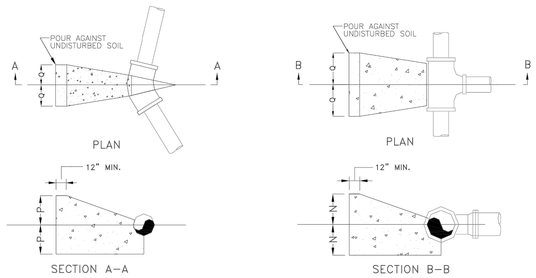


PLUGS



HORIZONTAL & VERTICAL UPWARD BENDS

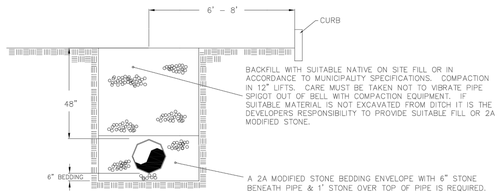
TEE

THRUST BLOCKS FOR TEES, HORZ. & VERTICAL BENDS AND PLUGS							
	DISCRIPTION	DIMENSION	6"ø	8"ø	10"ø	12"ø	16"ø
	TEES	N	0'-10"	1'-2"	1'-5"	1'-5"	2'-1"
		O	0'-10"	1'-2"	1'-5"	1'-5"	2'-1"
HORZ. & VERT. UPWARD BENDS	90° BENDS	P	1'-0"	1'-4"	1'-8"	1'-11"	2'-1"
		Q	1'-0"	1'-4"	1'-8"	1'-11"	2'-1"
	45° BENDS	P	0'-8"	1'-0"	1'-3"	1'-8"	1'-6"
		Q	0'-8"	1'-0"	1'-3"	1'-8"	1'-6"
	22 1/2° BENDS	P	0'-7"	0'-9"	0'-11"	1'-0"	0'-10"
		Q	0'-7"	0'-9"	0'-11"	1'-0"	1'-1"
	11 1/4° BENDS	P	0'-5"	0'-6"	0'-8"	0'-8"	1'-0"
		Q	0'-5"	0'-5"	0'-8"	0'-8"	1'-0"
	PLUGS	R	1'-8"	2'-4"	2'-10"	3'-4"	4'-1"
		S	1'-8"	2'-4"	2'-10"	3'-4"	4'-1"

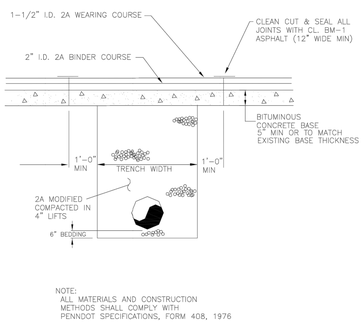
THRUST BLOCKS DESIGNED FOR 200 LBS. PER SQ. IN. TEST PRESSURE AND 2000 LBS. PER SQ. FT. SOIL PRESSURE

WRAP ALL FITTINGS IN PLASTIC BEFORE POURING CONCRETE.

THRUST BLOCK DETAIL

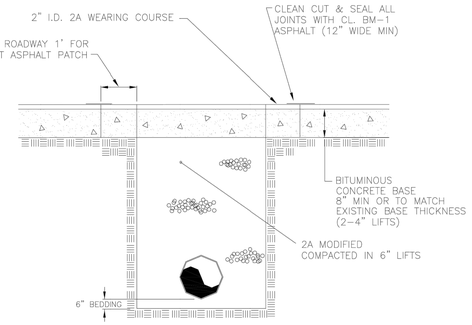


TYPICAL SUBDIVISION ROADWAY



NOTE:
ALL MATERIALS AND CONSTRUCTION METHODS SHALL COMPLY WITH PENNDOT SPECIFICATIONS, FORM 408, 1976

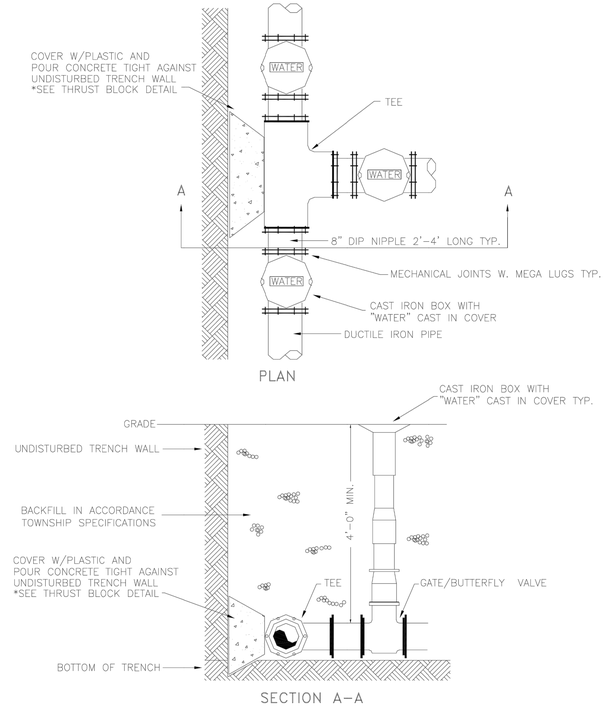
STATE HIGHWAY PERMANENT RESTORATION



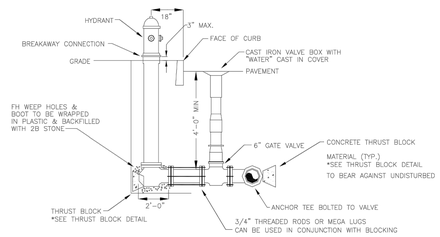
NOTE:

1. ROADWAYS WILL BE PADDED TO PREVENT DAMAGE FROM BUCKETS OR OUTRIGGERS
2. ALL MATERIALS AND CONSTRUCTION METHODS SHALL COMPLY WITH PENNDOT SPECIFICATIONS, FORM 408, CURRENT EDITION
3. FULL WIDTH OF ROAD SHOULDERS WILL BE COMPACTED WITH WITH 2A MODIFIED WITHIN 3' OF ASPHALT ROAD SURFACE
4. COLD PATCH TEMPORARILY INSTALLED WITH PERMANENT RESTORATION WITHIN 90 DAYS
5. THIS SPEC WILL BE FOLLOWED UNLESS AMENDED BY AGREEMENT WITH TOWNSHIP
6. FINAL RESTORATION NO SOONER THAN 30 DAYS AFTER BACKFILL COMPACTION

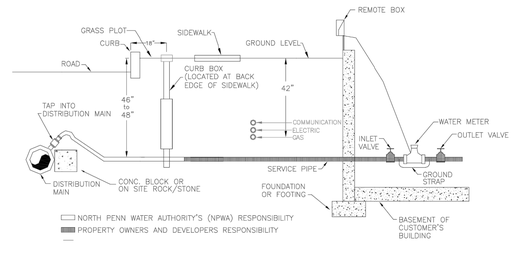
TYPICAL ROADWAY RESTORATION



TYPICAL INTERSECTION INSTALLATION

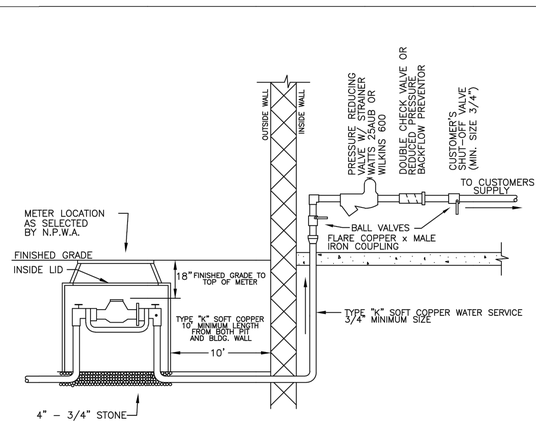


FIRE HYDRANT CONNECTION/LOCATION DETAIL



*SEE NPWA DETAILED SPECIFICATIONS FOR METER INSTALLATION

DOMESTIC SERVICE CONNECTION/LOCATION DETAIL



NOTES

1.) CUSTOMER TO PLACE STAKE MARKED "WATER" IN YARD AT DESIRED LOCATION FOR SERVICE LINE
2.) NO SOLDER JOINTS ALLOWED UNDERGROUND OR AHEAD OF FIRST BALL VALVE
3.) METER TO BE FURNISHED AND INSTALLED BY NORTH PENN WATER AUTHORITY
4.) WATER METER WILL NOT BE SET IF PIPING DOES NOT CONFORM TO SPECIFICATIONS
5.) THE USE OF LEAD–FREE SOLDER, FLUX AND OTHER PLUMBING MATERIALS IS REQUIRED BY FEDERAL LAW. SOLDER AND FLUX MAY NOT BE GREATER THAN 0.2% LEAD PIPE AND FITTINGS MAY NOT BE GREATER THAN 8% LEAD.
6.) ANY SERVICE LINE OVER 200' MAY USE PVC 165 PSI, TO WITHIN 10 ' OF THE STRUCTURE AND THE PIT BEFORE BEING CONNECTED TO TYPE "K" SOFT COPPER

7.) BACKFLOW PREVENTION DEVICES ARE REQUIRED ON ALL NPWA WATER SERVICE LINES. THEREFORE, A THERMAL EXPANSION TANK MUST BE INSTALLED ON THE SUPPLY SIDE OF THE HOT WATER SYSTEM, AS DIRECTED BY THE "UNIFORM PLUMBING CODE" (UPC).

SPECIFICATIONS

1.) SERVICE LINE – COPPER TYPE K SOFT W/FLARED FITTINGS.
2.) ALL SERVICE LINE FITTINGS TO BE COPPER OR BRASS.
3.) BALL VALVE – 200 PSI, BRASS
4.) PRESSURE REDUCING VALVE – WATTS 25AUB, WILKINS 600 OR APPROVED EQUAL BY N.P.W.A
5.) CHECK VALVE –SPRING LOADED DOUBLE CHECK
3/4" – WATTS NO. 773, 7U–22, WILKINS 700F OR APPROVED EQUAL BY N.P.W.A
1" – WATTS NO. 7ZO OR WILLINS 700F OR APPROVED EQUAL BY N.P.W.A

TYPICAL 3/4" AND 1" METER DETAIL (OUTSIDE METER)

NORTH PENN WATER AUTHORITY STANDARD NOTES

GENERAL NOTES

WATER MAIN PREPARATION

SURVEYORS ARE REQUIRED TO PLACE 5' OFFSET STAKES FROM FACE OF CURB OR EDGE OF ROADWAY AT 50' INTERVALS SHOWING THE FACE OF CURB AND TOP OF CURB GRADE.

WATER MAIN INSTALLATION

INSTALLATION MAY COMMENCE WHEN DEVELOPERS ESCROWS SIGNED AGREEMENTS AND BOARD APPROVALS ARE IN PLACE. 72 HOUR NOTICE MUST PROVIDED BEFORE PIPE MAY BE INSTALLED.

WHEN WATER MAIN IS BEING INSTALLED IN AN AREA WHERE THE GRADE IS ABOVE THE ROAD SURFACE, THE WATER MAIN MUST BE INSTALLED WITH FOUR FEET OF COVER FROM THE TOP OF THE ROAD SURFACE.

WATER MAIN INSTALLED UNDER A CREEK BED, A GAS MAIN OR IN CORROSIVE SOIL WILL REQUIRE EACH SECTION OF WATER MAIN TO BE ENCASED WITH POLYETHYLENE FILM. THE POLYETHYLENE FILM SHOULD BE FITTED WITH MINIMUM SPACE BETWEEN THE FILM AND THE PIPE. OVERLAPS AND ENDS SHOULD BE SECURED WITH ADHESIVE TAPE OR PLASTIC TIE STRAPS.

PIPE STOCKPILED FOR MORE THAN 24 HOURS ON THE JOB SITE WILL HAVE THE BELLS AND SPIGOTS WRAPPED WITH A POLYETHYLENE FILM AND/OR TARP TO PREVENT CONTAMINATION, UNLESS FIELD CONDITIONS DICTATE IMMEDIATE WRAPPING.

DUCTILE IRON PIPE AND FITTINGS

1. DUCTILE IRON PIPE SHALL BE MANUFACTURED IN ACCORDANCE WITH ANSI A21.51 (AWWA C151) AMERICAN STANDARD FOR DUCTILE IRON PIPE.

2. PIPE SHALL BE CLASS 52 THICKNESS IN ACCORDANCE WITH ANSI A21.51 (AWWA C151).

3. ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE CEMENT LINED AND COATED OUTSIDE WITH A BITUMINOUS SEAL COAT IN ACCORDANCE WITH ANSI A21.4 (AWWA C104) OR EPOXY COATED.

4. THE FITTINGS SHALL BE SHORT BODY MECHANICAL JOINT FITTINGS AND SHALL CONFORM TO AWWA 153SSB EXCEPT WHERE DETAILED OTHERWISE ON THE DRAWINGS. ALL MECHANICAL JOINT FITTINGS SHALL BE SECURED WITH MEGA LUGS.

5. REQUIRED FIELD LOCK USAGE WILL BE DETERMINED BY FIELD INSPECTOR. FIELD LOCKS WILL BE MADE AVAILABLE BY NPWA.

VALVES AND VALVE BOXES

VALVES CONNECTED TO LIVE WATER MAINS MAY ONLY BE OPERATED BY NPWA PERSONNEL. CONTRACTORS AND DEVELOPERS MAY NOT OPERATE ANY CHARGED WATER MAIN OPEN TO THE SYSTEM.

1. ALL GATE VALVES REQUIRED FOR 4" THRU 16" DIAMETER MAIN SHALL BE EITHER OR APPROVED EQUAL:
– MUELLER #H–615 AND T–2360–16D GATE VALVE MANUFACTURED BY MUELLER CO., DECATUR, ILLINOIS.

– U.S. PIPE T–9 AND METRO SEAL 250 MANUFACTURED BY U.S. PIPE AND FOUNDRY CO., BIRMINGHAM, AL.

– KENNEDY KENSEAL II RESILIENT WEDGE VALVE MANUFACTURED BY KENNEDY VALVE, ELMIRA, NY.

– AMERICAN FLOW CONTROL SERIES 2500 RESILIENT WEDGE VALVE MANUFACTURED BY AFC, LATHAM, NY

2. BUTTERFLY VALVES WILL BE USED FOR ALL 18" OR LARGER INSTALLATIONS.

3. ALL BUTTERFLY VALVES SHALL BE MUELLER LINE SEAL III BUTTERFLY VALVE NO. B–3211–20, MANUFACTURED BY HENRY PRATT CO. WITH ELASTOMETRIC SEAT IN THE BODY OF THE VALVE.

4. VALVES SHALL BE MOUNTED VERTICALLY, EXCEPT IF OTHER WISE NOTED ON THE DRAWINGS AND SHALL HAVE MECHANICAL JOINT ENDS.

5. ALL VALVES SHALL OPEN BY TURNING COUNTERCLOCKWISE AND SHALL HAVE A STANDARD 2" OPERATING NUT.

6. ALL BURIED VALVES SHALL BE FURNISHED WITH A CAST IRON VALVE BOX. ALL VALVE BOXES SHALL BE EITHER:
– BUFFALO TYPE–TWO (2) PIECE SCREW TYPE 5–1/4" SHAFT.

– TYLER SERIES 6850, MANUFACTURED BY TYLER PIPE COMPANY.

7. VALVE BOXES SHALL BE TWO–PIECE, SCREW–TYPE INSTALLED OVER THE BONNET AND OPERATING NUT. VALVE BOXES SHALL BE OF SUFFICIENT LENGTH TO REACH THE SURFACE OF THE GROUND BUT NOT EXTEND ABOVE THE GROUND SURFACE. VALVE NUT EXTENSIONS SHALL BE INSTALLED AS NECESSARY TO INSURE THE VALVE CAN BE TURNED FROM GROUND LEVEL WITH A 6' LONG VALVE NUT KEY WRENCH.

8. DEVELOPERS AND THEIR CONTRACTORS SHALL BE RESPONSIBLE FOR PROPER INSTALLATION AND MAINTAINCE OF VALVE BOXES. VALVE BOXES SHALL BE IN A VERTICAL OPERABLE CONDITION. ALL BROKEN, BURIED OR FILLED VALVE BOXES WILL BE DUG OUT AND REPAIRED AT THEIR EXPENSE.

FIRE HYDRANTS

1. ALL FIRE HYDRANTS SHALL BE EITHER:
– MUELLER CENTURION 5–1/4–INCH FIRE HYDRANT
AWWA TYPE FIRE HYDRANT
MANUFACTURED BY MUELLER CO., DECATUR, ILLINOIS.

– KENNEDY K–81D, 5 1/4–INCH FIRE HYDRANT
AWWA TYPE FIRE HYDRANT
MANUFACTURED BY KENNEDY VALVE, ELMIRA, NEW YORK.

2. ALL FIRE HYDRANTS SHALL HAVE:
– 6–INCH MECHANICAL JOINT INLET CONNECTION
– ONE (1) 4–1/2–INCH STEAMER NOZZLE
– TWO (2) 2–1/2 –INCH HOSE NOZZLE
OPEN LEFT HYDRANT OPERATING & NOZZLE CAP NUTS; FIRE HYDRANT STEAMER & HOSE THREADS TO BE NATIONAL STANDARD OR NORTH PENN THREADS AS NOTED ON DRAWING.

– NON METERED WATER FROM FIRE HYDRANTS MAY NOT BE USED FOR ANY PURPOSE BY THE DEVELOPER OR CONTRACTOR. METERS MAY BE OBTAINED BY CONTACTING NPWA'S CUSTOMER SERVICE DEPARTMENT BETWEEN APRIL 1ST & NOVEMBER 1ST. UNAUTHORIZED USE OF WATER FROM FIRE HYDRANTS IS SUBJECT TO CRIMINAL CHARGES.

CHLORINE DOSAGES

65% TABLETS

Diameter of pipe in inches	2	3	4	6	8	10	12	16
No. of 65% $Ca(OH)_2$ Tablets/pipe	1	1	1	1	2	3	4	6

1. TABLETS WILL BE ATTACHED WITH AN FDA APPROVED FOOD GRADE ADHESIVE (POLY GRIP) IN EACH PIECE OF PIPE INSTALLED.
2. CALCIUM HYPO CHLORITE CONFORMING TO NSI/AWWA B300 IS AVAILABLE IN 5–g TABLETS, AND CONTAINS APPROX. 65 PERCENT AVAILABLE CHLORINE BY WEIGHT.

TRAFFIC CONTROL

1. TRAFFIC CONTROL ON ALL STATE, TOWNSHIP AND BOROUGH ROADWAYS WILL BE IN ACCORDANCE WITH PENN DOT SPECIFICATIONS; PUBLICATION 203, FIG. 10A & 10B.

ROADWAY AND RIGHT OF WAY

1. ROADWAY RIGHT OF WAY RESTORATION WILL BE IN ACCORDANCE WITH PENN DOT SPECIFICATIONS ON STATE ROADWAYS, TOWNSHIP AND BOROUGH SPECIFICATION ON LOCAL MUNICIPALLY MAINTAINED ROADWAYS.

TAPS

1. ALL SERVICE TRENCHS ARE REQUIRED TO HAVE 2A MODIFIED STONE BACKFILL.
2. ALL TAPS ARE INSTALLED BY EITHER NPWA OR CONTRACTOR.
3. SERVICES WILL BE INSTALLED AT THE LOCATION DETERMINED BY DEVELOPER.
4. SERVICE TAPS WILL BE INSTALLED ONLY WHEN THE FOLLOWING REQUIREMENTS ARE MET:
– NPWA WILL FILL THE WATER MAIN WAIT 48 HOURS THEN FLUSH THE MAINS.
– A PRESSURE TEST WITH A MINIMUM PRESSURE OF 150 PSI FOR FOUR (4) HOURS WITHOUT LEAKS, CONDUCTED BY THE CONTRACTOR AND WITNESSED BY N.P.W.A.
– A BACTERIA TEST IS TAKEN AFTER THE LINES ARE FLUSHED WITH RESIDUAL CHLORINE OF 1.0 PPM OR LESS, CONDUCTED BY NPWA.
5. CURB BOXES WILL BE MAINTAINED IN A VERTICAL OPERABLE CONDITION. IT IS THE DEVELOPERS RESPONSIBILITY TO REPAIR, REPLACE AND RESTORE ALL DAMAGED, DESTROYED OR BURIED CURB BOXES.
6. ALL BRASS CORPORATIONS & CURB STOPS SHALL BE A COMPRESSION TYPE MEETING THE STANDARD MUELLER #B–25008 & MUELLER #B25209 WITH PRESSURE RATING OF 300 PSI.
7. CURB BOXES WILL BE TELESCOPING TYPE WITH PENTAGON PLUG IN CENTER OF LID. RISER PIPE WILL BE 1" DIAMETER TO ACCOMODATE THE STAINLESS STEEL CURB ROD.
8. SERVICE LINE WILL BE TYPE "K" COPPER.

ABANDONED MAIN

1. ANY OBSOLETE VALVE BOXES AND HYDRANTS WILL BE IDENTIFIED AND REMOVED UNDER THE DIRECTION OF A NPWA INSPECTOR.

2. ABANDONED VALVE BOXES ARE TO HAVE THE UPPER PORTION REMOVED 1" BELOW THE GRADE. THE VALVE BOX WILL BE FILLED USING 2–A MODIFIED STONE WHEN WORKING IN PAVING OR SUITABLE FILL WHEN WORKING OUTSIDE THE PAVED AREA. THE WORK AREA WILL BE RESTORED TO THE SURROUNDING CONDITIONS.

3. ABANDONED NON–BREAKAWAY HYDRANTS ARE TO BE CUT 1' BELOW THE GROUND SURFACE. ABANDONED BREAKAWAY HYDRANTS ARE TO BE EXTRACTED FROM THE MECHANICAL JOINT OF THE CONNECTING PIPE. THE HYDRANT EXTENSION WILL BE FILLED USING 2–A MODIFIED STONE WHEN WORKING IN PAVING OR SUITABLE FILL WHEN WORKING OUTSIDE THE PAVED AREA. BREAKAWAY HYDRANTS WILL BE SAVED AND RETURNED TO INVENTORY.

4. ONCE REMOVAL IS COMPLETE THE WORK AREA WILL BE RESTORED TO THE PRE–EXISTING SURROUNDING CONDITIONS.

FIELD NOTES & FIELD DIMENSIONS

1. NORTH PENN WATER AUTHORITY REQUIRES THEIR CONTRACTORS TO SUPPLY THE AUTHORITY WITH DAILY FIELD NOTES AND AN AS–BUILT DRAWING. NPWA'S CONSTRUCTION INSPECTOR WILL SUPPLY DAILY FIELD NOTE SHEETS.

Holmes Cunningham LLC
350 E. Butler Ave., Ste 106
New Britain, PA 18901
(215) 586-3330
www.hcengineering.net

holmes cunningham ENGINEERING

REVISIONS		
	Description	Date

CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR MARKING OF UNDERGROUND LINES
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 SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, PER PA. ACT 187 TO CONTACT ALL UTILITY COMPANIES PRIOR TO ANY EXCAVATION

ARBOR GROVE

TMP # 090001012005 & 090001006002

HATFIELD BOROUGH, MONTGOMERY COUNTY, PENNSYLVANIA

WATER DETAILS

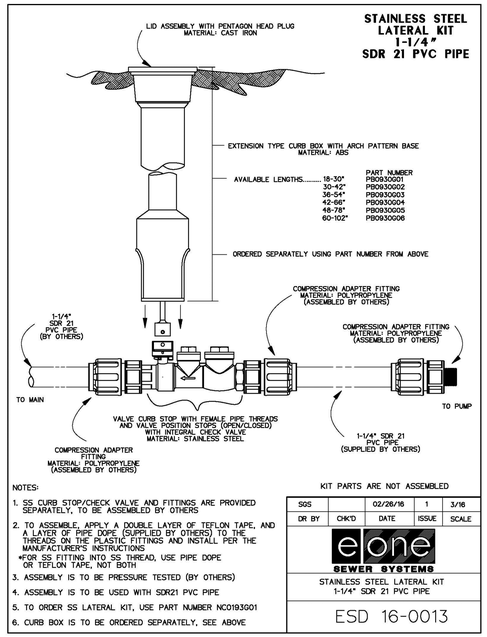
COMMONWEALTH OF PENNSYLVANIA
ROBERT THOMAS CUNNINGHAM
ENGINEER

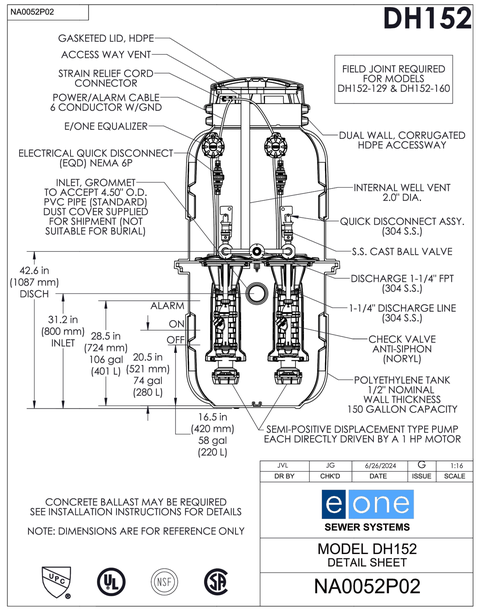
Robert T. Cunningham, P.E.
PA Lic. No. PA076424

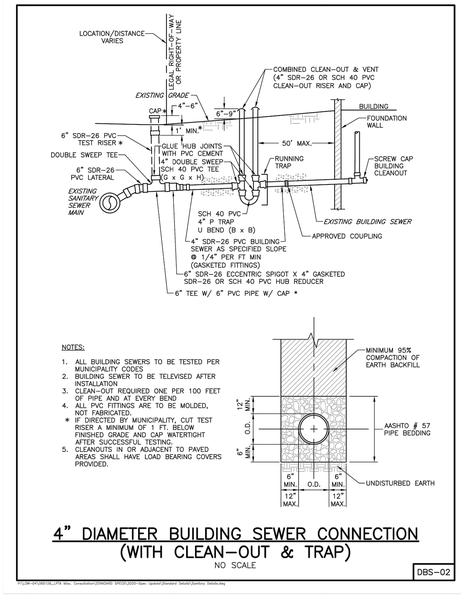
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Date	08/07/2024			Sheet 8 of 14

Drawing No.
C4.1



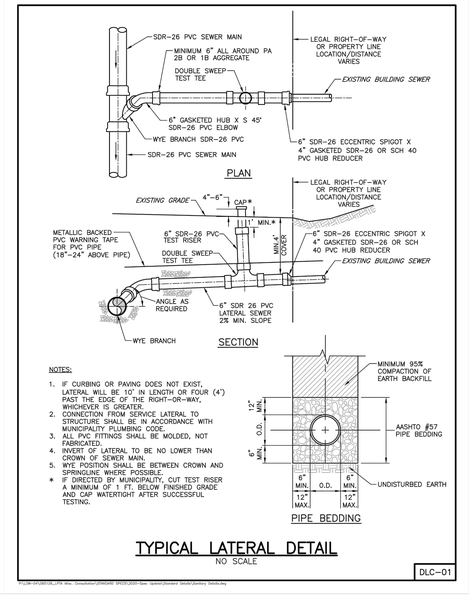




4" DIAMETER BUILDING SEWER CONNECTION (WITH CLEAN-OUT & TRAP)

NO SCALE

DBS-02

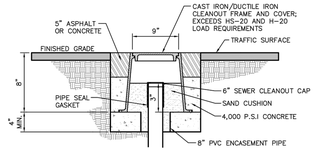


TYPICAL LATERAL DETAIL

NO SCALE

DLC-01

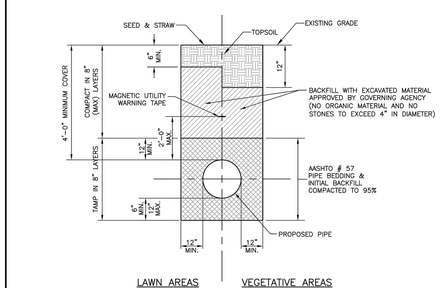
GRINDER PUMP DETAILS



CLEANOUT FRAME & COVER IN IMPERVIOUS AREAS

NO SCALE

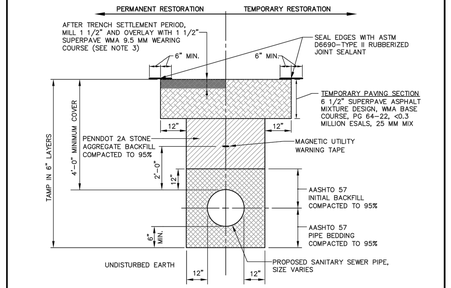
DT-02



SANITARY BEDDING & TRENCH RESTORATION LAWN/VEGETATIVE AREAS

NO SCALE

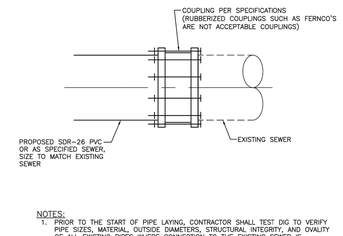
DT-04



SANITARY TRENCH BACKFILL AND PAVEMENT RESTORATION DETAIL FOR MUNICIPAL ROADS

NO SCALE

DT-05A



CONNECTION TO EXISTING SEWER PIPE

NO SCALE

DT-10

Holmes Cunningham LLC
350 E. Butler Ave., Ste 106
New Britain, PA 18901
(215) 586-3330
www.hcengineering.net
holmes cunningham ENGINEERING

REVISIONS

Description	Date

CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR MARKING OF UTILITIES 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 VERIFY LOCATIONS PRIOR TO ANY EXCAVATION

ARBOR GROVE

TMP # 09000101200 5 & 09000100600 2

HATFIELD BOROUGH, MONTGOMERY COUNTY, PENNSYLVANIA

SANITARY SEWER DETAILS

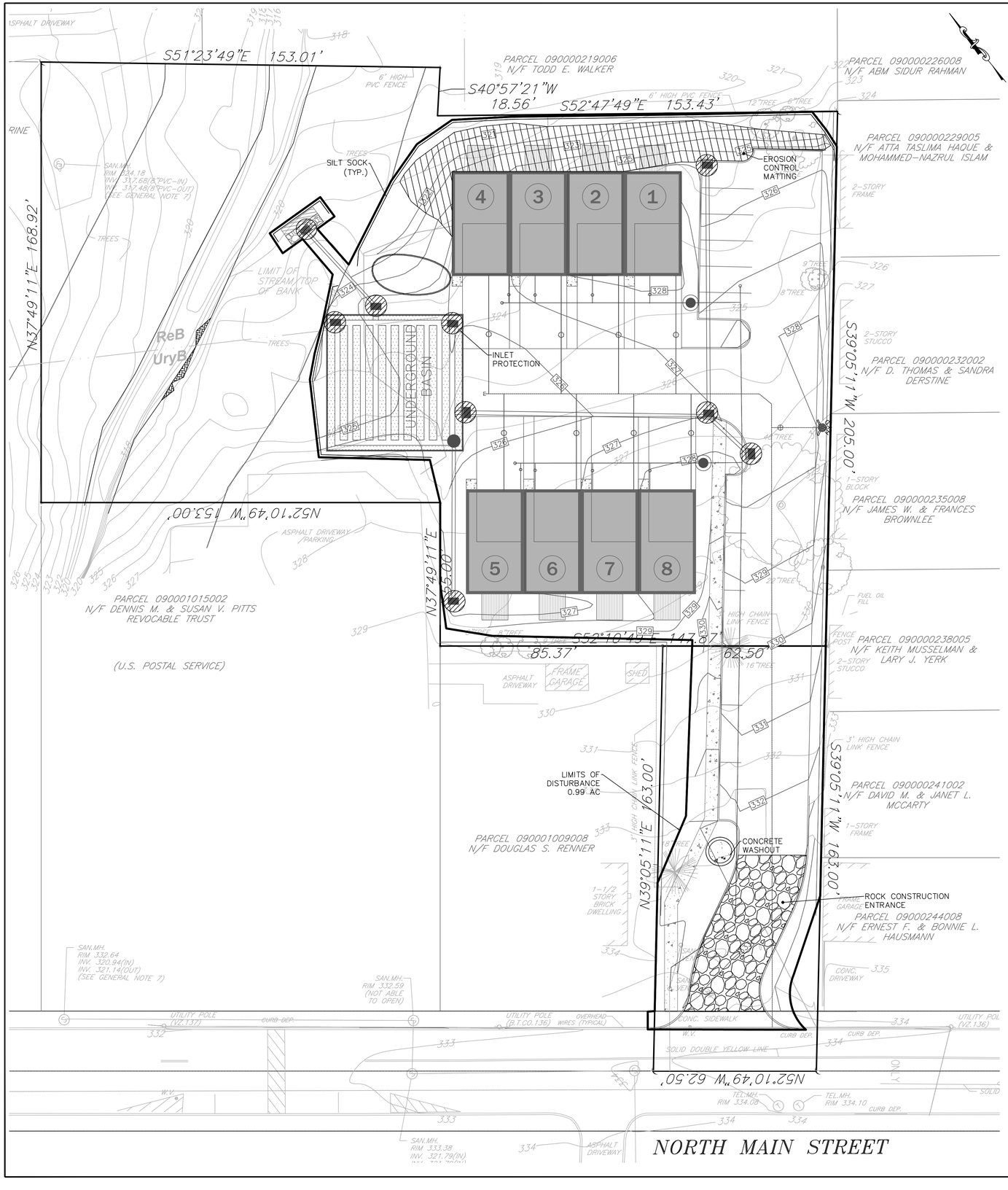
COMMONWEALTH OF PENNSYLVANIA
ROBERT C. THOMAS, JR.
Registered Professional Engineer

Robert C. Cunningham, P.E.
PA Lic. No. PA076424

File No.
1727_C4.0_Utilities.dwg

HCE Job	1727	Scale	N.T.S.	Designed	RC
Date	08/07/2024				
Sheet	9 of 14				

Drawing No.
C4.2



LIMIT OF DISTURBANCE = 0.99 ACRES

NOTE TO CONTRACTOR: NPDES PERMIT WILL BE REQUIRED IF ACTUAL DISTURBANCE EXCEEDS 1.0 ACRES

SOILS TYPES

SYM	Name	Hydric (Y/N)	Depth to Bedrock (in).	Depth to Water Table	HSG
ReB	Readington Silt Loam, 3 to 8% Slopes	N	40-60	18-36	C
UryB	Urban land-Readington complex, 0 to 8% slopes	N	40-70	18-36	C

SOIL LIMITATIONS AND RESOLUTION:
THE SOILS FOUND WITHIN THE PROJECT LIMITS HAVE POSSIBLE LIMITATIONS DUE TO SHALLOW DEPTH TO GROUNDWATER AND/OR POSSIBLE SHALLOW DEPTH TO BEDROCK. IN ORDER TO RESOLVE THIS ISSUE, ANY STANDING WATER SHOULD BE PUMPED THROUGH A SEDIMENT FILTER BAG DURING CONSTRUCTION, AND THE CONTRACTOR SHALL ENSURE THAT THE DWELLINGS ARE PROPERLY WATERPROOFED TO AVOID GROUNDWATER ISSUES POST-CONSTRUCTION. FOR AREAS WHERE SHALLOW BEDROCK IS A LIMITATION, CONTRACTOR SHALL DETERMINE WHETHER ROCK IS RIPPABLE. IF ROCK IS NOT RIPPABLE, BLASTING MAY BE REQUIRED. ALL BLASTING SHALL MEET LOCAL, COUNTY, STATE AND FEDERAL REGULATIONS.

ACT 187 AS AMENDED

UTILITY LOCATIONS AS SHOWN ON THIS PLAN ARE APPROXIMATE AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR, PER PA. ACT 187 TO CONTACT THE UTILITY COMPANIES FOR MORE ACCURATE LOCATION PRIOR TO ANY EXCAVATION.
TO OBTAIN ADDITIONAL UTILITY INFORMATION OR TO ARRANGE FOR FIELD LOCATION OF EXISTING UTILITIES BEFORE EXCAVATION, CALL THE PENNSYLVANIA ONE CALL SYSTEM AT 1-800-242-1776. THE UTILITY COMPANIES SHOWN MAY OR MAY NOT HAVE UTILITY LINES IN THE AREA.

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

CRITICAL STAGES OF PCSM PLAN IMPLEMENTATION
THE INSTALLATION OF THE SUBSURFACE INFILTRATION BED SHALL BE OVERSEEN BY A LICENSED PROFESSIONAL ENGINEER OR THEIR DESIGNEE. A WRITTEN REPORT AND PHOTOGRAPHS SHALL BE PREPARED DOCUMENTING THE CRITICAL STAGE INSPECTION. THE REPORT AND PHOTOGRAPHS SHALL BE PROVIDED TO MCCD IF REQUESTED.

NON-STRUCTURAL BMPS

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.

STRUCTURAL BMPS

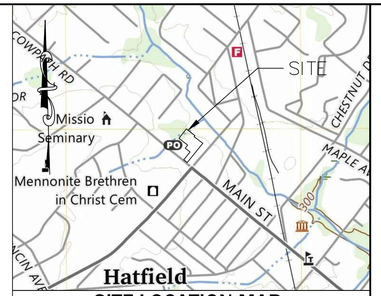
SUBSURFACE INFILTRATION BED: THE SUBSURFACE INFILTRATION BED IS DESIGNED TO REDUCE BOTH THE RATE AND THE VOLUME OF STORMWATER DISCHARGE FROM THE SITE. THE BMP WILL INFILTRATE RUNOFF AND USE AN OUTLET STRUCTURE TO SLOWLY INFILTRATE AND/OR RELEASE CAPTURED RUNOFF.

RECYCLING/ DISPOSAL OF MATERIALS
THE CONSTRUCTION WASTES ANTICIPATED INCLUDE DEMOLITION MATERIALS FROM 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.

SEQUENCE OF CONSTRUCTION
NOTE
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. CESSATION OF ACTIVITY FOR AT LEAST 4 DAYS REQUIRES TEMPORARY STABILIZATION. SEE TEMPORARY STABILIZATION NOTES ON THIS SHEET.

1. CONTACT THE MONTGOMERY COUNTY CONSERVATION DISTRICT (215-345-7577), HATFIELD BOROUGH AND BOROUGH ENGINEER AT LEAST THREE (3) WORKING DAYS PRIOR TO SITE DISTURBANCE. THE DISTRICT SHALL BE NOTIFIED 7 DAYS IN ADVANCE OF THE PRE-CONSTRUCTION MEETING.
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, AND COMPOST FILTER SOCK WHERE SHOWN ON THE PLAN.
4. COMMENCE DEMOLITION OF EXISTING FEATURES/STRUCTURES TO BE REMOVED. REMOVE EXISTING ASPHALT AND CONCRETE SURFACES. DEMOLITION DEBRIS SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE LOCAL, COUNTY, STATE AND FEDERAL REGULATIONS.
5. STRIP TOPSOIL AND STOCKPILE WHERE SHOWN ON PLAN. ALL STRIPPED TOPSOIL STOCKPILES SHALL HAVE TEMPORARY SEEDING INSTALLED. ROUGH GRADE SITE, PARKING/DRIVEWAY AREAS, AND BUILDING PADS.
6. EXCAVATE FOR BUILDING FOUNDATIONS AND CONSTRUCT BUILDINGS.
7. HAUL EXCESS FILL OFF SITE (IF NECESSARY) IN ACCORDANCE WITH ALL APPLICABLE LOCAL, COUNTY, STATE AND FEDERAL REGULATIONS.
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. INLET PROTECTION BAGS SHALL BE INSTALLED IN STORM SEWER INLETS IMMEDIATELY UPON PLACEMENT AT GRADE.
9. INSTALL PROPOSED SUBSURFACE BMP AND OUTLET STRUCTURE ONLY AFTER COMPOST FILTER SOCK IS INSTALLED UPHILL TO PREVENT SEDIMENTATION OF THE BMP. UPHILL COMPOST FILTER SOCK MAY NOT BE REMOVED UNTIL COMPOSTED SUBSURFACE AREA IS FULLY COVERED BY GEOTEXTILE AND SUBBASE/BASE COURSE IS PLACED.
10. COMPLETE FINAL GRADING AFTER THE BUILDING IS COMPLETED AND APPLY PERMANENT SEEDING MIXTURE AND INSTALL ALL REQUIRED PLANTINGS.
11. FLUSH ALL AFFECTED STORM DRAINAGE PIPES OF ACCUMULATED SILT.
12. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS MUST BE REMOVED IN THE FOLLOWING MANNER. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM OF 70% UNIFORM PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING OR OTHER MOVEMENTS.
    A. REMOVE ALL REMAINING SEDIMENT FROM COMPOST FILTER SOCKS, AND STOCKPILE FOR USE IN LANDSCAPE AREAS.
    B. ANY UNSUITABLE SOIL AND / OR FILL WILL BE REMOVED OFF-SITE AND DISPOSED OF LEGALLY. IF STOCKPILES ARE TO REMAIN, APPLY PERMANENT SEEDING AND MULCHING.
    C. REMOVE TEMPORARY COMPOST FILTER SOCK, ETC. WHEN THE ENTIRE SITE IS COMPLETELY STABILIZED.
    D. AREAS DISTURBED DURING THE REMOVAL OF THE TEMPORARY CONTROLS MUST BE STABILIZED IMMEDIATELY.
16. 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.



SITE LOCATION MAP

REFERENCE: TELFORD U.S.G.S. QUADRANGLE MAP SCALE: 1"=1,000'

OWNER/ APPLICANT
PENNINGTON PROPERTY GROUP LLC
P.O. BOX
CHALFONT, PA 18914
(267) 767-0876

SESC LEGEND

- LIMIT OF DISTURBANCE
- PROJECT SITE BOUNDARY
- LOT LINE
- COMPOST FILTER SOCK
- ROCK CONSTRUCTION ENTRANCE
- SOIL TYPE BOUNDARY
- CbA — SOIL TYPE
- POI-1 — DISCHARGE POINT
- FILTER BAG INLET PROTECTION
- 199 — PROPOSED CONTOUR
- DRAINAGE AREA TO SEDIMENT TRAP
- EROSION CONTROL MATTING
- TPF — TREE PROTECTION FENCING

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 MONTGOMERY 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 MONTGOMERY 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 MONTGOMERY COUNTY CONSERVATION DISTRICT SHALL BE NOTIFIED IN WRITING THAT THE RISER IS SEALED (WATERTIGHT).

AT STREAM CROSSING, 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.

Holmes Cunningham LLC
350 E. Butler Ave., Ste 106
New Britain, 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 THE UTILITY COMPANIES PRIOR TO ANY EXCAVATION.

ARBOR GROVE

TMP # 090001012005 & 090001006002

HATFIELD BOROUGH, MONTGOMERY COUNTY, PENNSYLVANIA

EROSION AND SEDIMENT CONTROL PLAN

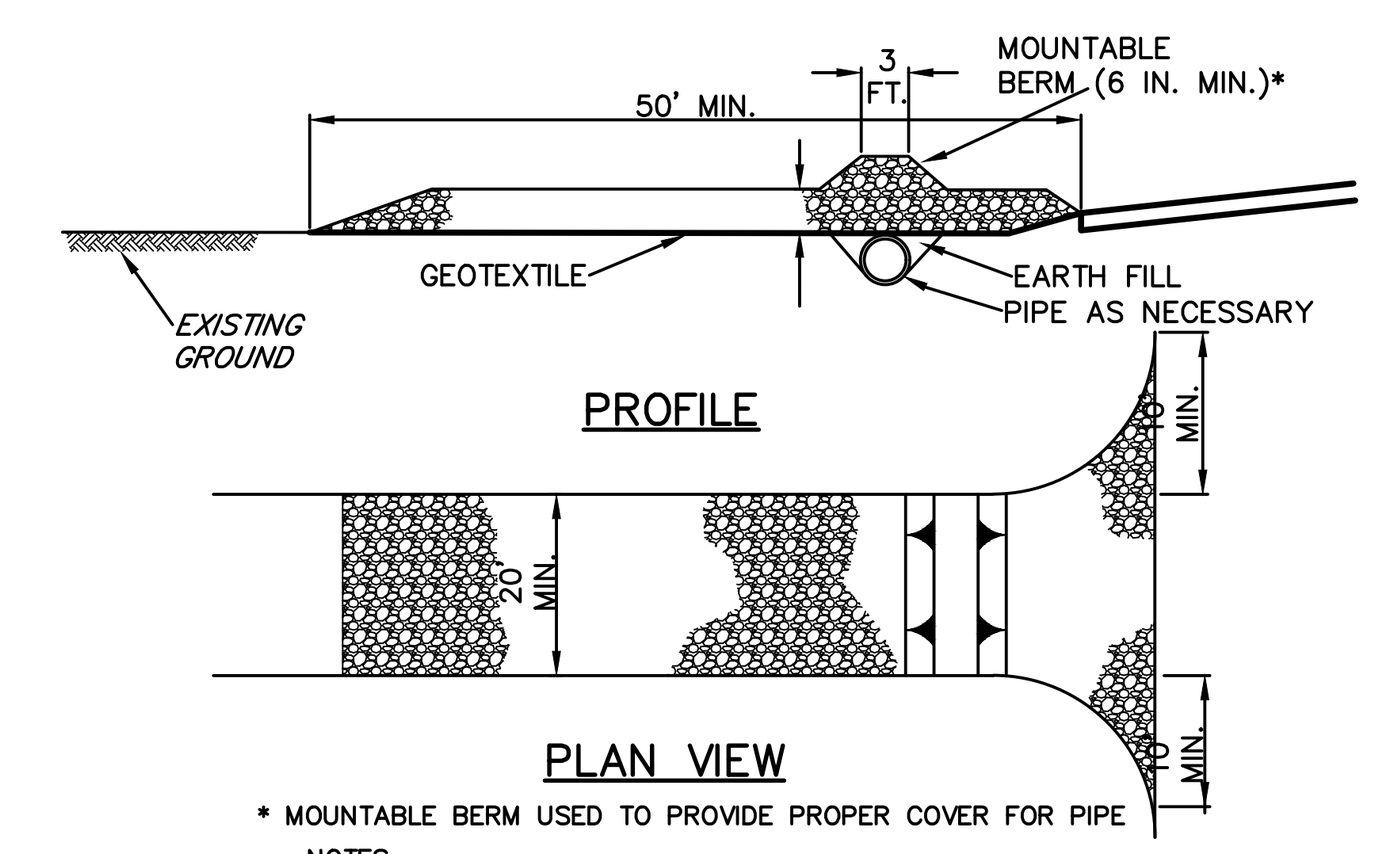
COMMONWEALTH OF PENNSYLVANIA — ROBERT K. CUNNINGHAM, P.E. — No. PA076424

Robert K. Cunningham, P.E.
PA Lic. No. PA076424

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Date	08/07/2024	Scale	1"=20'	Designed	RC
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Drawing No.
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* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

NOTES:

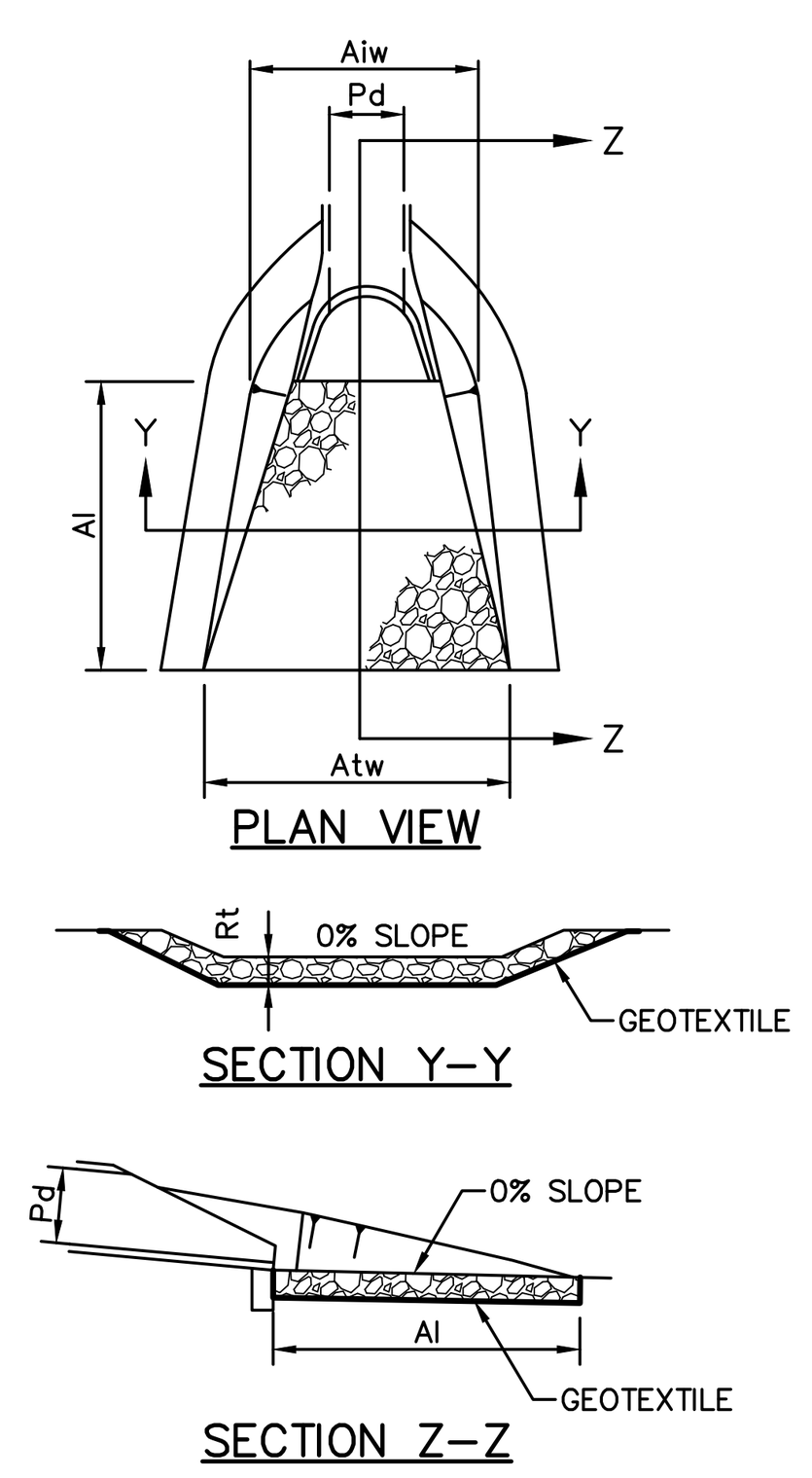
REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

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

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

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

STANDARD CONSTRUCTION DETAIL #3-1
ROCK CONSTRUCTION ENTRANCE



OUTLET NO.	PIPE DIA Pd (IN)	RIPRAP SIZE R-_	RIPRAP THICK. Rt (IN)	APRON LENGTH Al (FT)	APRON INITIAL WIDTH Aiw (FT)	APRON TERMINAL WIDTH Atw (FT)
FES-1	12	3	9	8	3.00	11.00
FES-2	12	3	9	8	3.00	11.00

NOTES:

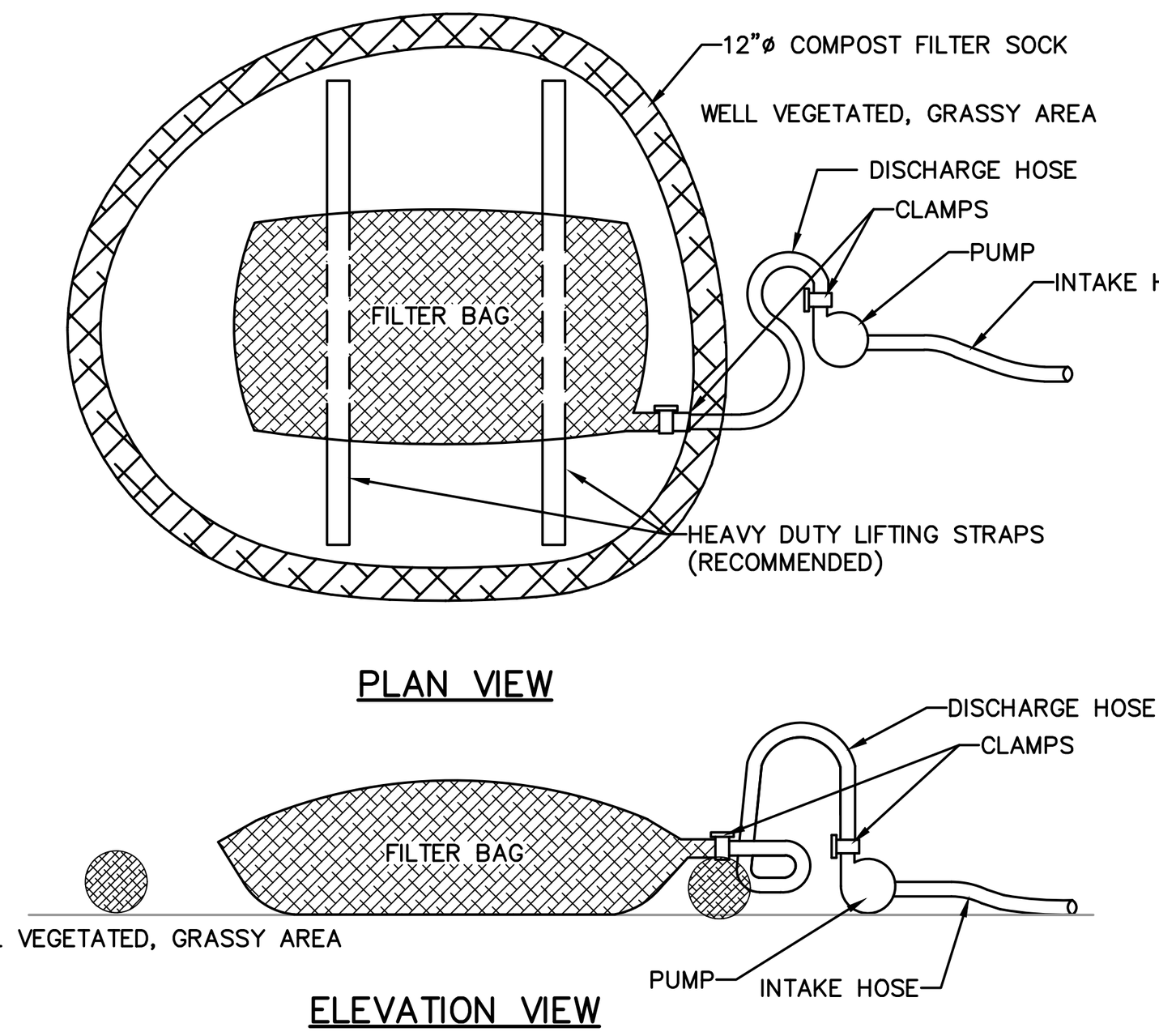
ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.

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

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.



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

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".

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 WRITTEN 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 SOCKS 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 SILT FENCE WILL BE REPLACED IMMEDIATELY WITH ROCK FILTER OUTLETS. ANY MANUFACTURER'S RECOMMENDATIONS WILL BE ADHERED TO FOR REPLACING SILT FENCE 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.

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.
   E. 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.
   F. 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.
   G. 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*

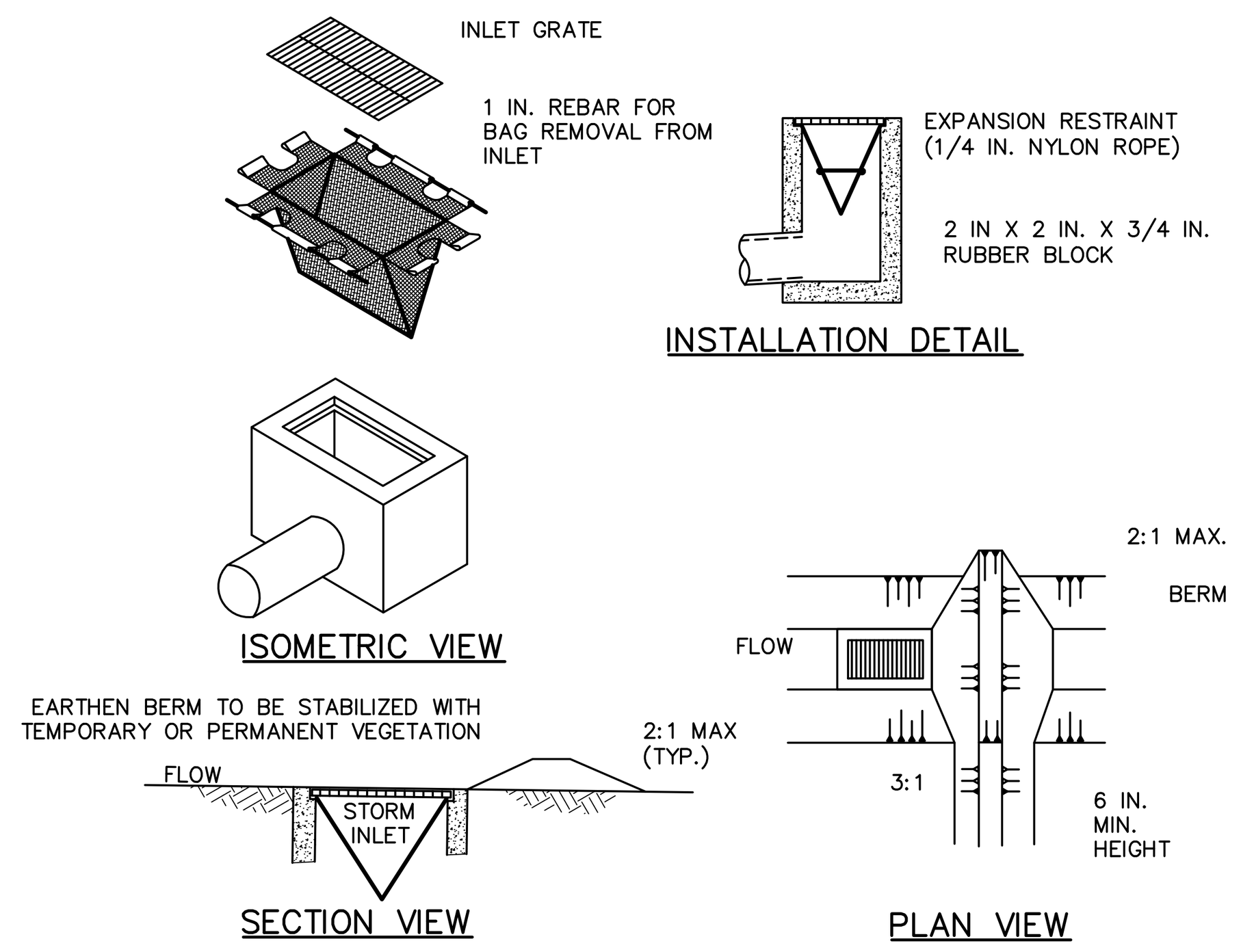
((*) USE DORMANT SEED, UNIFORMLY APPLIED, WORKING INTO A DEPTH OF 1/4 INCH. THE USE OF MULCH IS REQUIRED. THE USE OF NETTING OR EROSION CONTROL MATS MAY BE REQUIRED.)

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% & 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.



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.

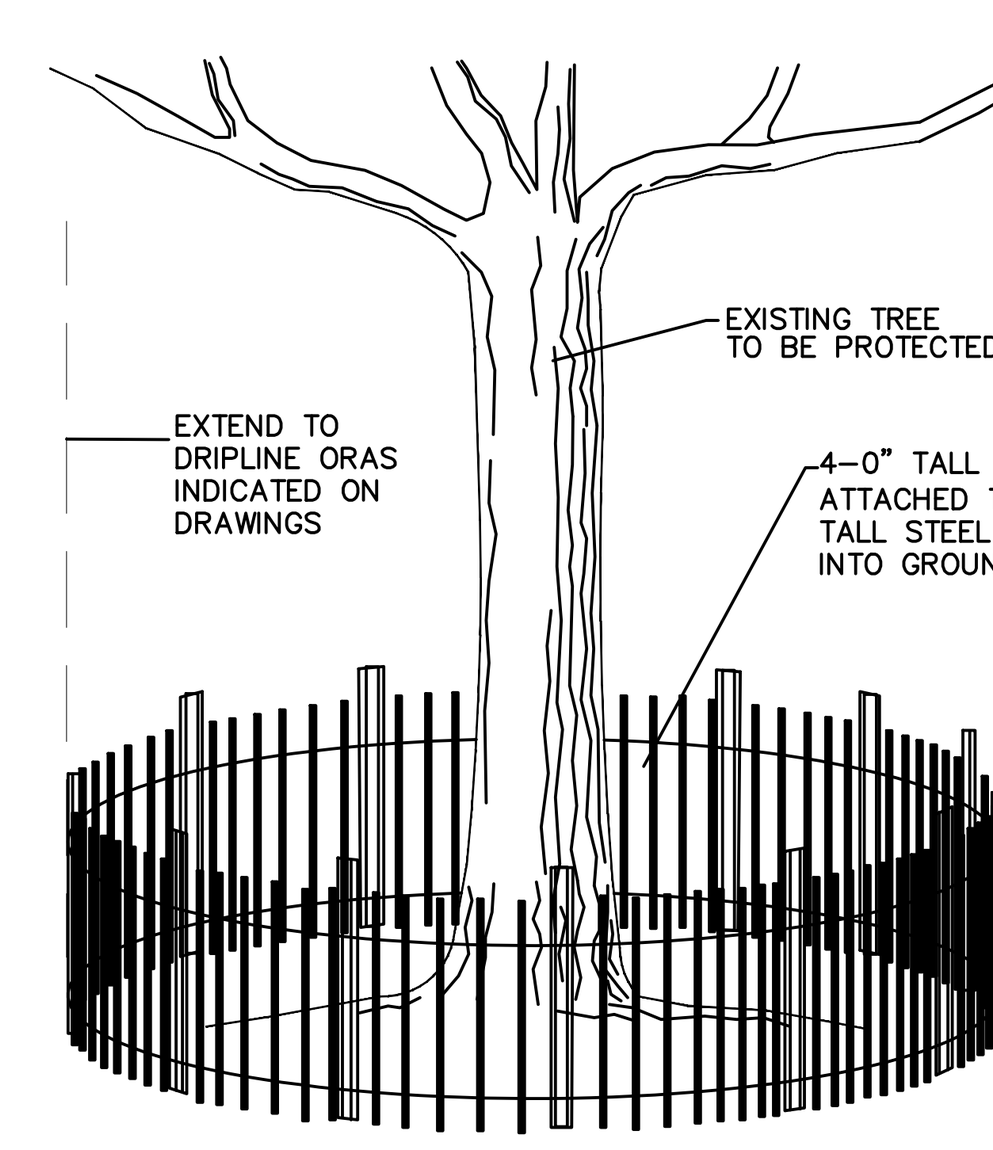
ROLLED EARTHEN BERM IN ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM ON ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. EARTHEN BERM IN CHANNEL SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED OR REMAIN PERMANENTLY.

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.

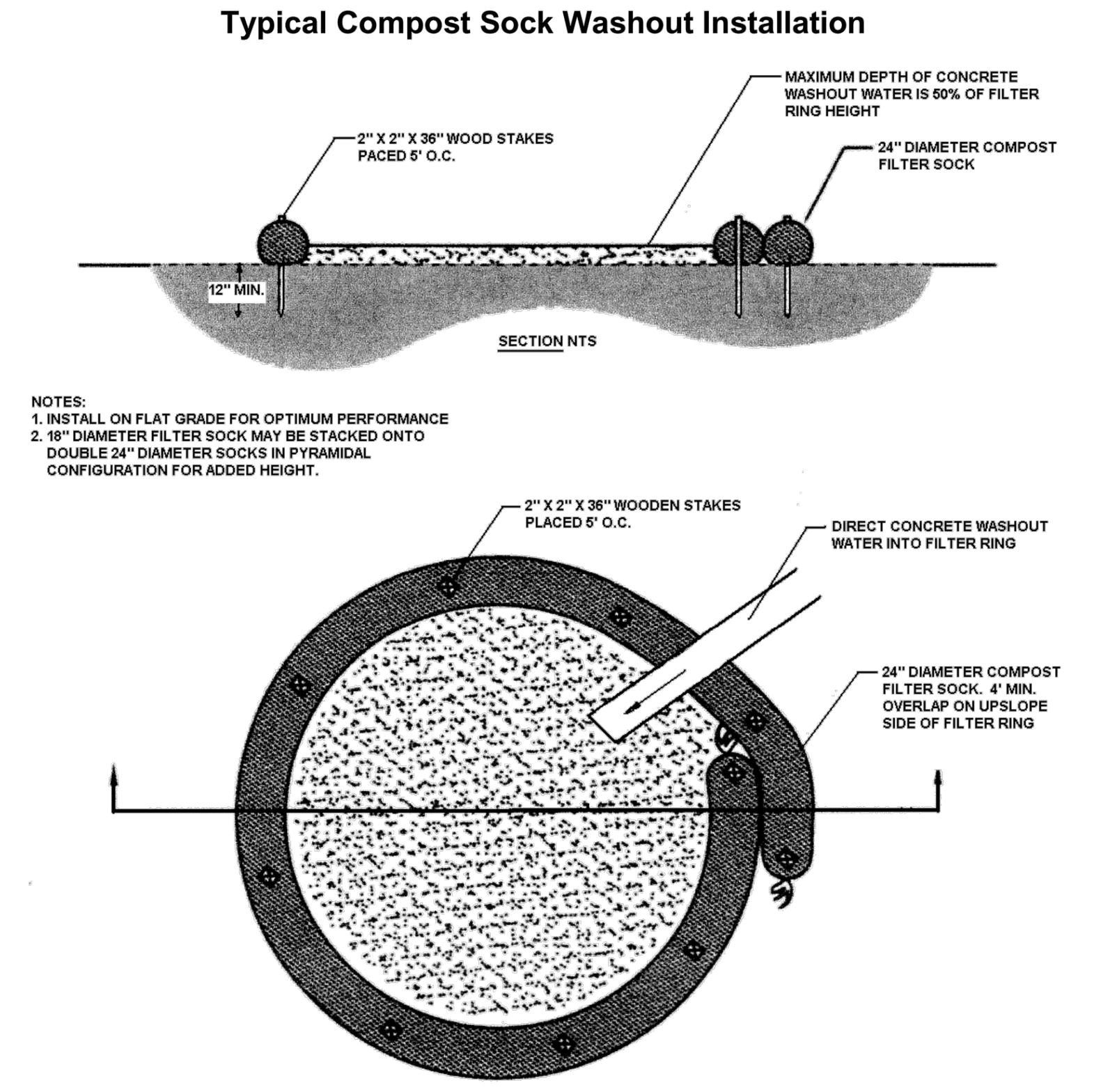
STANDARD CONSTRUCTION DETAIL #4-16
FILTER BAG INLET PROTECTION - TYPE M INLET



NOTES:
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

FIGURE 3.18
Typical Compost Sock Washout Installation

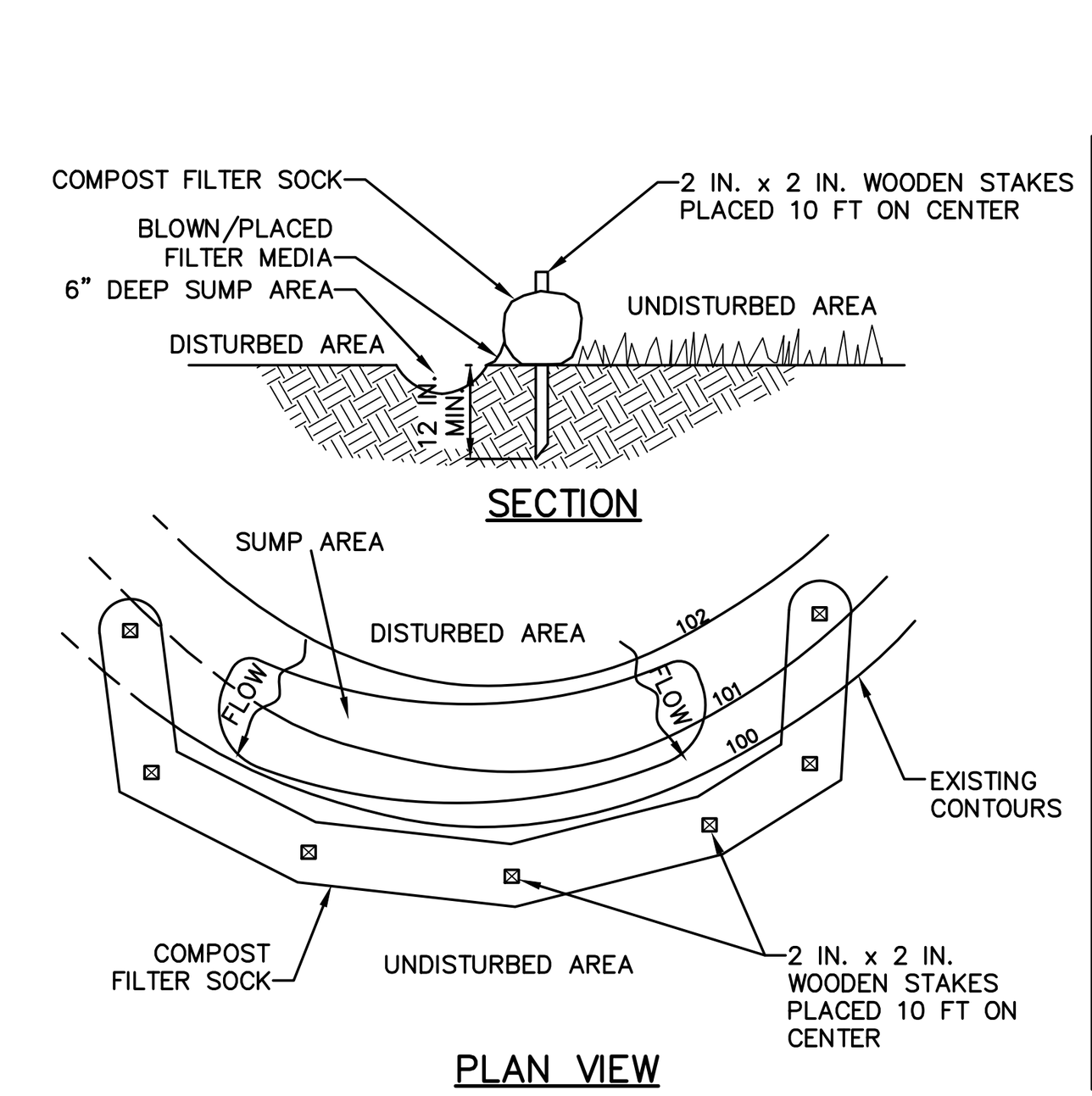


A suitable impervious geomembrane shall be placed at the location of the washout prior to installing the socks.
Adapted from Filtrexx

NOTE:

CONCRETE WASHOUT SHALL BE PLACED IN A FLAT, WELL-VEGETATED AREA NOT ADJACENT TO ANY STORMWATER INLETS OR SURFACE WATERS.

CONCRETE WASHOUT DETAIL



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.

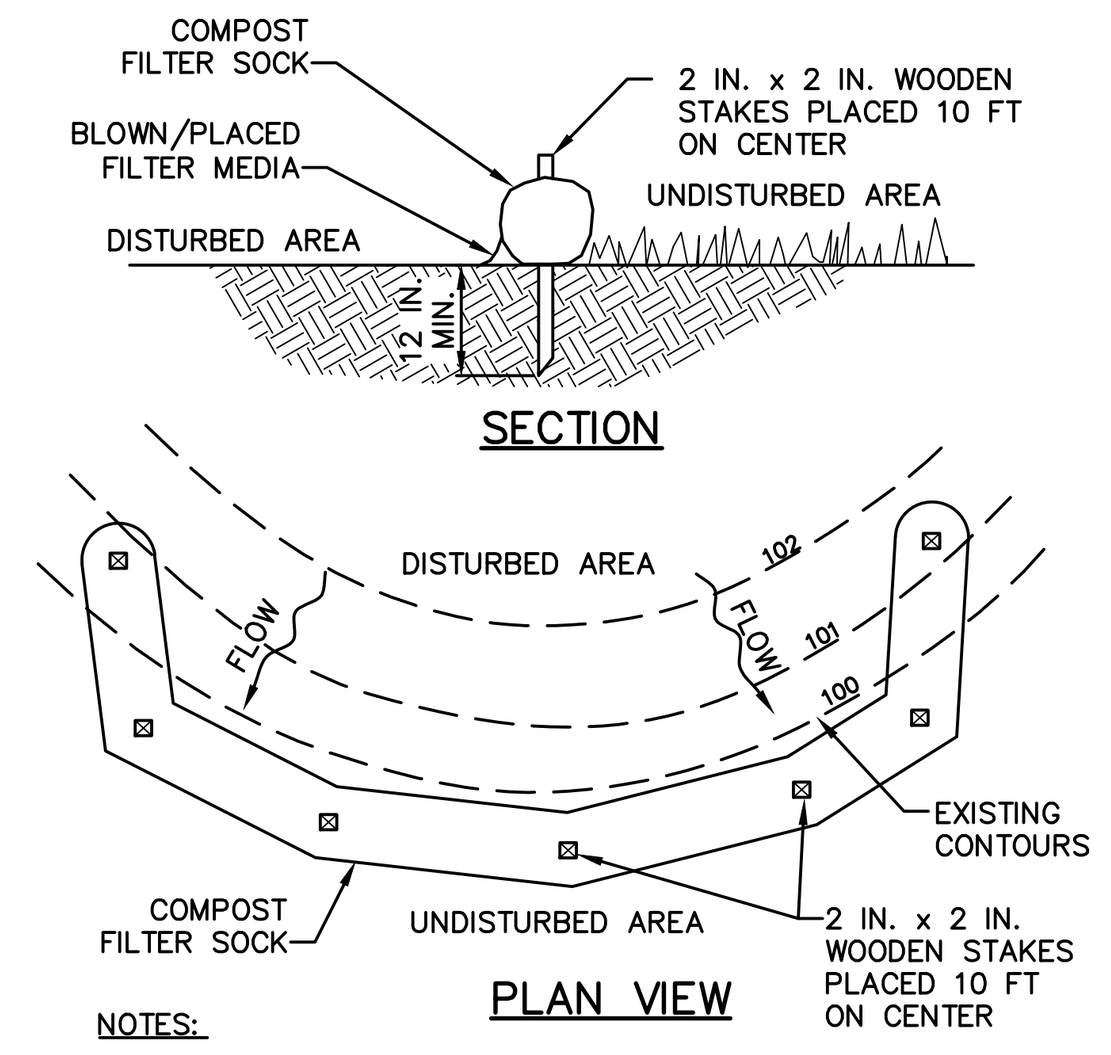
ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

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 WITH J-HOOK
NOT TO SCALE



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.

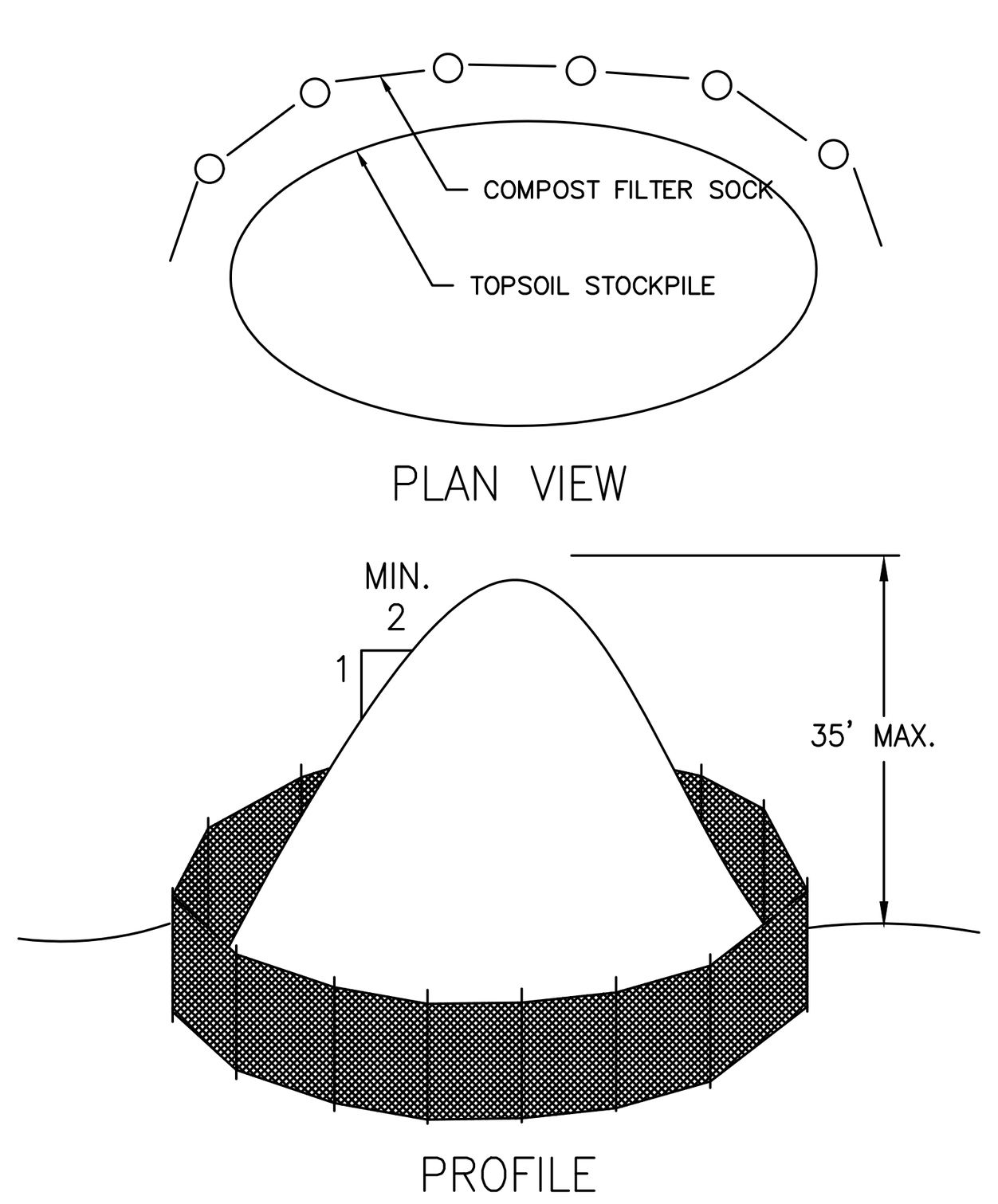
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STANDARD CONSTRUCTION DETAIL #4-1
COMPOST FILTER SOCK
NOT TO SCALE



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

Holmes Cunningham LLC
350 E. Butler Ave., Ste 106
New Britain, PA 18901
(215) 586-3330
www.hcengineering.net

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.

ARBOR GROVE

TMP # 090001012005 & 090001006002
HATFIELD BOROUGH, MONTGOMERY COUNTY, PENNSYLVANIA

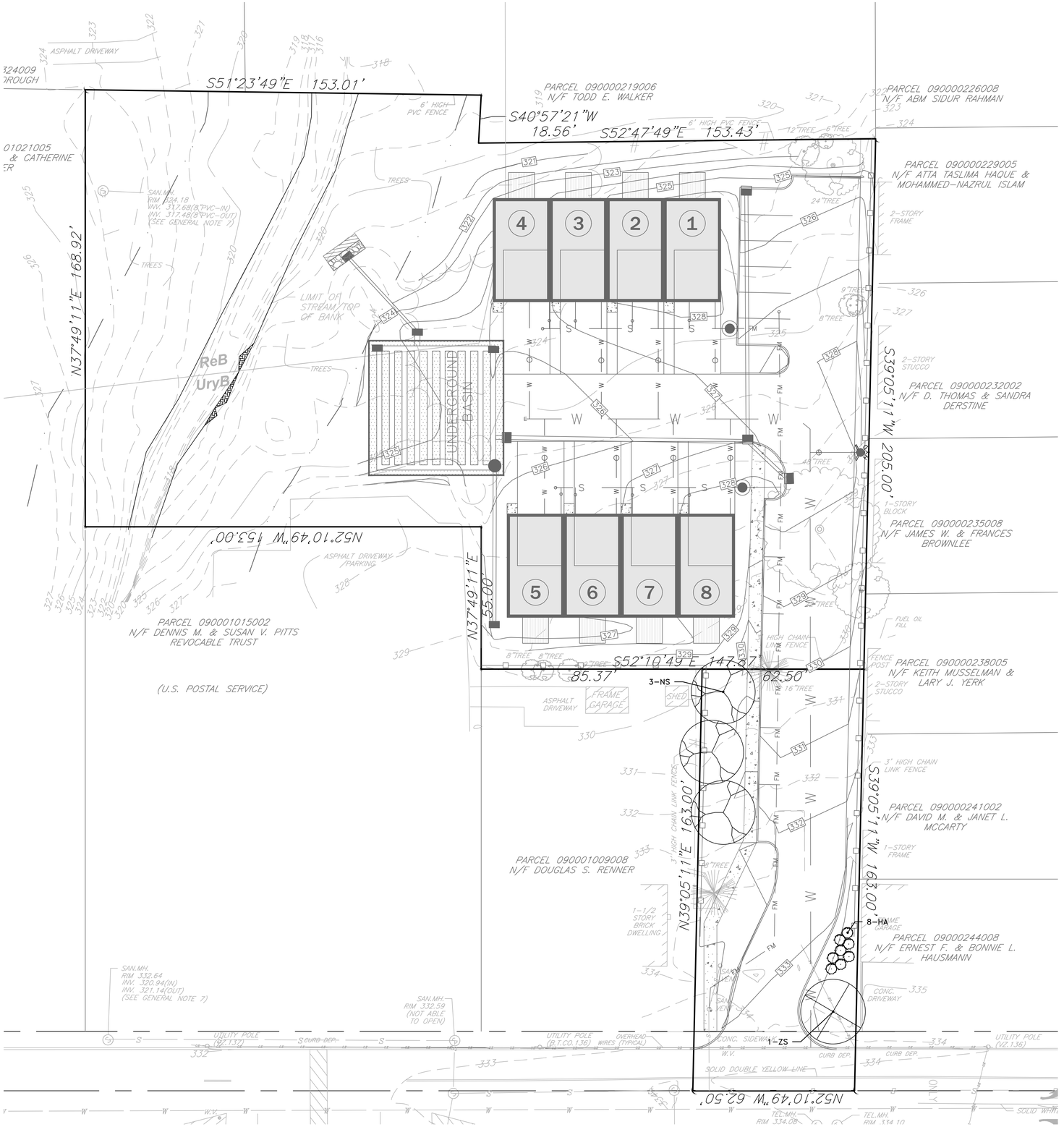
EROSION AND SEDIMENT CONTROL DETAILS

Robert T. Cunningham, P.E.
PA Lic. No. PA076424

File No.
1727_C5.0_Erosion.dwg

HCE Job	1727
Date	08/07/2024
Scale	N.T.S.
Designed	RC
Sheet	11 of 14

Drawing No.
C5.1



0 20 40 Feet

PLANT SCHEDULE								
Plan Symbol	Quantity	Botanical Name	Common Name	Min. Planting Caliper	Min. Planting Spread	Min. Planting Height	Remarks	Comments
Shade Trees								
NS	3	*Nyssa sylvatica*	Blackgum	2.5" cal.	-	12-14'	B&B	Full, straight leader
ZS	1	*Zelkova serrata*	Japanese Zelkova	2.5" cal.	-	12-14'	B&B	Full, straight leader
Shrubs **								
HA	8	*Hydrangea arborescens 'Annabelle'*	'Annabelle' Hydrangea	-	-	24-30"	CONT	Heavy, full specimen

** Plant in continuous mulch bed (2-3" depth) until fully established.

LANDSCAPE REQUIREMENTS CHART - BOROUGH OF HATFIELD

Ordinance Item	Requirement	Plan Proposed
S.O. 22-420.1.B. Street trees	Street tree spacing shall be not less than the minimums listed in Sect. 22-421.1.A & B, nor more than twice the minimum or 50 feet, whichever is lower. N. Main St.: 62.5' - 31' (driveway opening) = 32' 32/50 = 1 Street tree	 1 Shade tree
S.O. 22-420.1.C.(2) Buffer & Screen Planting	Where development on both sides of the property line or will be or essentially the same type, but of significantly different intensities, the buffer area shall be planted with shade trees at a ratio of at least 2 trees for each 100 feet of property line. Bordering residential 'Renner' parcel: 248' (248/100) x 2 = 5 shade trees Eastern property line: 345' (345/100) x 2 = 7 shade trees	 3 Shade trees [W] 6' privacy fence 8 Shrubs [W] 6' privacy fence
	Total Landscape Proposed	4 Shade trees 8 Shrubs

[W] Waiver requested to permit less than the required amount of plant material and install 6' privacy fence due to limited planting space.

LANDSCAPE LEGEND

Street Tree

Buffer landscape

NOTES:
1. NO STRUCTURES, GRADING OR PLANTING HIGHER THAN TWO FEET SHALL BE LOCATED WITHIN THE SIGHT TRIANGLES.
2. NO PLANTINGS OR STRUCTURES SHALL BE LOCATED WITHIN THE SANITARY SEWER EASEMENTS OR WITHIN 10 FEET OF THE PROPOSED SEWER OR LATERALS.

RACHEL S. VAHEY, RLA
PA LIC. NO LA001672

Holmes Cunningham LLC
350 E. Butler Ave., Ste 106
New Britain, 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
DESIGN & PREMARKING AND
10 WORKING DAYS IN DESIGN STAGE
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ARBOR GROVE

TMP # 090001012005 & 090001006002

HATFIELD BOROUGH, MONTGOMERY COUNTY, PENNSYLVANIA

LANDSCAPE PLAN

Robert E. Cunningham, P.E.
PA Lic. No. PA076424

File No.
1727_C6.0_Landscape.dwg

HCE Job	1727	Scale	1"=20'	Sheet	12 of 14
Date	08/07/2024	Designed	RC		

Drawing No.
C6.0

GENERAL LANDSCAPE PLANTING NOTES:

PLANTING MATERIALS

1. NAMES OF PLANTS AS DESCRIBED ON THIS PLAN CONFORM TO THOSE GIVEN IN "STANDARDIZED PLANT NAMES", 1942 EDITION PREPARED BY THE AMERICAN JOINT COMMITTEE ON HORTICULTURAL NOMENCLATURE. NAMES OF PLANT VARIETIES NOT INCLUDED THEREIN CONFORM TO NAMES GENERALLY ACCEPTED IN NURSERY TRADE.

2. STANDARDS FOR TYPE, SPREAD, HEIGHT, ROOT BALL AND QUALITY OF NEW PLANT MATERIAL SHALL BE IN ACCORDANCE WITH GUIDELINES AS SET FORTH IN THE "AMERICAN STANDARD FOR NURSERY STOCK", PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN. PLANT MATERIAL SHALL HAVE NORMAL HABIT OF GROWTH AND BE HEALTHY, VIGOROUS, AND FREE FROM DISEASES AND INSECT INFESTATION.

3. NEW PLANT MATERIAL SHALL BE NURSERY GROWN UNLESS SPECIFIED OTHERWISE. ALL PLANTS SHALL BE SET PLUMB AND SHALL BEAR THE SAME RELATIONSHIP TO FINISHED GRADE AS THE PLANT'S ORIGINAL GRADE BEFORE DIGGING. PLANT MATERIAL OF THE SAME SPECIES AND SPECIFIED AS THE SAME SIZE SHOULD BE SIMILAR IN SHAPE, COLOR AND HABIT. THE LANDSCAPE ARCHITECT HAS THE RIGHT TO REJECT PLANT MATERIAL THAT DOES NOT CONFORM TO THE TYPICAL OR SPECIFIED HABIT OF THAT SPECIES.

4. THE CONTRACTOR SHALL NOT MAKE SUBSTITUTIONS. IF THE SPECIFIED LANDSCAPE MATERIAL IS NOT OBTAINABLE, THE CONTRACTOR SHALL SUBMIT PROOF OF NON-AVAILABILITY TO THE LANDSCAPE ARCHITECT AND OWNER TOGETHER WITH A WRITTEN PROPOSAL FOR USE OF AN EQUIVALENT MATERIAL.

5. THE LANDSCAPE ARCHITECT MAY REVIEW PLANT MATERIALS AT THE SITE, BEFORE PLANTING, FOR COMPLIANCE WITH REQUIREMENTS FOR GENUS, SPECIES, VARIETY, SIZE, AND QUALITY. THE LANDSCAPE ARCHITECT RETAINS THE RIGHT TO FURTHER REVIEW PLANT MATERIALS FOR SIZE AND CONDITION OF BALLS AND ROOT SYSTEM, INSECTS, INJURIES, AND LATENT DEFECTS, AND TO REJECT UNSATISFACTORY OR DEFECTIVE MATERIAL AT ANY TIME DURING PROGRESS OF WORK. THE CONTRACTOR SHALL REMOVE REJECTED PLANT MATERIALS IMMEDIATELY FROM PROJECT SITE AS DIRECTED BY THE LANDSCAPE ARCHITECT OR OWNER.

PLANTING SOILS

1. REUSE SURFACE SOILS STOCKPILED ON SITE, VERIFYING COMPLIANCE WITH PLANTING SOIL AND TOPSOIL CRITERIA IN THIS SPECIFICATION THROUGH TESTING. CLEAN SURFACE SOIL OF ALL ROOTS, PLANTS, SOD, AND GRAVEL OVER 1" IN DIAMETER AND DELETERIOUS MATERIALS. IF ON-SITE SOILS ARE TO BE USED FOR PROPOSED PLANTING, THE CONTRACTOR SHALL DEMONSTRATE, THROUGH SOIL TESTING, THAT ON-SITE SOILS MEET THE SAME CRITERIA AS INDICATED IN NOTES PLANS AND SPECIFICATIONS

2. SUPPLEMENT WITH IMPORTED OR MANUFACTURED TOPSOIL FROM OFF SITE SOURCES WHEN TOPSOIL AND PLANTING SOIL QUANTITIES ARE INSUFFICIENT. OBTAIN SOIL DISPLACED FROM NATURALLY WELL-DRAINED SITES WHERE TOPSOIL OCCURS AT LEAST 4" DEEP. DO NOT OBTAIN FROM AGRICULTURAL LAND, BOGS, MARSHES OR CONTAMINATED SITES.

3. IF DEPTH OF PLANTING SOILS AND TOPSOIL IS NOT INDICATED IN PLANS OR DETAILS, A MINIMUM 18" DEPTH SHALL BE PROVIDED FOR ALL TREES AND LARGE SHRUBS; MINIMUM 12" DEPTH SHALL BE PROVIDED FOR GROUNDCOVERS, HERBACEOUS AND MEADOW OR ORNAMENTAL GRASS AREAS AND A MINIMUM 6" LAYER SHALL BE INSTALLED IN ALL LAWN AREAS. TOPSOIL AND PLANTING SOIL DEPTH INDICATED ON PLANS AND PLANTING DETAILS AND NARRATIVE SPECIFICATIONS SHALL GOVERN DEPTH WHEN PROVIDED.

4. WHERE PLANTING AREAS ARE PROPOSED FOR FORMER PAVED OR GRAVEL AREAS, BEDS SHALL BE EXCAVATED TO A MINIMUM 30" DEPTH AND, AT A MINIMUM, BE BACKFILLED WITH BOTTOM LAYER OF SANDY LOAM (ORGANIC CONTENT LESS THAN 2%) OVER WHICH TOPSOIL AND PLANTING SOILS WILL BE PLACED AT DEPTHS INDICATED IN PLANS, DETAILS AND NOTES.

5. IF THE QUANTITY OF SOILS FROM THE SITE IS NOT ADEQUATE TO FILL PLANTING AREAS TO THE DEPTH INDICATED IN THE PLANS AND DETAILS, CONTRACTOR SHALL FURNISH PLANTING SOILS THAT ARE FREE OF BROKEN GLASS, PAINT CHIPS, PLASTIC, DELETERIOUS MATERIALS, ROOTS, WEEDS, BOULDERS, COBBLES AND GRAVEL OVER 1" IN DIAMETER AND COMPLY WITH THE FOLLOWING CRITERIA:
   -SOILS SHALL MEET ALL APPLICABLE SOIL REMEDIATION STANDARDS
   -ORGANIC CONTENT: 2-5% IN NATIVE SOILS; UP TO 10% IN AMENDED SOILS
   -SOLUBLE SALTS: LESS THAN 0.5 MM HOS/CM
   -SOIL PH: 4.5-7S TO BE AMENDED PER SOIL TEST RESULTS
   -PHYSICAL (SIEVE) ANALYSIS/ SOIL TEXTURE
   SAND: 40-60% SILT: 25-60% CLAY: 5-20%
   -NOT MORE THAN 1% OF MATERIAL SHALL BE RETAINED BY A #4 SIEVE.

6. ALL PLANTING SOILS SHALL BE SUBMITTED FOR TESTING TO THE STATE COOPERATIVE EXTENSION SERVICE, OR APPROVED EQUAL, PRIOR TO DELIVERY TO THE SITE. CONTRACTOR SHALL FURNISH SOIL SAMPLES AND SOIL TEST RESULTS TO LANDSCAPE ARCHITECT OR OWNER AT A RATE OF ONE SAMPLE PER 500 CUBIC YARDS TO ENSURE CONSISTENCY ACROSS THE TOTAL VOLUME OF PLANTING SOIL REQUIRED. TEST RESULTS SHALL EVALUATE FOR ALL CRITERIA LISTED IN THIS SPECIFICATION. IF TESTING AGENCY DETERMINES THAT THE SOILS ARE DEFICIENT IN ANY MANNER AND MAY BE CORRECTED BY ADDING AMENDMENTS, THE CONTRACTOR SHALL FOLLOW STATED RECOMMENDATIONS FOR SOIL IMPROVEMENT AND FURNISH SUBMITTALS FOR ALL AMENDMENTS PRIOR TO DELIVERY OF SOIL TO THE PROJECT SITE.

7. IF SOIL ORGANIC CONTENT IS INADEQUATE, SOIL SHALL BE AMENDED WITH COMPOST OR ACCEPTABLE, WEED FREE, ORGANIC MATTER. ORGANIC AMENDMENT SHALL BE WELL COMPOSTED, PH RANGE OF 6-8; MOISTURE CONTENT 35-55% BY WEIGHT 100% PASSING THROUGH 1" SIEVE; SOLUBLE SALT CONTENT LESS THAN 0.5 MM HOS/CM; MEETING ALL APPLICABLE ENVIRONMENTAL CRITERIA FOR CLEAN FILL; FREE OF BROKEN GLASS, PAINT CHIPS, PLASTIC, DELETERIOUS MATERIALS, ROOTS, WEEDS, BOULDERS, COBBLES AND GRAVEL OVER 1" IN DIAMETER

8. SCARIFY AND/OR TILL ALL COMPACTED SUBSOILS PRIOR TO ADDING PLANTING SOIL OR TOPSOIL. PLANTING SOILS AND TOPSOIL SHALL BE PLACED IN 12-18" LIFTS THAT ARE LOOSELY COMPACTED. NO SOILS SHALL BE PLACED IN A FROZEN OR MUDDY CONDITION.

DELIVERY, STORAGE, AND HANDLING

1. PACKAGED MATERIALS: PACKAGED MATERIALS SHALL BE DELIVERED IN CONTAINERS SHOWING WEIGHT, ANALYSIS, AND NAME OF MANUFACTURER. MATERIALS SHALL BE PROTECTED FROM DETERIORATION DURING DELIVERY, AND WHILE STORED AT SITE.

2. TREES AND SHRUBS: THE CONTRACTOR SHALL PROVIDE TREES AND SHRUBS DUG FOR THE GROWING SEASON FOR WHICH THEY WILL BE PLANTED. DO NOT PRUNE PRIOR TO DELIVERY UNLESS OTHERWISE DIRECTED BY THE LANDSCAPE ARCHITECT. DO NOT BEND OR BIND-TIE TREES OR SHRUBS IN SUCH A MANNER AS TO DAMAGE BARK, BREAK BRANCHES, OR DESTROY NATURAL SHAPE. PROVIDE PROTECTIVE COVERING DURING TRANSIT. DO NOT DROP OR BREAK BALLED STOCK DURING DELIVERY OR HANDLING.

3. ALL PLANTS SHALL BE BALLED AND BURLAPPED OR CONTAINER GROWN AS SPECIFIED. NO CONTAINER GROWN STOCK WILL BE ACCEPTED IF IT IS ROOT BOUND. ALL ROOT BALL WRAPPING AND BINDING MATERIAL MADE OF SYNTHETICS OR PLASTICS SHALL BE REMOVED FROM THE TOP OF THE BALL AT THE TIME OF PLANTING, IF THE PLANT IS SHIPPED WITH A WIRE BASKET AROUND THE ROOT BALL, THE WIRE BASKET SHALL BE CUT AND FOLDED DOWN 8" INTO THE PLANTING HOLE. WITH CONTAINER-GROWN STOCK, THE CONTAINER SHALL BE REMOVED AND THE ROOT BALL SHALL BE CUT THROUGH THE SURFACE IN TWO LOCATIONS.

4. THE CONTRACTOR SHALL HAVE TREES AND SHRUBS DELIVERED TO SITE AFTER PREPARATIONS FOR PLANTING HAVE BEEN COMPLETED AND PLANT IMMEDIATELY. IF PLANTING IS DELAYED MORE THAN 6 HOURS AFTER DELIVERY, THE CONTRACTOR SHALL SET TREES AND SHRUBS IN SHADE, PROTECT FROM WEATHER AND MECHANICAL DAMAGE AND KEEP ROOTS MOIST BY COVERING WITH MULCH, BURLAP OR OTHER ACCEPTABLE MEANS OF RETAINING MOISTURE.

INSTALLATION

1. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UNDERGROUND UTILITY AND SEWER LINES PRIOR TO THE START OF EXCAVATION ACTIVITIES. NOTIFY THE PROJECT ENGINEER AND OWNER IMMEDIATELY OF ANY CONFLICTS WITH PROPOSED PLANTING LOCATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE.

2. THE CONTRACTOR TO STAKE OUT PLANTING LOCATIONS, FOR REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT AND/OR OWNER BEFORE PLANTING WORK BEGINS. THE LANDSCAPE ARCHITECT AND/OR OWNER SHALL DIRECT THE CONTRACTOR IN THE FINAL PLACEMENT OF ALL PLANT MATERIAL AND LOCATION OF PLANTING BEDS TO ENSURE COMPLIANCE WITH DESIGN INTENT UNLESS OTHERWISE INSTRUCTED.

3. NO PLANT SHALL BE PUT INTO THE GROUND BEFORE FINISHED GRADING HAS BEEN COMPLETED AND APPROVED BY THE PROJECT LANDSCAPE ARCHITECT OR PROJECT ENGINEER.

4. NO PLANTINGS OR STRUCTURES SHALL BE LOCATED WITHIN THE SANITARY SEWER ESAEMENTS OR WITHIN 10 FEET OF THE PROPOSED SEWER OR LATERALS.

5. ALL LANDSCAPED AREAS TO BE CLEARED OF ROCKS, STUMPS, TRASH AND OTHER UNSIGHTLY DEBRIS. ALL FINE GRADED AREAS SHOULD BE HAND RAKED SMOOTH ELIMINATING ANY CLUMPS AND UNEVEN SURFACES PRIOR TO PLANTING OR MULCHING.

6. ALL PLANT MATERIAL SHALL BE INSTALLED AS PER DETAILS, NOTES AND CONTRACT SPECIFICATIONS. THE LANDSCAPE ARCHITECT MAY REVIEW INSTALLATION AND MAINTENANCE PROCEDURES.

7. THE CONTRACTOR SHALL KEEP AREA CLEAN DURING DELIVERY AND INSTALLATION OF PLANT MATERIALS. REMOVE AND DISPOSE OF OFF-SITE ANY ACCUMULATED DEBRIS OR UNUSED MATERIALS. REPAIR DAMAGE TO ADJACENT AREAS CAUSED BY LANDSCAPE INSTALLATION OPERATIONS.

8. AFTER PLANT IS PLACED IN TREE PIT LOCATION, ALL TWINE HOLDING ROOT BALL TOGETHER SHOULD BE COMPLETELY REMOVED AND THE BURLAP SHOULD BE PULLED DOWN SO 1/3 OF THE ROOT BALL IS EXPOSED. SYNTHETIC BURLAP SHOULD BE COMPLETELY REMOVED AFTER INSTALLATION.

9. MULCH SHOULD NOT BE PILED UP AROUND THE TRUNK OF ANY PLANT MATERIAL. NO MULCH OR TOPSOIL SHOULD BE TOUCHING THE BASE OF THE TRUNK ABOVE THE ROOT COLLAR.

10. ALL PLANTS SHALL BE WATERED THOROUGHLY TWCE DURING THE FIRST 24-HOUR PERIOD AFTER PLANTING. ALL PLANTS SHALL THEN BE WATERED WEEKLY OR AS REQUIRED BY SITE AND WEATHER CONDITIONS TO MAINTAIN VIGOROUS AND HEALTHY PLANT GROWTH.

11. AFTER COMPLETION OF A PROJECT, ALL EXPOSED GROUND SURFACES THAT ARE NOT PAVED WITHIN THE CONTRACT LIMIT LINE, AND THAT ARE NOT COVERED BY LANDSCAPE PLANTING OR SEEDING AS SPECIFIED, SHALL BE COVERED BY A SHREDDED HARDWOOD BARK OR APPROVED EQUAL MULCH THAT WILL PREVENT SOIL EROSION AND THE EMANATION OF DUST.

GUARANTEE

1. NEW PLANT MATERIAL SHALL BE GUARANTEED TO BE ALIVE AND IN VIGOROUS GROWING CONDITION FOR A PERIOD OF 18 MONTHS FOLLOWING ACCEPTANCE BY THE OWNER. PLANT MATERIAL FOUND TO BE UNHEALTHY, DYING OR DEAD DURING THIS PERIOD, SHALL BE REMOVED AND REPLACED IN KIND BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER.

LAWN SEED NOTES:

1. PRIOR TO SEEDING, AREA IS TO BE TOPSOILED, FINE GRADED, AND RAKED OF ALL DEBRIS LARGER THAN 2" DIAMETER.
2. THE FOLLOWING SEED MIX SHALL BE SOWN AT THE RATES AS DEPICTED:

RED FESCUE	1 1/2 LBS./1,000 SF
PERENNIAL RYEGRASS	1 LBS./1,000 SF
KENTUCKY BLUEGRASS	1 1/2 LBS./1,000 SF
SPREADING FESCUE	1 LBS./1,000 SF

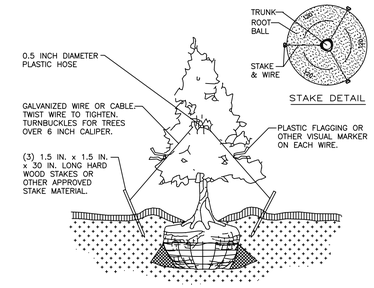
3. SEED MIX SHALL BE MULCHED WITH SALT HAY OR UNROTTED SMALL GRAIN STRAW AT A RATE OF 2 TONS/AC OR 90 LBS/1,000 SF
4. SEEDING DATES FOR THIS MIXTURE SHALL BE AS FOLLOWS:
   SPRING: APRIL 1 – MAY 31
   FALL: AUGUST 16 – OCTOBER 31
5. GERMINATION RATES WILL VARY AS TO TIME OF YEAR FOR SOWING. CONTRACTOR TO IRRIGATE SEEDED AREA UNTIL AN ACCEPTABLE STAND OF COVER IS ESTABLISHED BY OWNER.

TREE PROTECTION NOTES:

1. ALL EXISTING SHADE TREES WITHIN THE LIMITS OF TREE PROTECTION FENCING AND AS DIRECTED BY THE LANDSCAPE ARCHITECT SHALL BE PROTECTED THROUGHOUT THE DURATION OF WORK.
2. DEMOLITION AND GRADING WORK ADJACENT TO PROTECTED TREES SHALL BE PERFORMED BY A QUALIFIED PERSON WITH A MINIMUM OF FIVE (5) YEARS EXPERIENCE IN WORKING WITH EXCAVATION EQUIPMENT. CONTRACTOR TO PROTECT ROOT MASS AGAINST DAMAGE DURING EXCAVATION. ANY TREE ROOTS THAT ARE DISTURBED, BROKEN OR CUT SHALL BE PRUNED BACK WITH CLEAN SHARP TOOLS.
3. TO MINIMIZE DISTURBANCE OF VEGETATION TO REMAIN, ALL TREE STUMPS TO BE REMOVED WITHIN 10' OF TREE PROTECTION FENCE SHALL BE REMILLED USING A STUMP GRINDER.
4. ALL EXPOSED TREE ROOTS SHALL BE THOROUGHLY IRRIGATED ON A DAILY BASIS UNTIL BACKFILLING CAN OCCUR AS DIRECTED BY THE PROJECT LANDSCAPE ARCHITECT.
5. ALL WORK TO BE PERFORMED UNDER THE DIRECT SUPERVISION OF EITHER THE OWNER'S REPRESENTATIVE OR PROJECT LANDSCAPE ARCHITECT. NOTIFY OWNER A MINIMUM OF 48 HOURS PRIOR TO ANY EARTHWORK / EXCAVATION WORK.

PLAN NOTES:

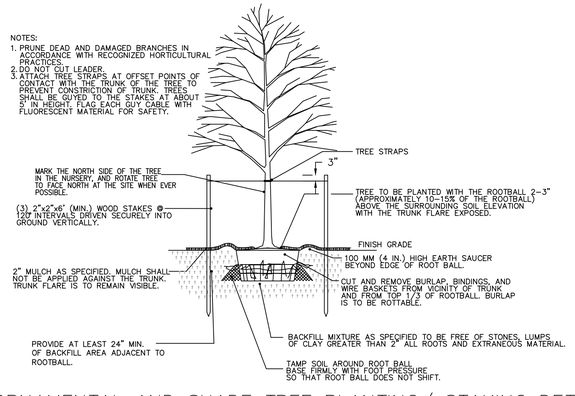
1. TREE REPLACEMENT CALCULATIONS ARE BASED OF A FIELD VISIT ON MARCH 5, 2019 AND ARE NOT BASED OFF THE SURVEYED TREES SHOWN ON DRAWING C0.1
2. NO STRUCTURE , GRADING OR PLANTING HIGHER THAN TWO FEET SHALL BE LOCATED WITHIN SIGHT TRIANGLES.
3. THE LOCATIONS OF PROPOSED ON-LOT REQUIRED PLANTINGS MAY BE ADJUSTED WITHIN EACH LOT FROM THE LOCATIONS INDICATED ON THE LANDSCAPING PLAN , AND AS APPROVED BY THE TOWNSHIP LANDSCAPE ARCHITECT,



STAKE DETAIL

1. ALL STAKES SHALL BE DRIVEN OUTSIDE THE EDGE OF THE ROOT BALL.
2. ASSURE THAT THE BEARING SURFACE OF THE PROTECTIVE COVERING OF THE WIRE OR CABLE AGAINST THE TREE TRUNK IS A MINIMUM 0.5 INCH.
3. REMOVE ALL STAKING AS SOON AS THE TREE HAS GROWN SUFFICIENT ROOTS TO OVER-COME THE PROBLEM THAT REQUIRED THE TREE TO BE STAKED. STAKES SHALL BE REMOVED NO LATER THAN THE END OF THE FIRST GROWING SEASON.
4. TREES NORMALLY DO NOT NEED TO BE STAKED AND STAKING CAN BE HARMFUL TO THE TREE. STAKING SHOULD BE DONE ONLY WITH THE APPROVAL OF THE LANDSCAPE ARCH-ITECT IF IT IS EXPECTED THAT THE TREE WILL NOT BE ABLE TO SUPPORT ITSELF.
5. WIRE OR CABLE SIZES SHALL BE AS FOLLOWS:
   TREES UP TO 2.5 INCH CALIPER – 14 GAUGE
   TREES 2.5 INCH TO 3 INCH CALIPER – 12 GAUGE
6. TIGHTEN WIRE OR CABLE ONLY ENOUGH TO KEEP FROM SLIPPING. ALLOW FOR SOME TRUNK MOVEMENT. PLASTIC HOSE SHALL BE LONG ENOUGH TO ACCOMMODATE 1.5 INCH CALIPER OF TRUNK MOVEMENT.
7. TUCK ANY LOOSE ENDS OF THE WIRE OR CABLE INTO THE WIRE WRAP SO THAT NO SHARP WIRE ENDS ARE EXPOSED.

EVERGREEN TREE STAKING DETAIL



ORNAMENTAL AND SHADE TREE PLANTING/ STAKING DETAIL

PENNSYLVANIA LICENSED SOLEMN VANEY REGISTERED LANDSCAPE ARCHITECT

RACHEL S. VAHEY, RLA
PA LIC. NO LA001672

Holmes Cunningham LLC
350 E. Butler Ave., Ste 106
New Britain, 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 EXCAVATION, DEMOLITION & BLASTING
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 NOTIFY ALL UTILITIES PRIOR TO ANY EXCAVATION

ARBOR GROVE

TMP # 09000101200S & 09000100600Z

HATFIELD BOROUGH, MONTGOMERY COUNTY, PENNSYLVANIA

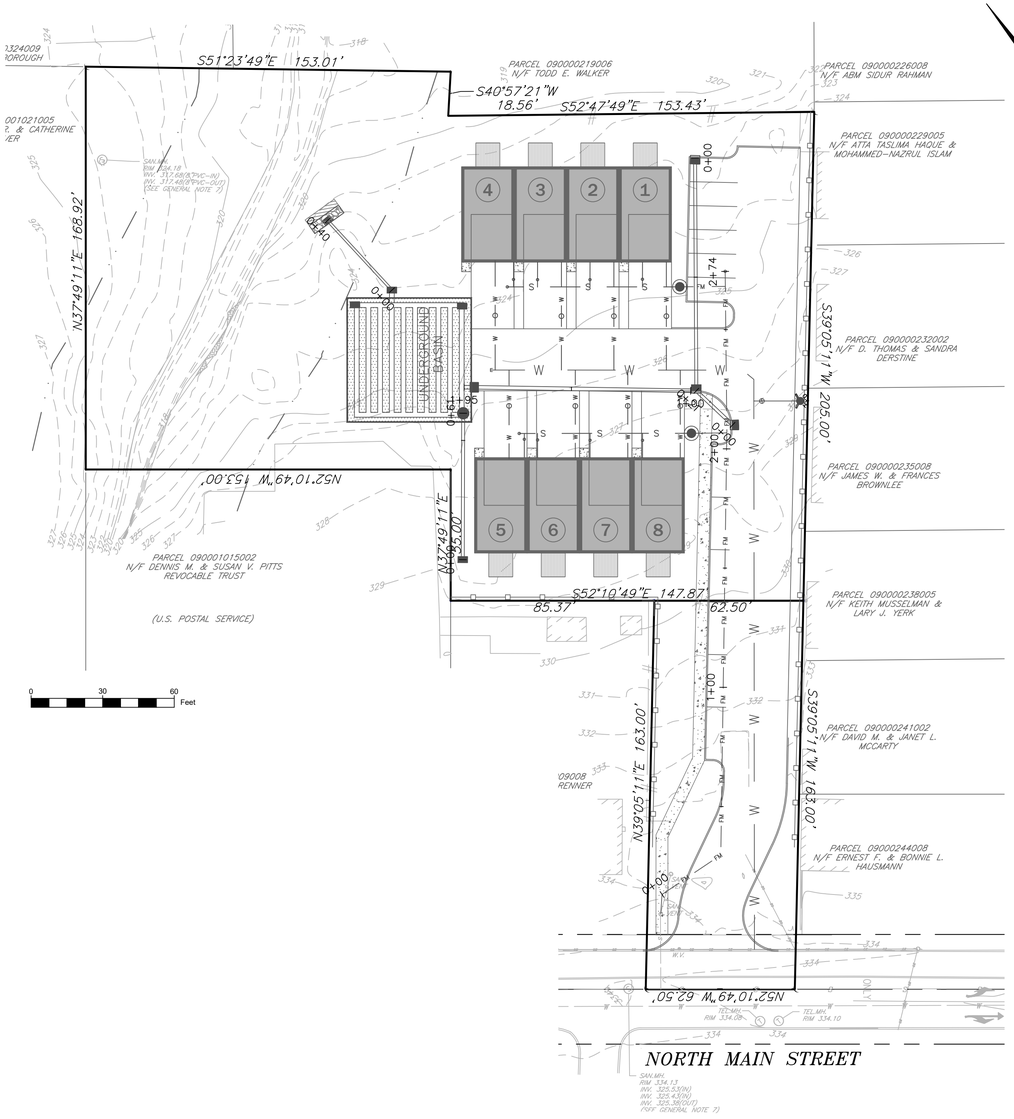
LANDSCAPE DETAILS

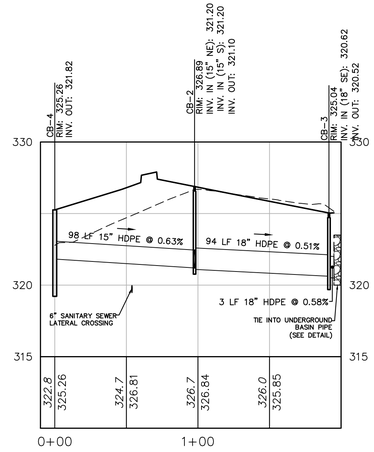
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PA Lic. No. PA076424

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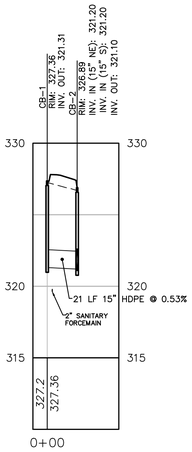
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Sheet	13 of 14				

Drawing No.
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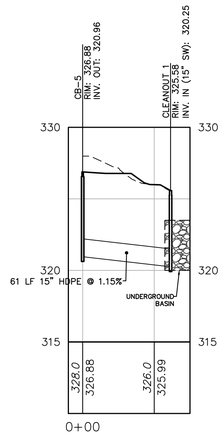




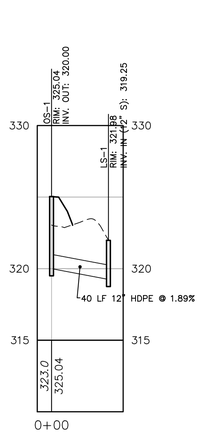
CB-4 TO UGB PROFILE



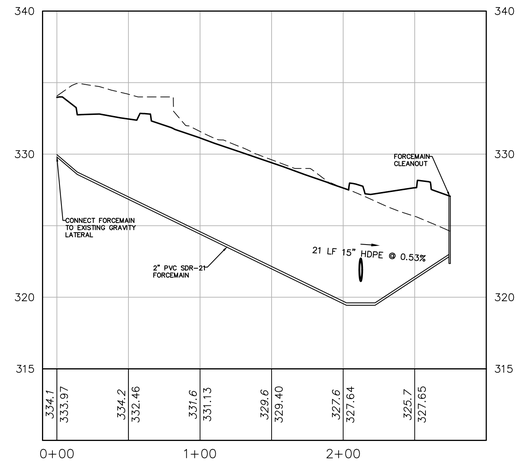
CB-1 TO CB-2 PROFILE



CB-5 TO CLEANOUT 1 PROFILE



OS-1 TO LS-1 PROFILE



PROPOSED SANITARY FORCEMAIN PROFILE

0 5 10 Vertical Scale

0 50 100 Horizontal Scale

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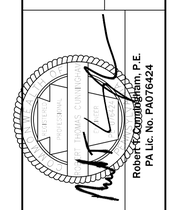
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ARBOR GROVE

TMP # 090001012005 & 090001006002

HATFIELD BOROUGH, MONTGOMERY COUNTY, PENNSYLVANIA

PROFILES



Robert K. Cunningham, P.E.
PA Lic. No. PA076424

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