZES: 8" | 12" | 15" | 18" | 24".
- LARGER SPECIAL ORDER, CUSTOM SIZES ARE AVAILABLE.

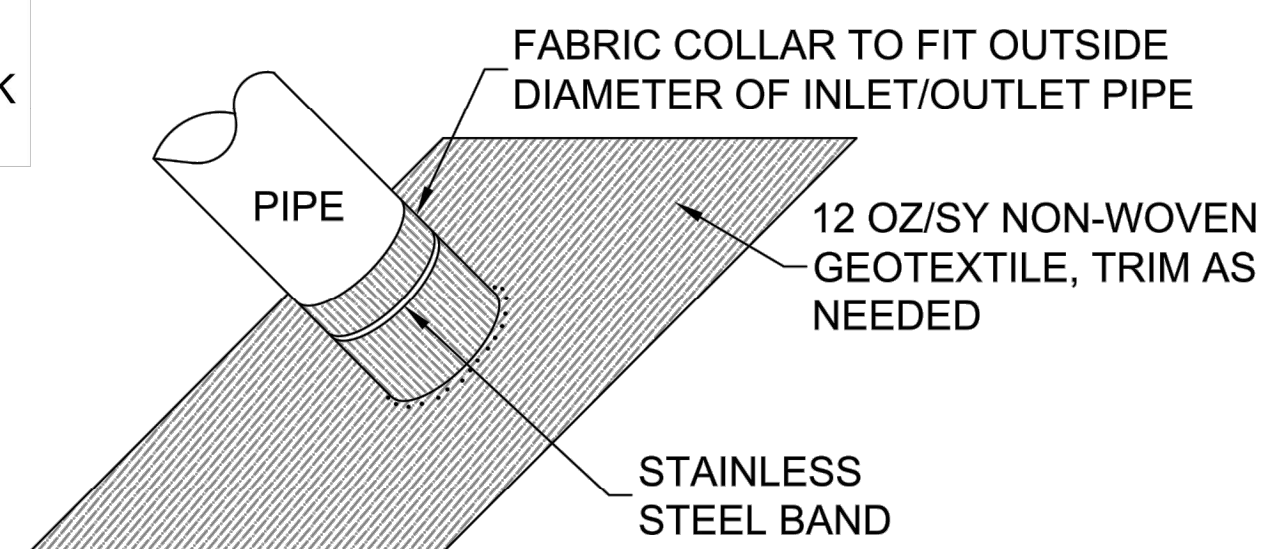
CUT AN "X" IN THE FABRIC ENVELOPE THAT IS SLIGHTLY LARGER THAN THE PIPE. PULL THE FABRIC FLAPS AROUND THE PIPE, AND SEAL WITH A STAINLESS STEEL BAND.



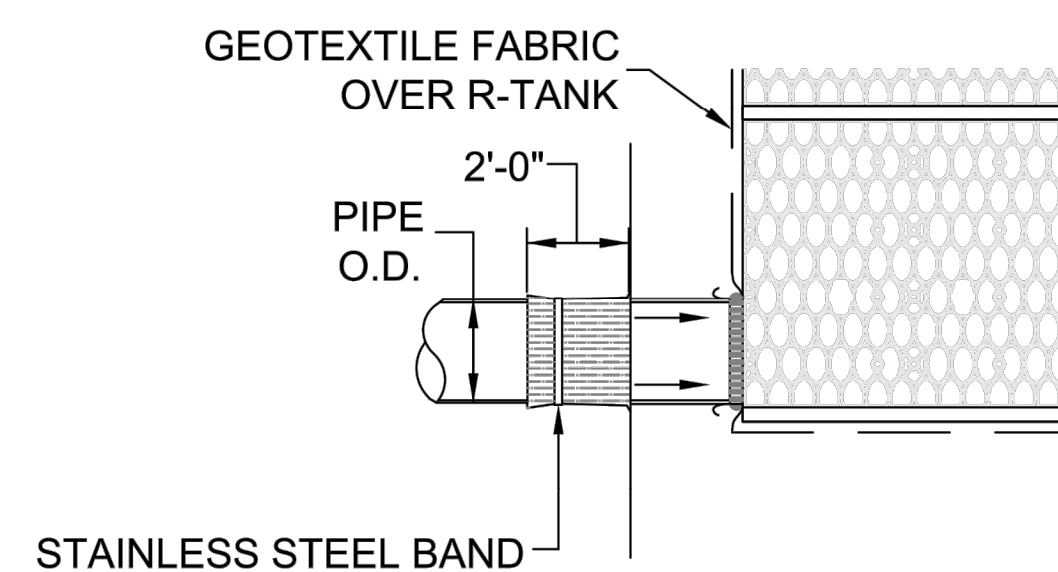
END VIEW OF PIPE/FABRIC CONNECTION



FRONT VIEW OF GEOTEXTILE BOOT



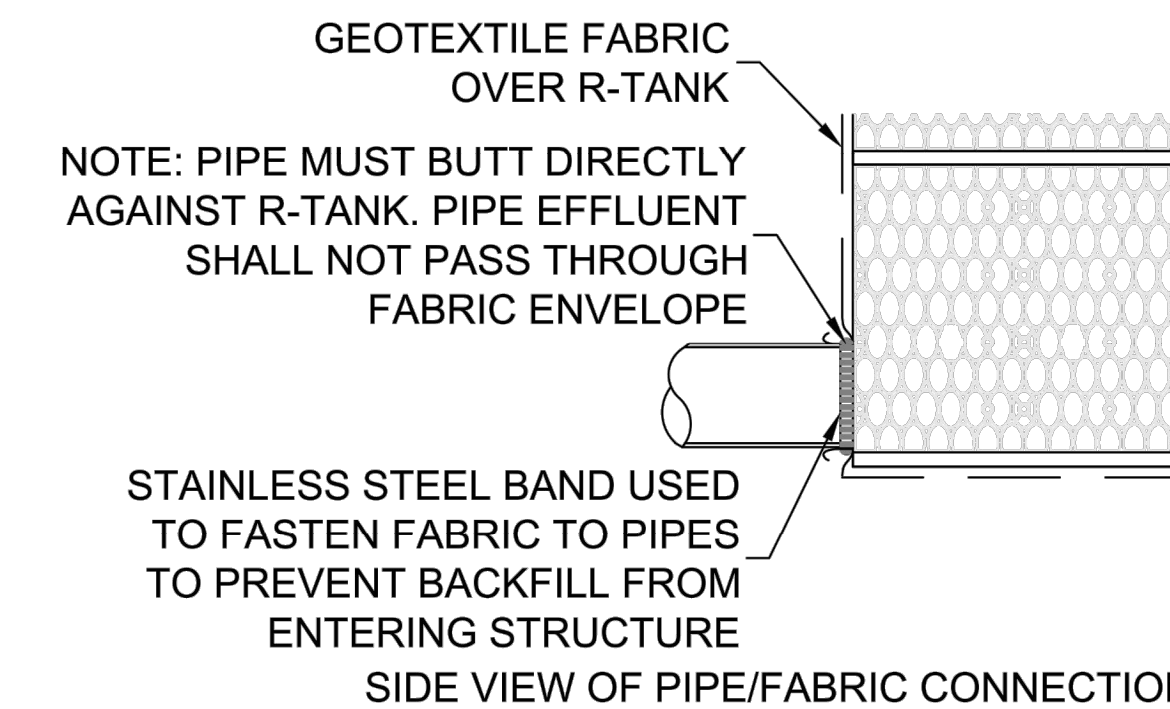
GEOTEXTILE BOOT



SIDE VIEW OF GEOTEXTILE BOOT

R-TANK TYPICAL TANK INLET/OUTLET W/ GEOTEXTILE PIPE BOOT DETAIL

AFTER TANK WRAP IS SECURED TO PIPE, SLIDE BOOT AGAINST R-TANK AND SECURE WITH SECOND STAINLESS STEEL BAND, THEN ATTACH BOOT FLAP TO TANK ENVELOPE FABRIC WITH DUCT TAPE OR OTHER ADHESIVE.



SIDE VIEW OF PIPE/FABRIC CONNECTION

SCALE
NTS
DRAWN BY
JKB
DATE
06/30/2023
SHEET NO.

3 of 6

FERGUSON WATERWORKS

FOR ADDITIONAL INFORMATION PLEASE CONTACT:
FERGUSON WATERWORKS,
1-800-448-3636, www.ferguson.com

R-TANK^{HD}

ENGINEER OF RECORD TO REVIEW, APPROVE AND ENDORSE FINAL SITE SPECIFIC DESIGN.

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2	4/3/2023	REVISED ENTRANCE ON GERMANTOWN PIKE	ROP	DS
1	10/04/2022	PER GIS REVIEW LETTER DATED 03/11/2022	PRG	DS

CHRISTOPHER W. JENSEN, P.E.
LICENSED PROFESSIONAL ENGINEER

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER W. JENSEN
NO. PE-6464
4/3/2023
LICENSED PROFESSIONAL ENGINEER
STATE OF PA LICENSE NO. PE076464

BT WORCESTER, LLC

CITY VIEW - APN #67-00-01606-001
2974 GERMANTOWN PIKE, WORCESTER TOWNSHIP,
MONTGOMERY COUNTY, COMMONWEALTH OF PENNSYLVANIA

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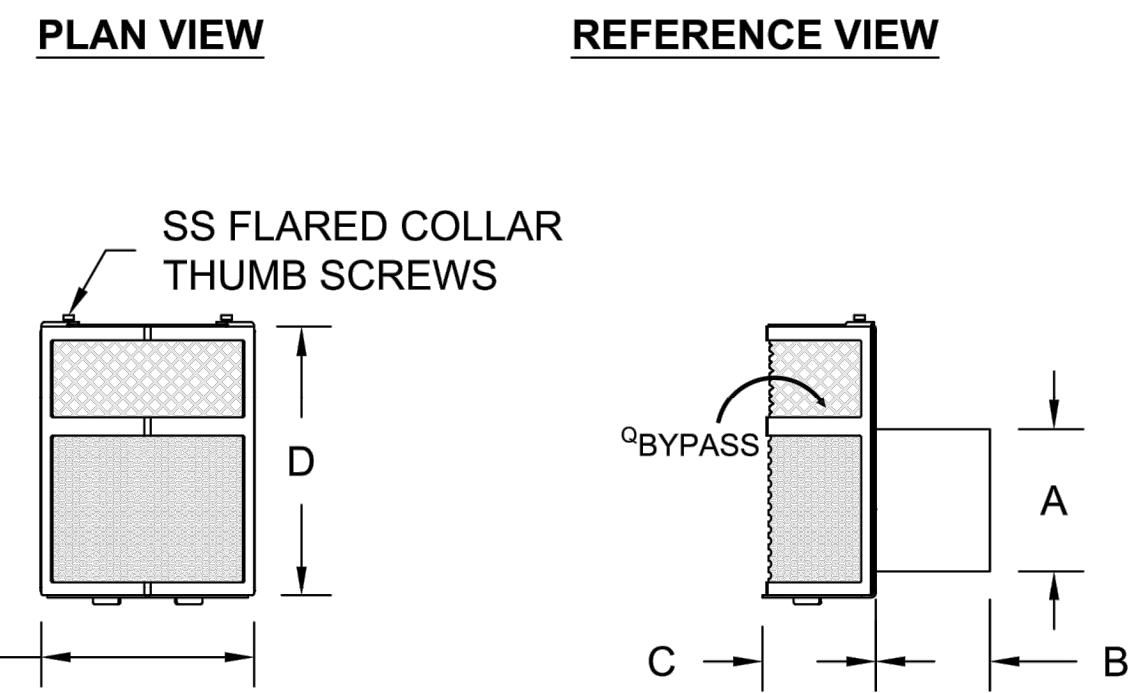
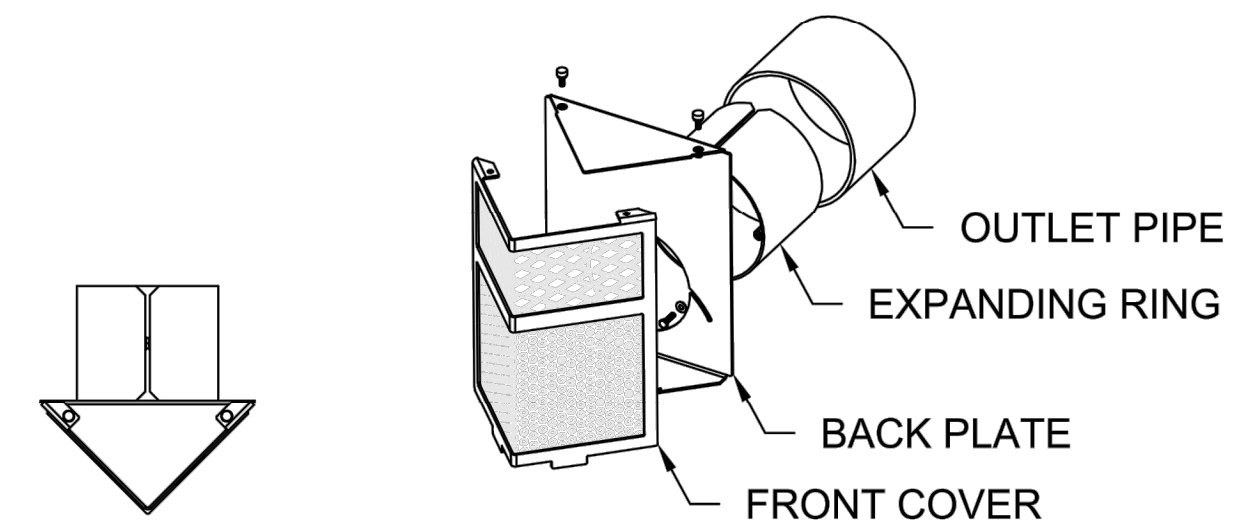
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CHECKED BY DS	SHEET
DRAWN BY PG/SR/ROP	29
DATE 1/27/22	OF 34
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LAST SAVE BY: J.Kelley

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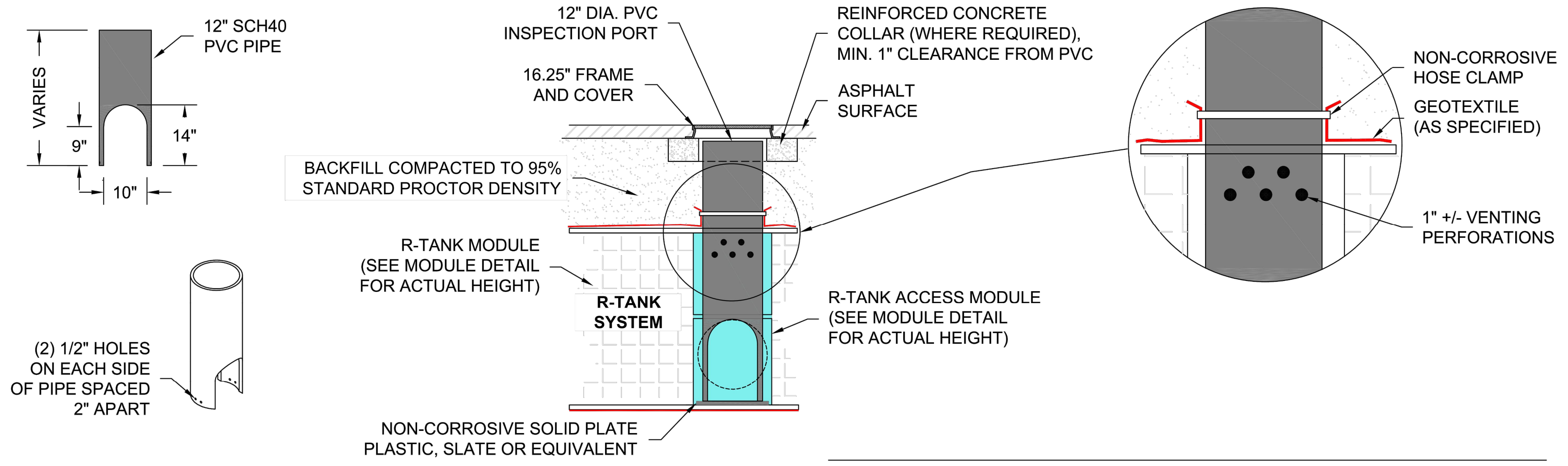
BASIN A
*FERGUSON R-TANK (OR APPROVED EQUAL)



PIPE DIA. (A)	STUB LENGTH (B)	CPS DEPTH (C)	CPS HEIGHT (D)	CPS WIDTH (E)
6"	4.00"	8.50"	10.00"	10.00"
8"	6.00"	11.00"	12.25"	11.50"
10"	8.00"	16.00"	13.50"	13.50"
12"	8.00"	16.00"	15.50"	15.50"
15"	8.00"	16.00"	21.50"	18.50"
18"	8.00"	16.00"	28.00"	21.50"
24"	10.00"	18.00"	40.00"	28.00"

STORMRING CPS PRETREATMENT DETAIL

- NOTES**
1. THE INSPECTION PORT IS USED IN THE ACCESS MODULE TO INSPECT THE LEVEL OF SEDIMENT ACCUMULATION.
 2. MINIMUM REQUIRED MAINTENANCE INCLUDES A QUARTERLY INSPECTION DURING THE FIRST YEAR OF OPERATION AND A YEARLY INSPECTION THEREAFTER. FLUSH AS NEEDED.
 3. R-TANK^{HD}, R-TANK^{SD}, R-TANK^{UD} AND R-TANK^{XD} MAY BE USED IN TRAFFIC APPLICATIONS.
 4. SEE TRAFFIC LOADING DETAIL FOR MINIMUM & MAXIMUM COVER REQUIREMENTS.
 5. IF INSPECTION PORT IS LOCATED IN A NON-TRAFFIC AREA, A PLASTIC CAP CAN BE USED IN LIEU OF A FRAME AND COVER WITH CONCRETE COLLAR.



R-TANK TYPICAL VEHICULAR LOAD RATED INSPECTION PORT



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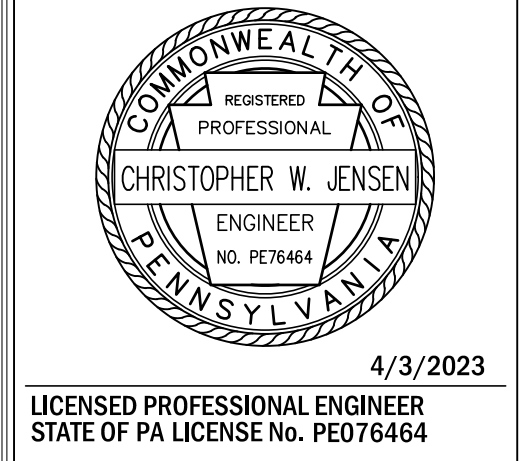
R-TANK^{HD} SYSTEM DETAILS
CITY VIEW APN 67
WORCESTER, PA

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4 of 6

ATTENTION: ALL CONTRACTORS LOCATIONS OF ALL EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM UTILITY COMPANIES RECORDS AND/OR NON-DETAILED REVISIONS OF THE CITY. COMPLETENESS OR ACCURACY OF THE SIZE, DEPTH OR HORIZONTAL LOCATION OF UNDERGROUND UTILITIES OR STRUCTURES CANNOT BE GUARANTEED. CONTRACTOR TO VERIFY LOCATION OF UTILITIES PER LEGISLATIVE ACT NUMBER 287 OF 1974 AS AMENDED BY ACT 121 OF 2004. CONTRACTOR MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES PRIOR TO START OF WORK.
 20213502293

NO.	DATE	REVISIONS	BY	CHKD
4	3/7/2024	PER GIS REVIEW LETTER DATED 01/24/2024	PRG	DS
3	11/17/2023	PER GIS REVIEW LETTER DATED 11/22/2023	PRG	DS
2	4/3/2023	REVISED ENTRANCE ON GERMAN TOWN PIKE	ROP	DS
1	10/04/2022	PER GIS REVIEW LETTER DATED 03/11/2022	PRG	DS

CHRISTOPHER W. JENSEN, P.E.
 LICENSED PROFESSIONAL ENGINEER



BT WORCESTER, LLC
 CITY VIEW - APN #67-00-01606-001
 2974 GERMAN TOWN PIKE, WORCESTER TOWNSHIP,
 MONTGOMERY COUNTY, COMMONWEALTH OF PENNSYLVANIA
 POST CONSTRUCTION STORMWATER
 MANAGEMENT DETAILS



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 CCG/JPK/ROP
 CHECKED BY
 DS
 DRAWN BY
 PG/SR/ROP
 DATE
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 PROJ. NO.
 BET00056

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PROJECT INFORMATION: C:\Projects\BET\00056\Plans\ FILE PATH: C:\Projects\BET\00056\Plans\ FILE NAME: BET00056_SHT20-30-DETAILS.dwg PLOT DATE: 06/30/2023 1:59PM PLOT TIME: 06/30/2023 1:59PM LAST SAVE BY: JKB

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BASIN A
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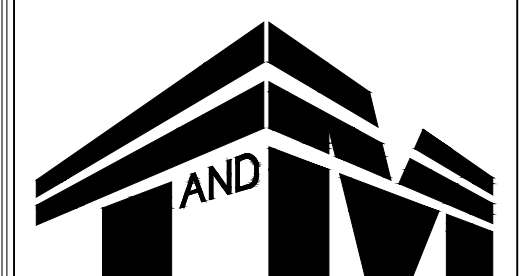
NO.	DATE	REVISIONS	BY	CHKD
1	10/04/2022	PER CHS REVIEW LETTER DATED 03/11/2022	PRG	DS
2	4/3/2023	REVISED ENTRANCE ON GERMAN TOWN PIKE	ROP	DS
3	11/17/2023	PER CHS REVIEW LETTER DATED 11/22/2023	PRG	DS
4	3/7/2024	PER CHS REVIEW LETTER DATED 01/24/2024	PRG	DS

CHRISTOPHER W. JENSEN, P.E.
LICENSED PROFESSIONAL ENGINEER



4/3/2023
LICENSED PROFESSIONAL ENGINEER
STATE OF PA LICENSE No. PED76464

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CITY VIEW - APN #67-00-01606-001
2974 GERMAN TOWN PIKE, WORCESTER TOWNSHIP,
MONTGOMERY COUNTY, COMMONWEALTH OF PENNSYLVANIA
POST CONSTRUCTION STORMWATER
MANAGEMENT DETAILS



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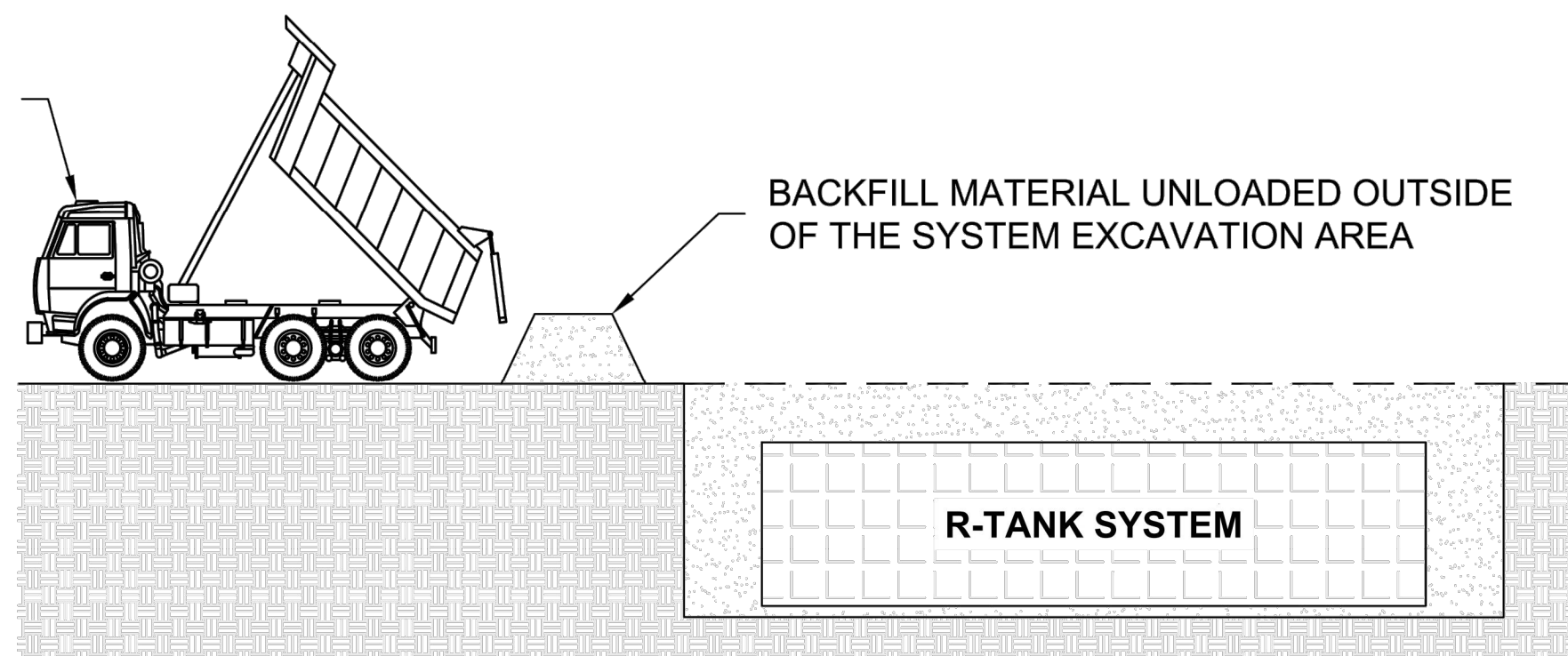
R-TANK^{HD} CONSTRUCTION EQUIPMENT
COVER DETAIL
CITY VIEW APN 67
WORCESTER, PA

SCALE
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06/30/2023
SHEET NO.

5 of 6

- NOTES:
- FOLLOWING PLACEMENT OF SIDE BACKFILL, A UNIFORM 12" LIFT OF THE FREELY DRAINING MATERIAL (SPEC SECTION 2.03 B2) SHALL BE PLACED OVER THE R-TANK AND LIGHTLY COMPACTED USING A WALK-BEHIND TRENCH ROLLER. ALTERNATELY, A ROLLER (MAXIMUM GROSS VEHICLE WEIGHT OF 6 TONS) MAY BE USED. ROLLER MUST REMAIN IN STATIC MODE UNTIL A MINIMUM OF 24" OF COVER HAS BEEN PLACED OVER THE MODULES. SHEEP FOOT ROLLERS SHOULD NOT BE USED. **SPEC SECTION 3.05 A5**
 - ONLY LOW PRESSURE TIRE OR TRACK VEHICLES (LESS THAN 7 PSI AND OPERATING WEIGHT OF LESS THAN 20,000 LBS) SHALL BE OPERATED OVER THE R-TANK SYSTEM DURING CONSTRUCTION. **SPEC SECTION 3.05 A5**
 - DUMP TRUCKS AND PANS SHALL NOT BE OPERATED WITHIN THE R-TANK SYSTEM AT ANY TIME. WHERE NECESSARY, THE HEAVY EQUIPMENT SHOULD UNLOAD IN AN AREA ADJACENT TO THE R-TANK SYSTEM AND THE MATERIAL SHOULD BE MOVED OVER THE SYSTEM WITH TRACKED EQUIPMENT. **SPEC SECTION 3.05 A5**
 - ENSURE THAT ALL UNRELATED CONSTRUCTION TRAFFIC IS KEPT AWAY FROM THE LIMITS OF EXCAVATION UNTIL THE PROJECT IS COMPLETE AND FINAL SURFACE MATERIALS ARE IN PLACE. NO NON-INSTALLATION RELATED LOADING SHOULD BE ALLOWED OVER THE R-TANK SYSTEM UNTIL THE FINAL DESIGN SECTION HAS BEEN CONSTRUCTED (INCLUDING PAVEMENT). **SPEC SECTION 3.05 B**
 - SEE R-TANK INSTALLATION GUIDE OR CONTACT YOUR LOCAL FERGUSON REPRESENTATIVE FOR ADDITIONAL INFORMATION.

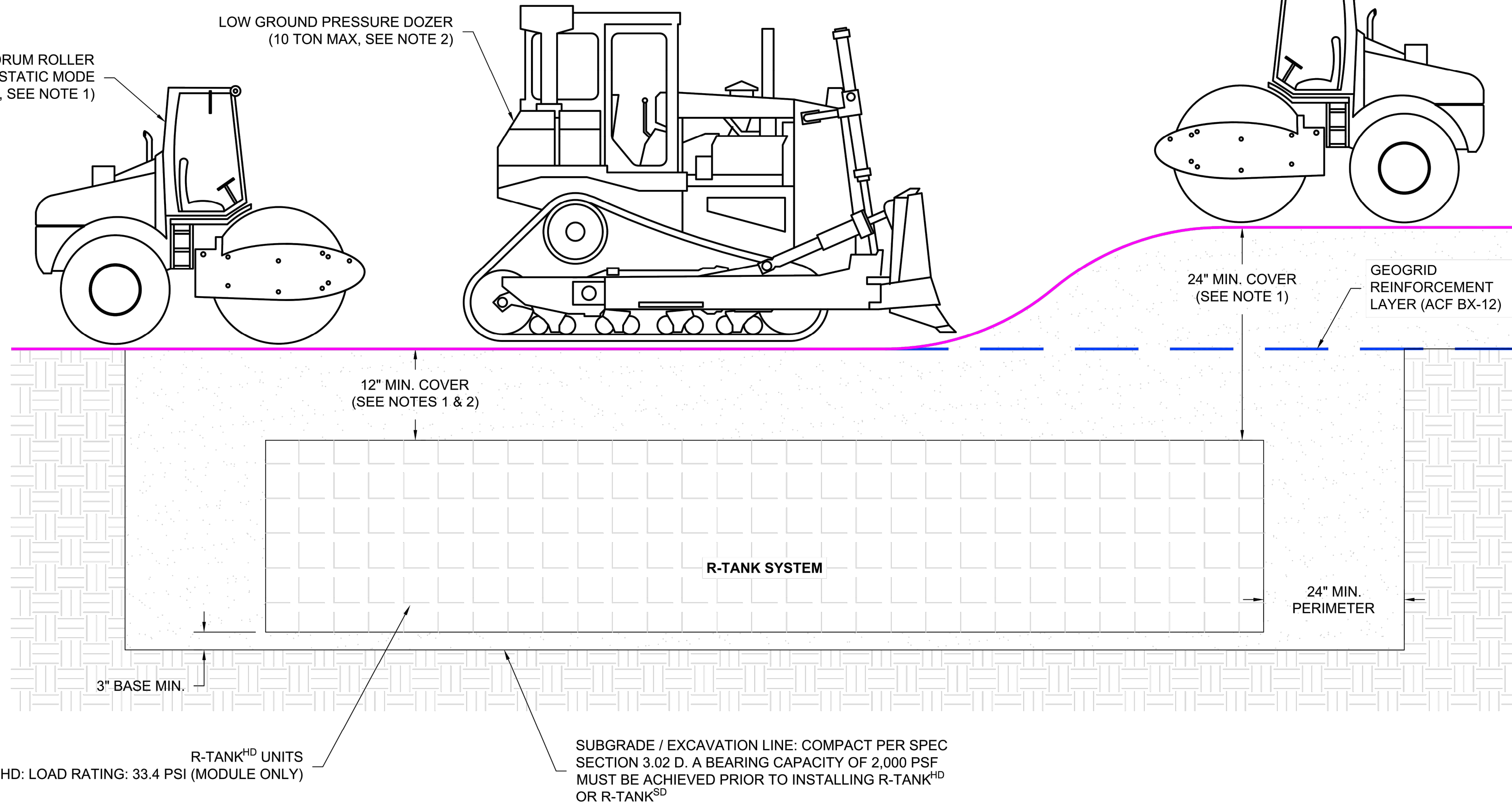
DUMP TRUCKS AND PANS SHALL NOT OPERATE OVER THE SYSTEM EXCAVATION AREA



DUMP TRUCK DETAIL (SEE NOTE 3)

SMOOTH DRUM ROLLER STATIC MODE (6 TON MAX, SEE NOTE 1)

LOW GROUND PRESSURE DOZER (10 TON MAX, SEE NOTE 2)



CONSTRUCTION EQUIPMENT COVER DETAIL - VEHICULAR TRAFFIC

BASIN A

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R-TANK SPECIFICATION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings, technical specification and general provisions of the Contract as modified herein apply to this section.

1.02 DESCRIPTION OF WORK INCLUDED

- A. Provide excavation and base preparation per geotechnical engineer's recommendations and/or as shown on the design drawings, to provide adequate support for project design loads and safety from excavation sidewall collapse. Excavations shall be in accordance with the owner's and OSHA requirements.
- B. Provide and install R-TankLD/, R-TankHD/, R-TankSD/, or R-TankUD/ system (hereafter called R-Tank) and all related products including fill materials, geotextiles, geogrids, inlet and outlet pipe with connections per the manufacturer's installation guidelines provided in this section.
- C. Provide and construct the cover of the R-Tank system including; stone backfill, structural fill cover, and pavement section as specified.
- D. Protect R-Tank system from construction traffic after installation until completion of all construction activity in the installation area.

1.03 QUALITY CONTROL

- A. All materials shall be manufactured in ISO certified facilities.
- B. Installation Contractor shall demonstrate the following experience:
1. A minimum of three R-Tank or equivalent projects completed within 2 years; and,
 2. A minimum of 25,000 cubic feet of storage volume completed within 2 years.
 3. Contractor experience requirement may be waived if the manufacturer's representative provides on-site training and review during construction.
- C. Installation Personnel: Performed only by skilled workers with satisfactory record of performance on bulk earthworks, pipe, chamber, or pond/landfill construction projects of comparable size and quality.
- D. Contractor must have manufacturer's representative available for site review if requested by Owner.

1.04 SUBMITTALS

- A. Submit proposed R-Tank layout drawings. Drawings shall include typical section details as well as the required base elevation of stone and tanks, minimum cover requirements and tank configuration.
- B. Submit manufacturer's product data, including compressive strength and unit weight.
- C. Submit manufacturer's installation instructions.
- D. Submit R-Tank sample for review. Reviewed and accepted samples will be returned to the Contractor.
- E. Submit material certificates for geotextile, geogrid, base course and backfill materials.
- F. Submit required experience and personnel requirements as specified in Section 1.03.
- G. Any proposed equal alternative product substitution to this specification must be submitted for review and approved prior to bid opening. Review package should include third party reviewed performance data that meets or exceeds criteria in Table 2.01 B.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Protect R-Tank and other materials from damage during delivery, and store UV sensitive materials under tarp to protect from sunlight when time from delivery to installation exceeds two weeks. Storage of materials should be on smooth surfaces, free from dirt, mud and debris.
- B. Handling is to be performed with equipment appropriate to the materials and site conditions, and may include hand, handcart, forklifts, extension lifts, etc.
- C. Cold weather:
1. Care must be taken when handling plastics when air temperature is 40 degrees or below as plastic becomes brittle.
 2. Do not use frozen materials or materials mixed or coated with ice or frost.
 3. Do not build on frozen ground or wet, saturated or muddy subgrade.

1.06 PREINSTALLATION CONFERENCE

- A. Prior to the start of the installation, a preinstallation conference shall occur with the representatives from the design team, the general contractor, the excavation contractor, the R-Tank installation contractor, and the manufacturer's representative.

1.07 PROJECT CONDITIONS

- A. Coordinate installation for the R-Tank system with other on-site activities to eliminate all non-installation related construction traffic over the completed R-Tank system. No loads heavier than the design loads shall be allowed over the system, and in no case shall loads higher than a standard AASHTO HS20 (or HS25, depending on design criteria) load be allowed on the system at any time.
- B. Protect adjacent work from damage during R-Tank system installation.
- C. All pre-treatment systems to remove debris and heavy sediments must be in place and functional prior to operation of the R-Tank system. Additional pretreatment measures may be needed if unit is operational during construction due to increased sediment loads.
- D. Contractor is responsible for any damage to the system during construction.

PART 2 - PRODUCTS

2.01 R-TANK UNITS

- A. R-Tank - Injection molded plastic tank plates assembled to form a 95% void modular structure of predesigned height (custom for each project).
- B. R-Tank units shall meet the following Physical & Chemical Characteristics:

PROPERTY	DESCRIPTION	R-Tank ^{HD} VALUE	R-Tank ^{SD} VALUE	R-Tank ^{LD} VALUE	R-Tank ^{UD} VALUE
Void Area	Volume available for water storage	95%	95%	95%	95%
Surface Void Area	Percentage of exterior available for infiltration	90%	90%	90%	90%
Vertical Compressive Strength	ASTM D 2412 / ASTM F 2418	30.0 psi	33.4 psi	42.9 psi	134.2 psi
Lateral Compressive Strength	ASTM D 2412 / ASTM F 2418	20.0 psi	22.4 psi	28.9 psi	N/A
HS-20 Minimum Cover	Cover required to support HS-20 loads	N/A	20"	18"	12" (STONE BACKFILL)
HS-25 Minimum Cover	Cover required to support HS-25 loads	N/A	24"	19"	10" (STONE BACKFILL)
Maximum Cover	Maximum allowable cover depth	3 feet	< 7 feet	< 10 feet	5 feet
Unit Weight	Weight of plastic per cubic foot of tank	3.29 lbs / cf	3.62 lbs/cf	3.96 lbs / cf	4.33 lbs / cf
Rib Thickness	Thickness of load-bearing members	0.18 inches	0.18 inches	0.18 inches	N/A
Service Temperature	Safe temperature range for use	-14 - 167° F	-14 - 167° F	-14 - 167° F	-14 - 167° F

- C. Supplier: Ferguson Waterworks 2831 Cardwell Road Richmond, VA 23234 (T): 800-448-3636; (F): 804-743-7779 www.ferguson.com

2.02 GEOSYNTHETICS

- A. Geotextile. A geotextile envelope is required to prevent backfill material from entering the R-Tank modules.
1. Standard Application: The standard geotextile shall be an 8 oz per square yard nonwoven geotextile (ACF N080 or equivalent).
 2. Infiltration Applications: When water must infiltrate/exfiltrate through the geotextile as a function of the system design, a woven monofilament (ACF M200 or equivalent) shall be used.
- B. Geogrid. For installations subject to traffic loads and/or when required by project plans, install geogrid (ACF BX12 or equivalent) to reinforce backfill above the R-Tank system. Geogrid is not always required for R-TankUD/ installations, and is often not required for non-traffic load applications.

2.03 BACKFILL & COVER MATERIALS

- A. Bedding Materials: Stone (angular and smaller than 1.5" in diameter) or soil (GW, GP, SW, or SP as classified by the Unified Soil Classification System) shall be used below the R-Tank system (3" minimum). Material must be free from lumps, debris, and any sharp objects that could cut the geotextile. Material shall be within 3 percent of the optimum moisture content as determined by ASTM D698 at the time of installation. For infiltration applications bedding material shall be free draining.
- B. Side and Top Backfill: Material must be free from lumps, debris and any sharp objects that could cut the geotextile. Material shall be within 3 percent of the optimum moisture content as determined by ASTM D698 at the time of installation.
1. Traffic Applications - Free draining material shall be used adjacent to (24" minimum) and above (for the first 12") the R-Tank system.
 - a. For HD, and SD modules, backfill materials shall be free draining stone (angular and smaller than 1.5" in diameter) or soil (GW, GP, SW, or SP as classified by the Unified Soil Classification System).
 - b. For UD modules with less than 14" of top cover, backfill materials shall be free draining stone (angular and smaller than 1.5" in diameter). The use of soil backfill on the sides and top of the UD module is not permitted unless the modules are installed outside of traffic areas or with cover depths of 14" or more. Top backfill material (from top of module to bottom of pavement base or 12" maximum) must be consistent with side backfill.
 2. Non-Traffic / Green Space Applications - For all R-Tank modules installed in green spaces and not subjected to vehicular loads, backfill materials may either follow the guidelines for Traffic Applications above, or the top backfill layer (12" minimum) may consist of AASHTO #57 stone blended with 30-40% (by volume) topsoil to aid in establishing vegetation.
- C. Additional Cover Materials: Structural Fill shall consist of granular materials meeting the gradational requirements of SM, SP, SW, GM, GP or GW as classified by the Unified Soil Classification System. Structural fill shall have a maximum of 25 percent passing the No. 200 sieve, shall have a maximum clay content of 10 percent and a maximum Plasticity Index of 4. Material shall be within 3 percent of the optimum moisture content as determined by ASTM D698 at the time of installation.

2.04 OTHER MATERIALS

- A. Utility Marker: Install metallic tape at corners of R-Tank system to mark the area for future utility detection.

PART 3 - EXECUTION

3.01 ASSEMBLY OF R-TANK UNITS

- A. Assembly of modules shall be performed in accordance with the R-Tank Installation Manual, Section 2.

3.02 LAYOUT AND EXCAVATION

- A. Installer shall stake out, excavate, and prepare the subgrade area to the required plan grades and dimensions, ensuring that the excavation is at least 2 feet greater than R-Tank dimensions in each direction allowing for installation of geotextile filter fabric, R-Tank modules, and free draining backfill materials.
- B. All excavations must be prepared with OSHA approved excavated sides and sufficient working space.
- C. Protect partially completed installation against damage from other construction traffic by establishing a perimeter with high visibility construction tape, fencing, barricades, or other means until construction is complete.
- D. Base of the excavation shall be uniform, level, and free of lumps or debris and soft or yielding subgrade areas. A minimum 2,000 pounds per square foot bearing capacity is required.
1. Standard Applications: Compact subgrade to a minimum of 95% of Standard Proctor (ASTM D698) density or as required by the Owner's engineer.
 2. Infiltration Applications: Subgrade shall be prepared in accordance with the contract documents. Compaction of subgrade should not be performed in infiltration applications.
- E. Unsuitable Soils or Conditions: All questions about the base of the excavation shall be directed to the owner's engineer, who will approve the subgrade conditions prior to placement of stone. The owner's engineer shall determine the required bearing capacity of the R-Tank subgrade; however in no case shall a bearing capacity of less than 2,000 pounds per square foot be provided.
1. If unsuitable soils are encountered at the subgrade, or if the subgrade is pumping or appears excessively soft, repair the area in accordance with contract documents and/or as directed by the owner's engineer.
 2. If indications of the water table are observed during excavation, the engineer shall be contacted to provide recommendations.
 3. Do not start installation of the R-Tank system until unsatisfactory subgrade conditions are corrected and the subgrade conditions are accepted by the owner's engineer.

3.03 PREPARATION OF BASE

- A. Place a thin layer (3" unless otherwise specified) of bedding material (Section 2.03 A), over the subgrade to establish a level working platform for the R-Tank modules. Level to within 1/2" (+/- 1/2") or as shown on the plans. Native subgrade soils or other materials may be used if determined to meet the requirements of 2.03 A and are accepted by the owner's engineer.
1. Standard Applications: Static roll or otherwise compact bedding materials until they are firm and unyielding.
 2. Infiltration Applications: Bedding materials shall be prepared in accordance with the contract documents.
- B. Outline the footprint of the R-Tank system on the excavation floor using spray paint or chalk line to ensure a 2' perimeter is available around the R-Tank system for proper installation and compaction of backfill.

3.04 INSTALLATION OF THE R-TANKS

- A. Where a geotextile wrap is specified on the stone base, cut strips to length and install in excavation, removing wrinkles so material lays flat. Overlap geotextile a minimum 12" or as recommended by manufacturer. Use tape, special adhesives, sandbags or other ballast to secure overlaps. As geotextiles can be damaged by extreme heat, smoking is not permissible on/near the geotextile, and tools using a flame to tack the overlaps, such as propane torches, are prohibited.
- B. Where an impervious liner (for containment) is specified, install the liner per manufacturer's recommendations and the contract documents. The R-Tank units shall be separated from impervious liner by a non-woven geotextile fabric installed accordance with Section 3.04A.
- C. Install R-Tank modules by placing side by side, in accordance with the design drawings. No lateral connections are required. It is advisable to use a string line to form square corners and straight edges along the perimeter of the R-Tank system. The modules are to be oriented as per the design drawing with required depth as shown on plans.
1. For LD, HD, and SD installations, the large side plate of the tank should be placed on the perimeter of the system. This will typically require that the two ends of the tank area will have a row of tanks placed perpendicular to all other tanks. If this is not shown in the construction drawings, it is a simple field adjustment that will have minimal effect on the overall system footprint. Refer to R-Tank Installation Guide for more details.
 2. For UD installations, there is no perpendicular end row required.
- D. Wrap the R-Tank top and sides in specified geotextile. Cut strips of geotextile so that it will cover the sides and top, encapsulating the entire system to prevent backfill entry into the system. Overlap geotextile 12" or as recommended by manufacturer. Take great care to avoid damage to geotextile (and, if specified, impervious liner) during placement.
- E. Identify locations of inlet, outlet and any other penetrations of the geotextile (and optional liner). These connections should be installed flush (butted up to the R-Tank) and the geotextile fabric shall be cut to enable hydraulic continuity between the connections and the R-Tank units. These connections shall be secured using pipe boots with stainless steel pipe clamps. Support pipe in trenches during backfill operations to prevent pipe from settling and damaging the geotextile, impervious liner (if specified) or pipe. Connecting pipes at 90 degree angles facilitates construction, unless otherwise specified. Ensure end of pipe is installed snug against R-Tank system.
- F. Install Inspection and Maintenance Ports in locations noted on plans. At a minimum one maintenance port shall be installed within 10' of each inlet & outlet connection, and with a maximum spacing of one maintenance port for every 2,500 square feet. Install all ports as noted in the R-Tank Installation Guide.
- G. If required, install ventilation pipes and vents as specified on drawings to provide ventilation for proper hydraulic performance. The number of pipes and vents will depend on the size of the system. Vents are often installed using a 90 degree elbow with PVC pipe into a landscaped area with "U" bend or venting bollard to inhibit the ingress of debris. A ground level concrete or steel cover can be used.

3.05 BACKFILLING OF THE R-TANK UNITS

- A. Backfill and fill with recommended materials as follows:
1. Place freely draining backfill materials (Section 2.03 B) around the perimeter in lifts with a maximum thickness of 12". Each lift shall be placed around the entire perimeter such that each lift is no more than 24" higher than the side backfill along any other location on the perimeter of the R-Tank system. No fill shall be placed over top of tanks until the side backfill has been completed.
 2. Each lift shall be compacted at the specified moisture content to a minimum of 95% of the Standard Proctor Density until no further densification is observed (for self-compacting stone materials). The side lifts must be compacted with walk behind compaction equipment. Even when "self-compacting" backfill materials are selected, a walk behind vibratory compactor must be used.
 3. Take care to ensure that the compaction process does not allow the machinery to come into contact with the modules due to the potential for damage to the geotextile and R-Tank units.
 4. No compaction equipment is permissible to operate directly on the R-Tank modules.
 5. Top Backfill: Only low pressure track vehicles shall be operated over the R-Tank system during construction. Dump Trucks and Pans shall not be operated within the R-Tank system footprint at any time. Heavy equipment should unload in an area adjacent to the R-Tank system and the material should be moved over the system using tracked equipment with an operating weight of less than 10 tons.
 - a. Typical Applications: Install a 12" (or as shown on plans) lift of freely draining material (Section 2.03 B) over the R-Tank Units, maintaining 12" between equipment tracks and R-Tank System. Lightly compacted using a walk-behind trench roller. Alternately, a roller (maximum gross vehicle weight of 6 tons) may be used. Roller must remain in static mode until a minimum of 24" of cover has been placed over the modules. Sheep foot rollers should not be used.
 - b. Shallow Applications (< 18" total cover): Install top backfill in accordance with plans.
6. If required, install a geogrid as shown on plans. Geogrid shall extend a minimum of 3 feet beyond the limits of the excavation wall.
 7. Following placement and compaction of the initial cover, subsequent lifts of structural fill (Section 2.03 C) shall be placed at the specified moisture content and compacted to a minimum of 95% of the Standard Proctor Density and shall cover the entire footprint of the R-Tank system. During placement of fill above the system, unless otherwise specified, a uniform elevation of fill shall be maintained to within 12" across the footprint of the R-Tank system. Do not exceed maximum cover depths listed in Table 2.01 B.
 8. Place additional layers of geotextile and/or geogrid at elevations as specified in the design details. Each layer of geosynthetic reinforcement placed above the R-Tank system shall extend a minimum of 3 feet beyond the limits of the excavation wall.
- B. Ensure that all unrelated construction traffic is kept away from the limits of excavation until the project is complete and final surface materials are in place. No non-installation related loading should be allowed over the R-Tank system until the final design section has been constructed (including pavement).
- C. Place surfacing materials, such as groundcovers (no large trees), or paving materials over the structure with care to avoid displacement of cover fill and damage to surrounding areas.
- D. Backfill depth over R-Tank system must be within the limitations shown in the table in Section 2.01 B. If the total backfill depth does not comply with this table, contact engineer or manufacturer's representative for assistance.

3.06 MAINTENANCE REQUIREMENTS

- A. A routine maintenance effort is required to ensure proper performance of the R-Tank system. The Maintenance program should be focused on pretreatment systems. Ensuring these structures are clean and functioning properly will reduce the risk of contamination of the R-Tank system and stormwater released from the site. Pre-treatment systems shall be inspected yearly, or as directed by the regulatory agency and by the manufacturer (for proprietary systems). Maintain as needed using acceptable practices or following manufacturer's guidelines (for proprietary systems).
- B. All inlet pipes and Inspection and/or Maintenance Ports in the R-Tank system will need to be inspected for accumulation of sediments at least quarterly through the first year of operation and at least yearly thereafter.
- C. If sediment has accumulated to the level noted in the R-Tank Maintenance Guide or beyond a level acceptable to the Owner's engineer, the R-Tank system should be flushed.
- D. All inspection and maintenance activities should be performed in accordance with the R-Tank Operation, Inspection & Maintenance Manual.

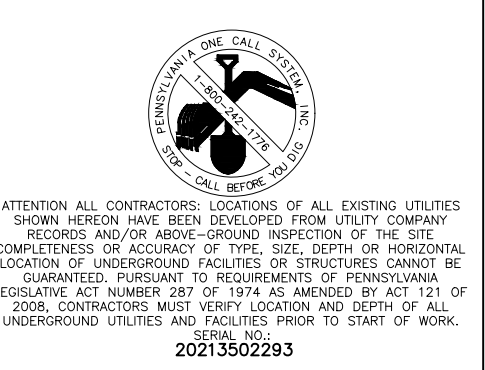


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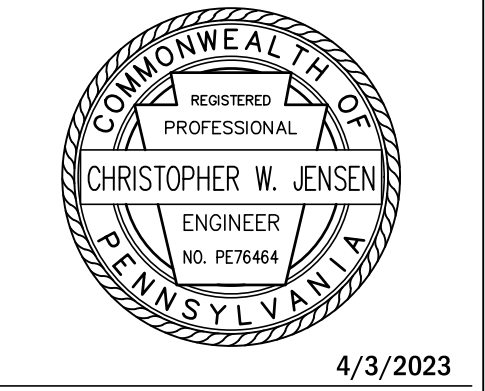
ENGINEER OF RECORD TO REVIEW, APPROVE AND ENDORSE FINAL SITE SPECIFIC DESIGN.

FOR ADDITIONAL INFORMATION PLEASE CONTACT:
FERGUSON WATERWORKS,
1-800-448-3636, www.ferguson.com



NO.	DATE	REVISIONS	BY	CHKD
1	10/04/2022	PER CIS REVIEW LETTER DATED 03/11/2022	PRG	DS
2	4/3/2023	REVISED ENTRANCE ON GERMANTOWN PIKE	PRG	DS
3	11/17/2023	PER CIS REVIEW LETTER DATED 11/22/2022	PRG	DS
4	3/7/2024	PER CIS REVIEW LETTER DATED 01/24/2024	PRG	DS

CHRISTOPHER W. JENSEN, P.E.
LICENSED PROFESSIONAL ENGINEER



4/3/2023
LICENSED PROFESSIONAL ENGINEER
STATE OF PA LICENSE NO. PED76464

BT WORCESTER, LLC

CITY VIEW - APN #67-00-01606-001
2974 GERMANTOWN PIKE, WORCESTER TOWNSHIP,
MONTGOMERY COUNTY, COMMONWEALTH OF PENNSYLVANIA

POST CONSTRUCTION STORMWATER
MANAGEMENT DETAILS



1700 MARKET STREET, SUITE 3110
PHILADELPHIA, PA 19103
TEL 215-282-7850
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BMP SPECIFICATIONS

BMP 5.6.3 RE-VEGETATE AND RE-Forest DISTURBED AREAS, USING NATIVE SPECIES PART TWO - REVEGETATE AND REFOREST
TO RECEIVE CREDIT FOR PLANTING TREES, THE FOLLOWING CRITERIA MUST BE MET:
1. TREES MUST BE NATIVE SPECIES, MINIMUM 2" CALIPER, MINIMUM TREE HEIGHT IS 16 FEET.

BMP 6.4.5 BIORETENTION (MRC):

VEGETATION - SEE APPENDIX B OF PA BMP MANUAL EXERCISE
A. SUBGRADE PREPARATION
1. INITIAL EXCAVATION CAN BE PERFORMED DURING FINAL SITE GRADING BUT SHALL NOT EXCEED ONE FOOT BELOW THE FINAL BOTTOM ELEVATION. FINAL EXCAVATION SHOULD NOT TAKE PLACE UNTIL ALL DISTURBED AREAS IN THE DRAINAGE AREA HAVE BEEN STABILIZED.

3. SUB-SOILING TO RELIEVE COMPACTION
A. BEFORE THE TIME THE COMPOST IS PLACED AND PREFERABLY WHEN EXCAVATION IS COMPLETED, THE SUBSOIL SHALL BE TO A LOOSE, FRABLE CONDITION TO A DEPTH OF 20 INCHES BELOW FINAL TOPSOIL GRADE AND THERE SHALL BE NO EROSION RILLS OR WASHOUTS IN THE SUBSOIL, SURFACE EXCEEDING 3 INCHES IN DEPTH.
B. TO ACHIEVE THIS CONDITION, SUBSOILING, RIPPING, OR SCARIFICATION OF THE SUBSOIL WILL BE REQUIRED AS DIRECTED BY THE OWNER'S REPRESENTATIVE, WHEREVER THE SUBSOIL WILL BE COMPACTED BY EQUIPMENT OPERATION OR HAS BECOME DRIED OUT AND CRUSTED, AND WHERE NECESSARY TO OBLITERATE EROSION RILLS, SUB-SOILING SHALL BE REQUIRED TO REDUCE SOIL COMPACTION IN ALL AREAS WHERE PLANT ESTABLISHMENT IS PLANNED.

4. COMPOST SOIL AMENDMENT INSTALLATION
A. A. SPREAD 2-3 INCHES OF APPROVED COMPOST ON EXISTING SOIL, TILL ADDED SOIL INTO EXISTING SOIL WITH A ROTARY TILLAGE THAT IS SET TO A DEPTH OF 6 INCHES, ADD AN ADDITIONAL 4 INCHES OF APPROVED COMPOST TO BLENDED AREA, AND REPEAT.
B. AFTER PERMANENT PLANTING/SEEDING, 2-3 INCHES OF COMPOST BLANKET WILL BE APPLIED TO ALL AREAS NOT PROTECTED BY GRASS OR OTHER PLANTS.

6.7.3 SOIL AMENDMENT
1. AREA SHALL NOT BE SUBJECT TO GRADING OR MOVEMENT OF EXISTING SOILS.
2. EXISTING NATIVE VEGETATION IN A HEALTHY CONDITION MAY NOT BE REMOVED.
3. INVASIVE NON-NATIVE VEGETATION MAY BE REMOVED.
4. PRUNING OR OTHER REQUIRED MAINTENANCE OF VEGETATION IS PERMITTED.

PCSM PLAN GENERAL DESIGN NOTES

1. THIS PCSM PLAN PRESERVES THE INTEGRITY OF STREAM CHANNELS AND MAINTAINS AND PROTECTS THE PHYSICAL, BIOLOGICAL AND CHEMICAL QUALITIES OF THE RECEIVING STREAM BY PROTECTING THE EXISTING NATURAL DRAINAGE FEATURES.
2. THIS PCSM PLAN PREVENTS AN INCREASE IN THE RATE OF STORMWATER RUNOFF AND MINIMIZES ANY INCREASE IN STORMWATER RUNOFF VOLUME BY USE OF STRUCTURAL BMPs TO FACILITATE STORAGE AND MANAGED RELEASE OF STORMWATER.

11. INFILTRATION BMPs SHALL NOT BE CONSTRUCTED NOR RECEIVE RUNOFF UNTIL THE ENTIRE CONTRIBUTORY DRAINAGE AREA TO THE INFILTRATION BMP HAS RECEIVED FINAL STABILIZATION.
12. THE STORMWATER MANAGEMENT SYSTEM IS A PERMANENT FEATURE THAT CAN BE ALTERED OR REMOVED ONLY AFTER APPROVAL OF A REVISED PLAN BY THE MUNICIPALITY, WHICH SHALL BE RECORDED WITH THE RECORD PLAN AND WHICH SHALL BE APPLICABLE TO ALL FUTURE LANDOWNERS.
13. I HEREBY CERTIFY THAT THE DRAINAGE PLAN MEETS ALL DESIGN STANDARDS AND CRITERIA OF THE DELAWARE RIVER SOUTH WATERSHED ACT 167 STORMWATER MANAGEMENT ORDINANCE.

14. THE MUNICIPAL ENGINEER OR HIS MUNICIPAL ASSIGNEE SHALL OBSERVE ALL PHASES OF THE INSTALLATION OF THE PERMANENT STORMWATER MANAGEMENT FACILITIES AS DEEM APPROPRIATE BY THE MUNICIPAL ENGINEER.
15. DURING CONSTRUCTION, THE CONTRACTOR MUST NOTIFY THE TOWNSHIP ENGINEER'S OFFICE THREE (3) DAYS PRIOR TO THE CONSTRUCTION OF ANY PROPOSED INFILTRATION BMP STORMWATER FACILITY.
16. THE TOWNSHIP SHALL HAVE THE RIGHT TO ENTER PRIVATE PROPERTY TO INSPECT AND REPAIR, IF NECESSARY, ANY STORMWATER MANAGEMENT FACILITY.

17. THE STORMWATER MANAGEMENT FACILITIES ARE A PERMANENT PART OF THE DEVELOPMENT AND SHALL NOT BE REMOVED, ALTERED, OR MODIFIED.
A. SCOPE
1. THIS SPECIFICATION COVERS THE USE OF COMPOST FOR SOIL AMENDMENT AND THE MECHANICAL RESTORATION OF COMPACTED, ERODED AND NON-VEGETATED SOILS. SOIL AMENDMENT AND RESTORATION IS NECESSARY WHERE EXISTING SOIL HAS BEEN DEEMED UNHEALTHY IN ORDER TO RESTORE SOIL STRUCTURE AND FUNCTION, INCREASE INFILTRATION POTENTIAL AND SUPPORT HEALTHY VEGETATIVE COMMUNITIES.

BMP MAINTENANCE & INSPECTION

BMP 5.6.3 RE-VEGETATE AND RE-Forest DISTURBED AREAS, USING NATIVE SPECIES PART TWO - REVEGETATE AND REFOREST
TREES SHALL BE ADEQUATELY PROTECTED DURING CONSTRUCTION.
TREES SHALL BE MAINTAINED AND PROTECTED FOR THE LIFE OF THE PROJECT (50 YEARS) OR UNTIL REDEVELOPMENT OCCURS.

BMP 6.4.5 BIO-RETENTION (MRC):

PROPERLY DESIGNED AND INSTALLED MRC AREAS REQUIRE SOME REGULAR MAINTENANCE.
WHILE VEGETATION IS BEING ESTABLISHED, PRUNING AND WEEDING MAY BE REQUIRED.
MRC AREAS MAY ALSO NEED TO BE REMOVED EVERY YEAR. PERENNIAL PLANTINGS MAY BE CUT DOWN AT THE END OF THE GROWING SEASON.
MULCH SHOULD BE RE-SPREAD WHEN EROSION IS EVIDENT AND BE REPLISHED AS NEEDED, ONCE EVERY 2 TO 3 YEARS THE ENTIRE AREA MAY REQUIRE MULCH REPLACEMENT.

BMP 6.4.8 VEGETATED SWALE:

SWALES SHALL BE KEPT FREE OF ANY BLOCKAGE AT ALL TIMES.
MAINTENANCE ACTIVITIES TO BE DONE ANNUALLY AND WITHIN 48 HOURS AFTER EVERY MAJOR STORM EVENT:
INSPECT AND CORRECT EROSION PROBLEMS, DAMAGE TO VEGETATION, AND SEDIMENT AND DEBRIS ACCUMULATION (ELEVATING WHEN > 3 INCHES AT ANY SPOT OR COVERING VEGETATION)
INSPECT VEGETATION ON SIDE SLOPES FOR EROSION AND FORMATION OF RILLS OR GULLIES, CORRECT AS NEEDED PER AMENDED SOIL SEEDING/MULCHING SPECIFICATION.

6.6.4 WATER QUALITY FILTERS & HYDRODYNAMIC DEVICES (SHOUL)
FOLLOW THE MANUFACTURER'S GUIDELINES FOR MAINTENANCE, ALSO TAKING INTO ACCOUNT EXPECTED POLLUTANT LOAD AND SITE CONDITIONS. INLETS SHOULD BE INSPECTED WEEKLY DURING CONSTRUCTION. POST-CONSTRUCTION, THEY SHOULD BE EMPTIED WHEN OVER HALF FULL OF SEDIMENT (AND TRASH) AND CLEANED AT LEAST TWICE A YEAR. THEY SHOULD ALSO BE INSPECTED AFTER RUNOFF EVENTS. MAINTENANCE IS CRUCIAL TO THE EFFECTIVENESS OF THIS BMP. THE MORE FREQUENT A WATER QUALITY INSERT IS CLEANED, THE MORE EFFECTIVE IT WILL BE. SOME SITES HAVE FOUND KEEPING A LOG OF SEDIMENT AMOUNT DATE REMOVED HELPFUL IN PLANNING A MAINTENANCE SCHEDULE.

OPERATION & MAINTENANCE

THE FOLLOWING NOTES BELOW DESCRIBE GENERAL OPERATION AND MAINTENANCE MEASURES FOR POST CONSTRUCTION STORMWATER MANAGEMENT BEST MANAGEMENT PRACTICES (PCSM BMPs). REQUIREMENTS SPECIFIC TO EACH INDIVIDUAL BMP ARE LISTED IN RESPECTIVE DETAILS. MAINTENANCE OF SAID BMPs CAN INCLUDE RECONSTRUCTION SHOULD A FAILURE OCCUR. THEREFORE, THESE RESPECTIVE DETAILS INCLUDE CONSTRUCTION SEQUENCES FOR RESTORATION PER THE APPROVED DESIGN. ANY CONSTRUCTION ACTIVITIES REQUIRE TOWNSHIP CONSTRUCTION PERMITS AND ADEQUATE INSURANCE APPROVAL.
OPERATION & MAINTENANCE PROCEDURES
ALL STORMWATER MANAGEMENT FACILITIES AND ALL PROPOSED STORM SEWER PIPING LOCATED OUTSIDE OF ROADWAYS RIGHTS-OF-WAY SHALL BE OWNED AND MAINTAINED BY GREAT VALLEY SCHOOL DISTRICT. APPLICABLE BMPs ARE DRY EXTENDED DETENTION UNDERGROUND DETENTION BASINS, MRC BASIN AND VEGETATED SWALES. OWNER SHALL NOTIFY THE TOWNSHIP OF THE RESPECTIVE PERSONS RESPONSIBLE FOR ONGOING INSPECTIONS, OPERATION, REPAIR, AND MAINTENANCE OF THE BMP AND CONVEYANCE SYSTEMS AFTER COMPLETION OF CONSTRUCTION. IF CONSTRUCTION SCHEDULE INDICATING THE DATE WHEN THE RESTORATION ACTIVITIES WILL BE STARTED AND COMPLETED SHALL BE PREPARED AND SUBMITTED TO THE TOWNSHIP.

NO BMP OR MAN-MADE CONVEYANCE MAY BE USED BY THE OWNER OR OTHERS FOR ANY PURPOSE OTHER THAN ITS INTENDED STORMWATER CONTROL FUNCTION, OR, IF APPROVED BY THE TOWNSHIP ENGINEER, A STATEMENT OF SPECIFIC ALLOWED USES OF THE BMP (I.E., RECREATIONAL BENEFITS THAT MAY BE ASSOCIATED WITH CERTAIN BMPs OWNED BY A HOMEOWNER OR TOWNSHIP, OR ALLOWABLE USES BY AN INDIVIDUAL, RESIDENTIAL, LANDOWNER).
BMP CHARACTERISTICS & FUNCTIONALITY
DRY EXTENDED DETENTION UNDERGROUND DETENTION
AN EXTENDED DETENTION BASIN IS AN EARTHEN STRUCTURE CONSTRUCTED EITHER BY IMPROVEMENT OF A SOIL DEPRESSION OR BY CONSTRUCTION OF A CONCRETE OR METAL STRUCTURE. IT IS DESIGNED TO STORE AND HOLD WATER AND FUNCTIONS HYDRAULICALLY TO ATTENUATE STORMWATER RUNOFF PEAKS. IT CAN ALSO BE PROVIDED IN A VARIETY OF SUB-SURFACE STRUCTURAL ELEMENTS, SUCH AS LARGE PIPES OR OTHER STRUCTURAL MEDIA PLACED IN AN ADJACENT FILLED BED IN THE SOIL.

MRC FACILITY
BIORETENTION IS AN EXCAVATED SHALLOW SURFACE DEPRESSION PLANTED WITH NATIVE VEGETATION TO CAPTURE AND TREAT RUNOFF. BIORETENTION TREATS STORMWATER BY ALLOWING FILTERING AND SETTLING OF SUSPENDED SOLIDS AND SEDIMENT IN THE SURFACE AS WELL AS INFILTRATION AND STORAGE OF RUNOFF. REMOVAL OF PLANT/SOIL/MICROBE COMPLEX IS REQUIRED. THE BIORETENTION-FACILITY SPECIFIC TO THIS PROJECT IS INTENDED TO MANAGE RUNOFF FROM THE PROJECT SITE. THE RELEASE OF SOLIDS TO THE RECEIVING CHANNELS AND THE RELEASE THROUGH AND UNDERDRAIN AND CONTROL STRUCTURE AT A RATE SIMILAR TO THE LATERAL UNSATURATED FLOW MOVEMENT TO THE RECEIVING WATERS OF UNDEVELOPED AREAS.

VEGETATED SWALES
VEGETATED SWALES ARE BROAD, SHALLOW, PARABOLIC CHANNELS THAT ARE DENSELY PLANTED WITH A VARIETY OF TREES, SHRUBS AND/OR GRASSES. THEY ARE DESIGNED TO ATTENUATE OR INFILTRATE RUNOFF VOLUME FROM ADJACENT IMPERVIOUS SURFACES AND ALLOW SETTLING OF POLLUTANTS.
GENERAL MAINTENANCE PROCEDURES (ALL FACILITIES)
MONITOR SEDIMENT ACCUMULATIONS IN ALL STORMWATER MANAGEMENT AND WATER QUALITY FACILITIES. REMOVE EXCESSIVE SEDIMENT ACCUMULATIONS FROM FOREBAY STORAGE OF FOREBAY STORAGE OR FROM THE POOLS BECOME STAGNANT. ACCUMULATED SEDIMENT SHALL BE REMOVED FROM THE STORMWATER MANAGEMENT AND WATER QUALITY FACILITIES ON A REGULAR BASIS (EVERY 2 TO 10 YEARS FOR BASINS) AND SHALL EITHER BE REMOVED FROM THE PROJECT SITE OR STORED AT AN OFF-SITE STORAGE AREA. MAINTENANCE OF GUTTER BASINS AND INLETS IS BEST DONE AT LEAST ANNUALLY OR AS NECESSARY WITH A VACUUM TRUCK. ALL COLLECTED WASTE MUST BE HANDLED AND DISPOSED ACCORDING TO LOCAL ENVIRONMENTAL REQUIREMENTS. PRIOR TO ON-SITE DISPOSAL OF SEDIMENT, THE OWNER SHALL ACQUIRE THE APPROPRIATE EARTH DISTURBANCE PERMITS FROM THE MUNICIPALITY AND/OR THE CONSERVATION DISTRICT.

MRC FACILITY OBSERVATIONS SHALL BE MADE TO DETERMINE THE LENGTH OF TIME NEEDED FOR REMOVED WATER TO DRAINDOWN INTO THE SOIL MEDIA AFTER A STORM EVENT. THE OBSERVATIONS SHALL BE MADE BY READING THE WATER LEVEL IN THE DEPRESSION OF THE MRC BASIN BED SEVERAL TIMES OVER A PERIOD OF TWO (2) DAYS AFTER A LARGE STORM EVENT. THE FIRST OF THESE OBSERVATIONS SHALL PROVIDE A RECORD OF HOW WELL THE SYSTEM IS WORKING WHEN COMPARING FLOW OBSERVATIONS. MEASUREMENTS SHOULD BE TAKEN AFTER EACH RAIN EVENT OF 0.5-INCHES OR MORE, OR MONTHLY, AS DETERMINED BY LOCAL WEATHER CONDITIONS. AT A MINIMUM, MEASUREMENTS SHOULD BE TAKEN AFTER THE FIRST AND SECOND YEARLY THUNDERSTORM EVENTS AT A MINIMUM. OPERATION AND MAINTENANCE PROCEDURES FOR MRC AREAS SHALL INCLUDE:
THE OVERLYING VEGETATION OF SUBSURFACE MRC FEATURES SHALL BE MAINTAINED IN GOOD CONDITION, AND ANY BARE SPOTS REVEGETATED AS SOON AS POSSIBLE.

VEGETATED AREAS SHALL BE INSPECTED QUARTERLY FOR EROSION.
VEGETATED AREAS SHALL BE INSPECTED QUARTERLY FOR UNWANTED GROWTH OF EXOTIC/INVASIVE SPECIES.
VEGETATIVE COVER SHALL BE MAINTAINED AT A MINIMUM OF 95 PERCENT. IF VEGETATIVE COVER HAS BEEN REDUCED, MAINTENANCE SHOULD BE INITIATED TO RESTORE THE COVER TO THE 95 PERCENT LEVEL.
ACCESS TO MRC BASINS SHOULD BE PROHIBITED, AND CARE SHALL BE TAKEN TO AVOID COMPACTION OF FLOOR OF STORAGE AREA.
SEDEMENT REMOVAL SHALL BE CONDUCTED WHEN THE BASIN IS COMPLETELY DRY. SEDIMENT SHALL BE DISPOSED OF PROPERLY AND ONCE SEDIMENT IS REMOVED, DISTURBED AREAS NEED TO BE IMMEDIATELY STABILIZED AND RE-VEGETATED, AS APPLICABLE.
DAMAGED AND CRACKED SURFACES SHOULD BE INSPECTED FOR DAMAGE AND REPAIRED AS NECESSARY.
SALT IS ACCEPTABLE FOR USE AS A DEICER ON THE PAVEMENT, THOUGH NITROGEN, ORGANIC DEICERS, AND OTHERS ARE BLENDED, MAGNESIUM CHLORIDE-BASED LIQUID PRODUCTS OR AS PRETREATED SALT, ARE PREFERRED.

VEGETATED AREAS
VEGETATED AREAS SHALL BE MAINTAINED WITH A MINIMUM UNIFORM VEGETATIVE 70% PERCENTAL VEGETATIVE COVER WITH A DENSITY CAPABLE OF RESISTING ACCELERATED EROSION AND SEDIMENTATION. VEGETATED AREAS THAT WASH OFF SHOULD BE REPLACED WITH VEGETATION AS SOON AS NECESSARY USING AN ANCHORING METHOD SHOULD THEY BE USED TO HOLD SEED AND MULCH IN PLACE. THIS IS ESPECIALLY IMPORTANT ON STEEP SLOPES.
AT A MINIMUM, OPERATIONS AND MAINTENANCE PROCEDURES FOR THE FOLLOWING AREAS SHALL INCLUDE:
TREES AND SHRUBS SHOULD BE INSPECTED TWICE PER YEAR TO EVALUATE HEALTH.
ADDITIONAL PLANTINGS PROVIDED AS NECESSARY TO MAINTAIN STABILIZATION.

OUTLET STRUCTURES (ALL FACILITIES):
DURING DRY CONDITIONS, CONCRETE SPILLWAY STRUCTURES SHALL BE INSPECTED TO DETERMINE IF WATER IS PASSING THROUGH ANY JOINTS OR OTHER STRUCTURE CONTACTS AND TO IDENTIFY ANY CRACKS, SPALLING, BROKEN OR LOOSE SECTIONS. ANY CRACKED, SPALLED, BROKEN OR LOOSE SECTIONS SHALL BE CLEANED AND REFILLED WITH AN APPROPRIATE CONCRETE PATCHING MATERIAL. A PROFESSIONAL ENGINEER SHALL BE CONSULTED TO REPAIR EXTENSIVE DAMAGE, SPALLS OR FRACTURES.
ANY REPAIRS MADE TO THE PRINCIPAL SPILLWAY (RISER OR BARREL) SHALL BE REVIEWED BY A PROFESSIONAL ENGINEER. VERTICAL TRENCHING TO EXPOSE THE BARREL SHALL NOT BE ALLOWED UNDER ANY CIRCUMSTANCES. THE TRENCH SIDE SLOPES SHALL BE STEPPED BACK AT A 2:1 SLOPE, MINIMUM.

FACILITY MAINTENANCE (ALL FACILITIES):
ALL ANNUAL BURROWS SHALL BE BACKFILLED AND COMPACTED AND BURROWING ANIMALS SHALL BE REMOVED FROM THE AREA.
ALL SEEDINGS NOT INDICATED ON LANDSCAPE PLANS SHALL BE REMOVED AT THE FIRST OPPORTUNITY. SIMILARLY, ANY VINE COVER AND BRUSH SHALL BE REMOVED FROM THE EMBANKMENT TO ALLOW FOR INSPECTIONS.
FAILURE TO MAINTAIN
THE OWNERS, HEREIN AND/OR ASSIGNS OF THE PROJECT SITE SHALL MAINTAIN OWNERSHIP OF AND BE RESPONSIBLE FOR THE MAINTENANCE OF THE STORM SEWER SYSTEM AND DETENTION FACILITY. IN THE EVENT SAID OWNERS, HEREIN AND/OR ASSIGNS FAIL TO PROPERLY MAINTAIN SAID FACILITIES, THE MUNICIPALITY SHALL HAVE THE RIGHT TO PERFORM SAID MAINTENANCE AT THE EXPENSE OF THE OWNERS AFTER PROPER NOTIFICATION OF THE OWNERS.

FACILITY INDICATORS:
THIS SECTION DEFINES FAILURE OF THE PRIMARY BMPs AS RELATED TO DETERMINING TIME.
MRC FACILITY - THE MRC FACILITY IS DESIGNED TO RECEIVE RUNOFF FROM THE MAJORITY OF THE SITE AS WELL AS A PORTION OF OFF-SITE RUNOFF. ITS PLANTING MEDIA IS DESIGNED TO FILTER THE INFLOW AND ALLOW IT TO INFILTRATE INTO THE SUBSOIL. IF THE INFLOW IS EXCESSIVE AND/OR CONSTANT STANDING WATER DEPTH OCCURS, THERE MAY BE AN ISSUE WITH UNDERDRAIN / OFFICE CLOGGINGS AND THE UNDERDRAIN PIPE SHOULD BE FLUSHED. SHOULD THIS ACTION NOT CORRECT THE ISSUE, THE FILTER MEDIA SHOULD BE ASSESSED AND REPLACED TO THE EXTENT REQUIRED TO RESTORE FUNCTION.
DETENTION RE-ESTABLISHMENT PER THE ORIGINAL DESIGN SHALL BE REQUIRED IN THE MEDIA REPRESENTED AREAS.

EROSION AND SEDIMENTATION POLLUTION CONTROL SPECIALIST'S CONTACTS:
MONTGOMERY COUNTY CONSERVATION DISTRICT: (610) 489-4506
PADEP: SOUTHEAST REGIONAL OFFICE: (484) 250-5900
FOR ADDITIONAL INFORMATION ON THE REQUIREMENTS OF SPECIFIC STORMWATER MANAGEMENT AND WATER QUALITY FACILITIES, SEE THE 2006 PENNSYLVANIA STORMWATER BMP MANUAL.
PCSM PLAN REVISIONS:
ANY REVISION TO THE APPROVED SWM SITE PLAN SHALL BE SUBMITTED TO AND APPROVED BY THE TOWNSHIP, AND A REVISED EROSION AND SEDIMENT CONTROL PLAN SHALL BE SUBMITTED TO AND APPROVED BY THE CONSERVATION DISTRICT OR TOWNSHIP (AS APPLICABLE) FOR A DETERMINATION OF ADEQUACY PRIOR TO THE CONSTRUCTION OF THE REVISED FEATURES, SHALL BE SIGNED BY THE APPLICANT.

Table with 5 columns: Map Unit Symbol, Map Unit Name, Acres in AOI, Percent of AOI. Rows include Bb, Bi, PIC, UYb, UaD, and Totals for Area of Interest.

Table E.1: LIMITATIONS OF PENNSYLVANIA SOILS PERTAINING TO EARTHMOVING PROJECTS. Columns include Soil Name, Erodibility, Permeability, etc.

CONSTRUCTION SEQUENCE

GENERAL SEQUENCE NOTES:
AT LEAST 7 DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, THE OPERATOR SHALL INVITE ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES, THE LANDOWNER, ALL APPROPRIATE MUNICIPAL OFFICIALS, THE EROSION AND SEDIMENT CONTROL PLAN PREPARER, AND THE CONSERVATION DISTRICT TO AN ON-SITE MEETING. ALSO, AT LEAST 3 WORKING DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES SHALL NOTIFY THE PENNSYLVANIA ONE CALL SYSTEM INCORPORATED AT 1-800-242-1776 FOR BURIED UTILITY LOCATIONS.

EROSION AND SEDIMENT BMPs MUST BE CONSTRUCTED, STABILIZED, AND FUNCTIONAL BEFORE SITE DISTURBANCE BEGINS WITHIN THE TRIBUTARY AREAS OF THOSE BMPs.
ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. EACH STAGE SHALL BE COMPLETED BEFORE ANY FOLLOWING STAGE IS INITIATED. CLEARING AND GRUBBING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH STAGE.
CRITICAL STAGE ITEMS THAT REQUIRE INSPECTION BY THE ENGINEER ARE SPECIFIED.
NOTE: NO ACTIVITIES SHALL DISTURB IDENTIFIED WATERS OF THE U.S. WITHOUT PRIOR APPROVAL OF PADEP. DISTURBANCES SHALL BE IN STRICT ACCORDANCE WITH IDENTIFIED PLAN AREAS WHICH ARE MINIMIZED FOR PROPOSED IMPROVEMENTS.

SITE CONSTRUCTION SEQUENCE
1. INSTALL CONSTRUCTION ENTRANCE, INSTALL PERIMETER COMPOST SOCK AND TREE PROTECTION FENCING.
CRITICAL STAGE - INSPECT CONSTRUCTION ENTRANCE AND COMPOST SOCK
2. INSTALL STORM SEWER B1 TO OCS 2 (NOT INCLUDING OCS 2 STRUCTURE) AND B1 TO B3 FROM BOTTOM TO TOP. STABILIZE EACH DAY WITH EITHER TOPSOIL SEEDING AND MULCH. INSTALL INLET PROTECTIONS.

CRITICAL STAGE - ENSURE CONSTRUCTED INLETS ARE PROPERLY INSTALLED, STABILIZED AND PROTECTED
3. GRADE SEDIMENT BASIN A AND INSTALL TEMPORARY RISER, SKIMMER DEVICES, AND ALL OTHER BASIN RELATED CONTROL STRUCTURES AS INDICATED IN THE ENS PLAN. INSTALL COMPOST FILTER SOCK BEHM AS SHOWN ON THE PLAN.

CRITICAL STAGE - SEDIMENT BASIN A AND CONTROL STRUCTURES TO BE INSPECTED PRIOR TO ADVANCING
4. MASS GRADING OF SITE MAY BEGIN. REMOVE EXISTING SITE FEATURES AND DISPOSE PROPERLY. STORE EXCESS FILL IN ESTABLISHED STOCKPILE AREA. INSTALL STORM SEWER AND UTILITIES. INCLUDING THE WALLS OF THE SEDIMENT BASIN A AT ALL TIMES. DO NOT INSTALL CURBING UPSLOPE OF THE SEDIMENT BASIN UNTIL THE CONTRIBUTING DRAINAGE AREA IS STABILIZED AND THE STORM INLETS NO LONGER NEED TO BE SEALED. INSTALL NEW PAVEMENT AND SIDEWALKS TO BINDER COURSE. STABILIZE SLOPES WITH EROSION CONTROL BLANKETS WHERE INDICATED.

CRITICAL STAGE - INSPECTION OF SITE STABILIZATION AND CONVERSION OF SEDIMENT BASIN
5. WHEN TRIBUTARY DRAINAGE AREAS ARE 70% STABILIZED, CONVERT SEDIMENT BASIN TO PERMANENT BASIN. MUST BE APPROVED BY CONSERVATION DISTRICT AND ENGINEER. DESILT AND STABILIZE. REMOVE SKIMMER AND ESTABLISH FINAL OUTLET STRUCTURE. EXCAVATE TO INSTALL PERIMETER WALLS AND CURBING UPSLOPE OF THE SEDIMENT BASIN TO BE PROTECTED FROM FILL SLITLON AT ALL TIMES. INSTALL GRATES PER MANUFACTURER RECOMMENDATIONS. INSTALL OCS 1 AND OCS 2. COMPLETE FINAL GRADING OF SLOPE BETWEEN UNDERGROUND DETENTION AND MRC BASIN. STABILIZE SLOPE WITH SOO, AND COMPLETE ANY FINAL LANDSCAPING. INSTALL MRC BASIN MEDIA AND PLANTINGS WHERE INDICATED.

CRITICAL STAGE - DESIGN ENGINEER SITE INSPECTION TO VERIFY FUNCTION OF MRC BASIN 1 AND UNDERGROUND DETENTION FACILITY AND 90% STABILIZATION. NO CONTROLS MAY BE REMOVED WITHOUT MCOB APPROVAL.
6. ONLY WHEN SITE IS 90% UNIFORMLY STABILIZED, REMOVE PERIMETER CONTROLS. COMPOST FROM SOCKS MAY BE RE-SPREAD ON SITE OR DISPOSED OF PROPERLY.

RESPONSIBILITIES FOR FILL MATERIALS

1. THE OPERATOR MUST USE ENVIRONMENTAL DUE DILIGENCE TO ENSURE THAT ANY NECESSARY FILL MATERIAL ASSOCIATED WITH THIS PROJECT QUALIFIES AS CLEAN FILL. ONLY FILL FROM THE OPERATOR'S OWN STOCKPILE OR FROM A SOURCE THAT IS IDENTIFIED AS "MANAGEMENT OF FILL", DOCUMENT NUMBER 258-2182-773. A COPY OF THIS POLICY IS AVAILABLE ONLINE AT WWW.PDFWEB.STATE.PA.US.
2. CLEAN FILL IS DEFINED AS: UNCONTAMINATED, NON-WATER SOLUBLE, NON-DECOMPOSED, INERT, SOLID MATERIAL. THE TERM INCLUDES SOIL, ROCK, STONE, CRUSHED MATERIALS, USED ASPHALT, AND BRICK, BLOCK OR CONCRETE. FILL FROM CONSTRUCTION AND DEMOLITION ACTIVITIES THAT IS SEPARATED FROM THE WASTE AND IS RECOGNIZABLE AS SUCH. THE TERM DOES NOT INCLUDE MATERIALS PLACED IN OR ON THE WATERS OF THE COMMONWEALTH UNLESS OTHERWISE AUTHORIZED (THE CRATE FILTER POLICY DOES NOT INCLUDE MILLED ASPHALT OR ASPHALT THAT HAS BEEN PROCESSED FOR RE-USE).

3. CLEAN FILL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE: FILL MATERIALS IMPACTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE STILL QUALIFIES AS CLEAN FILL PROVIDED THE TESTING REVEALS THAT THE FILL MATERIAL CONTAINS CONCENTRATIONS OF REGULATED SUBSTANCES THAT ARE BELOW THE RESIDUAL LIMITS SET FORTH IN TABLES FP-1A AND FP-1B FOUND IN PADEP'S POLICY "MANAGEMENT OF FILL".
4. ANY PERSON PLACING CLEAN FILL THAT HAS BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE MUST USE PADEP FORM FP-001 TO CERTIFY THE ORIGIN OF THE FILL MATERIAL AND THE RESULTS OF THE ANALYTICAL TESTING TO QUALIFY THE MATERIAL AS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE OWNER OF THE PROPERTY RECEIVING THE FILL. A COPY OF FORM FP-001 CAN BE FOUND AT WWW.PDFWEB.STATE.PA.US.

5. ENVIRONMENTAL DUE DILIGENCE: INVESTIGATIVE TECHNIQUES, INCLUDING, BUT NOT LIMITED TO, VISUAL PROPERTY INSPECTIONS, ELECTRONIC DATA BASE SEARCHES, REVIEW OF PROPERTY OWNERSHIP, REVIEW OF PROPERTY USE HISTORY, SANDBORN MAPS, ENVIRONMENTAL QUESTIONNAIRES, TRANSACTION SCREEN, ANALYTICAL TESTING, ENVIRONMENTAL ASSESSMENTS OR AUDITS.
6. ANALYTICAL TESTING IS NOT A REQUIRED PART OF DUE DILIGENCE UNLESS VISUAL INSPECTION AND/OR INSPECTION OF THE PAST LAND USE OF THE PROPERTY INDICATES THAT THE FILL MAY HAVE BEEN SUBJECTED TO A SPILL OR RELEASE OF A REGULATED SUBSTANCE. IF THE FILL MAY HAVE BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE, IT MUST BE TESTED TO DETERMINE IF IT QUALIFIES AS CLEAN FILL. TESTING SHOULD BE PERFORMED IN ACCORDANCE WITH APPENDIX A OF PADEP'S POLICY "MANAGEMENT OF FILL".

7. FILL MATERIAL THAT DOES NOT QUALIFY AS CLEAN FILL IS REGULATED FILL. REGULATED FILL IS WASTE AND MUST BE MANAGED IN ACCORDANCE WITH THE MUNICIPAL OR RESIDUAL WASTE REGULATIONS IN 25 PA CODE CHAPTERS 287 RESIDUAL WASTE MANAGEMENT OR 271 MUNICIPAL WASTE MANAGEMENT, WHICHEVER IS APPLICABLE.
8. ALL FILLS SHALL BE COMPACTED SUFFICIENTLY FOR THEIR INTENDED PURPOSE AND AS REQUIRED TO REDUCE SIPPING, EROSION OR EXCESS SATURATION.
9. REFER TO SITE / RECORD PLAN FOR ADDITIONAL NOTES.

Professional Engineer Seal for Christopher W. Jensen, P.E., License No. PC076404, State of PA.

Table with columns: PER OS REVIEW LETTER DATED, PRG, DS, BY, CHNO. Rows include review dates and initials for various stages.

CHRISTOPHER W. JENSEN, P.E.

Professional Engineer Seal for Christopher W. Jensen, P.E., License No. PC076404, State of PA.

LICENSED PROFESSIONAL ENGINEER STATE OF PA LICENSE NO. PC076404

4/3/2023

POST CONSTRUCTION STORMWATER MANAGEMENT NOTES

CITY VIEW - APN #67-00-001606-001
2974 GERMANTOWN PIKE, WORCESTER TOWNSHIP, MONTGOMERY COUNTY, COMMONWEALTH OF PENNSYLVANIA
BT WORCESTER, LLC

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1700 MARKET STREET, SUITE 3110 PHILADELPHIA, PA 19103
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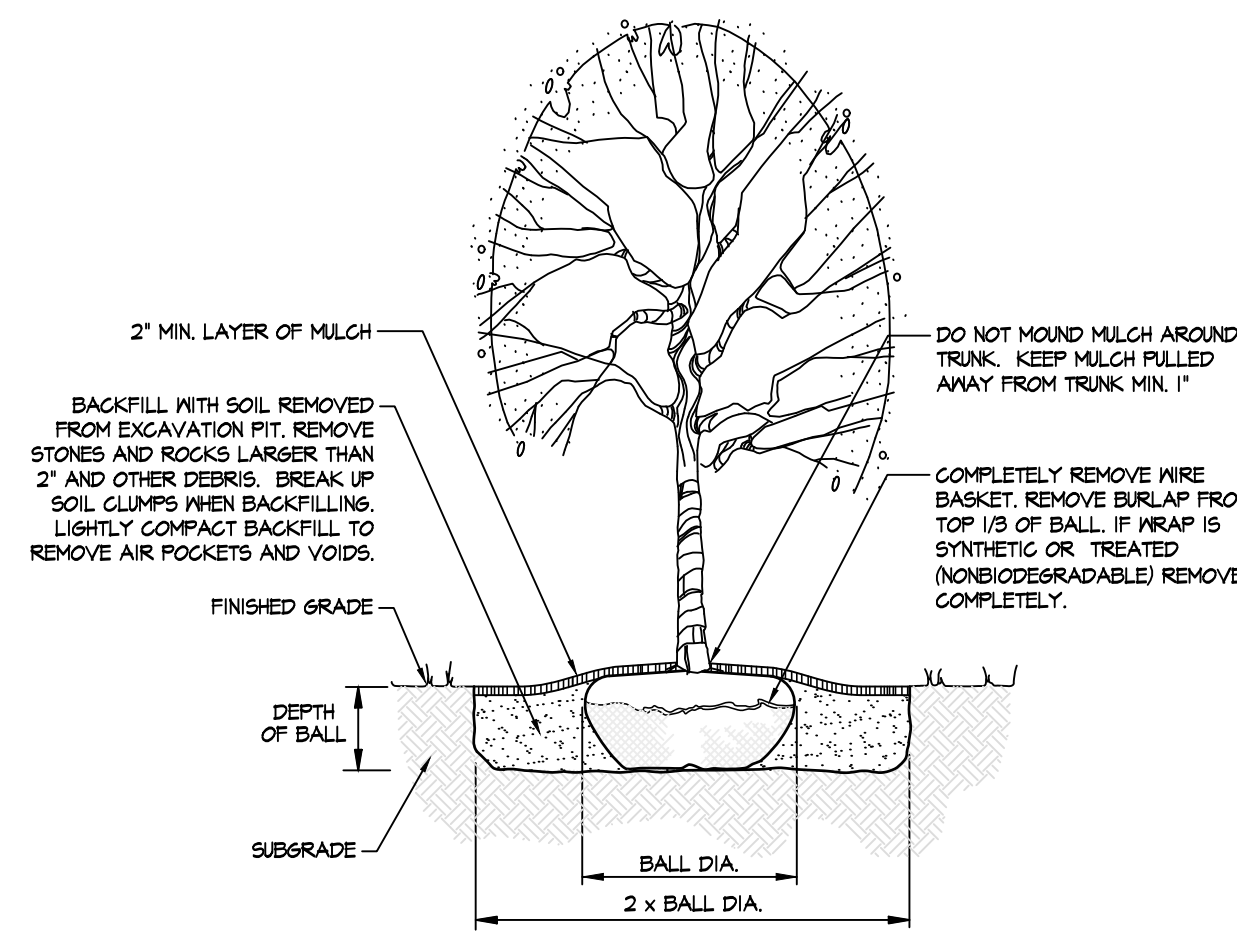
OFFICES LOCATED IN: CALIFORNIA, INDIANA, KENTUCKY, MASSACHUSETTS, MICHIGAN, NEW JERSEY, OHIO AND PENNSYLVANIA

DESIGNED BY CCG/JPK/ROP, CHECKED BY DS, DRAWN BY PG/SR/ROP, DATE 1/27/22, SCALE AS NOTED, PROJ. NO. BET00056, SHEET 33 OF 34.

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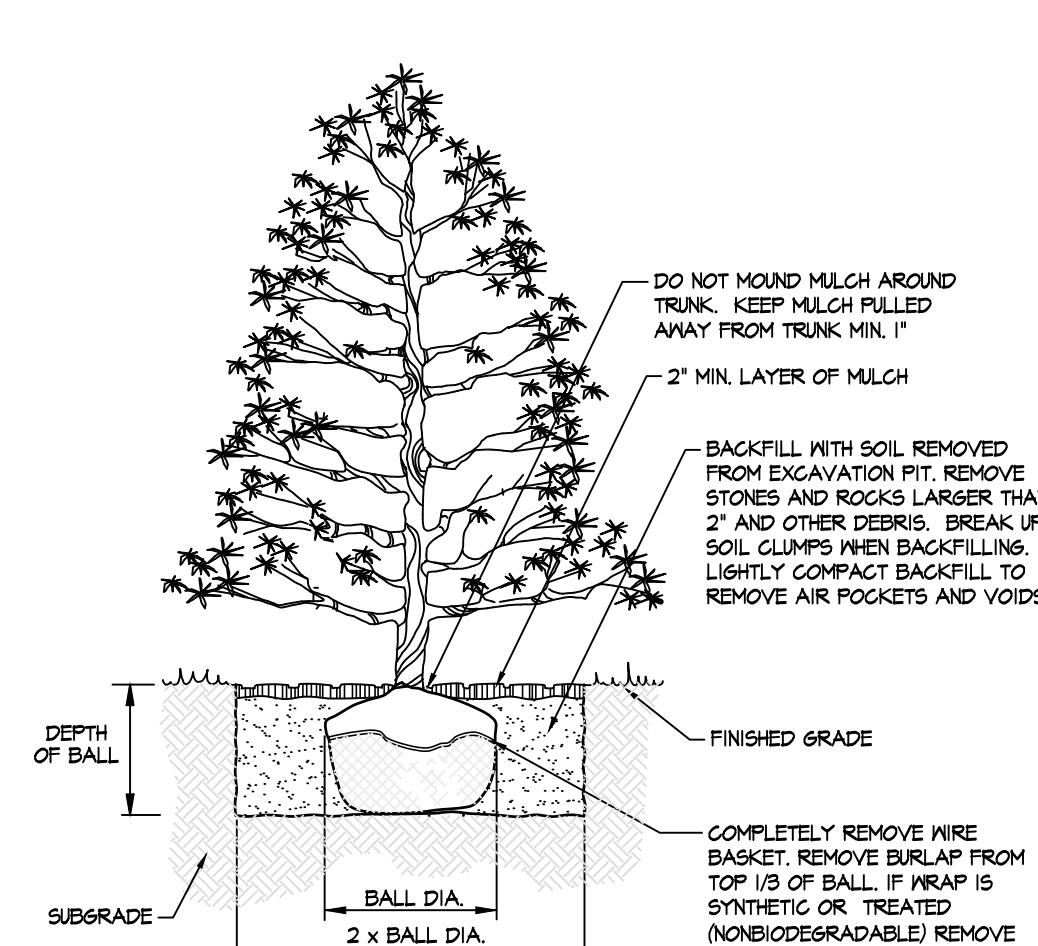
LANDSCAPE PLANTING NOTES AND SPECIFICATIONS:

1. ALL PLANT MATERIAL SHALL BE PROVIDED AND INSTALLED IN STRICT CONFORMANCE WITH USDA STANDARDS FOR NURSERY STOCK AND THE "AMERICAN NURSERY AND LANDSCAPE ASSOCIATION" STANDARDS LATEST EDITIONS.
2. THE CONTRACTOR SHALL VERIFY ALL UTILITIES WITHIN WORK AREA PRIOR TO COMMENCING WITH ANY EXCAVATIONS AND SHALL BE RESPONSIBLE FOR THEIR PROTECTION.
3. THE CONTRACTOR SHALL FURNISH AND PLANT ALL PLANTS SHOWN ON THE DRAWINGS, AS SPECIFIED, AND IN QUANTITIES INDICATED ON THE PLANT LIST. IF A DISCREPANCY SHOULD ARISE BETWEEN THE AMOUNT OF PLANTS SHOWN ON THE PLAN VS. THE PLANT SCHEDULE, THE PLAN SHALL GOVERN.
4. ALL PLANTS SHALL BE NURSERY GROWN.
5. ALL PLANTS SHALL BE HARDY UNDER CLIMATIC CONDITIONS SIMILAR TO THOSE IN THE LOCALITY OF THE PROJECT.
6. ALL PLANTS SHALL BE TYPICAL OF THEIR SPECIES OR VARIETY AND SHALL HAVE A NORMAL HABIT OR GROWTH. THEY SHALL BE SOUND, HEALTHY AND VIGOROUS WELL BRANCHED AND DENSELY FOLIATED WHEN IN LEAF. THEY SHALL BE FREE OF DISEASE AND INSECT PESTS, EGGS OR LARVAE. THEY SHALL HAVE HEALTHY WELL-DEVELOPED ROOT SYSTEMS.
7. SUBSTITUTIONS: WHEN PLANTS OF A SPECIFIED KIND OR SIZE ARE NOT AVAILABLE WITHIN A REASONABLE DISTANCE, SUBSTITUTIONS MAY BE MADE UPON REQUEST BY THE CONTRACTOR IF APPROVED BY THE LANDSCAPE ARCHITECT OR HIS/HER REPRESENTATIVE.
8. ALL AREAS TO BE SHOWN AS LAWN SHALL BE SEEDED, AS SPECIFIED, AND WATERED UNTIL A HEALTHY STAND OF GRASS IS OBTAINED WITH A MINIMUM OF 90% COVER PER 5 SQUARE FEET OF LAWN AREA AVERAGE.
9. TREE LOCATIONS MAY NEED TO BE ADJUSTED BASED ON LOCATIONS OF UTILITIES, FIELD CONDITIONS, OR FINAL GRADINGS. THE CONTRACTOR SHALL NOTIFY THE OWNER AND/OR THEIR REPRESENTATIVE IF ADJUSTMENTS ARE NECESSARY.
10. ALL SHRUBS TO BE PLANTED IN CONTINUOUS MULCH BEDS UNLESS OTHERWISE NOTED. ALL PLANTING BEDS TO RECEIVE 3" SHREDDED HARDWOOD MULCH.
11. ALL PLANTS DELIVERED TO THE SITE MUST BE INSTALLED WITHIN 24 HOURS. IF PLANTS MUST BE STORED LONGER THAN 24 HOURS THEY ARE TO BE HELED IN WITH MULCH AND SUFFICIENTLY WATERED TO PREVENT DRYNESS AND DESICCATION. IN NO CASE SHALL PLANTS BE STORED MORE THAN 12 HOURS WITHOUT APPROVAL FROM THE OWNERS REPRESENTATIVE.
12. ROOT BALLS OF ALL PLANTS SHALL BE ADEQUATELY PROTECTED AT ALL TIMES FROM SUN AND DRYING WINDS OR FROST. PLANTS WITH BROKEN ROOT BALLS, TRUNK AND BARK DAMAGE OR EXCESSIVE DAMAGE TO THE CROWN SHALL BE REPLACED PRIOR TO PLANTING.
13. ROPES AT TOP OF BALL SHALL BE CUT. REMOVE TOP 1/3 OF BURLAP MINIMUM. ALL NON-BIODEGRADABLE MATERIAL SHALL BE TOTALLY REMOVED. WIRE BASKETS SHALL BE CAREFULLY REMOVED ENTIRELY AT THE TIME OF PLANTING, PREFERABLY AFTER THE ROOT BALL HAS BEEN INSTALLED IN THE PLANTING PIT.
14. PREPARATION OF PLANTING: CLEAN SOIL EXCAVATED FROM PLANTING PIT OF ROOTS, PLANTS, STONES LARGER THAN 2", CLAY LUMPS, AND OTHER EXTRANEUS MATERIALS HARMFUL OR TOXIC TO PLANT GROWTH.
15. DO NOT ALLOW AIR POCKETS TO FORM WHEN BACKFILLING.
16. NO PLANT SHALL BE PLACED IN THE GROUND BEFORE ROUGH GRADING HAS BEEN COMPLETED AND APPROVED BY THE PROJECT LANDSCAPE ARCHITECT OR HIS/HER EQUAL.
17. INSTALL ALL PLANTS SO THAT THE TOP OF THE ROOTBALL IS SLIGHTLY ABOVE FINISHED GRADE. IN NO CASE SHALL THE PLAN BE INSTALLED WITH NO LESS THAN THE SAME RELATIONSHIP TO FINISHED GRADE AS THE PLANT'S ORIGINAL ROOT CROWN. EXCESS SOIL MAY EXIST AROUND THE ROOT CROWN FROM NURSERY OPERATIONS. THIS EXCESS MATERIAL SHALL BE REMOVED PRIOR TO PLANTING TO DETERMINE THE PROPER BALL INSTALLATION DEPTH.
18. ALL EXISTING TREES THAT ARE TO BE SAVED AS DETERMINED BY LANDSCAPE ARCHITECT SHALL BE PROTECTED UNTIL CONSTRUCTION HAS BEEN COMPLETED. AREA WITHIN DRUPLINE SHALL NOT BE TRAVELED ACROSS BY CONSTRUCTION TRAFFIC.
19. TREES PLANTED ALONG STREETS SHALL HAVE A SINGLE STRAIGHT TRUNK THAT DOES NOT FORK BELOW 6'.
20. ALL PLANTS SHALL BE BALLED OR WRAPPED OR CONTAINER GROWN AS SPECIFIED. NO CONTAINER GROWN STOCK WILL BE ACCEPTED IF IT IS ROOT BOUND. ALL NON-BIODEGRADABLE ROOT WRAPPING MATERIAL SHALL BE REMOVED AT TIME OF PLANTING.
21. WITH CONTAINER GROWN STOCK, THE CONTAINER SHALL BE REMOVED AND THE CONTAINER BALL CUT THROUGH THE SURFACE IN TWO VERTICAL LOCATIONS MINIMUM.
22. THE CONTRACTOR SHALL LAYOUT WITH IDENTIFIABLE STAKES INDIVIDUAL TREE AND SHRUB LOCATIONS AND AREAS FOR MULTIPLE PLANTING ALONG WITH THE ARRANGEMENTS AND OUTLINE OF PLANTING BEDS AS INDICATED ON DRAWINGS. THE LAYOUT OF PLANTING WILL THEN BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO ANY EXCAVATION OF PLANT PITS OR PLANT BEDS.
23. AT PLANTING TIME, ALL PLANT MATERIAL SHALL BE TRIMMED TO REMOVE BROKEN AND/OR DEAD VEGETATIVE MATERIAL.
24. ALL PLANTS SHALL BE INSTALLED AS PER THE PLANTING DETAILS AND THE CONTRACT SPECIFICATIONS, WHERE APPLICABLE.
25. ALL PLANTS SHALL BE INSTALLED PLUMB UNLESS OTHERWISE SPECIFIED.
26. ALL PLANTS SHALL BE THOROUGHLY WATERED TWICE DURING THE FIRST 24 HOUR PERIOD AFTER PLANTING. ALL PLANTS SHALL THEN BE WATERED WEEKLY OR MORE OFTEN IF NECESSARY, DURING THE FIRST GROWING SEASON.
27. CONDITIONS DETRIMENTAL TO PLANTS: THE CONTRACTOR SHALL NOTIFY THE PROJECT REPRESENTATIVE IN WRITING OF ALL SOIL OR DRAINAGE CONDITIONS WHICH THE CONTRACTOR CONSIDERS DETRIMENTAL TO THE GROWTH OF PLANTS. HE SHALL STATE THE CONDITIONS AND SUBMIT A PROPOSAL FOR CORRECTING THE CONDITIONS INCLUDING ANY CHANGE IN COST FOR REVIEW AND ACCEPTANCE BY THE PROJECT REPRESENTATIVE.
28. WARRANTY TREES AND SHRUBS FOR A MINIMUM PERIOD OF EIGHTEEN (18) MONTHS AFTER DATE OF WRITTEN FINAL ACCEPTANCE BY THE LANDSCAPE ARCHITECT AND/OR THE OWNERS AUTHORIZED REPRESENTATIVE AGAINST DEFECTS INCLUDING DISEASE AND UNSATISFACTORY GROWTH. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO MONITOR THE PROJECT PLANTINGS DURING THE WARRANTY PERIOD AND NOTIFY THE OWNER IF PROBLEMS DEVELOP. PLANTS THAT DIE DURING THE WARRANTY PERIOD SHALL BE REMOVED IMMEDIATELY AND REPLACED.
29. ANY TREE OR SHRUB WHICH DIES WITHIN 18 MONTHS OF PLANTING SHALL BE REPLACED IN KIND. ANY TREE OR SHRUB WHICH WITHIN 18 MONTHS OF PLANTING OR REPLANTING IS DEEMED BY THE TOWNSHIP NOT TO BE HEALTHY AND VIGOROUS SHALL BE REPLACED IN KIND. REPLACEMENTS MAY BE OF A SUBSTITUTE SPECIES ONLY WHEN APPROVED BY THE TOWNSHIP.



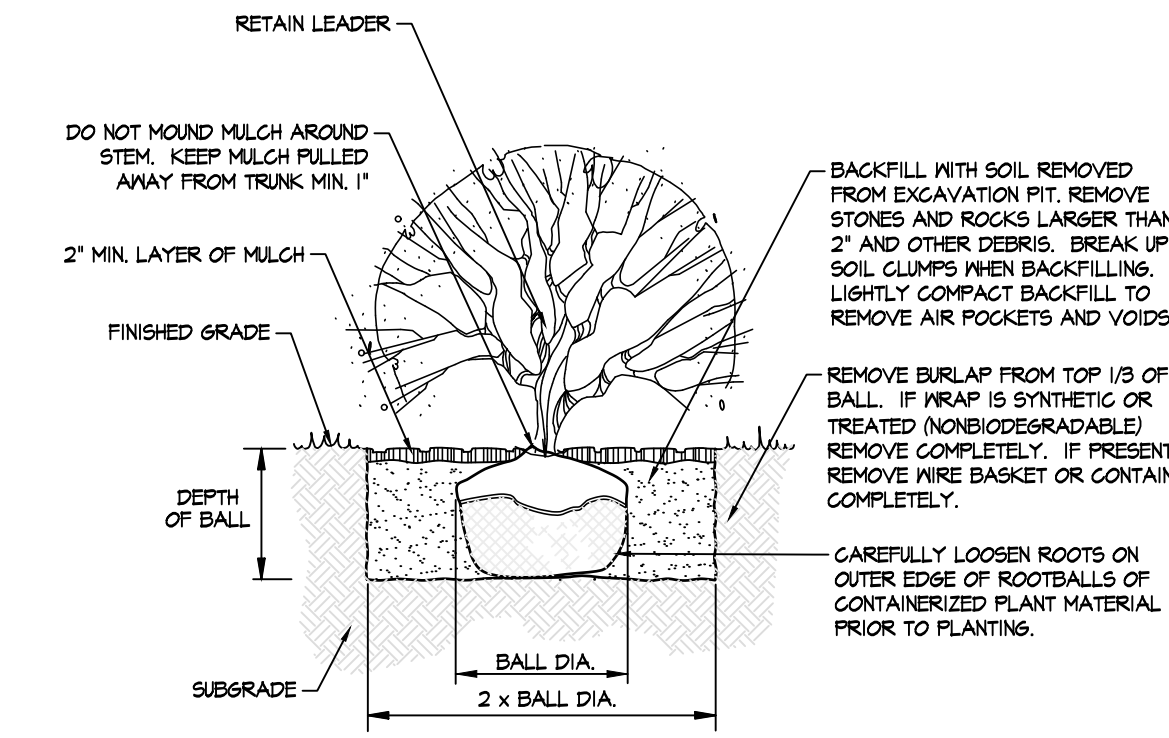
DECIDUOUS TREE PLANTING

NOT TO SCALE



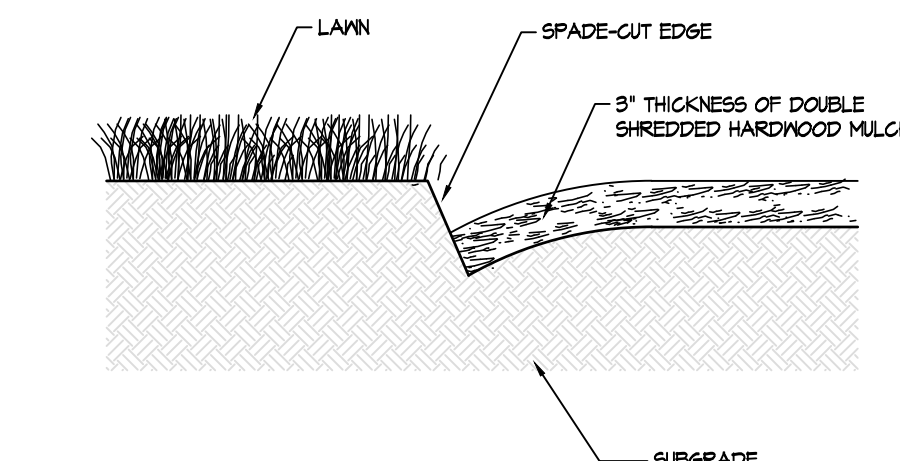
EVERGREEN TREE PLANTING

NOT TO SCALE



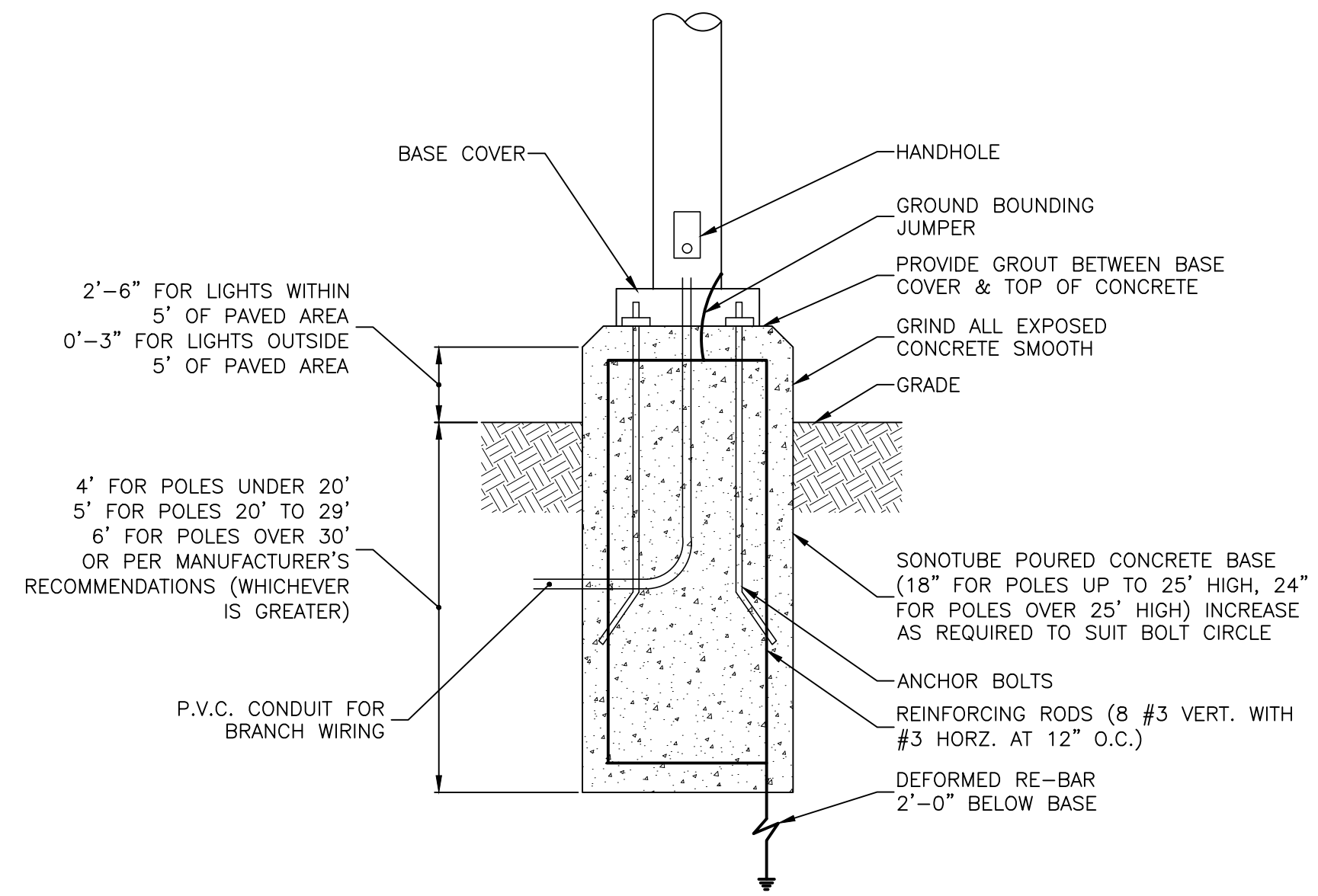
SHRUB PLANTING

NOT TO SCALE



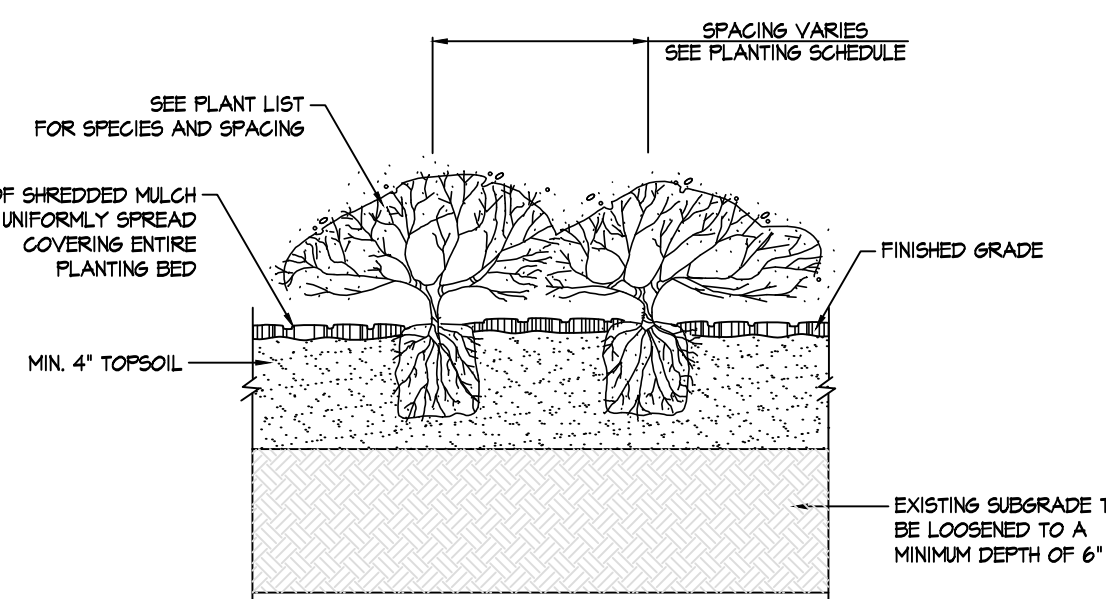
EDGING AT MULCH BED

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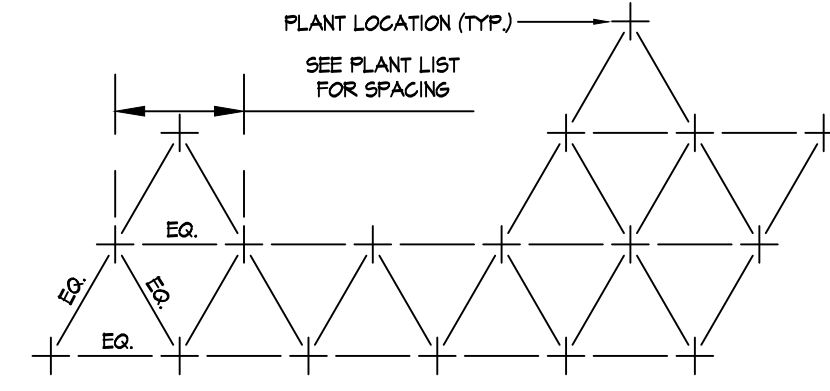
LIGHT BASE

NOT TO SCALE



PLUG AND PERENNIAL PLANTING

NOT TO SCALE



PLANT SPACING DIAGRAM

NOT TO SCALE

EMERGENCY SEEDING RECOMMENDATIONS TOWNSHIP OF WORCESTER

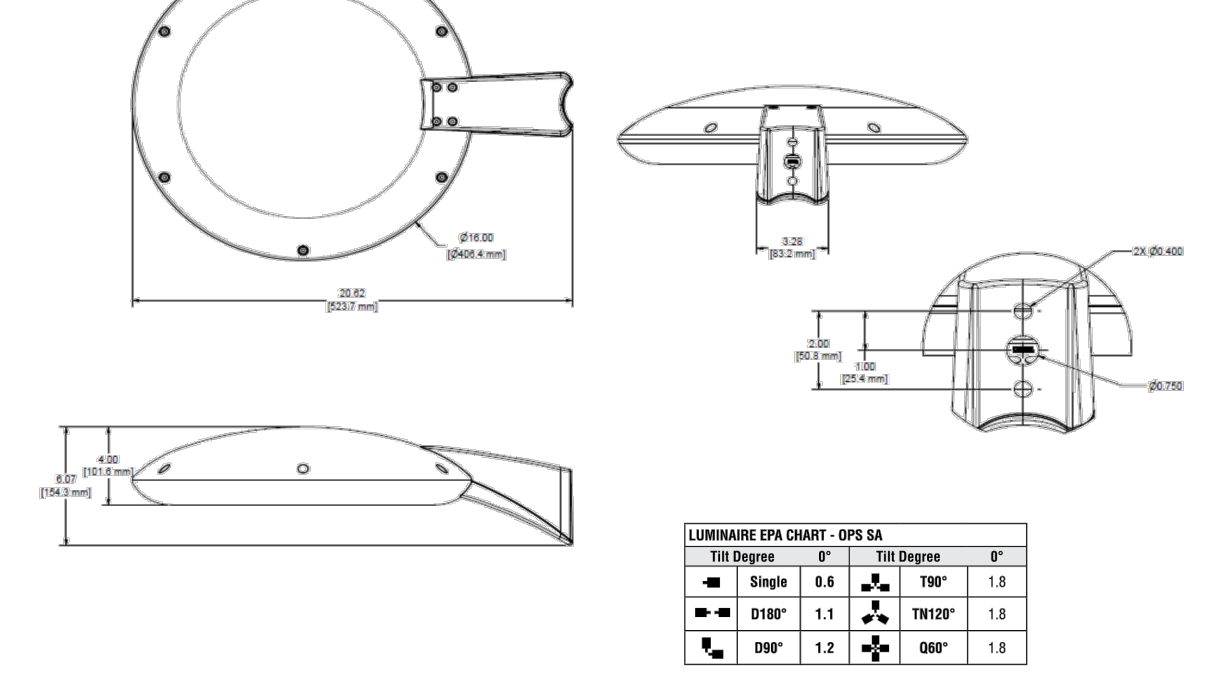
- DURING CONSTRUCTION ALL DISTURBED AREAS SHOULD BE SEEDED ACCORDING TO THE FOLLOWING INSTRUCTIONS. SEEDING RECOMMENDATION FOR SIX TO TWELVE-MONTH PERIODS.
1. INSTALL NEEDED WATER-CONTROL MEASURES.
 2. PERFORM ALL CULTURAL OPERATIONS AT RIGHT ANGLES TO THE SLOPE.
 3. LIME ACCORDING TO SOIL TEST OR KNOWLEDGE OF THE SITE OR APPLY TWO TONS OF GROUND LIMESTONE PER ACRE.
 4. FERTILIZE ACCORDING TO SOIL TEST OR KNOWLEDGE OF THE SITE OR APPLY 40-10-40 PER ACRE.
 5. INCORPORATE LIME AND FERTILIZER INTO THE TOP FOUR INCHES OF SURFACE SOIL BY DISCS OR OTHER SUITABLE MEANS.
 6. SEED ONE OF THE FOLLOWING MIXTURES AT THE MOST SUITABLE DATE. APPLY UNIFORMLY WITH A DRILL OR BY BROADCASTING.
 - a. MARCH 1 TO OCTOBER 1: 20 POUNDS OF ANNUAL RYE GRASS OR FIELD BROMEGRASS PER ACRE.
 - b. MARCH 1 TO MAY 30: 20 POUNDS OF ANNUAL RYE GRASS OR FIELD BROMEGRASS AND 64 POUNDS OF SPRING OATS PER ACRE.
 - c. AUGUST 1 TO NOVEMBER 1: 20 POUNDS OF ANNUAL RYE GRASS OR FIELD BROMEGRASS AND 1/2 POUNDS OF WINTER RYE PER ACRE.
 7. COVER GRASS AND LEGUME SEEDS ONE-FOURTH-INCH DEEP WITH CULTIPACKER OR HARROW. COVER RYE OR OATS ABOUT TWO INCHES DEEP.
 8. MOW RYE OR OATS JUST BEFORE THEY HEAD OUT IF SLOPE PERMITS.
- SECTION 130-6 SHALL PREVAIL IN CASES OF CONFLICT WITH THE ABOVE PROVISIONS.

Opulence Small Side Arm Mount

ELECTRICAL DATA*		RECOMMENDED LUMEN MAINTENANCE (1)	
Lumens	THW	Additional Drop	Lumen Multiplier
15	0.18	0.18	1.00
30	0.25	0.18	1.00
45	0.32	0.18	1.00
60	0.40	0.25	1.00
75	0.50	0.32	1.00
90	0.60	0.40	1.00
105	0.70	0.50	1.00
120	0.80	0.60	1.00
135	0.90	0.70	1.00
150	1.00	0.80	1.00

Voltage	Color Temp	Finish	Options
120V	3000K	Black	None
120V	4000K	Black	None
120V	5000K	Black	None
120V	3000K	White	None
120V	4000K	White	None
120V	5000K	White	None

PRODUCT DIMENSIONS



Opulence Small Side Arm Mount

Typical Order Example	Order Number	Description	Order Number
OPS SA BL 4F UNK 40K BLK ALBCS1	12514	Opulence Small Side Arm Mount	12514
	12515	Opulence Small Side Arm Mount	12515
	12516	Opulence Small Side Arm Mount	12516

Accessory Ordering Information	Order Number	Description	Order Number
Test Lock Protocol (200V) for use with OP17	12514	Test Lock Protocol (200V) for use with OP17	12514
Test Lock Protocol (240V) for use with OP17	12515	Test Lock Protocol (240V) for use with OP17	12515
Test Lock Protocol (277V) for use with OP17	12516	Test Lock Protocol (277V) for use with OP17	12516

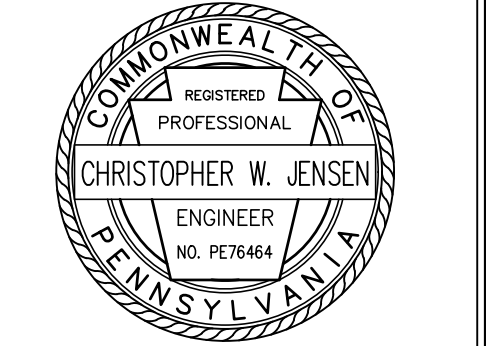
ACCESSORY ORDERING INFORMATION

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 FILE PATH: G:\Projects\BET1\00056\Plans\BET1\20-30-DETALS.dwg
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 PLOT TIME: 06 May 2024, 1:39PM
 LAST SAVE BY: j.kelley

NO.	DATE	REVISIONS	BY	CHKD
4	3/7/2024	PER CIS REVIEW LETTER DATED 01/24/2024	PRG	DS
3	11/17/2023	PER CIS REVIEW LETTER DATED 11/22/2023	PRG	DS
2	4/3/2023	REVISED ENTRANCE ON GERMANTOWN PIKE	ROP	DS
1	10/04/2022	PER CIS REVIEW LETTER DATED 03/11/2022	PRG	DS

CHRISTOPHER W. JENSEN, P.E.
LICENSED PROFESSIONAL ENGINEER



4/3/2023
LICENSED PROFESSIONAL ENGINEER
STATE OF PA LICENSE NO. PE076404

BT WORCESTER, LLC
CITY VIEW - APN #67-00-01606-001
 2974 GERMANTOWN PIKE, WORCESTER TOWNSHIP,
 MONTGOMERY COUNTY, COMMONWEALTH OF PENNSYLVANIA
LANDSCAPE AND LIGHTING DETAILS



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OHIO AND PENNSYLVANIA

DESIGNED BY CGG/JPK/ROP	DRAWING DET-15
CHECKED BY DS	SHEET
DRAWN BY PG/SR/ROP	34
DATE 1/27/22	OF 34
SCALE AS NOTED	
PROJ. NO. BET100056	



| YOUR GOALS. OUR MISSION.

March 27, 2024

Mr. Sean Halbom
Township Manager
1721 South Valley Forge Road
Worcester, PA 19490

**RE: Waiver Request Letter – City View
2974 Germantown Pike, Norristown, PA 19403
Worcester Township, Montgomery County, Pennsylvania
T&M Project No. BETI00056**

Below is a list of three (3) waiver requests for the City View Project. The list below identifies ordinance chapter, ordinance section, ordinance requirement, waiver request and the justification for the request. We are requesting that the Worcester Township Planning Commission review and make a recommendation to approve these waiver requests as a part of the Subdivision and Land Development Application for Preliminary Land Development and Conditional Use.

WAIVER #1

Chapter: Chapter 129 Stormwater Management
Section: 129-18.G(4)(5), Grading and Drainage
Requirement: (4) “Excavation. No excavation shall be made with a cut face steeper in slope than four horizontal to one vertical (4:1 = 25%)...”
(5) “Fill. No fill shall be made which creates any exposed surface steeper in slope than four horizontal to one vertical (4:1 = 25%)...”
Request: To allow for excavation and/or fill to be made with a three horizontal to one vertical (3:1 = 33%).
Justification: Slopes within excavation and/or fill of three horizontal to one vertical (3:1 = 33%) are sufficient to sustain a stable slope. Additionally, a letter from a Professional Engineer licensed in the Commonwealth of Pennsylvania stating such will be provided.

WAIVER #2

Chapter: Chapter 129 Stormwater Management
Section: 129-18.G(6), Grading and Drainage
Requirement: “Slopes and fences. The top or bottom edge of slopes shall be a minimum of five feet from property or right-of-way lines of streets or alleys in order to permit the normal rounding of the edge without encroaching on the abutting property.”
Request: To allow grading to occur within five feet of the property line, property right-of-way lines for streets or alleys.
Justification: The project is required to obtain an HOP Permit from PennDOT and Montgomery County for improvements along North Park Avenue and Germantown Pike, respectively. Grading proposed within 5 feet along the property right-of-way is associated with the cited HOP Permits, and it will be reviewed and approved by PennDOT and the County respectively.

Additionally, in order to allow for grading within five feet of the property line the applicant will obtain the required construction and/or grading easement from the adjoining property owners.



WAIVER #3

Chapter: Chapter 129 Stormwater Management

Section: 129-18.H(10), Stormwater Detention/retention Basins

Requirement: "All portions of a detention basin bottom shall have a minimum slope of 2%. For portions of basin bottoms with grades less than 2%, the applicant shall provide a landscape design, which minimizes maintenance provisions and encourages infiltration. These requirements may be altered when approved by the Township Engineer."

Request: To allow the basin bottom of proposed detention basin(s) to be installed at 0%.

Justification: The proposed above ground basin (Basin B) is to be a MRC Basin, due to the lack of infiltration noted during testing completed in March 2022 and February 2024. As part of the MRC design a 4" diameter wrapped perforated pipe is proposed to dewater the basin within the required MRC timeframe. The proposed perforated pipe allows for basin dewatering.

If you have any questions or require any additional information, please do not hesitate to contact me by phone at 215-486-4357 or by email dstewart@tandmassociates.com.

Sincerely,
T&M Associates

A handwritten signature in black ink, appearing to read 'D. Stewart', written over a horizontal line.

David Stewart
Group Manager

Sean Halbom
Township Manager
Township of Worcester
PO Box 767
Worcester, PA 19490

**Re: City View
Preliminary Plan Review – 3rd Review
2974 Germantown Pike
Worcester Township, Montgomery County, PA
Land Development submission #4
T&M File No. BETI00056
CKS Ref # 7550**

We are in receipt of the CKS Engineers Third Review letter dated January 24, 2024, regarding the above referenced project. We have reviewed the comments contained in the above referenced letter and offer the following in support of the current application. For your convenience and to expedite the review and approval process, the original comments are included, and T&M responses are provided in **bold font**.

ZONING

1. Sheet 2 includes a table entitled “Zoning Data”. The table indicates the maximum density allowed by ordinance is twelve dwelling units per acre. The proposed plans show a density of 11.76 dwelling units per acre. We note that since the time of the last plan submission, 46 units have been removed from the plans. This reduction of units reduces the overall density so that the previously required Transferable Development Rights (TDRs) are no longer required.

T&M Response: Acknowledged

2. In the zoning table on Sheet 2, the minimum parking setback along Germantown Pike is required to be 75’. The proposed setback is 25’. Zoning relief was obtained by ZHB 2022- 08 order dated June 16, 2022.

T&M Response: Acknowledged

3. Approval from the Zoning Hearing Board has been obtained to allow the installation of storm sewer, riprap and grading within the Flood Plain Conservation District. (150-138.A(4)). This was by ZHB 2022-08, dated June 16, 2022.

T&M Response: Acknowledged

SUBDIVISION AND LAND DEVELOPMENT

4. The list of utilities now include Lower Providence Township and the Lower Providence Township Authority. These are not included in this project. The list should be revised.

T&M Response: These utilities have been removed from the list. Refer to Drawing CVR, Cover Sheet.

5. The plans should show the proposed height of the buildings. The Zoning Table on Sheet 2 shows that the height will meet the 45’ height restriction, but a note on the plan indicating the specific height is requested.

T&M Response: The building height has been updated to be 45’ on the Zoning Data Table. Refer to Drawing LEG, Legend and Notes.



6. Architectural Drawings of the building must be submitted to the Township.

T&M Response: Schematic Design Building Elevations, prepared by Humphreys & Partners Architects, L.P., dated 12/22/2023 are included with this submission.

7. The plans show a 25' setback to the parking area at the front along Germantown Pike. As stated previously, this does not meet the required 75' setback. Relief was obtained by ZHB 2022-08 order dated June 16, 2022.

T&M Response: Acknowledged

8. The applicant will be required to prepare a Planning Module for this project for sanitary sewer service. This module will need to be submitted to the Pennsylvania Department of Environmental Protection (PADEP) for review and approval in order to revise the Township's current Act 537 Plan. The Township will need to review the planning module prior to submission and execution for PADEP.

T&M Response: Noted.

9. The water supply design and all associated details should be review and approved by the Pennsylvania Water Company for this project.

T&M Response: Noted.

10. The applicant should confirm with the Pennsylvania American Water Company the type of meter pits (if any) that will be required for this project. If meter pits are required, they should be shown on the plan in order to make sure they don't impact or conflict with other utilities.

T&M Response: Noted.

11. Fire Marshall approval is required. Additionally, The Worcester Fire Marshall should review the plans to verify that he is satisfied with the number and location of fire hydrants shown on the plans.

T&M Response: Will Comply

12. The Applicant will be required to purchase sanitary sewer tapping fees from the Township. The Township will determine the adequate number of EDUs required for this project and convey that information to the applicant.

T&M Response: Acknowledged.

13. Approval from the Township's Traffic Consultant is required.

T&M Response: Noted.

14. The Existing Feature plan, Sheet 3, indicates that a wooden fence separates the subject property from Parcel 43-00-02206-14-5 but the note on sheets 7 and 8 states chain link. This discrepancy must be addressed.

T&M Response: The callout on Drawing DEM, Demolition Plan and Drawing STE Site Plan has been updated to state, "Existing 330 LF Wooden Fence....". Refer to the referenced sheets.

15. A trash enclosure detail is provided on Sheet 21 but the location of the enclosure could not be found on the plans.

T&M Response: The trash enclosure detail has been removed from the plans. There is a proposed trash collection room within each building.



16. A 12-foot high Emergency Gate detail is shown on the Sheet 21 but the plans do not indicate 12-foot high fence or gate. Please note that fencing can be no higher than 6-feet per Z.O. 150-182.

T&M Response: The detail has been removed from the plans. Refer to Drawing DET-2, Construction Details.

17. The sidewalk widths must be added to the plans.

T&M Response: The site plan has been updated with dimensions noting the width along the sidewalk at multiple points. Refer to Drawing STE, Site Plan.

18. There are numerous notes on the plan regarding the walls that will be required as part of the project. The note says "wall(by others)". The design of the walls should be submitted with the Final Plans submission for review.

T&M Response: Will Comply.

19. The following approvals will be required in conjunction with this project:

- a. Pennsylvania American Water Company
- b. Pennsylvania Department of Environmental Protection (Planning Module & NPDES Permit)
- c. Montgomery County Conversation District – (Erosion and Sedimentation Control and Stormwater NPDES Permit)
- d. PennDOT – Park Avenue
- e. Montgomery County – Germantown Pike

T&M Response: Noted.

STORMWATER MANAGEMENT AND GRADING

The following comments pertain to the grading, stormwater management/storm drainage and erosion and sedimentation control aspects of the current Preliminary Plan submission and are based upon the requirements of the Worcester Township's Stormwater Management Ordinance (SMO) and/or Subdivision and Land Development Ordinance:

20. The applicant is advised that a NPDES permit, along with an Erosion and Sedimentation Control Plan pertaining to the proposed site development, which is approved by the Montgomery County Conversation District, will be required prior to plan recording. (SMO 129- 12)

T&M Response: Acknowledged

21. A Stormwater Management Agreement will be required. The Agreement shall be reviewed and approved by the Township Solicitor prior to plan approval. (SMO 129-138)

T&M Response: Noted.

22. Stormwater Infiltration testing has not been performed, which is required. The applicant's response states infiltration testing was performed and is included in the Stormwater Narrative.

No infiltration testing is included in the report and must be included in future submission.

Additionally, information about the site contamination must be submitted to the Township including type of contamination, location, etc. Depending on the information provided, Phase I/Phase II Environmental Study



maybe required. The Applicant's response indicates that information pertaining to the soil contamination will be provided under separate cover. This office has not received any additional information.

T&M Response: Infiltration Testing was originally completed in March of 2022. Additionally, Infiltration Testing was completed in February of 2024. The infiltration results are included with this resubmission. The revised report will be submitted under separate cover.

Information pertaining to the site contamination will be provided under separate cover.

23. The matting for Swale S1 must be shown on Sheet 13.

T&M Response: Drawing ENS, Erosion and Sediment Control Plan has been updated to show NAG C350 Lining as the matting for Swale S1. Refer to the cited drawing.

24. Additional information must be provided regarding Sediment Basin A. We note that the Emergency Spillway Elevation on Sheets 13, and 27 do not match. No elevation or sizing information is provided in the skimmer details and no detail for the temporary riser is shown.

T&M Response: The spillway elevation provided on Drawings ENS, Erosion and Sediment Control Plan and Drawing DET-8, Erosion and Sediment Control Plan have been updated to show an elevation of 413.10. Additionally, the Skimmer Standard Construction Detail on Drawing DET-8, Erosion and Sediment Control Plan has been updated with the sizing information. The temporary riser detail will be added to the detail sheet during the NPDES Approval process.

25. Calculations for the rip-rap sizing must be provided. We recommend that a minimum rip-rap size of R-4 be proposed.

T&M Response: Calculations for the proposed riprap is included in this resubmission. The revised report will be submitted under separate cover.

26. No cut or fill shall be made steeper than 4 horizontal to 1 vertical (4:1). It appears the project proposes 3:1 slopes throughout the site. A waiver has been requested. (SMO 129- 18.G(4)(5))

T&M Response: Acknowledged

27. Grading must be 5 feet from property lines to allow for normal rounding of the contours. There are multiple areas that the limit of disturbance is closer than five feet to the property boundary. (129-18.G(6)).

A waiver has been requested. We note temporary grading easements may be required.

T&M Response: A waiver has been requested and a temporary grading easement will be obtained from the adjacent property owner. Refer to the attached Waiver Request Letter.

28. Chapter 105 permitting from PADEP will be required at a minimum for the pipe outfall near North Park Avenue and for the basin outfall pipe.

T&M Response: Noted.

29. Roof drain locations must be indicated on the plan. (SMO 129-18(C)(20))
The applicant's response indicates that roof drains will be added during final plans.

T&M Response: Schematic Design Building Elevations, prepared by Humphreys & Partners Architects, L.P., dated 12/22/2023 are included with this submission. Roof drain locations will be provided at a later date, under separate cover.

30. A profile of storm sewer B 003 to MH-B1 must be added to the plans.

T&M Response: A profile of B OCS to MH-B1 has been added to Drawing PRF3, Storm Sewer Profiles.



31. All portions of the basin bottom shall have a minimum slope of 2%. The proposed Basin B appears bottom is flat. The applicant's response states that a waiver will be requested. SMO 129-18.H(10)).

T&M Response: A waiver has been requested. Refer to the attached Waiver Request Letter.

32. A stabilized access drive with an access easement has been shown for Basin B. The engineer's response that indicates Grass Pave Turf Reinforcement has been called out on the plans. This office cannot find this plan reference for the Basin Access Drive. (SMO 129- 18-H(22)).

T&M Response: Refer to Drawing GRD, Grading Plan for the cited Grass Pave Turf Reinforcement (from the paved concrete sidewalk to the basin berm).

33. A drainage and grading easement will be required for the improvements on TMP 67-064-058.

T&M Response: Noted. The applicant will obtain the noted easements from the cited Property.

34. A maximum of 4:1 slopes are required for excavations. 3:1 slopes or steeper appear adjacent to the tot lot. The applicant's response states a waiver will be requested.

T&M Response: A waiver has been requested (Waiver #1). Refer to the included Waiver Request Letter.

35. Copies of all environmental reports for the property should be provided to the Township. The applicant's response indicates these reports will be under separate cover.

T&M Response: The environmental reports will be provided under separate cover.

If you have any questions, clarification, or need additional information, please contact me.

Very truly yours,
T&M Associates Consulting Engineers

A handwritten signature in black ink, appearing to read 'David Stewart', written over a horizontal line.

David Stewart
Group Manager