

Map Symbol	Soil Name	Slope	Hydrologic Group
BeA	Bedington shaly silt loam	0-3%	B
BeB	Bedington shaly silt loam	3-8%	B
BkC	Berks channery silt loam	3-8%	B
BkC	Berks channery silt loam	8-15%	B
CmB	Conly silt loam	3-8%	C

STEEP SLOPE AREA	
EX LOT 1	5,114 S.F.
EX LOT 2	97,441 S.F.
EX LOT 3	10,052 S.F.
EX LOT 4	17,916 S.F.

**LEGEND**

**EXISTING FEATURES**

- EXISTING ADJONER LINE AND CORNERS
- EXISTING EDGE OF PAVEMENT AND CURB LINE
- EXISTING RIGHT-OF-WAY
- EXISTING FENCE
- EXISTING SEWER
- EXISTING STORMWATER
- EXISTING WATERLINE
- EXISTING GASLINE
- EXISTING SIDEWALK/CONCRETE
- EXISTING CONTOURS
- EXISTING TREELINE
- EXISTING TOWNSHIP BOUNDARY
- LIMITS OF FIELD SURVEY
- EXISTING SOILS
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING DELINEATED WETLANDS
- DEMO (TO BE REMOVED)
- TREES (TO BE REMOVED)
- 15%-25% SLOPES
- 25%+ SLOPES

REVISION	DATE	BY
PER ARRO COMMENT LETTER DATED 4-3-23	5-8-23	CDS
PER LPD LETTER DATED 4-4-23	5-12-23	CDS
PER COLA COMMENTS DATED 3-31-23	5-12-23	CDS
PER ARRO COMMENT LETTER DATED 6-6-23	6-28-23	CDS
PER ARRO COMMENT LETTER DATED 7-13-23	8-4-23	CDS

**EXISTING CONDITIONS - DEMOLITION PLAN**  
**PRELIMINARY/FINAL SUBDIVISION & LAND DEVELOPMENT PLANS**  
**BRIAR RIDGE COMMONS - APARTMENTS**  
 NORTH LEBANON TOWNSHIP  
 Lebanon County, Pennsylvania

**ESI**  
 Steadbeck Engineering & Surveying Inc.  
 279 Lebanon, Pennsylvania 17042  
 Phone: (717) 272-7110  
 Fax: (717) 272-7348

FIELD CREW: MOD,JEC
BASE MAP: JEC
DRAWN: CDS
DESIGN: CDS
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DATE: 3/1/23
SCALE: 1"=50'
PROJECT #135-19-001



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PER ARRO COMMENT LETTER DATED 4-3-23	5-8-23	CDS
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PER ARRO COMMENT LETTER DATED 6-6-23	6-28-23	CDS
PER ARRO COMMENT LETTER DATED 7-13-23	8-4-23	CDS

**SUBDIVISION PLAN**  
 For  
**PRELIMINARY/FINAL SUBDIVISION & LAND DEVELOPMENT PLANS**  
 BRIAR RIDGE COMMONS - APARTMENTS  
 located in  
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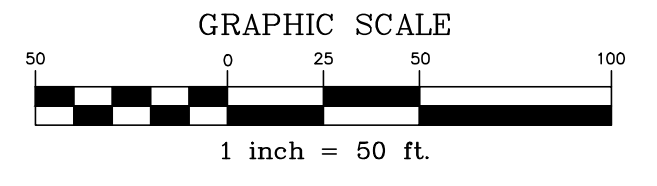
**LEGEND**

**EXISTING FEATURES**

- EXISTING ADJOINER LINE
- EXISTING BOUNDARY LINE AND CORNERS
- EXISTING EDGE OF PAVEMENT AND CURB LINE
- EXISTING RIGHT-OF-WAY

**PROPOSED FEATURES**

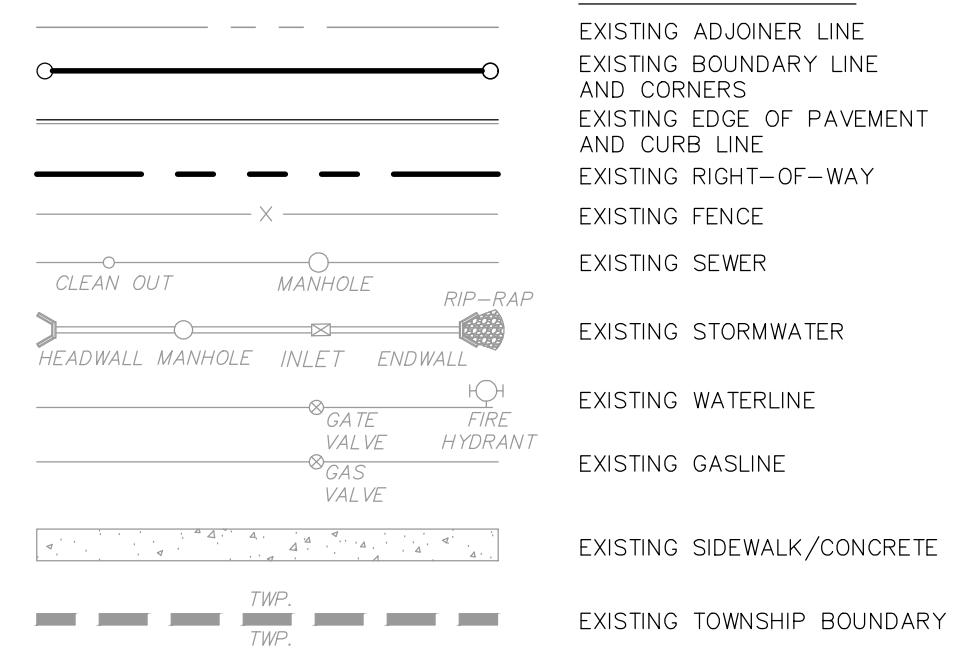
- PROPOSED BUILDING SETBACK
- PROPOSED BOUNDARY LINE AND CORNERS
- PROPOSED EDGE OF PAVEMENT AND CURB LINE
- PROPOSED RIGHT-OF-WAY



OPEN DOOR BAPTIST CHURCH  
 UPI: 27-2343695-378710  
 DEED: 2025-7392, TR. 3  
 PLAN: 33-189



**LEGEND**



**EXISTING FEATURES**

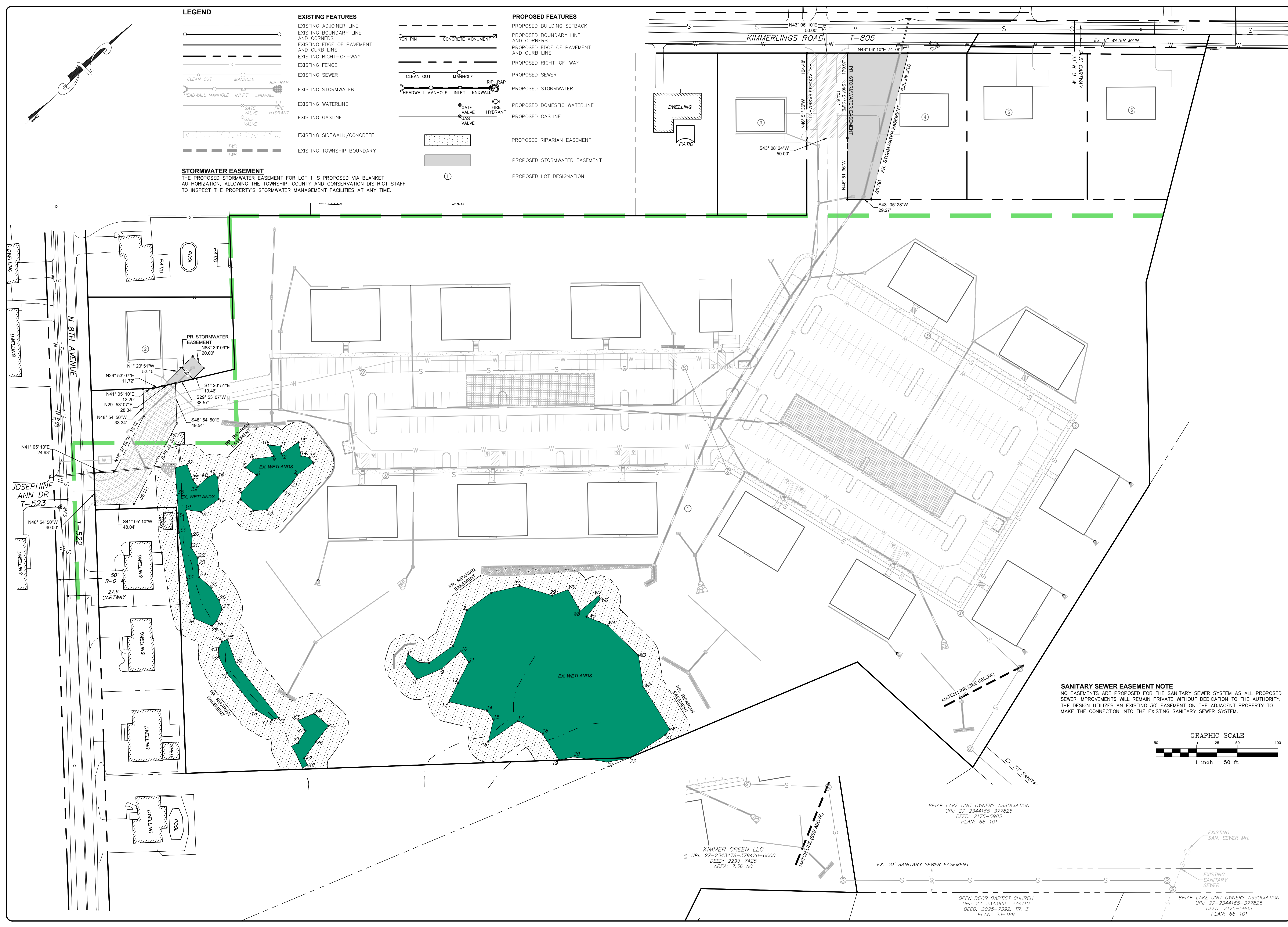
EXISTING ADJOINER LINE  
 EXISTING BOUNDARY LINE AND CORNERS  
 EXISTING EDGE OF PAVEMENT AND CURB LINE  
 EXISTING RIGHT-OF-WAY  
 EXISTING FENCE  
 EXISTING SEWER  
 EXISTING STORMWATER  
 EXISTING WATERLINE  
 EXISTING GASLINE  
 EXISTING SIDEWALK/CONCRETE  
 EXISTING TOWNSHIP BOUNDARY

**PROPOSED FEATURES**

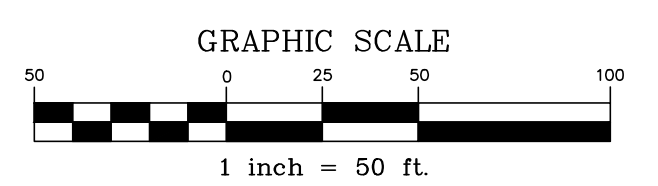
PROPOSED BUILDING SETBACK  
 PROPOSED BOUNDARY LINE AND CORNERS  
 PROPOSED EDGE OF PAVEMENT AND CURB LINE  
 PROPOSED RIGHT-OF-WAY  
 PROPOSED SEWER  
 PROPOSED STORMWATER  
 PROPOSED DOMESTIC WATERLINE  
 PROPOSED GASLINE  
 PROPOSED RIPARIAN EASEMENT  
 PROPOSED STORMWATER EASEMENT  
 PROPOSED LOT DESIGNATION

**STORMWATER EASEMENT**

THE PROPOSED STORMWATER EASEMENT FOR LOT 1 IS PROPOSED VIA BLANKET AUTHORIZATION, ALLOWING THE TOWNSHIP, COUNTY AND CONSERVATION DISTRICT STAFF TO INSPECT THE PROPERTY'S STORMWATER MANAGEMENT FACILITIES AT ANY TIME.



**SANITARY SEWER EASEMENT NOTE**  
 NO EASEMENTS ARE PROPOSED FOR THE SANITARY SEWER SYSTEM AS ALL PROPOSED SEWER IMPROVEMENTS WILL REMAIN PRIVATE WITHOUT DEDICATION TO THE AUTHORITY. THE DESIGN UTILIZES AN EXISTING 30' EASEMENT ON THE ADJACENT PROPERTY TO MAKE THE CONNECTION INTO THE EXISTING SANITARY SEWER SYSTEM.



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PER ARRO COMMENT LETTER DATED 4-3-23	5-8-23	CDS
PER LCPO LETTER DATED 4-4-23	5-12-23	CDS
PER COLA COMMENTS DATED 3-31-23	5-12-23	CDS
PER ARRO COMMENT LETTER DATED 6-6-23	6-28-23	CDS
PER ARRO COMMENT LETTER DATED 7-13-23	8-4-23	CDS

**EASEMENT PLAN**  
 For  
**PRELIMINARY/FINAL SUBDIVISION & LAND DEVELOPMENT PLANS**  
**BRIAR RIDGE COMMONS - APARTMENTS**  
 located in  
 NORTH LEBANON TOWNSHIP  
 LEBANON County, Pennsylvania

Robb, Smith & Ingham  
 Engineering & Surveying Inc.  
 279 Lebanon, Pennsylvania 17042  
 Phone: (717) 272-7110  
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PROJECT #135-19-001

**PCSM LEGEND**

- ENGINEERED SOILS WITH ERNST SEEDS
- RETENTION BASIN FLOOR MIX - LOW MAINTENANCE AND PLUG PLASTING
- INFILTRATION TEST PIT
- EMERGENCY SPILL-WAY LINING N.A.G. P300 OR EQUAL

Map Symbol	Soil Name	Slope	Hydrologic Group
BeA	Bedington shaly silt loam	0-3%	B
BeB	Bedington shaly silt loam	3-8%	B
BkB	Berks channery silt loam	3-8%	B
BkC	Berks channery silt loam	8-15%	B
Cmb	Comly silt loam	3-8%	C

BMP DIMENSIONS / CAPACITY				
BMP	AVERAGE WIDTH (FT)	AVERAGE LENGTH (FT)	INFILTRATION OR MRC CAPTURE VOLUME (C.F.)	TOTAL STORAGE VOLUME (C.F.)
MRC BASIN 1	78	154	4,401	45,552
MRC BASIN 2	64	135	4,784	25,629
MRC BASIN 3	65	87	3,157	16,182
SUBSURFACE MRC BED 1	37.5	156	4,352	14,742
SUBSURFACE INF. BED 2	39	240	8,939	13,408

- NOTES:
- CONTRACTORS AND PROPERTY OWNERS SHALL NOT STORE CONSTRUCTION MATERIALS OR LOCATE TRASH RECEPTACLES (I.E. DUMPSTERS) ON THE PAVED CARTWAY OF STREETS.
  - ALL MUD FROM CONSTRUCTION ACTIVITIES THAT IS TRACKED ONTO STREETS SHALL BE CLEANED BY THE RESPONSIBLE CONTRACTOR OR PROPERTY OWNER AT THE END OF EACH WORKDAY.
  - STORMWATER INLETS OR DRAINAGE PIPES WHICH BECOME FILLED WITH MUD OR DEBRIS FROM CONSTRUCTION ACTIVITIES SHALL BE CLEANED BY THE RESPONSIBLE CONTRACTOR OR PROPERTY OWNER.
  - THE PROPOSED DETENTION BASIN IS UNDERLAIN BY LIMESTONE.
  - ALL INVERTS AS LISTED ON THE STORMWATER STRUCTURES SHALL BE CONSIDERED THE BOTTOM ELEVATION, UNLESS A SPECIFIC SUMP (BOTTOM) ELEVATION IS LISTED ON THIS SHEET.
  - CATCH BASIN MARKINGS SHALL BE PROVIDED AT ALL INLETS. MARKINGS SHALL STATE "NO DUMPING INTO STORM DRAIN".



DATE	BY
5-8-23	CDS
5-12-23	CDS
5-12-23	CDS
6-28-23	CDS
8-4-23	CDS

REVISION	LETTER	DATE	DESCRIPTION
1	A	4-3-23	PER ARRO COMMENT
2	B	4-4-23	PER LPOD LETTER
3	C	3-31-23	PER COLA COMMENTS
4	D	6-6-23	PER ARRO COMMENT
5	E	7-13-23	PER ARRO COMMENT

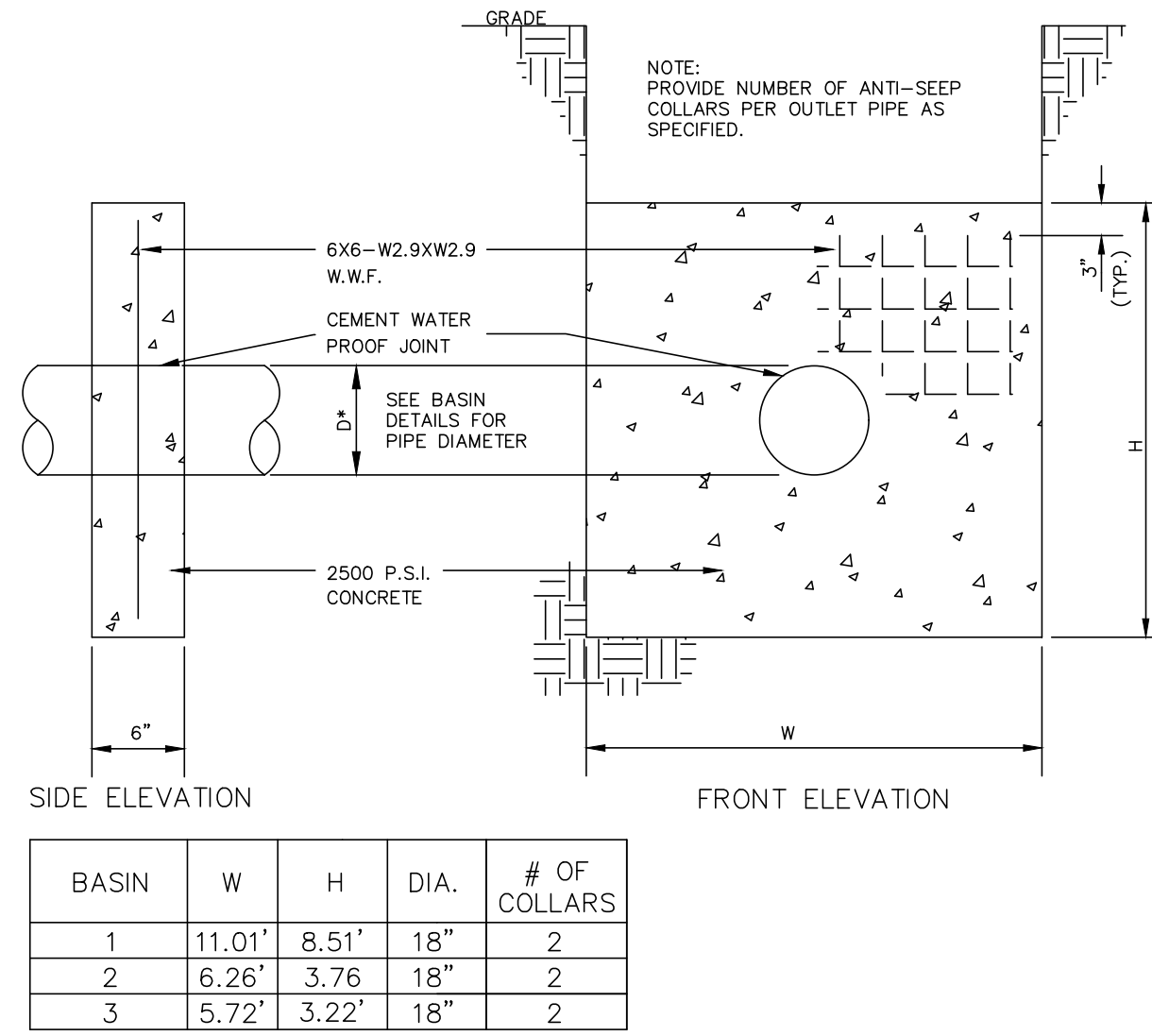
**POST CONSTRUCTION STORMWATER MANAGEMENT PLAN**  
**PRELIMINARY/FINAL SUBDIVISION & LAND DEVELOPMENT PLANS**  
**BRIAR RIDGE COMMONS - APARTMENTS**  
 NORTH LEBANON TOWNSHIP  
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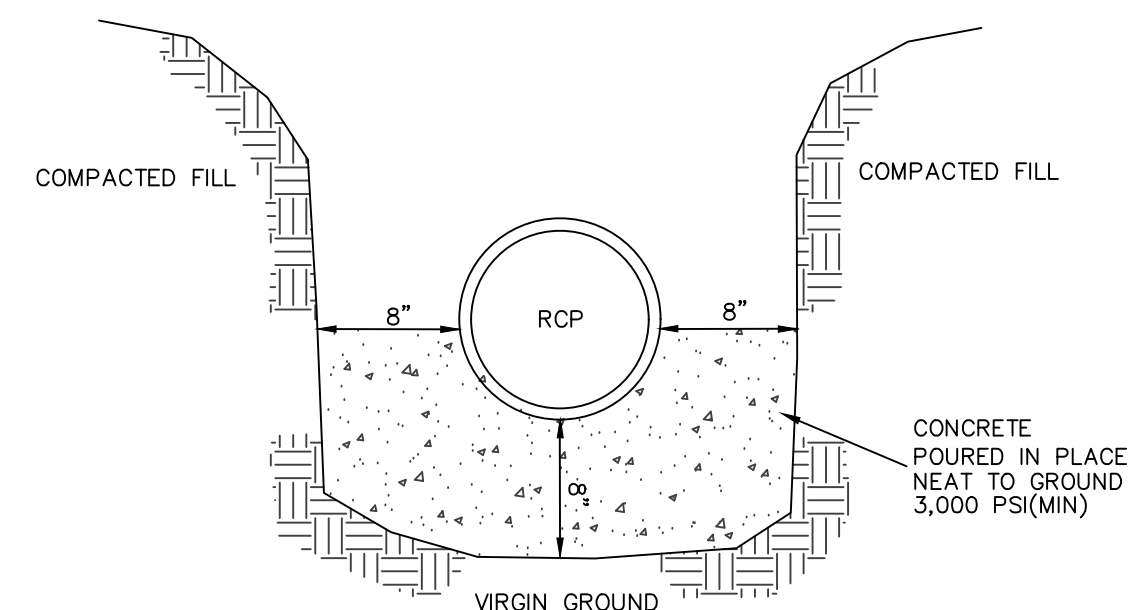






**CONCRETE ANTI-SEEP COLLAR**

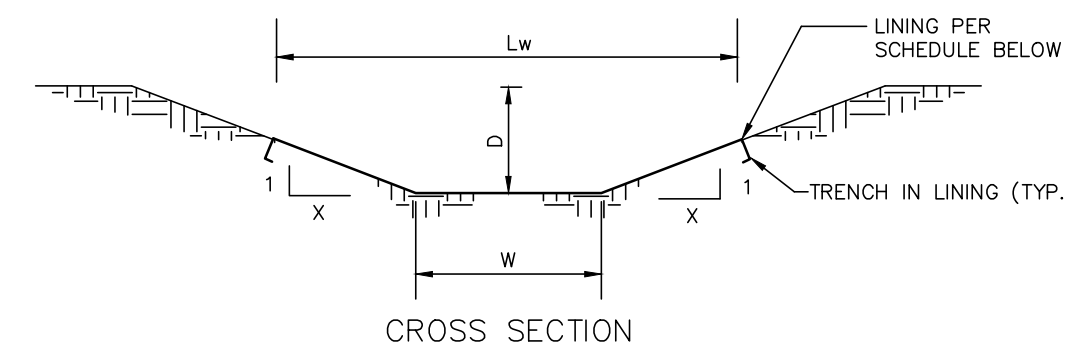
NO SCALE



- NOTES:**
- A CONCRETE CRADLE MAY BE USED IN CONJUNCTION WITH ANTI-SEEP COLLARS AND/OR FILTER DIAPHRAGM.
  - ANTI-SEEP COLLAR NUMBER, SIZE AND SPACING SHALL BE AS SHOWN ELSEWHERE IN PLAN.
  - THE CONCRETE CRADLE SHALL RUN ALONG THE ENTIRE LENGTH OF THE OUTLET PIPE.

**CONCRETE CRADLE DETAIL**

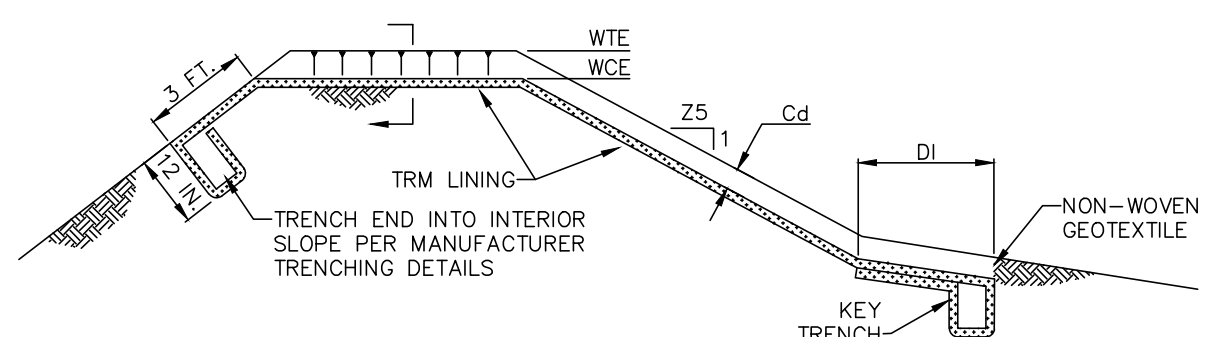
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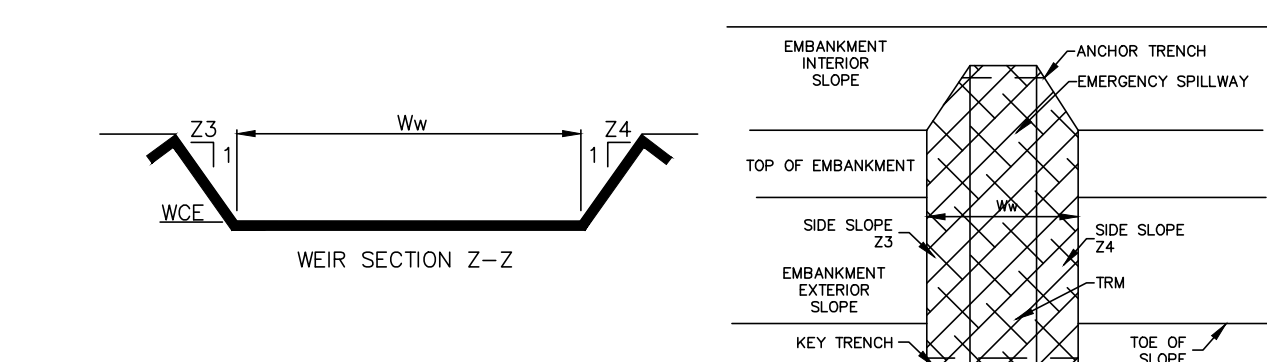
SWALE NO	WIDTH (W)	DEPTH (D)	SIDE SLOPE(X)	SLOPE %	LINING WIDTH (Lw)	LINING	TEMPORARY LINING	STAPLE PATTERN
1	2'	1.25'	3	1.2%	9.5'	GRASS	N.A.G. S-75	D
2	2'	1"	3	1.2%	8'	GRASS	N.A.G. S-75	D
3	2'	1'	3	7%	8'	GRASS	N.A.G. S200	E
4	2'	1'	3	5%	8'	GRASS	N.A.G. S200	E

**STORMWATER SWALE DETAIL**

NO SCALE

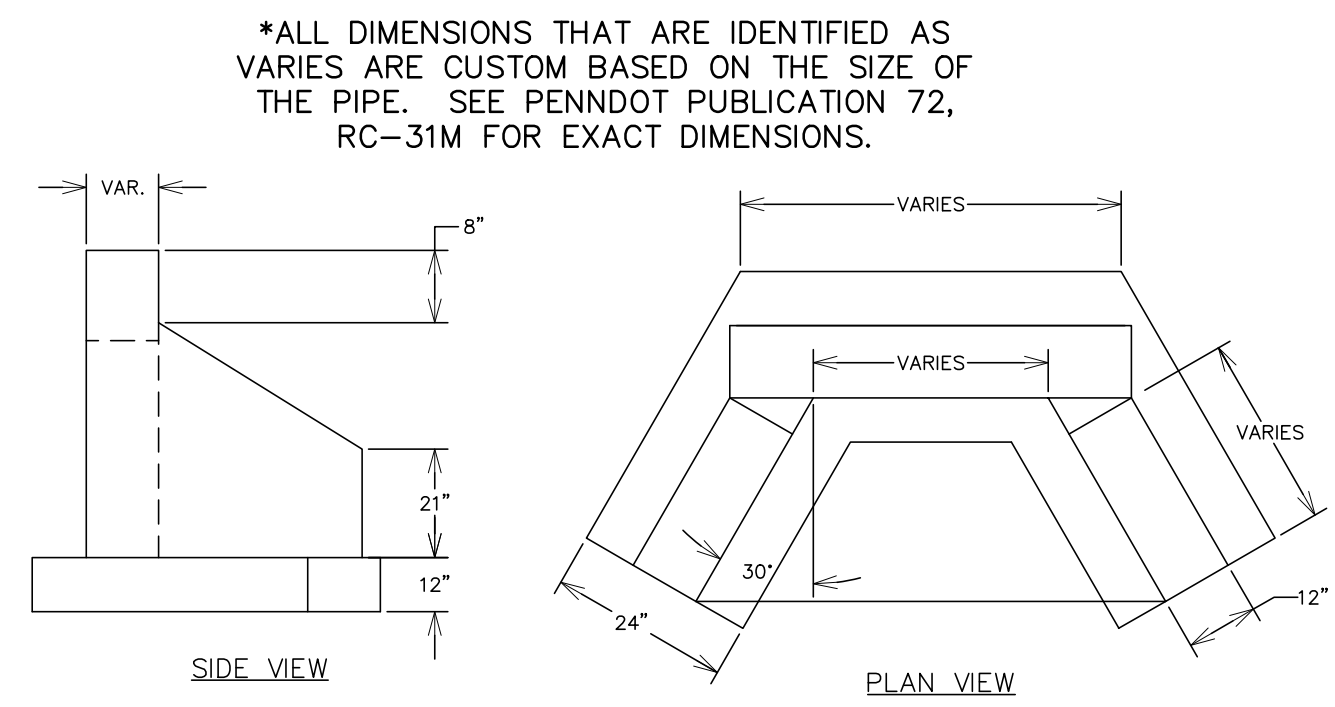


BASIN NO.	WEIR		LINING	CHANNEL	DISSIPATOR	RIPRAP THICK. (R-)	RIPRAP ORI (N)						
	23 (FT)	24 (FT)											
1	5	5	606.25	605.00	100	P300	E	3	1.25	7	N/A	N/A	N/A
2	5	5	607.75	606.50	100	P300	E	3	1.25	7	N/A	N/A	N/A
3	5	5	614.25	613.00	50	P300	E	3	1.25	7	N/A	N/A	N/A



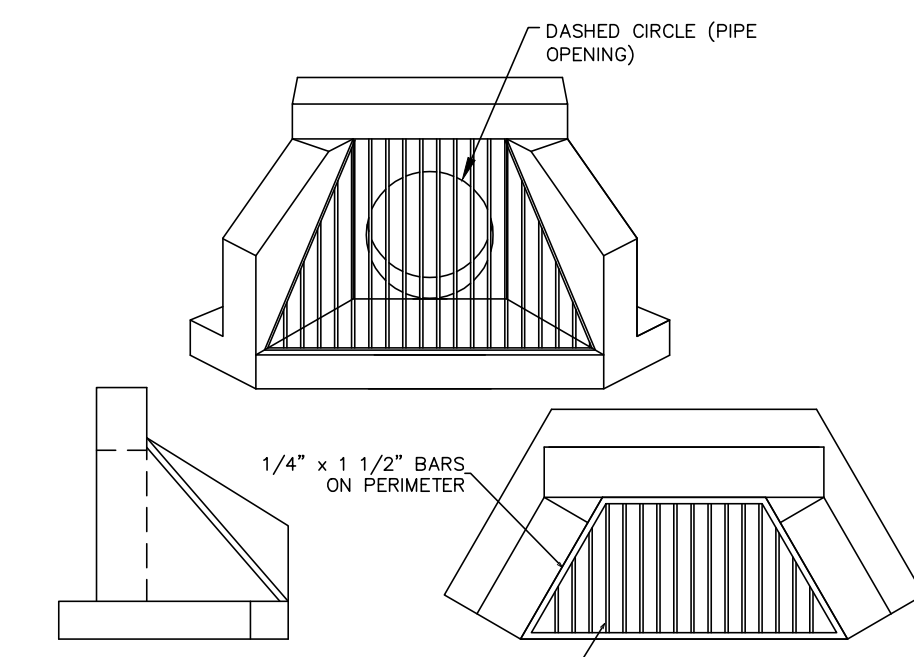
**BASIN EMERGENCY SPILLWAY DETAIL**

NO SCALE



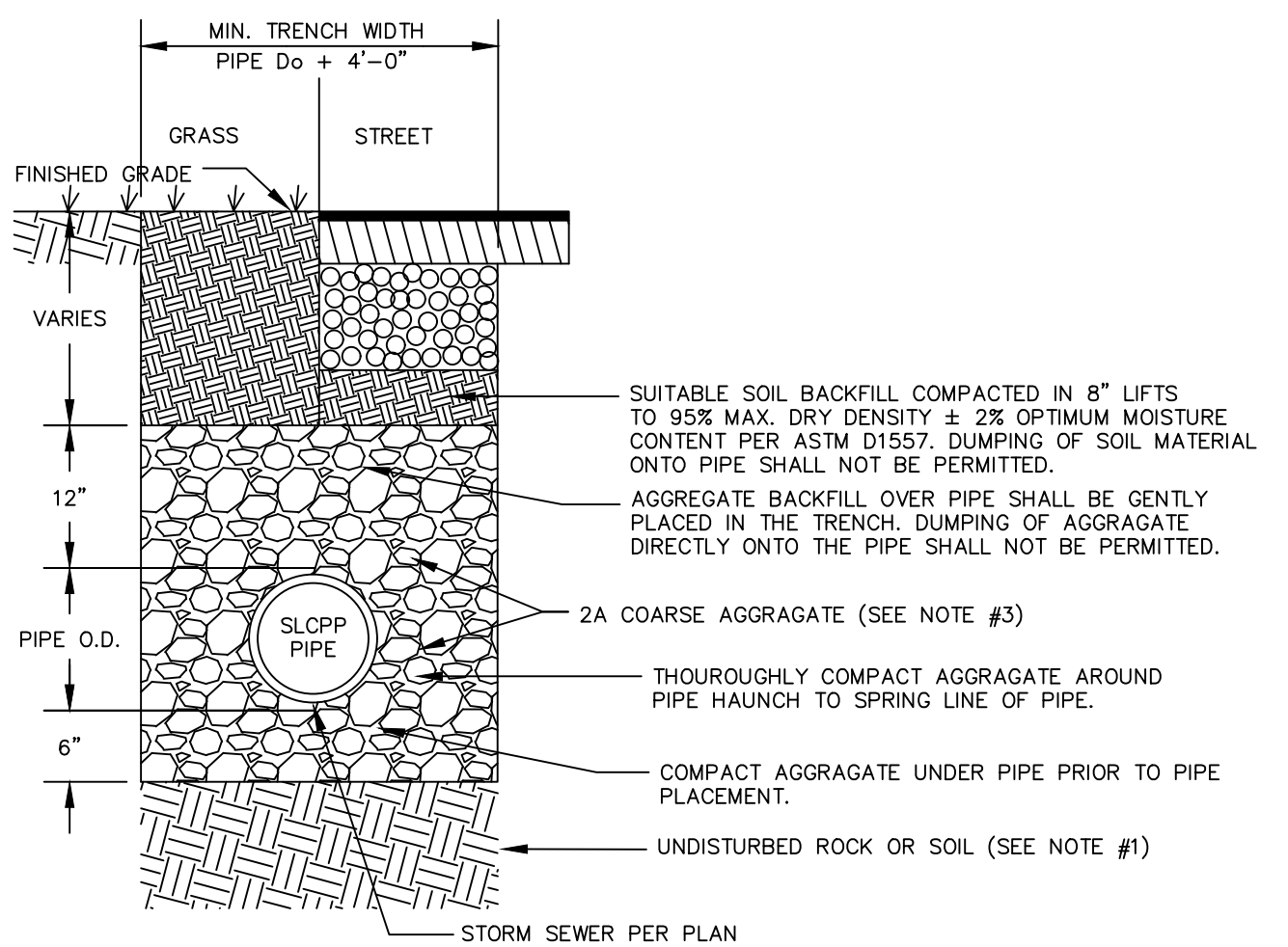
**TYPE DW ENDWALL DETAIL**

NO SCALE



**TYPE DW ENDWALL WITH TRASH RACK DETAIL**

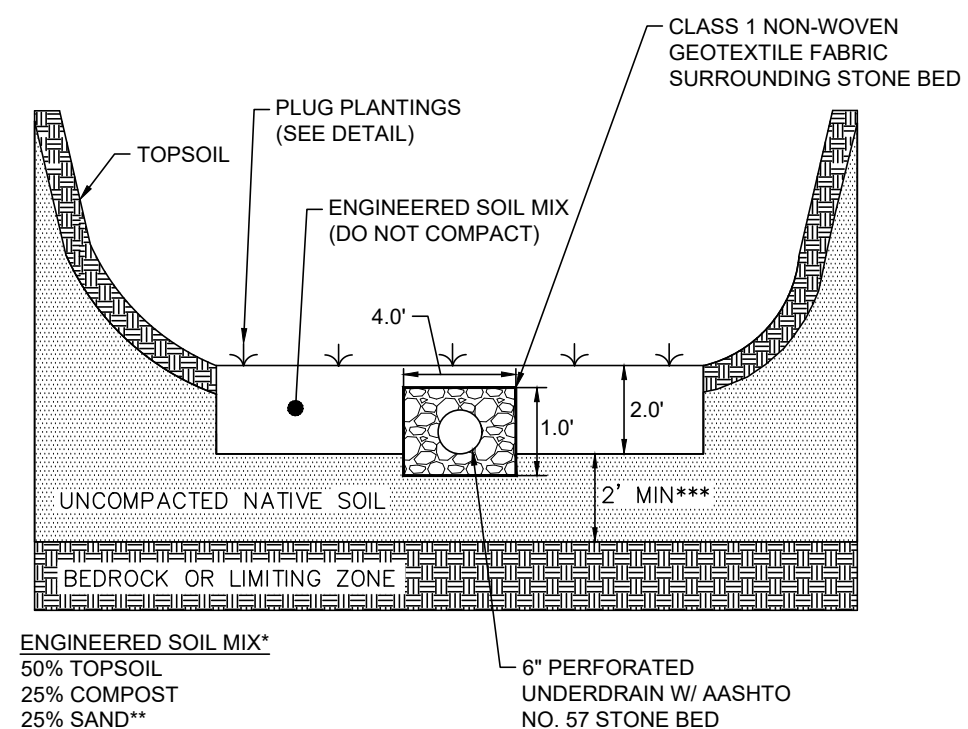
NO SCALE



- NOTE:**
- USE #2A MODIFIED AGGREGATE COMPACTED IN 4 INCH LIFTS AS NECESSARY TO FILL ANY EXCAVATED UNSUITABLE MATERIALS.
  - ALL PIPE INSTALLATIONS SHALL HAVE STRAIGHT ALIGNMENTS BETWEEN DRAINAGE STRUCTURES.
  - USE NO. 2A STONE FOR OUTLET PIPES IN DETENTION BASIN EMBANKMENTS.
  - ALL TRENCHING SHALL CONFORM TO THE CURRENT PENNDOT RC-30M DRAWINGS.
  - DETAIL NOT TO BE USED FOR RCP BASIN OUTLET PIPES AS STONE BACKFILL IS NOT PERMITTED WITHIN THE EMBANKMENT.

**TYPICAL TRENCH DETAIL FOR SLCPP INSTALLATION**

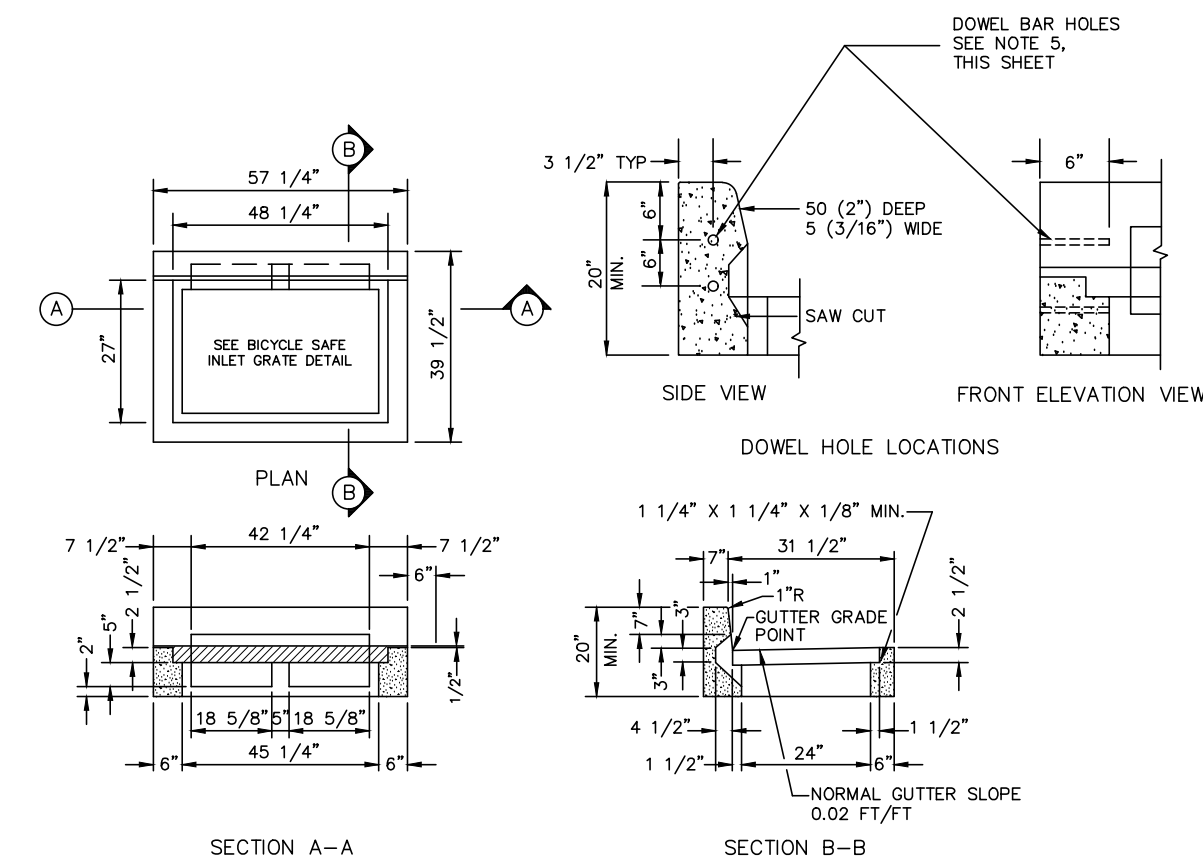
NO SCALE



- \*SHALL BE LESS THAN 20% CLAY BY VOLUME, TO BE VERIFIED BY GEOTECHNICAL ENGINEER.**
- \*\*SAND USED IN ENGINEERED SOILS SHALL BE SILICA SAND MEETING THE SPECIFICATIONS IDENTIFIED IN AASHTO M-6 OR ASTM C-33 FOR SILICA CONCRETE SAND. CALCIUM CARBONATE, MAGNESIUM CARBONATE, AND/OR DIABASE SUBSTITUTIONS ARE NOT ACCEPTABLE. NEITHER STONE DUST NOR #10 SCREENINGS MAY BE SUBSTITUTED FOR SAND.**
- \*\*ANY ROCK WITHIN TWO (2) FEET OF THE BOTTOM OF THE ENGINEERED SOILS SHALL BE OVEREXCAVATED AND REPLACED WITH UNCOMPACTED NATIVE SOILS.**

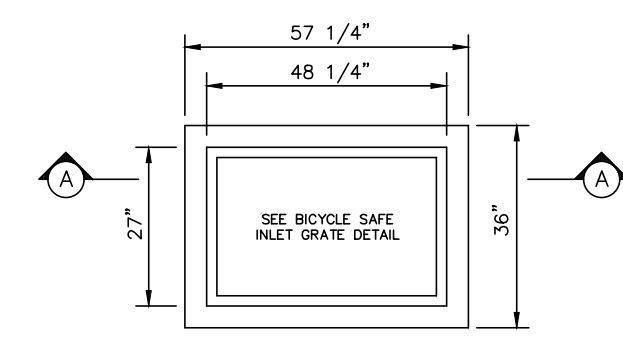
**TYPICAL MRC BASIN BOTTOM CROSS SECTION DETAIL**

NO SCALE



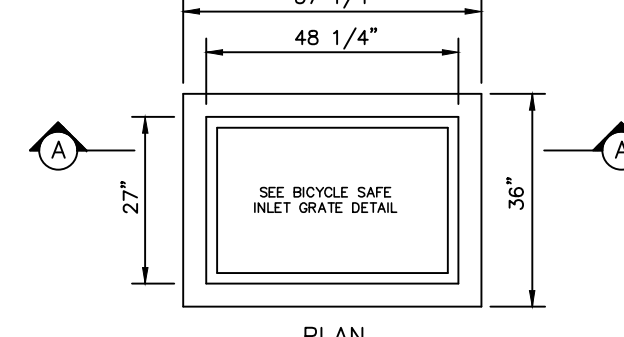
**PENNDOT TYPE "C" INLET TOP**

NO SCALE



**TYPE M INLET DETAIL (RC-46M)**

NO SCALE

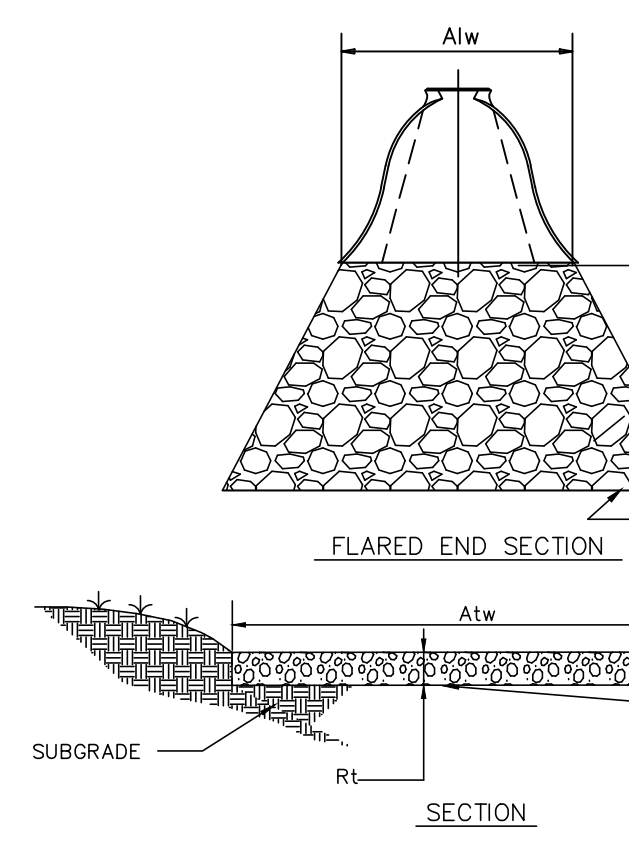


**TYPE C INLET DETAIL (RC-46M)**

NO SCALE

**INLET NOTES:**

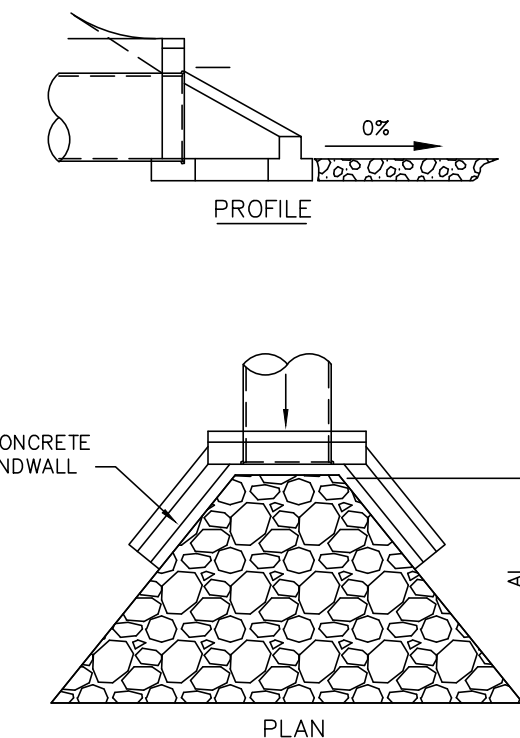
- CONCRETE TOP UNITS WHICH SEAT THE GRATE DIRECTLY WITHIN THE UNIT SHALL UTILIZE 1-1/4" X 1-1/4" ANGLES EMBEDDED IN THE CONCRETE AS A BEARING AREA FOR THE GRATE.
- THIS STANDARD DEPICTS THE SHAPE AND DIMENSIONS REQUIRED FOR UNIFORMITY AND COMPATIBILITY. IT IS NOT INTENDED TO SHOW THE DETAILS REQUIRED FOR MANUFACTURING AND HANDLING. ONLY THOSE ITEMS WHICH ARE SUPPLIED BY AN APPROVED MANUFACTURER AS LISTED IN PA BULLETIN NO. 15 WILL BE PERMITTED.
- WHENEVER AN INLET IS REQUIRED WITHIN A MOUNTABLE CURB SECTION, A TYPE M INLET WILL BE LOCATED ADJACENT TO THE BACK EDGE OF THE CURB AND WILL BE FLUSH WITH THE PAVEMENT SURFACE.
- THE SELECTION OF COMPONENTS TO ACHIEVE A SPECIFIED INLET TYPE IS THE CONTRACTOR'S RESPONSIBILITY.
- PIPES SHALL BE LOCATED AS REQUIRED.
- ALL INLETS OVER FOUR (4) FEET IN DEPTH SHALL BE PROVIDED WITH STEPS FOR ACCESSIBILITY.
- GRADE ADJUSTMENT RINGS MAY BE OF MASONRY OR PRECAST CONCRETE CONSTRUCTION, AS APPROVED.
- INLET BOX SHALL BE PRECAST CONCRETE.
- REFER TO PA DOT BUREAU OF DESIGN STANDARDS RC-46M.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH PA DOT PUBLICATION 408, SECTION 605 & STANDARDS FOR ROADWAY CONSTRUCTION, RC-46M. CONTRACTOR SHALL VERIFY INLET BOX SIZING BASED ON PIPE SIZES AND ALIGNMENT PRIOR TO ORDERING PRECAST STRUCTURES.
- ALL DRAINAGE STRUCTURES SHALL HAVE POURED-IN-PLACE CONCRETE CHANNEL BOTTOM, UNLESS OTHERWISE NOTED.
- ALL STORMWATER INLET BOXES, CONCRETE TOP UNITS, AND INLET GRATES AND FRAMES SHALL CONFORM TO CURRENT PENNDOT RC-46M STANDARDS.
- ALL INLETS SHALL BE CONSTRUCTED WITH CONCRETE FLOW CHANNELS CAST-IN-PLACE IN THE BOTTOM OF EACH INLET, EXCEPT THE LAST TWO INLETS BEFORE A STORM SEWER OUTFALL SHALL BE CONSTRUCTED WITH A MINIMUM 12" SUMP TO CATCH DEBRIS. INLET SUMPS SHALL HAVE WEEPHOLES.



**FLARED END SECTION/ENDWALL RIP RAP DETAIL**

NO SCALE

PIPE NO.	PIPE DIA. (In)	RIPRAP SIZE	R1 (In)	A1 (ft)	Atw (ft)	Atw (ft)
EW-34	18	R-4	18	10	5	15
EW-3	18	R-4	18	8	5	8
EW-43	18	R-4	18	8	5	8
EX. CULVERT	18	R-4	18	16	5	21
ROOF LEADER FES (TYP.)	6-12	R-3	9	6	3	9



DATE	BY	REVISION
5-8-23	CDS	PER ARRO COMMENT LETTER DATED 4-33-23
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5-12-23	CDS	PER COLA COMMENTS DATED 3-31-23
6-28-23	CDS	PER ARRO COMMENT LETTER DATED 6-6-23
8-4-23	CDS	PER ARRO COMMENT LETTER DATED 7-13-23

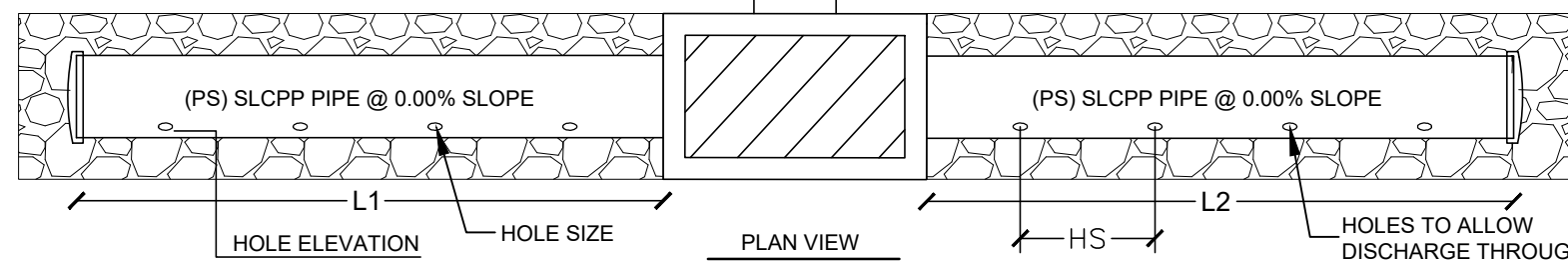
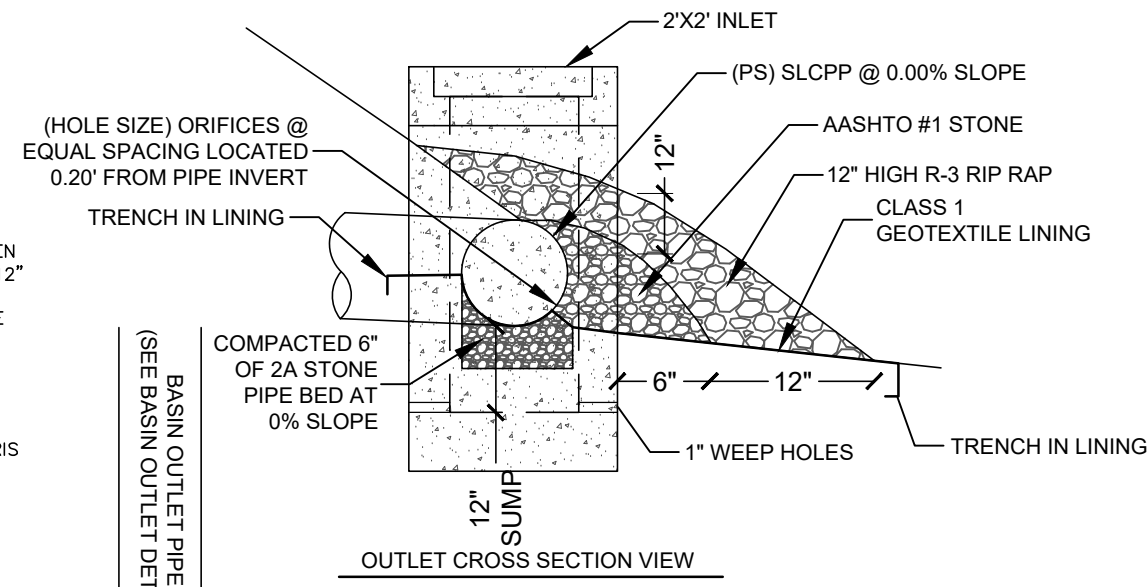
POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS  
 PRELIMINARY/FINAL SUBDIVISION & LAND DEVELOPMENT PLANS  
 For  
**BRIAR RIDGE COMMONS - APARTMENTS**  
 located in  
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**NOTES:**

- LEVEL SPREADER PIPE SHALL BE INSTALLED FLAT WITH ALL HOLES IN THE PIPE INSTALLED AT THE SAME ELEVATION TO ALLOW EVEN DISTRIBUTION OF STORM WATER DISCHARGE.
- PROVIDE AASHTO #1 AROUND PIPE HOLES TO ALLOW FOR EVEN DISTRIBUTION OF STORM DISCHARGE. STONE SHALL EXTEND 12" BEYOND FRONT FACE OF STORM INLET.
- PROVIDE AN ADDITIONAL 12" (TAPERED TO 24" AT DISCHARGE ELEVATION) OF R-3 RIPRAP TO PROTECT THE AASHTO #1 STONE AND THE STORM PIPE.
- 6" OF COMPACTED 2A STONE SHALL BE PROVIDED BENEATH THE LEVEL SPREADER PIPE TO PROVIDE AN EVEN FLAT SURFACE FOR THE PIPE TO SIT ON.
- INLET SHALL BE SUMPED 12" TO ALLOW COLLECTION OF DEBRIS TO PREVENT CLOGGING OF LEVEL SPREADER PIPE. INLET SHALL BE MONITORED AND CLEANED AT LEAST TWICE PER YEAR.



ID	PIPE SIZE (PS)	HOLE SIZE	HOLE ELEVATION	HOLE SPACING (HS)	# OF HOLES	L1	L2	TOTAL PIPE LENGTH (L1+L2)
LS-1	15"	1.5"	590.45	0.402'	50	10'	10'	20'
LS-4B	15"	1.0"	602.45	0.457'	188	35'	50'	85'
LS-5B	15"	1.5"	609.70	0.572'	35	10'	10'	20'
LS-5S	18"	1.5"	611.70	0.289'	259	60'	15'	75'
LS-50	24"	1.5"	604.20	0.247'	930	210'	20'	230'

**LEVEL SPREADER DETAIL**

NO SCALE

ALL INLETS DENOTED BELOW SHALL BE INSTALLED WITH A FLEXSTORM PURE FILTER OR APPROVED EQUIVALENT.

**INLETS**  
I-18, I-19, I-20, I-21 (OS-21), I-22, I-23, I-24, I-28 (OS-28), I-29, I-30, I-31, I-32, I-33, I-46

**INSTALLATION:**

- INSTALL PCSM WATER QUALITY FILTERS ONLY AFTER THE TRIBUTARY AREA IS STABLE.
- REMOVE THE GRATE FROM THE CASTING OR CONCRETE DRAINAGE STRUCTURE.
- CLEAN THE LEDGE (LIP) OF THE CASTING FRAME OR DRAINAGE STRUCTURE TO ENSURE IT IS FREE OF STONE AND DIRT.
- DROP IN THE FLEXSTORM INLET FILTER THROUGH THE CLEAR OPENING AND BE SURE THE SUSPENSION HANGERS REST FIRMLY ON THE INSIDE LEDGE (LIP) OF THE CASTING.
- REPLACE THE GRATE AND CONFIRM IT IS ELEVATED NO MORE THAN 1/8", WHICH IS THE THICKNESS OF THE STEEL HANGERS.

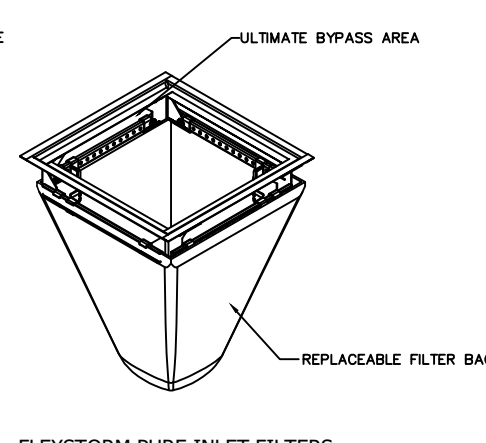
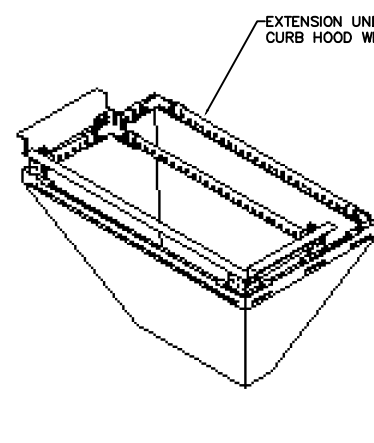
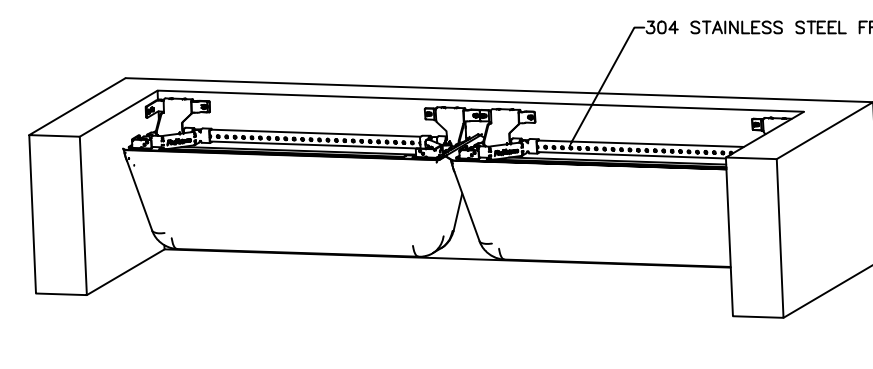
**MAINTENANCE:**

- EMPTY THE SEDIMENT BAG IF MORE THAN HALF FILLED WITH SEDIMENT AND DEBRIS, OR AS DIRECTED BY THE ENGINEER.
- REMOVE THE GRATE, ENGAGE THE LIFTING BARS OR HANDLES WITH THE FLEXSTORM REMOVAL TOOL, AND LIFT FROM THE DRAINAGE STRUCTURE.
- DISPOSE OF THE SEDIMENT OR DEBRIS AS DIRECTED BY THE ENGINEER OR MAINTENANCE CONTRACT IN ACCORDANCE WITH EPA GUIDELINES.
- AS AN ALTERNATIVE, AN INDUSTRIAL VACUUM MAY BE USED TO COLLECT THE ACCUMULATED SEDIMENT.
- REMOVE ANY CAKED-ON SILT FROM THE SEDIMENT BAG AND REVERSE FLUSH THE BAG WITH MEDIUM SPRAY FOR OPTIMAL FILTRATION.
- REPLACE THE BAG IF TORN OR PUNCTURED TO 1/2" DIAMETER OR GREATER ON THE LOWER HALF OF THE BAG.
- DISPOSE OF ALL OIL CONTAMINATED PRODUCTS IN ACCORDANCE WITH EPA GUIDELINES.
- REMOVE THE BAG BY LOOSENING OR CUTTING OFF THE CLAMPING BAND.
- TAKE THE NEW SEDIMENT BAG, WHICH IS EQUIPPED WITH A STAINLESS-STEEL WORM DRIVE CLAMPING BAND, AND USE A SCREW DRIVER TO TIGHTEN THE BAG AROUND THE FRAME CHANNEL.
- ENSURE THE BAG IS SECURE AND THAT THERE IS NO SLACK AROUND THE PERIMETER OF THE BAND.
- WRITTEN REPORTS DOCUMENTING ALL INSPECTIONS, REPAIRS, AND MAINTENANCE ACTIVITIES SHALL BE MAINTAINED ON SITE BY THE PROPERTY OWNER AT ALL TIMES.

**SPECIFICATIONS:**

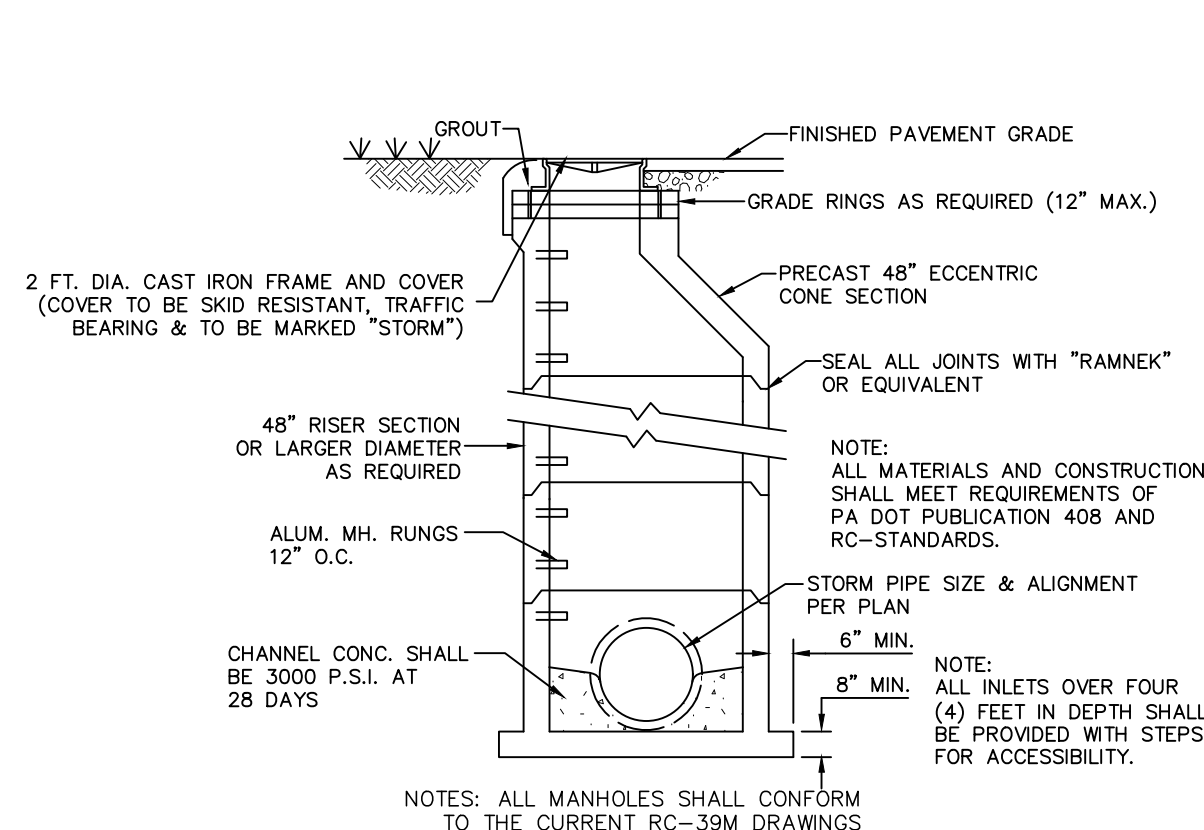
- ALL FRAMING SHALL BE CONSTRUCTED OF 304 STAINLESS STEEL FOR 25 YEAR SERVICE LIFE RATING.
- REPLACEABLE GEOTEXTILE FILTER BAG SHALL BE ATTACHED TO THE FRAME WITH A STAINLESS STEEL LOCKING BAND.
- TOTAL BYPASS CAPACITY: BYPASS CAPACITY WILL VARY WITH EACH SIZE DRAINAGE STRUCTURE. FLEXSTORM DESIGNS FRAMING BYPASS TO MEET OR EXCEED THE DESIGN FLOW OF THE PARTICULAR DRAINAGE STRUCTURE.
- UPON ORDERING CONFIRMATION OF THE DOT CALLOUT, PRECAST OR CASTING MAKE AND MODEL, OR DETAILED DIMENSIONAL FORMS MUST BE PROVIDED TO CONFIGURE AND ASSEMBLE YOUR CUSTOMIZED FLEXSTORM INLET FILTER. PART NUMBER ALONE IS NOT SUFFICIENT.

For Open Throat Curb Inlets - Mounted to Wall Beneath Curb Opening	For Rectangular/Square Openings with Grates			Minimum Bypass Flow Rates (CFS) Based on Nominal Frame Size with minimum 2" Bypass flow gap.
Curb Opening Size	Flexstorm Frame P/N	Flexstorm Frame P/N	Flexstorm Frame P/N	2.4
Up to 4" curb openings (1 Filter)	62HDMW1	62HDMW1	62HDMW1	3.5
Between 4" and 8" curb openings (2 Filters)	62HDMW2	62HDMW2	62HDMW2	5.0
Between 8" and 12" curb openings (3 Filters)	62HDMW3	62HDMW3	62HDMW3	7.2
Between 12" and 18" curb openings (4 Filters)	62HDMW4	62HDMW4	62HDMW4	



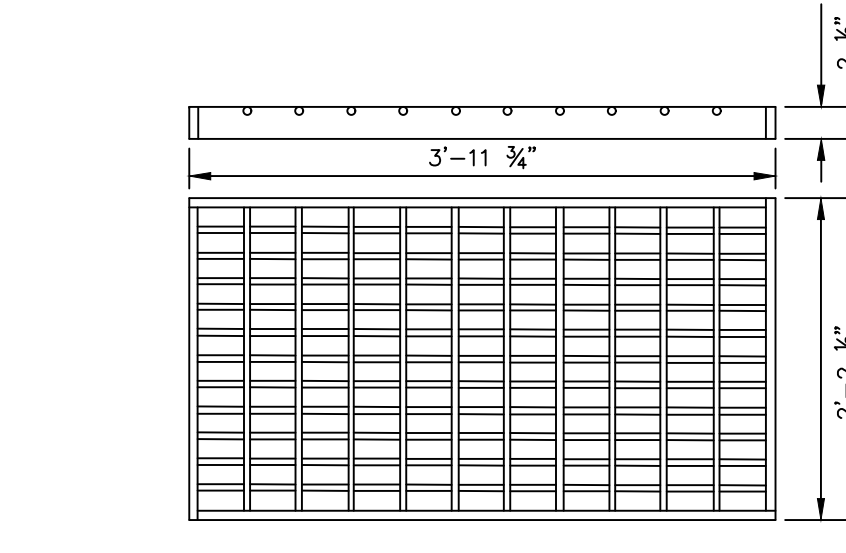
**FLEXSTORM FILTER BASKET DETAIL**

NO SCALE



**STORMWATER MANHOLE CROSS SECTION**

NO SCALE



- NOTES:**
- GRATES SHOWN FIT 24"x45 1/4" PRECAST TOP UNITS AND TYPES M & C STRUCTURAL STEEL FRAMES AND CONFORM TO PENN D.O.T. BUREAU OF HIGHWAY DESIGN "STANDARDS FOR ROADWAY CONSTRUCTION" RC-45M.
  - GRATES FOR 24"x22" PRECAST TOP UNITS AND STRUCTURAL STEEL FRAMES ARE ALSO AVAILABLE.
  - ALL GRATES WILL SAFELY WITHSTAND HS-20 HIGHWAY LOADING.
  - STEEL SHALL BE COMESTIC AND SHALL CONFORM TO ASTM A36; WELDING SHALL BE DONE BY CERTIFIED WELDERS; GRATES RECEIVE (1) SHOP COAT OF BLACK ASPHALT PAINT.

**STRUCTURAL STEEL GRATE-BICYCLE SAFE**

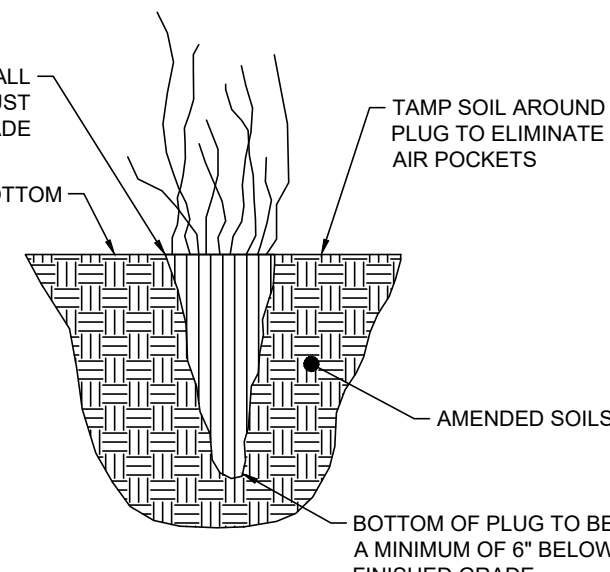
NO SCALE

- NOTES:**
- PLUGS SHALL BE INSTALLED IN A RANDOM PATTERN AT 5' SPACING WITHIN THE BASIN BOTTOM.
  - A MINIMUM OF ONE (1) WOODY AND ONE (1) HERBACEOUS SPECIES MUST BE USED WITH QUANTITIES BEING ROUGHLY THE SAME BETWEEN ANY SPECIES SELECTED.
  - AN ALTERNATIVE SPECIES FROM THOSE LISTED BELOW MAY BE UTILIZED WITH APPROVAL FROM THE ENGINEER AND LOCAL CONSERVATION DISTRICT.

PLUG PLANTING LIST		
TYPE	LATIN NAME	COMMON NAME
HERBACEOUS	ASCLEPLAS INCARNATA	SWAMP MILKWEED
HERBACEOUS	CALTHA PALUSTRIS	MARSH MARIGOLD
WOODY	RHODODENDRON VISCOSSUM	SWAMP AZALEA
WOODY	ROSA PALUSTRIS	SWAMP ROSE

**PLUG PLANTING DETAIL**

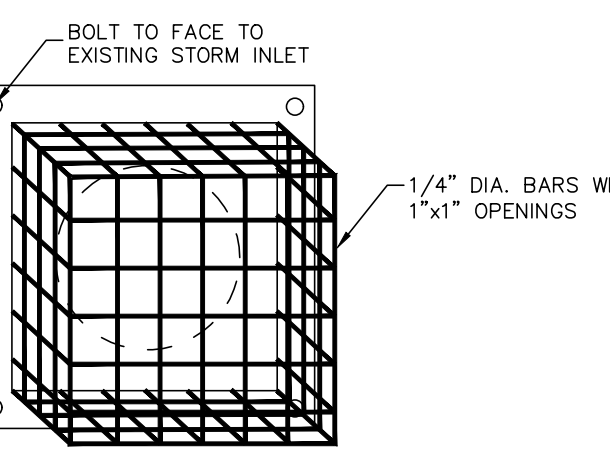
NO SCALE



PLUG PLANTING LIST		
TYPE	LATIN NAME	COMMON NAME
HERBACEOUS	ASCLEPLAS INCARNATA	SWAMP MILKWEED
HERBACEOUS	CALTHA PALUSTRIS	MARSH MARIGOLD
WOODY	RHODODENDRON VISCOSSUM	SWAMP AZALEA
WOODY	ROSA PALUSTRIS	SWAMP ROSE

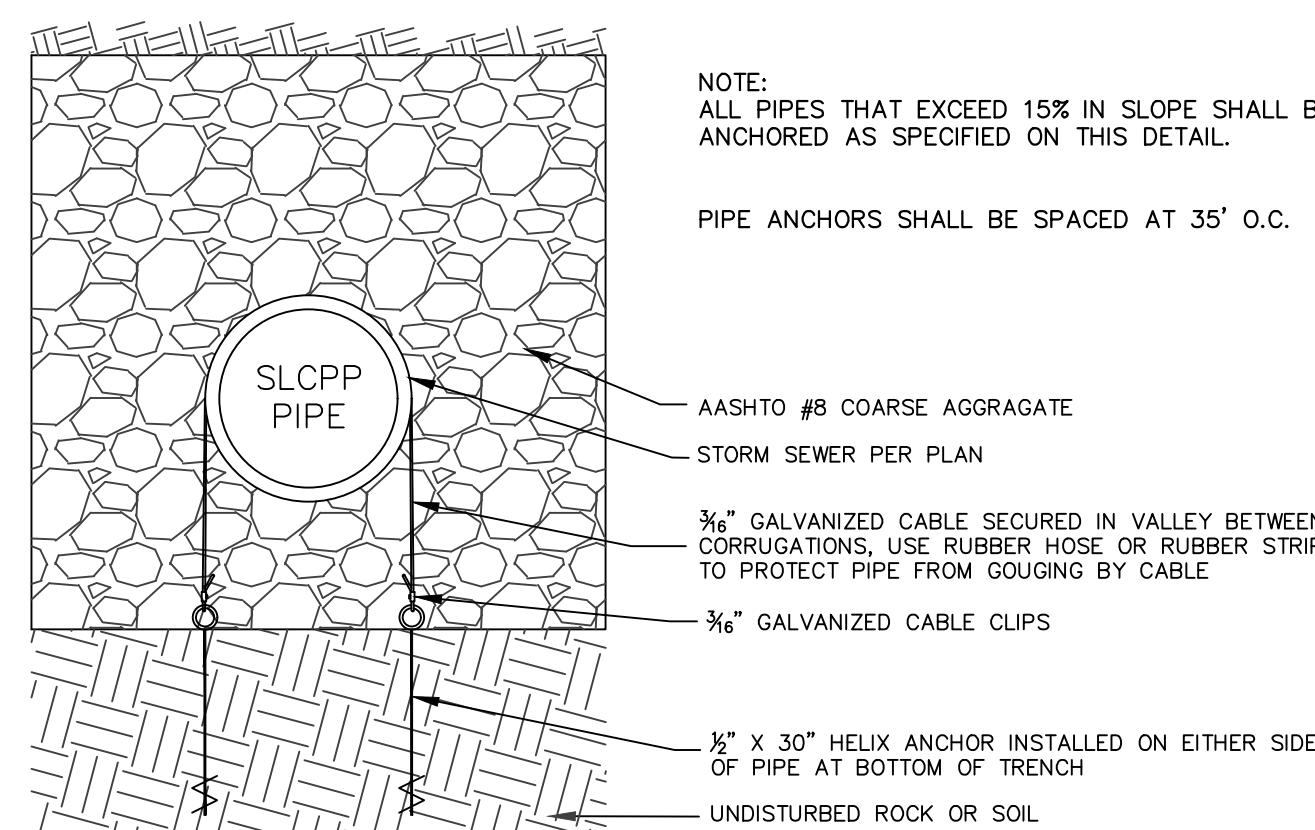
**PLUG PLANTING DETAIL**

NO SCALE



**STORM INLET TRASH RACK DETAIL**

NO SCALE

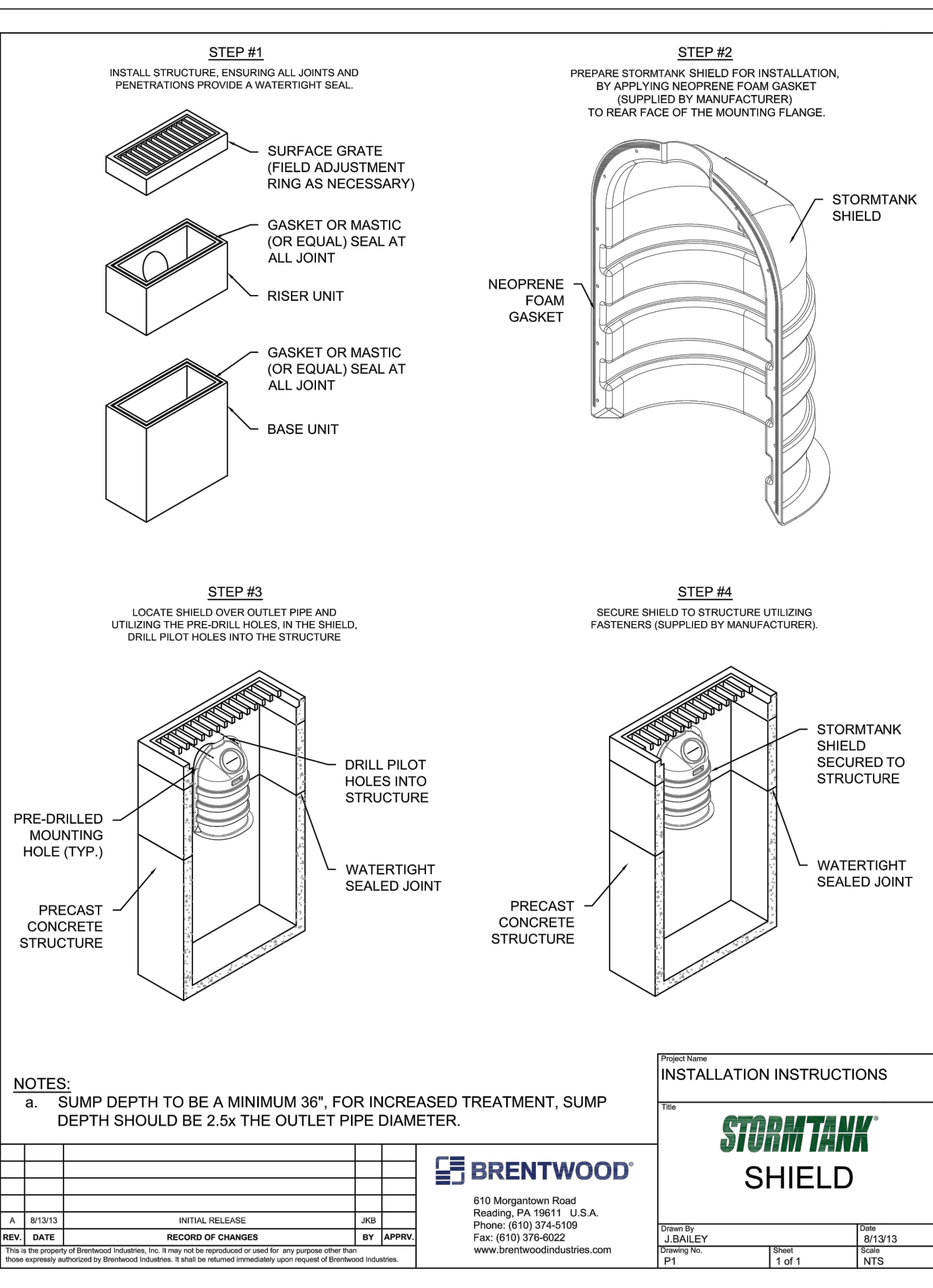


**TYPICAL STEEP SLOPE PIPE ANCHOR ASSEMBLY**

NO SCALE

**BRENTWOOD STORMTANK SHIELD INVENTORY SUMMARY**

STRUCTURE	OUTLET PIPE DIA. (IN.)	SUMP (IN.)	PRODUCT NAME
I-18	15	36	STKS-18
I-20	15	36	STKS-18
I-29	15	36	STKS-18
I-30	15	36	STKS-18
I-31	15	36	STKS-18
I-32	15	36	STKS-18
I-46	15	36	STKS-18

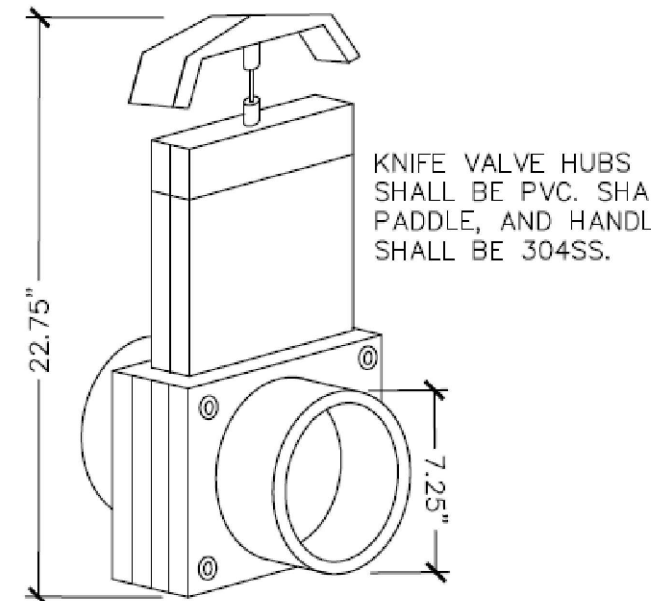


**INSTALLATION INSTRUCTIONS**

**STORMTANK SHIELD**

610 Morgantown Road  
Reading, PA 19611 U.S.A.  
Phone: (610) 378-6100  
Fax: (610) 378-6022  
www.brentwoodproducts.com

REV: 01/31/13  
DATE: 01/31/13  
BY: J.BALEY  
APP: NTS



PVC KNIFE VALVE SHALL BE MANUFACTURED BY THE FOLLOWING:

- VALTERRA PRODUCTS, LLC  
MISSION HILLS, CALIFORNIA  
PHONE: 818-868-1671  
FAX: 818-361-5399
- OR APPROVED EQUAL

**6" PVC KNIFE VALVE DETAIL**

NO SCALE

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REVISION	DATE	BY
PER ARRO COMMENT LETTER DATED 4-3-23	5-8-23	CDS
PER LCPO LETTER DATED 4-4-23	5-12-23	CDS
PER COLA COMMENTS DATED 3-31-23	5-12-23	CDS
PER ARRO COMMENT LETTER DATED 6-6-23	6-28-23	CDS
PER ARRO COMMENT LETTER DATED 7-13-23	8-4-23	CDS

**POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS**

**PRELIMINARY/FINAL SUBDIVISION & LAND DEVELOPMENT PLANS**

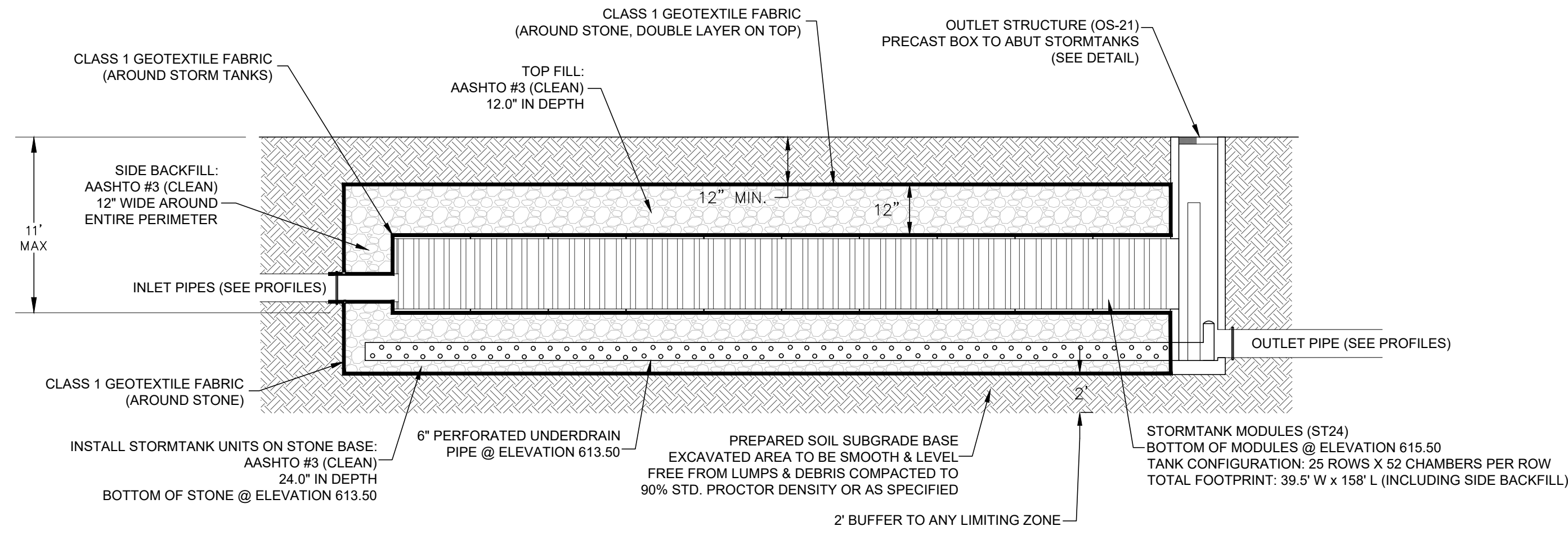
For  
**BRIAR RIDGE COMMONS - APARTMENTS**

located in  
NORTH LEBANON TOWNSHIP  
LEBANON County, Pennsylvania

**GIS**

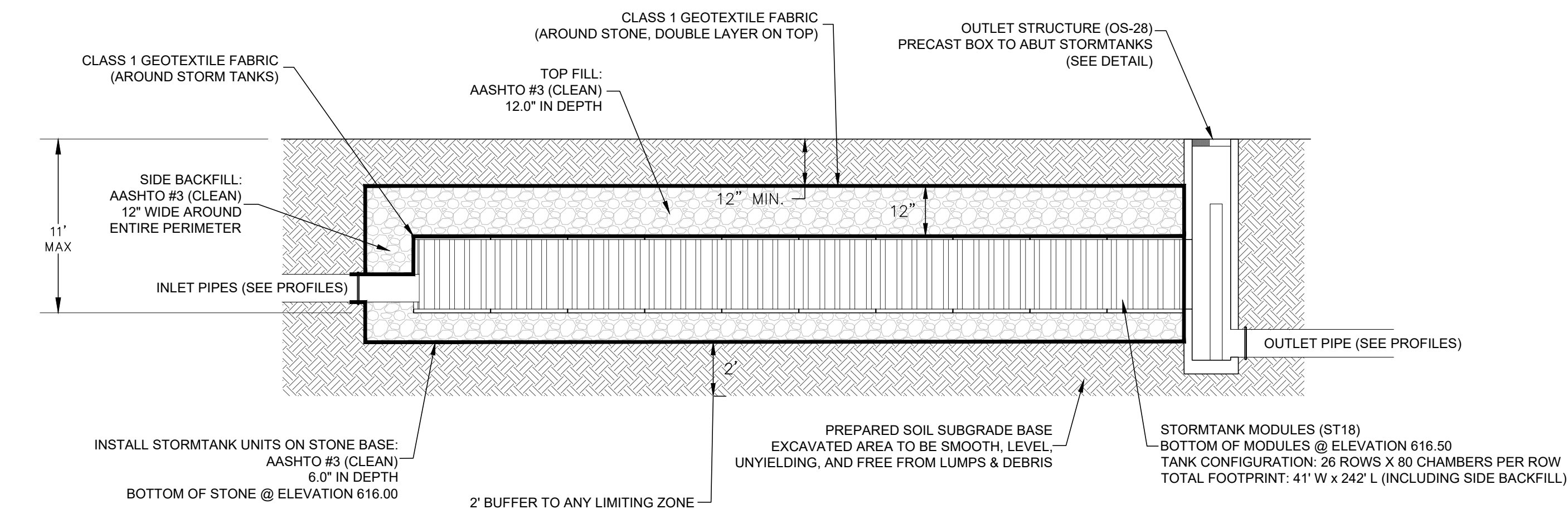
Steadbeck Engineering & Surveying Inc.  
279 Lebanon, Pennsylvania 17042  
Phone: (717) 272-7110  
Fax: (717) 272-7348

FIELD CREW: MOD/JEC
BASE MAP: JEC
DRAWN: CDS
DESIGN: CDS
CHECKED: SAS
DATE: 3/1/23
SCALE: 1"=50'
PROJECT #135-19-001



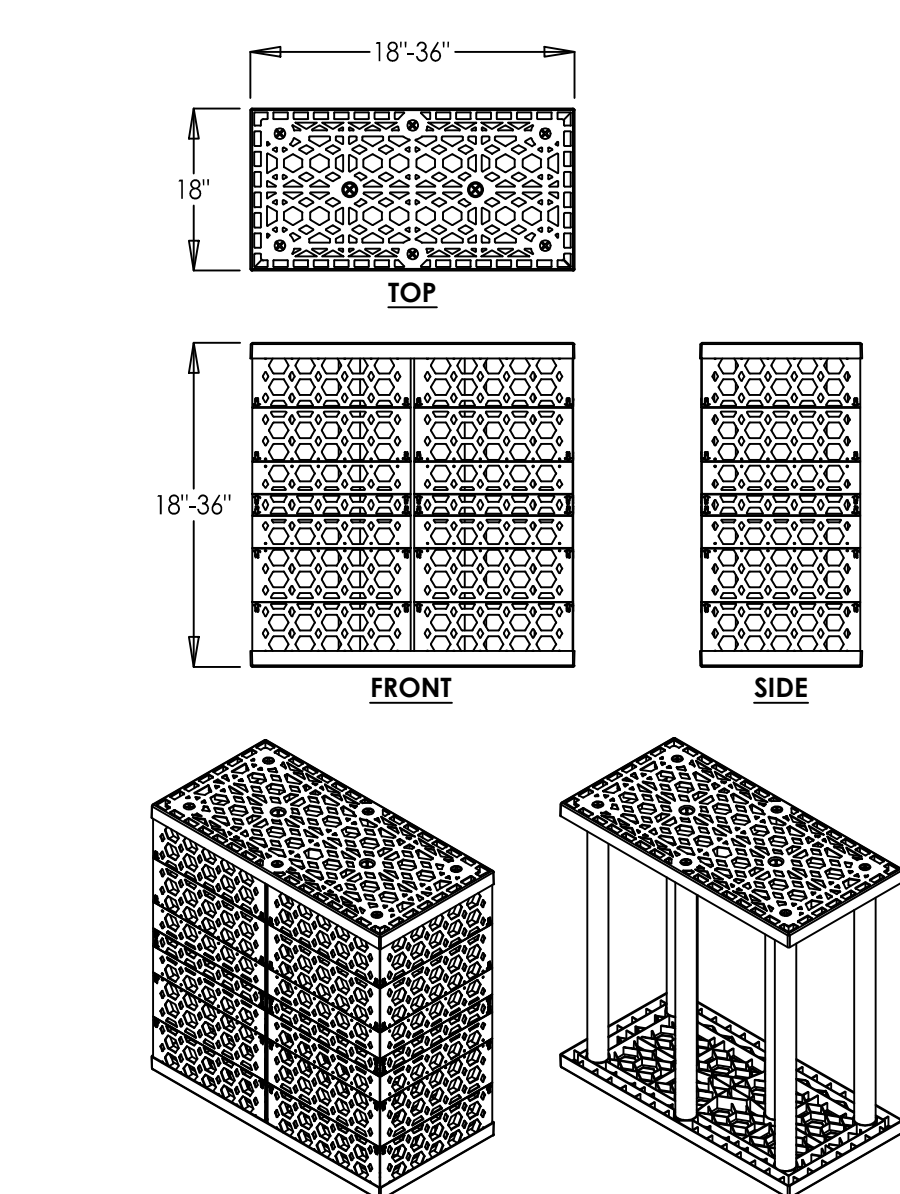
**STORM WATER - STORM TANK CROSS SECTION DETAIL - BMP NO. 4 MRC SUBSURFACE BED 1**

NO SCALE



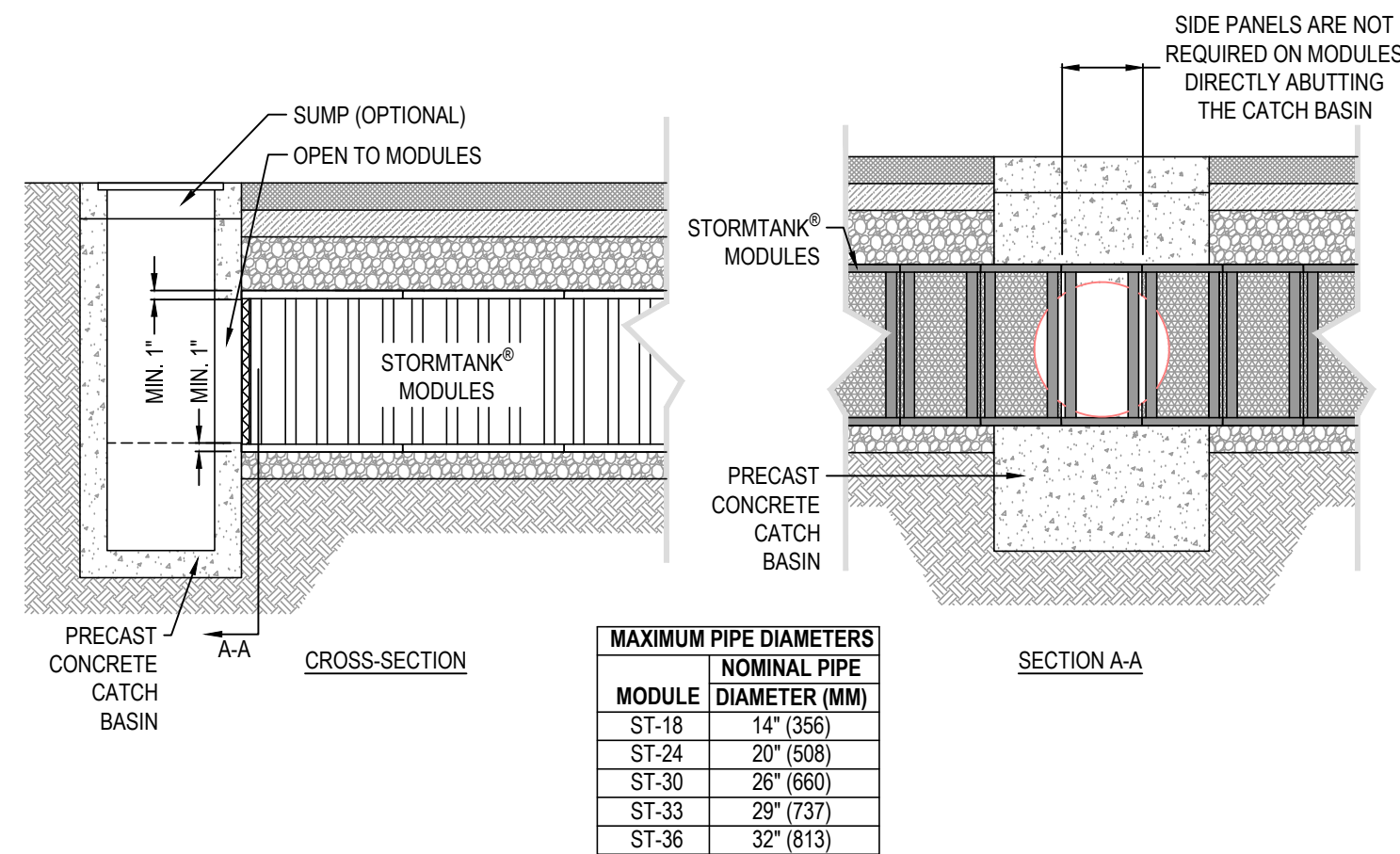
**STORM WATER - STORM TANK CROSS SECTION DETAIL - BMP NO. 5 SUBSURFACE INFILTRATION BED 2**

NO SCALE



**TYPICAL STORM TANK MODULE DETAIL**

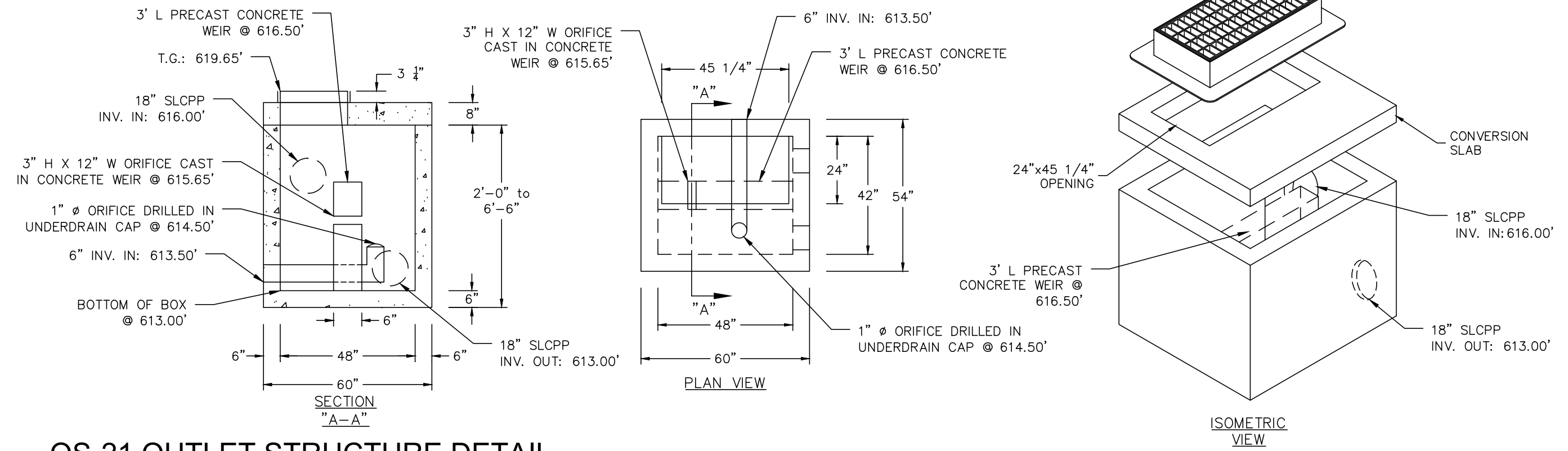
NO SCALE



- NOTES:**
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
  2. DO NOT SCALE DRAWING.
  3. THIS DRAWING IS INTENDED FOR USE BY ARCHITECTS, ENGINEERS, CONTRACTORS, CONSULTANTS AND DESIGN PROFESSIONALS FOR PLANNING PURPOSES ONLY. THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION.
  4. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.
  5. CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT [www.CADdetails.com/info](http://www.CADdetails.com/info) AND ENTER REFERENCE NUMBER 4907-001.

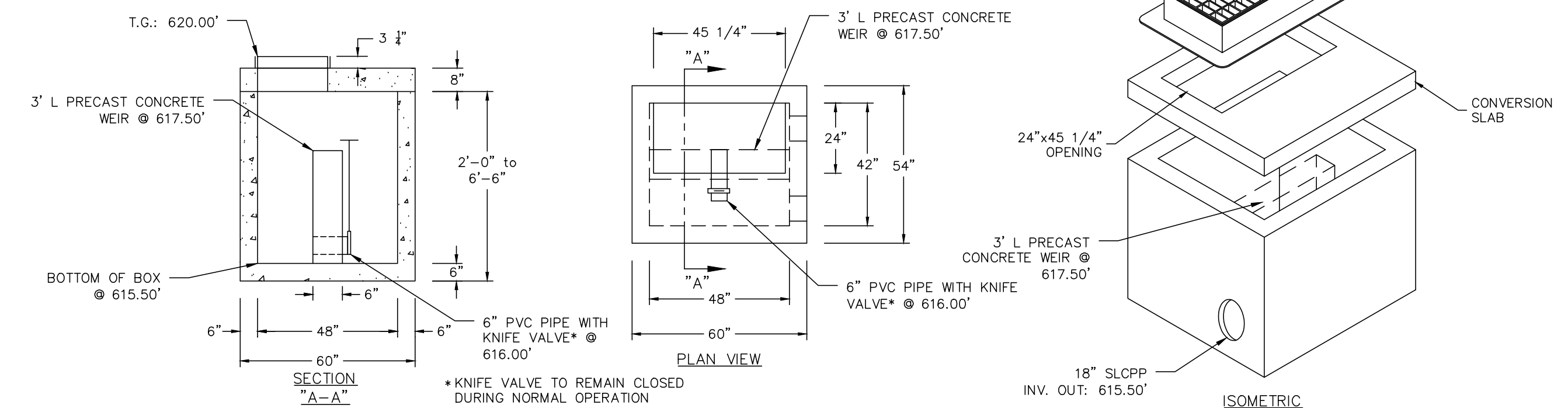


**STORMTANK MODULE CATCH BASIN ABUTMENT DETAIL**



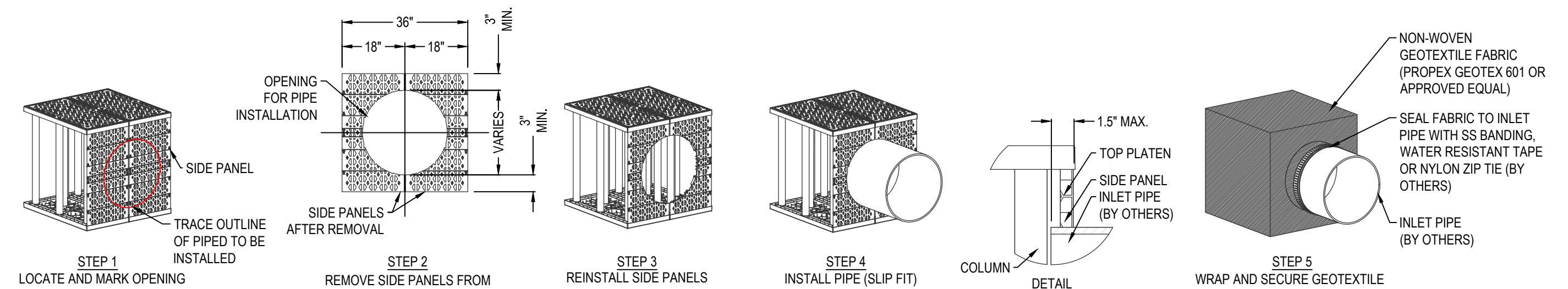
**OS-21 OUTLET STRUCTURE DETAIL**

NO SCALE

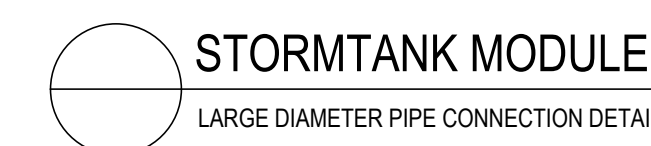


**OS-28 OUTLET STRUCTURE DETAIL**

NO SCALE



- NOTES:**
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
  2. DO NOT SCALE DRAWING.
  3. THIS DRAWING IS INTENDED FOR USE BY ARCHITECTS, ENGINEERS, CONTRACTORS, CONSULTANTS AND DESIGN PROFESSIONALS FOR PLANNING PURPOSES ONLY. THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION.
  4. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.
  5. CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT [www.CADdetails.com/info](http://www.CADdetails.com/info) AND ENTER REFERENCE NUMBER 4907-006.

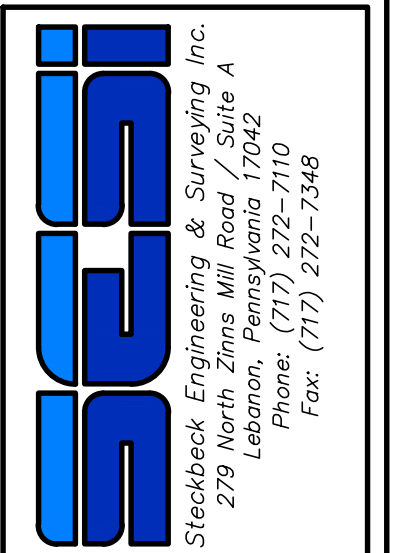


**STORMTANK MODULE LARGE DIAMETER PIPE CONNECTION DETAIL**

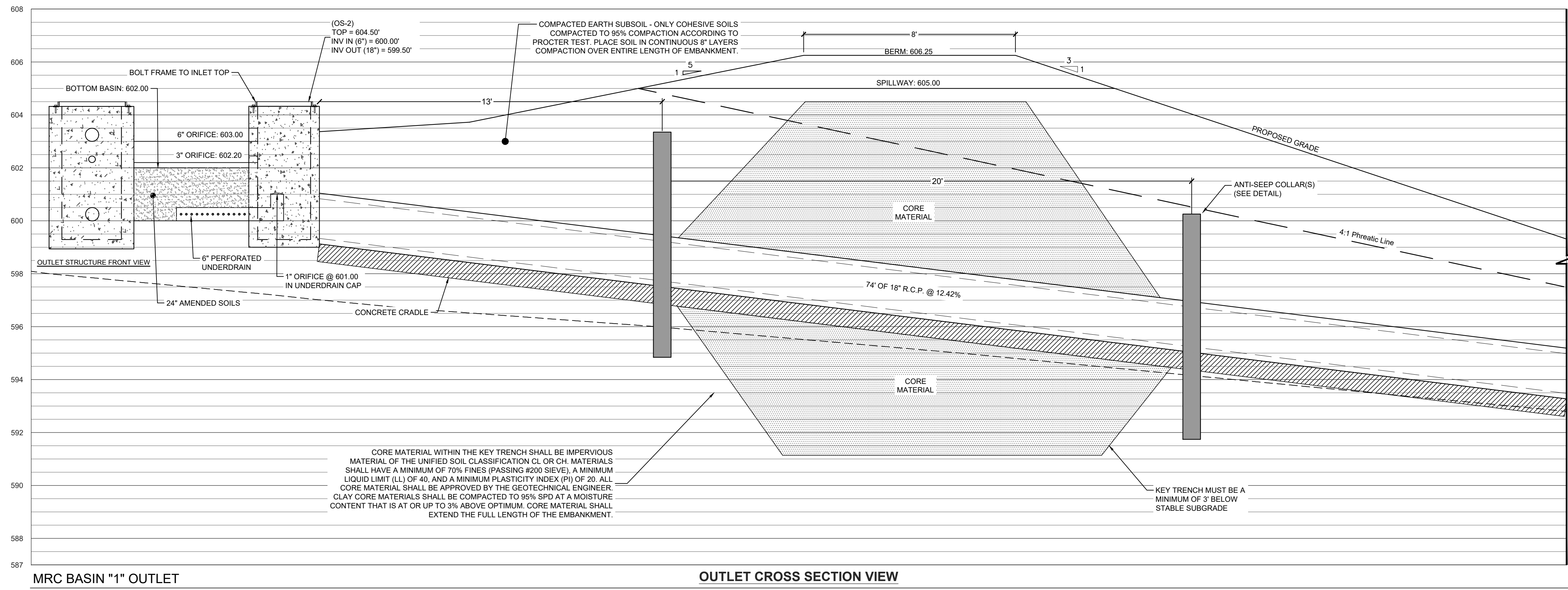
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PER LCPD LETTER DATED 4-4-23	5-12-23	CDS
PER COLA COMMENTS DATED 3-31-23	5-12-23	CDS
PER ARRO COMMENT LETTER DATED 6-6-23	6-28-23	CDS
PER ARRO COMMENT LETTER DATED 7-13-23	8-4-23	CDS

**POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS**  
**PRELIMINARY/FINAL SUBDIVISION & LAND DEVELOPMENT PLANS**

For  
**BRIAR RIDGE COMMONS - APARTMENTS**  
 located in  
 NORTH LEBANON TOWNSHIP  
 LEBANON County, Pennsylvania



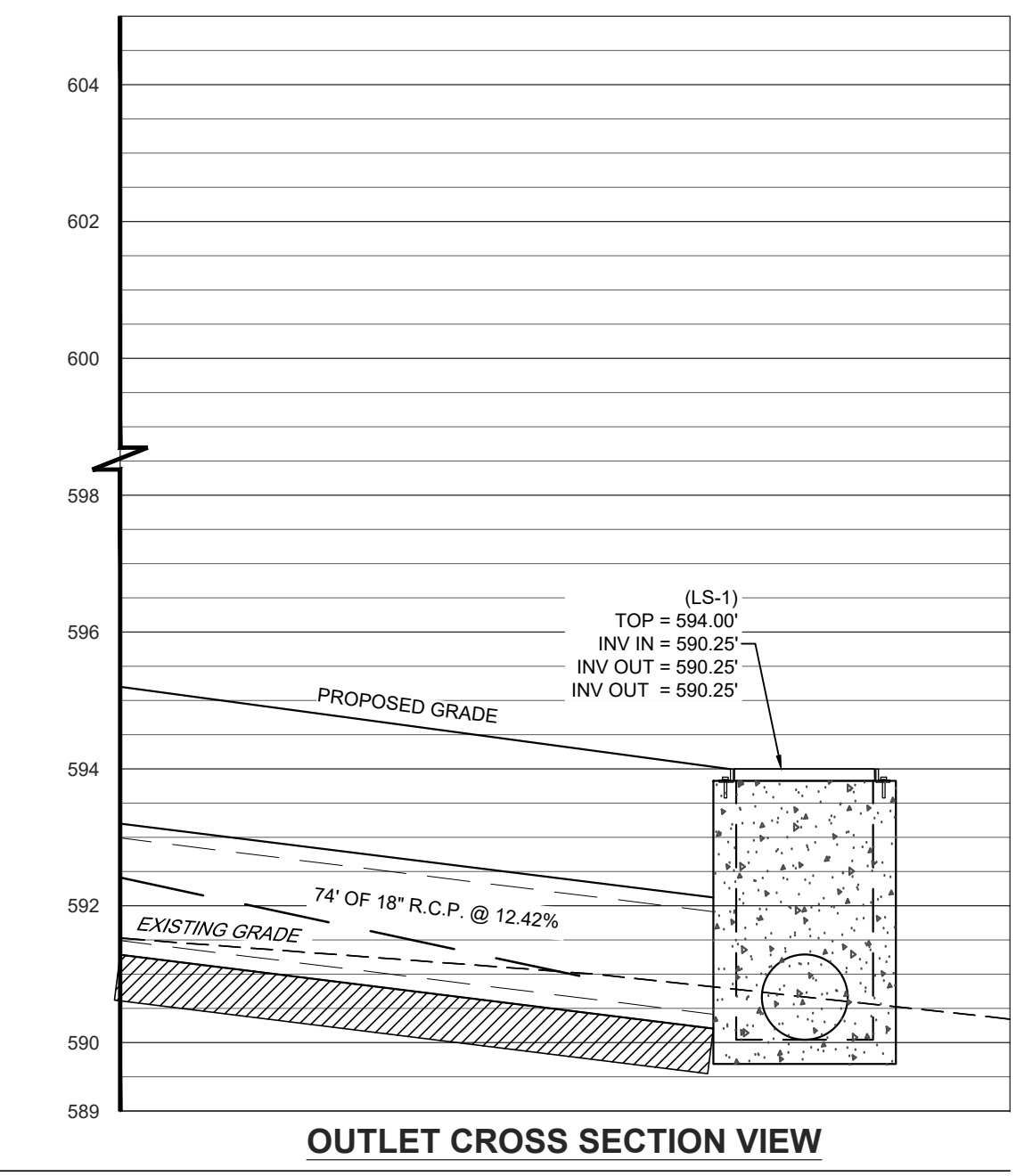
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BASE MAP:	JEC
DRAWN:	CDS
DESIGN:	CDS
CHECKED:	SAS
DATE:	3/1/23
SCALE:	1"=50'
PROJECT #	135-19-001



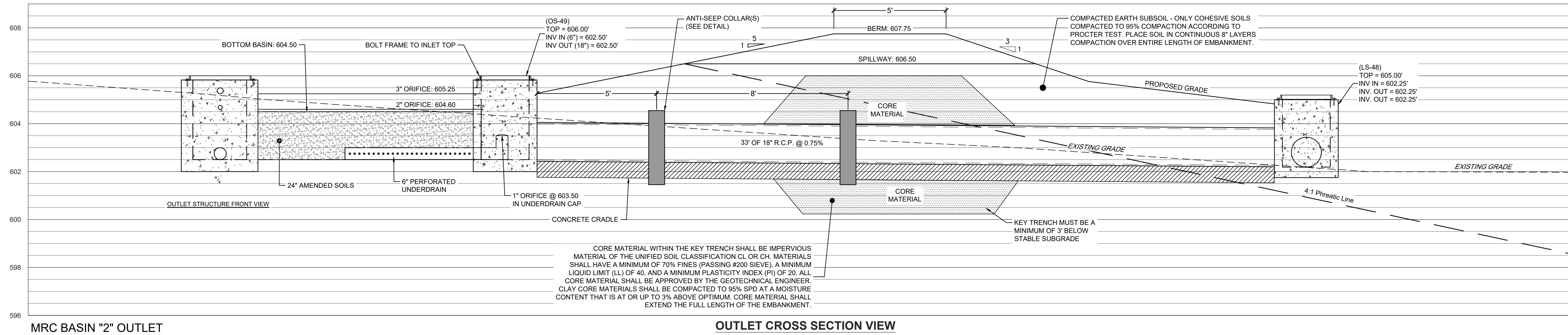
MRC BASIN "1" OUTLET

SCALE: 1" = 2.5'

OUTLET CROSS SECTION VIEW



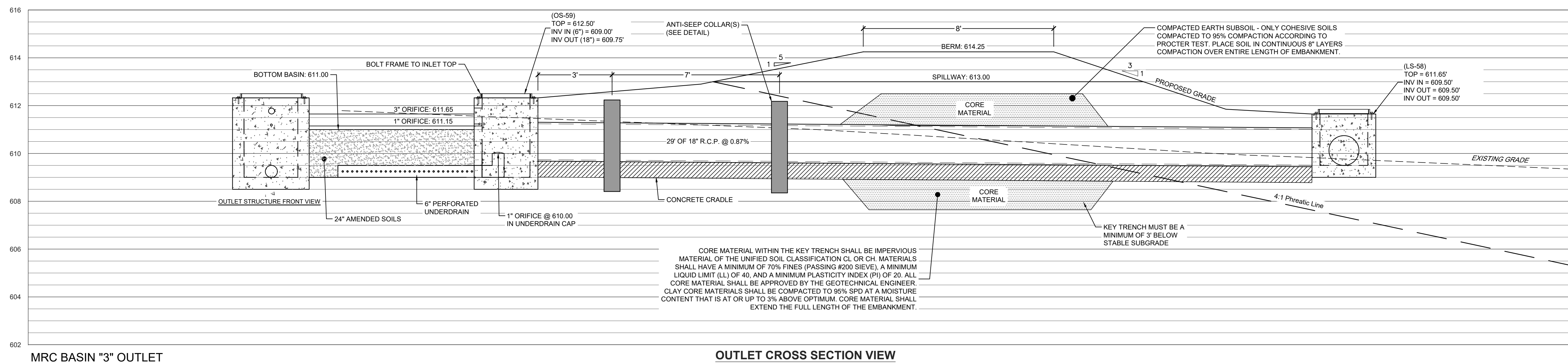
OUTLET CROSS SECTION VIEW



MRC BASIN "2" OUTLET

SCALE: 1" = 2.5'

OUTLET CROSS SECTION VIEW



MRC BASIN "3" OUTLET

SCALE: 1" = 2.5'

OUTLET CROSS SECTION VIEW

REVISION	DATE	BY
PER ARRO COMMENT LETTER DATED 4-3-23	4-3-23	CDS
PER LCPD LETTER DATED 4-4-23	4-4-23	CDS
PER COLA COMMENTS DATED 5-12-23	5-12-23	CDS
PER ARRO COMMENT LETTER DATED 6-6-23	6-6-23	CDS
PER ARRO COMMENT LETTER DATED 7-13-23	7-13-23	CDS
PER ARRO COMMENT LETTER DATED 8-4-23	8-4-23	CDS

POST CONSTRUCTION STORMWATER MANAGEMENT BASIN OUTLET DETAILS

PRELIMINARY/FINAL SUBDIVISION & LAND DEVELOPMENT PLANS

BRIAR RIDGE COMMONS - APARTMENTS

North Lebanon Township  
Lebanon County, Pennsylvania

FIELD CREW:	MOD, JEC
BASE MAP:	JEC
DRAWN:	CDS
DESIGN:	CDS
CHECKED:	SAS
DATE:	3/1/23
SCALE:	AS NOTED
PROJECT #	135-19-001

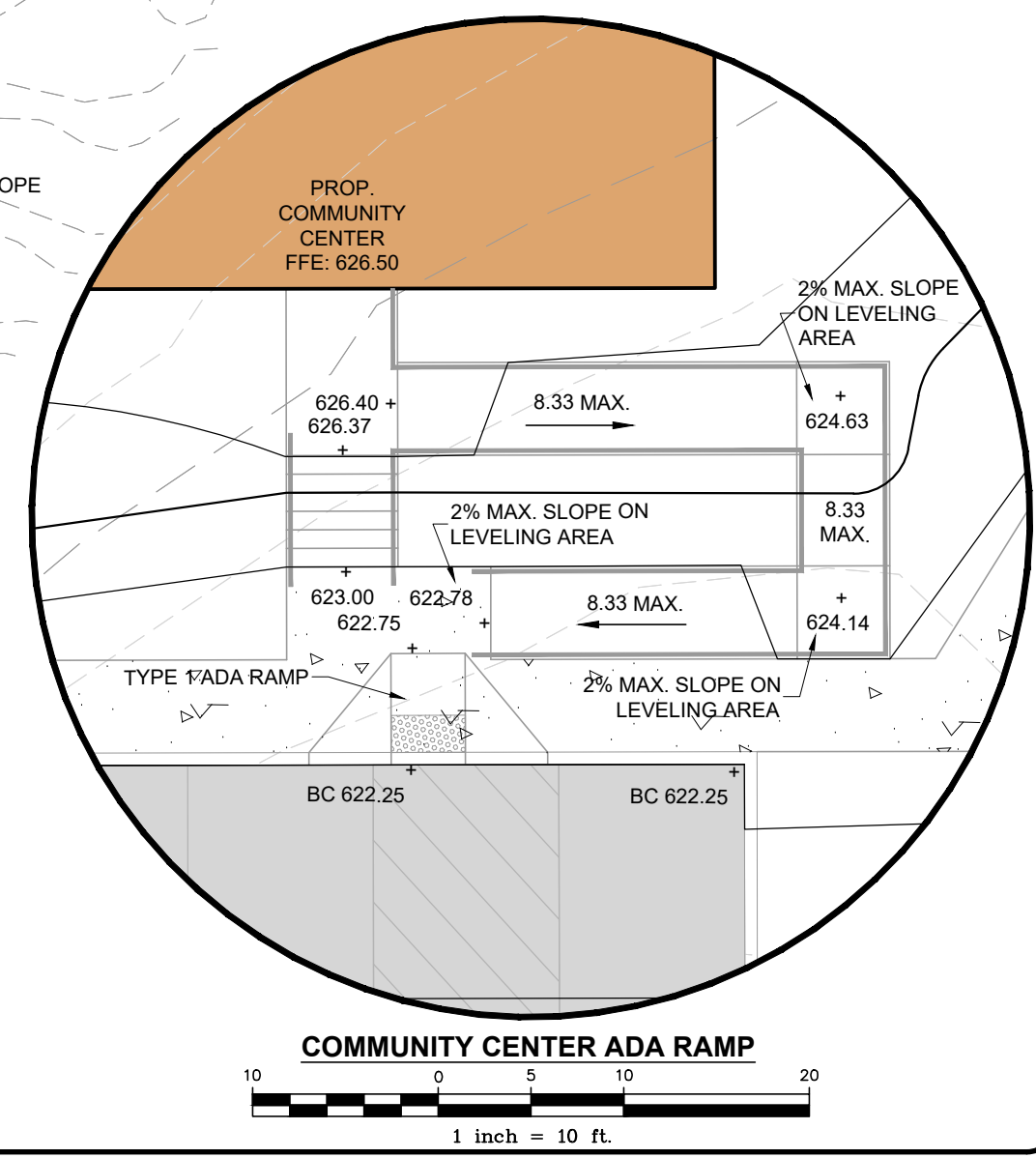


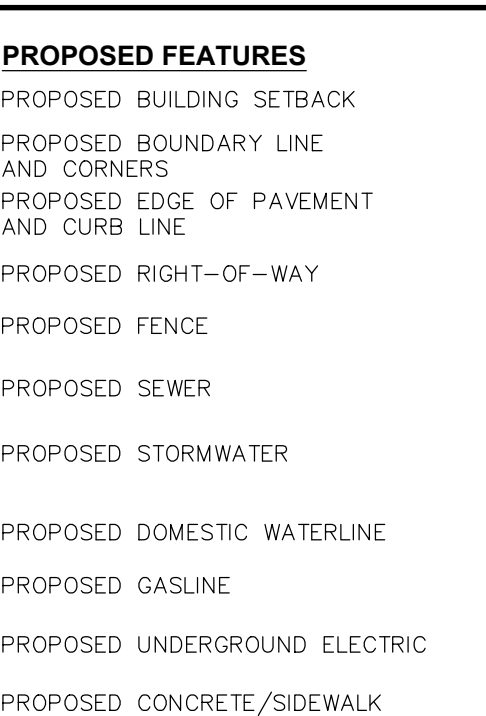
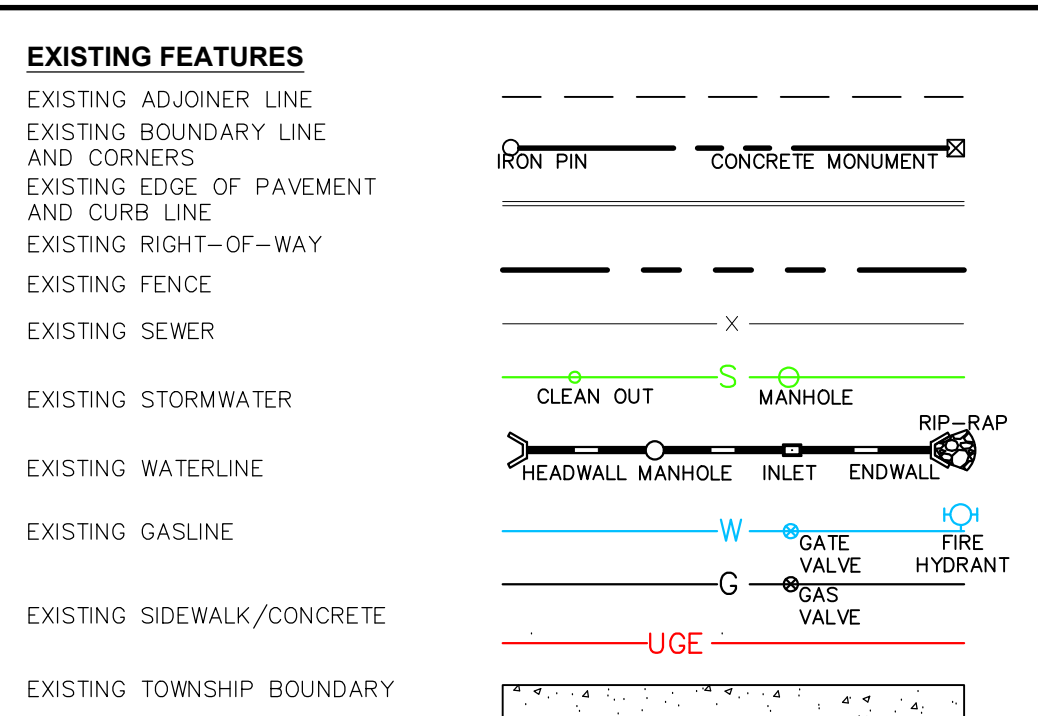
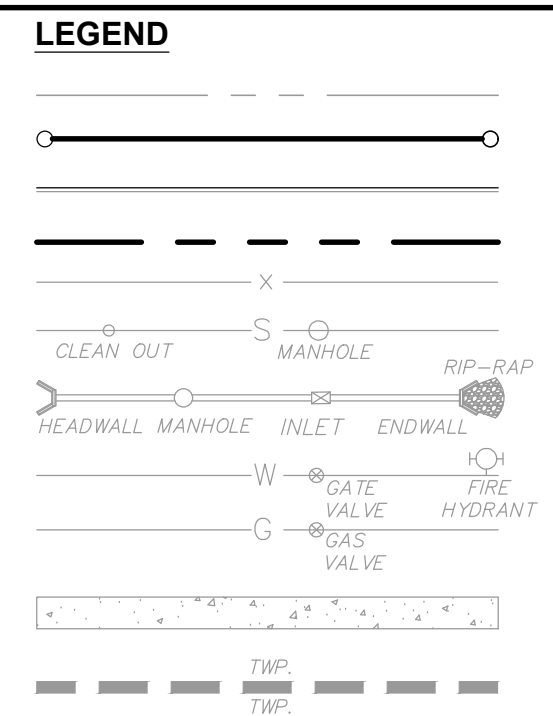
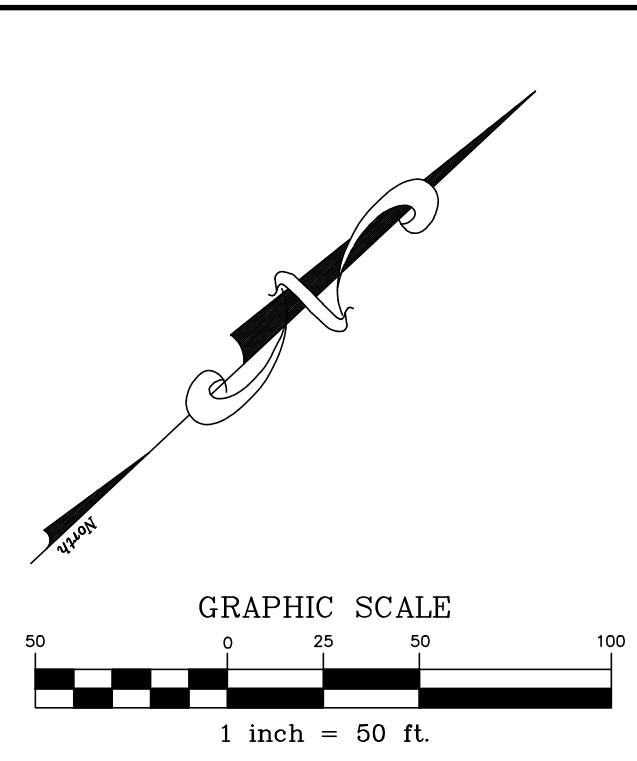
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PER COLA COMMENTS DATED 3-31-23	5-12-23	CDS
PER ARRO COMMENT LETTER DATED 6-6-23	6-28-23	CDS
PER ARRO COMMENT LETTER DATED 7-13-23	8-4-23	CDS

**GRADING PLAN**  
 For  
**PRELIMINARY/FINAL SUBDIVISION & LAND DEVELOPMENT PLANS**  
**BIARRIDGE COMMONS - APARTMENTS**  
 located in  
 NORTH LEBANON TOWNSHIP  
 Lebanon County, Pennsylvania

**ISI**  
 Steadbeck Engineering & Surveying Inc.  
 279 Lebanon, Pennsylvania 17042  
 Phone: (717) 272-7110  
 Fax: (717) 272-7348

FIELD CREW: MOD, JEC
BASE MAP: JEC
DRAWN: CDS
DESIGN: CDS
CHECKED: SAS
DATE: 3/1/23
SCALE: 1"=50'
PROJECT #135-19-001





THE EXISTING 30' SANITARY SEWER EASEMENT AS ILLUSTRATED ON THESE PLANS WAS RECORDED AS PART OF THE CROSSING AT SWEET BRIAR PHASE 4 FINAL SUBDIVISION PLAN (PLAN BOOK 100 PAGE 131). BRIAR RIDGE APARTMENTS PROJECT WILL UTILIZE THIS EXISTING SANITARY SEWER EASEMENT TO PROVIDE THE PUBLIC SEWER CONNECTION REQUIRED FOR THE DEVELOPMENT.

INSTALL TRENCH PLUGS EVERY 50' BETWEEN MH-4 AND MH-3

MH-3 (SAMPLING MANHOLE)  
RIM = 608.50'  
INV IN = 600.60'  
INV OUT = 600.50'

EX. 30' SANITARY SEWER EASEMENT

PROP. 8" PVC SDR-35 SEWER MAIN

MH-2  
RIM = 590.81'  
INV IN = 577.48'  
INV OUT = 577.38'

SMH CSB-3  
RIM = 594.93'  
INV = 577.28'

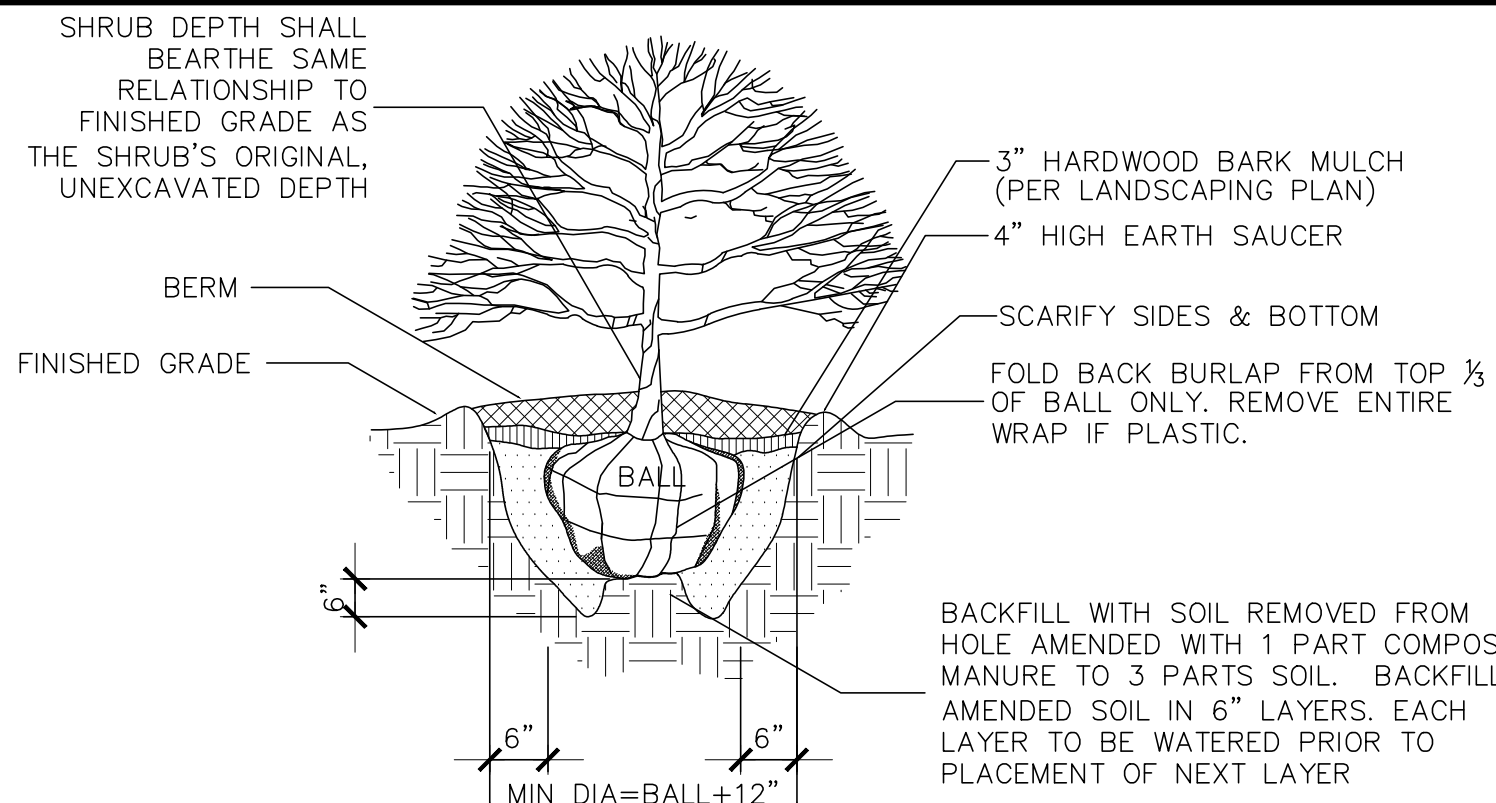
MH BRC-1  
RIM = 589.95'  
INV IN = 577.31'  
INV OUT = 577.21'

**PROPOSED SANITARY SEWER FACILITIES NOTE**  
THE PROPOSED SANITARY SEWER FACILITIES SHALL REMAIN PRIVATELY OWNED BY THE PROPERTY OWNER.

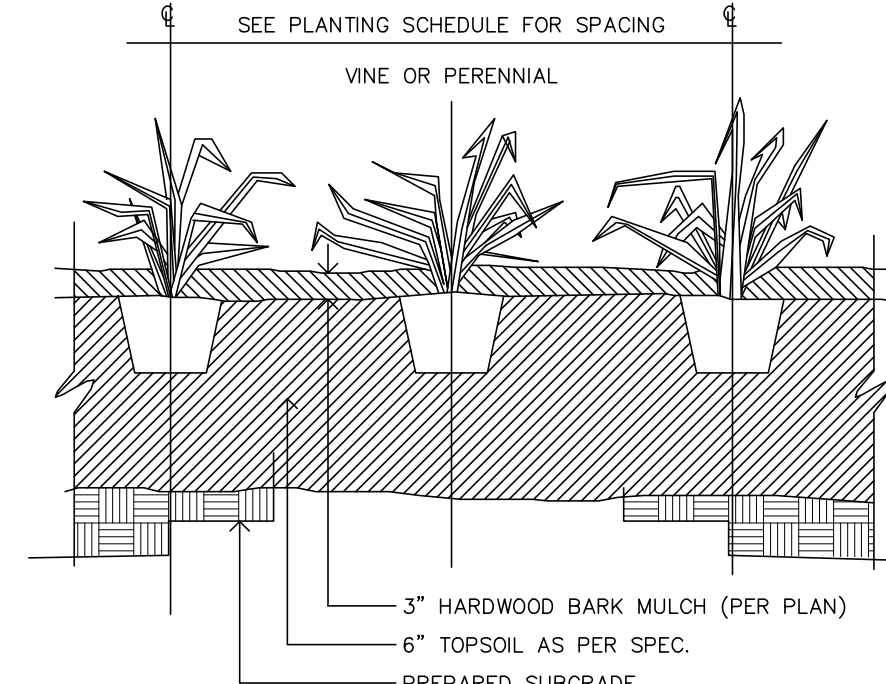
REVISION	DATE	BY
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PER LCPD LETTER DATED 4-4-23	5-12-23	CDS
PER COLA COMMENTS DATED 3-31-23	5-12-23	CDS
PER ARRO COMMENT LETTER DATED 6-6-23	6-28-23	CDS
PER ARRO COMMENT LETTER DATED 7-13-23	8-4-23	CDS

**UTILITY PLAN**  
For  
**PRELIMINARY/FINAL SUBDIVISION & LAND DEVELOPMENT PLANS**  
**BRIAR RIDGE COMMONS - APARTMENTS**  
located in  
NORTH LEBANON TOWNSHIP  
LEBANON County, Pennsylvania

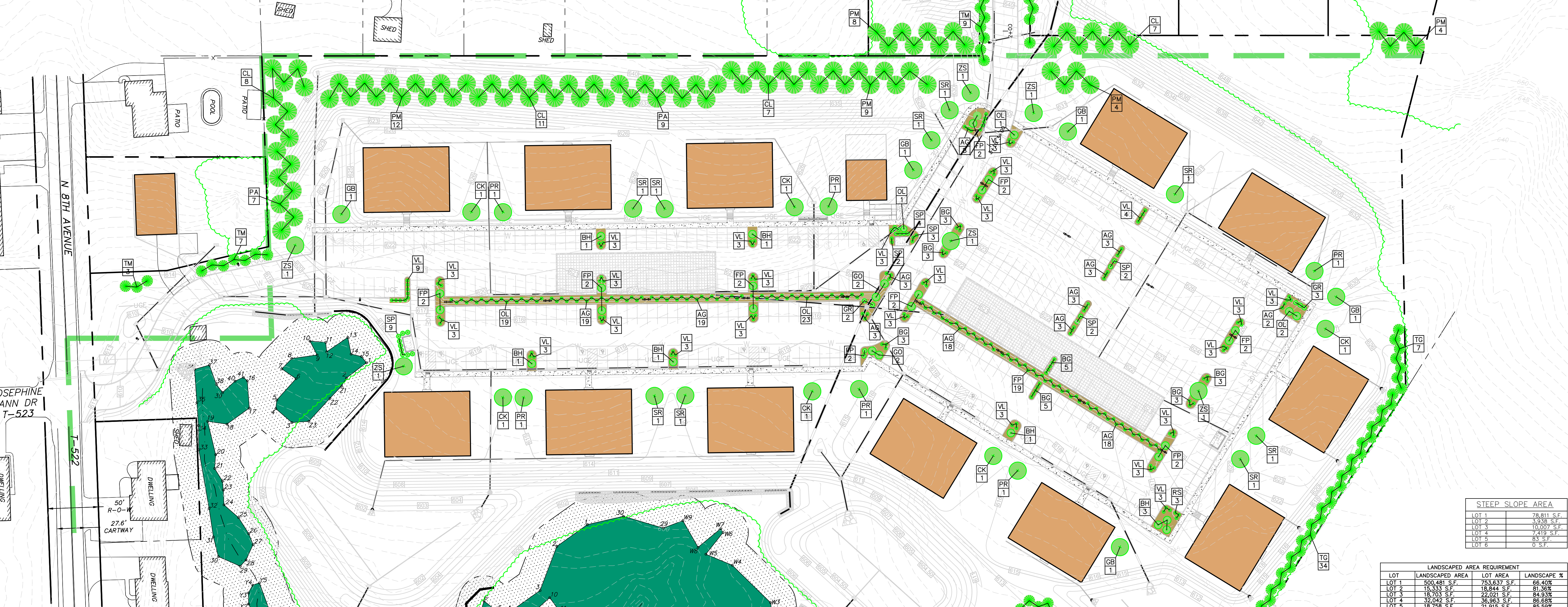
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BASE MAP:	JEC
DRAWN:	CDS
DESIGN:	CDS
CHECKED:	SAS
DATE:	3/1/23
SCALE:	1"=50'
PROJECT #	135-19-001



SHRUB PLANTING DETAIL  
NO SCALE



GROUND COVER PLANTING DETAIL  
NO SCALE

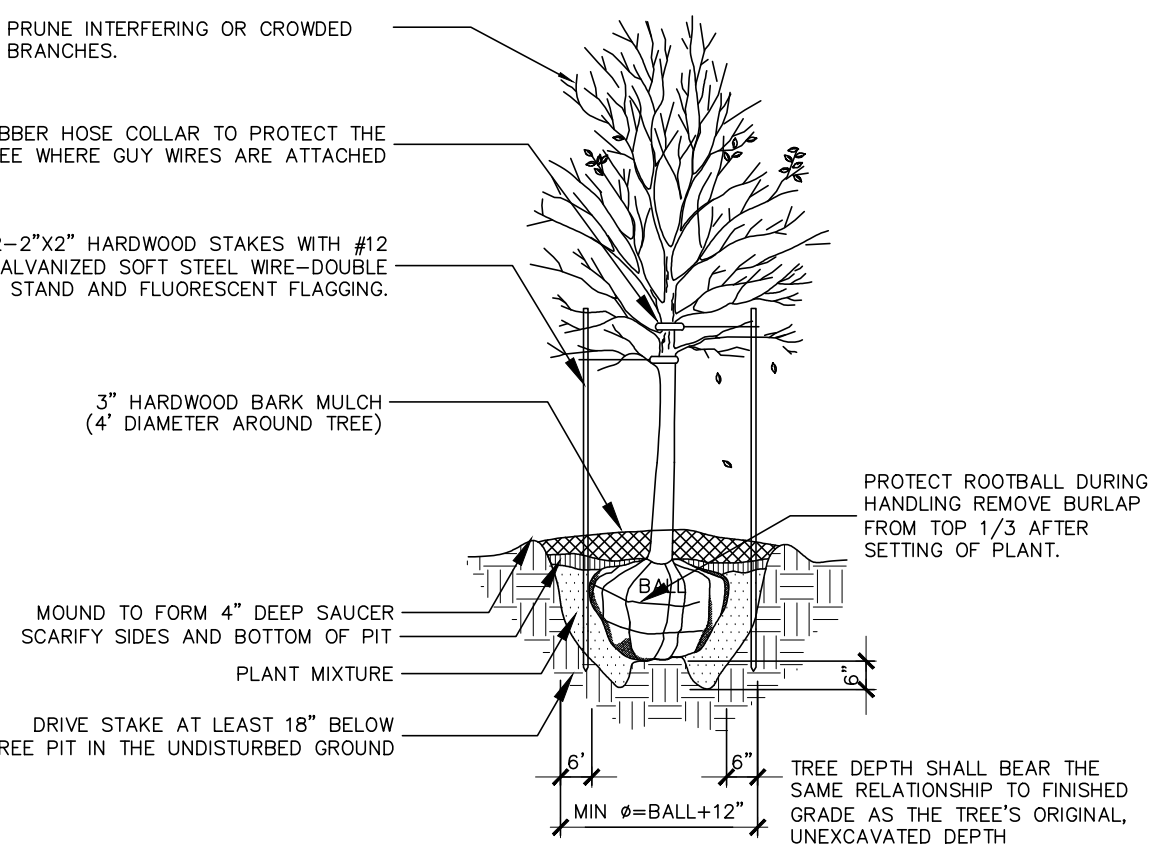


STEEP SLOPE AREA

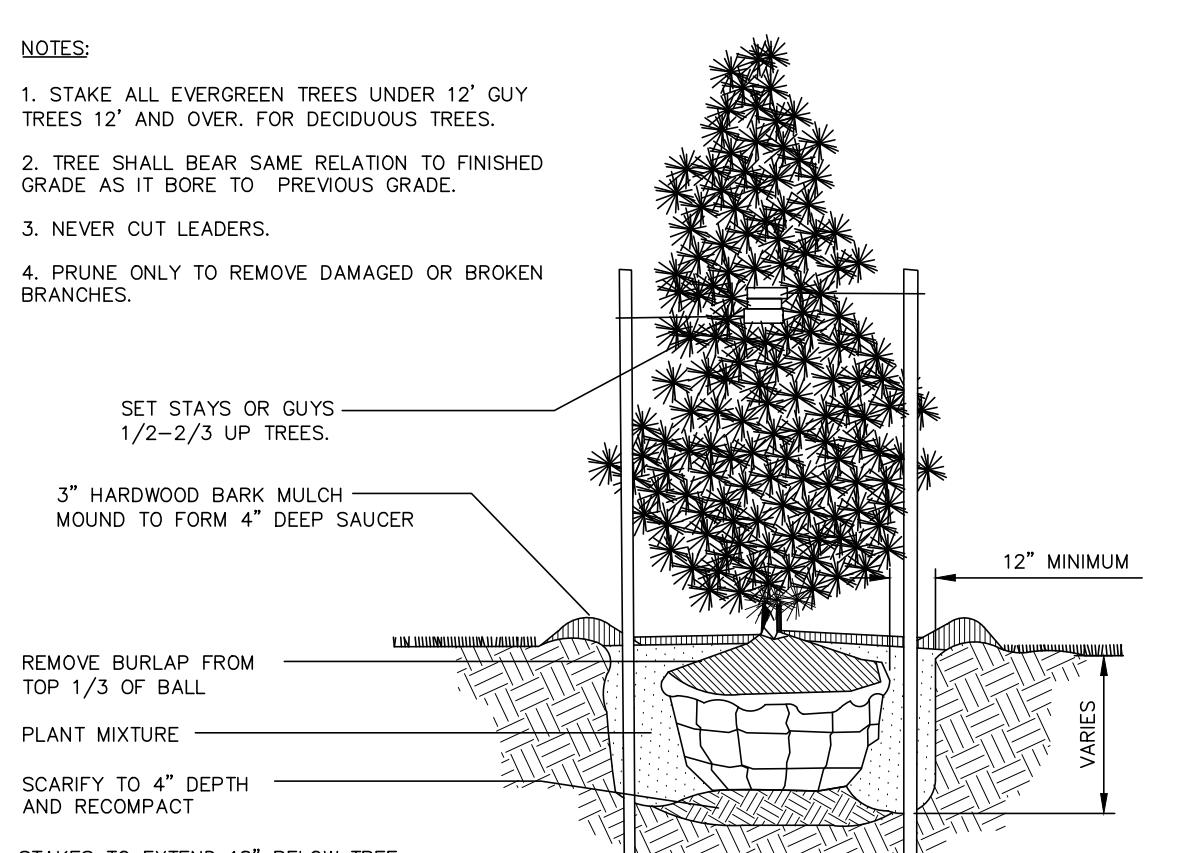
LOT	LANDSCAPED AREA	LOT AREA	LANDSCAPE %
LOT 1	500.481 S.F.	753.637 S.F.	66.40%
LOT 2	15.353 S.F.	18.844 S.F.	81.36%
LOT 3	18.103 S.F.	22.021 S.F.	84.93%
LOT 4	32.042 S.F.	36.963 S.F.	86.68%
LOT 5	18.758 S.F.	21.915 S.F.	85.59%
LOT 6	19.956 S.F.	23.264 S.F.	85.65%

LANDSCAPED AREA REQUIREMENT

LOT	LANDSCAPED AREA	LOT AREA	LANDSCAPE %
LOT 1	500.481 S.F.	753.637 S.F.	66.40%
LOT 2	15.353 S.F.	18.844 S.F.	81.36%
LOT 3	18.103 S.F.	22.021 S.F.	84.93%
LOT 4	32.042 S.F.	36.963 S.F.	86.68%
LOT 5	18.758 S.F.	21.915 S.F.	85.59%
LOT 6	19.956 S.F.	23.264 S.F.	85.65%



DECIDUOUS TREE PLANTING DETAIL  
NO SCALE

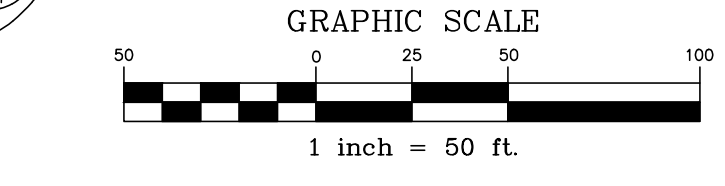


EVERGREEN TREE PLANTING DETAIL  
NO SCALE

KEY	QTY	SIZE	BOTANICAL NAME	COMMON NAME
GB	5	2' CAL	GINKGO BILOBA 'AUTUMN GOLD'	AUTUMN GOLD MAIDENHAIR TREE
SR	9	2' CAL	SYRINGA RETICULATA 'IVORY SILK'	IVORY SILK JAPANESE TREE
CK	6	2' CAL	CORNUS KOUSA 'SATOMI'	SATOMI KOUSA DOGWOOD
PR	6	2' CAL	PRUNUS 'AUTUMNALIS'	AUTUMN FLOWERING CHERRY
ZS	6	2' CAL	ZELKOVA SERRATA 'GREEN VASE'	GREEN VASE ZELKOVA
CL	25	6-7'	CUPRESSOCYPRIS LEYLANDII	LEYLAND CYPRISS
PA	25	6-7'	PICEA MORIKA	SEBASTIAN SPRUCE
PM	16	6-7'	PICEA ABIES	NORWAY SPRUCE
TM	35	4-5'	THUJA X 'MONRIE'	TINY TOWER GREEN GIANT ARBORVITAE
TG	69	4-5'	THUJA STANDISH X PULICATA 'GREEN GIANT'	GREEN GIANT WESTERN ARBORVITAE
BH	5'	3 GAL	ILEX CRENATA 'BEEHIVE'	BEEHIVE JAPANESE HOLLY
SP	17'	3 GAL	ILEX CRENATA 'SKY PENCIL'	SKY PENCIL JAPANESE HOLLY
FP	37'	3 GAL	NANDINA DOMESTICA 'FIREPOWER'	FIREPOWER NANDINA
GO	5'	3 GAL	OSMANTHUS HETEROPHYLLUS 'GOSHIKI'	GOSHIKI OSMANTHUS
OL	46'	18-24"	PRUNUS LAURO-CERASUS 'OTTO LUYKEN'	OTTO LUYKEN ENGLISH LAUREL
AG	102'	1 GAL	ACORUS GRAMINEUS 'OGON'	GOLDEN VAREGATED SWEET FLAG
VL	82'	1 GAL	LIRIOPE MUSCARI VAREGATA	LIRIOPE VAREGATED
BG	25'	1 GAL	GERANUM X CANTABRIGIENSE 'BOKOVO'	BOKOVO CRANESBILL
RS	6'	1 GAL	ECHINACEA RUBY STAR	SUNNY DAYS RUBY CONEFLOWER
GR	5'	1 GAL	RUBECOKIA X FULGIDA 'AMERICAN GOLD RUSH'	AMERICAN GOLD RUSH BLACK-EYED SUSAN

\* SUBSTITUTIONS ACCEPTABLE PENDING APPROVAL BY OWNER

- LANDSCAPE NOTES
1. PLANTED TREES SHALL BE MULCHED AND WATERED DURING THE FIRST GROWING SEASON. DEAD AND DYING TREES SHALL BE REPLACED.
  2. TREES PLANTED WITHIN FIVE (5) FEET OF A SIDEWALK SHALL HAVE A PLASTIC OR GEOTEXTILE ROOT BARRIER, A MINIMUM ONE (1) FOOT DEEP BY TEN (10) FEET LONG, PLACED ALONG THE SIDEWALK EDGE CLOSEST TO THE TREE.
  3. AT LEAST 15% OF THE TOTAL LOT AREA SHALL BE LANDSCAPED.
  4. ALL REQUIRED PLANTINGS SHALL BE MAINTAINED IN A GOOD CONDITION TO PRESENT A HEALTHY, NEAT AND ORDERLY APPEARANCE. SUCH PLANTINGS SHALL BE KEPT FREE FROM REFUSE AND DEBRIS. PLANTS DAMAGED BY INSECTS, DISEASE, VEHICULAR TRAFFIC, ACTS OF NATURE OR VANDALISM SHALL BE REPLACED BY THE NEXT PLANTING PERIOD.
  5. REQUIRED PLANTINGS SHALL NOT BE REMOVED EXCEPT TO FACILITATE THE PLANTING OF ACCEPTABLE REPLACEMENT PLANTS. PROPERTY IMPROVEMENTS SHALL BE PROTECTED AT ALL TIMES BY SUCH ENVIRONMENTAL PLANTINGS AND EXTENSIVE TRIMMING OR PRUNING OF THE PLANTINGS TO REDUCE OR ELIMINATE THE PROTECTION SHALL NOT BE PERMITTED.
  6. IF ANY OF THE SCREEN PLANTINGS DIE OR ARE CUT DOWN, REPLACEMENT OF SCREEN PLANTINGS SHALL BE REQUIRED AND SHALL BE OF COMPARABLE SIZE AND TYPE.

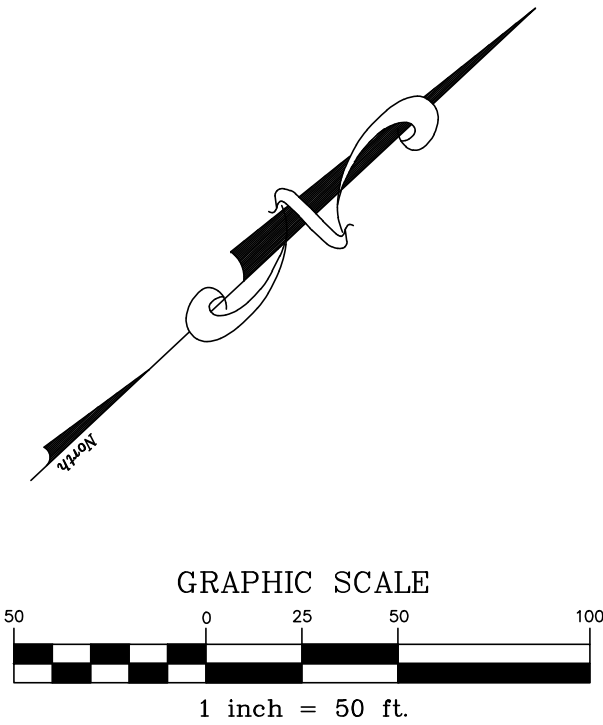


REVISION	DATE	BY
PER ARRO COMMENT LETTER DATED 4-3-23	5-8-23	CDS
PER LCPD LETTER DATED 4-4-23	5-12-23	CDS
PER COLA COMMENTS DATED 3-31-23	5-12-23	CDS
PER ARRO COMMENT LETTER DATED 6-6-23	6-28-23	CDS
PER ARRO COMMENT LETTER DATED 7-13-23	8-4-23	CDS

LANDSCAPING PLAN  
 PRELIMINARY/FINAL SUBDIVISION & LAND DEVELOPMENT PLANS  
 For  
 BRIAR RIDGE COMMONS - APARTMENTS  
 NORTH LEBANON TOWNSHIP  
 Lebanon County, Pennsylvania

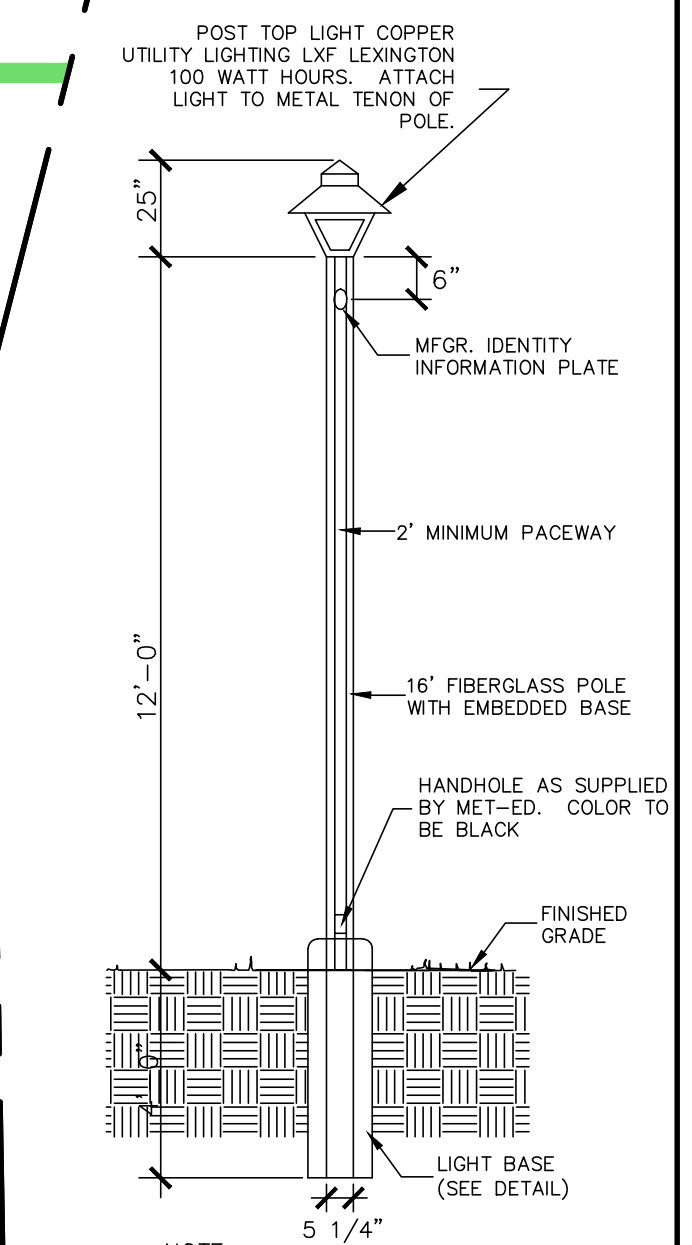
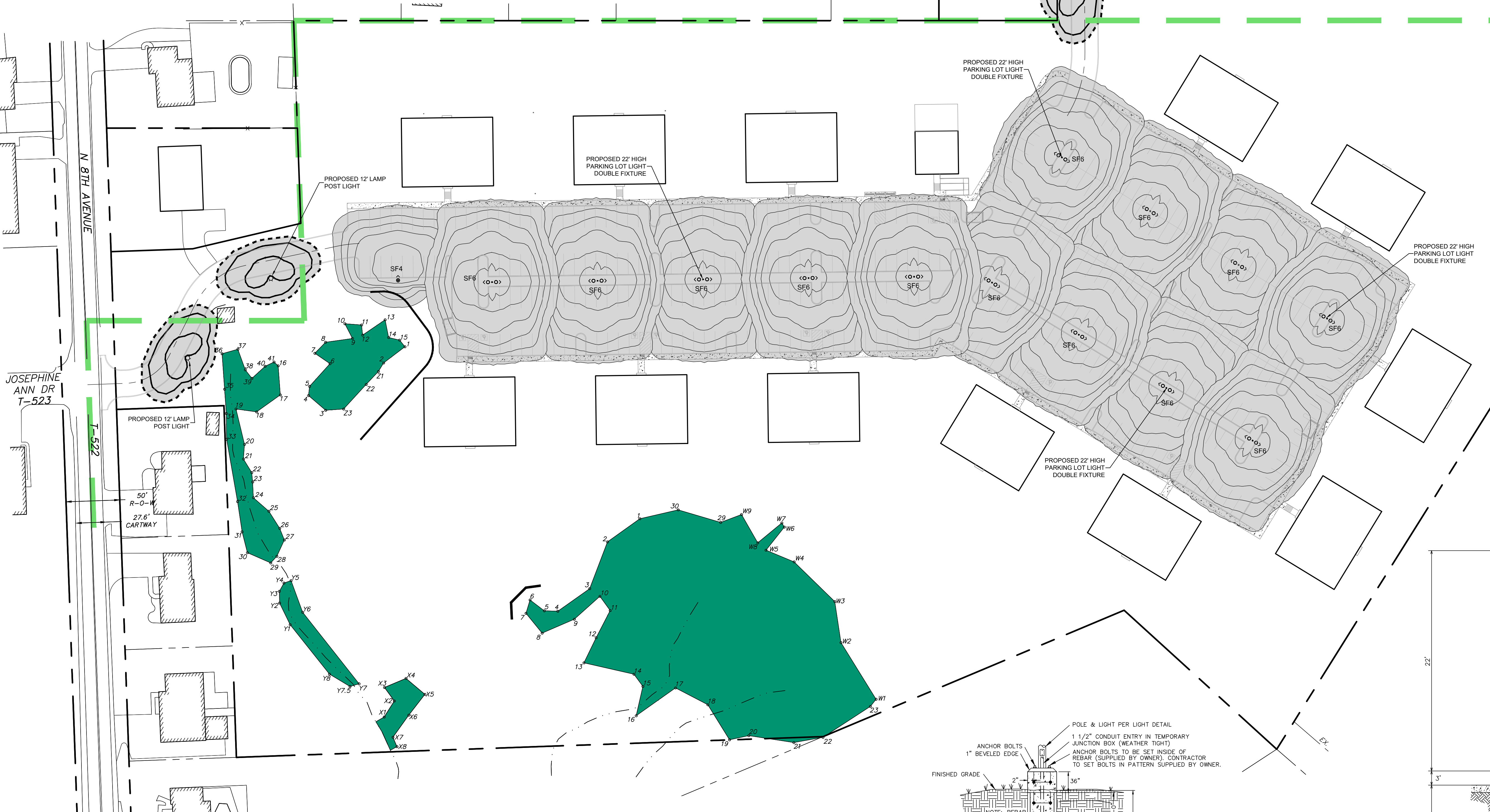
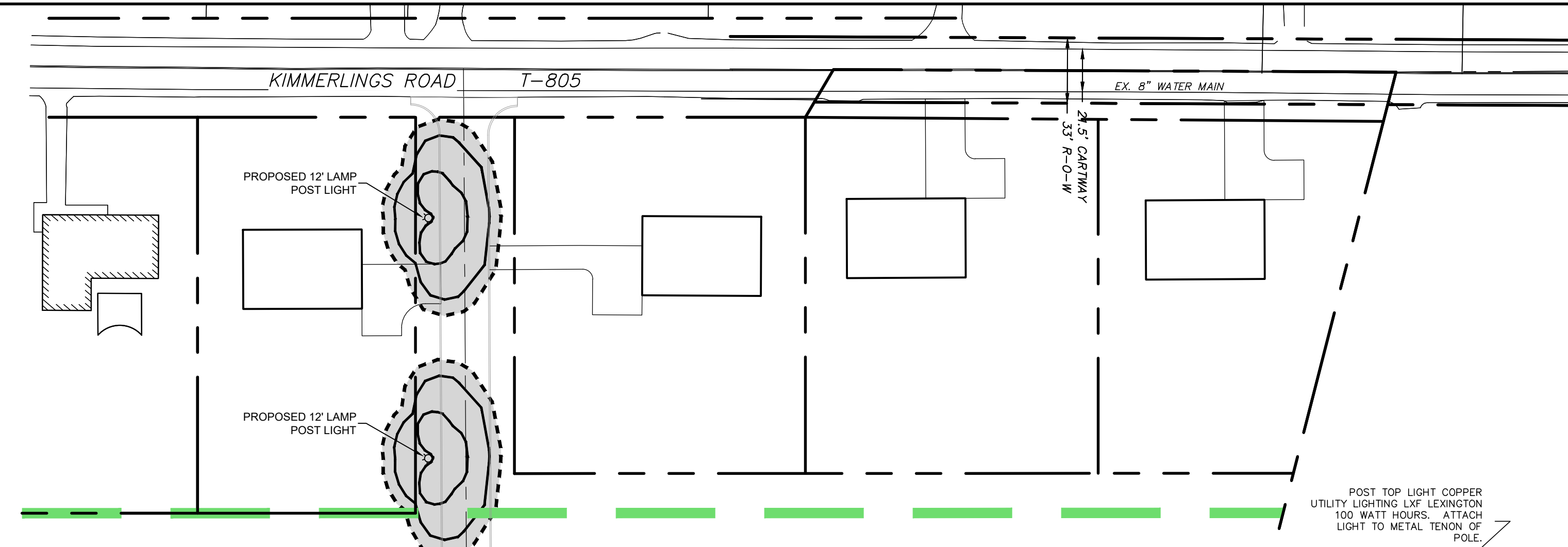
**ISI**  
 Steadbeck Engineering & Surveying Inc.  
 279 Lebanon, Pennsylvania 17042  
 Phone: (717) 272-7110  
 Fax: (717) 272-7348

FIELD CREW: MOD, JEC  
 BASE MAP: JEC  
 DRAWN: CDS  
 DESIGN: CDS  
 CHECKED: SAS  
 DATE: 3/1/23  
 SCALE: 1"=50'  
 PROJECT #135-19-001



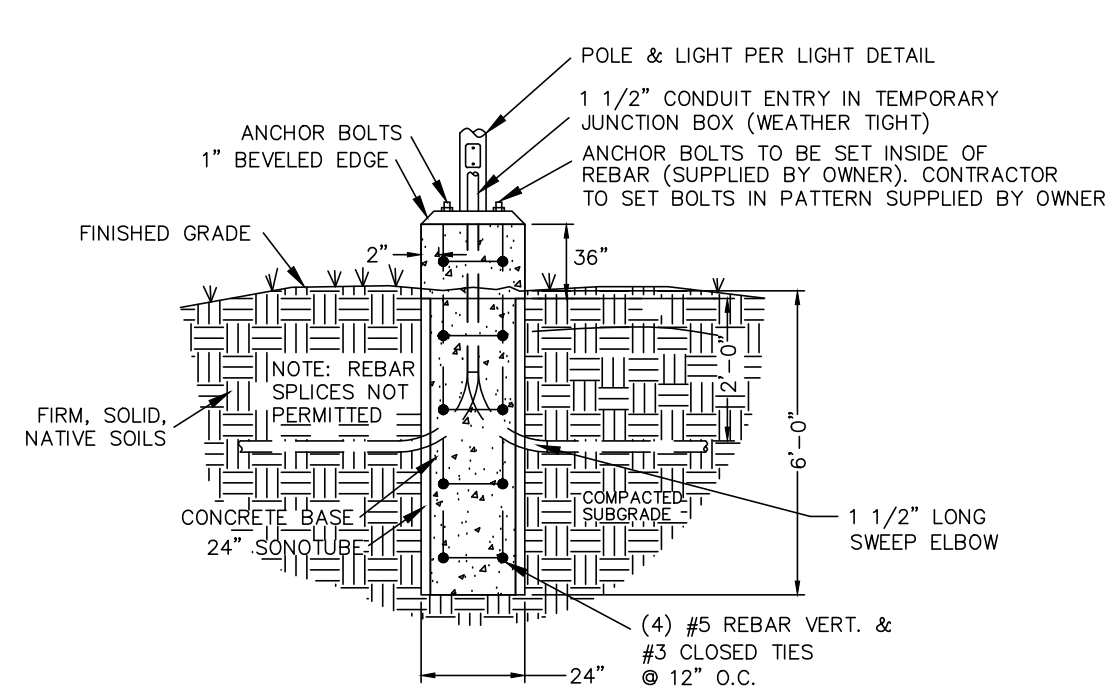
**LEGEND**

EXISTING FEATURES		PROPOSED FEATURES	
	EXISTING ADJOINER LINE		PROPOSED BUILDING SETBACK
	EXISTING BOUNDARY LINE AND CORNERS		PROPOSED BOUNDARY LINE AND CORNERS
	EXISTING EDGE OF PAVEMENT AND CURB LINE		PROPOSED EDGE OF PAVEMENT AND CURB LINE
	EXISTING RIGHT-OF-WAY		PROPOSED RIGHT-OF-WAY
	EXISTING FENCE		PROPOSED FENCE
	EXISTING SEWER		PROPOSED SEWER
	EXISTING STORMWATER		PROPOSED STORMWATER
	EXISTING WATERLINE		PROPOSED DOMESTIC WATERLINE
	EXISTING GASLINE		PROPOSED GASLINE
	EXISTING SIDEWALK/CONCRETE		PROPOSED CONCRETE/SIDEWALK
	EXISTING TOWNSHIP BOUNDARY		

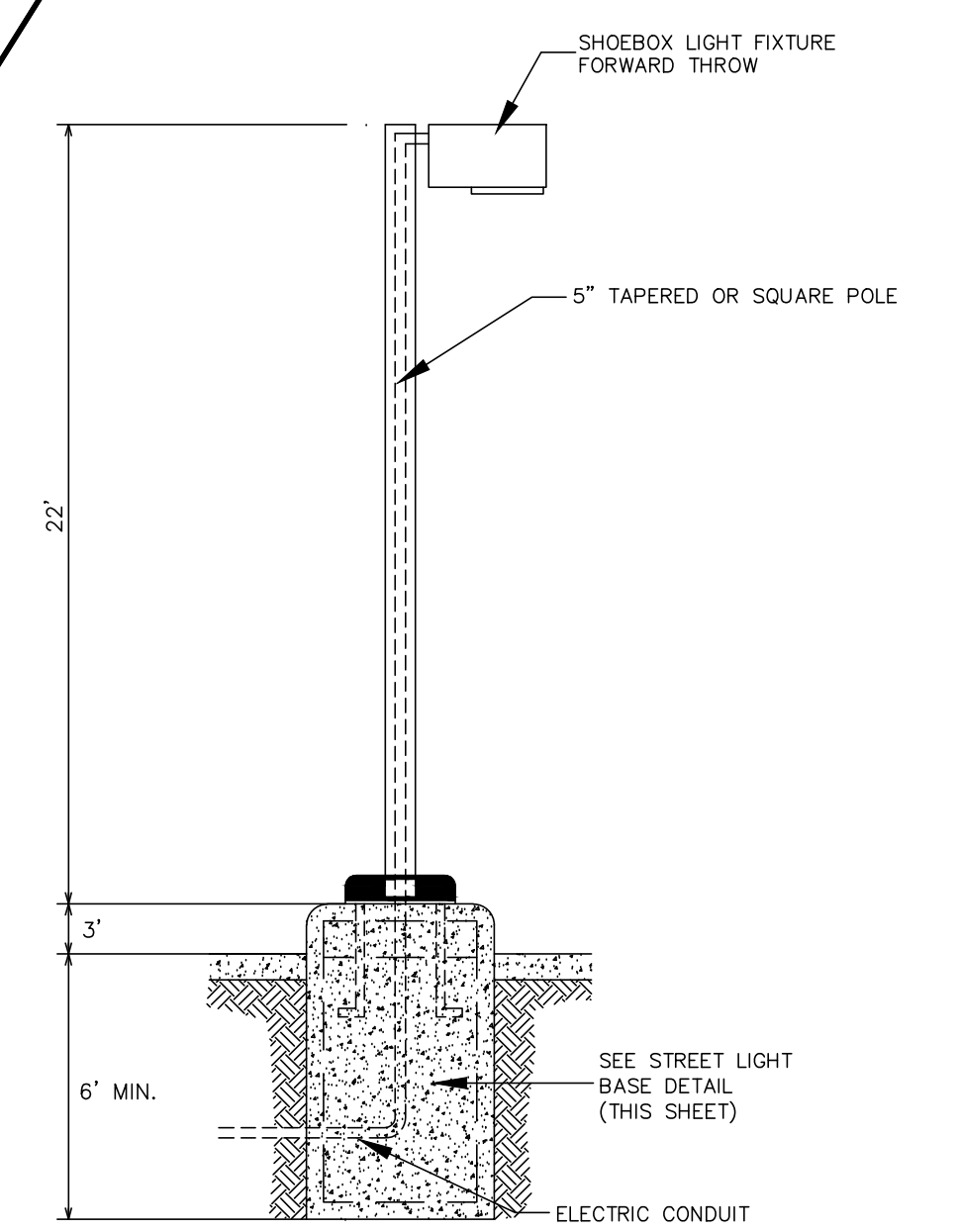


**12' LAMP POST LIGHT DETAIL**  
NO SCALE

NOTE:  
1. LIGHTING STANDARD AND FIXTURE TO BE SELECTED BY APPLICANT AND WILL BE A "TRADITIONAL" STYLE.  
2. ALL LIGHT FIXTURES SHALL MEET THE IESNA FULL-CUTOFF CRITERIA.



**PARKING LIGHT BASE DETAIL**  
NO SCALE



**TYPICAL 22' POLE & FOUNDATION**  
NO SCALE

Installation/Mounting In Accordance With Light Standards Manufacturers Specifications.

NOTE: This detail is a typical detail only. Site conditions and/or pole/fixture type may vary. Consult with pole/fixture manufacturer for foundation requirements.

**NOTES:**

- WHEN REQUIRED BY THE TOWNSHIP, ALL STREETLIGHTS WILL BE INSTALLED BY MET-ED (FIRST ENERGY) WITH THE DEVELOPER PAYING FOR ALL THE MATERIAL AND LABOR COST. THE DEVELOPER MUST USE THE COLONIAL STYLE POST TOP AND POLE OFFERED BY MET-ED (FIRST ENERGY). MET-ED (FIRST ENERGY) STILL OWNS AND MAINTAINS THE SYSTEM. A MINIMUM NINETY-WATT LED LIGHT IS REQUIRED. THE LIGHTS SHALL BE SHOWN ON THE SUBDIVISION PLAN AT INTERVALS OF NOT MORE THAN 200 FEET AND ARE SUBJECT TO APPROVAL BY MET-ED (FIRST ENERGY) AND THE TOWNSHIP. A SEPARATE SHEET SHALL REFLECT THE PROPOSED STREETLIGHT LAYOUT WITH DISTANCES BETWEEN LIGHTS SHOWN AND LOT WIDTHS AT CURB TO DETERMINE FUTURE STREETLIGHT ASSESSMENT COSTS.
- IT IS MET-ED'S POLICY TO ENERGIZE THE LIGHTS UPON INSTALLATION IN NORTH LEBANON TOWNSHIP. THE DEVELOPER WILL BE RESPONSIBLE FOR ALL COSTS, INCLUDING ENERGY COSTS, UNTIL SUCH TIME AS THE STREET IS DEDICATED AND ACCEPTED BY THE TOWNSHIP. STREETLIGHT ASSESSMENT IS BASED ON FRONT FOOT ASSESSMENT.
- THE DEVELOPER IS REQUIRED TO PROVIDE A LOCKING MECHANISM AT THE BOX THAT HOUSES THE SWITCH FOR THE STREETLIGHT(S). THE LOCKING MECHANISM MUST BE APPROVED BY THE ROADMASTER OF NORTH LEBANON TOWNSHIP PRIOR TO INSTALLATION.
- AS-BUILT DRAWINGS ARE REQUIRED FOR ALL STREETLIGHTS, WIRING AND DISCONNECT SWITCHES.

Symbol	Label	QTY	Manufacturer	Catalog Number	Description	Lamp	Filename	Lumens	LLF	Wattage
	SF4	5	SIGNIFY GARDCO	SFRA-4-110LA-4870-NW	SlenderForm Round Arm Mount SFRA, 48 LED's, 4000K CCT, TYPE 4 OPTIC.	(1(48LED)) FLEXgine ARRAY(S) DRIVEN AT 700mA	sfr-4-110la-4870-nw.ies	12403	0.9	107
	SF6	13	SIGNIFY GARDCO	SFRA-3-110LA-4870-NW	SlenderForm Round Arm Mount SFRA, 48 LED's, 4000K CCT, TYPE 3 OPTIC.	(1(48LED)) FLEXgine ARRAY(S) DRIVEN AT 700mA	sfr-3-110la-4870-nw.ies	12556	0.9	214

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PER LCPD LETTER DATED 4-4-23	5-12-23	CDS
PER COLA COMMENTS DATED 3-31-23	5-12-23	CDS
PER ARRO COMMENT LETTER DATED 6-6-23	6-28-23	CDS
PER ARRO COMMENT LETTER DATED 7-13-23	8-4-23	CDS

**LIGHTING PLAN**

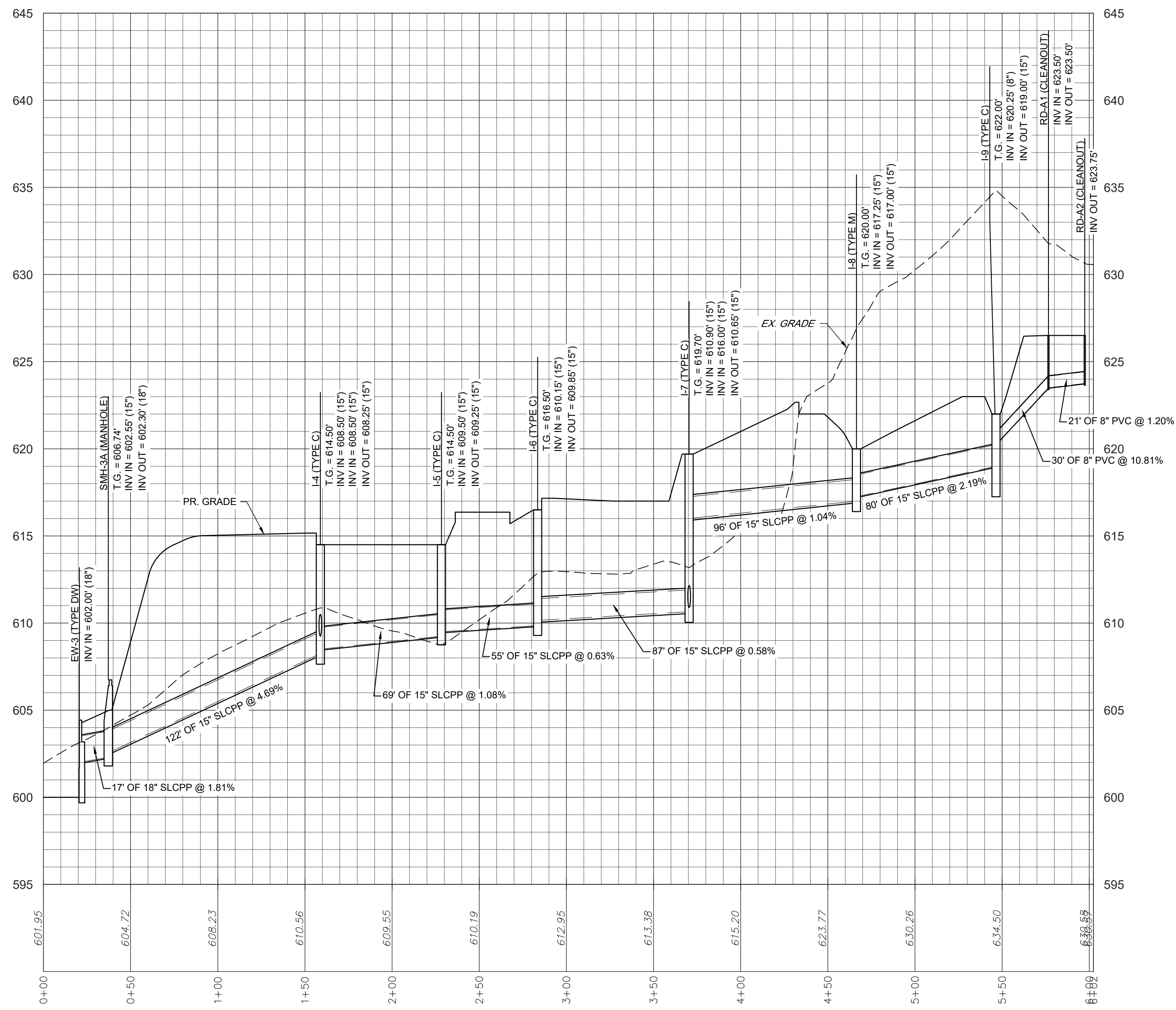
**PRELIMINARY/FINAL SUBDIVISION & LAND DEVELOPMENT PLANS**

For  
**BRIAR RIDGE COMMONS - APARTMENTS**

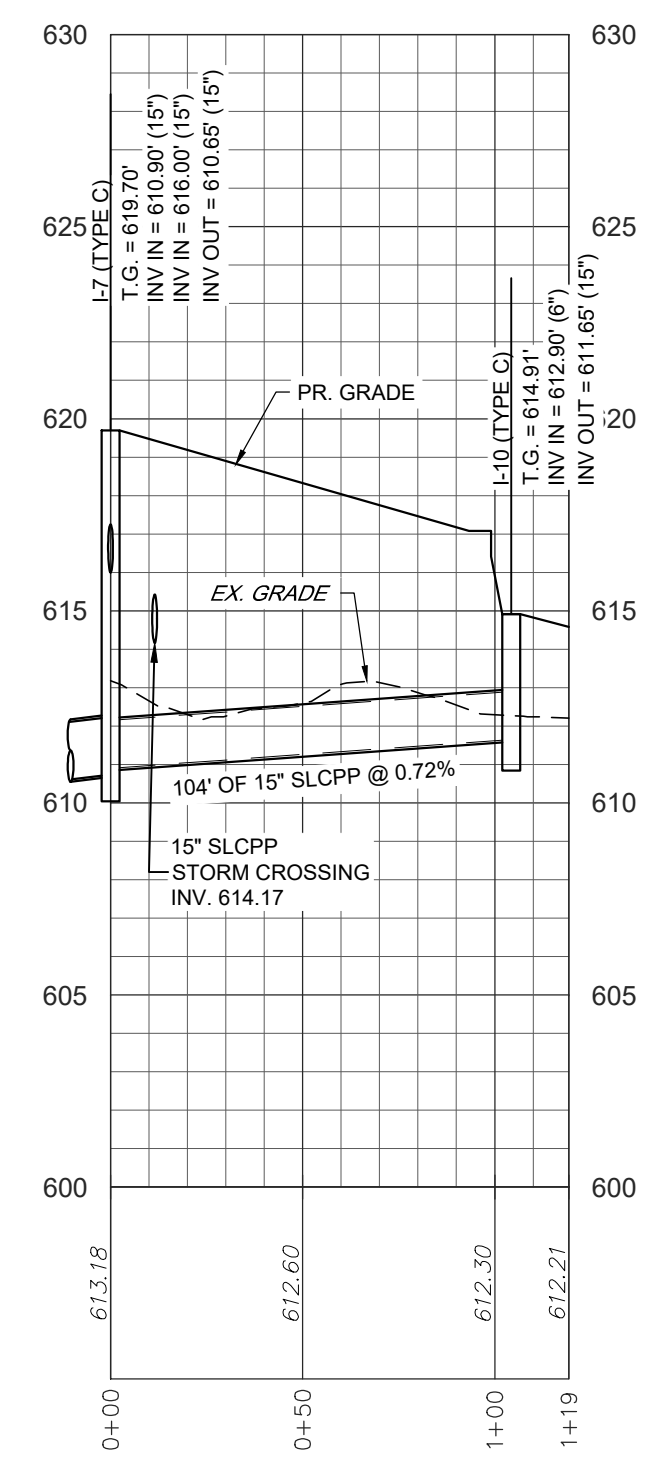
located in  
NORTH LEBANON TOWNSHIP  
LEBANON County, Pennsylvania

FIELD CREW:	MOD, JEC
BASE MAP:	JEC
DRAWN:	CDS
DESIGN:	CDS
CHECKED:	SAS
DATE:	3/1/23
SCALE:	1"=50'
PROJECT #	135-19-001

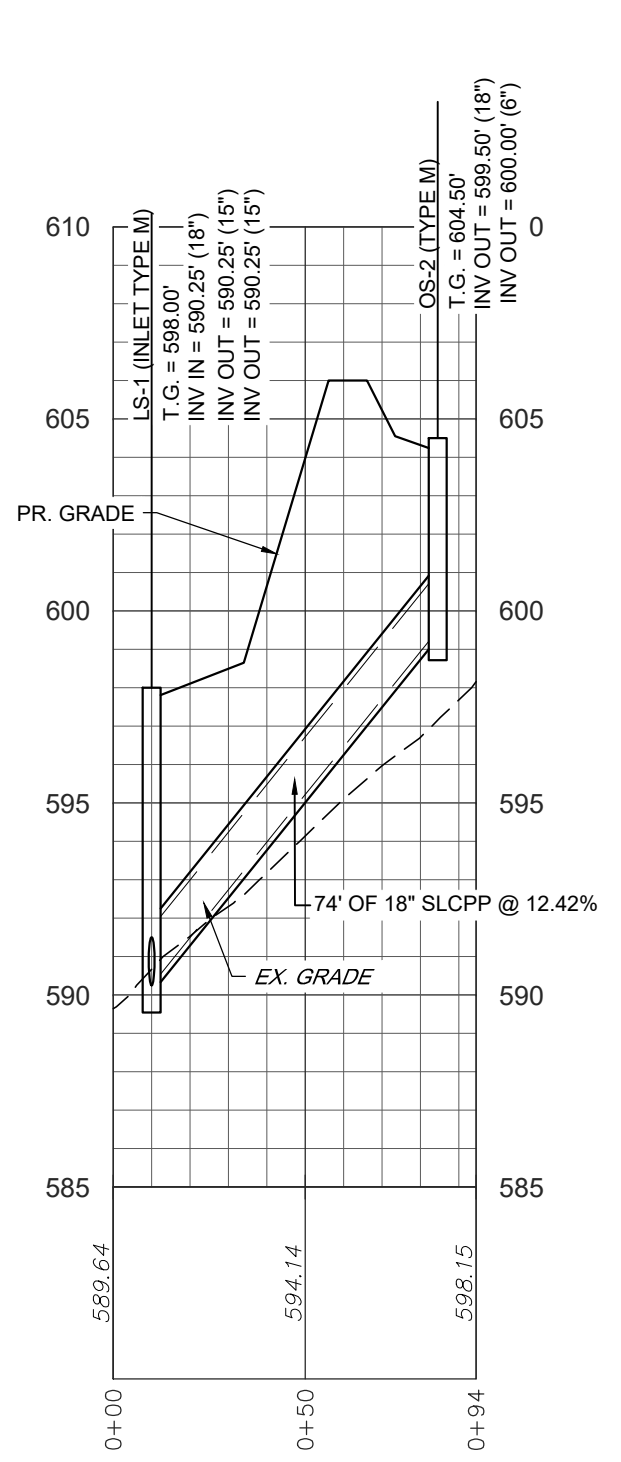




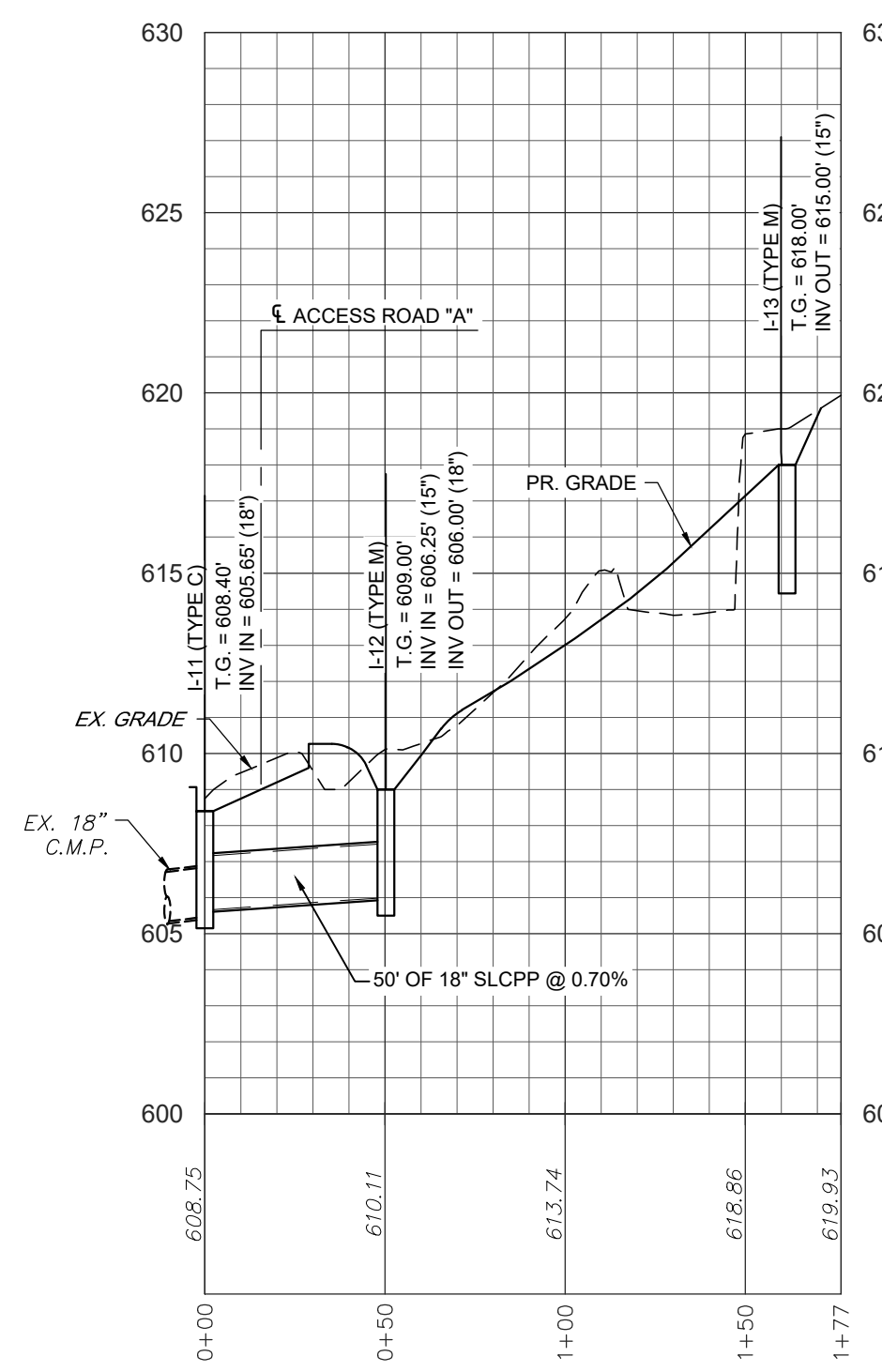
STORMWATER - EW-3 TO I-9



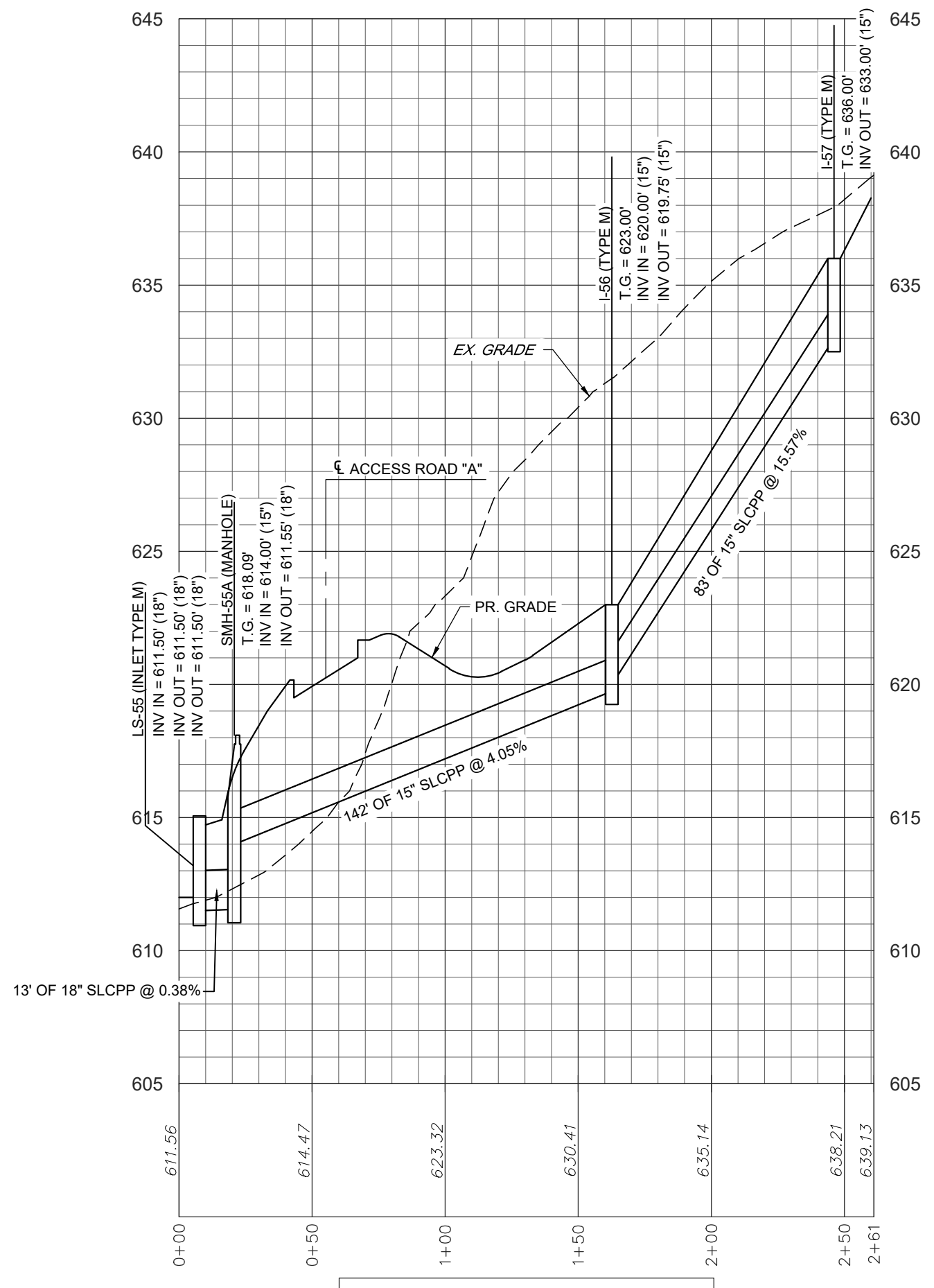
STORMWATER - I-7 TO I-10



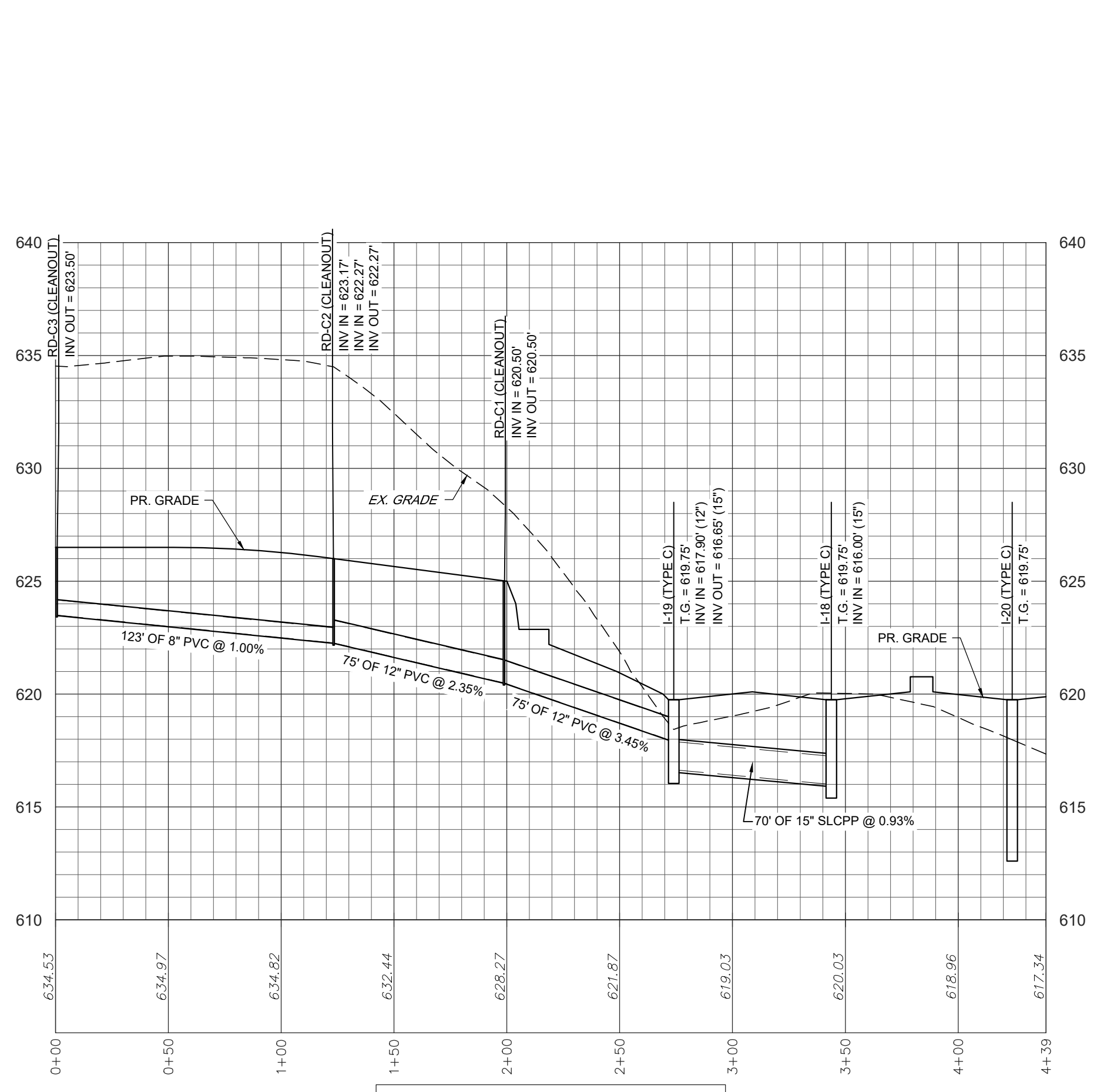
STORMWATER - LS-1 TO OS-2



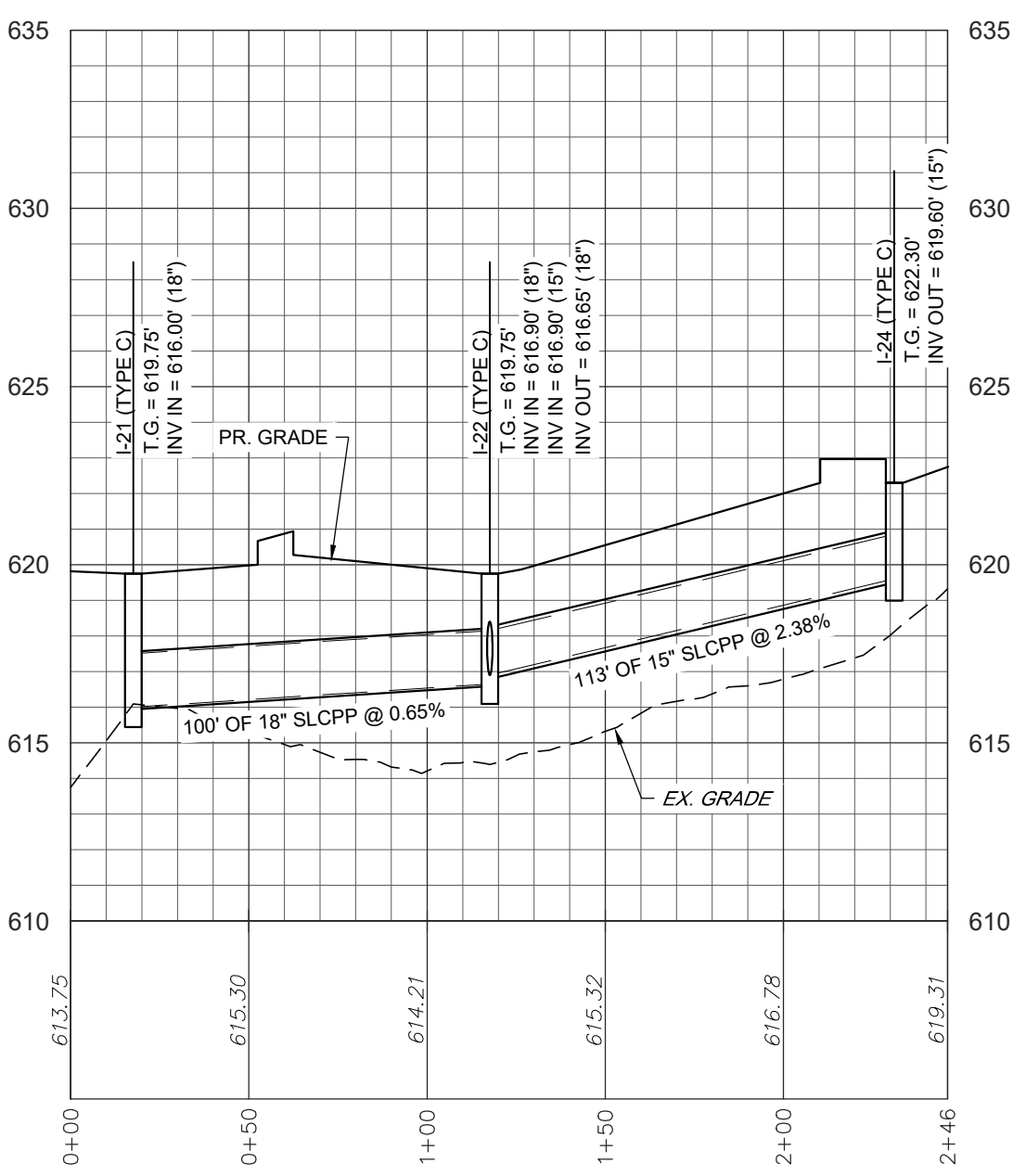
STORMWATER - I-11 TO I-13



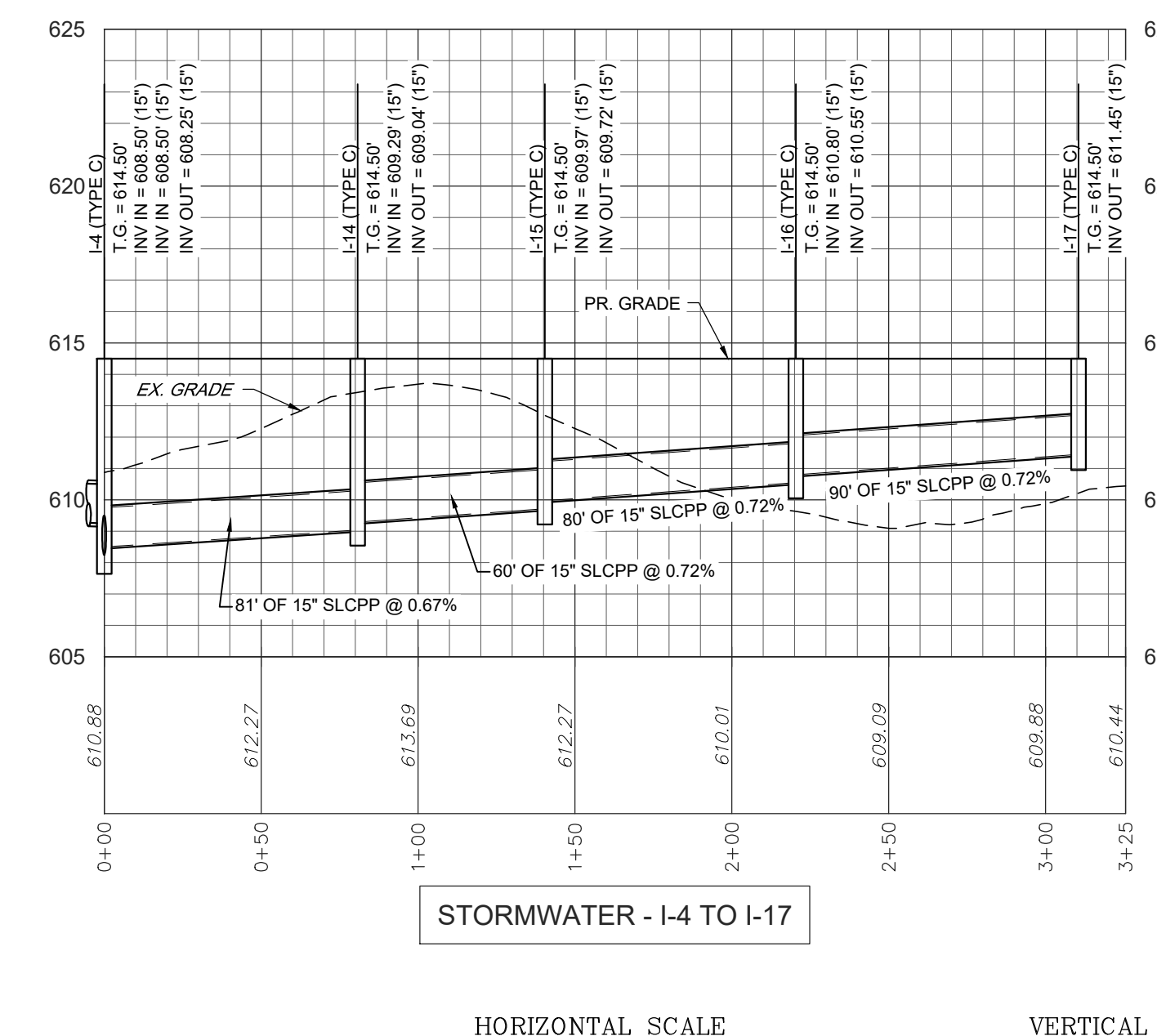
STORMWATER - EW-55 TO I-57



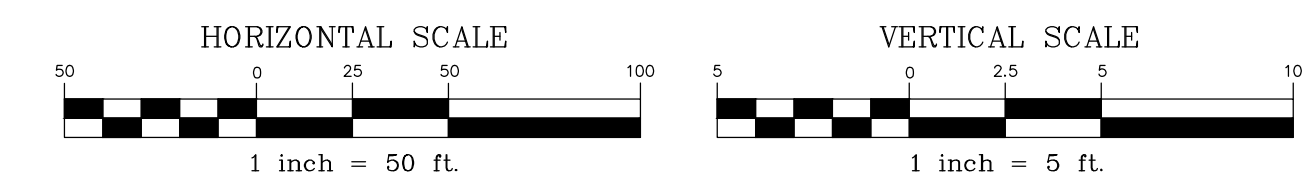
STORMWATER - I-18 TO I-19 & I-20



STORMWATER - I-21 TO I-24

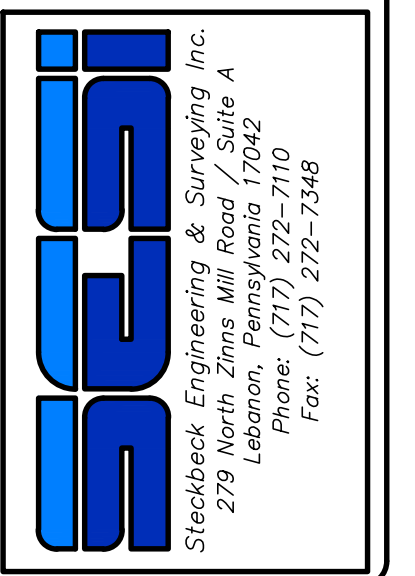


STORMWATER - I-4 TO I-17

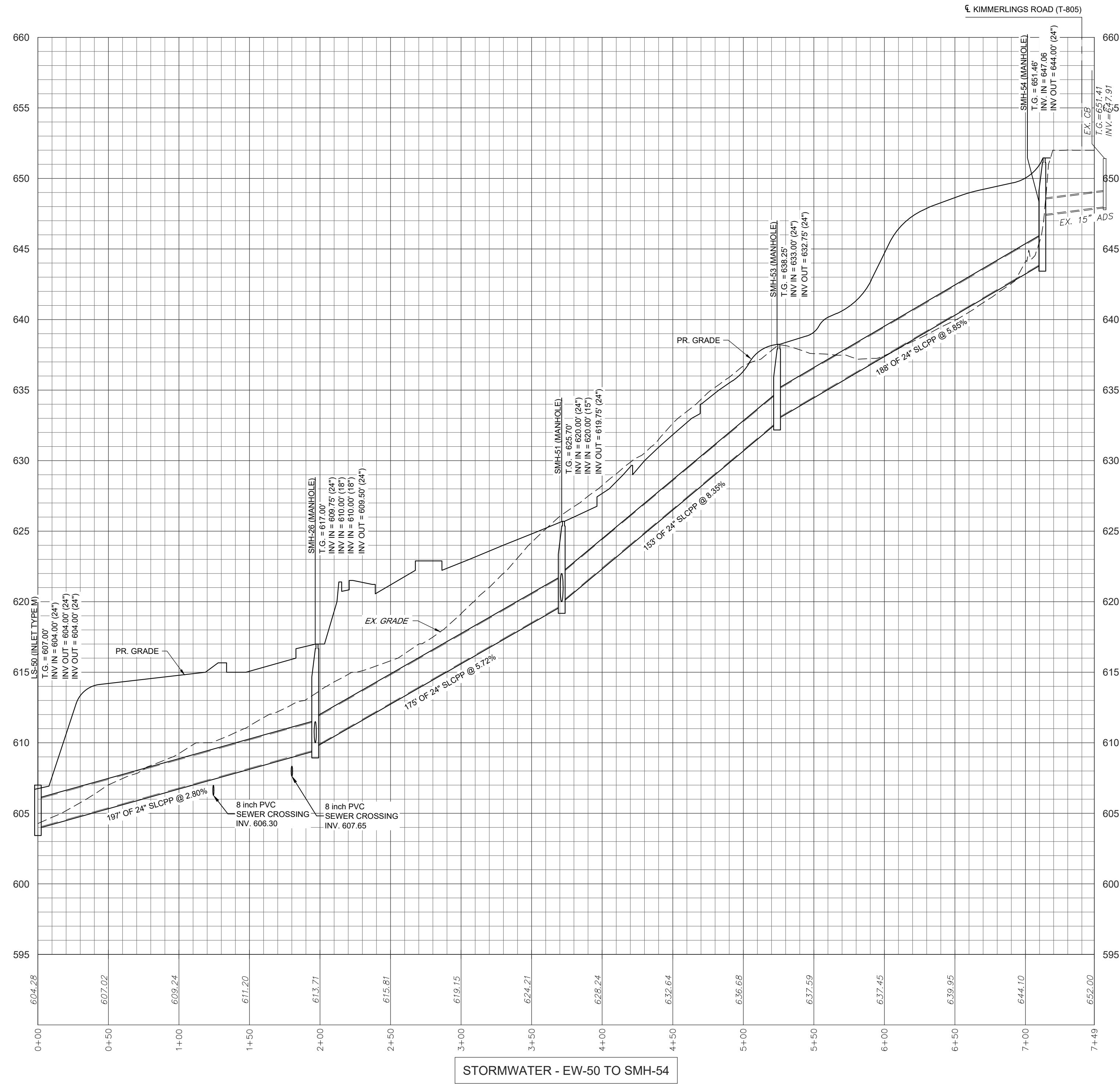


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PER LCPD LETTER DATED 4-4-23	5-12-23	CDS
PER COLA COMMENTS DATED 3-31-23	5-12-23	CDS
PER ARRO COMMENT LETTER DATED 6-6-23	6-28-23	CDS
PER ARRO COMMENT LETTER DATED 7-13-23	8-4-23	CDS

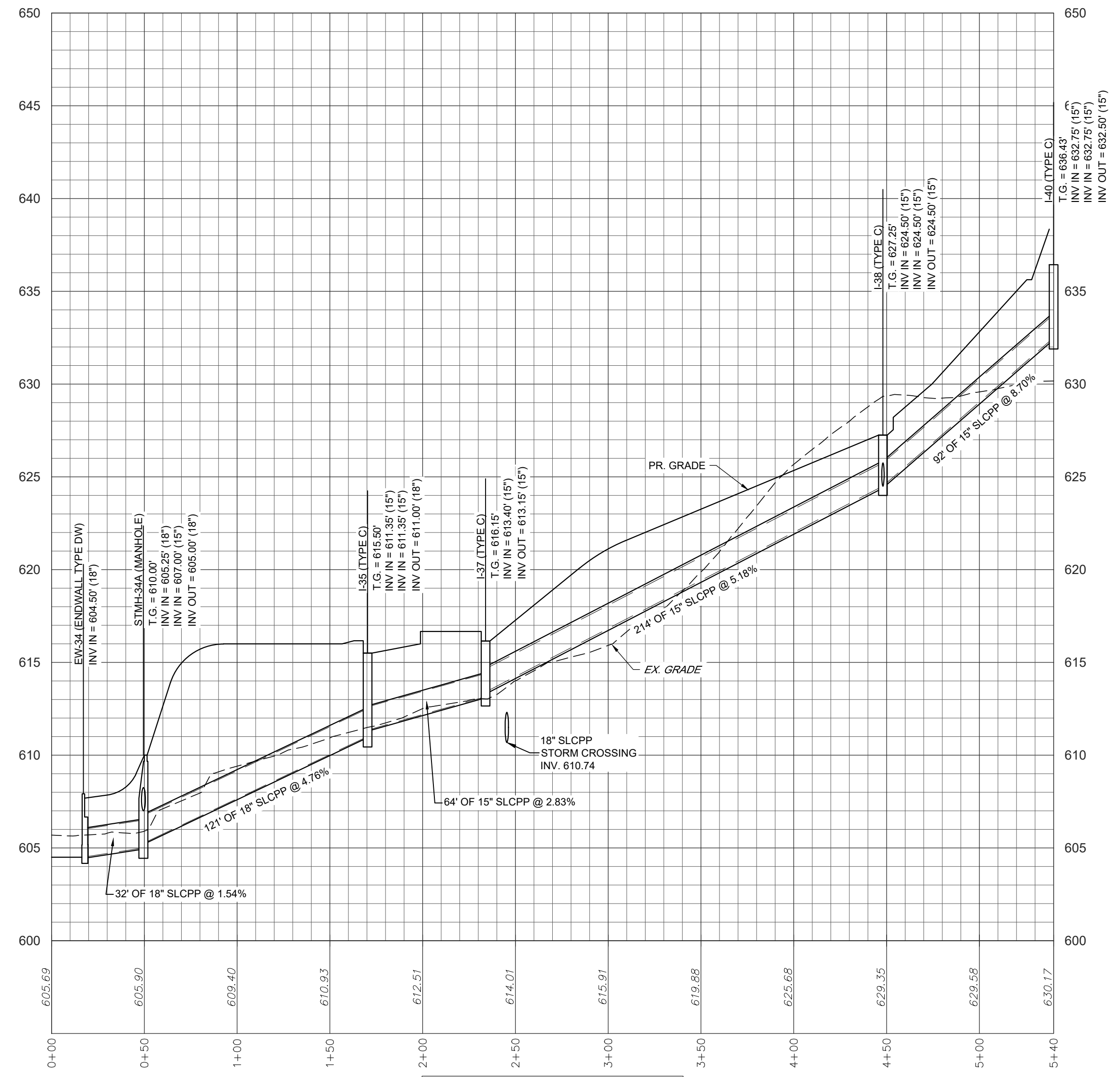
**PROFILES**  
For  
**PRELIMINARY/FINAL SUBDIVISION & LAND DEVELOPMENT PLANS**  
BRIAR RIDGE COMMONS - APARTMENTS  
located in  
NORTH LEBANON TOWNSHIP  
LEBANON County, Pennsylvania



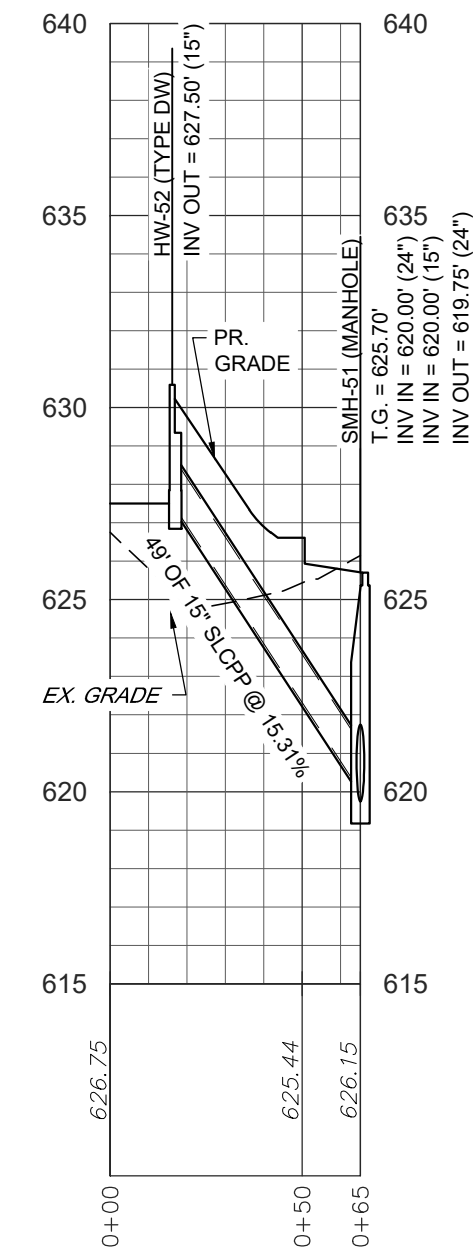
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SCALE:	AS NOTED
PROJECT #	135-19-001



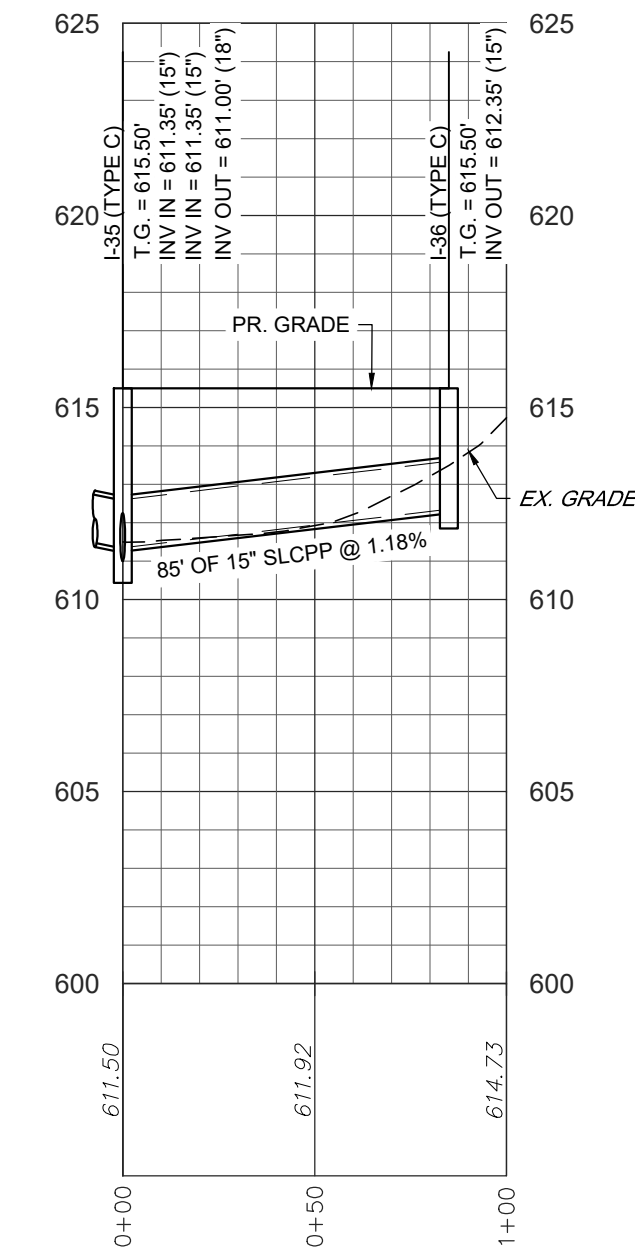
STORMWATER - EW-50 TO SMH-54



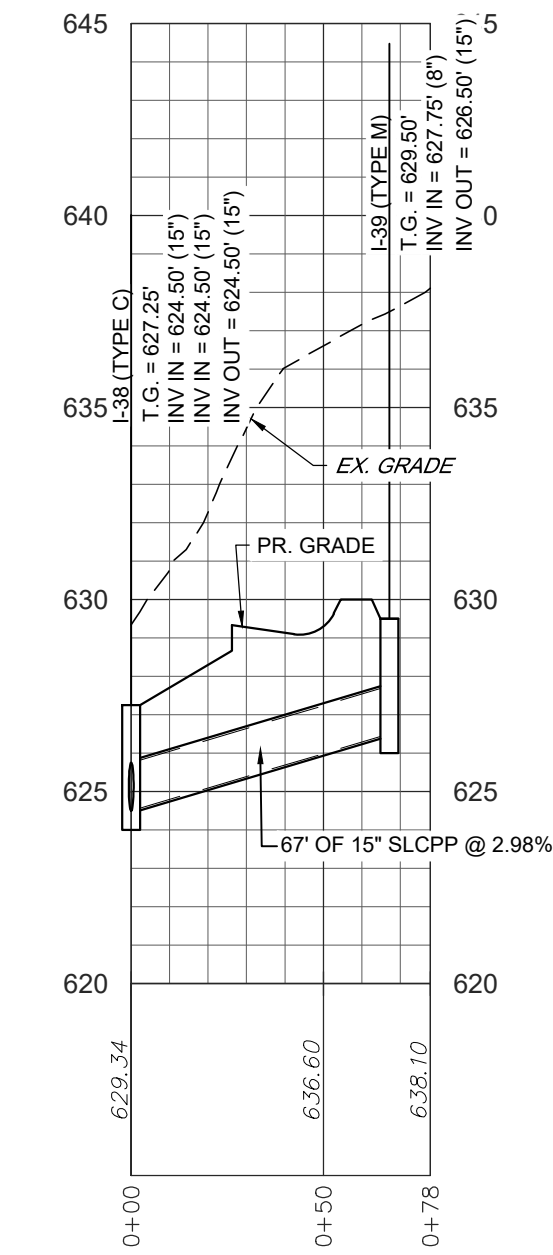
STORMWATER - EW-34 TO I-40



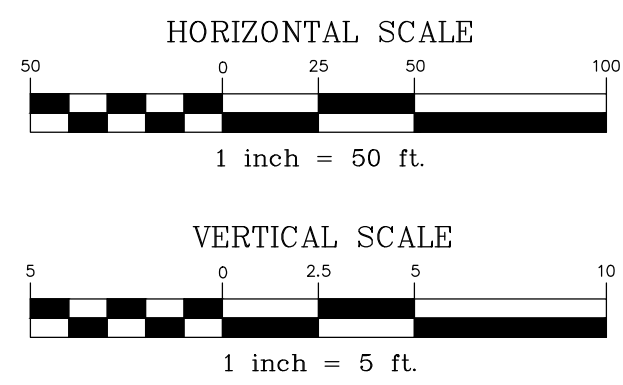
STORMWATER - HW-52 TO SMH-51



STORMWATER - I-35 TO I-36



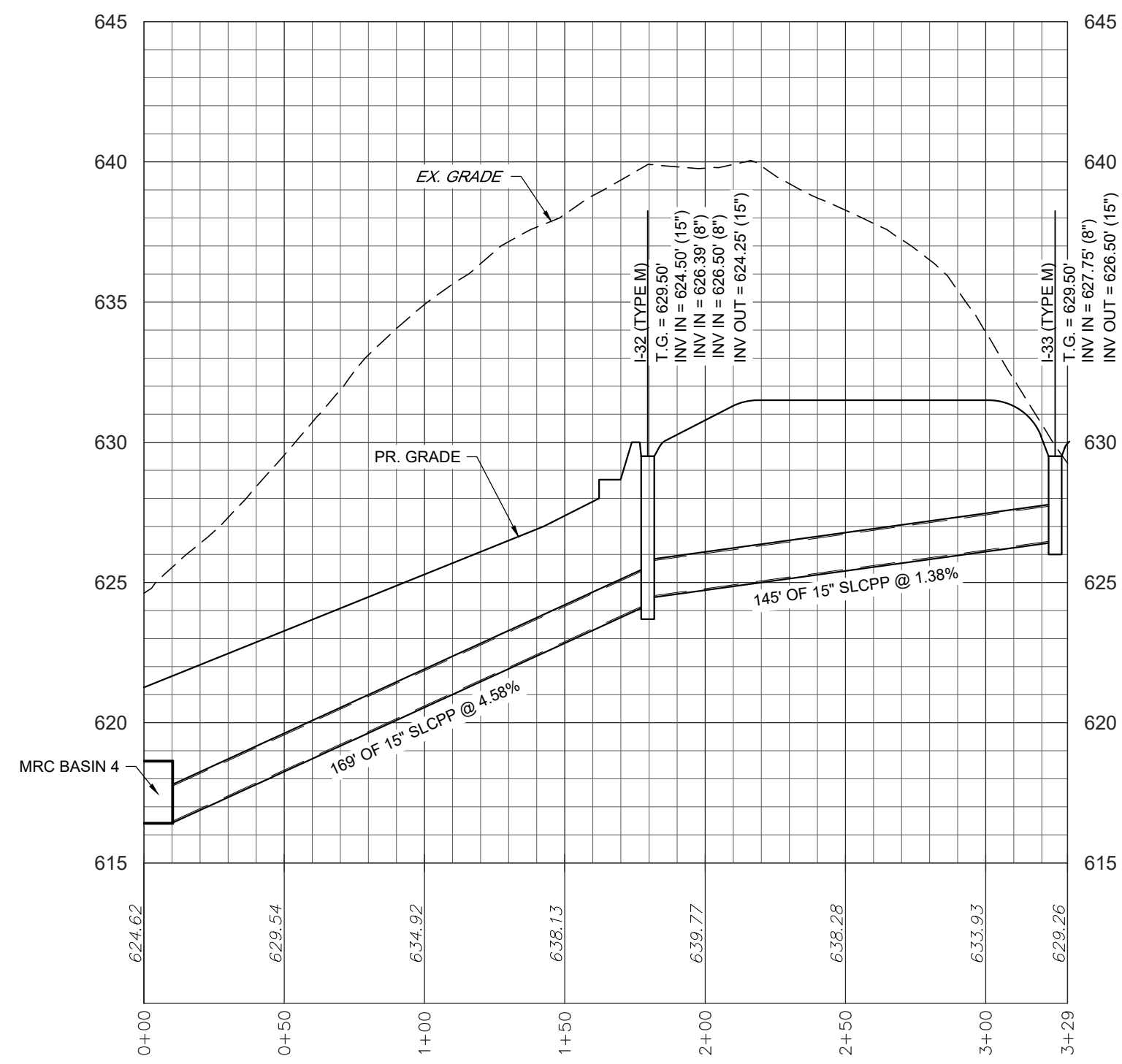
STORMWATER - I-38 TO I-39



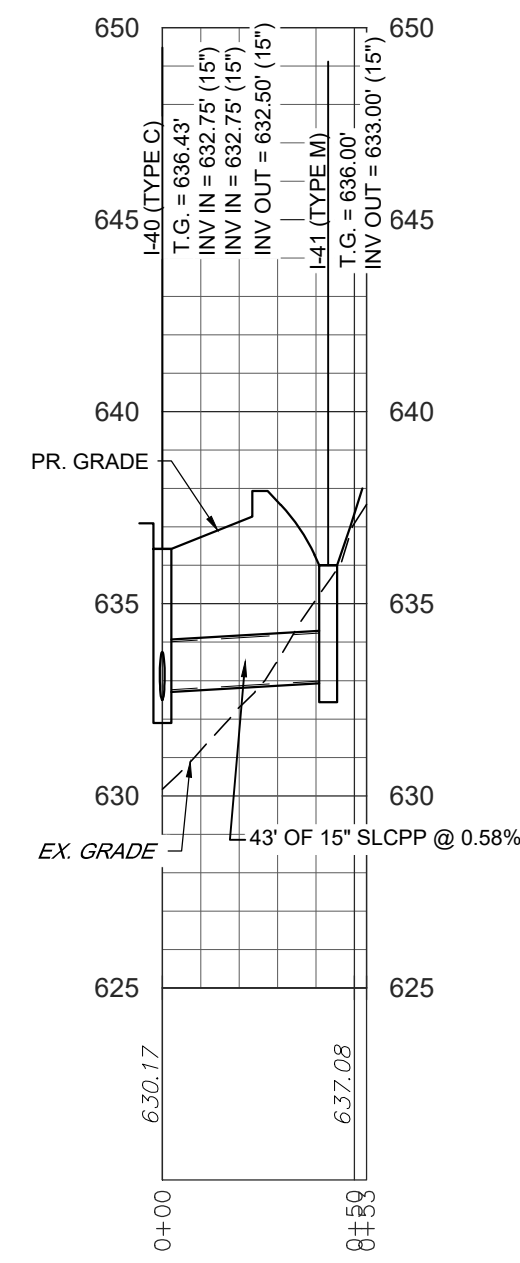
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PER COLA COMMENTS DATED 3-31-23	5-12-23	CDS
PER ARRO COMMENT LETTER DATED 6-6-23	6-28-23	CDS
PER ARRO COMMENT LETTER DATED 7-13-23	8-4-23	CDS

**PROFILES**  
 For  
**PRELIMINARY/FINAL SUBDIVISION & LAND DEVELOPMENT PLANS**  
 Briar Ridge Commons - Apartments  
 located in  
 NORTH LEBANON TOWNSHIP  
 LEBANON COUNTY, PENNSYLVANIA

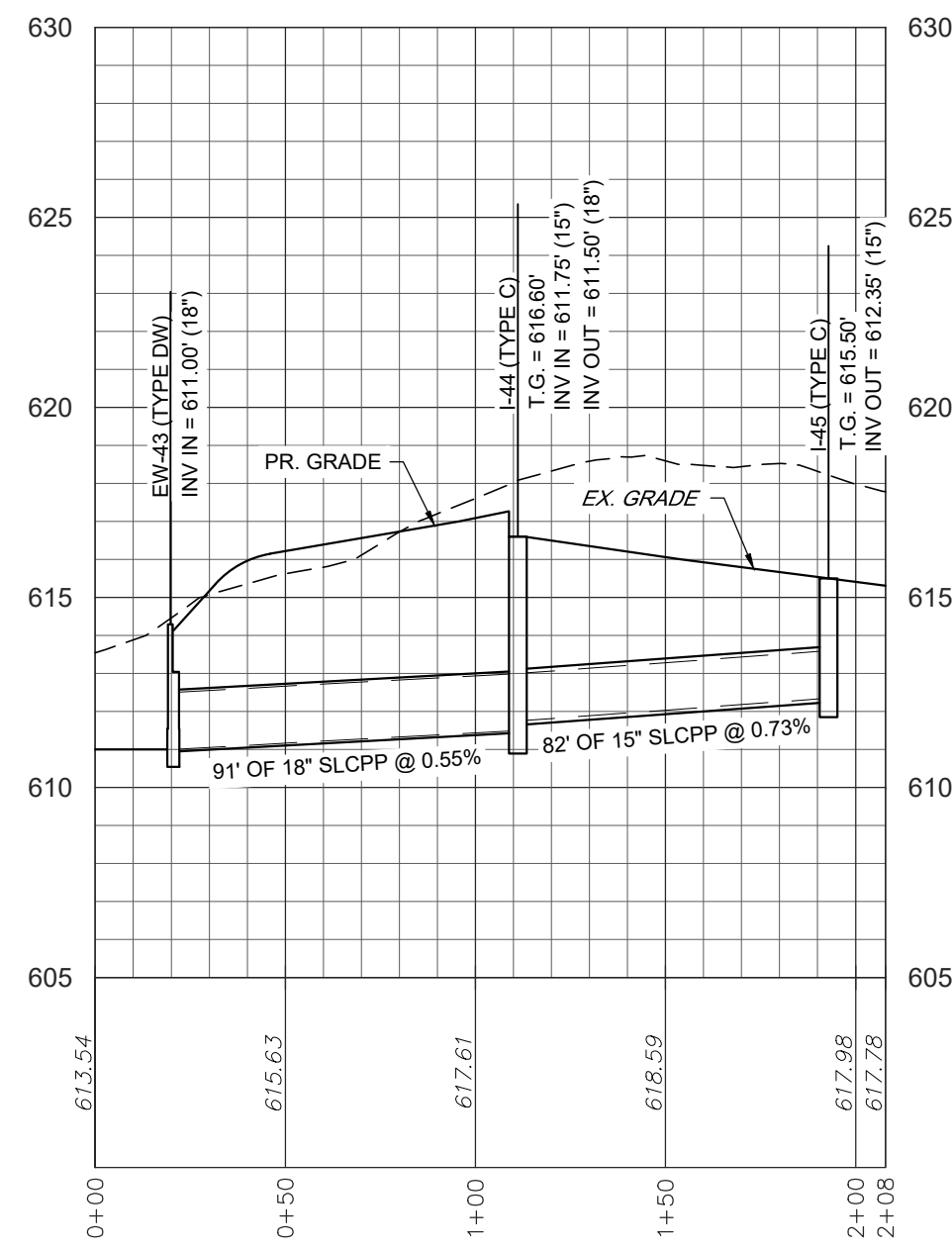
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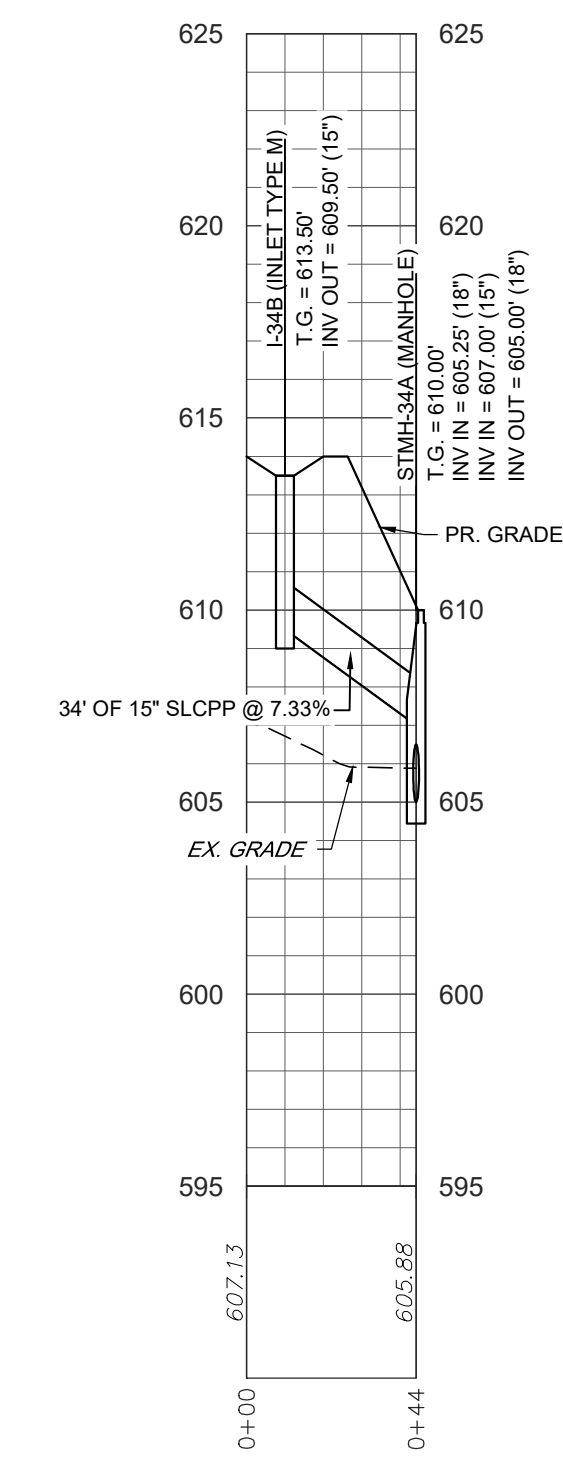
STORMWATER - MRC BASIN 4 TO I-33



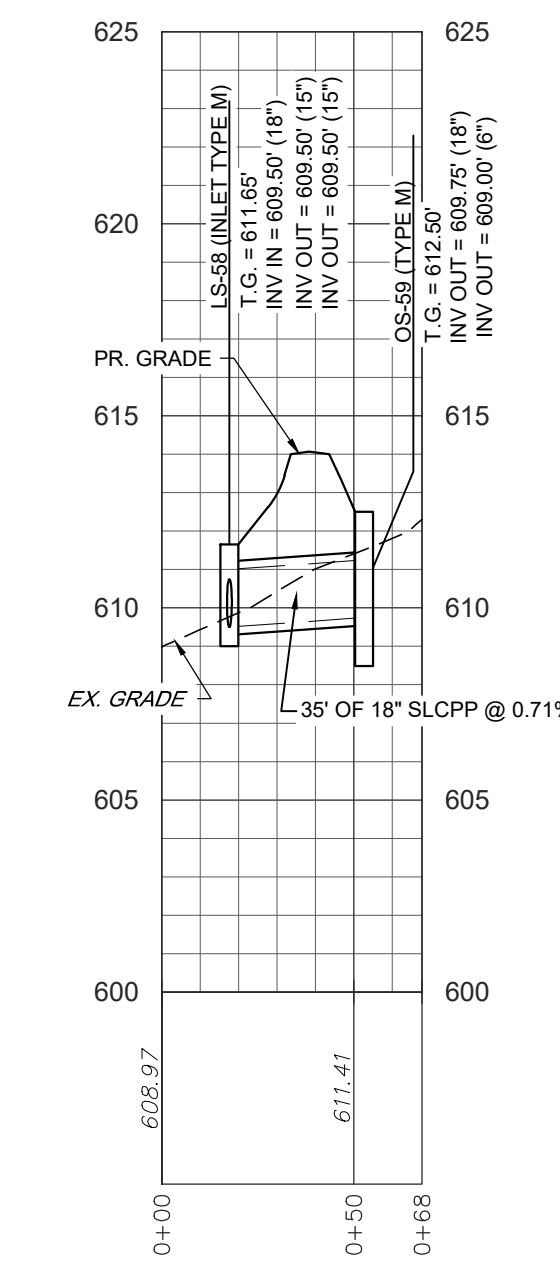
STORMWATER - I-40 TO I-41



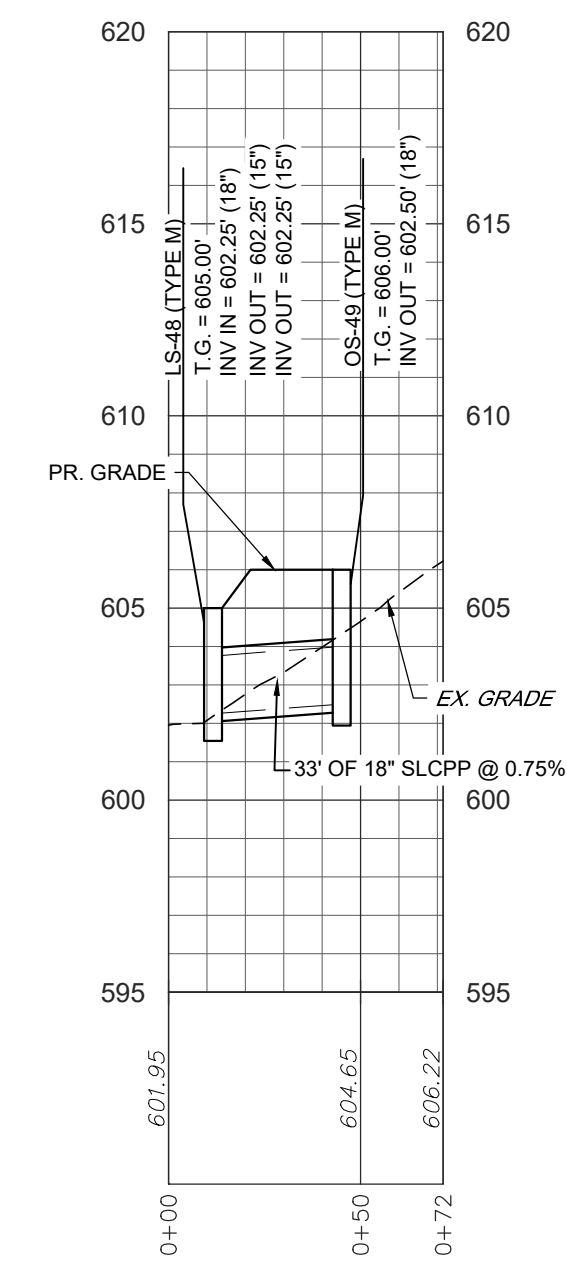
STORMWATER - EW-43 TO I-45



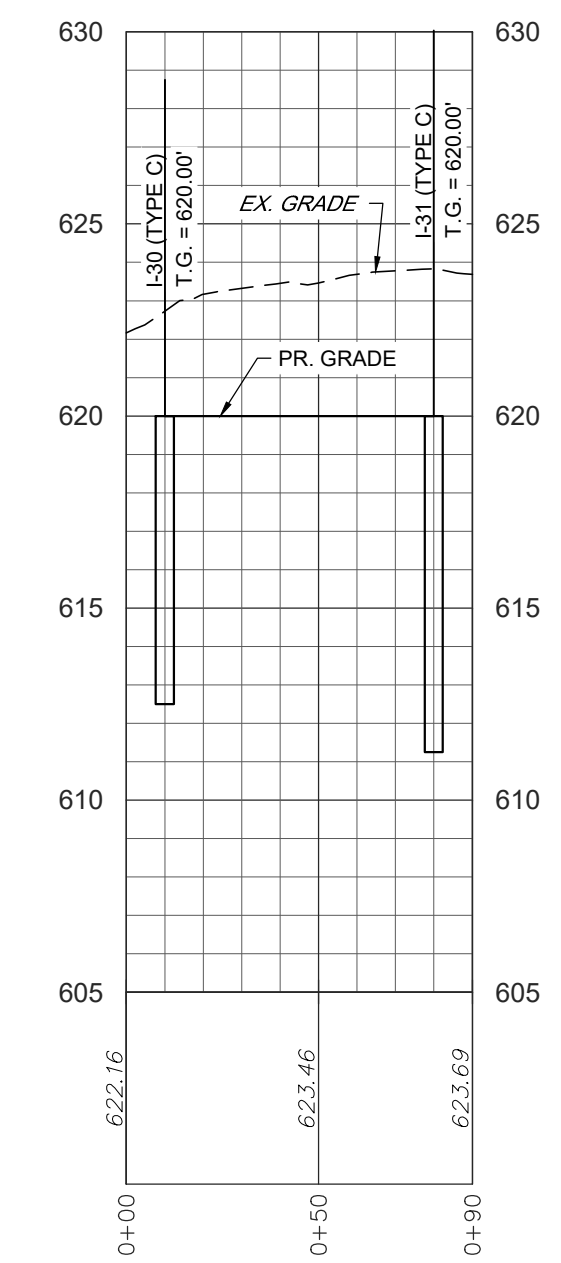
STORMWATER - I-34B TO STMH-34A



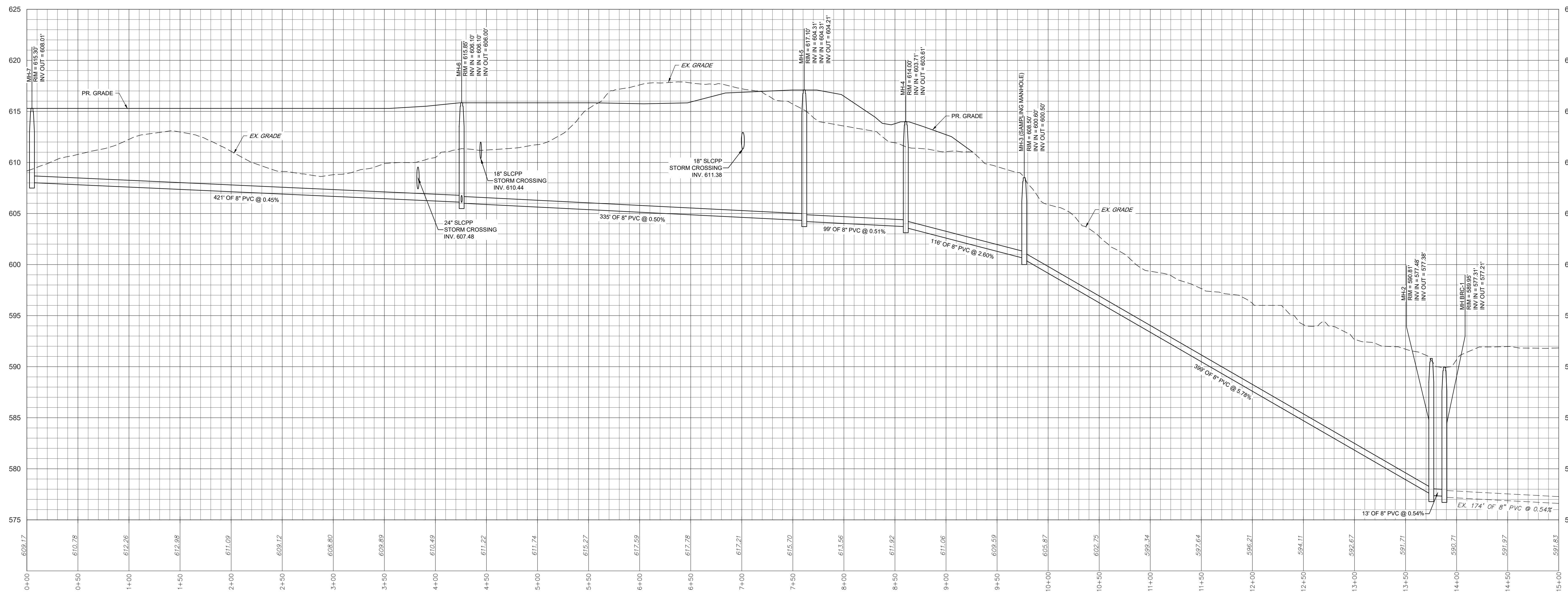
STORMWATER - LS-58 TO OS-59



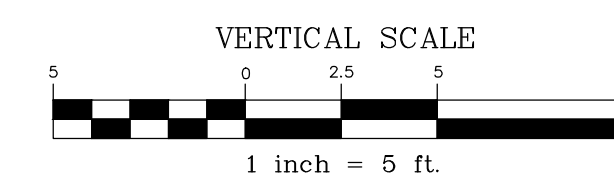
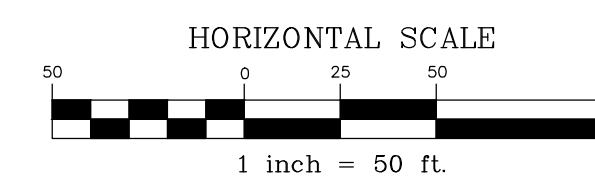
STORMWATER - LS-48 TO OS-49



STORMWATER - I-30 TO I-31

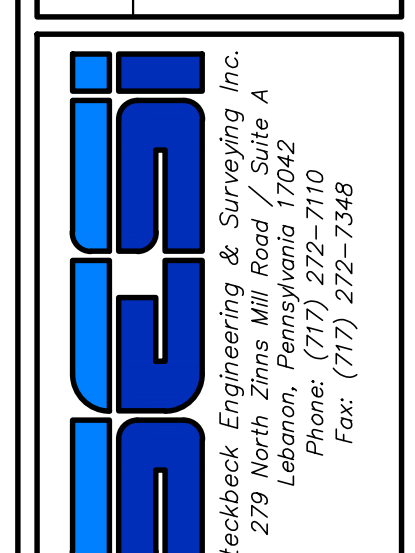


SANITARY SEWER - MH-7 TO EX MH

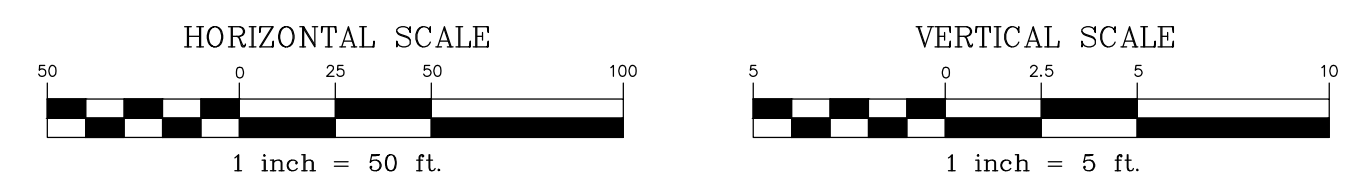
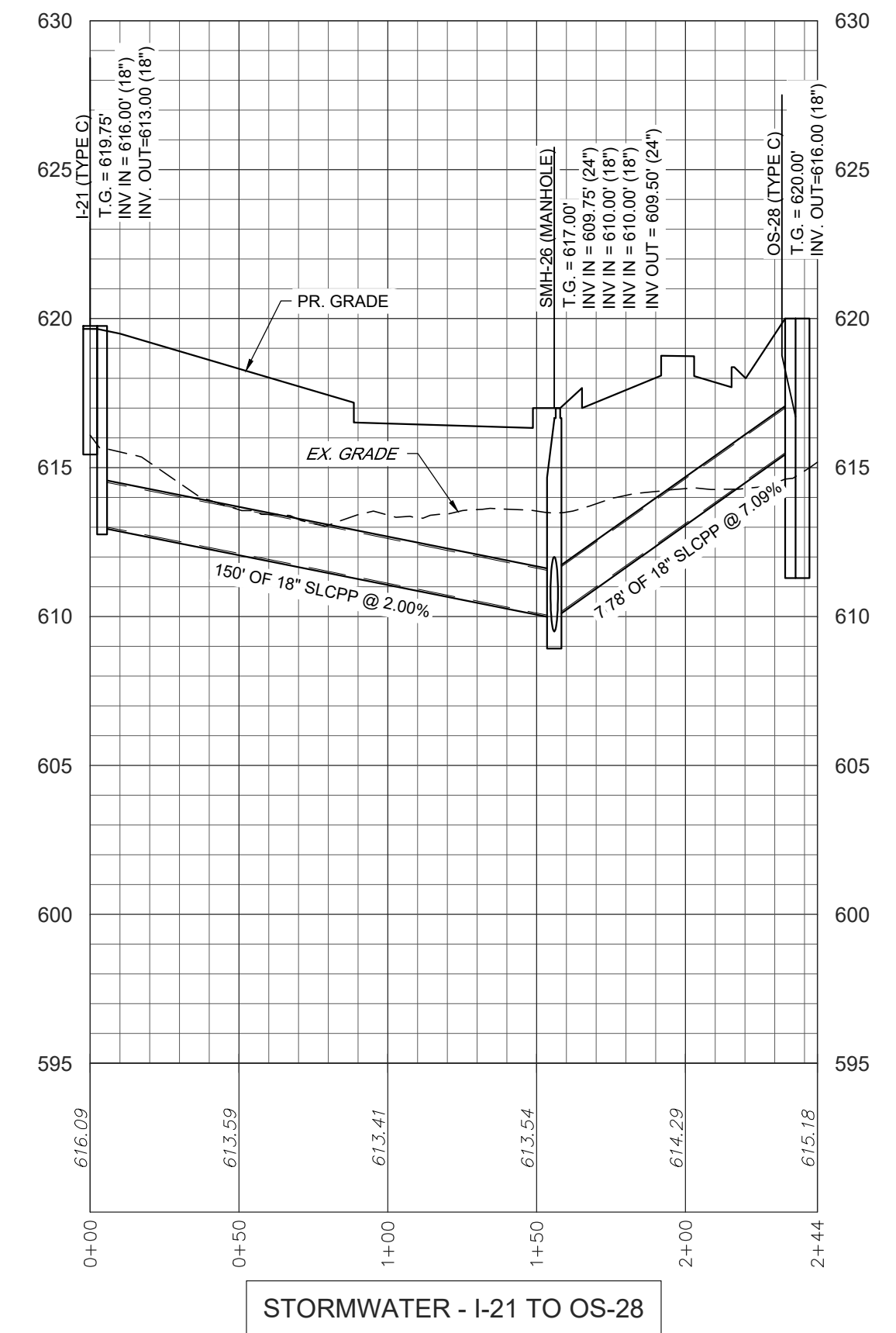
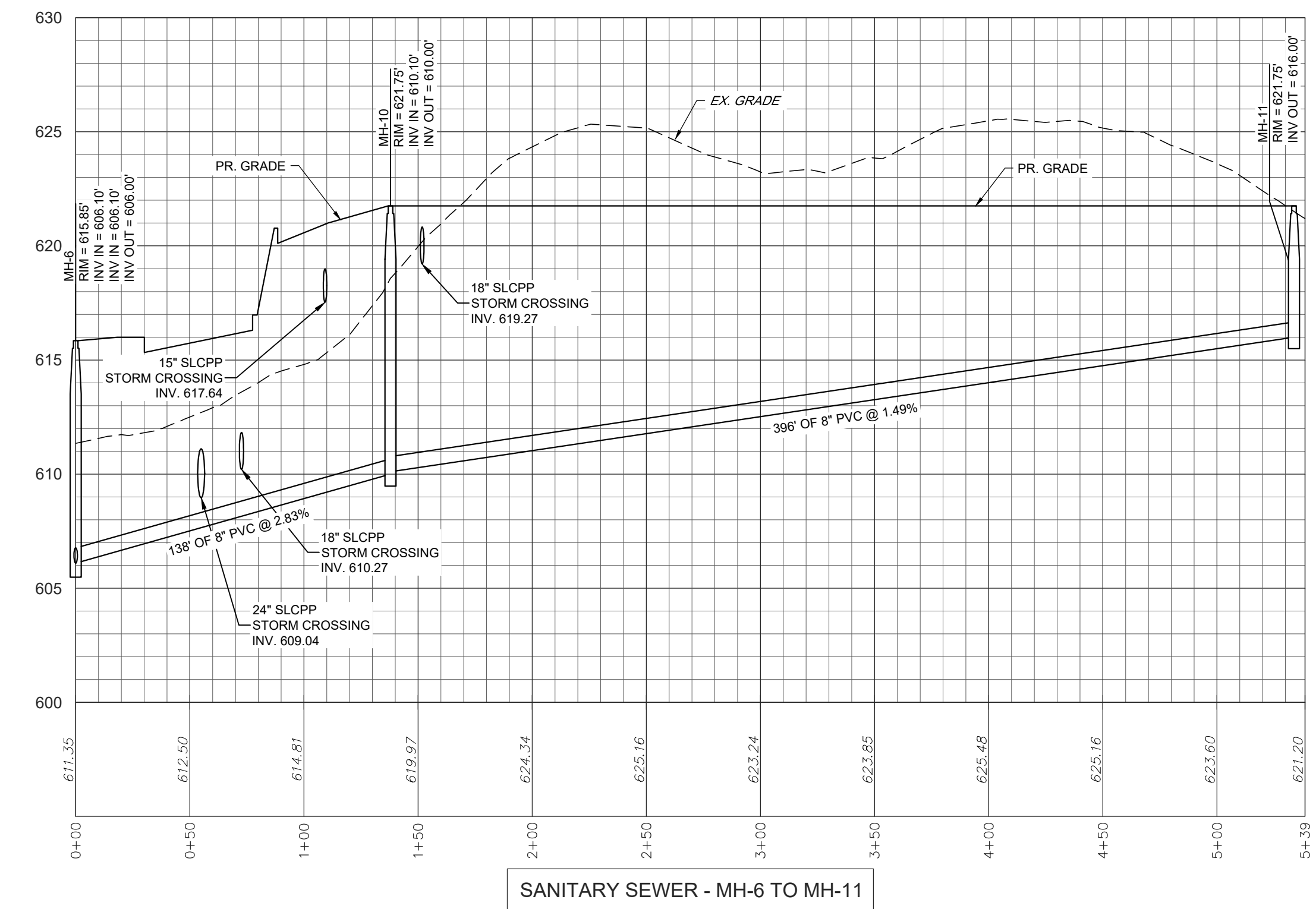
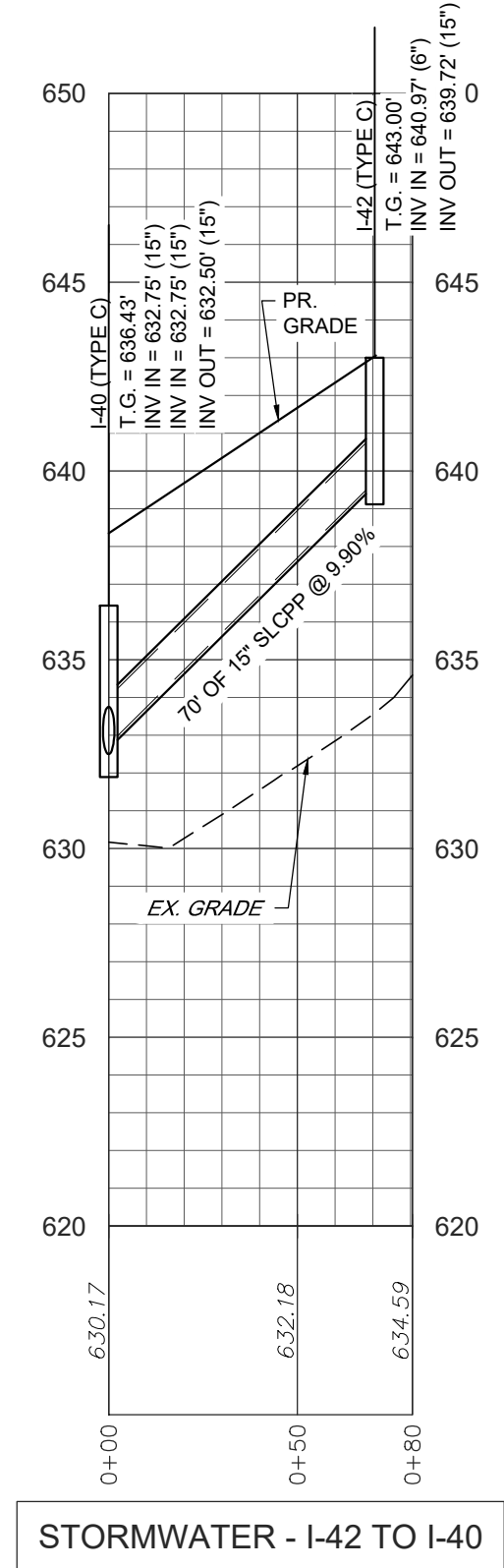
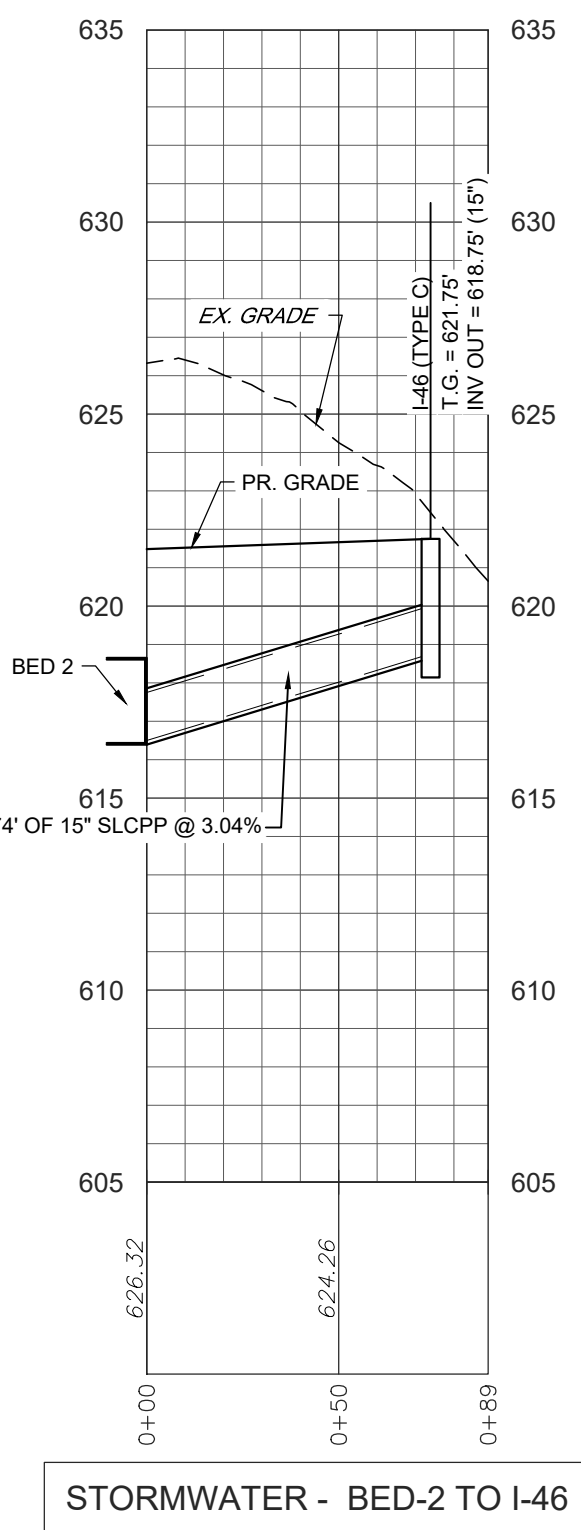
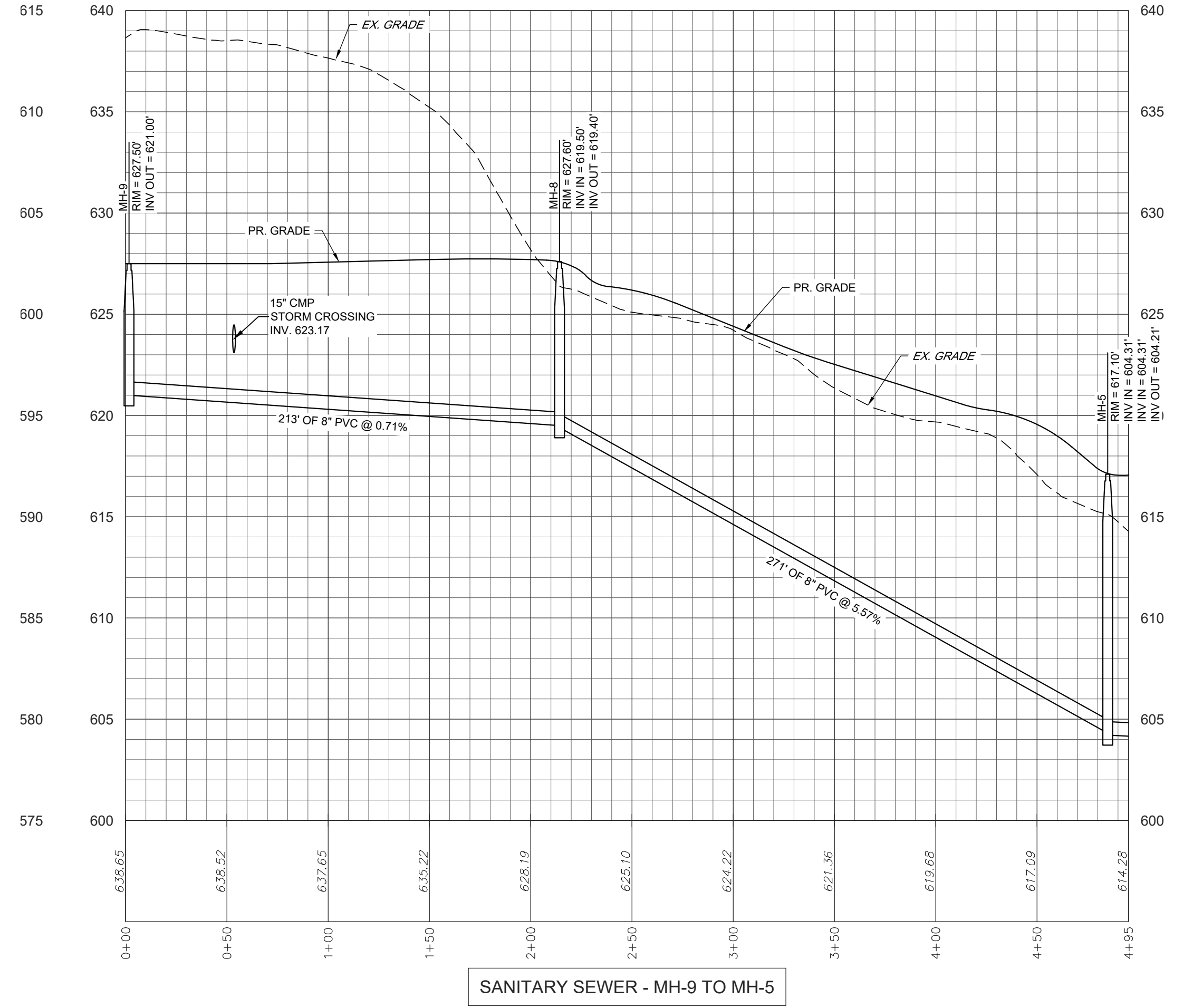
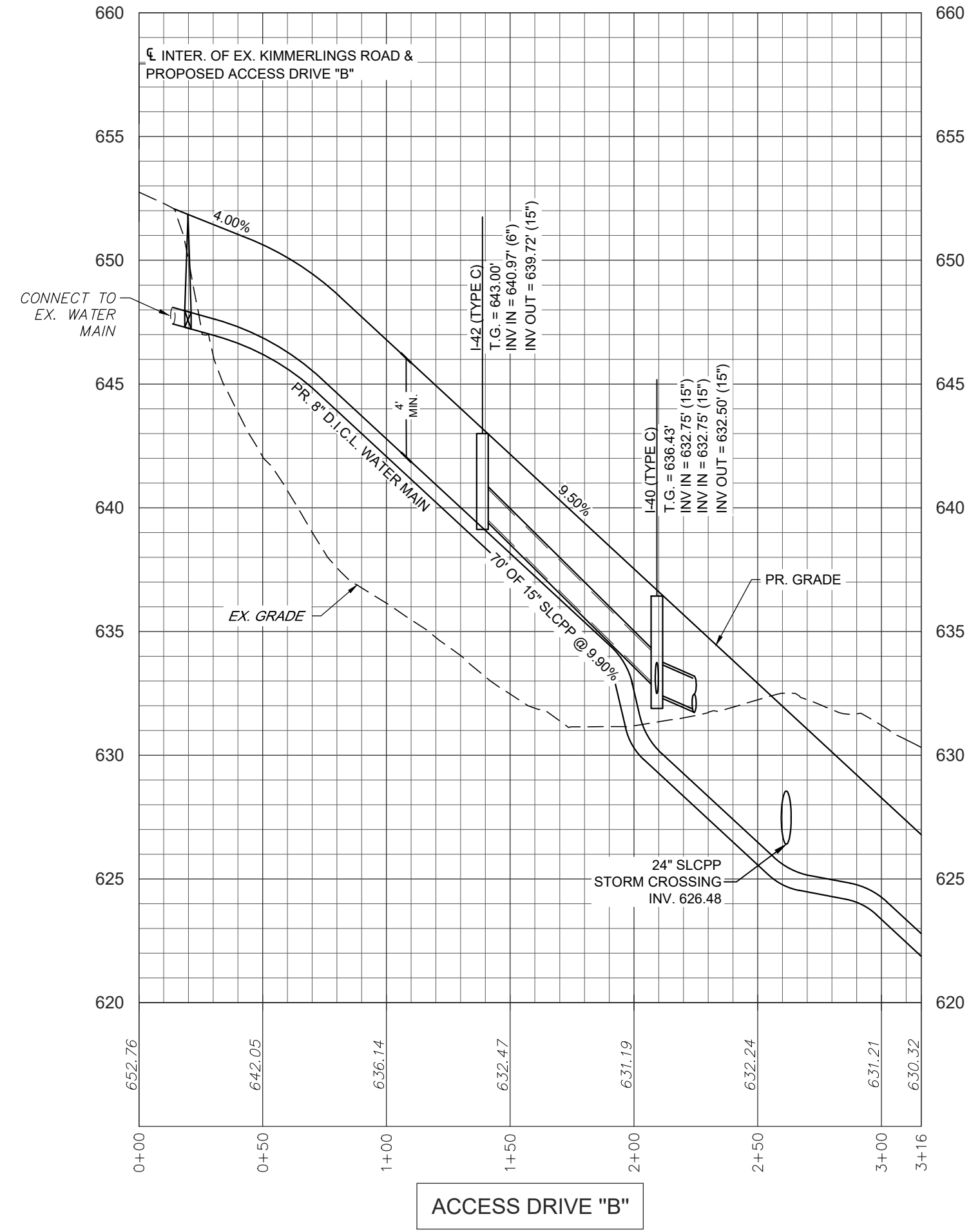
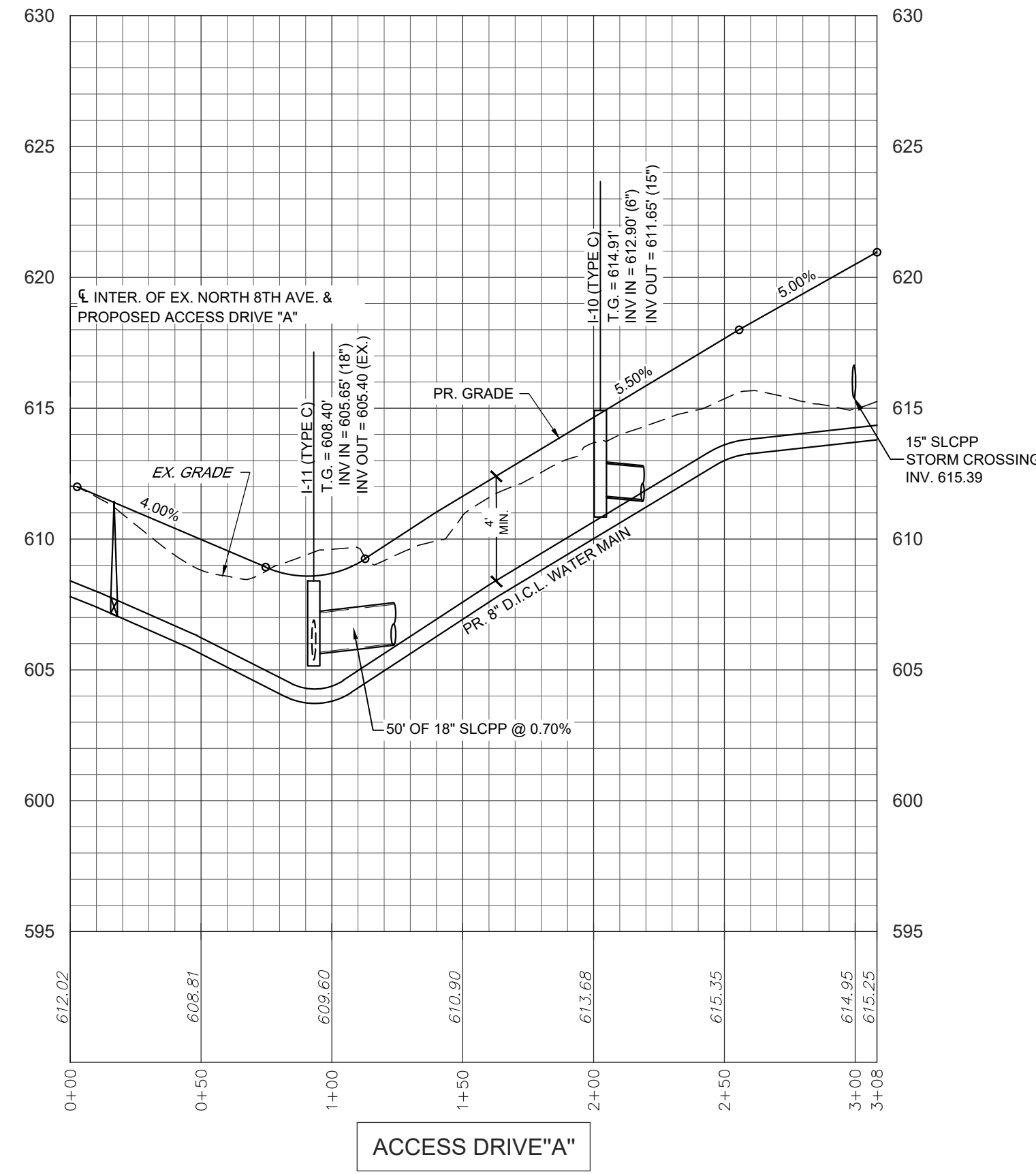


REVISION	DATE	BY
PER ARRO COMMENT LETTER DATED 4-33-23	5-8-23	CDS
PER LCPD LETTER DATED 4-4-23	5-12-23	CDS
PER COLA COMMENTS DATED 3-31-23	5-12-23	CDS
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PROFILES  
 PRELIMINARY/FINAL SUBDIVISION & LAND DEVELOPMENT PLANS  
 For  
**BRIAR RIDGE COMMONS - APARTMENTS**  
 located in  
 NORTH LEBANON TOWNSHIP  
 LEBANON County, Pennsylvania

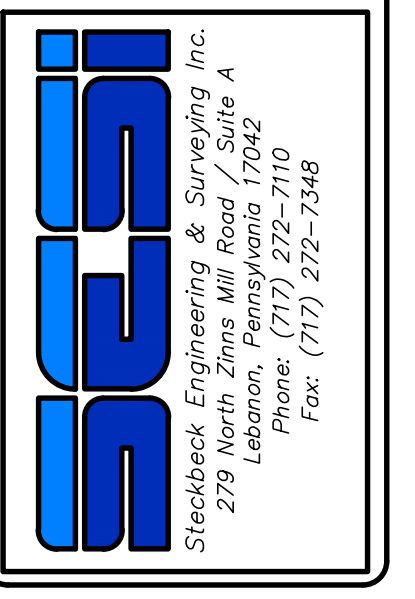


FIELD CREW:	MOD, JEC
BASE MAP:	JEC
DRAWN:	CDS
DESIGN:	CDS
CHECKED:	SAS
DATE:	3/1/23
SCALE:	AS NOTED
PROJECT #	135-19-001

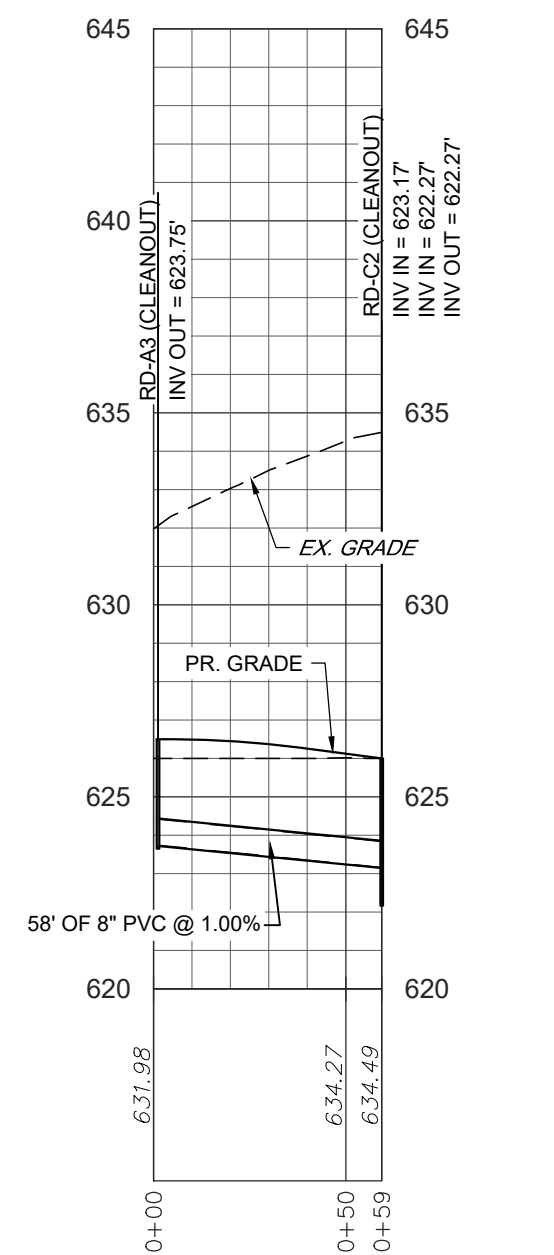


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PER LCPD LETTER DATED 4-4-23	5-12-23	CDS
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PER ARRO COMMENT LETTER DATED 7-13-23	8-4-23	CDS

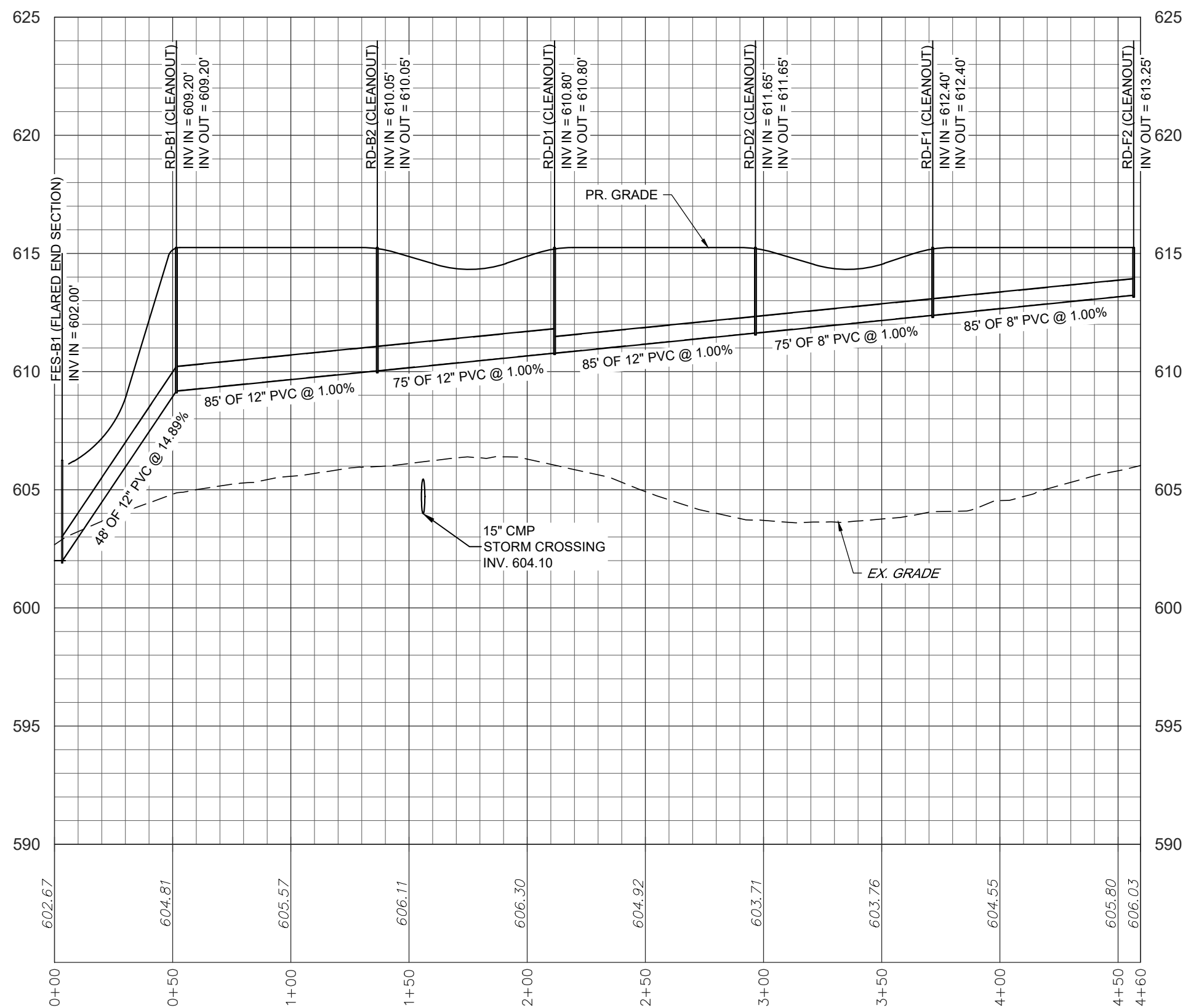
**PROFILES**  
For  
**PRELIMINARY/FINAL SUBDIVISION & LAND DEVELOPMENT PLANS**  
for  
**BRIAR RIDGE COMMONS - APARTMENTS**  
located in  
NORTH LEBANON TOWNSHIP  
LEBANON County, Pennsylvania



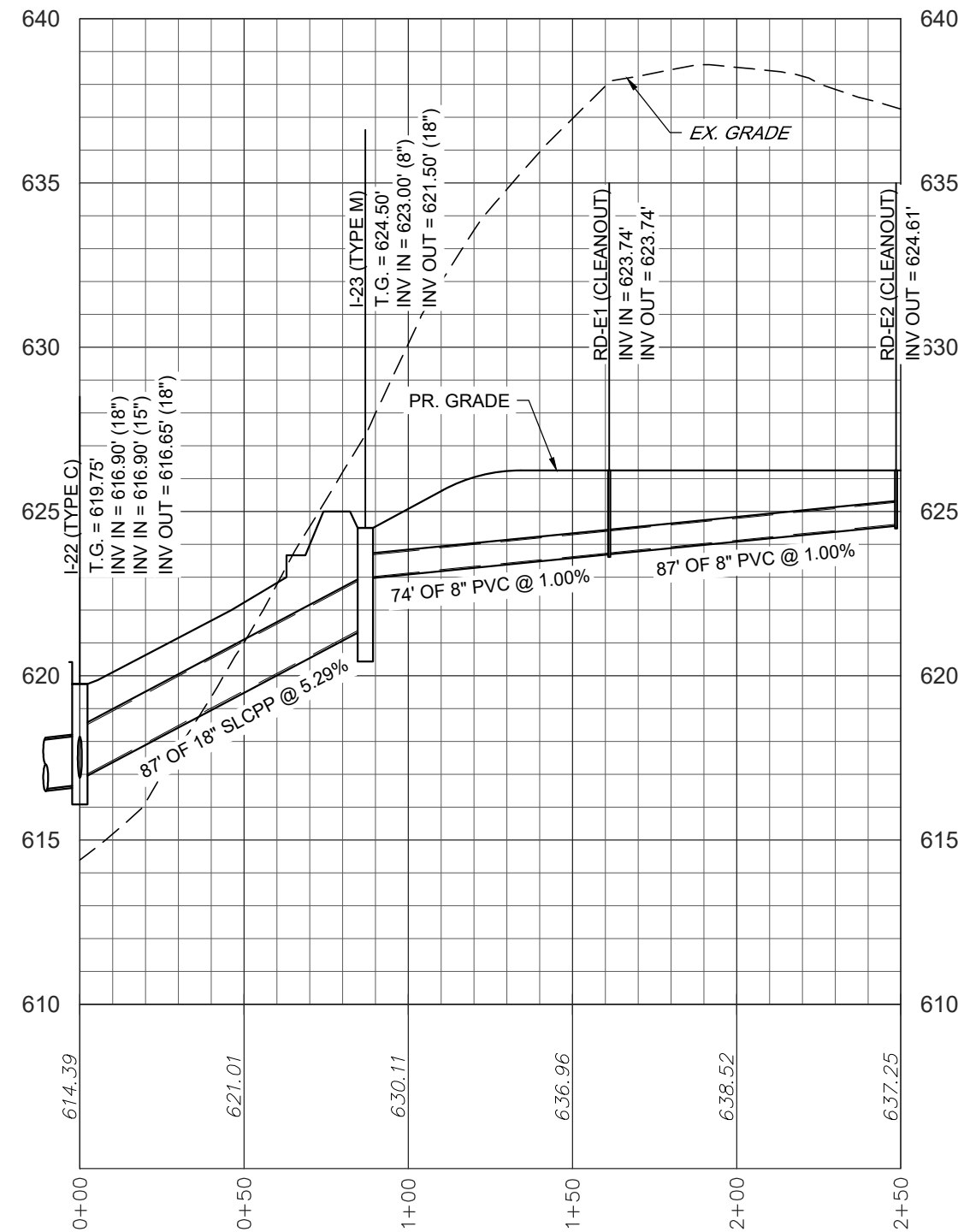
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BASE MAP:	JEC
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SCALE:	AS NOTED
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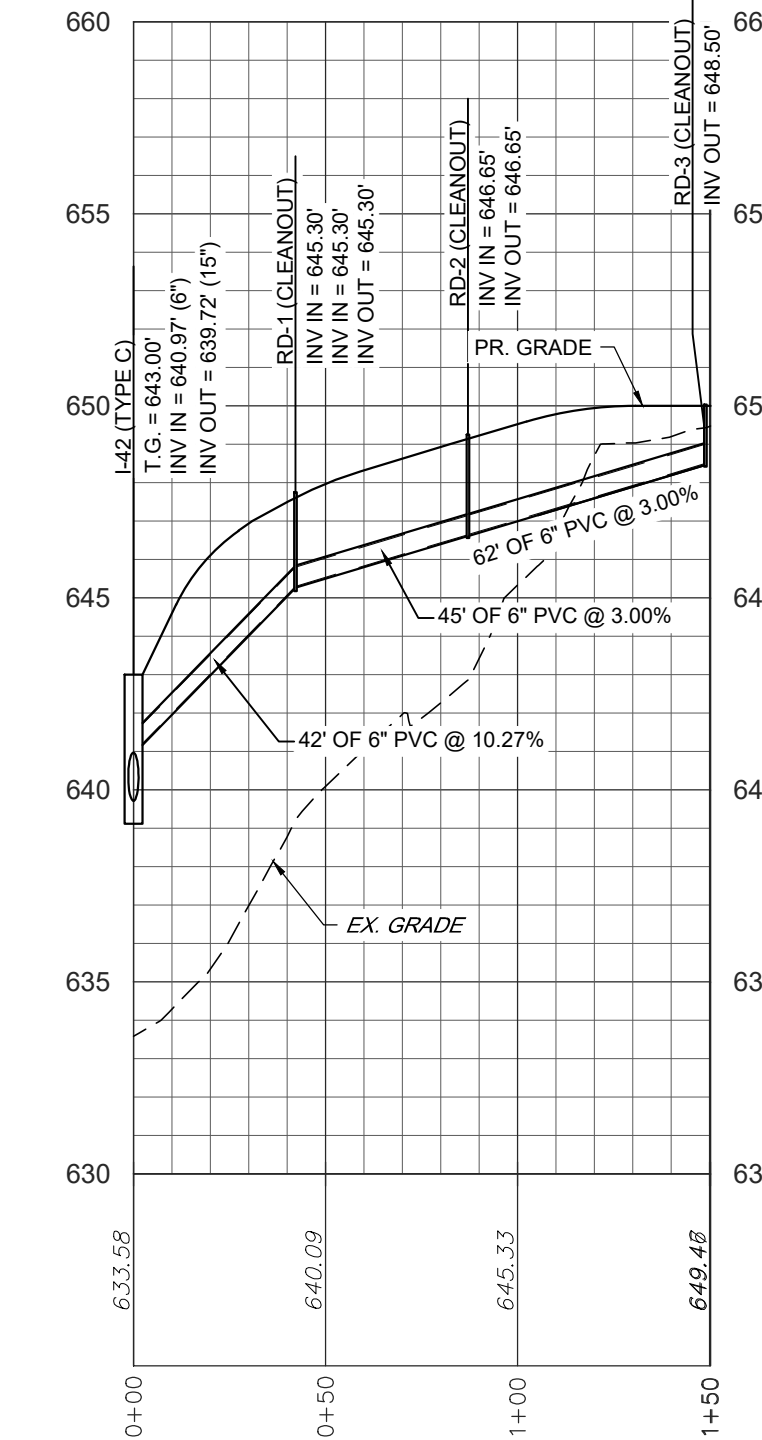
STORMWATER - RD-C2 TO RD-A3



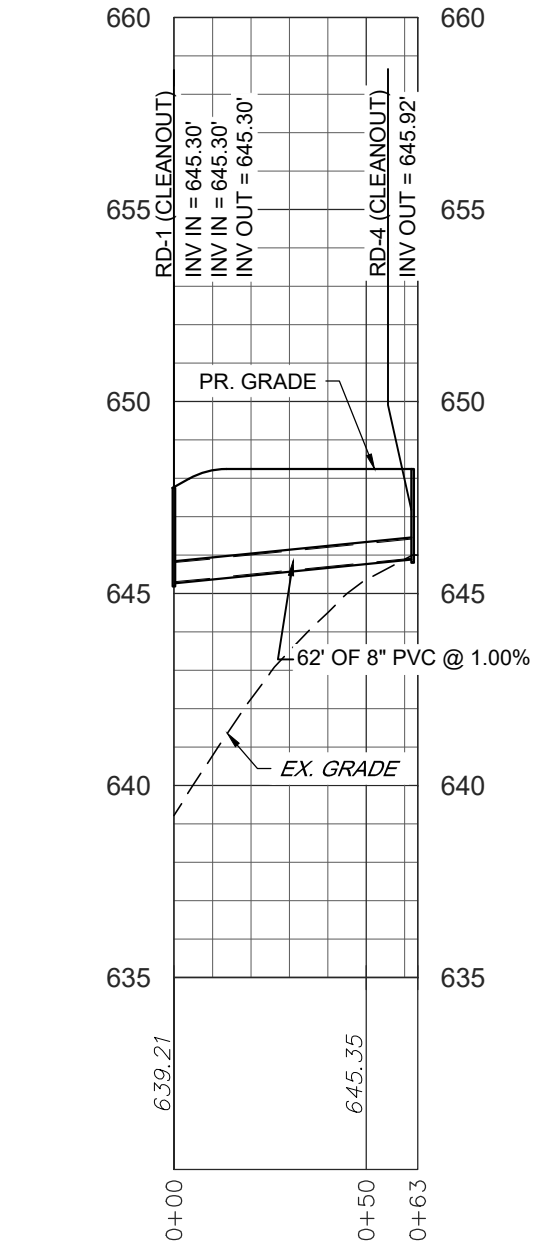
STORMWATER - EW-B1 TO RD-F2



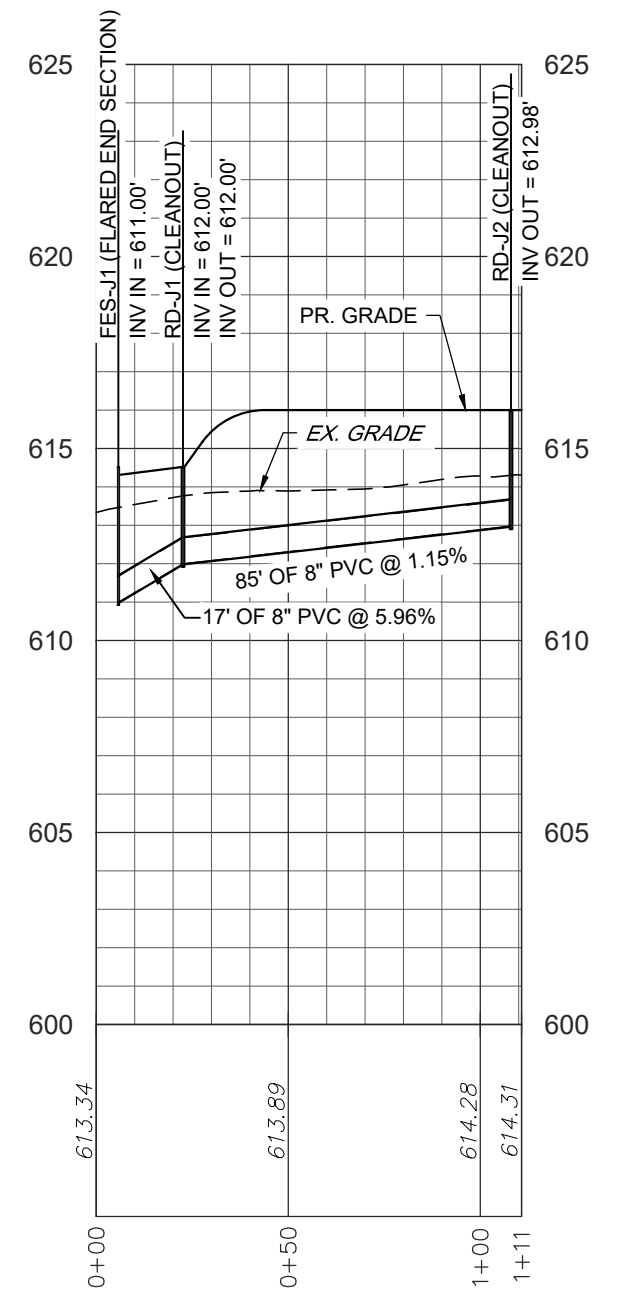
STORMWATER - I-22 TO I-23



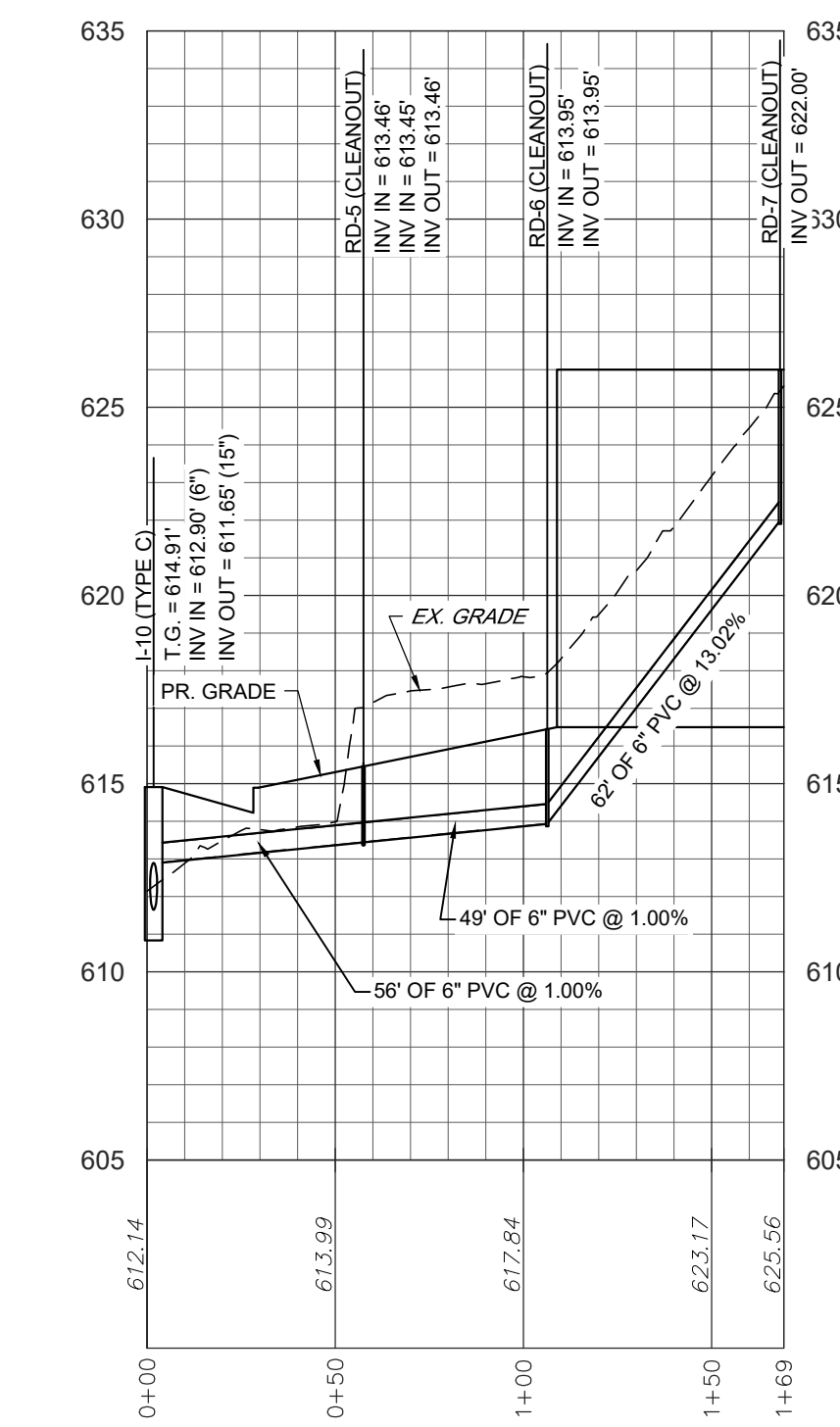
STORMWATER - I-42 TO RD-3



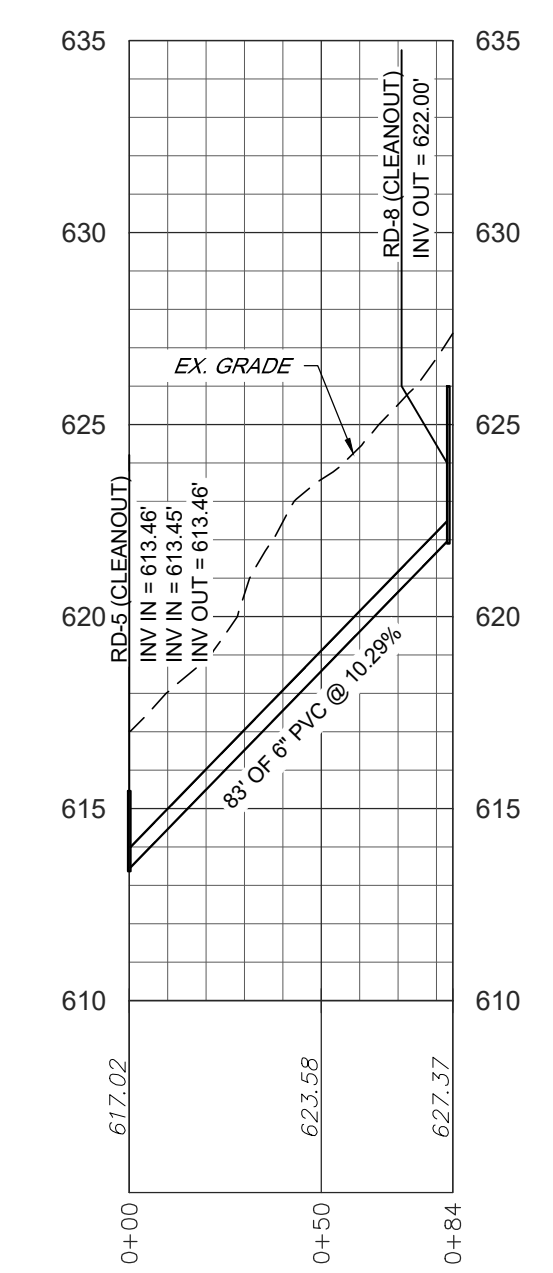
STORMWATER - RD-1 TO RD-4



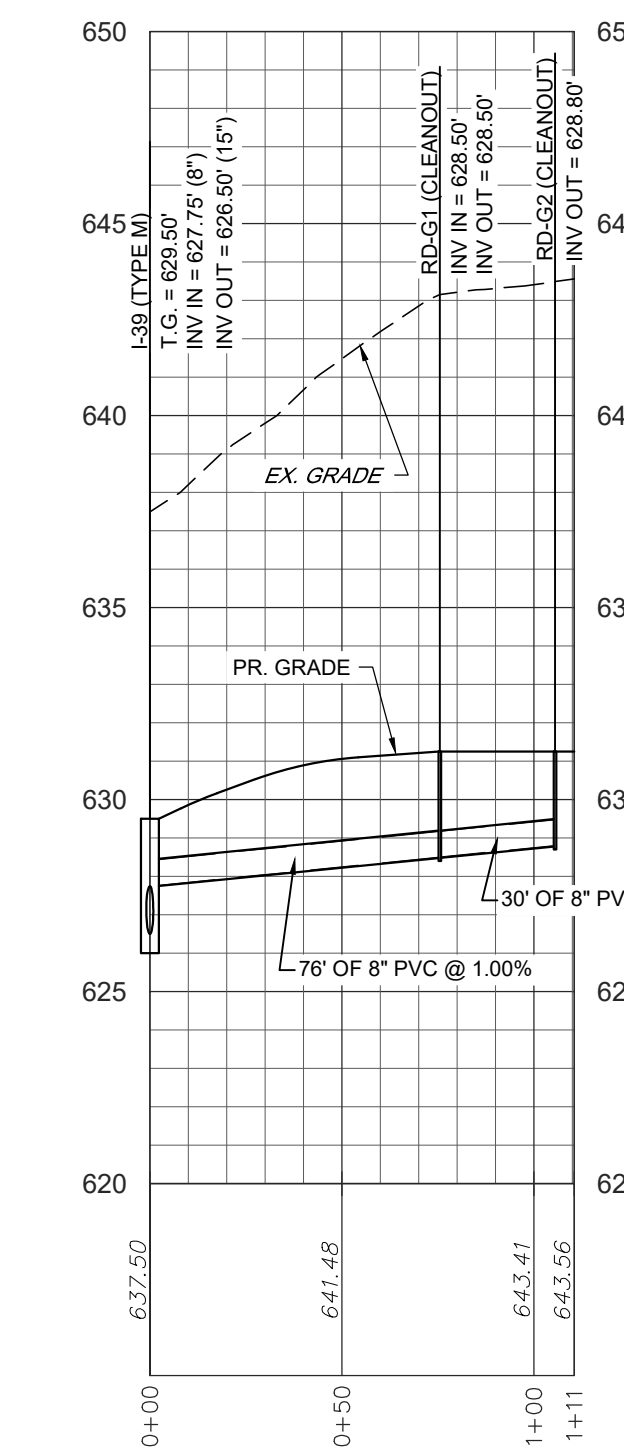
STORMWATER - EW-J1 TO RD-J2



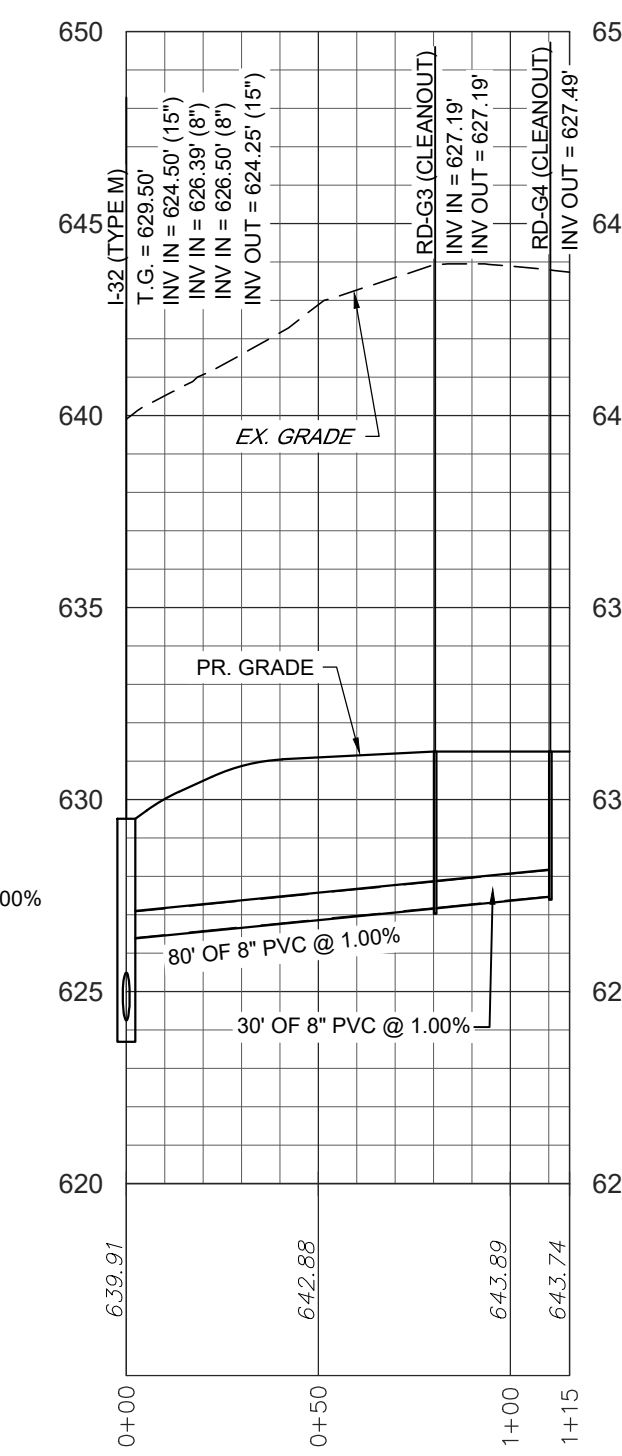
STORMWATER - I-10 TO RD-7



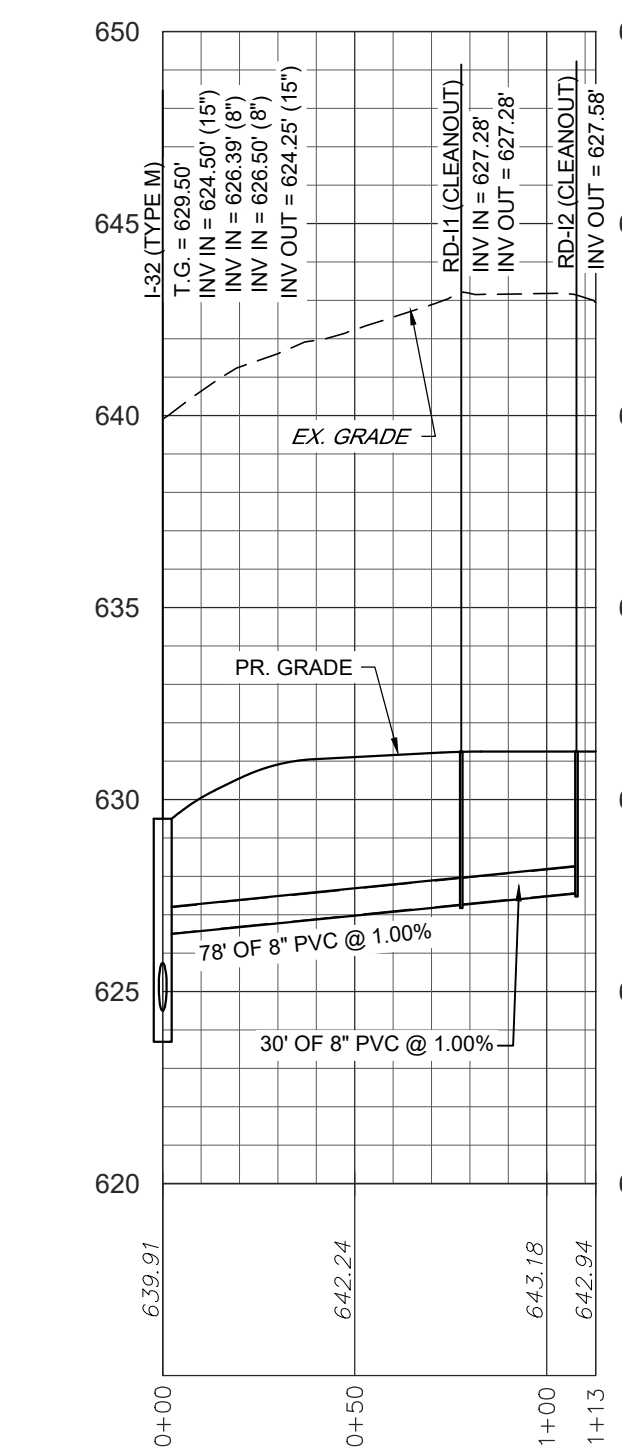
STORMWATER - RD-5 TO RD-8



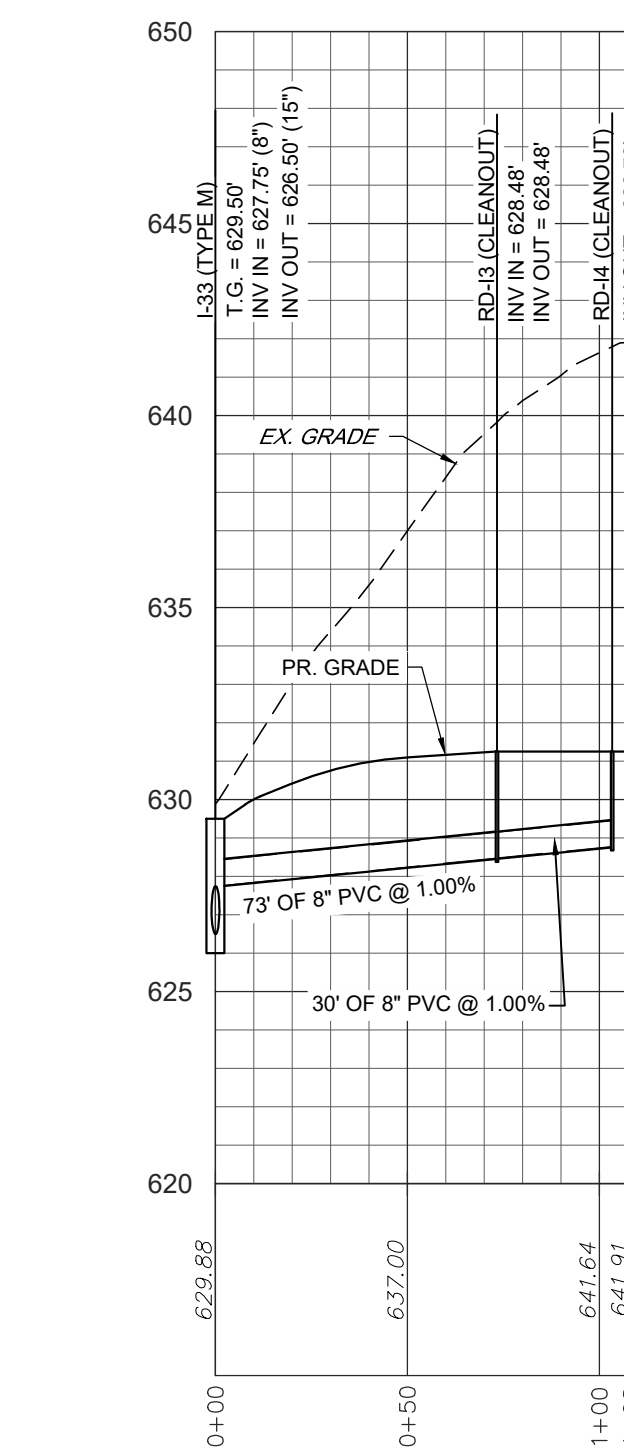
STORMWATER - I-39 TO RD-G2



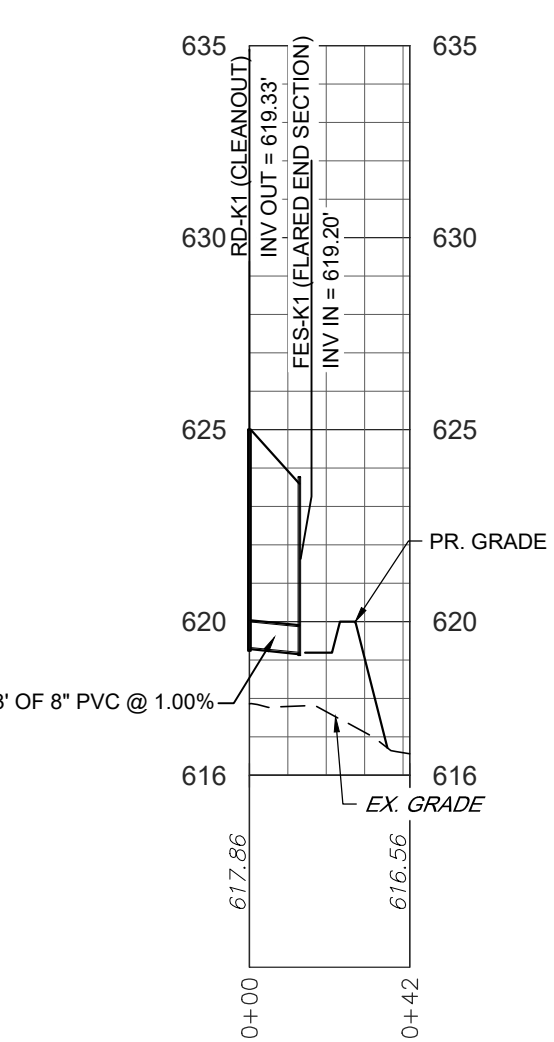
STORMWATER - I-32 TO RD-G4



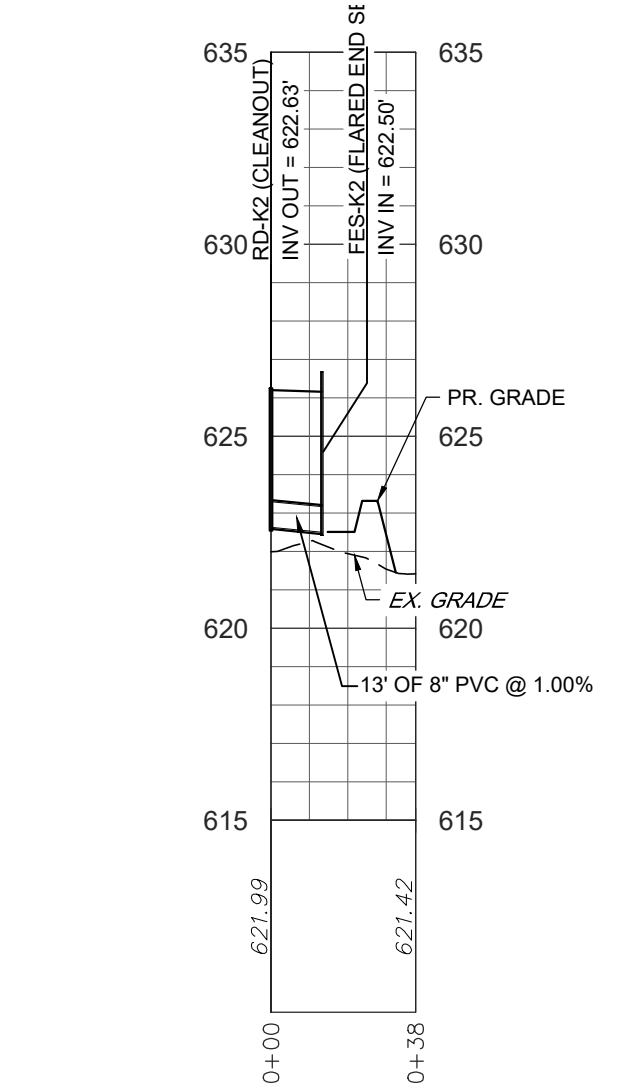
STORMWATER - I-32 TO RD-I2



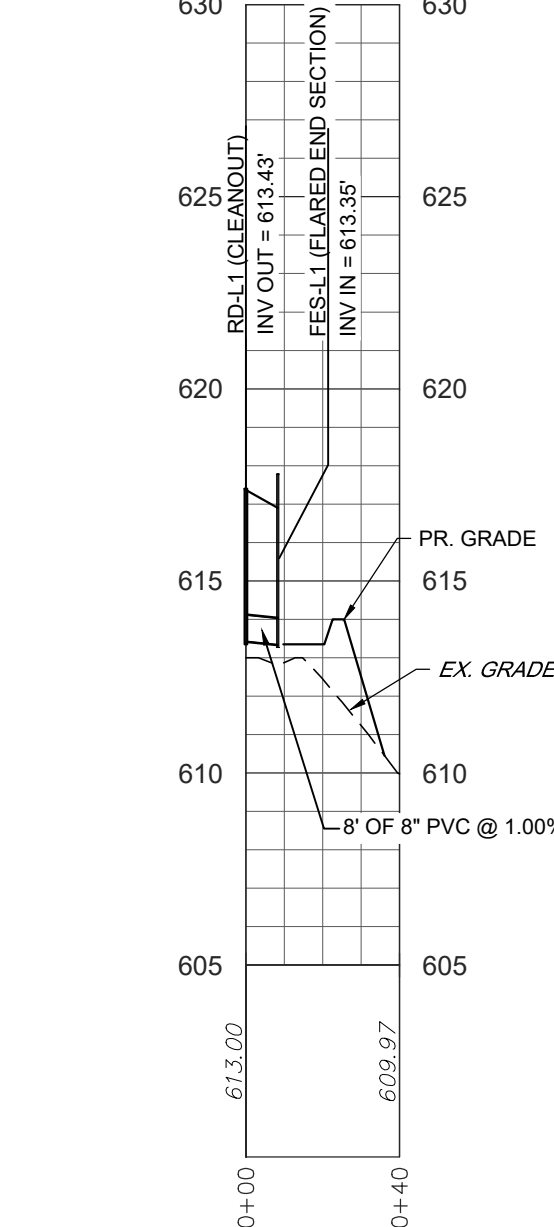
STORMWATER - I-33 TO RD-I4



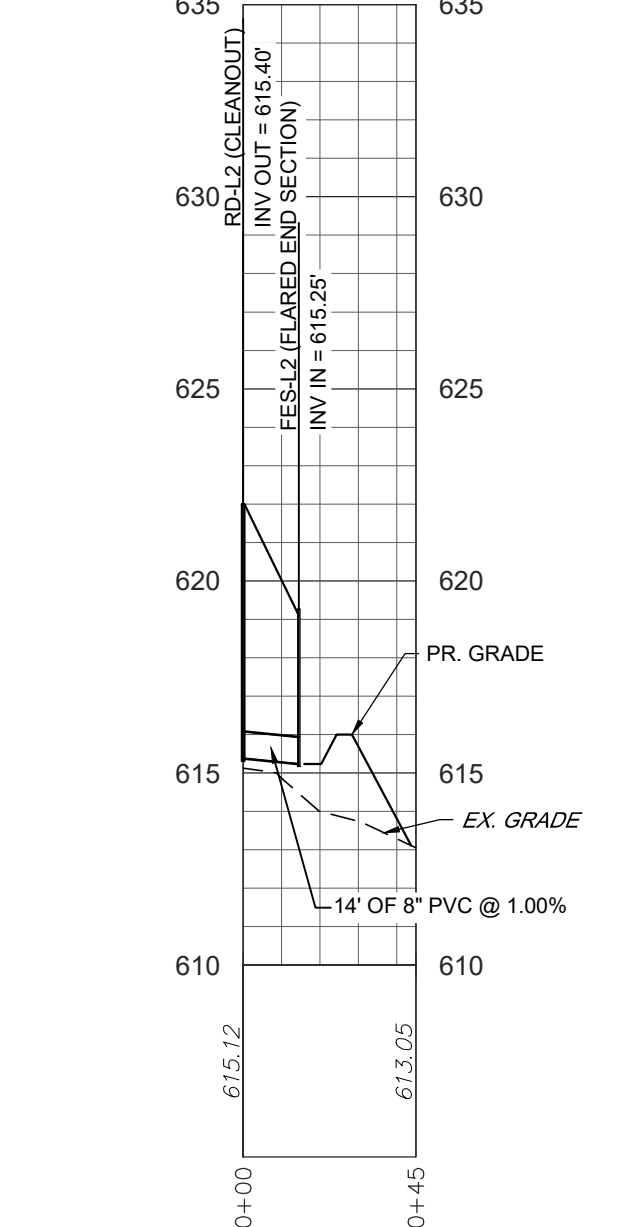
STORMWATER - EW-K1 TO RD-K1



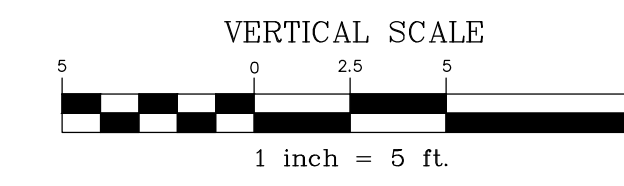
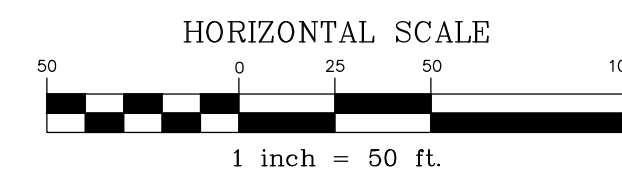
STORMWATER - EW-K2 TO RD-K2



STORMWATER - EW-L1 TO RD-L1

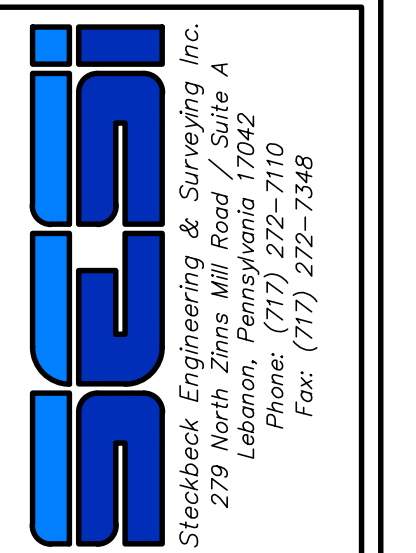


STORMWATER - EW-L2 TO RD-L2



REVISION	DATE	BY
PER ARRO COMMENT LETTER DATED 4-3-23	5-8-23	CDS
PER LCPD LETTER DATED 4-4-23	5-12-23	CDS
PER COLA COMMENTS DATED 3-31-23	5-12-23	CDS
PER ARRO COMMENT LETTER DATED 6-6-23	6-28-23	CDS
PER ARRO COMMENT LETTER DATED 7-13-23	8-4-23	CDS

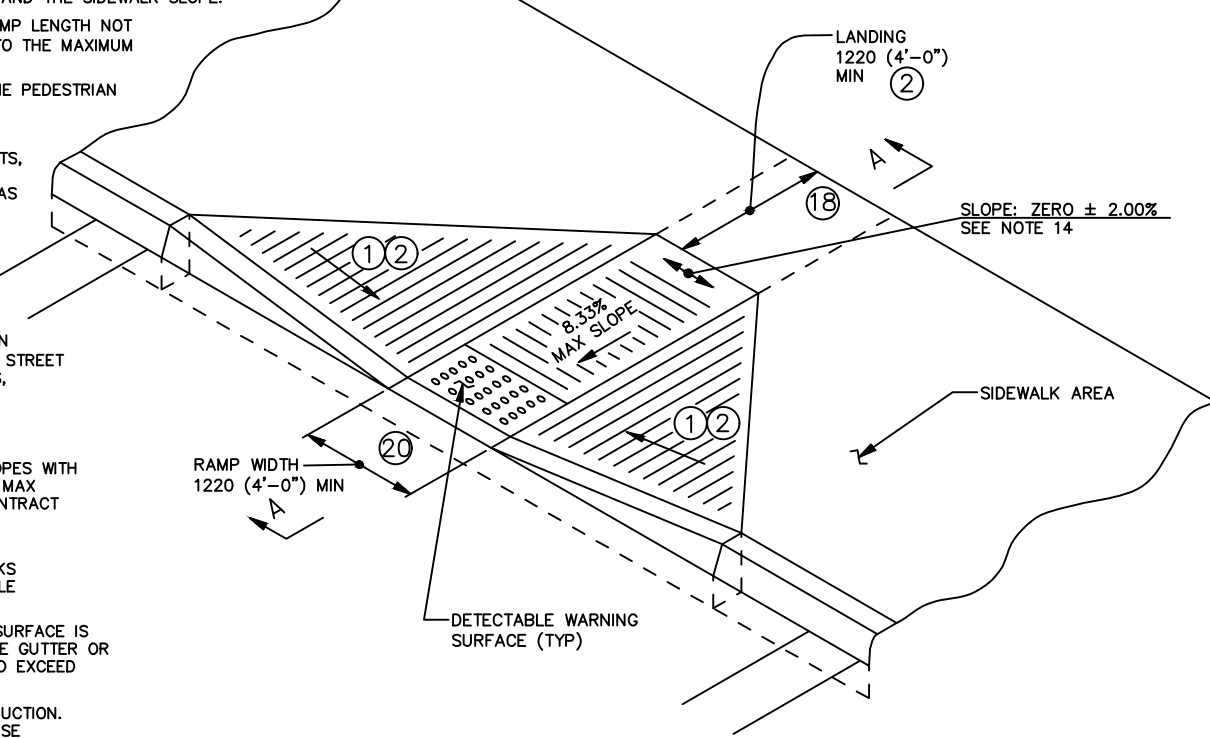
**PROFILES**  
 For  
**PRELIMINARY/FINAL SUBDIVISION & LAND DEVELOPMENT PLANS**  
**BRIAR RIDGE COMMONS - APARTMENTS**  
 located in  
 NORTH LEBANON TOWNSHIP  
 LEBANON County, Pennsylvania



FIELD CREW: MOD_JEC
BASE MAP: JEC
DRAWN: CDS
DESIGN: CDS
CHECKED: SAS
DATE: 3/1/23
SCALE: AS NOTED
PROJECT #135-19-001

**NOTES**

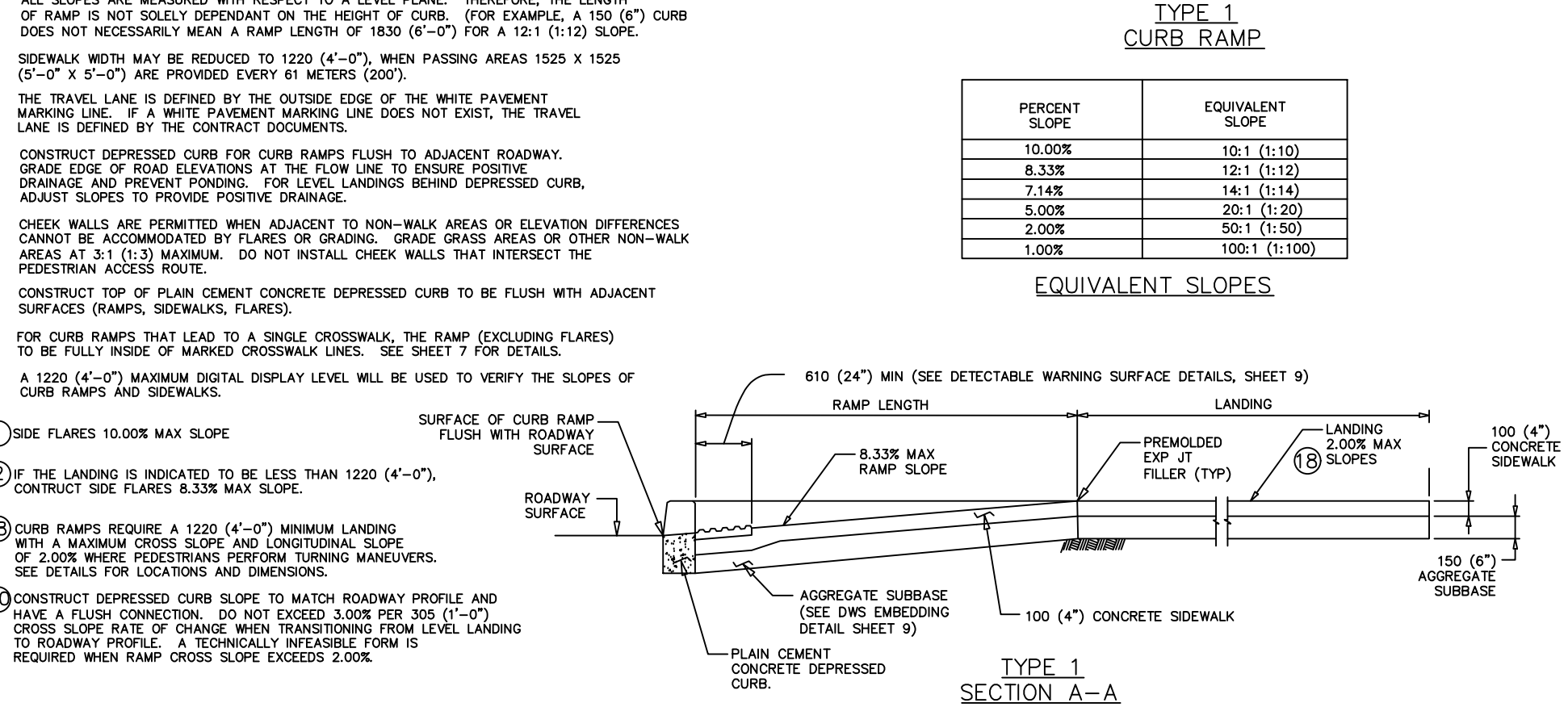
PROVIDE MATERIALS AND CONSTRUCTION MEETING THE REQUIREMENTS OF PUBLICATION 408, SECTION 305, 409, 630, 678 AND 684.  
 PROVIDE EXPANSION JOINT MATERIAL 13 (3/4)" THICK WHERE CURB RAMP ADJONS ANY RIGID PAVEMENT, SIDEWALK OR STRUCTURE WITH THE TOP OF JOINT FILLER FLUSH WITH ADJACENT CONCRETE SURFACE.  
 CONSTRUCT CURB RAMP FLARE WITH A MINIMUM 1200 X 1200 (4'-0") MIN. CLEAR RAMP LENGTH BEYOND THE CURB FACE WITHIN THE WIDTH OF THE CROSSWALK AND MOLLY OUTSIDE THE PARALLEL VEHICLE TRAVEL LANE.  
 SEAL JOINTS WITH AN APPROVED SEALING MATERIAL.  
 PROVIDE SLIP RESISTANCE ON CURB RAMP BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP. EXTEND TEXTURE THE FULL WIDTH AND LENGTH OF THE CURB RAMP INCLUDING FLARED SIDE RAMPS. MODIFY CONSTRUCTION DETAILS TO ADAPT DIMENSIONS TO EXISTING CURB HEIGHTS WHERE THE CURB IS LESS THAN THE STANDARD 205 (8") HEIGHT.  
 CURB RAMP AND SIDE FLARE LENGTHS ARE VARIABLE AND BASED ON CURB HEIGHT AND THE SIDEWALK SLOPE. TO AVOID CHANGING GRADE INDEFINITELY TRAVELING THE HEIGHT OF CURB RAMP LENGTH NOT TO EXCEED 4000 (10'-0"). ADJUST RAMP SLOPE AS NEEDED TO PROVIDE ACCESS TO THE MAXIMUM EXTENDED LENGTH.  
 NON-WALK AREA IS AN OBSTRUCTED OR GRASS/NON-PAVED AREA ADJACENT TO THE PEDESTRIAN ACCESS ROUTE THAT IS NOT USED BY THE PEDESTRIAN FOR ACCESS.  
 THE DETAILS DEPICT PEDESTRIAN PUSHBUTTON HOLES TO ILLUSTRATE THE RECOMMENDED PLACEMENT OF PEDESTRIAN PUSHBUTTONS. FOR ALTERNATE PROJECTS, PROVIDE ACCESS TO EXISTING PEDESTRIAN PUSHBUTTONS TO THE MAXIMUM EXTENT FEASIBLE. INSTALL PEDESTRIAN PUSHBUTTON STUB POLES, WHERE APPLICABLE, SO AS NOT TO CREATE PEDESTRIAN OBSTRUCTIONS.  
 ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE NOTED. US CUSTOMARY UNITS IN ( ) PARENTHESES.  
 ALONG DETECTABLE WARNING SURFACE TRANSCERSED COMES ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF THE RAMP AND PERPENDICULAR TO CURB.  
 PROVIDE DETECTABLE WARNING SURFACE (DWS) 610 (24") MINIMUM (IN THE DIRECTION OF PEDESTRIAN TRAVEL) ACROSS FULL WIDTH OF RAMP AT THE GRADE BREAK NEAR STREET EDGE. PROVIDE DWS THAT CONTRAST VISUALLY WITH ADJACENT SIDEWALK SURFACES. EITHER LIGHT-ON-DARK OR DARK-ON-LIGHT FOR THE FULL WIDTH OF RAMP.  
 FOR NEW CONSTRUCTION, DO NOT EXCEED 2.00% CROSS SLOPE ON THE CURB RAMP OR PEDESTRIAN ACCESSIBLE ROUTE.  
 FOR NEW CONSTRUCTION AND ALTERATIONS, CONSTRUCT CURB RAMP AND FLARE SLOPES WITH THE FLATTEST SLOPE POSSIBLE. THE SLOPES INDICATED IN THE DETAILS SHOW THE MAX. SLOPE ALLOWABLE. SLOPES THAT EXCEED THOSE INDICATED IN THE DETAILS, OR CONTRACT DOCUMENTS AS ACCEPTED AND WILL BE RECONSTRUCTED.  
 CONSTRUCT SIDEWALKS AT A LONGITUDINAL SLOPE NOT TO EXCEED 5.00% FOR ROADWAY PROFILE SLOPES THAT EXCEED 5.00%. CONSTRUCT PARALLEL SIDEWALKS ADJACENT TO ROADWAY AT A LONGITUDINAL SLOPE NOT TO EXCEED ROADWAY PROFILE SLOPE.  
 THE CHANGE IN GRADE AT THE BOTTOM OF THE CURB RAMP AND ADJOINING ROAD SURFACE IS NOT TO EXCEED AN ALGEBRAIC DIFFERENCE OF 11.00%. THE COUNTER SLOPE OF THE OUTER OR ROAD AT THE FOOT OF A CURB RAMP. LANDING OR BLENDED TRANSITION IS NOT TO EXCEED 5.00%. SEE SHEET 8 FOR DETAILS.  
 THE CONSTRUCTION STANDARDS DEPICTED ARE MOST APPROPRIATE FOR NEW CONSTRUCTION. ALL CONSTRUCTION MUST MEET THE STANDARDS CONTAINED HEREON UNLESS OTHERWISE NOTED OR DIRECTED.  
 ALL SLOPES ARE MEASURED WITH RESPECT TO A LEVEL PLANE. THEREFORE, THE LENGTH OF RAMP IS NOT NECESSARILY DEPENDANT ON THE HEIGHT OF CURB. (FOR EXAMPLE, A 150 (6") CURB DOES NOT NECESSARILY MEAN A RAMP LENGTH OF 1830 (6'-0") FOR A 12:1 (1:12) SLOPE.  
 SIDEWALK WIDTH MAY BE REDUCED TO 1220 (4'-0"), WHEN PASSING AREAS 1525 X 1525 (5'-7" X 5'-7") ARE PROVIDED EVERY 61 METERS (200').  
 THE TRAVEL LANE IS DEFINED BY THE OUTSIDE EDGE OF THE WHITE PAVEMENT SURFACE. THE TRAVEL LANE IS DEFINED BY THE CONTRACT DOCUMENTS.  
 CONSTRUCT DEPRESSED CURB FOR CURB RAMPS FLUSH TO ADJACENT ROADWAY. GRADE EDGE OF ROAD ELEVATIONS AT THE FLOW LINE TO ENSURE POSITIVE DRAINAGE AND PREVENT PONDING. FOR LEVEL LANDINGS BEHIND DEPRESSED CURB, ADJUST SLOPE TO PROVIDE POSITIVE DRAINAGE.  
 CHECK WALLS ARE PERMITTED WHEN ADJACENT TO NON-WALK AREAS OR ELEVATION DIFFERENCES CANNOT BE ACCOMMODATED BY FLARES OR GRADING. GRADE GRASS AREAS OR OTHER NON-WALK AREAS AT 3:1 (1:3) MAXIMUM. DO NOT INSTALL CHECK WALLS THAT INTERSECT THE PEDESTRIAN ACCESS ROUTE.  
 CONSTRUCT TOP OF PLAN CEMENT CONCRETE DEPRESSED CURB TO BE FLUSH WITH ADJACENT SURFACES (RAMPS, SIDEWALKS, FLARES).  
 FOR CURB RAMPS THAT LEAD TO A SINGLE CROSSWALK, THE RAMP (EXCLUDING FLARES) TO BE FULLY INSIDE OF MARKED CROSSWALK LINES. SEE SHEET 7 FOR DETAILS.  
 A 1220 (4'-0") MAXIMUM DIGITAL DISPLAY LEVEL WILL BE USED TO VERIFY THE SLOPES OF CURB RAMPS AND SIDEWALKS.



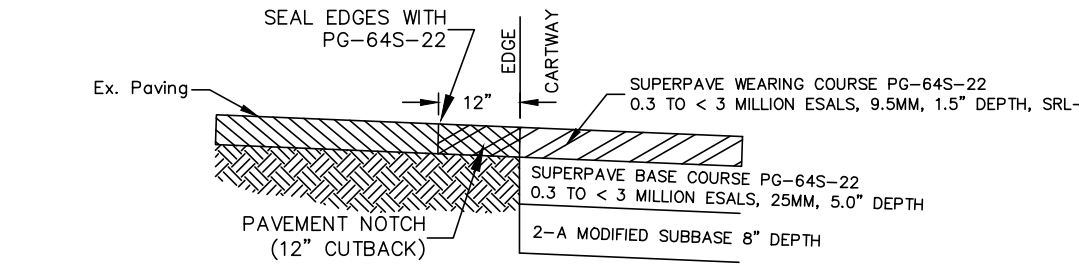
**TYPE 1 CURB RAMP**

PERCENT SLOPE	EQUIVALENT SLOPE
10.00%	10:1 (1:10)
8.33%	12:1 (1:12)
7.14%	14:1 (1:14)
5.00%	20:1 (1:20)
2.00%	50:1 (1:50)
1.00%	100:1 (1:100)

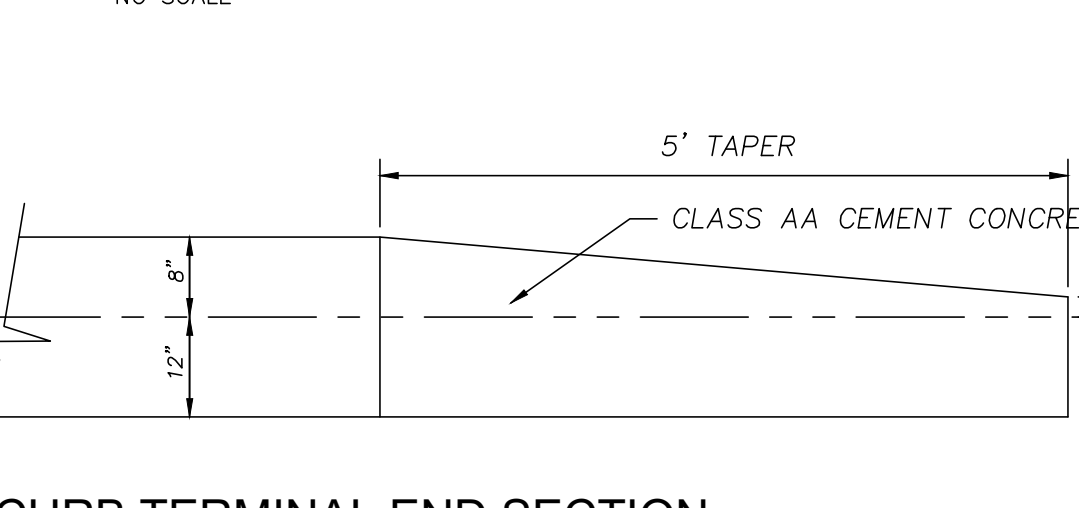
**EQUIVALENT SLOPES**



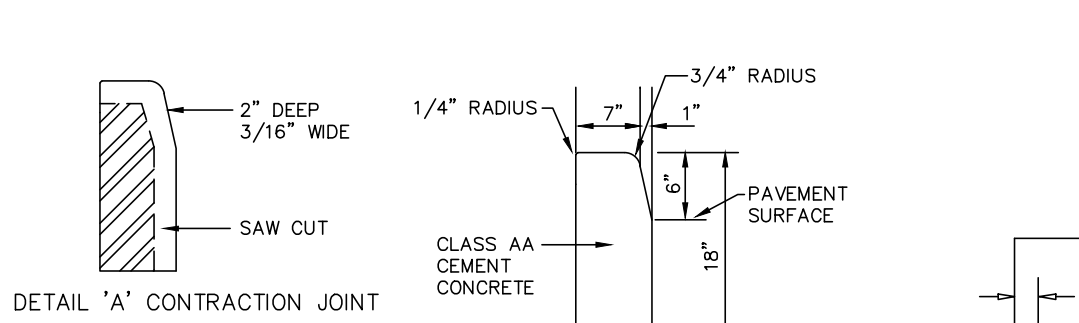
**TYPE 1 CURB RAMP DETAIL (PENNDOT RC-67M)**  
NO SCALE



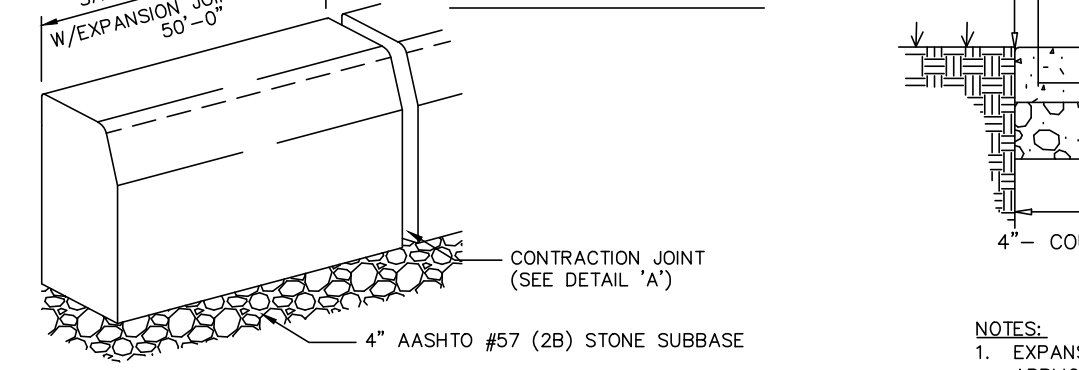
**PAVEMENT NOTCH DETAIL**  
NO SCALE



**CURB TERMINAL END SECTION**  
NO SCALE



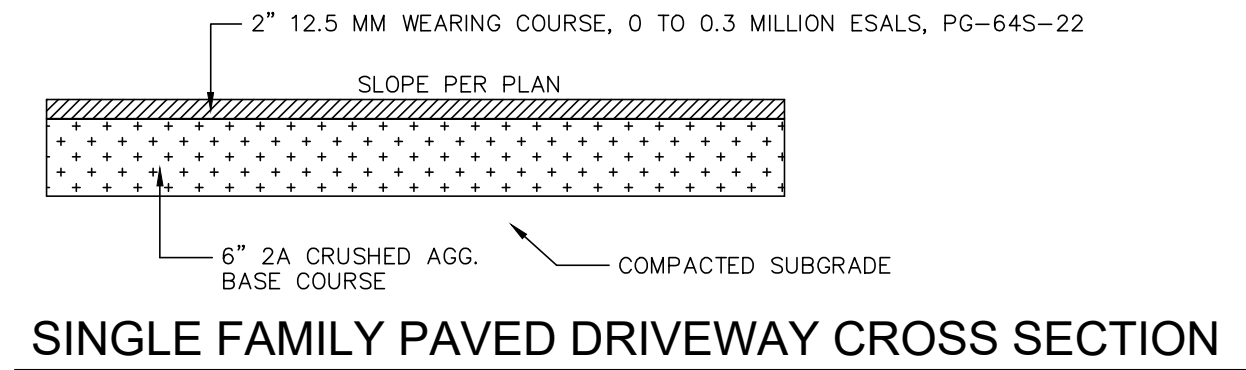
**TYPICAL PAINTED ACCESSIBLE SYMBOL DETAIL**  
NO SCALE



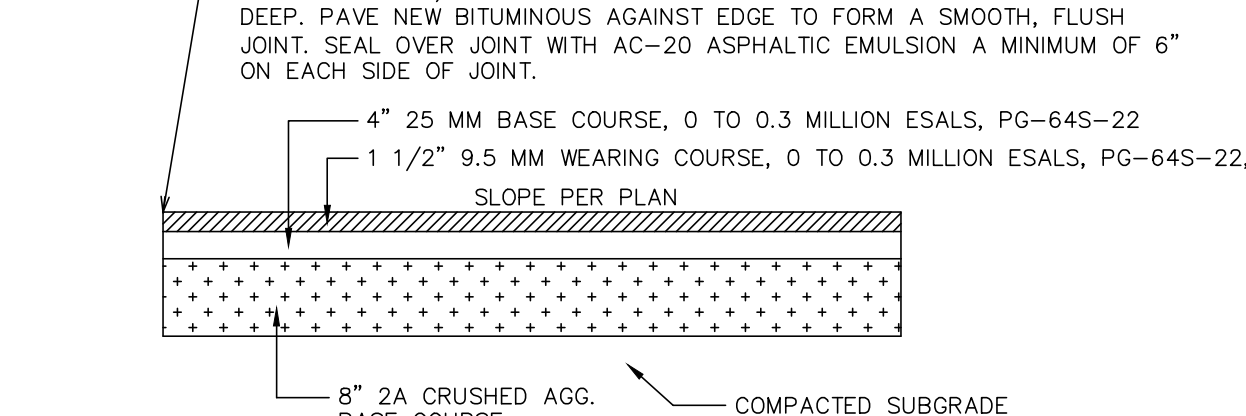
**NOTES:**  
 1. MATERIALS AND CONSTRUCTION SHALL MEET THE REQUIREMENTS OF PUBLICATION 408, SECTION 630, FOR PLAN CEMENT CONCRETE CURB AND DEPRESSED CURB, SECTION 640 FOR PLAN CEMENT CONCRETE CURB AND FOR PLAN CEMENT CONCRETE CURB CUTTER.  
 2. SPACE CONTRACTION JOINTS IN UNIFORM LENGTHS OR SECTIONS.  
 3. PLACE 3/4"-HIGH PREMOLDED EXPANSION JOINT FILLER MATERIAL AT STRUCTURES AND AT THE END OF THE WORK DAY. CUT MATERIAL TO CONFORM TO AREA ADJACENT TO CURB TO CONFORM TO CROSS SECTIONAL AREA OF CURB.  
 4. SEE RC-50 FOR PLAN CEMENT CONCRETE CURB SLOPED TOP TREATMENT AT END OF STRUCTURE.  
 5. CURBING SHALL BE FREE OF STRESS CRACKS AND OTHER DEFORMITIES.

**6" STRAIGHT CONCRETE CURB DETAIL**  
NO SCALE

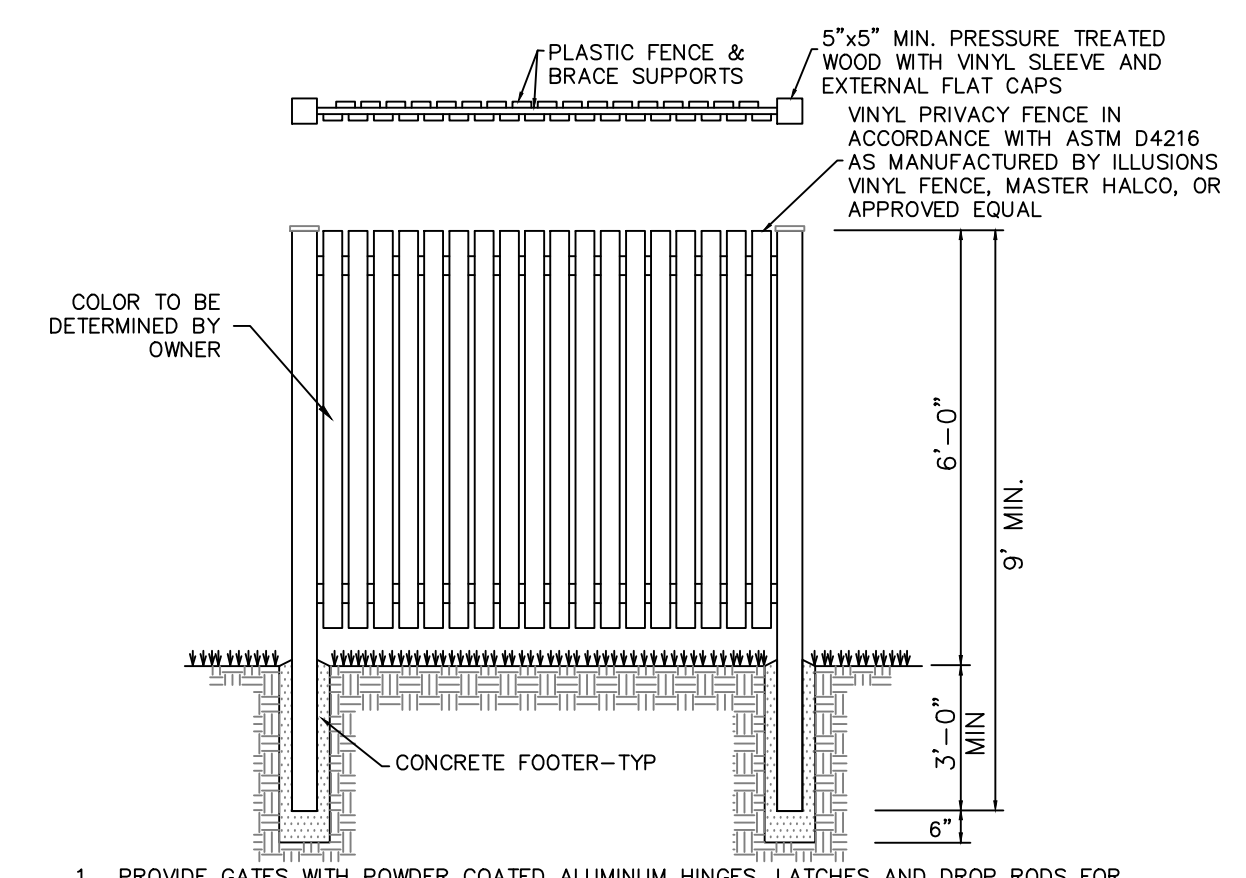
**CONCRETE SIDEWALK/DRIVEWAY APRON DETAIL**  
NO SCALE



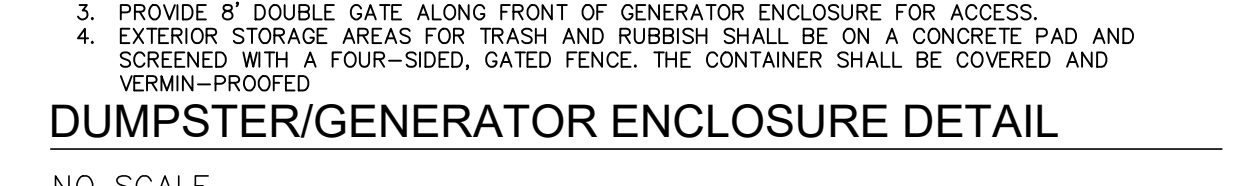
**SINGLE FAMILY PAVED DRIVEWAY CROSS SECTION**  
NO SCALE



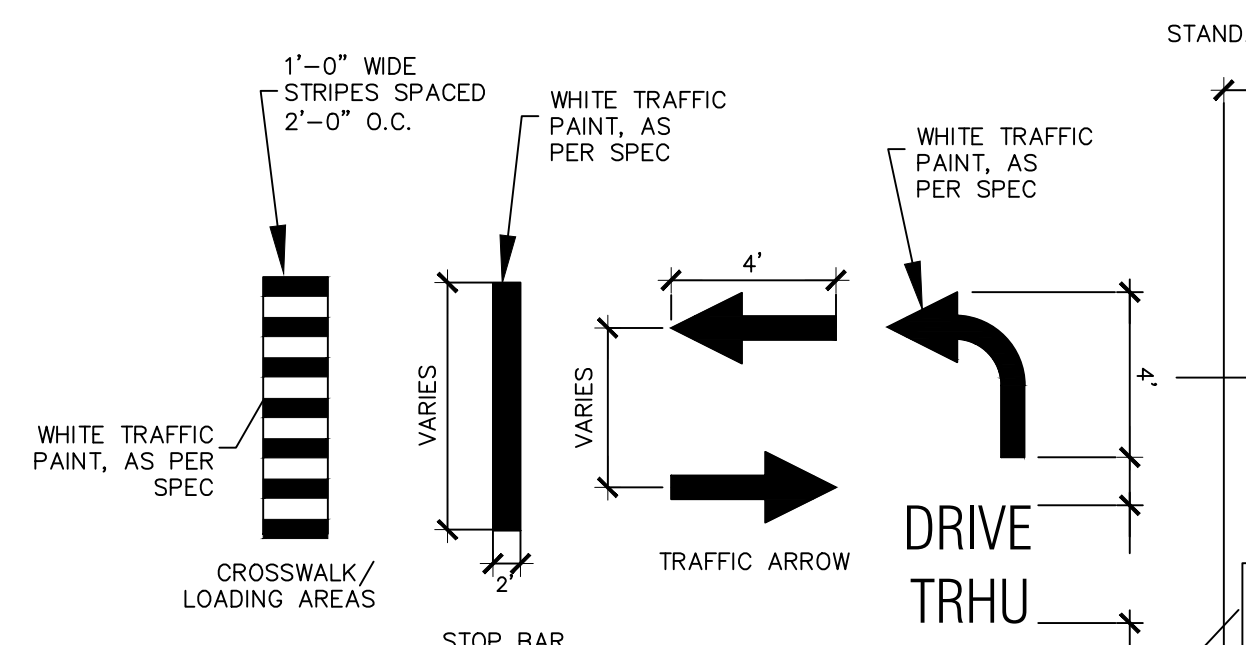
**BITUMINOUS PAVEMENT CROSS SECTION (STANDARD ACCESS DRIVES & PARKING LOTS)**  
NO SCALE



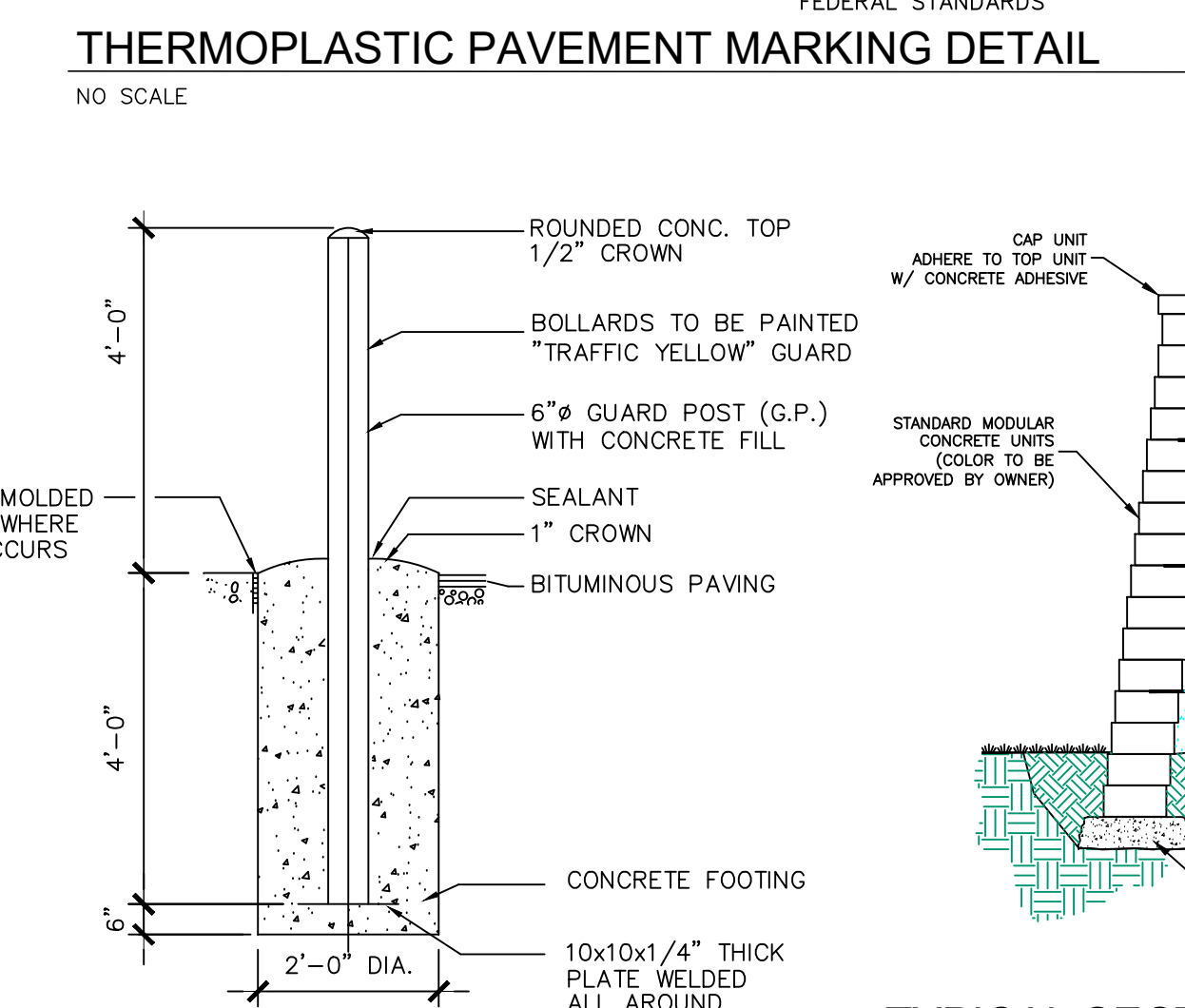
**DUMPSTER/GENERATOR ENCLOSURE DETAIL**  
NO SCALE



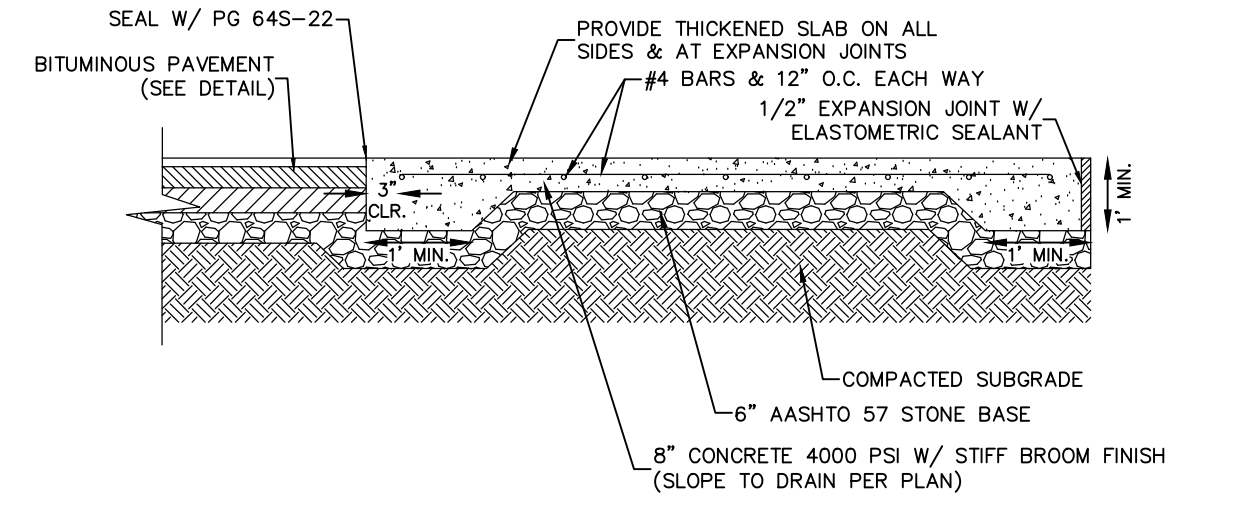
**THERMOPLASTIC PAVEMENT MARKING DETAIL**  
NO SCALE



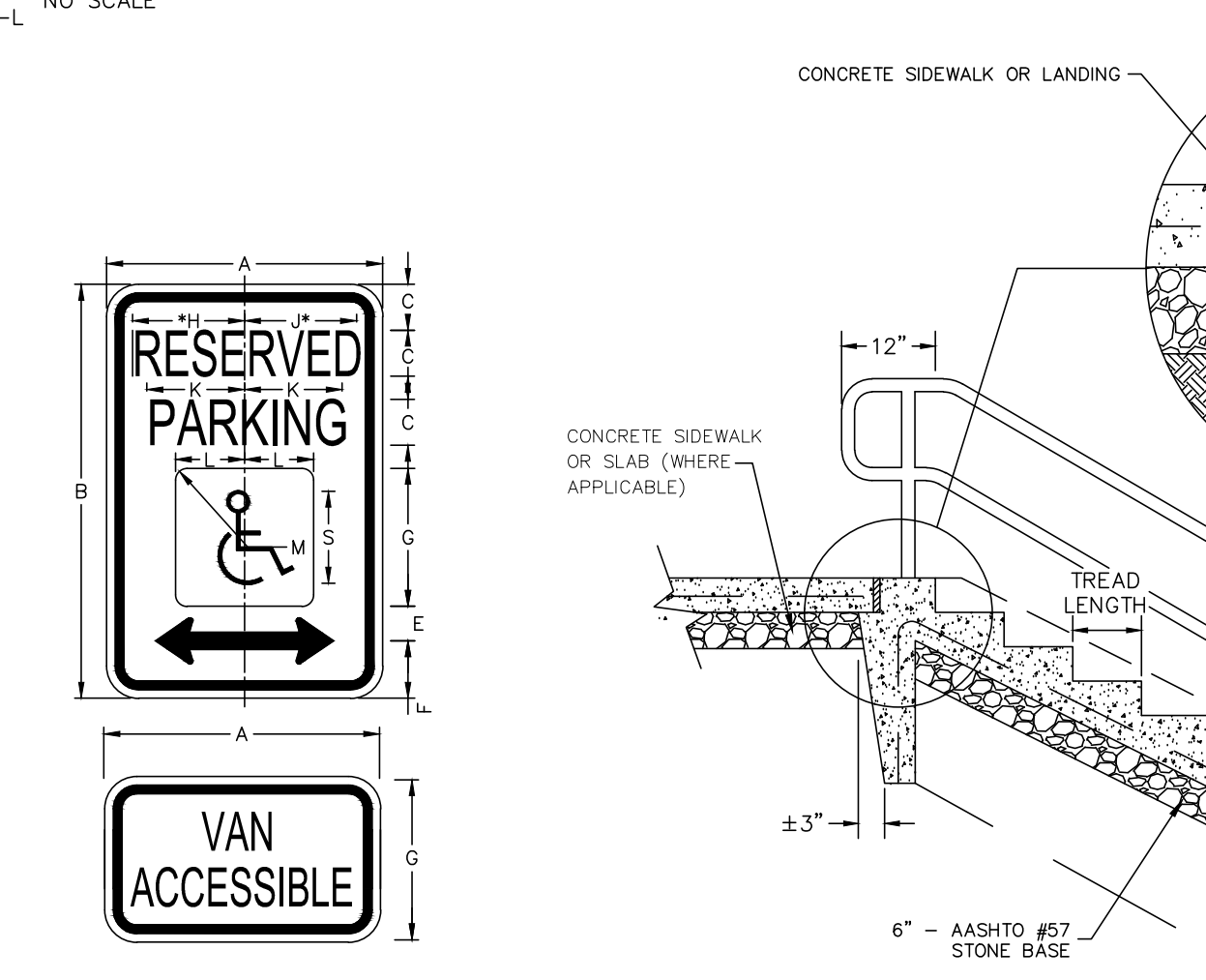
**TYPICAL SECTION-REINFORCED RETAINING WALL**  
NO SCALE



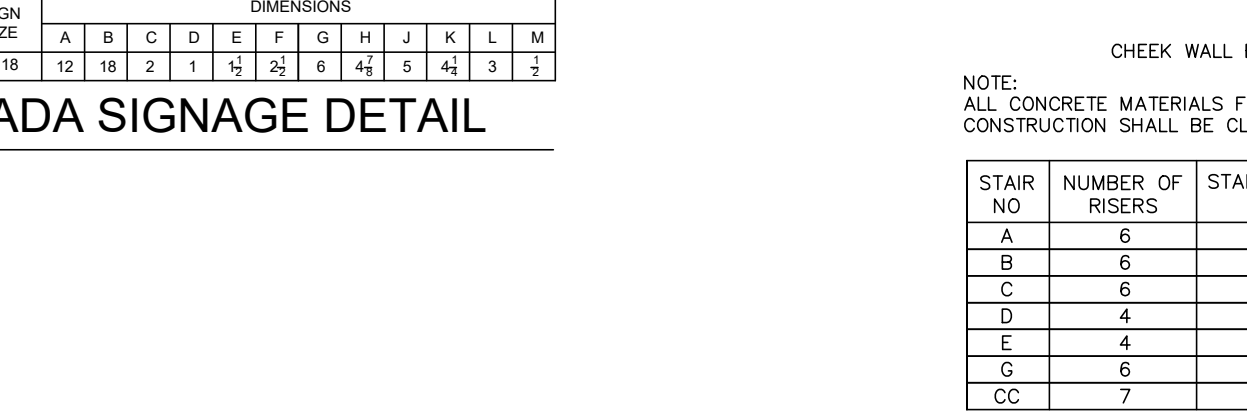
**TYPICAL BOLLARD POST DETAIL**  
NO SCALE



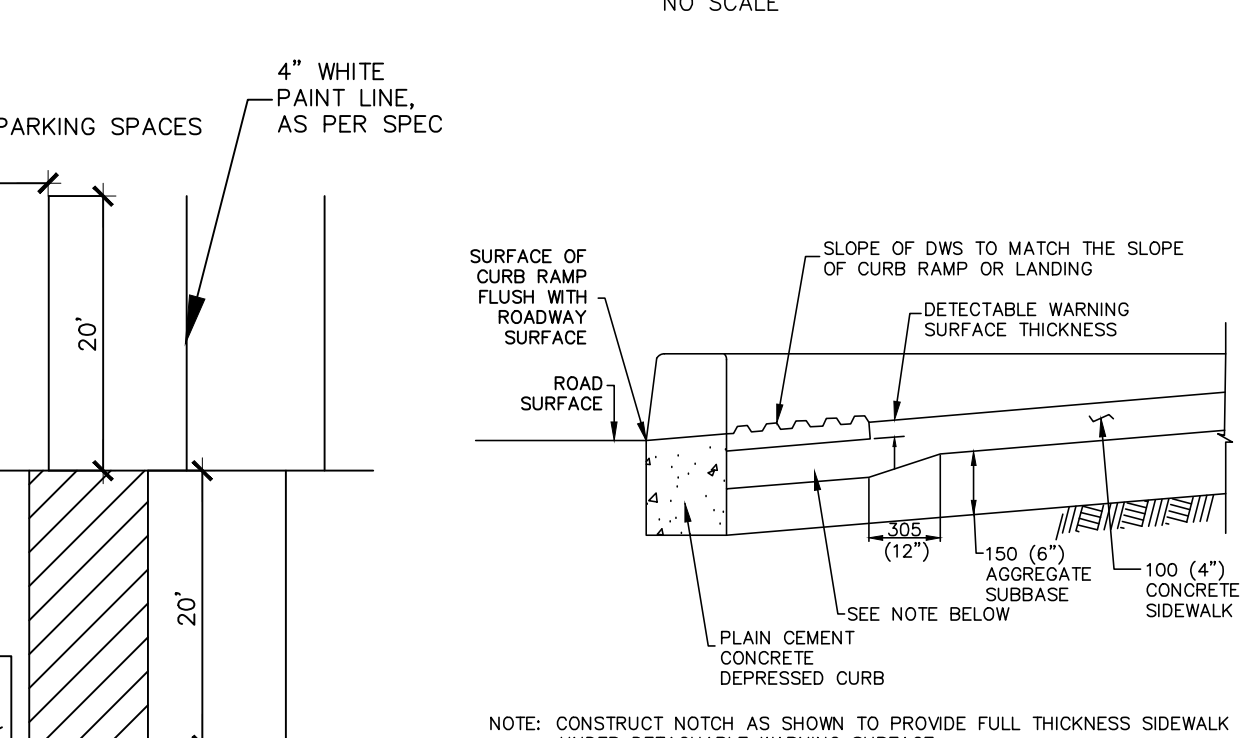
**CONCRETE DUMPSTER PAD/LOADING AREA DETAIL**  
NO SCALE



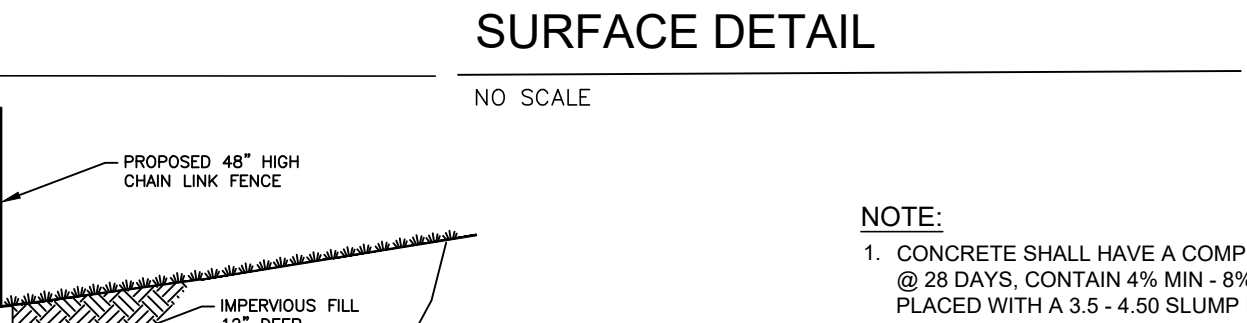
**ADA SIGNAGE DETAIL**



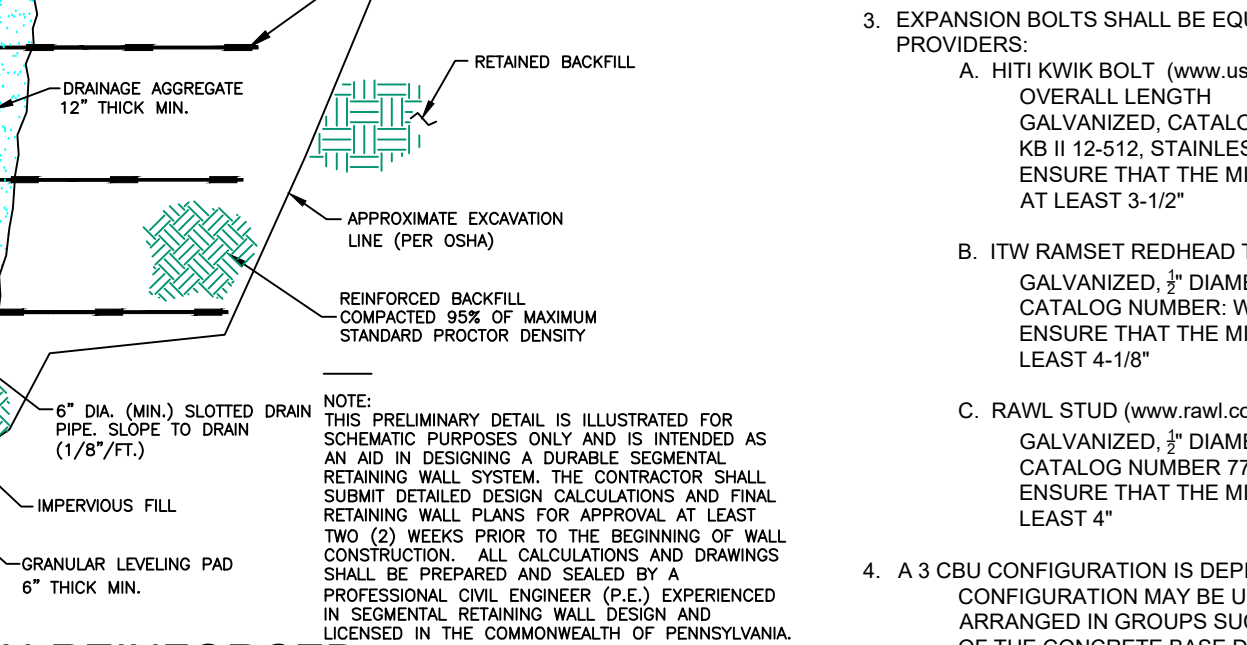
**EXTERIOR STAIR DETAIL**  
NO SCALE



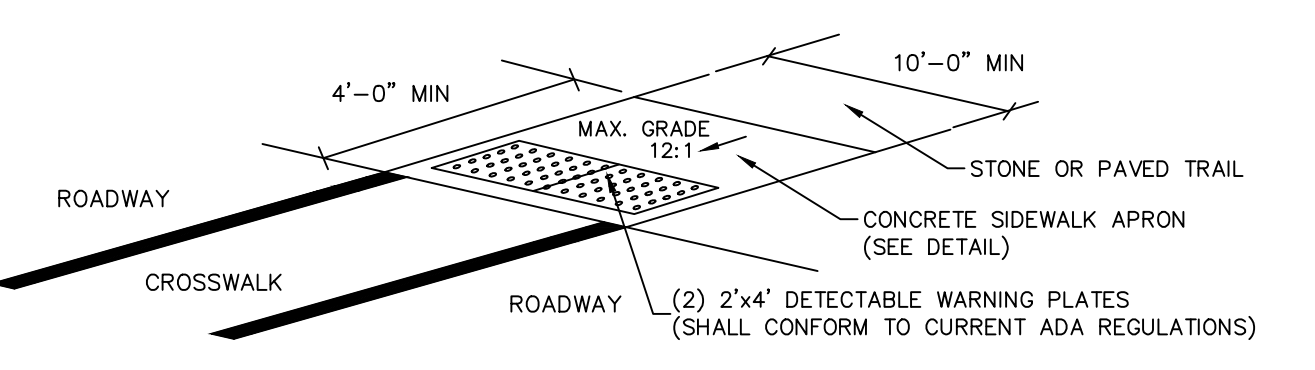
**DETECTABLE WARNING SURFACE DETAIL**  
NO SCALE



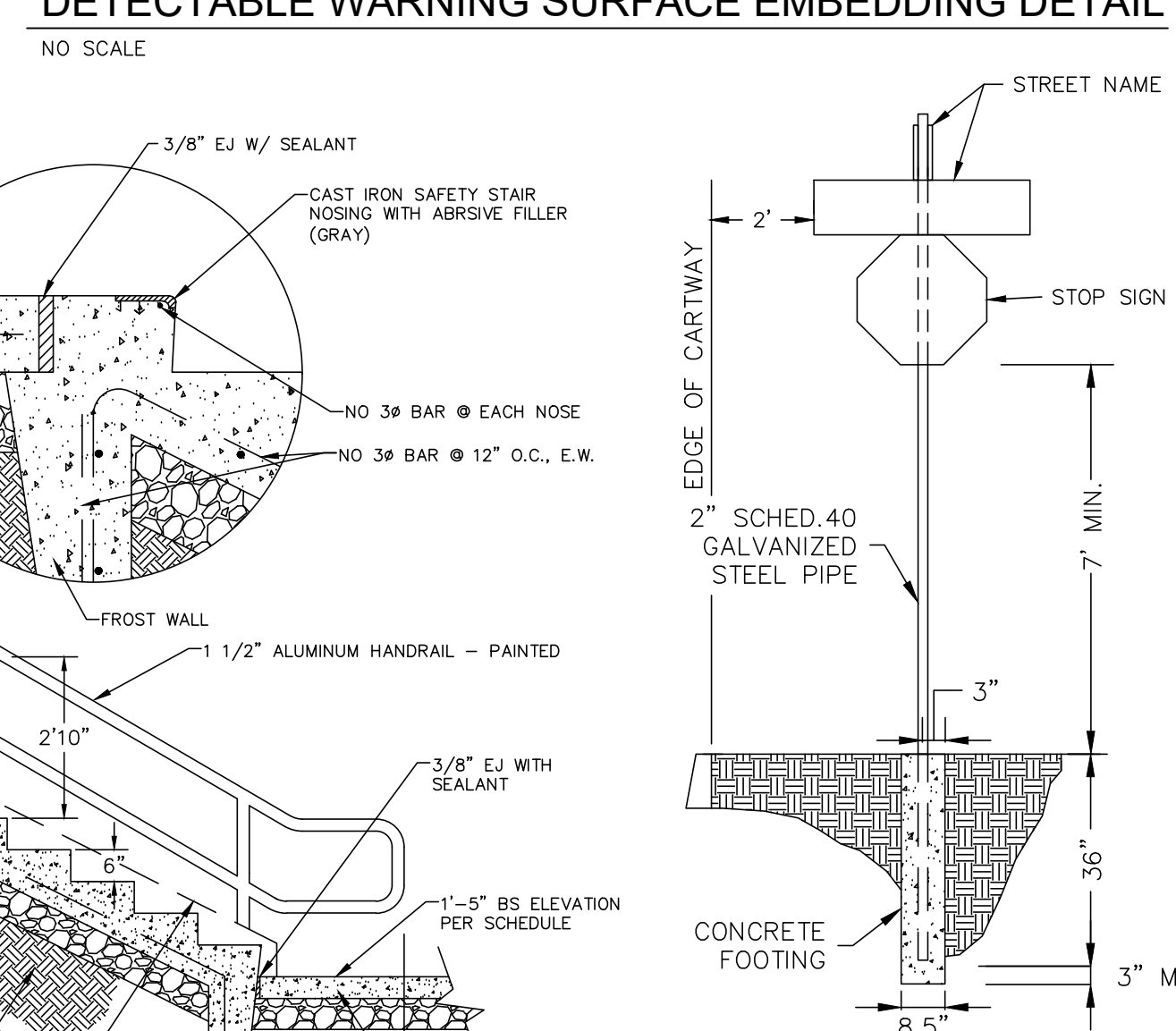
**ADA SIGN POST DETAIL**  
NO SCALE



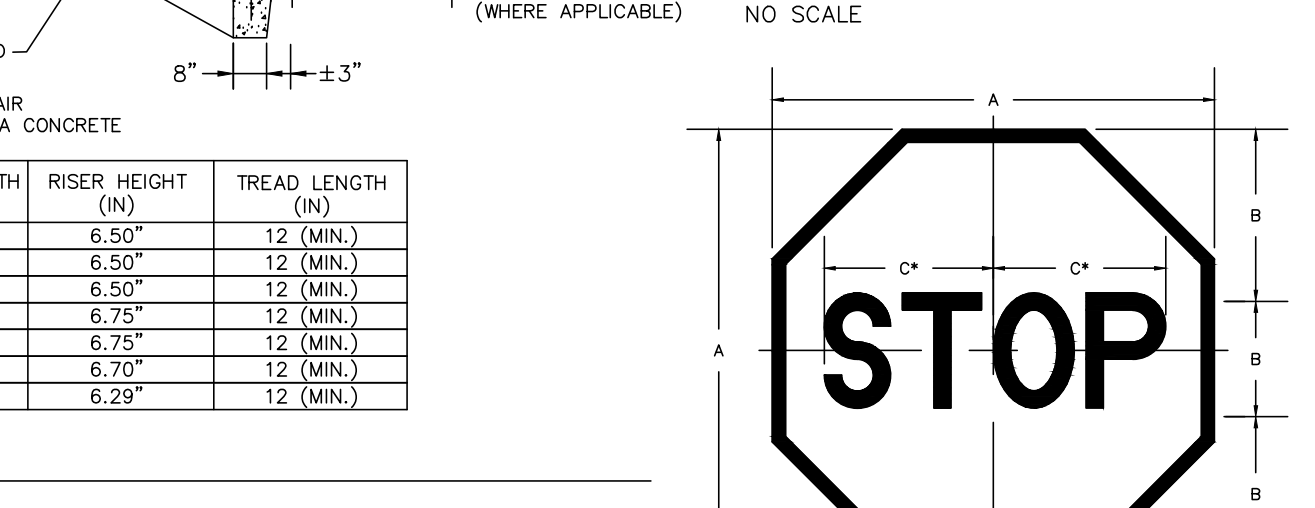
**TYPICAL CLUSTER BOX UNIT DETAIL**  
NO SCALE



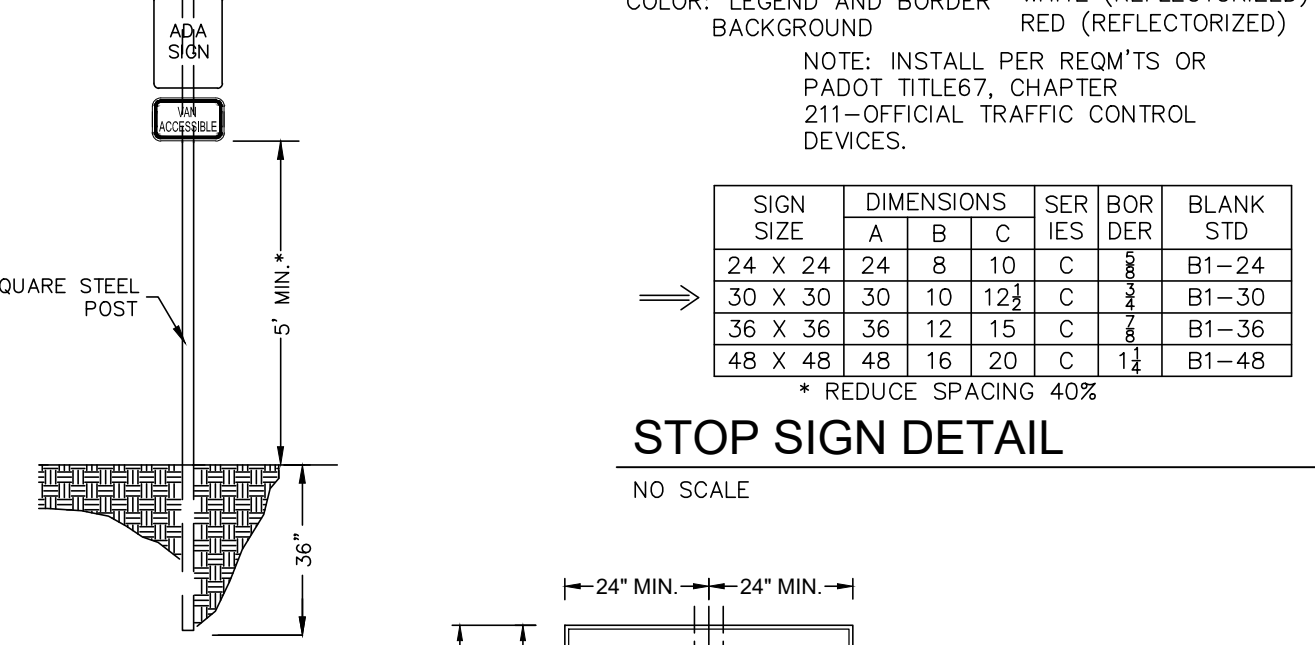
**DETECTABLE WARNING SURFACE EMBEDDING DETAIL**  
NO SCALE



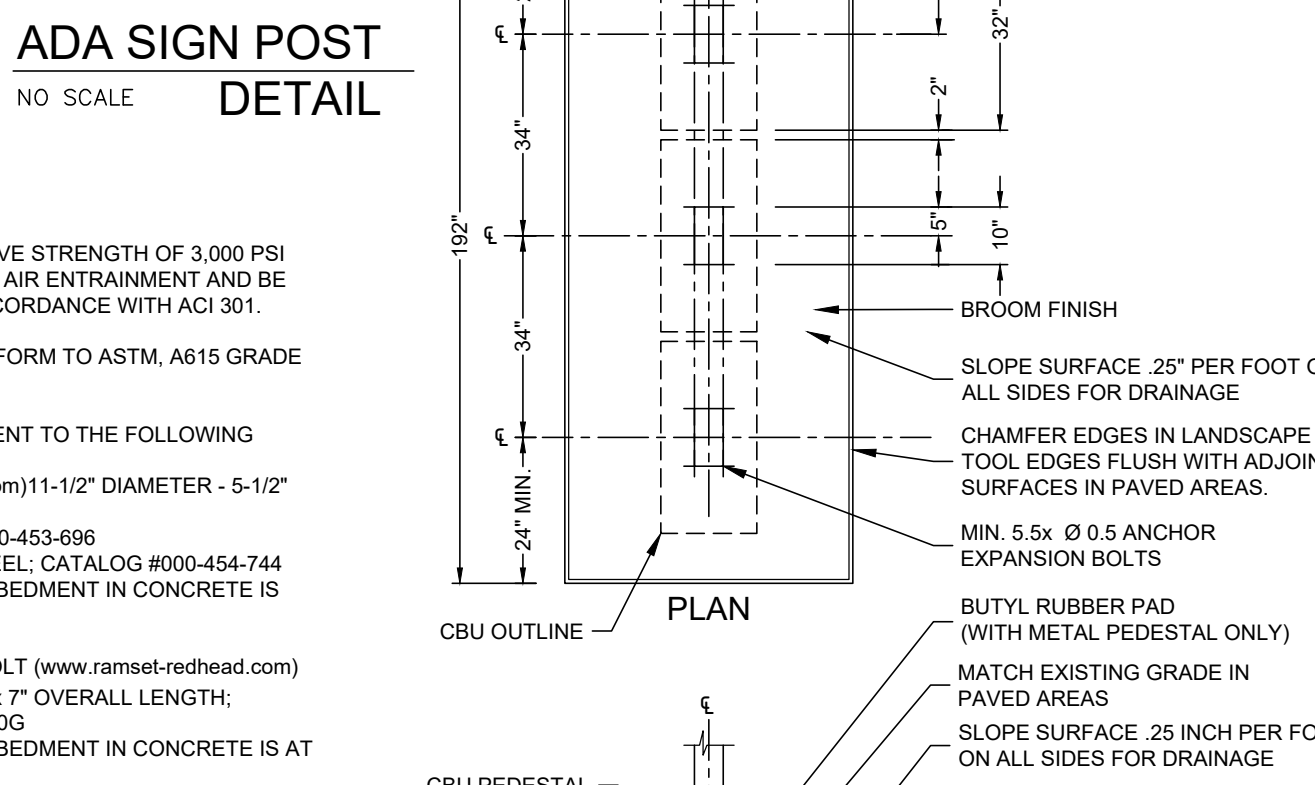
**SIGN POST DETAIL**  
NO SCALE



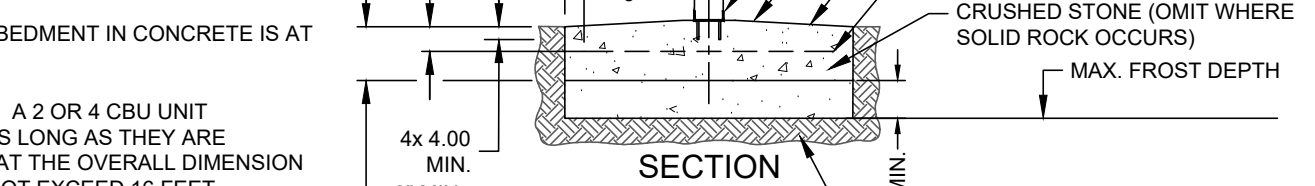
**STOP SIGN DETAIL**  
NO SCALE



**STOP SIGN DETAIL**  
NO SCALE



**TYPICAL CLUSTER BOX UNIT DETAIL**  
NO SCALE



**TYPICAL CLUSTER BOX UNIT DETAIL**  
NO SCALE

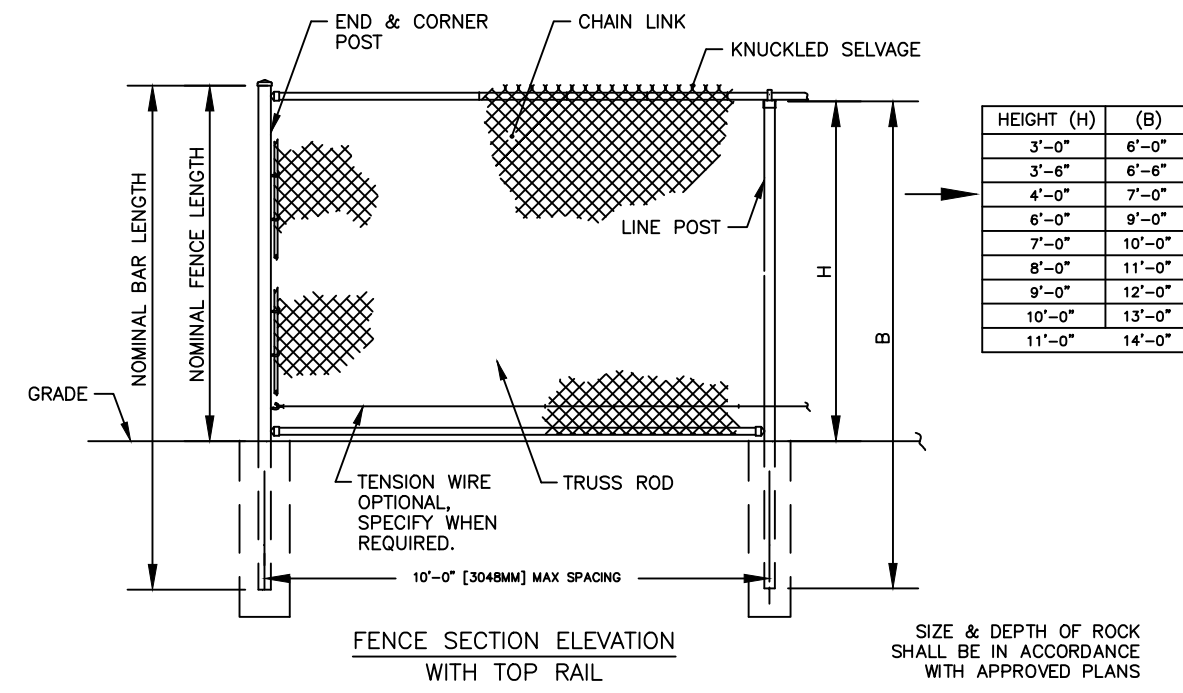
REVISION	DATE	BY
PER ARRO COMMENT LETTER DATED 4-33-23	5-8-23	CDS
PER LCPD LETTER DATED 4-4-23	5-12-23	CDS
PER COLA COMMENTS DATED 3-31-23	5-12-23	CDS
PER ARRO COMMENT LETTER DATED 6-6-23	6-28-23	CDS
PER ARRO COMMENT LETTER DATED 7-13-23	8-4-23	CDS

FIELD CREW:	MOD, JEC
BASE MAP:	JEC
DRAWN:	CDS
DESIGN:	CDS
CHECKED:	SAS
DATE:	3/1/23
SCALE:	AS NOTED
PROJECT #	135-19-001

**PRELIMINARY/FINAL SUBDIVISION & LAND DEVELOPMENT PLANS**  
 For  
**BIARRIDGE COMMONS - APARTMENTS**  
 located in  
 NORTH LEBANON TOWNSHIP  
 LEBANON County, Pennsylvania

**is**  
 Steadbeck Engineering & Surveying Inc.  
 279 Lebanon, Pennsylvania 17042  
 Phone: (717) 272-7110  
 Fax: (717) 272-7348

**22**  
 OF 28 SHEETS



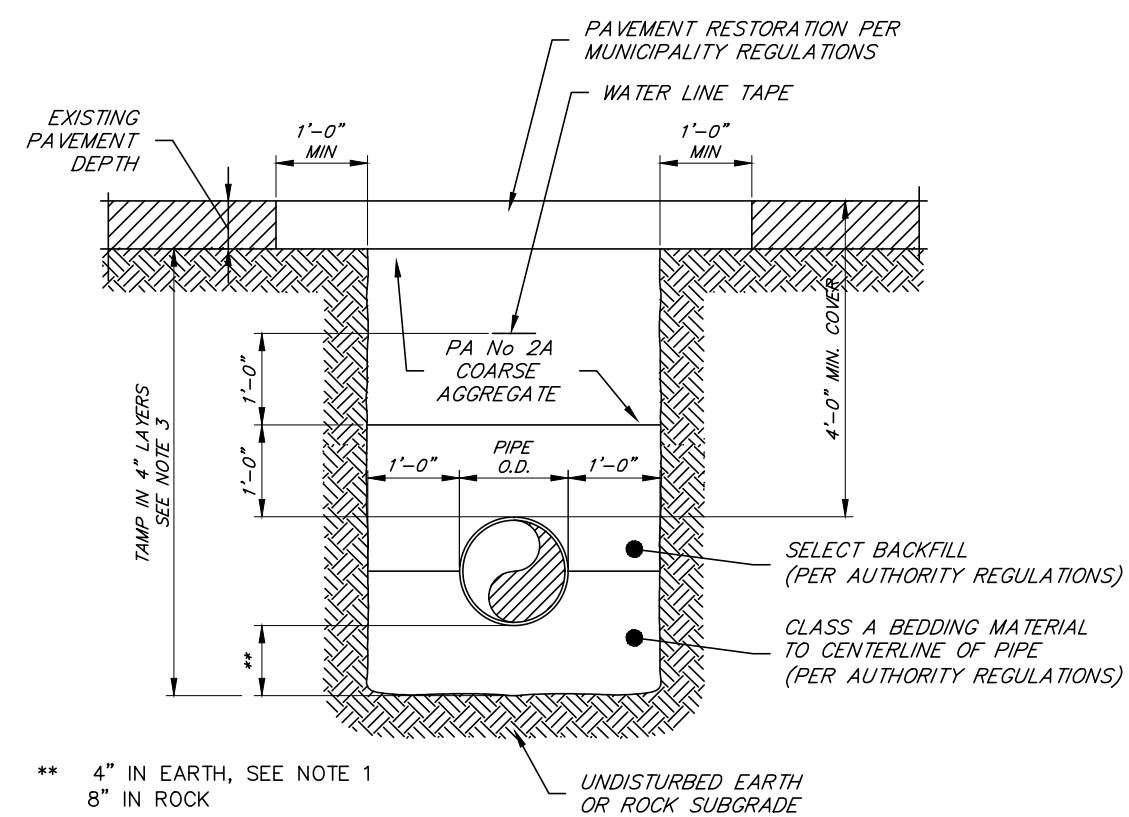
HEIGHT (H)	(B)
3'-0"	6'-0"
3'-6"	6'-6"
4'-0"	7'-0"
6'-0"	9'-0"
7'-0"	10'-0"
8'-0"	11'-0"
9'-0"	12'-0"
10'-0"	13'-0"
11'-0"	14'-0"

**BLACK PVC COATED CHAIN LINK FENCE**

NO SCALE

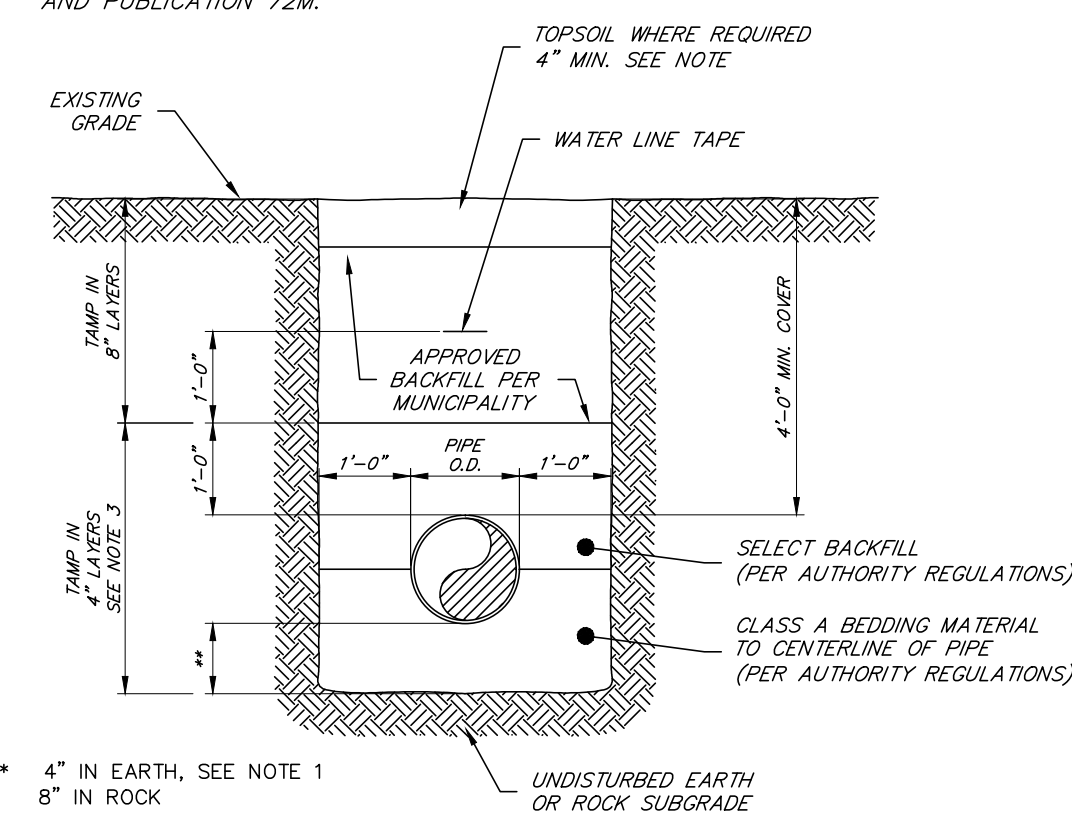
**TRENCH NOTES**

- IF UNSUITABLE SUBSOIL IS ENCOUNTERED AT THE NORMAL TRENCH SUBGRADE THE CONTRACTOR SHALL REMOVE IT TO THE DEPTH DIRECTED BY THE ENGINEER IN THE FIELD, AND SHALL BACKFILL W/ CLASS A BEDDING IN 4" LAYERS.
- BOTTOM OF TRENCH SHALL BE FREE OF WATER PRIOR TO WATER MAIN INSTALLATION.
- IF VIBRATORY COMPACTION EQUIPMENT IS USED BACKFILL MAY BE IN 8" LAYERS.
- PROVIDE 4" OF TOPSOIL WHERE SEEDING IS REQUIRED. SEE NOTE 6 AT GRAVEL DRIVEWAYS.
- CONTRACTOR SHALL SHORE THE TRENCH IN ACCORDANCE WITH SECTION 02151 OF THE SPECIFICATIONS.
- GRAVEL AND PAVED DRIVEWAYS TO BE RESTORED IN KIND.
- CONTRACTOR MAY SUBSTITUTE PA No. 2A FOR CLASS A BEDDING AT NO INCREASED COST TO THE OWNER WITH WRITTEN PERMISSION FROM THE ENGINEER OR OWNER. FOR DESCRIPTION OF BACKFILL MATERIAL, SEE SPECIFICATION SECTION 02221.
- ALL PAVING RESTORATION TO BE IN ACCORDANCE WITH PennDOT PUBLICATION 408/2003 AND PUBLICATION 72M.



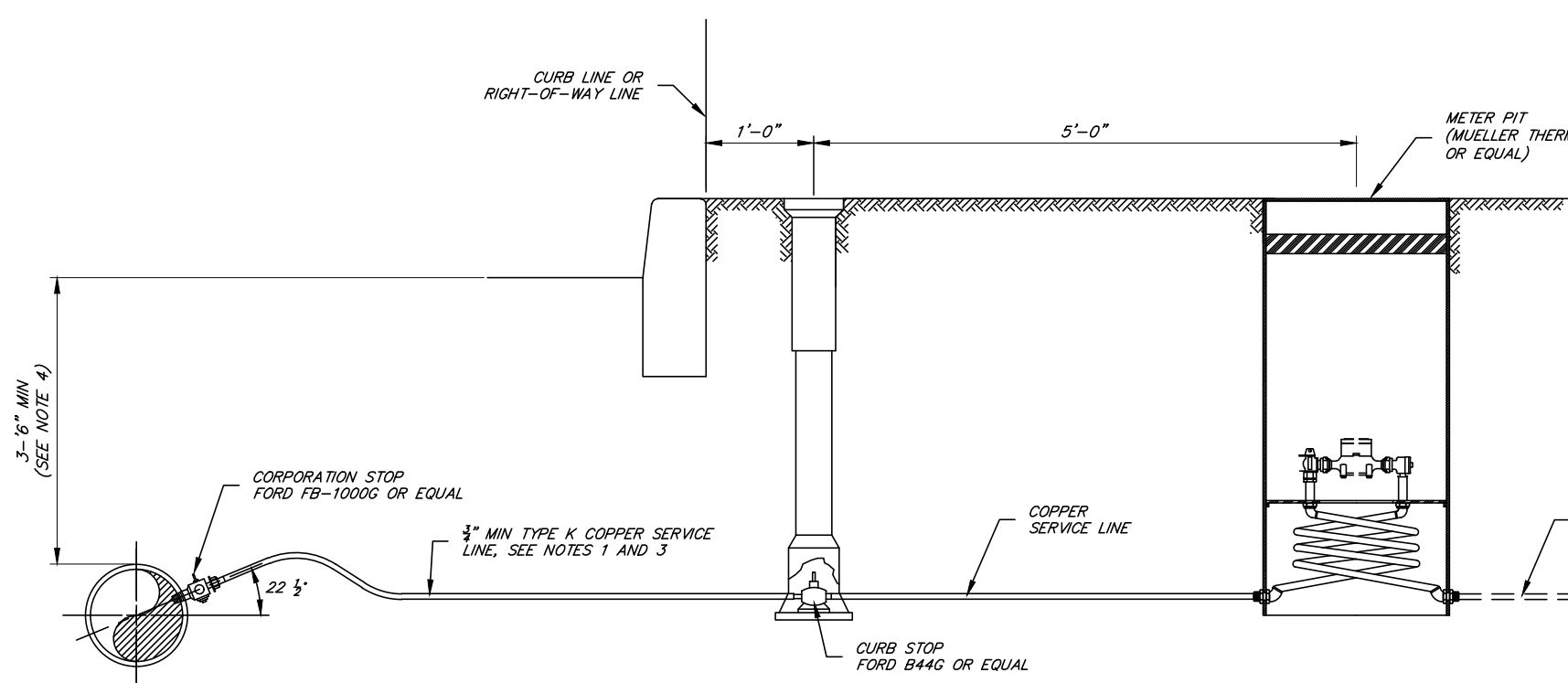
**TYPICAL TRENCH DETAIL - PAVED AREAS**

NO SCALE



**TYPICAL TRENCH DETAIL - UNPAVED AREAS**

NO SCALE

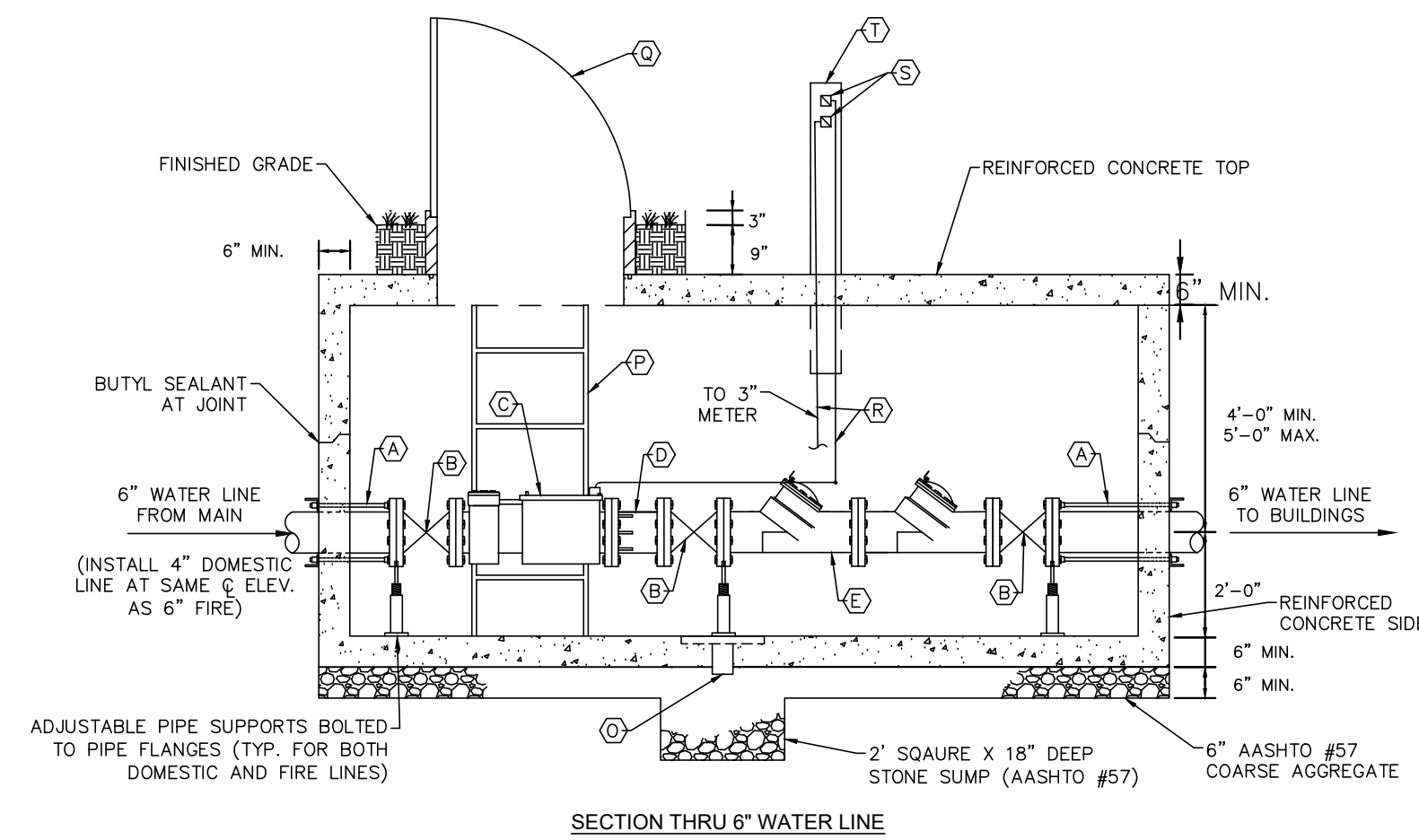
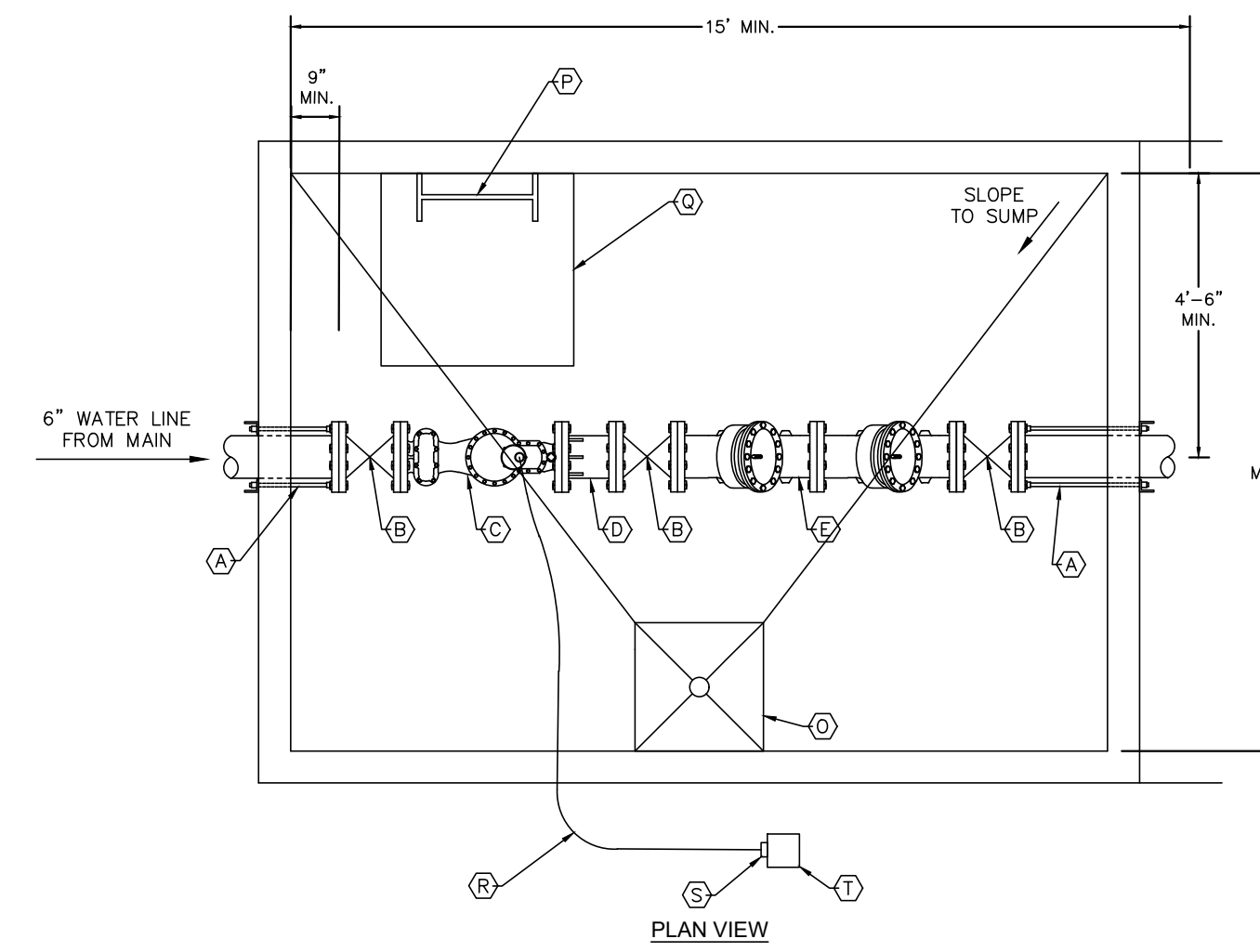


**WATER SERVICE WITH METER PIT CONNECTION DETAIL (RESIDENTIAL LOTS)**

NO SCALE

**NOTES:**

- REPLACE EXISTING WATER SERVICE LINES WITH MINIMUM 3/4" COPPER, IF EXISTING SERVICE IS LARGER DIAMETER, REPLACE WITH SAME SIZE.
- CURB STOP LOCATION NO MORE THAN 1'-0" BEHIND CURB.
- WATER LINE TAPE TO BE INSTALLED 1'-6" TO 2'-0" ABOVE PIPE.
- IF MAIN DEPTH CAN NOT BE MAINTAINED TUBE INSULATION TO BE INSTALLED ON SERVICE LINE.
- NEW SERVICE LINES - FROM CORPORATION TO CURB STOP, INCLUDING NEW CURB BOX.
- SERVICE LINES TO BE INSULATED WHEN 18" OF SEPARATION CANNOT BE MAINTAINED.
- ANY METER PITS REQUIRED FOR SERVICE LINES WILL BE AT THE AUTHORITY'S DISCRETION.
- REFER TO METER PIT DETAILS FOR ADDITIONAL INFORMATION.



**WATER METER VAULT DETAIL**

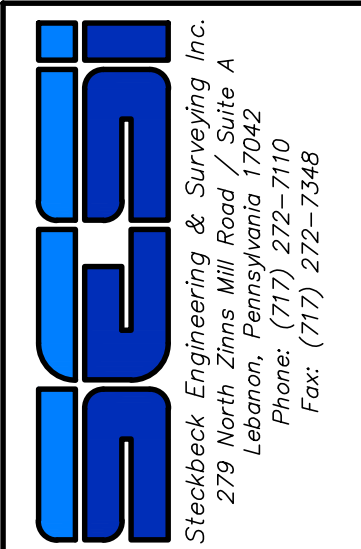
NO SCALE

EQUIPMENT SCHEDULE VAULTS B & D	
ITEM	DESCRIPTION
(A)	5/8" TIE RODS W/3" x 3" x 3/8" REACTION ANGLE IRON
(B)	6" NRS RESILIENT SEATED, AWWA C509 GATE VALVE
(C)	4" TURBO METER W/ BUILT IN STRAINER
(D)	6" FLANGED ADAPTER BY DRESSER OR SMITH-BLAIR
(E)	6" DOUBLE CHECK VALVE BACKFLOW PREVENTER BY WATTS 709 OR CONBRACO SERIES 40-600
(F)	ALUMINUM LADDER W/BILCO SAFETY EXTENSION
(G)	3'-0" SQ. ALUM. ACCESS HATCH EQUAL TO HALLIDAY PRODUCTS SIS CENTERED OVER METER
(R)	1" CONDUIT TO REMOTE READ-OUT POST
(S)	REMOTE READOUT
(T)	4" x 4" TREATED LUMBER READOUT POST

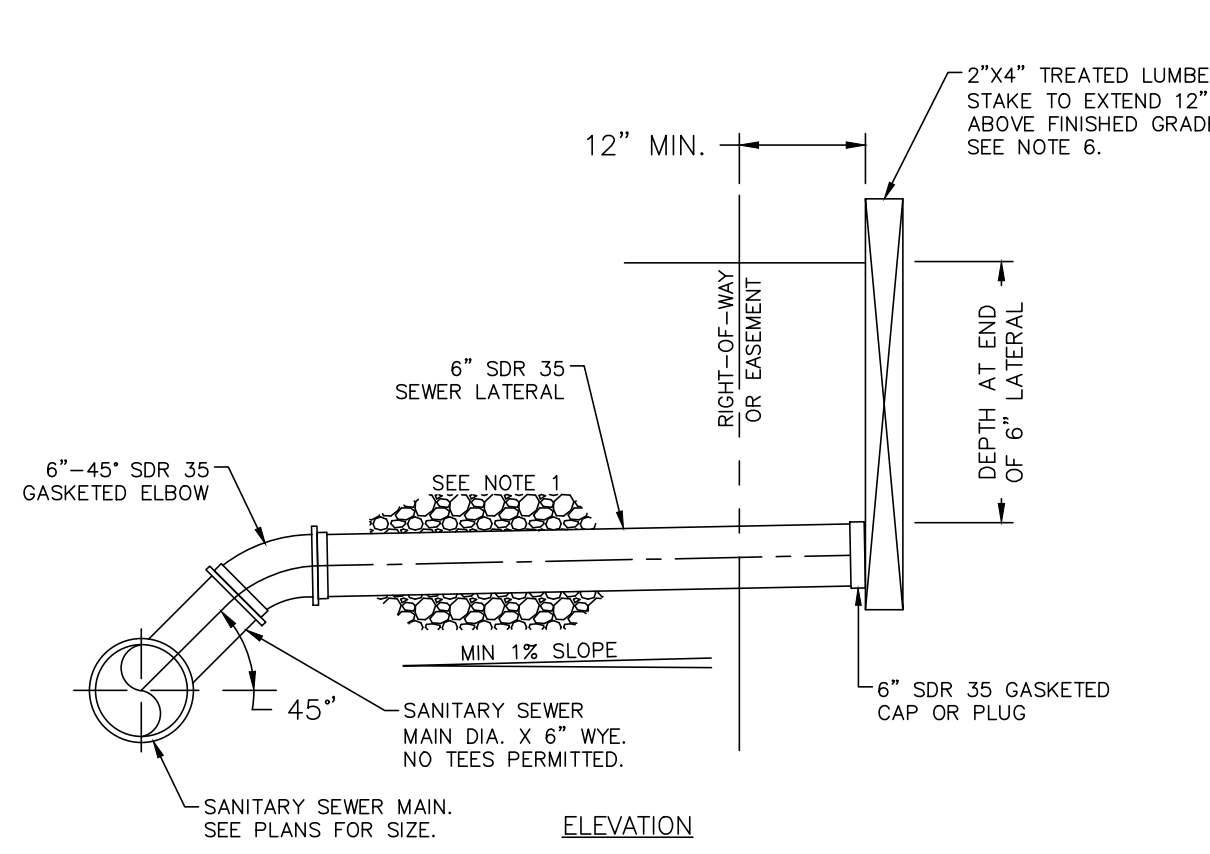
**NOTES:**

- CONSTRUCT METERING VAULT AS SHOWN TO MINIMUM DIMENSIONS AND GENERAL CONFIGURATION.
- PROVIDE PIPE SUPPORTS, TIE RODS, ANCHORS AND THRUST BRACING AT FITTINGS AND VALVES SUFFICIENT TO ALLOW PIPING TO STAND WITH REMOVAL OF METERS, FRICTION CLAMPS ARE NOT PERMITTED FOR RESTRAINT OF PIPING SYSTEMS.
- ALL VALVES AND BACK FLOW PREVENTORS TO BE MAINTAINED BY CUSTOMER.
- TIE RODS TO BE EMBEDDED IN CONCRETE OR BOLTED TO STEEL ON PLATES ON EXTERIOR WALLS. THE AUTHORITY SHALL INSPECT BEFORE BACKFILLING. AS AN ALTERNATE, A MEGA-LUG MAY BE UTILIZED ON THE INSIDE OF THE PIT AS RESTRAINT.
- VAULT SHALL BE DESIGNED TO WITHSTAND AASHTO H20 TRAFFIC LOADING.
- SLOPE FLOOR TO SUMP USING GROUT.
- CONCRETE STRUCTURE SHALL MEET REQUIREMENTS OF ASTM C478. DESIGN SHALL COMPLY WITH ACI 318. COMPRESSIVE STRENGTH SHALL BE 4,000 PSI AT 28 DAYS MINIMUM.
- CONTRACTOR HAS OPTION TO CONSTRUCT METER VAULT USING PRECAST OR REINFORCED CAST IN PLACE CONCRETE.
- ALL METERS ABOVE 2" IN SIZE SHALL BE SECURED PRIVATELY BY THE CONTRACTOR AND ALL SPECIFICATIONS PROVIDED TO THE AUTHORITY FOR APPROVAL.

**CONSTRUCTION & WATER DETAILS**  
 For  
**PRELIMINARY/FINAL SUBDIVISION & LAND DEVELOPMENT PLANS**  
**BRIAR RIDGE COMMONS - APARTMENTS**  
 located in  
 NORTH LEBANON TOWNSHIP  
 LEBANON County, Pennsylvania

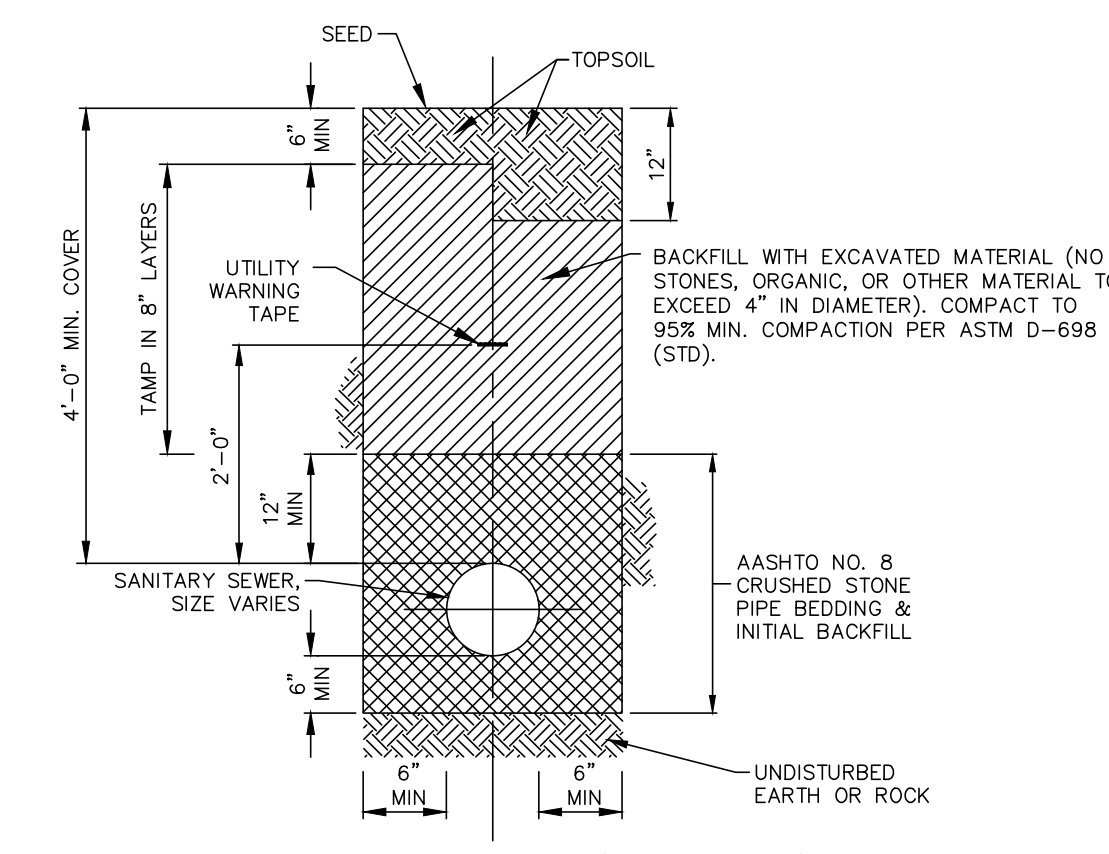


FIELD CREW: MOD,JEC  
 BASE MAP: JEC  
 DRAWN: CDS  
 DESIGN: CDS  
 CHECKED: SAS  
 DATE: 3/1/23  
 SCALE: AS NOTED  
 PROJECT #135-19-001

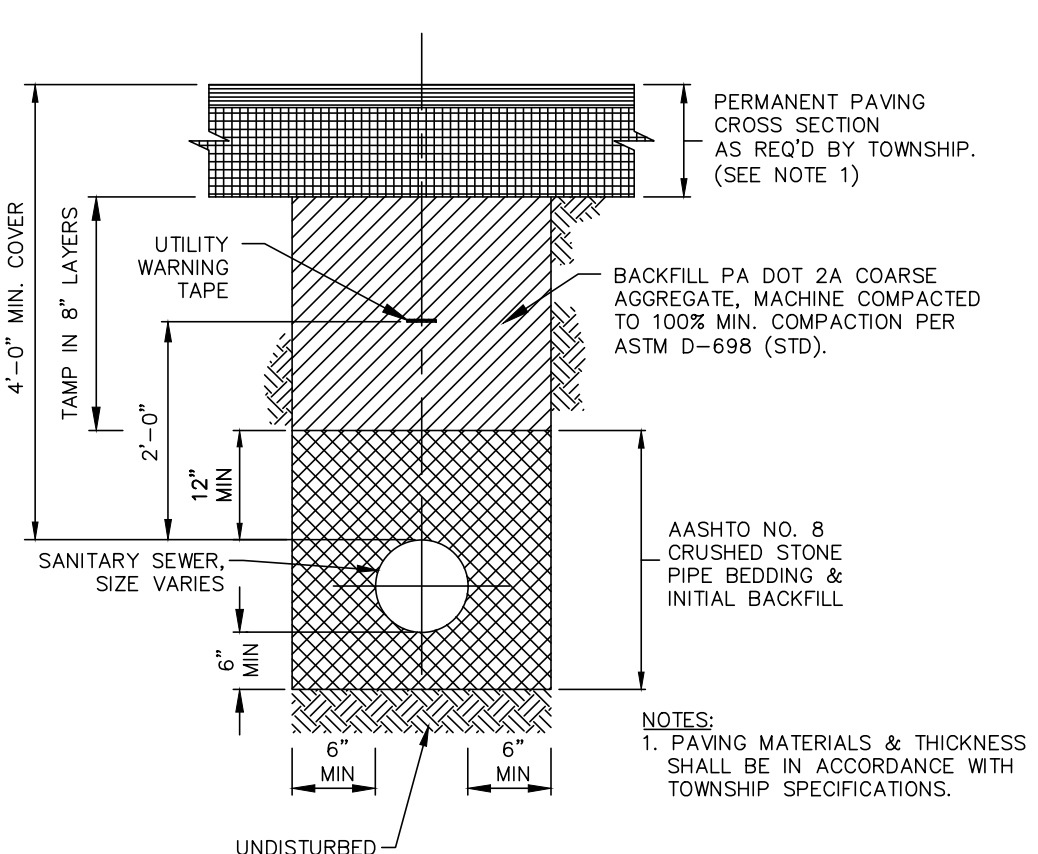


- NOTES:**
1. PROVIDE 6" OF AASHTO NO. 8 (1B) STONE BELOW PIPE AND 12" ABOVE PIPE. (TYPICAL ENTIRE LENGTH OF LATERAL).
  2. MINIMUM SLOPE = 1% (1/8" PER FOOT)
  3. MINIMUM DEPTH OF COVER = 4 FT
  4. DEVELOPER SHALL TEST AGAINST 6" SDR 35 GASKETED CAP OR PLUG.
  5. LATERAL TO EXTEND 12" BEYOND R.O.W. OR EASEMENT OR AS APPROVED OTHERWISE BY NLMA.
  6. LABEL STAKE AS "SEWER LATERAL". NOTE LATERAL DEPTH AT EDGE OF R.O.W. OR EASEMENT.

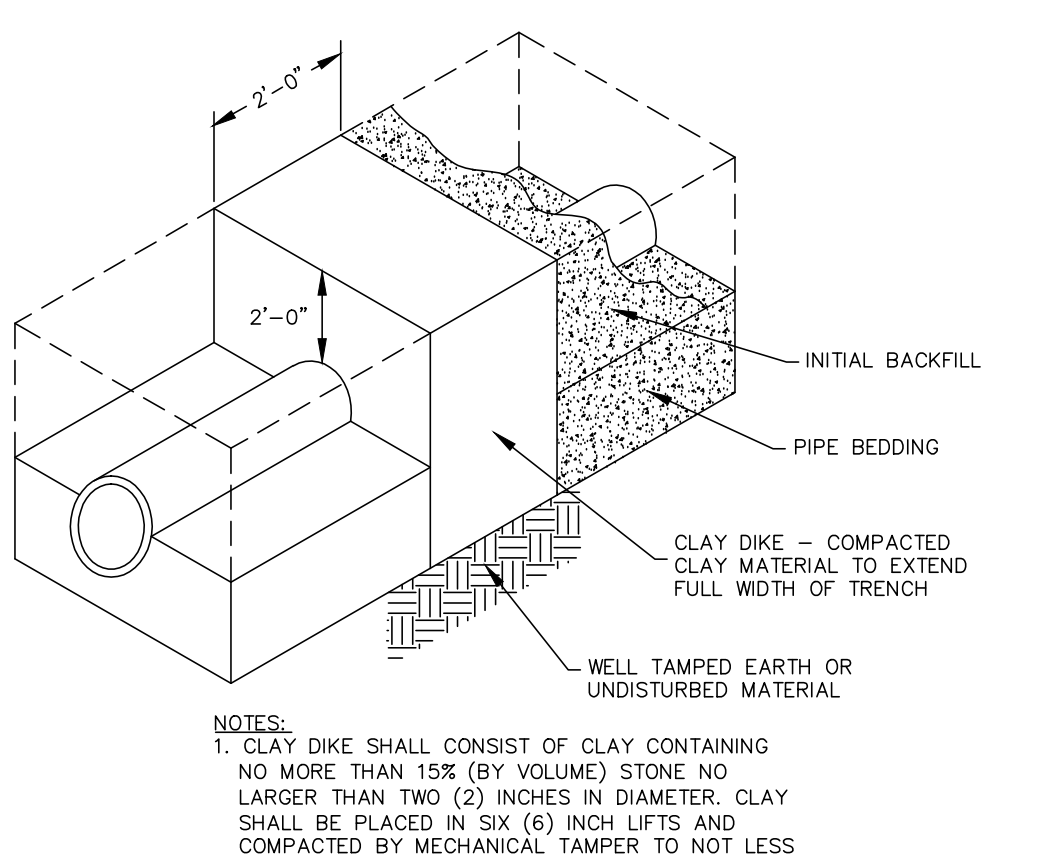
**SEWER LATERAL INSTALLATION DETAIL**  
NO SCALE



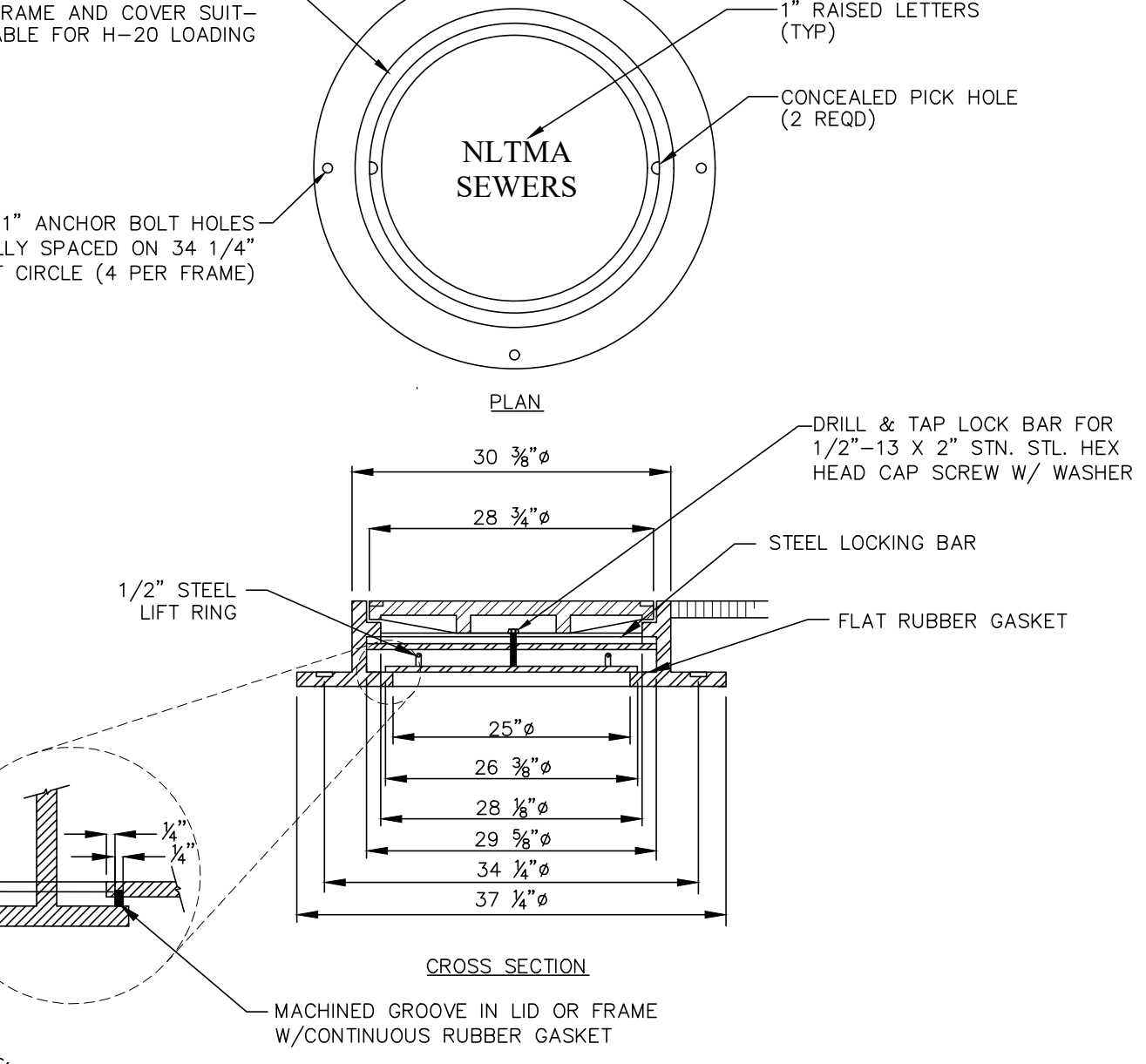
**TRENCH RESTORATION (LAWN AREAS)**  
NO SCALE



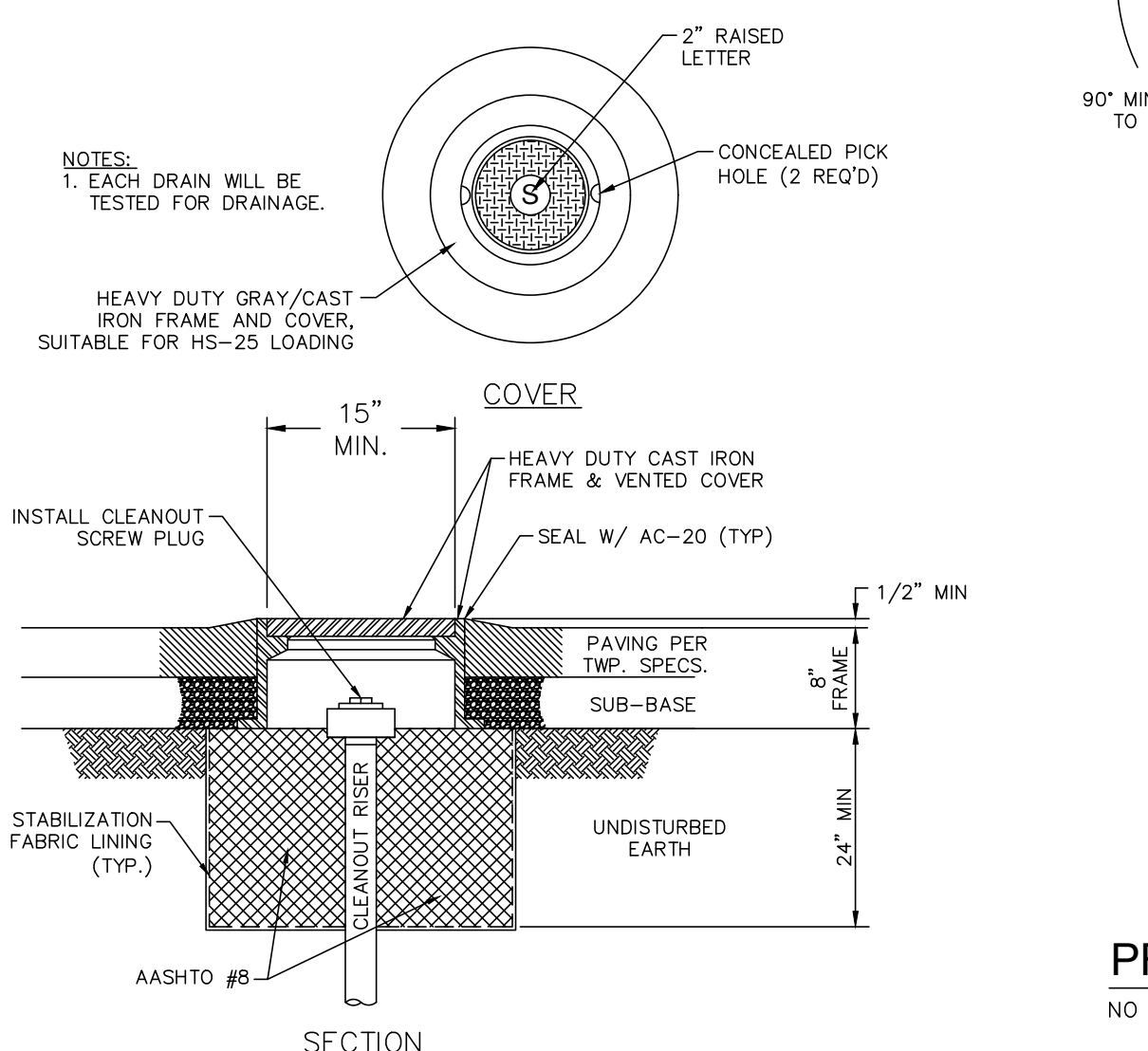
**TRENCH RESTORATION (PAVED AREAS)**  
NO SCALE



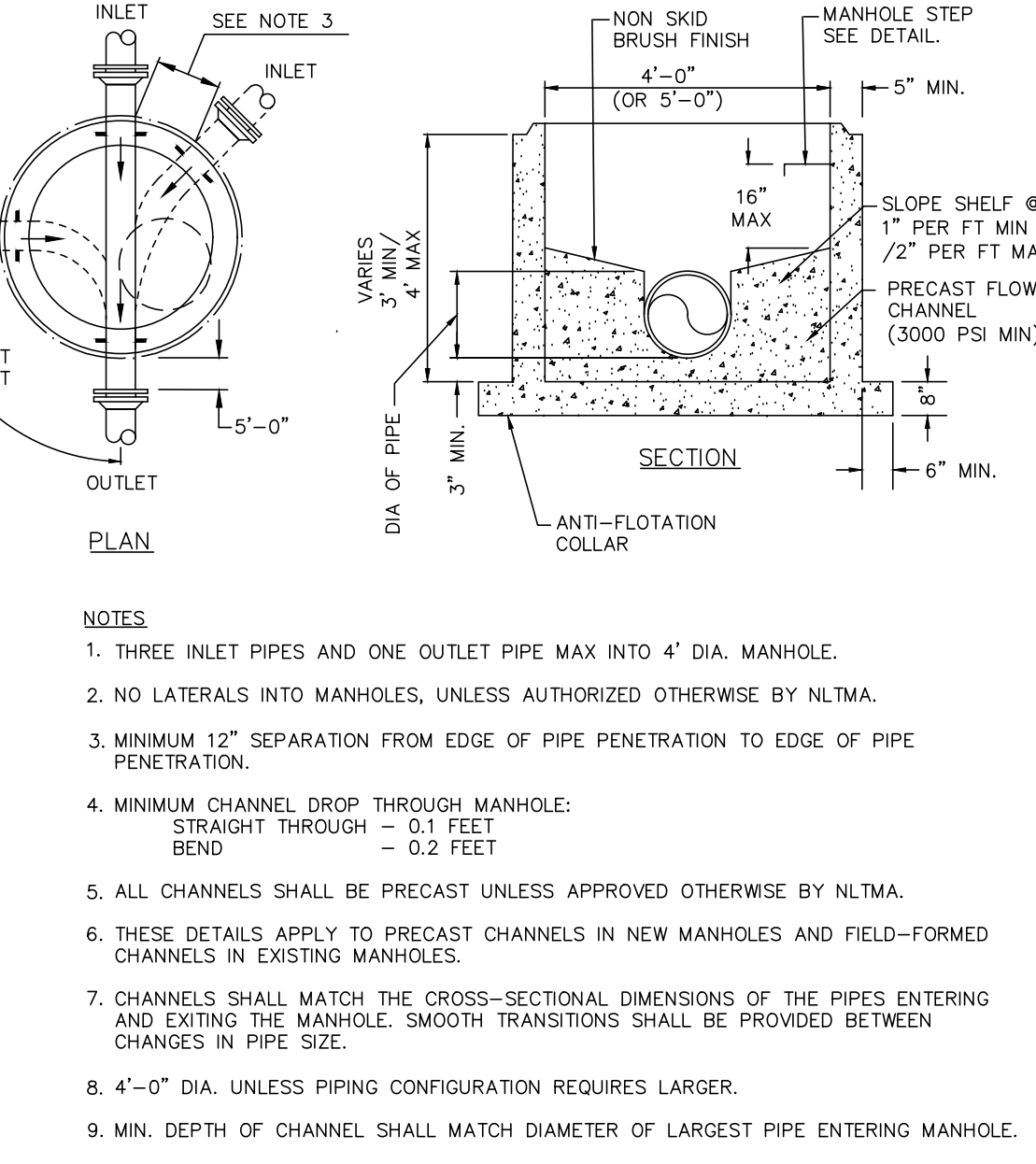
**CLAY DIKE (TRENCH PLUG) DETAIL**  
NO SCALE



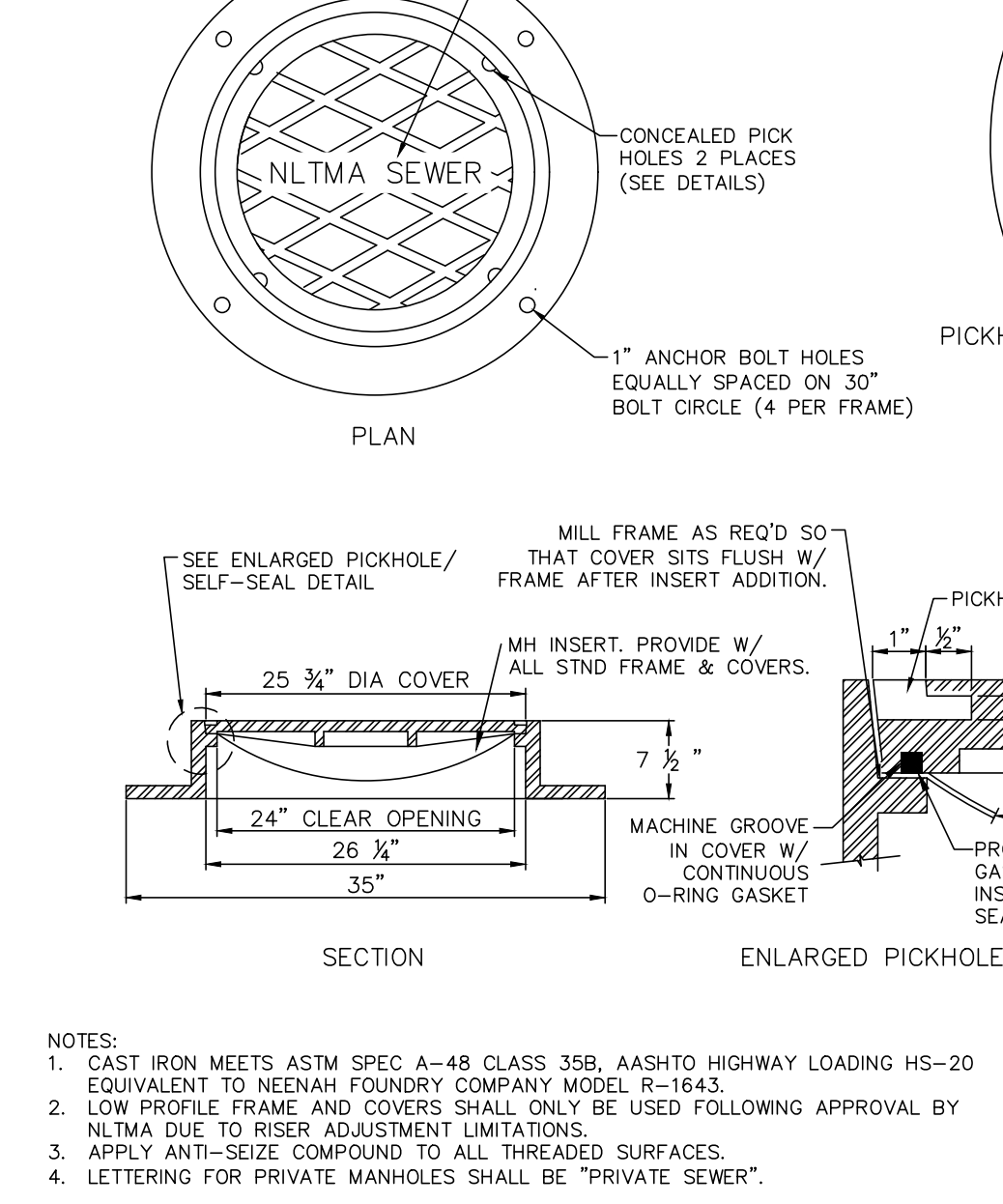
**WATERTIGHT MANHOLE FRAME AND COVER**  
NO SCALE



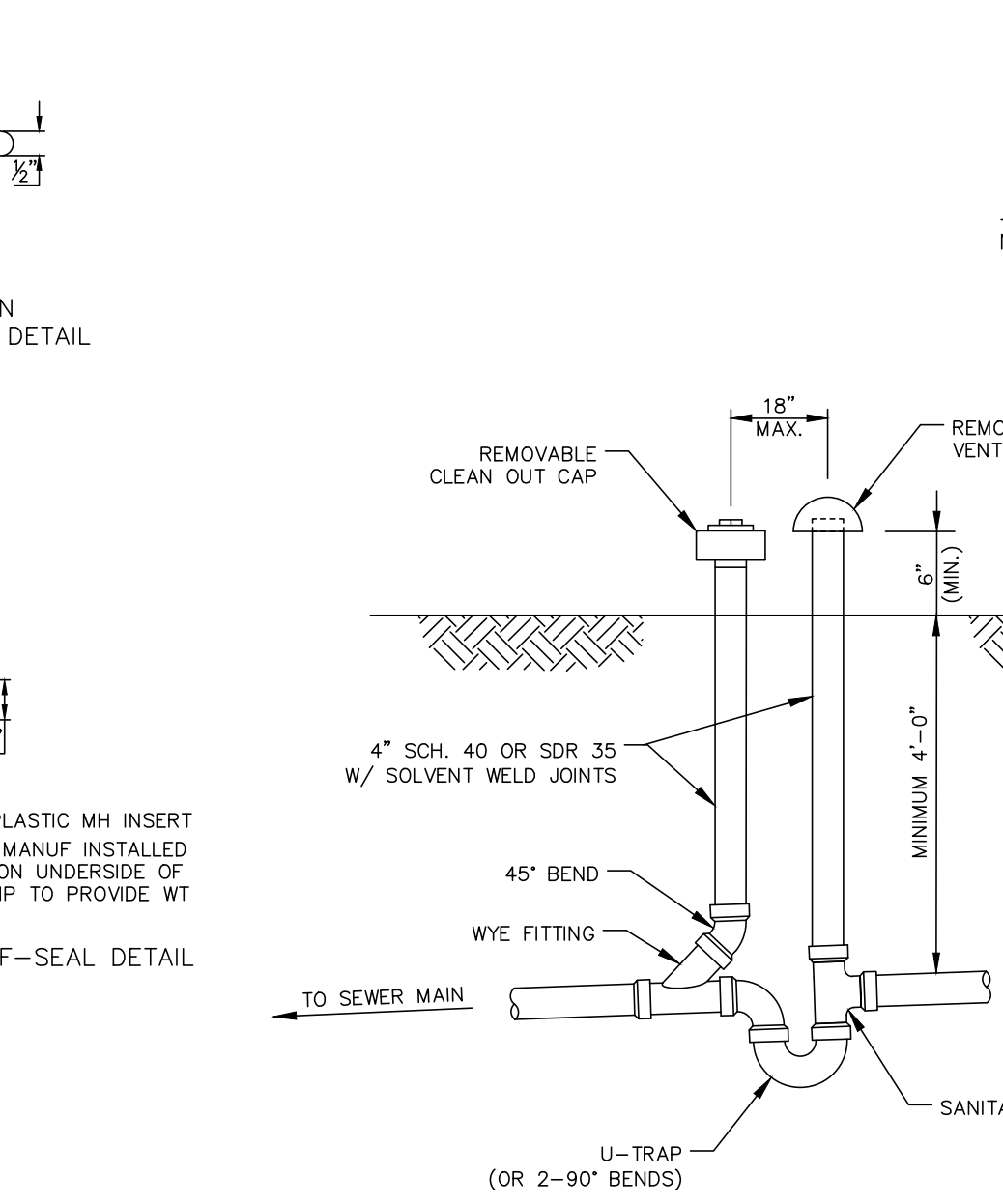
**PRECAST MANHOLE BASE DETAIL**  
NO SCALE



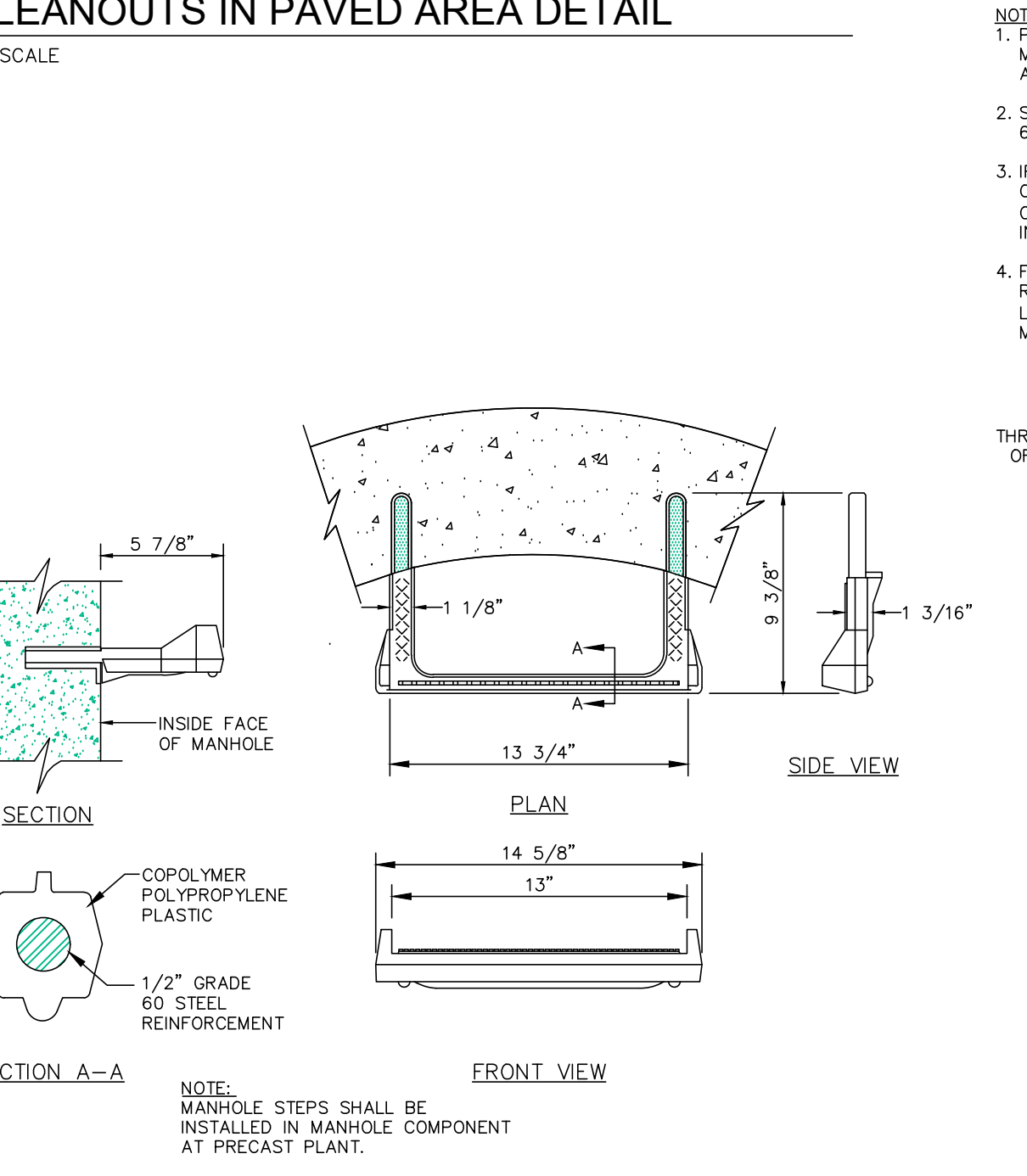
**STANDARD MANHOLE FRAME AND COVER DETAIL**  
NO SCALE



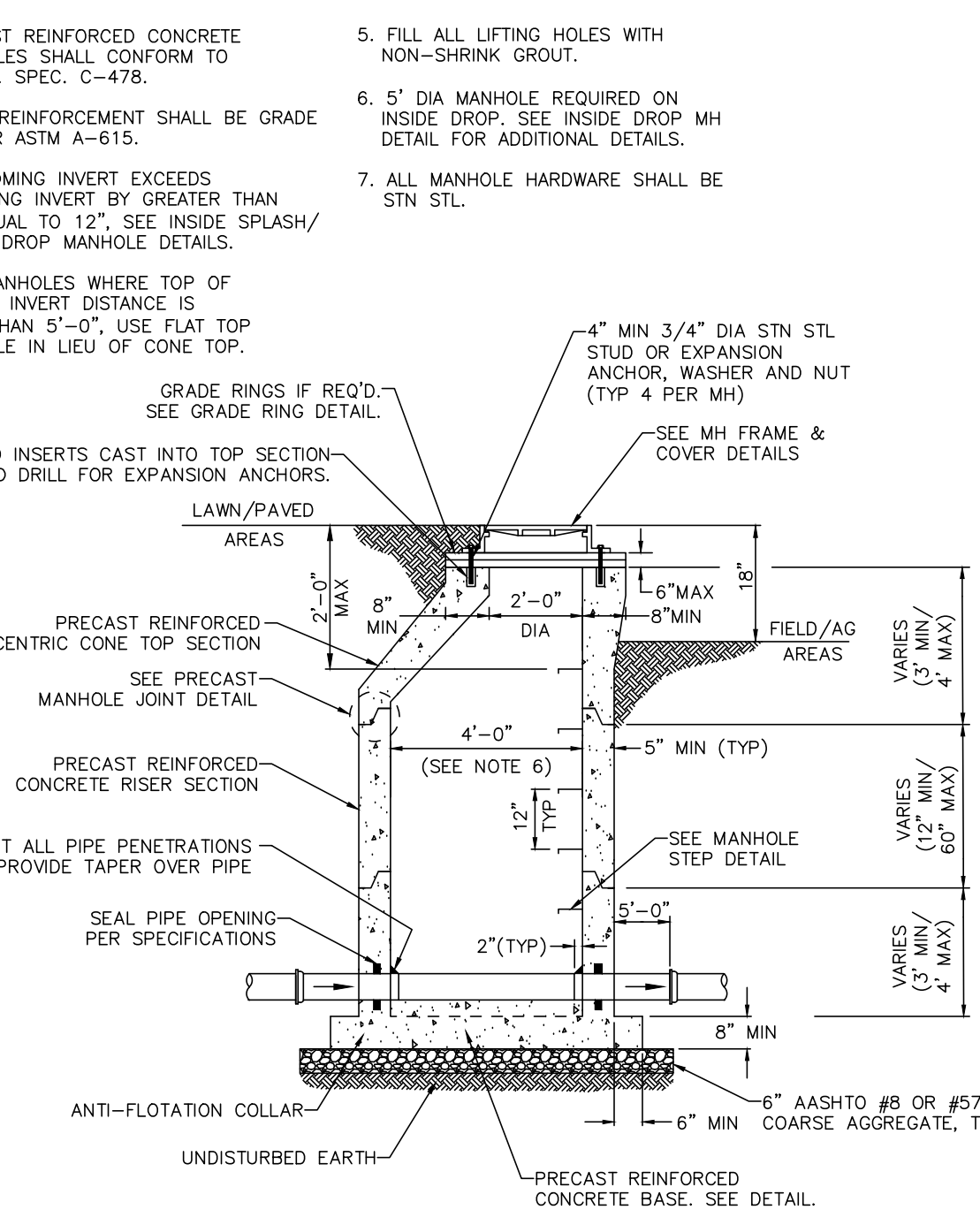
**TYPICAL TRAP & VENT ASSEMBLY**  
NO SCALE



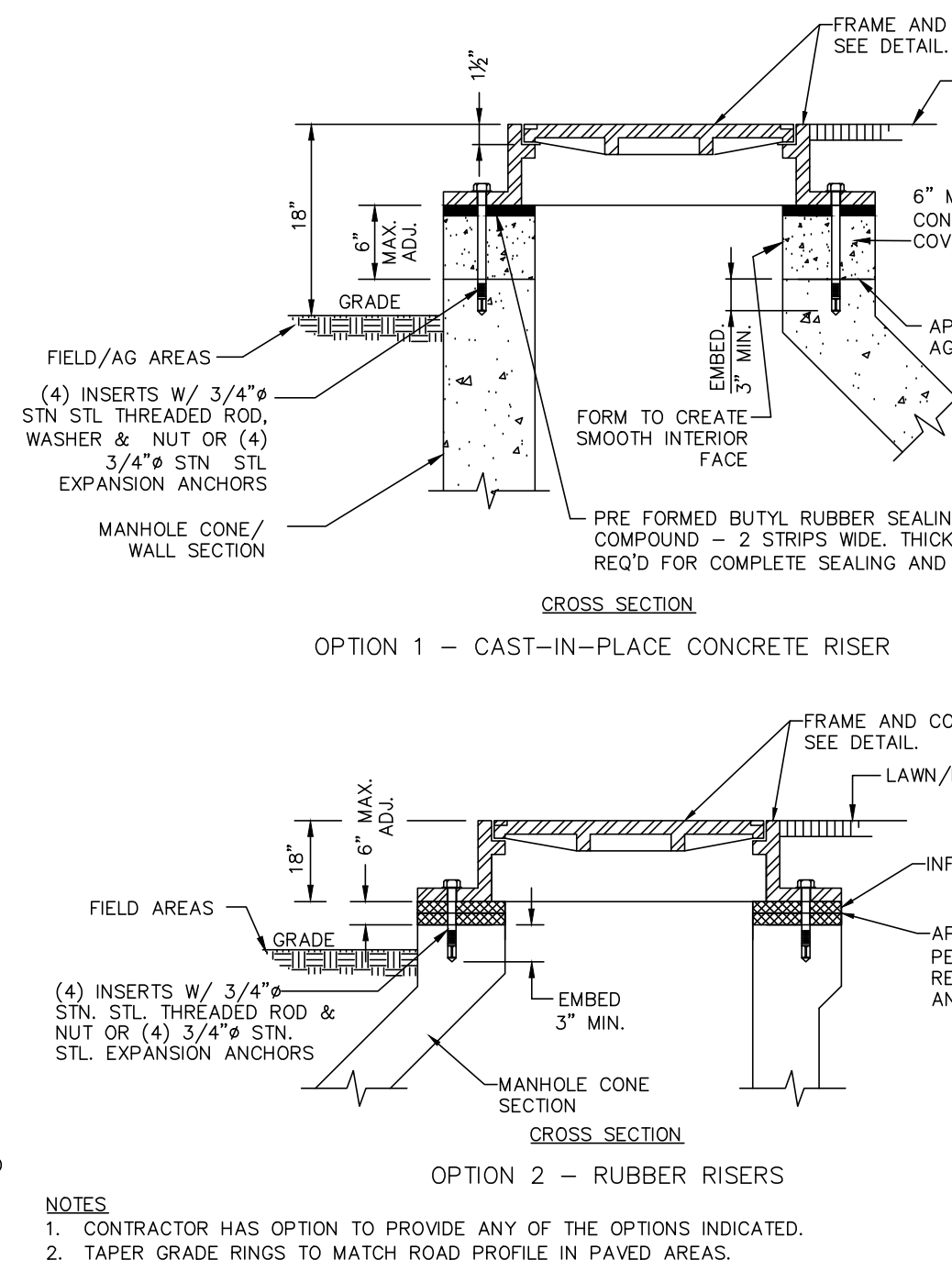
**NEW MANHOLE ON EXISTING MAIN DETAIL**  
NO SCALE



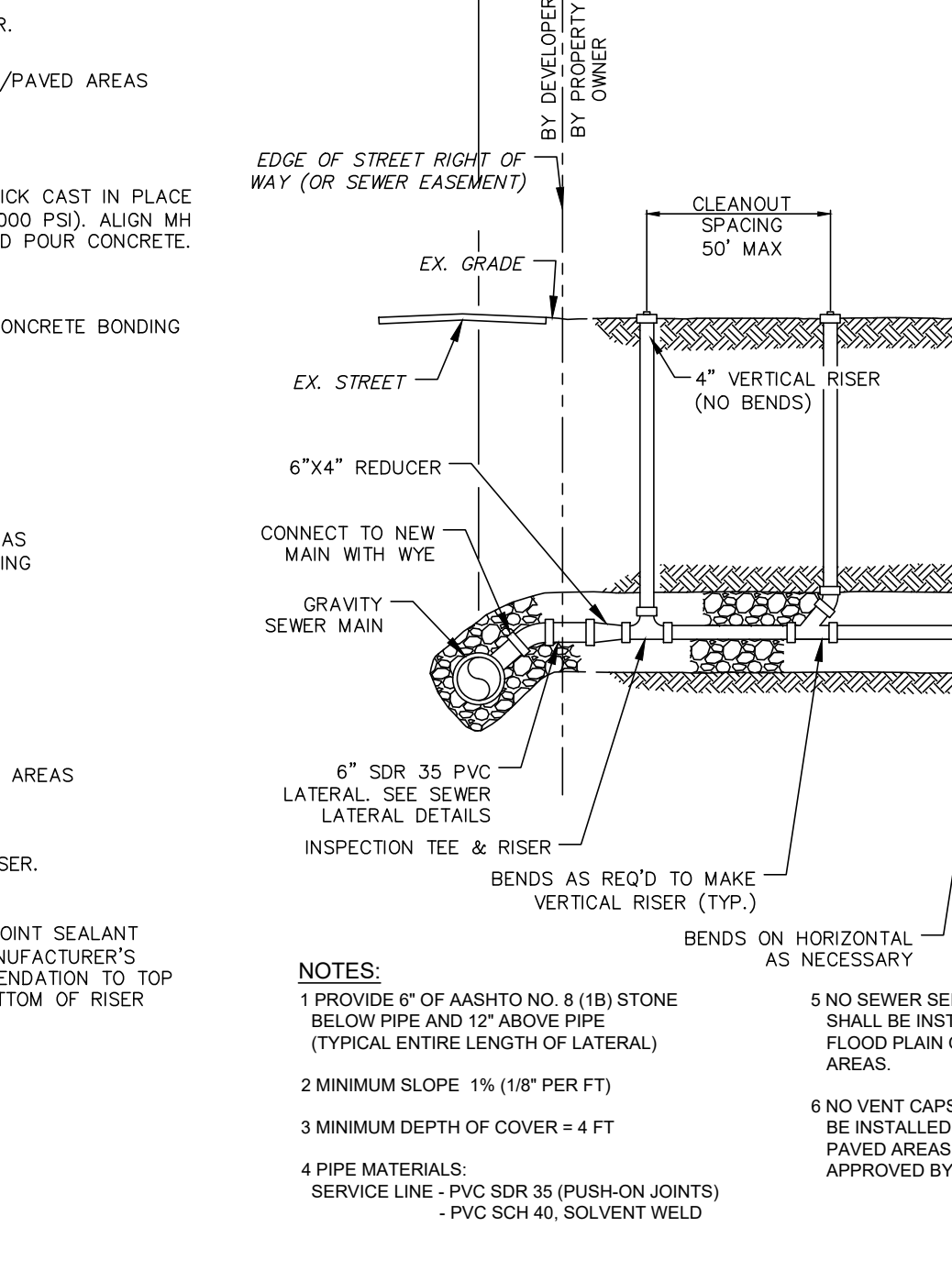
**CLEANOUTS IN PAVED AREA DETAIL**  
NO SCALE



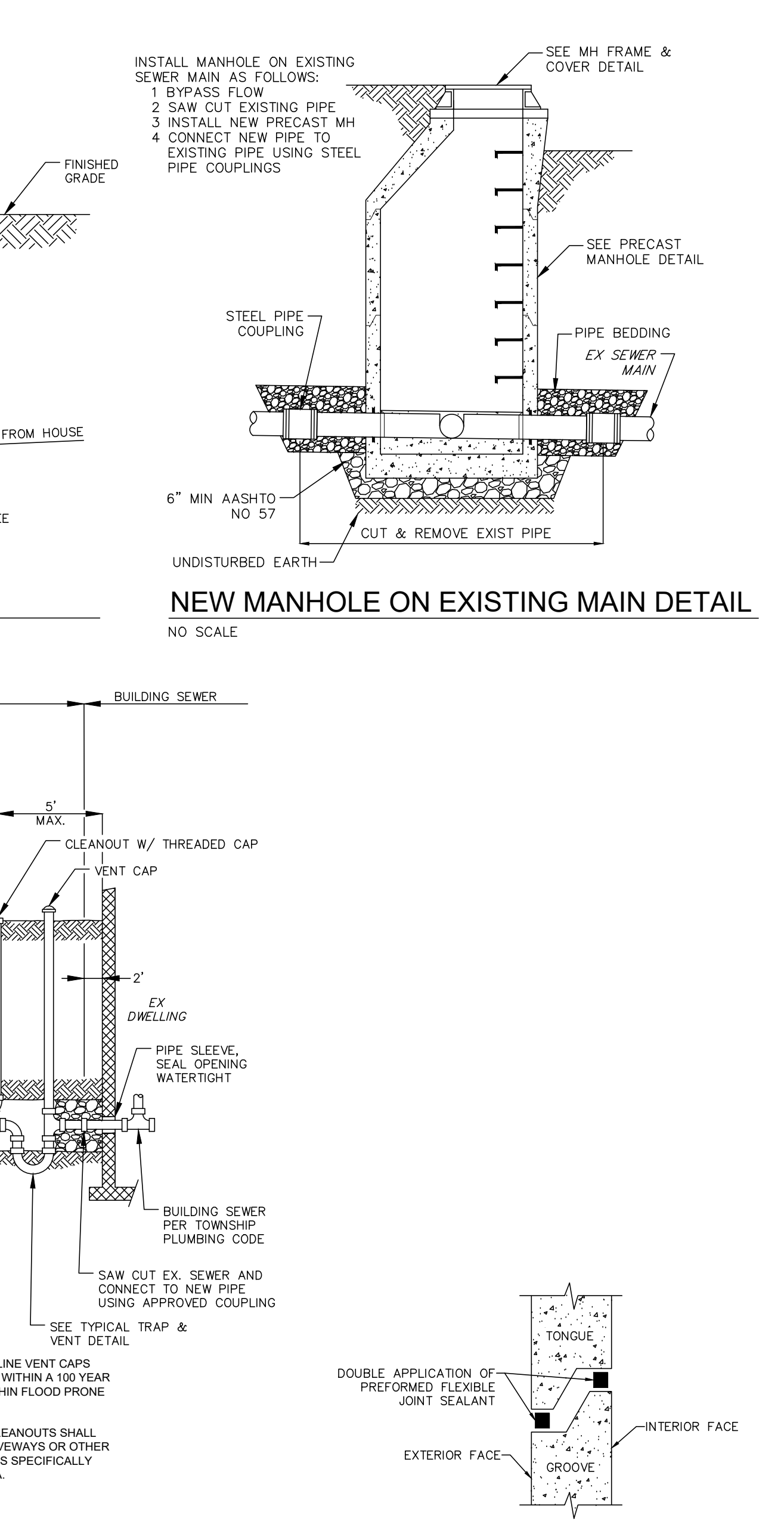
**PRECAST CONCRETE MANHOLE DETAIL**  
NO SCALE



**MANHOLE GRADE RINGS DETAIL**  
NO SCALE



**GRAVITY SERVICE LINE INSTALLATION DETAIL**  
NO SCALE



**PRECAST MANHOLE JOINT**  
NO SCALE

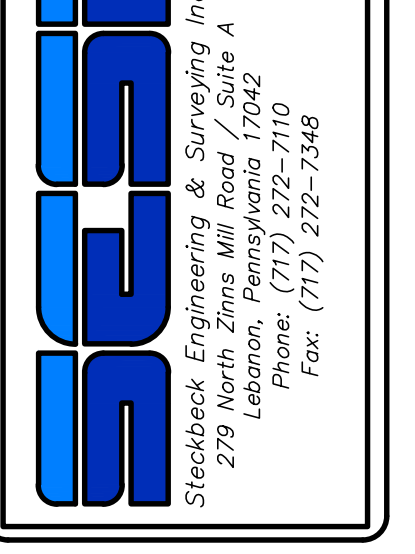
REVISION	DATE	BY
PER ARRO COMMENT LETTER DATED 4-3-23	5-8-23	CDS
PER LCPD LETTER DATED 4-4-23	5-12-23	CDS
PER COLA COMMENTS DATED 3-31-23	5-12-23	CDS
PER ARRO COMMENT LETTER DATED 6-6-23	6-28-23	CDS
PER ARRO COMMENT LETTER DATED 7-13-23	8-4-23	CDS

**SANITARY DETAILS**

**PRELIMINARY/FINAL SUBDIVISION & LAND DEVELOPMENT PLANS**

**BRIAR RIDGE COMMONS - APARTMENTS**

located in  
NORTH LEBANON TOWNSHIP  
LEBANON County, Pennsylvania



FIELD CREW: MOD/JEC
BASE MAP: JEC
DRAWN: CDS
DESIGN: CDS
CHECKED: SAS
DATE: 3/1/23
SCALE: AS NOTED
PROJECT # 135-19-001





**LEGEND**

- EXISTING ADJOINER LINE AND CORNERS
- EXISTING EDGE OF PAVEMENT AND CURB LINE
- EXISTING RIGHT-OF-WAY
- EXISTING FENCE
- EXISTING SEWER
- EXISTING STORMWATER
- EXISTING WATERLINE
- EXISTING GASLINE
- EXISTING CONTOURS
- EXISTING TREELINE
- EXISTING SOILS
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE

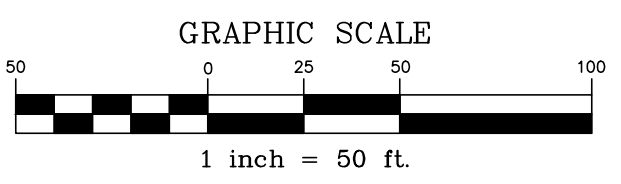
**EXISTING FEATURES**

- IRON PIN
- CLEAN OUT
- HEADWALL
- MANHOLE
- INLET
- ENDWALL
- GATE VALVE
- FIRE HYDRANT
- MAJOR
- MINOR
- SOIL TYPE

**PROPOSED FEATURES**

- PROPOSED BUILDING SETBACK
- PROPOSED PROPERTY LINE AND CORNERS
- PROPOSED EDGE OF PAVEMENT AND CURB LINE
- PROPOSED RIGHT-OF-WAY
- PROPOSED FENCE
- PROPOSED SEWER
- PROPOSED STORMWATER
- PROPOSED DOMESTIC WATERLINE
- PROPOSED GASLINE
- PROPOSED CONCRETE/SIDEWALK
- PROPOSED CONTOURS
- PROPOSED TREELINE
- PROPOSED UTILITY POLE
- PROPOSED LIGHT POLE

Map Symbol	Soil Name	Slope	Hydrologic Group
BeA	Bedington shaly silt loam	0-3%	B
BeB	Bedington shaly silt loam	3-8%	B
BkC	Berks channery silt loam	3-8%	B
BkC	Berks channery silt loam	8-15%	B
CmB	Comly silt loam	3-8%	C



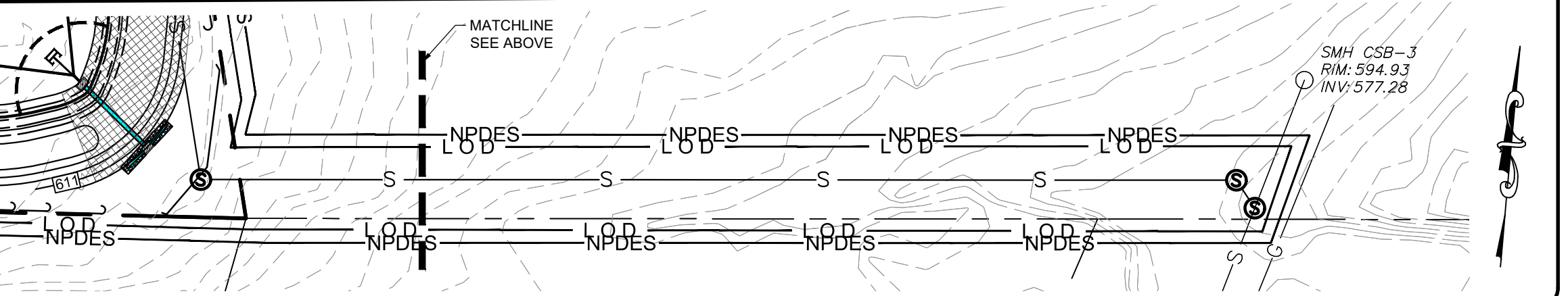
**EROSION AND SEDIMENT CONTROL LIABILITY NOTE:**  
FAILURE TO CORRECTLY INSTALL SEDIMENT CONTROL FACILITIES OR FAILURE TO PREVENT SEDIMENT LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE OR FAILURE TO TAKE CORRECTIVE ACTIONS TO IMMEDIATELY RESOLVE FAILURES OF SEDIMENT CONTROL FACILITIES MAY RESULT IN ADMINISTRATIVE, CIVIL AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION AS DEFINED IN SECTION 602 OF THE CLEAN STREAMS LAW OF PENNSYLVANIA. THE CLEAN STREAMS LAW PROVIDES FOR UP TO \$10,000 PER DAY IN CIVIL PENALTIES, UP TO \$10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO \$25,000 IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.

THESE PLANS INDICATE CRITICAL AREAS FOR EROSION AND SEDIMENT CONTROL PLACEMENT BUT DO NOT CRITIQUE THE CONTRACTOR FROM PROVIDING ADDITIONAL CONTROLS AS SITE CONDITIONS WARRANT. THE ENVIRONMENTAL COMPLIANCE MANAGER FOR THE PROJECT AND OR CONSERVATION DISTRICT MAY DIRECT THE CONTRACTOR TO INSTALL E&S BMPs NOT DEPICTED ON THESE DRAWINGS IN ORDER TO PROTECT DOWN GRADIENT AREAS FROM EROSION AND SEDIMENTATION DURING CONSTRUCTION.  
SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELLED OR SWEEPED INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.

**E&S LEGEND**

- INLET PROTECTION
- NPDES BOUNDARY
- DISTURBANCE LIMITS
- SWALE LINING N.A.G. S75 OR EQUAL
- SWALE LINING N.A.G. S200 OR EQUAL
- SPILLWAY LINING N.A.G. P300 OR EQUAL

**SEWER LINE INSTALLATION NOTE:**  
PIPELINES WITH JOINTS THAT ALLOW A MANUFACTURED LENGTH OF PIPE TO BE PLACED IN THE TRENCH WITH THE PIPE JOINT ASSEMBLY MADE IN THE TRENCH REQUIRE AN OPEN PIPELINE TRENCH THAT IS ONLY SLIGHTLY LONGER THAN THE LENGTH OF PIPE BEING INSTALLED. THE TOTAL LENGTH OF EXCAVATED TRENCH OPEN AT ANY ONE TIME SHOULD NOT BE GREATER THAN THE TOTAL LENGTH OF PIPELINE/UTILITY LINE THAT CAN BE PLACED IN THE TRENCH AND BACK-FILLED IN ONE WORKING DAY. ALL PIPELINE INSTALLATIONS SHALL BE STABILIZED BY THE END OF EACH WORKING DAY. SOIL SUPPLEMENTS, SEED AND MULCH SHALL BE APPLIED WITHIN 5 DAYS AFTER THE PIPELINE/UTILITY IS INSTALLED. ANY EXCAVATED MATERIAL FROM THE TRENCH SHALL BE PLACED ON THE UP-SLOPE SIDE OF THE TRENCH. FINISHED GRADE OVER THE UTILITY LINE SHALL BE RESTORED TO PRE-CONSTRUCTION CONDITIONS.



BY: CDS

DATE: 5-8-23

REVISION

REVISION	DATE	BY
PER ARRO COMMENT LETTER DATED 4-3-23	4-3-23	CDS
PER LCPD LETTER DATED 4-4-23	4-4-23	CDS
PER COLA COMMENTS DATED 3-31-23	3-31-23	CDS
PER ARRO COMMENT LETTER DATED 6-6-23	6-6-23	CDS
PER ARRO COMMENT LETTER DATED 7-13-23	7-13-23	CDS

**EROSION & SEDIMENTATION POLLUTION CONTROL PLAN**  
PRELIMINARY/FINAL SUBDIVISION & LAND DEVELOPMENT PLANS  
BRIAR RIDGE COMMONS - APARTMENTS  
NORTH LEBANON TOWNSHIP  
LEBANON COUNTY, PENNSYLVANIA

FIELD CREW: MOD,JEC

BASE MAP: JEC

DRAWN: CDS

DESIGN: CDS

CHECKED: SAS

DATE: 3/1/23

SCALE: 1"=50'

PROJECT #135-19-001

EROSION AND SEDIMENT POLLUTION CONTROL NARRATIVE  
BRIAR RIDGE COMMONS – APARTMENTS

THIS NARRATIVE IS INTENDED TO ACCOMPANY THE EROSION AND SEDIMENT POLLUTION CONTROL PLAN FOR THE PROPOSED PRELIMINARY/FINAL LAND DEVELOPMENT PLAN FOR THE BRIAR RIDGE COMMONS – APARTMENTS, LOCATED ON SOUTH SIDE OF KIMMERLINGS ROAD AND THE EAST SIDE OF PA 44 AVENUE IN NORTH LEBANON TOWNSHIP, LEBANON COUNTY. THIS NARRATIVE SHALL BE CONSIDERED A PART OF THE EROSION AND SEDIMENT POLLUTION CONTROL PLAN.

**PROJECT DESCRIPTION**  
THE TOTAL TRACT OF THE FOUR (4) PROPERTIES IN QUESTION IS APPROXIMATELY 20.24 ACRES. THE TOTAL SITE AND EARTH DISTURBANCE AS PART OF THE PROJECT IS APPROXIMATELY 16.5 ACRES. THE PROJECT SITE CONSISTS OF FORESTED AREAS, AGRICULTURAL FIELDS, AND THE RUNS OF AN EXISTING HOUSE WHICH APPEARS TO HAVE BEEN DEMOLISHED BETWEEN 2008 AND 2012 PER GOOGLE EARTH HISTORICAL IMAGERY. BASED ON GOOGLE EARTH HISTORICAL IMAGERY, THE SITE HAS BEEN IN A SIMILAR CONDITION SINCE THE EARLY 1900'S. BASED ON GOOGLE EARTH HISTORICAL IMAGERY, THE SITE WAS AGRICULTURAL IN USE DATING BACK TO THE EARLY 1940'S. THE SITE IS BORDERED TO THE NORTH BY KIMMERLINGS ROAD AND TO THE WEST BY N. 8<sup>TH</sup> AVENUE. THE SITE IS BORDERED TO THE SOUTH BY THE LEBANON CHRISTIAN ACADEMY AND TO THE EAST BY A RESIDENTIAL DEVELOPMENT. PROPOSED IMPROVEMENTS INCLUDE THE CONSTRUCTION OF TWO (2) APARTMENT BUILDINGS TOTALING 144 UNITS, CLUBHOUSE, PARKING AREAS, ACCESS DRIVES, FIVE (5) SINGLE-FAMILY HOMES WITH DRIVEWAYS, CONNECTION TO PUBLIC SEWER AND WATER, AND ASSOCIATED STORMWATER MANAGEMENT FACILITIES. THE ANTICIPATED SITE DISTURBANCE SHALL INCLUDE GRADING AS WELL AS ADDITIONAL IMPERVIOUS AREA WHICH WILL BE TREATED ON-SITE BY STORMWATER MANAGEMENT BMP'S. THREE (3) ABOVE GROUND BASINS UTILIZING THE MANAGED RELEASE CONCEPT (MRC), ONE (1) SUBSURFACE BED UTILIZING THE MANAGED RELEASE CONCEPT (MRC), AND ONE (1) SUBSURFACE INFILTRATION BED ARE PROPOSED TO MANAGE THE SITE RUNOFF. STORMWATER RUNOFF FROM THE SITE WILL REACH THE BRANDYWINE CREEK. THE BRANDYWINE CREEK IS DESIGNATED AS TRIBUTY STOKING (TSP) AND IS IMPAIRED ACCORDING TO CATEGORY 4 OF THE PA INTEGRATED WATER QUALITY MONITORING AND ASSESSMENT REPORT FOR AQUATIC LIFE. URBAN RUNOFF/STORM SEWERS – FLOW REGIME MODIFICATION, THE BRANDYWINE CREEK IS ALSO IMPAIRED ACCORDING TO CATEGORY 5 OF THE PA INTEGRATED WATER QUALITY MONITORING AND ASSESSMENT REPORT FOR RECREATIONAL SOURCE UNKNOWN – PATHOGENS.

**THERMAL IMPACTS ANALYSIS**  
ALL EXISTING SITE RUNOFF CURRENTLY LEAVES THE SITE UN-DETAINED WITH NO TREATMENT OF THIS RUNOFF IN ANY WAY. STRUCTURAL BMP'S ARE PROPOSED TO TREAT THE MAJORITY OF THE DISTURBED SITE AND PROPOSED IMPERVIOUS AREAS. RUNOFF REACHING THE THREE (3) MRC BASINS WILL BE COOLED BY THE NATIVE GRASSES AND PLUG PLANTINGS IN THE BASIN BOTTOMS BEFORE BEING FILTERED THROUGH THE ENGINEERED SOIL MIX AND SLOWLY RELEASED THROUGH THE UNDERDRAIN SYSTEM. RUNOFF REACHING THE TWO (2) SUBSURFACE BEDS WILL BE COOLED BY BENE SUBSURFACE AND AWAY FROM DIRECT SUNLIGHT. SHADE TREES ARE ALSO PROPOSED AROUND AND AROUND THE PARKING AREAS TO PROVIDE TEMPERATURE RELIEF FOR RUNOFF THAT FLOWS OVER THE IMPERVIOUS SURFACES.

**DOWNSTREAM WATERCOURSE ANALYSIS**  
THE FOLLOWING IS AN EXCERPT FROM THE PA DEP PA44 SHEET LABELED CHAPTER 102 OFF-SITE DISCHARGES OF STORMWATER TO SURFACE WATERS (GENERAL P. 2015) PAO #22 THAT IS PROPOSED TO DISCHARGE TO THE LEGAL AUTHORITY TO DISCHARGE THEIR STORMWATER EITHER THROUGH EITHER A COMMON LAW EASEMENT OR AN EXPRESS EASEMENT. FOR SITES THAT DISCHARGE TO EXISTING SLUICES, DITCHES, STORM SEWERS OR SIMILAR STRUCTURES WHERE THE NEW ACTIVITIES WILL NOT RESULT IN A CHANGE IN OR RATE OF STORMWATER RUNOFF (FOR ALL STORM EVENTS), THE EXISTING COMMON LAW EASEMENT COULD BE RELIED UPON."

THE POST-DEVELOPMENT SITE DISCHARGES IN A SIMILAR MANNER TO ALL DISCHARGE POINTS AT A RATE THAT IS LESS THAN PRE-DEVELOPMENT.

DISCHARGE POINT 001 (DP 001) IS LOCATED ALONG THE SOUTHEASTERN PROPERTY LINE WHERE AN EXISTING CHANNEL LEAVES THE PROJECT SITE BELOW WETLANDS 1 & 2. RUNOFF WILL DISCHARGE OFFSITE WITHIN THE EXISTING CHANNEL FOR APPROXIMATELY 825' PRIOR TO DISCHARGING INTO BRIAR LAKE WHICH IS THE HEADWATERS OF THE BRANDYWINE CREEK (TSP).

DISCHARGE POINT 002 (DP 002) IS LOCATED ALONG THE SOUTHEASTERN PROPERTY LINE WHERE AN EXISTING CHANNEL LEAVES THE PROJECT SITE BELOW WETLANDS 3. RUNOFF WILL DISCHARGE OFFSITE WITHIN THE EXISTING CHANNEL FOR APPROXIMATELY 800' PRIOR TO DISCHARGING INTO BRIAR LAKE WHICH IS THE HEADWATERS OF THE BRANDYWINE CREEK (TSP).

DISCHARGE POINT 003 (DP 003) IS LOCATED AT THE EASTERN PROPERTY CORNER WHERE RUNOFF SHEET FLOWS TOWARDS THE SOUTHEAST. RUNOFF WILL DISCHARGE OFFSITE FOR APPROXIMATELY 585 FEET PRIOR TO DISCHARGING INTO BRIAR LAKE WHICH IS THE HEADWATERS OF THE BRANDYWINE CREEK (TSP).

**SOIL INFORMATION AND GEOLOGY**  
THE FOLLOWING SOILS ARE FOUND WITHIN OR ADJACENT TO THE AREA TO BE DISTURBED BY EARTH MOVING ACTIVITIES. THESE SOILS CAN ERODE WHEN DISTURBED. EROSION CONTROL MEASURES SUCH AS FILTER SOCKS, SLOPE AND SWALE MATTING, RIPRAP OUTLET PROTECTION, INLET PROTECTION, ROCK CONSTRUCTION ENTRANCES, AND SEDIMENT BASINS.

Map Symbol	Soil Name	Slope	Hydrologic Group
BeA	Bedington shaly silt loam	0-3%	B
BeB	Bedington shaly silt loam	3-8%	B
BeBb	Berks channely silt loam	3-8%	B
BeC	Berks channely silt loam	8-15%	B
Com3	Comly silt loam	3-8%	C

\*IF SOILS ARE BOLD THEY ARE DISTURBED DURING CONSTRUCTION OF THIS PROJECT.

THE PA DEP'S EMAPPA DOES NOT IDENTIFY ANY KNOWN KARST FEATURES ON SITE OR IN THE IMMEDIATE VICINITY OF THE PROJECT. THE ENTIRE SITE OF THE PROJECT IS THE HAMBURG SITE OF THE HAMBURG SEQUENCE OF HAMBURG SEQUENCE ROCKS WHICH ARE COMPRISED OF SHALE, SILTSTONE, AND GRAYWACKE. AS SUCH, THE POTENTIAL FOR KARST ACTIVITY IS MINIMAL. SHOULD A GEOTECHNICAL HAZARD BE ENCOUNTERED, THE COUNTY CONSERVATION DISTRICT WILL BE IMMEDIATELY CONTACTED, AND A CERTIFIED GEOTECHNICAL ADVISOR WILL BE REQUIRED TO OVERSEE MITIGATION OF THE HAZARD.  
**BEDINGTON SOILS** – THE BEDINGTON SERIES CONSISTS OF VERY DEEP, WELL DRAINED SOILS. BEDINGTON SOILS FORMED IN RESIDUUM FROM DARK BROWN, GRAY AND OLIVE AID, SEDIMENTARY, SILTSTONE AND SHALE, WITH SOME SANDSTONE INTERBEDS. THEY ARE ON NEARLY LEVEL TOOLS AND ON THE SLOPES OF HILLS AND RIDGES. PERMEABILITY IS MODERATE. MEAN ANNUAL PRECIPITATION IS 42 INCHES. MEAN ANNUAL TEMPERATURE IS 52 DEGREES F. BEDINGTON SOILS MAY BE SUSCEPTIBLE TO CUT BANKS AND CAVE INS AND CORROSIVE TO CONCRETE. THIS SOIL MAY ALSO BE SUBJECT TO DROUGHT AND MAY BE EASILY ERODED. BEDINGTON SOILS MAY ALSO BE SUSCEPTIBLE TO HYDRIC INCLUSIONS, SLOW PERCOLATION, FROST ACTION, AND A POOR SOURCE OF TOPSOIL.

**BERKS SOILS** – THE BERKS SERIES CONSISTS OF MODERATELY DEEP, WELL DRAINED SOILS FORMED IN RESIDUUM WEATHERED FROM BMP'S AS WELL AS FROSTED AND FROZEN UPLANDS. SLOPE AND SILTSTONE. THEY ARE ON CONCAVE UPLAND SLOPES OF 0 TO 25 PERCENT. PERMEABILITY IS MODERATE OR MODERATELY RAPID. MEAN ANNUAL PRECIPITATION IS 42 INCHES. MEAN ANNUAL TEMPERATURE IS 52 DEGREES F. BERKS SOILS MAY BE SUSCEPTIBLE TO CUT BANKS AND CAVE INS, CORROSIVE TO CONCRETE, DROUGHT, AND MAY BE EASILY ERODED. BERKS SOILS MAY ALSO BE SUSCEPTIBLE TO HYDRIC INCLUSIONS, SLOW PERCOLATION, FROST ACTION, AND A POOR SOURCE OF TOPSOIL.

**COMLY SOILS** – THE COMLY SERIES CONSISTS OF VERY DEEP, MODERATELY WELL DRAINED, THESE SOILS FORMED COLLUVIUM WEATHERED FROM GRAY BROWN AND GRAY SHALE, SANDSTONE, AND SILTSTONE. THEY ARE ON CONCAVE UPLAND SLOPES OF 0 TO 25 PERCENT. PERMEABILITY IS MODERATE ABOVE THE FRAGIPAN AND MODERATELY SLOW IN THE FRAGIPAN. MEAN ANNUAL PRECIPITATION IS 42 INCHES. MEAN ANNUAL TEMPERATURE IS 52 DEGREES F. COMLY SOILS MAY BE SUSCEPTIBLE TO CUT BANKS AND CAVE INS, CORROSIVE TO STEEL AND CONCRETE, DROUGHT, AND MAY BE EASILY ERODED. COMLY SOILS MAY ALSO BE SUSCEPTIBLE TO A SEASONALLY HIGH WATER TABLE, HYDRIC INCLUSIONS, PIPING, FROST ACTION, AND A POOR SOURCE OF TOPSOIL.

- SOIL USE LIMITATIONS AND RESOLUTIONS**
- CUT-BANK CAVING, ALL APPLICABLE OSHA STANDARDS AND REGULATIONS SHALL BE IMPLEMENTED AT ALL TIMES DURING TRENCHING AND EXCAVATION OPERATIONS.
  - CORROSION OF STEEL AND CONCRETE: ALL UNDERGROUND FOUNDATIONS AND STRUCTURES SHALL BE PROPERLY PROTECTED AGAINST CORROSION, WHICH MAY INCLUDE COATING THESE STRUCTURES WITH CORROSION-RESISTANT MATERIAL.
  - DROUGHT: VEGETATION MAY REQUIRE REGULAR IRRIGATION DURING ESTABLISHMENT.
  - EASILY ERODIBLE: EROSION AND SEDIMENT POLLUTION CONTROLS WILL BE IMPLEMENTED TO AVOID THE TRANSPORTATION OF SEDIMENT-LADEN WATER OFF-SITE.
  - DEPTH TO SATURATED ZONE/SUBSTRATE HIGH WATER TABLE: THE SITE MAY REQUIRE DEWATERING OF PITS DURING CONSTRUCTION, I.E. WHEN POURING FOOTERS, EXCAVATING TRENCHES, DEWATERING BASINS, ETC. THE GEOTECHNICAL REPORT IDENTIFIED ISOLATED AREAS OF HIGH GROUNDWATER. IF DEWATERING IS REQUIRED, A SUMP PIT AND FILTER BAG SHALL BE UTILIZED, AND WATER SHALL BE PUMPED TO AN UNDISTURBED AREA UPSTREAM OF A PERIMETER CONTROL BMP SUCH AS A FILTER SOCK.
  - HYDRIC SOILS/HYDRIC INCLUSIONS: A WETLAND FIELD SURVEY WAS CONDUCTED AND VARIOUS WETLANDS ARE LOCATED ON SITE. NO DISTURBANCE WILL TAKE PLACE WITHIN ANY OF THE WETLANDS DELINEATED.
  - LOW STRENGTH/LANDSLIDE PRONE: THE MAXIMUM PROPOSED SLOPE ON THE SITE IS 3:1. THIS WILL REDUCE THE POTENTIAL FOR EROSION AND SLOPE FAILURE. PROPOSED BERM SHALL BE COMPACTED FULLY IN ORDER TO PROTECT AGAINST LANDSLIDES, AND SHALL BE STABILIZED IMMEDIATELY.
  - SLOW PERCOLATION: INFILTRATION TESTS PREVIOUSLY PERFORMED INDICATED THAT THE INFILTRATION RATE AT THE SITE IS NEGLIGIBLE WITHIN THE FOUR (4) MRC FACILITIES. A SUBSURFACE INFILTRATION BASIN IS PROPOSED IN THE AREA WHERE INFILTRATION TESTING YIELDED ADEQUATE RESULTS. PRECAUTIONS WILL BE TAKEN TO ENSURE THAT THE SELECTED PCSM BMP'S INFILTRATE WITHIN THE REQUIRED TIME PERIOD, INCLUDING INFILTRATION TESTING AND SOIL MODIFICATION/UNDERDRAIN INSTALLATION, IF NECESSARY.
  - PIPING: ANTI-SEEP COLLARS WILL BE PROVIDED AS PART OF THE PCSM AND PIPELINE DESIGNS.
  - POOR SOURCE OF TOPSOIL: THE ADEQUACY OF THE TOPSOIL WILL BE EVALUATED UPON THE COMMENCEMENT OF EXCAVATION. AS THE ENTIRE SITE IS FORESTED, THE TOPSOIL IS EXPECTED TO BE SUFFICIENT.
  - FROST ACTION: ALL IMPERVIOUS SURFACES SHALL BE GRADED AT A MINIMUM OF 1% IN ONE DIRECTION, SO THAT WATER WILL NOT COLLECT ON THE SURFACE AND CAUSE DAMAGE DURING FREEZE/THAW CYCLES. CRACKS WHICH DEVELOP IN THE IMPERVIOUS SURFACES SHALL BE PROMPTLY SEALED.
  - SHRINK/SWELL: ALL SITE GRADING SHALL DIRECT WATER AWAY FROM BUILDINGS AND OTHER IMPERVIOUS SURFACES TO REDUCE THE LIKELIHOOD OF WATER INFILTRATING NEAR OR UNDER THESE STRUCTURES.
  - SINKHOLE FORMATION: THE PA DEP'S EMAPPA DOES NOT IDENTIFY ANY KNOWN KARST FEATURES ON SITE OR IN THE IMMEDIATE VICINITY OF THE PROJECT. THE ENTIRE SITE OF THE HAMBURG SEQUENCE OF HAMBURG SEQUENCE ROCKS AND THE GRAYWACKE OF HAMBURG SEQUENCE ROCKS WHICH ARE COMPRISED OF SHALE, SILTSTONE, AND GRAYWACKE. AS SUCH, THE POTENTIAL FOR KARST ACTIVITY IS MINIMAL. SHOULD A GEOTECHNICAL HAZARD BE ENCOUNTERED, THE COUNTY CONSERVATION DISTRICT WILL BE IMMEDIATELY CONTACTED, AND A CERTIFIED GEOTECHNICAL ADVISOR WILL BE REQUIRED TO OVERSEE MITIGATION OF THE HAZARDS.
  - WETNESS: THE SITE MAY REQUIRE DEWATERING OF PITS DURING CONSTRUCTION, I.E. WHEN POURING FOOTERS, DEWATERING BASINS, ETC. SHOULD WETNESS BE REQUIRED, A SUMP PIT AND FILTER BAG SHALL BE UTILIZED, AND WATER SHALL BE PUMPED TO AN UNDISTURBED AREA UPSTREAM OF A PERIMETER CONTROL (FILTER SOCK).

- GENERAL SOIL NOTES**
1. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL NEEDED TO HAVE APPROPRIATE E&S CONTROLS.
  2. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLUFFAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES, AND CONDUIITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR PERMANENTLY STABILIZED WITHIN THE SPECIFIED PERIODS.
  3. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
  4. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
  5. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
  6. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
  7. THE LEBANON COUNTY CONSERVATION DISTRICT SHALL BE CONTACTED IF SEEPS OR SPRINGS ARE ENCOUNTERED AND THE DESIGNS ARE ALTERED DURING CONSTRUCTION AND THEY SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.

**CALCULATIONS**  
TEMPORARY AND PERMANENT EROSION CONTROL FACILITIES WERE DESIGNED IN ACCORDANCE WITH THE STANDARDS ESTABLISHED IN THE EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL (PA DEP BUREAU OF WATERWAYS ENGINEERING AND WETLANDS, MARCH 2012).

**CONSERVATION DISTRICT GENERAL E&S NOTES**  
1. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE COUNTY CONSERVATION DISTRICT SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE DISTRICT MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL BY ITS DISCRETION.

2. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION AND NOTIFY THE COUNTY CONSERVATION DISTRICT.

3. ALL PUMPING OF SEDIMENT LADEN WATER SHALL BE THROUGH A SEDIMENT CONTROL BMP, SUCH AS A PUMPED WATER FILTER BAG OR EQUIVALENT SEDIMENT REMOVAL FACILITY, OVER UNDISTURBED VEGETATED AREAS.

4. FAILURE TO CORRECTLY INSTALL E&S BMP'S, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE EARTH DISTURBANCE ACTIVITY, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMP'S MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO \$10,000 PER DAY IN CIVIL PENALTIES.

5. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 2601 ET SEQ., 271.1., AND 287.1 ET SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.

6. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE REMOVAL OF ANY EXCESS MATERIAL AND MAKE SURE THE SITE(S) RECEIVING THE EXCESS HAS AN APPROVED AND FULLY IMPLEMENTED EROSION AND SEDIMENT CONTROL PLAN THAT MEETS THE CONDITIONS OF CHAPTER 102 AND/OR OTHER STATE OR FEDERAL REGULATIONS.

7. CLEAN FILL IS DEFINED AS: UNCONTAMINATED, NON-WATER SOLUBLE, NON-DECOMPOSABLE, INERT, SOLID MATERIAL. THE TERM INCLUDES SOIL, ROCK, STONE, DREGGED MATERIAL, USE ASPHALT, AND BRICK, BLOCK OR CONCRETE FROM FINISHED AREAS WHICH WILL BE COOLED BY THE NATIVE GRASSES AND PLUG PLANTINGS IN THE BASIN BOTTOMS. THIS TERM DOES NOT INCLUDE MATERIALS PLACED IN OR ON THE WATERS OF THE COMMONWEALTH UNLESS OTHERWISE AUTHORIZED. (THE TERM "USED ASPHALT" DOES NOT INCLUDE MILLED ASPHALT OR ASPHALT THAT HAS BEEN PROCESSED FOR RE-USE.)

8. ANY PLACEMENT OF CLEAN FILL THAT HAS BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE MUST USE 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.

9. ENVIRONMENTAL DUE DILIGENCE MUST BE PERFORMED TO DETERMINE IF THE FILL MATERIALS ASSOCIATED WITH THE PROJECT QUALIFY AS CLEAN FILL. ENVIRONMENTAL DUE DILIGENCE IS DEFINED AS: INVESTIGATIVE TECHNIQUES, INCLUDING, BUT NOT LIMITED TO, VISUAL INSPECTION OF THE DISTURBED AREA, DATA BASE SEARCHES, REVIEW OF PROPERTY OWNERSHIP, HISTORY OF PROPERTY USE, SANBORN MAPS, ENVIRONMENTAL QUESTIONNAIRES, TRANSACTION SCREENS, ANALYTICAL TESTING, ENVIRONMENTAL ASSESSMENTS OR AUDITS. ANALYTICAL TESTING IS NOT A REQUIRED PART OF DUE DILIGENCE UNLESS VISUAL INSPECTION AND/OR REVIEW 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 THE DEPARTMENT'S POLICY "MANAGEMENT OF CLEAN FILL."

**TEMPORARY CONTROL MEASURES**

1. TOPSOIL STOCKPILE
  - a. A STOCKPILE SHALL BE USED TO CONTAIN ALL STRIPPED TOPSOIL IN A LIMITED AREA IN ORDER TO KEEP DISTURBANCE TO A MINIMUM.
  - b. STOCKPILES SHALL BE STABILIZED IMMEDIATELY IN ACCORDANCE WITH THE TEMPORARY SEEDING SPECIFICATION CONTAINED HEREON.
  - c. STOCKPILES SHALL BE LOCATED SO THAT ALL SWALES CAN FUNCTION AS DESIGNED.
  - d. STOCKPILE HEIGHTS MUST NOT EXCEED 35' IN HEIGHT. SIDE SLOPES SHALL BE 2:1 OR FLATTER.

2. SEDIMENT BASINS/TRAPS

- a. THE PROPOSED PERMANENT STORMWATER MRC BASINS 1-3 WILL SERVE AS SEDIMENT BASIN 1 AND SEDIMENT TRAPS 2-3 DURING THE CONSTRUCTION PHASE. REQUIRED SEDIMENT STORAGE AND DEWATERING VOLUMES ARE SPECIFIED ON THE STANDARD E&S WORKSHEETS PRESENTED LATER IN THIS REPORT.
- b. ACCUMULATED SEDIMENT SHALL BE REMOVED FROM EACH BASIN/TRAP WHEN IT HAS REACHED THE CLEAN OUT ELEVATION NOTED ON THE CLEANOUT TAG FOR THAT BASIN/TRAP. ALL SEDIMENT REMOVED FROM THE BASIN/TRAP SHALL BE DISPOSED WITHIN THE LIMITS OF DISTURBANCE, AWAY FROM STEEP SLOPES, AND IN A MANNER THAT WILL NOT CAUSE EROSION OR SEDIMENTATION. ALL AREAS DISTURBED DURING THIS PROCESS SHALL BE MULCHED AND PERMANENTLY STABILIZED WITH SEED.

3. SILT SOCK

- a. SILT SOCK SHALL BE USED TO INTERCEPT SEDIMENT-LADEN RUNOFF FROM SMALL WATERSHEDS.
- b. SILT SOCK MUST BE INSTALLED AT LEVEL GRADE. BOTH ENDS OF THE SILT SOCK SHALL EXTEND UP-SLOPE AT A 45-DEGREE ANGLE TO THE MAIN FENCE/SOAK ALIGNMENT.
- c. SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH ½ THE ABOVE GROUND HEIGHT OF SOCK.
- d. ALL AREAS OF CONCENTRATED FLOW AND AT ALL AREAS WHERE THE SILT SOCK HAS COLLAPSED OR UNDERCUT DUE TO EXCESSIVE FLOWS, A NEW SECTION OF SOCK SHALL BE INSTALLED.

4. ROCK FILTER

- a. A RIPRAP BERM SHALL BE PROVIDED WHERE SHOWN ON THE PLAN AND AT ALL LOCATIONS OF CONCENTRATED FLOWS.
- b. A 6" LAYER OF COMPOST SHALL BE ANCHORED TO THE UPSLOPE SIDE OF THE ROCK FILTER.
- c. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH 1/3 THE HEIGHT OF THE FILTER.
- d. ROCK FILTERS WILL BE REMOVED WHEN CLOGGED WITH SEDIMENT. THE STONE SHALL BE WASHED FREE OF ALL SEDIMENT OR NEW STONE SHALL BE USED TO REBUILD THE FILTER.

5. INTERIM STABILIZATION / TEMPORARY EROSION CONTROL MATTING

- a. TEMPORARY SEEDING/MATTING AND MULCHING SHALL BE APPLIED WHERE INDICATED TO PROVIDE INTERIM STABILIZATION TO EXPOSED AREAS.
- b. TEMPORARY SEEDING/MULCHING/MATTING SHALL AS APPLIED AS SPECIFIED ON THE SEEDING SCHEDULE CONTAINED ON THE E&SP PLAN.
- c. ANY DISTURBED AREA ON WHICH ACTIVITY HAS CEASED AND WHICH WILL REMAIN EXPOSED MUST BE STABILIZED IMMEDIATELY. DURING NON-GERMINATING PERIODS, MULCH MUST BE APPLIED AT THE RECOMMENDED RATES. DISTURBED AREAS THAT ARE NOT AT FINISHED GRADE AND WHICH WILL BE RE-DISTURBED WITHIN 1 YEAR MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY SEEDING SPECIFICATIONS CONTAINED HEREON. DISTURBED AREAS THAT ARE AT FINISHED GRADE OR WILL NOT BE RE-DISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE PERMANENT SEEDING SPECIFICATIONS CONTAINED HEREON.

6. ALTERNATIVE CONSTRUCTION ENTRANCE

- a. A STABILIZED PAD OF CRUSHED STONE SHALL BE LOCATED WHERE CONSTRUCTION TRAFFIC WILL BE ENTERING AND LEAVING THE SITE. THE ROCK CONSTRUCTION ENTRANCE IS USED TO EMULATE THE TRACKING OR FLOWING OF SEDIMENT ONTO THE EXISTING ROADWAY.
- b. ROCK CONSTRUCTION ENTRANCE SHALL BE A MINIMUM OF 100'L AND 20"W. REFER TO THE PLAN DETAIL FOR ADDITIONAL SPECIFICATIONS.

7. SEDIMENT SKIMMER

- a. A RIPPER SHALL BE ATTACHED TO THE SKIMMER ARM TO FACILITATE ACCESS TO THE SKIMMER WHEN INSTALLED.
- b. SKIMMER SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT GREATER THAN 0.25" IN DEPTH.
- c. ANY MALFUNCTIONING SKIMMER SHALL BE REPAIRED OR REPLACED WITHIN 24 HOURS OF INSPECTION.
- d. ICE OR SEDIMENT BUILDUP AROUND THE PRINCIPAL SPILLWAY SHALL BE REMOVED TO ALLOW THE SKIMMER TO RESPOND TO FLUCTUATING WATER ELEVATIONS.
- e. SEDIMENT SHALL BE REMOVED FROM THE BASIN/TRAP WHEN IT REACHES THE LEVEL MARKED ON THE SEDIMENT CLEAN-OUT STAKE OR THE TOP OF THE LANDING DEVICE.
- f. A SEMI-CIRCULAR LANDING ZONE MAY BE SUBSTITUTED FOR THE GUIDE RAILS.

8. INLET FILTER BAGS

- a. INLET FILTER BAGS SHOULD BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT GREATER THAN 0.25" IN DEPTH.
- b. FILTER BAGS SHOULD BE CLEANED AND/OR REPLACED WHEN THE BAG IS HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET.
- c. ACCUMULATED SEDIMENT SHOULD BE DISPOSED OF IN THE APPROVED MANNER. BAGS THAT WILL BE REUSED SHOULD BE RINSED AT A LOCATION WHERE THE RINSE WATER WILL ENTER A SEDIMENT TRAP OR SEDIMENT BASIN.
- d. DAMAGED FILTER BAGS SHOULD BE REPLACED.

**PERMANENT CONTROL MEASURES**

1. PERMANENT GRASS / LEGUME COVER
  - a. ALL DISTURBED AREAS THAT ARE NOT PAVED SHALL BE PERMANENTLY STABILIZED WITH GRASS TO MINIMIZE EROSION. ALL SWALES SHALL BE PERMANENTLY SEEDED AS REQUIRED IN ACCORDANCE WITH THE SEEDING SPECIFICATION SHOWN ON THE ATTACHED E&SP PLAN.
2. RIP – RAP OUTLET PROTECTION
  - a. RIP-RAP SHALL BE USED AT ALL PIPE OUTLETS TO REDUCE THE OUTFLOW VELOCITY AND MINIMIZE EROSION POTENTIAL AT THE OUTLET PIPE.
  - b. RIP-RAP SHALL BE INSTALLED IN ACCORDANCE WITH THE DIMENSIONS AND MATERIALS SHOWN ON THE ATTACHED PLAN.
3. CHANNEL LINING INSTALLATION
  - a. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF LIME, FERTILIZER, AND SEED.
  - b. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH, BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
  - c. ROLL CENTER BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
  - d. PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH A 6" OVERLAP, USE A DOUBLE ROW OF STAGGERED STAPLES 4" APART TO SECURE BLANKETS.
  - e. FULL LENGTH EDGE OF BLANKETS AT TOP OF SIDE SLOPES MUST BE ANCHORED DEEP X 6" WIDE TRENCH, BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
  - f. BLANKETS ON SIDE SLOPES MUST BE OVERLAPPED 4" OVER THE CENTER BLANKET AND STAPLED (2" FOR C350 MATTING).
  - g. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40-FOOT INTERVALS. USE A ROW OF STAPLES 4" APART OVER ENTIRE WIDTH OF THE CHANNEL. PLACE A SECOND ROW 4" BELOW THE FIRST ROW IN A STAGGERED PATTERN.
  - h. THE TERMINAL END OF THE BLANKETS MUST BE ANCHORED IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.

**STABILIZATION SPECIFICATIONS**

1. UPON TEMPORARY CESSATION OF AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY WHERE A CESSATION OF EARTH DISTURBANCE ACTIVITIES WILL EXCEED 4 DAYS, THE SITE SHALL BE IMMEDIATELY SEEDED, MULCHED, OR OTHERWISE PROTECTED FROM ACCELERATED EROSION AND SEDIMENTATION PENDING FUTURE EARTH DISTURBANCE ACTIVITIES.

2. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS.

3. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN DRAWINGS IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. TOPSOIL STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SIDE SLOPES MUST BE 2:1 OR FLATTER.

4. AREAS WHICH ARE TO BE TOP-SOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES – 6 TO 12 INCHES ON COMPACTED SOILS – PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUT-SLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.

5. LIME AND FERTILIZER SHOULD BE APPLIED IN ACCORDANCE WITH SOIL TEST RECOMMENDATIONS. IF SOIL TEST RESULTS ARE NOT AVAILABLE, APPLY AT LEAST 6 TONS OF AGRICULTURAL GRADE LIMESTONE AND 1000 POUNDS OF 10-20-20 FERTILIZER PER ACRE.

6. APPLY SEED AT REQUIRED RATES. IF LEGUMES ARE PLANTED, BE SURE TO INOCULATE THE SEED WITH THE CORRECT LEGUME INOCULANT. SEED MAY BE BROADCAST ON THE SURFACE AND A LAYER OF MULCH APPLIED AT THE NECESSARY RATES. HYDROSEEDING IS ANOTHER METHOD OF SEEDING, WHERE THE SEED, FERTILIZER, AND MULCH ARE MIXED WITH WATER TO FORM AN EMULSION. THIS METHOD SHOULD ONLY BE DONE WITH THE CORRECT EQUIPMENT OR BY PROFESSIONALS.

7. TOPSOIL SHOULD NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET, OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION. COMPACTED SOILS SHOULD BE SCARIFIED 6 TO 12 INCHES ALONG CONTOUR WHENEVER POSSIBLE PRIOR TO SEEDING.

8. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE, THE OPERATOR SHALL STABILIZE THE DISTURBED AREAS. DURING NON-GERMINATING PERIODS, MULCH MUST BE APPLIED AT THE SPECIFIED RATES. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE RE-DISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY VEGETATIVE STABILIZATION SPECIFICATIONS. DISTURBED AREAS WHICH ARE AT FINAL GRADE OR WHICH WILL NOT BE RE-DISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS.

9. AN EROSION CONTROL BLANKET WILL BE INSTALLED ON ALL DISTURBED SLOPES STEEPER THAN 3:1. ALL AREAS OF CONCENTRATED FLOWS, AND DISTURBED AREAS WITHIN 50' OF A SURFACE WATER.

**MAINTENANCE**

1. THE APPLICANT/OR HIS DESIGNEE SHALL BE RESPONSIBLE FOR MAINTAINING ALL FACILITIES SHOWN ON THIS PLAN.

2. DIVERSIONS, CHANNELS, AND STOCKPILES MUST BE STABILIZED IMMEDIATELY.

3. ANY PERMANENTLY SEEDED AREA THAT BECOMES ERODED OR DISTURBED SHALL HAVE THE TOPSOIL REPLACED, THE GRASS RE-SOWN AND MULCH REAPPLIED, OR, AT THE DISCRETION OF THE OWNER, SOIL INSTALLED.

4. SILT SOCK MUST BE INSTALLED AT LEVEL GRADE ALONG THE CONTOURS. BOTH ENDS OF EACH SILT SOCK SECTION MUST EXTEND AT LEAST 8 FEET UP-SLOPE AT 45-DEGREE ANGLES TO THE MAIN ALIGNMENT. SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH ½ THE ABOVE GROUND HEIGHT OF THE SILT SOCK.

5. ANY SILT SOCK SECTION THAT HAS BEEN UNDERMINED OR TOPPED MUST BE IMMEDIATELY REPLACED WITH A NEW SECTION OF SILT SOCK.

6. STOCKPILE HEIGHTS MUST NOT EXCEED 35 FEET. STOCKPILE SLOPES MUST BE 2:1 OR FLATTER.

7. ANY DISTURBED AREA ON WHICH ACTIVITY HAS CEASED AND WHICH WILL REMAIN EXPOSED MUST BE STABILIZED IMMEDIATELY. DURING NON-GERMINATING PERIODS, MULCH MUST BE APPLIED AT THE RECOMMENDED RATES. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE RE-DISTURBED WITHIN ONE (1) YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY SEEDING SPECIFICATIONS. DISTURBED AREAS WHICH ARE EITHER AT FINISHED GRADE OR WILL NOT BE RE-DISTURBED WITHIN ONE (1) YEAR MUST BE STABILIZED IN ACCORDANCE WITH PERMANENT SEEDING SPECIFICATIONS.

8. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED (DEFINED AS A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER, WITH A DENSITY CAPABLE OF RESISTING ACCELERATED EROSION AND SEDIMENTATION IN ALL AREAS TRIBUTARY TO THE CONTROLS), TEMPORARY EROSION AND SEDIMENTATION CONTROLS MUST BE REMOVED. AREAS DISTURBED DURING REMOVAL OF THE CONTROLS MUST BE STABILIZED IMMEDIATELY.

9. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT CONTROL BMP'S MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT CONTROL BMP'S AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEANOUT, REPAIR, REPLACEMENT, RE-GRADING, AND REPLACEMENT OF MULCH AND MULCHING, MUST BE COMPLETED IMMEDIATELY. IF MAINTENANCE OF EROSION AND SEDIMENT CONTROL BMP'S FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMP'S OR MODIFICATIONS TO THOSE INSTALLED WILL BE REQUIRED.

10. ANY SEDIMENT REMOVED FROM BASINS DURING CONSTRUCTION WILL BE RETURNED TO UPLAND AREAS ON SITE AND INCORPORATED INTO THE SITE GRADING IN A MANNER THAT WILL NOT CAUSE EROSION OR SEDIMENTATION. ALL AREAS DISTURBED DURING THIS PROCESS WILL BE MULCHED AND PERMANENTLY STABILIZED WITH SEED.

11. E&S BMP'S SHALL BE INSPECTED FOLLOWING EACH MEASURABLE RAINFALL THROUGH THE DURATION OF THE PROJECT. INSPECTIONS SHALL BE LOGGED ON DEP FORM 3800--PM--BW0271D (DATED 12/2019) AND SHALL SHOW THE DATES THAT E&S BMP'S ARE INSPECTED AND THE RESULTS OF THE INSPECTIONS. THE RESULTS OF THE INSPECTIONS SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO THE COUNTY CONSERVATION DISTRICT OR OTHER REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.

**STAGING OF EARTHMOVING**  
ALL EARTH MOVING ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING STAGING OF EARTHMOVING ACTIVITIES. EACH STAGE SHALL BE COMPLETED BEFORE A SUBSEQUENT STAGE IS INITIATED.

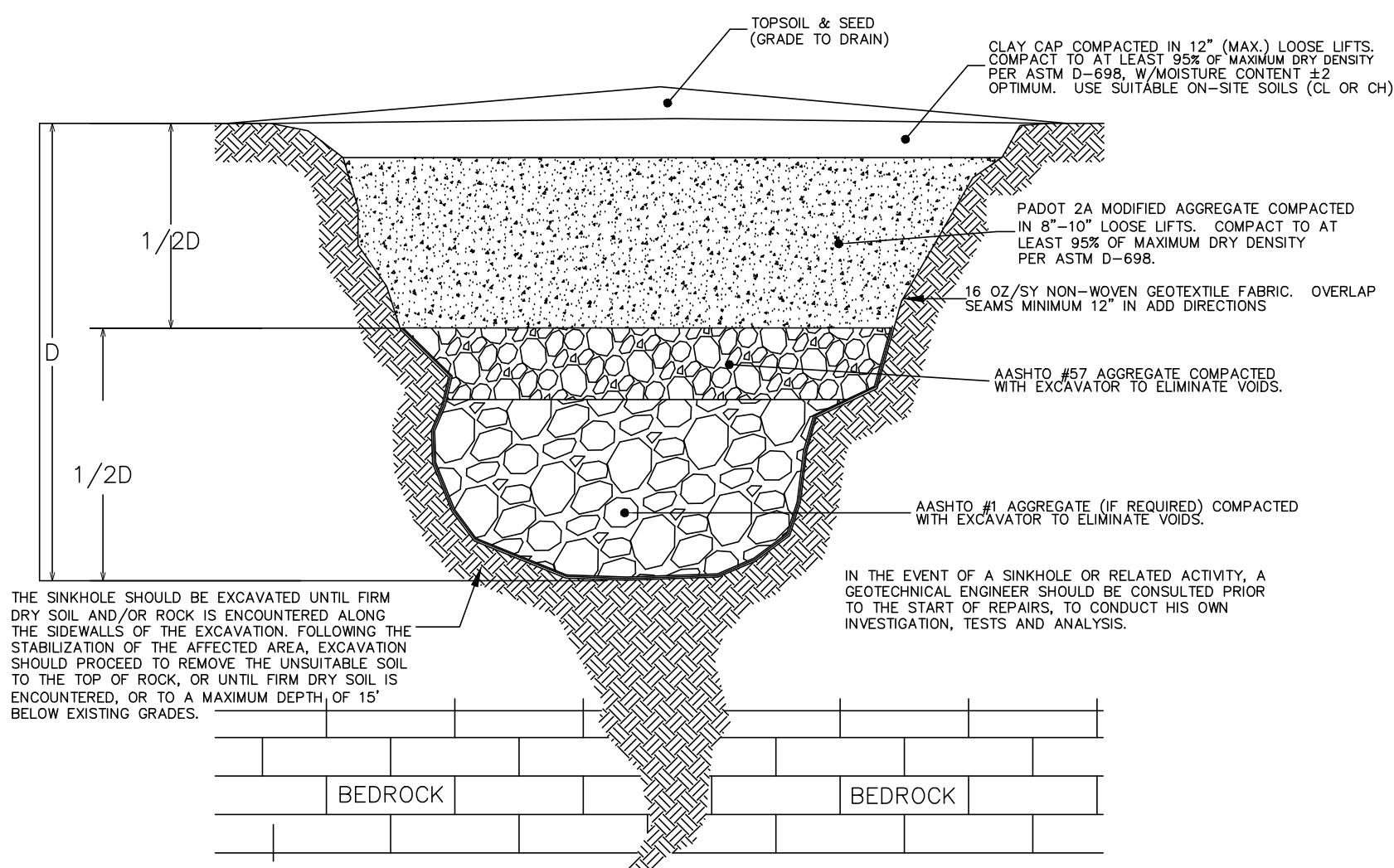
CONSTRUCTION OF THE SITE IMPROVEMENTS IS EXPECTED TO BEGIN IN THE FALL OF 2023. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. CONSTRUCTION WILL PROCEED IN A TIMELY MANNER IN ORDER TO LIMIT THE POTENTIAL FOR ACCELERATED EROSION AND SEDIMENTATION. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO ELIMINATE THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION. SHOULD ANY SINKHOLES OR GROUNDWATER SOURCES BE ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL CONTACT THE GEOTECHNICAL ENGINEER IMMEDIATELY. ALL PUMPING OF SEDIMENT LADEN WATER SHALL BE THROUGH A SEDIMENT CONTROL BMP, SUCH AS A PUMPED WATER FILTER BAG OR EQUIVALENT SEDIMENT REMOVAL FACILITY, OVER UNDISTURBED VEGETATED AREAS.

ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. EACH STAGE SHALL BE COMPLETED AND IMMEDIATELY STABILIZED BEFORE ANY FOLLOWING STAGE IS INITIATED. CLEARING, GRUBBING AND TOPSOIL STRIPPING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH STAGE. ANY DEVIATION FROM THE FOLLOWING SEQUENCE MUST BE APPROVED IN WRITING BY THE COUNTY CONSERVATION DISTRICT.

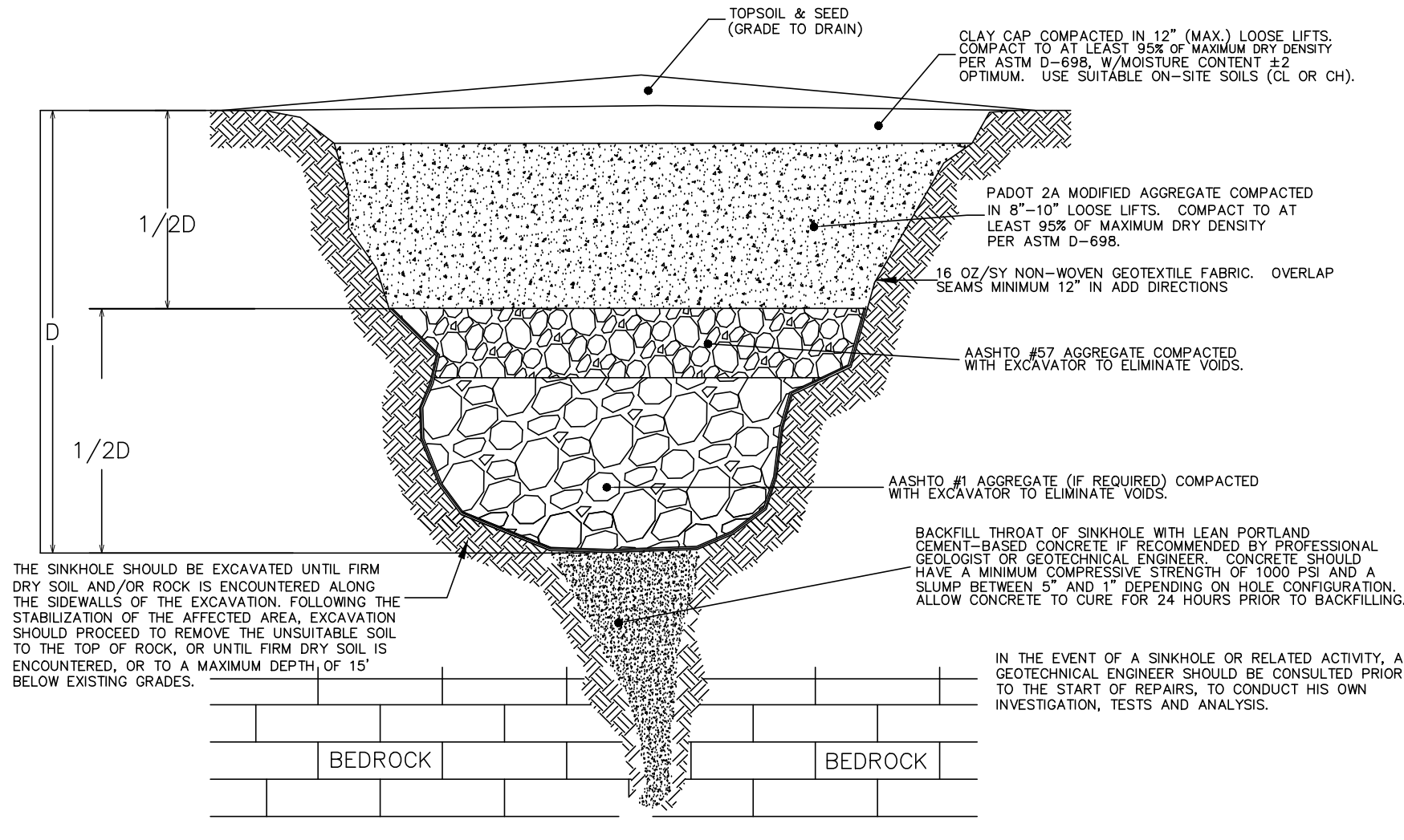
**SEQUENCE OF CONSTRUCTION**

1. AT LEAST 7 DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE CONTRACTOR SHALL INVITE ALL SUB-CONTRACTORS, THE LANDOWNER, ALL APPROPRIATE MUNICIPAL OFFICIALS, THE CIVIL ENGINEER, AND A REPRESENTATIVE OF THE LOCAL COUNTY CONSERVATION DISTRICT TO AN ON-SITE PRE-CONSTRUCTION MEETING. PERMETER E&S CONTROLS MAY BE INSTALLED PRIOR TO THE PRE-CONSTRUCTION MEETING.
2. AT LEAST 3 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 THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
3. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING BY THE LOCAL CONSERVATION DISTRICT OR BY DEP PERM TO IMPLEMENTATION.
4. INSTALL ALTERNATIVE ROCK CONSTRUCTION ENTRANCES AS SHOWN ON THE ATTACHED PLAN.
5. THE LIMITS OF DISTURBANCE (LOD) SHOULD BE MARKED PRIOR TO DISTURBANCE ACTIVITIES (I.E. SURVEY STAKES, POSTS & ROPE, CONSTRUCTION FENCE, ETC.).
6. LOCATE, STAKE, AND FLAG AREAS MARKED AS PCSM BMP'S (I.E. MRC BASINS 1-3, MRC SUBSURFACE BED 1, AND SUBSURFACE INFILTRATION BED 2). REFER TO PCSM PLAN FOR ADDITIONAL INFORMATION ON THE LOCATION OF PCSM BMP'S. ANY INFILTRATION BASIN SHALL BE INSTALLED IMMEDIATELY PRIOR TO THE CONSTRUCTION OF THE PERMETER CONTROL BMP. AFTER THE BASIN IS SEDED, AND 287.1 ET SEQ., THE CONTRACTOR SHALL NOT ILLEGALLY BURY DUMP, OR DISCHARGE ANY BUILDING MATERIAL OR WASTES ON OR OFF THE SITE. THESE BUILDING WASTES INCLUDE, BUT ARE NOT LIMITED TO, EXCESS SOIL MATERIALS, BUILDING MATERIALS, CONCRETE WASH WATER, SANITARY WASTES, ETC. THAT COULD ADVERSELY IMPACT WATER QUALITY.
7. INSTALL TEMPORARY ORANGE CONSTRUCTION FENCE AROUND ALL WETLAND AREAS AS DEPICTED ON THE PLANS. NO DISTURBANCE SHALL OCCUR WITHIN THE WETLAND AREAS.

8. INSTALL PERIMETER SILT SOCK ON THE SITE AT LOCATIONS 1-21 AS INDICATED ON THE ATTACHED PLAN. SILT SOCK IS TO BE INSTALLED ALONG THE CONTOUR WHERE POSSIBLE, AT A LEVEL GRADE. THE SILT SOCK SHOULD BE POSITIONED IN SUCH A MANNER AS TO PREVENT ANY SEDIMENT FROM ENTERING THE BASIN. THE SILT SOCK SHALL BE REMOVED IN ORDER TO RESTORE THE SEDIMENT STORAGE CAPACITY OF THESE AREAS. IN THE CASE OF A FAILURE OF THE SILT SOCK DUE TO HIGH FLOWS,

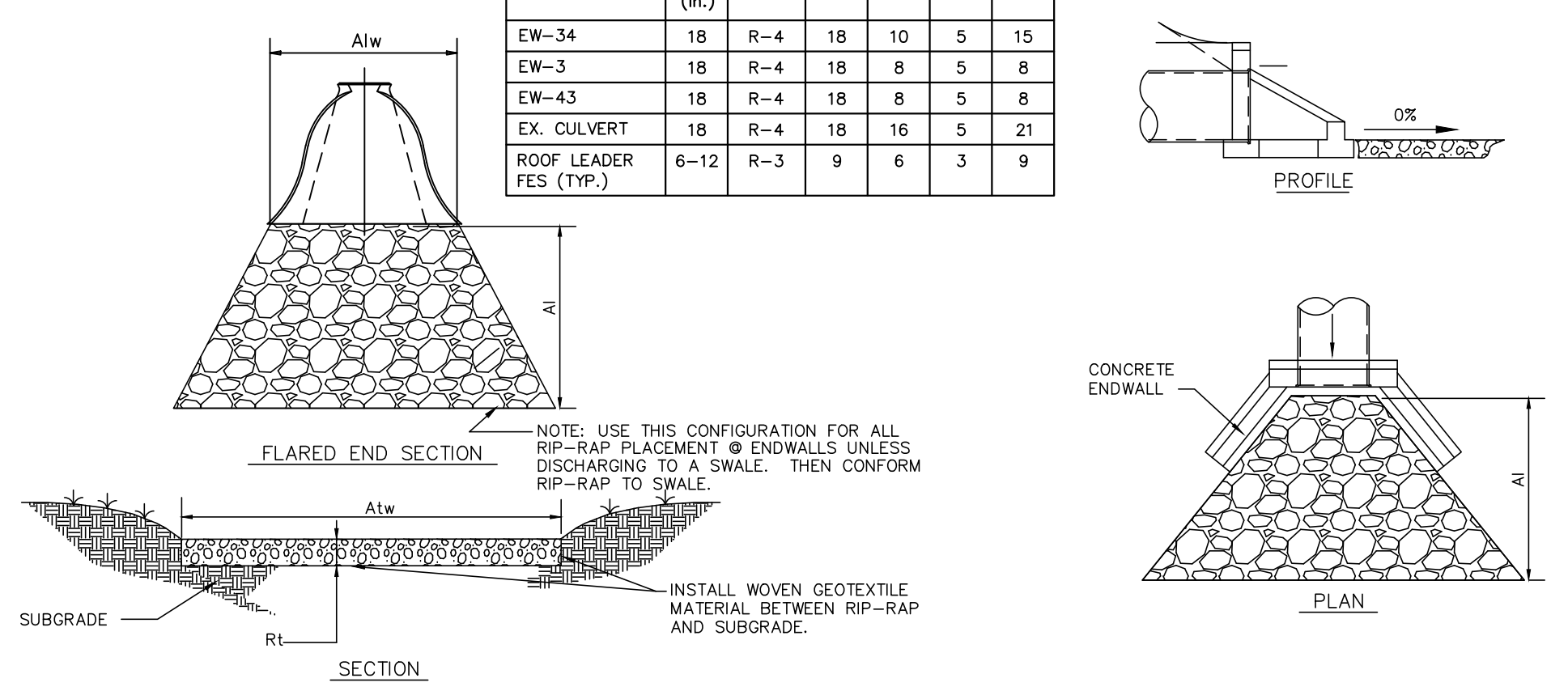


**SINKHOLE REPAIR DETAIL-BEDROCK THROAT NOT ENCOUNTERED**  
NO SCALE

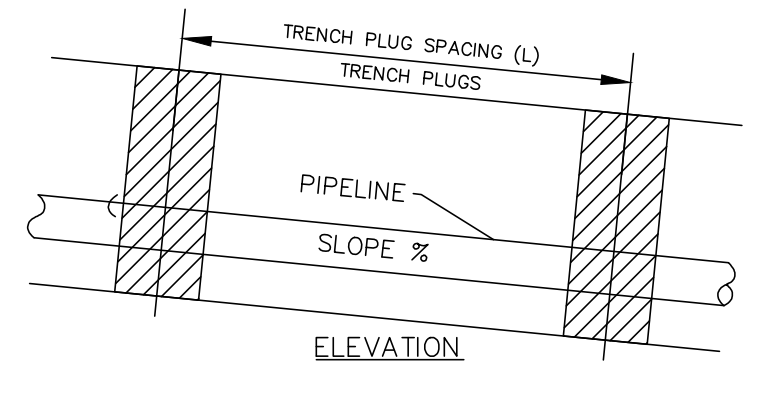


**SINKHOLE REPAIR DETAIL-BEDROCK THROAT ENCOUNTERED**  
NO SCALE

PIPE NO.	PIPE DIA. (in.)	RIPRAP SIZE	Rt (ft)	Al (ft)	Aw (ft)	Atw (ft)
EW-34	18	R-4	18	10	5	15
EW-3	18	R-4	18	8	5	8
EW-43	18	R-4	18	8	5	8
EX. CULVERT	18	R-4	18	16	5	21
ROOF LEADER RES (TYP.)	6-12	R-3	9	6	3	9

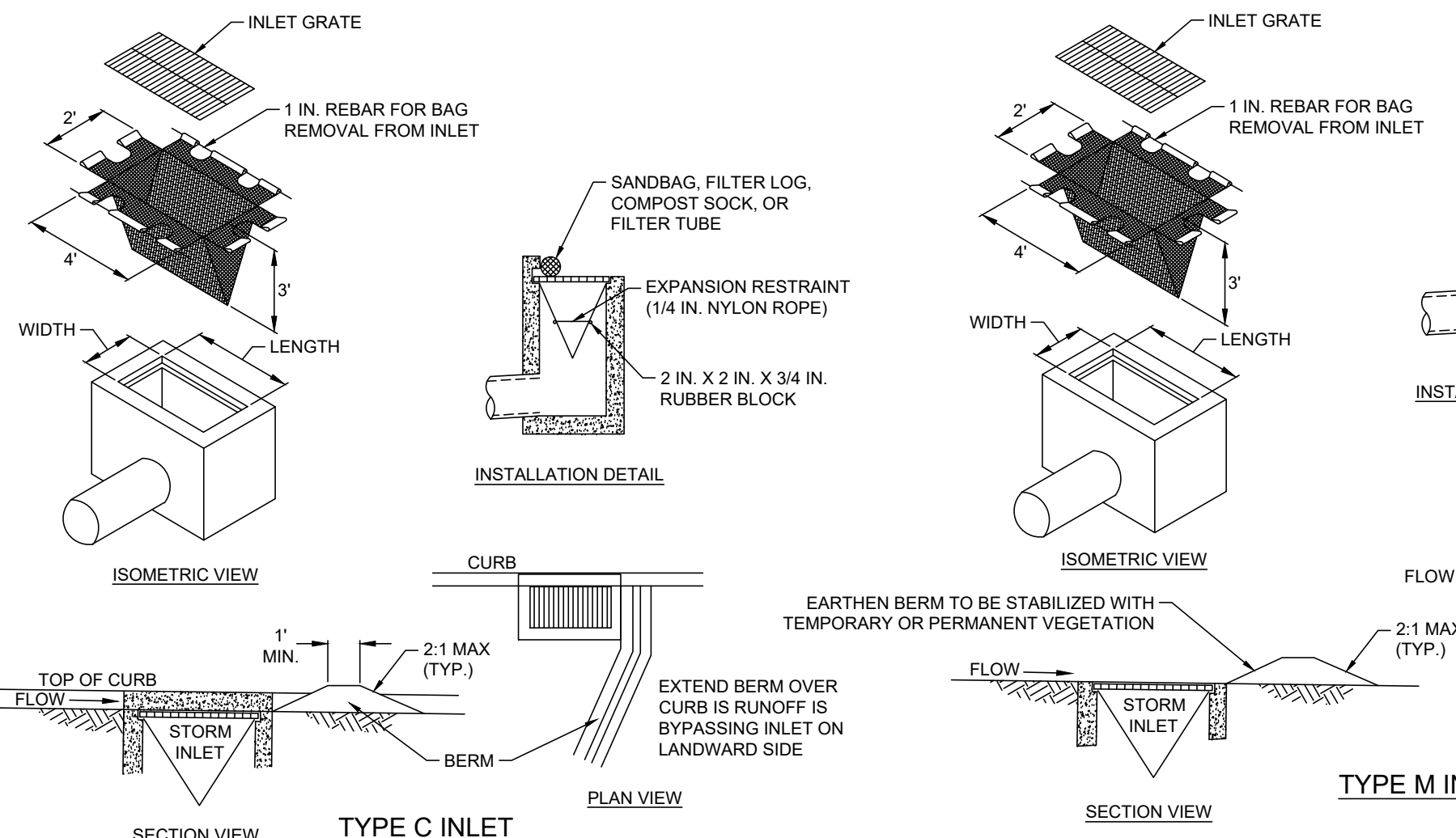


**FLARED END SECTION/ENDWALL RIP RAP DETAIL**  
NO SCALE

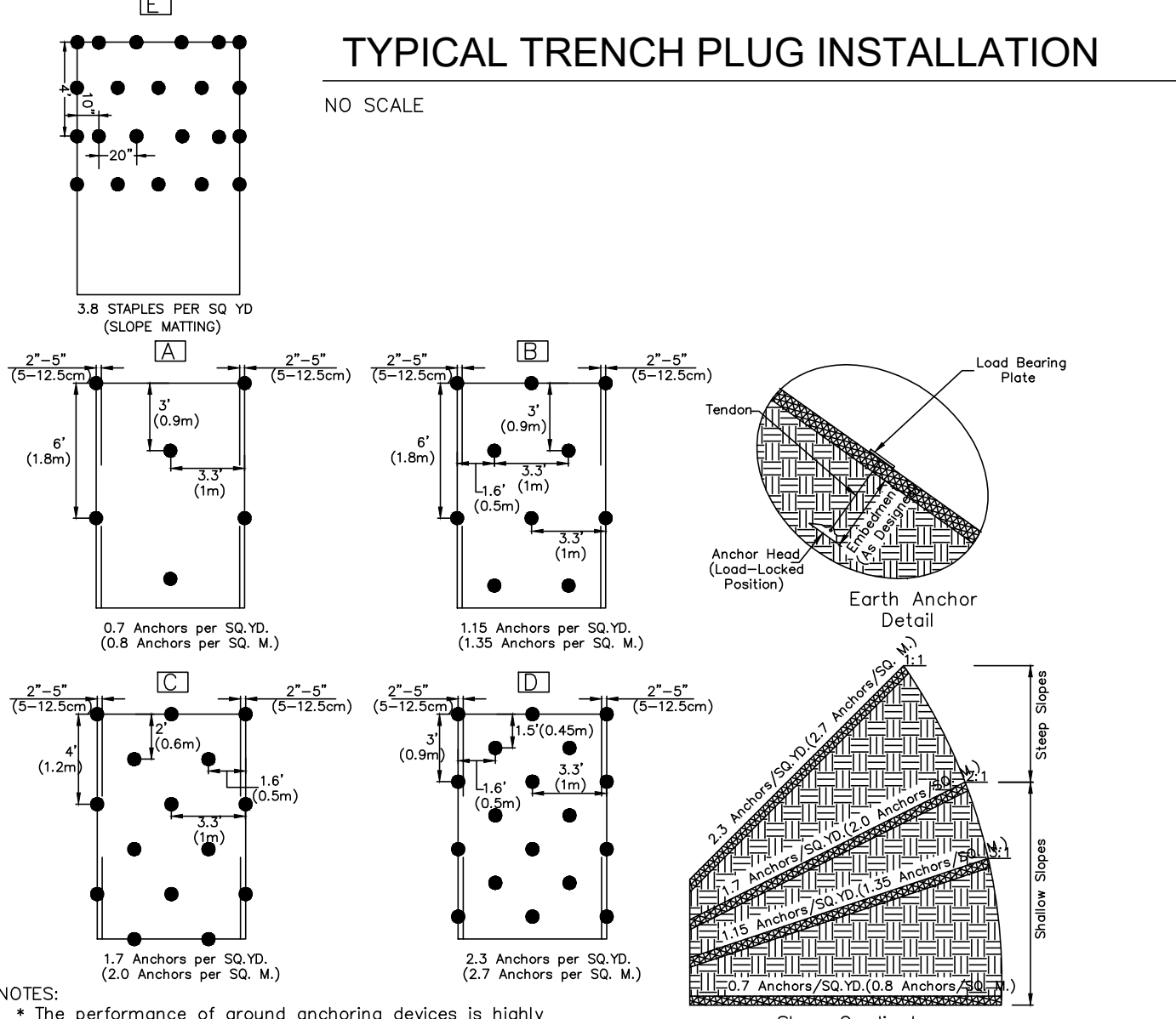


Trench Slope (%)	Spacing (ft)	Plug Material
< 5	50	Earth Filled Sacks
5 - 25	300	Earth Filled Sacks
25 - 35	200	Earth Filled Sacks
35 - 45	150	Earth Filled Sacks
> 45	50	Cement Filled Bags (Wetted) or Modified Stone

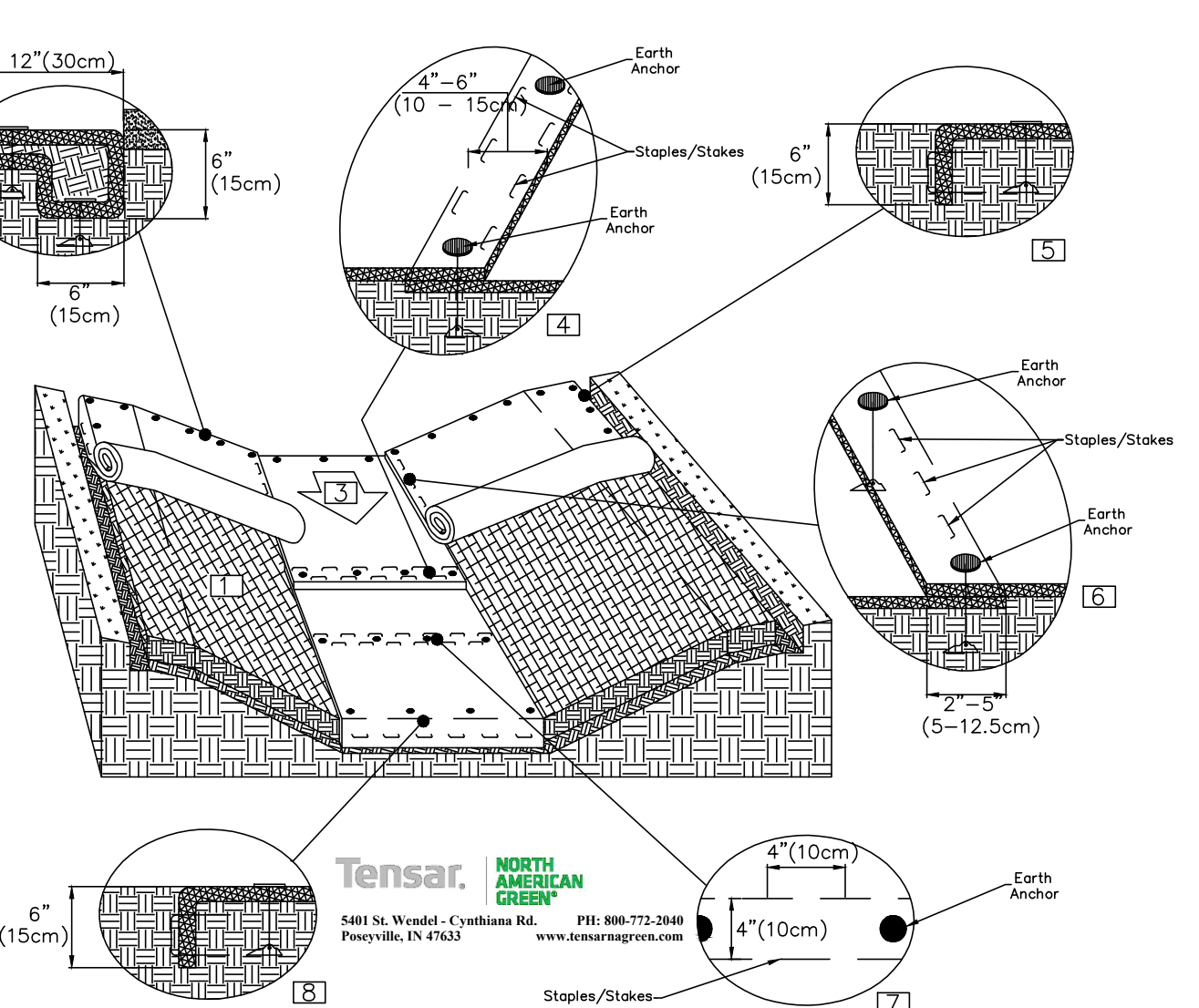
**TYPICAL TRENCH PLUG INSTALLATION**  
NO SCALE



**FILTER BAG INLET PROTECTION DETAIL - TYPE M & C INLETS**  
NO SCALE



**CHANNEL INSTALLATION EARTH ANCHOR DETAIL**  
NO SCALE

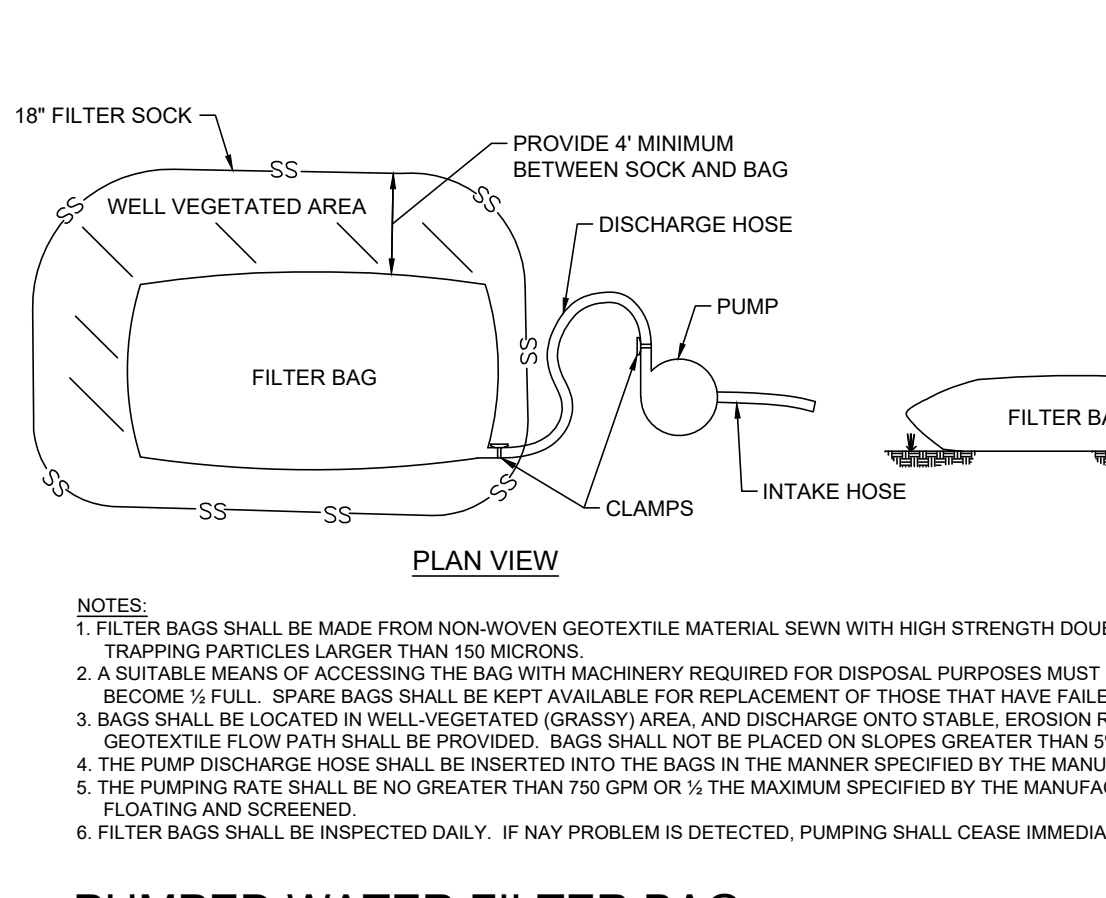


**STORMWATER SWALE DETAIL**  
NO SCALE

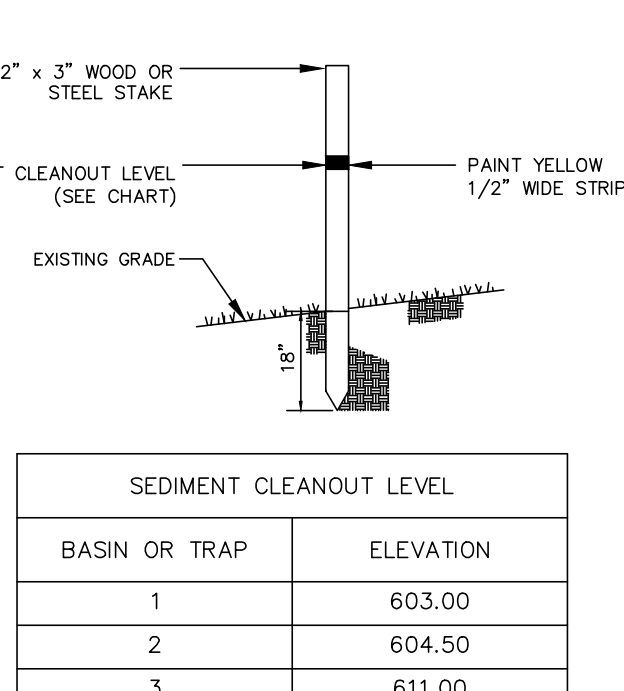
SWALE NO.	WIDTH (W)	DEPTH (D)	SIDE SLOPE(S)	SLOPE %	LINING WIDTH (Lw)	TEMPORARY LINING	STAPLE PATTERN
1	2'	1.25'	3	1.2%	10'	GRASS	N.A.G. S75 D
2	2'	1'	3	1.2%	8'	GRASS	N.A.G. S75 D
3	2'	1'	5	7%	8'	GRASS	N.A.G. S200 E
4	2'	1'	3	5%	8'	GRASS	N.A.G. S200 E

**SEDIMENT CLEANOUT LEVEL**

BASIN OR TRAP	ELEVATION
1	603.00
2	604.50
3	611.00



**PUMPED WATER FILTER BAG**  
NO SCALE



**CLEANOUT STAKE DETAIL**  
NO SCALE

SPECIES	PERCENTAGE	APP. RATE*	FERTILIZER**	SEED DATES
KENTUCKY BLUEGRASS	100%	2-3		
KENTUCKY BLUEGRASS PERENNIAL RYEGRASS	80-90%	3-4		
FINE FESCUE	40-60%	3-4	100-200-200 N-P <sub>2</sub> O <sub>5</sub> -K <sub>2</sub> O	MARCH 15-JUNE 15 & AUGUST 30-OCTOBER 15
TURF-TYPE TALL FESCUE	100%	6-8		
TURF-TYPE PEREN. RYEGRASS	100%	4-5		

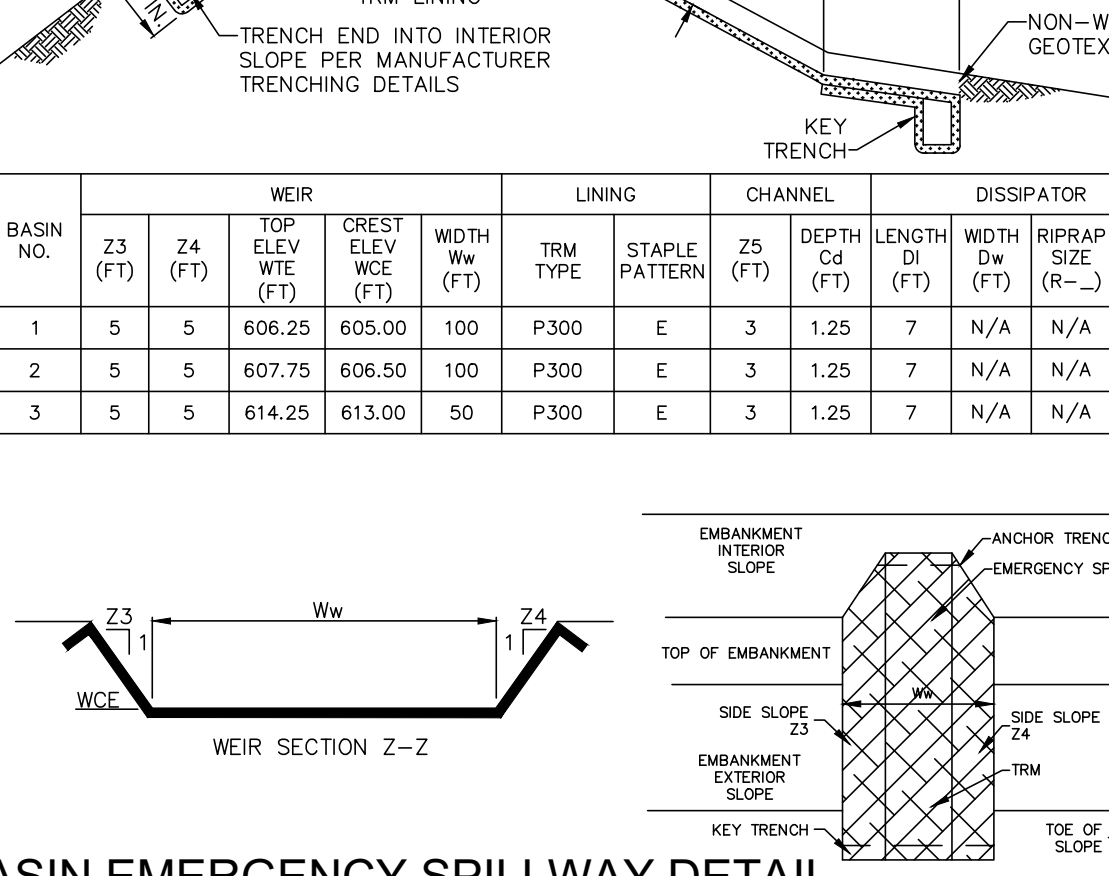
**SEEDING SPECIFICATIONS**  
NOT TO SCALE

SPECIES	PERCENTAGE	APP. RATE*	FERTILIZER**	SEED DATES
BROODFOOT TREFOIL	98%	10	100-200-200 N-P <sub>2</sub> O <sub>5</sub> -K <sub>2</sub> O	MARCH 15-JUNE 15 & AUGUST 30-OCTOBER 15
BROWN WITCH TALL FESCUE	1-2%	20		
		30		

**SEEDING SPECIFICATIONS**  
NOT TO SCALE

BASIN NO.	Z3 (FT)	Z4 (FT)	WEIR ELEV WTE (FT)	CREST ELEV WCE (FT)	WIDTH (W)	TRM TYPE	STAPLE PATTERN	CHANNEL DEPTH (FT)	LENGTH (L)	DISSIPATOR WIDTH (Dw)	RIPRAP THICK. (Rt)	RIPRAP GR1 (N)
1	5	5	606.25	605.00	100	P300	E	3	1.25	7	N/A	N/A
2	5	5	607.75	606.50	100	P300	E	3	1.25	7	N/A	N/A
3	5	5	614.25	613.00	50	P300	E	3	1.25	7	N/A	N/A

**SEEDING SPECIFICATIONS**  
NOT TO SCALE



**BASIN EMERGENCY SPILLWAY DETAIL**  
NO SCALE

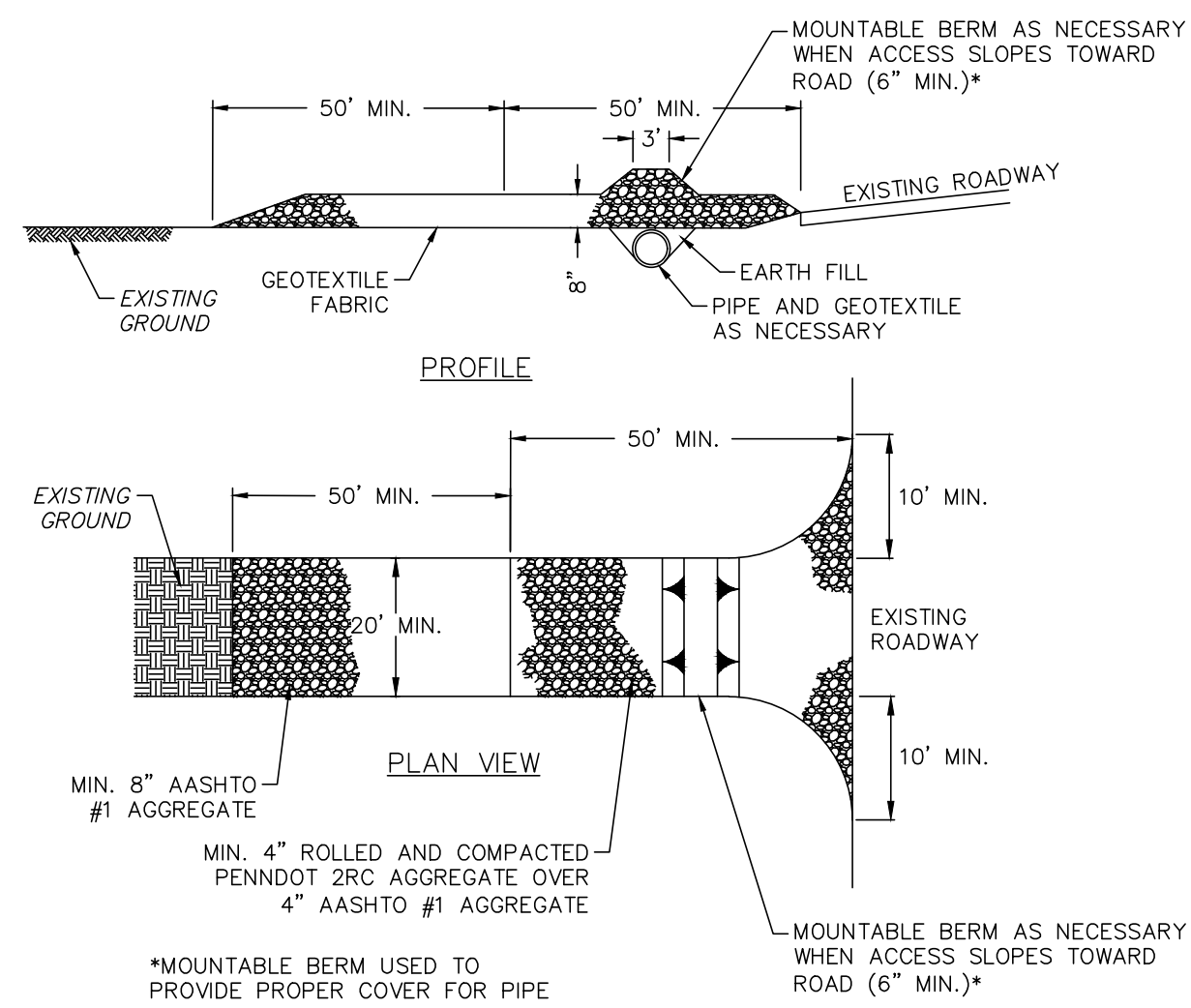
DATE	BY
5-8-23	CDS
5-12-23	CDS
5-12-23	CDS
6-28-23	CDS
8-4-23	CDS

REVISION	DATE	BY
PER ARRO COMMENT LETTER DATED 4-33-23	4-33-23	CDS
PER LCPD LETTER DATED 4-4-23	4-4-23	CDS
PER COLA COMMENTS DATED 3-31-23	3-31-23	CDS
PER ARRO COMMENT LETTER DATED 6-6-23	6-6-23	CDS
PER ARRO COMMENT LETTER DATED 7-13-23	7-13-23	CDS

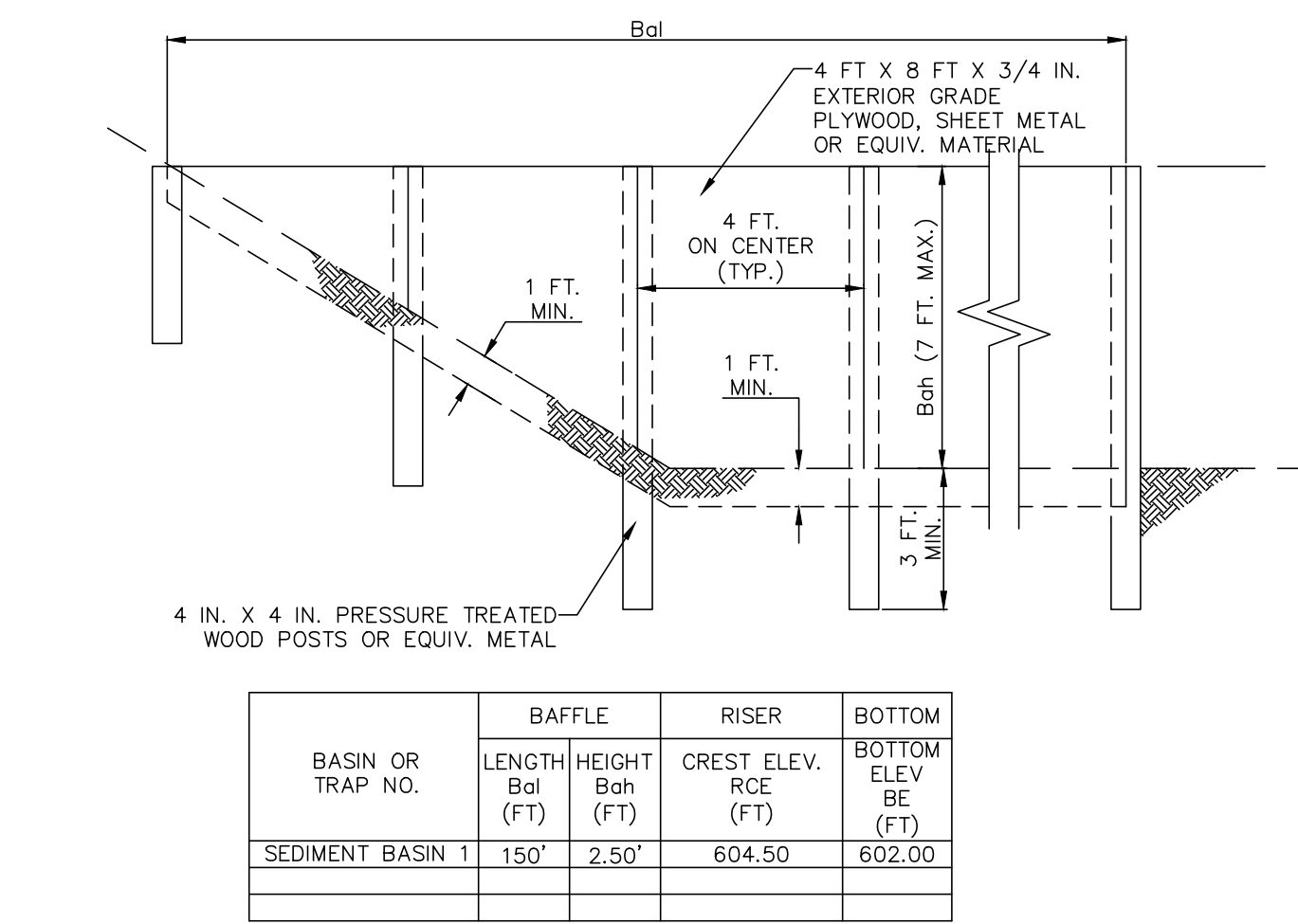
**EROSION & SEDIMENTATION POLLUTION CONTROL DETAILS**  
**PRELIMINARY/FINAL SUBDIVISION & LAND DEVELOPMENT PLANS**  
for  
**BRIAR RIDGE COMMONS - APARTMENTS**  
located in  
NORTH LEBANON TOWNSHIP  
LEBANON County, Pennsylvania

**is**  
Stredbeck Engineering & Surveying Inc.  
279 Lebanon, Pennsylvania 17042  
Phone: (717) 272-7100  
Fax: (717) 272-7348

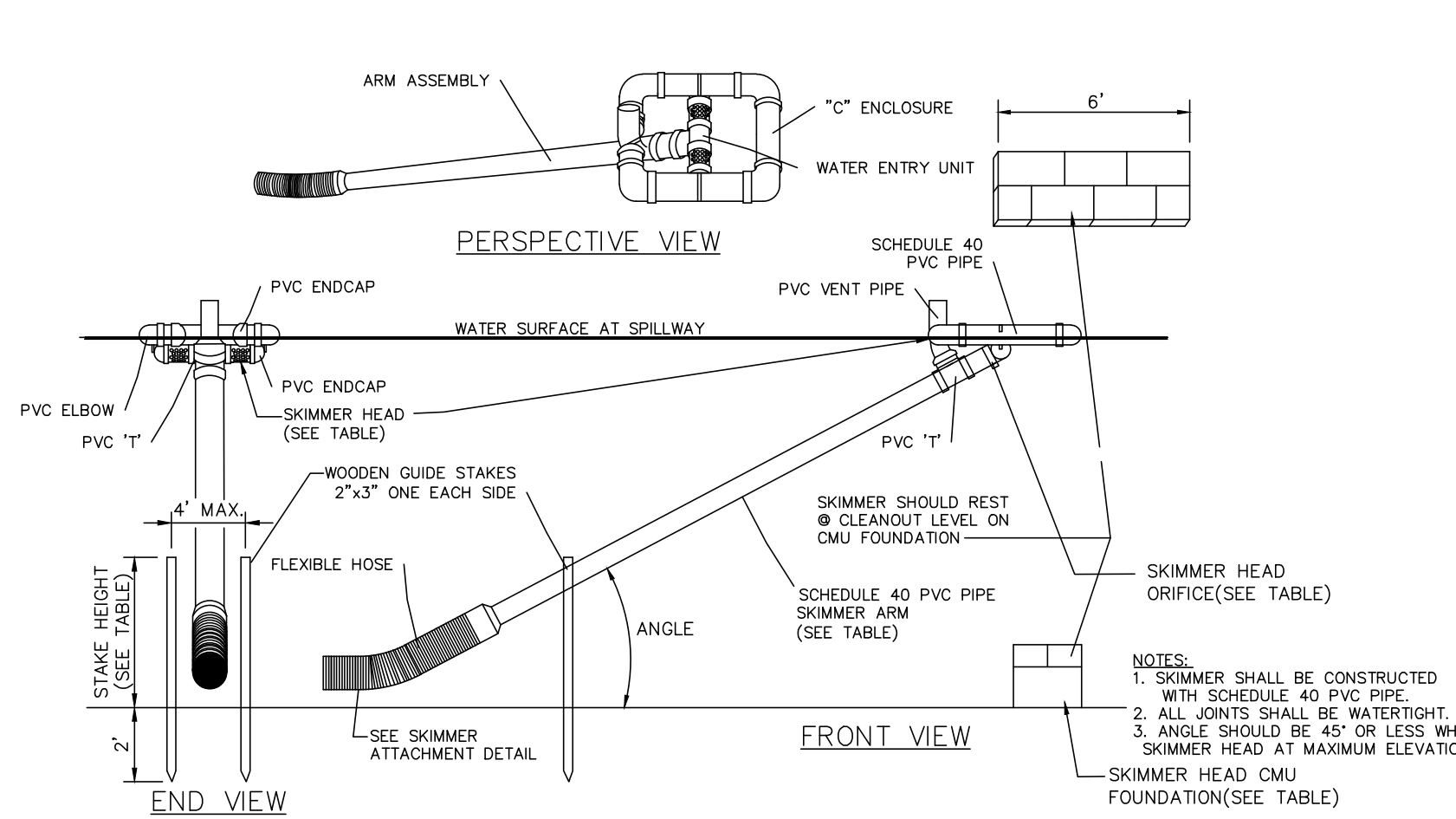
FIELD CREW: MOD,JEC
BASE MAP: JEC
DRAWN: CDS
DESIGN: CDS
CHECKED: SAS
DATE: 3/1/23
SCALE: 1"=50'
PROJECT #135-19-001
<b>27</b>
27 OF 28 SHEETS



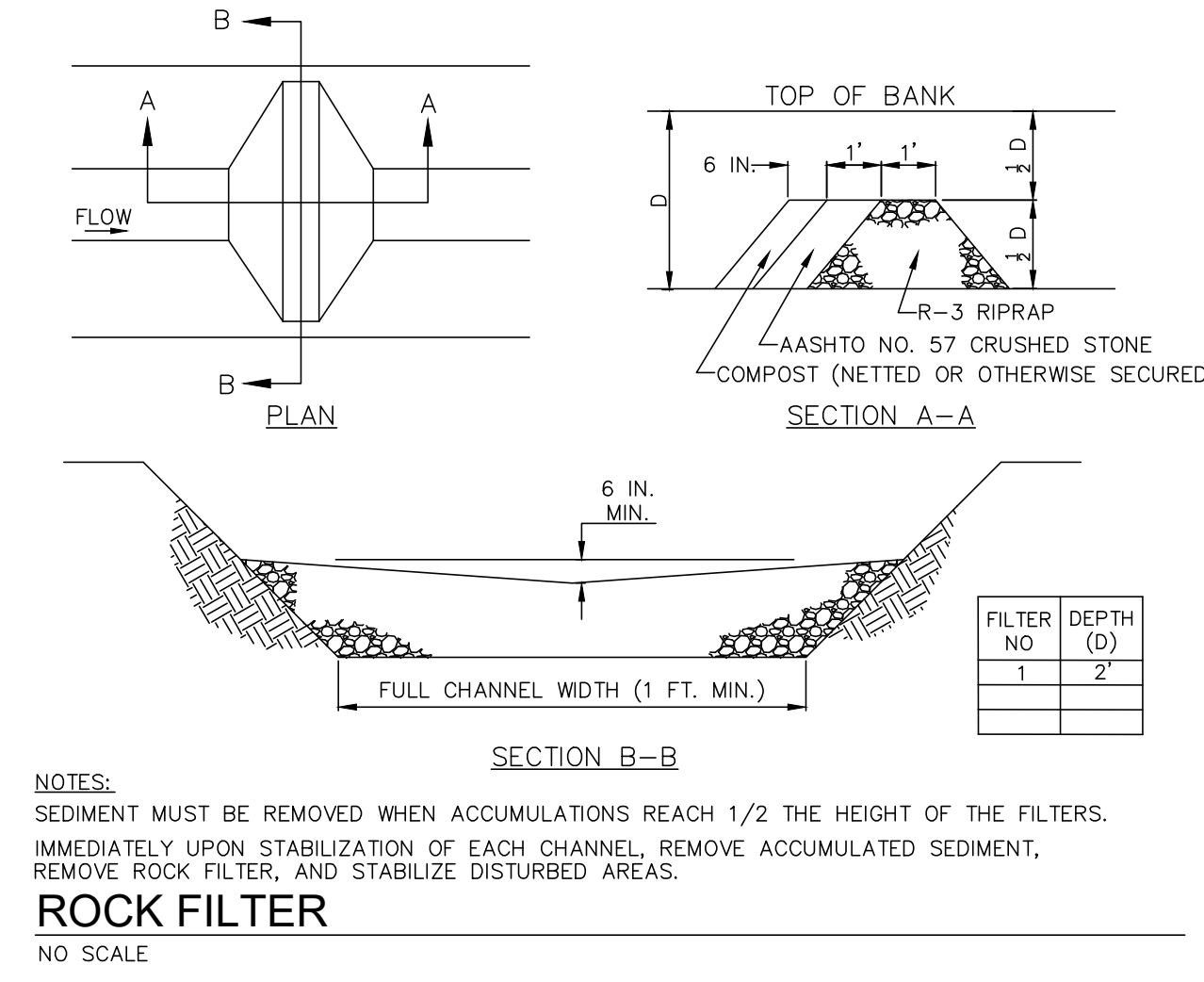
- ALTERNATIVE ROCK CONSTRUCTION ENTRANCE**  
NO SCALE
- NOTES:  
 1. REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.  
 2. RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.  
 3. MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY THE MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.  
 4. MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK, WASHING ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.



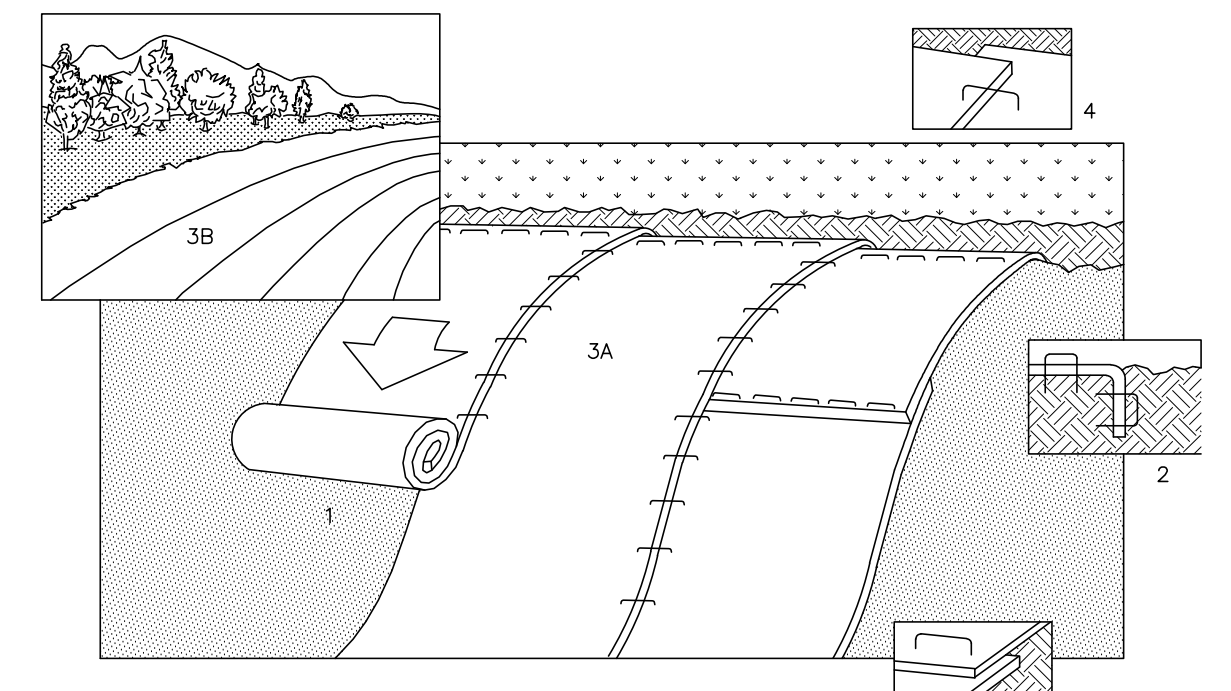
- SEDIMENT BASIN BAFFLE DETAIL**  
NO SCALE
- NOTES:  
 SEE APPROPRIATE BASIN DETAIL FOR PROPER LOCATION AND ORIENTATION.  
 AN ACCEPTABLE ALTERNATIVE IS TO INSTALL THE SAME HEIGHT WITH SUPER SILT FENCE OR COMPOST FILTER SOCK AT THE BAFFLE LOCATION.  
 IN POOLS WITH DEPTHS EXCEEDING 7', THE TOP OF THE PLYWOOD BAFFLE DOES NOT NEED TO EXTEND TO THE TEMPORARY RISER CREST. SUPER SILT FENCE BAFFLES NEED NOT EXTEND TO TRCE ELEVATION.  
 BAFFLES SHALL BE TIED INTO ONE SIDE OF THE BASIN UNLESS OTHERWISE SHOWN ON THE PLAN DRAWINGS.  
 SUBSTITUTION OF MATERIALS NOT SPECIFIED IN THIS DETAIL SHALL BE APPROVED BY THE DEPARTMENT OR THE LOCAL CONSERVATION DISTRICT BEFORE INSTALLATION.  
 DAMAGED OR WARPED BAFFLES SHALL BE REPLACED WITHIN 7 DAYS OF INSPECTION.  
 BAFFLES REQUIRING SUPPORT POSTS SHALL NOT BE INSTALLED IN BASINS REQUIRING IMPERVIOUS LINERS.



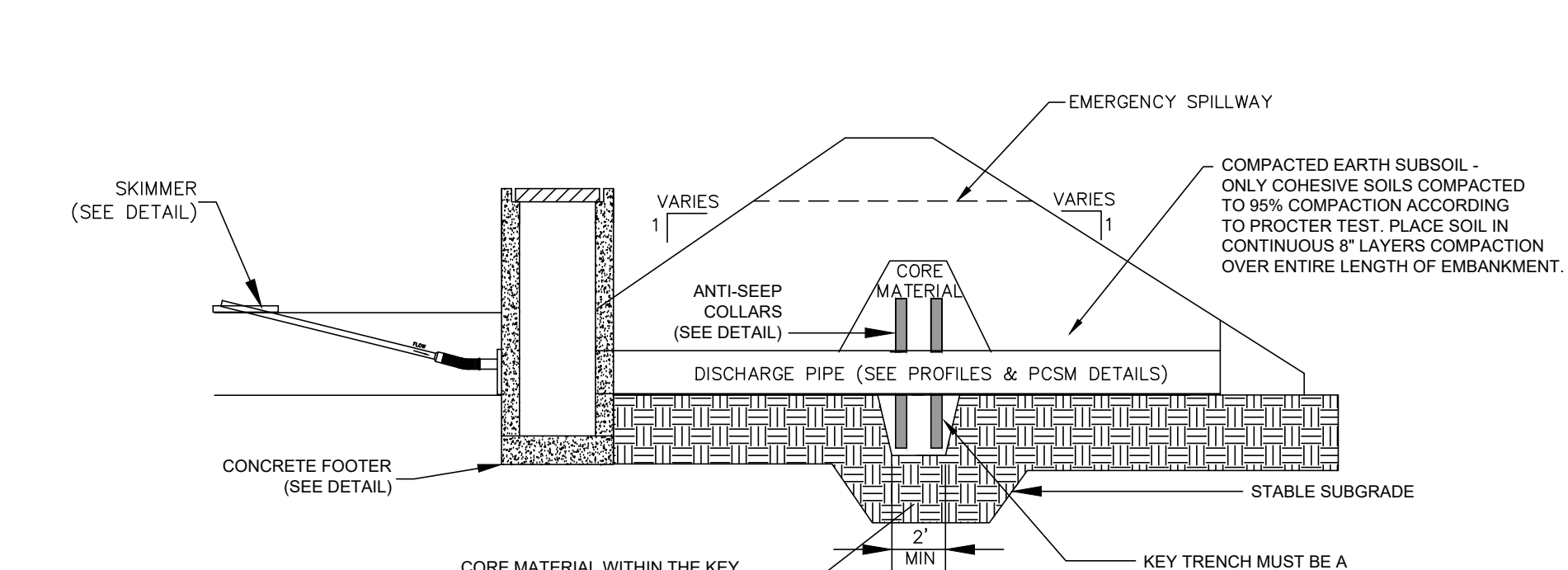
- E&S SKIMMER OUTLET DETAIL**  
NO SCALE
- NOTES:  
 1. SKIMMER SHALL BE CONSTRUCTED WITH SCHEDULE 40 PVC PIPE.  
 2. ALL JOINTS SHALL BE WATERTIGHT.  
 3. ANGLE SHOULD BE 45° OR LESS WHEN SKIMMER HEAD AT MAXIMUM ELEVATION.  
 SKIMMER HEAD CMU FOUNDATION (SEE TABLE)
- SKIMMER SHALL BE MANUFACTURED BY THE FOLLOWING:  
 1. J.W. FARLOTH & SON, INC.  
 PO BOX 789  
 HILLSBOROUGH, NORTH CAROLINA  
 PHONE: 919-732-1244  
 FAX: 919-732-1266  
 2. OR APPROVED EQUAL



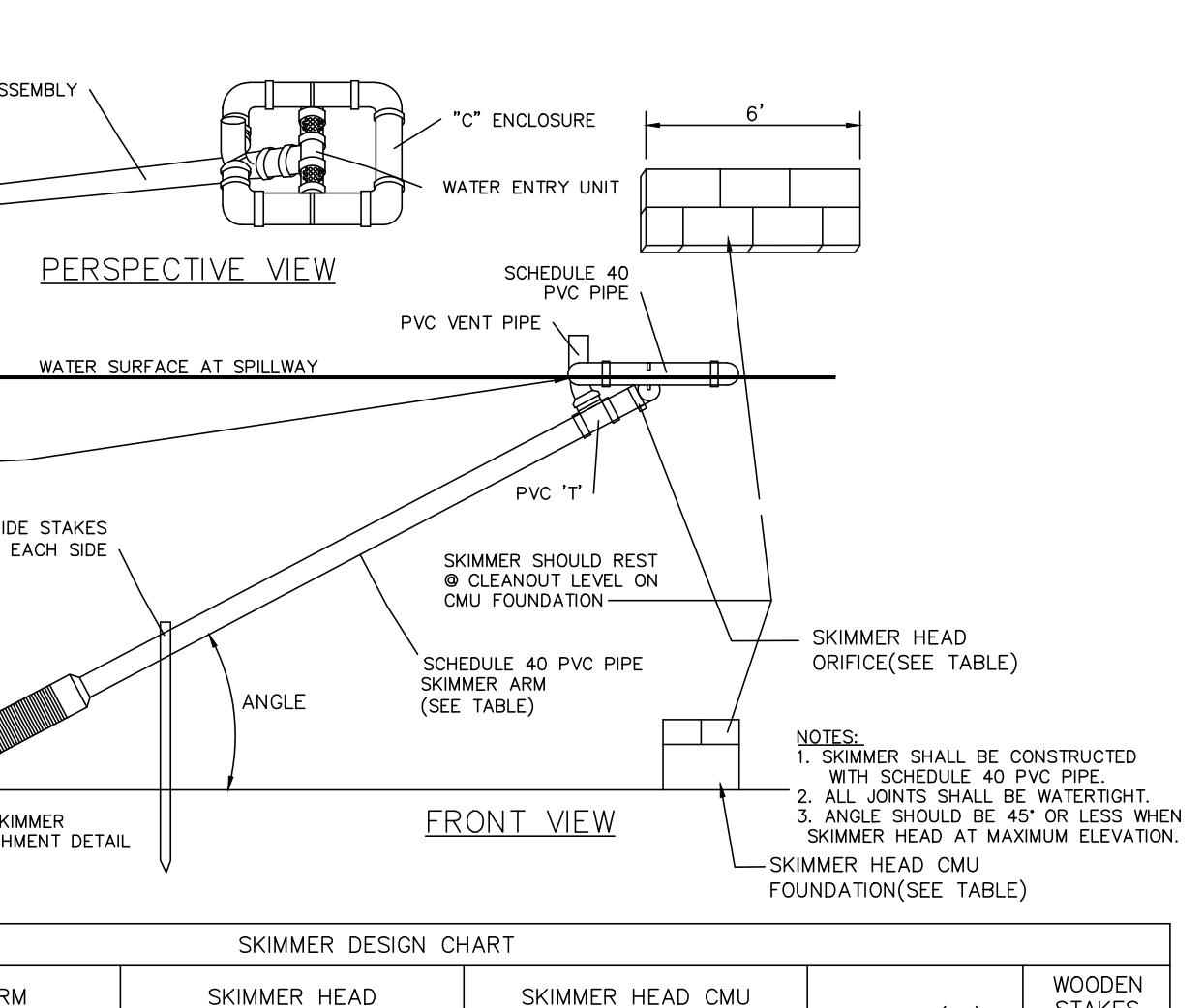
- ROCK FILTER**  
NO SCALE
- NOTES:  
 SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE HEIGHT OF THE FILTERS. IMMEDIATELY UPON STABILIZATION OF EACH CHANNEL, REMOVE ACCUMULATED SEDIMENT, REMOVE ROCK FILTER, AND STABILIZE DISTURBED AREAS.



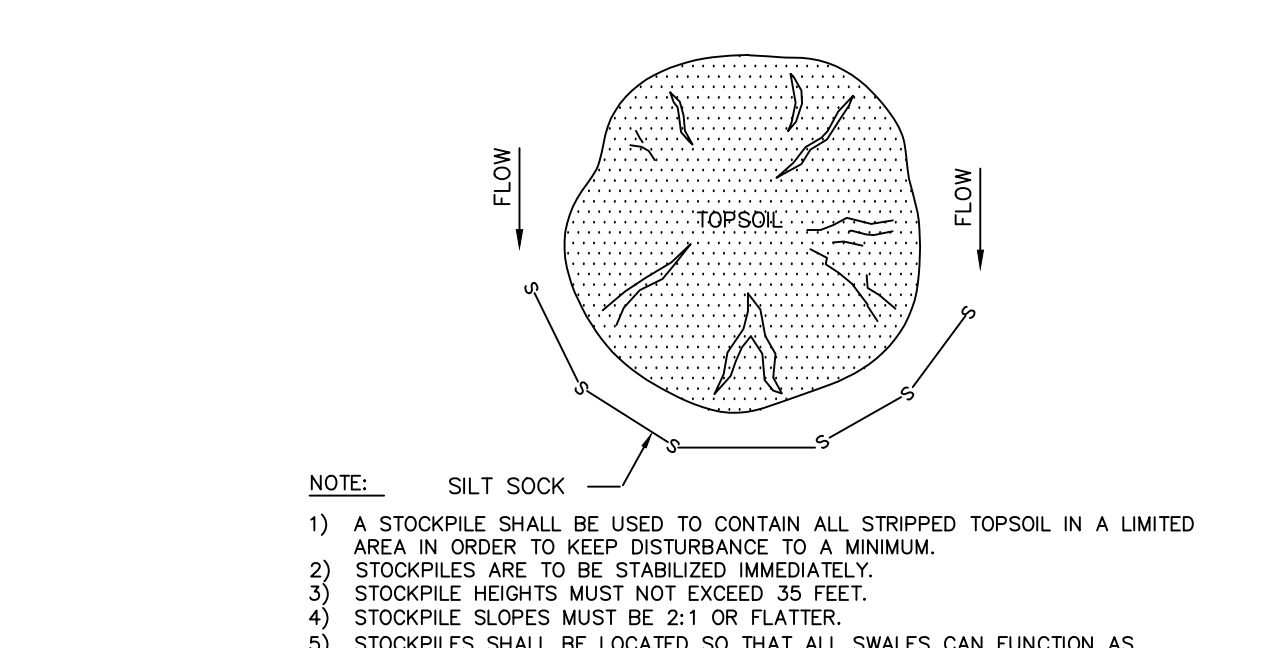
- SLOPE MATTING INSTALLATION DETAIL**  
NO SCALE
- NOTE: REFER TO GENERAL STAPLE PATTERN GUIDE FOR CORRECT STAPLE PATTERN RECOMMENDATIONS FOR SLOPE INSTALLATIONS.
- PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
  - BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
  - ROLL THE BLANKETS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE.
  - THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" OVERLAP.
  - WHEN BLANKETS MUST BE SPICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SINGLE STYLE) WITH APPROXIMATELY 4" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART.



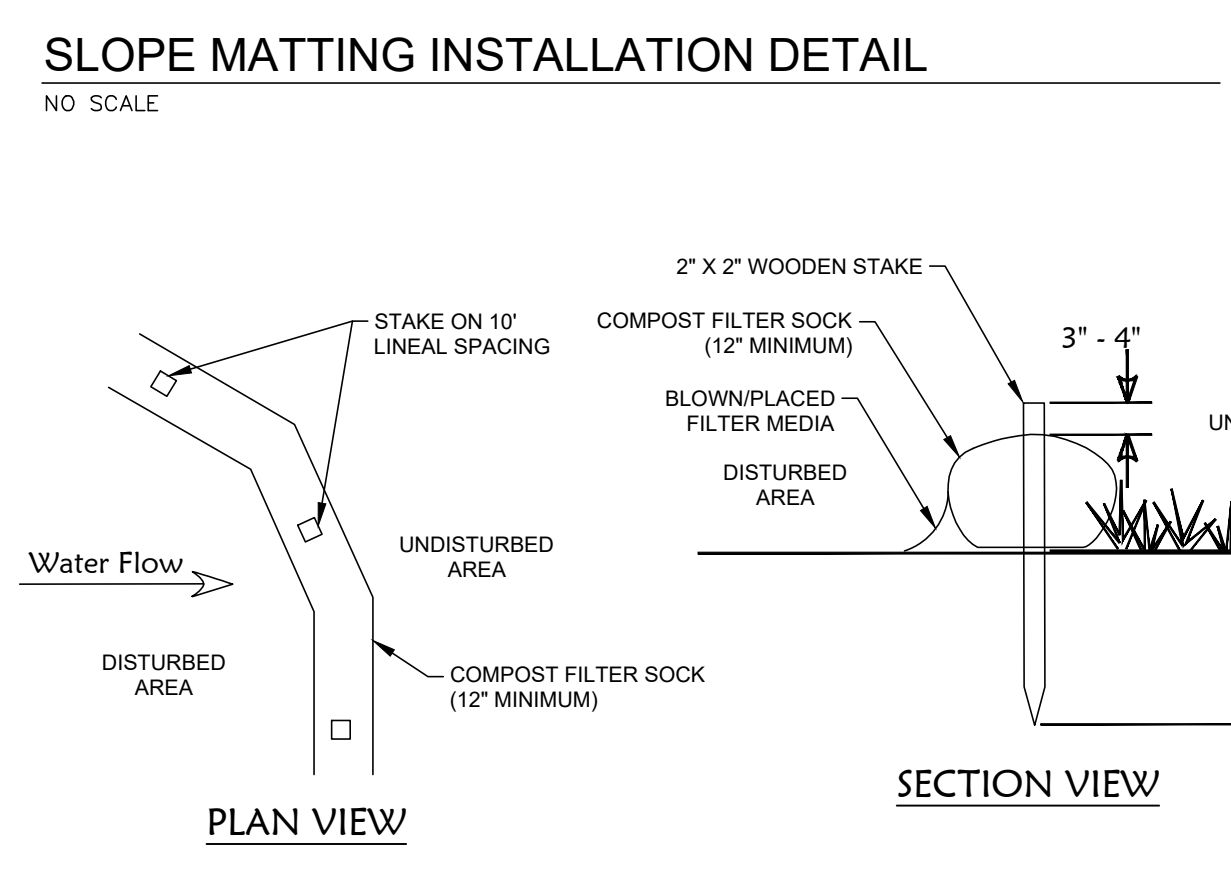
- SEDIMENT BASIN/TRAP DESIGN CHART**
- | BASIN OR TRAP | BASIN OR TRAP BOTTOM (FT) | INVERT OF SKIMMER ARM (FT) | TOP OF GRATE (FT) | SPILLWAY ELEVATION (FT) | SIZE OF DISCHARGE PIPE (IN) | (UPSTREAM) INV OF DISCHARGE PIPE (FT) | (DOWNSTREAM) INV OF DISCHARGE PIPE (FT) | PIPE LENGTH (FT) | HEIGHT OF RISER EXT. (FT) | SKIMMER | SILT SOCK BARRIER |
|---------------|---------------------------|----------------------------|-------------------|-------------------------|-----------------------------|---------------------------------------|---|------------------|---------------------------|---------|-------------------|
| 1             | 602.00                    | 602.00                     | 604.50            | 605.00                  | 18                          | 599.50                                | 590.25                                  | 74               | --                        | YES     | NO                |
| 2             | 603.50                    | 603.50                     | 606.00            | 606.50                  | 18                          | 602.50                                | 602.25                                  | 34               | --                        | YES     | NO                |
| 3             | 610.00                    | 610.00                     | 612.50            | 613.00                  | 18                          | 609.75                                | 609.50                                  | 35               | --                        | YES     | NO                |



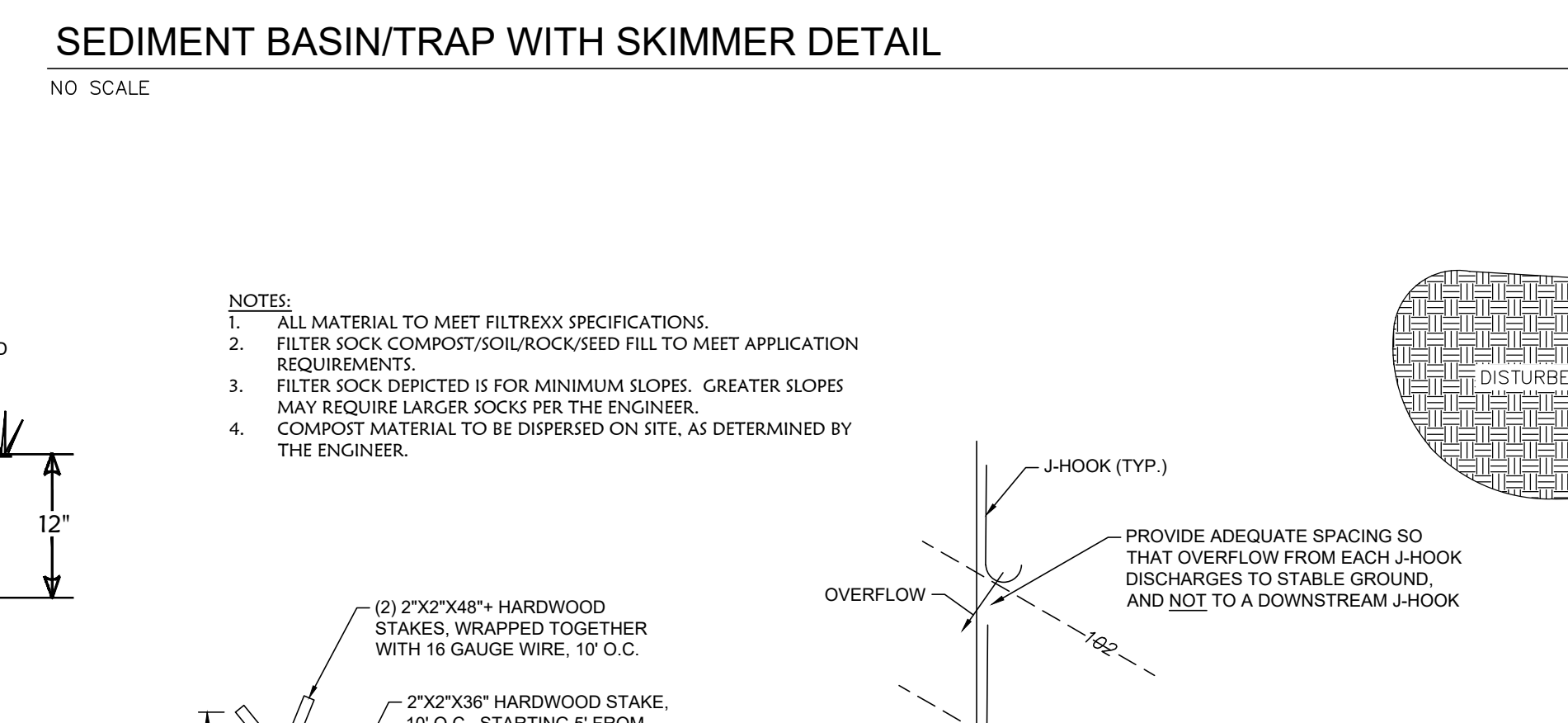
- SEDIMENT BASIN/TRAP OUTLET STRUCTURE DETAIL**  
NO SCALE
- NOTES:  
 1. ALL JOINTS SHALL BE WATERTIGHT.  
 2. TEMPORARY STUB PIPE PENETRATION TO BE GROUTED OR SEALED WITH AN ORIFICE PLATE DURING CONVERSION TO PERMANENT STORMWATER BASIN.



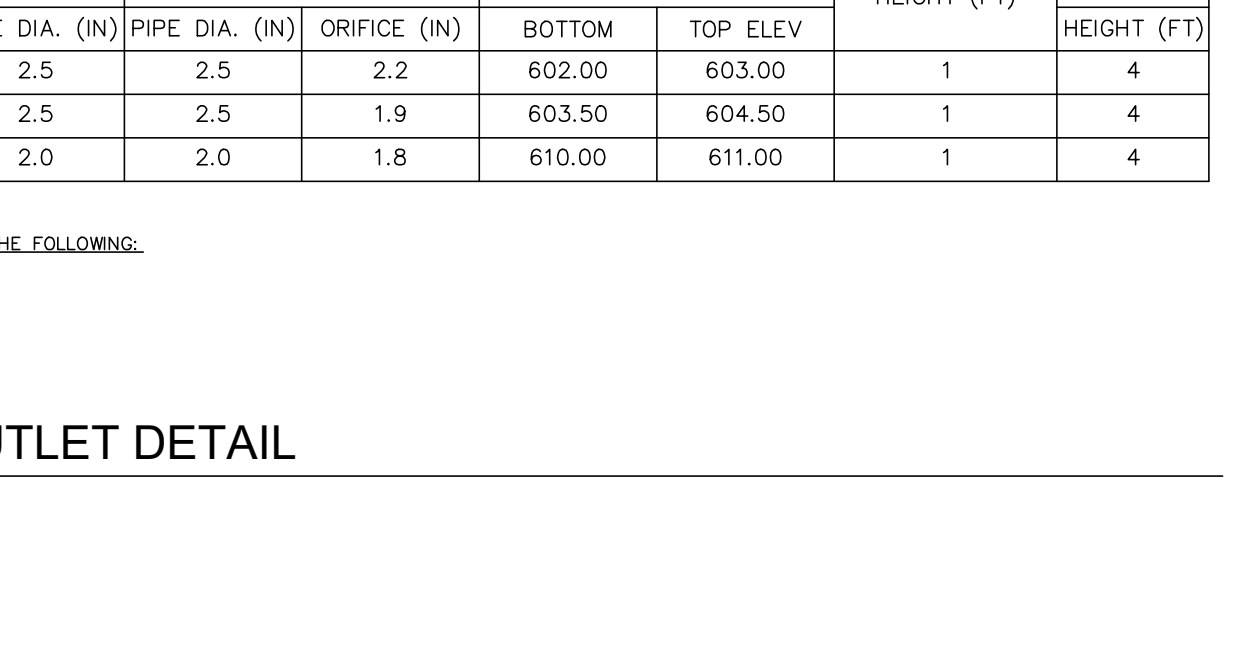
- TOPSOIL STOCKPILE**  
NO SCALE
- NOTE:  
 1) A STOCKPILE SHALL BE USED TO CONTAIN ALL STRIPPED TOPSOIL IN A LIMITED AREA IN ORDER TO KEEP DISTURBANCE TO A MINIMUM.  
 2) STOCKPILES ARE TO BE STABILIZED IMMEDIATELY.  
 3) STOCKPILE HEIGHTS MUST NOT EXCEED 35 FEET.  
 4) STOCKPILE SLOPES MUST BE 2:1 OR FLATTER.  
 5) STOCKPILES SHALL BE LOCATED SO THAT ALL SWALES CAN FUNCTION AS DESIGNED.



- COMPOST FILTER SOCK MAINTENANCE NOTES:**
- THE CONTRACTOR SHALL MAINTAIN THE FILTER SOCK IN A FUNCTIONAL CONDITION AT ALL TIMES AND IT SHALL BE INSPECTED WEEKLY.
  - IF THE FILTER SOCK HAS BEEN DAMAGED, IT SHALL BE REPAIRED, OR REPLACED IF BEYOND REPAIR.
  - THE CONTRACTOR SHALL REMOVE SEDIMENT AT THE BASE OF THE UPSLOPE SIDE OF THE FILTER SOCK WHEN ACCUMULATION HAS REACHED 1/2 OF THE EFFECTIVE HEIGHT OF THE FILTER SOCK OR AS DIRECTED BY THE LEBANON COUNTY CONSERVATION DISTRICT. ALTERNATIVELY, A NEW FILTER SOCK CAN BE PLACED ON TOP OF AND SLIGHTLY BEHIND THE ORIGINAL ONE CREATING MORE SEDIMENT STORAGE CAPACITY WITHOUT SOIL DISTURBANCE.
  - FILTER SOCK SHALL BE MAINTAINED UNTIL DISTURBED AREA ABOVE THE DEVICE HAS BEEN PERMANENTLY STABILIZED AND CONSTRUCTION ACTIVITY HAS CEASED.
  - THE FILTER MEDIA WILL BE DISPERSED ON SITE ONCE DISTURBED AREA HAS BEEN PERMANENTLY STABILIZED. CONSTRUCTION ACTIVITY HAS CEASED, OR AS DETERMINED BY THE LEBANON COUNTY CONSERVATION DISTRICT.
  - FOR LONG-TERM SEDIMENT AND POLLUTION CONTROL APPLICATION, FILTER SOCK CAN BE SEEDED AT THE TIME OF INSTALLATION TO CREATE A VEGETATIVE FILTERING SYSTEM FOR PROLONGED AND INCREASED FILTRATION OF SEDIMENT AND SOLUBLE POLLUTANTS (CONTAINED VEGETATIVE FILTER STRIP). THE APPROPRIATE SEED MIX SHALL BE DETERMINED BY THE DESIGN PROFESSIONAL.



- COMPOST FILTER SOCK DETAIL**  
NO SCALE
- NOTES:  
 1. ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS.  
 2. FILTER SOCK COMPOST/SOIL/ROCK/SEED FILL TO MEET APPLICATION REQUIREMENTS.  
 3. FILTER SOCK DEPICTED IS FOR MINIMUM SLOPES. GREATER SLOPES MAY REQUIRE LARGER SOCKS PER THE ENGINEER.  
 4. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY THE ENGINEER.



- TURBIDITY CURTAIN DETAIL**  
NO SCALE
- NOTES:  
 1. TURBIDITY CURTAIN FILTER MATERIAL SHALL HAVE A MINIMUM THICKNESS OF 45 MILS AND A WEIGHT OF 18 OZ./SQ. Y.  
 2. UV INHIBITOR SHALL BE INCLUDED.  
 3. APPARENT OPENING SIZE SHALL BE FINER THAN 70 U.S. STANDARD SIEVE.  
 4. TURBIDITY CURTAINS SHALL BE ANCHORED TO PREVENT ANY DRIFTING. ANCHORS SHALL CONSIST OF A POST/STAKE OR APPROVED EQUAL.

REVISION	DATE	BY
PER ARRO COMMENT LETTER DATED 4-3-23	5-8-23	CDS
PER LPOD LETTER DATED 4-4-23	5-12-23	CDS
PER COLA COMMENTS DATED 3-31-23	5-12-23	CDS
PER ARRO COMMENT LETTER DATED 6-6-23	6-28-23	CDS
PER ARRO COMMENT LETTER DATED 7-13-23	8-4-23	CDS

**EROSION & SEDIMENTATION POLLUTION CONTROL DETAILS**  
 For  
**PRELIMINARY/FINAL SUBDIVISION & LAND DEVELOPMENT PLANS**  
**BRIAR RIDGE COMMONS - APARTMENTS**  
 located in  
 NORTH LEBANON TOWNSHIP  
 LEBANON County, Pennsylvania



FIELD CREW:	MOD,JEC
BASE MAP:	JEC
DRAWN:	CDS
DESIGN:	CDS
CHECKED:	SAS
DATE:	3/1/23
SCALE:	1"=50'
PROJECT #	135-19-001