

Benchmarks for this Plan

- 1. CONCRETE MONUMENT - NORTH END OF CURB RETURN AT THE SOUTHEAST CORNER OF THE INTERSECTION OF SPILLMAN AND LYNN-TOP ELEVATION=320.30
- 1. CONCRETE MONUMENT - SOUTH END OF CURB RETURN AT THE SOUTHEAST CORNER OF THE INTERSECTION OF SPILLMAN AND LYNN-TOP ELEVATION=321.19



"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

THIS PROJECT'S DESIGNER INQUIRY NO.
20162023156

BETHLEHEM CITY DEPT. OF WATER/SEWER RESOURCES
NORAVIAN COLLEGE
PPL ELECTRIC
SERVICE ELECTRIC CABLE TV INC
UGI UTILITIES INC.
RCN TELECOM
VERIZON

Owner

STEEL9, LLC
6659 FOREST KNOLL COURT
ALLEN TOWN, PA 18106-9171
PHONE 610.295.7472

Site Address

1610 SPILLMAN DRIVE
BETHLEHEM, PA 18015

SIGN SCHEDULE				
SYMBOL	QUANTITY	DESCRIPTION	AREA	HEIGHT
(A) — SS	1	PENNDOT R1-1 "STOP" TYPE 3-HIGH INTENSITY SHEETING	30"x30"	9'
(B) — HC	4	PENNDOT R7-8 "RESERVED PARKING"	12"x18"	8.5'
(C) —	2	NO PARKING FIRE LANE	12"x18"	8.5'
(D) —	1	COMPACT VEHICLES ONLY K2-4126-B (RIGHT)	12"x18"	8.5'
(E) —	1	COMPACT VEHICLES ONLY K2-4126-B (LEFT)	12"x18"	8.5'

SIGNAGE NOTE:

ALL SITE AND BUILDING SIGNAGE WILL BE INSTALLED IN CONFORMITY WITH ARTICLE 1320 OF THE CITY OF BETHLEHEM ZONING ORDINANCE. DETAILED DRAWINGS WITH DESIGNED DIMENSIONS OF THE PROPOSED SIGNS WILL BE PROVIDED TO THE CITY FOR APPROVAL PRIOR TO OBTAINING ANY REQUIRED PERMITS FOR THEIR CONSTRUCTION.

ADA RAMP DETAILS

NOTES:

1. ALL ADA CURB RAMPS SHALL CONFORM TO PENNDOT PUBLICATION 72M RC-67M OF JUNE 1, 2010 OR THE LATEST REVISION.
2. ALL PROPOSED PEDESTRIAN CURB RAMPS TO HAVE "RED" TRUNCATED DOME DETECTABLE WARNING AREAS THAT COMPLY WITH THE CURRENT PENNDOT DESIGN MANUAL AND ADA REQUIREMENTS.

AT THE MEETING ON _____ 2023, THE BETHLEHEM CITY PLANNING COMMISSION, BETHLEHEM, PENNSYLVANIA, DULY ENACTED AND APPROVED THIS PLAN OF THE PROPERTY LOT 9B, LVP VII LOCATED IN NORTHAMPTON COUNTY AS SHOWN HEREIN.

CHAIRMAN _____

SECRETARY _____

REVIEWED BY THE LEHIGH VALLEY PLANNING COMMISSION FOR LEHIGH AND NORTHAMPTON COUNTIES.

LVPK STAFF PERSON RESPONSIBLE FOR REVIEW _____ DATE _____

THIS PLAN WAS RECORDED IN THE OFFICE OF THE RECORDER OF DEEDS FOR NORTHAMPTON COUNTY, ON _____ IN PLAN BOOK _____, PAGE _____.

Owner Signature:

STEEL9, LLC

COMMONWEALTH OF PENNSYLVANIA } SS:

COUNTY OF NORTHAMPTON }

I, _____ OF STEEL9, LLC
NAME CORPORATION NAME

BEING DULY SWORN ACCORDING TO LAW, AND ACTING IN MY CAPACITY AS _____ DEPOSE AND SAY THAT THE ABOVE NAMED CORPORATION IS THE TRUE AND LAWFUL OWNER OF PROPERTY KNOWN AS _____; THAT THE ABOVE DESCRIBED PROPERTY IS IN THE PEACEFUL POSSESSION OF SAID CORPORATION AND THAT THERE ARE NO LIENS PENDING AFFECTING THE TITLE THEREOF.

STEEL9, LLC
CORPORATION

CORPORATION OFFICIAL

NOTARY PUBLIC

MY COMMISSION EXPIRES ON _____

Legend

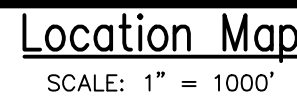
	PROPERTY LINE
	EXISTING STORM SEWER
	EXISTING CURB
	EXISTING RIGHT-OF-WAY
	EXISTING UTILITY POLE
	EXISTING GUY WIRE
	EXISTING LIGHT POLE
	EXISTING IRON PIN
	EXISTING SIGN
	EXISTING TREES
	EXISTING STORM INLETS
	EXISTING STORM SEWER MANHOLE
	EXISTING SANITARY SEWER MANHOLE
	EXISTING CONCRETE SIDEWALK
	PROPOSED CONCRETE CURB
	PROPOSED DEPRESSED CONCRETE CURB
	PROPOSED PAINTED RED CURB FOR FIRE LANE
	PROPOSED CONCRETE SIDEWALK
	PROPOSED SIGN
	PROPOSED HANDICAP RAMP
	PROPOSED RETAINING WALL

I, ANDREW THOMAS BOHL, PE, A PROFESSIONAL ENGINEER OF THE COMMONWEALTH OF PENNSYLVANIA, DO HEREBY CERTIFY THAT THIS PLAN CORRECTLY REPRESENTS THE PROPOSED DEVELOPMENT AS DESIGNED BY HANOVER ENGINEERING ASSOCIATES, INC.

ANDREW THOMAS BOHL, P.E. (PE-062856)
HANOVER ENGINEERING ASSOCIATES, INC.
252 BROODHEAD ROAD, SUITE 100
BETHLEHEM, PA 18107-8944
(610) 610-5644

SEAL

CHECKED BY: AB	DATE: 06/21/23	PROJECT NO: 4415(Tru)	SHEET NO: 02 OF 16
DRAWN BY: ECB	SCALE: 1"=30'		
DATE: 06/21/23			
REVISIONS	PER CITY & LVP COMMENTS		
NO. 1			
SEAL			
PLAN TITLE: PRELIMINARY/FINAL LAND DEVELOPMENT (RECORD PLAN 2 OF 2) TRU BY HILTON	RECORD PLAN		
PROJECT TITLE: LOT 9B - LVP VII - 1610 SPILLMAN DRIVE			
CITY OF BETHLEHEM NORTHAMPTON COUNTY PENNSYLVANIA			
HanoverEngineering			
Bethlehem Office 252 Broodhead Road, Suite 100 Bethlehem, PA 18017-8944			
P: 610.691.5644 F: 610.691.6968			
HanoverEng.com			



"FORMERLY BETHLEHEM
STEEL PARKING AREA.
TEMPORARILY
STABILIZED AS LAWN"

LOT 9
1630 SPILLMAN DRIVE
TWIN FALLS, IDAHO 83421

1630 SPILLMAN DRIVE
EXISTING CANDLEWOOD SUITES HOTEL

E FOURTH ST
SR 0412
(ROW VARIES)

"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

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20162023156

BETHLEHEM CITY DEPT. OF
WATER/SEWER RESOURCES
MORAVIAN COLLEGE
PPL ELECTRIC
SERVICE ELECTRIC CABLE TV INC
UGI UTILITIES INC.
RCN TELECOM
VERIZON

Benchmarks for this Plan

1. CONCRETE MONUMENT -NORTH END OF CURB RETURN AT THE SOUTHEAST CORNER OF THE INTERSECTION OF SPILLMAN AND LYNN-TOP ELEVATION=320.30



PROJECT / SERIAL NUMBERS/ EXCAVATION-DEMOLITION	/ TYPE OF ONE CALL	/ DATE	/ ADDRESS	/ NEAREST INT. / TOWNSHIP	/ COUNTY
4415 20160223156 EXCAVATION	ROUTINE	7/20/2016	SPILLMAN DRIVE	L'YNN AVEITY OF BETHLEHEM	NORTHAMPTON
PPL ELEC LEHIGH (PI) / BETHLEHEM C DWS (QX) / SVC ELEC CATV (SET) / RCN TELECOM (TCC) / UGI LEHIGH (UJ) / VERIZON EASTERN (YK)	CLEAR	CLEAR	CLEAR	MARKED	MARKED

PRELIMINARY/FINAL LAND DEVELOPMENT
TRU BY HILTON

TRU BY HILTON

PLAN TITLE:
EXISTING FEATURES AND DEMOLITION PLAN

PROJECT TITLE:
LOT 9B - IVP VII - 1610 SPIRITMAN DRIVE

PLAN TITLE:
EXISTING FEATURES AND DEMOLITION PLAN

PROJECT TITLE:
LOT 9B - IVP VII - 1610 SPIRITMAN DRIVE

CITY OF BETHLEHEM
THAMPTON COUNTY
PENNSYLVANIA



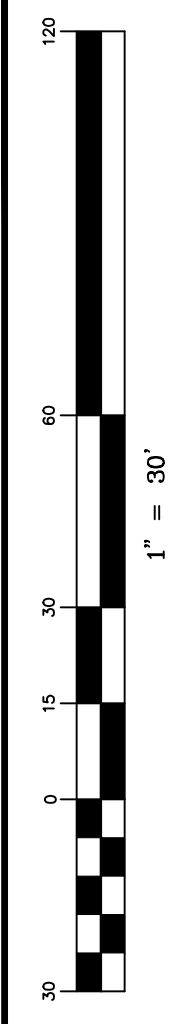
HanoverEngineering

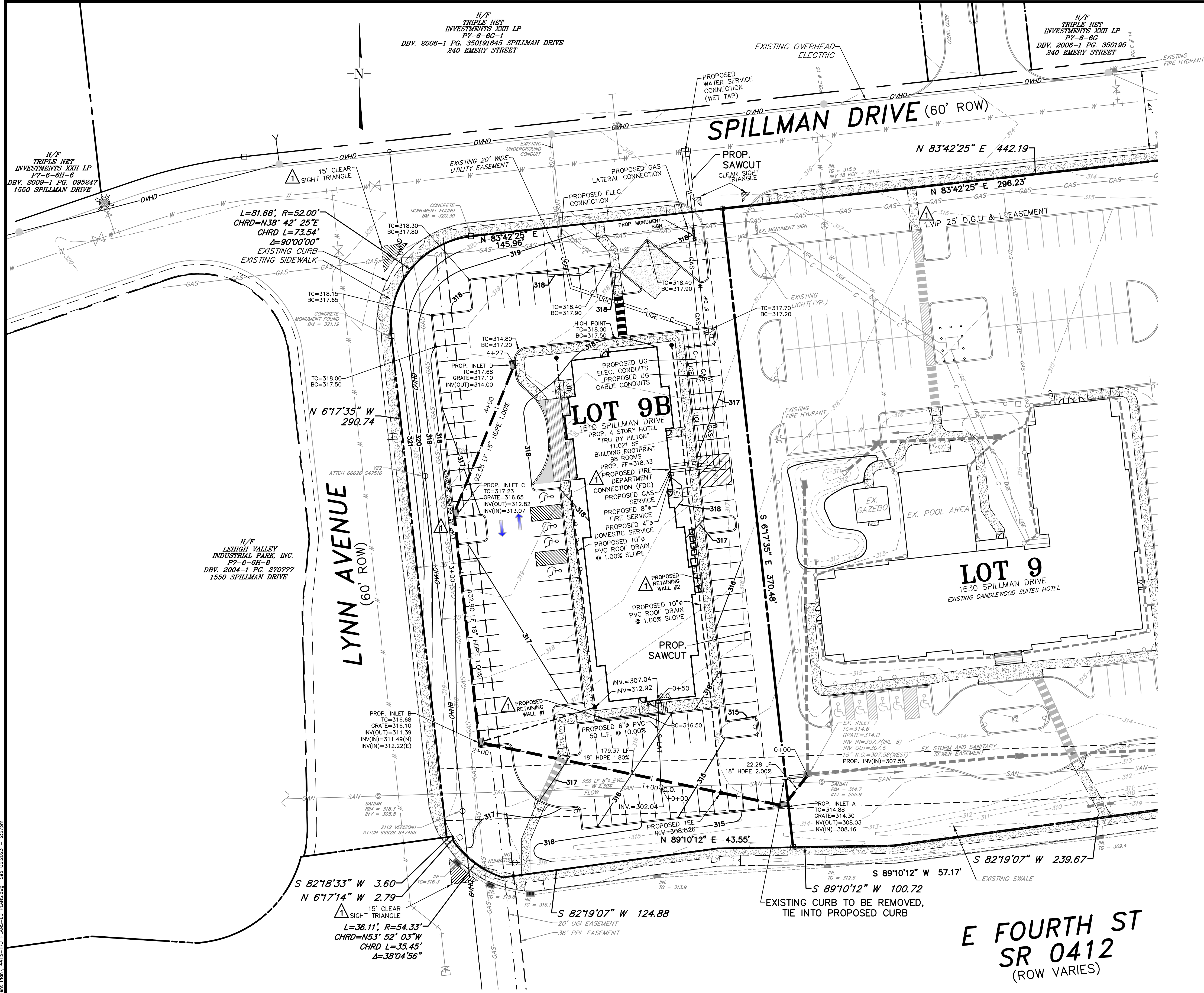
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Bethlehem Office
 Road, Suite 100
 017-8944
HanoverEng.com

NO.	1	PER CITY & LVP COMMENTS	DATE	DRAWN BY: EGS	CHECKED BY: AB	DATE: 06/21/23	PROJECT NO:	4415(TRU)	SHEET NO.	03	OF	16
		REVISIONS	08/31/23									





- ### Grading and Utility Notes
- SEE STORMWATER MANAGEMENT DESIGN REPORT FOR THE PRE AND POST WATERSHED LIMITS.
 - ALL PROPOSED UTILITIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PROPER CITY'S SPECIFICATIONS.
 - ALL PIPE LENGTHS ARE FROM CENTER OF THE MANHOLE OR INLET.
 - REFER TO ARCHITECTURAL DRAWINGS FOR EXACT BUILDING UTILITY CONNECTION LOCATIONS. WHERE CONFLICTS EXIST WITH THESE PLANS, THE ENGINEER OF RECORD SHALL BE NOTIFIED PRIOR TO CONSTRUCTION TO RESOLVE. SERVICE SIZES TO BE DETERMINED BY THE ARCHITECT.
 - ANY UTILITY CROSSING WITH LESS THAN MINIMUM OF EIGHTEEN INCHES (18") VERTICAL CLEARANCE SHALL BE CONCRETE ENCASED.
 - STRUCTURAL DETAILS FOR ALL STORMWATER MANAGEMENT STRUCTURES INCLUDING INLETS, JUNCTION BOXES, HEADWALLS, DETENTION BASINS, BAFFLES, AND SPILLWAYS, SHALL BE DESIGNED BY A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF PENNSYLVANIA AND SUBMITTED TO THE ENGINEER OF RECORD FOR A REVIEW AND APPROVAL PRIOR TO CONSTRUCTION. EXEMPTIONS TO THIS REQUIREMENT SHALL BE PERMITTED FOR ALL STANDARD STRUCTURES DESIGNED AND DETAILED IN EXISTING PENNDOT STANDARD DRAWINGS. IN THOSE CASES, THE STANDARD STRUCTURAL DETAIL TO BE USED FOR THE STRUCTURE SHALL BE SUBMITTED TO THE ENGINEER FOR RECORD, FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
 - ALL SANITARY SEWER AND WATERLINES AND LATERALS SHALL HAVE A MINIMUM OF TEN FEET (10') SEPARATION.
 - ANY EXISTING UTILITY POLES INTERFERING WITH CONSTRUCTION SHALL BE RELOCATED TO A LOCATION IN ACCORDANCE WITH UTILITY OWNERS, AND CITY'S REGULATIONS AND SPECIFICATIONS.
 - ALL ELECTRIC, TELEPHONE, CABLE TELEVISION AND NATURAL GAS DISTRIBUTION LINES SHALL BE PLACED UNDERGROUND.
 - THE SANITARY SEWER SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY'S RULES AND REGULATIONS.
 - ALL AREAS PROPOSED FOR INFILTRATION SHALL BE PROTECTED FROM DISTURBANCE AND COMPACTION EXCEPT AS NECESSARY FOR CONSTRUCTION OF INFILTRATION BMPs.
 - ALL ROOF LEADERS ARE TO BE PVC PIPE OR APPROVED EQUAL WITH A MINIMUM SLOPE OF 1.00% AS SHOWN ON THE PLAN.
 - THE SITE CONTRACTOR SHALL INSTALL THE FIRE AND DOMESTIC WATER SERVICE INTO THE MECHANICAL ROOM AND STOP AT THE FLANGE INSIDE THE BUILDING. COORDINATE FINAL FLANGE LOCATION WITH PLUMBING AND FIRE PROTECTOR CONTRACTOR.
 - ALL PROPOSED STORM SEWER PIPE SHALL BE HDPE PIPE WITH O-RING GASKETS UNLESS NOTED OTHERWISE ON THE PLAN.
 - STRUCTURAL DETAILS FOR ALL STORM WATER STRUCTURES SHALL BE DESIGNED BY A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF PENNSYLVANIA AND SUBMITTED TO THE CITY OF BETHLEHEM FOR REVIEW AND APPROVAL, AT LEAST THIRTY (30) DAYS BEFORE CONSTRUCTION.
 - ABANDONMENT OF EXISTING UTILITIES AND ASSOCIATED STRUCTURES WITHIN STREET RIGHTS-OF-WAY OR EASEMENTS TO BE DEDICATED TO THE CITY, SHALL BE COMPLETED IN ACCORDANCE WITH METHODS APPROVED BY THE CITY.
 - THE DEVELOPER SHALL ENSURE THAT CURRENT AS-BUILT RECORDS ARE MAINTAINED DURING CONSTRUCTION. UPON COMPLETION OF CONSTRUCTION, CERTIFIED (I.E., P.E. STAMPED) AS-BUILT DRAWINGS SHALL BE SUBMITTED BY THE DEVELOPER'S ENGINEERS. THESE AS-BUILT DRAWINGS SHALL BE FOUND ACCEPTABLE BY THE CITY ENGINEER PRIOR TO RELEASE OF ANY REMAINING SECURITY.
 - THE MAINTENANCE OF THE STORM WATER FACILITIES, SHALL BE THE OWNER'S RESPONSIBILITY UNTIL SUCH TIME AS SAID FACILITIES ARE DEDICATED TO THE CITY. THE OWNER'S DEED, AND THE DEEDS TO ANY SUBSEQUENT OWNER, SHALL NOTE THAT THE OWNER SHALL ACCEPT THE MAINTENANCE RESPONSIBILITIES OF ANY FACILITIES NOT DEDICATED. THE CITY OF BETHLEHEM SHALL BE PERMITTED TO INSPECT THE STORM WATER FACILITIES ON AT LEAST AN ANNUAL SCHEDULE TO ENSURE THAT ANY NECESSARY CORRECTIVE WORK IS PERFORMED IN A TIMELY MANNER.
 - IN ORDER TO MAINTAIN CONTINUITY BETWEEN PLAN REVISIONS, ANY CHANGES TO A PREVIOUS PLAN SUBMISSION SHALL BE FLAGGED WITH A TRIANGLE. ANY CHANGES NOT FLAGGED MAY BE CONSIDERED NOT APPROVED. FLAGGED CHANGES SHALL BE REFERENCED TO THE APPROPRIATE REVISION DATE.
 - FOR STORM SEWER MANHOLES/BOXES, THE ACTUAL RIM/ GRATE ELEVATION SHALL BE FINAL ADJUSTED PRIOR TO PAVING.
 - SLAG BACKFILL IS PROHIBITED IN WATER LINE TRENCH.
 - SEE PROFILE SHEET FOR THE STORM AND SANITARY PIPE SIZE, PIPE SLOPE, INVERTS, RIM ELEVATION AND GRATE ELEVATION.
 - THE CONTRACTOR SHALL PROVIDE ELECTRIC TO THE PROPOSED MONUMENT SIGN AND PROPOSED FLAG POLE AREA.
 - THE CONTRACTOR SHALL SUPPLY THE REQUIRED SIZE AND QUANTITY OF CONDUITS TO MEET THE DEMANDS FOR POWER, DATA, CABLE AND COMMUNICATIONS.
 - THE EXISTING CONDUIT FOR THE EXISTING STREET LIGHTING MAY NEED TO BE LOWERED AT THE TIME OF DRIVEWAY CONSTRUCTION AT THE DISCRETION OF THE CITY ENGINEERING DEPARTMENT.
 - THE CONTRACTOR SHALL CUT AND CAP THE EXISTING ABANDONED WATER MAIN OR ANY OTHER UTILITY IF THE UTILITY LINE CONFLICTS WITH THE CONSTRUCTION OF THE BUILDING OR ANY OTHER SITE IMPROVEMENT FOR THIS PROJECT.

Legend	
	PROPERTY LINE
	EXISTING STORM SEWER
	EXISTING CURB
	EXISTING SANITARY SEWER
	EXISTING OVERHEAD ELECTRIC LINE
	EXISTING GAS MAIN
	EXISTING WATER LINE
	EXISTING RIGHT-OF-WAY
	EXISTING MAJOR CONTOURS
	EXISTING MINOR CONTOURS
	EXISTING STORM INLET
	EXISTING STORM MANHOLE
	EXISTING SANITARY MANHOLE
	EXISTING WATER VALVE
	EXISTING FIRE HYDRANT
	EXISTING UTILITY POLE
	EXISTING GUY WIRE
	EXISTING LIGHT POLE
	EXISTING IRON PIN
	EXISTING SIGN
	EXISTING LIGHT POST
	EXISTING TREES
	EXISTING CONCRETE SIDEWALK
	PROPOSED CONCRETE CURB
	PROPOSED DEPRESSED CONCRETE CURB
	PROPOSED PAINTED RED CURB FOR FIRE LANE
	PROPOSED CONCRETE SIDEWALK
	PROPOSED MAJOR CONTOURS
	PROPOSED MINOR CONTOURS
	PROPOSED STORM INLET
	PROPOSED SANITARY MANHOLE
	PROPOSED UNDERGROUND ELECTRIC
	PROPOSED GAS LATERAL
	PROPOSED SANITARY LATERAL
	PROPOSED WATER LATERAL
	PROPOSED STORM SEWER
	PROPOSED STORM SEWER MANHOLE
	PROPOSED RETAINING WALL

- ### Benchmarks for this Plan
- CONCRETE MONUMENT - NORTH END OF CURB RETURN AT THE SOUTHEAST CORNER OF THE INTERSECTION OF SPILLMAN AND LYNN - TOP ELEVATION=320.30
 - CONCRETE MONUMENT - SOUTH END OF CURB RETURN AT THE SOUTHEAST CORNER OF THE INTERSECTION OF SPILLMAN AND LYNN - TOP ELEVATION=321.19

Know what's at stake?

Call 811

BEFORE YOU DIG

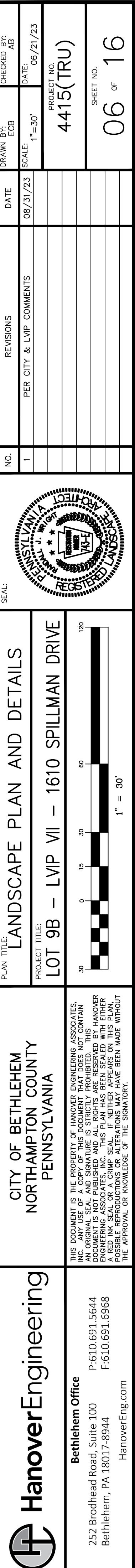
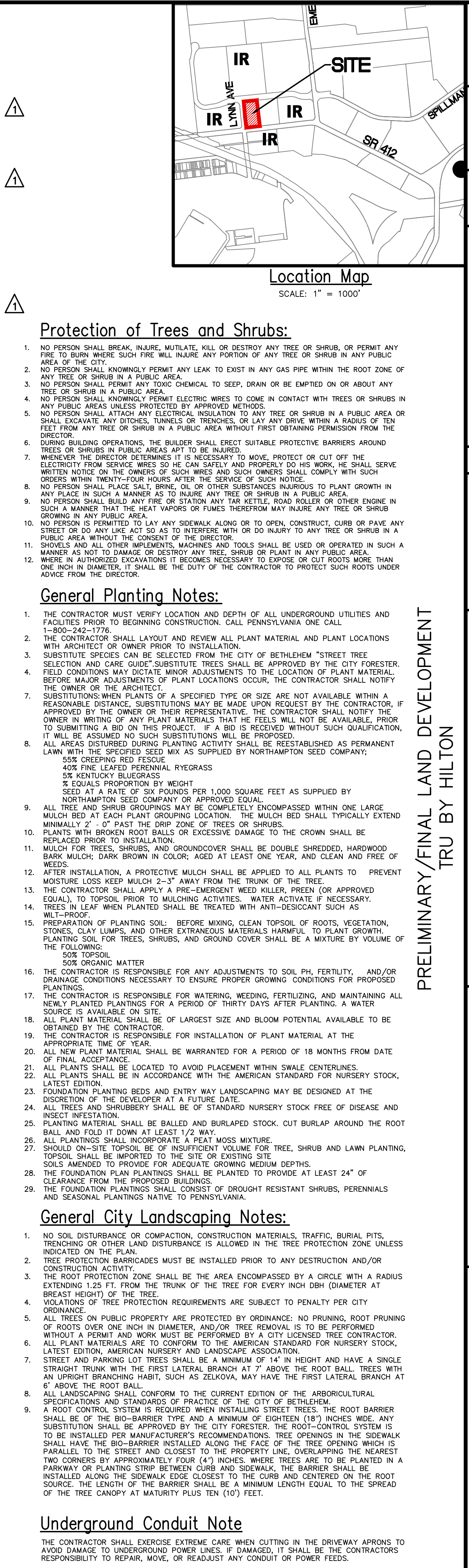
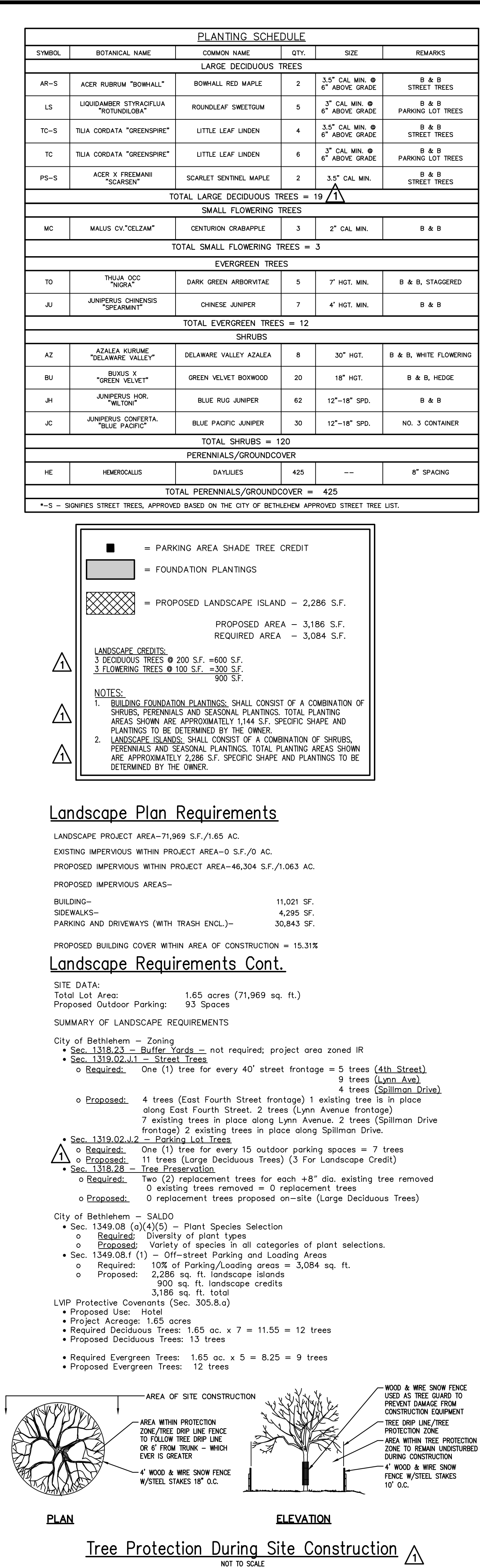
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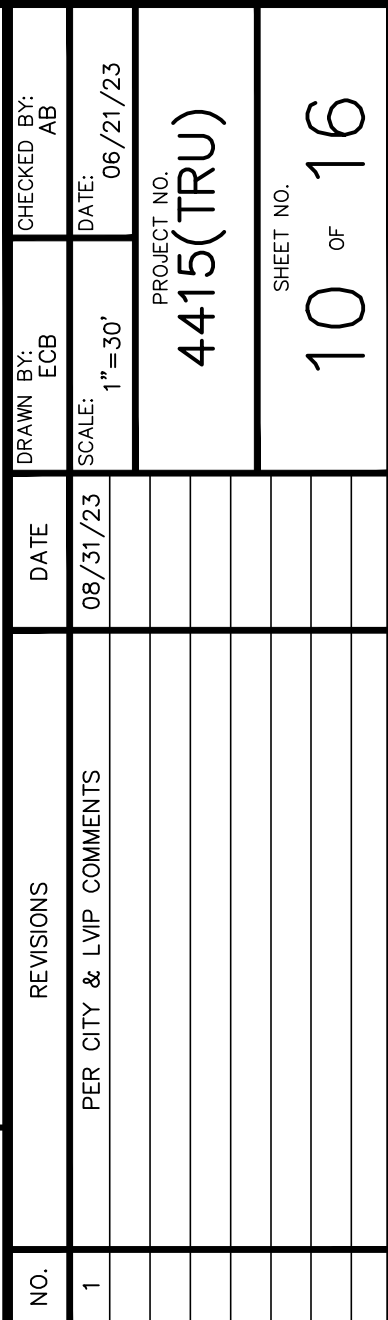
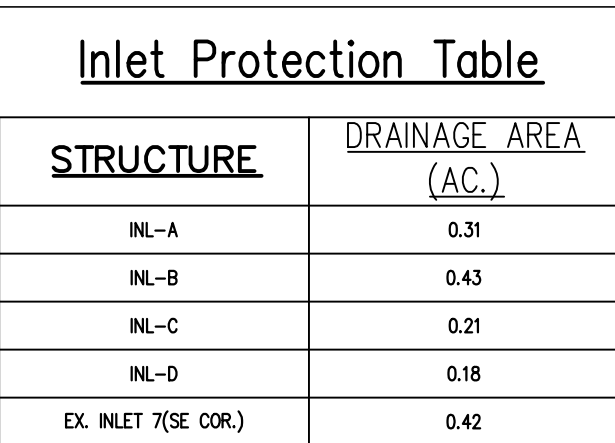
BETHLEHEM CITY DEPT. OF WATER/SEWER RESOURCES
NORAVIAN COLLEGE
PPL ELECTRIC
SERVICE ELECTRIC CABLE TV INC
UCI UTILITIES INC.
RCN TELECOM
VERIZON

PROJECT / SERIAL NUMBERS/ EXCAVATION-DEMOLITION / TYPE OF ONE CALL / DATE / ADDRESS / NEAREST INT. / TOWNSHIP / COUNTY
4415 20162023156 EXCAVATION ROUTINE 7/20/2016 SPILLMAN DRIVE LYNN AVE/CITY OF BETHLEHEM NORTHAMPTON
PPL ELEC LEHIGH (P) / BETHLEHEM C DWS (QX) / SVC ELEC CATV (SET) / RCN TELECOM (TCC) / UGI LEHIGH (UJ) / VERIZON EASTERN (YI)
CLEAR MARKED CLEAR CLEAR MARKED CLEAR

PRELIMINARY/FINAL LAND DEVELOPMENT
TRU BY HILTON

PLAN TITLE: GRADING AND UTILITY PLAN	CHECKED BY: AB	DATE: 06/21/23	PROJECT NO: 4415(1RU)	SHEET NO: 04 OF 16
LOT 9B - LVP VII - 1610 SPILLMAN DRIVE	SCALE: 1"=30'	DATE: 06/21/23	PROJECT NO: 4415(1RU)	SHEET NO: 04 OF 16
CITY OF BETHLEHEM NORTHAMPTON COUNTY PENNSYLVANIA	REVISIONS PER CITY & LVP COMMENTS	DATE: 06/21/23	PROJECT NO: 4415(1RU)	SHEET NO: 04 OF 16
HanoverEngineering	1			
Bethlehem Office 252 Broadhead Road, Suite 100 Bethlehem, PA 18017-8944 P: 610.691.5644 F: 610.691.6968 hanovereng.com				





EROSION & SEDIMENTATION CONTROL PLAN


PLAN TITLE:

PROJECT TITLE:
LOT 9B - LVP VII - 1610 SPILLMAN DRIVE

30 0 30 60 90 120

1" = 30'

CITY OF BETHLEHEM
NORTHAMPTON COUNTY
PENNSYLVANIA

 **HanoverEngineering**

Bethlehem Office

252 Brodhead Road, Suite 100
Bethlehem, PA 18017-8944

P-610.691.5644
F-610.691.6968

HanoverEng.com

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1-800-242-1776
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BETHLEHEM CITY DEPT. OF
WATER/SEWER RESOURCES
MORAVIAN COLLEGE
PPL ELECTRIC
SERVICE ELECTRIC CABLE TV INC
UGI UTILITIES INC.
RCN TELECOM
VERIZON

LIMITATIONS	RESOLUTION
1. CUTBANKS CAVE	1. LAYBACK SLOPES
2. CORROSIVE TO STEEL	2. CATHODIC PROTECTION AND/OR CORROSION RESISTANT CONCRETE
3. DROUGHTY	3. APPLY COMPOST IF MOISTURE RETENTION IS REQUIRED
4. EASILY ERODABLE	4. TAKE EXTRA CARE IN IMPLEMENTATION OF EROSION CONTROL PLAN
5. LOW STRENGTH / LANDSLIDE PRONE	5. LAYBACK SLOPES - DESIGN FOR CONDITION
6. SLOW PERCOLATION	6. DRAINAGE DITCH
7. FROST ACTION	7. LOWER FOOTINGS BELOW FROST DEPTHS, PROVIDE POSITIVE SUBGRADE

THIS SOIL TYPE HAS A LOW TO MEDIUM PH FACTOR AND SHOULD BE TESTED FOR PROPER LIME AND FERTILIZER APPLICATION RATES.

IF UNDERGROUND WATER IS ENCOUNTERED, A PUMPED WATER FILTER BAG (DETAIL ON SHEET 13 OF 16) SHALL BE UTILIZED.

IF SINKHOLES ARE ENCOUNTERED, A SINKHOLE REPAIR DETAIL HAS BEEN SUPPLIED ON THE PROJECT DRAWINGS.

1. ALL EXISTING LAND COVER WITHIN PROJECT LIMITS IS LAWN AND MEADOW IN FAIR CONDITION

RECEIVING WATERS:

SAUCON CREEK (CWF-MF AND HQ-CWF, MF)

ANDREW BOHL, PE
HANOVER ENGINEERING ASSOCIATES, INC.
252 BRODHEAD ROAD, SUITE 100
BETHLEHEM, PA 18107-8944
PHONE (610) 691-5644
FAX (610) 691-6968

LWP, INC
1720 SPILLMAN DRIVE, SUITE 150
BETHLEHEM, PA 18015-2164
PHONE 610.866.4600

STEEL9, LLC
6659 FOREST COURT
ALLENTOWN, PA 18106-9171
PHONE 610.295.7472

THIS PROPOSAL REQUIRES TO BE PERMITTED AND/OR APPROVED BY THE FOLLOWING GOVERNMENT ENTITIES:

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
(Permit previously obtained for the entire LVP VII Subdivision-Permit
NPDES#PAD480096)

NORTHAMPTON COUNTY CONSERVATION DISTRICT
LEHIGH VALLEY PLANNING COMMISSION

Standard Erosion And Sediment Control Plan Notes

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
2. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVIIE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING.
3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
5. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
6. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.
7. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAP(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2H:1V OR FLATTER.
9. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
10. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1, AND 287.1 ET SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
11. ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
12. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.
13. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS.
14. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, RE-GRADING, RESEEDING, REMULCHING, AND RE-NETTING MUST BE PERFORMED IMMEDIATELY IF THE E&S BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
15. A LOG SHOWING DATES THAT E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
16. SEDIMENT TRACKED ON ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEEP INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
17. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
18. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES --- 6 TO 12 INCHES ON COMPACTED SOILS --- PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
19. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLOPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
20. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
21. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
22. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
23. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
24. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
25. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINAL GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.
26. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS, DURING NON-GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
27. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
28. E&S BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
29. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPS.
30. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPS. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPS SHALL BE STABILIZED IMMEDIATELY IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.
31. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
32. FAILURE TO CORRECTLY INSTALL E&S BMPS, FAILURE TO PREVENT SEDIMENT--LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPS MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO \$10,000 PER DAY IN CIVIL PENALTIES, UP TO \$10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO \$25,000 IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.

OPTIONAL NOTES

THE FOLLOWING NOTES SHOULD BE ADDED TO PLAN DRAWINGS AS APPLICABLE:

1. CONCRETE WASH WATER SHALL BE HANDLED IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS. IN NO CASE SHALL IT BE ALLOWED TO ENTER ANY SURFACE WATERS OR GROUNDWATER SYSTEMS.
2. ALL CHANNELS SHALL BE KEPT FREE OF OBSTRUCTIONS INCLUDING BUT NOT LIMITED TO FILL, ROCKS, LEAVES, WOODY DEBRIS, ACCUMULATED SEDIMENT, EXCESS VEGETATION, AND CONSTRUCTION MATERIALS/WASTES.
3. UNDERGROUND UTILITIES CUTTING THROUGH ANY ACTIVE CHANNEL SHALL BE IMMEDIATELY BACKFILLED AND THE CHANNEL RESTORED TO ITS ORIGINAL CROSS-SECTION AND PROTECTIVE LINING. ANY BASE FLOW WITHIN THE CHANNEL SHALL BE CONVEYED PAST THE WORK AREA IN THE MANNER DESCRIBED IN THIS PLAN UNTIL SUCH RESTORATION IS COMPLETE.
4. CHANNELS HAVING RIPRAP, RENO MATTRESS, OR GABION LININGS MUST BE SUFFICIENTLY OVER--EXCAVATED SO THAT THE DESIGN DIMENSIONS WILL BE PROVIDED AFTER PLACEMENT OF THE PROTECTIVE LINING.
5. SEDIMENT BASINS AND/OR TRAPS SHALL BE KEPT FREE OF ALL CONSTRUCTION WASTE, WASH WATER, AND OTHER DEBRIS HAVING POTENTIAL TO CLOG THE BASIN/TRAP OUTLET STRUCTURES AND/OR POLLUTE THE SURFACE WATERS.
6. SEDIMENT TRAPS SHALL BE PROTECTED FROM UNAUTHORIZED ACTS BY THIRD PARTIES.
7. ANY DAMAGE THAT OCCURS IN WHOLE OR IN PART AS A RESULT OF BASIN OR TRAP DISCHARGE SHALL BE IMMEDIATELY REPAIRED BY THE PERMITTEE IN A PERMANENT MANNER SATISFACTORY TO THE MUNICIPALITY, LOCAL CONSERVATION DISTRICT, AND THE OWNER OF THE DAMAGED PROPERTY.
8. UPON REQUEST, THE APPLICANT OR HIS CONTRACTOR SHALL PROVIDE AN AS--BUILT (RECORD DRAWING) FOR ANY SEDIMENT BASIN OR TRAP TO THE MUNICIPAL INSPECTOR, LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
9. EROSION CONTROL BLANKETING SHALL BE INSTALLED ON ALL SLOPES 3H:1V OR STEEPER WITHIN 50 FEET OF A SURFACE WATER AND ON ALL OTHER DISTURBED AREAS SPECIFIED ON THE PLAN MAPS AND/OR DETAIL SHEETS.
10. FILL MATERIAL FOR EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS.

Temporary Stabilization & Permanent Stabilization

1. HAY OR STRAW MULCH MUST BE APPLIED AT 3.0 TONS PER ACRE.
2. MULCH WITH MULCH CONTROL NETTING OR EROSION CONTROL BLANKETS MUST BE INSTALLED ON ALL SLOPES 3:1 AND STEEPER."
3. STRAW MULCH SHALL BE APPLIED IN LONG STRANDS, NOT CHOPPED OR FINELY BROKEN.

102.4(b)(5)(v) "A MAINTENANCE PROGRAM WHICH PROVIDES FOR INSPECTION OF BMPS ON A WEEKLY BASIS AND AFTER EACH MEASURABLE RAINFALL EVENT, INCLUDING THE REPAIR OF THE BMPS TO ENSURE EFFECTIVE AND EFFICIENT OPERATION."

4. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT CONTROL BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, 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. *E&SPCSM P168*
5. SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN LANDSCAPED AREAS OUTSIDE OF STEEP SLOPES, WETLANDS, FLOODPLAINS OR DRAINAGE SWALES AND IMMEDIATELY STABILIZED, OR PLACED IN TOPSOIL STOCKPILES.

102.4(b)(5)(vi) "PROCEDURES WHICH ENSURE THAT THE PROPER MEASURES FOR THE RECYCLING OR DISPOSAL OF MATERIALS ASSOCIATED WITH OR FROM THE PROJECT SITE WILL BE UNDERTAKEN IN ACCORDANCE WITH THIS TITLE."

6. THE OPERATOR SHALL REMOVE FROM THE SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1 ET SEQ., AND 287.1 ET SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP, OR DISCHARGE ANY BUILDING MATERIAL OR WASTES AT THE SITE."
7. SOIL/ROCK DISPOSAL AREAS SHOULD BE ADDRESSED IN THE NARRATIVE AND ON THE DRAWINGS WITH APPROPRIATE BMPS (E.G. THE OPERATOR SHALL ASSURE THAT AN EROSION AND SEDIMENT CONTROL PLAN HAS BEEN PREPARED, APPROVED BY THE CONSERVATION DISTRICT AND IS BEING IMPLEMENTED AND MAINTAINED FOR ALL PROPOSED SOIL/ROCK SPOIL AND BORROW AREAS ON OR OFFSITE.).

REFER TO NARRATIVE FOR PENN DOT PUBL. 408 DATA

Temporary Seeding

ALL DISTURBED EARTH SURFACES OR TOPSOIL STOCKPILES WHICH ARE TO REMAIN LONGER THAN FOUR (4) DAYS SHALL BE STABILIZED AND SEEDDED WITH A CONTRACTOR'S MIX AS STATED BELOW:

DATE	TYPE OF MIXTURE	PER 1,000 SQ. ACRES	PER ACRE
MARCH 1 TO JUNE 15	ANNUAL RYEGRASS	100%	1.0 LB.
JUNE 15 TO AUG. 15	SUDANGRASS	100%	1.0 LB.
AUG. 15 TO SEPT. 15	ANNUAL RYEGRASS	100%	0.7 LB.
MARCH 1 TO AUG. 15			
AUG. 15 TO OCT. 15	WINTER WHEAT	100%	4.1 LB.
OCT. 15 TO MARCH 1	HAY OR STRAW MULCH		180 LB.
LIME AND FERTILIZER AND MULCH SPECIFICATIONS			3.0 TONS
TEMPORARY SEEDING			
-- APPLY ONE TON OF LIME PER ACRE AND			
-- FERTILIZER 50--50--50 PER ACRE			
-- MULCH, HAY OR STRAW -- 3 TONS PER ACRE			
STRAW MULCH SHALL BE APPLIED IN LONG STRANDS, NOT CHOPPED OR FINELY BROKEN.			

- A. FORMULA "b"-- PRIMARILY KENTUCKY BLUEGRASS & CREEPING RED OR CHEWINGS FESCUE, SPREAD AT A SEEDING RATE OF 21 LB. PER 1000 SQ. YDS. SPREAD FORMULA "b" FROM MARCH 15 TO JUNE 1 OR FROM AUGUST 1 TO OCTOBER 15.
- B. FORMULA "c"-- CROWNVELTCH AND ANNUAL RYEGRASS (45% -- 55%) SPREAD AT A RATE OF 9.0 LB. PER 1000 SQ. YDS. ON ALL SLOPES 2 HORIZONTAL TO 1 VERTICAL OR STEEPER. SPREAD FORMULA "c" RYEGRASS PORTION FROM MARCH 1 TO OCTOBER 15 AND CROWNVELTCH PORTION ANYTIME EXCEPT SEPTEMBER AND OCTOBER.
- C. FORMULA "w"--MIXTURE OF TALL FESCUE, BIRDSFOOT TREFOL, AND REDTOP, SPREAD AT A SEEDING RATE OF 10.5 LB. PER 1000 SQ. YDS. ON THE DETENTION POND. SPREAD THIS FORMULA FROM APRIL 1 TO JUNE 15 OR FROM AUGUST 16 TO SEPTEMBER 15.
- D. ALTERNATE SEED MIXES, BASED ON SECTION IX OF THE "PENN STATE AGRONOMY GUIDE", MAY BE USED ONLY IF APPROVED IN WRITING IN ADVANCE OF PLACEMENT.

Note:

SLURRY APPLICATIONS MUST INCLUDE A STRAW MULCH BINDER. AT A RATE OF 3.0 TONS PER ACRE.

Permanent Seeding

-- IMMEDIATELY UPON FINAL GRADING OF ANY PHASE OR SECTION, TOPSOIL SHALL BE BROUGHT BACK OVER THE DISTURBED AREAS WHICH ARE NOT TO BE PAVED OR BUILT UPON. THIS TOPSOIL SHALL BE SPREAD TO A SMOOTH FINISH GRADE WITH A MINIMUM DEPTH OF SIX (6) INCHES. THE TOPSOIL SHALL THEN BE:

- A. RAKED FREE OF STONES;
- B. LIMED AND FERTILIZED AS NECESSARY;
- C. PLANTED WITH GRASS OR OTHER SPECIFIED SEED;
- D. MULCHED OR MATTED TO PROTECT THE SEED FROM DRYNESS AND EROSION (STRAW OR HAY AT 1,240 LB. PER 1,000 SQ. YD.).

IT IS RECOMMENDED THAT THE CONTRACTOR TAKE SOIL SAMPLES TO ENSURE THE PROPOSED SEED MIXTURE WILL PROVIDE ADEQUATE COVER.

PERMANENT SEEDING SHALL BE UNDERTAKEN IN ACCORDANCE WITH PENNDOT, FORM 408 SPECIFICATIONS AS FOLLOWS:

- A. PENNDOT FORMULA "b" (PRIMARILY KENTUCKY BLUEGRASS AND CREEPING RED OR CHEWING FESCUE) SPREAD AT A RATE OF 21 POUNDS PER 1,000 SQUARE YARDS, OR OTHER SEED MIX APPROVED FOR THE AREA. SPREAD FORMULA "b" FROM MARCH 15 TO JUNE 1, OR FROM AUGUST 1 TO OCTOBER 15.
- B. ALTERNATE SEED MIXES, BASED ON SECTION IX OF THE "PENN STATE AGRONOMY GUIDE", MAY BE USED ONLY IF APPROVED IN WRITING IN ADVANCE OF PLACEMENT BY THE PROJECT ENGINEER AND THE LOCAL COUNTY CONSERVATION DISTRICT.

Lime And Fertilizer Specifications

PULVERIZED AGR. LIMESTONE, 2,480 LBS. PER 1,000 S.Y.
ANALYSIS COMMERCIAL 10--20--20, 210 LBS. PER 1,000 S.Y.
UREA/FORM FERTILIZER 38--0--0, 50 LBS. PER 1,000 S.Y.
IBU/FERTILIZER 31--0--0, 100 LBS. PER 1,000 S.Y.

MULCH OR APPLY HAY AT 1,240 LBS. PER 1,000 S.Y. TO SEEDDED AREAS TO PROTECT THE SEED FROM DRYNESS AND EROSION.

Location Of Measures And Facilities

THE REQUIRED LOCATIONS OF THE PERMANENT CONTROL MEASURES WILL BE DETERMINED BY THE ENGINEER DURING/AFTER CONSTRUCTION AND WILL BE INSTALLED TO STABILIZE THE PROJECT AS PART OF THE CONTRACTOR'S RESPONSIBILITY.

Dimensioned Details Of The Facilities

ALL ITEMS TO BE USED IN THIS PROJECT SHALL BE CONSTRUCTED TO PREVAILING STANDARDS. DETAILS OF SPECIAL EROSION CONTROL FACILITIES, I.E. THE FILTER FABRIC, INLET PROTECTION, ETC., ARE NOTED ON THE PROJECT PLANS.

102.5(b)(8) MAINTENANCE OF CONTROL FACILITIES

Disposal Of Materials From The Control Facilities

SEDIMENT WHICH HAS BEEN TRAPPED BY SILT BARRIER FACILITIES MUST BE REMOVED AND STOCKPILED OR REDISTRIBUTED ON THE PROJECT SITE. ALL CONSTRUCTION DEBRIS OR OTHER UNSUITABLE MATERIALS SHALL BE REMOVED BY THE CONTRACTOR AND DISPOSED OF IN A LAWFUL MANNER.

WASHING OF FILTER STONE AND REDISTRIBUTION OF WET SEDIMENT SHALL BE ONLY PERMITTED UPHILL OF AN EFFECTIVE SEDIMENT FILTER FACILITY. SILT LADEN RUN--OFF SHALL NOT BE ALLOWED TO FLOW DIRECTLY TO UNPROTECTED INLETS, BASINS, ADJACENT PROPERTIES, ROADWAYS, OR WETLANDS.

ALL SILT BARRIER FACILITIES MUST BE CHECKED FOR CAPACITY AND PROPER FUNCTION WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL ALL UPSTREAM AREAS HAVE A UNIFORM PERENNIAL VEGETATIVE COVER OF OVER SEVENTY (70) PERCENT.

RECYCLING AND/OR DISPOSAL OF MATERIALS ASSOCIATED WITH OR FROM THE PROJECT SITE MUST BE IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION.

Recycling And Disposal Of Materials

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO BE FAMILIAR WITH, AND TO INFORM HIS WORKERS OF ALL LOCAL, STATE, AND FEDERAL ENVIRONMENTAL REGULATIONS REGARDING THE CONDUCT OF WORK AND HANDLING OF MATERIALS ON THE PROJECT, AND TO PERFORM ALL ACTIVITIES IN ACCORDANCE WITH THOSE REGULATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING EMERGENCY RESPONSE PLANS FOR ANY HAZARDOUS OR POLLUTING MATERIALS USED IN THE WORK.

ALL RUBBISH OR WASTE MATERIALS PRODUCED BY CONTRACTOR'S WORKERS SHALL BE PROTECTED FROM DISSEMINATION BY WIND, RAIN, OR ANIMALS, AND SHALL BE LEGALLY DISPOSED OF REGULARLY. ANY CONSTRUCTION DEBRIS OR OTHER UNSUITABLE MATERIALS TRAPPED BY SILT BARRIER FACILITIES SHALL BE SEPARATED FROM SOIL MATERIALS AND DISPOSED OF IN A LAWFUL MANNER.

SEDIMENT WHICH HAS BEEN TRAPPED BY SILT BARRIER FACILITIES MUST BE REMOVED AND STOCKPILED OR REDISTRIBUTED ON THE PROJECT SITE. SEDIMENT WHICH COLLECTS TO THE SPECIFIED CLEAN--OUT ELEVATION IN THE BOTTOM OF STORMWATER MANAGEMENT PONDS, OR THE SPECIFIED ELEVATIONS IN SEDIMENT TRAPS, MUST BE REMOVED AND STOCKPILED OR REDISTRIBUTED AND STABILIZED ON THE PROJECT SITE.

WASHING OF FILTER STONE AND RE--DISTRIBUTION OF WET SEDIMENT FROM BASINS, TRAPS OR OTHER FACILITIES SHALL BE ONLY PERMITTED UPHILL OF AN EFFECTIVE SEDIMENT FILTER FACILITY. SILT LADEN RUNOFF SHALL NOT BE ALLOWED TO FLOW DIRECTLY TO UNPROTECTED CATCH BASINS, PONDS, ADJACENT PROPERTIES, ROADS, STREAMS OR WETLANDS.

IF THE CONTRACTOR EXPECTS TO RECYCLE OR DISPOSE OF ANY SOIL OR ROCK MATERIAL TO LOCATIONS OTHER THAN THE PROJECT AREA FOR WHICH THIS PLAN AND NARRATIVE HAVE BEEN PREPARED, THE CONTRACTOR SHALL ARRANGE FOR PREPARATION AND SUBMITTAL TO THE APPROPRIATE COUNTY CONSERVATION DISTRICT OF EROSION AND SEDIMENT CONTROL PLANS FOR ALL SUCH OFF--PROJECT AREAS PRIOR TO COMMENCEMENT OF WORK.

Anticipated Project Specific Waste

SEDIMENT TRAPPED BY EROSION CONTROL BMPS

PLANT WASTE CREATED DURING CLEARANCE OF SITE

ALL WASTE IS TO BE RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION.

Sequence Of Construction

1. SCHEDULE A PRE--CONSTRUCTION CONFERENCE AND PROVIDE AT LEAST SEVEN (7) WORKING DAYS' NOTICE TO THE FOLLOWING AGENCIES PRIOR TO COMMENCEMENT OF SITE GRADING WORK:
- I. PROJECT ENGINEER: 610--691--5644
- II. NORTHAMPTON COUNTY CONSERVATION DISTRICT: 610--829--6276
- III. PA ONE CALL: 1--800--242--1776
2. THE CONTRACTOR SHALL CONTACT THE DESIGN ENGINEER AT LEAST FORTY--EIGHT HOURS (48 HOURS) IN ADVANCE OF EROSION CONTROL FACILITIES COMPONENT INSTALLATIONS.
3. THE CONTRACTOR SHALL REFER TO THE POST CONSTRUCTION STORMWATER MANAGEMENTS PLANS FOR LOW IMPACT/NO CONVICTION TECHNIQUES FOR THE EXCAVATION AND PLACEMENT OF THE PROPOSED FILL MATERIALS.
4. PRIOR TO REMOVAL OF TOPSOIL, REFER TO THE ESPC PLAN SHEET FOR LOCATION OF SOIL STOCKPILES. TEMPORARY AND PERMANENT SEEDING SHALL BE IN ACCORDANCE WITH REQUIREMENTS LISTED AND AS NOTED IN THE NARRATIVE. ITEMS AS LISTED ON THE ESPC PLAN SHEET. COMPOST FILTER SOCK SHALL BE INSTALLED DOWNSLOPE OF ALL TOPSOIL STOCKPILES.
- a) PRIOR TO ANY SEEDING AND LIME AND FERTILIZE APPLICATION, A SOIL TEST SHALL BE PERFORMED TO DETERMINE THE PH FACTOR. ADDITIONAL LIME AND FERTILIZER MAY BE REQUIRED.
5. DISTURBED AREAS SHALL NOT BE STRIPPED OF TOPSOIL FOR MORE THAN FOUR (4) DAYS WITHOUT TEMPORARY STABILIZATION.
6. SAW CUT THE PAVEMENT AREAS AS SHOWN ON THE PLANS AND INSTALL ROCK CONSTRUCTION ENTRANCE AT ENTRANCE TO LOT 9B FROM EXISTING COMMON ACCESS DRIVE AS SHOWN ON SHEET 10. ALL CONSTRUCTION TRAFFIC FOR THE SITE IS TO ENTER AT THIS LOCATION. ALTERNATE ENTRANCES ARE PROHIBITED.
7. INSTALL HIGH VISIBILITY FENCING ALONG COMMON ACCESS DRIVE AS SHOWN ON SHEET 10. IMMEDIATELY STABILIZE ALL DISTURBED AREAS.
8. PLACE COMPOST FILTER SOCKS CFS--1 AND CFS--2. IMMEDIATELY STABILIZE ANY DISTURBED AREAS. ALSO, INSTALL ROCK FILTER DOWNSTREAM OF THE PROPOSED INLET LOCATED AT THE SOUTHEAST CORNER OF THE SITE.
9. CLEAR AND GRUB ENTIRETY OF SITE WITHIN THE LIMIT OF DISTURBANCE PRIOR TO ANY EARTHMOVING ACTIVITIES. REMOVE ALL WASTE MATERIALS, AS OUTLINED ON SHEET 11.
- a) INSTALL STORM SEWER RUN BETWEEN EXISTING INLET 7 AND PROPOSED INLET D.
- b) INSTALL INLET PROTECTION. BACKFILL AND STABILIZE AREA OF EXCAVATIONS. IF STORMWATER FILLS IN EXCAVATION PITS, UTILIZE FILTER BAGS TO REMOVE. THE TOTAL LENGTH OF EXCAVATED TRENCH OPEN AT ANY ONE TIME SHOULD NOT BE GREATER THAN THE TOTAL LENGTH OF UTILITY LINE THAT CAN BE PLACED IN THE TRENCH AND BACKFILLED IN ONE WORKING DAY. NO MORE THAN 50 LINEAL FEET OF OPEN TRENCH SHOULD EXIST WHEN UTILITY LINE INSTALLATION CEASES AT THE END OF THE WORKDAY. SOIL SUPPLEMENTS, SEED AND MULCH MUST BE APPLIED ACCORDINGLY TO 25 PA. CODE 102.22.
- b) RECONSTRUCT THE 412 SWALES 316 CONTOUR AS SHOWN ON THE PLANS. INSTALL EROSION MATTING AND STABILIZE ALL DISTURBED AREAS. IMMEDIATELY REPAIR ANY TEMPORARY BMPS DISTURBED IN THE CONSTRUCTION OF THE 412 SWALE.
10. INSTALL ROOF LEADER CONNECTION TO INLET B AND RUN TO BUILDING. INSTALL ROOF LEADER CONNECTION USING A PROPOSED TEE TO THE PROPOSED STORM SEWER AND RUN TO BUILDING. BACKFILL AND STABILIZE AREA OF EXCAVATIONS. CAP ROOF LEADER STUB FOR FUTURE CONNECTION. INSTALL INLET PROTECTION.
11. INSTALL SANITARY SEWER LATERAL AND PROPOSED CLEAN OUTS. IMMEDIATELY STABILIZE DISTURBED AREAS.
12. GRADE IN BUILDING PAD AND START THE CONSTRUCTION OF THE BUILDING AND IMMEDIATELY STABILIZE. ALSO, INSTALL CONCRETE WASHOUT FACILITY AT LOCATION SHOWN ON SHEET 10.
13. INSTALL WATER SERVICE. IMMEDIATELY STABILIZE DISTURBED AREAS.
14. INSTALL GAS LATERAL. IMMEDIATELY STABILIZE DISTURBED AREAS.
15. INSTALL UNDERGROUND ELECTRIC UTILITY LINES. IMMEDIATELY STABILIZE DISTURBED AREAS.
16. ROUGH GRADE THE ACCESS DRIVEWAYS AND PARKING AREAS. IMMEDIATELY STABILIZE AREAS.
17. INSTALL ALL CONCRETE CURBING, SIDEWALKS, AND DUMPSTER PADS. ALL DISTURBANCE GENERATED DURING THE INSTALLATION OF THESE ITEMS SHOULD BE IMMEDIATELY STABILIZED.
18. PLACE SUBBASE STONE AGGREGATE FOR ALL AREAS TO BE PAVED.
19. FINISH PAVE ALL PARKING AND DRIVEWAYS AND LINE STRIPE PARKING FACILITIES.
20. INSTALL AMENDED SOILS AND PROPOSED LANDSCAPING. IMMEDIATELY STABILIZE ALL AREAS. THIS IS A CRITICAL STAGE AND LICENSED PROFESSIONAL MUST BE ALLOWED TO OVERSEE THE INSTALLATION OF THE STRUCTURAL PCSM BMP.
21. ONCE 70% STABILIZATION OF ALL DISTURBED AREAS HAS BEEN ACHIEVED, UNIFORM PERENNIAL VEGETATIVE COVER, EROSION CONTROLS CAN BE REMOVED AND PROPERLY DISPOSED OF/RECYCLED. ALL AREAS DISTURBED DURING THE REMOVAL OF THE EROSION CONTROL BMPS SHOULD BE IMMEDIATELY REPAIRED AND PERMANENTLY STABILIZED. EROSION CONTROLS FOR THE TEMPORARY STOCKPILES ARE TO REMAIN AND ARE TO BE MAINTAINED.
22. NO SOIL IS TO BE HAULED OFF SITE WITHOUT SEPARATE EROSION AND SEDIMENTATION POLLUTION CONTROL PLAN REVIEWED AND APPROVED BY THE DISTRICT PRIOR TO BEING ACTIVE. ALSO, ANY BORROW AREA SHALL HAVE SEPARATE EROSION AND SEDIMENTATION POLLUTION CONTROL PLAN REVIEWED AND APPROVED BY THE DISTRICT PRIOR TO BEING ACTIVE. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A UNIFORM MINIMUM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON--VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING OR OTHER MOVEMENTS.

SYNTHETIC BINDERS, OR CHEMICAL BINDERS MAY BE USED AS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH PROVIDED SUFFICIENT DOCUMENTATION IS PROVIDED TO SHOW THEY ARE NON--TOXIC TO NATIVE PLANT AND ANIMAL SPECIES.

MULCH ON SLOPES OF 8% OR STEEPER SHOULD BE HELD IN PLACE WITH NETTING. LIGHTWEIGHT PLASTIC, FIBER, OR PAPER NETS MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

SHREDED PAPER HYDROMULCH SHOULD NOT BE USED ON SLOPES STEEPER THAN 5% WOOD FIBER HYDROMULCH MAY BE APPLIED ON STEEPER SLOPES PROVIDED A TACKIFIER IS USED. THE APPLICATION RATE OF HYDROMULCH SHOULD BE 2,000 LB./ACRE AT A MINIMUM.

TABLE 11.6 MULCH APPLICATION RATES				
MULCH TYPE	APPLICATION RATE (MIN.)			NOTES
	PER ACRE	PER 1,000 SQ. FT.	PER 1,000 SQ. YD.	
STRAW	3 TONS	140 LB.	1,240 LB.	EITHER WHEAT OR OAT STRAW, FREE OF WEEDS, NOT CHOPPED OR FINELY BROKEN
HAY	3 TONS	140 LB.	1,240 LB.	TIMOTHY, MIXED CLOVER AND TIMOTHY OR OTHER NATURAL FIBER PRODUCTS
WOOD CHIPS	4--6 TONS	185--275 LB.	1,650--2,500 LB.	MAY PREVENT GERMINATION OF GRASSES AND LEGUMES
HYDRO MULCH	1 TON	47 LB.	415	SEE LIMITATIONS ABOVE

Assurance Of Design Performance

THE SPECIFICATIONS AND REQUIREMENTS OF THE PROJECT PLANS, NARRATIVE AND SPECIFICATION ARE THE MINIMUM ACCEPTABLE CONSTRUCTION CRITERIA FOR THIS PROJECT.

DURING SITE DEVELOPMENT CONSTRUCTION, ALL TEMPORARY EROSION AND SEDIMENTATION CONTROL FACILITIES MUST BE CHECKED BY THE SITE CONTRACTOR AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ANY DAMAGE TO THE FACILITIES MUST BE REPAIRED IMMEDIATELY. ANY LOST SOIL MATERIAL SHALL BE RECOVERED, IF POSSIBLE. WASHED OUT LAWN OR SLOPE AREAS MUST HAVE TOPSOIL REPLACED AND THEN MUST BE RE--SEEDDED AND MULCHED.

IF, FOR ANY REASON, THE DESIGNED FACILITIES OR MEASURES DO NOT PROVIDE THE NECESSARY PROTECTION, THE CONTRACTOR SHALL ADJUST THE EROSION CONTROL MEASURES AND SEDIMENT CONTROL MEASURES TO ACHIEVE A COMPLETE NON--ERODED STABILIZED SITE CONDITION.

AFTER THE CITY'S FINAL ACCEPTANCE OF SITE WORK CONSTRUCTION AND STABILIZATION BY THE CONTRACTOR, THE GROUND SURFACE AND ALL DRAINAGE FACILITIES LOCATED ON PRIVATE PROPERTY MUST BE MAINTAINED BY THE OWNER OF THE PROPERTY.

PRELIMINARY/FINAL LAND DEVELOPMENT TRU BY HILTON

PLAN TITLE EROSION & SEDIMENTATION CONTROL NOTES	DATE 08/21/23	DRAWN BY ECB	CHECKED BY AB
PROJECT TITLE LOT 9B -- LVP VII -- 1610 SPILLMAN DRIVE	DATE 08/21/23	SCALE	DATE 06/21/23
CITY OF BETHLEHEM NORTHAMPTON COUNTY PENNSYLVANIA	PROJECT NO. 4415(Tru)		SHEET NO. 11 of 16
HanoverEngineering Bethlehem Office 252 Brodhead Road, Suite 100 Bethlehem, PA 18017-8944			
THE DOCUMENT IS THE PROPERTY OF HANOVER ENGINEERING ASSOCIATES, INC. IT IS TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREON. ANY REUSE, REPRODUCTION, OR DISTRIBUTION OF THIS DOCUMENT WITHOUT THE WRITTEN PERMISSION OF HANOVER ENGINEERING ASSOCIATES, INC. IS STRICTLY PROHIBITED. THIS DOCUMENT IS NOT TO BE USED FOR ANY OTHER PROJECT. THE PLAN HAS BEEN SEALED WITH EITHER AN ORIGINAL SEAL AND SIGNATURE OR A DIGITAL SEAL. ANY ATTEMPT TO ALTER OR REMOVE THE SEAL OR SIGNATURE WILL BE CONSIDERED A VIOLATION OF THE PROFESSIONAL SEALING ACT AND WILL BE PUNISHED AS SUCH. THE APPROVAL OR KNOWLEDGE OF THE SIGNATORY.			

ALL BMP'S SHOULD BE INSPECTED AFTER EVERY RUNOFF EVENT AND ON A WEEKLY BASIS. ANY NECESSARY REPAIRS MUST BE MADE IMMEDIATELY.

VA Project# 44157(Tru)-LVP-LOT 9B(UND)Current Plan Set/Land Development Plan, 4415-TRU-PLANS-Cover-Addendum Set, 05/2023 - 2/28/2024

TABLE 11.1 Cubic Yards of Topsoil Required for Application to Various Depths		
Depth (in)	Per 1,000 Square Feet	Per Acre
1	3.1	134
2	6.2	268
3	9.3	403
4	12.4	537
5	15.5	672
6	18.6	806
7	21.7	940
8	24.8	1,074

Adapted from VA DSWC

TABLE 11.2 Soil Amendment Application Rate Equivalents				
Soil Amendment	Permanent Seeding Application Rate			Notes
	Per Acre	Per 1,000 sq. ft.	Per 1,000 sq. yd.	
Agricultural lime	6 tons	240 lb.	2,480 lb.	Or as per soil test; may not be required in agricultural fields
10-20-20 fertilizer	1,000 lb.	25 lb.	210 lb.	Or as per soil test; may not be required in agricultural fields
Temporary Seeding Application Rate				
Agricultural lime	1 ton	40 lb.	410 lb.	Typically not required for topsoil stockpiles
10-10-10 fertilizer	500 lb.	12.5 lb.	100 lb.	Typically not required for topsoil stockpiles

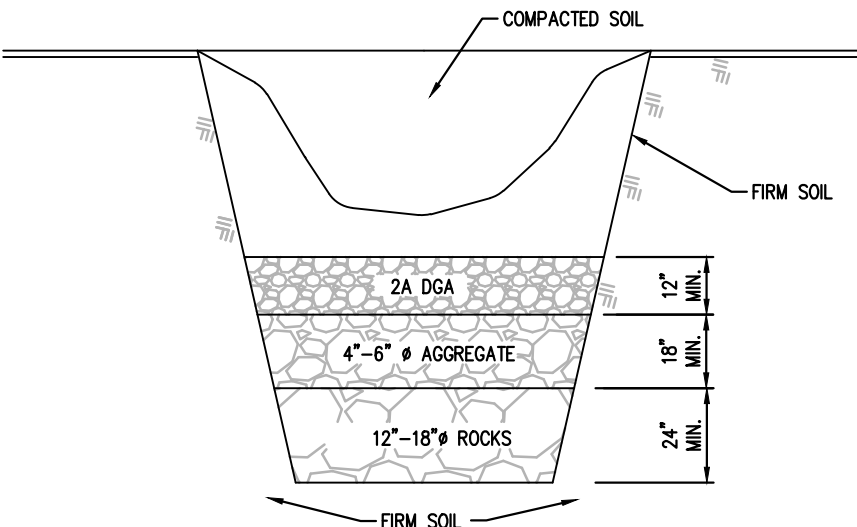
Adapted from Penn State, "Erosion Control and Conservation Plantings on Noncropland"

NOTE: A compost blanket which meets the standards of this chapter may be substituted for the soil amendments shown in Table 11.2.

TABLE 11.3 Plant Tolerances of Soil Limitation Factors											
Species	Growth Habit ¹	Tolerates				Minimum Seed Specifications ²					
		Wet Soil	Dry Site	Low Fertility	Acid Soil (pH 5-5.5) ³	Purity (%)	Ready Germ (%)	Hard Seed (%)	Total Germ (%)	Seeds/lb (1,000s)	
Warm-Season Grasses											
Deertongue	bunch	yes	yes	yes	yes	95	75		75	250	
Weeping lovegrass	bunch	no	yes	yes	yes	97	75		75	1,500	
Switchgrass ⁴	bunch	yes	yes	yes	yes			(60 PL%)		3,600	
Big bluestem	bunch	no	yes	yes	yes			(60 PL%)		1,500	
Cool-Season Grasses											
Tall Fescue	bunch	sod	yes	no	yes	95	80		80	227	
Redtop	sod	yes	yes	yes	yes	92	80		80	5,000	
Fine fescues	bunch	sod	no	no	yes	95	80		80	400	
Perennial ryegrass	bunch	yes	no	yes	no	95	85		85	227	
Annual ryegrass	bunch	yes	no	yes	no	95	85		85	227	
Kentucky bluegrass	sod	no	no	yes	no	85	75		75	2,200	
Reed canarygrass	sod	yes	yes	yes	no	95	70		70	520	
Orchardgrass	bunch	yes	yes	yes	yes	95	80		80	654	
Timothy	bunch	yes	no	yes	yes	95	80		80	1,230	
Smooth bromegrass	sod	no	yes	yes	no	95	80		80	136	
Legumes⁵											
Crownvetch	sod	no	yes	yes	no	98	40	30	65	120	
Birdsfoot trefoil ⁶	bunch	yes	no	yes	yes	98	60	20	80	400	
Flatpea	sod	no	no	yes	yes	98	55	20	75	10	
Sericea lespedeza	bunch	no	yes	yes	yes	98	60	20	80	335	
Cereals											
Winter wheat	bunch	no	no	no	no	98	85		85	15	
Winter rye	bunch	no	no	yes	yes	98	85		85	18	
Spring oats	bunch	no	no	no	no	98	85		85	13	
Sundargrass	bunch	no	yes	no	no	98	85		85	55	
Japanese millet	bunch	yes	no	yes	yes	98	80		80	155	

- Growth habit refers to the ability of the species to either form a dense sod by vegetative means (stolons, rhizomes, or roots) or remain in a bunch or single plant (biv) manner. If seeded heavily enough, even bunch formers can produce a very dense stand. This is sometimes called a sod, but not in the sense of a sod formed by vegetative means.
- Once established, plants may grow at a somewhat lower pH, but cover generally is only adequate at pH 6.0 or above.
- Minimum seed lots are truly minimum, and seed lots to be used for revegetation purposes should equal or exceed these standards. Thus, deertongue grass should germinate 75% or better. Crownvetch should have at least 40% readily germinable seed and 30% hard seed. Commonly, seed lots are available that equal or exceed minimum specifications. Remember that disturbed sites are adverse for plant establishment. Ready germination refers to seed that germinates during the period of the germination test and that would be expected, if conditions are favorable, to germinate rapidly when planted. The opposite of ready germination is dormant seed, of which hard seed is one type.
- Switchgrass seed is sold only on the basis of PLS.
- Need specific legume inoculant. Inoculant suitable for garden peas and sweetpeas usually is satisfactory for flatpea.
- Birdsfoot trefoil is adapted over the entire state, except in the extreme southeast where crown and root rots may injure stands.

Penn State, "Erosion Control and Conservation Plantings on Noncropland,"



Sinkhole In Soil

- The repair techniques as described below are suitable only if the sinkhole is located in an open area. If the sinkhole is located under or near a structure or a building, compaction grouting may be necessary for remediation, as determined by a geotechnical engineer licensed in the Commonwealth of Pennsylvania.
- Excavate down to rock to sinkhole throat or to a depth of 15 feet below grade, whichever occurs first.
- If rock is encountered within 10 feet, stop excavation. The limit of excavation shall be determined by the geotechnical engineer. Generally, a zone of soft, in-fill material will be found which covers most of the bottom of the excavation. Cover this area with a graded rock filter as shown above.
- Backfill hole with relatively impermeable clay soil. Compact soil in 6" lifts with a power tamper or rammer to at least 95% of the standard proctor.
- Backfill hole above existing grade to divert surface water.

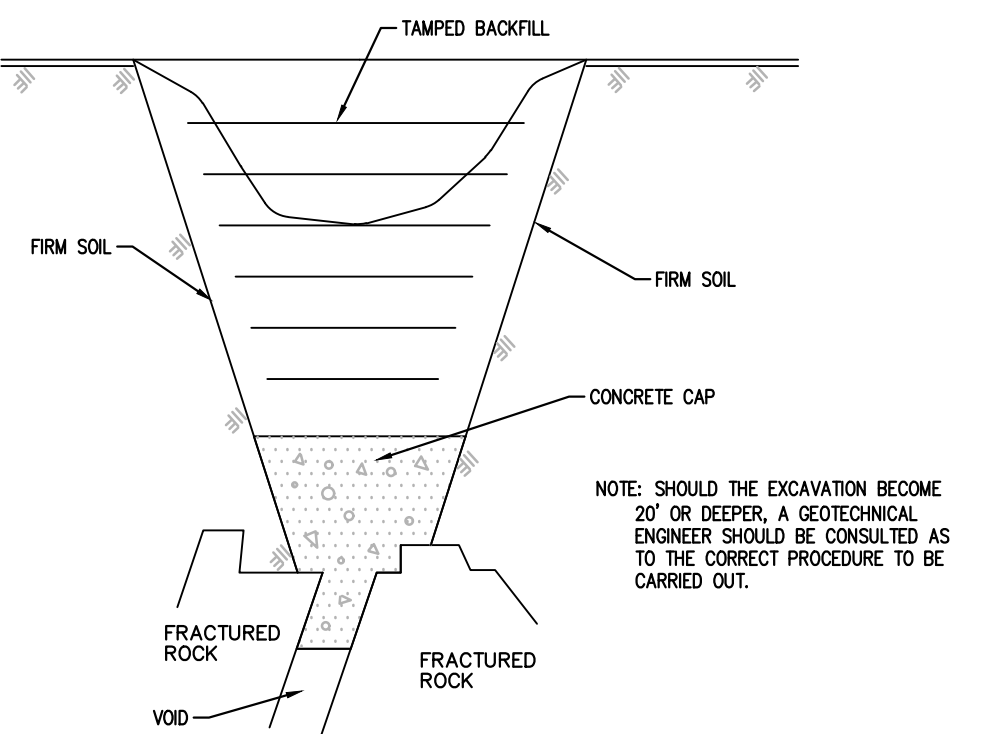
TABLE 11.4 Recommended Seed Mixtures				
Mixture Number	Species	Seeding Rate - Pure Live Seed ¹		
		Most Sites	Adverse Sites	
1 ²	Spring oats (spring), or Annual ryegrass (spring or fall), or Winter wheat (fall), or Winter rye (fall)	64 90 90 56	96 15 120 112	
2 ³	Tall fescue, or Fine fescue, or Kentucky bluegrass, plus Redtop ⁴ , or Perennial ryegrass	60 35 25 3 15	75 40 30 3 20	
3	Birdsfoot trefoil, plus Tall fescue	6 30	10 35	
4	Birdsfoot trefoil, plus Reed canarygrass	6 10	10 15	
5 ⁵	Crownvetch, plus Tall fescue, or Perennial ryegrass	10 20 20	15 25 25	
6 ^{5,6}	Crownvetch, plus Annual ryegrass	10 20	15 25	
7 ⁵	Birdsfoot trefoil, plus Crownvetch, plus Tall fescue	10 20 20	15 30 30	
8	Flatpea, plus Tall fescue, or Perennial ryegrass	20 20 20	30 30 10	
9 ⁸	Sericea lespedeza, plus Tall fescue, plus Redtop ⁴	10 20 3	20 25 3	
10	Tall fescue, plus Fine fescue	40 10	60 15	
11	Deertongue, plus Birdsfoot trefoil	15 6	20 10	
12 ⁷	Switchgrass, or Big bluestem, plus Birdsfoot trefoil	15 15 6	20 20 10	
13	Orchardgrass, or Smooth bromegrass, plus Birdsfoot trefoil	20 25 6	30 35 10	

- Penn State, "Erosion Control and Conservation Plantings on Noncropland"
- PLS is the product of the percentage of pure seed times percentage germination divided by 100. For example, to secure the actual planting rate for switchgrass, divide 12 pounds PLS shown on the seed tag. Thus, if the PLS content of a given seed lot is 35%, divide 12 PLS by 0.35 to obtain 34.3 pounds of seed required to plant one acre. All mixtures in this table are shown in terms of PLS.
 - If high-quality seed is used, for most sites seed spring oats at a rate of 2 bushels per acre, winter wheat at 11.5 bushels per acre, and winter rye at 1 bushel per acre. If germination is below 90%, increase these suggested seeding rates by 0.5 bushel per acre.
 - This mixture is suitable for frequent mowing. Do not cut shorter than 4 inches.
 - Keep seeding rate to that recommended in table. These species have many seeds per pound and are very competitive. To seed small quantities of small seeds such as weeping lovegrass and reedtop, dilute with dry sawdust, sand, rice hulls, buckwheat hulls, etc.
 - Use for highway slopes and similar sites where the desired species after establishment is crownvetch.

TABLE 11.5 Recommended Seed Mixtures for Stabilizing Disturbed Areas		
Site Condition	Nurse Crop	Seed Mixture (Select one mixture)
Slopes and Banks (not mowed)		
Variable drainage	1 plus	3, 5, 8, or 12 ¹
Well-drained	1 plus	3 or 7
Slopes and Banks (mowed)		
Well-drained	1 plus	2 or 10
Slopes and Banks (grazed/hay)		
Well-drained	1 plus	2, 3, or 13
Gullies and Eroded Areas	1 plus	3, 5, 7, or 12 ¹
Erosion Control Facilities (BMPs)		
Soil waterways, spillways, frequent water flow areas	1 plus	2, 3, or 4
Drainage ditches	1 plus	2, 3, or 4
Shallow, less than 3 feet deep	1 plus	5 or 7
Deep, not mowed	1 plus	2 or 3
Non-mowed areas	1 plus	5 or 7
For hay or silage on diversion channels and occasional water flow areas	1 plus	3 or 13
Highways		
Non-mowed areas	1 plus	5 or 6
Pure crownvetch ³	1 plus	5, 7, 8, 9, or 10
Well-drained	1 plus	3 or 7
Variable drainage	1 plus	3 or 4
Poorly drained	1 plus	2, 3, or 10
Areas mowed several times per year	1 plus	2, 3, or 10
Utility Right-of-way		
Well-drained	1 plus	5, 8, or 12 ¹
Variable drainage	1 plus	3 or 7
Well-drained areas for grazing/hay	1 plus	2, 3, or 13
Effluent Disposal Areas	1 plus	3 or 4
Sanitary Landfills	1 plus	3, 5, 7, 11 ¹ , or 12 ¹
Surface mines		
Spoils, mine wastes, fly ash, slag, settling basin	1 plus	3, 4, 5, 7, 8, 9, 11 ¹ , or 12 ¹
Residues and other severely disturbed areas (time to soil test)		
Severely disturbed areas for grazing/hay	1 plus	3 or 13

Penn State, "Erosion Control and Conservation Plantings on Noncropland"

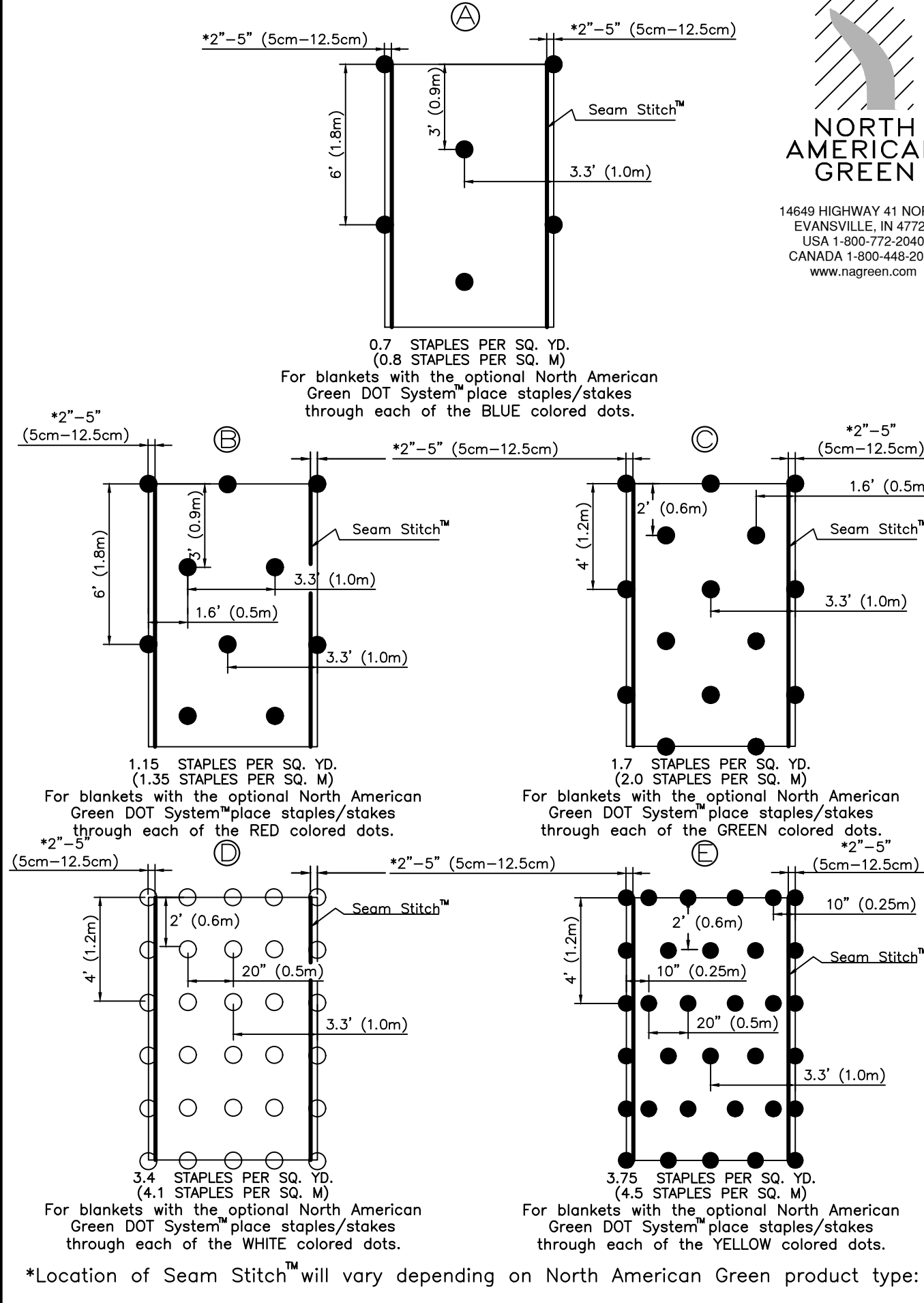
- For seed mixtures 11 and 12, only use spring oats or weeping lovegrass (included in mix) as nurse crop.
- Contact the Pennsylvania Department of Transportation district roadside specialist for specific suggestions on treatment techniques and management practices.
- Seed mixtures containing crown vetch should not be used in areas adjacent to wetlands or stream channels due to the invasive nature of this species.



Sinkhole In Rock

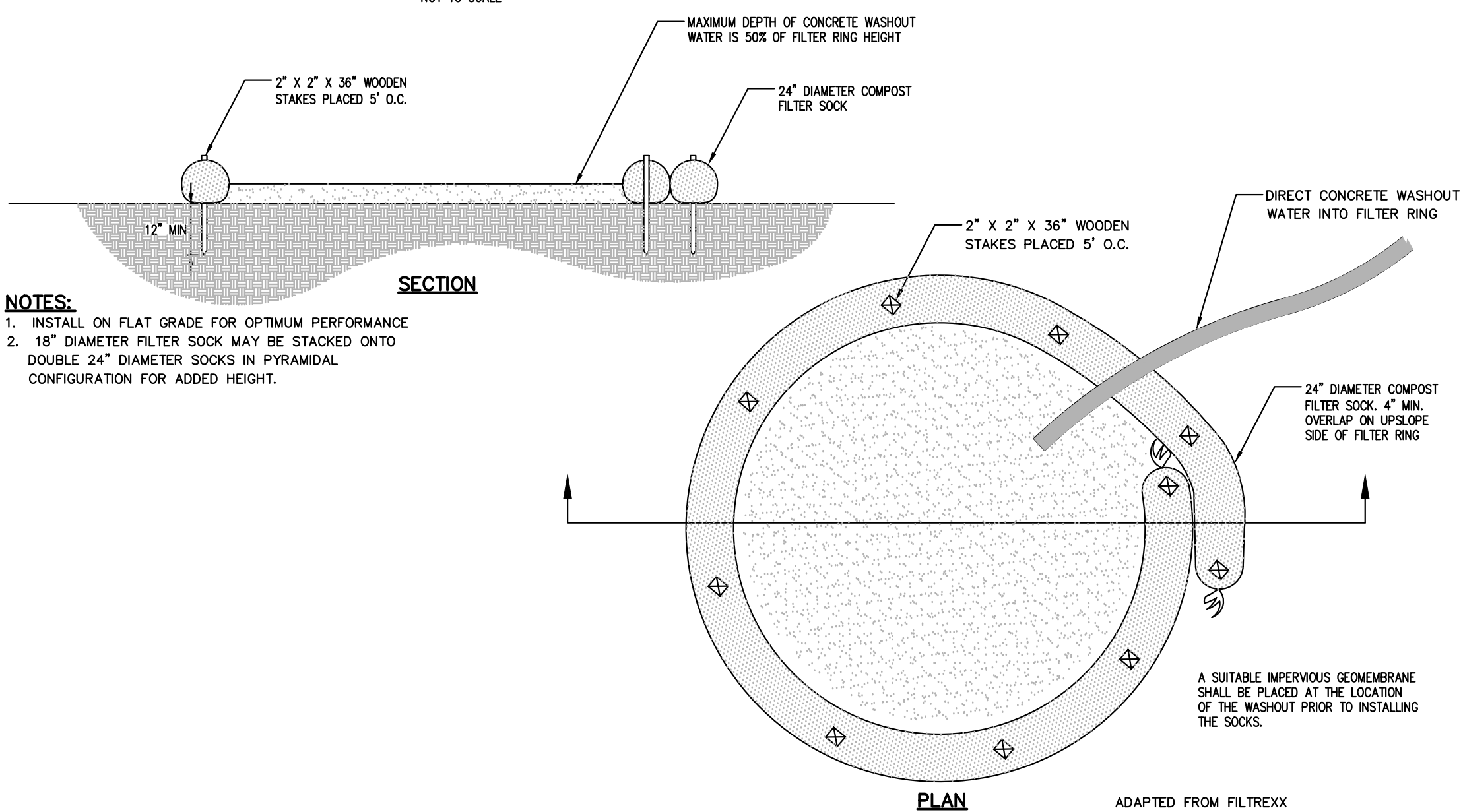
- The repair techniques as described below are suitable only if the sinkhole is located in an open area. If the sinkhole is located under or near a structure or a building, compaction grouting may be necessary for remediation, as determined by a geotechnical engineer licensed in the Commonwealth of Pennsylvania.
- Excavate down to bedrock or to the sinkhole throat.
- Expose the rock surface by washing the area with a small hose water spray and install highsump cement into voids and crevices until voids are filled and a cap covers the area. The limit of excavation and concrete shall be determined by the engineer.
- After concrete has set overnight, backfill hole with relatively impermeable clay soil. Compact soil in 6" lifts with a power tamper or rammer to at least 95% of the standard proctor. The top three(3) feet shall be backfilled with 20C crushed aggregate.
- Backfill hole above existing grade to divert surface water.
- When sinkhole is under a proposed utility, concrete is to be set 6" below the utility to allow for a stone bedding.

Staple Pattern Guide



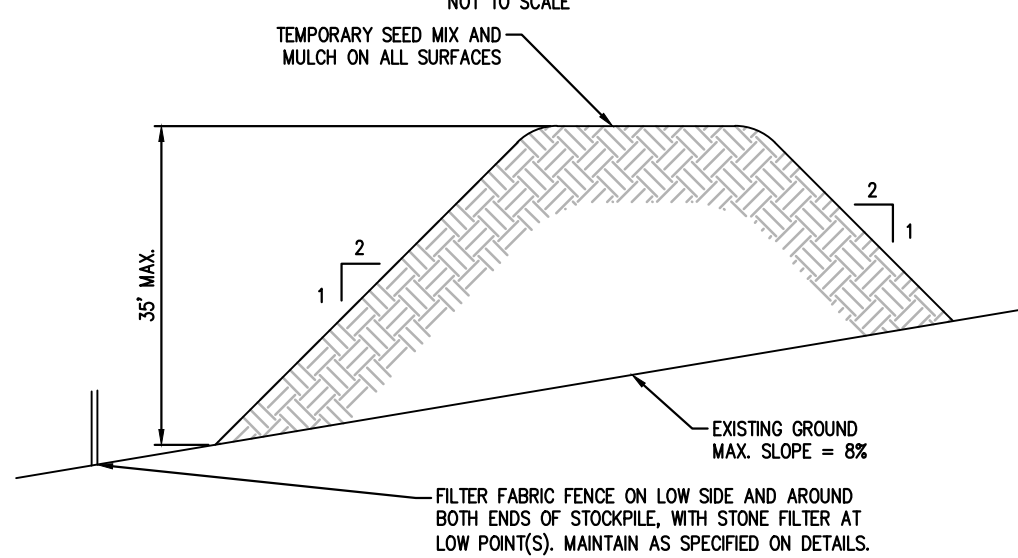
14649 HIGHWAY 41 NORTH
EVANSVILLE, IN 47725
USA 1-800-772-2040
CANADA 1-800-448-2040
www.nagreen.com

Typical Compost Sock Concrete Washout Detail



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

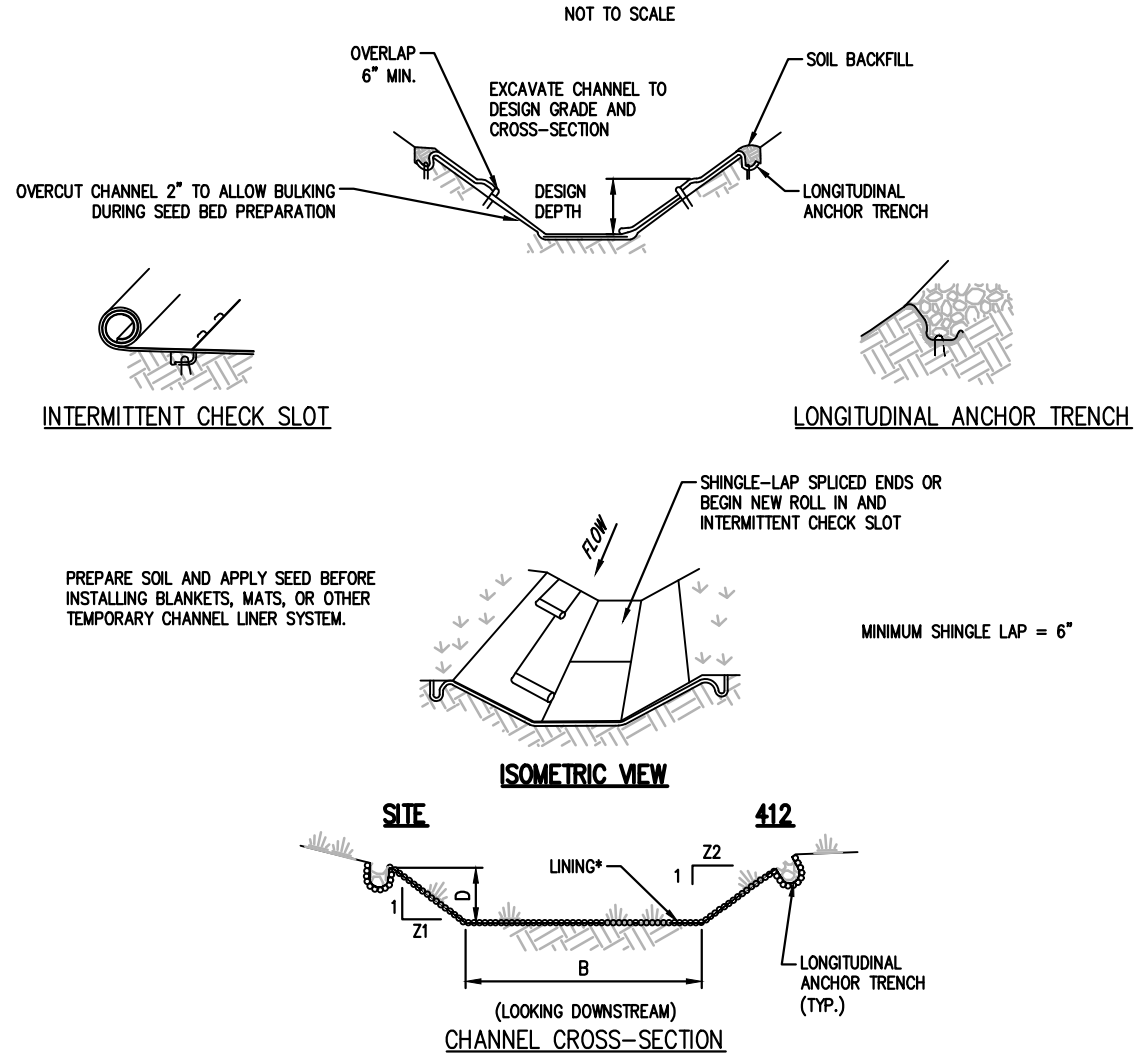
Topsoil Stockpile



General Notes:

- STOCKPILE TOPSOIL OR EXCAVATED SOIL MATERIAL AT LOCATIONS SHOWN FOR EACH PHASE OF CONSTRUCTION
- HEIGHT AND SIDE SLOPES SHALL NOT EXCEED MAXIMUM VALUES SHOWN ON DETAIL
- INSTALL FILTER FENCE PRIOR TO STOCKPILING OF MATERIAL. REPLACE ANY FENCE REMOVED FOR VEHICULAR ACCESS AFTER EACH WORK DAY.
- APPLY A TEMPORARY SEED MIX AND MULCH WHEN PILE WILL REMAIN FOR 30 DAYS OR MORE.

STANDARD CONSTRUCTION DETAIL # 6-1 VEGETATED SWALE



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

ADAPTED FROM SALKX APPLIED EARTH CARE - EROSION DRAW 5.0

NOTE: SWALES TO BE LINED FOR TOTAL TOP WIDTH

CHANNEL NO.	STATIONS	BOTTOM WIDTH B (FT)	DEPTH D (FT)	Z1 (FT)	Z2 (FT)	LINING/ STAPLE PATTERN*
412	ALL	1.5	1.10	4	3	NAG 575\D

* See Manufacturer's Lining Installation Detail for Staple Patterns, and Vegetation Stabilization Specifications for Soil Amendments, Seed Mixtures, and Mulching information.

GENERAL NOTES:

- ANCHOR TRENCHES SHALL BE INSTALLED AT BEGINNING AND END OF CHANNEL IN THE SAME MANNER AS LONGITUDINAL ANCHOR TRENCHES.
- CHANNEL DIMENSIONS SHALL BE CONSTANTLY MAINTAINED. CHANNEL SHALL BE CLEANED WHENEVER TOTAL CHANNEL DEPTH IS REDUCED BY 25% AT ANY LOCATION. SEDIMENT DEPOSITS SHALL BE REMOVED WITHIN 24 HOURS OF DISCOVERY OR AS SOON AS SOIL CONDITIONS PERMIT ACCESS TO CHANNEL WITHOUT FURTHER DAMAGE. DAMAGED LINING SHALL BE REPAIRED OR REPLACED WITHIN 48 HOURS OF DISCOVERY.
- NO MORE THAN ONE THIRD OF THE SHOOT (GRASS LEAF) SHALL BE REMOVED IN ANY MOWING. GRASS HEIGHT SHALL BE MAINTAINED BETWEEN 2 AND 3 INCHES UNLESS OTHERWISE SPECIFIED. EXCESS VEGETATION SHALL BE REMOVED FROM PERMANENT CHANNELS TO ENSURE SUFFICIENT CHANNEL CAPACITY.

PRELIMINARY/FINAL LAND DEVELOPMENT
TRU BY HILTON

EROSION & SEDIMENTATION CONTROL DETAILS
LOT 9B - LVP VII - 1610 SPILLMAN DRIVE

CITY OF BETHLEHEM
NORTHAMPTON COUNTY
PENNSYLVANIA

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Bethlehem, PA 18017-8944

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SCALE

NO. 1

PER CITY & LVP COMMENTS

REVISIONS

DATE

08/31/23

DATE

06/21/23

CHECKED BY: JCB

DATE

06/21/23

PROJECT NO.

4415(Tru)

SHEET NO.

12 of 16

The image contains two technical drawings of a road shoulder cross-section and its plan view.

PROFILE: This drawing shows a cross-section of a road shoulder. On the left is the "EXISTING GROUND" line. A horizontal dimension of "50' MIN." is shown from the ground line to the start of the shoulder. The shoulder itself is composed of "EARTH FILL" and a "PIPE AS NECESSARY" (indicated by a circle). A "MOUNTABLE BERM (6" MIN.)" is shown on top of the shoulder. A vertical dimension of "3'" is shown for the berm. A "GEOTEKILE" is shown at the base of the shoulder. A vertical dimension of "MIN. 8" AASHTO NO. 1" is shown for the base layer.

PLAN VIEW: This drawing shows the plan view of the road shoulder. It is a rectangular area with a width of "20' MIN." and a length of "10' MIN.". The shoulder is composed of "EARTH FILL" and a "PIPE AS NECESSARY" (indicated by a circle). The plan view shows the shoulder's position relative to the "EXISTING ROADWAY" on the right.

1. REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.
2. RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.
3. MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

Diagram illustrating the Plan View of the Suction Hose System. The system is shown in a top-down perspective, featuring a large, rectangular, woven mesh structure labeled "FILTER BAG". This bag is supported by four vertical "HEAVY DUTY LIFTING STRAPS (RECOMMENDED)". A "DISCHARGE HOSE" is connected to the top of the filter bag, passing through a "CLAMPS (TYP)" and leading to a "PUMP". An "INTAKE HOSE" is connected to the bottom of the filter bag, leading to the pump. The entire system is designed for use in a "WELL VEGETATED, GRASSY AREA".

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

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. DOME WIDTH STRENGTH	ASTM D-4884	60 lb/ft ²
GRAB TENSILE	ASTM D-4632	205 lb
PUNCTURE	ASTM D-4833	110 lb
MULLEN BURST	ASTM D-3786	300 psi
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-4751	80 Sieves

A SUFFICIENT MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILLER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPACE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF FULLY FILLED OR EXHAUSTED BAGS. FILLER BAGS SHALL BE KEPT FULL AT ALL TIMES. EXCESSIVE SEDIMENT SHALL BE REMOVED BY LIFTING STRIPS ALREADY ATTACHED.

SEDIMENT SHALL BE REMOVED FROM THE DISTURBED (GRASSY) AREA, AND DISCHARGE INTO STABLE, EROSION RESISTANT AREAS, WHERE THIS IS NOT POSSIBLE, A CATCHPILE UNDERDOWN AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILLER STONE TO PREVENT EXCESSIVE CHURNING OF SEDIMENT. BAGS SHALL BE PLACED TO PREVENT FLOW OF SEDIMENT TO FILLER STONE OR TO FLOW FOR SLURGES DOWNCHURN. CLEAN ROCK OR OTHER NON-POSSIBLE MATERIALS MAY BE PLACED UNDER THE BAG TO REDUCE STOP PRESSURE.

SEDIMENTATION BARRIERS IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BINS OR COMPOST FILLER ROCK SHALL BE INSTALLED TO PREVENT BAGS FROM BEING WASHED AWAY BY ANY FLOW OF WATER. BAGS SHALL BE PLACED ON A GRASSY AREA IS NOT AVAILABLE.

SEDIMENT SHALL BE REMOVED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CAPPED. A PROPER PVC PIPE IS REQUIRED FOR THIS PURPOSE.

SEDIMENT SHALL BE REMOVED FROM THE BAGS BY LIFTING STRIPS OR 1/2" THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PIPE INTAKES SHALL BE FLOATING AND SECURED.

SEDIMENT SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS OBSERVED, BAGS SHALL BE REPLACED IMMEDIATELY AND NOT REUSE UNTIL THE PROBLEM IS CORRECTED.

The diagram illustrates the installation of filter media in a trench. The **SECTION VIEW** shows a cross-section of the trench with a layer of **BROWN/PLACED FILTER MEDIA** at the bottom. A **12" MIN** depth is indicated for the media layer. The trench is flanked by **UNDISTURBED AREA** on both sides. The **PLAN VIEW** shows the top-down layout of the trench, with **EXISTING CONTOURS** indicated by dashed lines. The trench is filled with **2"x2" WOODEN STAKES PLACED 10' O.C.** (On Center). The **UNDISTURBED AREA** is also labeled in the plan view.

ORGANIC MATTER CONTENT	25% - 100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FIBROUS AND ELONGATED
pH	5.5 - 8.5
MOISTURE CONTENT	30% - 60%
PARTICLE SIZE	30% - 50% PASS THROUGH 3/8" SIEVE
SOLUBLE SALT CONCENTRATION	5.0 dS/m (mmhos/cm) MAXIMUM

1. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEE LENGTH. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8 FEET BEYOND THE EXISTING LEVEE LENGTH. THE SOCK SHALL BE PLACED AT THE EXISTING LEVEE LENGTH AND THE SETBACK DISTANCE TO THE CONTROL PROGRAM MANUAL (MAR. 2012), MAXIMUM SLOPE GRADE ABOVE ANY SOCK SHALL NOT EXCEED THAT SHOWN AT FIGURE 4.2 OF THE PA DEP EROSION AND SEDIMENTATION CONTROL PROGRAM MANUAL (MAR. 2012). STAKES MAY BE INSTALLED.

2. TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.

3. SOCKS SHALL BE REPLACED AT LEAST EVERY 18 MONTHS OR HALF THE ABOVEGROUND HEIGHT OF THE SOCK AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

4. SOCKS SHALL BE REPLACED WITHIN EACH RAINFALL EVENT. DISMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF IMPACT.

5. SOCKS SHALL BE REPLACED WITHIN 12 MONTHS OF THE END OF THE PROGRAMMABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

6. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE RE-PLACED AND RE-USED FOR THE SAME OR A DIFFERENT AREA OF THE PROJECT AND THE MUDCH SLOPE MAY BE A SOIL SUPPLEMENT.

MATERIAL TYPE	3 mil HDPE	5 mil HDPE	5 mil HDPE	MULTI-FILAMENT POLYPROPYLENE (MPP)	HEAVY DUTY MULTI-FILAMENT POLYPROPYLENE (HMPP)
MATERIAL CHARACTERISTICS	PHOTO - DEGRADABLE	PHOTO - DEGRADABLE	PHOTO - DEGRADABLE	PHOTO - DEGRADABLE	PHOTO - DEGRADABLE
SOCK DIAMETERS	12" 18"	12" 18" 24"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24"
MESH OPENING	3/8"	3/8"	3/8"	3/8"	1/8"
TENSILE STRENGTH		26 psi	26 psi	44 psi	202 psi
ULTRAVIOLET STABILITY % ORIGINAL STRENGTH (ASTM G-155)	23% AT 1000 HR.	23% AT 1000 HR.		100% AT 1000 HR.	100% AT 1000 HR.
MINIMUM FUNCTIONAL LONGEVITY	6 MONTHS	9 MONTHS	6 MONTHS	1 YEAR	2 YEARS

ORGANIC MATTER CONTENT	25% – 100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FIBROUS AND ELONGATED
pH	5.5 – 8.5
MOISTURE CONTENT	30% – 60%
PARTICLE SIZE	30% – 50% PASS THROUGH 3/8" SIEVE
SOLUBLE SALT CONCENTRATION	5.0 dS/m (mmhos/cm) MAXIMUM

Diagram illustrating the cross-section of a trench wall and bottom. The trench is filled with R-3 rock. The bottom is covered with a 6" layer of asphalt #57. An optional 6" compost layer is shown on top of the asphalt, which is firmly anchored. The trench walls are sloped at a minimum of 1:1. The trench is 1 foot wide at the bottom. The bottom is 6 inches deep. The trench is 1 foot wide at the bottom. The bottom is 6 inches deep.

Diagram illustrating a Slope Protection Structure (Figure 10-10). The structure is a rectangular frame supported by wood posts, with straw bales or filter fabric filling the interior. The structure is shown on a slope, with the height of the rock filter+5/6 height of straw bales or filter fabric fence indicated. The structure is labeled "UP-SLOPE FACE". The diagram also shows the "WOOD POSTS", "STRAW BALES OR FILTER FABRIC", and "AASHTO #57" material. Dimensions include a 1' gap between posts, a 3' MIN. width, and a 1' gap between the structure and the slope.

1. A ROCK FILTER OUTLET SHALL BE INSTALLED WHERE FAILURE OF A STRAW BALE BARRIER OR FILTER FABRIC FENCE HAS OCCURRED DUE TO CONCENTRATED FLOW. ANCHORED COMPOST LAYER SHALL BE USED ON UPSLOPE FACE IN HQ AND EV WATERSHEDS.
2. SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/3 THE HEIGHT OF OUTLET.

PLAN VIEW

SECTION A-A

6" MIN

FULL CHANNEL WIDTH (1" MIN)

SECTION B-B

FOR $3' \leq D$ USE
FOR $2' \leq D < 3'$ NOT APPLICABLE FOR D

ROCK FILTER NO.	LOCATION	D (FT.)	RIPRAP SIZE
1	EXISTING SWALE	1.0	R-3

1. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE HEIGHT OF THE FILTER.
2. IMMEDIATELY UPON STABILIZATION OF EACH CHANNEL, INSTALLER SHALL REMOVE ACCUMULATED SEDIMENT, REMOVE ROCK FILTER, AND STABILIZE DISTURBED AREAS.

The technical drawing illustrates the design of a drop inlet. The top portion is the **PLAN VIEW**, which shows a square structure composed of concrete blocks. An **INLET GRATE** is located at the top center. The blocks are separated by **AASHTO #57 STONE**. A **WIRE MESH** (galvanized, 11 gauge, or plastic mesh with a 1/4" max. opening) is positioned between the concrete blocks. The distance between the blocks is labeled **A**. The bottom portion is **SECTION A-A**, which shows a cross-section of the structure. It features a **DROP INLET** at the base, with a concrete block on either side. The structure is supported by a base layer of **AASHTO #57 STONE**.

1. MAXIMUM DRAINAGE AREA = 1 ACRE.
2. INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS NOT LOCATED AT A LOW POINT.
3. ROLLED EARTHEN BERM IN ROADWAY SHALL BE PROVIDED AND MAINTAINED IMMEDIATELY DOWN GRADIENT OF THE PROTECTED INLET 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 MEASURES ARE IN PLACE.
4. TOP OF BLOCK SHALL BE AT LEAST 6 INCHES BELOW ADJACENT ROADS IF PAVED WATER WOULD POSE A SAFETY HAZARD TO TRAFFIC.
5. SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE HEIGHT OF THE STONE, DAMAGED OR CLOGGED INSTALLATIONS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.
6. FOR SYSTEMS DISCHARGING TO AN HQ OR EY SURFACE WATER, A 6 INCH THICK COMPOST LAYER SHALL BE SECURELY ANCHORED ON OUTSIDE AND OVER TOP OF STONE. COMPOST SHALL MEET THE FOLLOWING STANDARDS

ORGANIC MATTER CONTENT	80%-100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FIBROUS AND ELONGATED
pH	5.5-8.0
MOISTURE CONTENT	35%-55%
PARTICLE SIZE	98% PASS THROUGH 1" SCREEN
SOLUBLE SALT CONCENTRATION	5.0 dS/m (mmhos/cm) MAXIMUM

1. INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.
2. ROLLED EARTHEN BERM SHALL BE MAINTAINED IMMEDIATELY DOWN GRADIENT OF THE DRAINAGE AREA. UNROLLED EARTHEN BERM SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. A 6" MINIMUM HEIGHT ASPHALT BERM SHALL BE MAINTAINED UNTIL PROTECTION SURFACE BEING FINAL COAT.
3. STONE LINER, ROADWAY AND BERM TYPE C INLET CAN BE USED IN ONE AREAS.
4. WIRE MESH DRAGS SHALL BE OVERFLOWED. A TYPE C HEAD, A PERFORATED PLATE WELDED TO A METAL RISER MAY NOT BE SUBSTITUTED FOR THE WIRE MESH. A SLOTTED PLATE WELDED TO THE RISER MAY BE USED IN CONJUNCTION WITH THE WIRE MESH IF THE PERFORATED PLATE OR SLOTTED PLATE IS 18" HIGH AND HAS A MINIMUM OF 1/4" OPENINGS.
5. THE PEAK RUNOFF FOR A 2-YEAR STORM EVENT FROM THE TRIBUTARY DRAINAGE AREA.
6. SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE HEIGHT OF THE STONE.
7. DAMAGED OR CLOSED INSTALLATIONS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

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

ORGANIC MATTER CONTENT	80%-100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FIBROUS AND ELONGATED
pH	5.5-8.0
MOISTURE CONTENT	35%-55%
PARTICLE SIZE	98% PASS THROUGH 1" SCREEN
SOLUBLE SALT CONCENTRATION	5.0 dS/m (mmhos/cm) MAXIMUM

8" HIGH, 15" MIN
SLOPP OR PVC PIPE

TYPE C TOP UNIT

11 GAUGE WIRE MESH
OR EQUIVALENT
1/4" MAXIMUM OPENING

ASPHALT NO.
57 STONE

1.5 MAX.

1" FLOW

STORM INLET

GRATE

1" MIN.

STANDARD BRICK
JP. AT EACH CORNER

SECTION

INLET

INLET BOX

CURB LINE

INLET PROTECTION

BERM

BERM

2" MIN.

2" MAX.

FLOW

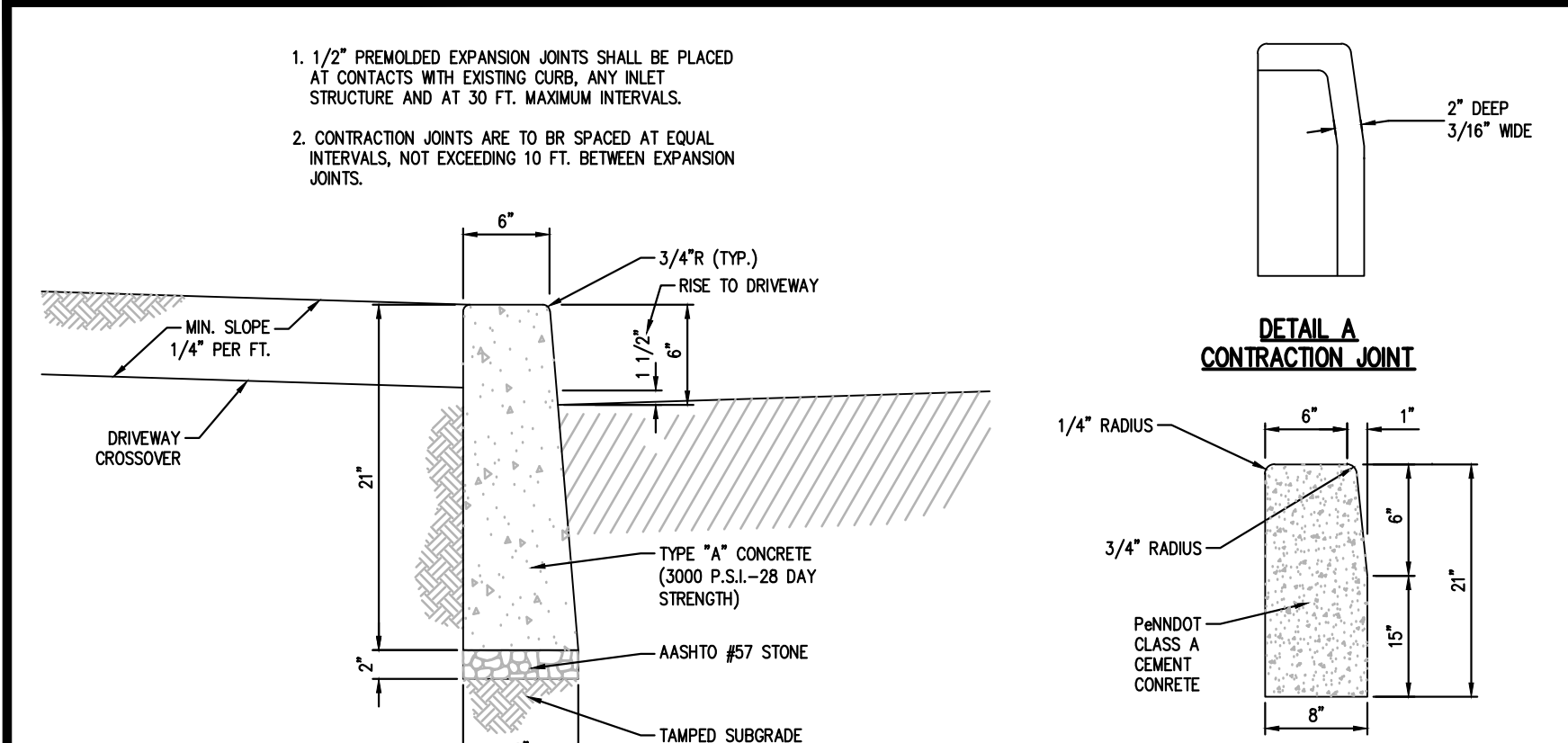
ISOMETRIC VIEW

PLAN VIEW

1. INLET PROTECTION SHALL NOT BE REQUIRED FOR INLETS TRIBUTARY TO SEDIMENT BASINS OR SEDIMENT TRAPS. ALTERNATE TYPE C INLET PROTECTION CAN BE USED ON ONE ACRE MAXIMUM DRAINAGE AREA WITH 15' OVERFLOW PIPE AND 4' HEAD.
2. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS NOT LOCATED AT LOW POINTS. EARTHEN BERMS SHALL BE STABILIZED WITH VEGETATION AND MAINTAINED UNTIL ROADWAY IS STORED OR TRIBUTARY AREA IS PERMANENTLY VEGETATED. ROADWAY SHALL BE MAINTAINED OPEN TO TRAFFIC AT ALL TIMES.
3. INLETS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE HEIGHT OF THE STORM. DAMAGED INSTALLATIONS SHALL BE REPAIRED OR REPLACED WITHIN 24 HOURS.
4. FOR SYSTEMS DISCHARGING TO HQ OR EV SURFACE WATER, A 6 INCH THICK COMPOST LAYER SHALL BE SECURELY ANCHORED ON OUTSIDE AND OVER TOP OF STORM. COMPOST SHALL MEET THE FOLLOWING STANDARDS:
 - a. 100% ORGANIC
 - b. 100% BIODEGRADABLE
 - c. 100% NON-TOXIC
 - d. 100% FREE OF PLASTIC
 - e. 100% FREE OF PET
 - f. 100% FREE OF GLASS
 - g. 100% FREE OF METALS
 - h. 100% FREE OF OTHER CONTAMINANTS
 - i. 100% FREE OF OTHER DEBRIS
 - j. 100% FREE OF OTHER HAZARDOUS MATERIALS
 - k. 100% FREE OF OTHER HAZARDOUS SUBSTANCES
 - l. 100% FREE OF OTHER HAZARDOUS WASTES
 - m. 100% FREE OF OTHER HAZARDOUS BY-PRODUCTS
 - n. 100% FREE OF OTHER HAZARDOUS RESIDUES
 - o. 100% FREE OF OTHER HAZARDOUS REMAINS
 - p. 100% FREE OF OTHER HAZARDOUS REMnants
 - q. 100% FREE OF OTHER HAZARDOUS REMnants
 - r. 100% FREE OF OTHER HAZARDOUS REMnants
 - s. 100% FREE OF OTHER HAZARDOUS REMnants
 - t. 100% FREE OF OTHER HAZARDOUS REMnants
 - u. 100% FREE OF OTHER HAZARDOUS REMnants
 - v. 100% FREE OF OTHER HAZARDOUS REMnants
 - w. 100% FREE OF OTHER HAZARDOUS REMnants
 - x. 100% FREE OF OTHER HAZARDOUS REMnants
 - y. 100% FREE OF OTHER HAZARDOUS REMnants
 - z. 100% FREE OF OTHER HAZARDOUS REMnants

ORGANIC MATTER CONTENT	80%-100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FIBROUS AND ELONGATED
pH	5.5-8.0
MOISTURE CONTENT	35%-55%
PARTICLE SIZE	98% PASS THROUGH 1" SCREEN
SOLUBLE SALT CONCENTRATION	5.0 dS/m (mmhos/cm) MAXIMUM

2. MAXIMUM DIRECTION SHIFTS = 1/2 AC.
3. INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEWERAGE BASIN OR TRAP. BASS SHALL BE REQUIRED FOR ALL OTHER INSTALLATIONS.
4. 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 IS PAVED.
5. AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAD TENSILE STRENGTH OF 120 LBS., A MINIMUM BURST STRENGTH OF 200 P.S.I. AND A MINIMUM TRANSDVERSE TEAR-STRENGTH OF 50 LB./INCH.
6. 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 IS REDUCED. IF THE BAGS ARE CLOGGED WITH DEBRIS, THE BAGS SHALL BE RINSED OR REPLACED 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 WHEN PONDING AS ALL USED BAGS ACCORDING TO THE PRACTICE.
7. DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

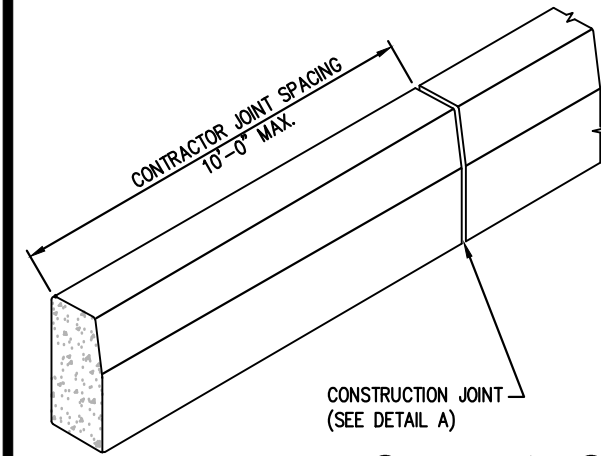


Upright Curb Detail

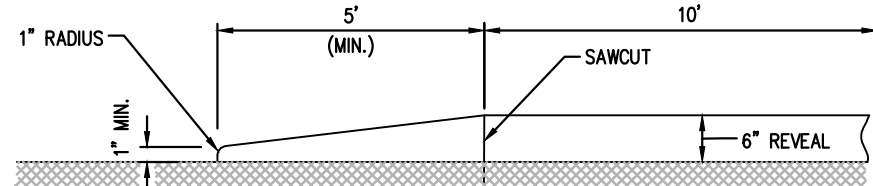
Typical Cross Section

Notes:

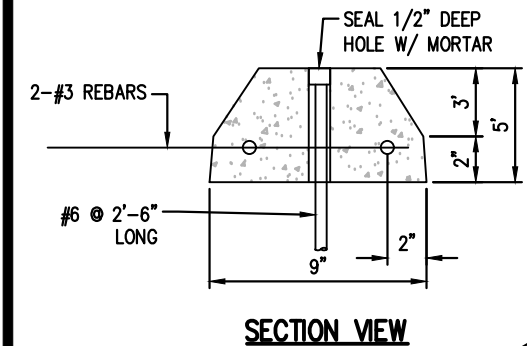
1. MATERIALS AND CONSTRUCTION SHALL MEET THE REQUIREMENTS OF PUBLICATION 408, SECTION 630.
2. SPACE CONTRACTION JOINTS IN UNIFORM LENGTHS OR SECTIONS.
3. PLACE 3/4" PREMOLDED EXPANSION JOINT FILLER MATERIAL AT STRUCTURES AND AT THE END OF THE WORK DAY. CUT MATERIAL TO CONFORM TO AREA ADJACENT TO CURB OR TO CONFORM TO CROSS SECTIONAL AREA OF CURB.



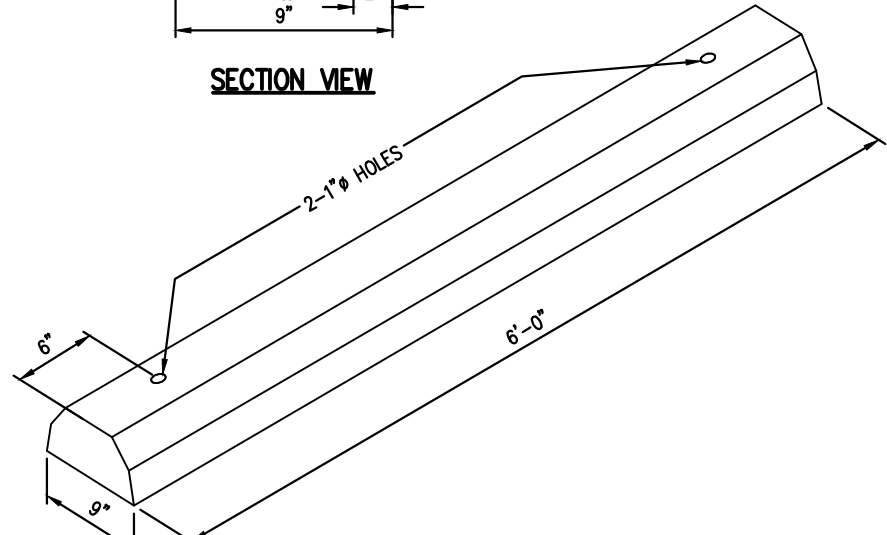
Concrete Curb



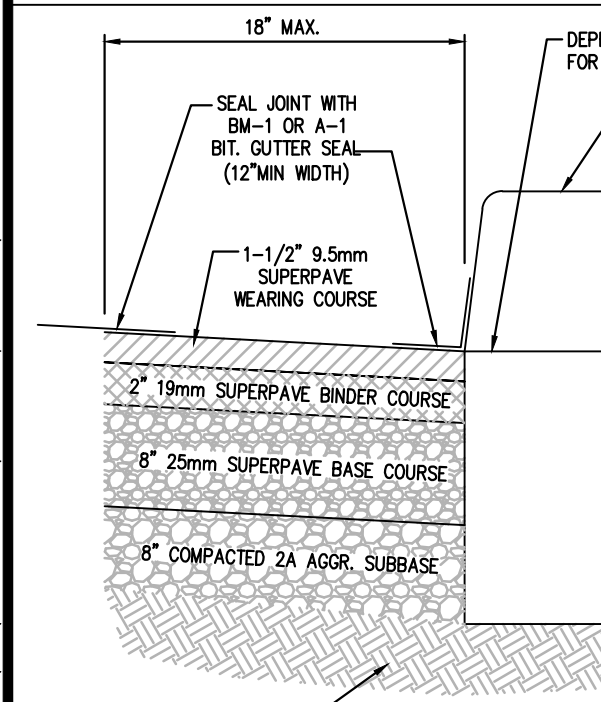
Typical Curb Taper Detail



SECTION VIEW

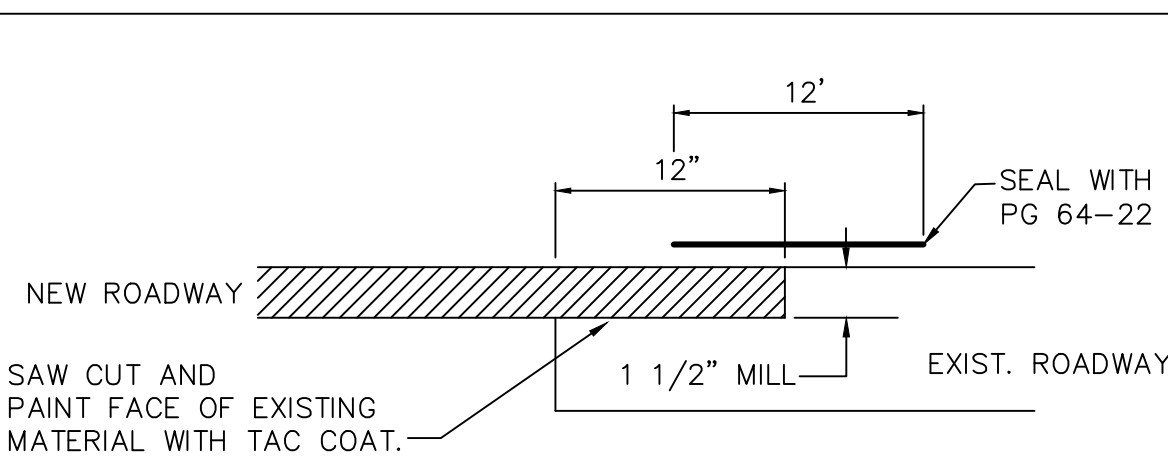


Precast Concrete Wheel Stop Detail

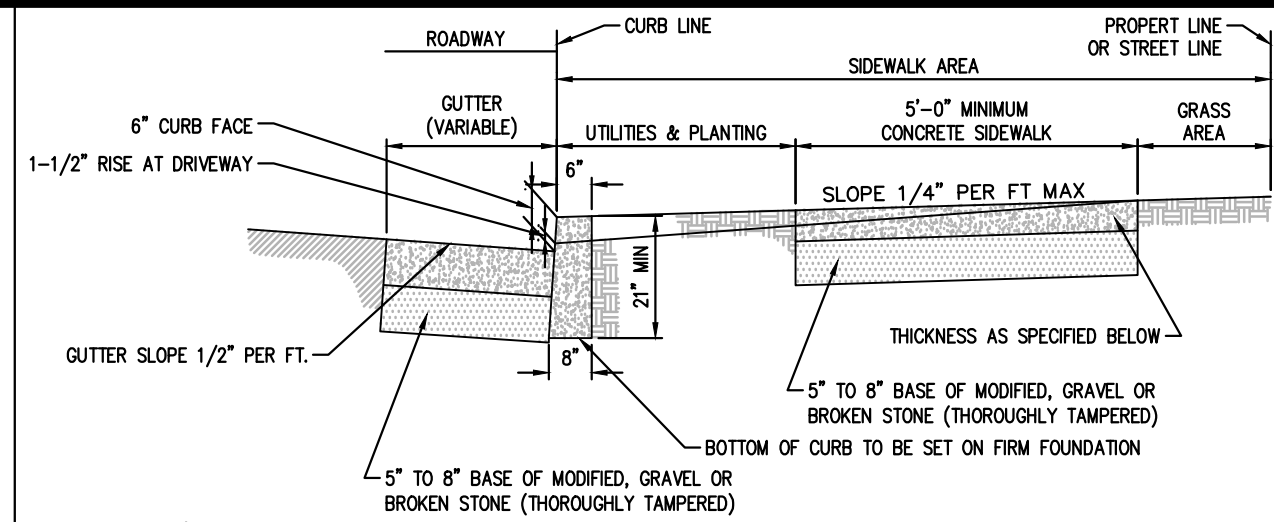


Pavement Restoration For Curb Replacement

(WITHIN CITY R.O.W.)



PAVING JOINT
(TIE INTO EXISTING PAVEMENT)



General Requirements:

ONE COURSE (NONOLITHIC) CONSTRUCTION FOR ALL CURB, GUTTER AND SIDEWALK. CONCRETE MIX TO BE CLASS A CONCRETE 3500# 6 BAG MIX - 5.6 GAL. WATER PER BAG THROUGHOUT; USE POWER BATCH MIXER. NO SLAG.

CURB: 21" MINIMUM DEPTH WITH APPROVED FINISH ON TOP AND EXPOSE FACE.

GUTTERS: 8" DEPTH - SLOPE OF GUTTER 1/2" PER FOOT AWAY FROM CURB.

SIDEWALKS: THICKNESS - RESIDENTIAL AREA - 5", BUSINESS AND INDUSTRIAL AREAS - 6"

AT RESIDENTIAL DRIVEWAYS - 6", AT BUSINESS AND INDUSTRIAL DRIVEWAYS - 8"

FINISH - USE WOOD FLOAT TO PRODUCE SKID RESISTANCE SURFACE.

CHANGES OF 5% OR MORE PRODUCE A ROUGHER FINISH.

SLOPE - WALK AND PARKWAY AREAS 1/4" PER FOOT (2%) TOWARD CURB.

EXPANSION AND CONTRACTION JOINTS: SEE CITY CONSTRUCTION STANDARD NO. 1A.

HANDICAP RAMP: REQUIRED ON ALL RADI IN ACCORDANCE WITH CURRENT ADA REQUIREMENTS.

DRIVEWAYS: SEE CITY STANDARD DRIVEWAY ENTRANCE AND APRON SKETCH.

EXCAVATION IN CARTWAY: WHEN EXCAVATING IN THE CARTWAY OF THE CITY STREET, A CLEAN, FULL DEPTH CUT-BY JACK

HAMMERING OR SAWCUTTING-SHALL BE MADE IN THE STREET BETWEEN THE AFFECTED AND THE UNAFFECTED WORK AREAS. FURTHER, FINAL RESTORATION IN THE AFFECTED AREA OF THE STREET

SHALL CONSIST OF CREATING A NEW CLEAN CUT BY SAWCUTTING 12" BEYOND THE EDGE OF ANY

AFFECTED WORK AREAS, BACKFILLING WITH PENNDOT 2A MODIFIED STONE, AND PROPERLY

COMPACTING THIS STONE TO THE ELEVATION OF THE TOP OF THE SUBGRADE (I.E. BOTTOM OF THE

BASE COURSE OF MACADAM), BUT NO HIGHER THAN 3-INCHES BELOW THE FINISH GRADE-EXCEPT

AS REQUIRED TO PROVIDE REASONABLE TEMPORARY ACCESS AT DRIVEWAYS.

ORDINANCE REQUIREMENTS:

WARRANT OF SURVEY: PROCURED FROM THE CITY ENGINEER'S OFFICE; PROVIDES FOR ESTABLISHING LINE

& GRADES; STAKES TO BE PROTECTED BY APPLICANT AND USED WITHIN 30 DAYS.

EXCAVATION PERMIT: PROCURED FROM THE CITY ENGINEER'S OFFICE; FOR SIDEWALK AND DRIVEWAY

CONSTRUCTION

DETAIL REQUIREMENTS:

FOR FURTHER DETAILS AND OTHER REQUIREMENTS SEE THE FOLLOWING DOCUMENTS ON FILE IN THE OFFICE OF THE

CITY ENGINEER:

"STANDARD SPECIFICATIONS FOR THE CONSTRUCTION OF CONCRETE CURB, GUTTER AND SIDEWALK"

"COPIED ORDINANCES OF THE CITY OF BETHLEHEM, ARTICLES 903 AND 909.

NOTE:

* WHENEVER A CURB, GUTTER AND/OR SIDEWALK IS LOCATED IN THE HISTORIC DISTRICT, SPECIAL REQUIREMENTS MAY

APPLY.

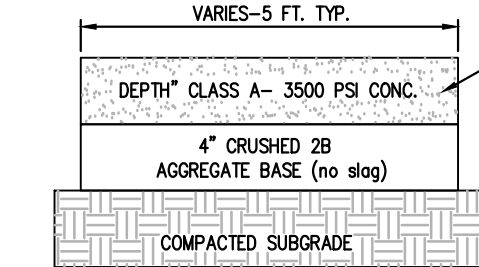
* CHANGES TO DIMENSIONAL REQUIREMENTS MAY BE CONSIDERED IN CASES WHERE OBSTRUCTIONS OR

ENCROACHMENTS EXIST. ANY EXCEPTIONS MUST BE APPROVED BY THE CITY ENGINEER. CURRENT ADA

REQUIREMENTS MUST BE IN ALL CASES.

CITY OF BETHLEHEM, PA.
BUREAU OF ENGINEERING
Construction Standard No. 1

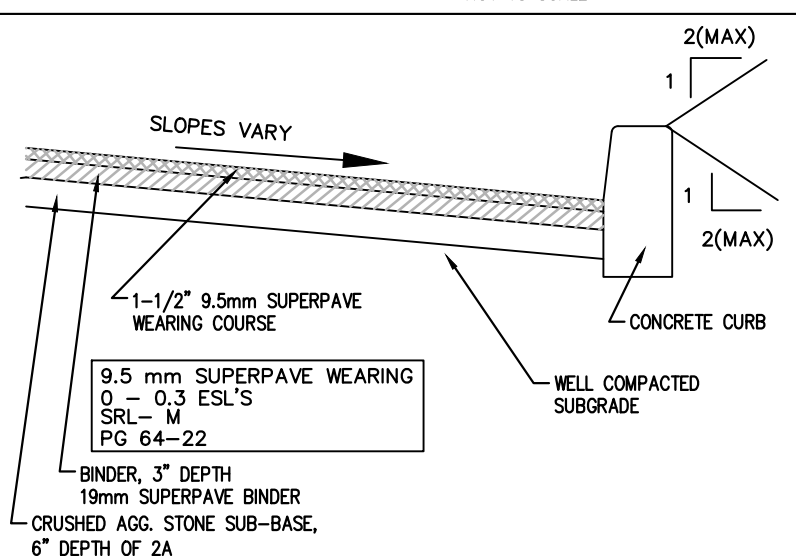
NOT TO SCALE
FOR CONCRETE CURB, GUTTER AND SIDEWALK
FEBRUARY 7, 2001
REVISED JUNE 4, 2013
(WITHIN CITY R.O.W.)



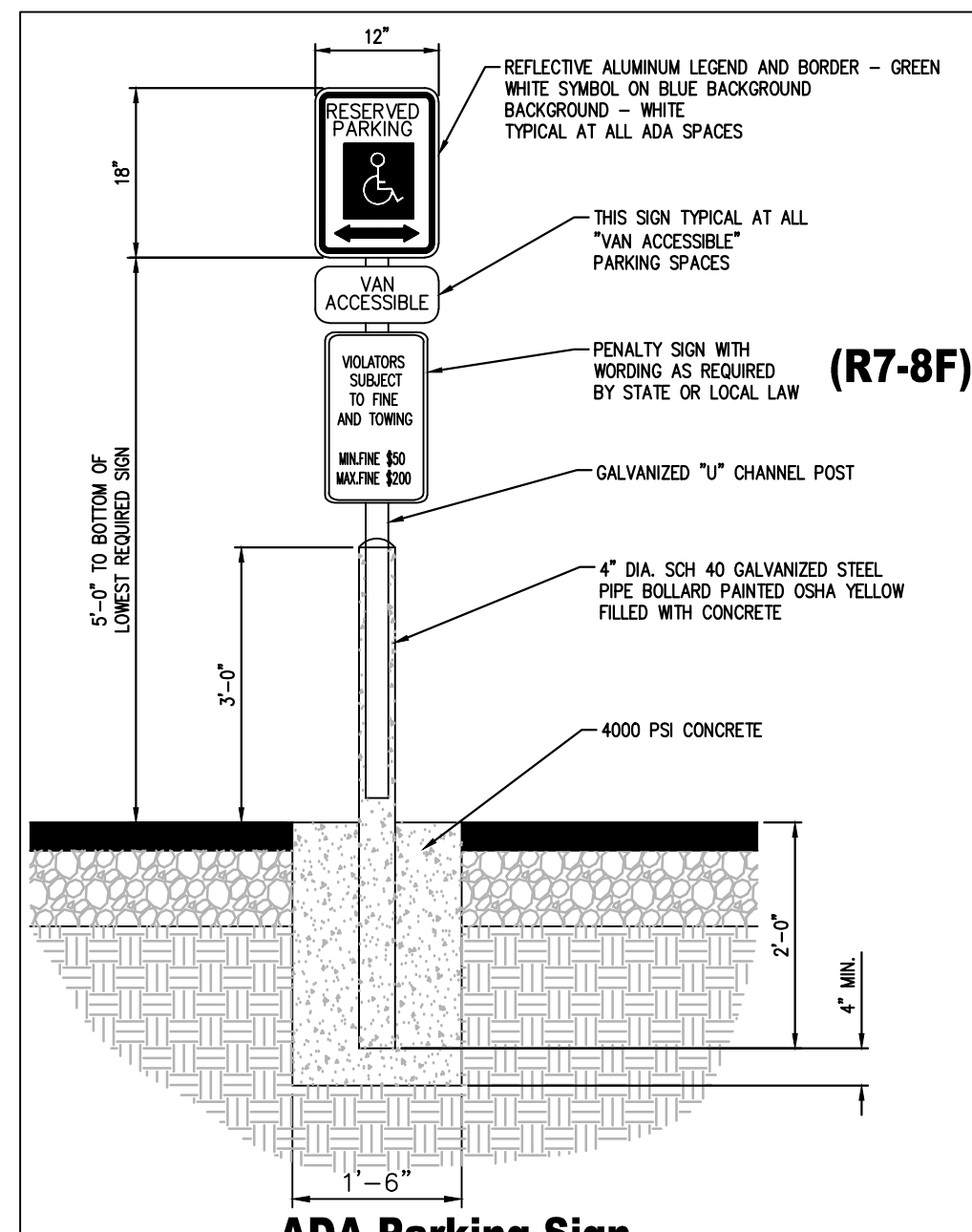
Concrete Sidewalk Detail (ON-SITE)

Note:

1. CONSTRUCT IN SECTIONS NOT OVER 10 FEET WITH VERTICAL JOINTS FOR FULL DEPTH OF PAVEMENT. THE JOINTS SHALL BE MADE BY REMOVABLE METAL PLATES SO THAT ADJACENT BLOCKS WILL BE MADE ON DIFFERENT DAYS.
2. EXPANSION JOINTS LOCATED 30' O.C.
3. TOOLED JOINTS LOCATED 5' O.C.
4. SIDEWALK IS TO BE LIGHT BROOM FINISHED IN THE DIRECTION OF SIDEWALK WIDTH.
5. ALL MATERIAL AND CONSTRUCTION PROCEDURES SHALL COMPLY WITH THE CITY OF BETHLEHEM ORDINANCE.
6. ALL SIDEWALK OUTSIDE OF THE ROW SHALL USE ABOVE DETAIL. ALL SIDEWALK WITHIN THE ROW SHALL FOLLOW THE CITY STANDARD "CONSTRUCTION STANDARD No. 1".

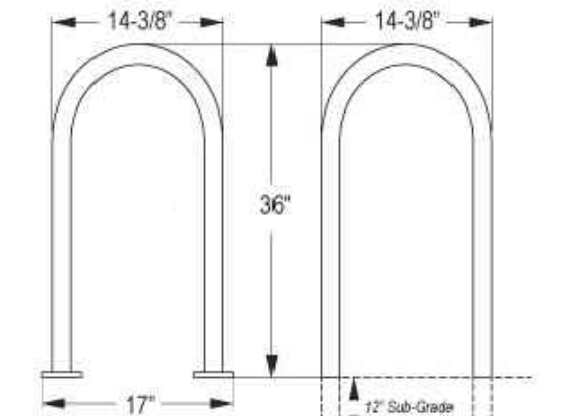


Typical Light Duty Paving Section (Parking Lots)

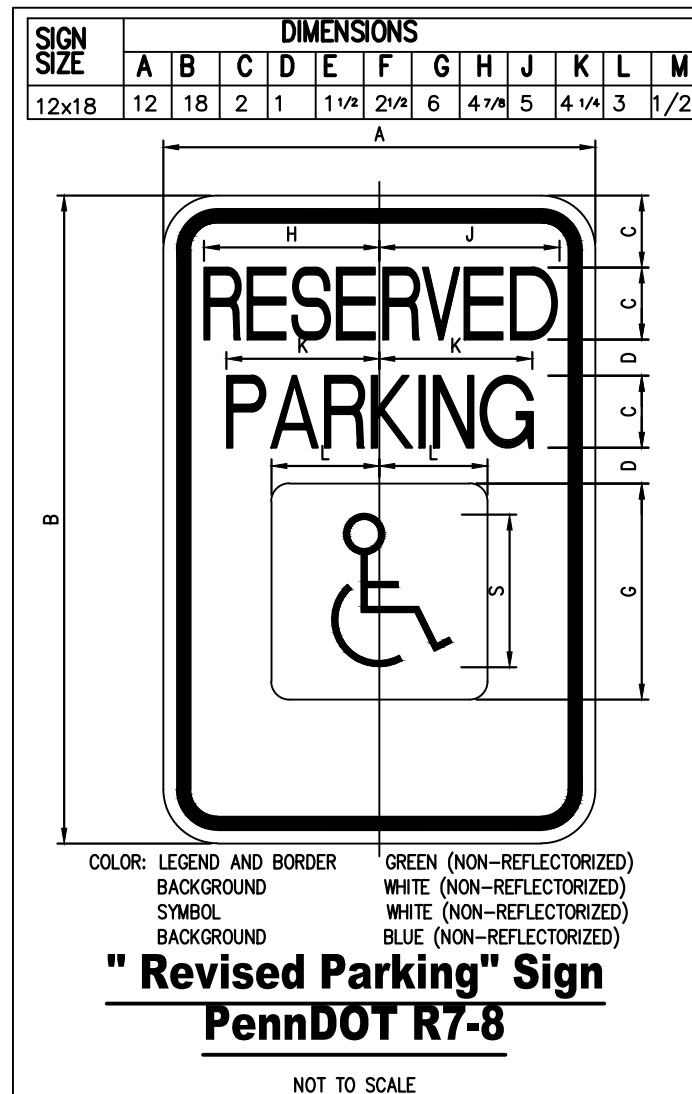


ADA Parking Sign

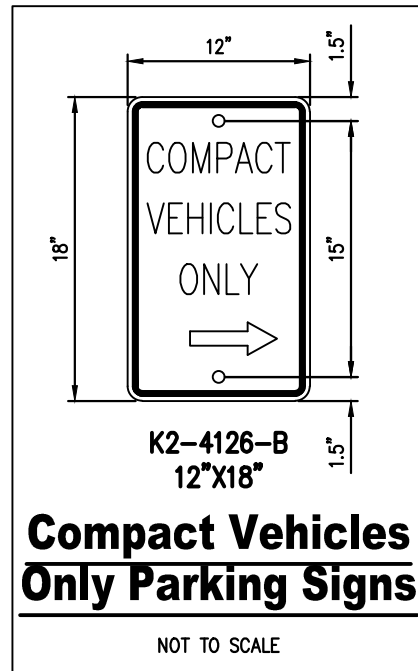
NOTE:
ONE AT EACH ADA SPACE. WHERE ADA SPACES FACE EACH OTHER WITHOUT WALKWAY, THERE SHALL BE ONE POST WITH SIGNS MOUNTED BOTH SIDES.



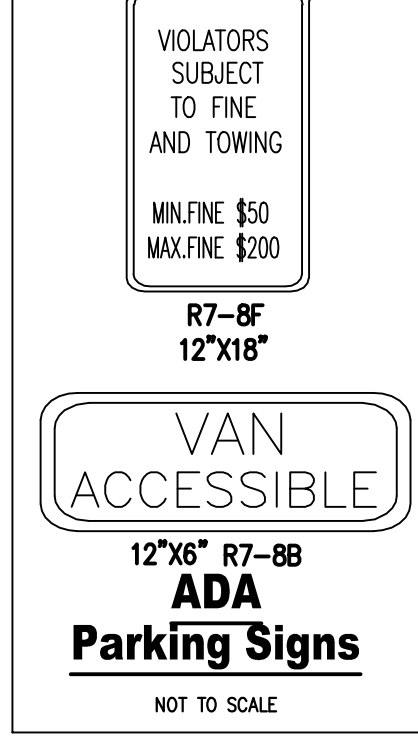
Inverted U Bicycle Rack



" Revised Parking" Sign PennDOT R7-8

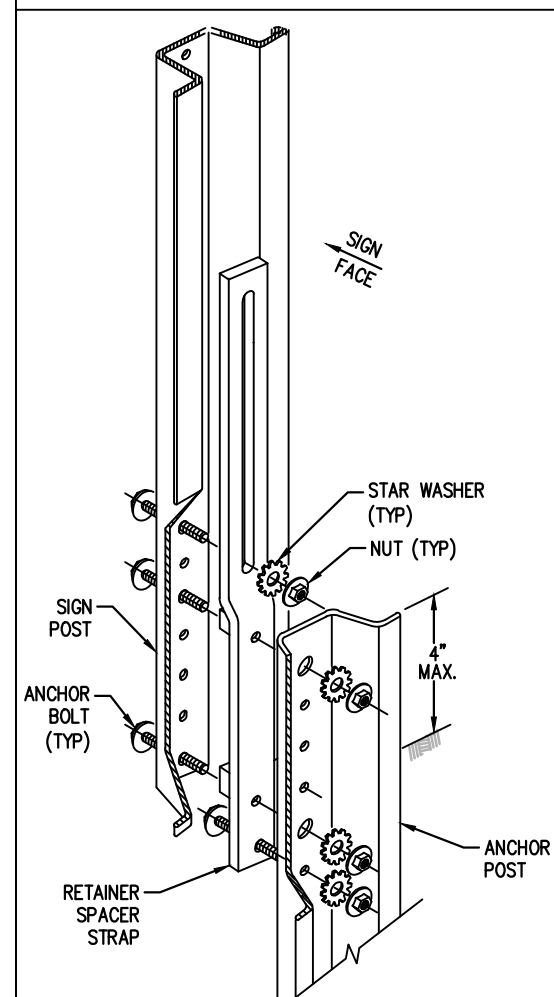


Compact Vehicles Only Parking Signs

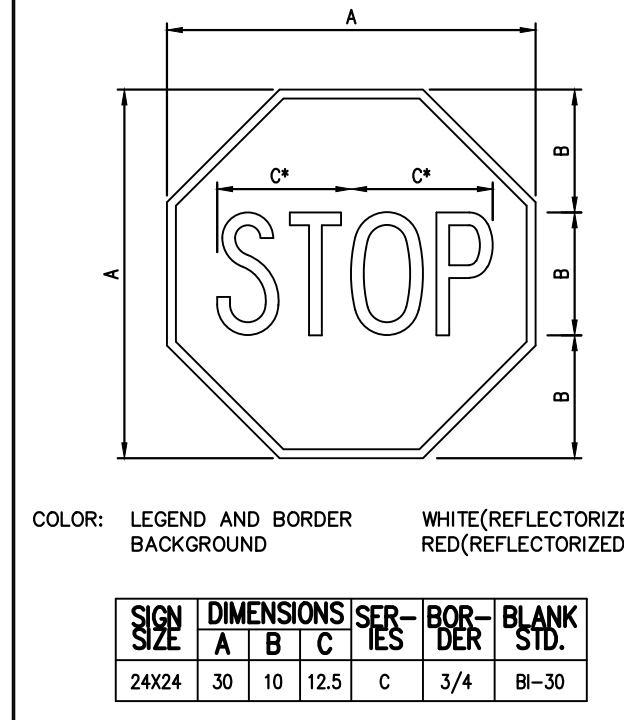


VAN ACCESSIBLE

ADA Parking Signs

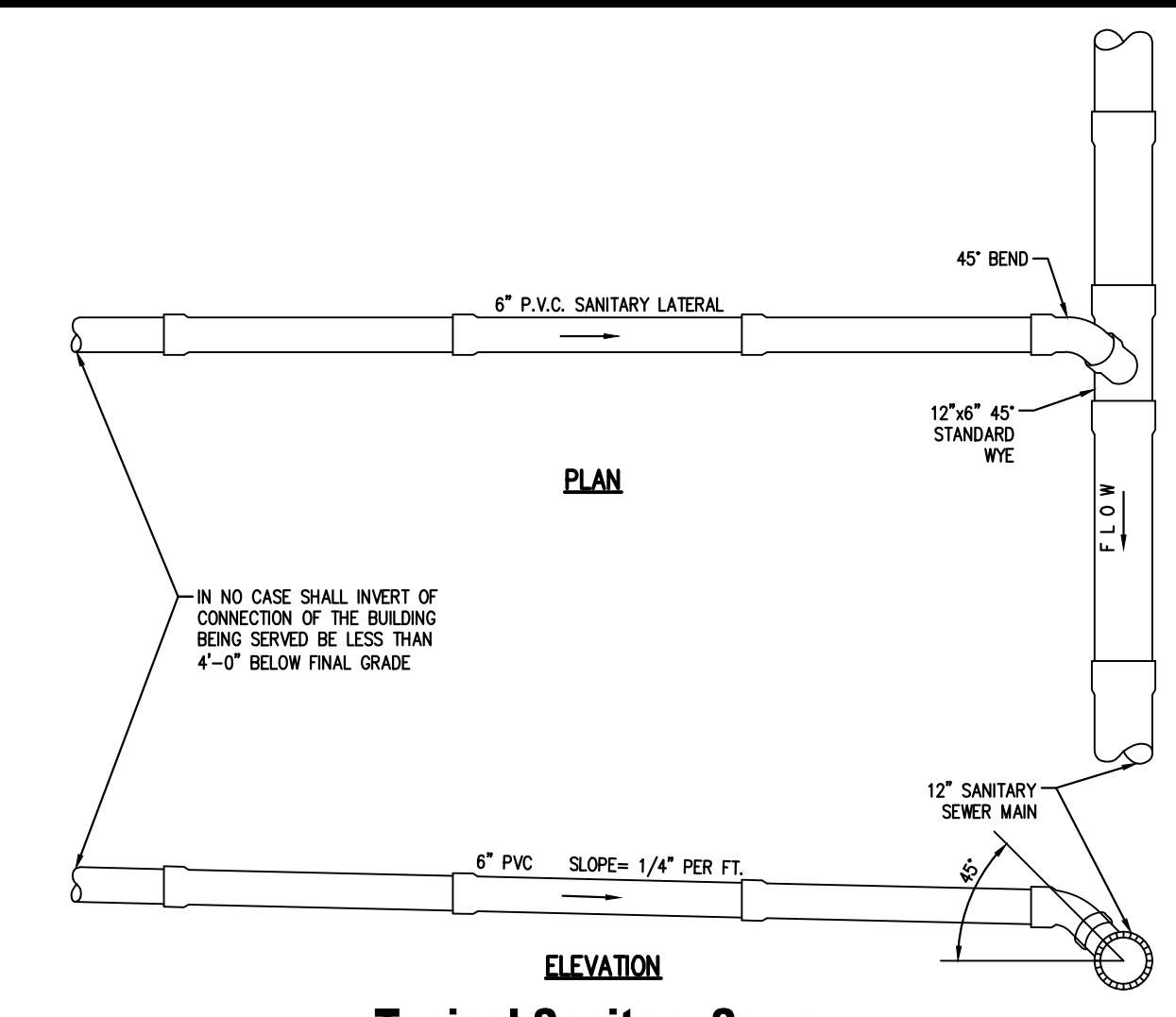


Break Away Sign Post Installation Detail

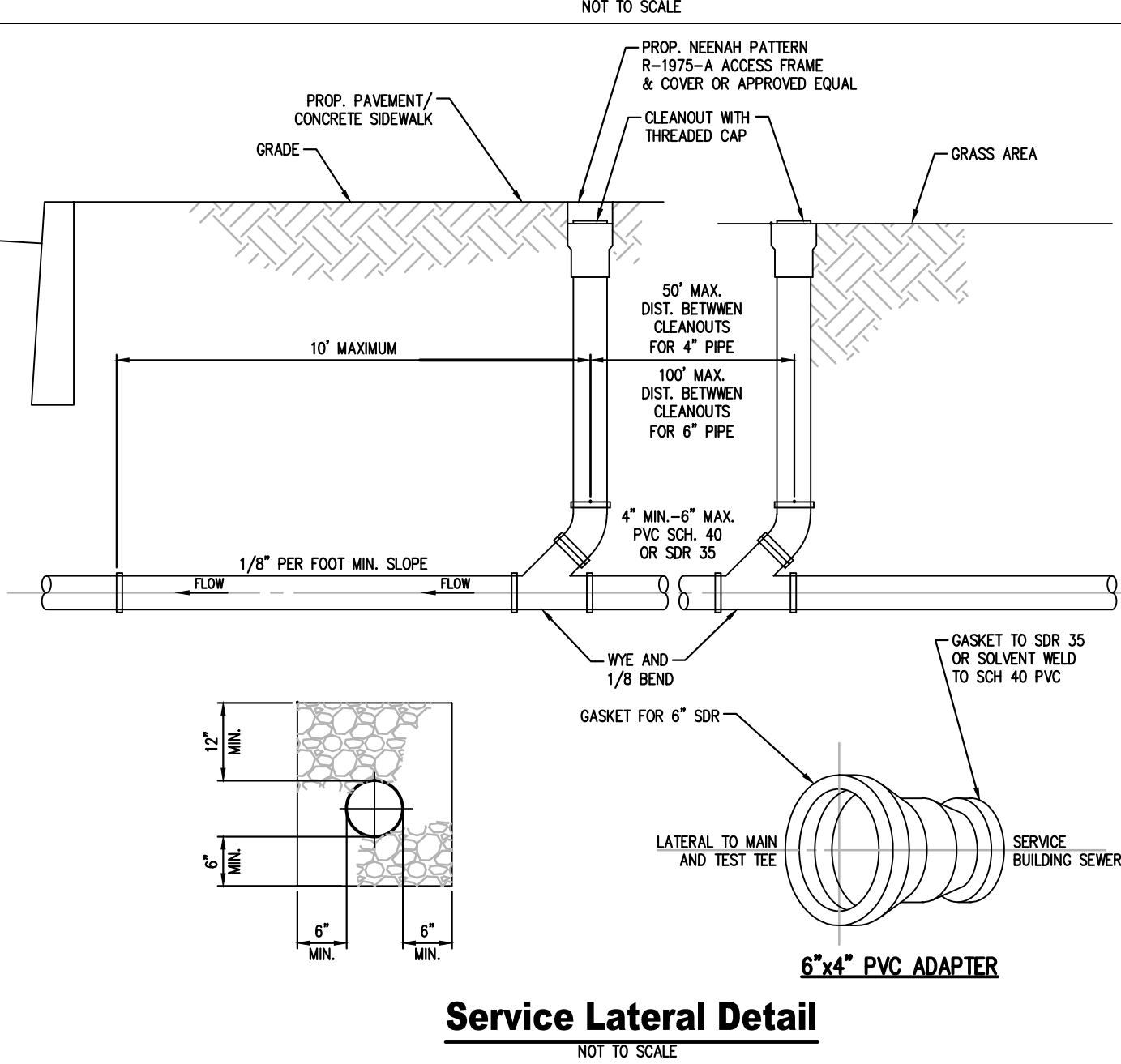


STOP Sign Detail

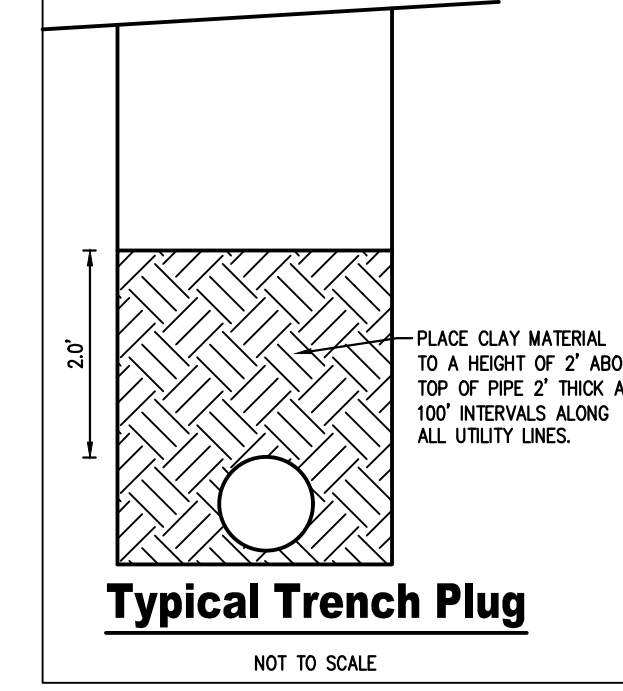
STOP Sign Detail



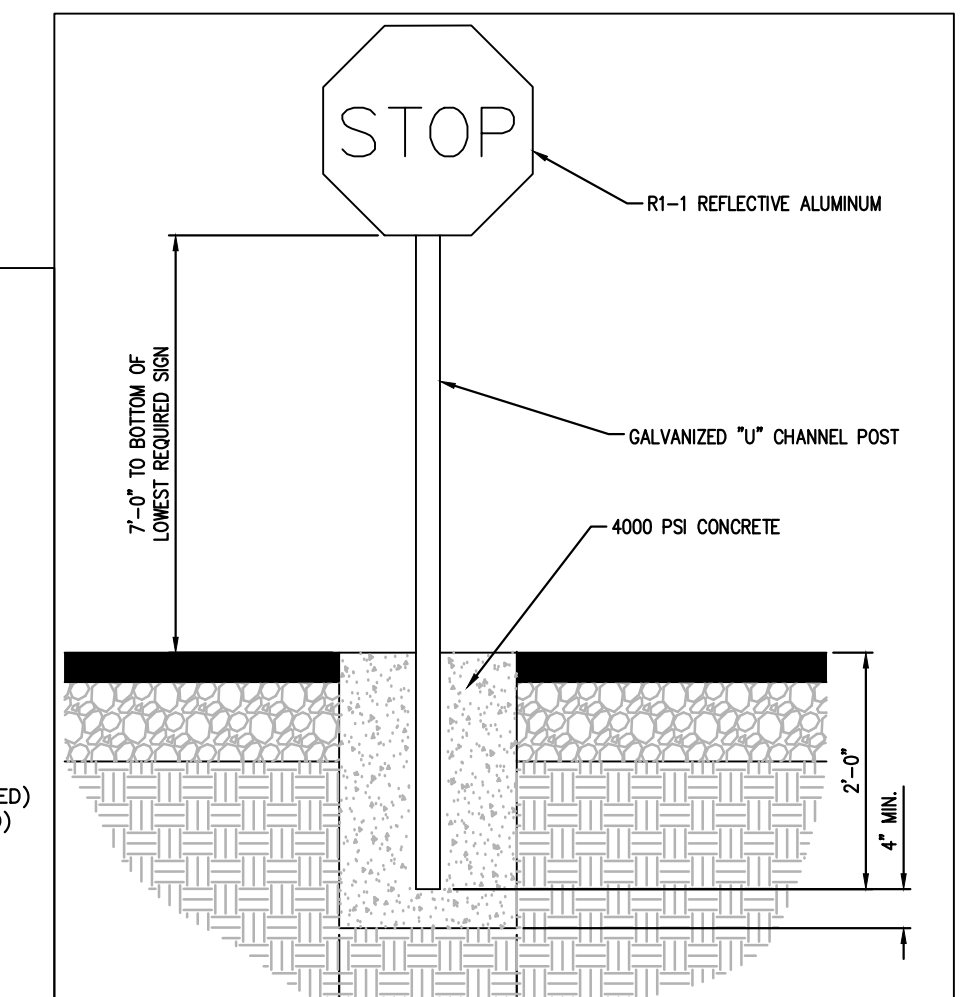
Typical Sanitary Sewer Lateral Connection



Service Lateral Detail





Typical Trench Plug



Stop Sign Detail

PRELIMINARY/FINAL LAND DEVELOPMENT
TRU BY HILTON

 <div>HanoverEngineering</div>	<div>Bethlehem Office</div> <div>252 Broadhead Road, Suite 100 Bethlehem, PA 18017-8944</div> <div>HanoverEng.com</div>	<div>CITY OF BETHLEHEM NORTHAMPTON COUNTY PENNSYLVANIA</div>	<div>PLAN TITLE: CONSTRUCTION DETAILS</div> <div>PROJECT TITLE: LOT 9B — LVPV VII — 1610 SPILLMAN DRIVE</div>	SEAL		NO.	REVISIONS	DATE	DRAWN BY: ECB	CHECKED BY: AB
				1		PER CITY & LVP COMMENTS	08/21/23	DATES: NOT TO SCALE	06/21/23	PROJECT NO. 4415(Tru)

6-14-121	RENCHING & BACKFILLING BY CUSTOMER / JOINT TRENCH CUSTOMER REFERENCE SPECIFICATION	6-14-121
Sheet 7		Sheet 7

NOT TO SCALE

BOX PAD EXCAVATION

10' - 1 PAD
15' - 2 PADS
18' - 3 PADS

EXCAVATION AREA FOR BOX PAD

FINISH GRADE

BOX PAD

BOTTOM OF EXCAVATION

BEDDING MATERIAL BY CUSTOMER

PLAN VIEW

ELEVATION

10' OPENING

48"

72"

BOX PAD

11' OPENING

SIDE PROPERTY LINE

24" MAIN TRENCH

12"

24"

10' - 1 PAD

15' - 2 PADS

18' - 3 PADS

STONE SCREENINGS WITH FINES BY CUSTOMER

CONDUIT ROUTE

FRONT PROPERTY LINE

6-14-121_5507.dwg

DISTRIBUTION CONSTRUCTION SPECIFICATIONS

PPL ELECTRIC UTILITIES CORPORATION

Issue Date: 9/1/04 Drafter: JLL Rev.: 1

Sponsor: *John S. Brown*

Approved: *John S. Brown*

LRE-Distribution Standards

[illegible]

Figure 30.10.30-3: Recommended Common Trench Installation - Main Lines (not to scale)
* Wire must be 6" from pipe (below, next to, or above)

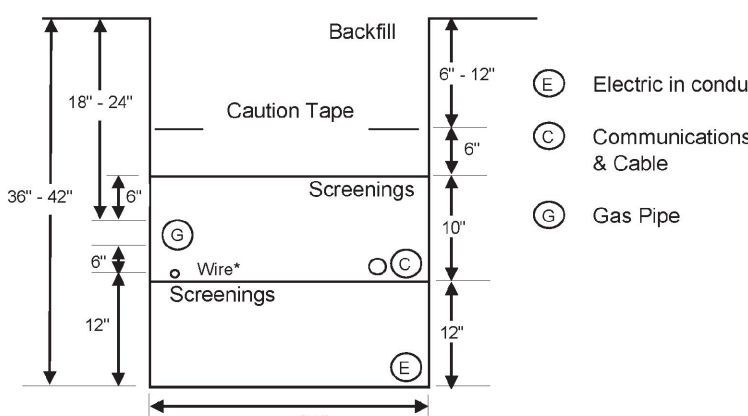


Figure 30.10.30-4: Recommended Common Trench Installation - Service Lines (not to scale)
* Wire must be 6" from pipe (below, next to, or above)

UGI TRENCHING AND BACKFILLING (LATEST VERSION)

