





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 BOUNDARY

PROPOSED FEATURES

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

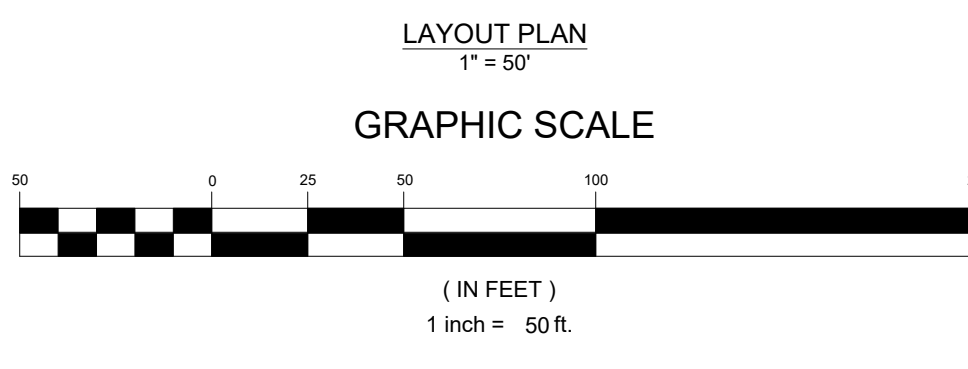
EXISTING FEATURES

- MAJOR
- MINOR
- SOIL TYPE
- SOIL TYPE
- EXISTING SIDEWALK/CONCRETE
- EXISTING CONTOURS
- EXISTING TREELINE
- EXISTING SOILS
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING OVERHEAD ELECTRIC
- EXISTING STUDIED FLOODPLAIN
- EXISTING WETLANDS
- EXISTING UTILITY EASEMENT
- IRON PIN FOUND

PROPOSED FEATURES

- PROPOSED DOMESTIC WATERLINE
- PROPOSED GASLINE
- PROPOSED CONCRETE/SIDEWALK
- PROPOSED CONTOURS
- PROPOSED TREELINE
- PROPOSED UTILITY POLE
- PROPOSED LIGHT POLE
- PROPOSED STANDARD PAVING
- PROPOSED AMENDED SOILS

PROPOSED IMPROVEMENTS ON LOT 2 ARE FOR SCHEMATIC PURPOSES ONLY. 1.3 ACRES OF IMPERVIOUS AREA ON LOT 2 AND THE EXTENSION OF THE PRIVATE STREET HAS BEEN ACCOUNTED FOR IN THE STORMWATER MANAGEMENT CALCULATIONS. A FINAL LAND DEVELOPMENT PLAN WILL BE REQUIRED FOR LOT 2 PRIOR TO CONSTRUCTION OF ANY SITE IMPROVEMENTS SUCH AS BUILDINGS, DRIVEWAYS, PARKING LOTS, ETC.



CLEAR SIGHT TRIANGLE NOTE
NO VISION OBSTRUCTING OBJECTS (OTHER THAN UTILITY POLES) SHALL BE PERMITTED WHICH OBSCURE VISION ABOVE THE HEIGHT OF 30 INCHES AND BELOW 10 FEET.

PRIVATE STREET NOTE
THE PRIVATE STREET SHALL BE EXTENDED AND FULLY COMPLETED THROUGH THE CUL-DE-SAC TURNAROUND UPON THE DEVELOPMENT OF LOT 2. TURN AROUND RADIUS SHALL BE IN CONFORMANCE WITH CURRENT TOWNSHIP REQUIREMENTS.

IMPERVIOUS CALCULATION

PROPOSED BUILDINGS:	44,750 SF
ACCESS DRIVES:	71,413 SF
PRIVATE ROAD:	4,844 SF
FUTURE IMPERVIOUS:	25,542 SF
TOTAL:	146,349 SF
LOT COVERAGE:	9%

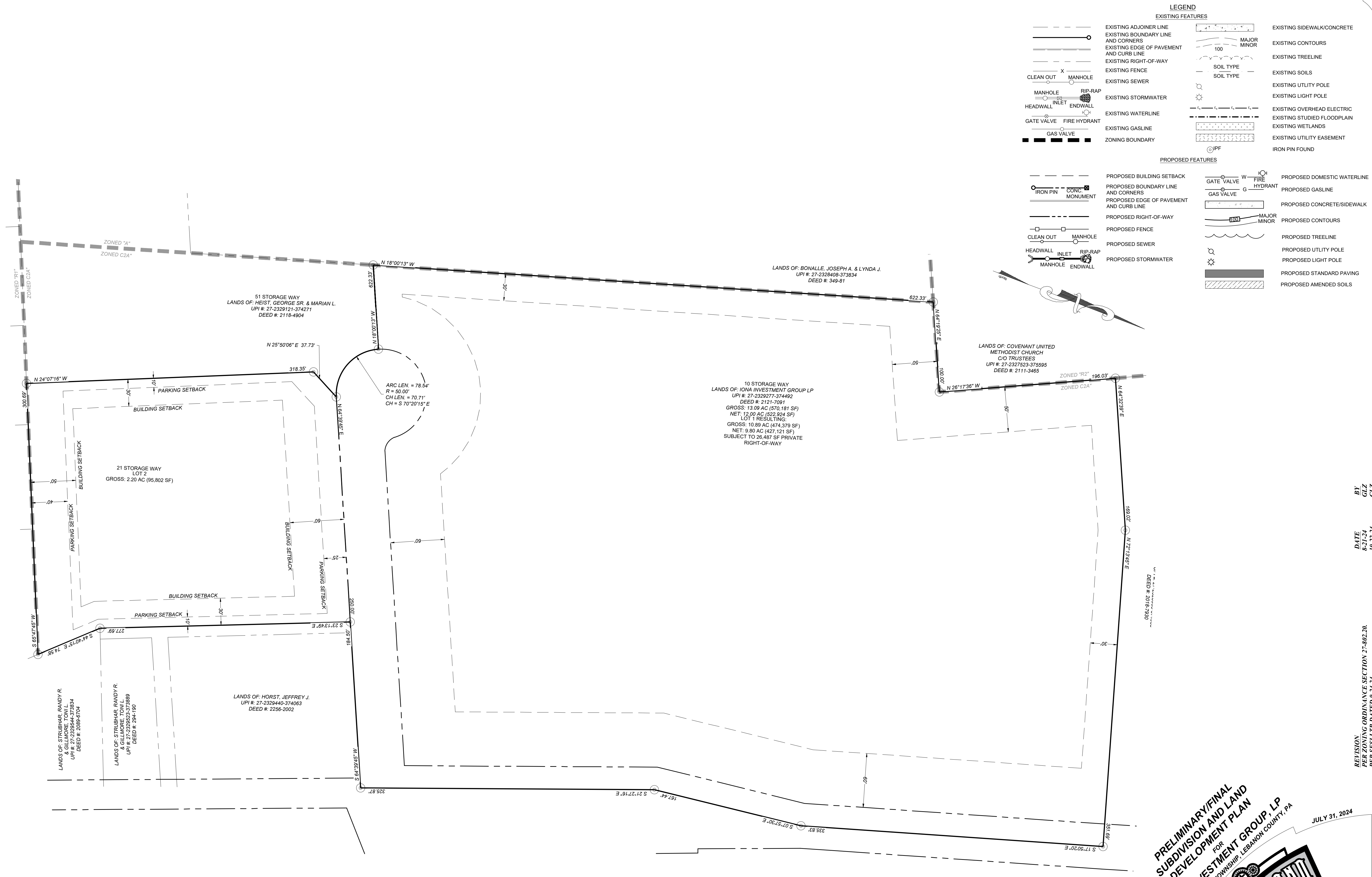
BUILDING CHART

BUILDING #1: 44 STANDARD/38 CLIMATE INTERNAL UNITS
BUILDING #2: 50 STANDARD/42 CLIMATE INTERNAL UNITS
BUILDING #3: 22 STANDARD UNITS
BUILDING #4: 48 STANDARD UNITS
BUILDING #5: 54 STANDARD UNITS
BUILDING #6: 7 STANDARD UNITS

PRELIMINARY/FINAL
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IONA INVESTMENT GROUP, LP
NORTH LEBANON TOWNSHIP, LEBANON COUNTY, PA



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PRELIMINARY/FINAL SUBDIVISION AND LAND DEVELOPMENT PLAN
FOR
IONA INVESTMENT GROUP, LP
NORTH LEBANON TOWNSHIP, LEBANON COUNTY, PA

ENGINEERING
711-934-6513
602 Cornwall Road
Lebanon, PA 17042
www.chrislandengineering.com

Subdivision Plan

4 OF 19

REVISION
PER ZONING ORDINANCE SECTION 27-302.20
PER SESI LTR DATED 9-24-24.

DATE
8-21-24
10-22-24

BY
GLZ
GLZ

JULY 31, 2024

SOIL CHART:

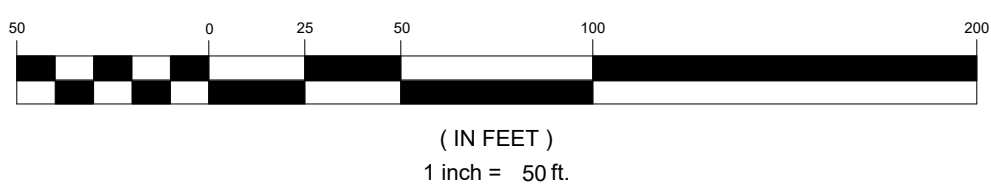
Map Unit Symbol	Map Unit Name	Acres	HSG	% of Disturbed Area	Depth (ft)	Hydric
BeB	Bedington Shaly Silt Loam	13.80	B	39.80	0' - 72"	No
BeC	Bedington Shaly Silt Loam	4.40	B	12.80	0' - 72"	No
BKc	Berks Channey Silt Loam	0.00	B	0.10	0' - 48"	No
BKd	Brinkerton Silt Loam	1.50	D	4.40	0' - 65"	No
CmA	Comly Silt Loam	1.10	C	3.20	0' - 65"	Yes
CmB	Comly Silt Loam	1.20	C	3.40	0' - 65"	Yes
Hb	Holly Silt Loam	10.70	B/D	31.00	0' - 62"	Yes
WeB	Weikert Channey Silt Loam	0.80	D	2.30	0' - 28"	Yes
WeD	Weikert Channey Silt Loam	1.00	D	2.90	0' - 25"	No



GRADING & UTILITY PLAN

1" = 50'

GRAPHIC SCALE




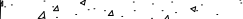





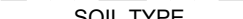







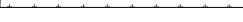





PRIVATE STREET NOTE
THE PRIVATE STREET SHALL BE EXTENDED AND FULLY COMPLETED THROUGH THE TURNAROUND UPON THE DEVELOPMENT OF LOT 2.

FLOODPLAIN NOTES

- FEMA FLOODPLAIN EXISTS ON-SITE IN ACCORDANCE WITH THE FLOOD INSURANCE RATE MAP FOR LEBANON COUNTY, PENNSYLVANIA (ALL JURISDICTIONS). MAP NUMBER 42075C0252E, EFFECTIVE DATE JULY 8, 2020.
- THE 100-YR FLOODPLAIN (STUDIED) LABELED ON THE PLAN WITH THE ELEVATIONS HAS BEEN PROVIDED IN ACCORDANCE WITH THE DAM BREACH ANALYSIS FOR EBENEZER LAKE DAM (D38-008) PREPARED BY STECKBECK ENGINEERING AND SURVIVING ON NOVEMBER 17, 2014 WITH A REVISION DATE OF MARCH 29, 2016.
- ANY CONSTRUCTION WITHIN THE FLOODPLAIN SHALL BE IN STRICT ACCORDANCE WITH THE TOWNSHIPS ZONING ORDINANCE.

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	EXISTING SIDEWALK/CONCRETE		EXISTING CONTOURS		EXISTING TREELINE		EXISTING SOILS		EXISTING UTILITY POLE		EXISTING LIGHT POLE		EXISTING OVERHEAD ELECTRIC		EXISTING STUDIED FLOODPLAIN		EXISTING WETLANDS		EXISTING UTILITY EASEMENT		IRON PIN FOUND

PROPOSED FEATURES

PROPOSED BUILDING SETBACK	PROPOSED BOUNDARY LINE AND CORNERS	PROPOSED EDGE OF PAVEMENT AND CURB LINE	PROPOSED RIGHT-OF-WAY	PROPOSED FENCE	PROPOSED SEWER	PROPOSED STORMWATER	PROPOSED DRAINAGE EASEMENT	PROPOSED RIPARIAN BUFFER EASEMENT	PROPOSED DOMESTIC WATERLINE	PROPOSED GASLINE	PROPOSED CONCRETE/SIDEWALK	PROPOSED CONTOURS	PROPOSED TREELINE	PROPOSED UTILITY POLE	PROPOSED LIGHT POLE	PROPOSED STANDARD PAVING	PROPOSED AMENDED SOILS
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Grading & Utility Plan
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OF 19

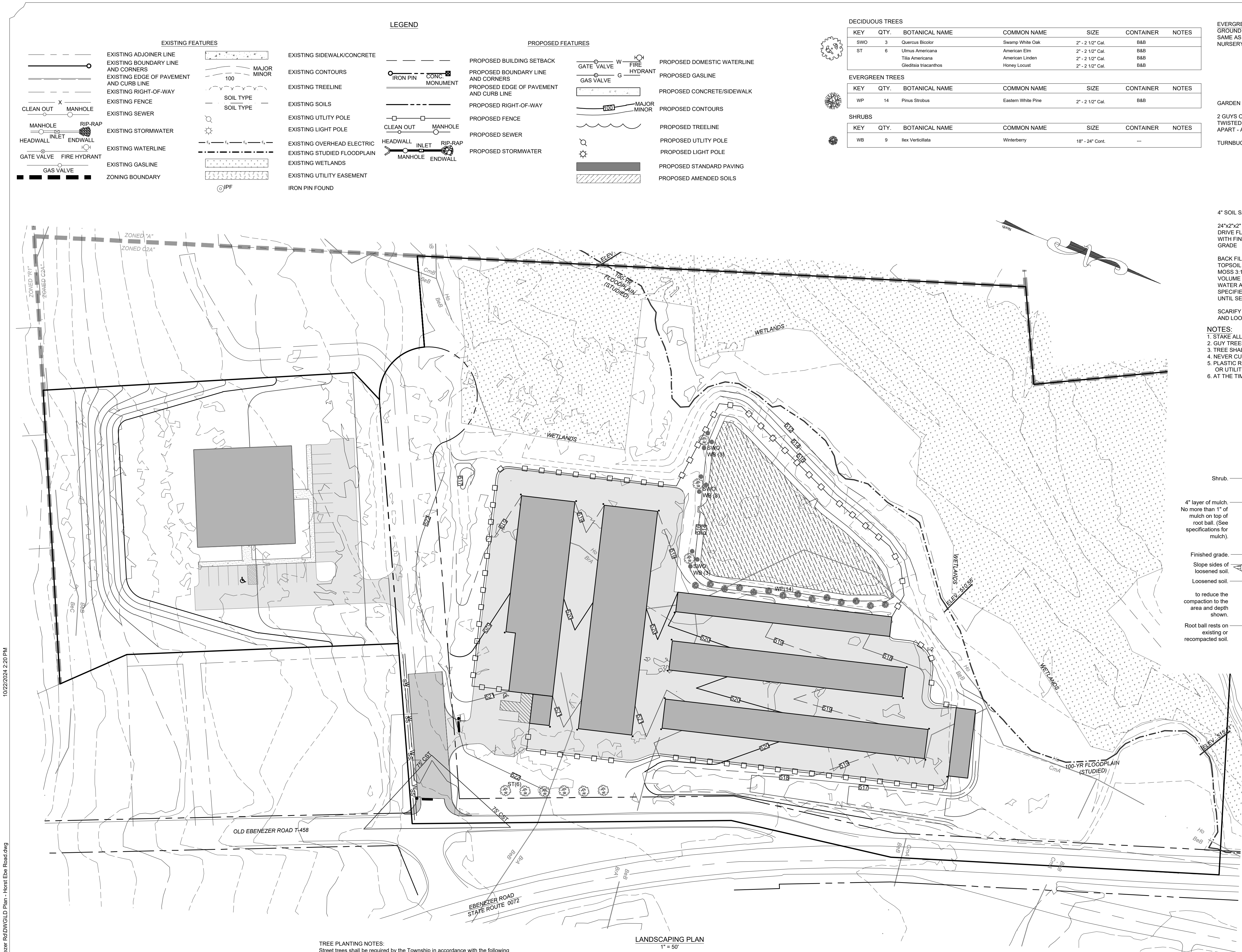
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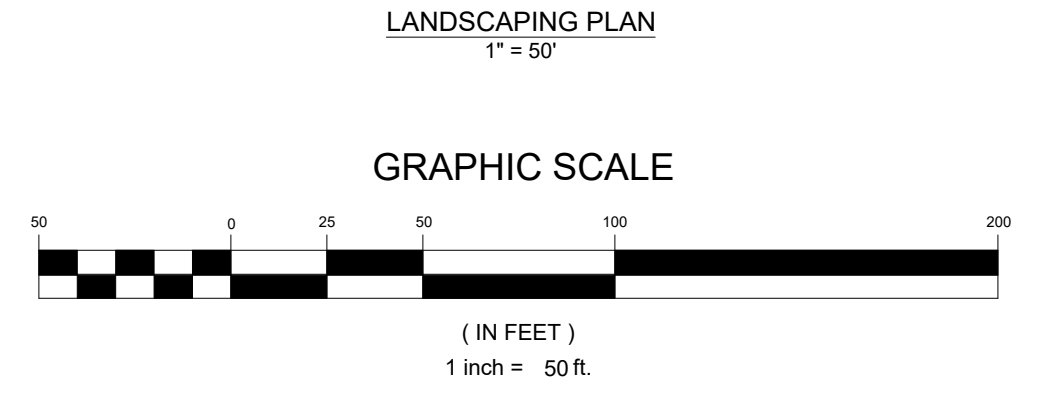
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TREE PLANTING NOTES:
Street trees shall be required by the Township in accordance with the following standards:

- The trees shall be nursery grown in a climate similar to that of the locality of the project. Varieties of trees shall be subject to the approval of the Township.
- All trees shall have a normal habit of growth and shall be sound, healthy and vigorous; they shall be free from disease, insects, insect eggs, and larvae.
- The caliper of the trunk, measured at a height of six (6) inches above finished grade, shall be a minimum of two (2) inches.
- Trees shall be planted between the street right-of-way line and the building setback line except where the Township has authorized placement of trees within the street right-of-way. The tree growth shall not interfere with the street cartway, sidewalk or utility line.
- All planting shall be performed in conformance with good nursery and landscape practice including proper guying and staking.
- Requirements for the measurements, branching, grading, quality, baling, and burflapping of trees shall follow the code of standards recommended by the American Association of Nurserymen, Inc., in the American Standard for Nursery Stock, ANSI Z60, 1-1973, as amended.



DECIDUOUS TREES

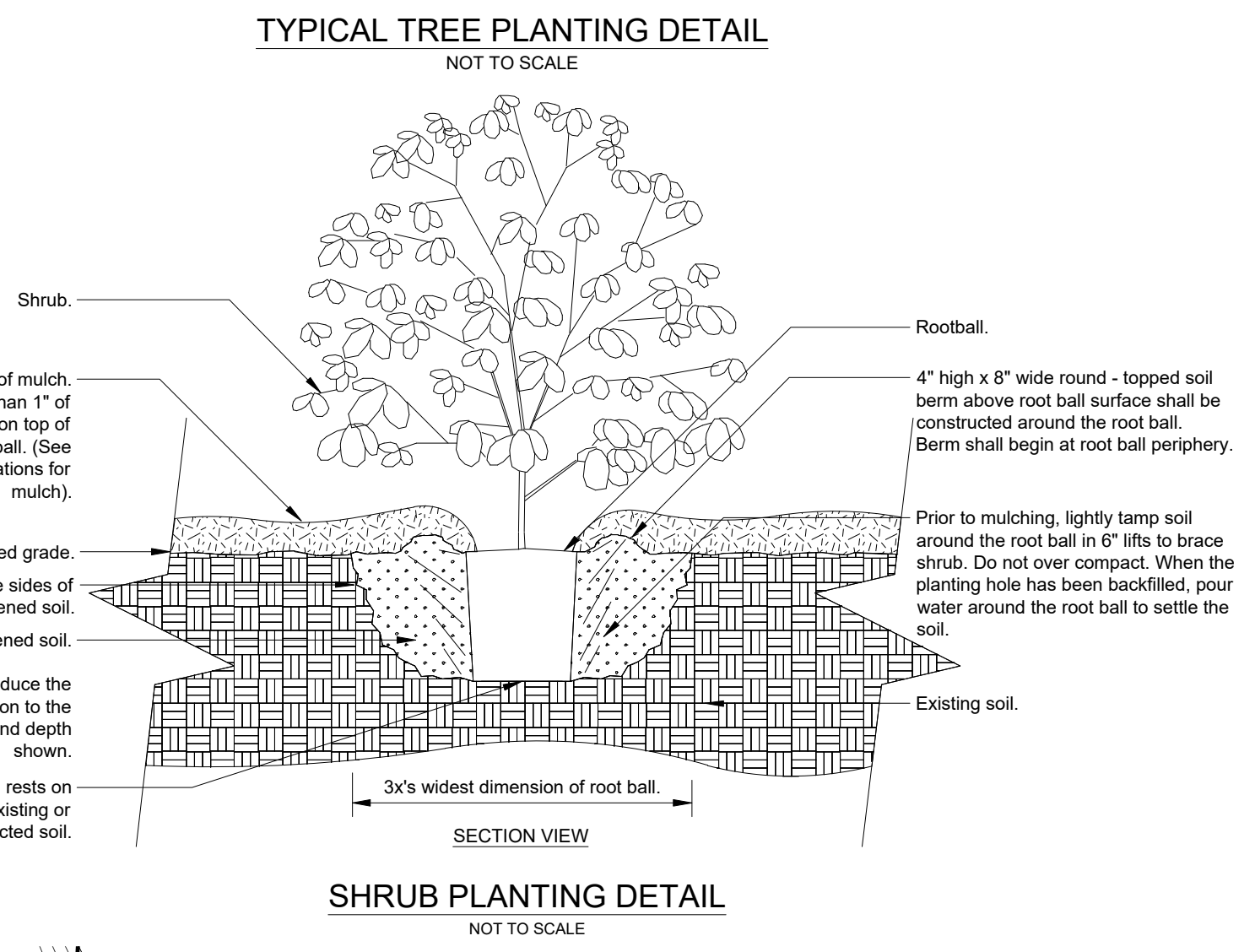
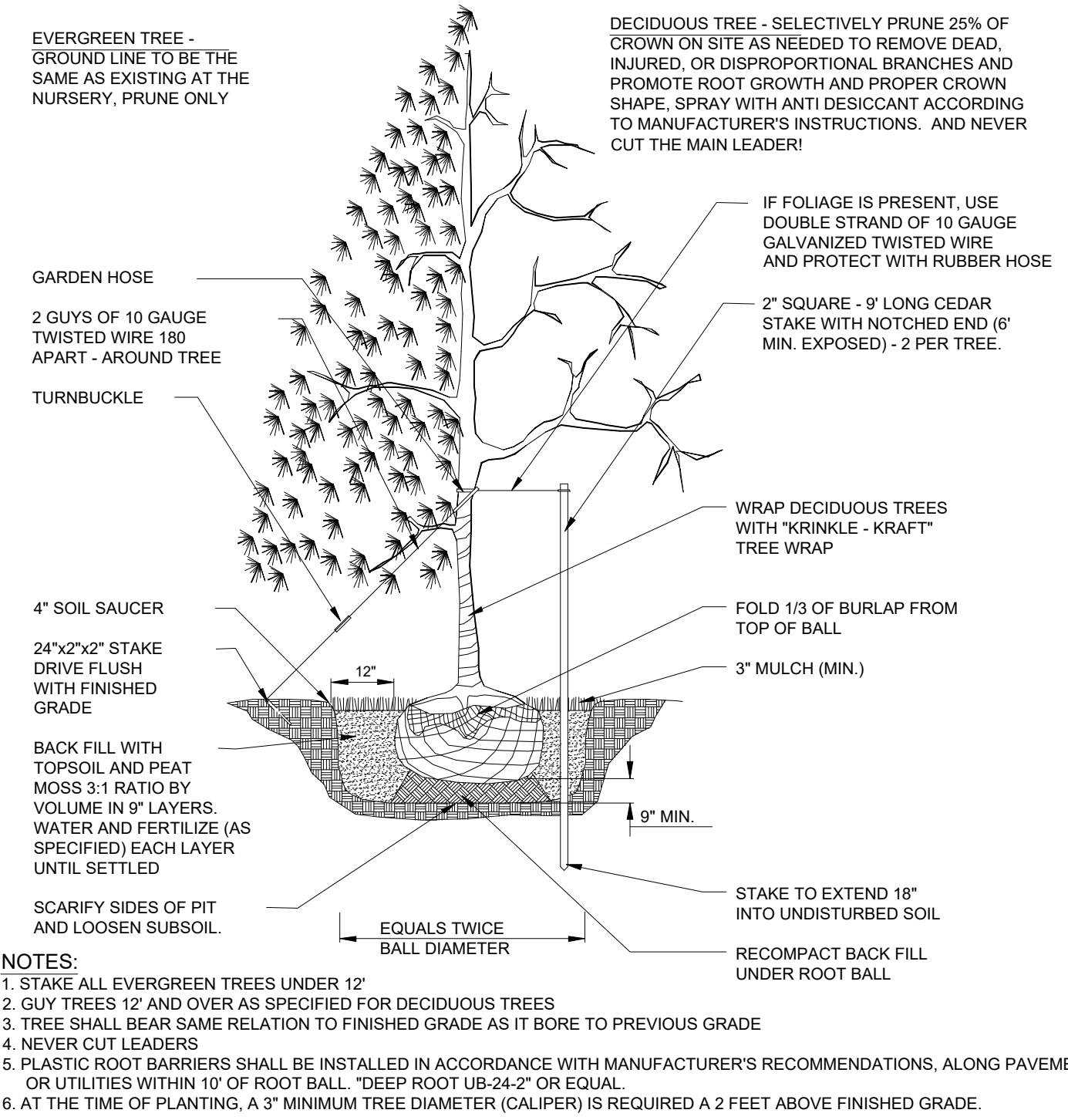
KEY	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	NOTES
SWO	3	Quercus bicolor	Swamp White Oak	2" - 2 1/2" Cal.	B&B	
ST	6	Ulmus Americana	American Elm	2" - 2 1/2" Cal.	B&B	
		Tilia Americana	American Linden	2" - 2 1/2" Cal.	B&B	
		Gleditsia triacanthos	Honey Locust	2" - 2 1/2" Cal.	B&B	

EVERGREEN TREES

KEY	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	NOTES
WP	14	Pinus Strobus	Eastern White Pine	2" - 2 1/2" Cal.	B&B	

SHRUBS

KEY	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	NOTES
WB	9	Ilex Verticillata	Winterberry	18" - 24" Cont.	---	



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CHRISTIAN ENGINEERING
711-934-8513
602 Cornwall Road
Lebanon, PA 17042
www.christianengineering.com
Landscaping Plan

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REVISION
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- EXISTING GASLINE
- ZONING BOUNDARY

PROPOSED FEATURES

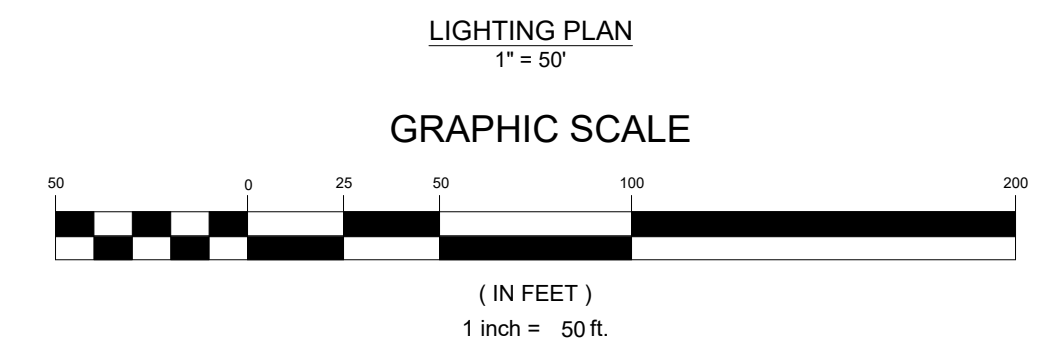
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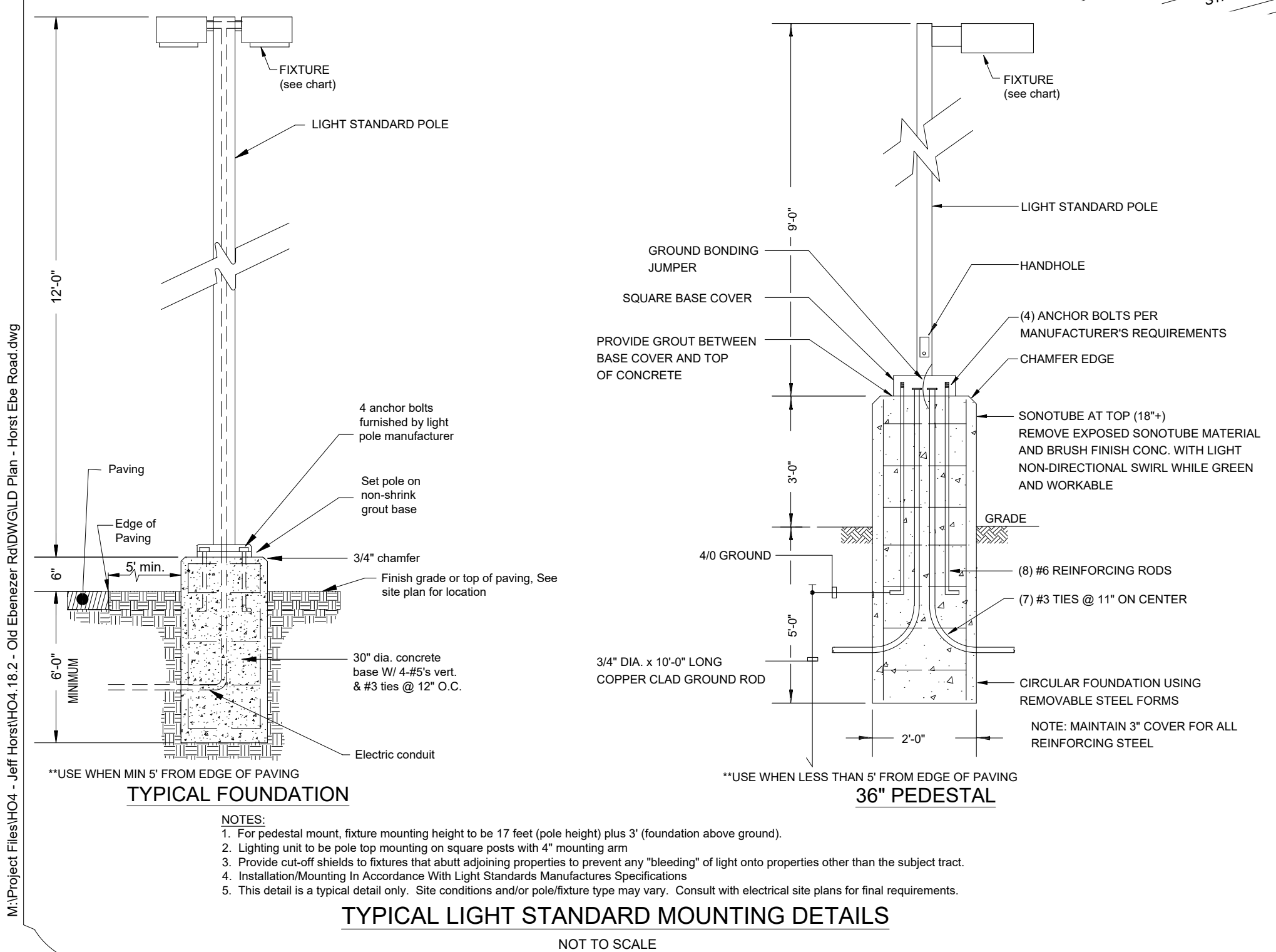
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LIGHTING NOTE
LIGHTS IDENTIFIED AS "A1" AND "W2"
IN THE PROPOSED LIGHTING SCHEDULE
WILL NOT BE INSTALLED AS PART OF
THE CURRENT PLAN BUT INSTEAD ARE
TO BE CONSIDERED A FUTURE
IMPROVEMENT FOR LOT 2.

SYMBOL	LABEL	QUANTITY	MANUFACTURER	CATALOG NUMBER	DESCRIPTION	NO. OF LAMPS	LUMENS/LAMP	LIGHT LOSS FACTOR	WATTAGE
	A1	4	Lithonia Lighting	DSX1 LED P1 40K T2M MVOLT HS	DSX1 LED P1 40K T2M MVOLT with houseside shield on 25' pole	1	5693	1	54
	A2	1	Lithonia Lighting	DSX1 LED P1 40K T2M MVOLT HS	DSX1 LED P1 40K T2M MVOLT with houseside shield on 25' pole	1	5693	1	108
	W1	30	Lithonia Lighting	DSXW1 LED 10C 700 40K T3M MVOLT	DSXW1 LED WITH (1) 10 LED LIGHT ENGINES, TYPE T3M OPTIC, 4000K, @ 700mA.	1	2757	1	28.2
	W2	4	Lithonia Lighting	DSXW1 LED 20C 700 40K TFTM MVOLT	DSXW1 LED WITH (2) 10 LED LIGHT ENGINES, TYPE TFTM OPTIC, 4000K, @ 700mA.	1	5554	1	45.7



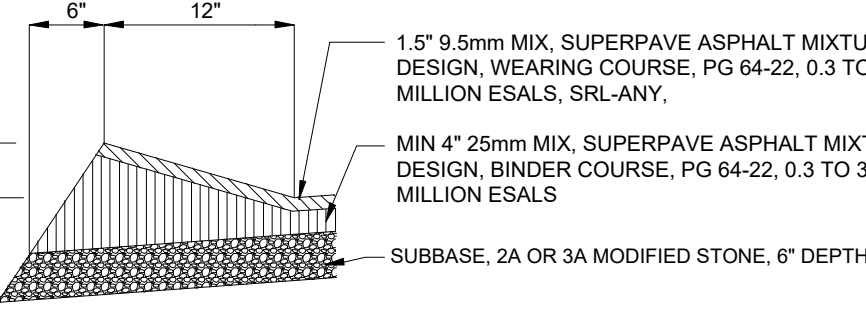
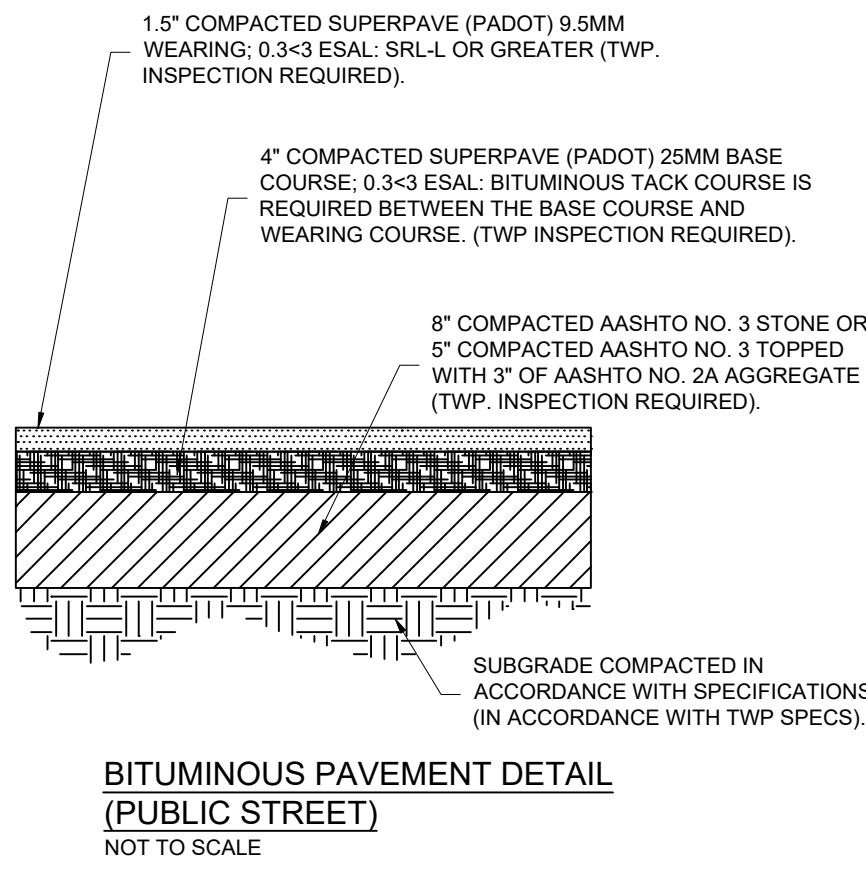
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Lighting Plan

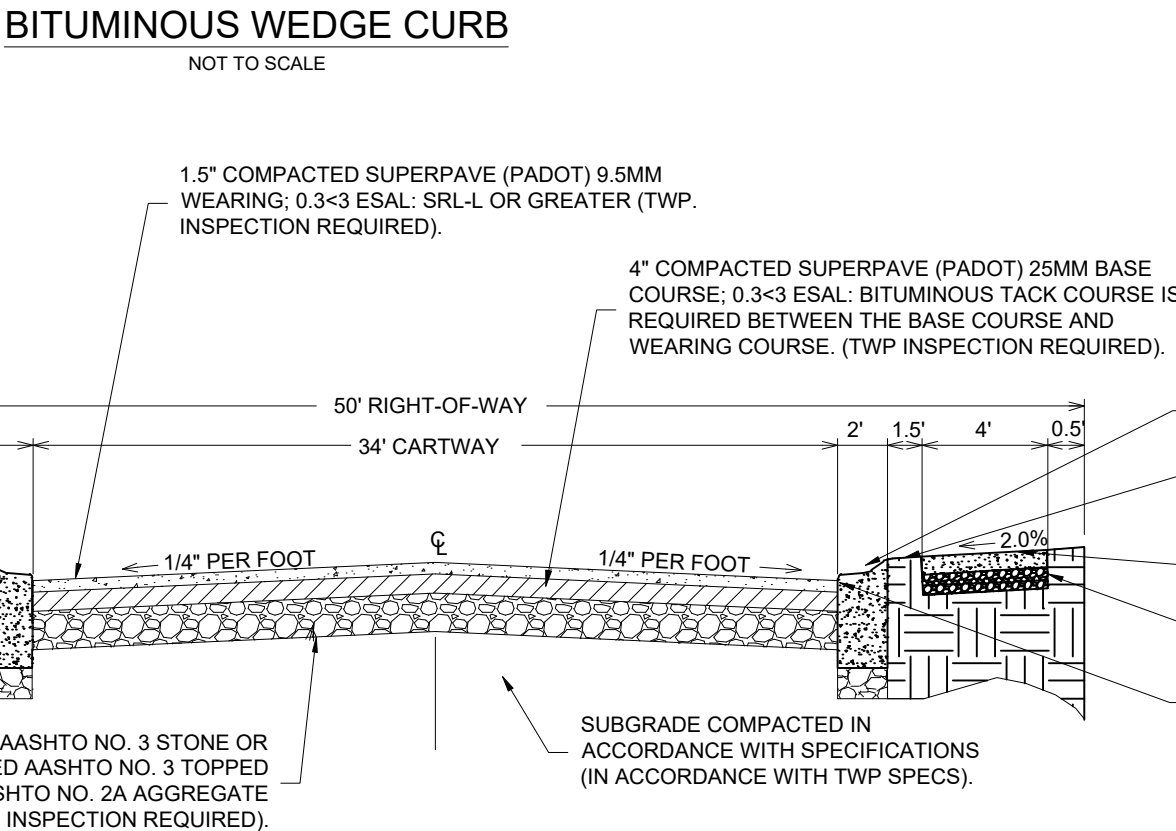
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NOTES:
1. ONCE THE FINAL WEARING COURSE OF BITUMINOUS PAVING IS PLACE, THE CONTRACTOR SHALL SEAL THE GUTTER LINE WITH ASPHALT CEMENT BY OVERLAPPING 3" ONTO THE WEDGE CURB AND EXTENDING 9" ONTO THE PARKING LOT.

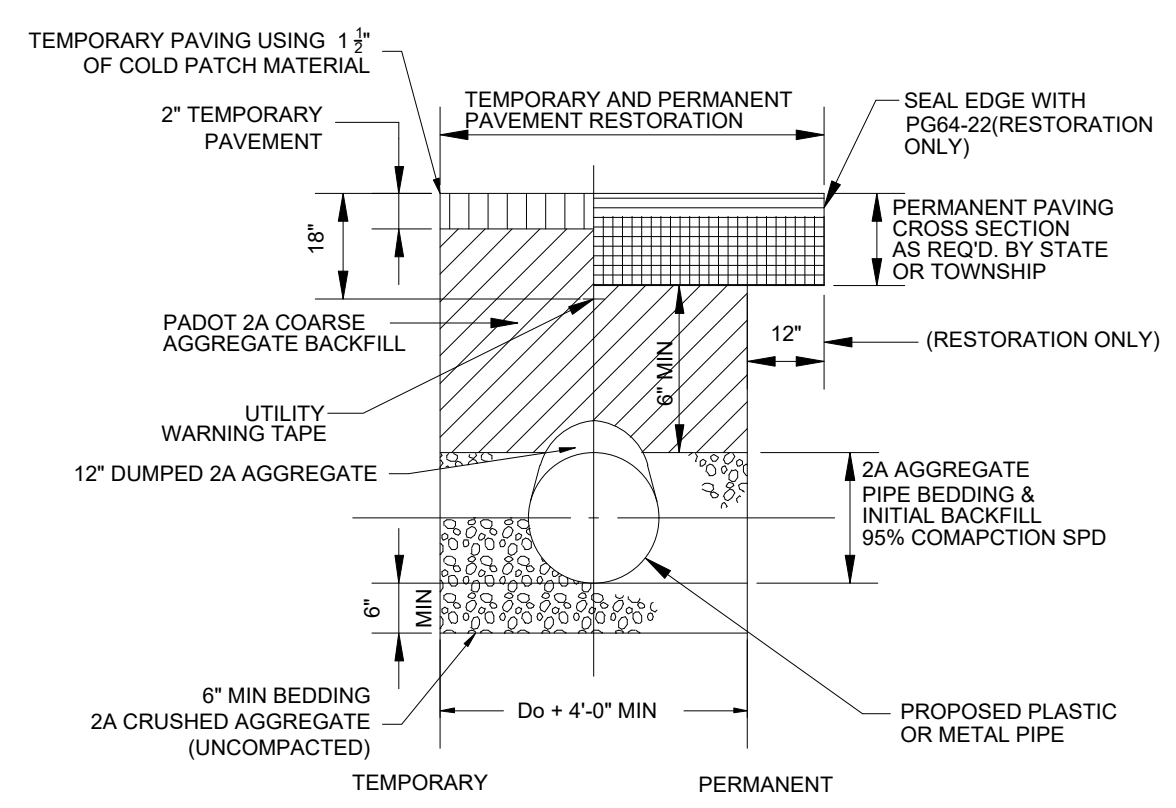


RESIDENTIAL STREET TYPICAL LOCAL ROADWAY CROSS-SECTION

NOT TO SCALE

ROADWAY COMPACTION SECTION 21-612:

- SUBGRADE: COMPACT SUBGRADE TO NOT LESS THAN 100% OF THE DETERMINED DRY-MASS (DRY-WEIGHT) DENSITY. THE DETERMINED DRY-MASS (DRY-WEIGHT) DENSITY SHOULD BE DETERMINED BY THE PENNSYLVANIA TEST METHOD (PTM) NO. 106 - METHOD B, PTM NO. 112, OR PTM NO. 402 FOR EACH 3,000 SQUARE YARDS OR LESS OF COMPLETED SUBGRADE. WHEN THE MATERIAL IS TOO COARSE (MORE THAN 20% RETAINED ON A 3/4-INCH SIEVE) TO UTILIZE THE PTM METHODS, COMPACTION SHOULD BE DETERMINED BASED ON THE NONMOVEMENT OF THE SUBGRADE MATERIAL UNDER THE COMPACTION EQUIPMENT. WHEN COMPACTING, THE SUBGRADE'S MOISTURE CONTENT SHOULD BE MAINTAINED TO NOT MORE THAN 2% ABOVE OPTIMUM MOISTURE FOR THE MATERIAL. WHEN THE MATERIAL IS TOO COARSE (MORE THAN 20% RETAINED ON A 3/4-INCH SIEVE) TO UTILIZE THE PTM METHODS, COMPACTION SHOULD BE DETERMINED BASED ON THE NONMOVEMENT OF THE SUBGRADE MATERIAL UNDER THE COMPACTION EQUIPMENT. COMPACTION OF THE SUBGRADE SHALL BE INSTALLED IN MAXIMUM FOUR-INCH LAYERS OF NO. 2A OR A MAXIMUM FIVE-INCH LAYER OF NO. 3 (COMPACTED THICKNESS) UNTIL THE TOTAL REQUIRED SUBBASE THICKNESS IS ACHIEVED. COMPACTION SHALL PROCEED GRADUALLY FROM SIDES TO CENTER, WITH THE SUCCEEDING PASS UNIFORMLY OVERLAPPING THE PREVIOUS PASS, WHICH SHALL CONTINUE UNTIL THE SUBBASE IS PROPERLY COMPACTED AND SHAPED. IF THE SUBBASE MATERIAL DOES NOT CONTAIN SUFFICIENT MOISTURE AFTER PLACEMENT, ADD WATER TO OBTAIN THE PROPER COMPACTION. IMMEDIATELY PRIOR TO THE PLACEMENT OF THE ROADWAY PAVEMENT, THE SUBBASE SHALL BE RECOMPACTED AND RESHAPED TO PROVIDE THE REQUIRED ROADWAY SUBBASE COMPACTION AND ELEVATION. INSPECTION IS REQUIRED AT THE COMPLETION OF THE SUBGRADE COMPACTION BY THE TOWNSHIP ROAD FOREMAN OR HIS DELEGATE. ALL INSPECTIONS WILL REQUIRE A MINIMUM OF TWENTY-FOUR-HOUR NOTICE TO THE TOWNSHIP.
- SUBBASE: SUBBASE MATERIAL SHALL CONSIST OF TYPE C OR BETTER, NO. 2A AND NO. 3 AGGREGATES AS SPECIFIED IN THE LATEST VERSION OF THE COMMONWEALTH OF PENNSYLVANIA, DEPARTMENT OF TRANSPORTATION, SPECIFICATIONS, PUBLICATION 408, SECTION 703.2. COMPACT THE UNIFORMLY SPREAD SUBBASE MATERIAL TO NOT LESS THAN 100% OF THE MAXIMUM DRY-MASS (DRY-WEIGHT) DENSITY. THE DETERMINED DRY-MASS (DRY-WEIGHT) DENSITY SHOULD BE DETERMINED BY THE PENNSYLVANIA TEST METHOD (PTM) NO. 106 - METHOD B, PTM NO. 112, OR PTM NO. 402 FOR EACH 3,000 SQUARE YARDS OR LESS OF COMPLETED SUBBASE. WHEN THE MATERIAL IS TOO COARSE (MORE THAN 20% RETAINED ON A 3/4-INCH SIEVE) TO UTILIZE THE PTM METHODS, COMPACTION SHOULD BE DETERMINED BASED ON THE NONMOVEMENT OF THE SUBBASE MATERIAL UNDER THE COMPACTION EQUIPMENT. COMPACTION OF THE SUBBASE SHALL BE INSTALLED IN MAXIMUM FOUR-INCH LAYERS OF NO. 2A OR A MAXIMUM FIVE-INCH LAYER OF NO. 3 (COMPACTED THICKNESS) UNTIL THE TOTAL REQUIRED SUBBASE THICKNESS IS ACHIEVED. COMPACTION SHALL PROCEED GRADUALLY FROM SIDES TO CENTER, WITH THE SUCCEEDING PASS UNIFORMLY OVERLAPPING THE PREVIOUS PASS, WHICH SHALL CONTINUE UNTIL THE SUBBASE IS PROPERLY COMPACTED AND SHAPED. IF THE SUBBASE MATERIAL DOES NOT CONTAIN SUFFICIENT MOISTURE AFTER PLACEMENT, ADD WATER TO OBTAIN THE PROPER COMPACTION. IMMEDIATELY PRIOR TO THE PLACEMENT OF THE ROADWAY PAVEMENT, THE SUBBASE SHALL BE RECOMPACTED AND RESHAPED TO PROVIDE THE REQUIRED ROADWAY SUBBASE COMPACTION AND ELEVATION. INSPECTION IS REQUIRED AT THE COMPLETION OF THE SUBBASE COMPACTION BY THE TOWNSHIP ROAD FOREMAN OR HIS DELEGATE. ALL INSPECTIONS WILL REQUIRE A MINIMUM OF TWENTY-FOUR-HOUR NOTICE TO THE TOWNSHIP.
- PLANT MIXED BITUMINOUS CONCRETE COURSES — WEATHER LIMITATIONS. DO NOT PLACE BITUMINOUS PAVING MIXTURES BETWEEN OCTOBER 31 AND APRIL 1 FOR BASE COURSE PAVEMENT AND STANDARD WEARING COURSE PAVEMENT, UNLESS OTHERWISE PERMITTED IN WRITING BY AUTHORIZED TOWNSHIP PERSONNEL. DO NOT PLACE SUPER PAVE WEARING COURSES FROM OCTOBER 16 TO APRIL 1 UNLESS OTHERWISE PERMITTED IN WRITING BY AUTHORIZED TOWNSHIP PERSONNEL. DO NOT PLACE BITUMINOUS PAVING MIXTURES WHEN SURFACES ARE WET OR WHEN THE TEMPERATURE OF EITHER THE AIR OR THE SURFACE ON WHICH THE MIXTURE IS TO PLACE IS 40° F. (4° C.) OR LOWER. WHEN WORK IS HALTED BECAUSE OF WEATHER CONDITIONS, LIMITED QUANTITIES EN ROUTE TO THE PROJECT MAY BE PLACED, IF PERMITTED BY THE TOWNSHIP ROAD FOREMAN.
- BASE COURSE PAVEMENT: BASE COURSE PAVING MATERIAL SHALL CONFORM TO LATEST VERSION OF THE COMMONWEALTH OF PENNSYLVANIA, DEPARTMENT OF TRANSPORTATION, SPECIFICATIONS, PUBLICATION 408, SECTION 409.2 AND SECTION 421.2. BASE COURSE PAVING SHALL CONFORM TO THE ABOVE-MENTIONED WEATHER LIMITATIONS. THE BASE COURSE PAVEMENT SHALL BE INSTALLED IN A MAXIMUM OF TWO-INCH ROLLED LAYERS, UNTIL THE TOTAL REQUIRED BASE COURSE DEPTH IS ACHIEVED. NINETY PERCENT OF ALL THE LOTS MUST BE DEVELOPED AND A MINIMUM OF ONE YEAR MUST ELAPSE FROM THE INSTALLATION OF THE BASE COURSE PAVING PRIOR TO THE INSTALLATION OF THE WEARING COURSE. INSPECTION IS REQUIRED BY THE TOWNSHIP ROAD FOREMAN OR HIS DELEGATE DURING THE BITUMINOUS PLACEMENTS. ALL INSPECTIONS WILL REQUIRE A MINIMUM OF TWENTY-FOUR-HOUR NOTICE TO THE TOWNSHIP. AFTER INSTALLATION OF BASE COURSE, NO STREET CUTS CAN BE MADE BY THE DEVELOPER WITHOUT THE PERMISSION OF NORTH LEBANON TOWNSHIP ROAD FOREMAN OR SUPERVISORS. A STREET CUT PERMIT IS REQUIRED. THE ROAD FOREMAN, OR DESIGNATED AGENT, MUST BE PRESENT DURING ANY PERMITTED CUTS FOR PROPER RESTORATION. ANY CUTS MADE WITHOUT AUTHORIZATION BY THE TOWNSHIP WILL BE REQUIRED TO BE REDUG, AT THE DEVELOPER'S EXPENSE, SO VERIFICATION CAN BE MADE ON PROPER RESTORATION.
- BITUMINOUS TACK COAT: PRIOR TO THE PLACEMENT OF THE WEARING COURSE, THE BASE COURSE SHALL BE CONDITIONED AND TREATED WITH THE APPLICATION OF A BITUMINOUS BONDING MATERIAL CONFORMING TO THE LATEST VERSION OF THE COMMONWEALTH OF PENNSYLVANIA, DEPARTMENT OF TRANSPORTATION, SPECIFICATIONS, PUBLICATION 408, SECTION 460. APPLY THE EMULSIFIED ASPHALT TACK COAT AT A RATE TO LEAVE A UNIFORM ASPHALT RESIDUE FROM 0.02 TO 0.07 GALLONS PER SQUARE YARD, OR AS APPROVED BY THE TOWNSHIP ROAD FOREMAN. APPLY THE TACK COAT ONLY WHEN THE AIR TEMPERATURE IS 4° C. (40° F.) AND RISING. DO NOT APPLY TO A WET SURFACE, OR DURING WET WEATHER. FOLLOWING APPLICATION AND PRIOR TO SUCCEEDING CONSTRUCTION, ALLOW THE TACK COAT TO CURE, WITHOUT BEING DISTURBED, UNTIL THE WATER HAS COMPLETELY SEPARATED AND EVAPORATED, AS DETERMINED BY THE TOWNSHIP ROAD FOREMAN. INSPECTION IS REQUIRED BY THE TOWNSHIP ROAD FOREMAN OR HIS DELEGATE DURING THE BITUMINOUS PLACEMENTS. ALL INSPECTIONS WILL REQUIRE A MINIMUM OF TWENTY-FOUR-HOUR NOTICE TO THE TOWNSHIP.
- WEARING COURSE PAVEMENT: NINETY PERCENT OF ALL THE LOTS MUST BE DEVELOPED AND A MINIMUM OF ONE YEAR MUST ELAPSE FROM THE INSTALLATION OF THE BASE COURSE PAVING PRIOR TO THE INSTALLATION OF THE WEARING COURSE. WEARING COURSE PAVING MATERIAL SHALL CONFORM TO THE LATEST VERSION OF THE COMMONWEALTH OF PENNSYLVANIA, DEPARTMENT OF TRANSPORTATION, SPECIFICATIONS, PUBLICATION 408, SECTION 409.2 AND SECTION 420.2. WEARING COURSE PAVING SHALL CONFORM TO THE ABOVE-MENTIONED WEATHER LIMITATIONS. PRIOR TO THE PLACEMENT OF THE WEARING COURSE PAVING, ALL DEFICIENCIES IN THE BASE COURSE PAVING MUST BE REPAIRED. PRIOR TO THE PLACEMENT OF THE WEARING COURSE A BITUMINOUS TACK COAT SHALL BE APPLIED TO THE BASE COURSE PAVEMENT. WEARING COURSE PAVING SHALL NOT BE COMPLETED IF IT WILL BE SUBJECTED TO HIGH TEMPERATURES OR CHANNELIZED TRAFFIC FOR EXTENDED PERIODS OF TIME. INSPECTION IS REQUIRED BY THE TOWNSHIP ROAD FOREMAN OR HIS DELEGATE DURING THE BITUMINOUS PLACEMENTS. ALL INSPECTIONS WILL REQUIRE A MINIMUM OF TWENTY-FOUR-HOUR NOTICE TO THE TOWNSHIP.

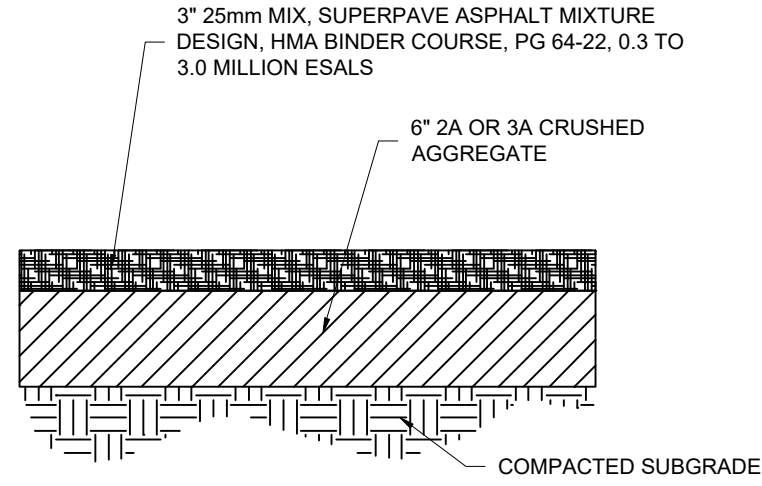


- ALL TRENCH RESTORATION SHALL BE IN ACCORDANCE WITH PENNDOT RC-30M.
- IF UNSUITABLE MATERIAL IS FOUND, UNDERCUT AS DIRECTED AND BACKFILL WITH SUITABLE MATERIAL TO BOTTOM OF BEDDING ELEVATION OF THE PIPE, 18" MAX.
- PLACE 2A COARSE AGGREGATE MATERIAL IN LIFTS 4" THICK, ADJACENT TO THE LOWER HAUNCHES TO A HEIGHT OF 12" THICK ABOVE TOP OF PIPE. COMPACT TO 95% SPD. TEST BACKFILL MATERIAL AND CONTINUE EMBANKMENT IN ACCORDANCE WITH PUBLICATION 408, SECTION 601.

(TYPICAL FOR STATE HIGHWAYS, AND TOWNSHIP ROADS, SHOULDER & DRIVEWAYS)

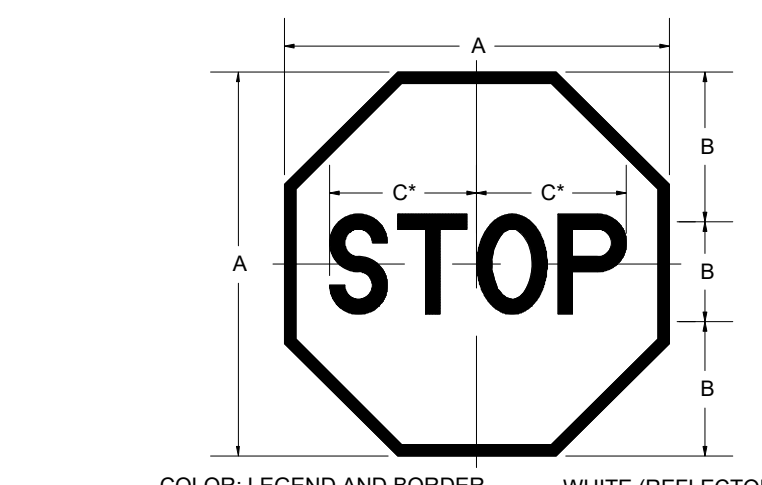
STREET CUT AND TRENCH RESTORATION DETAIL

NOT TO SCALE



BITUMINOUS PAVEMENT DETAIL (DRIVEWAY AND ACCESS LANES)

NOT TO SCALE



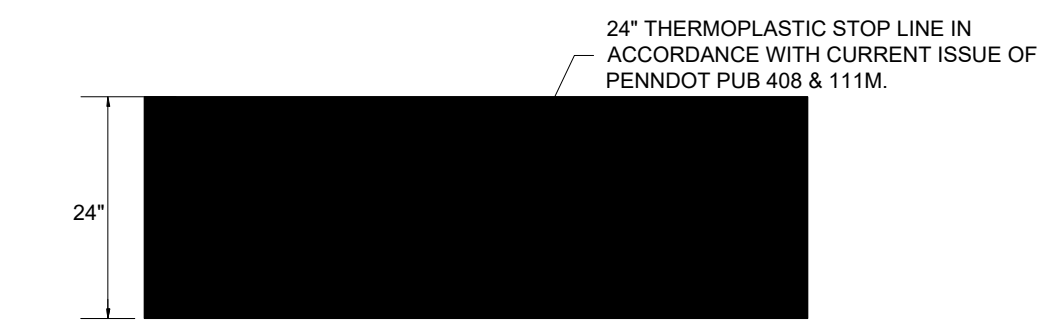
NOTE: INSTALL PER REQMTS OR PADOT TITLE 67, CHAPTER 211-OFFICIAL TRAFFIC CONTROL DEVICES.

SIGN SIZE	A	B	C	SER	BOR	IES	DER	BLANK STD
24 X 24	24	8	10	C	1			B1-24
30 X 30	30	10	12.5	C	1			B1-30
36 X 36	36	12	15	C	1			B1-36
48 X 48	48	16	20	C	1 1/2			B1-48

* REDUCE SPACING 40%

STOP SIGN DETAIL R1-1

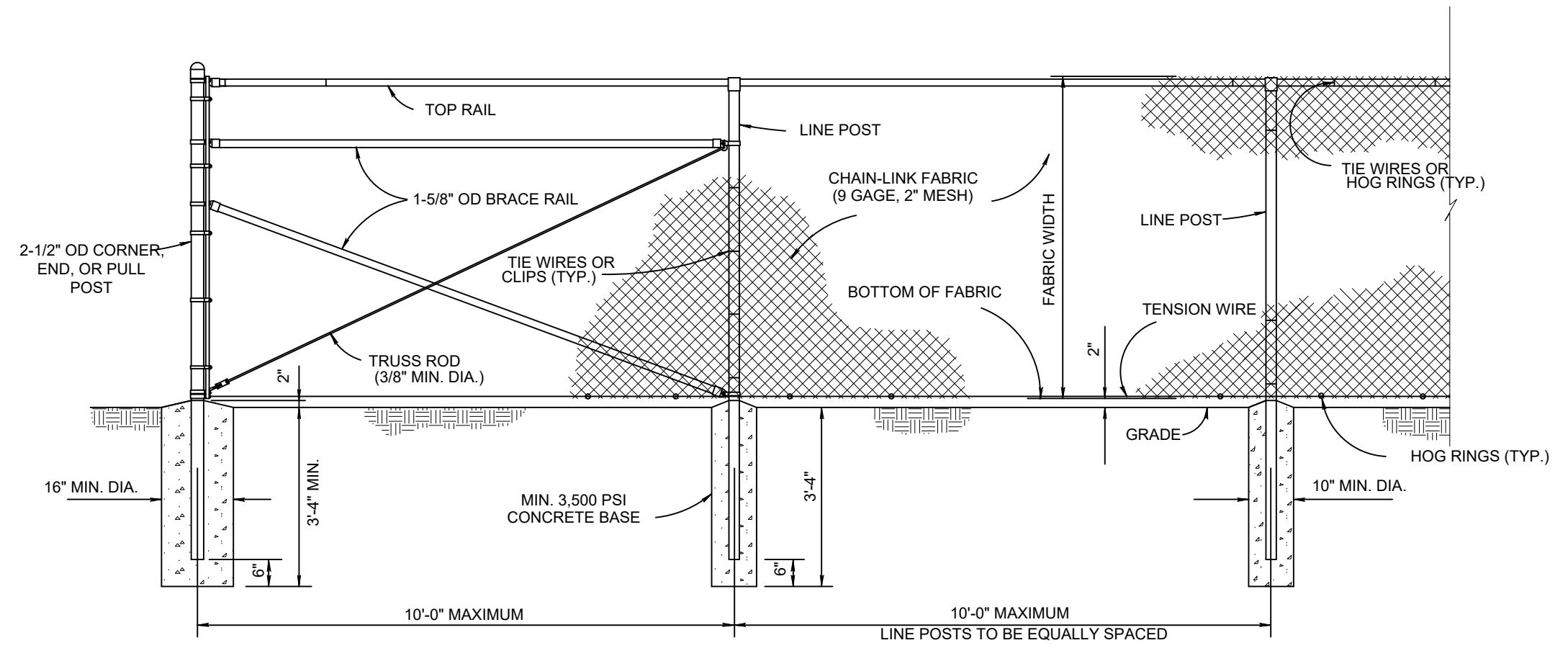
NOT TO SCALE



- NOTES:
- STOP LINES ARE SOLID WHITE LINES THAT COMPLETELY TRAVERSE EACH TRAFFIC LANE. AT AN INTERSECTION STOP SIGN, THE STOP SIGN SHOULD BE PLACED AT A LOCATION NO LESS THAN 1.2 m (4') OR MORE THAN 9 m (30') FROM THE NEAREST EDGE OF THE INTERSECTING ROADWAY TO ENSURE MAXIMUM SIGHT DISTANCE TO VEHICLES ON THE CROSSING ROUTE.
 - LOCATE STOP LINES AT A MINIMUM OF 1.2 m (4') IN ADVANCE OF AND PARALLEL TO THE CROSSWALK LINES UNLESS OTHERWISE NOTES.
 - ALL THERMOPLASTIC MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE CURRENT ISSUE OF PENNDOT PUB. 408.

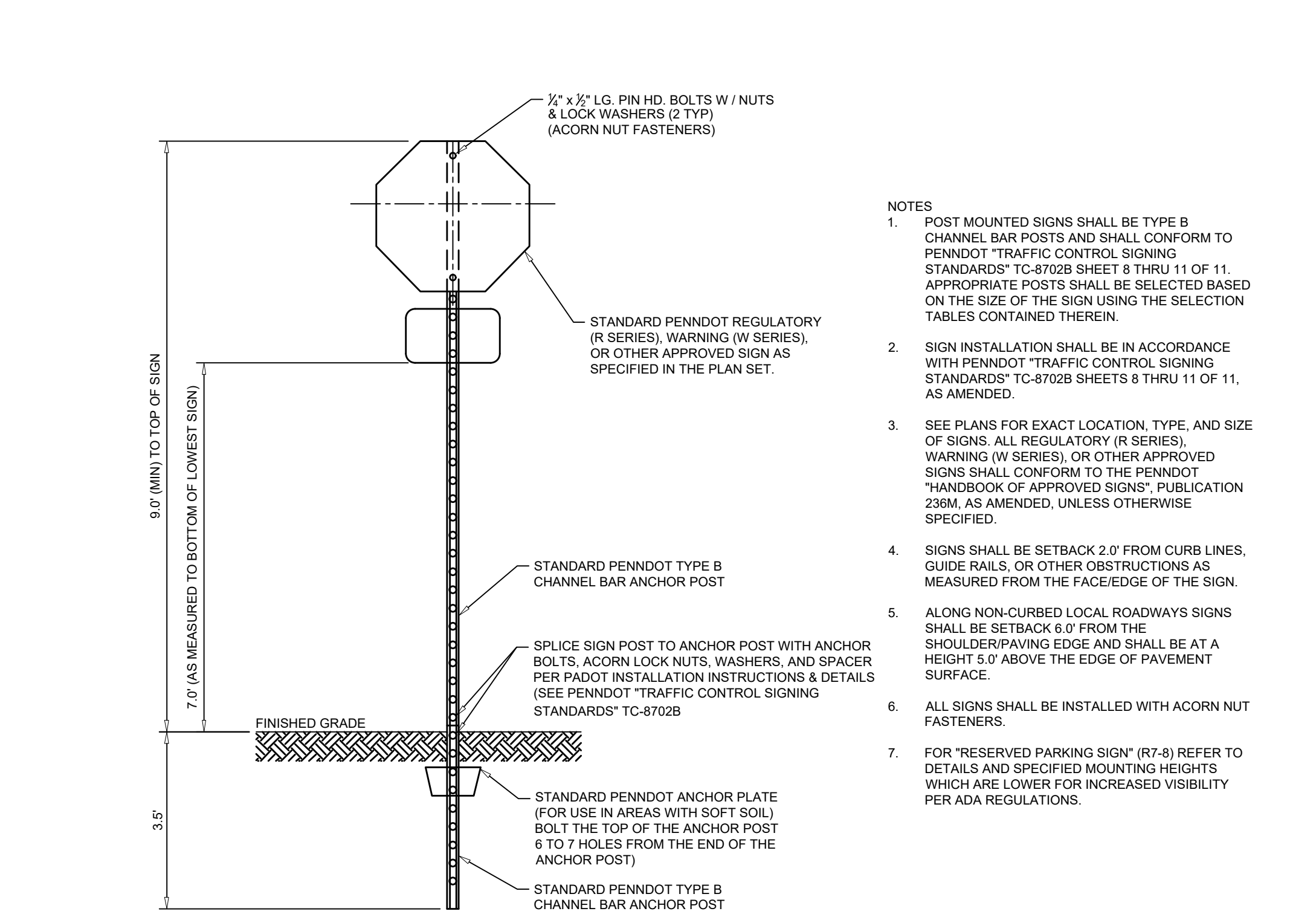
STOP LINE DETAIL

NOT TO SCALE



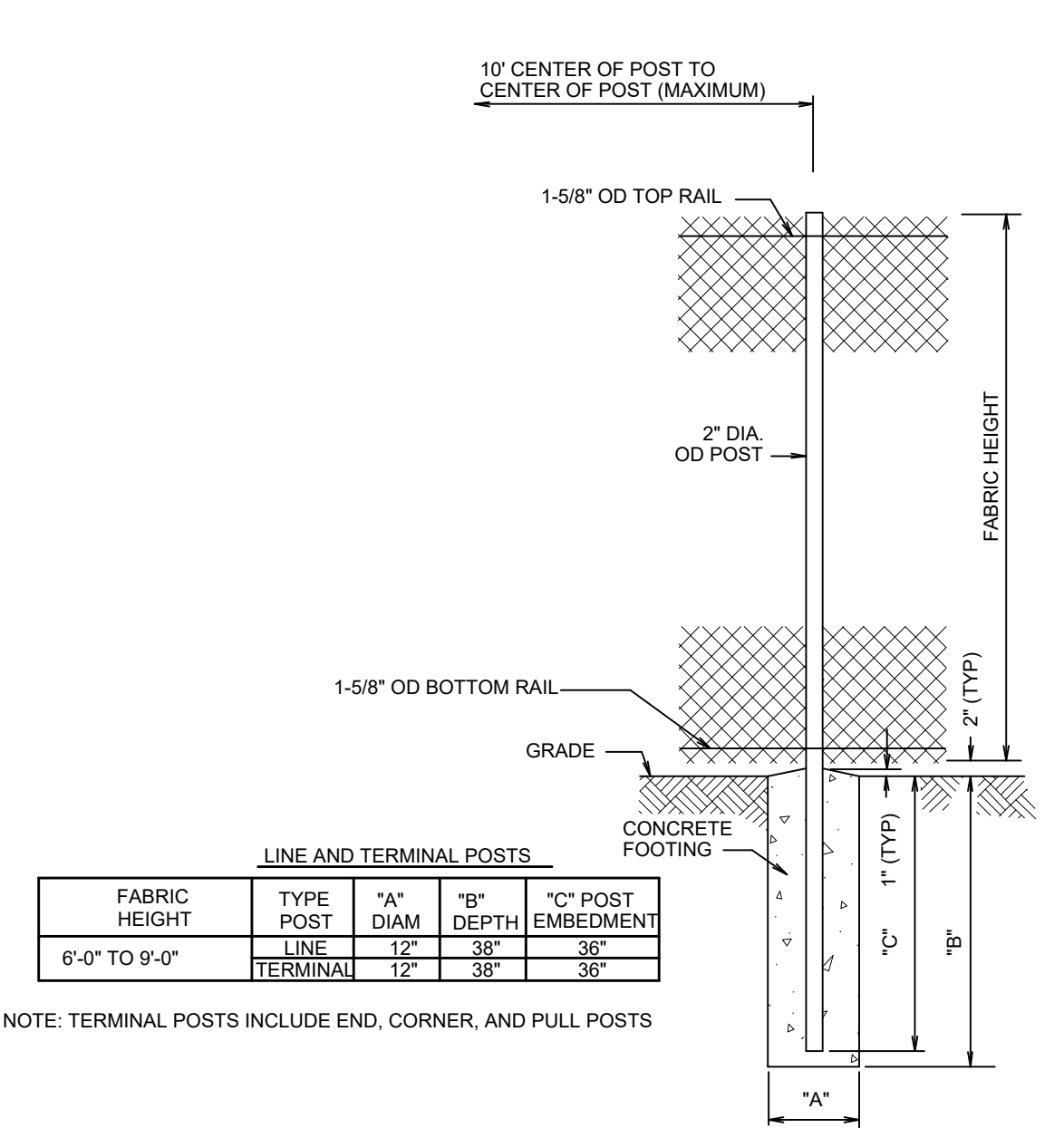
6 FOOT HIGH CHAIN-LINK FENCE DETAIL

NOT TO SCALE



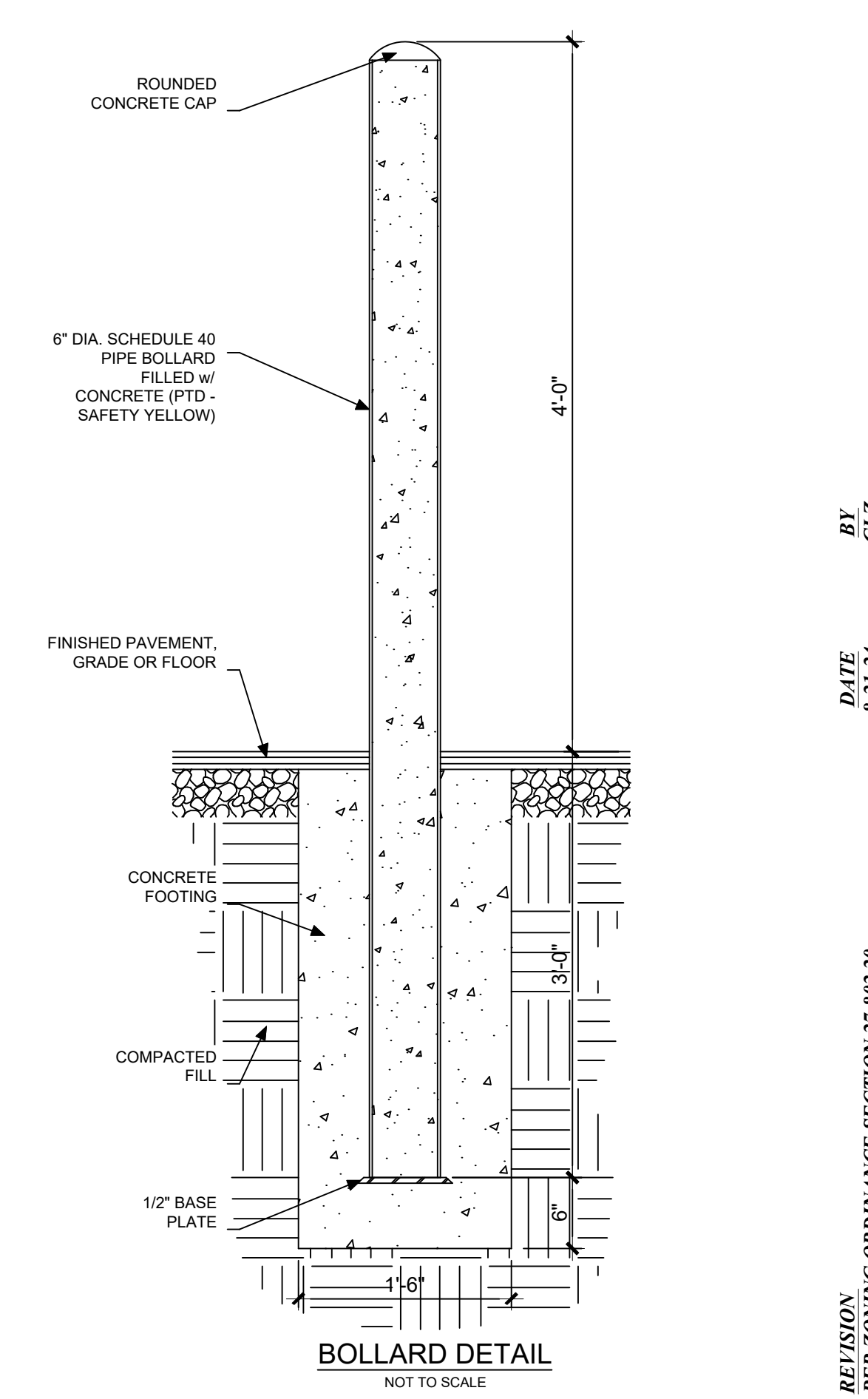
STANDARD SIGNPOST INSTALLATION DETAIL

NOT TO SCALE



CHAIN LINK FENCE FOUNDATION

NOT TO SCALE



BOLLARD DETAIL

NOT TO SCALE

**PRELIMINARY/FINAL
SUBDIVISION AND LAND
DEVELOPMENT PLAN**
FOR
IONA INVESTMENT GROUP, LP
NORTH LEBANON TOWNSHIP, LEBANON COUNTY, PA

CHRIS LAMBLING ENGINEERING
717-934-8513
602 Cornwell Road
Lebanon, PA 17042
www.chrislamblengineering.com
Site Details

REVISIONS
PER ZONING ORDINANCE SECTION 27-402.30
PER SESSION DATED 9-24-24

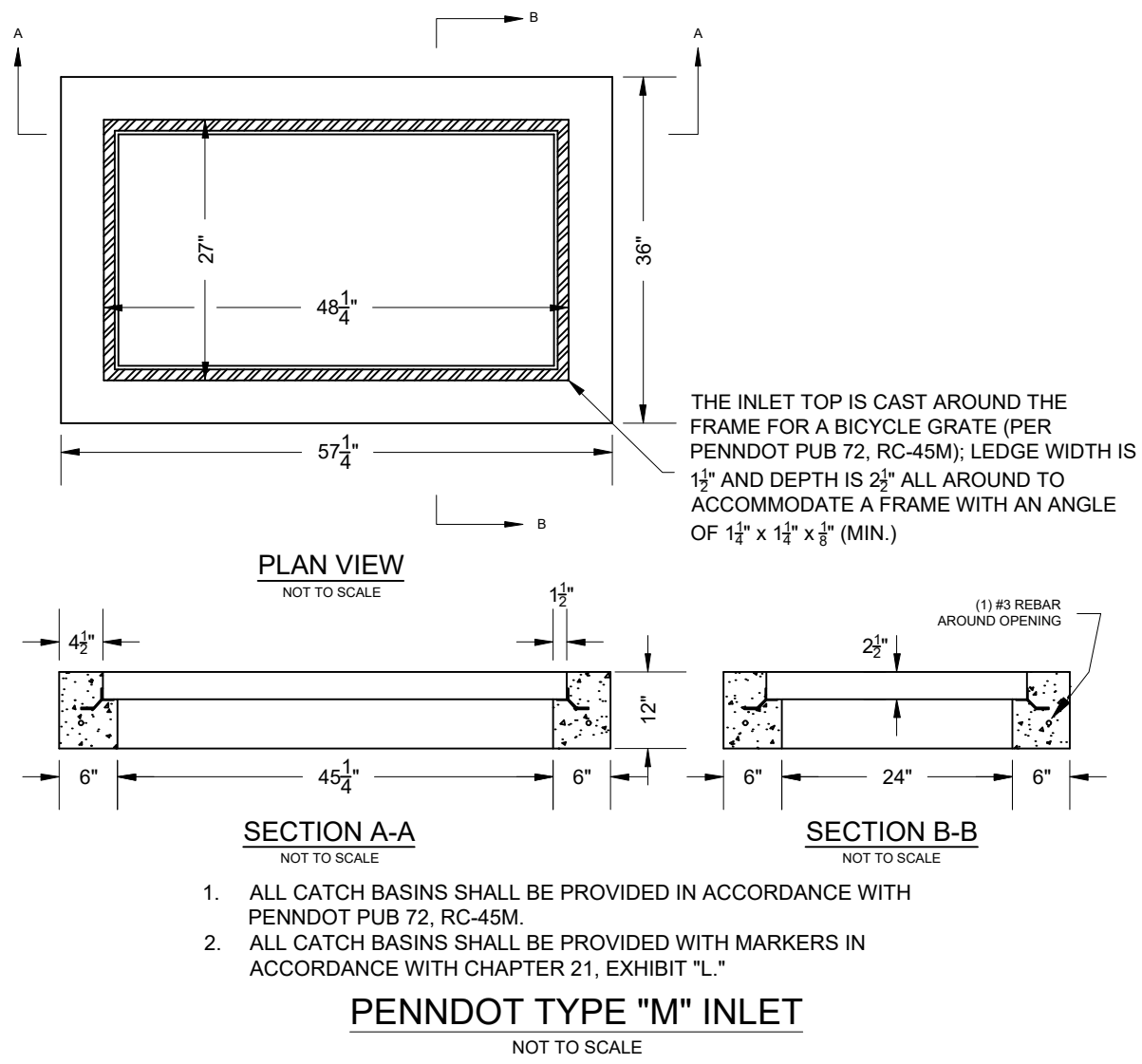
JULY 31, 2024

9
OF 19

M:\Project Files\104 - Jeff Host/H04.10.2 - Old Ebenezer Rd\DWG\LD Plan - Horst Ebe Road.dwg 10/22/2024 2:20 PM

INFILTRATION TEST:			
TEST LOCATION	EX. GRADE ELEVATION	INFILTRATION TEST DEPTH (FT)	INFILTRATION TEST ELEVATION
1	511.75	2	509.75
2	511.50	2	509.50

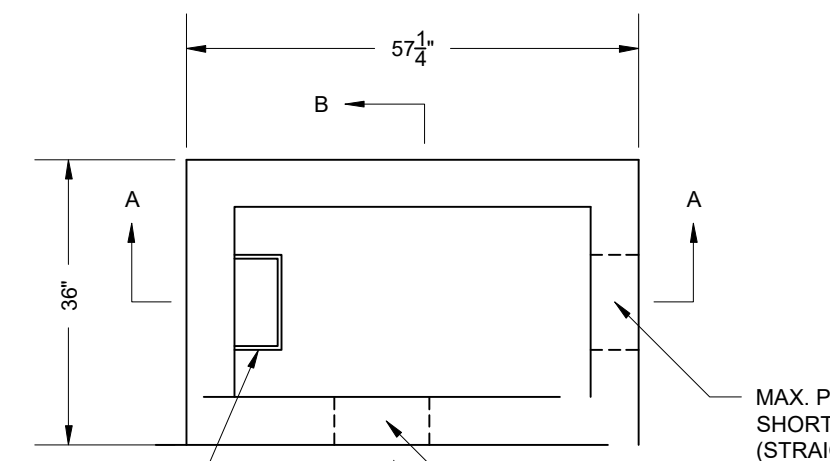
BOTTOM BMP ELEVATION	PROBE TEST DEPTH (FT)	PROBE TEST LIMITING ZONE	PROBE TEST ELEVATION	RATE (FT/HR)
512.00	2	12", WATER	509.75	0.000
512.00	2	16", WATER	509.50	0.000



SECTION A-A
NOT TO SCALE

SECTION B-B
NOT TO SCALE

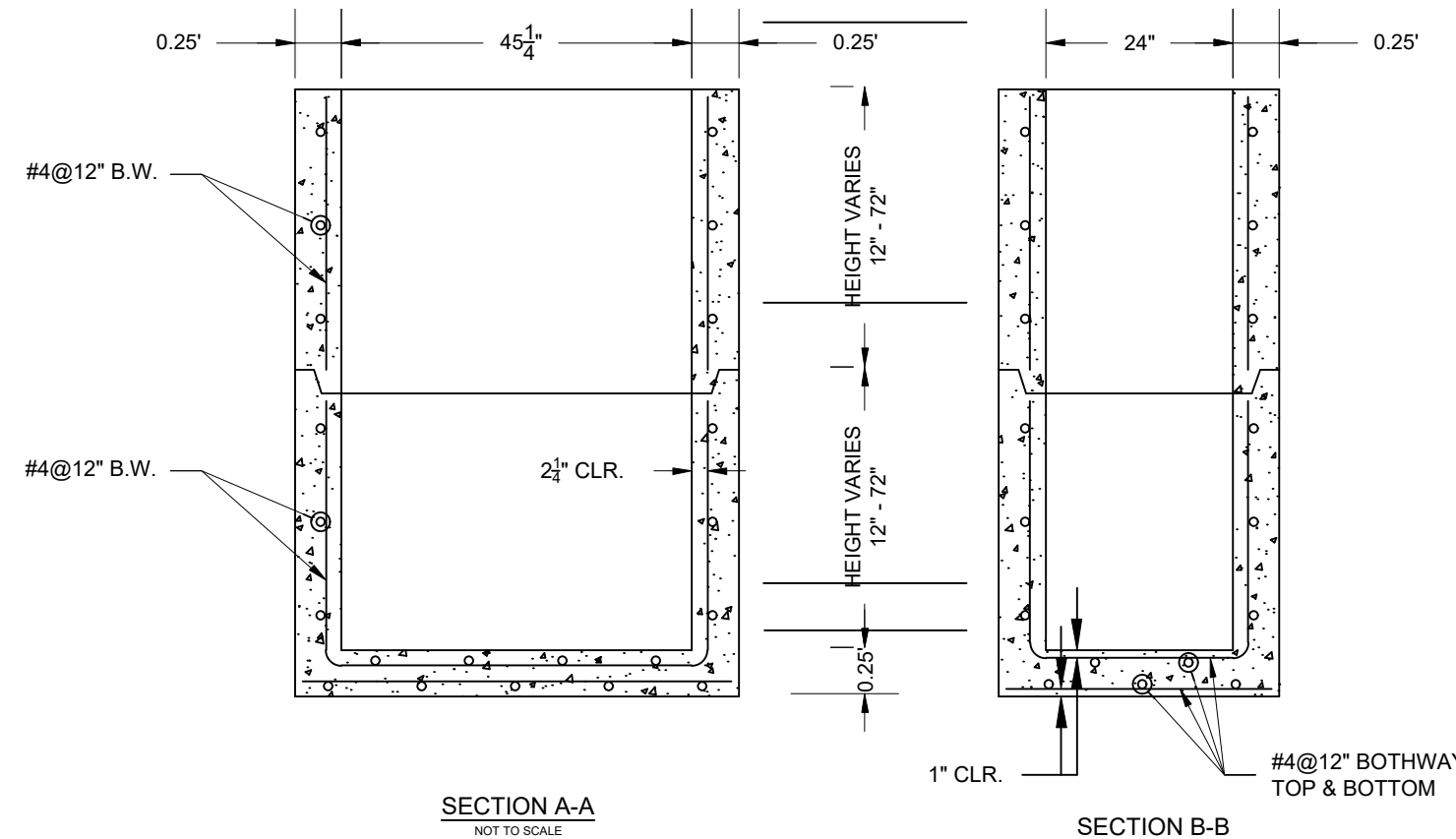
PENNDOT TYPE "M" INLET
NOT TO SCALE



SECTION A-A
NOT TO SCALE

SECTION B-B
NOT TO SCALE

PENNDOT TYPE "M" INLET
NOT TO SCALE



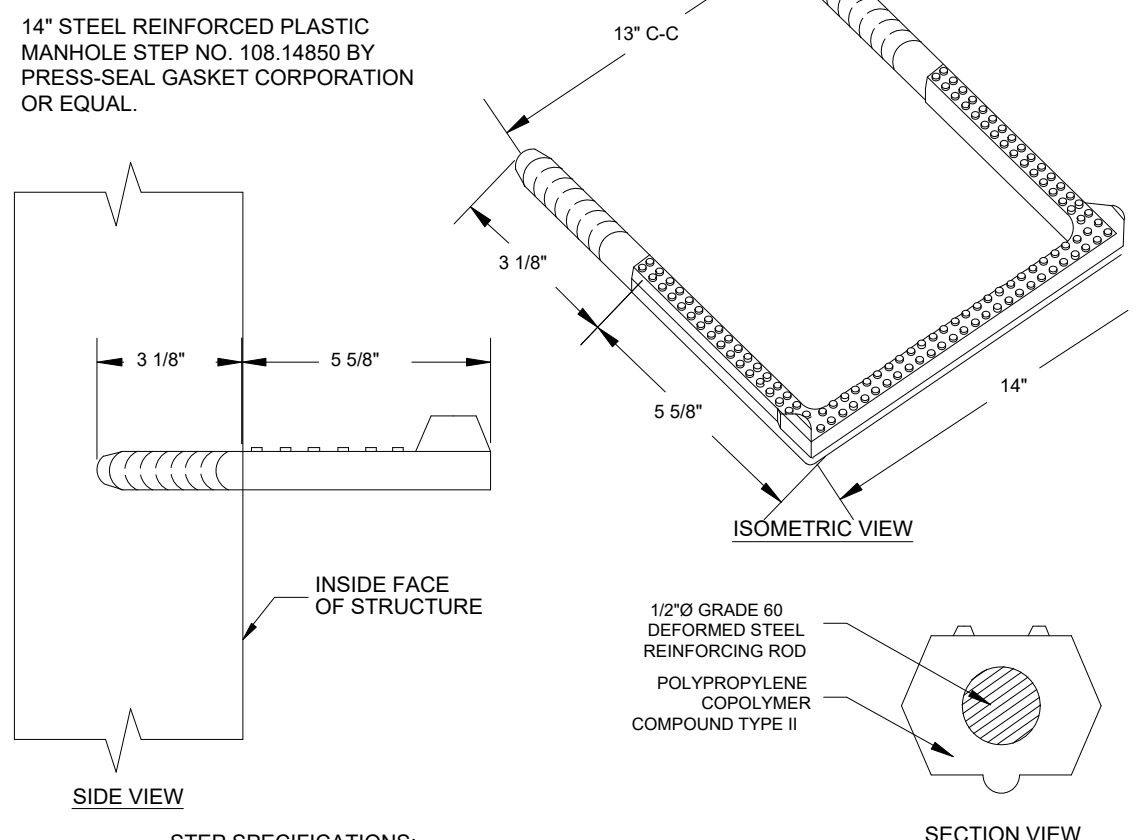
SECTION A-A
NOT TO SCALE

SECTION B-B
NOT TO SCALE

PENNDOT INLET BOX
NOT TO SCALE

- SPECIFICATIONS:**
- THE CONCRETE IS DESIGNED TO OBTAIN A STRENGTH OF 4,000 PSI IN 28 DAYS.
 - THE REINFORCING STEEL HAS A YIELD STRENGTH OF 60,000 PSI.
 - THE INLET SHALL BE DESIGNED TO MEET PENNDOT SPEC. FORM 408 FOR PRECAST CONCRETE CATCH BASINS (RC-45M).
 - THE REINFORCED CONCRETE BASE SLAB IS DESIGNED FOR A MAXIMUM DEPTH OF 20 FT (DEPTH = F.G. TO TOP OF BASE SLAB).
 - THE OPTIONAL A-LOCK STORM GASKET IS DESIGNED TO MEET THE REQUIREMENTS OF ASTM C-1478, "STORM DRAIN RESILIENT CONNECTORS BETWEEN REINFORCED CONCRETE STORM SEWER STRUCTURES, PIPES, AND LATERALS."
 - PROVIDE STEPS WHERE STRUCTURE DEPTH IS GREATER THAN 48".
 - TO TOP OF OUT DIMENSIONS OF TOP SLABS TO MATCH SIZE OF INLET BOX.
 - SECTION DIMENSIONS AND SPECIFICATIONS ADJUSTED AS NECESSARY ON SECTION VIEWS FOR TYPE 6 BOX (6'x6' INLET BOX) TO MEET PENNDOT RC-45M.
 - BLENDRETE NONSHRINKING GROUT OR EQUAL SHALL BE USED TO GROUT ALL PIPE PROTRUDING FROM STRUCTURE. GROUT TO BE PLACED INSIDE AND OUTSIDE OF STRUCTURE.
 - 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 TWELVE-INCH-DEEP SUMP TO CATCH DEBRIS. INLET SUMPS SHALL HAVE WEEPHOLES.

PENNDOT INLET BOX
NOT TO SCALE

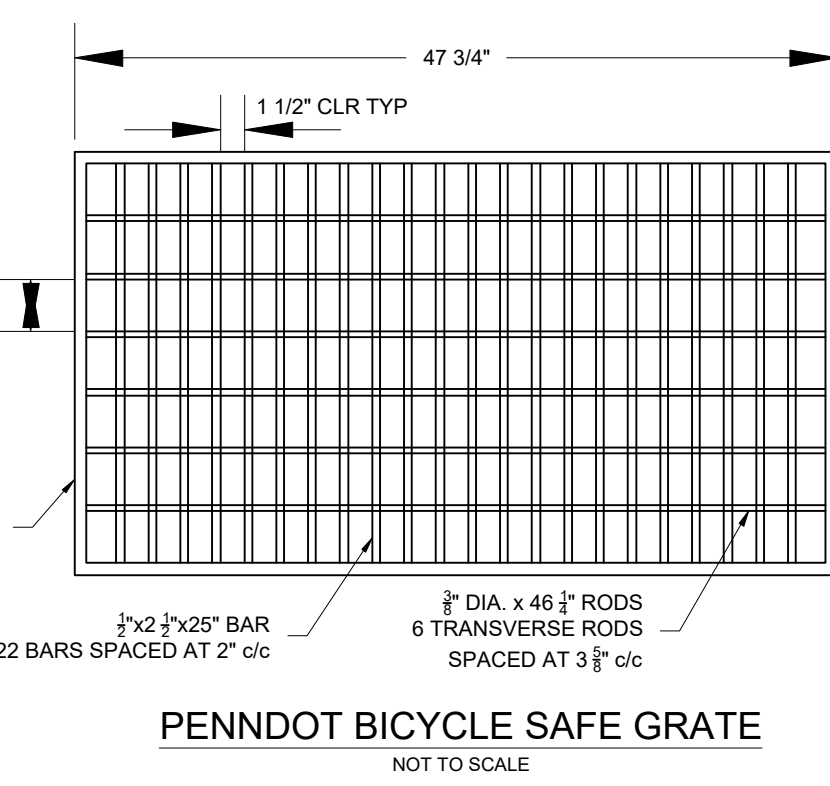


STEP SPECIFICATIONS:

STEPS SHALL BE 1/2" GRADE 60 DEFORMED STEEL REINFORCING ROD CONFORMING TO ASTM A615 AND COMPLETING ENCAPSULATED IN POLYPROPYLENE COPOLYMER COMPOUND TYPE II CONFORMING TO ASTM D4101.

STEP INSTALLATION: STEPS SHALL BE CAST IN-PLACE BY THE MANUFACTURE. STEPS SHALL BE ALIGNED VERTICALLY NOT MORE THAN 12" ON CENTER.

STEEL REINFORCED PLASTIC INLET/MANHOLE STEPS
NOT TO SCALE



PENNDOT BICYCLE SAFE GRATE
NOT TO SCALE

**PRELIMINARY/FINAL
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IONA INVESTMENT GROUP, LP
NORTH LEBANON TOWNSHIP, LEBANON COUNTY, PA



REVISION
PER ZONING ORDINANCE SECTION 37-402.30
PER SESI LTR DATED 9-24-24

DATE
8-21-24
10-22-24

BY
GLZ
GLZ

PROPOSED IMPROVEMENTS ON LOT 2 ARE FOR SCHEMATIC PURPOSES ONLY. 1.3 ACRES OF IMPERVIOUS AREA ON LOT 2 AND THE EXTENSION OF THE PRIVATE STREET HAS BEEN ACCOUNTED FOR IN THE STORMWATER MANAGEMENT CALCULATIONS. A FINAL LAND DEVELOPMENT PLAN WILL BE REQUIRED FOR LOT 2 PRIOR TO CONSTRUCTION OF ANY SITE IMPROVEMENTS, SUCH AS BUILDINGS, DRIVEWAYS, PARKING LOTS, ETC.

POTENTIAL FUTURE 1" PRIVATE WATER SERVICE AND 6" SANITARY SEWER SERVICE TO BE INSTALLED AT TIME OF APPROVAL OF A FINAL LAND DEVELOPMENT PLAN FOR LOT 2

POST-CONSTRUCTION
STORMWATER MANAGEMENT PLAN
1" = 50'

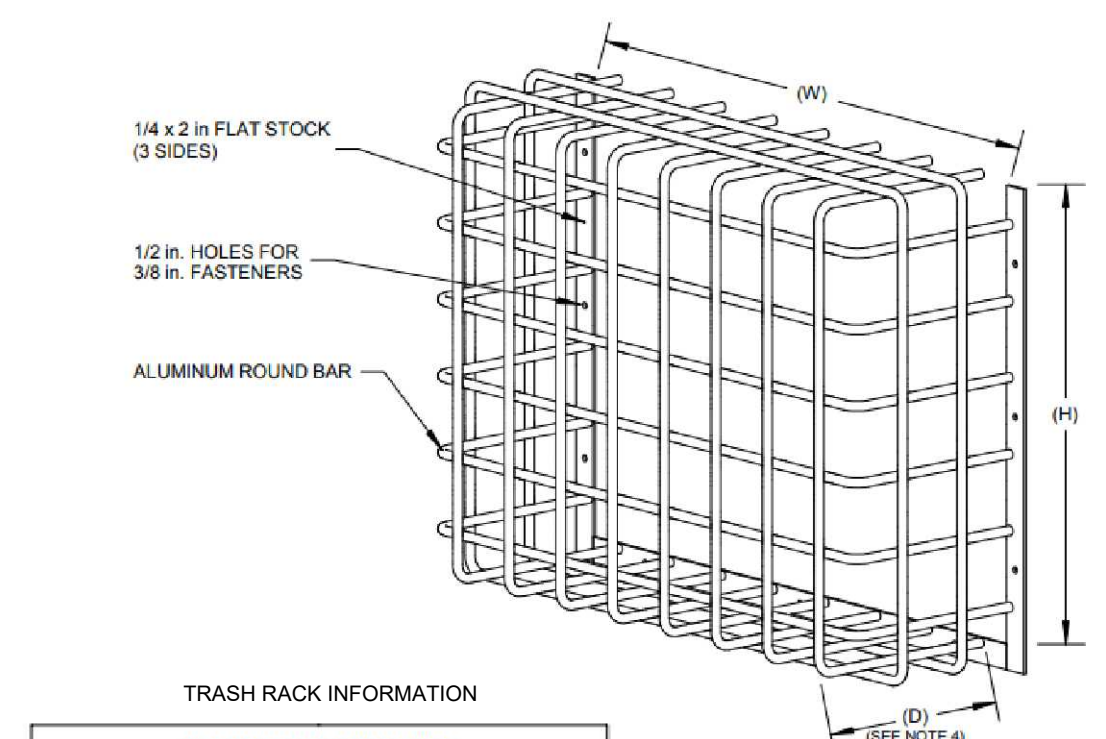
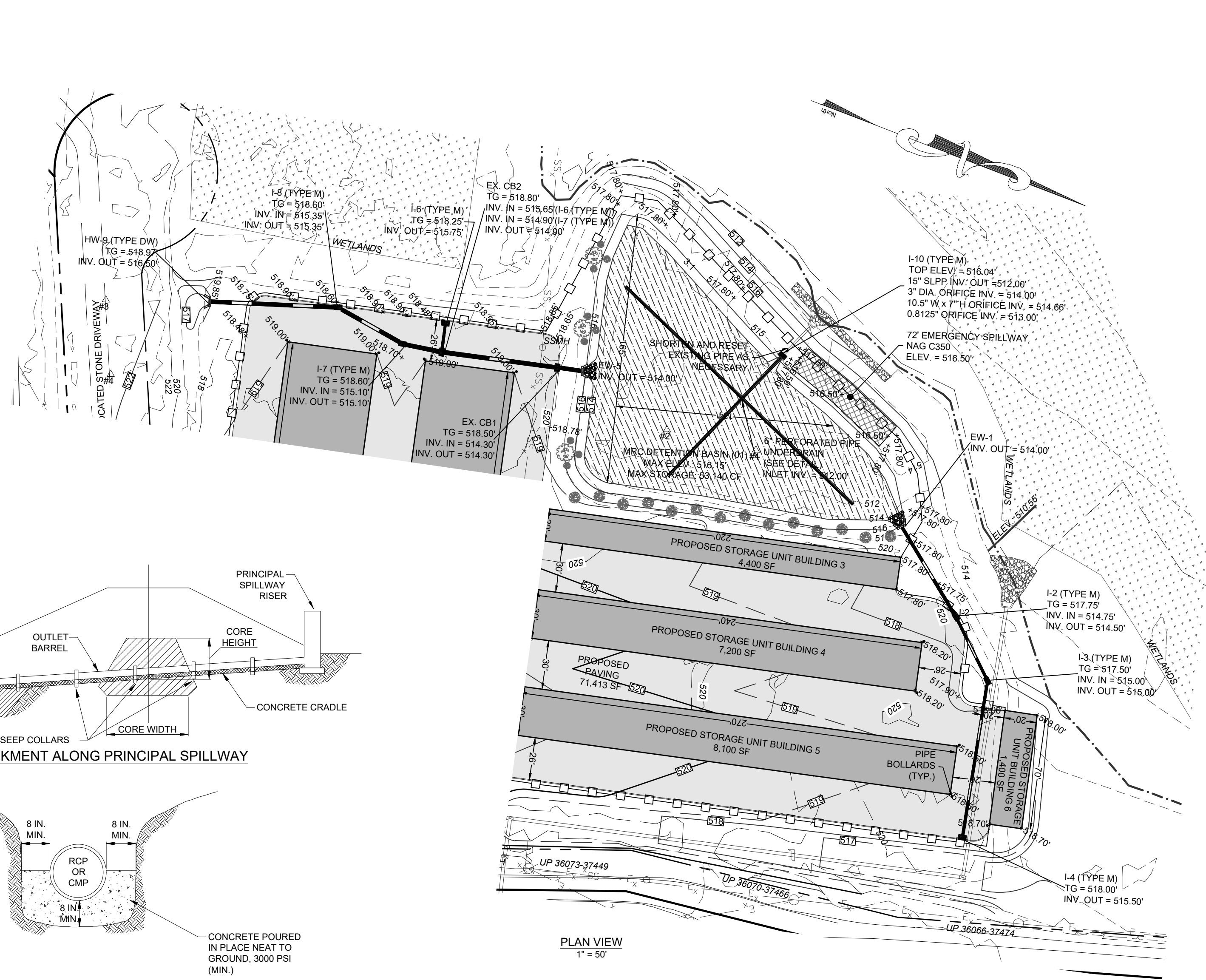
GRAPHIC SCALE
(IN FEET)
1 inch = 50 ft.

SOIL CHART:

Map Unit Symbol	Map Unit Name	Acres	HSG	% of Disturbed Area	Depth (ft)	Hydric
BeB	Bedington Shaly Silt Loam	13.80	B	39.80	0' - 72"	No
BeC	Bedington Shaly Silt Loam	4.40	B	12.80	0' - 72"	No
BKc	Berkshire Channery Silt Loam	0.00	B	0.10	0' - 46"	No
BrA	Brinkerton Silt Loam	1.50	D	4.40	0' - 65"	No
CmA	Comly Silt Loam	1.10	C	3.20	0' - 65"	Yes
CmB	Comly Silt Loam	1.20	C	3.40	0' - 65"	Yes
Hc	Holly Silt Loam	10.70	B/D	31.00	0' - 62"	Yes
WeB	Weikert Channery Silt Loam	0.80	D	2.30	0' - 28"	Yes
WeD	Weikert Channery Silt Loam	1.00	D	2.90	0' - 25"	No

LEGEND

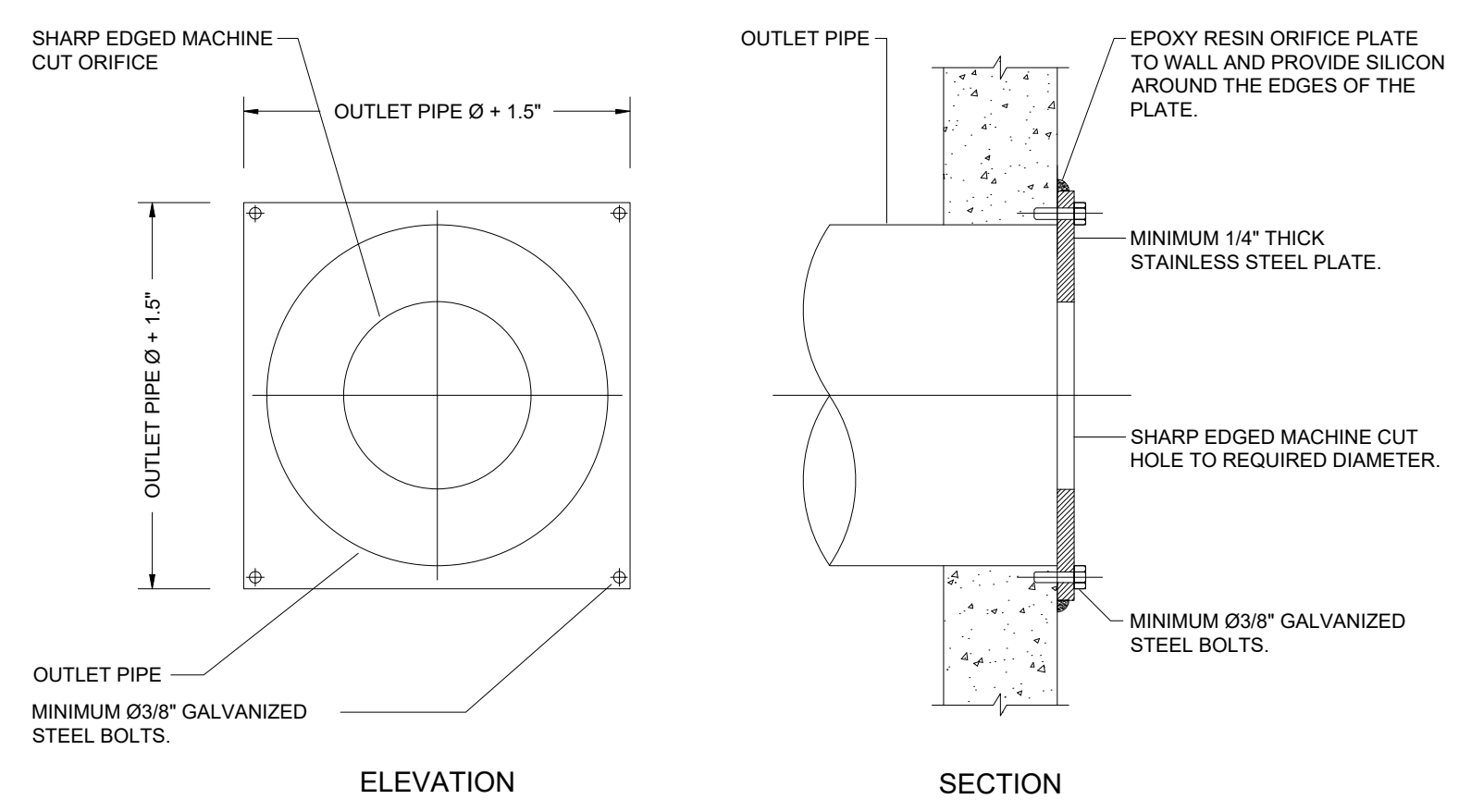
- EXISTING FEATURES**
- EXISTING ADJOINER LINE
 - EXISTING BOUNDARY LINE AND CORNERS
 - EXISTING EDGE OF PAVEMENT AND CURB LINE
 - EXISTING RIGHT-OF-WAY
 - EXISTING FENCE
 - EXISTING SEWER
 - EXISTING STORMWATER
 - EXISTING WATERLINE
 - EXISTING GASLINE
 - EXISTING ZONING BOUNDARY
 - EXISTING SIDEWALK/CONCRETE
 - EXISTING CONTOURS
 - EXISTING TREELINE
 - EXISTING SOILS
 - EXISTING UTILITY POLE
 - EXISTING LIGHT POLE
 - EXISTING OVERHEAD ELECTRIC
 - EXISTING STUDIED FLOODPLAIN
 - EXISTING WETLANDS
 - EXISTING UTILITY EASEMENT
 - IRON PIN FOUND
- PROPOSED FEATURES**
- PROPOSED BUILDING SETBACK
 - PROPOSED BOUNDARY LINE AND CORNERS
 - PROPOSED EDGE OF PAVEMENT AND CURB LINE
 - PROPOSED RIGHT-OF-WAY
 - PROPOSED FENCE
 - PROPOSED SEWER
 - PROPOSED STORMWATER
 - PROPOSED DRAINAGE EASEMENT
 - PROPOSED RIPARIAN BUFFER EASEMENT
 - PROPOSED DOMESTIC WATERLINE
 - PROPOSED GASLINE
 - PROPOSED CONCRETE/SIDEWALK
 - PROPOSED CONTOURS
 - PROPOSED TREELINE
 - PROPOSED UTILITY POLE
 - PROPOSED LIGHT POLE
 - PROPOSED STANDARD PAVING
 - PROPOSED AMENDED SOILS



TRASH RACK INFORMATION	
	BASIN 1
RACK WIDTH (W)	6"
RACK HEIGHT (H)	11"
RACK DEPTH (D)	4"
BAR DIAMETER (1/2" OR 3/4")	1/2"
BAR CENTERLINE SPACING	2"
STRUCTURE OPENING W	2" DIA
STRUCTURE OPENING H	7" DIA
WEIR EXTENDS TO TOP?	NO
FASTENERS (QTY)	8
WIRE MESH?	NO

- NOTES:
1. ALL MATERIALS TO BE ALUMINUM 6061-T6 ALLOY.
 2. WELD ALL INTERSECTIONS.
 3. FASTEN TO CONCRETE STRUCTURE WITH 3/8 in. x 3 in. STAINLESS STEEL CONCRETE WEDGE ANCHORS AT 18 in. MAX. SPACING. MINIMUM OF (4).
 4. DEPTH TO O.D. OF RACK. IF THE CONCRETE WEIR EXTENDS TO THE TOP OF THE STRUCTURE, THE DEPTH OF THE TOP BARS WILL EXTEND TO MEET TOP GRATING OR FRAME OF STRUCTURE SO THERE IS NO GAP.
 5. OVERALL RACK WIDTH = (W) + 4 INCHES
 6. OVERALL RACK HEIGHT = (H) + BAR DIAMETER + 2 INCHES
 7. OPTIONAL - 10g STEEL WIRE MESH WITH 1 1/2 in. GRID TO COVER RACK.

SURFACE MOUNTED TRASH RACK DETAIL
NOT TO SCALE



STAINLESS STEEL ORIFICE PLATE DETAIL
NOT TO SCALE

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 BOUNDARY

PROPOSED FEATURES

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

EXISTING SIDEWALK/CONCRETE

EXISTING CONTOURS

EXISTING TREELINE

EXISTING SOILS

EXISTING UTILITY POLE

EXISTING LIGHT POLE

EXISTING OVERHEAD ELECTRIC

EXISTING STUDIED FLOODPLAIN

EXISTING WETLANDS

EXISTING UTILITY EASEMENT

IRON PIN FOUND

PROPOSED DOMESTIC WATERLINE

PROPOSED GASLINE

PROPOSED CONCRETE/SIDEWALK

PROPOSED CONTOURS

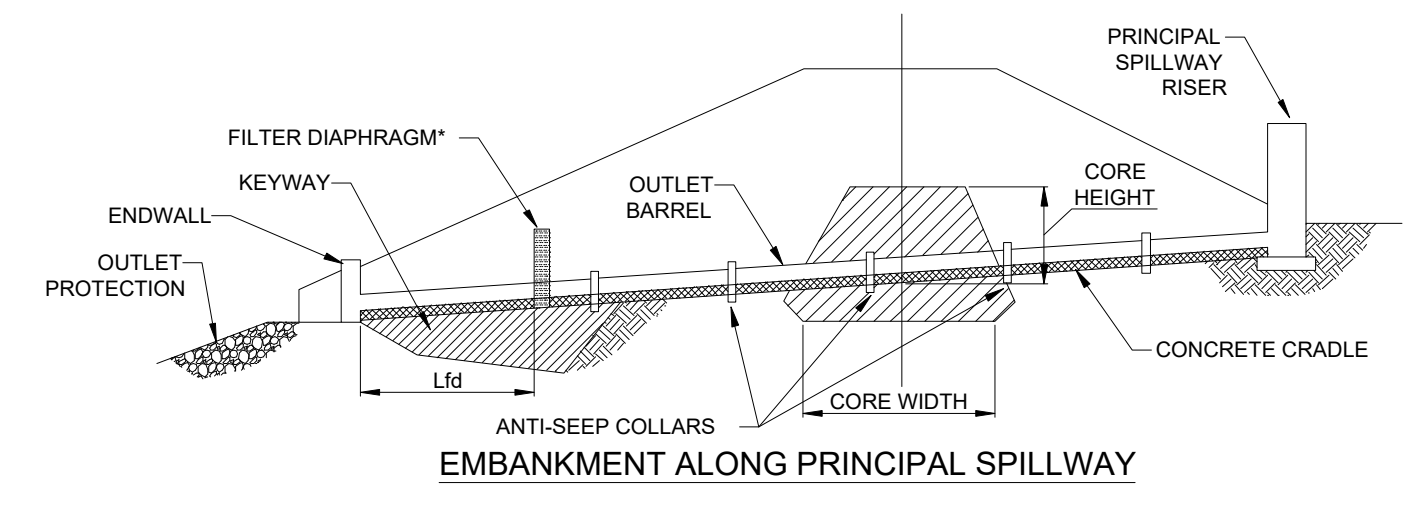
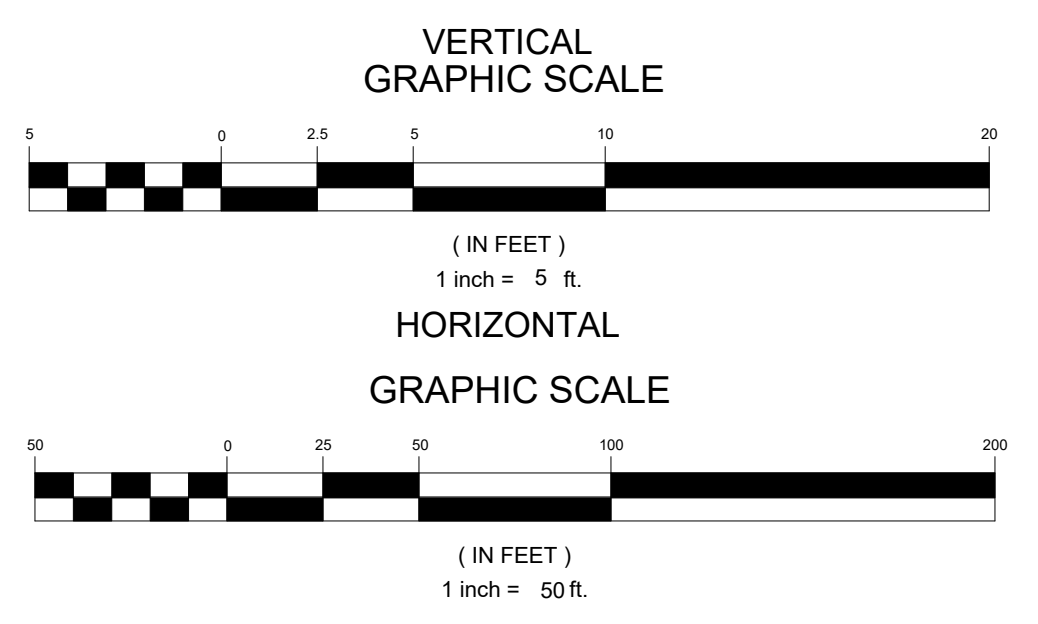
PROPOSED TREELINE

PROPOSED UTILITY POLE

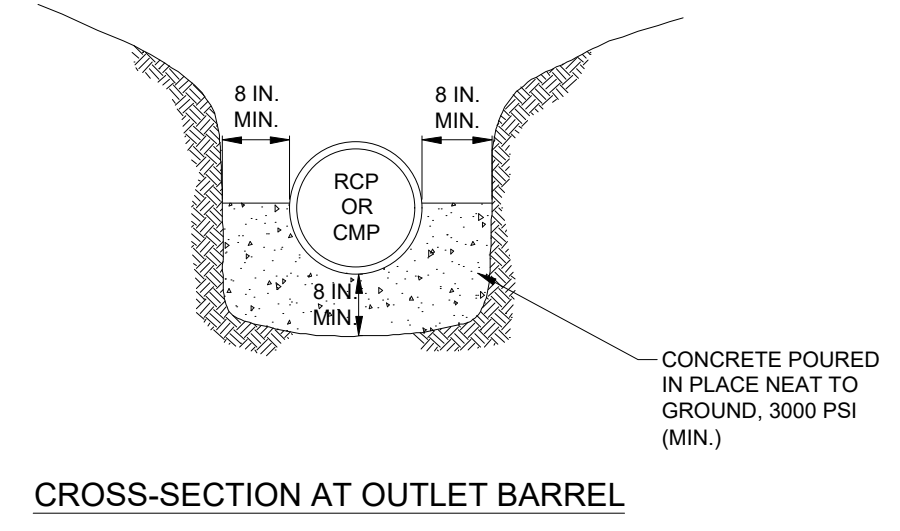
PROPOSED LIGHT POLE

PROPOSED STANDARD PAVING

PROPOSED AMENDED SOILS



EMBANKMENT ALONG PRINCIPAL SPILLWAY



CROSS-SECTION AT OUTLET BARREL

NOTES:

A CONCRETE CRADLE MAY BE USED IN CONJUNCTION WITH ANTI-SEEP COLLARS AND/OR FILTER DIAPHRAGM.

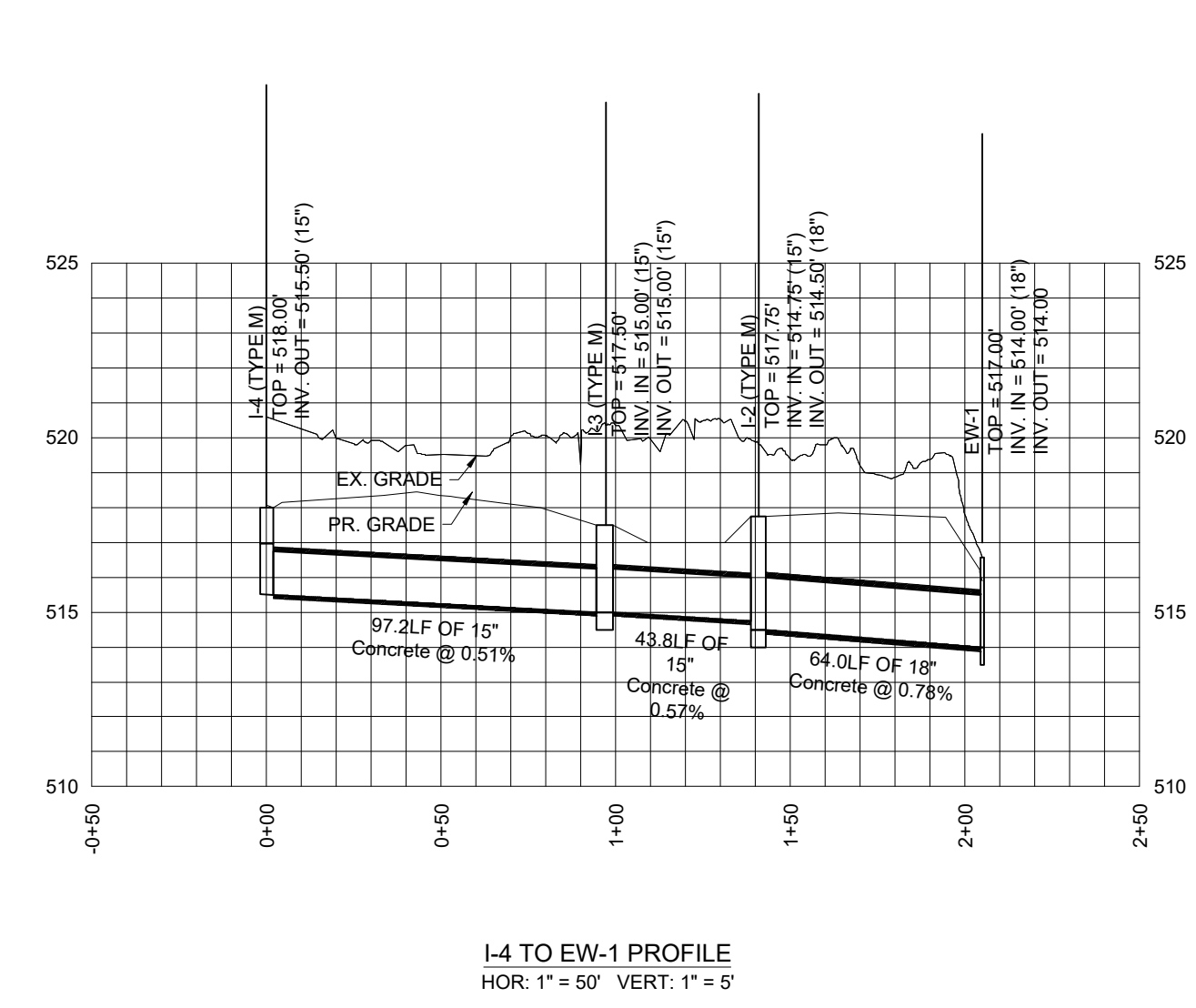
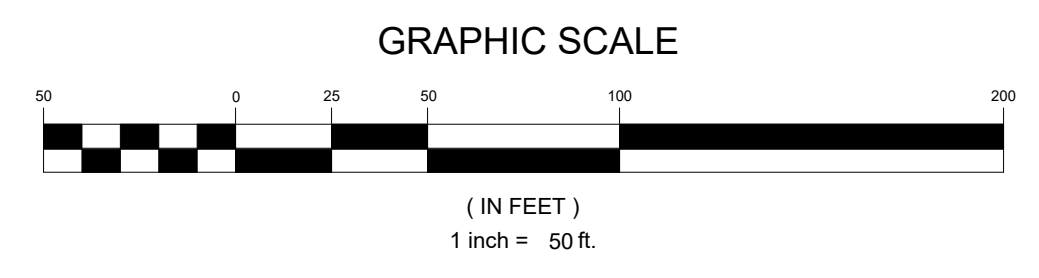
ANTI-SEEP COLLAR NUMBER, SIZE AND SPACING SHALL BE AS SHOWN ELSEWHERE IN PLAN.

FILTER DIAPHRAGM LOCATION (Lfd) SHALL BE AS SHOWN IN FIGURE 7.8 OF THE PA DEP EROSION CONTROL MANUAL.

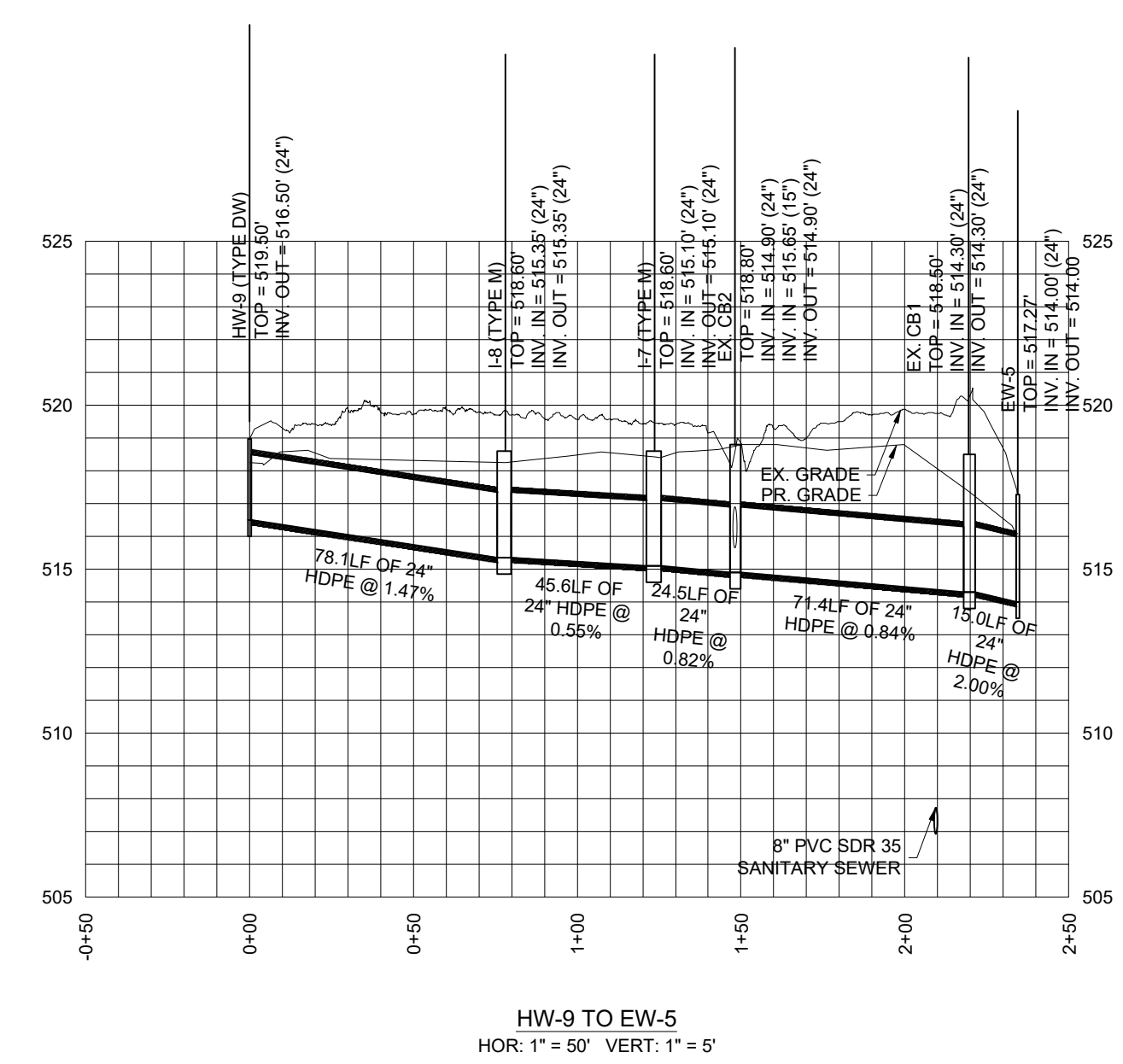
STANDARD CONSTRUCTION DETAIL #7-17

CONCRETE CRADLE FOR BASIN OR TRAP OUTLET BARREL

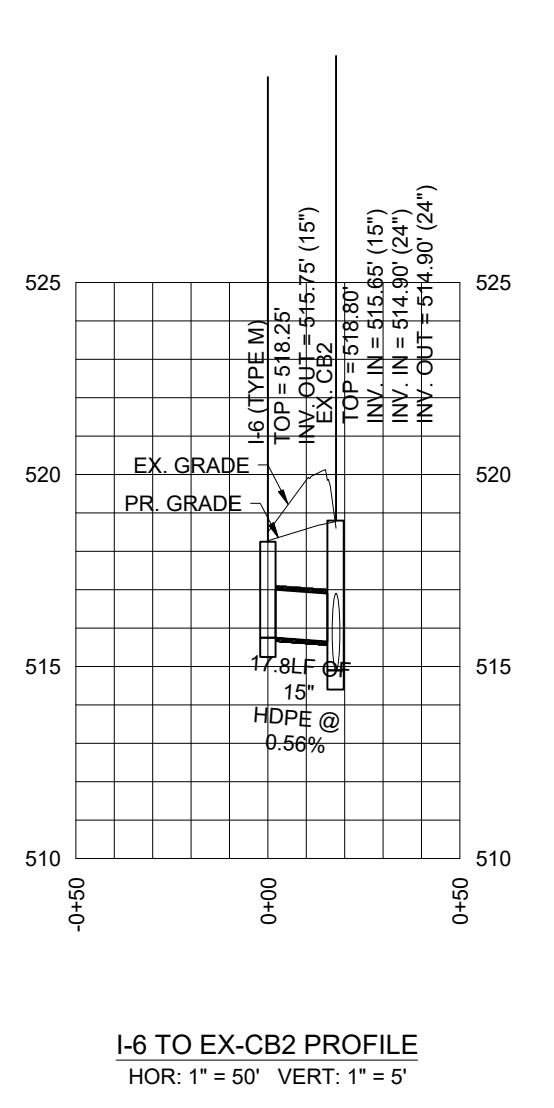
NOT TO SCALE



I-4 TO EW-1 PROFILE
HOR: 1" = 50' VERT: 1" = 5'



HW-9 TO EW-5
HOR: 1" = 50' VERT: 1" = 5'



I-6 TO EX-CB2 PROFILE
HOR: 1" = 50' VERT: 1" = 5'

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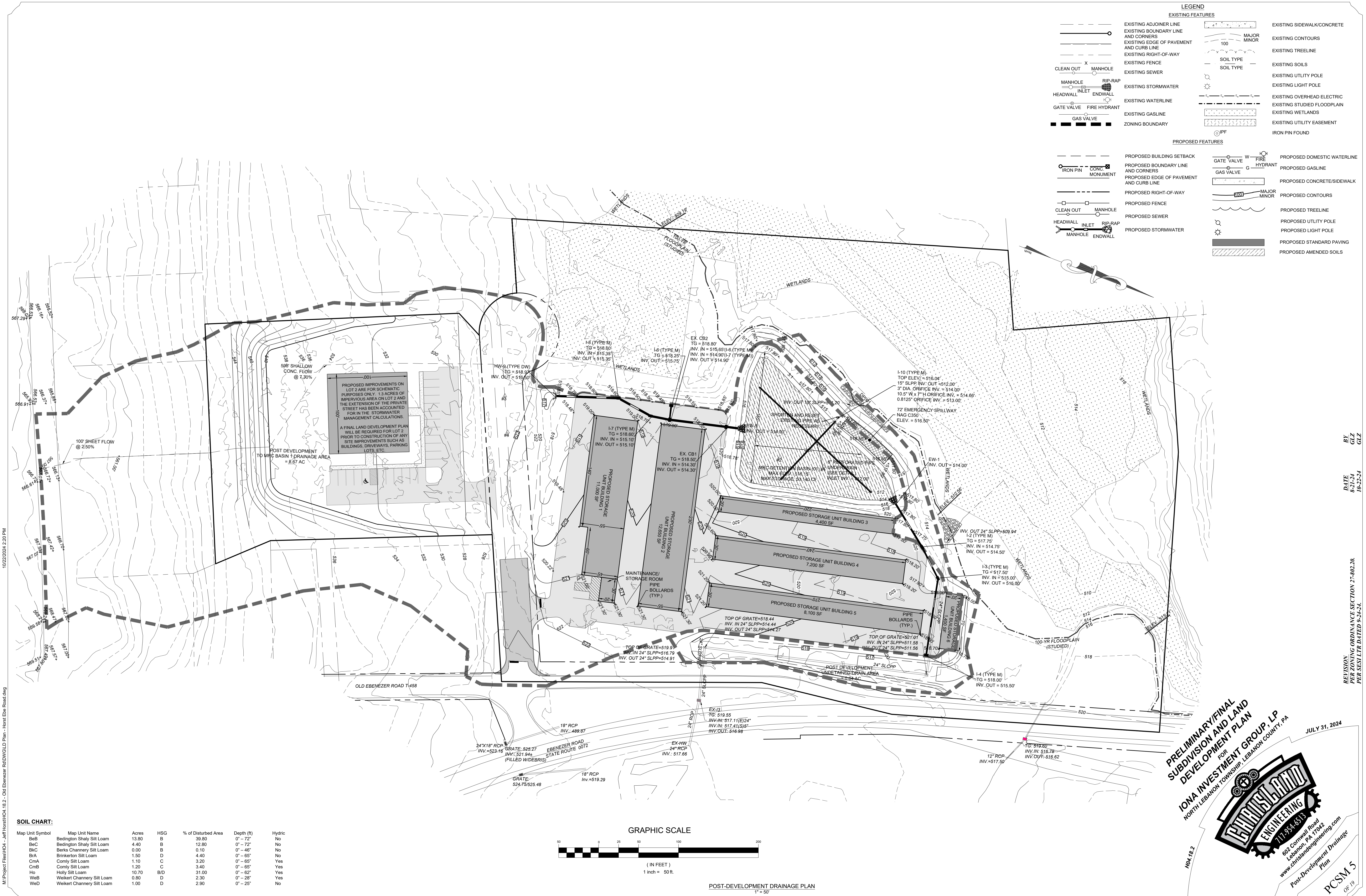


PCSM Profiles
OF 19

REVISION
PER ZONING ORDINANCE SECTION 7-402.20
PER SESI LTR DATED 9-24-24.

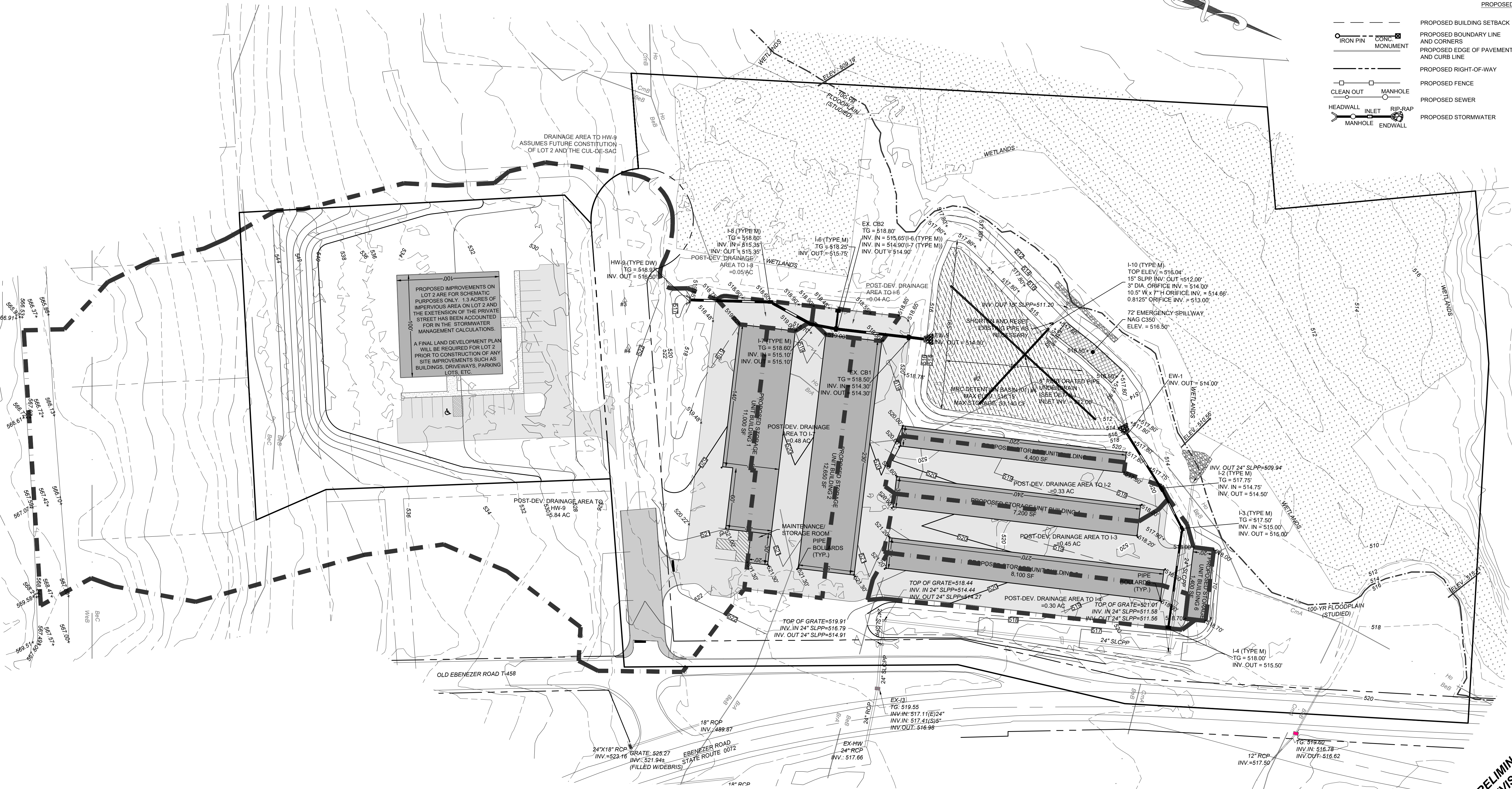
DATE
8-21-24
10-22-24

BY
GLZ
GLZ



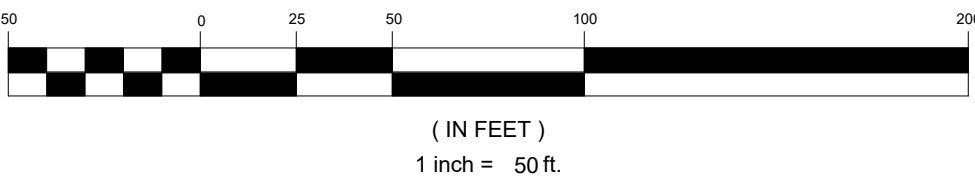
SOIL CHART:

Map Unit Symbol	Map Unit Name	Acres	HSG	% of Disturbed Area	Depth (ft)	Hydric
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WeB	Weikert Channery Silt Loam	0.80	D	2.30	0' - 28"	Yes
WeD	Weikert Channery Silt Loam	1.00	D	2.90	0' - 25"	No



INLET DRAINAGE PLAN
1" = 50'

GRAPHIC SCALE



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 BOUNDARY
	EXISTING SIDEWALK/CONCRETE		EXISTING CONTOURS
	EXISTING TREELINE		EXISTING SOILS
	EXISTING UTILITY POLE		EXISTING OVERHEAD ELECTRIC
	EXISTING STUDIED FLOODPLAIN		EXISTING WETLANDS
	EXISTING UTILITY EASEMENT		IRON PIN FOUND
PROPOSED FEATURES			
	PROPOSED BUILDING SETBACK		PROPOSED DOMESTIC WATERLINE
	PROPOSED BOUNDARY LINE AND CORNERS		PROPOSED GASLINE
	PROPOSED EDGE OF PAVEMENT AND CURB LINE		PROPOSED CONCRETE/SIDEWALK
	PROPOSED RIGHT-OF-WAY		PROPOSED CONTOURS
	PROPOSED FENCE		PROPOSED TREELINE
	PROPOSED SEWER		PROPOSED UTILITY POLE
	PROPOSED STORMWATER		PROPOSED LIGHT POLE
	PROPOSED STANDARD PAVING		PROPOSED AMENDED SOILS

PRELIMINARY/FINAL
SUBDIVISION AND LAND
DEVELOPMENT PLAN
FOR
IONA INVESTMENT GROUP, LP
NORTH LEBANON TOWNSHIP, LEBANON COUNTY, PA



Chris Land Engineering, Inc.
602 Cornwell Road
Lebanon, PA 17042
www.chrislandengineering.com

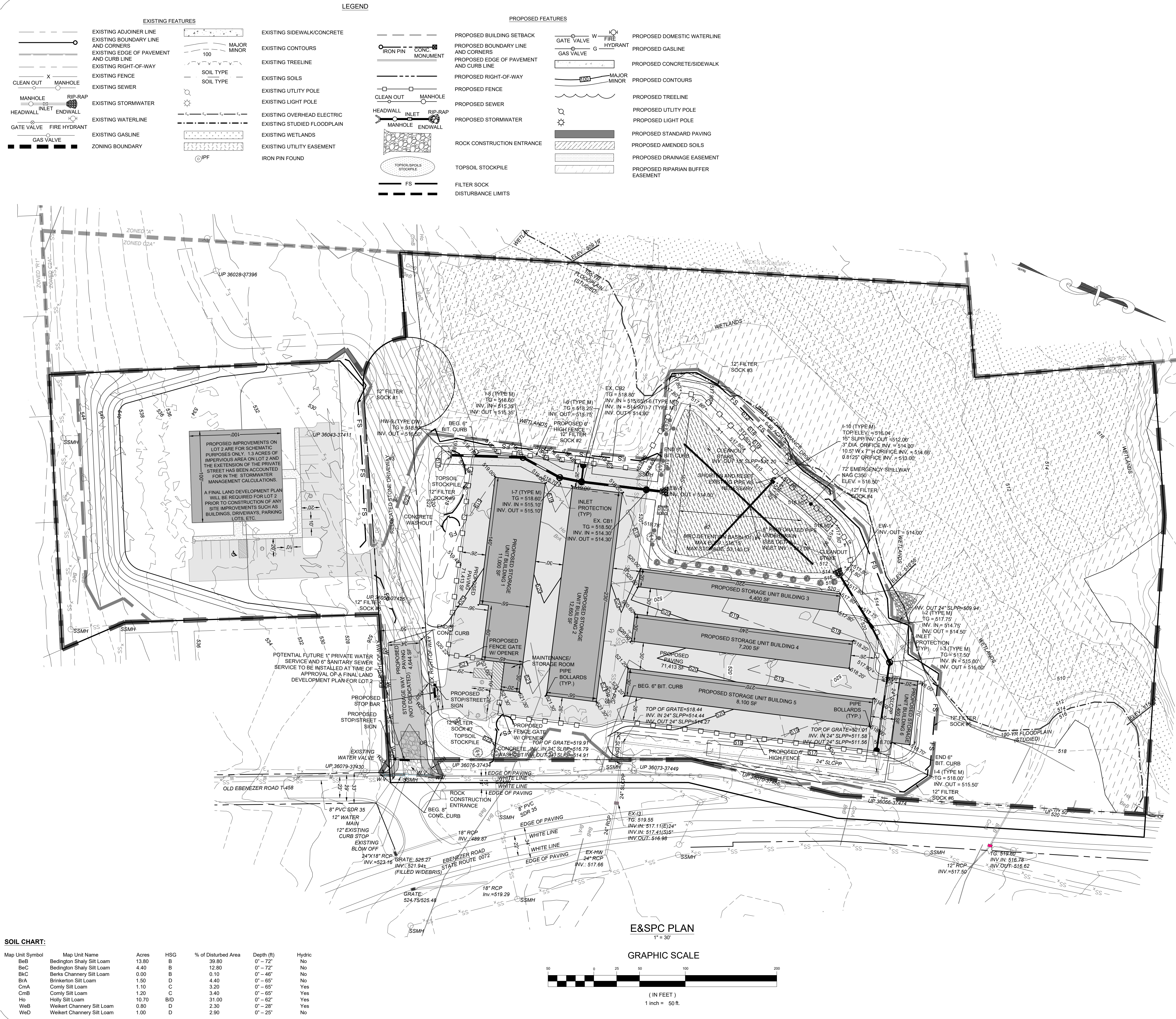
July 31, 2024
PCSM 6
OF 19

REVISION
PER ZONING ORDINANCE SECTION 7-102.20
PER SESI LTR DATED 9-24-24.

D/DATE
8-21-24
10-22-24

BY
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- STANDARD E&S PLAN NOTES**
- All earth disturbances, including clearing and grubbing as well as cuts and fills shall be done in accordance with the approved E&S plan. A copy of the approved drawings (stamped, signed and dated by the reviewing agency) must be available at the project site at all times. The reviewing agency shall be notified of any changes to the approved plan prior to implementation of those changes. The reviewing agency may require a written submittal of those changes for review and approval at its discretion.
 - At least 7 days prior to starting any earth disturbance activities, including clearing and grubbing, the owner and/or operator shall invite all contractors, the landowner, appropriate municipal officials, the Lebanon County Engineer, the E&S plan preparer, the PCSM plan preparer, the licensed professional responsible for oversight of critical stages of implementation of the PCSM plan, and a representative from the local conservation district to an on-site preconstruction meeting.
 - At least 3 days prior to starting any earth disturbance activities, or expanding into an area previously unmarked, the Pennsylvania One Call System Inc. shall be notified at 1-800-242-1776 for the location of existing underground utilities.
 - 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 from the local conservation district or by the Department prior to implementation.
 - Areas to be filled are to be cleared, grubbed, and stripped of topsoil to remove trees, vegetation, roots and other objectionable material.
 - Clearing, grubbing, and topsoil stripping shall be limited to those areas described in each stage of the construction sequence. General site clearing, grubbing and topsoil stripping may not commence in any stage or phase of the project until the E&S BMPs specified by the BMP sequence for that stage or phase have been installed and are functioning as described in this E&S plan.
 - At no time shall construction vehicles be allowed to enter areas outside the limit of disturbance boundaries shown on the plan maps. These areas must be clearly marked and fenced off before clearing and grubbing operations begin.
 - Topsoil required for the establishment of vegetation shall be stockpiled at the location(s) shown on the plan map(s) in the amount necessary to complete the final 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. Stockpile heights shall not exceed 35 feet. Stockpile slopes shall be 2H:1V or flatter.
 - 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 erosion and sediment pollution and notify the local conservation district and/or the regional office of the Department.
 - 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 260.1 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.
 - All off-site waste and borrow areas must have an E&S plan approved by the local conservation district or the Department fully implemented prior to being activated.
 - The contractor is responsible for ensuring that any material brought on site is clean fill. Form FP-001 must be retained by the property owner for any fill material affected by a spill or release of a regulated substance but qualifying as clean fill due to analytical testing.
 - All pumping of water from any work area shall be done according to the procedure described in this plan, over undisturbed vegetated areas.
 - Until the site is stabilized, all erosion and sediment BMPs shall be maintained properly. Maintenance shall include inspections of all erosion and sediment BMPs after each runoff event and on a weekly basis. All preventative and remedial maintenance work, including clean out, repair, replacement, regrading, reseeding, remulching and renetting must be performed immediately. If the E&S BMPs fail to perform as expected, replacement BMPs, or modifications of those installed will be required.
 - A log showing dates that E&S BMPs were inspected as well as any deficiencies found and the date they were corrected shall be maintained on the site and be made available to regulatory agency officials at the time of inspection.
 - 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, shoveled, or swept into any roadside ditch, storm sewer, or surface water.
 - All sediment removed from BMPs shall be disposed of in the manner described on the plan drawings.
 - Areas which are to be topsoiled 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 outcrops shall have a minimum of 2 inches of topsoil.
 - All fills shall be compacted as required to reduce erosion, slippage, settlement, subsidence or other related problems. Fill intended to support buildings, structures and conduits, etc. shall be compacted in accordance with local requirements or codes.
 - All earthen fills shall be placed in compacted layers not to exceed 9 inches in thickness.
 - 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.
 - Frozen materials or soft, mucky, or highly compressible materials shall not be incorporated into fills.
 - Fill shall not be placed on saturated or frozen surfaces.
 - Seeps or springs encountered during construction shall be handled in accordance with the standard and specification for subsurface drain or other approved method.
 - All graded areas shall be permanently stabilized immediately upon reaching finished grade. Cut slopes in competent bedrock and rock fills need not be vegetated. Seeded areas within 50 feet of a surface water, or as otherwise shown on the plan drawings, shall be blanketed according to the standards of this plan.
 - Immediately after earth disturbance activities cease in any area or subarea of the project, the operator shall stabilize all disturbed areas. During non-germinating months, mulch or protective blanketing shall be applied as described in the plan. Areas not at finished grade, which will be reactivated within 1 year, may be stabilized in accordance with the temporary stabilization specifications. Those areas which will not be reactivated within 1 year shall be stabilized in accordance with the permanent stabilization specifications.
 - Permanent stabilization is defined as a minimum uniform, perennial 70% vegetative cover or other permanent non-vegetative cover with a density sufficient to resist accelerated erosion. Cut and fill slopes shall be capable of resisting failure due to slumping, sliding, or other movements.
 - E&S BMPs shall remain functional as such until all areas tributary to them are permanently stabilized or until they are replaced by another BMP approved by the local conservation district or the Department.
 - Upon completion of all earth disturbance activities and permanent stabilization of all disturbed areas, the owner and/or operator shall contact the local conservation district for an inspection prior to removal/conversion of the E&S BMPs.
 - After final site stabilization has been achieved, temporary erosion and sediment BMPs must be removed or converted to permanent post construction stormwater management BMPs. Areas disturbed during removal or conversion of the BMPs shall be stabilized immediately, in order to ensure rapid revegetation of disturbed areas, such removal/conversions are to be done only during the germinating season.
 - Upon completion of all earth disturbance activities and permanent stabilization of all disturbed areas, the owner and/or operator shall contact the local conservation district to schedule a final inspection.
 - Failure to correctly install E&S BMPs, failure to prevent sediment-laden runoff from leaving the construction site, or failure to take immediate corrective action to resolve failure of E&S BMPs 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, up to \$10,000 in summary criminal penalties, and up to \$25,000 in misdemeanor criminal penalties for each violation.
 - Underground utilities cutting through any active channel shall be immediately backfilled and the channel restored to its original cross-section and protective lining. Any base flow within the channel shall be conveyed past the work area in the manner described in this plan until such restoration is complete.
 - Erosion control blanketing shall be installed on all slopes 3H:1V or steeper within 50 feet of a surface water and on all other disturbed areas specified on the plan maps and/or detail sheets.
 - Fill material for embankments shall be free of roots, or other woody vegetation, organic material, large stones, and other objectionable materials. The embankment shall be compacted in maximum 9" layered lifts at 95% density.

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EROSION AND SEDIMENT POLLUTION CONTROL NARRATIVE

Preliminary/Final Land Development Plan for Iona Investment Group, LP
North Lebanon Township, Lebanon County, PA

A. SITE LOCATION

The site is located at 101 Old Ebenezer Road, PA 17046, North Lebanon Township, Lebanon County, PA. The deed book and page for the property is 02121-7091. The Lebanon County map number for the property is 27-2329277-374492-0000 (See USGS Map).

B. PROJECT DESCRIPTION

The project consists of the construction of six (6) storage unit buildings, paving, parking areas, and associated stormwater management facilities (See Site Plan). The disturbance area for this project is 6.55 acres.

C. EXISTING SITE CONDITIONS & DOWNSTREAM DRAINAGE PATH

The deeded acreage for 101 Old Ebenezer Road is 13.09 acres. The subject property has been in said condition since 2018 according to research done on the Pennsylvania Imagery Navigator (PASDA). The site is currently stabilized by grass/meadow open spaces, a gravel access driveway, and disturbed topsoil. Until the past few years, the site consisted of cultivated agricultural fields. The site slopes north, the highest elevations are on the southeast side of the property. Once leaving the property, runoff is intercepted by Tributary 09861 to Swatara Creek. In the Swatara Creek Watershed, Chapter 93 designation of Tributary 09861 to Swatara Creek is Warm Water Fishes (WWF).

Assessed Use: Recreational

Attain Use: Impaired

Source Cause: AGRICULTURE - ESCHERICHIA COLI (E. COLI); RURAL (RESIDENTIAL AREAS) - ESCHERICHIA COLI (E. COLI)

Assessed Use: Aquatic Life

Attain Use: Impaired

Source Cause: AGRICULTURE - NUTRIENTS; AGRICULTURE - FLOW REGIME

D. SOIL LIMITATIONS AND RESOLUTIONS

The following soil was found within or adjacent to the area directly disturbed by earth moving activities.

SOIL CHART:

Map Unit Symbol	Map Unit Name	Acres	HSG	% of Disturbed Area	Depth (ft)	Hydic
BeB	Bedington Shaly Silt Loam	13.80	B	39.80	0' - 72"	No
BeC	Bedington Shaly Silt Loam	4.40	B	12.60	0' - 72"	No
BkC	Berks Channery Silt Loam	0.00	B	0.10	0' - 46"	No
BrA	Brinkerton Silt Loam	1.50	D	4.40	0' - 65"	No
CmA	Comly Silt Loam	1.10	C	3.20	0' - 65"	Yes
CmB	Comly Silt Loam	1.20	C	3.40	0' - 65"	Yes
Ho	Holly Silt Loam	10.70	B/D	31.00	0' - 62"	Yes
WeB	Weikert Channery Silt Loam	0.80	D	2.30	0' - 28"	Yes
WeD	Weikert Channery Silt Loam	1.00	D	2.90	0' - 25"	No

Many soil limitations exist for the proposed project. The Web Soil Survey indicates lawns and landscaping establishment limitations classified as very limited for the BeB, BeC, BkC, CmA, and CmB soil type due to due to dustiness, large stones content, gravel content, depth to saturated zone, depth to bedrock, doughiness, slope, dustiness, and low exchange capacity. The BrA, Ho, WeB, and WeD soil types classified as somewhat limited due to dustiness, doughiness, depth to saturation zone, ponding, depth to cement pan, depth to bedrock, gravel content, low exchange capacity and large stones content. This potential limitation should not be a problem since the project includes the placement of fill over native soils which will allow placement of topsoil and establishment of lawns and grasses. In addition, the site will be stabilized with building and pavement cover along with tree plantings and mulched landscaping beds.

The Web Soil Survey indicated dwellings with and without basements establishment limitations classified as very limited for the BkC, BrA, Ho, WeB and WeD soil types due to to slope, shrink-swell, depth to saturated zone, ponding, flooding, large stones and depth to bedrock. The BeC, CmA, and CmB, soil types classified as somewhat limited due to depth to saturated zone and slope. This limitation will be taken into consideration when designing the proposed features.

The Soil Rutting Hazard limitation classified as severe due to low strength. Standard construction practices will be utilized to avoids excessive rutting and erosion associated with rutting will be controlled with standard erosion and sediment pollution controls.

E. CALCULATIONS

Temporary and permanent erosion control facilities were designed in accordance with the standards established in the Erosion and Sediment Pollution Control Manual (PA DEP Bureau of Soil and Water Conservation).

Runoff calculations were performed using the Rational Method in accordance with PaDEP, North Lebanon Township regulations. The proposed condition peak rates of runoff and runoff volumes will remain consistent with existing conditions. The vegetative cover will be restored to existing conditions to mitigate any potential increase in peak rates of runoff and runoff volumes.

F. STAGING OF EARTHMOVING

All earth disturbance activities shall proceed in accordance with the sequence provided on the plan drawings. **Deviation from that sequence must be approved by the Lebanon County Conservation District or by the Department prior to implementation. Each step of the sequence shall be completed before proceeding to the next step, except where noted.**

Construction of the site improvements is expected to begin fall of 2024. Construction will proceed in a timely manner in order to limit the potential for accelerated erosion and sedimentation. If the controls shown on the plan are incapable of addressing the erosion and sediment control problems on the lot, the owner/developer shall be responsible for adapting adequate alternative measures.

The construction sequence for development of the project shall be as follows:

- At least 7 days prior to starting any earth disturbance activities (including clearing and grubbing), the owner and/or operator shall invite all contractors, the landowner, appropriate municipal officials, the E&S plan preparer, the PCSM plan preparer, and a representative from the Lebanon County Conservation District (717-277-5275) to an on-site preconstruction meeting.

Also, at least 3 days prior to starting any earth disturbance activities, or expanding into an area previously unmarked, the Pennsylvania One Call System Inc. shall be notified at 1-800-242-1776 for the location of existing underground utilities.
- Install stabilized construction entrance(s). The base course shall be AASHTO #1 installed at a minimum of 20-ft wide and 50-ft long.
- Stake out limits of proposed earth disturbance prior to any earth disturbance activities taking place.
- Install filter sock at topsoil stockpile and other areas as indicated on the attached plan. Filter sock is to be installed along the contour at a level grade.

Upon installation or stabilization of all perimeter sediment control BMPs, and at least 3 days prior to proceeding with the bulk earth disturbance activities, the permittee or co-permittee shall provide notification to the Department or authorized conservation district.
- Clear, grub, and strip areas as necessary to construct improvements. Excess topsoil shall be placed on the "Topsoil/Spill Stockpile" shown hereon. Immediately stabilize topsoil stockpile.
- Rough grade site for installation of the storage unit buildings, paved access drives, parking areas, and stormwater management facility facilities.

Take care to avoid unnecessary compaction of the detention basin bottom. Excavation shall take place from outside the limits of the detention facility. If compaction occurs, the detention basin bottom shall be scarified to loosen the soils prior to placement of the amended soils.
- Construct detention basin/sediment basin and install basin berm, outlet pipe, outlet structure, temporary riser, and cleanout stake.
- Backfill and bring site to necessary grade for storage unit buildings, paved access drives, and parking areas. Place stone base as soon as practicable.
- Install storm sewer and backfill.
- Install inlet protection and pumped water filter bags at concrete inlets as soon as practicable to prevent sediment laden runoff from entering the detention facility.
- Construct storage unit buildings and paved access drives.
- Fine grade any remaining areas as shown on the grading plan. Spread 6-in of topsoil on freshly graded areas. Final passes during fine grading shall be made at right angles to the slopes. Prepare the remainder of the disturbed area for permanent stabilization.
- Install slope matting as indicated on the plan. Seedbed shall be prepared in accordance with accepted practices. Seed mixture shall be applied in accordance with the manufacturers rates and instruction.
- Install trees, shrubs, and landscaping areas.
- Convert sediment basin to final configuration. Remove built up sediment from basin bottom, remove temporary riser, remove temporary seals from basin outlet orifices, install amended soils, fine grade, and install basin bottom seeding.
- Mulch all remaining disturbed areas and seeded areas with hay or straw at a minimum rate of three (3) tons per acre (or mulch as a part of hydroseeding).
- Remove all temporary erosion and sediment controls once the site is completely stabilized (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). All areas disturbed during this process shall be stabilized immediately through seeding and mulching.
- The operator shall remove from the site, recycle or dispose of all building materials and wastes 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. The contractor shall not illegally bury dump or discharge any building material or wastes on or off the site.
- TEMPORARY CONTROL MEASURES**
 - Topsoil Stockpile
 - A stockpile shall be used to contain all stripped topsoil in a limited area in order to keep disturbance to a minimum.
 - Stockpiles shall be stabilized immediately in accordance with the temporary seeding specification contained hereon.
 - Stockpiles shall be located so that all swales can function as designed.
 - Stockpile heights must not exceed 35' in height. Side slopes shall be 2:1 or flatter.
 - Filter Sock
 - Filter sock shall be used to intercept sediment-laden runoff from small watersheds.
 - Filter sock must be installed at level grade.
 - Sediment must be removed when accumulations reach ½ the above ground height of sock.
 - All areas of concentrated flow and at all areas where the filter sock has been undercut due to excessive flows, rock filters shall be installed (see Temporary Control Measures, item 3.)
 - Interim Stabilization
 - Temporary seeding and mulching shall be applied where indicated to provide interim stabilization to exposed areas.
 - Temporary seeding/mulching shall be as applied as specified on the Seeding Schedule contained on the E&SPC Plan.
 - 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 will be re-disturbed within 1 year may be stabilized in accordance with the temporary seeding specification 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.

4. Rock Construction Entrance

- A stabilized pad of crushed stone (AASHTO #1) shall be located where construction traffic will be entering and leaving the site. The rock construction entrance is used to eliminate the tracking of flowing of sediment onto the existing cartway.
- Public street sweeping with a vacuum sweeper and rolling of dirt and gravel roads shall be completed at the end of each work day (or more frequently as needed).
- Inspect area to be swept for materials that may be hazardous prior to beginning sweeping operations.
- Manual cleaning of tires with a broom shall be completed prior to site egress.

H. PERMANENT CONTROL MEASURES

- Permanent Grass or Legume Cover
 - 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&SPC Plan.
 - Permanent grass cover shall be applied as specified in accordance with the Seeding Schedule and Notes contained on the attached E&SPC Plan.
- Mulch
 - Mulch shall be applied to all seeded areas to help establish a permanent grass cover and to prevent erosion on all areas permanently stabilized with seed.
 - Mulch shall be applied at a rate of 3 tons per acre. Mulch shall be anchored with wood cellulose fiber at 750 lbs/acre.
- Sod
 - Sod shall be installed in areas where permanent stabilization with seed alone is difficult.
 - Sod materials and installation shall meet the approval of the Lebanon County Conservation District.
 - All permanent and temporary spillways are to be sodded to provide immediate erosion protection. Sod shall extend from the spillway to the top of the slope of the trap embankment.
- Rip-Rap Outlet Protection
 - Rip-rap shall be used at all pipe outlets to reduce the outflow velocity and minimize erosion potential at the outlet pipe.
 - Rip-rap shall be installed in accordance with the dimensions and materials shown on the attached plan.
- MAINTENANCE
 - The Applicant/or His Designee shall be responsible for maintaining all facilities shown on this plan.
 - Until the site is stabilized, all erosion and sedimentation must be maintained properly. Maintenance must include inspections of all erosion and sedimentation control after each runoff event and on a weekly basis. All preventative and remedial maintenance work, including clean-out, repair, replacement, regrading, reseeded, re-mulching, and re-netting, must be performed immediately.
 - Stockpiles must be stabilized immediately.
 - All sediment removed from sediment trapping devices shall be disposed within the site in a manner that will not cause erosion or sedimentation. All areas disturbed during this process will be mulched and permanently stabilized with seed.
 - 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, sod installed.
 - Filter sock must be installed at level grade. Sediment must be removed when accumulations reach ½ the above ground height of the sock.
 - Any sock section that has been undermined or topped must be immediately replaced with a rock filter outlet. See rock filter outlet detail.
 - Stockpile heights must not exceed 35 feet. Stockpile slopes must be 2:1 or flatter.
 - 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 may be stabilized in accordance with 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.
 - 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.
- FILL MATERIALS

- If the site will need to have fill imported from an off-site location, the responsibility for performing environmental due diligence and the determination of clean fill will in most cases reside with the Operator. If the site will have excess fill that will need to be exported to an off-site location, the responsibility of clean fill determination and environmental due diligence rests on the applicant.
- CLEAN FILL

Uncontaminated, non-water soluble, non-decomposable, inert, solid material. The term includes soil, rock, stone, dredged material, used asphalt, and brick, block, or concrete from construction and demolition activities that is separate from other waste and is recognizable as such. The term does not include materials placed in or on the waters of the Commonwealth unless otherwise authorized.
 - CLEAN FILL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE

Fill materials affected by a spill or release of a regulated substance still qualifies as a clean fill provided the testing reveals that the fill material contains concentrations of regulated substances that are below the residential limits in Tables FP-1a and FP-1b found in the Department's policy "Management of Fill."
 - ENVIRONMENTAL DUE DILIGENCE

Investigative techniques, including, but not limited to, visual property inspections, electronic data base searches, review of property ownership, review of property use history, Sanborn maps, environmental questionnaires, transaction screens, analytical testing, environmental assessments or audits.

- POTENTIAL POLLUTANT CAUSING MATERIALS

The site consists of Bedington, Berks, Brinkerton, Comly, Holly, and Weikert soils which have the potential to erode when disturbed. Standard erosion controls such as rock construction entrances, filter socks, and temporary and final seeding will be utilized to minimize the potential for erosion.
- MINIMIZE THE EXTEND AND DURATION OF EARTH DISTURBANCE

The construction sequence addresses the anticipated sequence of construction and provides provisions for interim stabilization and a periodic stabilization schedule to minimize the duration and extend of disturbance at any one time.
- E&S PLAN MINIMIZES SOIL COMPACTION

The project will compact fill only as needed to provide the necessary structural stability. It is not anticipated there will be any unnecessary compaction by construction equipment since the project is limited in size and construction equipment will generally be concentrated in areas of proposed driveways immediately adjacent to the proposed structures. Topsoil will be placed in accordance with industry standards and will not be overly compacted. The topsoil placement and stabilization will be the last steps of the project with limited potential for unwarranted compaction.
- E&S PLAN UTILIZES OTHER MEASURES OR CONTROLS THAT PREVENT OF MINIMIZE GENERATION OF INCREASED STORMWATER RUNOFF

A stormwater management system is proposed to reduce peak rates of runoff and the volume of runoff. Disturbed areas will be restored to meadow/grass conditions similar to pre-development conditions.
- THERMAL IMPACTS ANALYSIS

No thermal impacts are expected from this project. The runoff is collected and conveyed to the MRC Detention basin via subsurface conveyance facilities which allow the runoff to cool prior entering the basin. Once entering the basin, the runoff will be detained and allowed to cool further prior to discharge. Furthermore, the landscaping and more specifically the basin buffer plantings are proposed to help shade and cool the runoff prior to site discharge.

- ANALYSIS OF DOWNSTREAM CHANNEL

The MRC Detention Basin and undetained areas discharge to the existing low point north of the project site to Tributary 09861 to Swatara Creek. The downstream drainage path was inspected via aerial imagery and LIDAR contours until flow meets Tributary 09861 to Swatara Creek. The drainage path generally traverses wetlands and floodplain north of the project site and there did not appear to be any visible erosion along the drainage path as it appeared to have a relatively shallow slope.

- No adverse impacts are expected as part of this development. The proposed stormwater management system proposes to reduce the peak flow rates and 2-year runoff volume to less than pre-development conditions. Therefore, the conveyance capacity of the downstream drainage path will be improved. The current drainage path is stable and will continue to be so in post-development conditions.
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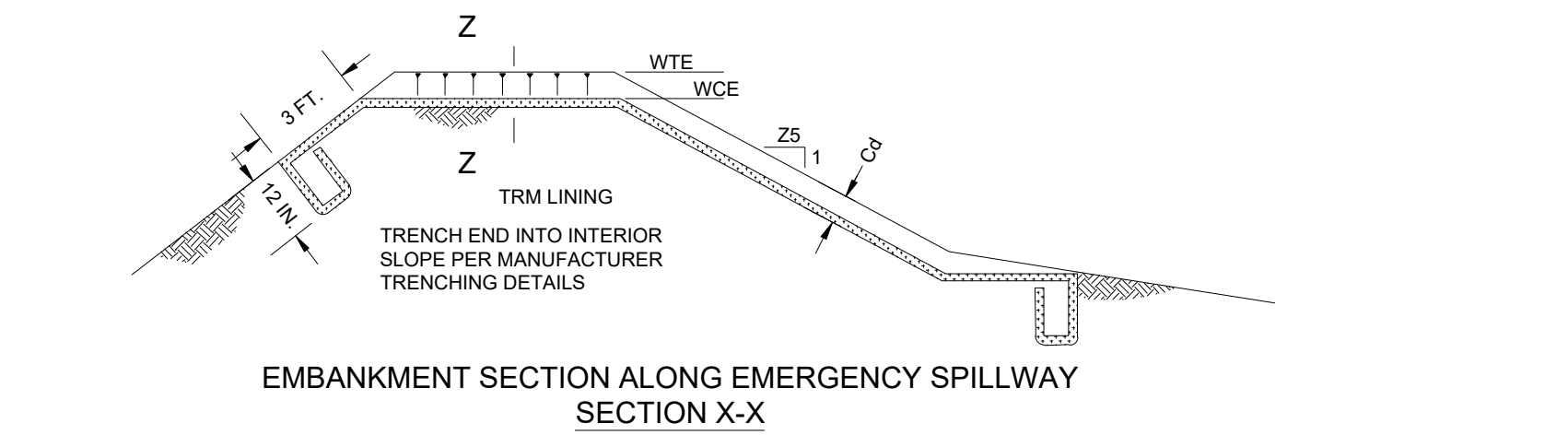
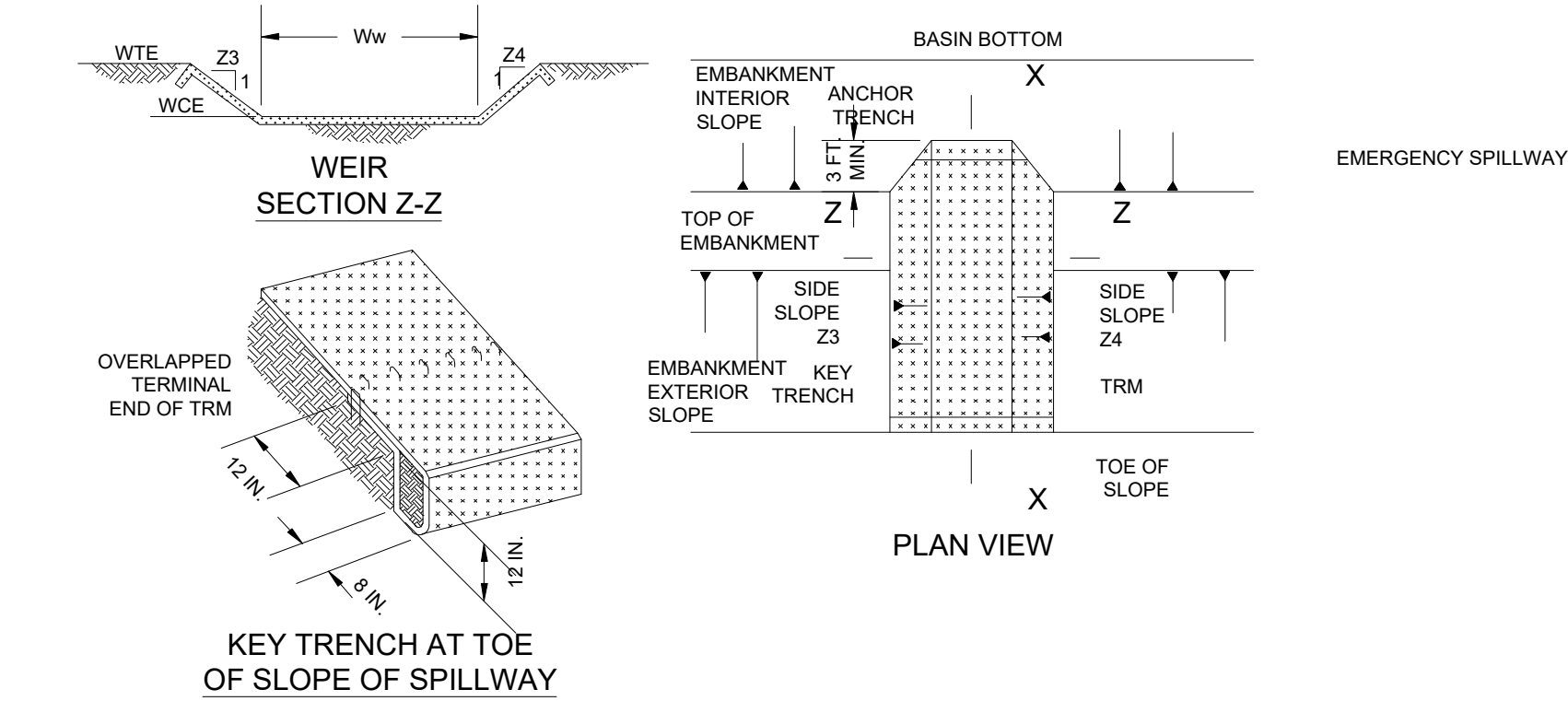
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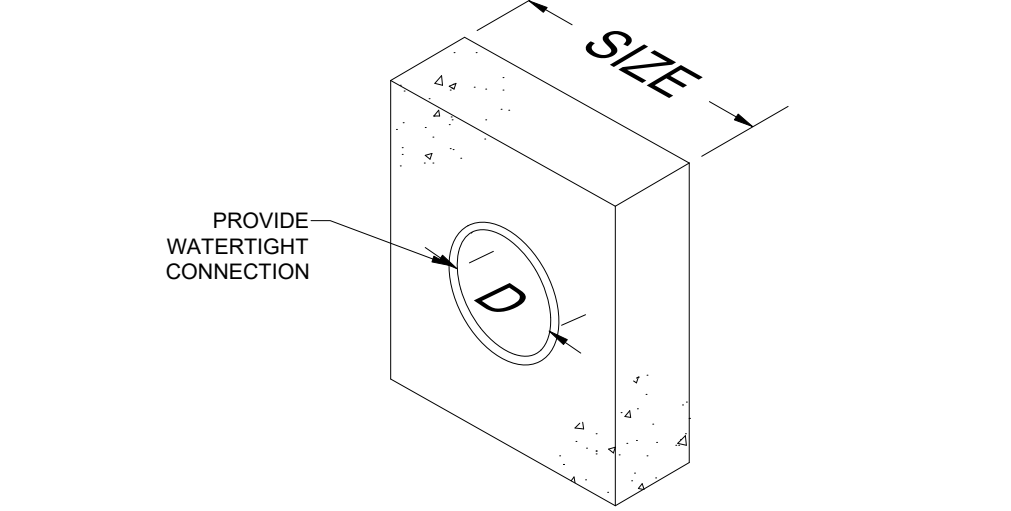


BASIN NO.	Q100 (CFS)	Z3 (FT)	Z4 (FT)	Z5 (FT)	C	WIDTH Ww (FT)	FLOW HEIGHT (FT)	CREST ELEV WCE	TOP ELEV WTE	TRM TYPE	STAPLE PATTERN	FREEBOARD
MRC 1	35.89	3	3	3	3	72	0.90	516.5	517.80	C350	E	1.00

NOTES:
HEAVY EQUIPMENT SHALL NOT CROSS OVER SPILLWAY WITHOUT PRECAUTIONS TAKEN TO PROTECT TRM LINING.
DISPLACED LINER WITHIN THE SPILLWAY AND/OR OUTLET CHANNEL SHALL BE REPLACED IMMEDIATELY.

EMERGENCY SPILLWAY WITH TRM LINING

NOT TO SCALE

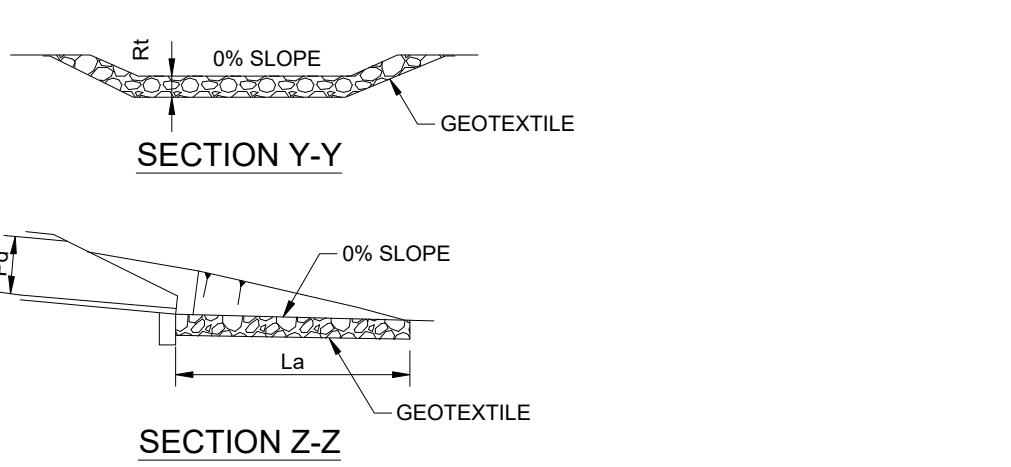
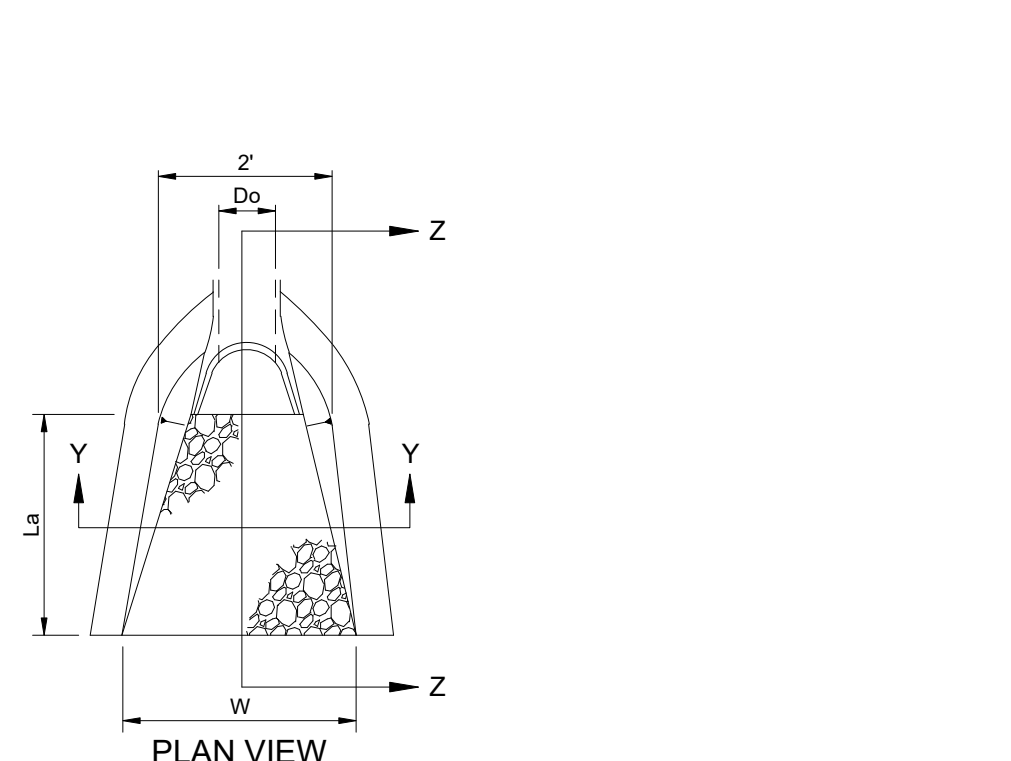


Basin	y (ft)	z (ft)	S (ft/ft)	La (ft)	Lf (ft)	Increase (ft)	Collar Projection (ft)	# of Collars	D (ft)	Size (ft)
1	3.00	3.00	0.033	24.23	27.86	3.63	0.91	2	1.25	3.07

NOTES:
ALL COLLARS SHALL BE INSTALLED SO AS TO BE WATERTIGHT.
COLLAR SIZE AND SPACING SHALL BE AS INDICATED WITHIN TABLE.

STANDARD CONSTRUCTION DETAIL #7-16 CONCRETE ANTI-SEEP COLLAR FOR PERMANENT BASINS OR TRAPS

NOT TO SCALE



OUTLET NO.	PIPE DIA., Do (in)	La (ft)	W (ft)	RIPRAP (R-?)	DEPTH (ft)
EW-1	18	6	7	4	1.5
EW-5	24	12	11	5	2.25

NOTES:
ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.
ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.

RIPRAP APRON AT PIPE OUTLET WITH FLARED END SECTION OR ENDWALL

NOT TO SCALE

PRELIMINARY/FINAL
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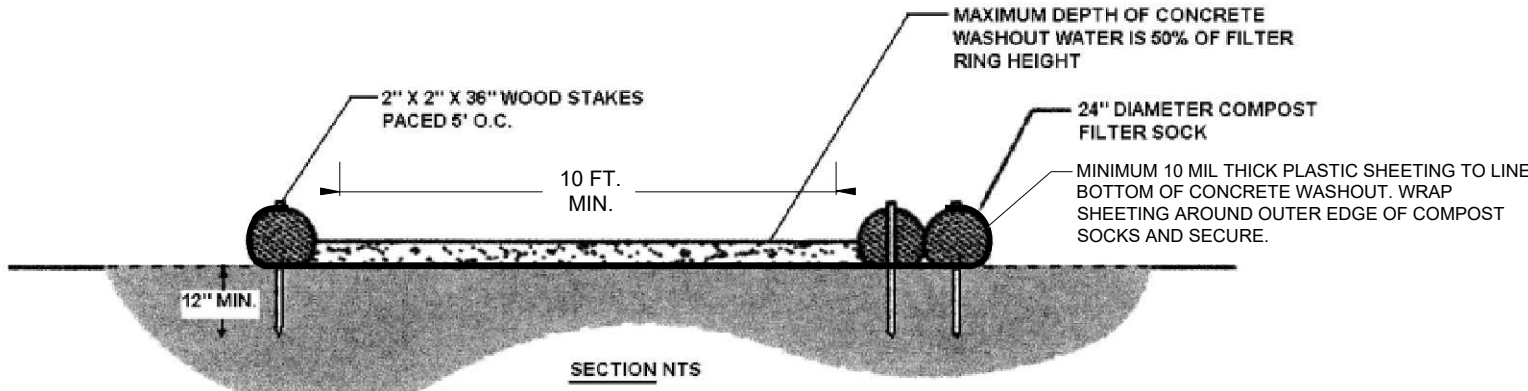


Ernst & Young
Details
ES2
OF 19

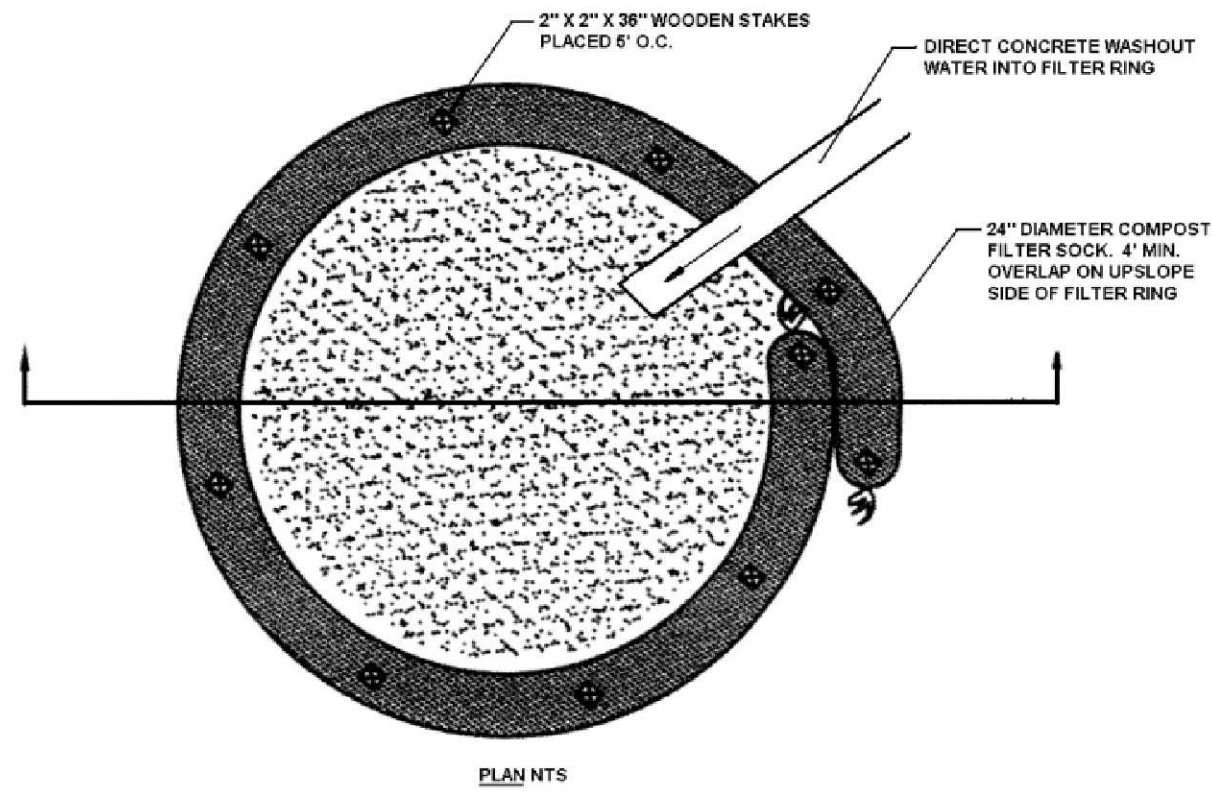
REVISION
PER ZONING ORDINANCE SECTION 37-402.20,
PER SESI LTR DATED 9-24-24.

DATE
8-21-24
10-22-24

BY
GLZ
GLZ



NOTES:
1. INSTALL ON FLAT GRADE FOR OPTIMUM PERFORMANCE
2. 18" DIAMETER FILTER SOCK MAY BE STACKED ONTO DOUBLE 24" DIAMETER SOCKS IN PYRAMIDAL CONFIGURATION FOR ADDED HEIGHT.

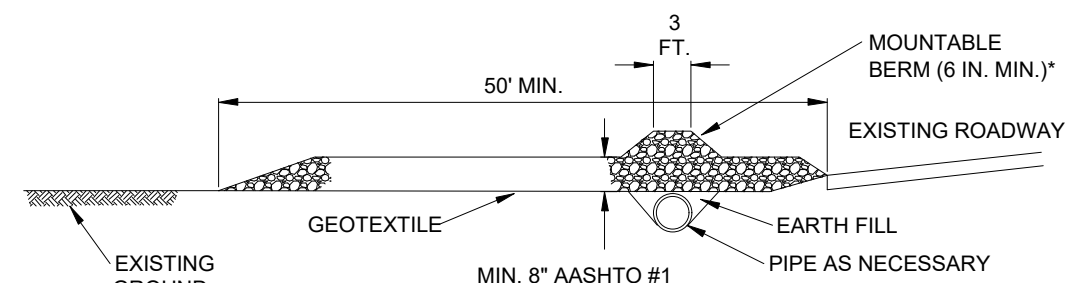


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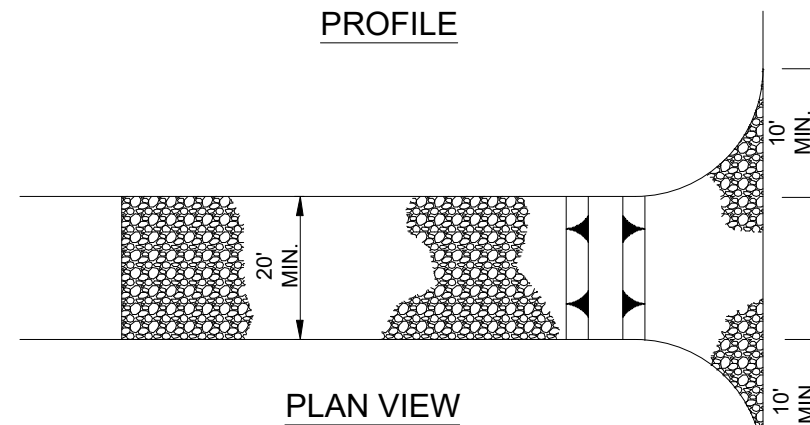
1. A SUITABLE IMPERVIOUS GEOMEMBRANE SHALL BE PLACED AT THE LOCATION OF THE WASHOUT PRIOR TO INSTALLING THE SOCKS.
2. PROVIDE 10' MINIMUM INSIDE DIAMETER.
3. PROVIDE AT LEAST ONE WASHOUT PER GROUPING OF TOWNHOUSES AND EACH APARTMENT BUILDING.

TYPICAL COMPOST SOCK WASHOUT INSTALLATION

NOT TO SCALE



PROFILE



PLAN VIEW

* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

NOTES:

REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

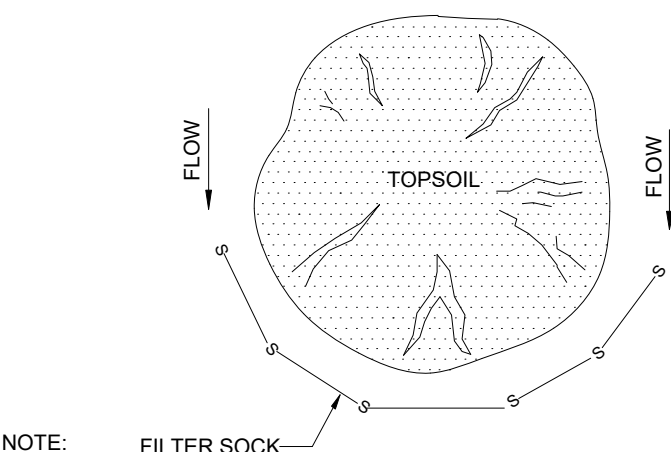
MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

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 THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

PUBLIC STREET SWEEPING WITH A VACUUM SWEEPER AND ROLLING OF DIRT AND GRAVEL ROADS TO BE COMPLETED AT THE END OF EACH WORK DAY (OR MORE FREQUENTLY AS NEEDED). TIRES SHALL BE MANUALLY CLEANED PRIOR TO SITE EGRESS.

STANDARD CONSTRUCTION DETAIL #3-1 ROCK CONSTRUCTION ENTRANCE

NOT TO SCALE

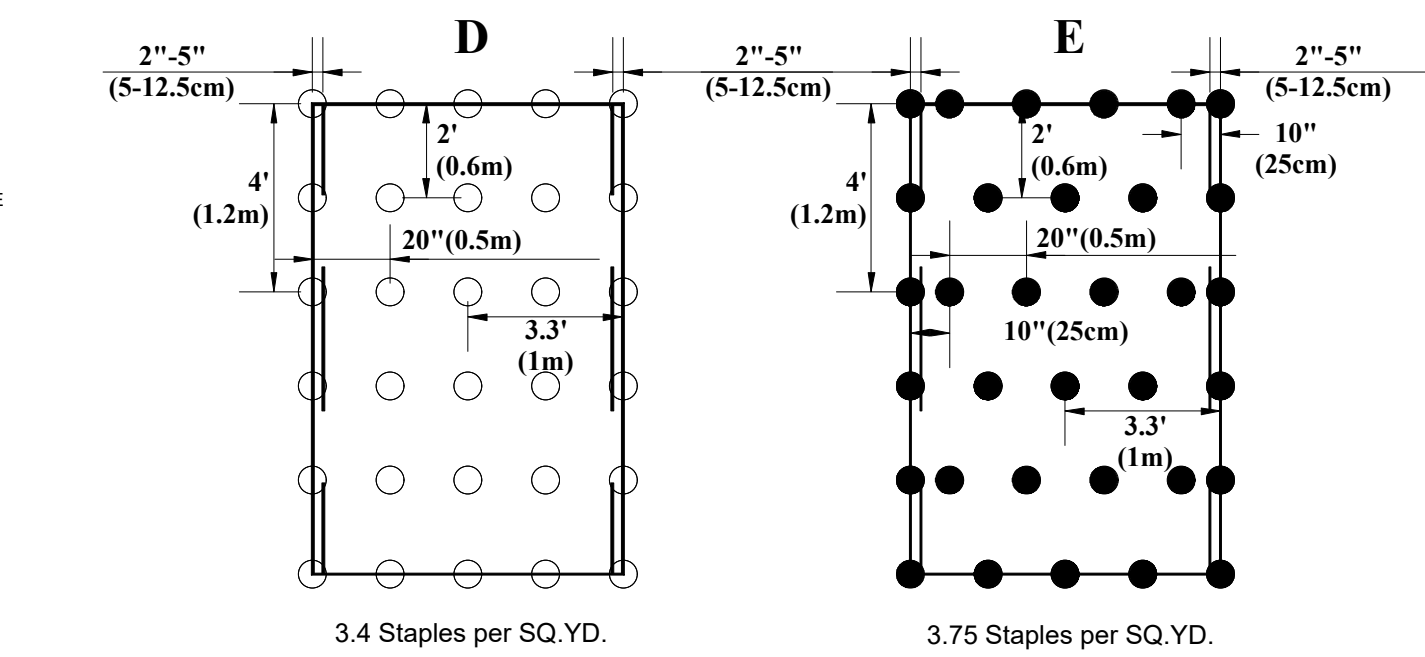


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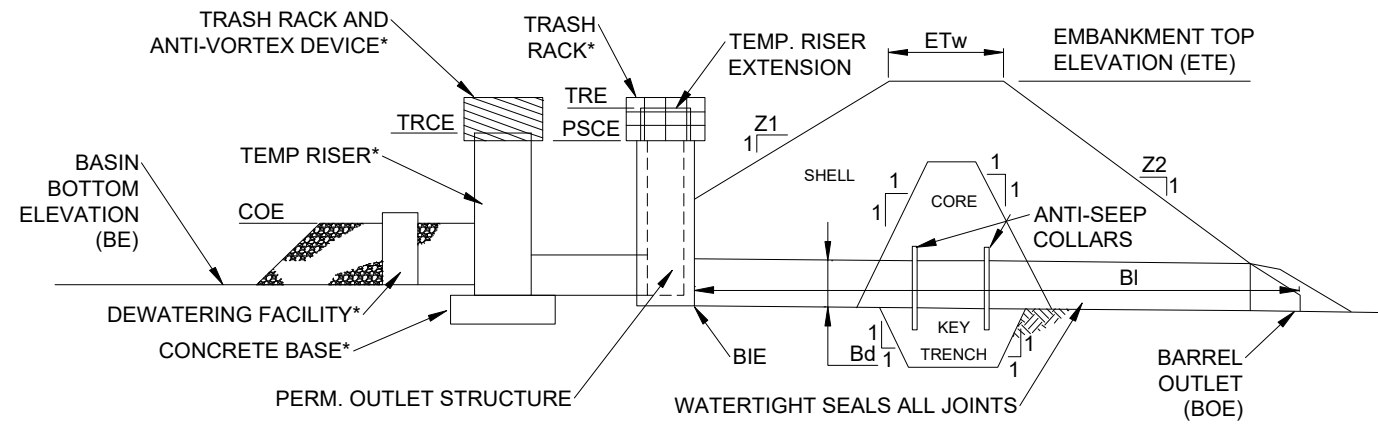
- 1) A STOCKPILE SHALL BE USED TO CONTAIN ALL STRIPPED TOPSOIL IN A LIMITED AREA IN ORDER TO KEEP DISTURBANCE TO A MINIMUM.
- 2) STOCKPILES ARE TO BE STABILIZED IMMEDIATELY.
- 3) STOCKPILE HEIGHTS MUST NOT EXCEED 35 FEET.
- 4) STOCKPILE SLOPES MUST BE 2:1 OR FLATTER.
- 5) STOCKPILES SHALL BE LOCATED SO THAT ALL SWALES CAN FUNCTION AS DESIGNED.

TOPSOIL STOCKPILE

NO SCALE



STAPLE PATTERN FOR TRM LINING



* ALSO REFER TO SEDIMENT BASIN TEMPORARY RISER, EMERGENCY SPILLWAY, ENERGY DISSIPATER, TRASH RACK AND ANTI-VORTEX DEVICE, AND SEDIMENT STORAGE DEWATERING FACILITY DETAILS.

EMBANKMENT SECTION ALONG PRINCIPAL SPILLWAY

BASIN NO.	Z1 (FT)	Z2 (FT)	TEMPORARY RISER				BARREL			
			DIA TRd (IN)	CREST ELEV TRCE (FT)	MATL	TEMP RISER EXT. ELEV TRE (FT)	DIA Bd (IN)	INLET ELEV BIE (FT)	MATL	OUTLET ELEV BOE (FT)
1	3	3	24	515.00	CMP	515.50	18	513.00	SLCPP	510.65

EMBANKMENT				CLEANOUT ELEV COE (FT)	BOTTOM ELEV BE (FT)
TOP ELEV ETE (FT)	TOP WIDTH ETW (FT)	KEY TRENCH DEPTH (FT)	KEY TRENCH WIDTH (FT)		
517.00	5	2	3.5	514.25	512.00

NOTES:

SEDIMENT BASINS, INCLUDING ALL APPURTENANT WORKS, SHALL BE CONSTRUCTED TO THE DETAIL AND DIMENSIONS SHOWN ON THE E&S PLAN DRAWINGS.

AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO A DEPTH OF TWO FEET PRIOR TO ANY PLACEMENT AND COMPACTION OF EARTHEN FILL. FILL MATERIAL FOR THE EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE COMPACTED IN LAYERED LIFTS OF NOT MORE THAN 6 TO 9 IN. THE MAXIMUM ROCK SIZE SHALL BE NO GREATER THAN 2/3 THE LIFT THICKNESS. UPON COMPLETION, THE EMBANKMENT SHALL BE SEEDED AND MULCHED OR OTHERWISE STABILIZED ACCORDING TO THE SPECIFICATIONS OF THE E&S PLAN DRAWINGS. TREES SHALL NOT BE PLANTED ON THE EMBANKMENT.

ALL SEDIMENT BASINS SHALL BE INSPECTED ON AT LEAST A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT.

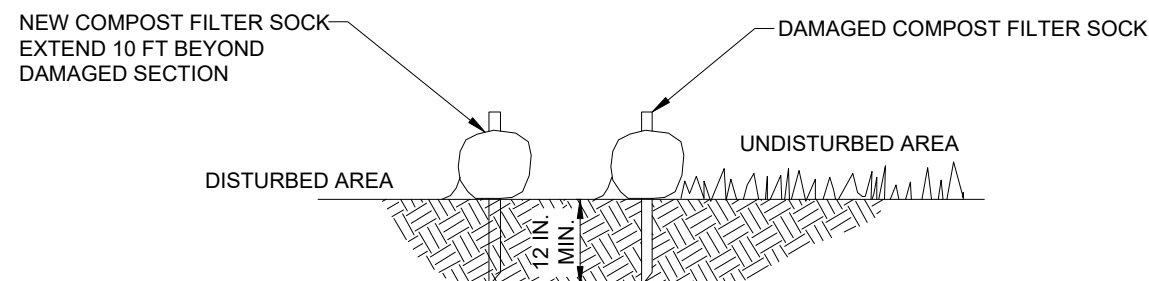
ACCESS FOR SEDIMENT REMOVAL AND OTHER REQUIRED MAINTENANCE ACTIVITIES SHALL BE PROVIDED.

A CLEAN OUT STAKE SHALL BE PLACED NEAR THE CENTER OF EACH BASIN. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED THE CLEAN OUT ELEVATION OF THE STAKE AND THE BASIN RESTORED TO ITS ORIGINAL DIMENSIONS. DISPOSE OF MATERIALS REMOVED FROM THE BASIN IN THE MANNER DESCRIBED IN THE E&S PLAN.

BASIN EMBANKMENTS, SPILLWAYS, AND OUTLETS SHALL BE CHECKED FOR EROSION, PIPING AND SETTLEMENT. NECESSARY REPAIRS SHALL BE MADE IMMEDIATELY. DISPLACED RIPRAP WITHIN THE OUTLET ENERGY DISSIPATER SHALL BE REPLACED IMMEDIATELY. ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISTURBED AREAS INSIDE THE BASIN STABILIZED BEFORE CONVERSION TO A STORMWATER MANAGEMENT FACILITY. THE DEVICE SHOWN IN STANDARD CONSTRUCTION DETAIL #7-18 MAY BE USED TO DEWATER SATURATED SEDIMENT PRIOR TO ITS REMOVAL. ROCK FILTERS SHALL BE ADDED AS NECESSARY.

STANDARD CONSTRUCTION DETAIL #7-8 SEDIMENT BASIN DETENTION POND EMBANKMENT AND SPILLWAY DETAILS

NOT TO SCALE

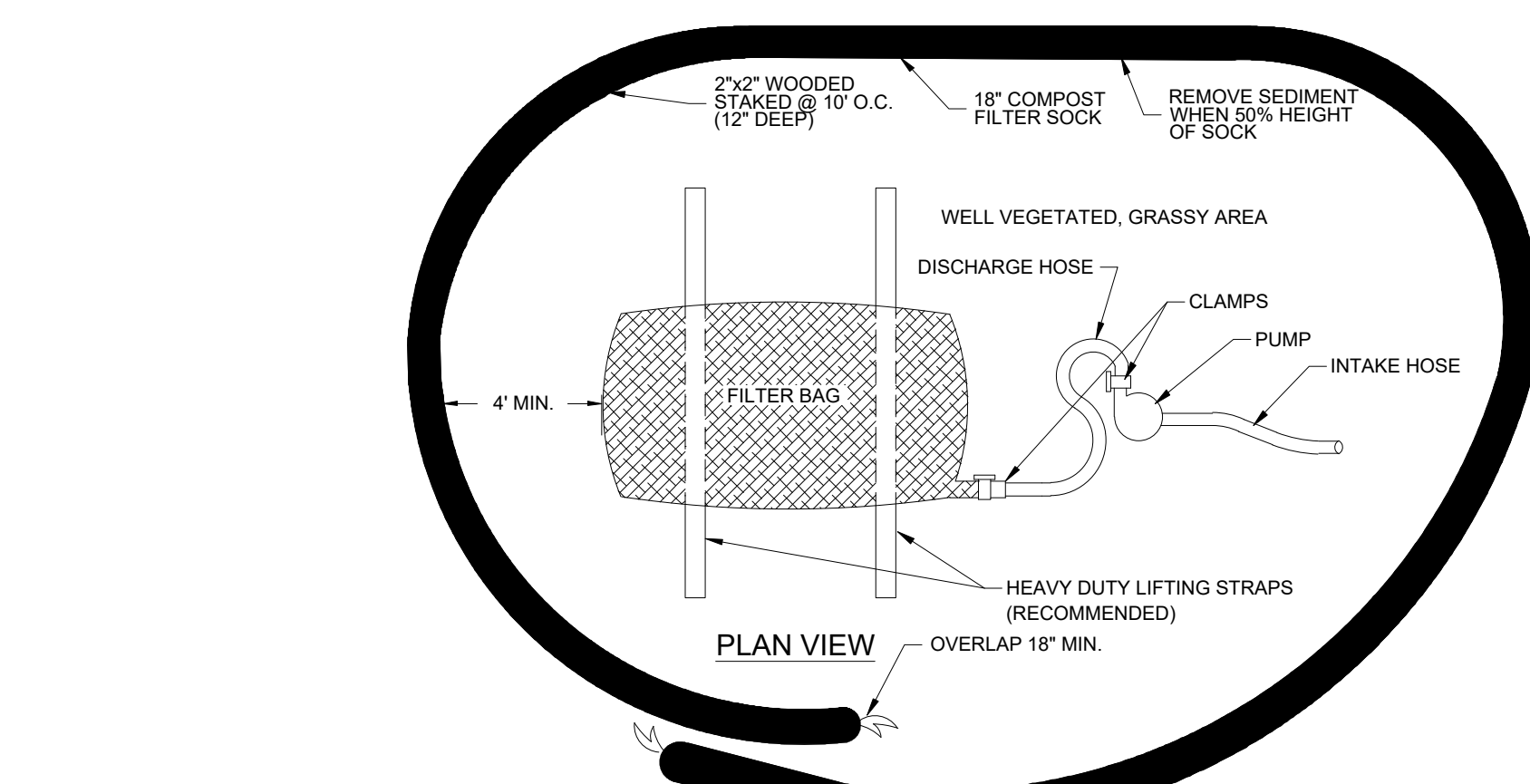


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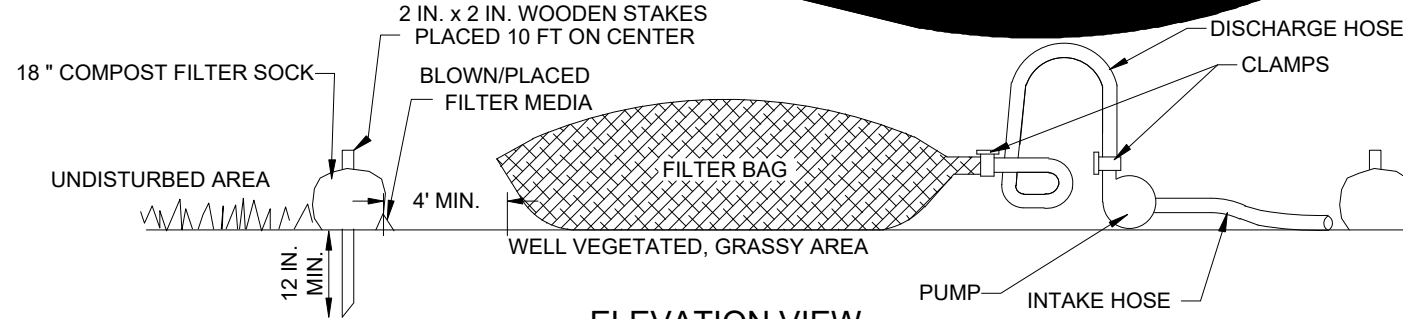
COMPOST FILTER SOCK OF EQUAL OR GREATER DIAMETER SHALL BE INSTALLED WHERE FAILURE OF A COMPOST FILTER SOCK HAS OCCURRED DUE TO CONCENTRATED FLOW. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE ABOVE GROUND HEIGHT.

ADDITIONAL FILTER SOCK AT DAMAGED FILTER SOCK

NOT TO SCALE



ELEVATION VIEW



NOTES:

LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D-4884	60 LB/IN
GRAB TENSILE	ASTM D-4632	205 LB
PUNCTURE	ASTM D-4833	110 LB
MULLEN BURST	ASTM D-3786	350 PSI
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-4751	80 SIEVE

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5% FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

A FILTER SOCK RING OF NO LESS THAN 18" IN DIAMETER SHALL BE INSTALLED AT LEAST 4 FT. FROM THE PUMPED WATER FILTER BAG.

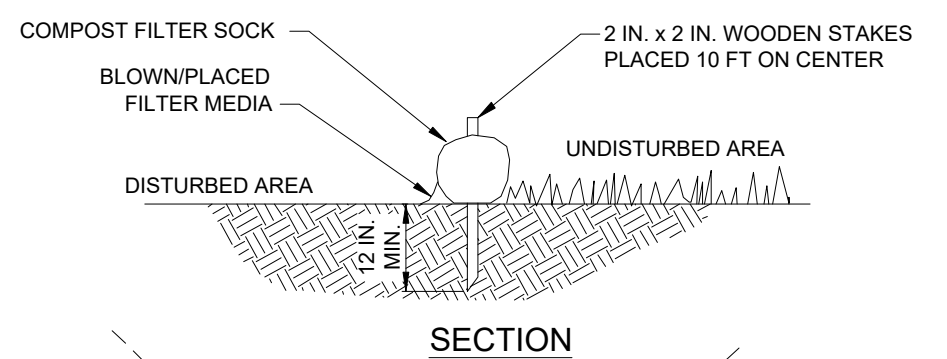
THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

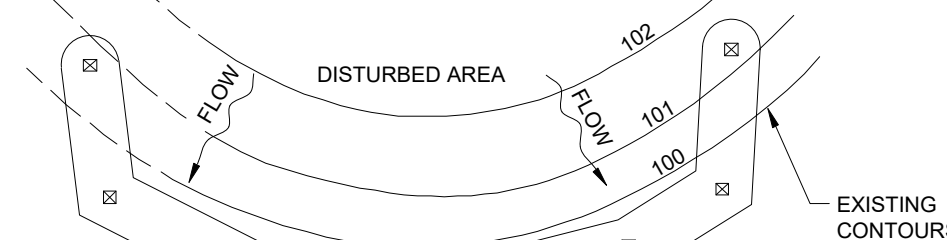
FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

STANDARD CONSTRUCTION DETAIL #3-16 PUMPED WATER FILTER BAG

NOT TO SCALE



SECTION



PLAN VIEW

NOTES:

SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.

COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.

TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.

ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

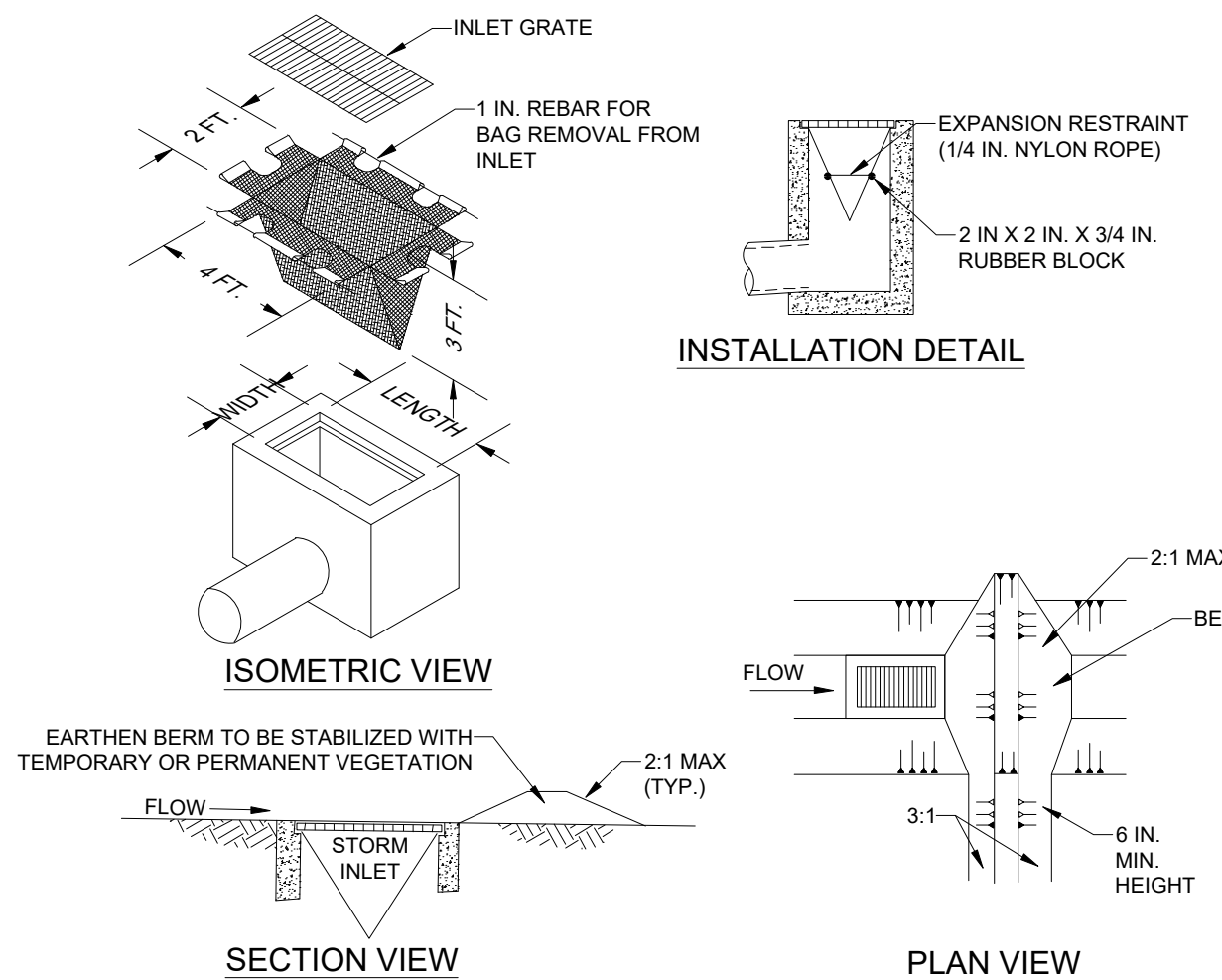
COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.

BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

STANDARD CONSTRUCTION DETAIL #4-1 COMPOST FILTER SOCK

NOT TO SCALE



SECTION VIEW

PLAN VIEW

NOTES:

MAXIMUM DRAINAGE AREA = 1/2 ACRE.

INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.

ROLLED EARTHEN BERM IN ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM ON ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. EARTHEN BERM IN CHANNEL SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED OR REMAIN PERMANENTLY.

AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS. A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.

INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.

DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

STANDARD CONSTRUCTION DETAIL #4-16 FILTER BAG INLET PROTECTION - TYPE M INLET

NOT TO SCALE

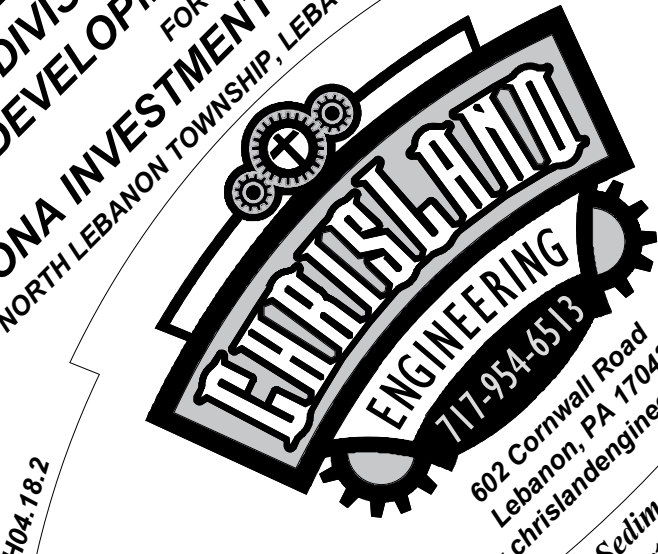
		1 (P.L.S. IN LBS/AC)	(LBS/AC)	2 (TONS/AC)	
TEMPORARY	ANNUAL RYE	174	50-50-50 N-P-K	1 AG GRADE	OCTOBER 30
PERMANENT	FINE FESCUES	60	100-200-200 N-P-K	6 AG GRADE	AUGUST 30 OCTOBER 30
	KENTUCKY BLUEGRASS	90	100-200-200 N-P-K	6 AG GRADE	AUGUST 30 OCTOBER 30
	PERENNIAL RYEGRASS	25	100-200-200 N-P-K	6 AG GRADE	AUGUST 30 OCTOBER 30
ATHLETIC FIELDS	KENTUCKY BLUEGRASS	150	100-200-200 N-P-K	6 AG GRADE	AUGUST 30 OCTOBER 30
	PERENNIAL RYEGRASS	25	100-200-200 N-P-K	6 AG GRADE	AUGUST 30 OCTOBER 30
DETENTION BASIN	F.M. BROWN CONSERVE LOW MAINTENANCE BASIN	20	100-200-200 N-P-K	6 AG GRADE	AUGUST 30 OCTOBER 30
STEEP SLOPES					
NURSE CROP	ANNUAL RYE	64	50-50-50 N-P-K	1 TON/AC AG GRADE	OCT. 15
PERMANENT	BIRDSFOOT TREFOIL PLUS	10	100-200-200 N-P-K	1 TON/AC AG GRADE	MARCH 15 OCT. 15
	PLUS TALL FESCUE	30	100-200-200 N-P-K	1 TON/AC AG GRADE	MARCH 15 OCT. 15

1. PLS IS PURE LIVE SEED. PLS IS THE PRODUCT OF THE PERCENTAGE OF PURE SEED TIMES PERCENTAGE GERMINATION DIVIDED BY 100. TO SECURE THE ACTUAL PLANTING RATE, DIVIDE THE POUNDS PLS BY THE PLS PERCENTAGE SHOWN ON THE SEED TAG OR AS PREVIOUSLY DISCUSSED. THUS, IF THE PLS CONTENT OF FINE FESCUES IS 90%, DIVIDE 7 PLS BY 0.90 TO OBTAIN 140 POUNDS OF SEED PER ACRE.
2. LIMING RATE SHALL BE IN ACCORDANCE WITH SOIL TEST RESULTS. APPLY 6 TONS OF AGRICULTURAL GRADE LIMESTONE/AC OF LAND DISTURBED BY DIVERSIONS AND DAMS.
3. ALL SEEDED AREAS SHALL BE MULCHED WITH STRAW APPLIED AT A RATE OF 3 TONS/ACRE. MULCH TO BE ANCHORED WITH WOOD CELLULOSE FIBER @ 750 LBS/AC.
4. ALL DIVERSIONS, CHANNELS, SED TRAPS AND STOCKPILES MUST BE STABILIZED IMMEDIATELY.

SEEDING AND FERTILIZER SPECIFICATIONS

NOT TO SCALE

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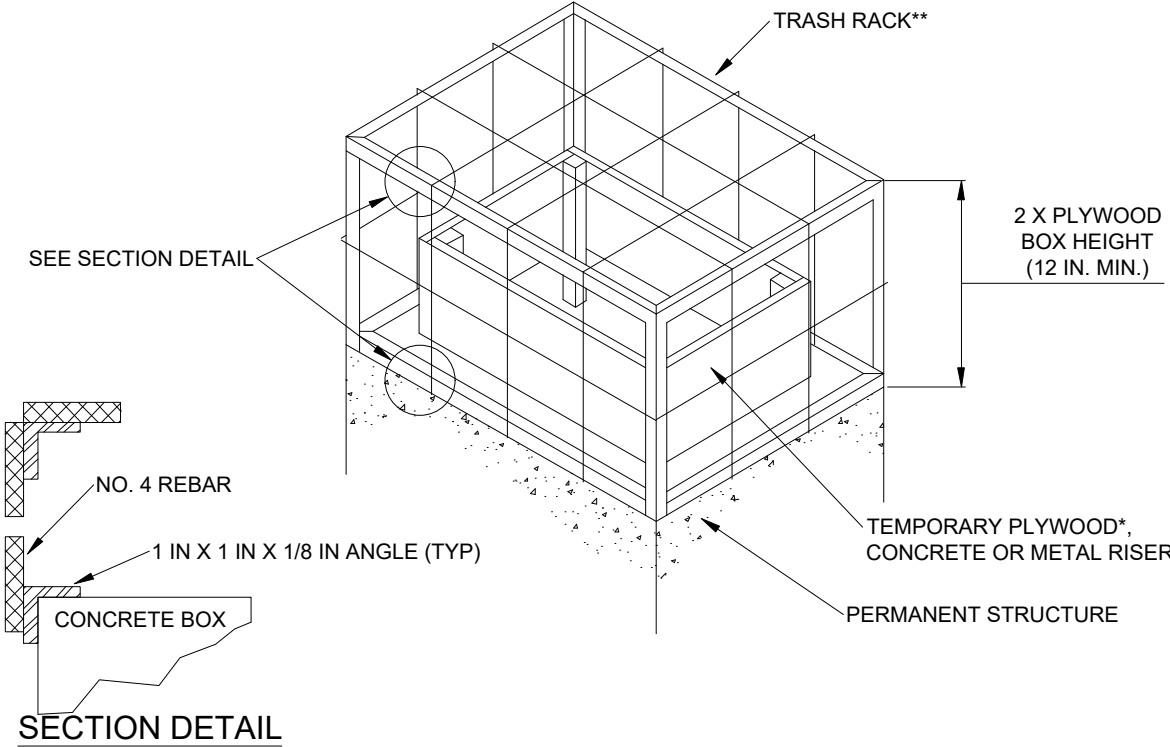
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Ernst & Soliman Pollution
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8-21-24
10-22-24

REVISION
PER ZONING ORDINANCE SECTION 7-402.20
PER SESI LTR DATED 9-24-24.



NOT TO SCALE

NOTES

BOX SHALL BE BOLTED, STRAPPED, OR OTHERWISE SECURED TO THE PERMANENT RISER

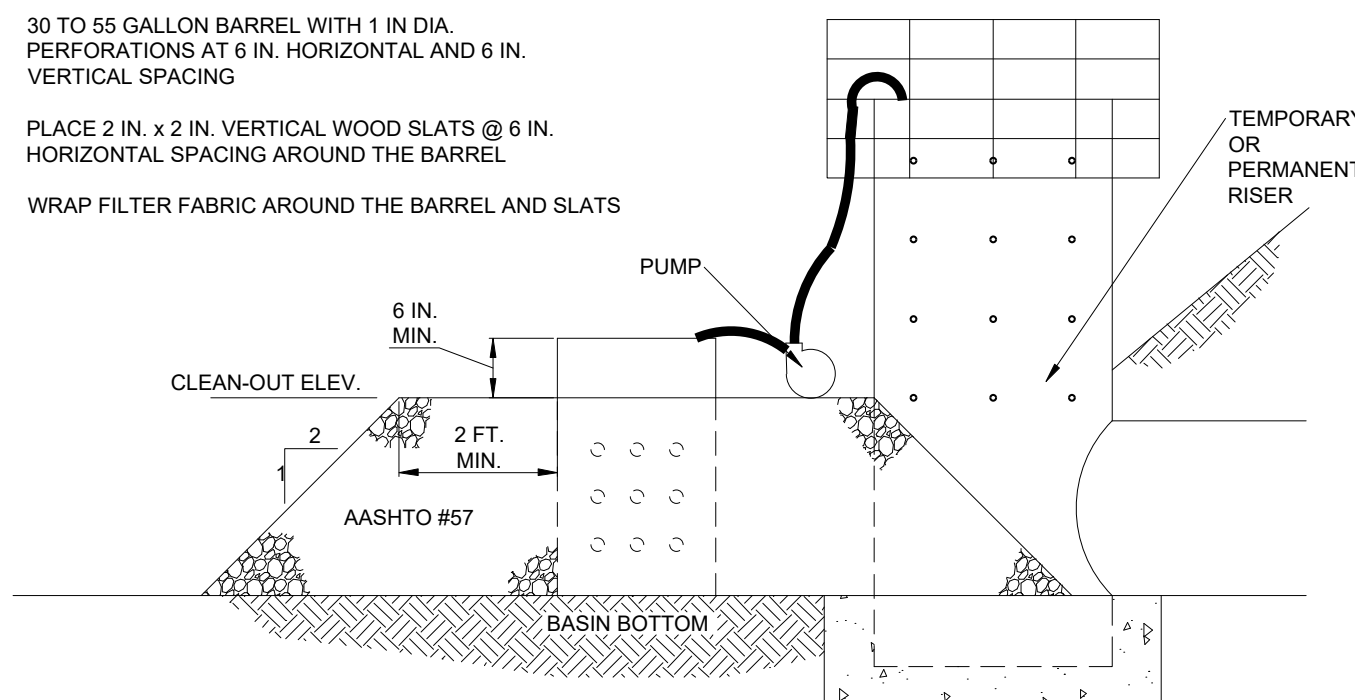
TOP OF TEMPORARY RISER EXTENSION SHALL BE AT LEAST AS HIGH AS SEDIMENT BASIN TEMPORARY RISER AND SHALL BE 6 IN. (MINIMUM) BELOW CREST OF EMERGENCY SPILLWAY.

ALL JOINTS SHALL BE WATER TIGHT

CLOGGED OR DAMAGED SPILLWAYS SHALL BE REPAIRED IMMEDIATELY. TRASH AND OTHER DEBRIS SHALL BE REMOVED FROM THE BASIN AND RISER.

TEMPORARY RISER EXTENSION AND

TRASH RACK FOR PERMANENT STRUCTURE



*SEE STANDARD CONSTRUCTION DETAIL #7-5, TRASH RACK AND ANTI-VORTEX DEVICE AND STANDARD CONSTRUCTION. TOP OF TEMPORARY RISER EXTENSION (TRE) SHALL BE EQUAL TO OR ABOVE TEMPORARY RISER CREST ELEVATION (TRCE) AND 6 IN. MIN. BELOW CREST OF EMERGENCY SPILLWAY. REMOVE FLAT GRATE FROM PERMANENT RISER FOR AS LONG AS BASIN FUNCTIONS AS A SEDIMENT REMOVAL BMP.

** LOWEST ROW OF HOLES AT SEDIMENT CLEAN-OUT ELEVATION

	TEMPORARY RISER			PERFORATIONS			CONCRETE BASE		
BASIN NO.	DIA TRD (IN)	CREST ELEV TRCE (FT)	MAT'L	LOWEST ROW OF HOLES ELEV (FT)	NO. ROWS**	NO. HOLES PER ROW	VERT. SPACING OF ROWS (FT)	LENGTH AND WIDTH CBI (IN)	THICKNESS CBI (IN)
1	24	516.04	CMP	515.00	2	4	0.25	30	18

BASIN NO.	TEMPORARY STUB				PERMANENT STRUCTURE			BARREL INLET ELEV BIE (FT)
	DIA SBD (IN)	INVERT ELEV SBIE (FT)	MAT'L	LENGTH SBI (FT)	CREST ELEV PSCE (FT)	CREST ELEV TRE (FT)	OUTLET ELEV PSOE (FT)	
1	24	512.00	CMP	5	516.04	516.04	512.00	512.00

SEDIMENT BASIN OR SEDIMENT TRAP

SEDIMENT STORAGE DEWATERING FACILITY

NOT TO SCALE

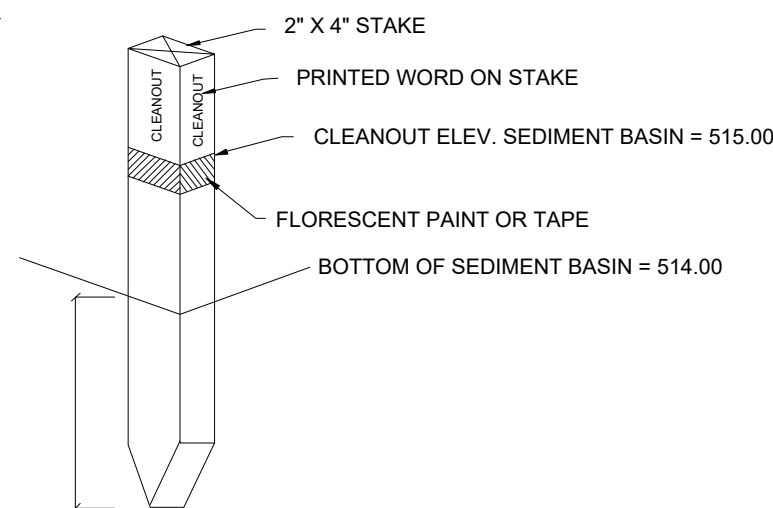
NOTES

DEWATERING FACILITY SHALL BE INSTALLED IMMEDIATELY UPON COMPLETION OF BASIN/TRAP

PRIOR TO INITIATING OPERATION OF DEWATERING FACILITY, ALL ACCUMULATED SEDIMENT SHALL BE CLEANED FROM THE INSIDE OF THE BARREL.

DEWATERING FACILITY SHALL BE CONTINUOUSLY MONITORED DURING OPERATION. IF FOR ANY REASON THE DEWATERING FACILITY CEASES TO FUNCTION PROPERLY, IT SHALL BE IMMEDIATELY SHUT DOWN AND NOT RESTARTED UNTIL THE PROBLEM HAS BEEN CORRECTED.

NOT TO SCALE



NOT TO SCALE

NOTES

CLEANOUT STAKES MUST BE PLACED AT A HALF DISTANCE FROM CONCENTRATED INFLOWS TO TEMPORARY RISERS. WHEN SEDIMENT HAS ACCUMULATED TO CLEANOUT ELEVATION ON ANY STAKE, IT MUST BE REMOVED TO RESTORE BASIN CAPACITY.

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BY GLZ GLZ

DATE
8-21-24
~~10-22-24~~

REVISION
PER ZONING ORDINANCE SECTION 27-802.20.
PER SESI LTR DATED 9-24-24.

PRELIMINARY/FINAL
SUBDIVISION AND LAND
DEVELOPMENT PLAN
FOR
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NORTH LEBANON TOWNSHIP, LEBANON COUNTY, PA

JULY 31, 2024

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