PRELIMINARY AND FINAL LAND DEVELOPMENT AND MINOR SUBDIVISION PLANS

FOR

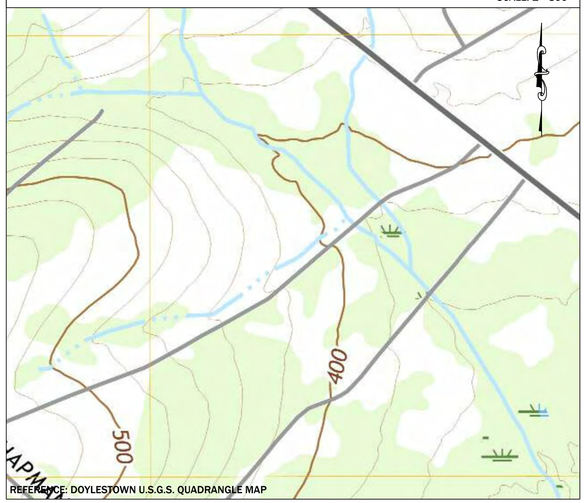
140 UPPER CHURCH ROAD

TMP # 26-003-104

NEW BRITAIN TOWNSHIP, BUCKS COUNTY, PA

SITE LOCATION MAP

SCALE: 1"=800'

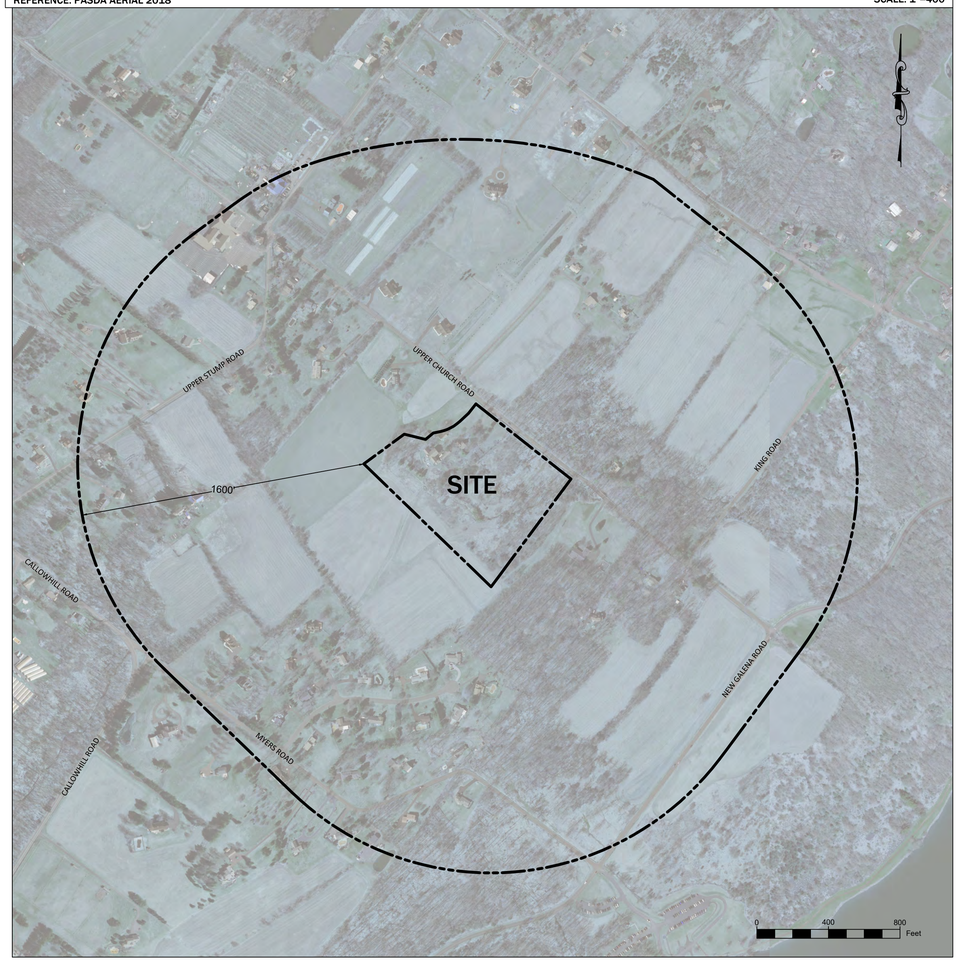


REFERENCE: DOYLESTOWN U.S.G.S. QUADRANGLE MAP

AERIAL MAP

REFERENCE: PASDA AERIAL 2018

SCALE: 1"=400'



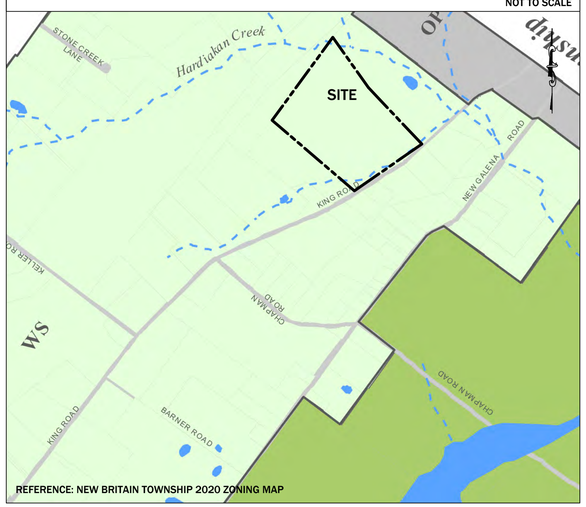
FEMA MAP

NOT TO SCALE

REFERENCE: FEMA MAP 42017C0280J

ZONING MAP

NOT TO SCALE



REFERENCE: NEW BRITAIN TOWNSHIP 2020 ZONING MAP

DRAWING LIST

SHEET NUMBER	DRAWING NUMBER	DRAWING TITLE	LAST REVISED DATE
1	C0.0	COVER SHEET	6/16/2023
2	C0.1	EXISTING CONDITIONS AND SITE ANALYSIS PLAN	6/16/2023
3*	C0.2	SUBDIVISION PLAN	6/16/2023
4	C1.0	POST CONSTRUCTION STORMWATER MANAGEMENT PLAN	6/16/2023
5	C1.1	CONSTRUCTION DETAILS	6/16/2023
6	C1.2	POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS	6/16/2023
7	C2.0	EROSION AND SEDIMENT CONTROL PLAN	6/16/2023
8	C2.1	EROSION AND SEDIMENT CONTROL DETAILS	6/16/2023
9	C2.2	EROSION AND SEDIMENT CONTROL DETAILS	6/16/2023

* DENOTES PLAN TO BE RECORDED

CONTACTS

TOWNSHIP
NEW BRITAIN TOWNSHIP
207 PARK AVENUE
CHALFONT, Pa 18914
PHONE: (215)-822-1391

TOWNSHIP ENGINEER
GILMORE & ASSOCIATES, Inc
65 EAST BUTLER AVENUE, SUITE 100
NEW BRITAIN, PA 18901
PHONE: 215 345 4330

TOWNSHIP PUBLIC WORKS DEPARTMENT
207 PARK AVENUE
CHALFONT, PA 18914
PHONE: (215)-822-1391

COUNTY PLANNING COMMISSION
BUCKS COUNTY PLANNING COMMISSION
THE ALMSHOUSE NESHAMINY MANOR CENTER
1260 ALMSHOUSE ROAD
DOYLESTOWN, PA 18901
PHONE: 215-345-3400

ELECTRIC AND GAS
PHILDELPHIA ELECTRIC COMPANY
BUCKS/MONT REGION CONTRACTOR AND BUILDER SERVICES
400 PARK AVENUE
WARMINSTER, PA 18974
PHONE: (215) 956-3270
FAX: (215) 956-3240

PECO
WARMINSTER SERVICE BUILDING
400 PARK AVE.,
WARMINSTER, PA 18974
ELECTRIC PHONE: (215) 956-3270
NEW ELECTRIC PHONE: (215) 956-3010
ELECTRIC EMERGENCY: (800) 841-4141
GAS PHONE: (800) 454-4100
NEW GAS PHONE: (800) 454-4100
GAS EMERGENCY: (800) 841-4141
GAS EMERGENCY(ALT): (844) 841-4151

COUNTY CONSERVATION DISTRICT
BUCKS COUNTY CONSERVATION DISTRICT
1456 FERRY ROAD, SUITE 704
DOYLESTOWN, PA 18901
PHONE: 215-345-7577

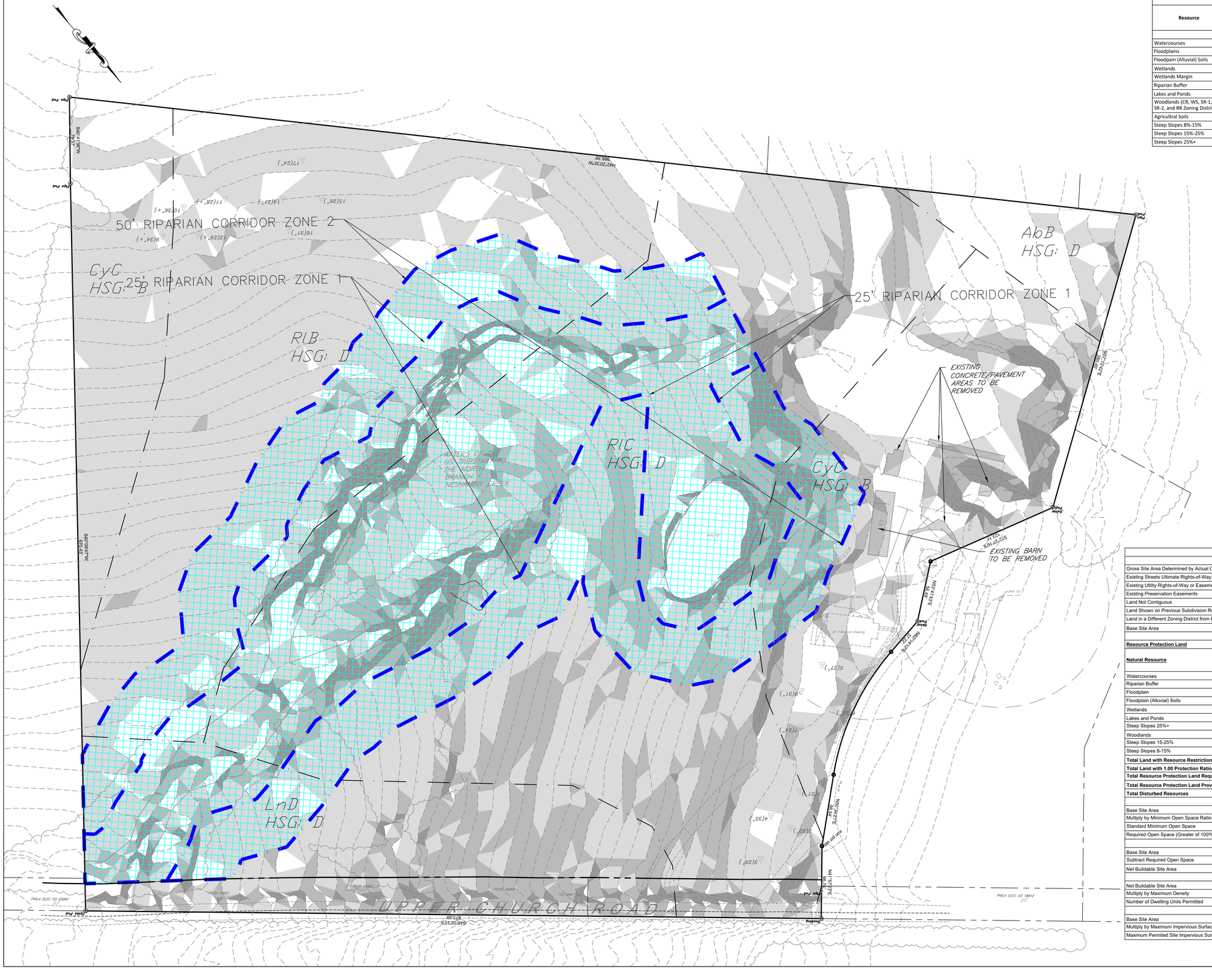
PREPARED BY:

HOLMES CUNNINGHAM LLC
409 EAST BUTLER AVENUE
UNIT 5
DOYLESTOWN, PA 18901
(215) 586-3330

APPLICANT/ EQUITABLE OWNER

CASADONTI HOMES, INC.
P.O. BOX 5,
CHALFONT, PA 18914

DATE:	06/16/2023
PROJECT #	1890
DRAWING #	C0.0
SHEET	1 OF 9



RESOURCE PROTECTION STANDARDS					
Resource	Min. Required Protection Ratio	Total Area of Land in Resource	Required Resource Protection Land	Actual Resource Protection Land	Actual Protection Ratio
	%	(Ac.)	(Ac.)	(Ac.)	%
Watercourses	100%	1.052	1.052	1.052	N/A
Floodplains	100%	0.569	0.569	0.569	100%
Floodpain (Alluvial) Soils	100%	0.933	0.933	0.933	100%
Wetlands	100%	0.000	0.000	0.000	N/A
Wetlands Margin	80%	0.000	0.000	0.000	N/A
Riparian Buffer	100%	5.431	5.431	5.431	100%
Lakes and Ponds	100%	0.000	0.000	0.000	N/A
Woodlands (CR, WS, SR-1, SR-2, and RR Zoning Districts)	80%	1.680	1.344	1.400	83%
Agricultral Soils	50%	13.350	6.675	10.180	76%
Steep Slopes 8%-15%	60%	7.479	4.488	5.879	79%
Steep Slopes 15%-25%	70%	2.254	1.578	1.854	82%
Steep Slopes 25%+	85%	0.836	0.710	0.746	89%

LEGEND

- PROPERTY LINE
- 208 EXISTING CONTOUR
- ULTIMATE RIGHT-OF-WAY
- STREAM/ WATERCOURSE
- WOODLANDS
- RIPARIAN CORRIDOR BUFFER
- STEEP SLOPES 8%-15%
- STEEP SLOPES 15%-25%
- STEEP SLOPES 25%+
- TrB SOIL TYPE
- AGRICULTURAL SOILS

NOTES:

1. THE BOUNDARY AND TOPOGRAPHIC INFORMATION IS TAKEN FROM AN EXISTING FEATURES PLAN PREPARED BY EFFICIENT DESIGN, DATED FEBRUARY 10, 2022.
2. LOCATIONS OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM EXISTING RECORDS AND/OR ABOVE GROUND OBSERVATION AT THE SITE. COMPLETENESS OR ACCURACY OF LOCATION CAN NOT BE GUARANTEED.
3. ALL CONTRACTORS WORKING ON THIS PROJECT SHALL VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES/FACILITIES PRIOR TO THE START OF WORK AND SHALL COMPLY WITH THE REQUIREMENTS OF P.L. 852, NO. 287 DECEMBER 10, 1974 AS LAST AMENDED ON OCTOBER 9, 2008, PENNSYLVANIA ACT 121.
4. THIS SITE IS CURRENTLY ZONED WS – WATERSHED DISTRICT IN THE TOWNSHIP OF NEW BRITAIN.
5. ELEVATION INFORMATION IS BASED ON THE NATIONAL AMERICAN VERTICAL DATUM OF 1988 (NAVD88) AND HORIZONTAL DATUM ID BASED ON 1983 STATE COORDINATE SYSTEM.
6. REFERENCE IS MADE TO PENNSYLVANIA ONE CALL SYSTEM, IN ACCORDANCE WITH PA ACT 287 OF 1974 AS AMENDED BY PA ACT 187 OF 2008. (800-242-1776).
7. FLOOD ZONE INFORMATION: A PORTION OF SUBJECT PARCEL AREA IS LOCATED INSIDE ZONE A OF THE FLOOD INSURANCE RATE MAP, PANEL NO. 280 OF 532, MAP NO. 42017C0280J WHICH BEARS AN EFFECTIVE DATE OF MARCH 16, 2015.

Site Capacity Calculations		
	Area (SF)	Area (AC)
Gross Site Area Determined by Actual On-site Survey	581,269	13.344
Existing Streets Ultimate Rights-of-Way	22,518	0.517
Existing Utility Rights-of-Way or Easements	17,721	0.407
Existing Preservation Easements	0	0.000
Land Not Contiguous	0	0.000
Land Shown on Previous Subdivision Reserved for Open Space, Protection, etc.	0	0.000
Land in a Different Zoning District from Primary Use	0	0.000
Base Site Area	541,030	12.420

Resource Protection Land				
Natural Resource	Protection Ratio	Acres of Land in Resources	Resource Protection Land (AC)	Proposed Resource Protection Land (AC)
Watercourses	1.00	1.05	1.05	1.05
Riparian Buffer	1.00	3.81	3.81	3.81
Floodplain	1.00	0.57	0.57	0.57
Floodplain (Alluvial) Soils	1.00	0.03	0.03	0.03
Wetlands	1.00	0.00	0.00	0.00
Lakes and Ponds	1.00	0.00	0.00	0.00
Steep Slopes 25%+	0.85	0.31	0.26	0.75
Woodlands	0.80	0.16	0.13	0.13
Steep Slopes 15-25%	0.70	1.23	0.86	1.85
Steep Slopes 8-15%	0.60	4.50	2.70	5.88
Total Land with Resource Restrictions			11.65	
Total Land with 1.00 Protection Ratio Restrictions			5.46	
Total Resource Protection Land Required			9.41	
Total Resource Protection Land Provided			9.41	
Total Disturbed Resources			2.24	

Open Space Calculations		
Base Site Area	12.42	Ac.
Multiply by Minimum Open Space Ratio	0.00	
Standard Minimum Open Space	0.00	Ac.
Required Open Space (Greater of 100% Protection Land or Min Open Space)	5.46	Ac.

Net Buildable Site Area Calculations		
Base Site Area	12.42	Ac.
Subtract Required Open Space	5.46	Ac.
Net Buildable Site Area	6.96	Ac.

Density Calculations		
Net Buildable Site Area	6.96	Ac.
Multiply by Maximum Density	N/A	
Number of Dwelling Units Permitted	N/A	

Impervious Surface Calculations		
Base Site Area	12.42	Ac.
Multiply by Maximum Impervious Surface Ratio	0.20	
Maximum Permited Site Impervious Surface	2.48	Ac.

0 40 80 Feet

Holmes Cunningham LLC
409 E. Butler Ave., Unit 5
Doylestown, PA 18901
(215) 586-3330
www.hcengineering.net

REVISIONS		
	Description	Date

CALL BEFORE YOU DIG!!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR EXCAVATION/DEMOLITION & 10 WORKING DAYS IN DESIGN STAGE – STOP & CALL
Pennsylvania One Call System, Inc.
1-800-242-1776
UTILITY LOCATIONS AS SHOWN ON THIS PLAN ARE APPROXIMATE AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR, PER PA. ACT 187 TO CONTACT UTILITIES COMPANIES PRIOR TO ANY EXCAVATION.

140 UPPER CHURCH ROAD

140 UPPER CHURCH ROAD
TMP # 26-003-104
NEW BRITAIN TOWNSHIP, BUCKS COUNTY, PA

EXISTING CONDITIONS AND SITE ANALYSIS PLAN

ROBERT T. CUNNINGHAM, P.E.
PA PE076424

File No.
1890_C0.1 EXISTING CONDITIONS.DWG

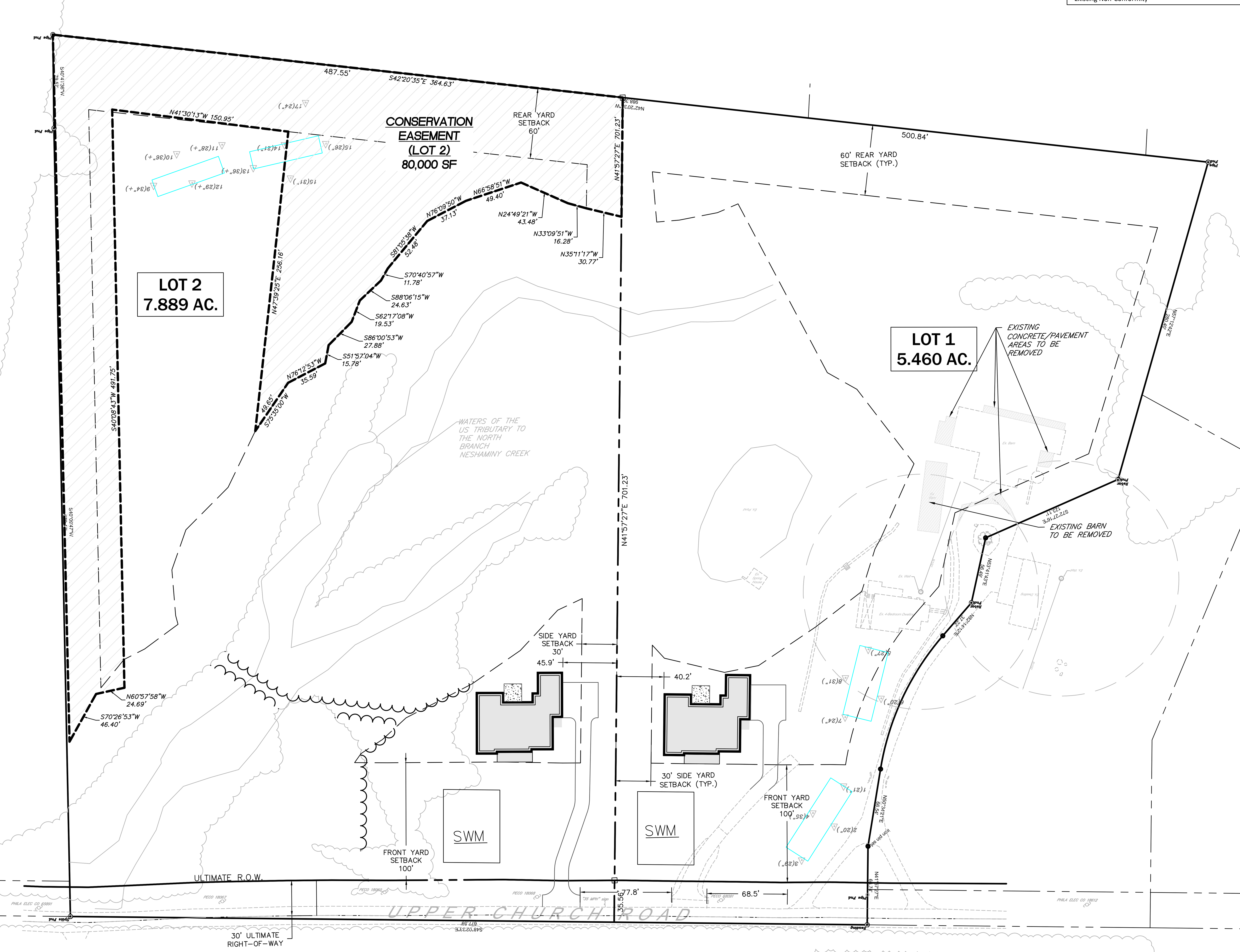
HCE Job	1890	Designed	RC	Sheet	2 of 9
Date	06/16/2023				
Scale	1"=40'				

Drawing No.
C0.1

LOT AREA AND COVERAGE TABLE											
Lot	Gross Lot Area	Right-of-Way Area	Conservation Easement Area	100% Natural Resource Protection	Ratio Base Site Area	Building Area	Building Ratio	On-lot Impervious Excluding Building Area	Impervious Ratio	Future Impervious	Max Impervious Ratio
#	(SF)	(SF)	(SF)	(SF)	(SF)	(SF)	%		%	(SF)	%
1	237,856	7,648	0	69,643	160,565	10,000	6.2%	6,058	10.00%	3,210	12%
2	343,413	14,870	80,000	166,934	81,609	4,046	5.0%	2,879	8.5%	2,868	12%

LOT WIDTH/DEPTH TABLE		
LOT	LOT WIDTH	LOT DEPTH
#	(FEET)	(FEET)
1	441	566
2	198	599

NEW BRITAIN TOWNSHIP ZONING DATA TABLE				
ZONING DISTRICT: WS - WATERSHED DISTRICT				
ITEM	REQUIRED/ PERMITTED	PROPOSED LOT 1	PROPOSED LOT 2	Ordinance Section
Use: Zoning 27-501.a	B1: Single Family Detached Dwelling			
Max. Building Height	35 FT	< 35 FT	< 35 FT	27-502.a
Min. Lot Size	80,000 SF	5.460 AC	7.889 AC	27-502.b.1.(a)
Min. Lot Width	175 FT	225.7 FT	466.5 FT	27-502.b.1.(b)
Min. Front Yard Setback	100 FT	100 FT	100FT	27-502.b.1.(c)
Min. Side Yard Setback	30 FT	17.26 FT*	45.3 FT	27-502.b.1.(d)
Min. Rear Yard Setback	60 FT	229.8 FT	493.5 FT	27-502.b.1.(e)
Min. Building Envelope	10,000 SF	13,390 SF	87,864 SF	27-502.b.1.(f)
Max. Building Coverage (Developer)	6%	6.23%	4.96%	27-502.b.1.(g)
Max. Impervious Surface Coverage (Developer)	10%	**10.00%**	8.49%	27-502.b.1.(h)
Max. Porch Pojection into Yard Areas	4 FT	0 FT	0 FT	27-2107
Min. Off-Street Parking Spaces	3 spaces / DU (4+ bedrooms)	3 spaces	3 spaces	27-2901.B
* Existing Non-Conformity				



SITE PLAN NOTES:

1. THE BOUNDARY AND TOPOGRAPHIC INFORMATION IS TAKEN FROM EXISTING FEATURES PLAN PREPARED BY EFFICIENT DESIGN DATED FEBRUARY 10, 2022.
2. THE PROPOSED DEVELOPMENT IS TO BE SERVED BY ON–LOT WELLS AND ON–LOT SEPTIC SYSTEMS
3. FLOOD ZONE INFORMATION: A PORTION OF SUBJECT PARCEL AREA IS LOCATED INSIDE ZONE A OF THE FLOOD INSURANCE RATE MAP, PANEL NO. 280 OF 532, MAP NO. 42017C0280J WHICH BEARS AN EFFECTIVE DATE OF MARCH 16, 2015
4. THE STORMWATER MANAGEMENT FACILITIES (AS SHOWN ON THIS PLAN) ARE A BASIC AND PERPETUAL PART OF THE STORMWATER MANAGEMENT SYSTEM OF THE HOMEOWNERS, AND AS SUCH ARE TO BE PROTECTED AND PRESERVED, IN ACCORDANCE WITH THE APPROVED FINAL PLAN BY THE OWNER ON WHOSE LANDS THE FACILITY IS LOCATED. THE TOWNSHIP OF NEW BRITAIN AND/OR ITS AGENTS RESERVE THE RIGHT AND PRIVILEGE TO ENTER UPON SUCH LANDS FROM TIME TO TIME FOR THE PURPOSE OF INSPECTION OF THE STORMWATER MANAGEMENT FACILITIES IN ORDER TO DETERMINE THAT THE STRUCTURAL AND DESIGN INTEGRITY ARE BEING MAINTAINED BY THE OWNERS.
5. TOPSOIL SHALL NOT BE REMOVED FROM THE DEVELOPMENT SITE. TOPSOIL SHALL BE STRIPPED, STOCKPILED, AND REDISTRIBUTED ON THE SITE.
6. AT THE TIME OF INDIVIDUAL ZONING PERMIT APPLICATION FOR EACH LOT, THE NATURAL RESOURCES PROTECTION STANDARDS SHALL BE REVIEWED FOR COMPLIANCE AND SITES LAID OUT TO MINIMIZE NATURAL RESOURCE DISTURBANCE TO THE GREATEST EXTENT PRACTICABLE.
7. IF THE DISTURBANCE ENCROACHES INTO A DESIGNATED TREE PROTECTION ZONE RESULTING IN THE DAMAGE OR DESTRUCTION OF THE EXISTING TREES AND/OR VEGETATION DESIGNATED TO REMAIN, THE APPLICANT SHALL BE RESPONSIBLE FOR REPLACING THE DAMAGED OR DESTROYED VEGETATION ON AN EQUIVALENT CALIPER BASIS.
8. OBSTRUCTIONS TO VISIBILITY SHALL NOT BE PERMITTED WITHIN 2 FEET AND 7 FEET ABOVE THE EDGE OF PAVING. ANY PLANT MATERIALS PLACED WITHIN CLEAR SIGHT TRIANGLES SHALL BE PROPERLY MAINTAINED TO CONTINUALLY COMPLY WITH THE HEIGHT RESTRICTIONS AND THE TOWNSHIP HAS THE RIGHT TO ENTER THE AREA AND PERFORM MAINTENANCE IF DEEMED CRITICAL TO PUBLIC WELFARE PURSUANT TO A DECLARATION OF COVENANTS, RESTRICTIONS AND CONDITIONS APPROVED BY THE BOARD.
9. ALL MONUMENTATION SHALL BE SET BY A PROFESSIONAL LAND SURVEYOR AND ARE TO BE SET DURING CONSTRUCTION.
10. THE AREA LOCATED BETWEEN THE TITLE LINE AND ULTIMATE RIGHT–OF–WAY LINE OF UPPER CHURCH ROAD SHALL BE OFFERED TO NEW BRITAIN TOWNSHIP.
11. ALL PROPOSED LOTS ARE TO BE DEED RESTRICTED FROM FURTHER SUBDIVISION.
12. ALL DEAD TREES, LINE TREES AND BRANCHES INTERFERING WITH THE EXISTING OVERHEAD LINES SHALL BE REMOVED WITHIN THE PROPOSED ULTIMATE–RIGHT–OF–WAY.
13. A BLANKET EASEMENT IS PROVIDED TO THE TOWNSHIP TO CONDUCT INSPECTIONS AND MAINTENANCE OF STORMWATER FACILITIES AS REQUIRED.
14. AREAS NOT LOCATED IN THE LIMIT OF DISTURBANCE HAVE BEEN PROPOSED TO REMAIN IN EXISTING CONDITIONS.

OWNER SIGNATURE BLOCK & ACKNOWLEDGEMENT

TO ALL WHOM THESE PRESENTS MAY COME, KNOW YE THAT I, ____________, OF ________________, HAS LAID OUT UPON MY/OUR LAND SITUATED IN THE TOWNSHIP OF NEW BRITAIN, COUNTY OF BUCKS, COMMONWEALTH OF PENNSYLVANIA, CERTAIN LOTS ACCORDING TO THIS PLAN WHICH IS INTENDED TO BE FORTHWITH RECORDED. WITNESS OUR HAND AND SEAL THIS ________ DAY OF ____________, 20_____.

BY: ____________, ____________ DATE: ________
NAME TITLE

____
CORPORATION

OWNER(S): ______________________

TITLE(S): ______________________

COMMONWEALTH OF ______________

(OR IF NOT PENNSYLVANIA, STATE OF ______________)

COUNTY OF ______________

ON THIS _____ DAY OF ______________, A.D., 20_____, BEFORE ME A NOTARY PUBLIC, PERSONALLY APPEARED ______________, ______________, OF ______________, OWNER OF THE SUBJECT PROPERTY, AS SUCH, BEING AUTHORIZED TO DO SO, EXECUTED THE FOREGOING INSTRUMENT ON ITS BEHALF FOR THE USES AND PURPOSES THEREIN SET FORTH.

IN WITNESS WHEREOF, I HAVE HEREUNTO SET MY HAND AND OFFICIAL SEAL.

SEAL ______________ NOTARY PUBLIC ______________

COMMISSION EXPIRATION DATE ______________

RECORDER OF DEEDS ACKNOWLEDGEMENT

RECORDED IN THE OFFICE FOR THE RECORDING OF DEEDS, ETC. IN AND FOR THE COUNTY OF BUCKS, AT DOYLESTOWN, PENNSYLVANIA IN PLAN BOOK _________, PAGE ______, ON THIS ________ DAY OF ____________, 20_____.

____
BUCKS COUNTY RECORDER OF DEEDS

BOARD OF SUPERVISORS ACKNOWLEDGEMENT

THIS PLAN APPROVED BY THE BOARD OF SUPERVISORS OF NEW BRITAIN TOWNSHIP THIS ____________ DAY OF ______________, 20_____.

OWNER CERTIFICATION FOR STORMWATER BMP'S

THE STORMWATER BMP'S ARE FIXTURES THAT CAN BE ALTERED OR REMOVED ONLY AFTER APPROVAL BY NEW BRITAIN TOWNSHIP.

____
PROPERTY OWNER

TOWNSHIP ENGINEER ACKNOWLEDGEMENT

THIS PLAN HAS BEEN REVIEWED BY THE TOWNSHIP ENGINEER ON THIS _________ DAY OF ____________, 20_____.

ENGINEER: ______________________

PLANNING COMMISSION ACKNOWLEDGEMENT

BUCKS COUNTY PLANNING COMMISSION NOTATION BCPC NO ______ PROCESSED AND REVIEWED. REPORT PREPARED BY THE BUCKS COUNTY PLANNING COMMISSION IN ACCORDANCE WITH THE MUNICIPALITIES PLANNING CODE. CERTIFIED THIS DATE ______________.

WETLANDS CERTIFICATION

I HEREBY CERTIFY THAT THERE ARE NO WETLANDS LOCATED WITHIN THE PROPOSED REGULATED ACTIVITY ASSOCIATED WITH THIS LAND DEVELOPMENT, AS INDICATED ON THE PLAN.

____
JOSEPH A. VALENTINE

ENGINEER'S CERTIFICATION

ROBERT CUNNINGHAM, A REGISTERED PROFESSIONAL ENGINEER IN THE COMMONWEALTH OF PENNSYLVANIA, HEREBY CERTIFY THAT TO THE BEST OF MY KNOWLEDGE THIS PLAN IS ACCURATE AND CORRECT AS INDICATED.

______________ DATE: ______________
ROBERT CUNNINGHAM, P.E.
PA PE076424

CERTIFICATION OF ACCURACY

I HEREBY CERTIFY THAT TO THE BEST OF MY KNOWLEDGE, THE SURVEY AND PLAN SHOWN AND DESCRIBED HEREON IS TRUE AND CORRECT.

______________ DATE: ______________ ERIC
WILLIAMS, PLS
SURVEYOR

LEGEND

- PROPERTY LINE
- PROPOSED BUILDING
- PROPOSED EASEMENT
- BUILDING SETBACK LINE
- LOT LINE
- PROPOSED WOODLANDS
- PROPOSED CONSERVATION EASEMENT
- PROPOSED MONUMENT
- PROPOSED IRON PIN

0 40 80 Feet

Holmes Cunningham LLC
409 E. Butler Ave., Unit 5
Doylestown, PA 18901
(215) 586-3330
www.hcengineering.net

holmes cunningham ENGINEERING

REVISIONS	
Date	Description

CALL BEFORE YOU DIG !! PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE -- STOP & CALL --
Pennsylvania One Call System, Inc. 1-800-242-1776

UTILITY LOCATIONS AS SHOWN ON THIS PLAN ARE APPROXIMATE AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR, PER PA. ACT 187 TO CONTACT UTILITY COMPANIES PRIOR TO ANY EXCAVATION.

140 UPPER CHURCH ROAD

140 UPPER CHURCH ROAD
TMP # 26-003-104
NEW BRITAIN TOWNSHIP, BUCKS COUNTY, PA

SUBDIVISION PLAN

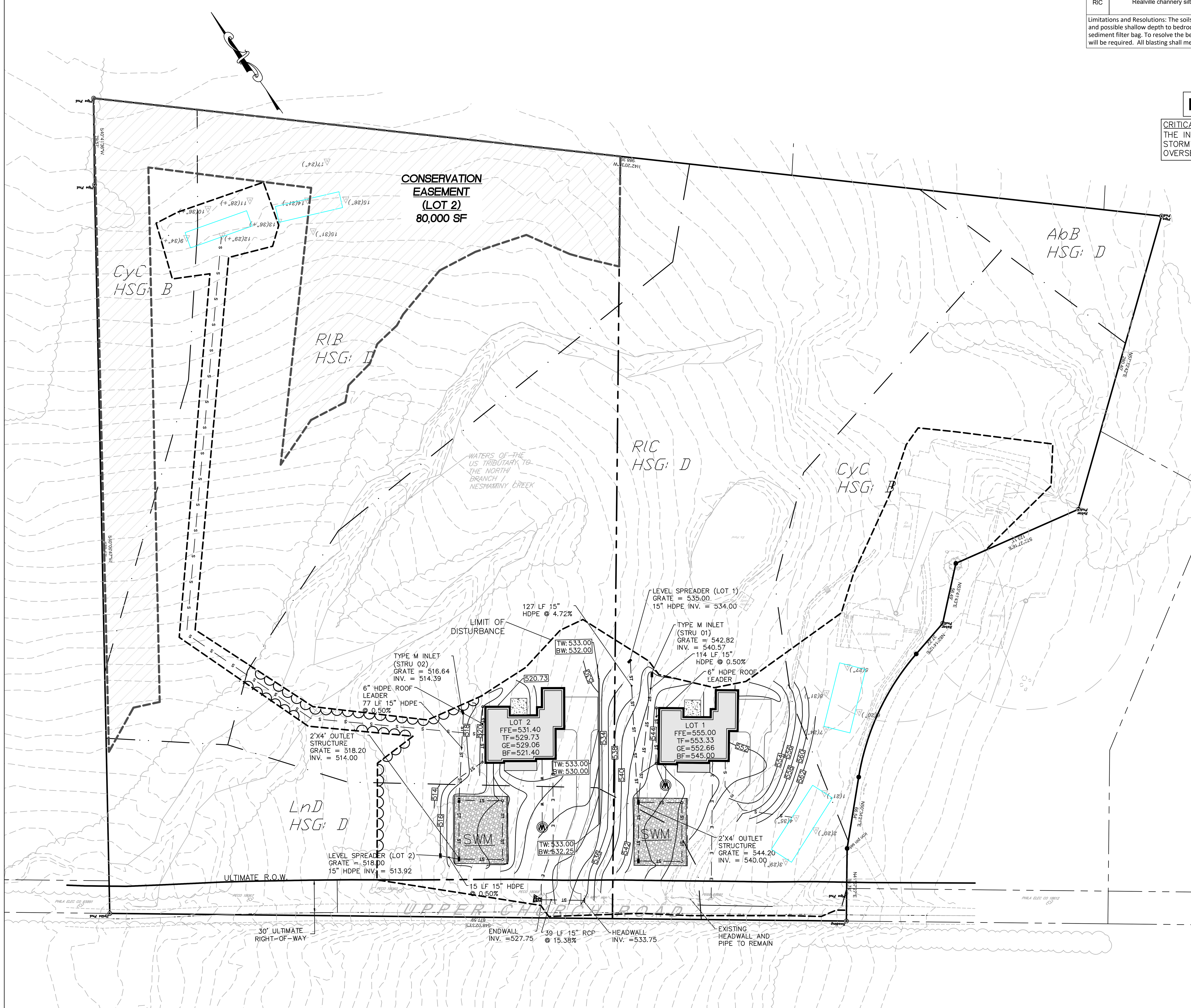
COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ROBERT THOMAS CUNNINGHAM ENGINEER PE 076424

ROBERT T. CUNNINGHAM, P.E.
PA PE076424

File No. 1890_C0.2 SUB.DWG

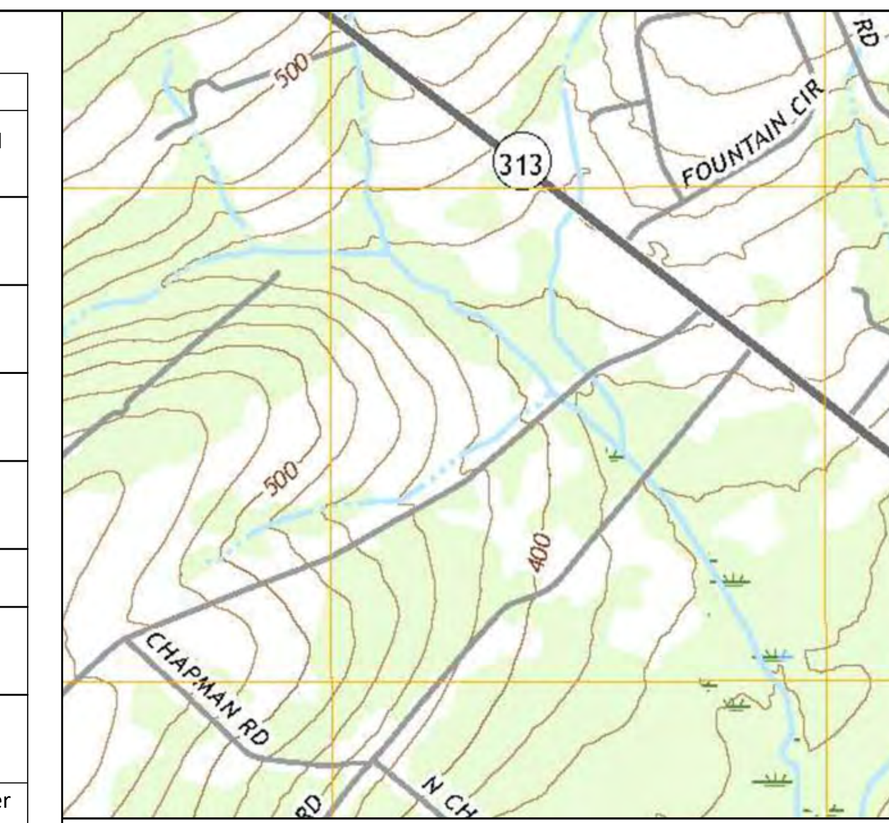
HCE Job	1890
Date	06/16/2023
Scale	1"=40'
Designed	RC
Sheet	3 of 9

Drawing No.
C0.2



Soils Legend						
Type	Name	Depth to Bedrock	Depth to Seasonal High Water Table	HSG	Hydric Soil	Agricultural Soil
AbA	Abbotstown silt loam, 0 to 3 percent slopes	40"-60"	6"-18"	D	No	Farmland of Statewide Importance
AbB	Abbotstown silt loam, 3 to 8 percent slopes	40"-60"	6"-18"	D	No	Farmland of Statewide Importance
CyB	Culleoka-Weikert channery silt loams, 3 to 8 percent slopes	20"-40"	>80"	B	No	Farmland of Statewide Importance
CyC	Culleoka-Weikert channery silt loams, 8 to 15 percent slopes	20"-40"	>80"	B	No	Farmland of Statewide Importance
LnD	Lehigh Channery Silt Loam, 8 to 25 percent slopes	40"-60"	12"-24"	C/D	No	Not Prime Farmland
Rlb	Realville channery silt loam, 3 to 8 percent slopes	20"-40"	6"-36"	D	No	Farmland of Statewide Importance
RlC	Realville channery silt loam, 8 to 15 percent slopes	20"-40"	6"-36"	D	No	Farmland of Statewide Importance

Limitations and Resolutions: The soils found within the project limits have varying limitations including possible shallow depth to groundwater and possible shallow depth to bedrock. In order to resolve the groundwater limitation, any standing water should be pumped through a sediment filter bag. To resolve the bedrock limitation, the contractor shall determine whether rock is rippable. If rock is not rippable, blasting will be required. All blasting shall meet all local, county, state and federal regulations.



LOCATION MAP

REFERENCE: DOYLESTOWN U.S.G.S. QUADRANGLE MAP

LIMIT OF DISTURBANCE = 3.17 ACRES

PROJECT SITE BOUNDARY = 13.34 ACRES

CRITICAL STAGES OF PCSM PLAN IMPLEMENTATION
THE INSTALLATION AND/OR CONVERSION OF EROSION CONTROL FACILITIES TO STORMWATER FACILITIES, INCLUDING THE INFILTRATION BASIN WITH MRC, SHALL BE OVERSEEN BY A LICENSED PROFESSIONAL ENGINEER OR THEIR DESIGNEE.

APPLICANT'S ACKNOWLEDGEMENT
I, ______________________, ACKNOWLEDGE THAT STORMWATER FACILITIES AND BMPs ARE FIXTURES THAT CAN ONLY BE ALTERED AND REMOVED AFTER APPROVAL BY THE MUNICIPALITY AND SUBMISSION OF A REVISED E&S PLAN TO THE CONSERVATION DISTRICT.

____

GRADING AND DRAINAGE NOTES

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND / OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES, WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
2. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR ACTUAL LOCATIONS OF ALL UTILITY ENTRANCES TO INCLUDE SANITARY SEWER LATERALS, DOMESTIC WATER SERVICE, ELECTRICAL TELEPHONE AND GAS SERVICE. CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES IN SUCH A MANNER AS TO AVOID CONFLICTS AND TO ENSURE PROPER DEPTHS ARE ACHIEVED AS WELL AS COORDINATING WITH THE UTILITY COMPANIES AS TO LOCATION AND SCHEDULING OF CONNECTIONS TO THEIR FACILITIES.THE
3. CONTRACTOR SHALL PROVIDE A WRITTEN REQUEST FOR INFORMATION TO THE OWNER AND OWNER'S ENGINEER PRIOR TO THE CONSTRUCTION OF ANY SPECIFIC SITEWORK ITEM DEPICTED ON THE PLANS, FOR ADDITIONAL INFORMATION REQUIRED FOR CONSTRUCTION NOT RELATED TO MEANS AND METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SPECIFIC SITEWORK ITEMS INSTALLED DIFFERENTLY THAN INTENDED AS DEPICTED ON THE PLANS IN THE ABSENCE OF SUBMITTING AND ADDRESSING WRITTEN REQUESTS FOR INFORMATION.
4. SITE GRADING SHALL NOT PROCEED UNTIL ALL EROSION CONTROL MEASURES HAVE BEEN INSTALLED.
5. PVC = POLYVINYLCHORIDE PIPE, HDPE = HIGH DENSITY POLYETHYLENE PIPE, RCP = REINFORCED CONCRETE PIPE
6. STORM DRAINAGE PIPING TO UTILIZE WATER TIGHT JOINTS.
7. COMPACTION CRITERIA FOR FILL PLACEMENT IN THE FOLLOWING AREAS SHALL MEET OR EXCEED THE FOLLOWING MINIMUM PERCENTAGE OF MAXIMUM MODIFIED PROCTOR DRY DENSITY AS DETERMINED BY ASTM D-1557 USED ON REPRESENTATIVE SOIL SAMPLES, UNLESS MORE STRINGENT CRITERIA GIVEN ELSEWHERE;

FILL AREA	PERCENT OF MAXIMUM MODIFIED PROCTOR DRY DENSITY
BUILDING FOOTPRINT	95%
PAVEMENT AND ROADWAYS	95%
SIDEWALKS	95%
LANDSCAPE AREAS	93%
TRENCH BACKFILL	SAME AS SURROUNDING AREA

8. PROTECT SUBGRADE FROM EXCESSIVE WHEEL LOADING DURING CONSTRUCTION, INCLUDING CONCRETE TRUCKS AND DUMP TRUCKS.
9. REMOVE AREAS OF FINISHED SUBGRADE FOUND TO HAVE INSUFFICIENT COMPACTION DENSITY TO DEPTH NECESSARY AND REPLACE IN A MANNER THAT WILL COMPLY WITH COMPACTION REQUIREMENTS BY USE OF MATERIAL EQUAL TO OR BETTER THEN BEST SUBGRADE MATERIAL ONSITE. SURFACE OF SUBGRADE AFTER COMPACTION SHALL BE HARD, UNIFORM, SMOOTH, STABLE, AND TRUE TO GRADE AND CROSS SECTION.
10. ALL CONCRETE, UNLESS OTHERWISE NOTED OR SPECIFIED BY REGULATORY AUTHORITIES, SHALL BE A MINIMUM OF 4,000 PSI..
11. NEW BRITAIN TOWNSHIP SHALL HAVE THE RIGHT TO ENTER PRIVATE PROPERTY TO INSPECT AND REPAIR, IF NECESSARY, ANY STORMWATER MANAGEMENT FACILITY.
12. ALL STORMWATER MANAGEMENT FACILITIES ARE A PERMANENT PART OF THE DEVELOPMENT AND SHALL NOT BE REMOVED, ALTERED OR MODIFIED WITHOUT PRIOR APPROVAL FROM NEW BRITAIN TOWNSHIP.
13. NO PORTION OF AN ON-LOT SEPTIC SYSTEM SHALL BE LOCATED IN A MANNER THAT WOULD BLOCK ANY STORMWATER DRAINAGE FROM ANY LOT.
14. ALL ACCESS DRIVES AND DRIVEWAYS SHALL BE PROVIDED WITH A STOPPING AREA OF 20 FEET, AT A MAXIMUM GRADE OF 3%, MEASURED FROM THE PRIVATE ACCESS EASEMENT.

UTILITY NOTES

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS IN A MANNER WHICH WILL NOT NEGATIVELY AFFECT ANY EXISTING USERS OF THESE UTILITIES.
2. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR ACTUAL LOCATIONS OF ALL UTILITY ENTRANCES TO INCLUDE SANITARY SEWER LATERALS, DOMESTIC AND FIRE PROTECTION WATER SERVICE, ELECTRICAL, TELEPHONE AND GAS SERVICE. CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES IN SUCH A MANNER AS TO AVOID CONFLICTS AND ASSURE PROPER DEPTHS ARE ACHIEVED AS WELL AS COORDINATING WITH THE REGULATORY AGENCY AS TO LOCATION AND SCHEDULING OF CONNECTIONS TO THEIR FACILITIES.
3. ANY EXISTING FEATURES DAMAGED DURING CONSTRUCTION SHALL BE REPLACED BY THE OWNER, AT NO COST TO THE TOWNSHIP.
4. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING THE EXISTING UTILITY SERVICE (WATER, SEWER, GAS AND ELECTRIC) TO THE PROPERTY AND ENSURE THAT THEY ARE PROPERLY DISCONNECTED FROM THE EXISTING UTILITIES AND RECONNECTED TO THE NEW SERVICES PROVIDED.
5. THE LOCATION OF THE EXISTING GAS MAINS ARE APPROXIMATE. THE CONTRACTOR SHOULD CONSULT LOCAL UTILITY COMPANIES FOR ADDITIONAL INFORMATION.
6. THE LOCATION OF EXISTING ELECTRIC LINES ARE APPROXIMATE. THE CONTRACTOR SHOULD CONSULT LOCAL UTILITY COMPANIES FOR ADDITIONAL INFORMATION.
7. ALL GAS WORK AND OTHER ASSOCIATED APPURTENANCES WILL BE IN CONFORMANCE WITH APPLICABLE LOCAL COUNTY, STATE AND FEDERAL GUIDELINES AND REQUIREMENTS.
8. ALL ELECTRICAL WORK, TRANSFORMER PADS, AND ASSOCIATED APPURTENANCES WILL BE IN CONFORMANCE WITH APPLICABLE LOCAL, COUNTY, STATE AND FEDERAL GUIDELINES AND REQUIREMENTS. MIN. DEPTH OF COVER OVER ELECTRIC, GAS, AND CABLE SHALL BE 2 FT.
9. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL EXISTING CONDITIONS, UTILITY LOCATIONS, CATHODIC PROTECTION AND INVERTS PRIOR TO CONSTRUCTION. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ANY DISRUPTIONS TO EXISTING UTILITIES SERVICES. ANY CONDITIONS FOUND TO DIFFER FROM THOSE SHOWN BY THE DRAWINGS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER.
10. EIGHTEEN (18) INCHES VERTICAL CLEARANCE SHOULD BE PROVIDED AT ALL UTILITY CROSSINGS.
11. ALL FIRE HYDRANTS AND VALVES SHALL OPEN RIGHT (CLOCKWISE).
12. THE OWNER IS RESPONSIBLE FOR REPLACEMENT OF LANDSCAPING SHOULD DISTURBANCE BE REQUIRED FOR UTILITY REPAIRS.
13. 18 INCHES OF VERTICAL CLEARANCE OR 10 FEET OF HORIZONTAL CLEARANCE SHALL BE PROVIDED BETWEEN THE SANITARY SEWER AND ALL OTHER UTILITIES. OTHERWISE, CONCRETE ENCASEMENT OF THE SANITARY SEWER SHALL BE PROVIDED.
14. THERE SHALL NOT BE BUILT, INSTALLED, CONSTRUCTED, PLANTED OR LOCATED ANY TEMPORARY OR PERMANENT BUILDINGS OR STRUCTURES INCLUDING INFILTRATION BASINS, OR ANY TREES, SHRUBS, OR OTHER LANDSCAPING WITHIN 10 FEET OF SANITARY SEWER FACILITIES, EXCEPT TREES, SHRUBS, AND OTHER LANDSCAPING WHICH WILL NOT GROW TO MORE THAN 6 FEET IN HEIGHT.
15. PROPOSED ON-LOT WELLS ARE SUBJECT TO THE PROVISIONS OF THE WELL CONSTRUCTION STANDARDS, WHICH INCLUDES REQUIREMENTS FOR WELL PERMITTING, WATER QUALITY TESTING, AND WELL PRODUCTION CERTIFICATION.

0 60 120 Feet

DRAINAGE LEGEND

EXISTING STORM PIPE
EXISTING INLET
EXISTING MANHOLE
PROPOSED STORM PIPE
PROPOSED YARD INLET — CB-X GR. 185.56 INV 180.00
PROPOSED CURB INLET — CB-X GR. 185.56 INV 180.00
PROPOSED MANHOLE — MH-X RIM 185.56 INV 180.00

UTILITY LEGEND

EXISTING SANITARY SEWER MAIN
EXISTING SANITARY SEWER MANHOLE — Ex.San MH
EXISTING WATER MAIN AND VALVE — W.V.
EXISTING FIRE HYDRANT
PROPOSED SANITARY SEWER MAIN.
PROPOSED SANITARY SEWER MANHOLE. — SAN. MH RIM 185.56 INV 180.00
PROPOSED WATER MAIN — W
PROPOSED WATER VALVE
PROPOSED FIRE HYDRANT
PROPOSED SANITARY SERVICE LATERAL — S
PROPOSED WATER SERVICE LATERAL — W
PROPOSED TELEPHONE, ELECTRIC, & CABLE — T&E

GRADING LEGEND

EXISTING CONTOUR — 185
EXISTING SPOT ELEVATION — 185.2 x
PROPOSED CONTOUR — 185
PROPOSED SPOT ELEVATION — 185.2 x

MINIMIZE IMPERVIOUS AREAS
THE PROJECT HAS LIMITED IMPERVIOUS AREAS PROPOSED TO THE MAXIMUM EXTENT POSSIBLE. THE SITE PLAN HAS CLUSTERED THE DEVELOPMENT TO REDUCE THE EXTENT OF PROPOSED ROADWAYS AND THE DRIVEWAYS ARE THE MINIMUM ACCEPTABLE LENGTH.

PROTECTION OF EXISTING DRAINAGE FEATURES AND VEGETATION
THE LIMIT OF DISTURBANCE IS MINIMIZED TO REDUCE THE DISTURBANCE TO THE EXISTING FEATURES. THE EXISTING VEGETATION AROUND THE PERIMETER OF THE SITE IS TO REMAIN TO THE MAXIMUM EXTENT POSSIBLE. THERE IS NO PROPOSED DISTURBANCE TO DRAINAGE FEATURES.

MINIMIZE LAND CLEARING
THE PROJECT HAS LIMITED THE SOIL DISTURBANCE AREA TO THE MAXIMUM EXTENT POSSIBLE AND LAND CLEARING IS LIMITED TO THE AREAS SHOWN ON THE PLAN.

STRUCTURAL AND NON-STRUCTURAL BMPS TO DECREASE STORMWATER RUNOFF
RE-VEGETATE DISTURBED AREAS: ALL DISTURBED AREAS WILL BE PERMANENTLY SEEDED OR LANDSCAPED. ADDITIONALLY, NEW TREES WILL BE PLANTED THROUGH THE SITE TO REDUCE THE THERMAL IMPACTS OF IMPERVIOUS SURFACES AND REDUCE RUNOFF VOLUME THROUGH TRANSPIRATION.

RECYCLIING/ DISPOSAL OF MATERIALS
THE CONSTRUCTION WASTES ANTICIPATED INCLUDE DEMOLITION MATERIALS FROM THE BUILDING AND SITE DEMOLITION AND EXCESS BUILDING MATERIAL SUCH AS CONCRETE, WOOD, ETC.

ALL BUILDING MATERIAL AND WASTES MUST BE REMOVED FROM THE SITE AND RECYCLED IN ACCORDANCE WITH DEP'S SOLID WASTE REGULATIONS (25 PA CODE 260.1 ET SEQ., 271.1 ET SEQ., AND 287.1 ET SEQ.), AND/OR ANY ADDITIONAL LOCAL, STATE OR FEDERAL REGULATIONS. NO BUILDING MATERIALS (USED OR UNUSED) OR WASTE MATERIALS SHALL BE BURNED, BURIED, DUMPED OR DISCHARGED AT THE SITE.

GENERAL NOTES

1. THE BOUNDARY AND TOPOGRAPHIC INFORMATION IS TAKEN FROM AN EXISTING FEATURES PLAN PREPARED BY EFFICIENT DESIGN, DATED FEBRUARY 10, 2022.
2. UNDER PENNSYLVANIA LAW , THE CONTRACTOR IS REQUIRED TO NOTIFY THE PENNSYLVANIA ONE-CALL SYSTEM AT 1-800-242-1776 PRIOR TO THE START OF HIS WORK, SO THAT ALL THE VARIOUS UNDERGROUND UNTILITY OPERATORS WILL BE ABLE TO LOCATE THEIR OWN UTILITIES.
3. THERE ARE NO HQ OR EV WATERSHEDS LOCATED WITHIN THE PROJECT AREA.
4. THERE ARE NO RIPARIAN BUFFERS EXISTING OR PROPOSED AS PART OF THIS PROJECT (WITHIN OR OUTSIDE THE LIMIT OF DISTURBANCE). ADDITIONALLY, RIPARIAN BUFFER OFFSETS ARE NOT NECESSARY.
5. THERE ARE NO WETLANDS WITHIN THE PROJECT AREA.
6. THERE ARE NO INFILTRATION BMPS LOCATED OUTSIDE PROPOSED GRADING AREAS.
7. THE EXISTING SITE IS NOT UNDERLAIN BY ANY NATURALLY OCCURRING GEOLOGIC FORMATIONS OR SOIL CONDITIONS WHICH COULD CAUSE POLLUTION DURING EARTH DISTURBANCE. THEREFORE, NO LOCATIONS ARE IDENTIFIED ON THIS PLAN AND NO DETAILS ARE PROVIDED FOR DISPOSAL OF SUCH MATERIAL.

Holmes Cunningham LLC
409 E. Butler Ave., Unit 5
Doylestown, PA 18901
(215) 586-3330
www.hcengineering.net
holmes cunningham ENGINEERING

REVISIONS

Date	Description

CALL BEFORE YOU DIG !!
PENNSYLVANIA LAW REQUIRES
3 WORKING DAYS NOTICE FOR
CONSTRUCTION PHASE AND
10 WORKING DAYS IN DESIGN STAGE
-- STOP & CALL --
Pennsylvania One Call System, Inc.
1-800-242-1776

UTILITY LOCATIONS AS SHOWN ON THIS PLAN ARE APPROXIMATE AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR, PER PA. ACT 187 TO CONTACT UTILITY COMPANIES PRIOR TO ANY EXCAVATION.

140 UPPER CHURCH ROAD

140 UPPER CHURCH ROAD
TMP # 26-003-104
NEW BRITAIN TOWNSHIP, BUCKS COUNTY, PA

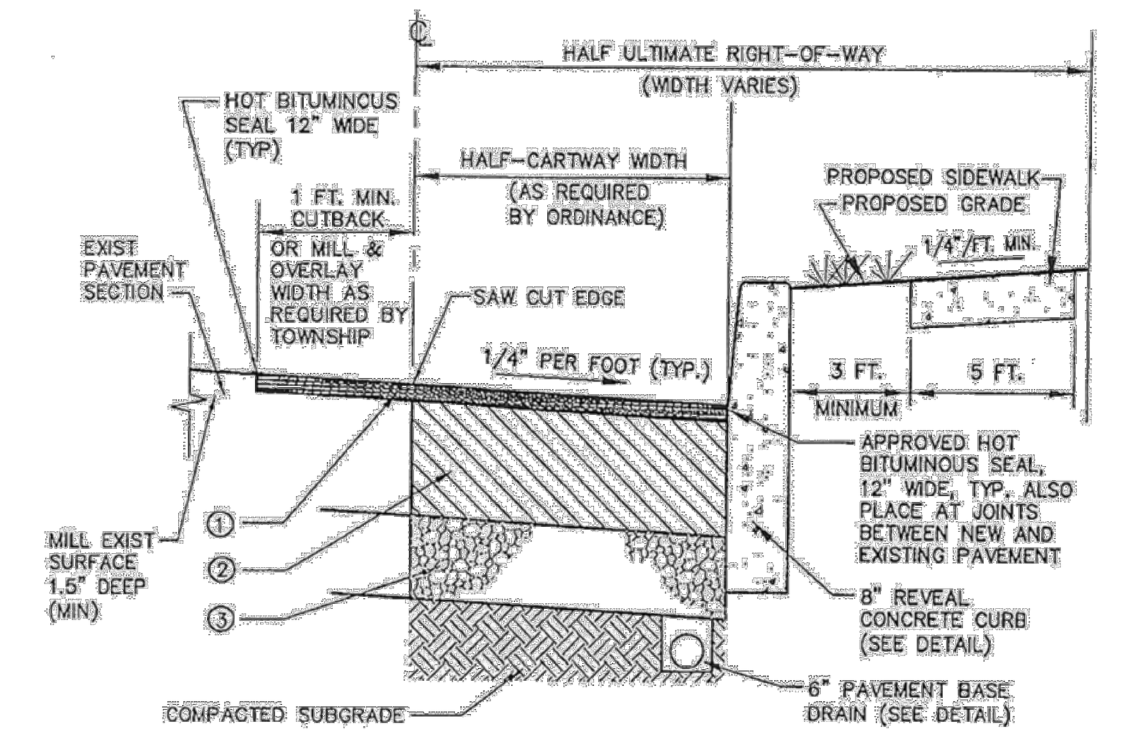
POST CONSTRUCTION STORMWATER MANAGEMENT PLAN

ROBERT T. CUNNINGHAM, P.E.
PA PE076424

File No.
1890_C1.0 PCSM.DWG

HCE Job	1890
Date	06/16/2023
Scale	1"=60'
Designed	RC
Sheet	4 of 9

Drawing No.
C1.0



(1) 1.5" SUPERPAVE ASPHALT MIXTURE DESIGN, 9.5 mm MIX, PG 64-22, HMA WEARING COURSE, 3.0 TO 10.0 MILLION ESALS, SRL-M
(2) 4.5" SUPERPAVE ASPHALT MIXTURE DESIGN, 25 mm MIX, PG 64-22, HMA BASE COURSE, 3.0 TO 10.0 MILLION ESALS
(3) 6" 3A MODIFIED STONE SUBBASE (MATCH EXISTING IF GREATER)

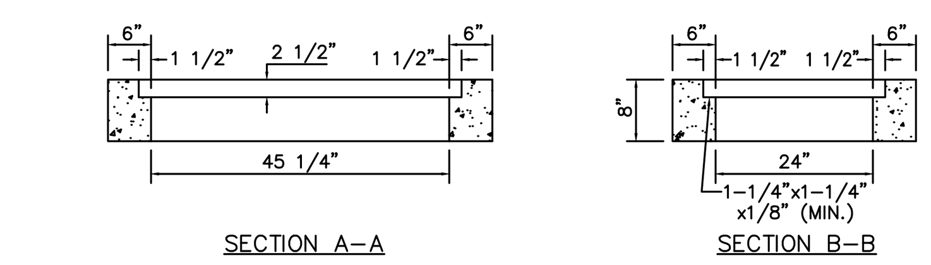
NOTE: NEW ROADS SHALL COMPLY WITH THE ABOVE SPECIFICATION

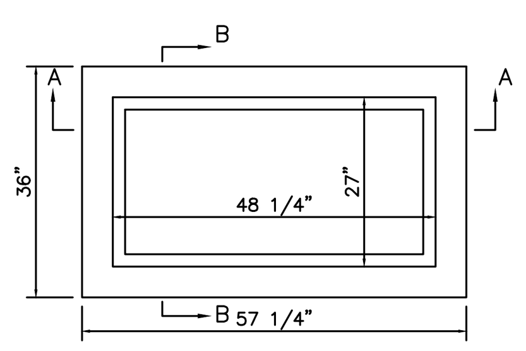
TYPICAL ROADWAY WIDENING SECTION DETAIL FOR RESIDENTIAL AND LOCAL ROADS

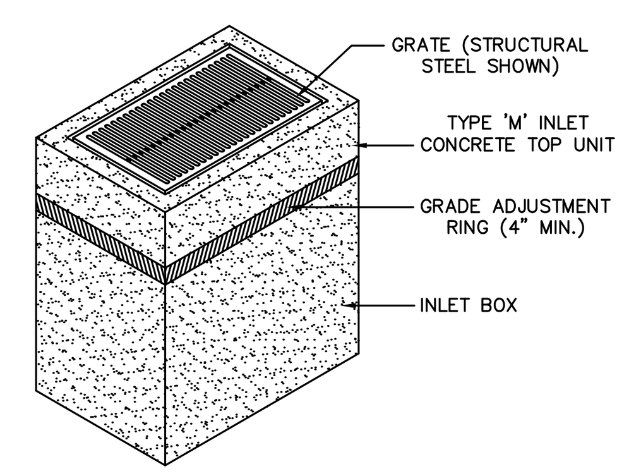
NEW BRITAIN TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES

DATE: 5/22/09	LAST REVISED:	SCALE: N.T.S.	DRAWING No: 3 OF 17

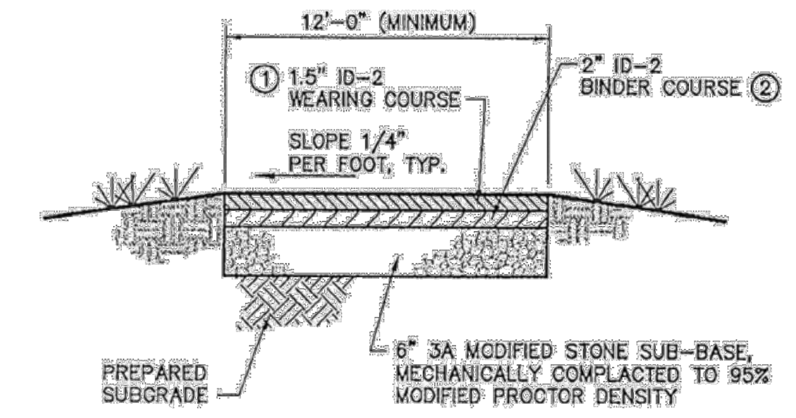






NOTE:
1. REFER TO PENNDOT PUBLICATIONS 408 AND 72, MOST CURRENT EDITION FOR DESIGN STANDARDS.
2. ALL INLET TOPS SHALL BE THE ENVIRONMENT TYPE.
3. ALL INLET IN AREAS TO BE PAVED ARE TO BE BACKFILLED WITH 2A MATERIAL.

TYPE M INLET DETAIL



ALTERNATE SPECIFICATION

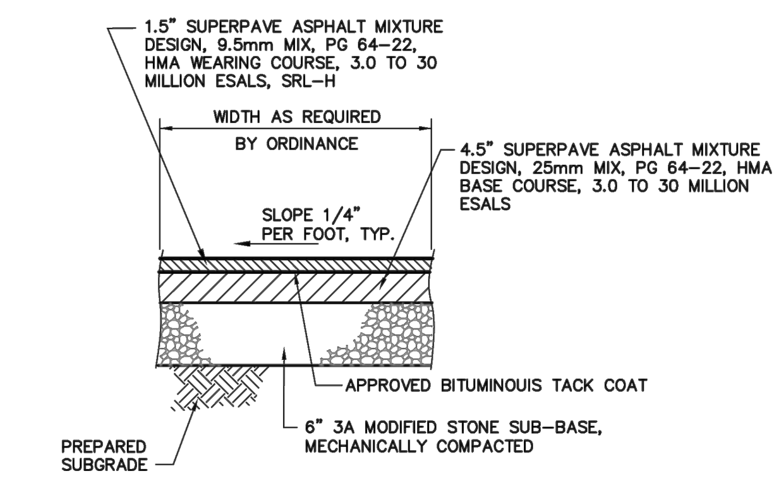
(1) 1.5" SUPERPAVE ASPHALT MIXTURE DESIGN, 9.5 mm MIX, PG 64-22, HMA WEARING COURSE, 0.3 TO 3 MILLION ESALS, SRL-M
(2) 2.0" SUPERPAVE ASPHALT MIXTURE DESIGN, 19mm MIX, PG 64-22, HMA BINDER COURSE, 0.3 TO 3 MILLION ESALS

RESIDENTIAL DRIVEWAY PAVING SECTION DETAIL

NEW BRITAIN TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES

DATE: 5/22/09	LAST REVISED:	SCALE: N.T.S.	DRAWING No: 7 OF 17

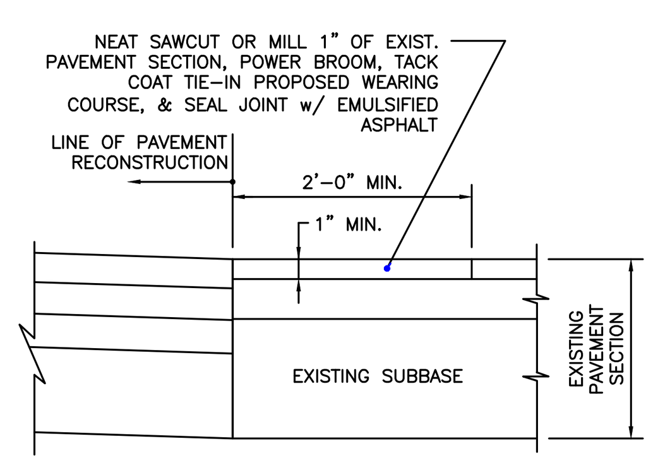


NON-RESIDENTIAL AND MULTI-RESIDENTIAL DRIVEWAYS, PARKING AREAS AND LOADING AREAS PAVING SECTION DETAIL

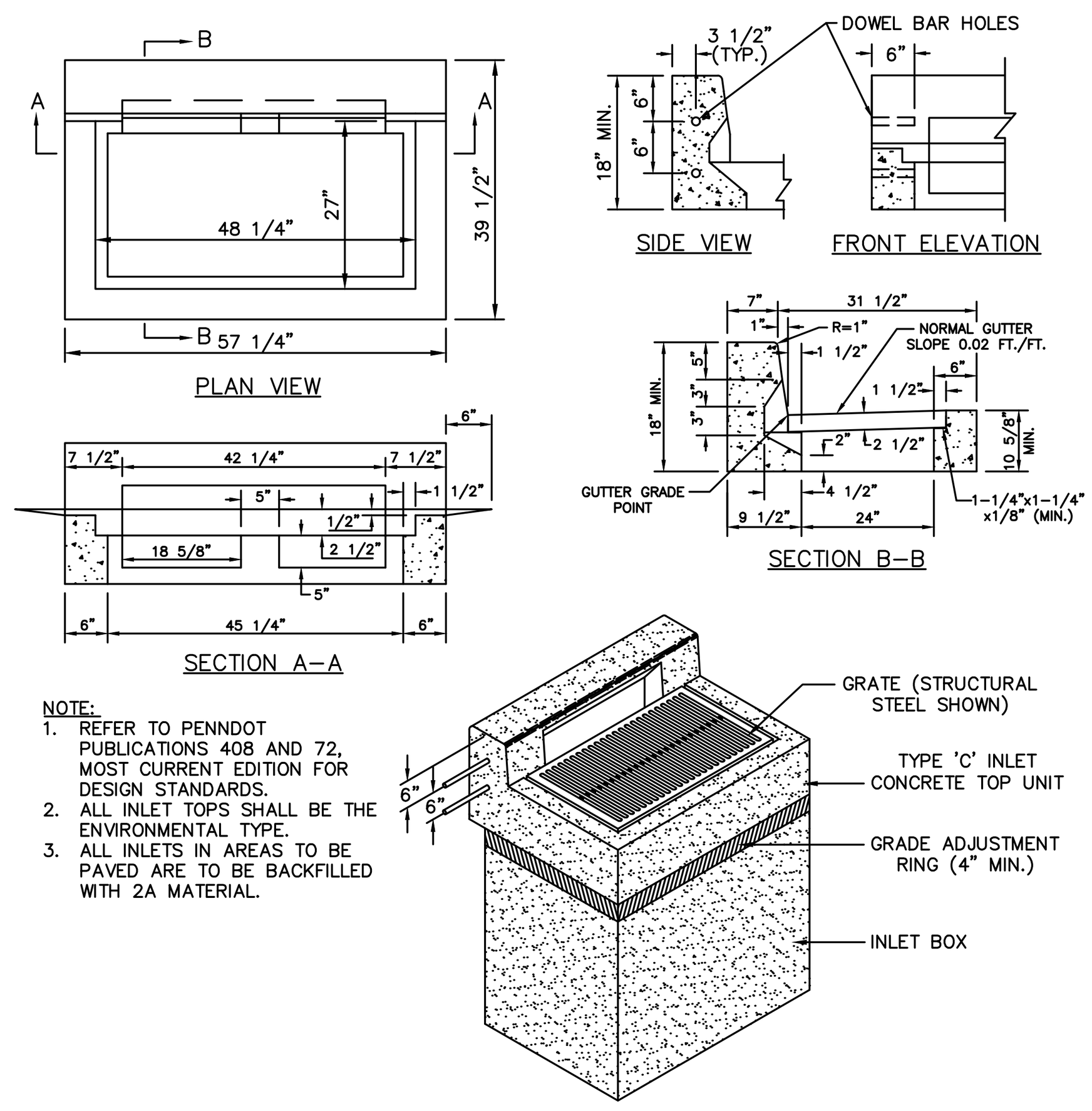
NEW BRITAIN TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES

DATE: 5/22/09	LAST REVISED:	SCALE: N.T.S.	DRAWING No: 8 OF 17

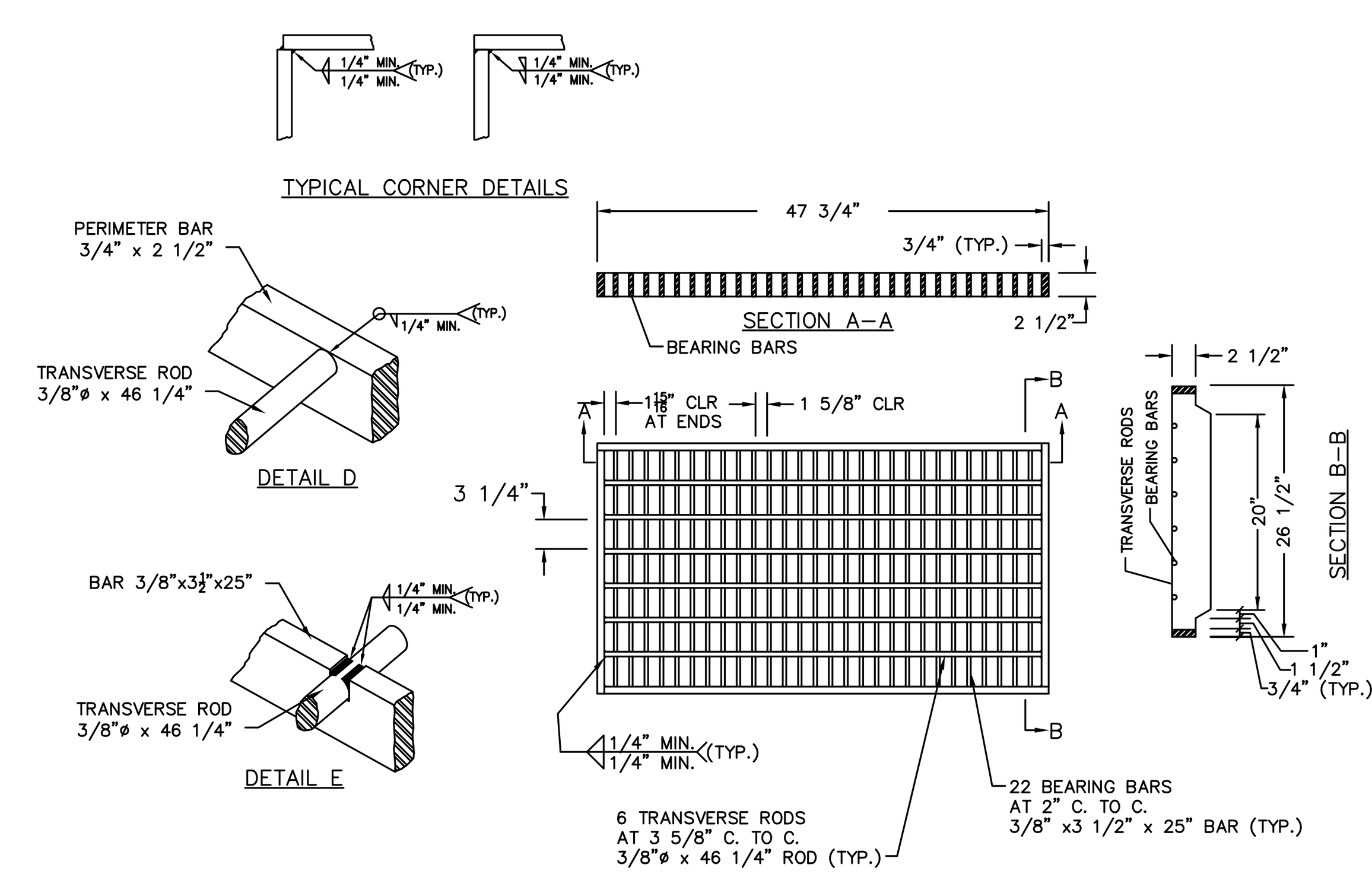


PAVEMENT TIE-IN

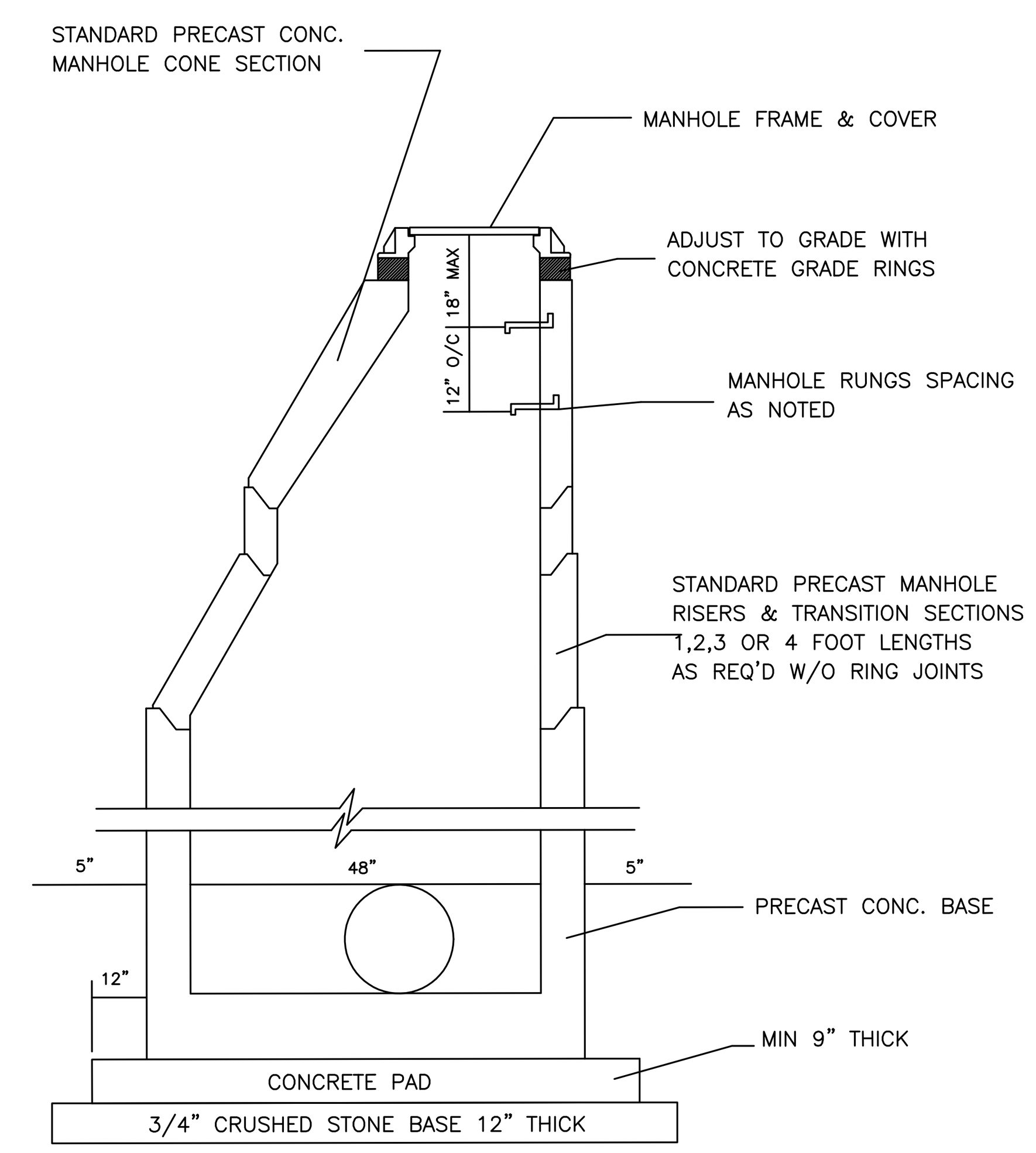


NOTE:
1. REFER TO PENNDOT PUBLICATIONS 408 AND 72, MOST CURRENT EDITION FOR DESIGN STANDARDS.
2. ALL INLET TOPS SHALL BE THE ENVIRONMENTAL TYPE.
3. ALL INLETS IN AREAS TO BE PAVED ARE TO BE BACKFILLED WITH 2A MATERIAL.

TYPE C INLET DETAIL

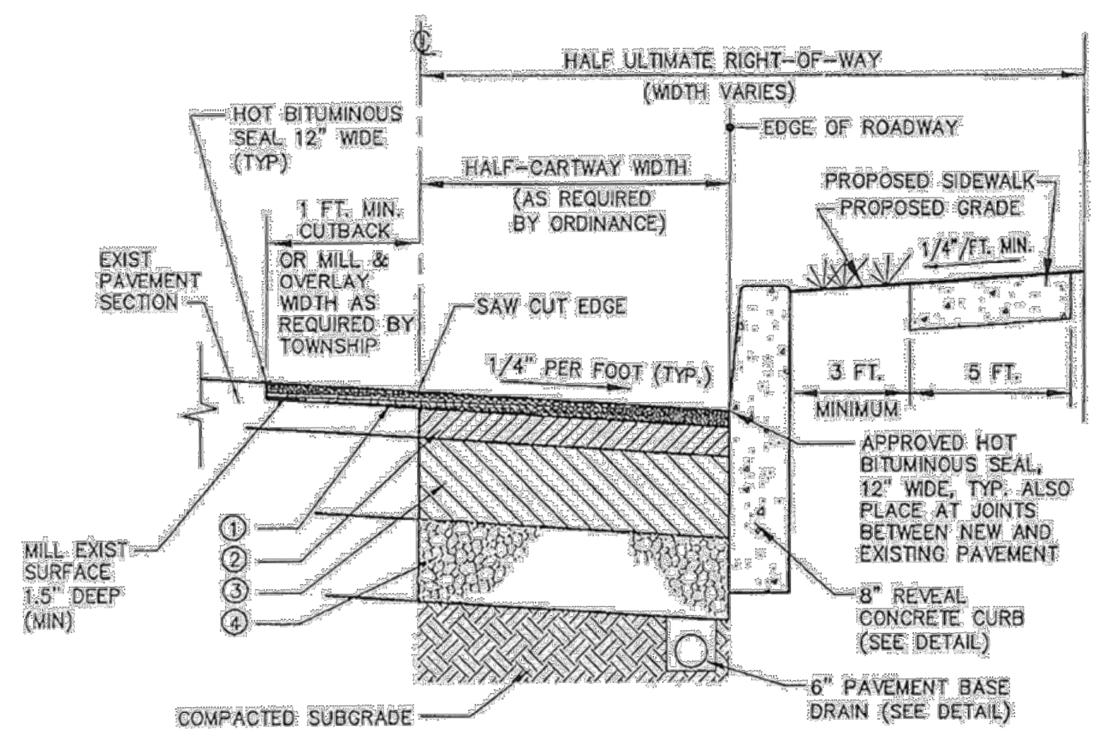


STRUCTURAL STEEL BICYCLE SAFE INLET GRATE DETAIL



NOTES:
1. PRECAST CONCRETE MANHOLES SHALL BE AS DETAILED IN PENNDOT STANDARDS FOR ROADWAY CONSTRUCTION, CURRENT EDITION (PDT PUB #72M) RC–39M, 'STANDARD MANHOLES, PRECAST MANHOLES AND MANHOLE STEPS'.
2. STEPS SHALL BE PROVIDED WHENEVER STRUCTURE EXCEEDS 4 FEET IN DEPTH.
3. STEP DIMENSIONS AND CONFIGURATION SHALL BE IN ACCORDANCE WITH PENNDOT STANDARDS FOR ROADWAY CONSTRUCTION, CURRENT EDITION (PDT PUB 172M), RC–39M.
4. STEP AND STEP INSTALLATION SHALL MEET ALL REQUIREMENTS OF ASTM C 478 AND C 497 FOR DIMENSIONS, LOAD RATING AND PULLOUT RESISTANCE.
5. PROVIDE FRAME AND GRATE AS DETAILED IN PENNDOT STANDARDS FOR ROADWAY CONSTRUCTION. CURRENT EDITION (PDT PUB 1172M) RC–39M. 'STANDARD MANHOLES COVERS, FRAMES AND ADJUSTMENT RISERS'
6. THE CONTRACTOR SHALL PROVIDE CUT SHEETS TO ENGINEER TO REVIEW PRIOR TO CONSTRUCTION.
7. STORM MANHOLE COVERS SHALL HAVE THE WORD "STORM" ON THE COVER IN 2–INCH HIGH LETTERS.
8. STORM MANHOLES SHALLS BE THE ENVIRONMENT TYPE.

PRECAST CONCRETE STORM MANHOLE



(1) 1.5" SUPERPAVE ASPHALT MIXTURE DESIGN, 9.5 mm MIX, PG 64-22, HMA WEARING COURSE, 3.0 TO 30.0 MILLION ESALS, SRL-H
(2) 2.0" SUPERPAVE ASPHALT MIXTURE DESIGN, 19 mm MIX, PG 64-22, HMA BINDING COURSE, 3.0 TO 30.0 MILLION ESALS
(3) 5" SUPERPAVE ASPHALT MIXTURE DESIGN, 25 mm MIX, PG 64-22, HMA BASE COURSE, 3.0 TO 30.0 MILLION ESALS
(4) 6" 3A MODIFIED STONE SUBBASE (MATCH EXISTING IF GREATER)

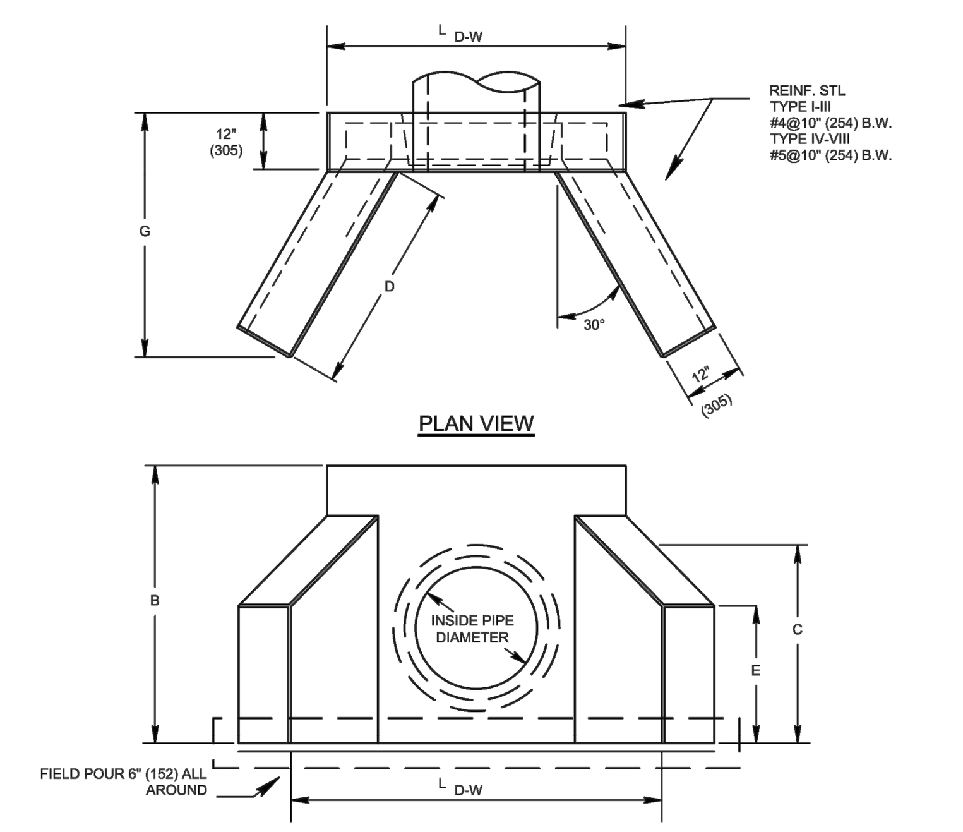
NOTE: NEW ROADS SHALL COMPLY WITH THE ABOVE SPECIFICATION

TYPICAL ROADWAY WIDENING SECTION DETAIL FOR ARTERIAL, COLLECTOR, AND NON-RESIDENTIAL ROADS

NEW BRITAIN TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES

DATE: 5/22/09	LAST REVISED:	SCALE: N.T.S.	DRAWING No: 2 OF 17

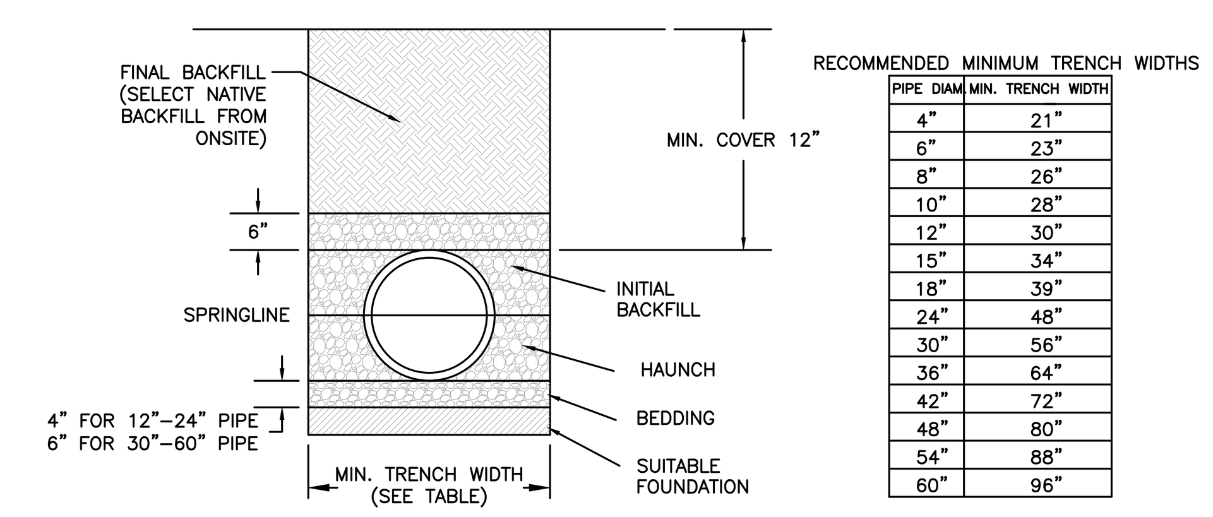


TYPE	INSIDE PIPE DIA. IN./(mm)	WEIGHT L.B./(kg)	A IN./(mm)	B IN./(mm)	C IN./(mm)	D IN./(mm)	E IN./(mm)	F IN./(mm)	G IN./(mm)
I	12–15 (305–381)	3400 (1542)	56 (1422)	39 (991)	26 (660)	36 (914)	12 (305)	86 (2184)	44 (2184)
II	18–21 (457–533)	4880 (2214)	64 (1626)	48 (1219)	36 (914)	39 (991)	20 (508)	96 (2438)	48 (1219)
III	24–27 (610–686)	5270 (2390)	68 (1727)	52 (1321)	40 (1016)	42 (1067)	24 (610)	104 (2642)	48 (1219)
VI	30–36 (762–914)	9250 (4196)	79 (2007)	65 (1651)	54 (1372)	63 (1600)	28 (711)	134 (3404)	67 (1702)
V	42 (1067)	9500 (4309)	88 (2235)	71 (1803)	54 (1372)	63 (1600)	28 (711)	143 (3632)	67 (1702)
*VI	48 (1219)	12780 (5797)	96 (2438)	78 (1981)	66 (1676)	81 (2057)	30 (762)	170 (4318)	83 (2108)
*VII	54–60 (1371–1524)	20440 (9271)	122 (3099)	102 (2591)	96 (2438)	102 (2591)	30 (762)	216 (5486)	100 (2540)
*VIII	72 (1829)	24800 (11249)	142 (3607)	120 (3048)	102 (2591)	108 (2743)	30 (762)	243 (6172)	106 (2692)

SPECIFICATIONS:
1. CONCRETE TO OBTAIN A STRENGTH OF 4,000 PSI. (27mPA) IN 28 DAYS.
2. REINFORCING STEEL TO HAVE A YIELD STRENGTH OF 60,000 PSI (414mPA).
3. TYPE MARKED BY * INDICATES WALL MAY BE FABRICATED IN (3) PIECES.

PRECAST CONCRETE STRUCTURES TO BE WET CAST AS MANUFACTURED BY ATLANTIC CONCRETE PRODUCTS OR APPROVED EQUAL.

CONCRETE END WALLS 2001 FT–29



RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN. TRENCH WIDTH
4"	21"
6"	23"
8"	26"
10"	28"
12"	30"
15"	34"
18"	39"
24"	48"
30"	56"
36"	64"
42"	72"
48"	80"
54"	88"
60"	96"

NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION
2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"–24" (100mm–600mm); 6" (150mm) FOR 30"–60" (750mm–900mm).
5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
6. MINIMUM COVER: MINIMUM COVER, H, IN NON–TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 54"–60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

HDPE PIPE DETAIL

Holmes Cunningham LLC
409 E. Butler Ave., Unit 5
Doylestown, PA 18901
(215) 586-3330
www.hcengineering.net
holmes cunningham ENGINEERING

REVISIONS

Date	Description

CALL BEFORE YOU DIG! PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE – STOP & CALL
Pennsylvania One Call System, Inc. 1-800-242-1776

UTILITY LOCATIONS AS SHOWN ON THIS PLAN ARE APPROXIMATE AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR, PER PA ACT 187 TO CONTACT UTILITY COMPANIES PRIOR TO ANY EXCAVATION.

140 UPPER CHURCH ROAD

140 UPPER CHURCH ROAD
TMP # 26-003-104
NEW BRITAIN TOWNSHIP, BUCKS COUNTY, PA

CONSTRUCTION DETAILS

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ROBERT THOMAS CUNNINGHAM PE076424

ROBERT T. CUNNINGHAM, P.E.
PA PE076424

File No.
1890_C1.0 PCSM.DWG

HCE Job	1890
Date	06/16/2023
Scale	N.T.S.
Designed	RC
Sheet	5 of 9

Drawing No.
C1.1

SEEDING NOTES:

TEMPORARY SEEDING :

1. TEMPORARY SEEDING SHALL BE DONE IN AREAS WHERE NO ACTIVITY WORK WILL BE PERFORMED. ANY DISTURBED AREA ON WHICH ACTIVITY HAS CEASED MUST BE SEEDED AND MULCHED IMMEDIATELY.
2. DURING NON-GERMINATING PERIODS, ONLY MULCH MUST BE APPLIED AT THE RECOMMENDED RATES. AREAS MULCHED DURING THE NON-GERMINATING PERIODS, MUST BE LIMED, FERTILIZED, SEEDED, AND MULCHED IMMEDIATELY FOLLOWING THE END OF THE NON-GERMINATING PERIODS.
3. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE REDISTURBED WITHIN ONE (1) YEAR MAY BE SEEDED AND MULCHED WITH A QUICK GROWING TEMPORARY SEED MIXTURE.
4. DISTURBED AREAS WHICH ARE AT EITHER FINISHED GRADE OR WILL NOT BE DISTURBED AGAIN WITHIN ONE (1) YEAR MUST BE SEEDED WITH A PERMANENT SEED MIXTURE AND MULCHED.
5. TEMPORARY SEEDING STEPS:
   A. APPLY AGRICULTURAL LIMESTONE AT A RATE OF ONE (1) TON PER ACRE. (5 POUNDS PER, 1000 SQUARE FEET)
   B. APPLY FERTILIZER AT THE RATE OF 50-50-50 PER ACRE.
   C. WORK THE LIMESTONE AND FERTILIZER INTO THE SOIL.
   D. UTILIZING THE FOLLOWING SEEDING TYPES, RATES AND TIME SCHEDULE :

TEMPORARY SEEDING

SEASON	RATE	TYPE
MARCH 1 TO JUNE 15	1 LB./1000 SF	ANNUAL RYEGRASS
MAY 15 TO SEPT 15	1 LB./1000 SF	SUDAN GRASS
SEPT 15 TO OCT 15	168 LB./AC	WINTER RYE

   E. APPLY HAY OR STRAW MULCH (IN ACCORDANCE WITH SECTION NO. 4) AT A RATE OF THREE (3) TONS PER ACRE.
6. ALL SEED SHALL BE LABELED, DATED AND QUALITY CONSISTENT WITH SECTION NO. 2

PERMANENT SEEDING:

1. DISTURBED AREAS WHICH ARE EITHER AT FINISHED GRADE OR WILL NOT BE DISTURBED AGAIN WITHIN ONE (1) YEAR MUST BE SEEDED WITH A PERMANENT SEED MIXTURE AND MULCHED.
2. SEEDING SHALL BE DONE DURING PERIODS FROM APRIL 15TH TO OCTOBER PT, UNLESS OTHERWISE DIRECTED. IF SEEDING IS DONE AFTER OCTOBER 1", DORMANT SEED MUST BE USED AND DISTURBED AREAS MUST BE MULCHED.
3. DISTURBED FINAL GRADED AREAS AND DRAINAGE SWALES WILL BE PERMANENTLY SEEDED AS FOLLOWS:
   A. MINIMUM OF 4" OF TOPSOIL SHALL BE SPREAD OVER ALL AREAS TO BE SEEDED. TOPSOIL SHALL BE FREE OF STONES, STICKS, WASTE MATERIAL AND SIMILAR DEBRIS. FROZEN GROUND SHALL NOT BE SPREAD AS TOPSOIL AND TOPSOIL SHALL NOT BE SPREAD OVER FROZEN GROUND.
   B. A SOIL ANALYSIS IS RECOMMENDED, HOWEVER, IN LIEU OF AN ANALYSIS APPLY AGRICULTURAL LIMESTONE AND FERTILIZER AT RATES RECOMMENDED BELOW (OR AS SUGGESTED BY THE SOIL TEST RESULTS (ONE (1) TEST PER 25 ACRES)).
   C. THE LIMESTONE AND FERTILIZER SHALL BE WORKED INTO THE SOIL TO DEPTHS OF 3 TO 4 INCHES. D. GRASS SHALL NOT BE PLANTED AFTER HEAVY RAIN OR WATERING.
   D. ALL SEED USED SHALL BE LABELED IN ACCORDANCE WITH THE U.S. DEPARTMENT OF AGRICULTURE RULES AND REGULATIONS UNDER THE FEDERAL SEED ACT IN EFFECT AT THE TIME OF PURCHASE. INERT MATTER SHALL NOT EXCEED 15% AND BLUE TAG CERTIFIED SEED SHALL BE SUPPLIED WHEREVER POSSIBLE.
   E. SMOOTH AND FIRM SEED BED WITH CULTIPACKER OR SIMILAR EQUIPMENT PRIOR TO SEEDING. APPLY SEED UNIFORMLY BY BROADCASTING, DRILLING OR HYDRO SEEDING. COVER SEEDS WITH '/2" OF SOIL WITH SUITABLE EQUIPMENT.
   F. APPLY HAY OR STRAW MULCH (IN ACCORDANCE WITH SECTION NO. 4) AT A RATE OF THREE (3) TONS PER ACRE.

PERMANENT SEEDING FOR NORMAL MOWED LAWN AREAS:

SEASON	RATE	TYPE
MARCH 1 TO JUNE 1 & AUG 15 TO OCT 1	2 LBS./1000 SF	KY31 TALL FESCUE AND RED TOP 12%
OCT 1 TO MARCH 1 & JUNE 1 TO AUG 1	2 LBS./1000 SF	RED TOP*

((*) USE DORMANT SEED, UNIFORMLY APPLIED, WORKING INTO A DEPTH OF 1/4 INCH. THE USE OF MULCH IS REQUIRED. THE USE OF NETTING OR EROSION CONTROL MATS MAY BE REQUIRED.)

PERMANENT SEEDING FOR SPECIAL AREAS
(SWALES, POND EMBANKMENTS, LEVEES, DIVERSION CHANNELS, ETC):

SEASON	RATE	TYPE
MARCH 1 TO JUNE 1 & AUG 15 TO OCT 1	2 LBS./1000 SF	KY31 TALL FESCUE 80% AND RYEGRASS 20%

NOTE : SEEDING PERIODS AND SPECIFICATIONS MAY VARY DUE TO SITE CONDITIONS AND VARIANCES FROM THE TIME THIS REPORT IS WRITTEN AND APPROVED. IT MAY BE NECESSARY TO ADAPT SEED SPECIFICATION, VARIETIES, AND QUALITIES. FOR SPECIAL CONDITIONS CONSULT "GUIDELINE FOR RECLAMATION OF SEVERELY DISTURBED AREAS", PENNSYLVANIA STATE UNIVERSITY.

4. FERTILIZER : A SOIL ANALYSIS IS RECOMMENDED BUT IN LIEU OF AN ANALYSIS APPLY AGRICULTURAL LIMESTONE AT A RATE OF FOUR (4) TONS/ACRE AND 10-20-20 FERTILIZED AT A RATE OF 50 LBS. PER 1000 SF. THESE MATERIALS WILL BE UNIFORMLY APPLIED AND WORKED INTO THE TOPSOIL TO A DEPTH OF 3 TO 4 INCHES. IMMEDIATELY BEFORE SEEDING, A 1 0- 1 0- 10 FERTILIZER WILL BE WORKED INTO THE SURFACE AT A RATE OF 10 LBS. PER 1000 SF.
5. HYDRO SEEDING: LIME AND SEED SHALL BE AS SPECIFIED ABOVE, AND FERTILIZER SHALL BE APPLIED AT A RATE OF 40-80. CROWN VETCH SHALL BE INOCULATED AT FOUR TIMES THE MANUFACTURER'S RATE. SHOULD FERTILIZER BE APPLIED WITH THE INOCULANT, THE MIXTURE SHALL NOT REMAIN IN A SLURRY FOR MORE THAN ONE HOUR. WOOD CELLULOSE FIBER, APPLIED AT A RATE OF 35 LBS. PER 1000 SF, MAY BE APPLIED AS PART OF THE SLURRY IN LIEU OF MULCHING. SYNTHETIC MULCH BINDER, SUCH AS CURASOL, DCA-70, TERRE-TACK OR AN APPROVED EQUAL SHALL BE USED PER THE MANUFACTURER'S INSTRUCTIONS TO ANCHOR THE MULCH.
6. MULCHING: MULCHING SHALL BE APPLIED AS FOLLOWS:
   A. STRAW - SHALL BE ALL DRIED AND FREE FROM UNDESIRABLE SEEDS AND COURSE MATERIAL, APPLY AT A RATE OF 115 TO 150 LBS. PER 1000 SF OR 3 TONS PER ACRE. MULCHED AREAS SHALL BE CHECKED PERIODICALLY AND IMMEDIATELY AFTER STORMS AND WIND. DAMAGED OR MISSING MULCH SHALL BE REPLACED. A TACKIFIER APPLIED AFTER STRAW IS RECOMMENDED. TACKIFIER MAY BE ASPHALT OR POLYMER SPRAY. APPLY AT A RATE RECOMMENDED BY THE MANUFACTURER WITH SUITABLE EQUIPMENT. IN LIEU OF MANUFACTURERS RECOMMENDATIONS APPLY AT A RATE OF .04 TO .06 GALLONS PER SQUARE YARD.
   B. NETTING / EROSION CONTROL BLANKETS - THE USE AND INSTALLATION OF EROSION CONTROL BLANKETS OR NETTING SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION AND SHALL BE SELECTED FOR THE PROPER APPLICATION AND CONDITIONS.

SEQUENCE OF CONSTRUCTION

NOTES:

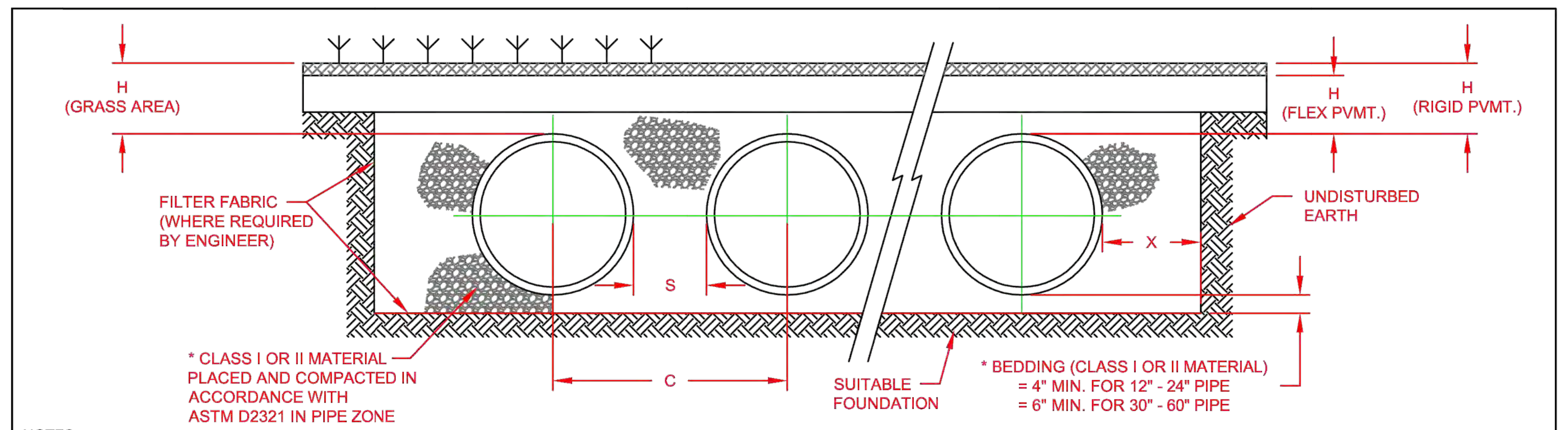
- SITE DEVELOPMENT OPERATIONS SHOULD BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING GENERAL SEQUENCE OF OPERATIONS. THE CONTRACTOR MAY DEVIATE FROM THE STAGING OF PERMANENT SITE IMPROVEMENT CONSTRUCTION ITEMS, WITH APPROVAL OF THE CONSERVATION DISTRICT INSPECTOR. DEVIATION FROM THE RELATIVE ORDER OF EROSION AND SEDIMENT CONTROL MEASURES SHOULD NOT OCCUR WITHOUT APPROVAL OF THE CONSERVATION DISTRICT INSPECTOR AND SITE ENGINEER. NO VERTICAL CONSTRUCTION MAY OCCUR UNTIL SUBGRADE IS SET.
- THE RAIN GARDENS SHALL BE INSTALLED BEFORE THE CONSTRUCTION OF ANY BUILDINGS OR SITE IMPROVEMENTS, UNLESS OTHERWISE APPROVED BY THE BOARD AND THE BUCKS COUNTY CONSERVATION DISTRICT. A PRELIMINARY BASIN AS-BUILT PLAN MUST BE SUBMITTED AND APPROVED BY THE TOWNSHIP ENGINEER PRIOR TO BEGINNING ANY BUILDING CONSTRUCTION TO CONFIRM THAT THE CONSTRUCTED VOLUMES ARE IN ACCORDANCE WITH THE DESIGN PLANS.

1. CONTACT THE BUCKS COUNTY CONSERVATION DISTRICT (215-345-7577), NEW BRITAIN TOWNSHIP, AND THE TOWNSHIP ENGINEER AT LEAST THREE (3) WORKING DAYS PRIOR TO SITE DISTURBANCE.
2. EACH STAGE OF THE SEQUENCE OF CONSTRUCTION MUST BE COMPLETED PRIOR TO INITIATION OF THE NEXT STAGE OF THE SEQUENCE OF CONSTRUCTION. CONSTRUCTION MAY OVERLAP INTO A SUBSEQUENT PHASE AS LONG AS ALL EROSION CONTROL MEASURES HAVE BEEN INSTALLED IN THE PREVIOUS PHASE.
3. INSTALL CONSTRUCTION ENTRANCE AT SITE ACCESS, STOCKPILE, COMPOST FILTER SOCK AND TREE PROTECTION FENCE WHERE SHOWN ON THE PLAN. INSTALL PROTECTION FENCE AROUND FUTURE BMPS.
4. STRIP TOPSOIL AND STOCKPILE WHERE SHOWN ON PLAN. ALL STRIPPED TOPSOIL STOCKPILES SHALL HAVE TEMPORARY SEEDING INSTALLED. ROUGH GRADE SITE, DRIVEWAY/PARKING AND BUILDING PADS. INSTALL TEMPORARY EROSION CONTROL BLANKETS.
5. PRIOR TO VERTICAL CONSTRUCTION A STABLE BASE WILL BE ESTABLISHED AND MAINTAINED, TO AVOID ACCELERATED EROSION.
6. A PRELIMINARY SEEPAGE PIT AS-BUILT PLAN MUST BE SUBMITTED AND APPROVED BY THE TOWNSHIP ENGINEER PRIOR TO BEGINNING ANY BUILDING CONSTRUCTION TO CONFIRM THAT THE CONSTRUCTED VOLUMES ARE IN ACCORDANCE WITH THE DESIGN PLANS.
7. BEGIN CONSTRUCTION OF BUILDING FOUNDATIONS. BUILDING CONSTRUCTION MAY COINCIDE WITH ADDITIONAL SITE WORK, INCLUDING UTILITY AND DRIVEWAY CONSTRUCTION, THAT IS LISTED IN THIS SEQUENCE OF CONSTRUCTION. PRIOR TO VERTICAL CONSTRUCTION, SUBGRADE IS TO BE SET, INCLUDING BUT NOT LIMITED TO FOUNDATION WORK, STABLE SUBGRADE/SUBBASE, SUBSURFACE UTILITY WORK, AND DRIVEWAY/PARKING SUBGRADE.
8. INSTALL WATER, SANITARY SEWER, AND STORM SEWER SYSTEM STARTING AT THE DOWNSTREAM ENDS AND WORKING UPSTREAM. ALL TRENCHES SHALL BE BACKFILLED AT THE END OF EACH DAY. MAKE OFFSITE UTILITY CONNECTIONS AND INSTALL OFFSITE WATER AND SANITARY SEWER, INSTALL CURB, SUBBASE AND BASE COURSE FOR THE DRIVEWAY/PARKING.
9. COMPLETE FINAL GRADING. AFTER FINAL GRADING IS COMPLETED, APPLY PERMANENT SEEDING MIXTURE AND INSTALL ALL REQUIRED PLANTINGS, FENCING, AND LIGHTING. LIGHTING SHALL BE INSTALLED PRIOR TO THE ISSUANCE OF ANY USE AND OCCUPANCY PERMITS. ONCE ALL BUILDINGS ARE COMPLETED, FLUSH ALL AFFECTED STORM DRAINAGE PIPES OF ACCUMULATED SILT.
10. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENTATION CONTROLS MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENTATION CONTROLS AFTER EACH STORM EVENT OR ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN-OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING, MUST BE PERFORMED IMMEDIATELY.
11. UPON COMPLETE STABILIZATION OF SITE, REMOVE EROSION CONTROL DEVICES. THE SITE SHALL BE CONSIDERED STABILIZED WHEN THE PERMANENT VEGETATION HAS PROVIDED A 70% GROUNDCOVER.
12. AFTER CONSTRUCTION IS COMPLETED, INSTALL WEARING COURSE FOR THE DRIVEWAY. REPAIR ANY DAMAGED STORM SEWER STRUCTURES, SANITARY SEWER STRUCTURES, LANDSCAPING, LIGHTING, SIDEWALK, DRIVEWAYS, AND/OR ANY OTHER AMENITIES FROM INSTALLATION OF WEARING COURSE.

BMP MAINTENANCE PLAN
THE PROPERTY OWNER IS RESPONSIBLE FOR MAINTENANCE OF THE STORMWATER CONVEYANCE SYSTEM, AND ALL OTHER PROPOSED BMP'S ON THEIR LOT.

STORMWATER CONVEYANCE SYSTEM
- CATCH BASINS, MANHOLES AND PIPES TO BE INSPECTED FOR CLOGGING AND EXCESSIVE DEBRIS AND SEDIMENT ACCUMULATION AT LEAST ANNUALLY.
- ALL STRUCTURAL COMPONENTS MUST BE INSPECTED FOR CRACKING, SUBSIDENCE, BREACHING, WEARING, AND DETERIORATION AT LEAST ANNUALLY.
- 3. IN THE EVENT INSPECTION REVEALS THE BMP TO NOT BE FUNCTIONING PROPERLY, THE RESPONSIBLE PARTY SHALL NOTIFY A LICENSED PROFESSIONAL TO DETERMINE THE EXTENT OF THE FAILURE AND RECOMMEND REMEDIATION OR REPLACEMENT.

SEEPAGE PIT (MANAGED RELEASE CONCEPT)
- INSPECT SEEPAGE PITS AT LEAST FOUR TIMES A YEAR, AS WELL AS AFTER EVERY STORM EXCEEDING 1 INCH.
- DISPOSE OF SEDIMENT, DEBRIS/TRASH, AND ANY OTHER WASTE MATERIAL REMOVED FROM AN INFILTRATION BED AT SUITABLE DISPOSAL/RECYCLING SITES AND IN COMPLIANCE WITH LOCAL, STATE, AND FEDERAL WASTE REGULATIONS.
- EVALUATE THE DRAIN-DOWN TIME OF THE BED TO ENSURE THE MAXIMUM TIME OF 48 HOURS FROM THE END OF THE STORM IS NOT BEING EXCEEDED. IF DRAIN-DOWN TIMES ARE EXCEEDING THE MAXIMUM, DRAIN THE INFILTRATION BED VIA PUMPING AND CLEAN OUT PERFORATED PIPING, IF INCLUDED. IF SLOW DRAINAGE PERSISTS, THE SYSTEM MAY NEED REPLACING.
- REGULARLY CLEAN OUT GUTTERS AND ENSURE PROPER CONNECTIONS TO FACILITATE THE EFFECTIVENESS OF THE SEEPAGE PIT.
- REPLACE FILTER SCREEN THAT INTERCEPTS ROOF RUNOFF AS NECESSARY.
- IF AN INTERMEDIATE SUMP BOX EXISTS, CLEAN IT OUT AT LEAST ONCE PER YEAR.
- YARD INLETS AND PIPES TO BE INSPECTED FOR CLOGGING AND EXCESSIVE DEBRIS AND SEDIMENT ACCUMULATION AT LEAST ANNUALLY AS WELL AS AFTER EVERY STORM EXCEEDING 1-INCH OF RAINFALL.
- ALL STRUCTURAL COMPONENTS MUST BE INSPECTED FOR CRACKING, SUBSIDENCE, BREACHING, WEARING, AND DETERIORATION AT LEAST ANNUALLY
- THE GROUND SURFACE, INCLUDING AREAS AROUND YARD INLETS, BERMS, AND OVERFLOWS, SHALL BE INSPECTED FRO EROSION, PITTING, AND SCOURING AT LEAST ANNUALLY..



NOTES:

1. ALL REFERENCES TO CLASS I OR II MATERIAL ARE PER ASTM D2321 "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST EDITION.
2. ALL RETENTION AND DETENTION SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, LATEST EDITION AND THE MANUFACTURER'S PUBLISHED INSTALLATION GUIDELINES.
3. MEASURES SHOULD BE TAKEN TO PREVENT THE MIGRATION OF NATIVE FINES INTO THE BACKFILL MATERIAL, WHEN REQUIRED. SEE ASTM D2321.
4. FILTER FABRIC: A GEOTEXTILE FABRIC MAY BE USED AS SPECIFIED BY THE ENGINEER TO PREVENT THE MIGRATION OF FINES FROM THE NATIVE SOIL INTO THE SELECT BACKFILL MATERIAL.
5. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
6. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I OR II. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-1500mm).
7. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I OR II IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
8. MINIMUM COVER: MINIMUM COVER OVER ALL RETNETION/DETENTION SYSTEMS IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER IS 12" UP TO 36" DIAMETER PIPE AND 24" OF COVER FOR 42" - 60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

NOMINAL DIAMETER	NOMINAL O.D.	TYPICAL SPACING "S"	NOMINAL SPACING "C"	TYPICAL SIDE WALL "X"	H (NON-TRAFFIC)	H (TRAFFIC)
12" (300mm)	14.5" (368mm)	11" (279mm)	25.5" (648mm)	8" (203mm)	12" (305mm)	12" (305mm)
15" (375mm)	18" (457mm)	11.5" (292mm)	29.0" (737mm)	8" (203mm)	12" (305mm)	12" (305mm)
18" (450mm)	21" (533mm)	17.0" (432mm)	38.0" (965mm)	9" (229mm)	12" (305mm)	12" (305mm)
24" (600mm)	28" (711mm)	14.0" (356mm)	41.5" (1054mm)	10" (254mm)	12" (305mm)	12" (305mm)
30" (750mm)	36" (914mm)	18" (457mm)	53.0" (1346mm)	18" (457mm)	12" (305mm)	12" (305mm)
36" (900mm)	42" (1067mm)	22" (559mm)	63.0" (1600mm)	18" (457mm)	12" (305mm)	12" (305mm)
42" (1050mm)	48" (1219mm)	24" (610mm)	72.0" (1829mm)	18" (457mm)	12" (305mm)	24" (610mm)
48" (1200mm)	54" (1372mm)	25" (635mm)	78.5" (1994mm)	18" (457mm)	12" (305mm)	24" (610mm)
60" (1500mm)	67" (1702mm)	24" (610mm)	90" (2286mm)	18" (457mm)	12" (305mm)	24" (610mm)

* CLASS I BACKFILL REQUIRED AROUND 60" DIAMETER FITTINGS.

REV.	DESCRIPTION	BY	MM/DD/YY	CHK'D
4	GENERAL UPDATES AND RENAMED	TJR	02/19/16	

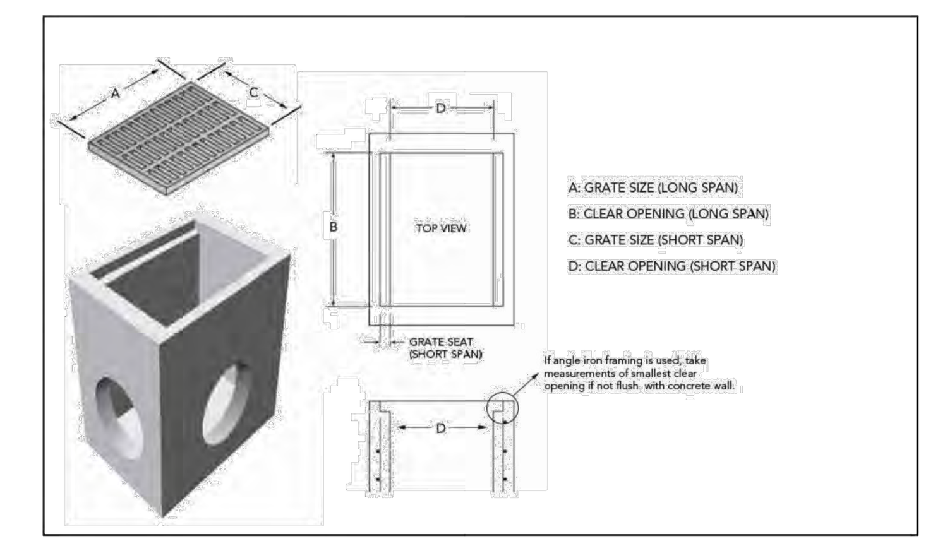
ADVANCED DRAINAGE SYSTEMS, INC. ("ADS") HAS PREPARED THIS DETAIL BASED ON INFORMATION PROVIDED TO ADS. THIS DRAWING IS INTENDED TO DEPICT THE COMPONENTS AS REQUESTED. ADS HAS NOT PERFORMED ANY ENGINEERING OR DESIGN SERVICES FOR THIS PROJECT, NOR HAS ADS INDEPENDENTLY VERIFIED THE INFORMATION SUPPLIED. THE INSTALLATION DETAILS PROVIDED HEREIN ARE GENERAL RECOMMENDATIONS AND ARE NOT SPECIFIC FOR THIS PROJECT. THE DESIGN ENGINEER SHALL REVIEW THESE DETAILS PRIOR TO CONSTRUCTION. IT IS THE DESIGN ENGINEERS RESPONSIBILITY TO ENSURE THE DETAILS PROVIDED HEREIN MEETS OR EXCEEDS THE APPLICABLE NATIONAL, STATE, OR LOCAL REQUIREMENTS AND TO ENSURE THAT THE DETAILS PROVIDED HEREIN ARE ACCEPTABLE FOR THIS PROJECT.

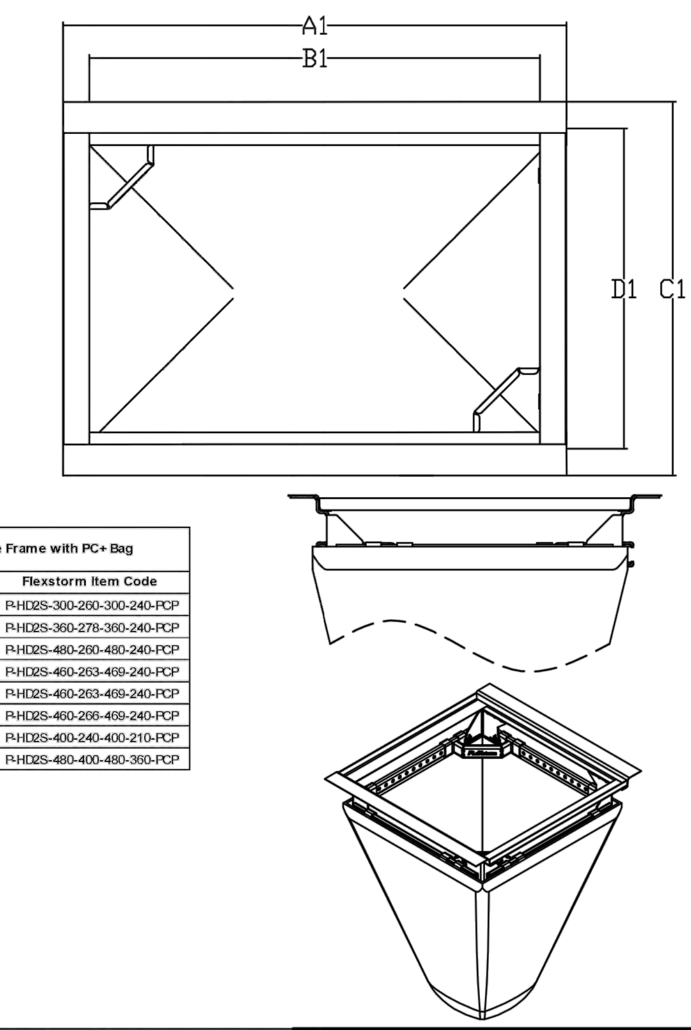
RETENTION-DETENTION SYSTEM (CROSS-SECTION)
DRAWING NUMBER: STD-702

ADS ADVANCED DRAINAGE SYSTEMS, INC. 4640 TRUEMAN BLVD HILLIARD, OHIO 43026

DRAWN BY: AWM · DATE: 07.25.06 · CHK'D BY: · SCALE: NTS · SHEET: OF

FLEXSTORM P/Ns 62'_'HDPC & 62'_'HDPCP
HD2S: INLET TYPE: RECTANGULAR PRECAST OPENING WITH 2 SEAT GRATE SUPPORTS ON LONG LEDGES (SHORT SPAN)





Pure Frame with PC Bag		Field Inlet Dimensions		Flexstorm Framing Dim				Flexstorm Ratings (Flow at 50% max)			Pure Frame with PC+ Bag	
ADS P/N	Flexstorm Item Code	Grate Size (A x C)	Clear Opening (B x D)	B1	D1	A1	C1	Bag Capacity (ft³)	PC/PC+ Flow Rate (CFS)	Total Bypass (CFS)	ADS P/N	Flexstorm Item Code
62LHDPC	P-HD2S-300-260-300-240-PC	30x26	30x24	27.0	22.5	29.8	26.0	3.9	1.5	5.3	62LHDPCP	P-HD2S-300-260-300-240-PCP
62LHDPC	P-HD2S-360-278-360-240-PC	36 x 27.75	36 x 24	33.0	23.5	35.8	27.0	4.9	1.7	6.1	62LHDPCP	P-HD2S-360-278-360-240-PCP
62XLHDPC	P-HD2S-480-260-480-240-PC	48x26	48x24	45.0	22.5	47.8	26.0	6.4	2.1	7.3	62XLHDPCP	P-HD2S-480-260-480-240-PCP
62XLHDPC	P-HD2S-460-263-469-240-PC	46 x 26.25	46 7/8 x 24	44.0	22.5	46.6	26.0	6.3	2.0	7.2	62XLHDPCP	P-HD2S-460-263-469-240-PCP
62XLHDPC	P-HD2S-460-263-469-240-PC	46 x 26.25	46 7/8 x 24	44.0	22.5	46.6	26.0	6.3	2.0	7.2	62XLHDPCP	P-HD2S-460-263-469-240-PCP
62XLHDPC	P-HD2S-460-266-469-240-PC	46 x 26.25	46.87 x 24	44.0	23.0	46.6	26.5	6.4	2.0	7.2	62XLHDPCP	P-HD2S-460-266-469-240-PCP
62XLHDPC	P-HD2S-400-240-400-210-PC	40x24	40x21	37.0	20.5	39.8	24.0	4.8	1.8	6.2	62XLHDPCP	P-HD2S-400-240-400-210-PCP
62XLHDPC	P-HD2S-480-400-480-360-PC	48x40	48x36	45.0	35.5	47.8	39.0	10.2	2.5	8.7	62XLHDPCP	P-HD2S-480-400-480-360-PCP

NOTES:

1. RATINGS SHOWN ARE FOR STANDARD 22" BAG DEPTH; "SHORT" 12" DEPTH BAGS ARE AVAILABLE WITH -S SUFFIX; RATINGS REDUCED BY ~50%.
2. THE FOLLOWING REQUIRES ADDITIONAL REVIEW
-GRATES WITH EXTENDED BOTTOMS
-ANY OBSTRUCTED INLET OPENINGS

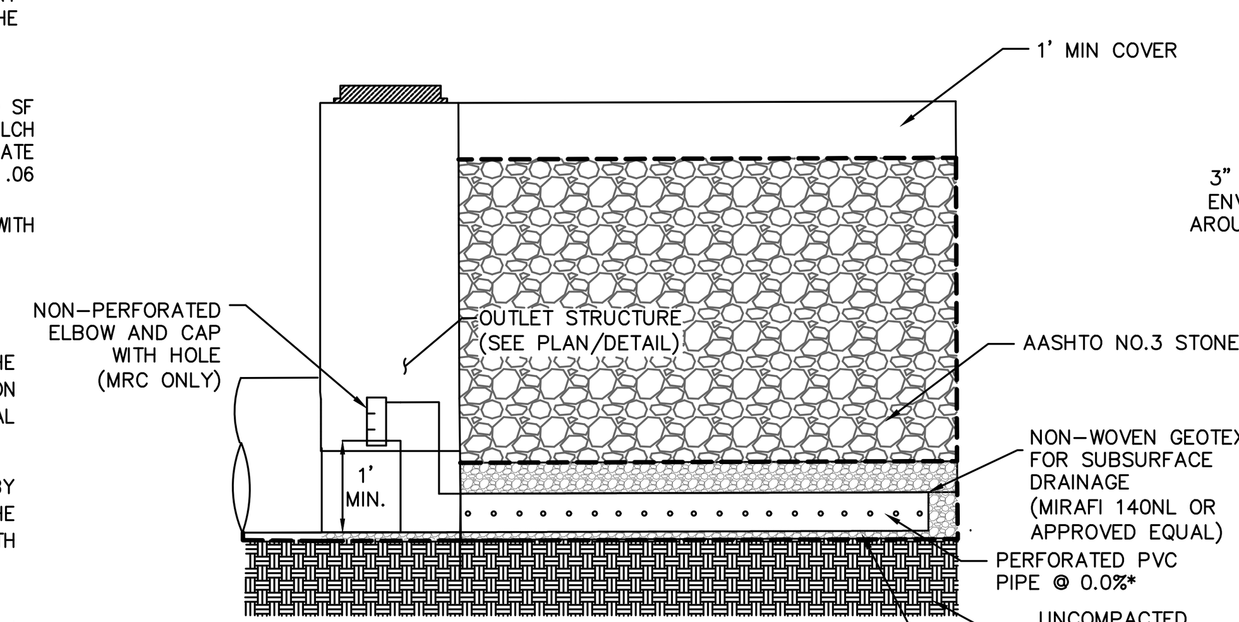
FLEXSTORM INLET FILTERS PURE

ALL PRODUCTS MANUFACTURED BY INLET & PIPE PROTECTION, INC
A DIVISION OF ADS, INC.
WWW.INLETFILTERS.COM
(866) 287-8655 PH
(630) 355-3477 FX
INFO@INLETFILTERS.COM

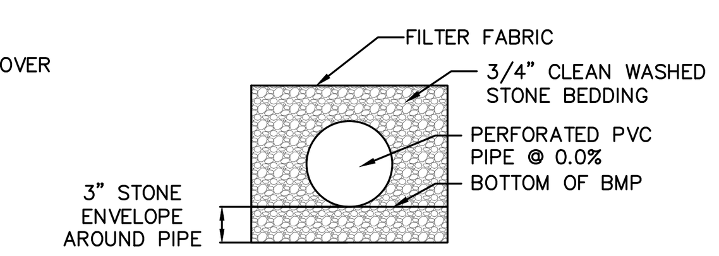
SIZE: C · FRAME TYPE: HDSQ2 · DWG NO: HD2S-62_HD-PC · REV: A · SCALE: · SHEET 1 OF 1

PERMANENT INLET FILTER BAG

PERMANENT FILTER BAG NOTE: THE SELECTED INLET FILTER IS DESIGNED TO REMOVE SEDIMENT, DEBRIS, AND OTHER POLLUTANTS AS SPECIFIED IN THE ADS MANUFACTURER SPECIFICATIONS.



STANDARD UNDERDRAIN/
MRC STORMWATER FACILITY UNDERDRAIN
DETAIL



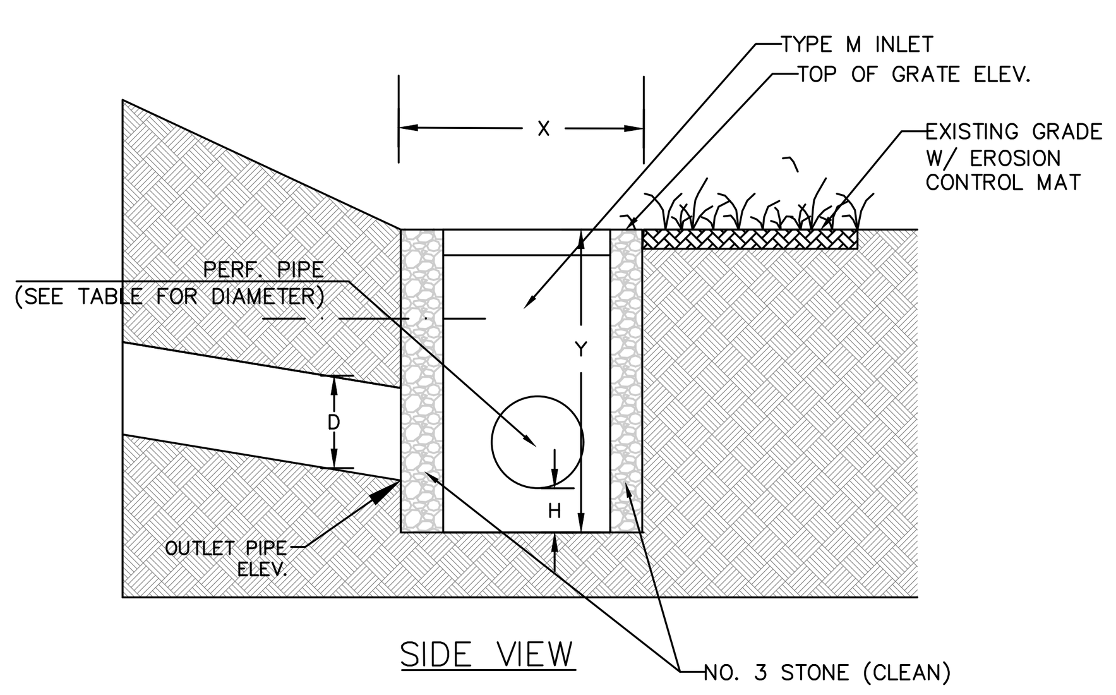
UNDERDRAIN BEDDING

*PERFORATED PIPE NOTES:

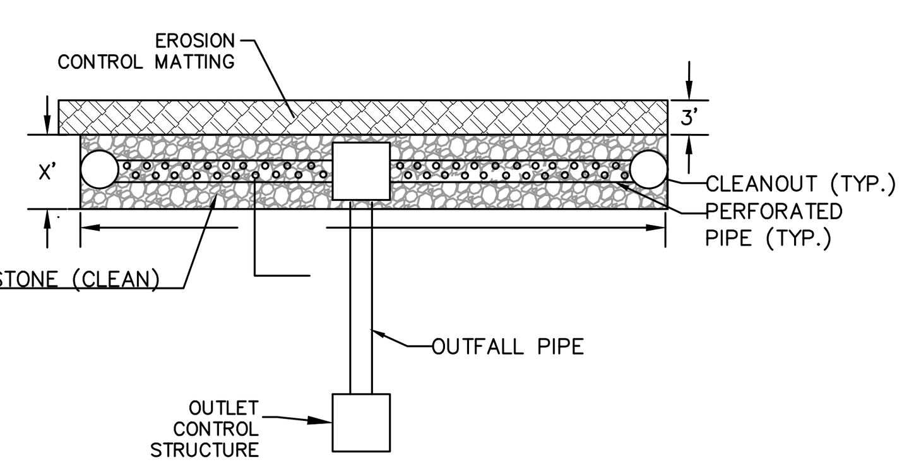
-PROPOSED PERFORATED UNDERDRAIN SHALL CONFORM WITH SPECIFICATIONS SET FORTH IN PENNDOT PUBLICATION 408 SECTION 610.

UNDERDRAIN SPECIFICATIONS

SEEPAGE PIT NO.	PIPE SIZE (IN.)	PIPE INVERT ELEV.	OUTLET HOLE SIZE (IN.)	OUTLET HOLE ELEV.
LOT 1	4	539.50	0.60	540.50
LOT 2	4	513.50	0.60	514.50



SIDE VIEW

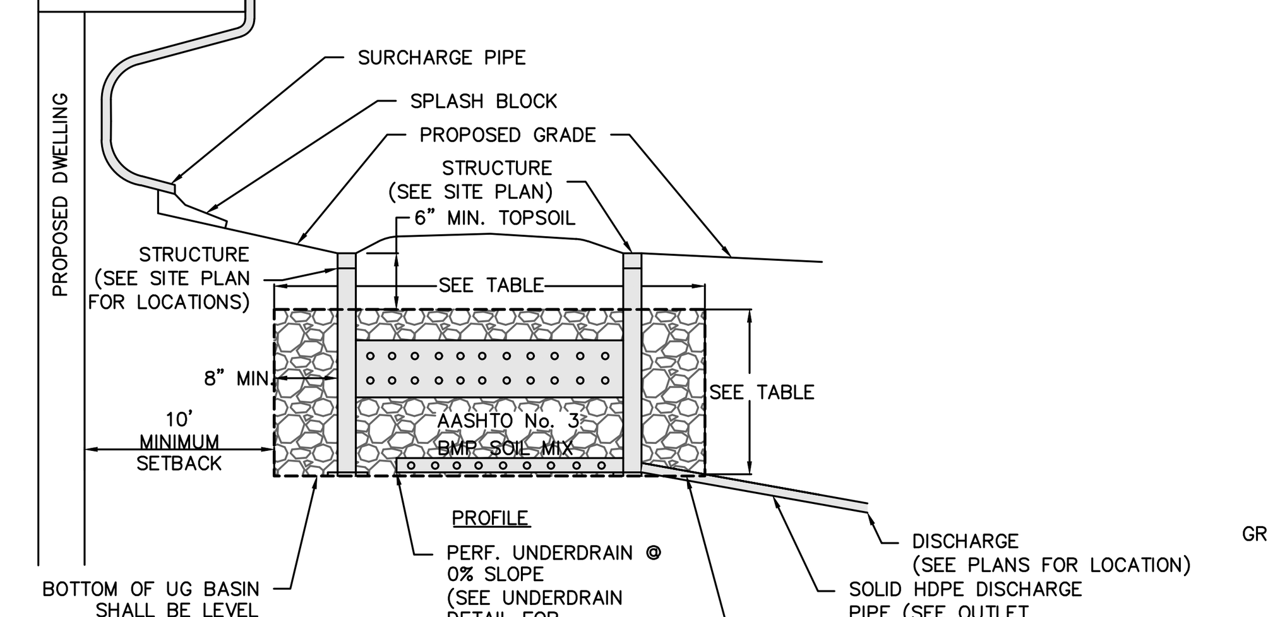


PLAN VIEW

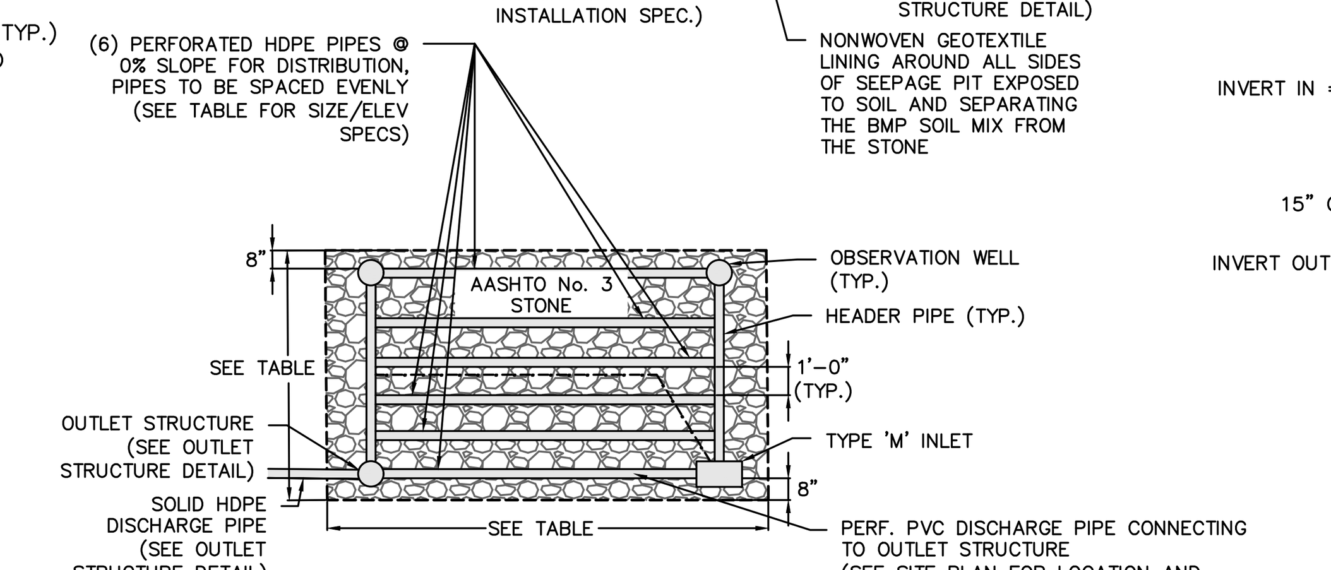
SWF OUTFALL	L	D	OUTFALL PIPE ELEV.	TOP OF GRATE ELEV.	PERF. PIPE DIAMETER	H	Y	X
#	FT	IN	--	--	IN	FT	FT	FT
LOT 1	10	15	534.00	535.00	12	0.50	3.00	5.00
LOT 2	10	15	513.92	518.00	12	0.50	4.58	5.00

CONSTRUCTION SEQUENCE FOR LEVEL SPREADER:
1. INSTALL AND MAINTAIN PROPER EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION AS PER THE PENNSYLVANIA EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL (MARCH 2000, OR LATEST EDITION).
2. EXCAVATE LEVEL SPREADER BOTTOM TO A UNIFORM, LEVEL SUBGRADE FREE FROM ROCKS AND DEBRIS. EXCAVATION EQUIPMENT SHOULD BE PLACED OUTSIDE THE LIMITS OF THE LEVEL SPREADER.
3. COMPLETELY WRAP LEVEL SPREADER WITH NONWOVEN GEOTEXTILE. (IF SEDIMENT AND/OR DEBRIS HAVE ACCUMULATED IN LEVEL SPREADER BOTTOM, REMOVE PRIOR TO GEOTEXTILE PLACEMENT.) GEOTEXTILE ROLLS SHOULD OVERLAP BY A MINIMUM OF 24 INCHES WITHIN THE TRENCH. FOLD BACK AND/OR CUT EXCESS GEOTEXTILE DURING STONE PLACEMENT.
4. INSTALL CONTINUOUSLY PERFORATED PIPE, OBSERVATION WELLS/INLETS, AND ALL OTHER LEVEL SPREADER STRUCTURES. CONNECT INCOMING PIPES TO STRUCTURES AS INDICATED ON PLANS.
5. PLACE UNIFORMLY GRADED, CLEAN-WASHED AGGREGATE IN 6-INCH LIFTS, LIGHTLY COMPACTING BETWEEN LIFTS.
6. INSTALL EROSION CONTROL BLANKET DOWNSTREAM OF LEVEL SPREADER AND SECURE AS PER MANUFACTURER'S RECOMMENDATIONS.
7. DO NOT REMOVE EROSION AND SEDIMENT CONTROL MEASURES UNTIL SITE IS FULLY STABILIZED.

LEVEL SPEADER



PROFILE



PLAN

NOTES:
1. MAINTAIN MINIMUM 10 FOOT SEPARATION BETWEEN BASIN AND BUILDING FOUNDATION WALL.
2. THE PROPERTY OWNER IS RESPONSIBLE FOR THE PROPER OPERATION AND MAINTENANCE OF THE UNDERGROUND BASIN. THE OWNER SHALL INSPECT, CLEAN, REMOVE SILT OR OTHER DEBRIS AND OTHERWISE MAINTAIN THE BASIN IN PROPER WORKING ORDER.
3. MINIMUM DISTANCE BETWEEN DISTRIBUTION PIPE AND EDGE OF SYSTEM SHALL BE 9 INCHES PER THE ADS RETENTION-DETENTION SYSTEM CROSS SECTION DETAIL.
4. MINIMUM DISTANCE BETWEEN DISTRIBUTION PIPES SHALL BE 1 FOOT 5 INCHES PER THE ADS RETENTION-DETENTION SYSTEM CROSS SECTION DETAIL.

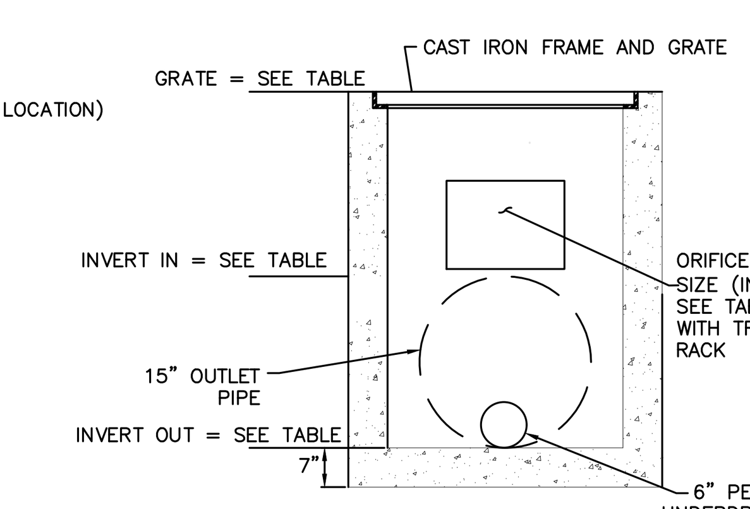
UNDERGROUND BASIN SPECIFICATIONS

UG NO.	LENGTH (FT)	WIDTH (FT)	DEPTH (FT)	TOP OF STONE ELEV.	BOTTOM OF STONE ELEV.
LOT 1	62	49	3.0	543.00	540.00
LOT 2	62	49	3.0	517.00	514.00

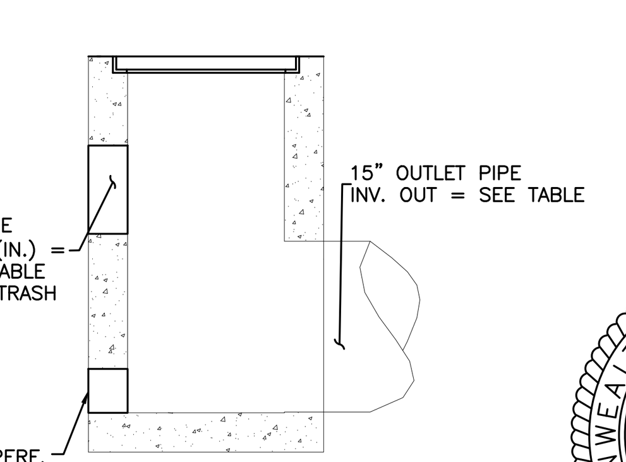
DISTRIBUTION PIPE SPECIFICATIONS

UG NO.	PIPE QTY	PIPE SIZE (IN.)	PIPE INV. ELEV.	UNDERDRAIN SIZE (IN.)	UNDERDRAIN ELEV.
1	4	24	540.50	4	539.50
LOT 2	4	24	514.50	4	513.50

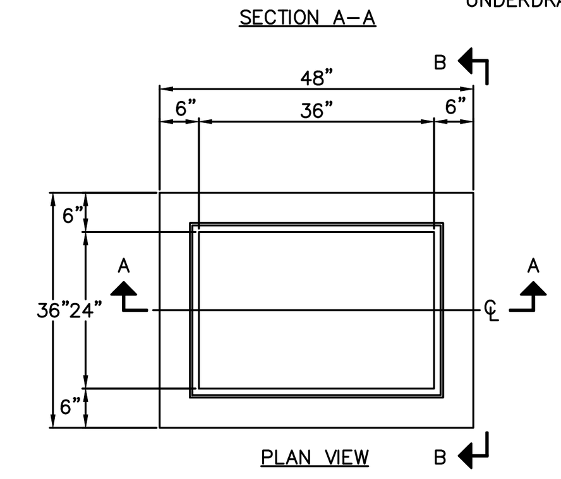
MRC UNDERGROUND BASIN DETAIL
N.T.S.



SECTION A-A



ELEVATION B-B



PLAN VIEW

NOTES:
1. OUTLET STRUCTURES SHALL BE AS DETAILED IN PENNDOT STANDARDS FOR ROADWAY CONSTRUCTION, CURRENT EDITION RC-46M, 'INLETS, CONCRETE TOP UNITS CAST-IN-PLACE AND PRECAST".
2. STEPS SHALL BE PROVIDED WHENEVER STRUCTURE EXCEEDS 4 FEET IN DEPTH.
3. THE CONTRACTOR SHALL PROVIDE CUT SHEETS TO ENGINEER TO REVIEW PRIOR TO CONSTRUCTION.
4. OUTLET PIPES MUST HAVE WATERTIGHT JOINTS.
5. REFER TO THE MRC BASIN UNDERDRAIN DETAIL FOR ORIFICE AND UNDERDRAIN CONNECTIONS.

OUTLET STRUCTURE ELEVATIONS

LOT #	GRATE	OUTLET PIPE	ORIFICE INVERT	ORIFICE SIZE (IN.)
1	544.20	540.00	541.75	20W X 4H
2	518.20	514.00	515.75	20W X 4H

BASIN OUTLET STRUCTURE DETAIL
N.T.S.

Holmes Cunningham LLC
409 E. Butler Ave., Unit 5
Doylestown, PA 18901
(215) 586-3330
www.hcengineering.net
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REVISIONS

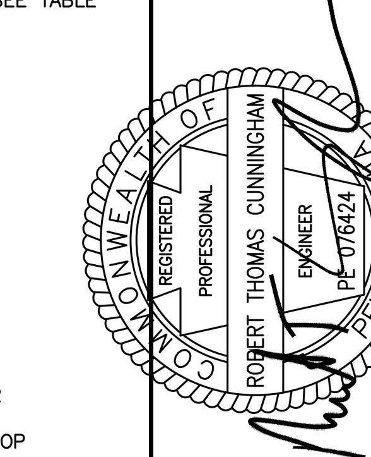
Date	Description

CALL BEFORE YOU DIG !!
PENNSYLVANIA LAW REQUIRES
3 WORKING DAYS NOTICE FOR
CONSTRUCTION PHASE AND
10 WORKING DAYS IN DESIGN STAGE
-- STOP & CALL --
Pennsylvania One
Call System, Inc.
1-800-242-1776

UTILITY LOCATIONS AS SHOWN ON THIS PLAN ARE APPROXIMATE AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR, PER PA. ACT 187 TO CONTACT UTILITY COMPANIES PRIOR TO ANY EXCAVATION.

140 UPPER CHURCH ROAD
140 UPPER CHURCH ROAD
TMP # 26-003-104
NEW BRITAIN TOWNSHIP, BUCKS COUNTY, PA

POST CONSTRUCTION STORMWATER MANAGEMENT DETAILS



ROBERT T. CUNNINGHAM, P.E.
PA PE076424

File No.
1890_C1.2 PCSM DETAILS.DWG

HCE Job	1890
Date	06/16/2023
Scale	N.T.S.
Designed	RC
Sheet	6 of 9

Drawing No.
C1.2

LIMIT OF DISTURBANCE = 3.17 ACRES

PROJECT SITE BOUNDARY = 13.34 ACRES

GENERAL NOTES

1. THE BOUNDARY AND TOPOGRAPHIC INFORMATION IS TAKEN FROM AN EXISTING FEATURES PLAN PREPARED BY EFFICIENT DESIGN, DATED FEBRUARY 10, 2022.
2. UNDER PENNSYLVANIA LAW , THE CONTRACTOR IS REQUIRED TO NOTIFY THE PENNSYLVANIA ONE-CALL SYSTEM AT 1-800-242-1776 PRIOR TO THE START OF HIS WORK, SO THAT ALL THE VARIOUS UNDERGROUND UNTILITY OPERATORS WILL BE ABLE TO LOCATE THEIR OWN UTILITIES.
3. THERE ARE NO HQ OR EV WATERSHEDS LOCATED WITHIN THE PROJECT AREA.
4. THERE ARE NO RIPARIAN BUFFERS EXISTING OR PROPOSED AS PART OF THIS PROJECT (WITHIN OR OUTSIDE THE LIMIT OF DISTURBANCE). ADDITIONALLY, RIPARIAN BUFFER OFFSETS ARE NOT NECESSARY.
5. THERE ARE NO WETLANDS WITHIN THE PROJECT AREA.
6. THERE ARE NO INFILTRATION BMPS LOCATED OUTSIDE PROPOSED GRADING AREAS.
7. THE EXISTING SITE IS NOT UNDERLAIN BY ANY NATURALLY OCCURRING GEOLOGIC FORMATIONS OR SOIL CONDITIONS WHICH COULD CAUSE POLLUTION DURING EARTH DISTURBANCE. THEREFORE, NO LOCATIONS ARE IDENTIFIED ON THIS PLAN AND NO DETAILS ARE PROVIDED FOR DISPOSAL OF SUCH MATERIAL.
8. IF ANY MUD OR STONE IS TRACKED ONTO KING ROAD, A FULL CONSTRUCTION ENTRANCE SHALL BE REQUIRED.

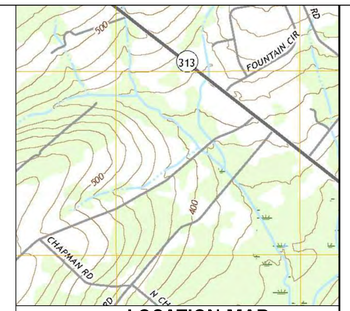
CRITICAL STAGES OF PCSM PLAN IMPLEMENTATION

THE INSTALLATION AND/OR CONVERSION OF EROSION CONTROL FACILITIES TO STORMWATER FACILITIES, INCLUDING THE INFILTRATION BASIN WITH MRC, SHALL BE OVERSEEN BY A LICENSED PROFESSIONAL ENGINEER OR THEIR DESIGNEE.

Soils Legend

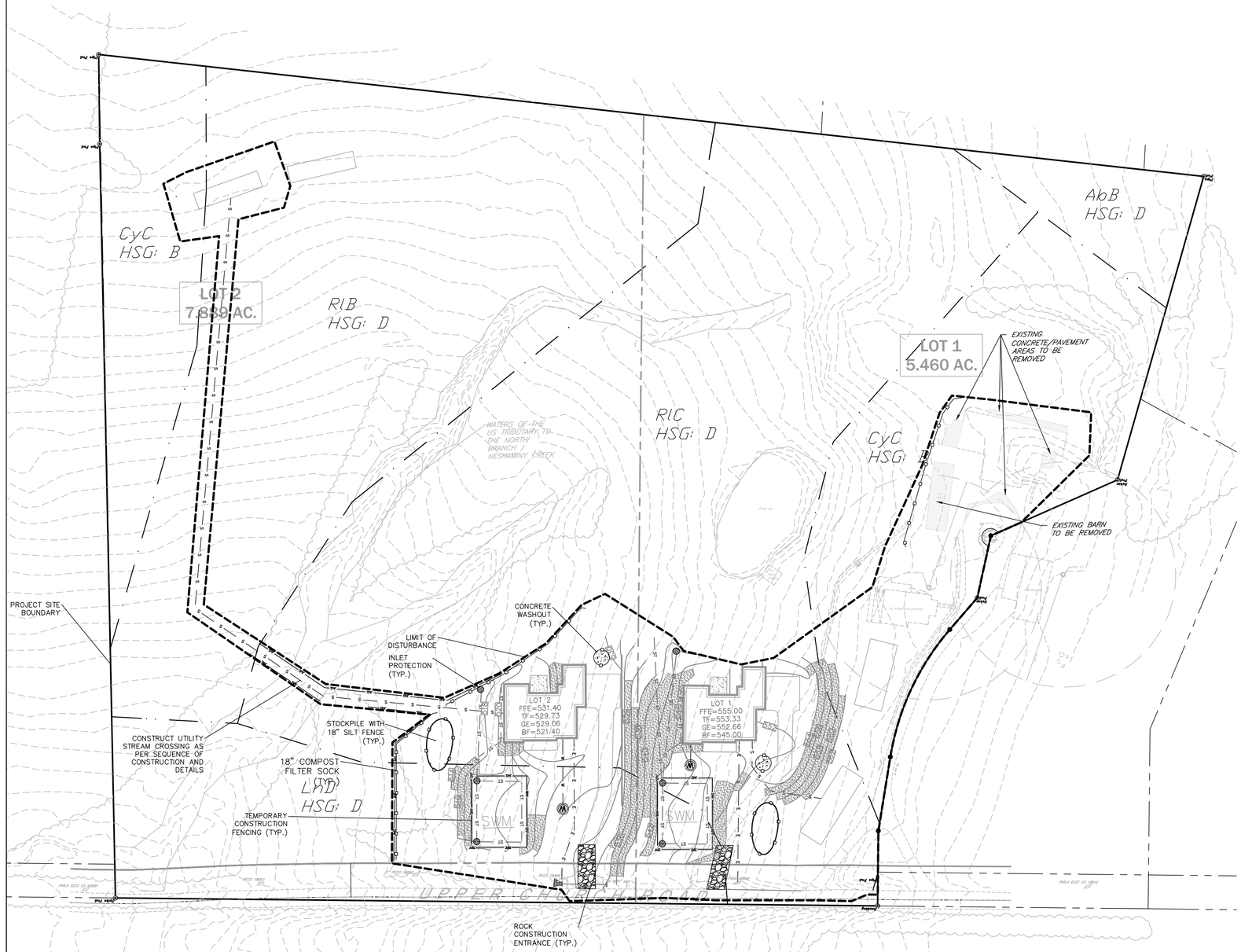
Type	Name	Depth to Bedrock	Depth to Seasonal High Water Table	HSG	Hydric Soil	Agricultural Soil
AbB	Abbotstown silt loam, 3 to 8 percent slopes	40"-60"	6"-18"	D	No	Farmland of Statewide Importance
Bo	Bowmansville-Knauers silt loams, 0 to 3 percent slopes	72"-99"	0"-18"	C/D	No	Not Prime Farmland
CyB	Culleoka-Weikert channery silt loams, 3 to 8 percent slopes	20"-40"	>80"	B	No	Farmland of Statewide Importance
CyC	Culleoka-Weikert channery silt loams, 8 to 15 percent slopes	20"-40"	>80"	B	No	Farmland of Statewide Importance
LhD	Lansdale loam, 8 to 25 percent slopes, extremely stony	42"-72"	>80"	B	No	Not Prime Farmland
ReB	Readington silt loam, 3 to 8 percent slopes	40"-60"	18"-36"	C	No	Farmland of Statewide Importance
RIC	Reaville channery silt loam, 8 to 15 percent slopes	20"-40"	6"-36"	D	No	Farmland of Statewide Importance

Limitations and Resolutions: The soils found within the project limits have varying limitations including possible shallow depth to groundwater and possible shallow depth to bedrock. In order to resolve the groundwater limitation, any standing water should be pumped through a sediment filter bag. To resolve the bedrock limitation, the contractor shall determine whether rock is rippable. If rock is not rippable, blasting will be required. All blasting shall meet all local, county, state and federal regulations.



LOCATION MAP

REFERENCE: DOYLESTOWN U.S.G.S. QUADRANGLE MAP



0 50 100 Feet

SEQUENCE OF CONSTRUCTION

NOTES:

- SITE DEVELOPMENT OPERATIONS SHOULD BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING GENERAL SEQUENCE OF OPERATIONS. THE CONTRACTOR MAY DEVIATE FROM THE STAGING OF PERMANENT SITE IMPROVEMENT CONSTRUCTION ITEMS, WITH APPROVAL OF THE CONSERVATION DISTRICT INSPECTOR. DEVIATION FROM THE RELATIVE ORDER OF EROSION AND SEDIMENT CONTROL MEASURES SHOULD NOT OCCUR WITHOUT APPROVAL OF THE CONSERVATION DISTRICT INSPECTOR AND SITE ENGINEER. NO VERTICAL CONSTRUCTION MAY OCCUR UNTIL SUBGRADE IS SET.
- THE RAIN GARDENS SHALL BE INSTALLED BEFORE THE CONSTRUCTION OF ANY BUILDINGS OR SITE IMPROVEMENTS, UNLESS OTHERWISE APPROVED BY THE BOARD AND THE BUCKS COUNTY CONSERVATION DISTRICT. A PRELIMINARY BASIN AS-BUILT PLAN MUST BE SUBMITTED AND APPROVED BY THE TOWNSHIP ENGINEER PRIOR TO BEGINNING ANY BUILDING CONSTRUCTION TO CONFIRM THAT THE CONSTRUCTED VOLUMES ARE IN ACCORDANCE WITH THE DESIGN PLANS.

1. CONTACT THE BUCKS COUNTY CONSERVATION DISTRICT (215-345-7577), NEW BRITAIN TOWNSHIP, AND THE TOWNSHIP ENGINEER AT LEAST THREE (3) WORKING DAYS PRIOR TO SITE DISTURBANCE.
2. EACH STAGE OF THE SEQUENCE OF CONSTRUCTION MUST BE COMPLETED PRIOR TO INITIATION OF THE NEXT STAGE OF THE SEQUENCE OF CONSTRUCTION. CONSTRUCTION MAY OVERLAP INTO A SUBSEQUENT PHASE AS LONG AS ALL EROSION CONTROL MEASURES HAVE BEEN INSTALLED IN THE PREVIOUS PHASE.
3. INSTALL CONSTRUCTION ENTRANCE AT SITE ACCESS, STOCKPILE, COMPOST FILTER SOCK AND TREE PROTECTION FENCE WHERE SHOWN ON THE PLAN. INSTALL PROTECTION FENCE AROUND FUTURE BMPS.
4. STRIP TOPSOIL AND STOCKPILE WHERE SHOWN ON PLAN. ALL STRIPPED TOPSOIL STOCKPILES SHALL HAVE TEMPORARY SEEDING INSTALLED. ROUGH GRADE SITE, DRIVEWAY/PARKING AND BUILDING PADS. INSTALL TEMPORARY EROSION CONTROL BLANKETS.
5. PRIOR TO VERTICAL CONSTRUCTION A STABLE BASE WILL BE ESTABLISHED AND MAINTAINED, TO AVOID ACCELERATED EROSION.
6. A PRELIMINARY SEEPAGE PIT AS-BUILT PLAN MUST BE SUBMITTED AND APPROVED BY THE TOWNSHIP ENGINEER PRIOR TO BEGINNING ANY BUILDING CONSTRUCTION TO CONFIRM THAT THE CONSTRUCTED VOLUMES ARE IN ACCORDANCE WITH THE DESIGN PLANS.
7. BEGIN CONSTRUCTION OF BUILDING FOUNDATIONS. BUILDING CONSTRUCTION MAY COINCIDE WITH ADDITIONAL SITE WORK, INCLUDING UTILITY AND DRIVEWAY CONSTRUCTION, THAT IS LISTED IN THIS SEQUENCE OF CONSTRUCTION. PRIOR TO VERTICAL CONSTRUCTION, SUBGRADE IS TO BE SET, INCLUDING BUT NOT LIMITED TO FOUNDATION WORK, STABLE SUBGRADE/SUBBASE, SUBSURFACE UTILITY WORK, AND DRIVEWAY/PARKING SUBGRADE
8. INSTALL WATER, SANITARY SEWER, AND STORM SEWER SYSTEM STARTING AT THE DOWNSTREAM ENDS AND WORKING UPSTREAM. ALL TRENCHES SHALL BE BACKFILLED AT THE END OF EACH DAY. MAKE OFFSITE UTILITY CONNECTIONS AND INSTALL OFFSITE WATER AND SANITARY SEWER, INSTALL CURB, SUBBASE AND BASE COURSE FOR THE DRIVEWAY/PARKING.
9. COMPLETE FINAL GRADING. AFTER FINAL GRADING IS COMPLETED, APPLY PERMANENT SEEDING MIXTURE AND INSTALL ALL REQUIRED PLANTINGS, FENCING, AND LIGHTING. LIGHTING SHALL BE INSTALLED PRIOR TO THE ISSUANCE OF ANY USE AND OCCUPANCY PERMITS. ONCE ALL BUILDINGS ARE COMPLETED, FLUSH ALL AFFECTED STORM DRAINAGE PIPES OF ACCUMULATED SILT.
10. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENTATION CONTROLS MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENTATION CONTROLS AFTER EACH STORM EVENT OR ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN-OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING, MUST BE PERFORMED IMMEDIATELY.
11. UPON COMPLETE STABILIZATION OF SITE, REMOVE EROSION CONTROL DEVICES. THE SITE SHALL BE CONSIDERED STABILIZED WHEN THE PERMANENT VEGETATION HAS PROVIDED A 70% GROUNDCOVER.
12. AFTER CONSTRUCTION IS COMPLETED, INSTALL WEARING COURSE FOR THE DRIVEWAY. REPAIR ANY DAMAGED STORM SEWER STRUCTURES, SANITARY SEWER STRUCTURES, LANDSCAPING, LIGHTING, SIDEWALK, DRIVEWAYS, AND/OR ANY OTHER AMENITIES FROM INSTALLATION OF WEARING COURSE.

LEGEND

- PROPERTY LINE
- PROPOSED BUILDING
- 208 EXISTING CONTOUR
- 208 PROPOSED CONTOUR
- DOWNSPOUT LOCATION
- COMPOST FILTER SOCK
- LIMIT OF DISTURBANCE
- PROJECT SITE BOUNDARY
- SOILS LINE
- ReB SOILS TYPE
- CONSTRUCTION FENCE
- 12" SILT SOCK
- EROSION CONTROL MATTING

RECYCLING/ DISPOSAL OF MATERIALS

THE CONSTRUCTION WASTES ANTICIPATED INCLUDE DEMOLITION MATERIALS FROM THE BUILDING AND SITE DEMOLITION AND EXCESS BUILDING MATERIAL SUCH AS CONCRETE, WOOD, ETC.

ALL BUILDING MATERIAL AND WASTES MUST BE REMOVED FROM THE SITE AND RECYCLED IN ACCORDANCE WITH DEP'S SOLID WASTE REGULATIONS (25 PA CODE 260.1 ET SEQ., 271.1 ET SEQ., AND 287.1 ET SEQ.), AND/OR ANY ADDITIONAL LOCAL, STATE OR FEDERAL REGULATIONS. NO BUILDING MATERIALS (USED OR UNUSED) OR WASTE MATERIALS SHALL BE BURNED, BURIED, DUMPED OR DISCHARGED AT THE SITE.

Holmes Cunningham LLC
409 E. Butler Ave., Unit 5
Doylestown, PA 18901
(215) 586-3330
www.hcengineering.net

holmes cunningham ENGINEERING

REVISIONS

Description	Date

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Pennsylvania One Call System, Inc.
1-800-242-1776

UTILITY LOCATIONS AS SHOWN ON THIS PLAN ARE APPROXIMATE AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR, PER PA. ACT 187 TO CONTACT UTILITIES FOR COMPANIES PRIOR TO ANY EXCAVATION.

140 UPPER CHURCH ROAD

140 UPPER CHURCH ROAD
TMP # 26-003-104
NEW BRITAIN TOWNSHIP, BUCKS COUNTY, PA

EROSION AND SEDIMENT CONTROL PLAN

ROBERT T. CUNNINGHAM, P.E.
PA PE076424

File No.
1890_C2.0 E&S.DWG

HCE Job	1890	Scale	1"=50'	Sheet	7 of 9
Date	06/16/2023	Designed	RC		

Drawing No.
C2.0

CLEAN FILL NOTE:

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 RESIDE WITH THE OPERATOR.

CLEAN FILL IS DEFINED AS: 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. (THE TERM "USED ASPHALT" DOES NOT INCLUDE MILLED ASPHALT OR ASPHALT THAT HAS BEEN PROCESSED FOR RE-USE.)

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. ANALYTICAL TESTING IS NOT A REQUIRED PART OF DUE DILIGENCE UNLESS VISUAL INSPECTION AND/OR REVIEW OF THE PAST LAND USE OF THE PROPERTY INDICATES THAT THE FILL MAY HAVE BEEN SUBJECTED TO A SPILL OR RELEASE OF REGULATED SUBSTANCE. IF THE FILL MAY HAVE BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE, IT MUST BE TESTED TO DETERMINE IF IT QUALIFIES AS CLEAN FILL. TESTING SHOULD BE PERFORMED IN ACCORDANCE WITH APPENDIX A OF THE DEPARTMENT'S POLICY "MANAGEMENT OF FILL".

EROSION / SEDIMENT CONTROL PLAN STANDARD NOTES

STOCKPILE HEIGHTS MUST NOT EXCEED 35 FEET; STOCKPILE SLOPES MUST NOT EXCEED 2L:1V.

THE OPERATOR/RESPONSIBLE PERSON (O/RP) ON SITE SHALL ASSURE THAT THE APPROVED EROSION AND SEDIMENT CONTROL PLAN IS PROPERLY AND COMPLETELY IMPLEMENTED.

IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE O/RP SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES (BMPS) TO ELIMINATE THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION.

THE O/RP SHALL ASSURE THAT AN EROSION AND SEDIMENT CONTROL PLAN HAS BEEN PREPARED, APPROVED BY THE BUCKS COUNTY CONSERVATION DISTRICT AND IS BEING IMPLEMENTED AND MAINTAINED FOR ALL SOIL AND/OR ROCK SPOIL AND BORROW AREAS REGARDLESS OF THEIR LOCATIONS.

ALL PUMPING OF SEDIMENT-LADEN WATER SHALL BE THROUGH A SEDIMENT CONTROL BMP SUCH AS A PUMPED WATER FILTER BAG DISCHARGING OVER UNDISTURBED AREAS.

A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN MUST BE AVAILABLE ON THE PROJECT SITE AT ALL TIMES.

EROSION AND SEDIMENT BMPS MUST BE CONSTRUCTED, STABILIZED AND FUNCTIONAL BEFORE SITE DISTURBANCE BEGINS WITHIN THE TRIBUTARY AREAS OF THOSE BMPS.

AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMP CONTROLS MUST BE REMOVED. AREAS DISTURBED DURING THE REMOVAL OF THE BMPS MUST BE STABILIZED IMMEDIATELY.

AT LEAST SEVEN (7) DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITY, THE O/RP SHALL INVITE ALL CONTRACTORS INVOLVED IN THAT ACTIVITY, THE LANDOWNER, ALL APPROPRIATE MUNICIPAL OFFICIALS, THE EROSION AND SEDIMENT CONTROL PLAN DESIGNER AND THE BUCKS COUNTY CONSERVATION DISTRICT TO A PRE-CONSTRUCTION MEETING. ALSO, AT LEAST THREE DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITY, ALL CONTRACTORS INVOLVED IN THAT ACTIVITY SHALL NOTIFY THE PENNSYLVANIA ONE-CALL SYSTEM INC. AT 1-800-242-1776 TO DETERMINE ANY UNDERGROUND UTILITIES LOCATIONS.

IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITY CEASES, THE O/RP SHALL STABILIZE ANY AREAS DISTURBED BY THE ACTIVITY. DURING NON-GERMINATING PERIODS, MULCH MUST BE APPLIED AT SPECIFIED RATES. DISTURBED AREAS THAT ARE NOT AT FINISHED GRADE AND WHICH WILL BE RE-DISTURBED WITHIN ONE YEAR MUST BE STABILIZED IN ACCORDANCE WITH TEMPORARY VEGETATIVE STABILIZATION SPECIFICATIONS.

DISTURBED AREAS THAT ARE AT FINISHED GRADE OR WHICH WILL NOT BE RE-DISTURBED WITHIN ONE YEAR MUST BE STABILIZED IN ACCORDANCE WITH PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS.

AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM UNIFORM 70% (PERCENT) VEGETATIVE OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS.

UPON THE INSTALLATION OF TEMPORARY SEDIMENT BASIN RISER(S), A QUALIFIED SITE REPRESENTATIVE SHALL CONDUCT AN IMMEDIATE INSPECTION OF THE RISER(S), WHEREUPON THE BUCKS COUNTY CONSERVATION DISTRICT SHALL BE NOTIFIED IN WRITING THAT THE RISER IS SEALED (WATERTIGHT).

AT STREAM CROSSINGS, A 50-FOOT BUFFER SHALL BE MAINTAINED. ON BUFFERS, CLEARINGS, SOD DISTURBANCES AND EXCAVATIONS, EQUIPMENT TRAFFIC SHOULD BE MINIMIZED. ACTIVITY SUCH AS STACKING LOGS, BURNING CLEARED BRUSH, DISCHARGING RAINWATER FROM TRENCHES, WELDING PIPE SECTIONS, REFUELING AND MAINTAINING EQUIPMENT SHOULD BE AVOIDED WITHIN BUFFER ZONES.

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

SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF ON-SITE IN LANDSCAPED AREAS OUTSIDE OF STEEP SLOPES, WETLANDS, FLOODPLAINS OR DRAINAGE SWALES AND IMMEDIATELY STABILIZED OR PLACED IN SOIL STOCKPILES AND STABILIZED.

ALL BUILDING MATERIAL AND WASTES MUST BE REMOVED FROM THE SITE AND RECYCLED IN ACCORDANCE WITH DEP'S SOLID WASTE REGULATIONS (25 PA CODE 260.1 ET SEQ., 271.1 ET SEQ., AND 287.1 ET SEQ.), AND/OR ANY ADDITIONAL LOCAL, STATE OR FEDERAL REGULATIONS. NO BUILDING MATERIALS (USED OR UNUSED) OR WASTE MATERIALS SHALL BE BURNED, BURIED, DUMPED OR DISCHARGED AT THE SITE.

SEEDING NOTES:

TEMPORARY SEEDING :

1. TEMPORARY SEEDING SHALL BE DONE IN AREAS WHERE NO ACTIVITY WORK WILL BE PERFORMED. ANY DISTURBED AREA ON WHICH ACTIVITY HAS CEASED MUST BE SEEDED AND MULCHED IMMEDIATELY.
2. DURING NON-GERMINATING PERIODS, ONLY MULCH MUST BE APPLIED AT THE RECOMMENDED RATES. AREAS MULCHED DURING THE NON-GERMINATING PERIODS, MUST BE LIMED, FERTILIZED, SEEDED, AND MULCHED IMMEDIATELY FOLLOWING THE END OF THE NON-GERMINATING PERIODS.
3. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE REDISTURBED WITHIN ONE (1) YEAR MAY BE SEEDED AND MULCHED WITH A QUICK GROWING TEMPORARY SEED MIXTURE.
4. DISTURBED AREAS WHICH ARE AT EITHER FINISHED GRADE OR WILL NOT BE DISTURBED AGAIN WITHIN ONE (1) YEAR MUST BE SEEDED WITH A PERMANENT SEED MIXTURE AND MULCHED.
5. TEMPORARY SEEDING STEPS:
   A. APPLY AGRICULTURAL LIMESTONE AT A RATE OF ONE (1) TON PER ACRE. (5 POUNDS PER, 1000 SQUARE FEET)
   B. APPLY FERTILIZER AT THE RATE OF 50-50-50 PER ACRE.
   C. WORK THE LIMESTONE AND FERTILIZER INTO THE SOIL.
   D. UTILIZING THE FOLLOWING SEEDING TYPES, RATES AND TIME SCHEDULE :

TEMPORARY SEEDING

SEASON	RATE	TYPE
MARCH 1 TO JUNE 15	1 LB./1000 SF	ANNUAL RYEGRASS
MAY 15 TO SEPT 15	1 LB./1000 SF	SUDAN GRASS
SEPT 15 TO OCT 15	168 LB./AC	WINTER RYE

   E. APPLY HAY OR STRAW MULCH (IN ACCORDANCE WITH SECTION NO. 4) AT A RATE OF THREE (3) TONS PER ACRE.
6. ALL SEED SHALL BE LABELED, DATED AND QUALITY CONSISTENT WITH SECTION NO. 2

PERMANENT SEEDING:

1. DISTURBED AREAS WHICH ARE EITHER AT FINISHED GRADE OR WILL NOT BE DISTURBED AGAIN WITHIN ONE (1) YEAR MUST BE SEEDED WITH A PERMANENT SEED MIXTURE AND MULCHED.
2. SEEDING SHALL BE DONE DURING PERIODS FROM APRIL 15TH TO OCTOBER PT, UNLESS OTHERWISE DIRECTED. IF SEEDING IS DONE AFTER OCTOBER 1", DORMANT SEED MUST BE USED AND DISTURBED AREAS MUST BE MULCHED.
3. DISTURBED FINAL GRADED AREAS AND DRAINAGE SWALES WILL BE PERMANENTLY SEEDED AS FOLLOWS:
   A. MINIMUM OF 4" OF TOPSOIL SHALL BE SPREAD OVER ALL AREAS TO BE SEEDED. TOPSOIL SHALL BE FREE OF STONES, STICKS, WASTE MATERIAL AND SIMILAR DEBRIS. FROZEN GROUND SHALL NOT BE SPREAD AS TOPSOIL AND TOPSOIL SHALL NOT BE SPREAD OVER FROZEN GROUND.
   B. A SOIL ANALYSIS IS RECOMMENDED, HOWEVER, IN LIEU OF AN ANALYSIS APPLY AGRICULTURAL LIMESTONE AND FERTILIZER AT RATES RECOMMENDED BELOW (OR AS SUGGESTED BY THE SOIL TEST RESULTS (ONE (1) TEST PER 25 ACRES)).
   C. THE LIMESTONE AND FERTILIZER SHALL BE WORKED INTO THE SOIL TO DEPTHS OF 3 TO 4 INCHES. D. GRASS SHALL NOT BE PLANTED AFTER HEAVY RAIN OR WATERING.
   D. ALL SEED USED SHALL BE LABELED IN ACCORDANCE WITH THE U.S. DEPARTMENT OF AGRICULTURE RULES AND REGULATIONS UNDER THE FEDERAL SEED ACT IN EFFECT AT THE TIME OF PURCHASE. INERT MATTER SHALL NOT EXCEED 15% AND BLUE TAG CERTIFIED SEED SHALL BE SUPPLIED WHEREVER POSSIBLE.
   E. SMOOTH AND FIRM SEED BED WITH CULTIPACKER OR SIMILAR EQUIPMENT PRIOR TO SEEDING. APPLY SEED UNIFORMLY BY BROADCASTING, DRILLING OR HYDRO SEEDING. COVER SEEDS WITH 1/2" OF SOIL WITH SUITABLE EQUIPMENT.
   F. APPLY HAY OR STRAW MULCH (IN ACCORDANCE WITH SECTION NO. 4) AT A RATE OF THREE (3) TONS PER ACRE.

PERMANENT SEEDING FOR NORMAL MOWED LAWN AREAS:

SEASON	RATE	TYPE
MARCH 1 TO JUNE 1 & AUG 15 TO OCT 1	2 LBS./1000 SF	KY31 TALL FESCUE AND RED TOP 12%
OCT 1 TO MARCH 1 & JUNE 1 TO AUG 1	2 LBS./1000 SF	RED TOP*

((*) USE DORMANT SEED, UNIFORMLY APPLIED, WORKING INTO A DEPTH OF 1/4 INCH. THE USE OF MULCH IS REQUIRED. THE USE OF NETTING OR EROSION CONTROL MATS MAY BE REQUIRED.)

PERMANENT SEEDING FOR SPECIAL AREAS
(SWALES, POND EMBANKMENTS, LEVEES, DIVERSION CHANNELS, ETC):

SEASON	RATE	TYPE
MARCH 1 TO JUNE 1 & AUG 15 TO OCT 1	2 LBS./1000 SF	KY31 TALL FESCUE 80% AND RYEGRASS 20%

NOTE : SEEDING PERIODS AND SPECIFICATIONS MAY VARY DUE TO SITE CONDITIONS AND VARIANCES FROM THE TIME THIS REPORT IS WRITTEN AND APPROVED. IT MAY BE NECESSARY TO ADAPT SEED SPECIFICATION, VARIETIES, AND QUALITIES. FOR SPECIAL CONDITIONS CONSULT "GUIDELINE FOR RECLAMATION OF SEVERELY DISTURBED AREAS", PENNSYLVANIA STATE UNIVERSITY.

4. FERTILIZER : A SOIL ANALYSIS IS RECOMMENDED BUT IN LIEU OF AN ANALYSIS APPLY AGRICULTURAL LIMESTONE AT A RATE OF FOUR (4) TONS/ACRE AND 10-20-20 FERTILIZED AT A RATE OF 50 LBS. PER 1000 SF. THESE MATERIALS WILL BE UNIFORMLY APPLIED AND WORKED INTO THE TOPSOIL TO A DEPTH OF 3 TO 4 INCHES. IMMEDIATELY BEFORE SEEDING, A 1 0- 1 0- 10 FERTILIZER WILL BE WORKED INTO THE SURFACE AT A RATE OF 10 LBS. PER 1000 SF.
5. HYDRO SEEDING: LIME AND SEED SHALL BE AS SPECIFIED ABOVE, AND FERTILIZER SHALL BE APPLIED AT A RATE OF 40-80. CROWN VETCH SHALL BE INOCULATED AT FOUR TIMES THE MANUFACTURER'S RATE. SHOULD FERTILIZER BE APPLIED WITH THE INOCULANT, THE MIXTURE SHALL NOT REMAIN IN A SLURRY FOR MORE THAN ONE HOUR. WOOD CELLULOSE FIBER, APPLIED AT A RATE OF 35 LBS. PER 1000 SF, MAY BE APPLIED AS PART OF THE SLURRY IN LIEU OF MULCHING. SYNTHETIC MULCH BINDER, SUCH AS CURASOL, DCA-70, TERRE-TACK OR AN APPROVED EQUAL SHALL BE USED PER THE MANUFACTURER'S INSTRUCTIONS TO ANCHOR THE MULCH.
6. MULCHING: MULCHING SHALL BE APPLIED AS FOLLOWS:
   A. STRAW - SHALL BE ALL DRIED AND FREE FROM UNDESIRABLE SEEDS AND COURSE MATERIAL, APPLY AT A RATE OF 115 TO 150 LBS. PER 1000 SF OR 3 TONS PER ACRE. MULCHED AREAS SHALL BE CHECKED PERIODICALLY AND IMMEDIATELY AFTER STORMS AND WIND. DAMAGED OR MISSING MULCH SHALL BE REPLACED. A TACKIFIER APPLIED AFTER STRAW IS RECOMMENDED. TACKIFIER MAY BE ASPHALT OR POLYMER SPRAY. APPLY AT A RATE RECOMMENDED BY THE MANUFACTURER WITH SUITABLE EQUIPMENT. IN LIEU OF MANUFACTURERS RECOMMENDATIONS APPLY AT A RATE OF .04 TO .06 GALLONS PER SQUARE YARD.
   B. NETTING / EROSION CONTROL BLANKETS - THE USE AND INSTALLATION OF EROSION CONTROL BLANKETS OR NETTING SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION AND SHALL BE SELECTED FOR THE PROPER APPLICATION AND CONDITIONS.

UTILITY TRENCHING GUIDELINES:

1. CONSTRUCTION REQUIREMENTS -
   A. LIMIT ADVANCE CLEARING AND GRUBBING OPERATIONS TO A DISTANCE EQUAL TO TWO TIMES THE LENGTH OF PIPE INSTALLATION THAT CAN BE COMPLETED IN ONE DAY.
   B. WORK CREWS AND EQUIPMENT FOR TRENCHING, PLACEMENT OF PIPE, PLUG CONSTRUCTION AND BACKFILLING WILL BE SELF CONTAINED AND SEPARATE FROM CLEARING AND GRUBBING AND SITE RESTORATION AND STABILIZATION OPERATIONS.
   C. LIMIT DAILY TRENCH EXCAVATION TO THE LENGTH OF PIPE PLACEMENT, PLUG INSTALLATION AND BACKFILLING THAT CAN BE COMPLETED THE SAME DAY.
   D. WATER WHICH ACCUMULATES IN THE OPEN TRENCH WILL BE COMPLETELY REMOVED BY PUMPING AS REQUIRED, TO A FACILITY FOR REMOVAL OF SEDIMENTS IN ACCORDANCE WITH PADEP GUIDELINES
   E. ON THE DAY FOLLOWING PIPE PLACEMENT AND TRENCH BACKFILLING, THE DISTURBED AREA WILL BE GRADED TO FINAL CONTOURS AND APPROPRIATE TEMPORARY EROSION AND SEDIMENT POLLUTION CONTROL MEASURES/FACILITIES WILL BE INSTALLED. SEEDING AND MULCHING OF ALL DISTURBED AREAS WILL BE DONE AT THE END OF EACH WEEK.
2. EXCEPTIONS - IN CERTAIN CASES TRENCHES CANNOT BE BACKFILLED UNTIL THE PIPE IS HYDROSTATICALLY TESTED, OR ANCHORS AND OTHER PERMANENT FEATURES ARE INSTALLED IN THESE CASES, ALL OF THE REQUIREMENTS LISTED UNDER ITEM 1 WILL REMAIN IN EFFECT WITH THE FOLLOWING EXCEPTIONS:
   A. DAILY BACKFILLING OF THE TRENCH MAY BE DELAYED FOR SIX DAYS. ALL PRESSURE TESTING AND THE COMPLETE BACKFILLING OF THE OPEN TRENCH MUST BE COMPLETED BY THE SEVENTH WORKING DAY.
   B. IF DAILY BACKFILLING IS DELAYED, THE DISTURBED AREA WILL BE GRADED TO FINAL CONTOURS, APPROPRIATE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES/FACILITIES WILL BE INSTALLED, AND THE AREAS SEEDED AND MULCHED WITHIN THE NEXT TWO CALENDAR DAYS.

BMP MAINTENANCE

THE CONTRACTOR WILL BE RESPONSIBLE FOR THE PROPER CONSTRUCTION STABILIZATION, AND MAINTENANCE OF ALL TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES AND RELATED ITEMS INCLUDED WITHIN THIS PLAN. THE CONTRACTOR WILL ALSO BE RESPONSIBLE FOR THE PROPER CONSTRUCTION AND STABILIZATION OF PERMANENT CONTROL MEASURES AND RELATED ITEMS INCLUDED WITHIN THIS PLAN.

DURING CONSTRUCTION THE CONTRACTOR IS RESPONSIBLE FOR PERFORMING INSPECTIONS OF THE BMPS AFTER EACH RUNOFF EVENT AS WELL AS ON A WEEKLY BASIS. THE CONTRACTOR SHALL KEEP A LOG OF ALL INPECTIONS AND MAINTENANCE PERFORMED ON THE BMPS

THE OWNER WILL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL PERMANENT CONTROL MEASURES.

SOIL SEDIMENT REMOVED FROM ANY TEMPORARY CONTROL MEASURE DURING REGULAR MAINTENANCE WILL BE INCORPORATED BACK INTO THE EARTHWORK AS FILL ON THE SITE. SOIL SEDIMENT MATERIAL SHALL BE DISTRIBUTED ON-SITE WITHOUT CHANGING DRAINAGE PATTERNS DURING A SPECIFIC CONSTRUCTION STAGE.

COMPOST FILTER SOCK WILL BE INSPECTED ONCE A WEEK OR AFTER EVERY STORM EVENT, WHICHEVER COMES FIRST. ANY NECESSARY REPAIRS WILL BE MADE IMMEDIATELY. ACCUMULATED SEDIMENTS WILL BE REMOVED AS REQUIRED TO KEEP THE SOCK FUNCTIONAL. DEPOSITS WILL BE REMOVED WHERE ACCUMULATIONS REACH 1/2 THE ABOVE GROUND HEIGHT OF THE SOCK. UNDERCUTTING OR EROSION OF THE TOE ANCHOR OF THE COMPOST FILTER SOCK WILL BE REPLACED IMMEDIATELY WITH ROCK FILTER OUTLETS. ANY MANUFACTURER'S RECOMMENDATIONS WILL BE ADHERED TO FOR REPLACING COMPOST FILTER SOCK DUE TO WEATHERING.

THE CONSTRUCTION ENTRANCE WILL BE INSPECTED AT THE END OF EACH WORK DAY. THE THICKNESS WILL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSION BY ADDING ROCK. A STOCKPILE OF ROCK MATERIAL WILL BE MAINTAINED ON THE SITE FOR THIS PURPOSE.

AT THE END OF EACH CONSTRUCTION DAY, ANY SEDIMENT DEPOSITED ON PUBLIC ROADWAYS, WILL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE. WASHING OF THE ROADWAY WITH WATER WILL NOT BE PERMITTED.

LIMITING EXPOSED EXTENT AND DURATION OF DISTURBED AREAS THE INITIAL PHASE OF THE PROPOSED PROJECT CONSISTS OF ESTABLISHING THE SOIL EROSION CONTROL MEASURES IN A SEQUENCE APPROPRIATE TOWARD LIMITING SOIL EROSION. THE EXTENT OF DISTURBED LAND HAS BEEN LIMITED TO INCLUDE ONLY THOSE AREAS REQUIRED FOR THE DEVELOPMENT OF THE SUBJECT SITE. ALL SEDIMENT AND EROSION CONTROL PRACTICES ARE TO BE INSTALLED PRIOR TO ANY MAJOR SOIL DISTURBANCE OR IN THEIR PROPER SEQUENCE AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED. UPON COMPLETION OR TEMPORARY CESSATION OF THE EARTH DISTURBANCE ACTIVITY, OR ANY STAGE THEREOF, THE PROJECT SITE SHALL BE IMMEDIATELY STABILIZED. THE SEQUENCE OF CONSTRUCTION ACTIVITIES IS OUTLINED IN THE SEQUENCE OF CONSTRUCTION CONTAINED HEREIN AND ON THE DRAWINGS.

PROTECTION OF EXISTING DRAINAGE FEATURES AND VEGETATION

THE PROJECT PROPOSES TO MINIMIZE DISTURBANCE TO THE EXISTING VEGETATION AT THE SITE BY ONLY PROPOSING DISTURBANCE IN THE AREA WHERE NEEDED. THE SITE VEGETATION PROPOSED FOR DISTURBANCE IS MAINLY SCRUB VEGETATION AND VINES WHICH ARE CURRENTLY DETRIMENTAL TO THE LARGE TREES ON THE SOUTHERN PROPERTY LINE.

MINIMIZE SOIL COMPACTION THE PROJECT DESIGN LIMITS THE BULK/ MASS EARTHWORK TO BE PERFORMED AS MUCH AS POSSIBLE. ADDITIONALLY, SOIL COMPACTION WILL NOT BE REQUIRED OTHER THAN IN PROPOSED IMPERVIOUS AREAS.

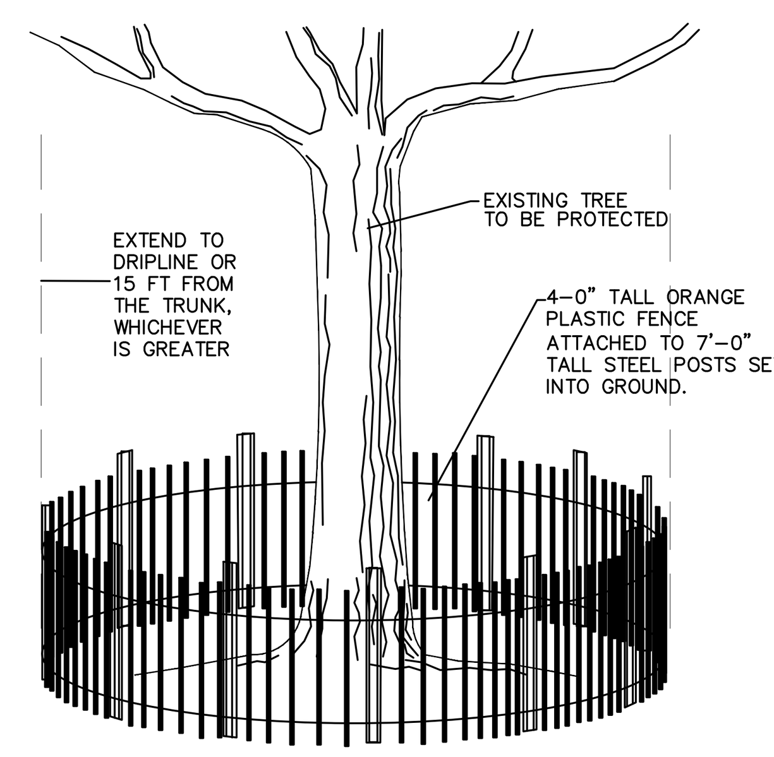
FEATURES AND MEASURES TO MINIMIZE STORMWATER RUNOFF TEMPORARY STABILIZATION: UPON COMPLETION OR TEMPORARY CESSATION OF THE EARTH DISTURBANCE ACTIVITY, OR ANY STAGE THEREOF, THE PROJECT SITE SHALL BE IMMEDIATELY STABILIZED. THE DISTURBED AREAS WILL ALSO BE MULCHED WITH UNROTTED STRAW OR SALT HAY. TEMPORARY STABILIZATION MEASURES ARE SPECIFIED ON SOIL EROSION AND SEDIMENT POLLUTION CONTROL DETAIL PLANS.

PERMANENT STABILIZATION: ALL SLOPES AND DISTURBED AREAS SHALL BE STABILIZED WITH PERMANENT SEEDING AND LANDSCAPING AS SOON AS POSSIBLE AFTER THE FINAL EARTHMOVING AND CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED. AREAS THAT ARE PROPOSED TO HAVE SPECIFIC LINING SHALL BE STABILIZED WITH THE SPECIFIED LINING AS SOON AS THE EARTHMOVING AND CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED. TEMPORARY SOIL EROSION CONTROL MEASURES SHALL REMAIN IN PLACE UNTIL A UNIFORM EROSION RESISTANT PERENNIAL VEGETATIVE COVER OF THE DISTURBED AREA IS ESTABLISHED. PERMANENT STABILIZATION MEASURES ARE SPECIFIED ON THE EROSION AND SEDIMENT POLLUTION CONTROL DETAIL PLANS.

SOLIDS SEPARATION: PRIOR TO ANY SITE DISTURBANCE OR CONSTRUCTION ACTIVITIES, A GRAVEL BUFFER WILL BE INSTALLED AT THE EXISTING DRIVEWAYS TO SERVE AS A CONSTRUCTION ENTRANCE. IN ADDITION, FILTER FABRIC FENCING WILL BE INSTALLED AROUND THE PROJECT AREA, DOWNGRADIENT FROM ANY DISTURBANCE, TO PREVENT SEDIMENT FROM LEAVING THE SITE. FILTER FABRIC SILT FENCING WILL BE CONSTRUCTED AND WILL REMAIN OPERATIONAL UNTIL PERMANENT CONTROL MEASURES ARE IN PLACE.

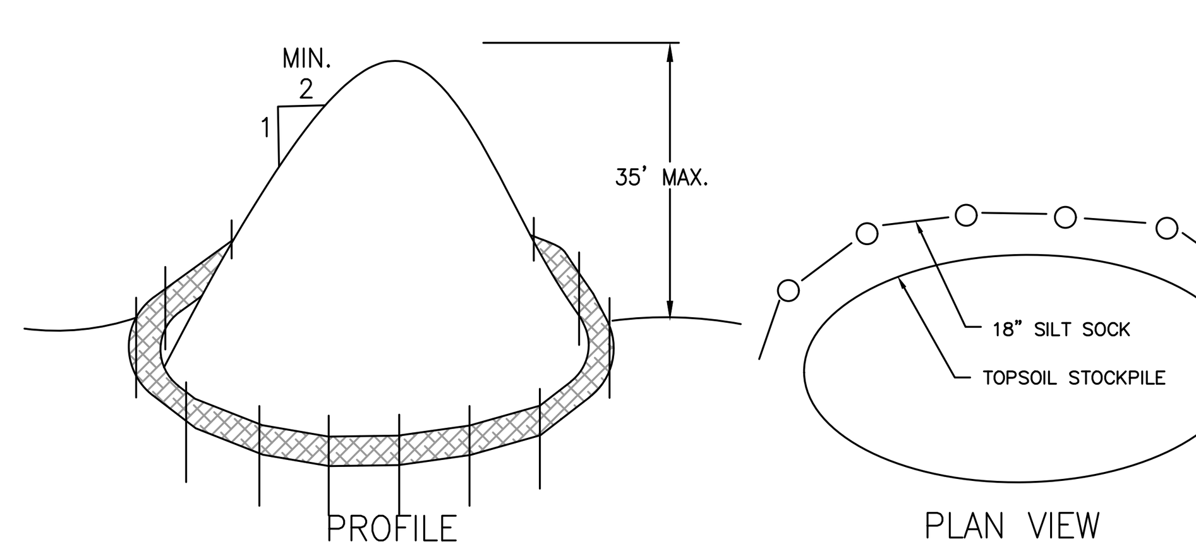
TREE PROTECTION NOTES

A. Prior to any site work, clearing, tree removal, grading, or construction, the tree protection area shall be delineated by the following methods:
(1) The tree protection area that is delineated on the site prior to construction shall conform to the approved development plans.
(2) Forty-eight inch high orange snow fence or other suitable fence, such as super silt fence, mounted on steel posts located 8 feet on center, shall be placed along the boundary of the tree protection area.
(3) Trees being removed shall not be felled, pushed or pulled into a tree protection area or into trees that are to be preserved.
(4) Grade changes and excavations shall not encroach upon the Tree protection area.
(5) No toxic materials, including petroleum products shall be stored less than 100 feet from a tree protection area or a watercourse. If field conditions warrant, a greater distance may be required.
(6) The area within the tree protection area shall not be built upon nor shall any materials be stored there either temporarily or permanently. Vehicles and equipment shall not be parked in the tree protection area.
(7) When tree stumps are located within 10 feet of the tree protection area, the stumps shall be removed by means of a stump grinder to minimize the effect on surrounding root systems.
(8) Tree roots which must be severed shall be cut by a backhoe or similar equipment aligned radially to the tree. This method reduces the lateral movement of the roots during excavation, which if done by other methods could damage the intertwined roots of adjacent trees.
(9) Within 4 hours of any severance of roots, all tree roots that have been exposed and/or damaged shall be trimmed cleanly and covered temporarily with moist peat moss, burlap, or other biodegradable material to keep them from drying out until permanent cover can be installed.
(10) Sediment, retention, and detention basins shall not discharge into the tree protection area.
(11) Sediment, retention, and detention basins shall not be located within the tree protection area.
(12) Trees shall not be used for roping, cables, signs, or fencing. Nails and spikes shall not be driven into trees.
B. Protection from Grade Change.
(1) When the original grade cannot be retained at the tree protection area line, a retaining wall shall be constructed outside the tree protection area.
(2) Appropriate details of the retaining wall design shall be provided.
(3) To ensure the survival of trees, the following methods shall be used.
(a) The top of the wall shall be four inches above the finished grade level.
(b) The wall shall be constructed of large stones, bricks, building tiles, concrete blocks, or treated wood beams not less than 6 inches by 6 inches. A means for drainage through the wall shall be provided so water will not accumulate on either side of the wall. Weep holes shall be required within any wall.
(a) Any severed roots as a result of excavation shall be trimmed so that their edges are smooth and are cut back to a lateral root if exposed.
C. Trees Damaged During Construction. Tree trunks and exposed roots damaged during construction shall be protected from further damage. Damaged branches shall be pruned according to National Arborist Association standards. All cuts shall be made sufficiently close to the trunk or parent limb without cutting into the branch collar or leaving a protruding stub. All necessary pruning cuts must be made to prevent bark from being torn from the tree and to facilitate rapid healing.
E. Tree Replacement. In the event that trees that are to be protected are removed or damaged by accident or by violation of the tree protection requirements, trees shall be replaced on an inch for inch basis.



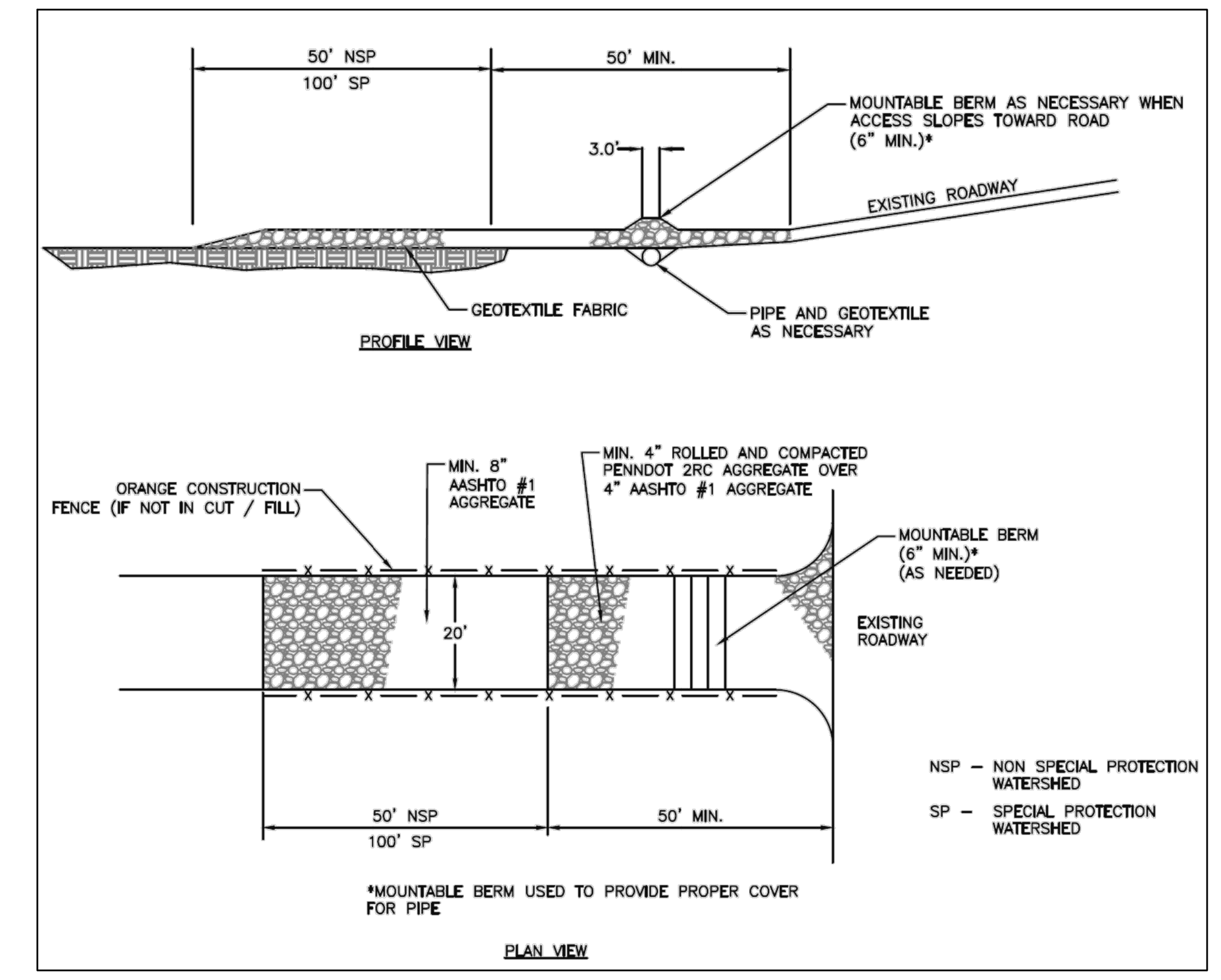
NOTES:
1) FENCE TO BE INSTALLED BEFORE WORK BEGINS. FENCE MUST REMAIN AND BE MAINTAINED THROUGH DURATION OF CONSTRUCTION.
2) ORANGE CONSTRUCTION FENCE MAY BE SUBSTITUTED FOR SNOW FENCE.

TREE PROTECTION FENCING DETAIL



COMPOST FILTER SOCK MUST BE PLACED DOWNSLOPE OF ALL STOCKPILES. IMMEDIATELY APPLY TEMPORARY SEEDING TO ALL STOCKPILES WHICH WILL REMAIN IN PLACE 20 DAYS OR MORE.

STOCKPILE AREA DETAIL



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

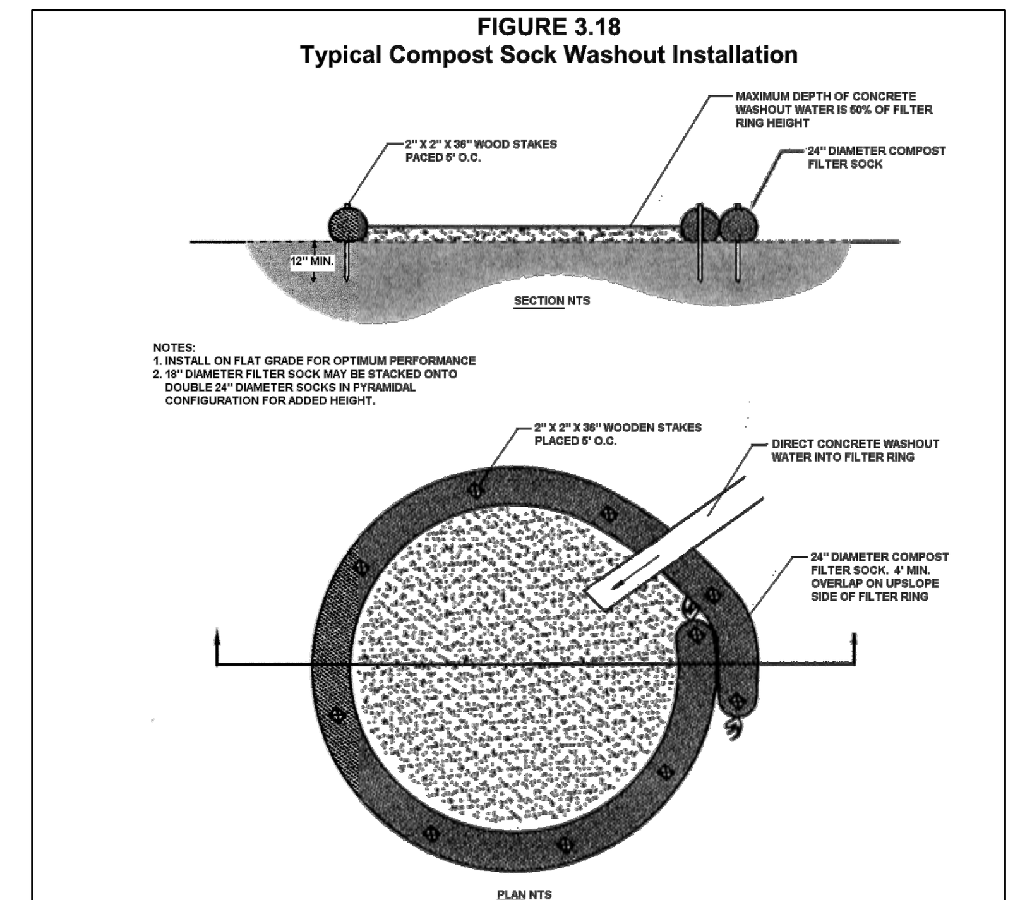
RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

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.

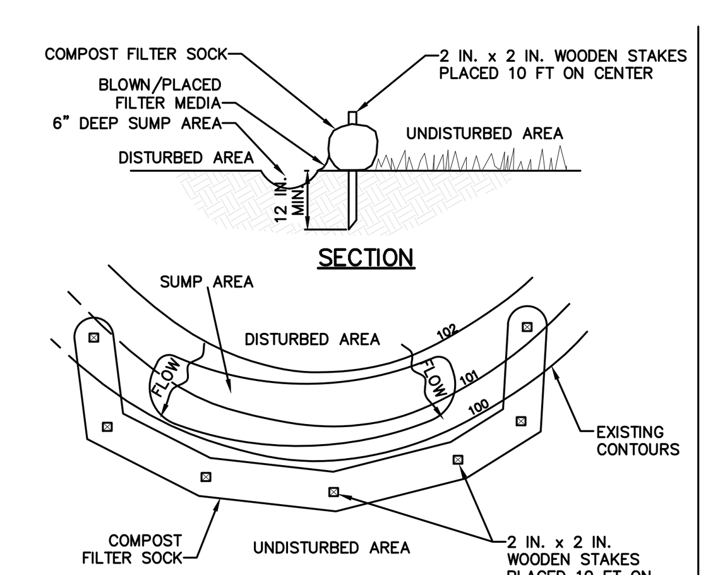
ALTERNATIVE ROCK CONSTRUCTION ENTRANCE

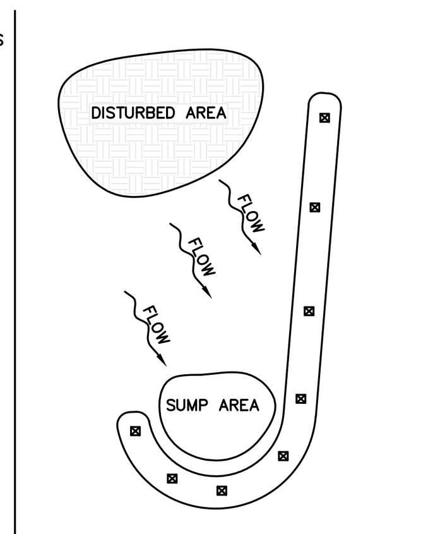
FIGURE 3.18
Typical Compost Sock Washout Installation



A suitable impervious geomembrane shall be placed at the location of the washout prior to installing the socks.
Adapted from Filtrexx

CONCRETE WASHOUT DETAIL





"J" HOOK PLACEMENT

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.

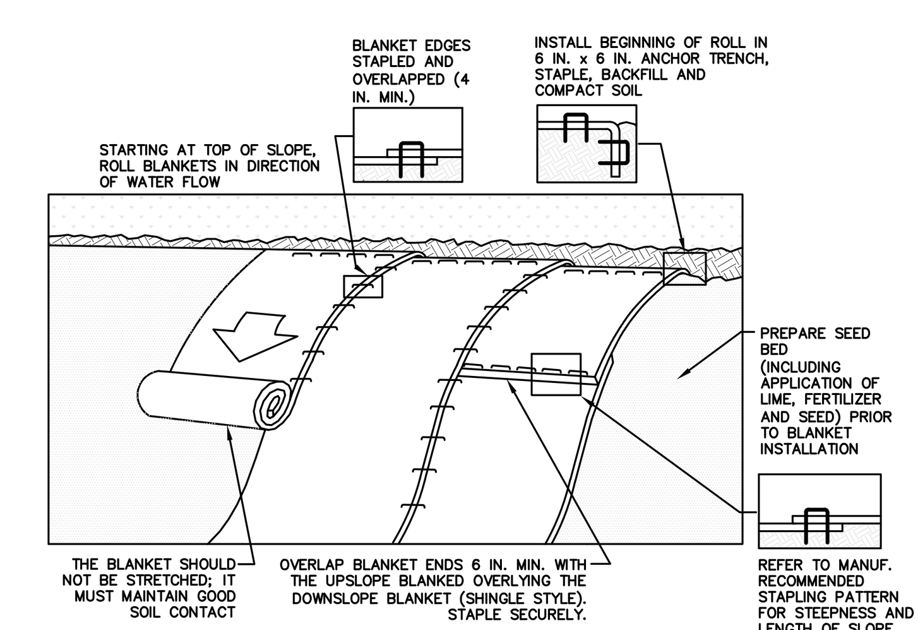
ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

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



NOTES:

SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET.

PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.

SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.

BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.

THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.

STANDARD CONSTRUCTION DETAIL #11-1
EROSION CONTROL BLANKET INSTALLATION

Holmes Cunningham LLC
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Doylestown, PA 18901
(215) 586-3330
www.hcengineering.net
holmes cunningham ENGINEERING

REVISIONS

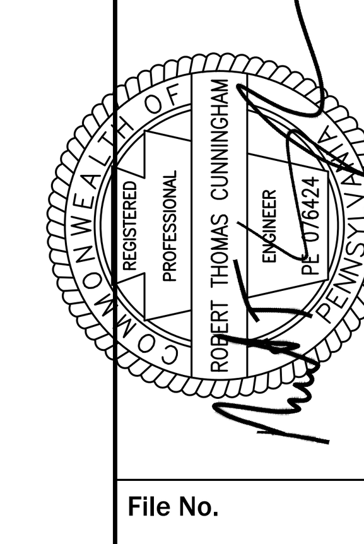
Date	Description

CALL BEFORE YOU DIG !! PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE -- STOP & CALL --
Pennsylvania One Call System, Inc. 1-800-242-1776

UTILITY LOCATIONS AS SHOWN ON THIS PLAN ARE APPROXIMATE AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR, PER PA. ACT 187 TO CONTACT UTILITY COMPANIES PRIOR TO ANY EXCAVATION.

140 UPPER CHURCH ROAD
140 UPPER CHURCH ROAD
TMP # 26-003-104
NEW BRITAIN TOWNSHIP, BUCKS COUNTY, PA

EROSION AND SEDIMENT CONTROL DETAILS



ROBERT T. CUNNINGHAM, P.E.
PA PE076424

File No.
1890_C2.0 E&S.DWG

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Date	06/16/2023
Scale	N.T.S.
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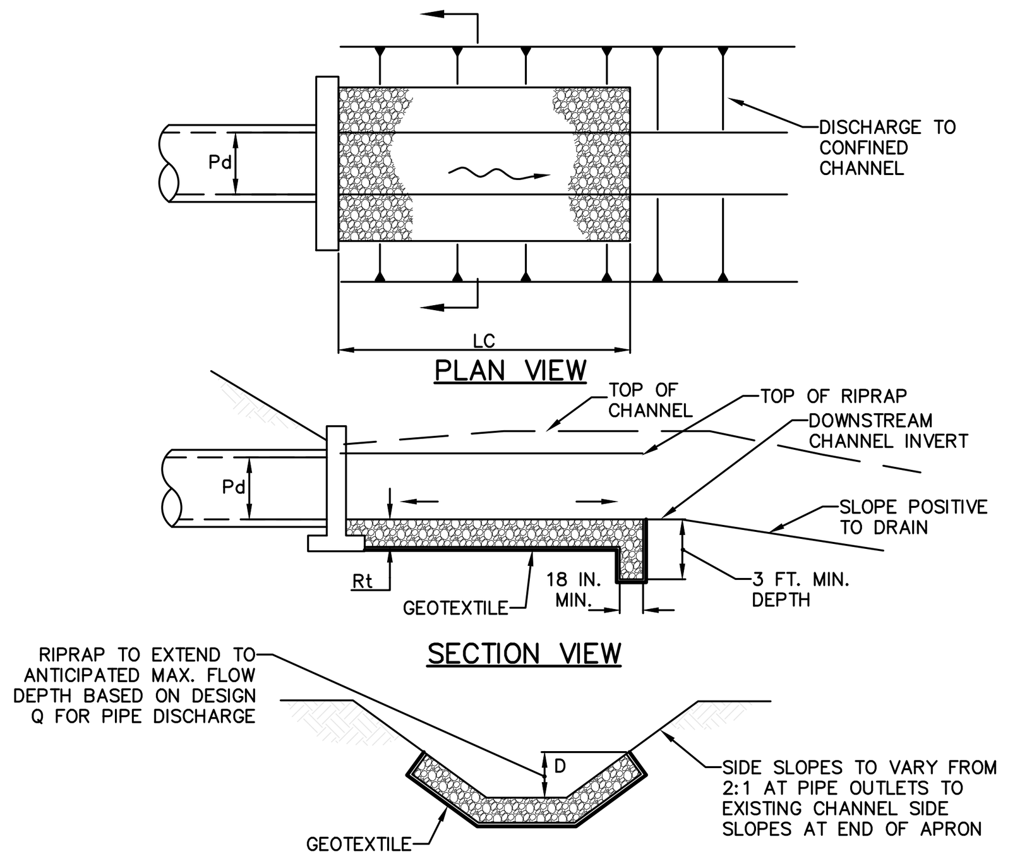
Sheet	8 of 9

Drawing No.
C2.1



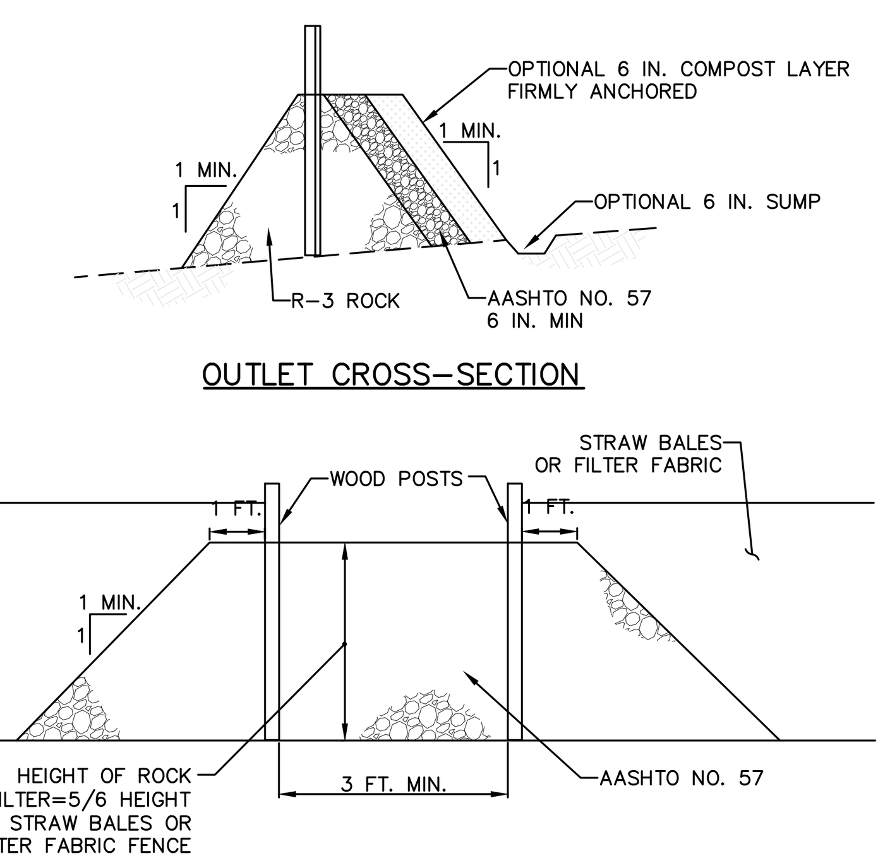
OUTLET NO.	PIPE DIA EQUIV. Pd (IN)	RIPRAP		APRON					
		SIZE R-_	THICK. Rt (IN)	LENGTH LC (FT)	INITIAL BOTTOM WIDTH (AT ENDWALL) (FT)	END WIDTH (FT)	INITIAL TOP WIDTH (AT ENDWALL) (FT)	END TOP WIDTH (FT)	SIDE SLOPES H:V
RRA-2	15	3	9	8	3.25	5	7.75	9.5	3:1

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.

STANDARD CONSTRUCTION DETAIL #9-3
RIPRAP APRON AT PIPE OUTLET TO AN EXISTING CHANNEL

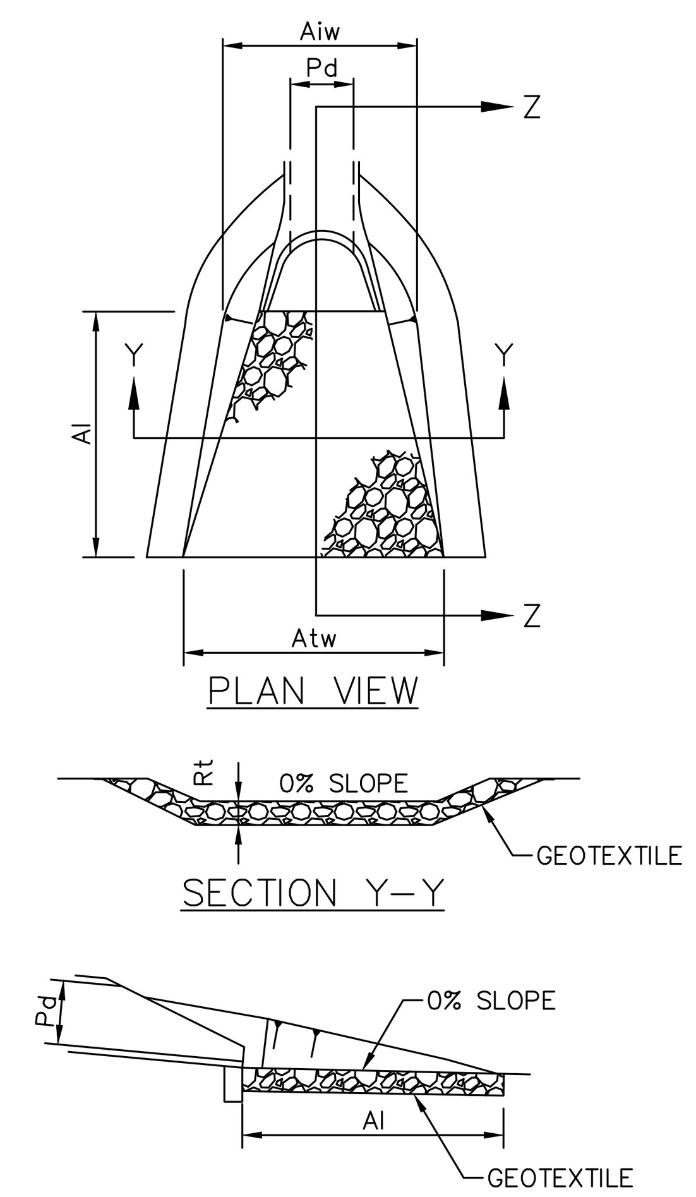


NOTES:

A ROCK FILTER OUTLET SHALL BE INSTALLED WHERE FAILURE OF A SILT FENCE OR STRAW BALE BARRIER HAS OCCURRED DUE TO CONCENTRATED FLOW. ANCHORED COMPOST LAYER SHALL BE USED ON UPSLOPE FACE IN HQ AND EV WATERSHEDS.

SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH 1/3 THE HEIGHT OF THE OUTLET.

STANDARD CONSTRUCTION DETAIL #4-6
ROCK FILTER OUTLET



OUTLET NO.	PIPE DIA Pd (IN)	RIPRAP		APRON		
		SIZE R-_	THICK. Rt (IN)	LENGTH Al (FT)	INITIAL WIDTH Alw (FT)	TERMINAL WIDTH Atw (FT)

NOTES:

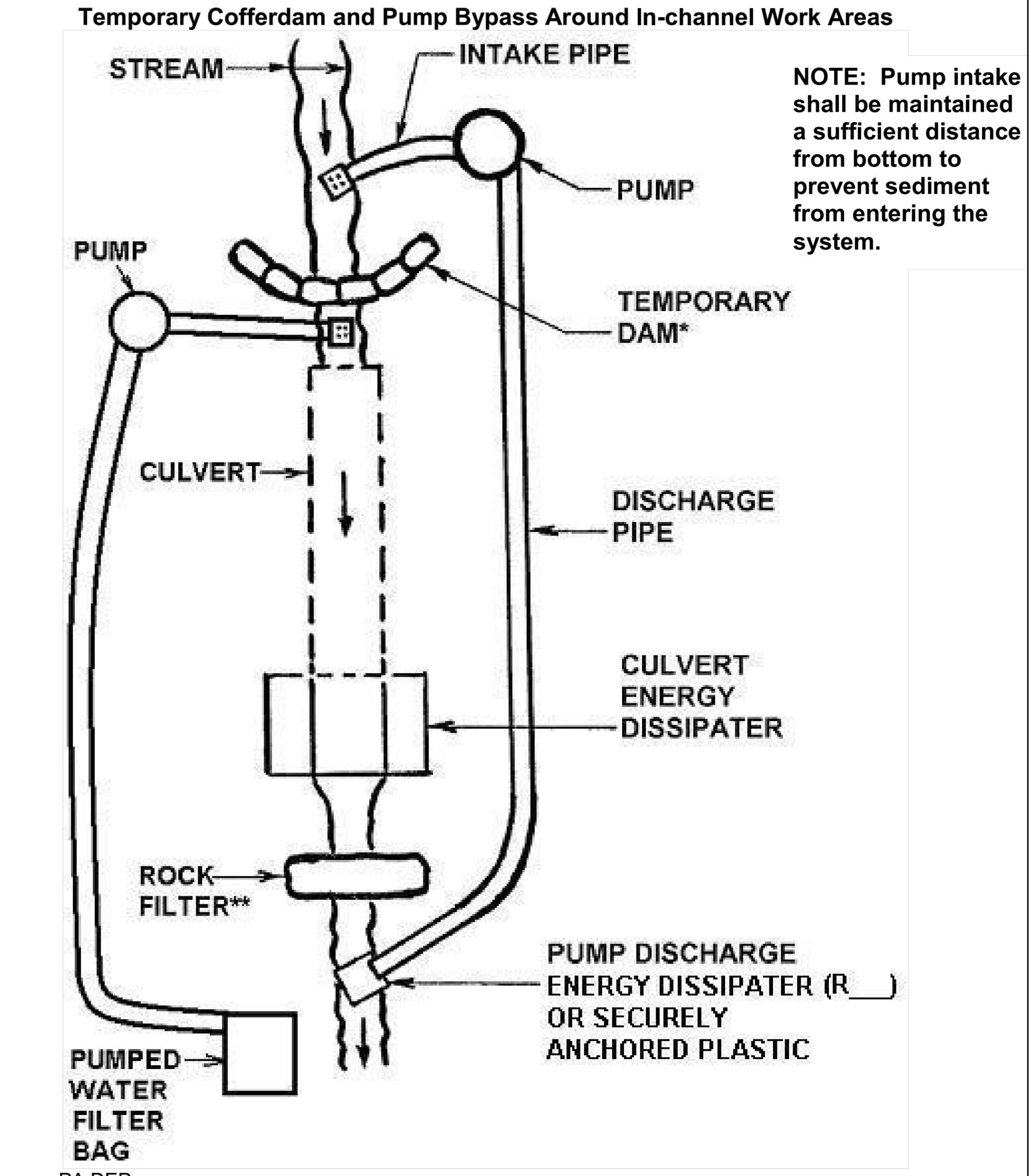
REFER TO E&S STANDARD WORKSHEET 20 FOR RIP-RAP APRON SIZING INFORMATION

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.

STANDARD CONSTRUCTION DETAIL #9-1
RIPRAP APRON AT PIPE OUTLET
WITH FLARED END SECTION OR ENDWALL

FIGURE 3.11
Temporary Cofferdam and Pump Bypass Around In-channel Work Areas

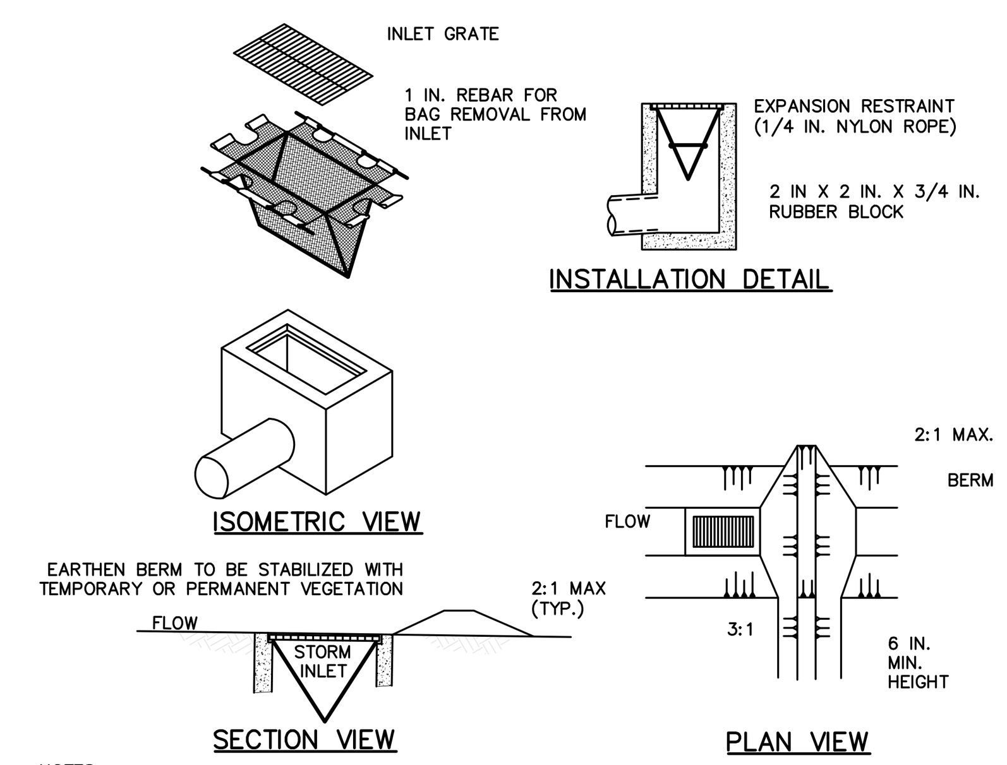


* Sandbags (Standard Construction Detail #3-15), Jersey barriers (Figure 3.13) or other non-erosive material, no earth fill. Do not excavate a sump for the pump intake.

** See Standard Construction Detail # 4-14. For low gradient channels, the rock filter may be replaced by an impervious cofferdam to prevent backflow into the work area.

TEMPORARY COFERDAN AND BYPASS FOR STREAM CHANNEL WORK AREA

STREAM CHANNEL CULVERT REPLACEMENT SEQUENCE OF CONSTRUCTION:
1. INSTALL BYPASS PUMP AND ENERGY DISSIPATER AS SHOWN ON THE DETAIL.
2. INSTALL COFFERDAM AND ROCK FILTER IN CHANNEL. INSTALL PUMPED WATER FILTER BAG IN A LEVEL, GRASSY, STABLE AREA ADJACENT TO THE CHANNEL.
3. BEGIN EXCAVATION AND REMOVAL OF EXISTING STREAM CROSSING.
4. INSTALL PROPOSED CULVERT AS SHOWN ON THE APPROVED GENERAL PERMIT PLAN.
5. STABILIZE DISTURBED AREA AS PER THE DETAILS AND NOTES SHOWN ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
6. REMOVE PUMPED WATER FILTER BAG, ROCK FILTER, AND COFFERDAM.
7. REMOVE BYPASS PUMP.



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.

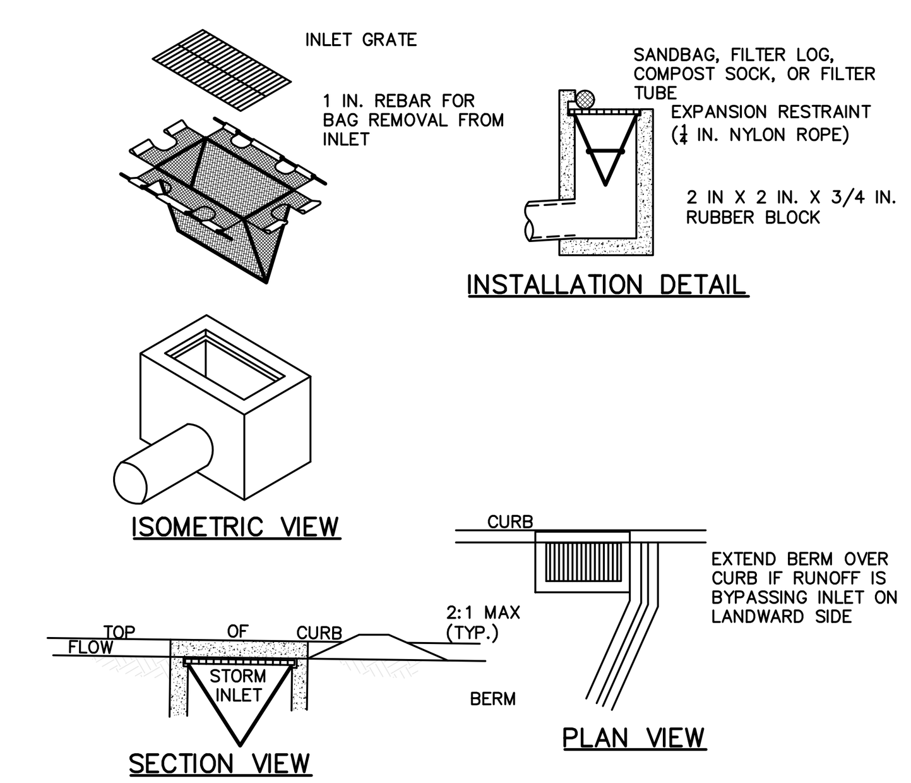
ROLLED EARTHEN BERM IN ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM ON ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. EARTHEN BERM IN CHANNEL SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED OR REMAIN PERMANENTLY.

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



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 SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. SIX INCH MINIMUM HEIGHT ASPHALT BERM SHALL BE MAINTAINED UNTIL ROADWAY SURFACE RECEIVES FINAL COAT.
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.

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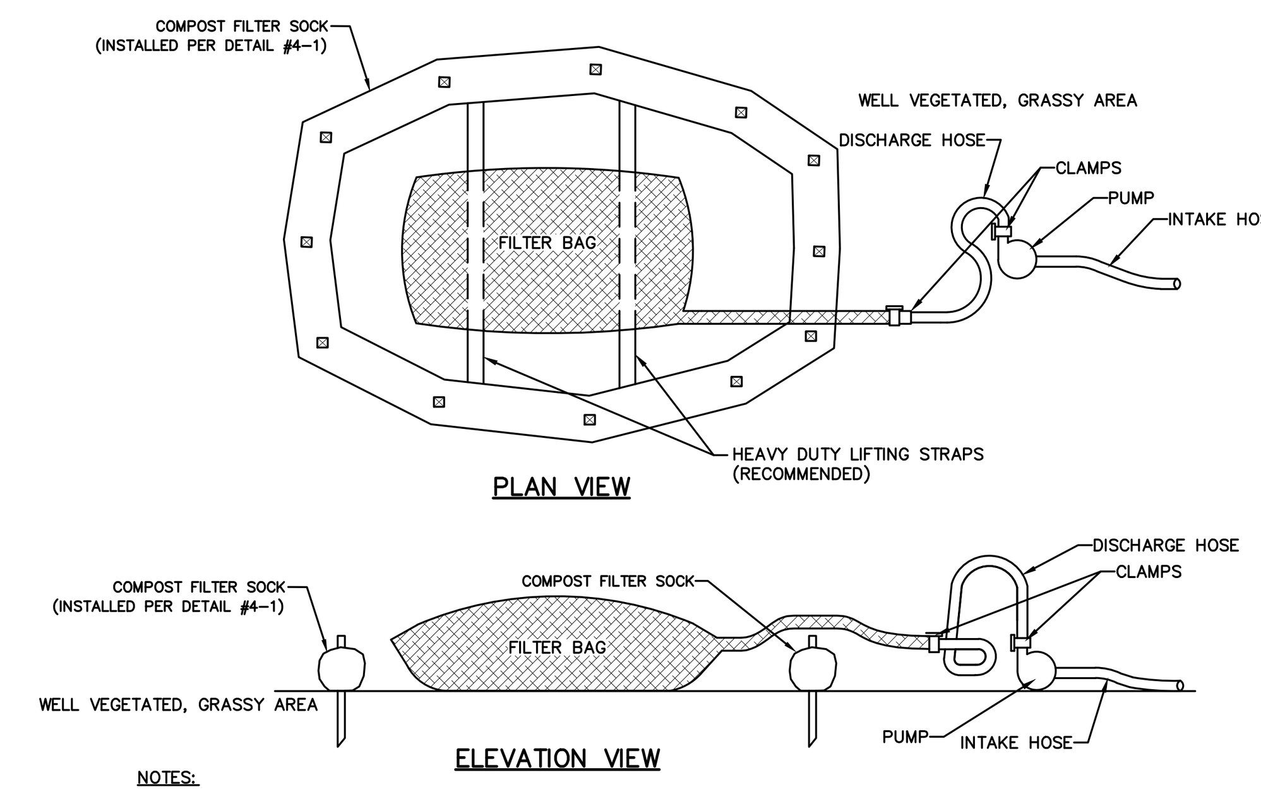
DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

STANDARD CONSTRUCTION DETAIL #4-15
FILTER BAG INLET PROTECTION - TYPE C INLET



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.

NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

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
WITH COMPOST FILTER SOCK

Holmes Cunningham LLC
409 E. Butler Ave., Unit 5
Doylestown, PA 18901
(215) 586-3330
www.hcengineering.net
holmes cunningham ENGINEERING

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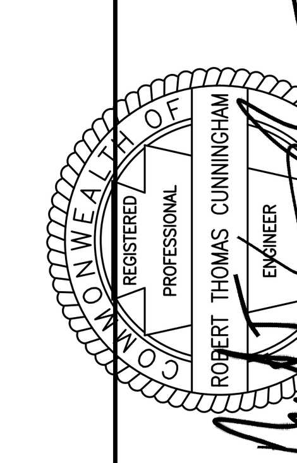

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