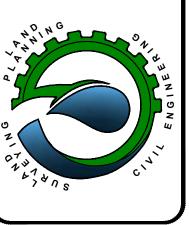
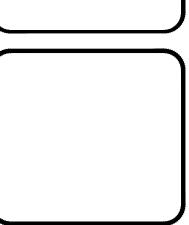
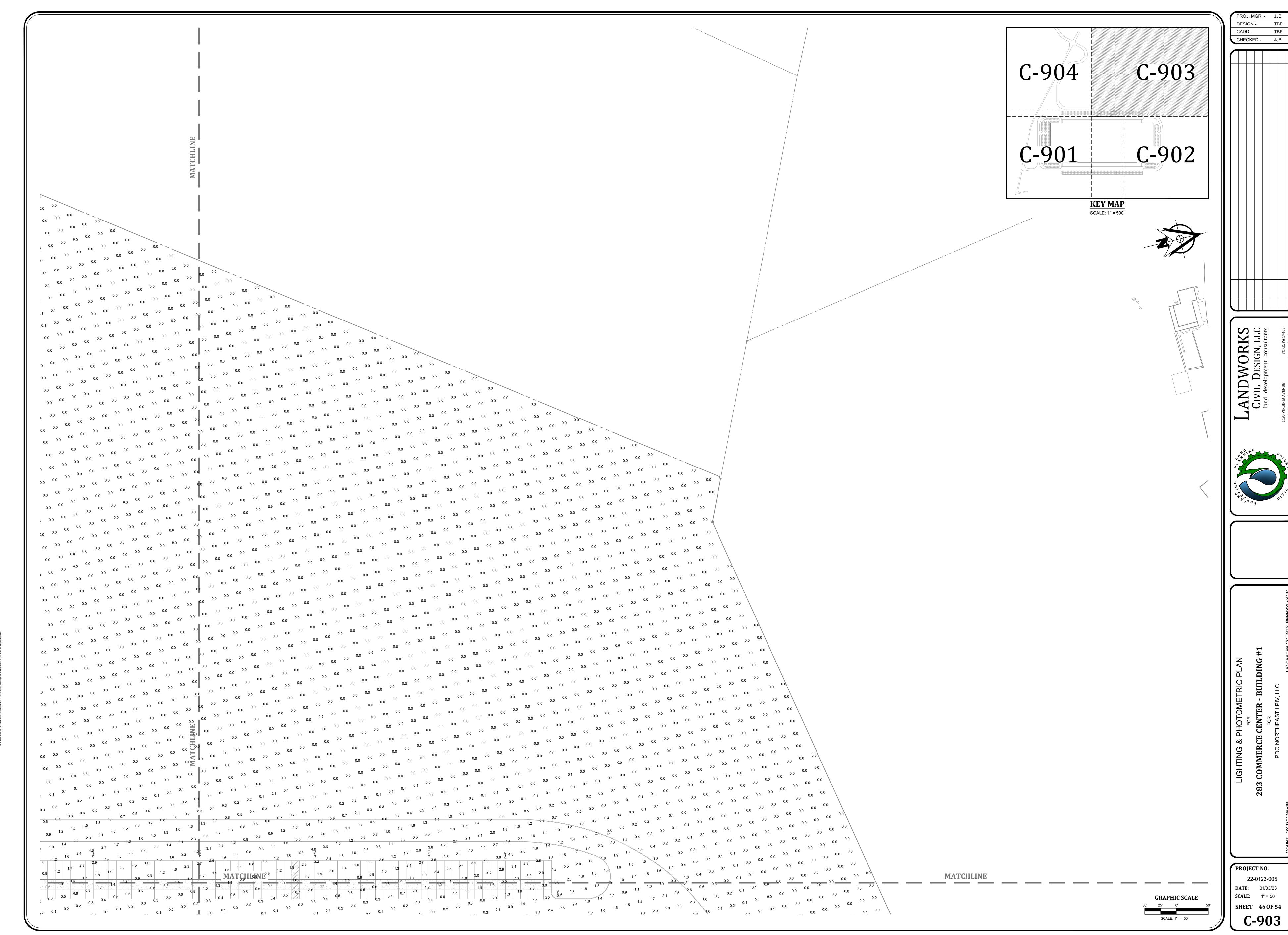


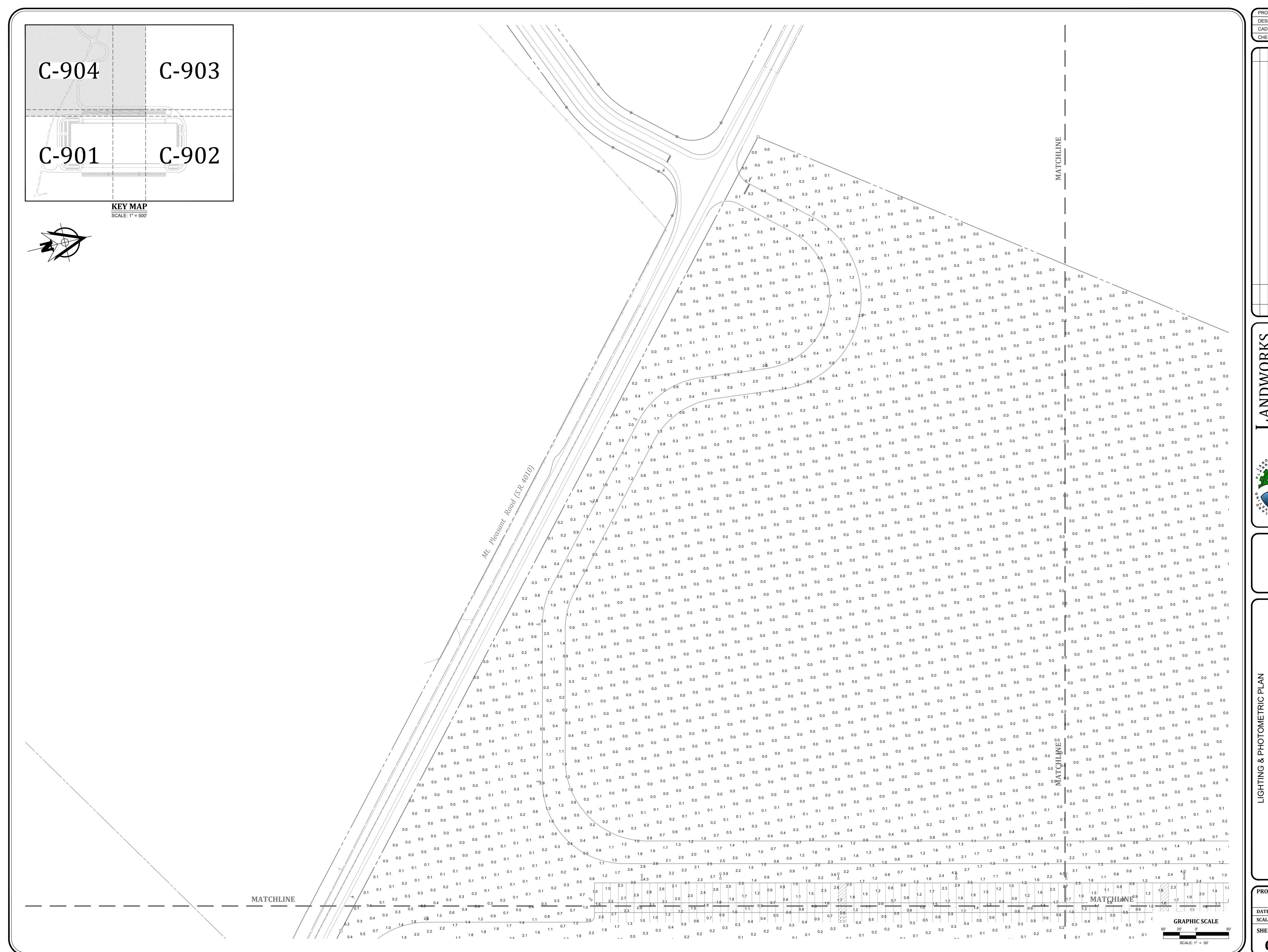
CHECKED - JJB





PROJECT NO. 22-0123-005 **DATE:** 01/03/23 **SCALE**: 1" = 50' **SHEET** 45 OF 54





PROJ. MGR. - JJB

DESIGN - TBF

CADD - TBF

CHECKED - JJB

PROJECT NO.

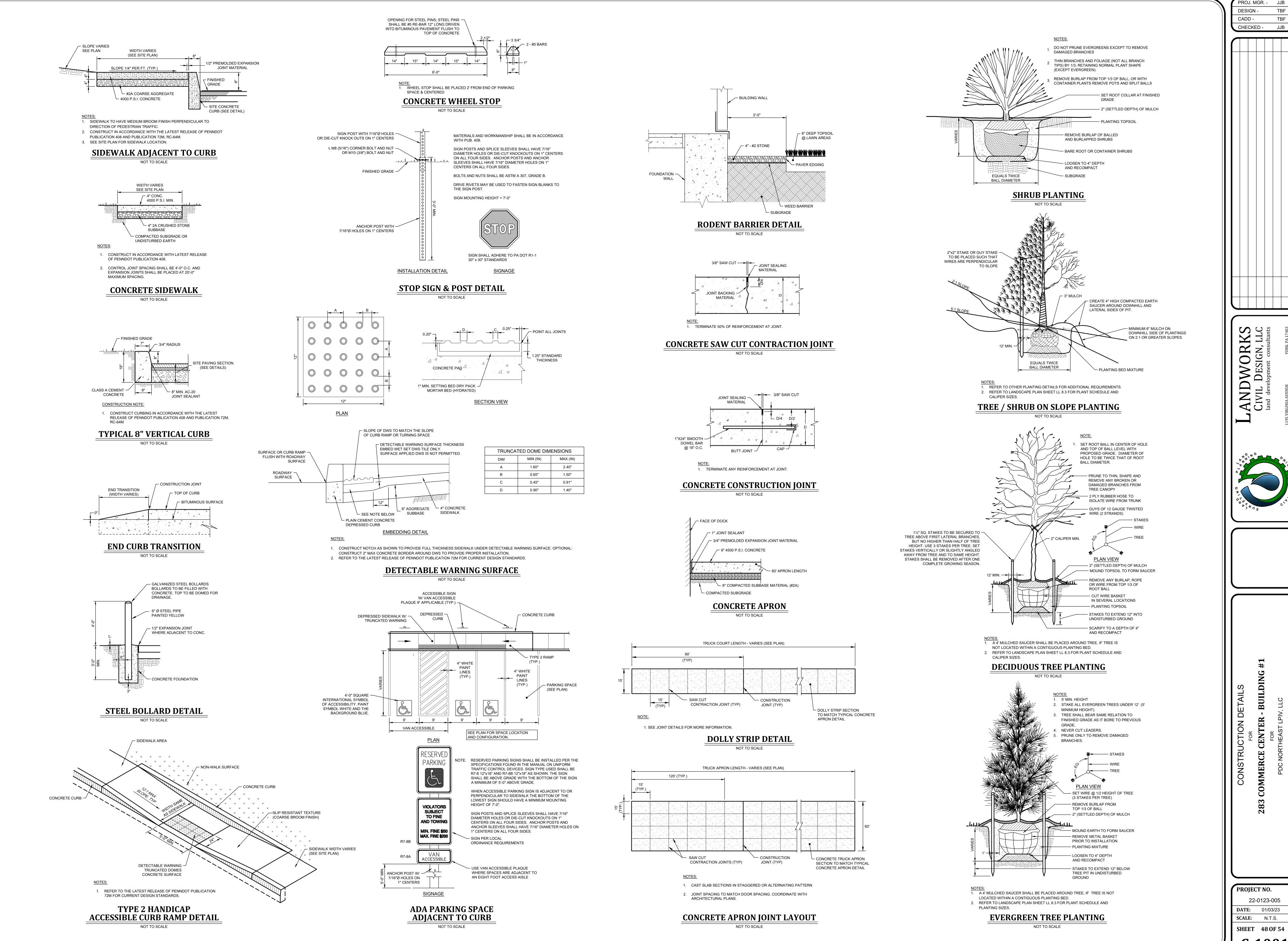
22-0123-005

DATE: 01/03/23

SCALE: 1" = 50'

SCALE: 1" = 50'

SHEET 47 OF 54



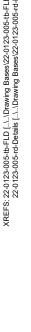
SCALE: N.T.S. SHEET 48 OF 54

22-0123-005

TBF

TBF

JJB







MSE RETAINING WALL DETAIL NOT TO SCALE NOT TO SCALE — TIE WIRES @ 12" O.C. 2" O.D. FRAME (TYP.) LATCH CLR. CHAIN LINK FABRIC 9-GA, 2" MESH KNUCKLED TOP & BOTTOM SELVAGES TUBULAR POST SWING GATE OPENING (BETWEEN POSTS) NOTE: HOLD BACKS SHALL BE INSTALLED FOR EACH LEAF TO PREVENT SELF-CLOSING OF GATE WHEN IN OPEN POSITION. A. FABRIC-GALVANIZED STEEL CHAIN LINK FABRIC SHALL BE FURNISHED IN ACCORDANCE WITH ASTM F-668-TYPE 2B. THE CORE WIRE AND BREAKLOAD WILL A LOCK KEEPER DETERMINE THE GAUGE OF THE WIRE. THE STEEL CORE WIRE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A-641-71A. THE COLOR SHALL BE GREEN, B LOCK KEEPER GUIDE A.1-TYPE-STANDARD INDUSTRIAL, 2"X 1/8" MESH, 9-GAUGE, 0.14" CORE WIRE DIA., C LOWER FORKS 1290 LB. BREAKLOAD. B. FRAMING & FITTINGS-ALL STEEL PARTS SHALL BE HOT-DIPPED GALVANIZED AS PER ASTM, PRIOR TO VINYL COATING. THICKNESS OF VINYL COATING SHALL BE 10-14 MILS APPLIED BY FUSION BONDING. CHAIN LINK SWING GATE & FENCE

OFFSET BRACKET -

1. ALL STRUCTURAL COMPONENTS SHALL COMPLY WITH PENNDOT RC-51M STANDARDS.

2. PROVIDE END TREATMENTS IN ACCORDANCE WITH PENNDOT RC-51M STANDARDS.

SECURE CAP WITH ¬ CONCRETE ADHESIVE

CLEAR CRUSHED DRAIN -

SECURELUG<sup>™</sup> CONNECTION <sup>1</sup> WITH GEOSYNTHETIC

PERFORATED DRAIN PIPE SURROUNDED -BY CLEAR CRUSHED DRAIN ROCK WRAPPED WITH FILTER FABRIC

NOTE:

REINFORCEMENT

DRAIN PIPE OUTLET -

IMPERVIOUS MATERIALS AT TOE OF WALL

COMPACTED -

COMPACTED GRAVEL —

LEVELING PAD

FOUNDATION SOIL <sup>1</sup>

1. FINAL DESIGN PER MANUFACTURER'S RECOMMENDATIONS.

REQUIRED PRIOR TO ANY WALL CONSTRUCTION.

3. OWNER TO SELECT WALL COLOR AND STYLE.

6. ALTERNATE WALL DESIGNS ARE PERMISSIBLE.

2. THIS DETAIL IS PROVIDED TO CONVEY DESIGN INTENT ONLY. FINAL DESIGN AND DETAILING IS

5. PRIOR TO THE ISSUANCE OF A BUILDING PERMIT, DESIGN DRAWINGS AND CALCULATIONS PREPARED

AND/OR COUNTY FOR REVIEW AND APPROVAL FOR WALLS IN EGRESS OF 4 FEET OR HEIGHT.

AND SEALED BY A PENNSYLVANIA PROFESSIONAL ENGINEER SHALL BE PROVIDED TO THE TOWNSHIP

4. PROVIDE SHOP DRAWING FOR ENGINEER'S REVIEW PRIOR TO CONSTRUCTION.

ROCK IN UNITS AND **BEHIND WALL** 

**TYPE 31 STRONG POST GUIDE RAIL** NOT TO SCALE

> ─ SOIL SEPARATING FILTER FABRIC

> > COMPACTED

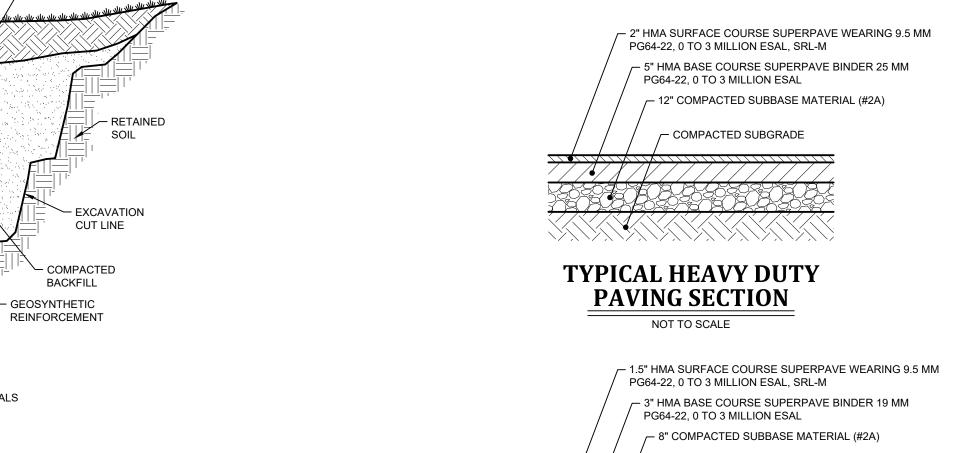
AT TOE OF WALL

IMPERVIOUS MATERIALS

/- PLANTING

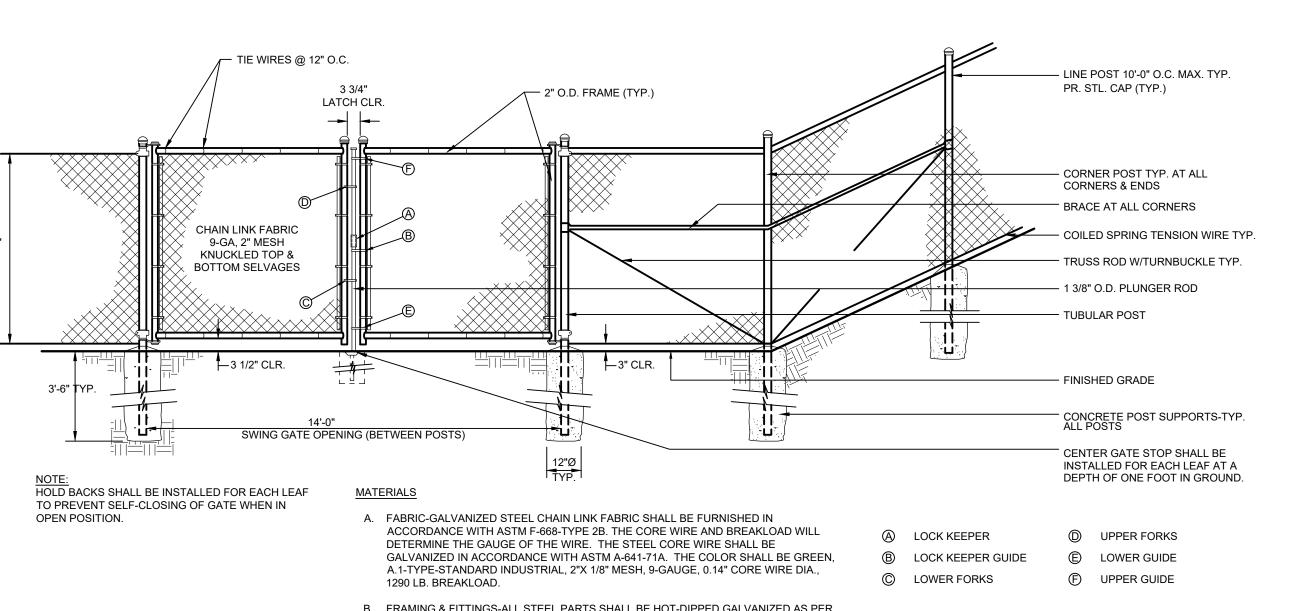
SOIL

STEEL POST -



COMPACTED SUBGRADE 

TYPICAL LIGHT DUTY **PAVING SECTION** 



TYPICAL STREET CROSS-SECTIONS CARTWAY WIDTH "A" 1/4" PER FT. CROWN 1 — CONSTR € OUTSIDE DESIGNATED GROWTH AREA INSIDE DESIGNATED GROWTH AREA ① CONCRETE CURBS AND SIDEWALK REQUIRED WITHIN DESIGNATED GROWTH AREA. ② SEE BASE COURSE AND PAVING SCHEDULE SHEET 2 OF 4. ③ 4" CONCRETE SIDEWALK ON 4" PennDOT No. 2B STONE. MAXIMUM OF 2% CROSS SLOPE ON SIDEWALKS, 1% DESIRED. SIDEWALK: MIN. WIDTH 5 FT, OR 4 FT WITH 5 FT SECTIONS EVERY 200 FT.
 SLANT CURB (RESIDENTIAL LOCAL STREETS) OR STANDARD CURB (ALL OTHER STREETS)
 (REFER TO DETAIL SHEET 3 AND 4 OF 4)
 (NO UNDERGROUND UTILITIES PARALLEL TO ROADWAY PERMITTED BETWEEN CURB AND SIDEWALK. (7) SHOULDER WIDTH PER SECTION 119-30. J (8) BITUMINOUS WEDGE PER RC-25M 9 MAX. SHOULDER SLOPE = 6% MOUNT JOY TOWNSHIP

159 MERT'S DRIVE
ELIZABETHTOWN, PA 17022
[717) 367-8917 STREET WIDTHS DATE: MARCH 20. 2012 SHEET NO: 1 OF 4 REFER TO SECTION 119-52. J CHAPTER 119 CURB AND STREET STANDARDS FOR MOUNT JOY TOWNSHIP

	Р	AVING SCHEDULE	
SECT.	ARTERIAL	COLLECTOR	LOCAL
Α	1 1/2 " SUPERPAVE ASPHALT MIXTURE DESIGN, HMA WEARING COURSE, RPS, PG 64-22, 0.3 TO < 3.0 M ESALS, 9.5 mm MIX, SRL-H	1 1/2 " SUPERPAVE ASPHALT MIXTURE DESIGN, HMA WEARING COURSE, RPS, PG 64-22, 0.3 TO < 3.0 M ESALS, 9.5 mm MIX, SRL-H	1 1/2 " SUPERPAVE ASPHAL' MIXTURE DESIGN, HMA WEARING COURSE, RPS, PG 64-22, 0.3 TO < 3.0 ESALS, 9.5 mm MIX, SRL-
В	2" SUPERPAVE ASPHALT MIXTURE DESIGN, HMA BINDER COURSE, PG 64-22, 0.3 TO < 3.0 M ESALS, 19.0 mm MIX	N/A	N/A
С	6" SUPERPAVE ASPHALT MIXTURE DESIGN, HMA BASE COURSE, PG 64-22, 0.3 TO < 3.0 M ESALS, 25.0 mm MIX	6" SUPERPAVE ASPHALT MIXTURE DESIGN, HMA BASE COURSE, PG 64-22, 0.3 TO < 3.0 M ESALS, 25.0 mm MIX	4" SUPERPAVE ASPHALT MIXTURE DESIGN, HMA BASE COURSE, PG 64-22 0.3 TO < 3.0 M ESALS, 25.0 mm MIX
D	6" SUBBASE NO. 2A	8" SUBBASE NO. 2A	8" SUBBASE NO. 2A
ALL A FOR A LOCAL COLLE	ORK SHALL MEET THE REQUIREM REAS ADJACENT TO CURB, INLE DISTANCE FO 12 INCHES FROM ROADS PROPOSED FOR INDUSTR CTOR ROAD DESIGN CRITERIA. T CLASSIFICATIONS TO BE DET	ETS, MANHOLE COVERS, ETC. AR M CURB ETC. RIAL AND/OR COMMERCIAL DEVEL	E TO BE SEALED WITH AC-2
SIKEE	T CLASSIFICATIONS TO BE DET	ACCONDANCE WITH	MOUNT JOY TOWNSHI  159 MERTS DRIVE ELIZABETHTOWN, PA.17022 (717) 367-8917 WWW.MT.JOYTWP.ORG  DATE: MARCH 20, 2012 SHEET NO: 2 OF CHAPTER 119 CURB AND STREET STANDARDS FOR MOUNT JOY TOWNSHIP

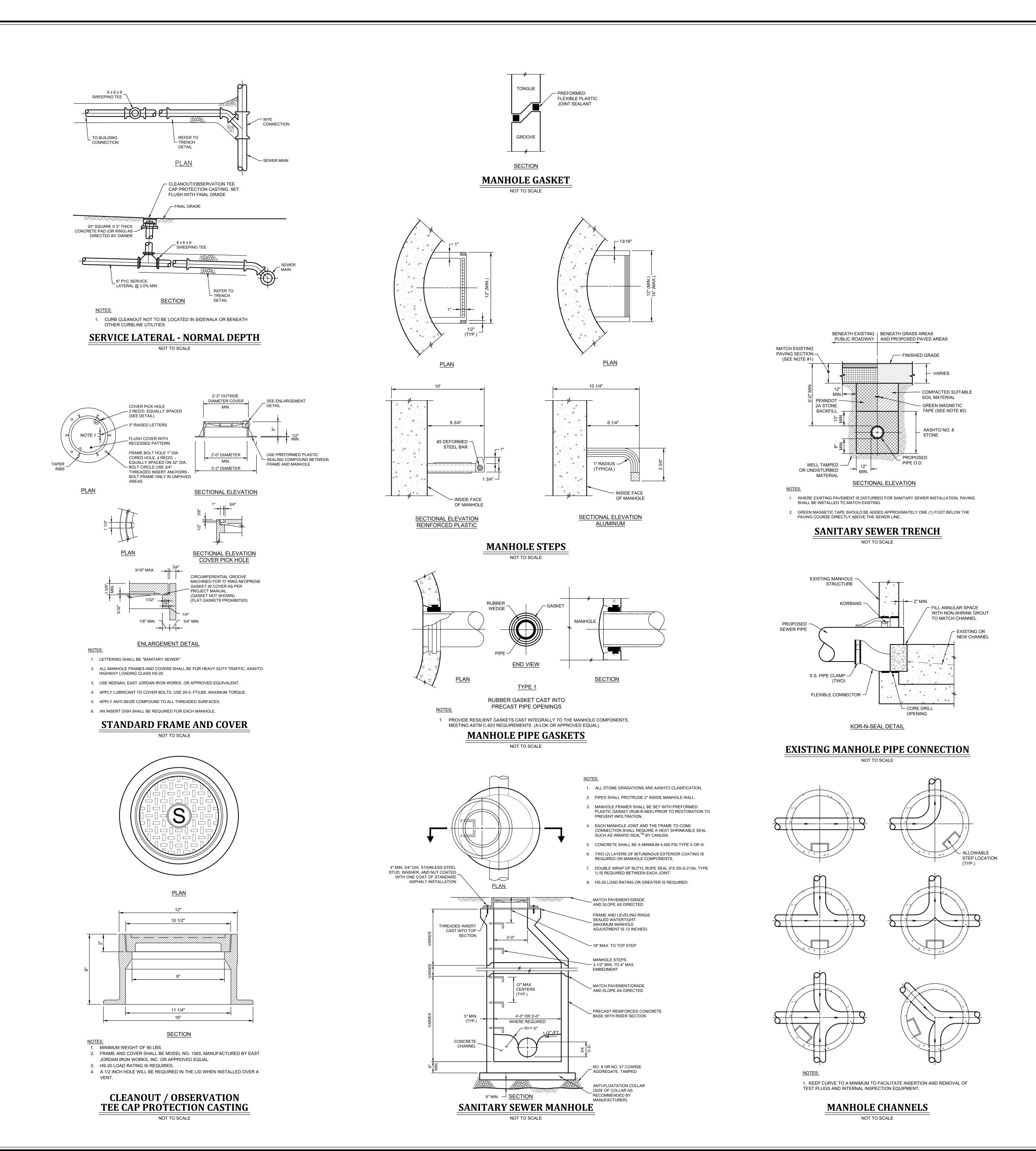
						NO. DATE
[						NO
I /						
	ANDIMODIZE	CANOW	CIVIL DESIGN, LLC	land development consultants	YORK, PA 17403	www.landworkscd.com

CADD -

CHECKED - JJB

PROJECT NO. 22-0123-005 **DATE:** 01/03/23

SCALE: N.T.S. SHEET 49 OF 54

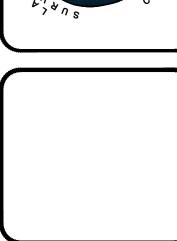


DESIGN - TBF
CADD - TBF
CHECKED - JJB

PROJ. MGR. - JJB

CIVIL DESIGN, LLC land development consultants





NINKY MANUEL MENERAL MANUEL MA

COMMERCE CENTER - BUILDING

FOR

PDC NORTHEAST LPIV, LLC

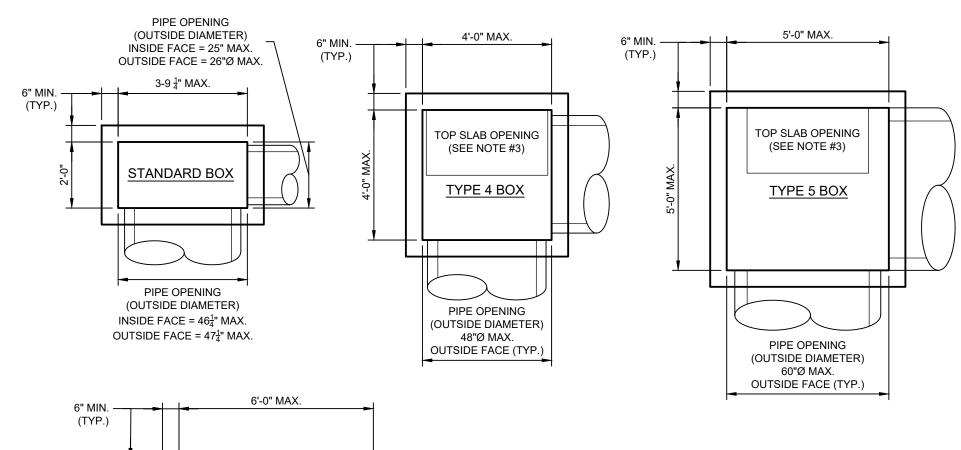
PROJECT NO.

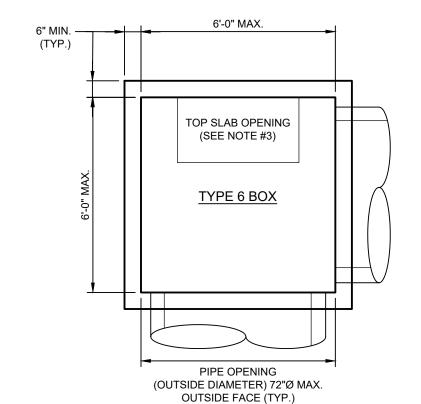
22-0123-005

DATE: 01/03/23

SCALE: N.T.S.

SHEET 50 OF 54



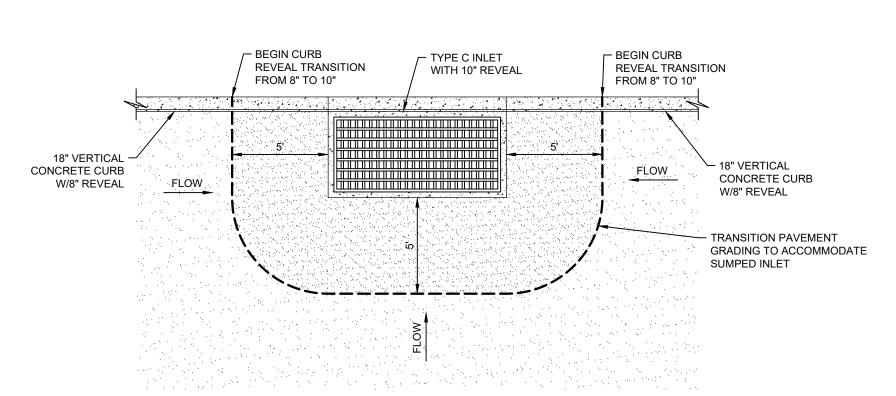


CONSTRUCT IN ACCORDANCE WITH PA DOT SPECIFICATIONS (RC-46). SEE GRADING & UTILITIES PLAN FOR INLET GRATE LOCATIONS. SEE PROFILES FOR INLET TOP UNIT AND BOX TYPES. ALL PIPES SHALL ENTER INLETS ALONG THE SIDES OR ENDS. NO CORNER ENTRY WILL BE PERMITTED. PROVIDE MANHOLE STEPS IN ALL INLET BOXES OVER 4 FEET IN DEPTH.

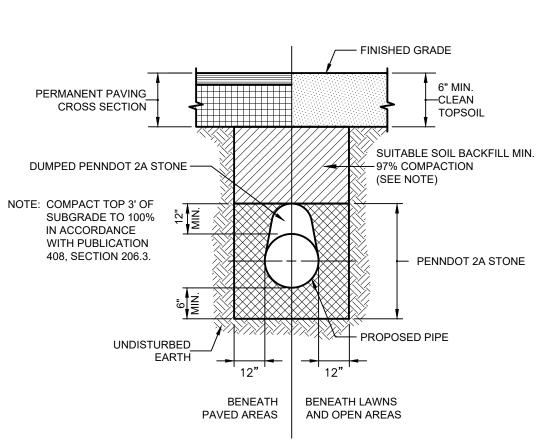
STEPS SHALL BE ARRANGED IN A CONTINUOUS LINEAR ALIGNMENT. ALL INLETS SHALL BE PROVIDED WITH STRUCTURAL STEEL BICYCLE SAFE GRATES PER PADOT RC-45M.

SHOP DRAWINGS APPROVED BY THE DESIGN PROFESSIONAL SHALL BE PROVIDED TO THE LEBANON COUNTY PLANNING DEPARTMENT FOR REVIEW PRIOR TO CONSTRUCTION.

TYPICAL PENNDOT **INLET BOXES & TOP SLAB TYPES**  ARRANGED IN A CONTINUOUS LINEAR ALIGNMENT.



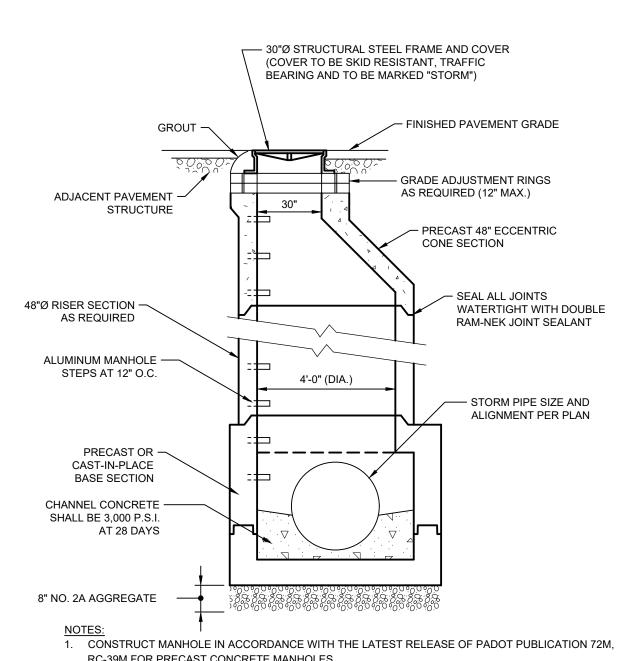
## **SUMPED INLET PAVEMENT & CURB TRANSITION**



UNLESS OTHERWISE SHOWN, PIPE TRENCHING SHALL CONFORM TO PENNDOT PUBLICATIONS 72 AND 408, LATEST EDITION.

## **STORM SEWER TRENCH**

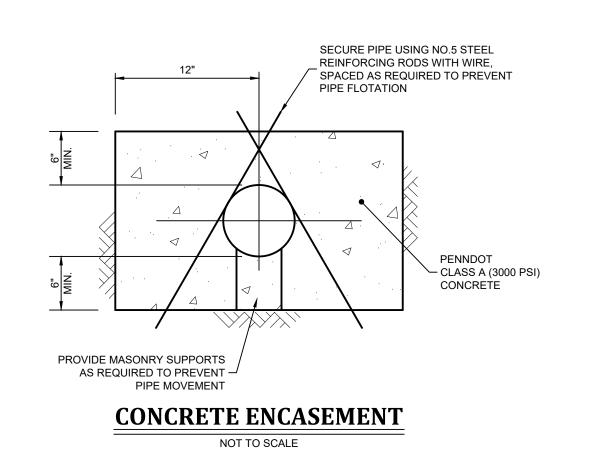
NOT TO SCALE

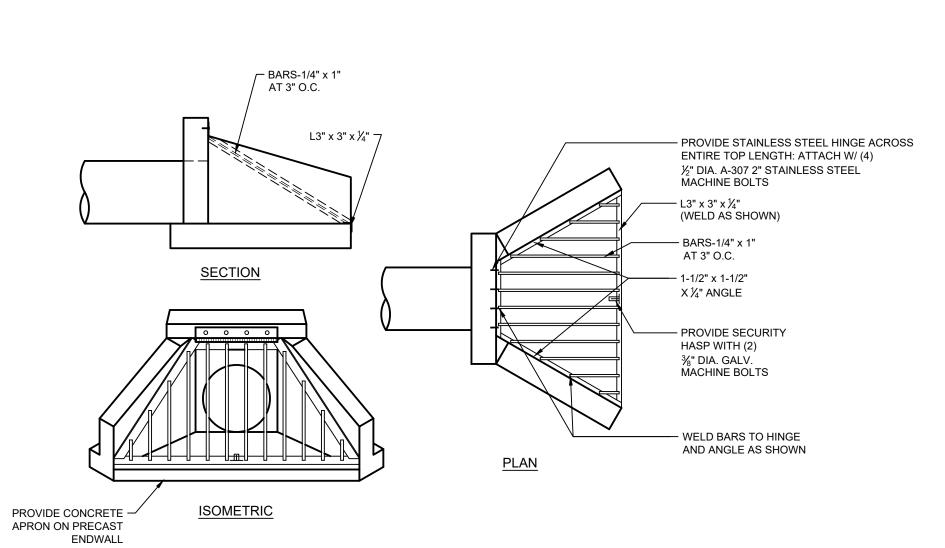


RC-39M FOR PRECAST CONCRETE MANHOLES. 2. ALL MATERIALS AND CONSTRUCTION SHALL MEET THE REQUIREMENTS OF THE LATEST RELEASE

LEBANON COUNTY PLANNING DEPARTMENT FOR REVIEW PRIOR TO CONSTRUCTION.

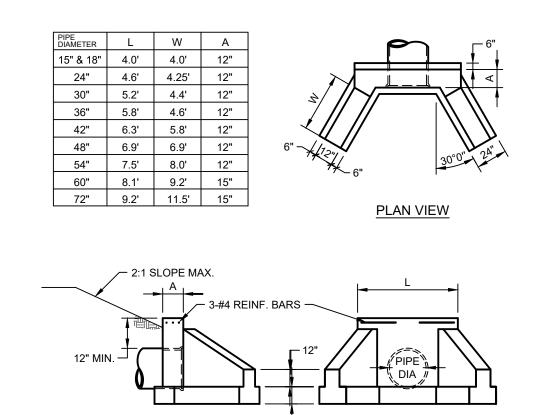
TYPICAL STORM SEWER MANHOLE NOT TO SCALE



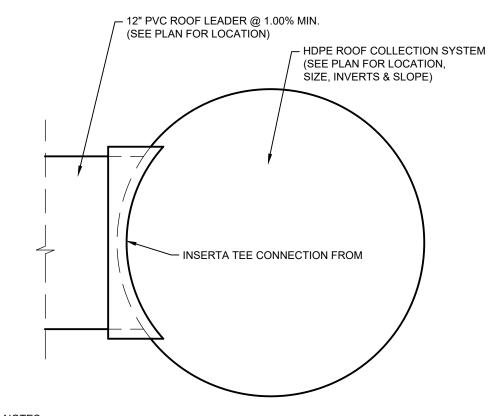


1. PROVIDE A SHOP DRAWING FOR ENGINEER'S APPROVAL PRIOR TO FABRICATION. 2. ALL HEADWALLS OR ENDWALLS OF PIPES IN OF 12-INCH DIAMETER OR GREATER MUST BE EQUIPPED WITH TRASH RACK.

### ENDWALL TRASH RACK NOT TO SCALE



SIDE ELEVATION TYPE D-W ENDWALL



1. ALL ROOF LEADER CONNECTIONS SHALL BE INSTALLED IN ACCORDANCE WITH INSERTA TEE WATER TIGHT SPECIFICATIONS OR APPROVED EQUAL.

2. COORDINATE ROOF LEADER LOCATIONS WITH BUILDING ARCHITECTURAL PLANS.

## **INSERTA TEE CONNECTION**

NOT TO SCALE

PLAN VIEW

TO PROVIDE OVERFLOW / CLEANOUT

TOP OF PAVEMENT -

NYLOPLAST 12" X 10" INCREASER —

- 12" PVC @ 1.0% MIN. SLOPE

(SEE PLAN FOR LOCATION)

**SECTION VIEW** 

1. ALL PIPE CONNECTIONS SHALL BE NYLOPLAST WATER TIGHT CONNECTIONS OR

2. COORDINATE ROOF LEADER LOCATIONS, SIZES AND MATERIALS WITH BUILDING

**ROOF DOWNSPOUT CONNECTION** 

APPROVED EQUAL.

ARCHITECTURAL PLANS.

- INSERTA TEE CONNECTION TO ROOF DRAIN COLLECTION

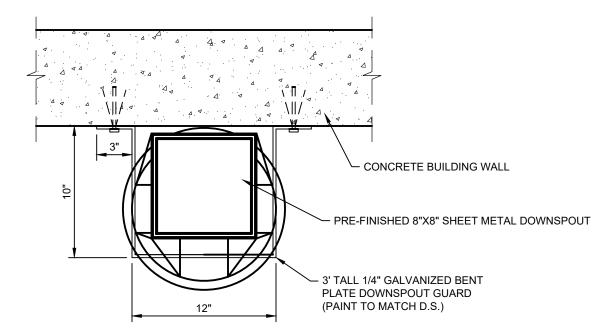
(SEE PLAN FOR LOCATION)

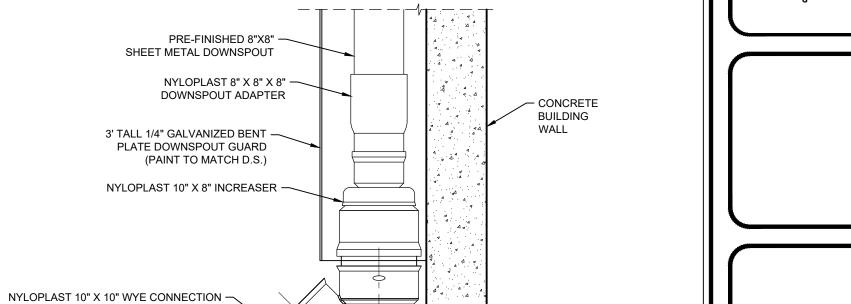
SYSTEM (SEE DETAIL)

10" PVC —

1'X1' LEAVE-OUT IN — FOUNDATION FOR

10" PVC PIPE





➤ NYLOPLAST 12" 90° BEND

PROJ. MGR. - JJB

TBF

JJB

DESIGN -CADD -

CHECKED -

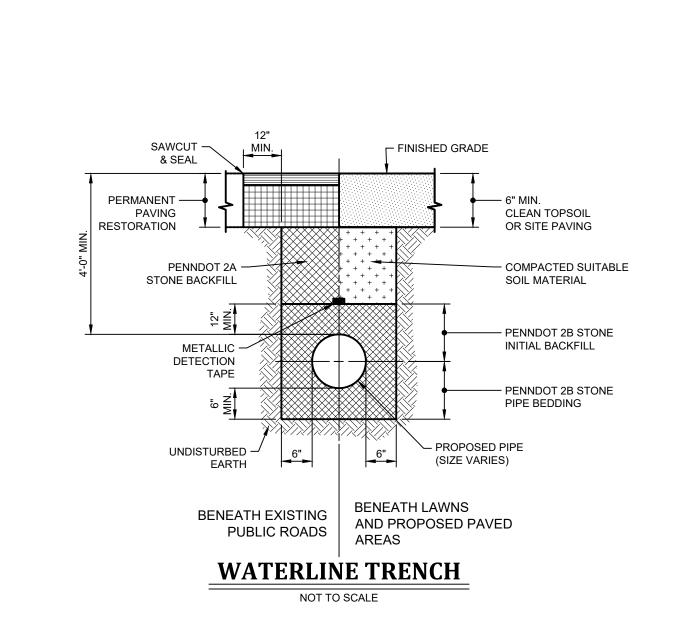
PROJECT NO. 22-0123-005 **DATE:** 01/03/23

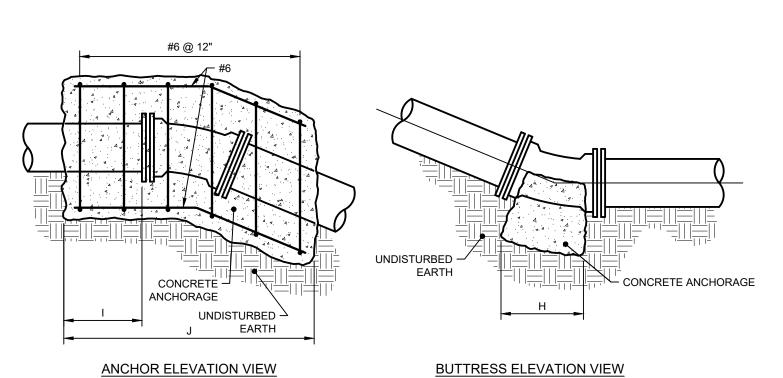
SCALE: N.T.S. SHEET 51 OF 54

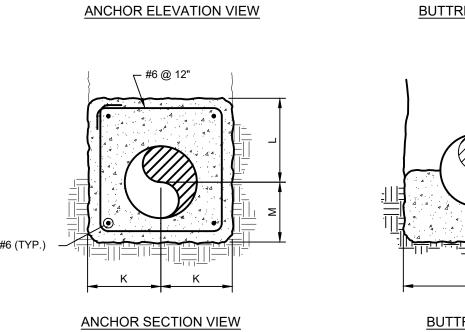
**C-1004** 

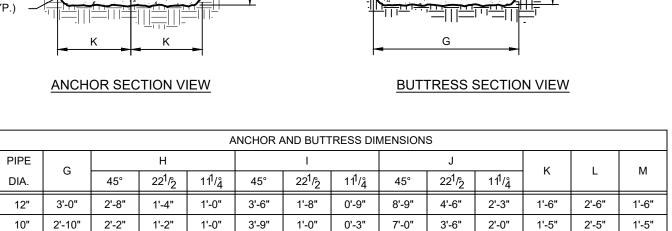
OF PADOT PUBLICATION 408. 3. USE FLAT TOP MANHOLES WHERE DEPTHS ARE LESS THAN 6' DEEP.

4. SHOP DRAWINGS APPROVED BY THE DESIGN PROFESSIONAL SHALL BE PROVIDED TO THE 5. PROVIDE MANHOLE STEPS IN ALL INLET BOXES OVER 4 FEET IN DEPTH. STEPS SHALL BE





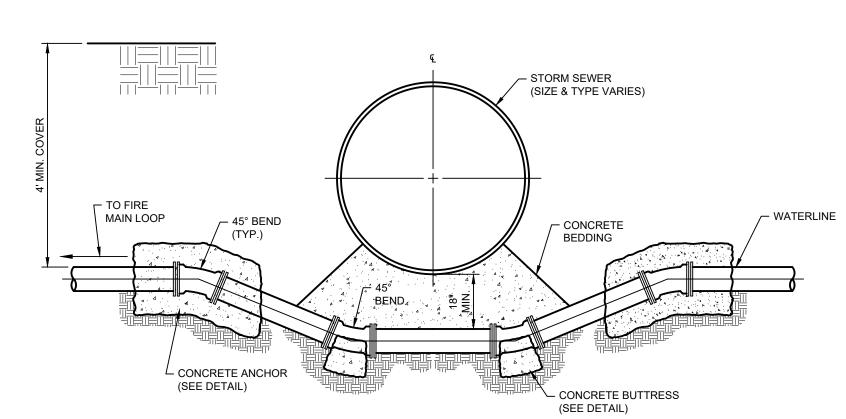




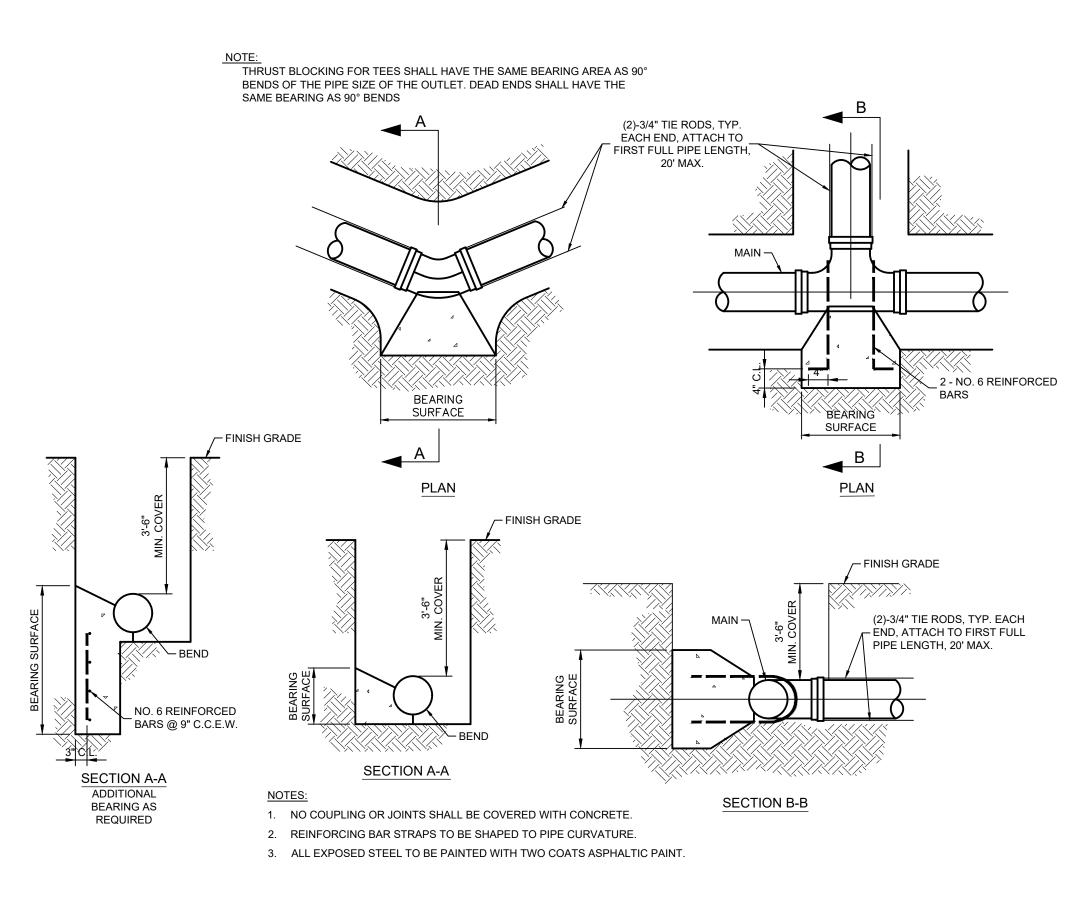
10	2-10	2-2	1 -2	1-0	3-9	1-0	0-3	7-0	3-0	2-0	1-5	2-0	1-5
8"	2'-8"	1'-6"	1'-0"	1'-0"	1'-10"	0'-6"	0'-4"	5'-0"	2'-6"	2'-0"	1'-4"	2'-4"	1'-4"
6"	2'-6"	1'-0"	1'-0"	1'-0"	1'-0"	0'-6"	0'-4"	3'-0"	2'-0"	2'-0"	1'-3"	2'-3"	1'-3"
			NOTES:										
					E TO BE 3 SES TO BE		CLASS. D TO UNE	DISTURBE	ED EARTH	l.			

WATER SYSTEM CONCRETE BUTTRESS & ANCHOR

NOT TO SCALE



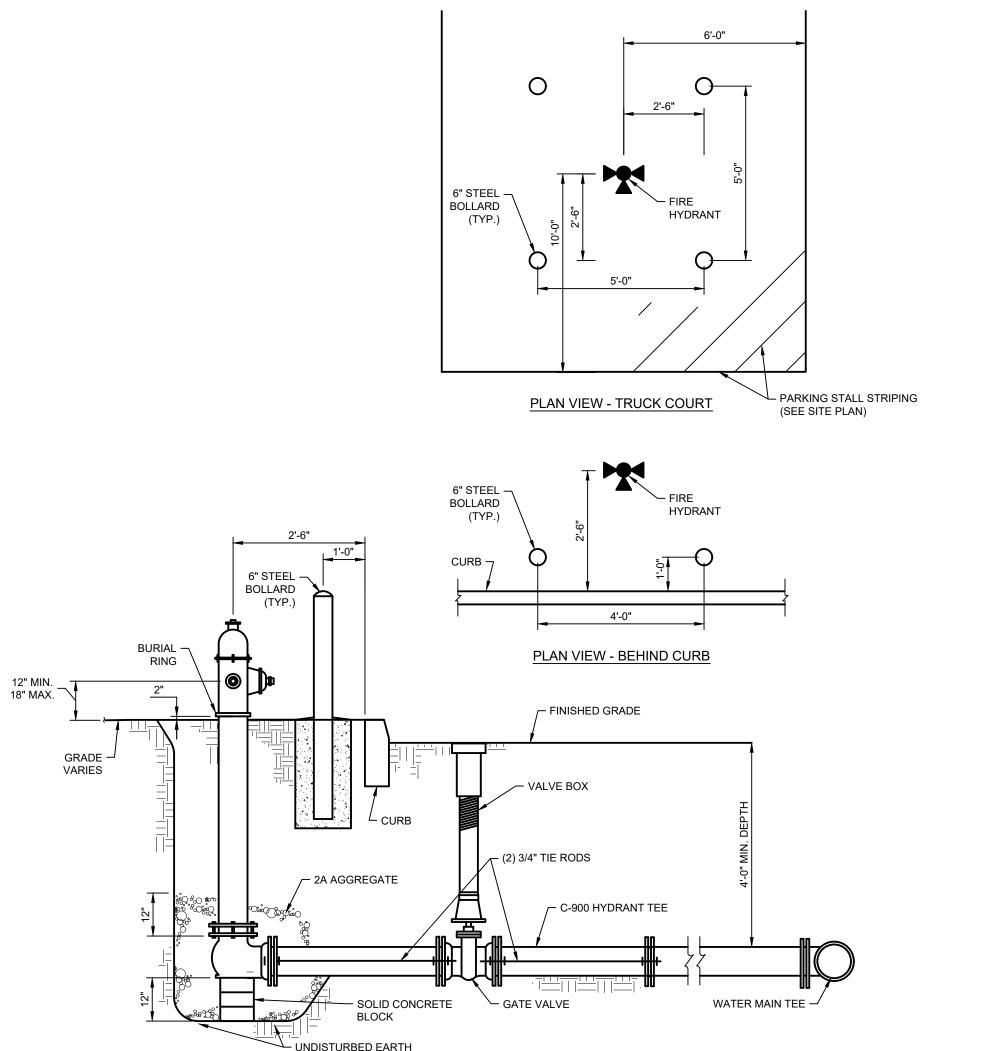
STORM SEWER / WATER LINE CROSSING NOT TO SCALE



45° 2.7	90°	11 1/4°	22 1/2°	45°	90°	11 1/4°	22 1/2°	45°	90
2.7	4.0		<b>-</b>					1	1
	4.0	1.5	3.0	6.0	10.0	3.0	6.2	12.0	22
1.5	2.0	1.0	1.5	3.0	5.0	1.5	3.1	6.0	11
1.0	1.0	1.0	1.0	1.2	2.0	1.0	1.3	2.4	4.
				1.0 1.0 1.0 1.0	1.0 1.0 1.0 1.0 1.2	1.0 1.0 1.0 1.0 1.2 2.0	1.0 1.0 1.0 1.0 1.2 2.0 1.0		1.0         1.0         1.0         1.2         2.0         1.0         1.3         2.4

TYPE OF BEARING MATERIAL		DEGRE	ND 16" E BEND LECTION			DEGRE	ND 20" EE BEND FLECTION	
AND ALLOWABLE LOADS, PSF	11 1/4°	22 1/2°	45°	90°	11 1/4°	22 1/2°	45°	90°
LOOSE SAND OR MEDIUM CLAY - 2,000	6.0	12.0	22.5	40.0	9.5	19.0	37.0	67.0
PACKED GRAVEL AND SAND - 4,000	3.0	6.0	11.3	20.0	4.8	9.5	18.5	33.5
ROCK - 10,000	1.2	2.4	4.5	8.0	2.0	3.8	7.4	13.5

## STANDARD THRUST BLOCKING DETAIL (HOR. & VERT. DOWNWARD THRUST UP TO 150 PSI) NOT TO SCALE

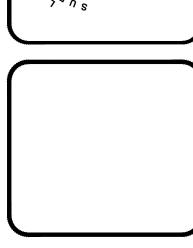


FIRE HYDRANT PLACEMENT DETAIL

NOT TO SCALE

DESIGN -CADD -TBF CHECKED - JJB





PROJECT NO.

22-0123-005 **DATE:** 01/03/23 SCALE: N.T.S.

SHEET 52 OF 54

ALL WASTES AND MATERIALS DEPOSITED IN AND REMOVED FROM POST-CONSTRUCTION STORMWATER (PCSM) BMP FACILITIES DURING OPERATION AND MAINTENANCE SHALL BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE §260.1 ET SEQ., §271.1 ET SEQ., AND §287.1 ET SEQ. NO MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.

THE OWNER SHALL ALSO BE RESPONSIBLE FOR INSPECTING AND MONITORING ALL SYSTEMS AND DOCUMENTING SAID ACTIVITY ON A REGULAR BASIS IN ACCORDANCE WITH THE FOLLOWING GENERAL PRACTICES:

### MRC #1, #3, & #4 & SWM/BMP FACILITY #2 (BMP 001-004)

- 1. SEQUENCE OF CONSTRUCTION
- A. THE DESIGN PROFESSIONAL SHALL BE ON-SITE FOR CONSTRUCTION OF THESE BMPS.

B. INSTALL TEMPORARY SEDIMENT CONTROL BMPS WHERE NECESSARY.

- C. REMOVE SEDIMENT AND DEBRIS FROM THE TEMPORARY SEDIMENT FACILITY TO THE SUBGRADE ELEVATION BELOW THE PROPOSED SURFACE ELEVATION OF THE BMP. WASTE MATERIAL SHALL BE PROPERLY AND LEGALLY DISPOSED OF IN ACCORDANCE WITH PADEP REGULATIONS.
- D. EXCAVATE BMPS TO PROPOSED SUBGRADE INVERT DEPTH AND SCARIFY THE EXISTING SOIL SURFACES. DO NOT COMPACT IN-SITU SOIL. DURING INITIAL EXCAVATION, CONSTRUCTION EQUIPMENT AND VEHICLES SHALL BE LIMITED TO RUBBER-TIRED VEHICLES TO THE
- E. PLACE PLANTING SOIL MIXTURE AND SPECIFIED SEED MIXTURE THROUGHOUT THE ENTIRE BMP AREA.
- F. REMOVE TEMPORARY SEDIMENT CONTROL DEVICES AND CONVERT PERMANENT OUTLET STRUCTURE ONCE 70% VEGETATIVE COVER IS ACHIEVED WITHIN THE BMP AREA. G. THE LICENSED PROFESSIONAL SHALL BE PRESENT DURING INITIAL EXCAVATION AS WELL AS DURING FINAL CONVERSION OF THE BMPS
- FROM "TEMPORARY" TO "PERMANENT" TO ENSURE THAT ALL CONSTRUCTION PROCEEDS IN ACCORDANCE WITH THE DESIGN.

### 2. INSPECTIONS

- A. THE BMPS SHOULD BE INSPECTED AFTER RUNOFF EVENTS GREATER THAN ONE INCH (1") AND MAKE SURE THAT RUNOFF DRAINS DOWN WITHIN 72 HOURS. MOSQUITO'S SHOULD NOT BE A PROBLEM IF THE WATER DRAINS IN 72 HOURS. MOSQUITOES REQUIRE A CONSIDERABLY LONG BREEDING PERIOD WITH RELATIVELY STATIC WATER LEVELS.
- B. INSPECTIONS OF THE BMPS SHALL INCLUDE BUT NOT BE LIMITED TO:
- STRUCTURAL INTEGRITY AND OPERATION OF THE OUTLET STRUCTURES AND APPURTENANCES COLLECTION, STORAGE AND RELEASE OF STORMWATER IN ACCORDANCE WITH EACH BMP'S DESIGN
- SEDIMENT AND DEBRIS ACCUMULATION
- CONDITION AND GROWTH OF VEGETATION
- CONDITION AND FUNCTIONALITY OF PLANTING SOIL MIXTURE GENERAL SAFETY AND OPERATION
- DEVELOPMENT OF SINKHOLES
- SIGNS OF WATER CONTAMINATION/SPILLS SLOPE STABILITY IN BMP BERMS
- GATE VALVES REMAIN CLOSED. C. IN THE EVENT THAT A DEFICIENCY IS DISCOVERED DURING THE ABOVE INSPECTIONS, IMMEDIATE REMEDIATION SHOULD OCCUR IN ORDER TO RESTORE THE DEFICIENT BMP IN ACCORDANCE WITH THE APPROVED DESIGN.

### 3. MAINTENANCE

- A. GATE VALVES ARE TO REMAIN CLOSED EXCEPT FOR EMERGENCY OR MAINTENANCE DEWATERING.
- B. VEGETATION CONTRIBUTING TO AND ADJACENT TO EACH BMP SHALL BE MAINTAINED IN ACCORDANCE WITH THE APPROVED PLAN AND IN ACCORDANCE WITH MUNICIPAL ORDINANCES. C. REMOVE ACCUMULATED SEDIMENT AND DEBRIS FROM BMPS AS REQUIRED. PROPERLY DISPOSE OF SEDIMENT IN ACCORDANCE WITH PADEP REGULATIONS. RESTORE ORIGINAL CROSS-SECTION AND INFILTRATION RATE. FLOATABLE DEBRIS THAT MAY IMPACT THE
- OPERATION OF THE OUTLET STRUCTURES SHALL BE REMOVED IMMEDIATELY. D. CATCH BASINS AND INLETS (UPGRADIENT OF THESE BMPS) SHOULD BE INSPECTED AND CLEANED AT LEAST TWO TIMES PER YEAR AND AFTER RUNOFF EVENTS.
- E. THE VEGETATION ALONG THE SURFACE OF THESE BMPS SHOULD BE MAINTAINED IN GOOD CONDITION, AND ANY BARE SPOTS REVEGETATED AS SOON AS POSSIBLE. F. VEHICLES SHOULD NOT BE PARKED OR DRIVEN ON A BMP, AND CARE SHOULD BE TAKEN TO AVOID EXCESSIVE COMPACTION BY MOWERS
- (WHERE MOWING IS APPLICABLE).
- G. MOW ONLY AS APPROPRIATE FOR VEGETATIVE COVER SPECIES.

### **LANDSCAPE RESTORATION (BMP 005)**

- A. PLACING OF LANDSCAPE PLANTINGS MUST TAKE PLACE DURING THE NORMAL GROWING SEASON.
- B. SEE THE PLANTING SCHEDULE ON THE PLAN FOR PLANT TYPES TO BE PLACED ON THE SITE.
- C. SEE THE CONSTRUCTION DETAILS HEREON FOR SPECIFIC PLANT INSTALLATION DETAILS. D. THE ENGINEER SHALL FIELD VERIFY THE TYPE AND LOCATION OF THE PROPOSED PLANTINGS AT THE TIME OF INSTALLATION.
- E. THE ENGINEER SHALL ALSO FIELD VERIFY THE LANDSCAPE RESTORATION SEEDING MIXTURE TYPE AND PROPOSED LOCATIONS AT THE

### 2. MAINTENANCE

- A. PLANTS SHOULD BE MONITORED REGULARLY FOR GROWTH AND POTENTIAL PROBLEMS.
- B. ASSIGN RESPONSIBILITIES FOR WATERING. WEEDING. AND MOWING TO INDIVIDUALS RESPONSIBLE FOR SITE MAINTENANCE. MOWING OF LANDSCAPE RESTORATION MEADOW AREAS, AS DEPICTED ON THE POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN, SHALL
- ONLY BE PERFORMED TWO (2) TIMES PER YEAR AFTER THE INITIAL ESTABLISHMENT OF THE MEADOW AREAS AS DESCRIBED HEREIN. C. APPLICATION OF A CAREFULLY SELECTED HERBICIDE MAY BE NECESSARY TO PROTECT THE PLANTS. THE INITIAL MAINTENANCE ROUTINE IS NECESSARY FOR 2 TO 3 YEARS UNTIL TREE GROWTH AND TREE CANOPIES BEGIN TO FORM.
- D. FERTILIZER AND CHEMICAL-BASED PEST CONTROL PROGRAMS SHOULD BE MINIMIZED IN THE LANDSCAPE RESTORATION MEADOW AREAS DEPICTED ON THE POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN.
- E. IN THE FIRST YEAR, WEEDS MUST BE CAREFULLY CONTROLLED AND CONSISTENTLY MOWED BACK TO 4-6 INCHES TALL WHEN THEY REACH 12 INCHES IN HEIGHT.
- F. IN THE SECOND YEAR, WEEDS SHOULD CONTINUE TO BE MONITORED AND MOWED AND RHIZOMATOUS WEEDS SHOULD BE HAND TREATED WITH HERBICIDE. WEEDS SHOULD NOT BE SPRAYED WITH HERBICIDE AS THE DRIFT FROM THE SPRAY MAY KILL LARGE PATCHES OF DESIRABLE PLANTS, ALLOWING WEEDS TO MOVE IN TO THESE NEW OPEN AREAS.
- G. IN THE BEGINNING OF THE THIRD SEASON, THE YOUNG MEADOW SHOULD BE MOWED VERY CLOSELY IN MID-SPRING. THE MOWED MATERIAL SHOULD BE REMOVED FROM THE SITE TO EXPOSE THE SOIL TO THE SUN. THIS HELPS ENCOURAGE RAPID SOIL WARMING
- 3. THESE NOTES ALSO APPLY TO THE OPERATION & MAINTENANCE OF THE GRASSED AREAS WITHIN BMPS 001-013.

WHICH FAVORS THE ESTABLISHMENT OF "WARM SEASON" PLANTS OVER "COOL SEASON" WEEDS.

PERMANENT CHANNEL

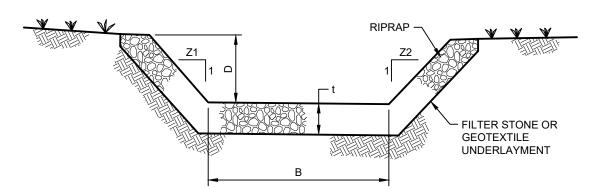
## 1. CONSTRUCTION SEQUENCE

- A. BEGIN CHANNEL CONSTRUCTION ONLY WHEN THE APPROPRIATE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES ARE IN
- B. ROUGH GRADE THE CHANNEL. EQUIPMENT SHALL AVOID EXCESSIVE COMPACTION AND LAND DISTURBANCE. EXCAVATING EQUIPMENT SHALL OPERATE FROM THE SIDE OF THE CHANNEL AND NEVER ON THE BOTTOM. C. FINE GRADE THE CHANNEL. ACCURATE GRADING IS CRUCIAL. THE SMALLEST NONCONFORMITY MAY COMPROMISE FLOW CONDITIONS D. SEED, VEGETATE, AND INSTALL PROTECTIVE LINING AS PER APPROVED PLANS AND ACCORDING TO THE SEEDING SPECIFICATIONS.
- PLANT THE CHANNEL AT A TIME OF YEAR WHEN SUCCESSFUL ESTABLISHMENT WITHOUT IRRIGATION IS MOST LIKELY. HOWEVER, TEMPORARY IRRIGATION MAY BE NEEDED IN PERIODS OF LITTLE RAIN OR DROUGHT. VEGETATION SHALL BE ESTABLISHED AS SOON AS POSSIBLE TO PREVENT EROSION AND SCOUR.
- E. ONCE ALL TRIBUTARY AREAS ARE PERMANENTLY STABILIZED, REMOVE TEMPORARY EROSION AND SEDIMENT CONTROLS. 2. MAINTENANCE
- A. ACTIVITIES TO BE DONE ANNUAL AND WITHIN 47 HOURS AFTER EVERY RUNOFF EVENT (>0.25" RAINFALL DEPTH): • INSPECT AND CORRECT EROSION PROBLEMS, DAMAGE TO VEGETATION, AND SEDIMENT AND DEBRIS ACCUMULATION. ADDRESS
- WHEN GREATER THAN THREE INCHES AT ANY SPOT OR COVERING VEGETATION. INSPECT VEGETATION ON SIDE SLOPES FOR EROSION AND FORMATION OF RILLS OR GULLIES, CORRECT AS NEEDED.
- INSPECT FOR POOLS OF STANDING WATER; DEWATER AND DISCHARGE TO AN APPROVED LOCATION AND RESTORE TO DESIGN
- MOW AND TRIM VEGETATION TO ENSURE SAFETY, AESTHETICS, PROPER CHANNEL OPERATION, OR TO SUPPRESS WEEDS AND INVASIVE VEGETATION. DISPOSE OF CUTTINGS IN A LOCAL COMPOSTING FACILITY. MOW ONLY WHEN DRY TO AVOID RUTTING.
- INSPECT FOR LITTER PRIOR TO MOWING. • INSPECT FOR UNIFORMITY OF CROSS SECTION AND LONGITUDINAL SLOPE, CORRECT AS NEEDED.
- INSPECT INLET AND OUTLET AREAS FOR SIGNS OF EROSION OR BLOCKAGES, CORRECT AS NEEDED. B. ACTIVITIES TO BE DONE AS NEEDED:
- PLANT ALTERNATIVE GRASS SPECIES IN THE EVENT OF UNSUCCESSFUL ESTABLISHMENT. RESEED BARE AREAS. INSTALL APPROPRIATE EROSION CONTROL MEASURES WHEN NATIVE SOIL IS EXPOSED, OR EROSION CHANNELS ARE FORMING.
- WATER DURING DRY PERIODS, FERTILIZE, AND APPLY PESTICIDE ONLY WHEN NECESSARY.

### **STORM SYSTEM CONVEYANCE FACILITIES**

. STORM SYSTEM CONVEYANCE FACILITIES (INLETS, PIPING, ROOF LEADERS, SWALES, ETC.,) SHOULD BE INSPECTED ANNUALLY FOR PROPER FUNCTION, OPERATION, STRUCTURAL CONDITION, ACCUMULATED SEDIMENT AND DEBRIS. ANY DEFICIENCIES SHALL BE DOCUMENTED AND REPORTED FOR MAINTENANCE.

PRIOR TO RECORDING THE APPROVED POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN, THE OWNER SHALL ALSO ENTER INTO A STORMWATER FACILITIES AND BMP MAINTENANCE AND MONITORING AGREEMENT WITH THE TOWNSHIP. THE AGREEMENT SHALL OUTLINE PROVISIONS FOR OWNERSHIP, MAINTENANCE AND CONTROL OF FACILITIES AS WELL AS PROVISIONS FOR ACCESS BY TOWNSHIP PERSONNEL FOR INSPECTION OF THE FACILITIES DEEMED CRITICAL TO THE PUBLIC WELFARE ON A REGULAR BASIS AND FOLLOWING MAJOR STORM EVENTS. MAINTENANCE AND OBSERVATION ACTIVITIES SHALL BE DOCUMENTED IN A REPORT AND SHALL BE MADE AVAILABLE FOR THE



### (LOOKING DOWNSTREAM) CHANNEL CROSS-SECTION

CHANNEL	В	D	Z1	Z3	RIPRAP GRADATION	t	UNDERLAYMENT
2D	2.0	1.5	3	3	R-4	18"	CLASS 1 GEOTEXTILE

- 1. FILTER STONE UNDERLAYMENT FOR BED SLOPES 0.10 FT/FT SHALL BE USED.
- 2. CHANNEL DIMENSIONS ARE FOR THE COMPLETED CHANNEL AFTER ROCK PLACEMENT. CHANNEL MUST BE OVER-EXCAVATED A SUFFICIENT AMOUNT TO ALLOW FOR THE VOLUME OF ROCK PLACED WITHIN THE CHANNEL WHILE PROVIDING THE SPECIFIED
- 3. CHANNEL DIMENSIONS SHALL BE CONSTANTLY MAINTAINED. CHANNEL SHALL BE CLEANED WHENEVER TOTAL CHANNEL DEPTH IS REDUCED BY 25% AT ANY LOCATION. SEDIMENT DEPOSITS SHALL BE REMOVED WITHIN 24 HOURS OF DISCOVERY OR AS SOON

BASIN BOTTOM EMERGENCY SPILLWAY

TOE OF -

SLOPE

**EMBANKMENT** INTERIOR ANCHOR -

TOP OF

**EMBANKMENT** 

EXTERIOR TRENCH

SLOPE

SEE KEY —

LINING

TRM STAPLE Z5
TYPE PATTERN (FT)

TRENCH

WIDTH

(FT)

SEE PERMANENT MRC OUTLET STRUCTURE DETAIL

EMBANKMENT SECTION ALONG

**EMERGENCY SPILLWAY SECTION X-X** 

CREST

NOTES:

1. HEAVY EQUIPMENT SHALL NOT CROSS OVER SPILLWAY WITHOUT PRECAUTIONS TAKEN TO

**EMERGENCY SPILLWAY WITH TRM LINING** 

NOT TO SCALE

2. DISPLACED LINER WITHIN THE SPILLWAY AND/OR OUTLET CHANNEL SHALL BE REPLACED

3. SEE EROSION CONTROL BLANKET INSTALLATION DETAIL FOR STAPLE PATTERN.

SECTION Z-Z

KEY TRENCH AT TOE OF SLOPE OF SPILLWAY

TRENCH END INTO INTERIOR SLOPE PER MANUFACTURER

WEIR

(FT) WTE WCE

ELEV ELEV

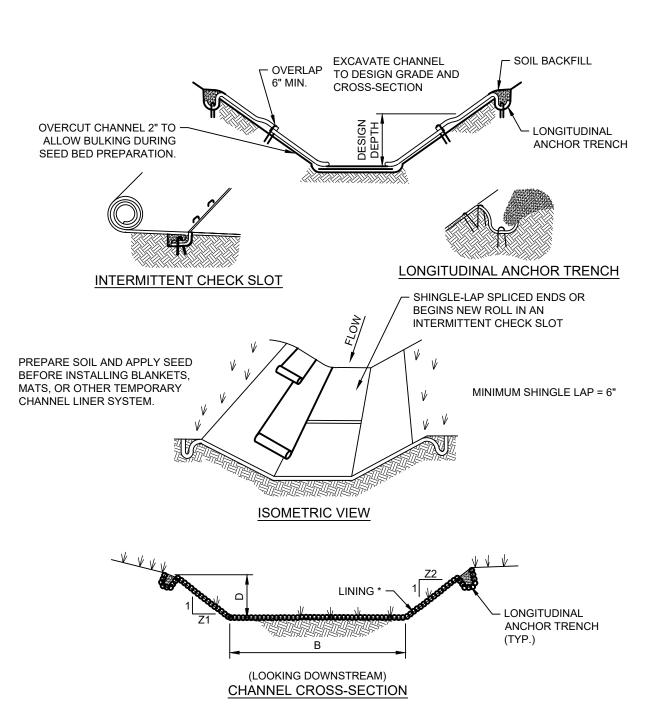
TRENCHING DETAILS

OVERLAPPED -TERMINAL

END OF TRM

TRENCH

- AS SOIL CONDITIONS PERMIT ACCESS TO CHANNEL WITHOUT FURTHER DAMAGE. 4. DAMAGED LINING SHALL BE REPAIRED OR REPLACED WITHIN 48 HOURS OF DISCOVERY.
- 5. THE MINIMUM ROCK THICKNESS (T) SHALL BE 1.5 TIMES THE MAX ROCK SIZE.



\* SEE MANUFACTURER'S LINING INSTALLATION DETAIL FOR STAPLE PATTERS, AND VEGETATIVE STABILIZATION SPECIFICATIONS FOR SOIL AMENDMENTS, SEED MIXTURES AND MULCHING

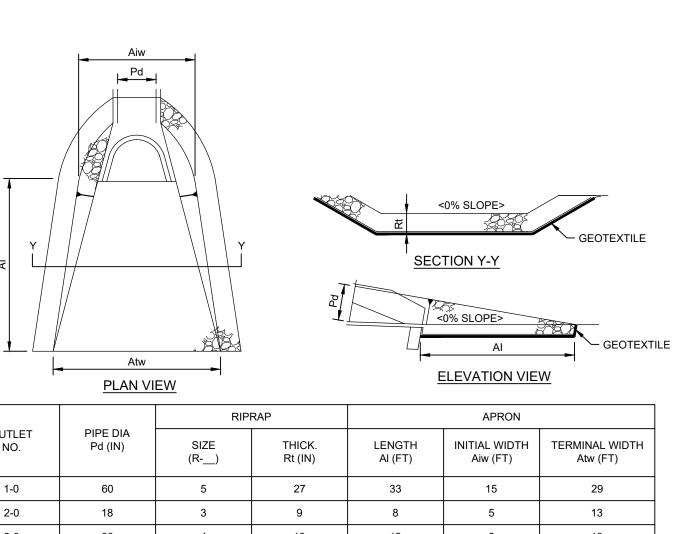
INFO	RMATION.					
CHANNEL NO.	BOTTOM WIDTH B (FT)	DEPTH D (FT)	Z1 (FT)	Z2 (FT)	LINING *	STAPLE PATTERN
1	10.0	2.0	3	3	N.A.G. S75	CHANNEL
2A	2.0	1.5	3	3	N.A.G. S75	CHANNEL
2B	2.0	1.5	3	3	N.A.G. S75	CHANNEL
2C	2.0	1.5	3	3	N.A.G. S75	CHANNEL
3	2.0	1.5	3	3	N.A.G. S75	CHANNEL
4	2.0	2.0	3	3	N.A.G. S75	CHANNEL
5A	2.0	1.5	3	3	N.A.G. S75	CHANNEL
5B	2.0	1.5	3	3	N.A.G. S75	CHANNEL

### **GENERAL NOTES:**

- 1. N.A.G. INDICATES A NORTH AMERICAN GREEN PRODUCT AND S75 REPRESENTS THE PRODUCT #.
- 2. ANCHOR TRENCHES SHALL BE INSTALLED AT BEGINNING AND END OF CHANNEL IN THE SAME MANNER AS LONGITUDINAL
- 3. CHANNEL DIMENSIONS SHALL BE CONSTANTLY MAINTAINED. CHANNEL SHALL BE CLEANED WHENEVER TOTAL CHANNEL DEPTH IS REDUCED BY 25% AT ANY LOCATION. SEDIMENT DEPOSITS SHALL BE REMOVED WITHIN 24 HOURS OF DISCOVERY OR AS SOON AS SOIL CONDITIONS PERMIT ACCESS TO CHANNEL WITHOUT FURTHER DAMAGE. DAMAGED LINING SHALL BE REPAIRED OR REPLACED WITHIN 48 HOURS OF DISCOVERY.
- 4. NO MORE THAN ONE THIRD OF THE SHOOT (GRASS LEAF) SHALL BE REMOVED IN ANY MOWING. GRASS HEIGHT SHALL BE MAINTAINED BETWEEN 2 AND 3 INCHES UNLESS OTHERWISE SPECIFIED. EXCESS VEGETATION SHALL BE REMOVED FROM PERMANENT CHANNELS TO ENSURE SUFFICIENT CHANNEL CAPACITY.
- 5. ALL CHANNELS MUST BE KEPT FREE OF OBSTRUCTIONS SUCH AS FILL GROUND, FALLEN LEAVES & WOODY DEBRIS, ACCUMULATED SEDIMENT, AND CONSTRUCTION MATERIALS/WASTES, CHANNELS SHOULD BE KEPT MOWED AND/OR FREE OF ALL WEEDY, BRUSHY, OR WOODY GROWTH, ANY UNDERGROUND UTILITIES RUNNING ACROSS/THROUGH THE CHANNEL(S) SHALL
- 6. CHANNELS SHALL BE CONSTRUCTED FREE OF ROCKS. TREE ROOTS, STUMPS, OR OTHER PROJECTIONS THAT WILL IMPEDE NORMAL CHANNEL FLOW AND/OR PREVENT GOOD LINING TO SOIL CONTACT. THE CHANNEL SHALL BE INITIALLY OVER-EXCAVATED TO ALLOW FOR THE PLACEMENT OF TOPSOIL.

BE IMMEDIATELY BACKFILLED AND THE CHANNEL(S) REPAIRED AND STABILIZED PER THE CHANNEL CROSS-SECTION DETAIL.

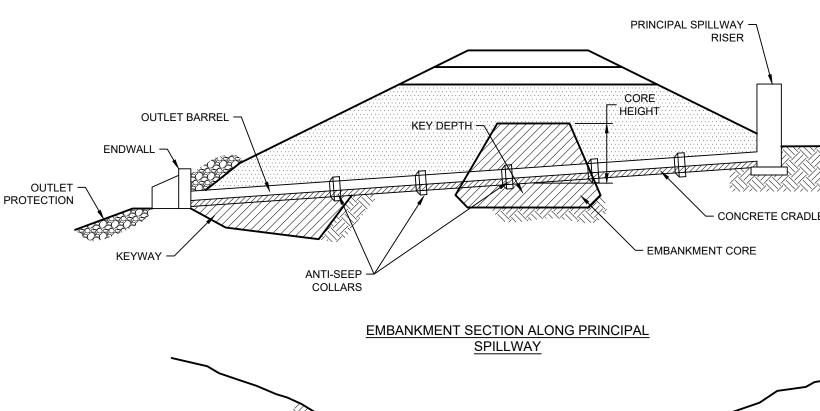
## PERMANENT CHANNEL

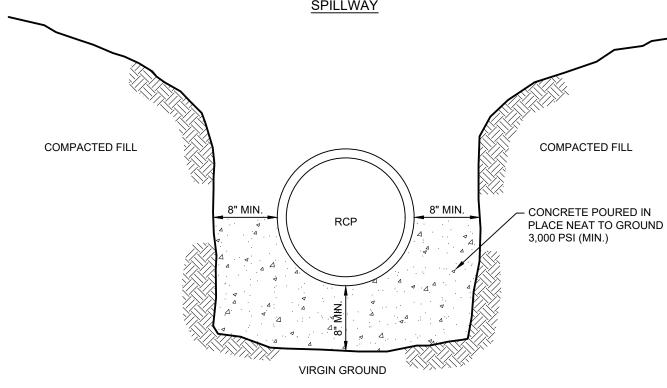


		RIP	RAP		APRON	
OUTLET NO.	PIPE DIA Pd (IN)	SIZE (R)	THICK. Rt (IN)	LENGTH AI (FT)	INITIAL WIDTH Aiw (FT)	TERMINAL WIDTI Atw (FT)
1-0	60	5	27	33	15	29
2-0	18	3	9	8	5	13
3-0	30	4	18	12	8	13
4-0	24	3	9	12	6	18
5-0	30	3	9	19	8	27
6-0	30	3	9	19	8	27
7-0	15	3	9	6	4	7
8-0	15	3	9	6	4	7
9-0	30	4	18	21	8	29
OS-1B	24	4	18	12	6	18
OS-2B	24	4	18	12	6	18
OS-4C	36	4	18	20	9	29

- 1. ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO
- 2. ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY <u>AND</u> AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON

## RIPRAP APRON AT PIPE OUTLET WITH ENDWALL



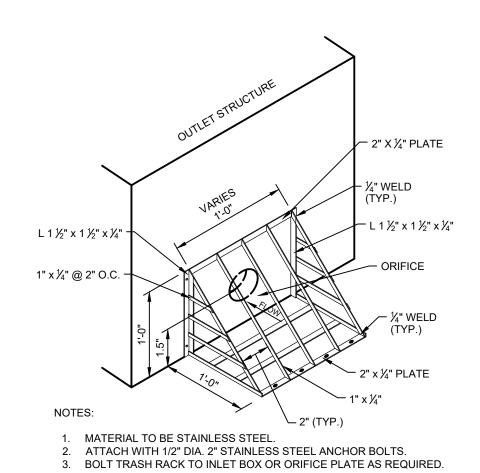


(	CROSS-SE	CTION AT	OUTLET	BARRE
_				

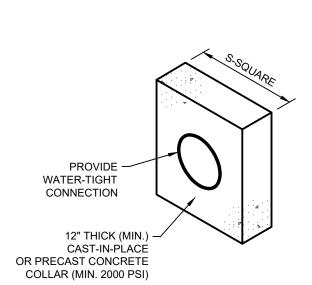
BASIN#	CRADLE LENGTH	OUTLET PIP
1	47'	24" RCP @ 1.0
2	56'	24" RCP @ 1.0
3	52'	24" RCP @ 0.5
4	9'	18" RCP @ 0.5

- 1. A CONCRETE CRADLE MAY BE USED IN CONJUNCTION WITH ANTI-SEEP
- 2. ANTI-SEEP COLLAR NUMBER, SIZE AND SPACING SHALL BE AS SHOWN ELSEWHERE IN PLAN.

## **CONCRETE CRADLE** FOR BASIN OUTLET PIP



**CIRCULAR ORIFICE TRASH RACK** NOT TO SCALE



1. ALL COLLARS SHALL BE INSTALLED SO AS TO BE WATER-TIGHT. 2. COLLAR SIZE AND SPACING SHALL BE AS INDICATED BELOW.

BASIN NO.	PIPE SIZE (IN.)	S (IN.)	NO. OF COLLARS	DISTANCE RISER TO 1ST COLLAR (FT.)	COLLAR SPACING (FT.)
1	24	92	2	6.0000	15
2	24	74	2	15.0000	11
3	24	52	2	12.0000	10
4	24	76	1	15.0000	N/A

**CONCRETE ANTI-SEEP COLLAR PERMANENT BASIN** NOT TO SCALE

PROJ. MGR. -

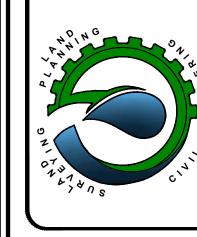
TBF

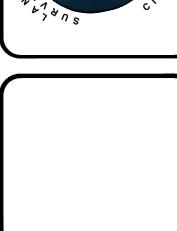
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DESIGN -

CHECKED -

CADD -

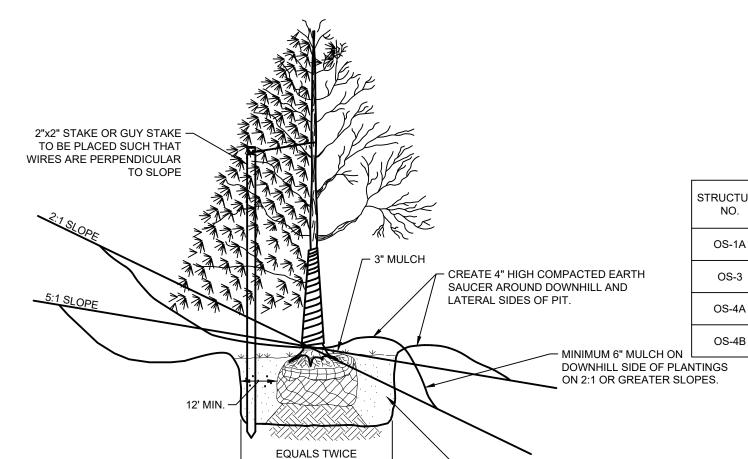




PROJECT NO. 22-0123-005 **DATE:** 01/03/23

SCALE: N.T.S. SHEET 53 OF 54

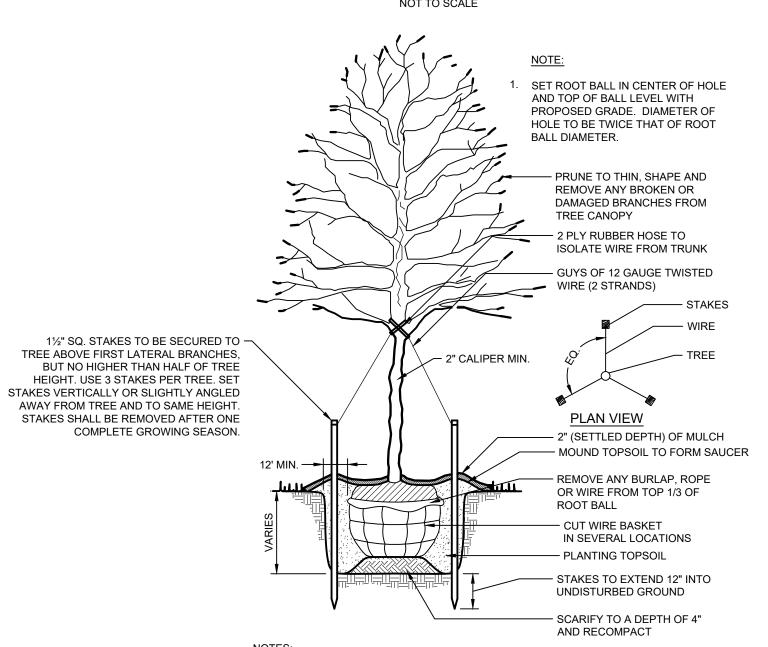
### **SHRUB PLANTING** NOT TO SCALE



- PLANTING BED MIXTURE

REFER TO OTHER PLANTING DETAILS FOR ADDITIONAL REQUIREMENTS. REFER TO LANDSCAPE PLAN SHEET LL 8.3 FOR PLANT SCHEDULE AND CALIPER SIZES.

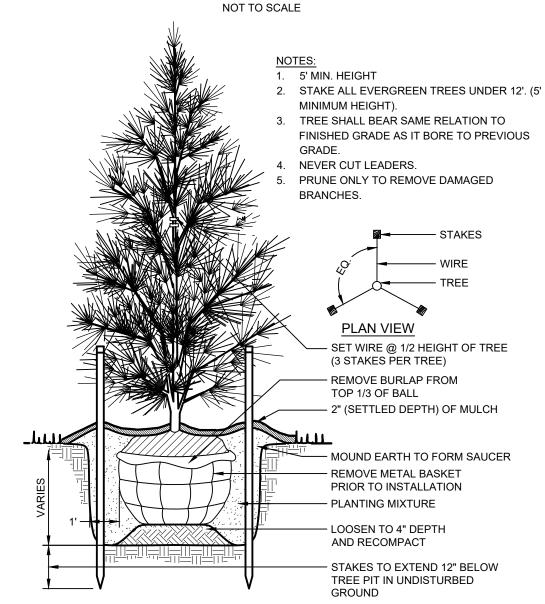
## TREE / SHRUB ON SLOPE PLANTING



1. A 4' MULCHED SAUCER SHALL BE PLACED AROUND TREE, IF TREE IS NOT LOCATED WITHIN A CONTIGUOUS PLANTING BED. REFER TO LANDSCAPE PLAN SHEET LL 8.3 FOR PLANT SCHEDULE AND

## **DECIDUOUS TREE PLANTING**

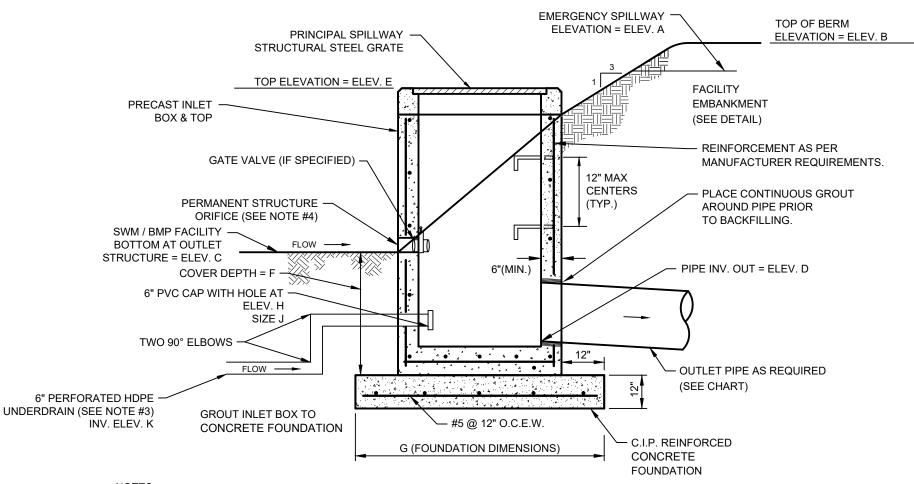
CALIPER SIZES.



1. A 4' MULCHED SAUCER SHALL BE PLACED AROUND TREE, IF TREE IS NOT LOCATED WITHIN A CONTIGUOUS PLANTING BED. 2. REFER TO LANDSCAPE PLAN SHEET LL 8.3 FOR PLANT SCHEDULE AND

## **EVERGREEN TREE PLANTING**

PLANTING SIZES.



1. PROVIDE FIELD PLACED CONCRETE FILL IN THE BOTTOM OF ALL OUTLET STRUCTURES. PROVIDE AN ADEQUATE FLOW CHANNEL FOR THE TRANSITION TO THE OUTLET PIPE. SHAPE BOX BOTTOM FOR POSITIVE DRAINAGE.

2. CONSTRUCT THE REINFORCED CONCRETE FOUNDATION TO A DIMENSION 24 INCHES LARGER THAN THE OUTSIDE DIMENSIONS OF THE

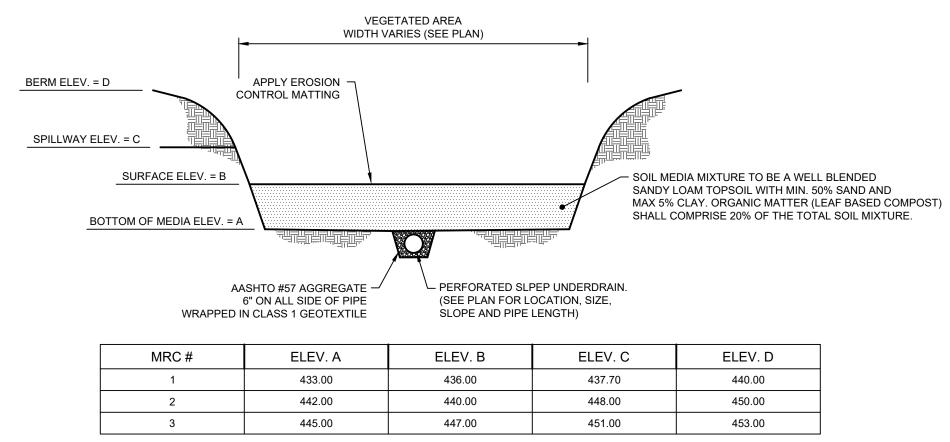
3. PROVIDE PERFORATED SLPEP UNDERDRAIN WITH CLEANOUTS WITHIN EACH FACILITY. SEE THE PLAN FOR LOCATION, SIZE, SLOPE, PIPE LENGTH AND CLEANOUT LOCATIONS.

4. WHERE SPECIFIED, PROVIDE A PERMANENT 6" GATE VALVE WITH STAINLESS STEEL PADDLES MANUFACTURED BY VALTERRA, OR APPROVED EQUAL AT THE BOTTOM OF THE FACILITY AT OUTLET STRUCTURE. THE OPERATOR FOR THE GATE VALVE SHALL BE OPERATED FROM THE INSIDE THE OUTLET STRUCTURE. THE GATE VALVE SHALL CREATE A WATERTIGHT CONNECTION AND REMAIN CLOSED AT ALL TIMES UNLESS THE FACILITY NEEDS TO BE DEWATERED FOR MAINTENANCE PURPOSES.

5. WHEN CONVERTING THE FACILITY TO IT'S PERMANENT CONDITION, REMOVE TEMPORARY STEEL PLATES AND PLACE THE INLET TOP GRATE ON TOP OF THE STRUCTURE.

STRUCTURE NO.	А	В	С	D	E	F	G	Н	J	К	PERMANENT STRUCTURE ORIFICE	INLET TYPE	INLET DIMENSIONS	BOX TYPE	OUTLET PIPE
OS-1A	437.70	440.00	436.00	428.51	437.70	8.0'	5' x 9'	434.00	Ø2.9"	433.00	6" GATE VALVE	TYPE M	24" x 45"	STANDARD	47' OF 24" RCP @ 1.00%
OS-3	448.00	450.00	442.00	441.81	446.00	0.7'	5' x 9'	441.00	Ø1.7"	440.00	Ø6" @ 442.00	TYPE M	24" x 45"	STANDARD	52' OF 24" RCP @ 0.50%
OS-4A	N/A	453.00	447.00	445.60	449.00	2.0'	5' x 9'	446.00	Ø0.7"	445.00	Ø6" @ 447.00	TYPE M	24" x 45"	STANDARD	9' OF 18" RCP @ 0.50%
OS-4B	N/A	453.00	447.00	445.45	451.00	2.0'	5.5' x 13'	N/A	N/A	N/A	NONE	TYPE DH LEVEL	24" x 93"	TYPE DH	69' OF 36" RCP @ 0.50%

### PERMANENT MRC OUTLET STRUCTURE NOT TO SCALE

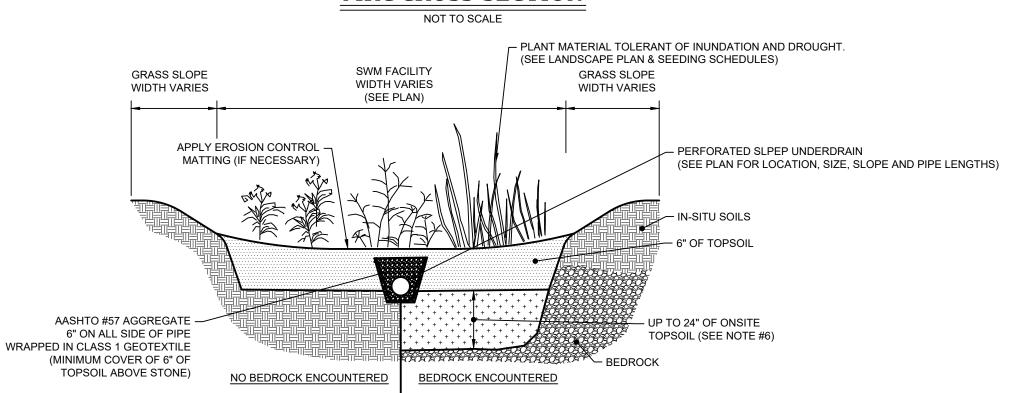


- **GENERAL NOTES:** 1. CONSTRUCT MRC FACILITY ONLY AFTER STABILIZATION OF CONTRIBUTING DRAINAGE AREA.
- 2. PLANT, SEED, AND STABILIZE VEGETATED AREA PER LANDSCAPING PLAN AND SEEDING SPECIFICATIONS.
- 3. GRADING OF MRC FACILITY SHALL BE ACCOMPLISHED USING LOW-COMPACTION EARTH-MOVING EQUIPMENT TO PREVENT OVER COMPACTION OF UNDERLYING SOILS.
- 4. THE SOIL MEDIA MIXTURE SHALL BE APPLIED TO THE ENTIRE BOTTOM CONTOUR AREA WITHIN THE MRC FACILITY. 5. THE TOPSOIL MIXTURE SHOULD BE FREE OF SUBSOIL, CLAY LUMPS, BRUSH, ROOTS, WEEDS AND ANY OTHER FOREIGN
- 6. THE SAND BEING USED IN THE PLANTING SOIL MIXTURE SHOULD BE A NON-REACTIVE, SILICA-BASED MATERIAL MEETING
- THE REQUIREMENTS FOR PENNDOT CEMENT CONCRETE SAND, TYPE A. 7. PROVIDE A MANUFACTURER'S SPECIFICATION AND/OR ON-SITE MATERIAL TESTING TO DEMONSTRATE A MINIMUM OF 30% OF VOID SPACE IN SUBSOIL MIXTURES.
- 1. IN THE EVENT THAT THE BMP IS NOT DEWATERING PROPERLY AFTER A STORM EVENT, INITIAL REPAIR OPTIONS SUCH AS
- TILLING GRASS AREAS AND REPLACING THE TOPSOIL MIXTURE SHALL BE PERFORMED. THIS WORK SHALL BE
- COORDINATED WITH THE LOCAL CONSERVATION DISTRICT. 2. IF THE BMP CONTINUES TO NOT DEWATER PROPERLY AFTER FREQUENT STORM EVENTS, THE RESPONSIBLE SITE

OFFICIAL SHALL CONTACT THE DESIGN ENGINEER FOR FURTHER GUIDANCE. ANY NECESSARY MODIFICATIONS TO THE

## **MRC CROSS-SECTION**

BMP SHALL BE COORDINATED WITH THE LOCAL CONSERVATION DISTRICT.



GENERAL NOTES:

OF ENVIRONMENTAL PROTECTION.

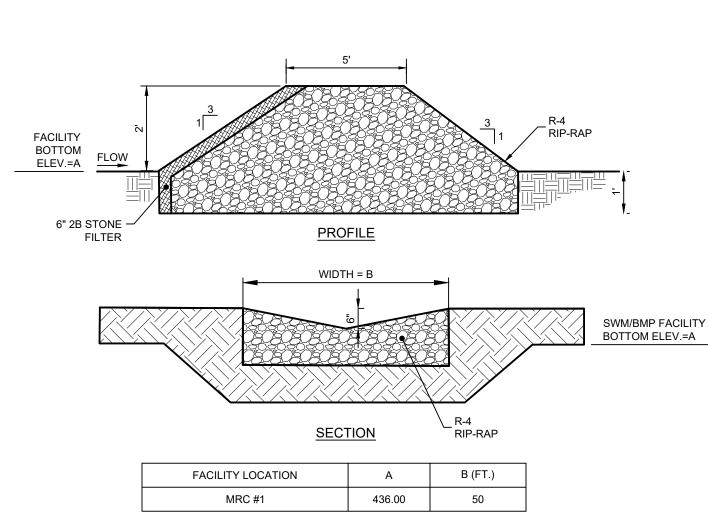
- 1. CONSTRUCT SWM/BMP FACILITY ONLY AFTER STABILIZATION OF CONTRIBUTING DRAINAGE AREA.
- 2. PLANT, SEED, AND STABILIZE SWM/BMP FACILITY PER LANDSCAPING PLAN AND SEEDING SPECIFICATIONS. 3. GRADING OF SWM/BMP FACILITY SHALL BE ACCOMPLISHED USING LOW-COMPACTION EARTH-MOVING EQUIPMENT TO PREVENT OVER COMPACTION OF UNDERLYING SOILS.
- 4. THE TOPSOIL MIXTURE SHALL BE APPLIED TO THE ENTIRE BOTTOM CONTOUR AREA WITHIN THE SWM FACILITY. 5. THE TOPSOIL MIXTURE SHOULD BE FREE OF SUBSOIL, CLAY LUMPS, BRUSH, ROOTS, WEEDS AND ANY OTHER FOREIGN

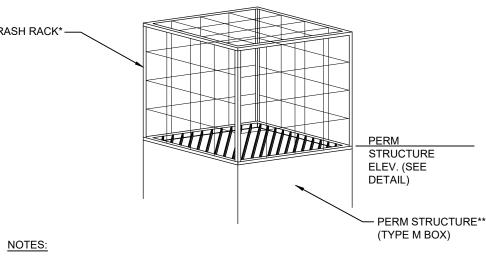
6. IN SWM FACILITY BED AREAS WHERE BEDROCK IS ENCOUNTERED OR LOCATED WITHIN TWO (2) FEET OF THE BOTTOM

ELEVATION OF THE FACILITY, THE BED SHALL BE OVER-EXCAVATED AT LEAST TWO (2) FEET AND REPLACED WITH ONSITE

- TOPSOIL. THE FACILITY BOTTOM BED AREA THAT WILL REQUIRE OVER-EXCAVATION SHALL BE FIELD VERIFIED DURING CONSTRUCTION. 7. IF GROUNDWATER IS ENCOUNTERED DURING EXCAVATION OF THE SWM FACILITY, THE CONTRACTOR SHALL INSTALL AN ADDITIONAL CUTOFF TRENCH AND IMPERVIOUS CORE ON THE UPPER SIDE OF THE FACILITY TO ENSURE THAT
- GROUNDWATER IS BYPASSED AROUND THE FACILITY. THE CUTOFF TRENCH AND IMPERVIOUS CORE SHALL BE INSTALLED PER THE SWM BMP FACILITY CROSS SECTION AT OUTLET STRUCTURE DETAIL PROVIDED HEREON AND SHALL EXTEND UP TO AN ELEVATION ONE FOOT ABOVE THE MAXIMUM ENCOUNTERED GROUNDWATER ELEVATION.
- REPAIR & REPLACEMENT NOTES: 1. IN THE EVENT THAT THE BMP IS NOT DEWATERING PROPERLY AFTER A STORM EVENT, INITIAL REPAIR OPTIONS SUCH AS
- TILLING GRASS AREAS AND REPLACING THE TOPSOIL MIXTURE SHALL BE PERFORMED. THIS WORK SHALL BE COORDINATED WITH LEBANON COUNTY CONSERVATION DISTRICT. 2. IF THE BMP CONTINUES TO NOT DEWATER PROPERLY AFTER FREQUENT STORM EVENTS, THE RESPONSIBLE SITE OFFICIAL SHALL CONTACT THE DESIGN ENGINEER FOR FURTHER GUIDANCE. ANY NECESSARY MODIFICATIONS TO THE BMP SHALL BE COORDINATED WITH LEBANON COUNTY CONSERVATION DISTRICT AND THE PENNSYLVANIA DEPARTMENT

## SWM / BMP FACILITIES CROSS-SECTION





\* TRASH RACK COMPOSED OF 1" X 1" X 1/8" L (TYP.) AND #4 BARS (TYP.) WELDED TO THE ANGLES AND AT EACH INTERSECTION OF THE BARS; #4 BARS SPACED @ 1/2 THE DIAMETER OF THE BARREL MAX.

\*\* THE PERMANENT PRINCIPAL SPILLWAY STRUCTURAL STEEL GRATE SHOULD BE REMOVED FROM THE PERMANENT STRUCTURE UNTIL THE TEMPORARY SEDIMENT BASIN IS CONVERTED TO THE PERMANENT SWM/BMP FACILITY.

TRASH RACK FOR PERMANENT STRUCTURES NOT TO SCALE

**FOREBAY SPILLWAY** 

— 1/4 OF DEPTH

GEOTEXTILE

1. REMOVE AND PROPERLY DISPOSE OF MATERIALS DUMPED IN AND AROUND THE

2. EXCAVATE LOOSE MATERIAL FROM THE SINKHOLE AND TRY TO EXPOSE THE SOLUTION VOID(S) IN THE BOTTOM. ENLARGE THE SINKHOLE, AS NECESSARY TO

3. PLACE A LAYER OF FILTER MATERIAL INTO THE SINKHOLE ALLOWING THE STONE

TO FILL THE VOID(S) BELOW THE BOTTOM OF EXCAVATED SINKHOLE. THE SIZE

4. PLACE A LAYER OF THE SAME SIZE FILTER MATERIAL AT A THICKNESS OF ABOUT 3/4

5. PLACE A LAYER OF SMALLER SIZE FILTER MATERIAL OVER THE PREVIOUS LAYER AT

SURFACE. THE SIZE SHOULD BE 1/4 TO 1/2 THE SIZE OF THE PREVIOUS LAYER. IN

NOT TO SCALE

A THICKNESS OF ABOUT 1/4 D (D = TOTAL DEPTH). BRING THIS LAYER TO THE

SHOULD BE 1/4 TO 1/2 THE SIZE OF THE VOID(S). IN MOST CASES THIS MATERIAL

ALLOW FOR INSTALLATION OF THE FILTER MATERIALS.

D (D = TOTAL DEPTH) ABOVE THE SINKHOLE BOTTOM.

MOST CASES THIS MATERIAL COULD BE NO. 57 STONE.

FILTER MATERIAL (NO. 57 STONE)

**OVERLYING SOIL** 

FILTER MATERIAL

- LIMESTONE BEDROCK

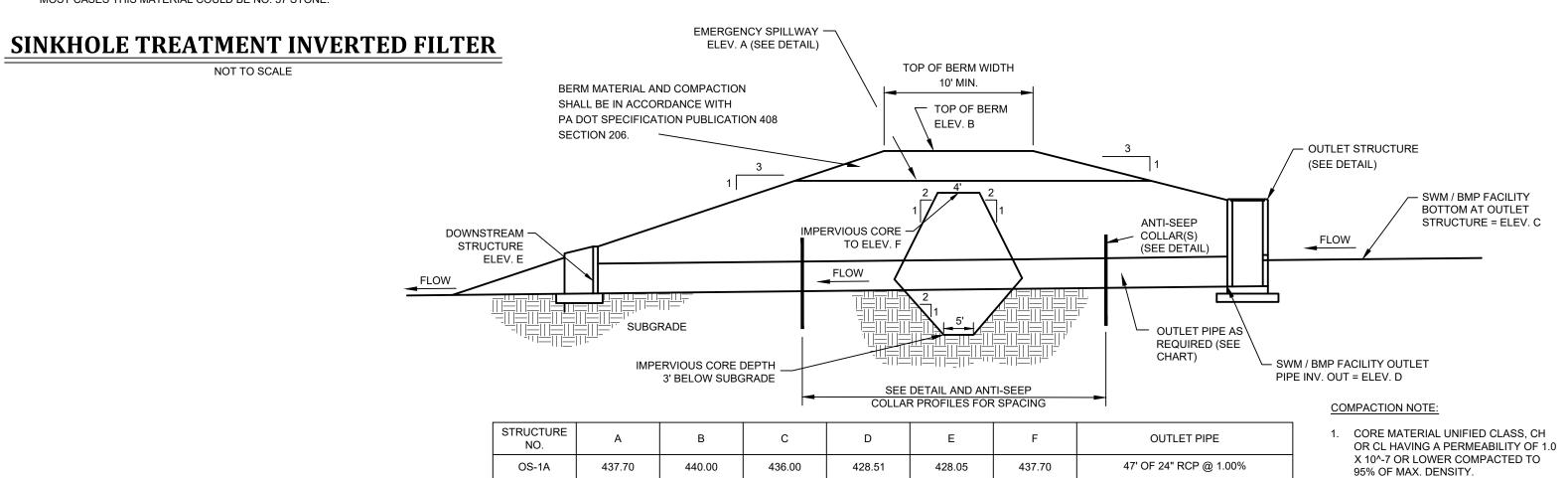
(R-3 STONE)

EMERGENCY SPILLWAY TOP OF BERM ELEVATION = ELEV. A PRINCIPAL SPILLWAY ELEVATION = ELEV. B STRUCTURAL STEEL GRATE TOP ELEVATION = ELEV. **EMBANKMENT** PRECAST INLET BOX & TOP (SEE DETAIL) - REINFORCEMENT AS PER ORIFICE TRASH RACK -MANUFACTURER REQUIREMENTS. (SEE DETAILS) CENTERS PLACE CONTINUOUS GROUT PERMANENT STRUCTURE ORIFICE(S) AROUND PIPE PRIOR TO BACKFILLING. SWM / BMP FACILITY -BOTTOM AT OUTLET STRUCTURE = ELEV. C SWM / BMP FACILITY PIPE INV. OUT = ELEV. D GATE VALVE (SEE NOTE #4) PERFORATED SLPEP -— OUTLET PIPE AS REQUIRED (SEE NOTES #3 & #4) (SEE CHART) GROUT INLET BOX TO #5 @ 12" O.C.E.W. CONCRETE FOUNDATION - C.I.P. REINFORCED H (FOUNDATION DIMENSIONS) CONCRETE **FOUNDATION** 

- 1. PROVIDE FIELD PLACED CONCRETE FILL IN THE BOTTOM OF ALL OUTLET STRUCTURES. PROVIDE AN ADEQUATE FLOW CHANNEL FOR THE TRANSITION TO THE OUTLET PIPE. SHAPE BOX BOTTOM FOR POSITIVE DRAINAGE.
- 2. CONSTRUCT THE REINFORCED CONCRETE FOUNDATION TO A DIMENSION 24 INCHES LARGER THAN THE OUTSIDE DIMENSIONS OF THE
- 3. PROVIDE PERFORATED SLPEP UNDERDRAIN WITH CLEANOUTS WITHIN EACH FACILITY. SEE THE PLAN FOR LOCATION, SIZE, SLOPE, PIPE LENGTH AND CLEANOUT LOCATIONS.
- 4. PROVIDE A PERMANENT 6" GATE VALVE WITH STAINLESS STEEL PADDLES MANUFACTURED BY VALTERRA, OR APPROVED EQUAL AT THE OUTLET STRUCTURE PERFORATED SLPEP UNDERDRAIN OPENING. THE OPERATOR FOR THE GATE VALVE SHALL BE OPERATED FROM THE INSIDE THE OUTLET STRUCTURE. THE GATE VALVE SHALL CREATE A WATERTIGHT CONNECTION AND REMAIN CLOSED AT ALL TIMES UNLESS THE FACILITY NEEDS TO BE DEWATERED FOR MAINTENANCE PURPOSES.
- 5. WHEN CONVERTING THE FACILITY TO IT'S PERMANENT CONDITION, REMOVE TEMPORARY STEEL PLATES & SKIMMER ATTACHMENT AND INSTALL THE REMAINING RISER SECTION OF THE OUTLET STRUCTURE TO THE PERMANENT PRINCIPAL SPILLWAY DESIGN ELEVATION. ALSO

PLACE THE INLET TOP GRATE ON TOP OF THE STRUCTURE.													
STRUCTURE NO.	A	В	С	D	E	F	G	Н	INLET TYPE	INLET DIMENSIONS	BOX TYPE	PERMANENT STRUCTURE ORIFICE(S)	OUTLET PIPE
OS-2A	437.60	440.00	432.00	429.78	436.00	3.0'	430.00	5' x 9'	TYPE M	24" x 45"	STANDARD	6"H x 10"W @ 432.00	56' OF 24" RCP @ 1.00%

# PERMANENT SWM/BMP FACILITY OUTLET STRUCTURE



1.	OUTLET PIPE	F	E	D	С	В	А	STRUCTURE NO.
	47' OF 24" RCP @ 1.00%	437.70	428.05	428.51	436.00	440.00	437.70	OS-1A
2.	56' OF 24" RCP @ 1.00%	436.00	429.22	429.78	432.00	440.00	437.60	OS-2A
	52' OF 24" RCP @ 0.50%	446.00	441.55	441.81	442.00	450.00	448.00	OS-3
	9' OF 18" RCP @ 0.50%	449.00	445.55	445.60	447.00	453.00	N/A	OS-4A
1	69' OF 36" RCP @ 0.50%	449.00	445.11	445.45	447.00	453.00	N/A	OS-4B

GENERAL NOTE:

1. THE PROPOSED IMPERVIOUS CORE SHALL BE INSTALLED TO A DEPTH OF 3 FEET BELOW EXISTING GRADE OR A DEPTH OF 2 FEET BELOW THE UNDERLYING BEDROCK FOR THE ENTIRE LENGTH OF THE FACILITY'S BERM.

> **FACILITY CROSS-SECTION** AT PERMANENT OUTLET STRUCTURE NOT TO SCALE

PROJ. MGR. -

TBF

JJB

DESIGN -CADD -

CHECKED -



PROJECT NO. 22-0123-005

HOMOGENEOUS EMBANKMENT

MATERIAL TO BE COMPACTED IN 8"

WEIGHT AT OPTIMUM MOISTURE

CONTENT.

LAYERS TO A MINIMUM FINAL DENSITY

OF NOT LESS THAN 95% OF MAX. DRY

**DATE:** 01/03/23 SCALE: N.T.S. **SHEET** 54 OF 54