

**Shade Tree Commission of
Radnor Township
Wayne, Pennsylvania**

AGENDA

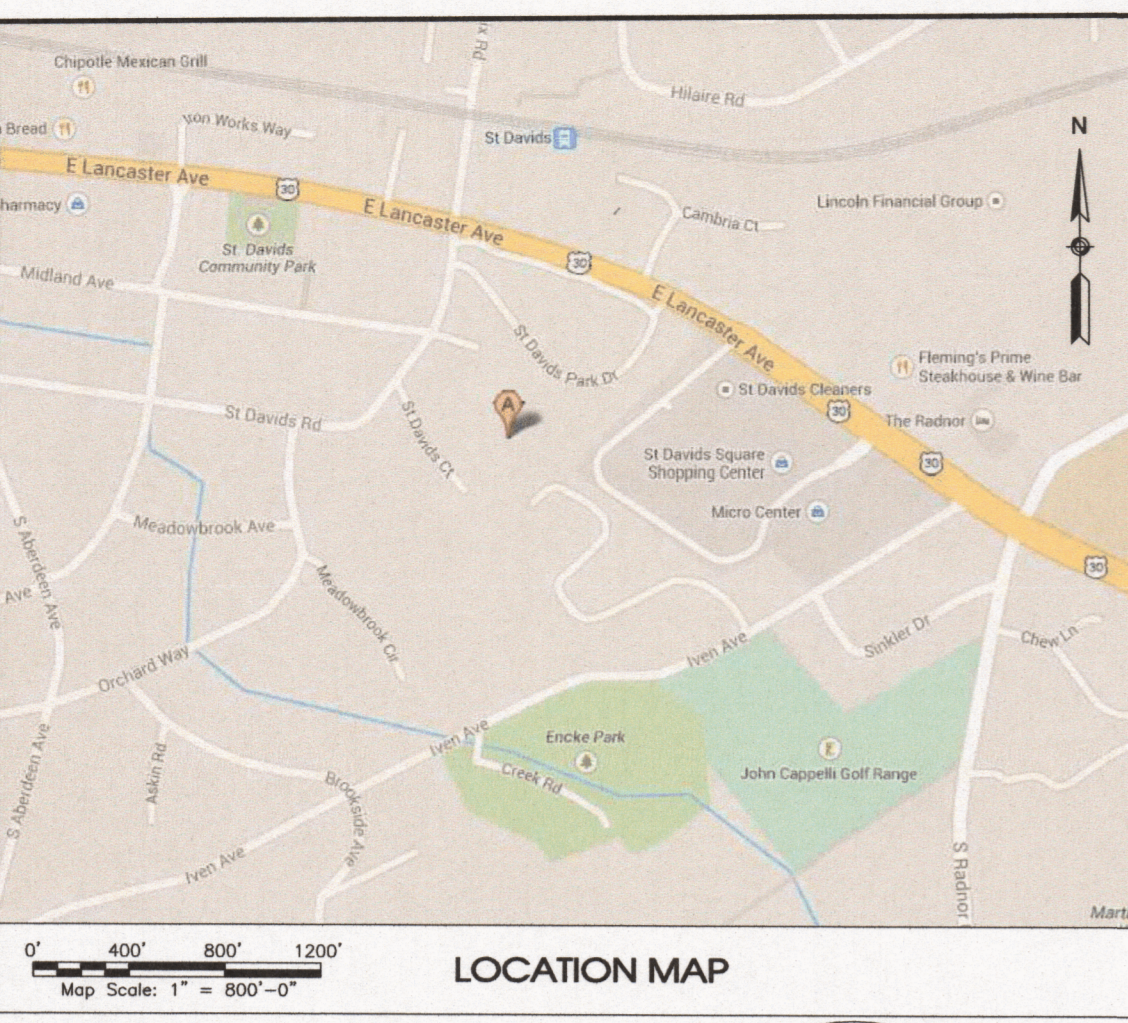
**Wednesday
March 25, 2015
6:30 PM**

214 St. Davids Court GP # 15-17
Residential additions, patio & walkways
125 CY of dirt (keep on site)

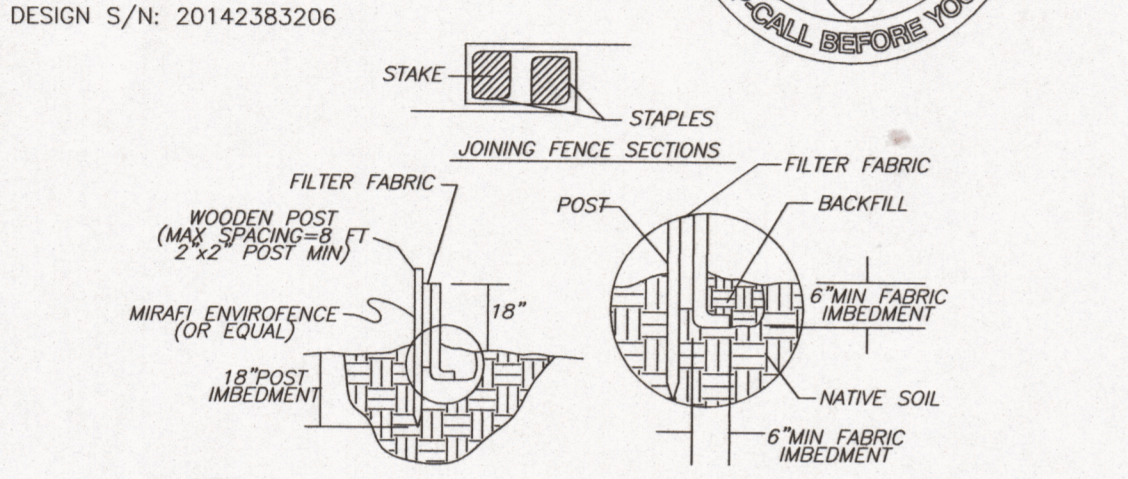
227 / 229 Plant Avenue SD # 2015-SD-01
Consolidate lots, demo existing structures and construct (4) townhomes
8 trees to be removed
9 replacement trees provided
4 street trees provided

600 Maplewood Avenue GP # 15-32
Relocate swimming pool on already approved plan

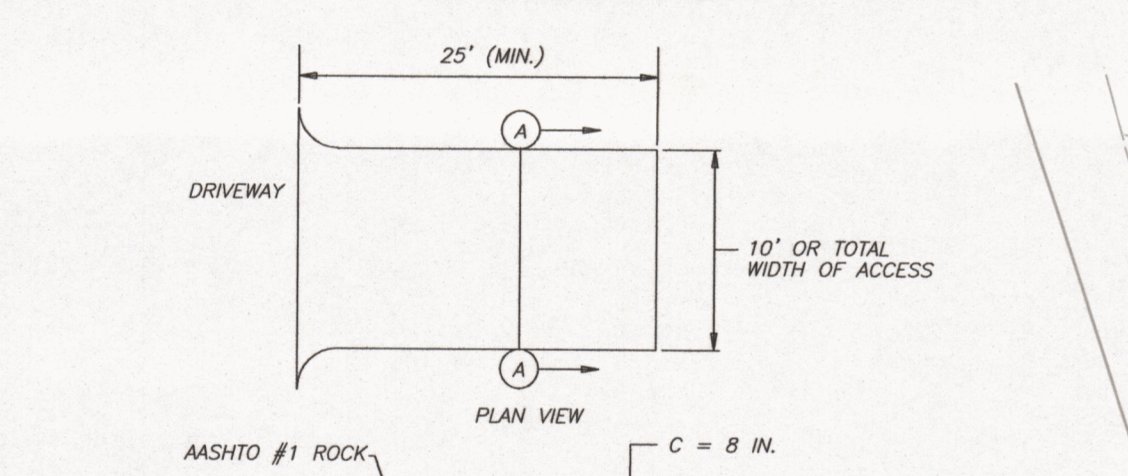
***Hazardous Tree Removals
Approved for removal by Township Arborist***



NOTE: THE EXACT LOCATION AND DEPTH OF EXISTING UTILITIES CANNOT BE GUARANTEED. ALL UTILITIES DEPICTED ON THIS PLAN HAVE BEEN DEVELOPED FROM ABOVE GROUND OBSERVATIONS AND/OR EXISTING RECORDS. CONTRACTOR MUST VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. PENNSYLVANIA STATE LAW REQUIRES NOTIFICATION TO 1-800-242-1776 3-10 BUSINESS DAYS PRIOR TO ANY EXCAVATION.



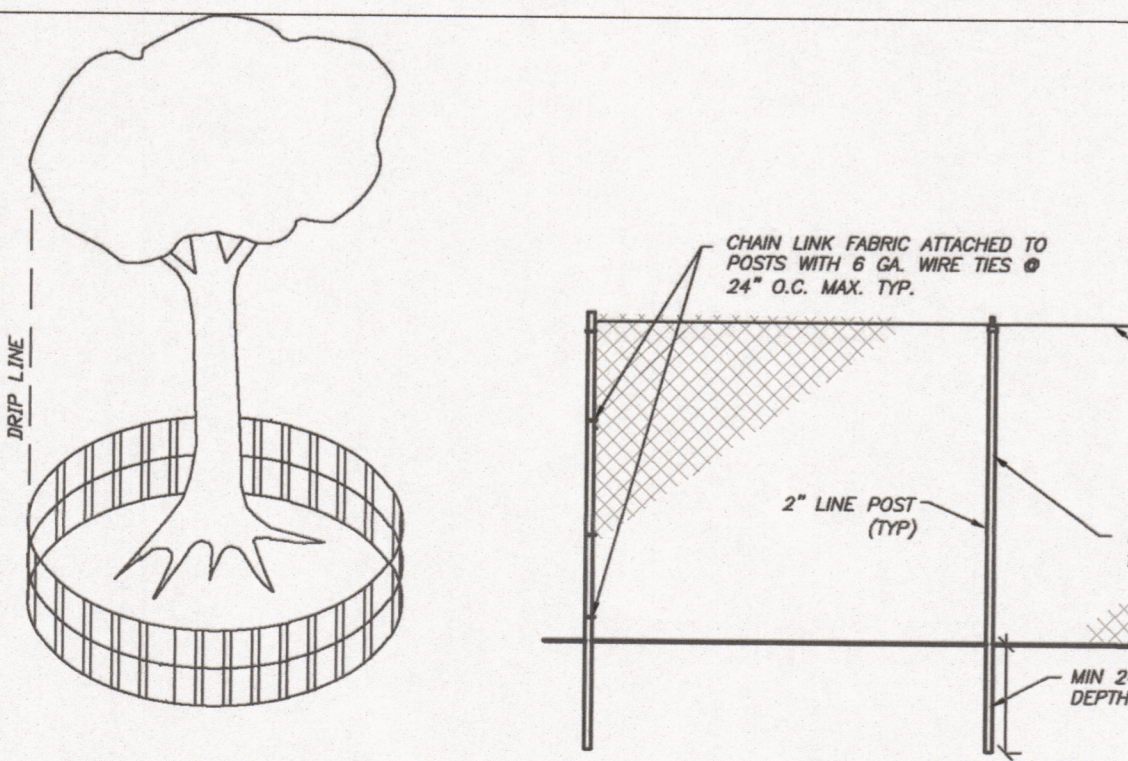
NOTES:
 1. POSTS SHALL BE SPACED AT 8 FT MAXIMUM C-C.
 2. FILTER FABRIC FENCE MUST BE INSTALLED AT LEVEL GRADE, BOTH ENDS OF THE FENCE SECTION MUST BE EXTENDED UPSLOPE AT LEAST 8 FT AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT.
 3. FABRIC FENCE SHOULD BE INSTALLED WITH A DITCH-WITCH OR SIMILAR DEVICE.
 4. ANY SILT FENCE THAT HAS BEEN UNDERMINED OR OVERTOPPED SHOULD BE IMMEDIATELY REPLACED WITH A ROCK FILTER OUTLET (SEE DETAIL).
 5. SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE ABOVE GROUND HEIGHT OF THE FENCE.



MAINTENANCE: Rock Construction Entrance thickness shall be constantly maintained to the specified dimensions by adding rock. A stockpile shall be maintained on site of this purpose. At the end of each construction day, all sediment deposited on paved roadways shall be removed and returned to the construction site.

TREE LEGEND

AL ALNANTHUS	MC MULBERRY
AS ASH	MG MAGNOLIA
AV ARBORVITAE	MJ J. MAPLE
BE BEECH	OK OAK
BR BIRCH	P PINE
CE CEDAR	SA SASSAPARILLA
CH CHESTNUT	SG SWEETGUM
EM ELM	SW SWEETWOOD
FR FRUIT	TL TUPERO
FR FRUIT	TL TUPERO
HB HACKBERRY	TU TULIP POPLAR
HK HICKORY	WA WALNUT
HM HEMLOCK	WY WILLOW
HO HOLLY	WP WHITE PINE
MA MAPLE	KD KOUSA DOGWOOD



ALL WOODY VEGETATION TO BE REMOVED WITHIN 50 FEET OF A BUILDING SITE. FENCING SHALL BE PROTECTED FROM EQUIPMENT DAMAGE BY COVERING EXISTING SURFACES WITH A 2" THICK LAYER OF GRANULAR MATERIAL. FENCING SHALL BE INSTALLED AS SHOWN ON THIS PLAN. LOCATION SHALL BE SUBJECT TO APPROVAL BY THE TOWNSHIP ENGINEER AND/OR CONTRACTOR.

- EROSION AND SEDIMENTATION CONTROL NOTES**
1. EROSION AND SEDIMENT BMPs MUST BE CONSTRUCTED, STABILIZED, AND FUNCTIONAL BEFORE SITE DISTURBANCE BEGINS WITHIN THE TRIBUTARY AREAS OF THESE BMPs.
 2. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPs MUST BE REMOVED. AREAS DISTURBED DURING REMOVAL OF THE BMPs MUST BE STABILIZED IMMEDIATELY.
 3. CONTRACTOR MUST WASH VEHICLE TIRES PRIOR TO LEAVING SITE. SHOULD WASHING TIRES PROVE INEFFECTIVE, CONTRACTOR MUST INSTALL ROCK CONSTRUCTION ENTRANCE.
 4. CONTRACTOR MUST CLEAN DRIVEWAY AND ROAD OF ANY SEDIMENT AT THE END OF EACH WORK DAY.
 5. STOCKPILE HEIGHTS MUST NOT EXCEED 35 FEET. STOCKPILE SLOPES MUST BE 2:1 OR FLATTER.
 6. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPs MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPs AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RETENING 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.

- CONSTRUCTION STAGING**
- CONTRACTOR MUST NOTIFY TOWNSHIP 48 HOURS PRIOR TO BEGINNING OF CONSTRUCTION TO SCHEDULE ANY REQUIRED TOWNSHIP INSPECTIONS.
- STAGE 1. INSTALL SILT FENCE AND TREE PROTECTION FENCING.
 - STAGE 2. INSTALL ROCK CONSTRUCTION ENTRANCE IF CLEANING OF TIRES ON EXISTING DRIVEWAY IS INEFFECTIVE.
 - STAGE 3. FIELD LOCATE ALL UTILITIES AND COORDINATE WITH UTILITIES FOR SHUTOFF/REMOVAL/CONSTRUCTION AS NECESSARY. IMMEDIATELY STABILIZE ANY DISTURBED AREAS.
 - STAGE 4. REMOVE IMPROVEMENTS AS SHOWN. IMMEDIATELY STABILIZE AREAS WITH MULCH AND SEED MIX UNLESS IMMEDIATE CONSTRUCTION TAKES PLACE ON THESE AREAS.
 - STAGE 5. STRIP TOPSOIL AND ROUGH GRADE AREA OF PROPOSED IMPROVEMENTS. IMMEDIATELY STABILIZE DISTURBED AREAS WITH THE APPROPRIATE SEED MIXTURE. TOPSOIL STOCKPILES ARE TO BE LIMITED TO 35 FEET WITH A MAXIMUM SLOPE OF 2:1. IMMEDIATELY STABILIZE STOCKPILE.
 - STAGE 6. CONSTRUCT BUILDING FOOTINGS AND FOUNDATION.
 - STAGE 7. COMPLETE CONSTRUCTION. IMMEDIATELY STABILIZE DORMANT DISTURBED AREAS WITH THE APPROPRIATE SEED MIXTURE.
 - STAGE 8. AFTER ALL AREAS TRIBUTARY TO THE RAIN GARDEN HAVE ACHIEVED A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER (STONE PAVING). CONSTRUCT THE EXISTING RAIN GARDEN SUB-GRADE SHALL NOT BE COMPACTED OR SUBJECT TO EXCESSIVE CONSTRUCTION EQUIPMENT TRAFFIC. ANY SEDIMENT THAT ACCUMULATES IN RAIN GARDEN SHALL BE REMOVED.
 - a. EXCAVATE RAIN GARDEN TO PROPOSED INVERT DEPTH AND SCARIFY THE EXISTING SOIL SURFACES. DO NOT COMPACT IN-SITU SOILS.
 - b. BACKFILL RAIN GARDEN WITH AMENDED SOIL AS SHOWN. OVERFILLING IS RECOMMENDED TO ACCOUNT FOR SETTLEMENT. LIGHT HAND TAMPING IS ACCEPTABLE IF NECESSARY.
 - c. PRE-SOAK THE PLANTING SOIL PRIOR TO PLANTING VEGETATION TO AID IN SETTLEMENT.
 - d. COMPLETE FINAL GRADING TO ACHIEVE PROPOSED DESIGN ELEVATIONS LEAVING SPACE FOR UPPER LAYER OF MULCH.
 - e. PLANT VEGETATION AS SHOWN AND LAY MULCH.
 - STAGE 9. ONCE SITE IS STABILIZED WITH 70% COVERAGE, CONTRACTOR MUST REMOVE EROSION AND SEDIMENTATION CONTROLS. AREAS DISTURBED DURING REMOVAL MUST BE STABILIZED IMMEDIATELY.

ANTICIPATED START OF CONSTRUCTION - WINTER/SPRING 2015
 ANTICIPATED COMPLETION OF CONSTRUCTION - FALL 2015

- STORMWATER MANAGEMENT (BMP) FACILITY OWNERSHIP, OPERATIONS AND MAINTENANCE NOTES**
- ALL STORMWATER CONVEYANCE AND MANAGEMENT FACILITIES SHOWN ON THIS PLAN ARE PERMANENT. NO PERSON SHALL MODIFY, REMOVE, FILL, LANDSCAPE OR ALTER ANY EXISTING STORMWATER CONTROL OR BMP FACILITY OR ANY FACILITY OF A STORMWATER CONTROL PROGRAM WITHOUT THE WRITTEN APPROVAL OF THE MUNICIPALITY. NO PERSON SHALL PLACE ANY STRUCTURE, FILL, LANDSCAPE OR SUCCESORING SHALL BE RESPONSIBLE FOR THE PERPETUAL MAINTENANCE OF THE FACILITY. THE TOWNSHIP MAINTAINS THE RIGHT, BUT NOT THE RESPONSIBILITY, IF THE BMP WITHOUT THE WRITTEN APPROVAL OF THE MUNICIPALITY. THE PROPERTY OWNERS AND THEIR HEIRS, ASSIGNS OR SUCCESSORS SHALL BE ALTERED OR REMOVED UPON WRITTEN NOTIFICATION BY THE TOWNSHIP. THE DEFECTS SHALL PROMPTLY BE CORRECTED BY THE PROPERTY OWNER UPON THE FAILURE TO CORRECT THE DEFECTS WITHIN TIME SPECIFIED BY THE TOWNSHIP. THE OWNER, HIS/HER HEIRS, ASSIGNS, OR SUCCESSORS DO HEREBY AUTHORIZE THE TOWNSHIP AND/OR THEIR CONTRACTOR TO ENTER UPON THE SAID PROPERTY AND CAUSE THE REPAIR, MAINTENANCE, AND/OR CORRECTIONS TO BE MADE. A LEV MAY BE FILED AGAINST THE PROPERTY FOR THE COSTS OF ALL CORRECTIONS INCLUDING APPLICABLE ENGINEERING AND/OR ATTORNEY'S FEES. THE TOWNSHIP IS UNDER NO OBLIGATION TO TAKE ANY ACTION. MAINTENANCE RESPONSIBILITIES SHALL INCLUDE THE FOLLOWING:
- SHORT TERM/ROUTINE MAINTENANCE OF RAIN GARDEN:**
1. MAINTAINING UPSTREAM VEGETATED COVER IN ORDER TO PREVENT THE FORMATION OF NONVEGETATED AREAS THAT COULD ERODE AND CAUSE SEDIMENT BUILDUP IN THE RAIN GARDEN.
 2. KEEPING ALL DEBRIS, INCLUDING GRASS CLIPPINGS, LEAVES CLEAR OF INLET AND OUTLET STRUCTURES AND REMOVING ANY DEBRIS.
 3. INLET AND OUTLET STRUCTURES SHALL BE INSPECTED MONTHLY.
 4. WHILE VEGETATION IS BEING ESTABLISHED, PRUNING AND WEEDING MAY BE REQUIRED.
 5. DETRITUS MAY ALSO NEED TO BE REMOVED EVERY YEAR. PERENNIAL PLANTINGS MAY BE CUT DOWN AT THE END OF THE GROWING SEASON.
 6. MULCH SHOULD BE RE-SPREAD WHEN EROSION IS EVIDENT AND BE REPLISHED AS NEEDED. ONCE EVERY 2 TO 3 YEARS THE ENTIRE AREA MAY REQUIRE MULCH REPLACEMENT.
 7. RAIN GARDENS SHOULD BE INSPECTED AT LEAST TWO TIMES PER YEAR FOR SEDIMENT BUILDUP, EROSION, VEGETATIVE CONDITIONS, ETC.
 8. DURING PERIODS OF EXTENDED DROUGHT, RAIN GARDENS MAY REQUIRE WATERING.
 9. TREES AND SHRUBS SHOULD BE INSPECTED TWICE PER YEAR TO EVALUATE HEALTH AND REPLACED AS NEEDED.
- LONGTERM/ROUTINE MAINTENANCE OF RAIN GARDEN:**
1. VISIBLE SIGNS OF SEDIMENT ACCUMULATION
 2. INSECTS AND/OR ODOOR BECOMING PROBLEMS
 3. STANDING WATER LASTING LONGER THAN 72 HRS
 4. VISIBLE DAMAGE TO EMBANKMENTS
 1. AERATE COMPACTED AREAS TO PROMOTE INFILTRATION AND/OR DIG UP AND REPLACE AREAS WITH 30% COMPOST TO 70% SOIL MIX FOR A DEPTH OF 2 FEET.
 2. REMOVE ACCUMULATED SEDIMENT/SOLLIVAYS.
 3. RECONSTRUCT EMBANKMENTS AND SPILLWAYS.

STORMWATER MANAGEMENT CALCULATIONS

REQUIRED RECHARGE VOLUME = 1" x PROPOSED IMPERVIOUS (SF) x 1/12" = 1x1499/12 = 125 CF

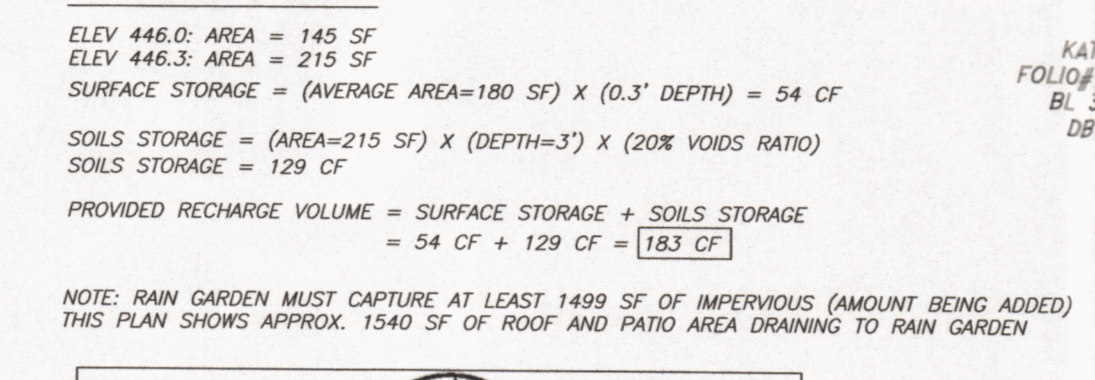
REQUIRED WATER QUALITY VOLUME (WQV) = [(P)(0.05 + 0.009(I))(AREA)] / 12 WQV = [(1 INCH)(0.05 + 0.009(100%))(1499 SF)] / 12 / FT = 113 CF

RAIN GARDEN DEAD STORAGE:

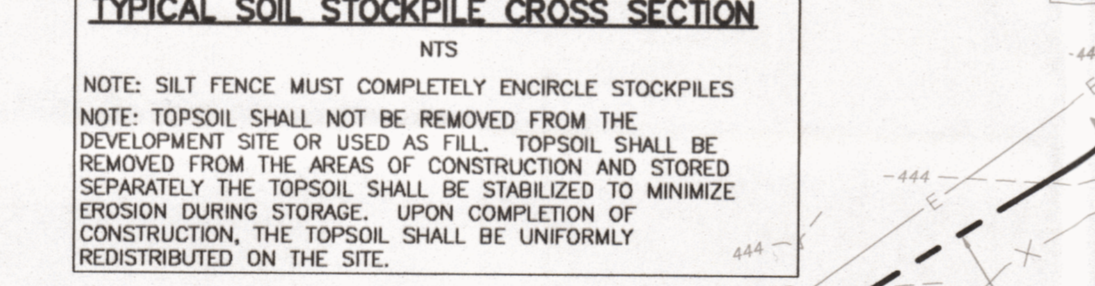
ELEV 446.0: AREA = 145 SF
 ELEV 446.3: AREA = 215 SF
 SURFACE STORAGE = (AVERAGE AREA x 180 SF) x (0.3' DEPTH) = 54 CF

SOILS STORAGE = (AREA x 215 SF) x (DEPTH x 3") x (20% VOIDS RATIO)
 SOILS STORAGE = 129 CF

PROVIDED RECHARGE VOLUME = SURFACE STORAGE + SOILS STORAGE = 54 CF + 129 CF = 183 CF

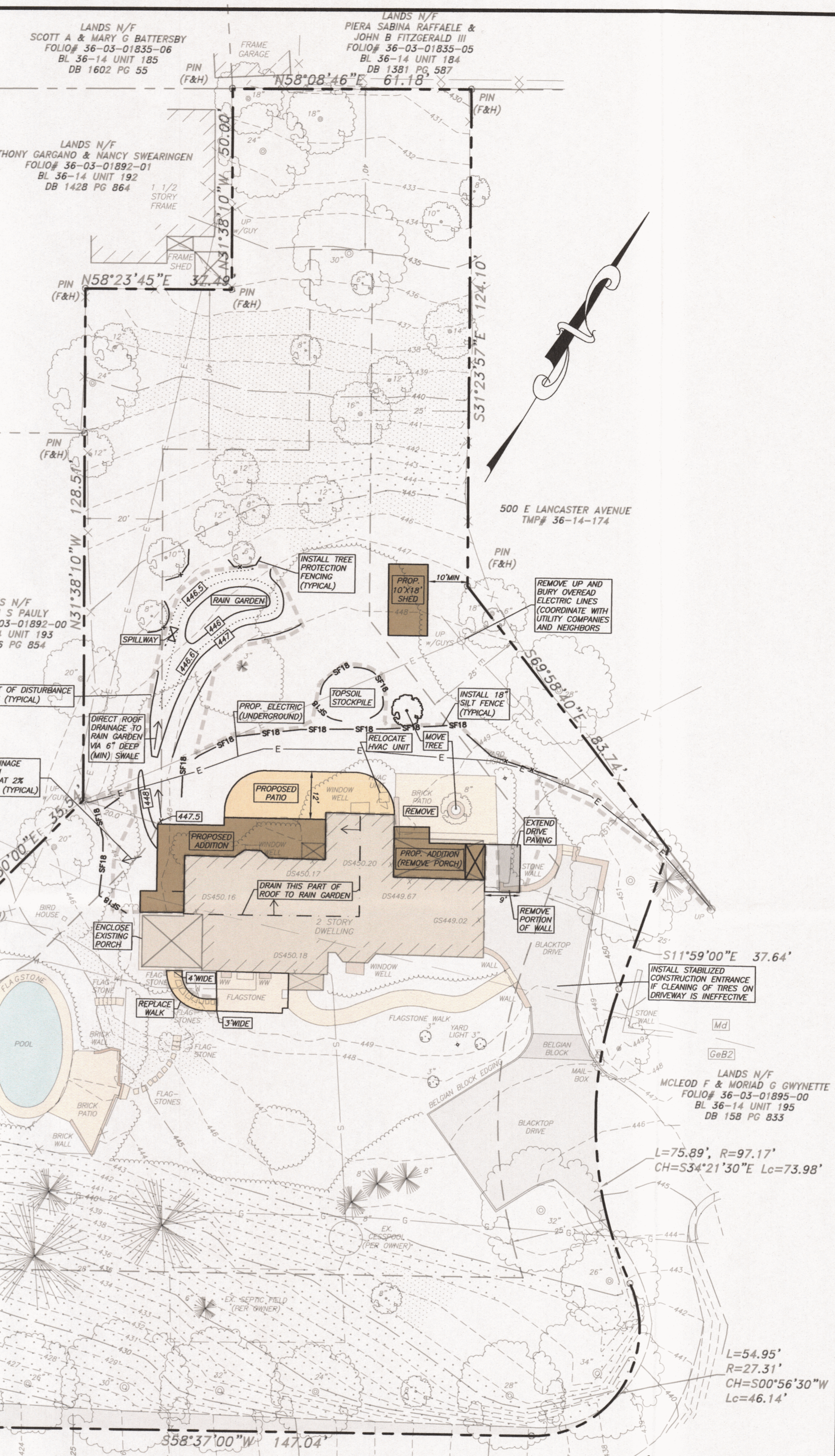


NOTE: SILT FENCE MUST COMPLETELY ENCLOSE STOCKPILES
 NOTE: TOPSOIL SHALL NOT BE REMOVED FROM THE DEVELOPMENT SITE OR USED AS FILL. TOPSOIL SHALL BE REMOVED FROM THE AREA OF CONSTRUCTION AND STORED SEPARATELY. THE TOPSOIL SHALL BE STABILIZED TO MINIMIZE EROSION DURING STORAGE. UPON COMPLETION OF CONSTRUCTION, THE TOPSOIL SHALL BE UNIFORMLY REDISTRIBUTED ON THE SITE.



RAIN GARDEN EMBANKMENT NOTES

1. ALL TOPSOIL AND VEGETATION SHOULD BE STRIPPED FROM THE EMBANKMENT AREA.
2. AREAS WHICH ARE TO RECEIVE FILL SHOULD BE PROTECTED WITH A SEGMENTED PAD OR "SHEEPSFOOT" ROLLER PRIOR TO FILL PLACEMENT. ANY SOFT OR UNSTABLE AREAS NOTED DURING THE PROOFROLLING SHALL BE UNDERCUT TO SUITABLE MATERIALS AS DIRECTED BY THE TOWNSHIP ENGINEER.
3. ALL EMBANKMENT FILL SHALL CONSIST OF INORGANIC, READILY COMPACTIBLE, PREDOMINANTLY CLAY SOIL FREE OF TRASH, FROZEN MATERIAL, ORGANIC INCLUSIONS, OR EXCESS MOISTURE. FILL SHALL BE PLACED IN HORIZONTAL LIFTS WITH A MAXIMUM THICKNESS OF EIGHT INCHES (8"). EACH LIFT SHALL BE COMPACTED IN ACCORDANCE AND TO THE STANDARDS OF THE STANDARD PROCTOR TEST (ASTM D998).



RAIN GARDEN PLANTINGS

QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	TYPE
3	CORNUS FLORIDA	FLOWERING DOGWOOD	5-7"	TREE
7	ILEX VERTICILLATA	WINTERBERRY HOLLY	18-24"	SHRUB
*	DRYOPTERIS MARGINALIS	MARGINAL SHIELD FERN		PLANT

PLANTING NOTES:

1. RAIN GARDEN DESIGN AND PLANT SPECIES PER PA STORMWATER BMP MANUAL.
2. MINIMUM SHRUBS AND TREES IN RAIN GARDEN**
3. THIS IS THE MINIMUM NUMBER OF PLANTINGS. ADDITIONAL PLANTINGS ARE RECOMMENDED AS APPROPRIATE. CONSULTATION WITH A LANDSCAPE DESIGNER FAMILIAR WITH RAIN GARDENS IS HIGHLY RECOMMENDED FOR SPECIES TYPE AND PLANTING LOCATIONS. IF PLANTING PLAN ALTERED, APPLICANT/OWNER SHALL SUBMIT TO TOWNSHIP FOR APPROVAL.
5. UNLESS ALTERED BY A LANDSCAPE DESIGNER, USE THE BELOW SPACING:
 TREES PLANTED AT LEAST 10' APART, SHRUBS AT LEAST 4' APART, PLANTS 18" APART, AND GRASSES 12" APART. SPECIES SHALL BE PLANTED TOGETHER IN GROUPS OF AT LEAST 3.

- PROJECT NARRATIVE**
- THE APPLICANT PROPOSES TO REMOVE AN PORCH, PATIO, AND WALKWAYS AND CONSTRUCT HOUSE ADDITIONS, A PATIO, AND WALKWAYS.
- A RAIN GARDEN IS PROPOSED TO PROVIDE GROUNDWATER RECHARGE, WATER QUALITY TREATMENT, THE PROPOSED IMPERVIOUS SURFACES IS UNDER 1500 SF.
- DURING CONSTRUCTION EROSION AND SEDIMENT CONTROL IS ACCOMPLISHED THROUGH LIMITED DISTURBANCE, IMMEDIATE STABILIZATION, AND SILT FENCING. THE LIMIT OF DISTURBANCE IS 4700 SF.
- GENERAL NOTES**
1. PARCEL INFORMATION: FOLIO# 36-03-01893-00 Block 36-14 Unit 194 DEED BOOK 2278 PAGE 745
 2. GROSS LOT AREA: 59,134 Sq. Ft. LOT AREA CLEAR OF ROAD RIGHT OF WAY: 52,619 Sq. Ft.
 3. ELEVATION BENCHMARK IS BASED ON APPROXIMATE USGS DATUM.
 4. THIS SURVEY IS NOT TO BE USED FOR TREE REMOVAL ALONG PROPERTY LINES. TREE LOCATIONS ARE APPROXIMATE. FOR TREE REMOVAL PURPOSES, PROPERTY LINES MUST BE FIELD MARKED WITH STAKES SET TO ESTABLISH EXACT TREE OWNERSHIP.
 5. THERE IS NO IDENTIFIABLE FLOOD PLAIN AREAS WITHIN THE PROJECT SITE AS ILLUSTRATED ON COMMUNITY PANEL NUMBER 42028-0287 OF THE FLOOD INSURANCE RATE MAP AS PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY FOR THE TOWNSHIP OF RADNOR, PENNSYLVANIA.
 6. EXISTING SUBSURFACE UTILITY INFORMATION INDICATED IS BASED UPON VISUAL FIELD INSPECTION BY JEFFERY P. TURNER. PLS. SUCH INFORMATION CONCERNING THE SIZE, LOCATION, DEPTH, QUANTITY, ETC. OF SUBSURFACE UTILITIES IS APPROXIMATE IN NATURE AND HAS BEEN OBTAINED AS A SUPPLEMENT TO THE SITE SURVEY. THE INFORMATION PROVIDED IS REPRESENTATIVE OF SUBSURFACE CONDITIONS ONLY AT LOCATIONS AND DEPTHS WHERE SUCH INFORMATION WAS OBTAINED. THERE IS NO EXPRESSED OR IMPLIED AGREEMENT THAT UTILITY ACCORDINGLY, UTILITY INFORMATION SHOWN SHOULD NOT BE RELIED UPON FOR CONSTRUCTION PURPOSES. IT IS INCIDENT UPON THE CONTRACTOR TO VERIFY THE SIZE, LOCATION, DEPTH, QUANTITY, ETC. OF ALL UTILITIES BEFORE EXCAVATION.
 7. SOILS TAKEN FROM THE FOLLOWING WEBSITE: [HTTP://WEBSITESURVEY.SC.EDU/USDA.GOV](http://websitesurvey.sc.edu/USDA.GOV). THE SITE'S SOIL ATTRIBUTE DATA IS DERIVED FROM THE NRCS SOIL DATA MAP: Cb82 - GLENGLIFF CHANNERY SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED, HYDROLOGIC GROUP B. M4 - MADE LANK, GABRIO AND DABASE MATERIALS, HYDROLOGIC GROUP C.

ZONING SUMMARY

ORDINANCE ITEM	REQUIREMENT	EXISTING	PROPOSED
MIN. LOT AREA	20,000 SF	59,134 SF	59,134 SF
MIN. LOT WIDTH @ BLDG	100 FT	170 FT	170 FT
MIN. SETBACKS			
FRONT	40 FT	116 FT	116 FT
REAR	40 FT	181 FT	181 FT
SIDE (INDIVIDUAL/AGGREGATE)	20 FT/45 FT	31 FT/67 FT	20 FT/56 FT
MAX. BUILDING HEIGHT	35 FT	35 FT MAX	35 FT MAX
MAX. BUILDING COVERAGE	18%	4.4%	5.5%
MAX. IMPERVIOUS COVERAGE	30%	15.4%	16.8%

IMPERVIOUS COVERAGE SUMMARY

BUILDINGS	EXISTING	REMOVE	ADD	PROPOSED
BUILDINGS	2,589	250	929	3,268
WALKS	1,478	94	500	1,884
PATIOS	775	345	0	430
DRIVES	4,270	0	66	4,336
TOTAL (SQ FT)	9,112	689	1,495	9,918
Total Site Impervious Coverage	15.4%			16.8%

APPLICANTS' ACKNOWLEDGEMENT:

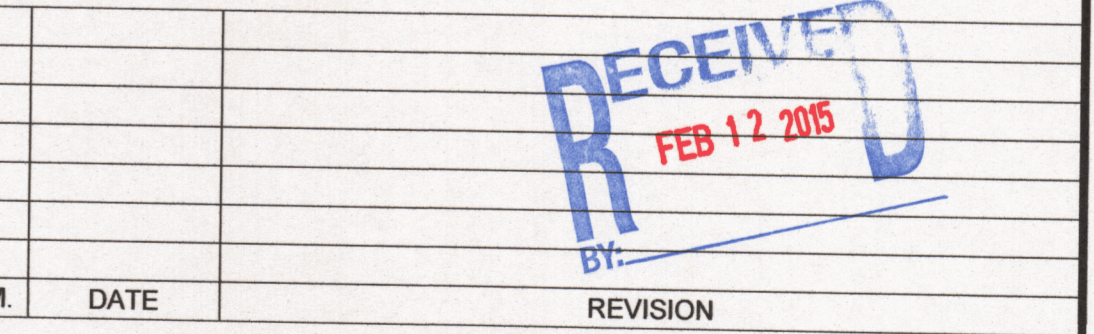
I ACKNOWLEDGE THAT ANY REVISION TO THE APPROVED DRAINAGE PLAN AND EROSION AND SEDIMENT CONTROL PLAN MUST BE APPROVED BY RADNOR TOWNSHIP.

PAUL WISSEL _____ DATE _____
 DEBORAH WISSEL _____ DATE _____

DESIGN ENGINEER'S CERTIFICATION:

I HEREBY CERTIFY THAT THE DRAINAGE PLAN MEETS ALL DESIGN STANDARDS AND CRITERIA OF THE RADNOR TOWNSHIP STORMWATER MANAGEMENT ORDINANCE.

Peter L. Cokonis
 PETER L. COKONIS, P.E. 2/11/15
 DATE

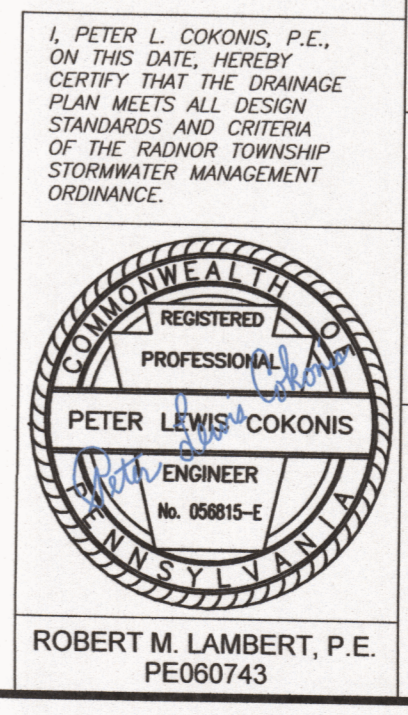


PLAN PREPARED BY:
SITE ENGINEERING CONCEPTS, LLC
 P.O. BOX 1992
 SOUTHEASTERN, PA 19399
 P: 610-240-0450 F: 610-240-0451 E: INFO@SITE-ENGINEERS.COM

PLAN PREPARED FOR:
PAUL AND DEBORAH WISSEL
 214 ST. DAVIDS COURT
 ST. DAVIDS, PA 19087

RADNOR TOWNSHIP DELAWARE COUNTY PENNSYLVANIA
 DATE: FEBRUARY 11, 2015

PERMIT PLAN SHEET 1 of 1
 SCALE: 1"=20'



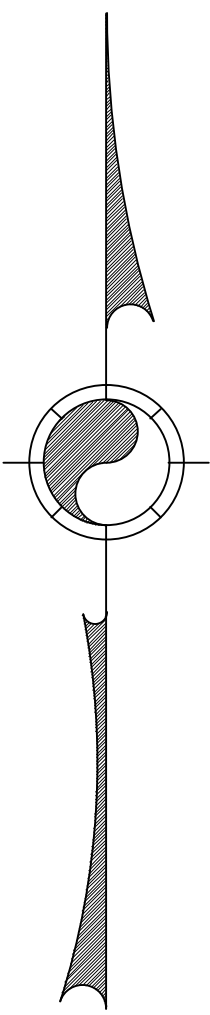
ALL LOCATIONS OF EXISTING UTILITIES, SHOWN ON THIS PLAN, HAVE BEEN DEVELOPED FROM FIELD LOCATIONS OF VISIBLE ABOVE GROUND UTILITY STRUCTURES AND INFORMATION FURNISHED BY THE UTILITY COMPANIES.

ALL LOCATIONS SHOULD BE CONSIDERED APPROXIMATE. COMPLETENESS OR ACCURACY OF THE LOCATIONS AND DEPTH OF ALL STRUCTURES CANNOT BE GUARANTEED. CONTRACTORS MUST VERIFY ALL LOCATIONS AND DEPTHS OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE THE START OF ANY WORK.

AS PER ACT 187 HOUSE BILL 2627, BEFORE THE START OF ANY EXCAVATION WORK THE CONTRACTOR SHALL NOTIFY THE AFFECTED UTILITY COMPANIES THROUGH THE PENNSYLVANIA "ONE CALL SYSTEM" 1-800-242-1776 THREE DAYS PRIOR TO THE START OF ANY EXCAVATION. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO THE START OF ANY CONSTRUCTION.

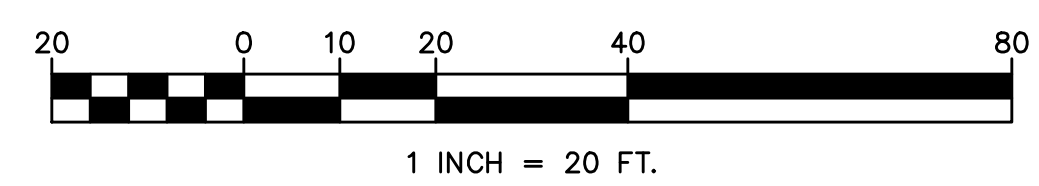
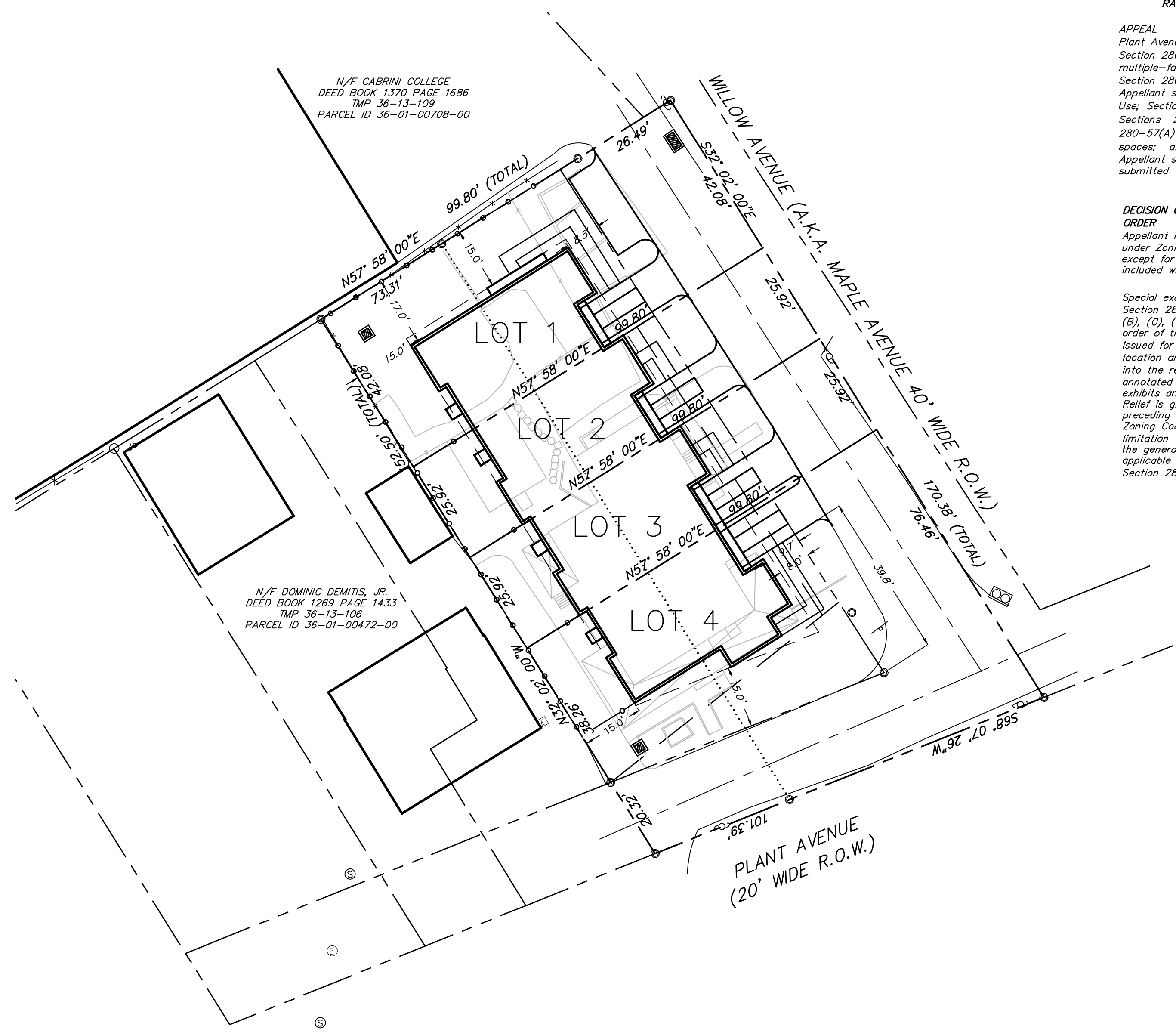
REQUESTED WAIVERS:

- §255-27.C.(1), §255-27.C.(2) and §255-27.C.(4) TO NOT REQUIRE THE RESERVATION OR DEDICATION OF ADDITIONAL RIGHT-OF-WAY, INCREASE THE WIDTH OF THE EXISTING CARTWAY OR TO PROVIDE CURBING AND SIDEWALK FOR WILLOW AVENUE AND PLANT.
- §255-27.I.(3) TO PROVIDE A DRIVEWAY LESS THAN REQUIRED 40'-FEET FROM AN INTERSECTION.
- §255-36. & §255-52.A. TO NOT PROVIDE CURBING ALONG STREETS.
- §255-37.K. & §255-51.A. TO NOT PROVIDE SIDEWALKS IN DEVELOPMENTS WHERE LOT AREAS ARE 20,000-SF OR LESS.
- §255-47.C. TO NOT PROVIDE IMPROVEMENTS TO THE ADJOINING STREETS TO THE WIDTH OF THE REQUIRED CARTWAY.



LINE TYPE LEGEND

---	PROPERTY LINE
---	ROW LINE
-X-X-X-	FENCE LINE
---	PROPOSED RIGHT OF WAY
---	PROPOSED BUILDING SETBACK
---	PROPOSED EASEMENT
---	PROPOSED FENCE



GENERAL NOTES

- OWNER/APPLICANT: DTL HOLDINGS, LP
126 E. BEECH TREE LANE
WAYNE, PA 19087
PHONE: 610-293-0101, ext. 101
- LOT DATA:
PARCEL 36-01-00473-00 5,363 SF GROSS (4,663 SF NET)
PARCEL 36-01-00474-00 10,749 SF GROSS (5,644 SF NET)
- TOTAL GROSS AREA 16,112 SF (0.3699 AC)
- TOTAL AREA NET OF ROW 10,307 SF (0.2366 AC)
- SOIL INFORMATION TAKEN FROM THE SOIL SURVEY FOR CHESTER AND DELAWARE COUNTIES PREPARED BY THE UNITED STATES DEPARTMENT OF AGRICULTURE.
- THE PROPOSED DEVELOPMENT WILL CONTAIN FOUR (4) TOWNHOUSE UNITS.
- THE EXISTING LOT LINE BISECTING THE TWO PARCELS IS TO BE ELIMINATED AND FOUR (4) NEW PARCELS CREATED.
- THIS SITE IS CURRENTLY SERVED BY PUBLIC DOMESTIC WATER SERVICE PROVIDED BY AQUA PENNSYLVANIA. PUBLIC WATER SERVICE IS TO BE EXTENDED TO THE NEW TOWNHOUSE UNITS.
- THIS SITE IS CURRENTLY SERVED BY PUBLIC SEWER SERVICE. A NEW SEWER EXTENSION IS PROPOSED TO SERVE THE NEW TOWNHOUSE UNITS.
- THE PROPOSED DEVELOPMENT WILL BE SET UP AS A PLANNED COMMUNITY WITH MAINTENANCE RESPONSIBILITIES FOR THE SITE TO BE THE RESPONSIBILITY OF THE COMMUNITY MEMBERS.
- THE STORMWATER MANAGEMENT DETENTION AND COLLECTION SYSTEM AND INLETS ARE TO BE OWNED AND MAINTAINED BY THE HOME OWNERS ASSOCIATION. ROOF DRAINS ARE TO BE TIED INTO THE STORMWATER MANAGEMENT DETENTION SYSTEMS.
- THE STORMWATER MANAGEMENT FACILITIES ARE DESIGNED FOR THE ADDED IMPERVIOUS COVERAGE SHOWN ON THE PLANS (19,546 SF) AS WELL AS AN ADDITIONAL 100 SF ON EACH LOT FOR FUTURE DEVELOPMENT, WHICH MUST BE CONTROLLED BY THE STORMWATER MANAGEMENT SYSTEM.
- A PLANNING MODULE OR EXEMPTION IS REQUIRED FROM PADEP.

RADNOR TOWNSHIP ZONING HEARING BOARD APPEAL NO. 2923

APPEAL OF DTL HOLDINGS, LP, premises located at 227 - 229 Plant Avenue and zoned C-3. Appellant seeks a special exception under Zoning Code Section 280-101(A)(1) in order to change the existing nonconforming use of a multiple-family dwelling to four townhomes, and a special exception under Zoning Code Section 280-105(F) to permit parking in the front yard setback. In the alternative, Appellant seeks variances from the following Zoning Code provisions: Section 280-55-Use; Section 280-56(A) - lot area and width; Section 280-56(B) - building area; Sections 280-56 (C), (D), and (E) - front, side and rear yard setbacks; Section 280-57(A) - required buffer; Section 280-103(B)(1) - required number of parking spaces; and Section 280-105(F) - parking within the front yard setback. In addition, Appellant seeks any other zoning or alternative relief required pursuant to the Plans submitted with this Appeal.

DECISION OF THE ZONING HEARING BOARD ORDER

Appellant has withdrawn its requests for parking relief except for the special exception under Zoning Code Section 280-105(F) to permit parking in the front yard setback, so except for the aforesaid special exception, relief from parking requirements no longer is included within the scope of this Appeal.

Special exceptions under Zoning Code Section 280-101(A)(1) and under Zoning Code Section 280-105(F) are granted. Variances under Zoning Code Sections 280-56 (A), (B), (C), (D), and (E), and under Zoning Code Section 280-57(A), are granted. The order of the Zoning Officer is reversed, and an appropriate permit is ordered to be issued for the construction of Appellant's proposed four townhomes, in the precise location and manner shown on those certain plans (the "Plans") which have been entered into the record as Appellant's Exhibits "A-4" and "A-5" (the "Plans") having been annotated by Appellant at the hearing, and otherwise in accordance with the other exhibits and testimony made part of the record, to the extent consistent with the Plans. Relief is granted only from the Zoning Code Sections specifically enumerated in the preceding sentence, and no relief is granted with respect to any other provision of the Zoning Code, or with respect to any other Township ordinances, including without limitation the Township's Subdivision and Land Development Ordinance. Without limiting the generality of the preceding sentence, no relief is granted with respect to any applicable parking requirements except only for a special exception under Zoning Code Section 280-105(F) to permit parking in the front yard setback.

PARKING TABULATION:

RESIDENTIAL:	
RESIDENTIAL PARKING REQUIRED	9
2 SPACES PER DWELLING UNIT (4)	8
1 VISITOR SPACE/4 UNITS	1
RESIDENTIAL PARKING PROVIDED:	
1 SPACE/GARAGE X 4 UNITS	4
1 SPACE/DRIVEWAY X 4 UNITS	4
VISITOR SPACE	1

LOT 1:

GROSS AREA = 4,200 SF (0.096 ACRES)
NET AREA = 2,886 SF (0.066 ACRES)
HSE. & PORCHES 1,094 S.F. (26.0%)
DRIVEWAY 74 S.F.
WALKS & MISC. 133 S.F.
TOTAL IMPERVIOUS COVERAGE 1,301 S.F. (30.9%)
FRONT YARD 8-FT
SIDE YARD N/A
REAR YARD 15-FT
BUILDING HEIGHT <35-FT

LOT 2:

GROSS AREA = 2,587 SF (0.059 ACRES)
NET AREA = 1,789 SF (0.041 ACRES)
HSE. & PORCHES 1,096 S.F. (42.4%)
DRIVEWAY 76 S.F.
WALKS & MISC. 46 S.F.
TOTAL IMPERVIOUS COVERAGE 1,218 S.F. (47.1%)
FRONT YARD 8-FT
SIDE YARD N/A
REAR YARD 15-FT
BUILDING HEIGHT <35-FT

LOT 3:

GROSS AREA = 2,587 SF (0.059 ACRES)
NET AREA = 1,797 SF (0.041 ACRES)
HSE. & PORCHES 1,096 S.F. (42.4%)
DRIVEWAY 78 S.F.
WALKS & MISC. 46 S.F.
TOTAL IMPERVIOUS COVERAGE 1,220 S.F. (47.2%)
FRONT YARD 8-FT
SIDE YARD N/A
REAR YARD 15-FT
BUILDING HEIGHT <35-FT

LOT 4:

GROSS AREA = 6,739 SF (0.155 ACRES)
NET AREA = 3,109 SF (0.071 ACRES)
HSE. & PORCHES 1,135 S.F. (16.8%)
DRIVEWAY 78 S.F.
WALKS & MISC. 93 S.F.
TOTAL IMPERVIOUS COVERAGE 1,306 S.F. (19.4%)
FRONT YARD 8-FT
SIDE YARD 15-FT
REAR YARD 15-FT
BUILDING HEIGHT <35-FT

GENERAL NOTES:

REFERENCE PLAN: BOUNDARY AND TOPOGRAPHIC SURVEY OF 227 & 229 PLANT AVENUE, PREPARED BY MOMENEE SURVEY GROUP, INC., DATED JUNE 19, 2014, LAST REVISED JUNE 24, 2014, FILE NO. 14-158.

- THIS PLAN REPRESENTS AN ACTUAL FIELD SURVEY PERFORMED ON THE PREMISES ON JUNE 9, 2014 AND DEPICTS CONDITIONS ON THAT DATE.
- THE EXISTENCE AND/OR LOCATION OF ALL SUBSURFACE UTILITIES SHALL BE CONSIDERED APPROXIMATE AND MUST BE FIELD VERIFIED BY ALL CONTRACTORS PRIOR TO CONSTRUCTION.
- THE VERTICAL DATUM SHOWN ON THIS PLAN IS PER NAVD 1988 OBTAINED VIA GPS/VRS NETWORK.
- THIS SURVEY AND PLAN WAS COMPLETED WITHOUT THE AVAILABILITY OF A CURRENT TITLE REPORT AND SUBJECT TO ANY FACTS THAT MAY BE DISCLOSED IN A FULL AND ACCURATE TITLE REPORT.
- IN ACCORDANCE WITH FEMA PANEL NUMBER 42045C0017E EFFECTIVE DATE NOVEMBER 18, 2009, PREMISES IS LOCATED IN ZONE X, AREAS DETERMINED TO BE OUTSIDE THE 0.2% CHANCE ANNUAL FLOOD PLAIN.

LOT DATA TMP 36-13-102:

227 PLANT AVENUE
PARCEL I.D. 36-01-00473-00
LOT AREA = 5,363 S.F. OR 0.123 ACRES (GROSS)
MINUS R.O.W. = (700 S.F.) 4,663 S.F. OR 0.107 ACRES (NET)

LOT DATA TMP 36-13-108:

229 PLANT AVENUE
PARCEL I.D. 36-01-00474-00
LOT AREA = 10,749 S.F. OR 0.246 ACRES (GROSS)
MINUS R.O.W. = (5,105 S.F.) 5,644 S.F. OR 0.129 ACRES (NET)

ZONING DISTRICT C-3 (SERVICE COMMERCIAL DISTRICT)

LOT AREA	30,000 S.F. MIN.
LOT WIDTH	150 FEET AT BLDG. LINE.
BLDG. AREA	35% MAX.
FRONT YARD	25 FEET MIN.(IF ABUTTING RESIDENTIAL DISTRICT).
SIDE YARD	20 FEET MIN.
REAR YARD	25 FEET OR 25% OF LOT DEPTH (WHICHEVER IS GREATER)
HEIGHT	35 FEET MAX.
IMPERVIOUS SURFACE	65% MAX.
RIPARIAN BUFFER	35' MIN.

FOR MORE DETAILED INFORMATION YOUR ATTENTION IS CALLED TO THE ZONING CODE OF RADNOR TOWNSHIP, LATEST EDITION.

STATE OF PENNSYLVANIA
COUNTY OF DELAWARE SS

ON THIS _____ DAY OF _____, 2015, BEFORE ME A NOTARY PUBLIC IN AND FOR THE COMMONWEALTH OF PENNSYLVANIA, THE UNDERSIGNED OFFICER, PERSONALLY APPEARED _____ WHO ACKNOWLEDGED HIMSELF TO BE THE _____ OF _____ A PENNSYLVANIA LIMITED PARTNERSHIP, AND THAT HE AS SUCH OFFICER OF SUCH BEING AUTHORIZED TO DO SO, EXECUTED THE FOREGOING INSTRUMENT FOR THE PURPOSES THEREIN CONTAINED BY SIGNING THE NAME OF THE LIMITED PARTNERSHIP BY HIM AS SUCH OFFICER.

WITNESS MY HAND AND SEAL THE DAY AND DATE ABOVE WRITTEN.

(SIGNATURE)

NOTARY PUBLIC OR OTHER OFFICER

MY COMMISSION EXPIRES: _____

Serial Number: 20141360518
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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MOMENEE & ASSOCIATES, INC.
REGISTERED PROFESSIONAL ENGINEER
MICHAEL J. BOWKER
ENGINEER PE061543

PRELIMINARY/FINAL LAND DEVELOPMENT PLANS
MOMENEE & ASSOCIATES, INC.
CIVIL ENGINEERS AND LAND SURVEYORS
924 COUNTY LINE ROAD, BRYN MAWR, PA 19010 PHONE: (610) 527-3030 FAX: (610) 527-9008

RECORD PLAN
227 & 229 PLANT AVENUE
RADNOR TOWNSHIP • DELAWARE COUNTY • PENNSYLVANIA

DATE: MARCH 16, 2015
SHEET NO. 2
OF 14
SCALE: 1" = 20'
FILE NO.: 14-158

ONE-CALL: 20141360518
DRAWN BY: MJB
CHECKED BY: MJB

OWNER/APPLICANT
DTL HOLDINGS, LP
126 E. BEECH TREE LANE
WAYNE, PA 19087

ALL LOCATIONS OF EXISTING UTILITIES, SHOWN ON THIS PLAN, HAVE BEEN DEVELOPED FROM FIELD LOCATIONS OF VISIBLE ABOVE GROUND UTILITY STRUCTURES AND INFORMATION FURNISHED BY THE UTILITY COMPANIES.

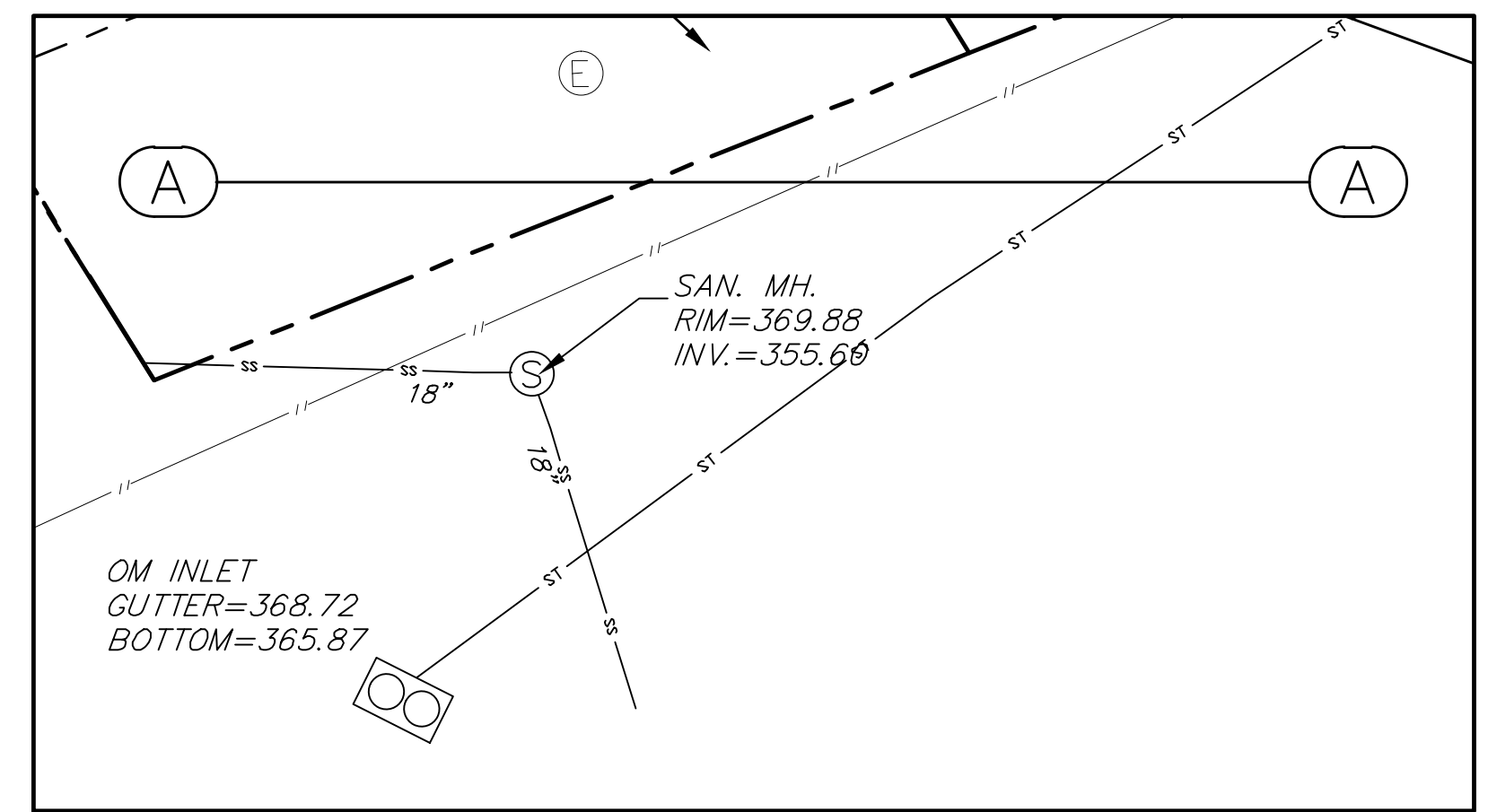
ALL LOCATIONS SHOULD BE CONSIDERED APPROXIMATE, COMPLETENESS OR ACCURACY OF THE LOCATIONS AND DEPTH OF ALL STRUCTURES CANNOT BE GUARANTEED. CONTRACTORS MUST VERIFY ALL LOCATIONS AND DEPTHS OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE THE START OF ANY WORK.

AS PER ACT 187 HOUSE BILL 2627, BEFORE THE START OF ANY EXCAVATION WORK THE CONTRACTOR SHALL NOTIFY THE AFFECTED UTILITY COMPANIES THROUGH THE PENNSYLVANIA "ONE CALL SYSTEM" 1-800-242-1776 THREE DAYS PRIOR TO THE START OF ANY EXCAVATION. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO THE START OF ANY CONSTRUCTION.

N/F CABRINI COLLEGE
DEED BOOK 1370 PAGE 1686
TMP 36-13-109
PARCEL ID 36-01-00708-00

N/F DOMINIC DEMITIS, JR.
DEED BOOK 1269 PAGE 1433
TMP 36-13-106
PARCEL ID 36-01-00472-00

- DEMOLITION PERMIT APPROVAL CHECKLIST:**
- SEWER SEAL PERMIT FROM TOWNSHIP PUBLIC WORKS DEPARTMENT.
 - RODENT CERTIFICATE - LETTER FROM A LICENSED PEST CONTROL OPERATOR STATING THE PROPERTY IS RODENT FREE.
 - LETTER FROM PECO STATING THE ELECTRIC AND GAS SERVICES HAVE BEEN TERMINATED.
 - LETTER FROM AQUA PENNSYLVANIA STATING THE WATER SERVICE HAS BEEN TERMINATED.
 - NOTICE TO NEIGHBORS DIRECTLY AFFECTED (BY BORDER OR VIEW) - PROVIDE COPY OF LETTER AND LIST OF RECIPIENTS.
 - FOR TEAR DOWN AND REBUILD - A GRADING PERMIT IS REQUIRED.
 - BUILDING DIRECTOR APPROVAL.



- GENERAL NOTES:**
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 - IN ACCORDANCE WITH FEMA PANEL NUMBER 42045C0017 EFFECTIVE DATE NOVEMBER 18, 2009, PREMISES IS LOCATED PARTIALLY IN ZONE X AND ZONE A.
- ZONE X, AREAS DETERMINED TO BE OUTSIDE THE 0.2% CHANCE ANNUAL FLOOD PLAIN.
- ZONE A, SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD.
- ZONE A - NO BASE FLOOD ELEVATIONS DETERMINED.

LOT DATA TMP 36-13-107:
227 PLANT AVENUE
PARCEL I.D. 36-01-00473-00
LOT AREA = 5,363 S.F. OR 0.123 ACRES (GROSS)
MINUS R.O.W. = (700 S.F.) 4,663 S.F. OR 0.107 ACRES (NET)

LOT DATA TMP 36-13-108:
229 PLANT AVENUE
PARCEL I.D. 36-01-00474-00
LOT AREA = 10,749 S.F. OR 0.246 ACRES (GROSS)
MINUS R.O.W. = (5,105 S.F.) 5,644 S.F. OR 0.129 ACRES (NET)

ZONING DISTRICT C-3 (SERVICE COMMERCIAL DISTRICT)

LOT AREA	30,000 S.F. MIN.
LOT WIDTH	150 FEET AT BLDG. LINE.
BLDG. AREA	35% MAX.
FRONT YARD	25 FEET MIN. (IF ABUTTING RESIDENTIAL DISTRICT)
SIDE YARD	20 FEET MIN.
REAR YARD	25 FEET OR 25% OF LOT DEPTH (WHICHEVER IS GREATER)
HEIGHT	35 FEET MAX.
IMPERVIOUS SURFACE	65% MAX.
RIPARIAN BUFFER	35' MIN.

FOR MORE DETAILED INFORMATION YOUR ATTENTION IS CALLED TO THE ZONING CODE OF RADNOR TOWNSHIP, LATEST EDITION.

EXISTING IMPERVIOUS COVERAGE TMP 36-13-107 :

HSE. & PORCHES	1,128 S.F.
GARAGE	503 S.F.
DRIVEWAY	320 S.F.
WALLS & MISC.	371 S.F.
TOTAL IMPERVIOUS COVERAGE	2,372 S.F. (50.9%)

EXISTING IMPERVIOUS COVERAGE TMP 36-13-108 :

HSE. & PORCHES	1,391 S.F.
DRIVEWAY	394 S.F.
GRAVEL	350 S.F.
WALLS & MISC.	453 S.F.
TOTAL IMPERVIOUS COVERAGE	2,588 S.F. (52.6%)

NOTE: ALL EXISTING ON LOT IMPROVEMENTS SHALL BE REMOVED

- SYMBOL LEGEND**
- EXISTING MAILBOX
 - EXISTING WATER VALVE
 - EXISTING GAS METER
 - EXISTING ELECTRIC METER
 - EXISTING CLEANOUT
 - EXISTING UTILITY POLE
 - EXISTING DECIDUOUS TREE
 - EXISTING EVERGREEN TREE
 - TREE TO BE REMOVED

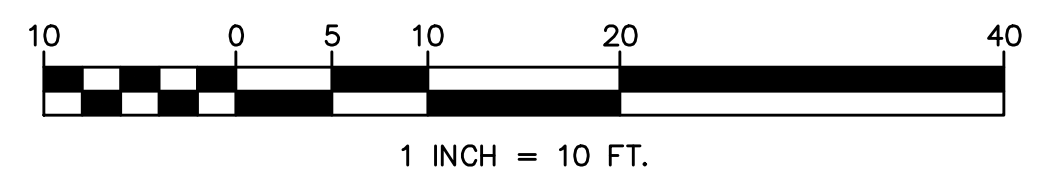
- LINE TYPE LEGEND**
- PROPERTY LINE
 - ROW LINE
 - BUILDING SETBACK
 - FENCE LINE
 - OVERHEAD ELECTRIC
 - ELECTRIC LINE
 - GAS LINE
 - TELECOM LINE
 - WATER LINE
 - SANITARY LINE
 - EXISTING STORM PIPES
 - EXISTING 2' CONTOUR
 - EXISTING 10' CONTOUR

Serial Number: 20141360518

CALL BEFORE YOU DIG!

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MOMENEE & ASSOCIATES, INC.
CIVIL ENGINEERS AND LAND SURVEYORS
924 COUNTY LINE ROAD, BRYN MAWR, PA 19010 PHONE: (610) 527-3030 FAX: (610) 527-9008

REGISTERED PROFESSIONAL ENGINEER
MICHAEL J. BOWKER
ENGINEER PE061543

DEMOLITION PLAN
227 & 229 PLANT AVENUE
RADNOR TOWNSHIP • DELAWARE COUNTY • PENNSYLVANIA

DATE: MARCH 16, 2015
SHEET NO. 5
OF 14
SCALE: 1" = 10'
FILE NO.: 14-158

ONE-CALL: 20141360518
DRAWN BY: MJB
CHECKED BY: MJB

OWNER/APPLICANT
DTL HOLDINGS, LP
126 E. BEECH TREE LANE
WAYNE, PA 19087

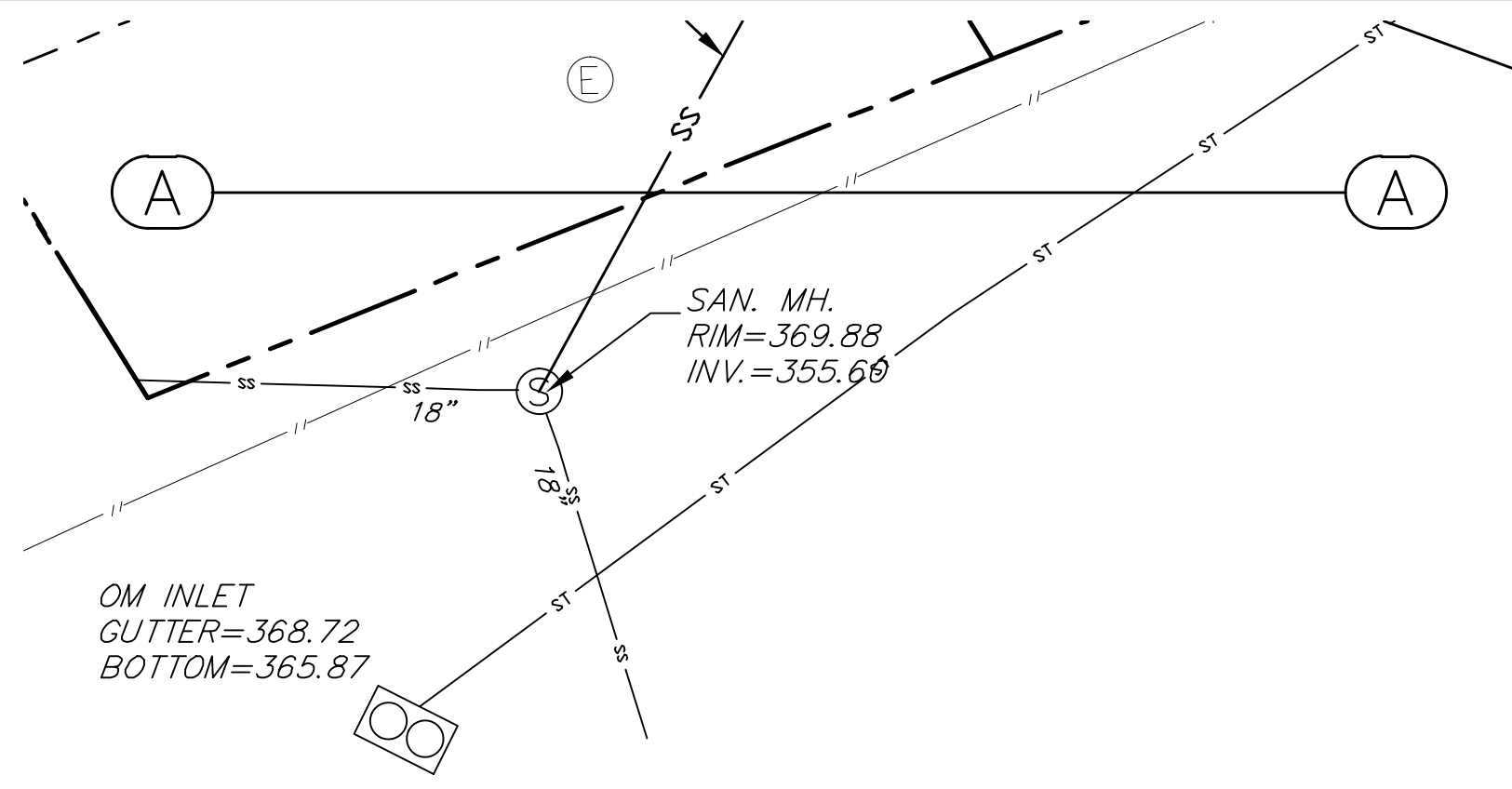
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N/F CABRINI COLLEGE
DEED BOOK 1370 PAGE 1686
TMP 36-13-109
PARCEL ID 36-01-00708-00

FILE INLET #2
TG 364.00
INV18" CMP 357.90
INVEXST 18" CMP 357.32



- GENERAL NOTES:**
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 - IN ACCORDANCE WITH FEMA PANEL NUMBER 42045C0017E EFFECTIVE DATE NOVEMBER 18, 2009, PREMISES IS LOCATED PARTIALLY IN ZONE X AND ZONE A.
- ZONE X, AREAS DETERMINED TO BE OUTSIDE THE 0.2% CHANCE ANNUAL FLOOD PLAIN.
- ZONE A, SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD.
- ZONE A - NO BASE FLOOD ELEVATIONS DETERMINED.

I HEREBY CERTIFY THAT TO THE BEST OF MY KNOWLEDGE THE EXISTING CONDITIONS ARE AS SHOWN AND THAT THIS DRAINAGE PLAN COMPLIES WITH ALL THE DESIGN STANDARDS AND CRITERIA OF THE RADNOR TOWNSHIP STORMWATER MANAGEMENT ORDINANCE.

DAVID R. FIORELLO, P.E. DATE _____

I HEREBY ACKNOWLEDGE THAT ANY REVISION TO THE APPROVED DRAINAGE PLAN MUST BE APPROVED BY THE MUNICIPALITY, AND THAT A REVISED EROSION AND SEDIMENT CONTROL PLAN MUST BE SUBMITTED TO THE TOWNSHIP DISTRICT FOR A DETERMINATION OF ADEQUACY.

OWNER DATE _____

I HEREBY ACKNOWLEDGE THAT THE STORMWATER CONTROLS AND BMPs ARE FIXTURES THAT CAN BE ALTERED OR REMOVED ONLY AFTER APPROVAL BY THE MUNICIPALITY.

OWNER DATE _____

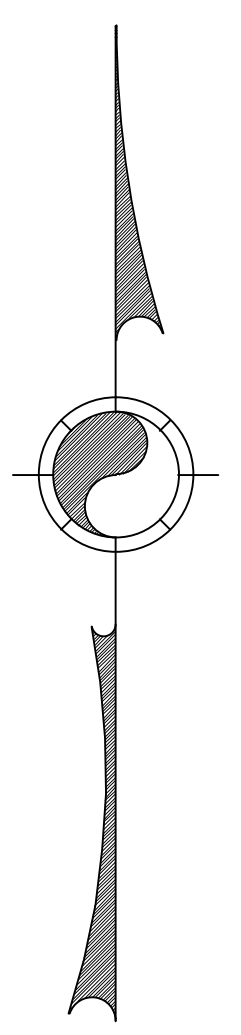
BMP NOTES:

A GENERAL EASEMENT IS HEREBY CREATED OVER THE STORMWATER MANAGEMENT SYSTEMS THAT PERMITS INGRESS AND EGRESS BY RADNOR TOWNSHIP.

AN AS-BUILT PLAN SIGNED AND SEALED BY A REGISTERED LAND SURVEYOR SHOWING ALL PUBLIC AND PRIVATE IMPROVEMENTS CONSTRUCTED AT THE SITE INCLUDING ALL BMPs SHALL BE SUBMITTED TO THE TOWNSHIP FOLLOWING THE COMPLETION OF THE CONSTRUCTED IMPROVEMENTS.

NO PERSON SHALL MODIFY, REMOVE, FILL, LANDSCAPE, OR ALTER ANY EXISTING STORMWATER CONTROL OR BMP, UNLESS IT IS PART OF AN APPROVED MAINTENANCE PROGRAM, WITHOUT THE WRITTEN APPROVAL OF THE MUNICIPALITY.

NO PERSON SHALL PLACE ANY STRUCTURE, FILL, LANDSCAPING, OR VEGETATION INTO A STORMWATER CONTROL OR BMP OR WITHIN A DRAINAGE EASEMENT WHICH WOULD LIMIT OR ALTER THE FUNCTIONING OF THE STORMWATER CONTROL OR BMP WITHOUT THE WRITTEN APPROVAL OF THE MUNICIPALITY.



SYMBOL LEGEND

	EXISTING MAILBOX
	EXISTING WATER VALVE
	EXISTING GAS METER
	EXISTING ELECTRIC METER
	EXISTING CLEANOUT
	EXISTING UTILITY POLE
	EXISTING DECIDUOUS TREE
	EXISTING EVERGREEN TREE
	TREE TO BE REMOVED

LINETYPE LEGEND

	PROPERTY LINE
	ROW LINE
	BUILDING SETBACK
	FENCE LINE
	OVERHEAD ELECTRIC
	ELECTRIC LINE
	GAS LINE
	TELECOM LINE
	WATER LINE
	SANITARY LINE
	EXISTING STORM PIPES
	EXISTING 2' CONTOUR
	EXISTING 10' CONTOUR

PROPOSED LINETYPE LEGEND

	PROPOSED GRADING
	PROPOSED ELECTRIC LINE
	PROPOSED GAS LINE
	PROPOSED TELECOM LINE
	PROPOSED WATER LINE
	PROPOSED STORM PIPES

SWM SYS #5
25-LF 48" FULLY PERFORATED CMP
TOP PIPE 364.75
BOT PIPE 360.75
BOT SYS 360.25
IRON PIN SET

SWM SYS #1
25-LF 48" FULLY PERFORATED CMP
TOP PIPE 365.75
BOT PIPE 361.75
BOT SYS 361.25

SWM SYS #2
20-LF 48" FULLY PERFORATED CMP
TOP PIPE 366.00
BOT PIPE 362.00
BOT SYS 361.50

SWM SYS #3
20-LF 48" FULLY PERFORATED CMP
TOP PIPE 366.75
BOT PIPE 362.75
BOT SYS 362.25

SWM SYS #4
20-LF 48" FULLY PERFORATED CMP
TOP PIPE 368.00
BOT PIPE 364.00
BOT SYS 363.50

N/F DOMINIC DEMITIS, JR.
DEED BOOK 1269 PAGE 1433
TMP 36-13-106
PARCEL ID 36-01-00472-00

2'x2' INLET #1
TG 369.00
INV 366.00
BOT 365.00

4" PVC RWC
@ 1.00% MIN
FF 371.50
GR 369.50

OM INLET
TOP=373.12
GUTTER=372.41
18" TER. INV. IN=368.12
12" TER. INV. IN=363.42
18" CMP INV. OUT=362.27

PLANT AVENUE
(20' WIDE R.O.W.)

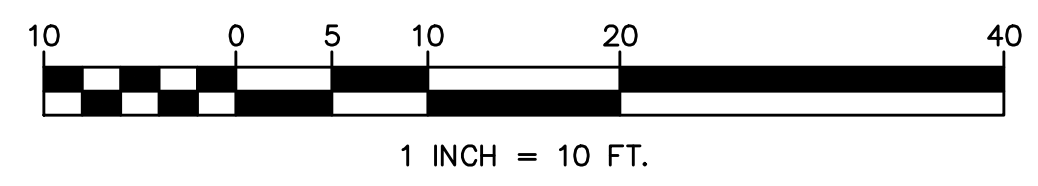
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1-800-242-1776

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	PRELIMINARY/FINAL LAND DEVELOPMENT PLANS		DATE: MARCH 16, 2015 SHEET NO. 7 OF 14 SCALE: 1" = 10' FILE NO.: 14-158
	MOMENEE & ASSOCIATES, INC. CIVIL ENGINEERS AND LAND SURVEYORS 924 COUNTY LINE ROAD, BRYN MAWR, PA 19010 PHONE: (610) 527-3030 FAX: (610) 527-9008		
	POST CONSTRUCTION STORMWATER MANAGEMENT PLAN 227 & 229 PLANT AVENUE RADNOR TOWNSHIP • DELAWARE COUNTY • PENNSYLVANIA		
	ONE-CALL: 20141360518 DRAWN BY: MJB CHECKED BY: MJB	OWNER/APPLICANT DTL HOLDINGS, LP 126 E. BEECH TREE LANE WAYNE, PA 19087	

ALL LOCATIONS OF EXISTING UTILITIES, SHOWN ON THIS PLAN, HAVE BEEN DEVELOPED FROM FIELD LOCATIONS OF VISIBLE ABOVE GROUND UTILITY STRUCTURES AND INFORMATION FURNISHED BY THE UTILITY COMPANIES.

ALL LOCATIONS SHOULD BE CONSIDERED APPROXIMATE. COMPLETENESS OR ACCURACY OF THE LOCATIONS AND DEPTH OF ALL STRUCTURES CANNOT BE GUARANTEED. CONTRACTORS MUST VERIFY ALL LOCATIONS AND DEPTHS OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE THE START OF ANY WORK.

AS PER ACT 187 HOUSE BILL 2627, BEFORE THE START OF ANY EXCAVATION WORK THE CONTRACTOR SHALL NOTIFY THE AFFECTED UTILITY COMPANIES THROUGH THE PENNSYLVANIA "ONE CALL SYSTEM" 1-800-242-1776 THREE DAYS PRIOR TO THE START OF ANY EXCAVATION. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO THE START OF ANY CONSTRUCTION.

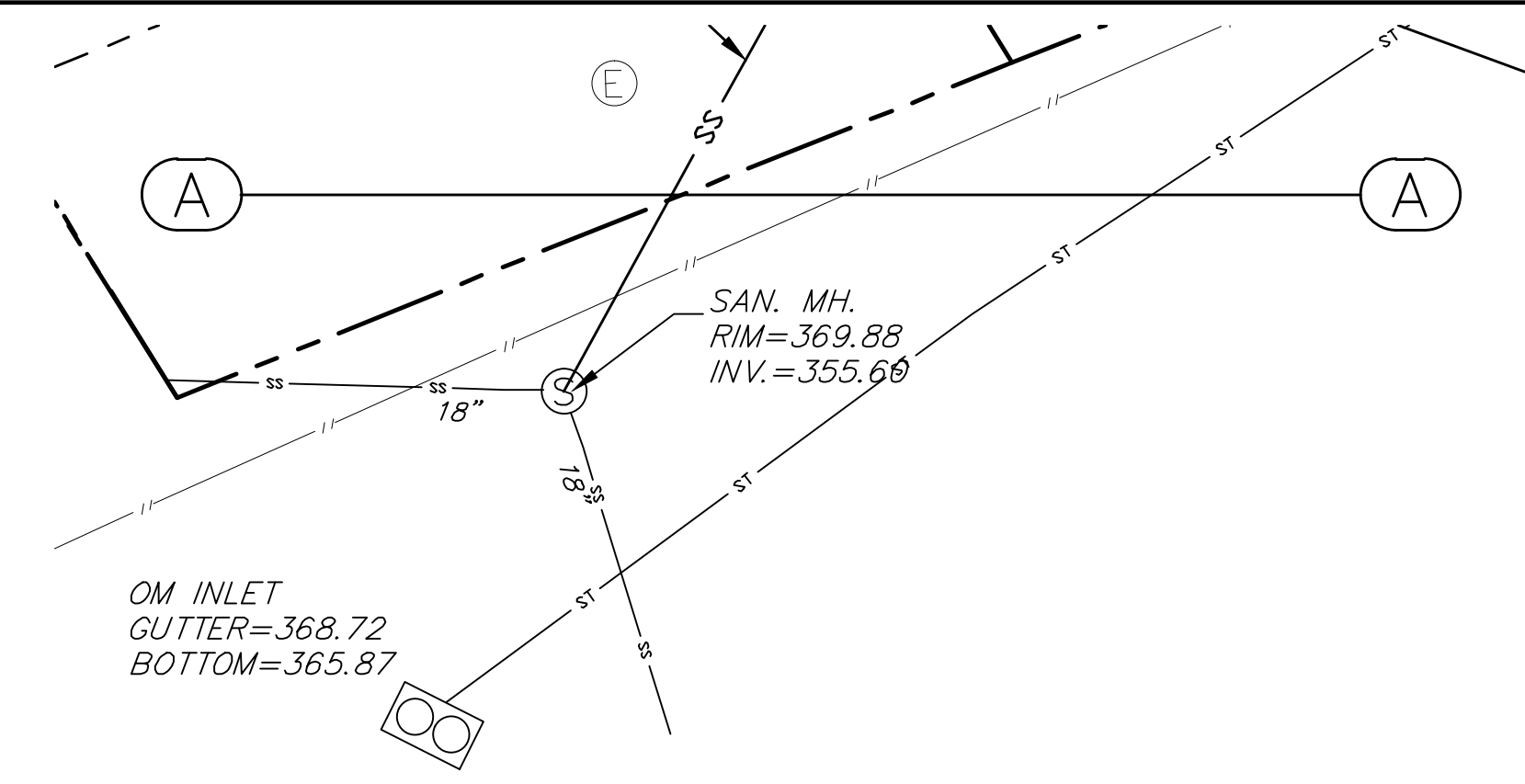
N/F CABRINI COLLEGE
DEED BOOK 1370 PAGE 1686
TMP 36-13-109
PARCEL ID 36-01-00708-00

N/F DOMINIC DEMITIS, JR.
DEED BOOK 1269 PAGE 1433
TMP 36-13-106
PARCEL ID 36-01-00472-00

SOIL DATA [ENTIRE SITE AND SURROUNDING AREA]

NAME	DEPTH TO		HYDRO SOIL LIMITATIONS
	SLOPE	WATER BEDROCK	
MADELAND	0-8	3+	4+ B

NOTES: IF THE PROPOSED EROSION AND SEDIMENTATION CONTROL MEASURES ARE INSTALLED AND MAINTAINED PROPERLY, NO UNFORESEEN SOIL LIMITATIONS OR PROBLEMS ARE LIKELY. NEVERTHELESS, IF A PROBLEM DOES DEVELOP, THE DEVELOPER MUST TEMPORARILY SEED AND MULCH THE DISTURBED AREA. SUITABLE TOPSOIL SHALL BE IMPORTED TO SITE IF INADEQUATE QUANTITIES OF SUITABLE TOPSOIL EXIST ON SITE. ADEQUACY OF SOIL TO BE DETERMINED BY SITE GEOTECHNICAL ENGINEER IN CONJUNCTION WITH THE LANDSCAPE ARCHITECT. SOIL AMENDMENTS SHALL BE ADDED AS REQUIRED. ALL UNSUITABLE MATERIAL SHALL BE DISPOSED OF PROPERLY. SITE GEOTECHNICAL ENGINEER SHALL ALSO BE CONSULTED DURING WINTER GRADING OPERATIONS.

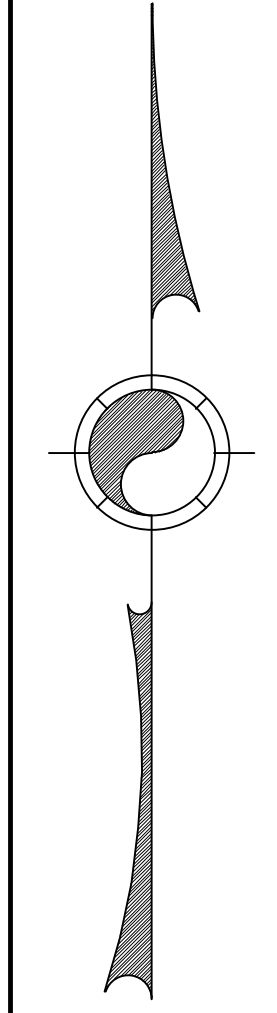


GENERAL NOTES:

REFERENCE PLAN: BOUNDARY AND TOPOGRAPHIC SURVEY OF 227 & 229 PLANT AVENUE, PREPARED BY MOMENEE SURVEY GROUP, INC., DATED JUNE 19, 2014, LAST REVISED JUNE 24, 2014, FILE NO. 14-158.

1. THIS PLAN REPRESENTS AN ACTUAL FIELD SURVEY PERFORMED ON THE PREMISES ON JUNE 9, 2014 AND DEPICTS CONDITIONS ON THAT DATE.
2. THE EXISTENCE AND/OR LOCATION OF ALL SUBSURFACE UTILITIES SHALL BE CONSIDERED APPROXIMATE AND MUST BE FIELD VERIFIED BY ALL CONTRACTORS PRIOR TO CONSTRUCTION.
3. P.A. ONE CALL NUMBER FOR THIS SITE IS 20141360518.
4. THE VERTICAL DATUM SHOWN ON THIS PLAN IS PER NAVD 1988 OBTAINED VIA GPS/VRS NETWORK.
5. THIS SURVEY AND PLAN WAS COMPLETED WITHOUT THE AVAILABILITY OF A CURRENT TITLE REPORT AND SUBJECT TO ANY FACTS THAT MAY BE DISCLOSED IN A FULL AND ACCURATE TITLE REPORT.
6. IN ACCORDANCE WITH FEMA PANEL NUMBER 42045C0017 EFFECTIVE DATE NOVEMBER 18, 2009, PREMISES IS LOCATED PARTIALLY IN ZONE X AND ZONE A.

ZONE X, AREAS DETERMINED TO BE OUTSIDE THE 0.2% CHANCE ANNUAL FLOOD PLAIN.
ZONE A, SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD.
ZONE A - NO BASE FLOOD ELEVATIONS DETERMINED.



SYMBOL LEGEND

	EXISTING MAILBOX
	EXISTING WATER VALVE
	EXISTING GAS METER
	EXISTING ELECTRIC METER
	EXISTING CLEANOUT
	EXISTING UTILITY POLE
	EXISTING DECIDUOUS TREE
	EXISTING EVERGREEN TREE
	TREE TO BE REMOVED

LINETYPE LEGEND

	PROPERTY LINE
	ROW LINE
	BUILDING SETBACK
	FENCE LINE
	OVERHEAD ELECTRIC
	ELECTRIC LINE
	GAS LINE
	TELECOM LINE
	WATER LINE
	SANITARY LINE
	EXISTING STORM PIPES
	EXISTING 2' CONTOUR
	EXISTING 10' CONTOUR

EROSION CONTROL LEGEND

	PROPOSED DISTURBANCE AREA
	PROPOSED COMPOST FILTER SOCK
	PROPOSED TREE PROTECTION FENCE
	PROPOSED CONSTRUCTION ENTRANCE

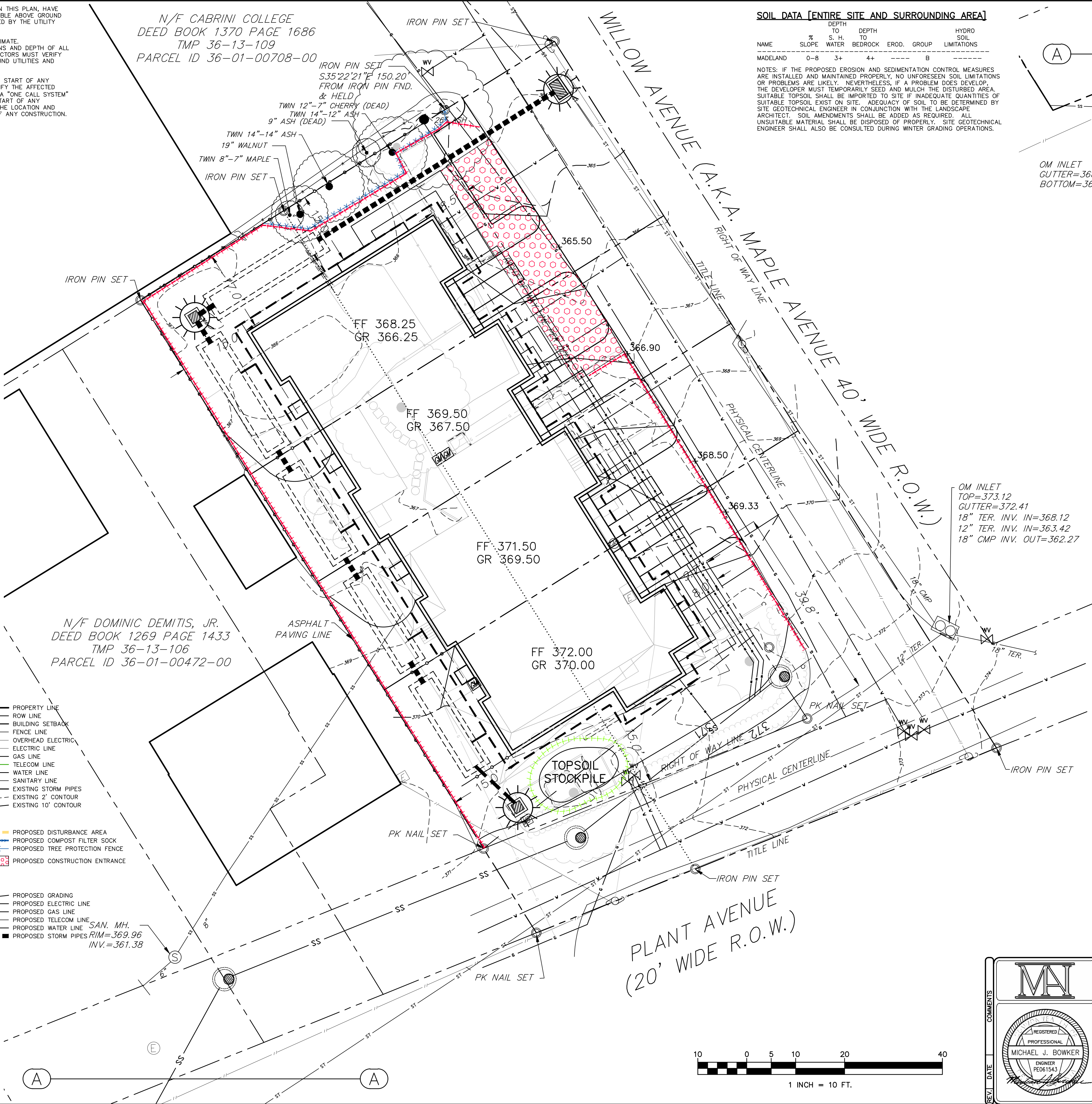
PROPOSED LINETYPE LEGEND

	PROPOSED GRADING
	PROPOSED ELECTRIC LINE
	PROPOSED GAS LINE
	PROPOSED TELECOM LINE
	PROPOSED WATER LINE
	PROPOSED STORM PIPES

Serial Number: 20141360518

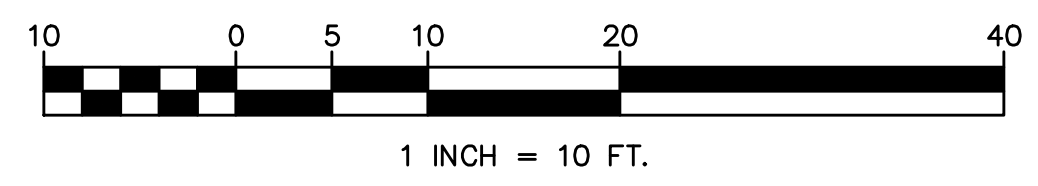
CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE-STOP CALL Pennsylvania One Call System, Inc. 1-800-242-1776

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OM INLET
TOP=373.12
GUTTER=372.41
18" TER. INV. IN=368.12
12" TER. INV. IN=363.42
18" CMP INV. OUT=362.27

PLANT AVENUE
(20' WIDE R.O.W.)



REGISTERED PROFESSIONAL ENGINEER
MICHAEL J. BOWKER
PE061543

PRELIMINARY/FINAL LAND DEVELOPMENT PLANS

MOMENEE & ASSOCIATES, INC.
CIVIL ENGINEERS AND LAND SURVEYORS
924 COUNTY LINE ROAD, BRYN MAWR, PA 19010 PHONE: (610) 527-3030 FAX: (610) 527-9008

EROSION AND SEDIMENT CONTROL PLAN
227 & 229 PLANT AVENUE
RADNOR TOWNSHIP • DELAWARE COUNTY • PENNSYLVANIA

DATE: MARCH 16, 2015
SHEET NO. 8
OF 14
SCALE: 1" = 10'
FILE NO.: 14-158

ONE-CALL: 20141360518	OWNER/APPLICANT: DTL HOLDINGS, LP
DRAWN BY: MJB	126 E. BEECH TREE LANE
CHECKED BY: MJB	WAYNE, PA 19087

PLANTING SCHEDULE

Quantity	Symbol	Scientific Name	Common Name	Planting Size
1-PD		Quercus palustris	Pin Oak	2.5-3' cal., 14-16' ht., 7-8' sp., B&B
4-RM		Acer rubrum	Red Maple	2.5-3' cal., 14-16' ht., 7-8' sp., B&B
2-RB		Betula nigra	River Birch	2.5-3' cal., 14-16' ht., 7-8' sp., B&B
3-DW		Cornus kousa	Kousa Dogwood	2.5-3' cal., 14-16' ht., 7-8' sp., B&B
3-AC		Cedrus atlantica	Atlas Cedar	10-12' ht., 5-6' sp., B&B

Disturbed Areas Seeded lawn area (drought tolerant mix: Sweeney Seed 'Survivor' mix or approved equal ALL DISTURBED AREAS ARE TO BE FINE GRADED, RAKED AND SEEDED.

PROPOSED SEED MIX:
 SWEENEY SEED SURVIVOR MIX: 75% SR 8200 FESCUE
 20% SR 4200 PERENNIAL RYEGRASS
 5% MERIT KENTUCKY BLUEGRASS

TREE REPLACEMENT SUMMARY

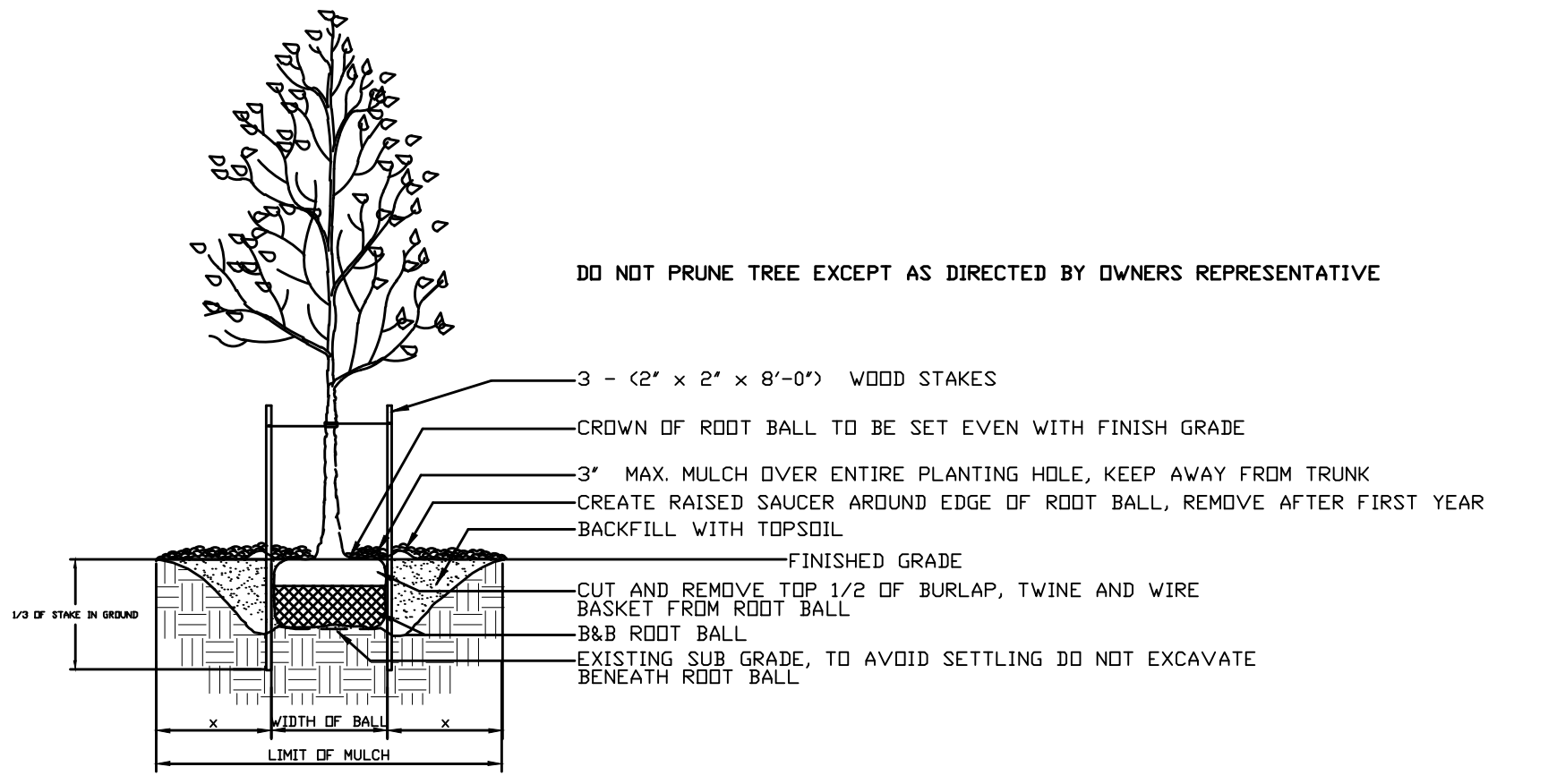
8 TREES TO BE REMOVED:
 MULBERRY CLUSTER
 TWIN 12"-7" CHERRY
 6" DOGWOOD
 25" ASH
 10" MAPLE
 TWIN 10"-9" MAPLE
 23" MAPLE
 23" SPRUCE

7 TREES < 24"
 1 TREE > 24" < 36"
 0 TREE > 36"

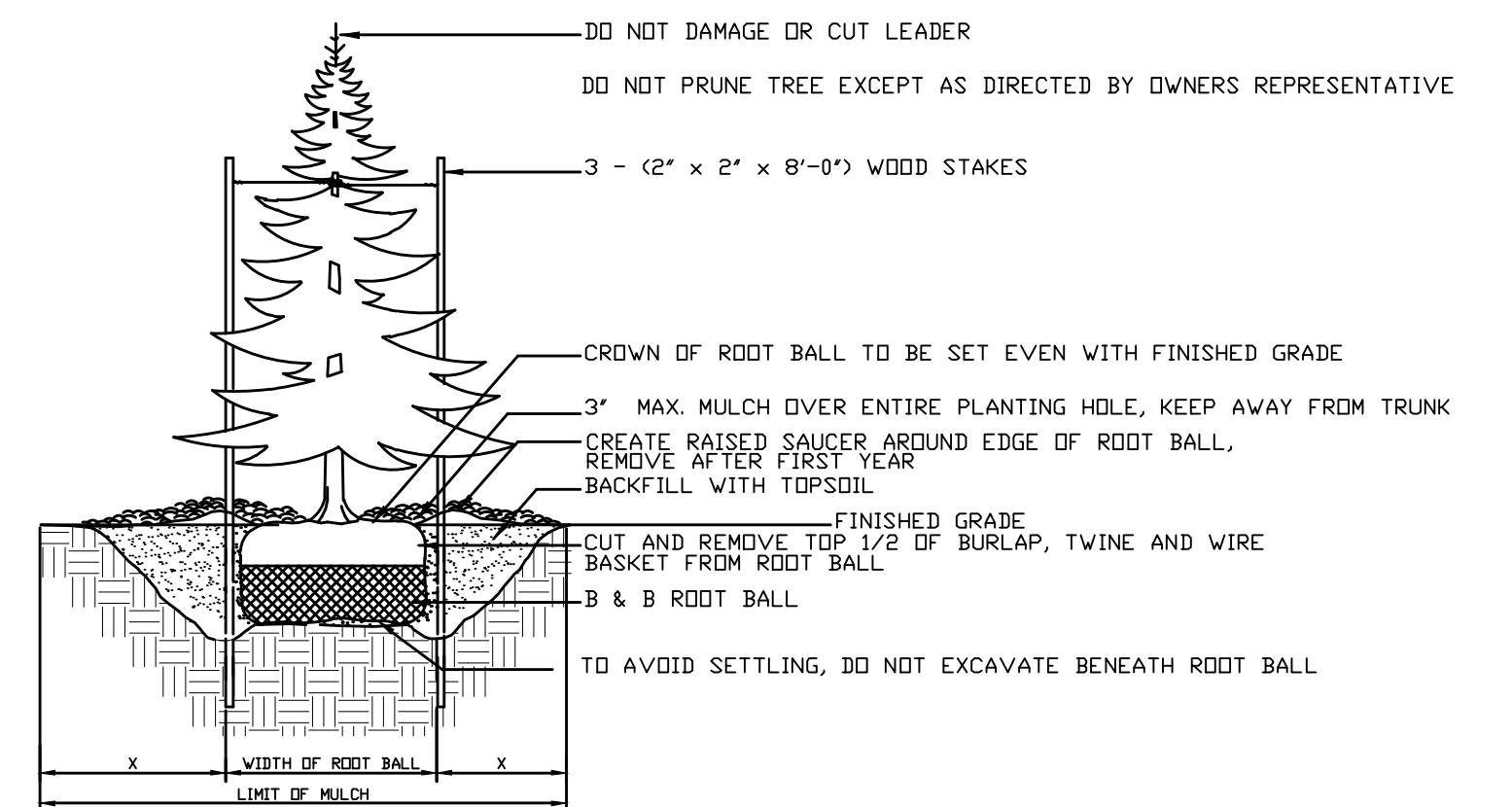
9 REPLACEMENT TREES REQUIRED
 1 FOR EACH TREE < 24"
 2 FOR EACH TREE > 24" < 36"
 3 FOR EACH TREE > 36"

9 REPLACEMENT TREES PROVIDED
 4 STREET TREES PROVIDED

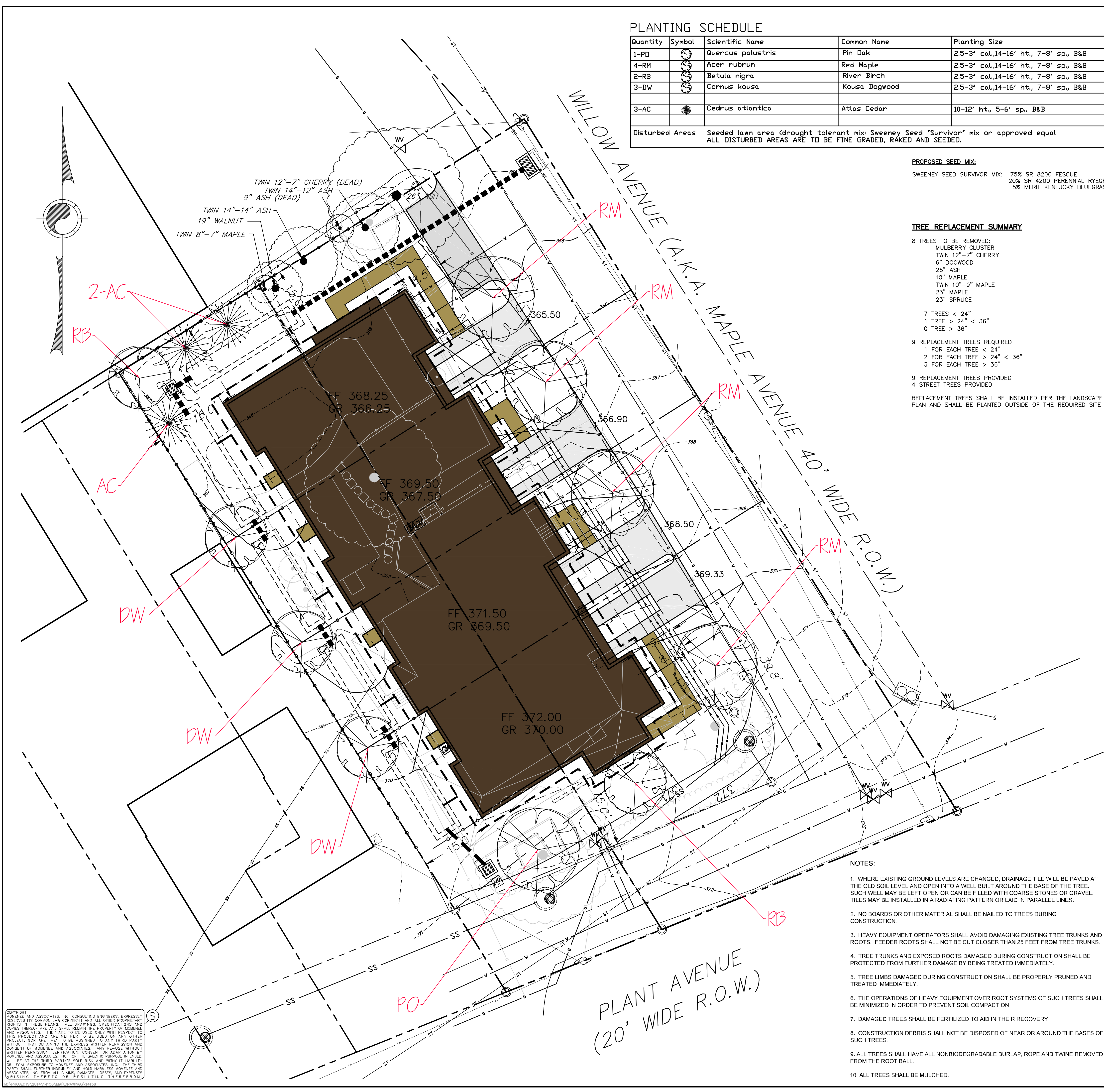
REPLACEMENT TREES SHALL BE INSTALLED PER THE LANDSCAPE PLAN AND SHALL BE PLANTED OUTSIDE OF THE REQUIRED SITE LINE.



TYPICAL DECIDUOUS TREE PLANTING DETAIL
 NOT TO SCALE



TYPICAL EVERGREEN TREE PLANTING DETAIL
 NOT TO SCALE



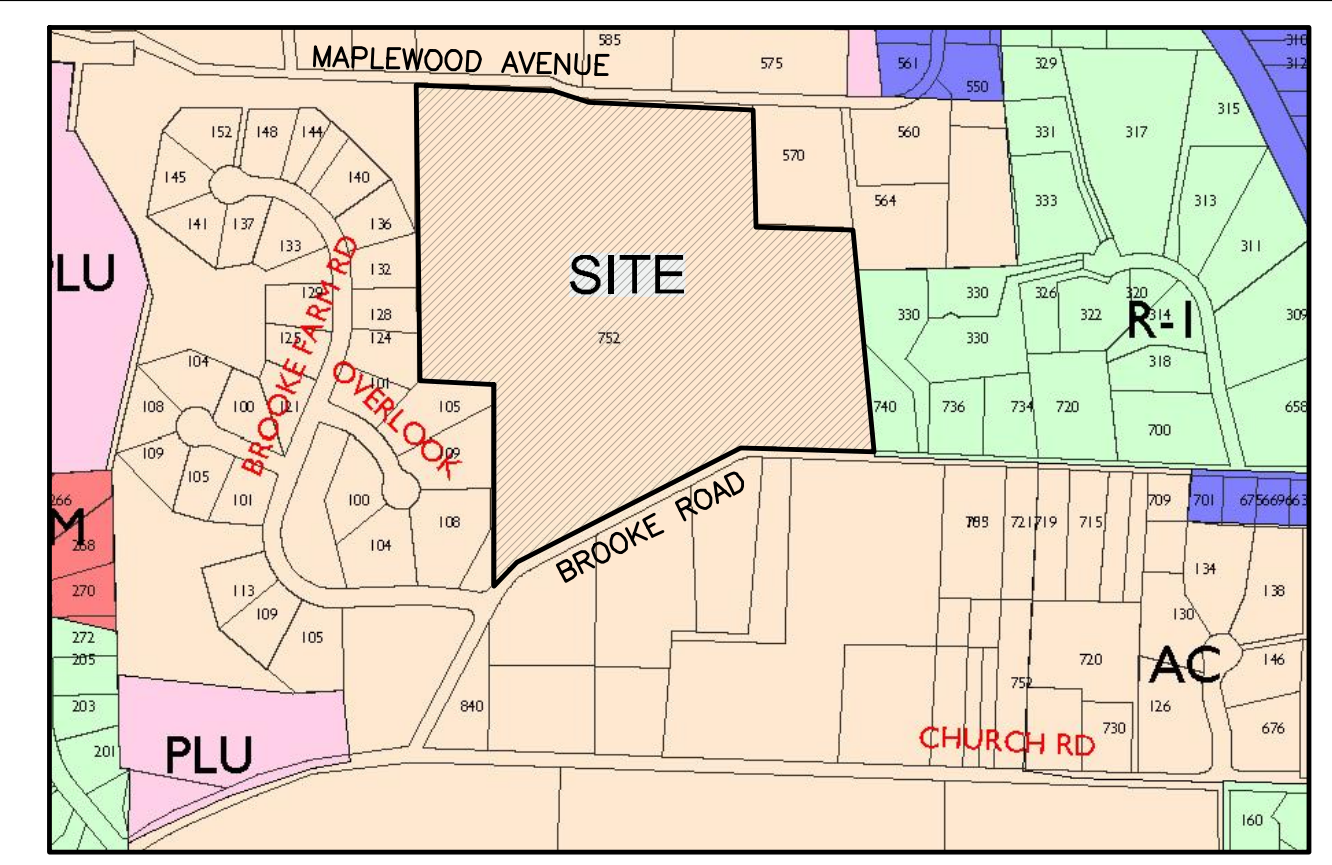
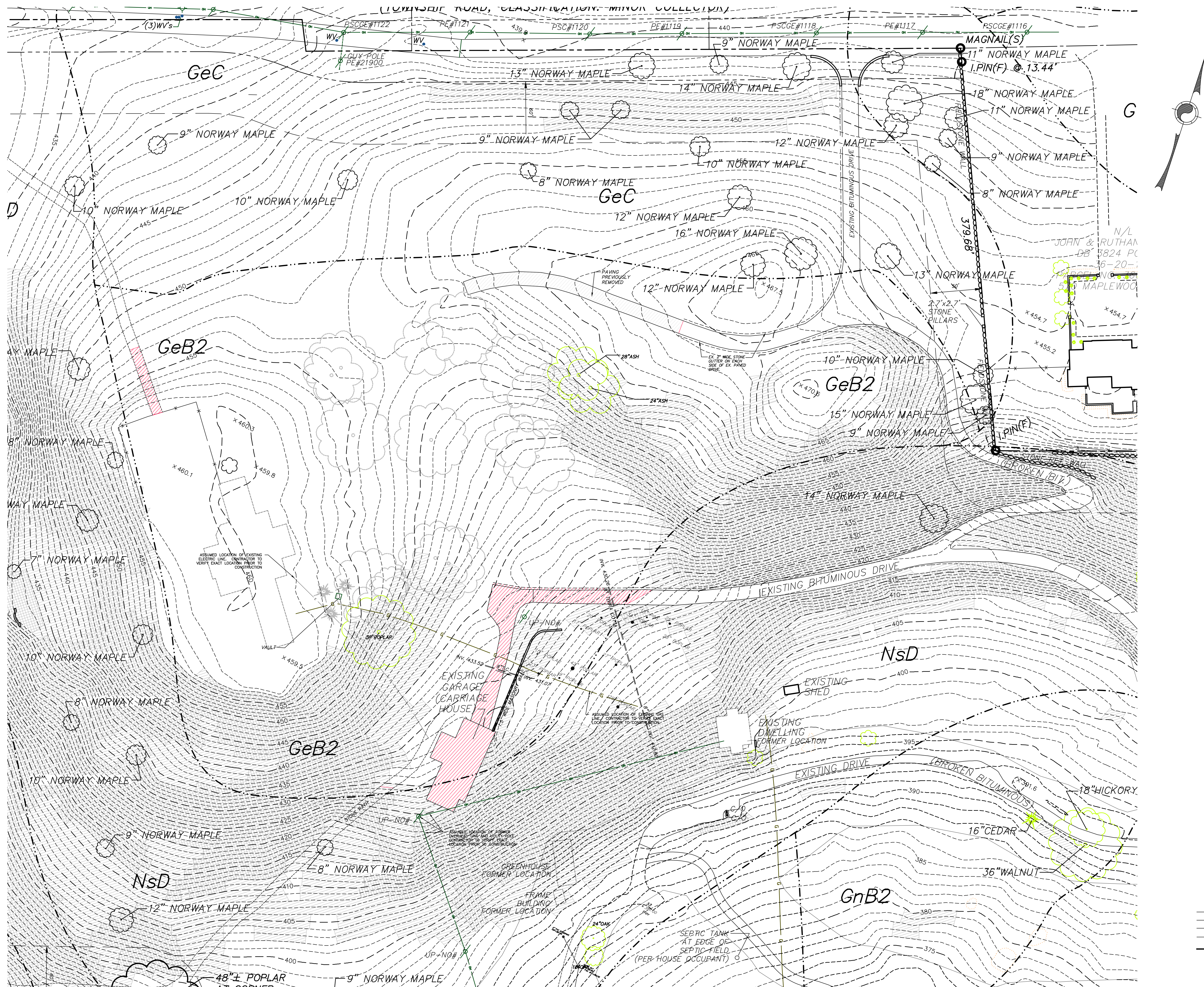
- NOTES:**
- WHERE EXISTING GROUND LEVELS ARE CHANGED, DRAINAGE TILE WILL BE PAVED AT THE OLD SOIL LEVEL AND OPEN INTO A WELL BUILT AROUND THE BASE OF THE TREE. SUCH WELL MAY BE LEFT OPEN OR CAN BE FILLED WITH COARSE STONES OR GRAVEL. TILES MAY BE INSTALLED IN A RADIATING PATTERN OR LAID IN PARALLEL LINES.
 - NO BOARDS OR OTHER MATERIAL SHALL BE NAILED TO TREES DURING CONSTRUCTION.
 - HEAVY EQUIPMENT OPERATORS SHALL AVOID DAMAGING EXISTING TREE TRUNKS AND ROOTS. FEEDER ROOTS SHALL NOT BE CUT CLOSER THAN 25 FEET FROM TREE TRUNKS.
 - TREE TRUNKS AND EXPOSED ROOTS DAMAGED DURING CONSTRUCTION SHALL BE PROTECTED FROM FURTHER DAMAGE BY BEING TREATED IMMEDIATELY.
 - TREE LIMBS DAMAGED DURING CONSTRUCTION SHALL BE PROPERLY PRUNED AND TREATED IMMEDIATELY.
 - THE OPERATIONS OF HEAVY EQUIPMENT OVER ROOT SYSTEMS OF SUCH TREES SHALL BE MINIMIZED IN ORDER TO PREVENT SOIL COMPACTION.
 - DAMAGED TREES SHALL BE FERTILIZED TO AID IN THEIR RECOVERY.
 - CONSTRUCTION DEBRIS SHALL NOT BE DISPOSED OF NEAR OR AROUND THE BASES OF SUCH TREES.
 - ALL TREES SHALL HAVE ALL NONBIODEGRADABLE BURLAP, ROPE AND TWINE REMOVED FROM THE ROOT BALL.
 - ALL TREES SHALL BE MULCHED.

NOTE:

THIS PLAN IS TO BE USED FOR LANDSCAPING PURPOSES ONLY

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	PRELIMINARY/FINAL LAND DEVELOPMENT PLANS MOMENE & ASSOCIATES, INC. CIVIL ENGINEERS AND LAND SURVEYORS 924 COUNTY LINE ROAD, BRYN MAWR, PA 19010 PHONE: (610) 527-3030 FAX: (610) 527-9008		DATE: MARCH 16, 2015 SHEET NO. 14
	LANDSCAPE PLAN 227 & 229 PLANT AVENUE RADNOR TOWNSHIP • DELAWARE COUNTY • PENNSYLVANIA		OF 14 SCALE: AS NOTED FILE NO.: 14-158
ONE-CALL: 20141360518 DRAWN BY: MJB CHECKED BY: MJB	OWNER/APPLICANT DTL HOLDINGS, LP 126 E. BEECH TREE LANE WAYNE, PA 19087		



ZONING DISTRICT A-G (AGRICULTURAL-CONSERVATION DISTRICT)
 LOT SIZE: 2 ACRES MIN
 LOT WIDTH: 15% MAX
 BUILDING AREA: 60' MIN
 FRONT YARD: 50' MIN
 SIDE YARD: 60' MIN
 REAR YARD: 35' MAX OR 3 STORIES
 BUILDING HEIGHT: 35' MAX OR 3 STORIES

FOR MORE DETAILED INFORMATION YOUR ATTENTION IS CALLED TO THE ZONING CODE OF RADNOR TOWNSHIP, LATEST EDITION.

SITE AREA CALCULATIONS:
 GROSS TRACT AREA (TO TITLE LINES): 35.982 ACRES
 - FLOOD PLAIN = 0 * 75% = 0
 - WETLANDS = 0.185 * 75% = 0.139
 - SLOPES 20% AND GREATER = 2.464 * 75% = 1.848
 NET AREA CLEAR OF R/W = 30.245 ACRES

EXISTING IMPERVIOUS COVERAGE (TOTAL SITE PRIOR TO DEVELOPMENT):
 BUILDINGS: 7,916 S.F. (0.51%)
 PAVING: 75,336 S.F.
 TOTAL: 83,252 S.F. (5.38%)

PROPOSED IMPERVIOUS COVERAGE (PER APPROVED PERMIT PLAN):
 BUILDINGS: 19,915 S.F. (1.27%)
 PAVING: 95,336 S.F.
 TOTAL: 115,250 S.F. (7.35%)

GENERAL NOTES:
 1- BEING DELAWARE COUNTY FOLIO No. 36-03-01752-00
 TAX MAP 36, BLOCK 20, UNIT 153
 600 MAPLEWOOD AVENUE

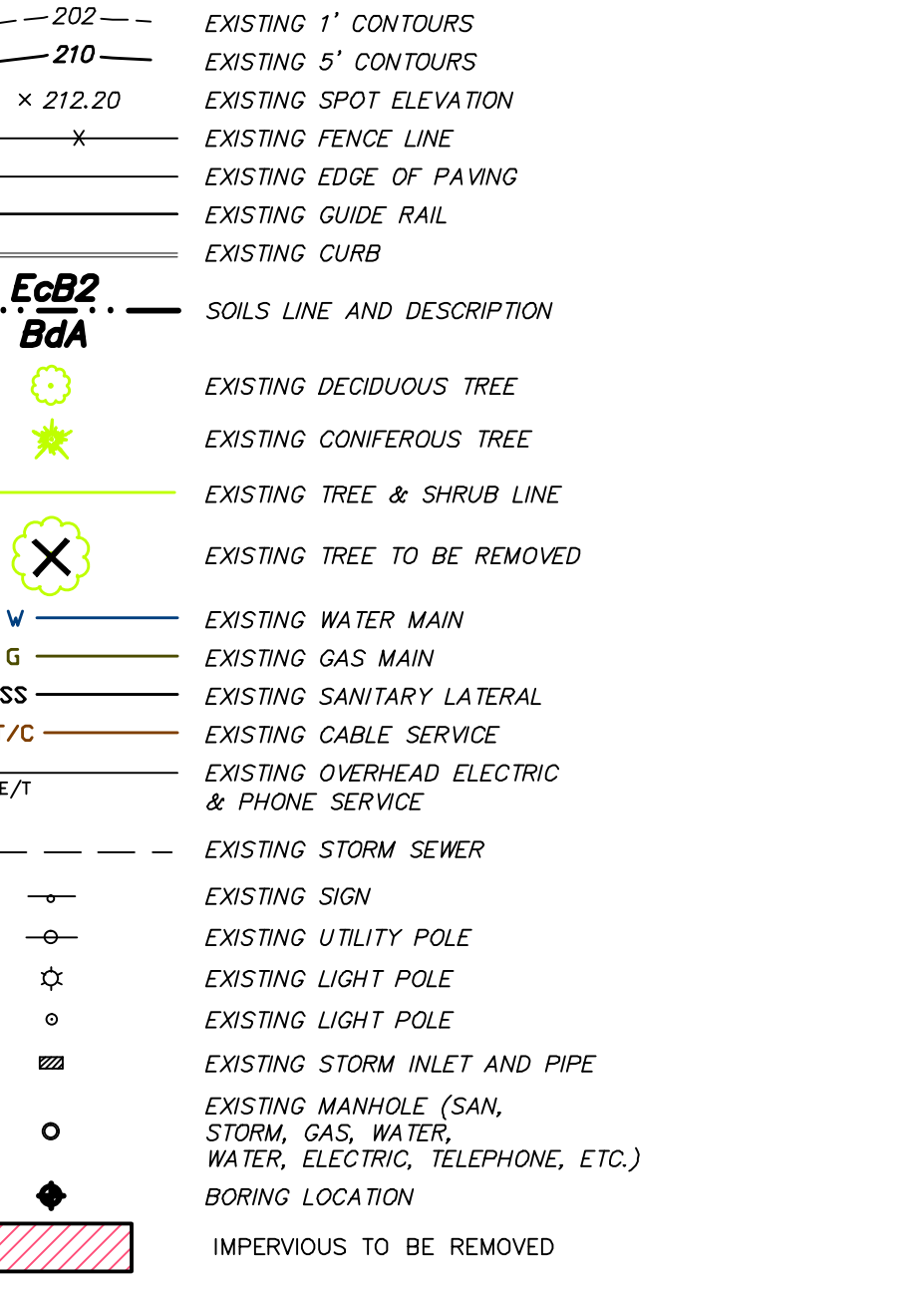
2- BOUNDARY INFORMATION FROM AN ACTUAL FIELD SURVEY PERFORMED BETWEEN SEPTEMBER 8, 2010 AND SEPTEMBER 28, 2010 BY CHESTER VALLEY ENGINEERS, INC. IN ACCORDANCE WITH COMMITMENT TO INSURE TITLE No. 109A2373, EFFECTIVE DATE: MARCH 30, 2010, ISSUED BY FIRST AMERICAN TITLE INSURANCE COMPANY, DEEDS OF RECORD, AND THE FOLLOWING PLANS:
 A) RECORD PLAN ESTATE OF JOSEPH N. DUBARRY DATED JUNE 23, 1995, REVISED JULY 17, 1995 BY MONENEY AND ASSOCIATES.
 B) SUBDIVISION OF PROPERTY FOR HENRY S. BELBER, 2nd and JOHN W. & MARGUERITE S. FRAZIER, DATED APRIL 19, 1946, LAST REVISED AUGUST 6, 1976, BY YERKES ASSOCIATES, INC.
 C) LOT LINE CHANGE PLAN FOR FIRST PENNSYLVANIA BANK, N.A. DATED JUNE 5, 1991, LAST REVISED NOVEMBER 26, 2001 BY YERKES ASSOCIATES, INC.
 D) ALTA/ACSM LAND TITLE SURVEY 600 MAPLEWOOD AVENUE FOR THOMAS P. & JILL C. NERNEY, DATED OCTOBER 11, 2010, BY YERKES ASSOCIATES, INC.
 E) GRADING PERMIT PLANS ENTITLED "FINAL NPDES PERMIT PLAN FOR (THOMAS P. NERNEY - 600 MAPLEWOOD AVENUE)", PREPARED BY CHESTER VALLEY ENGINEERS, DATED JUNE 7, 2013, LAST REVISED JULY 8, 2013. PROJECT NO. 19137.

3- EXISTING FEATURES AND ELEVATION CONTOURS COMPILED PHOTOGRAMMETRICALLY BY AERO-METRIC, INC., DULLES VA, DATE OF NEW PHOTOGRAPHY: SEPTEMBER 11, 2010, GROUND CONTROLLED AND SUPPLEMENTED BY ON-THE-GROUND SURVEYS BY CHESTER VALLEY ENGINEERS, INC.
 4- ELEVATIONS BASED ON NAVD 1988 ESTABLISHED FROM FEMA BENCHMARK RM-2 "SQUARE CUT ON TOP OF HEADWALL AT NORTHWEST CORNER OF BRIDGE (UPSTREAM SIDE) AT MAPLEWOOD AVENUE OVER LITTLE DAIRY CREEK" AS SHOWN ON FIRM 42045C002D, EFFECTIVE DATE: SEPTEMBER 30, 1993, ELEV = 356.49 (NGVD 1929) CONVERTED TO NAVD 1988 BY SUBTRACTING 1.04'.
 5- WETLANDS SHOWN HEREON WERE DELINEATED ON THE GROUND BY DELVAL SOIL AND ENVIRONMENTAL CONSULTANTS, FIELD LOCATED AND PLOTTED BY CHESTER VALLEY ENGINEERS, INC.
 6- BY GRAPHIC PLOTTING ONLY, THE PREMISES SHOWN HEREON DOES NOT LIE WITHIN A SPECIAL FLOOD HAZARD, THE PROPERTY LIES WITHIN AN AREA OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, AS SHOWN ON FLOOD INSURANCE RATE MAP (FIRM) 42045C0019F, MAPS REVISED NOVEMBER 18, 2009.

7- GROSS TRACT AREA = 35.982 ACRES.
 8- THE RECORD DESCRIPTION OF THE PREMISES DOES NOT FORM A CLOSED MATHEMATICAL FIGURE WITH A CLOSURE ERROR OF 3.69 FEET.
 9- BEARINGS SHOWN HEREON BASED UPON THE BEARING SYSTEM IN REFERENCE PLANS "A" AND "D" ABOVE.
 10- SITE BENCHMARK: TOP OF LIMESTONE FOUND ON LINE OF LANDS MYERS 24.86 FEET NORTHWEST OF SOUTHEAST CORNER OF TRACT SHOWN HEREON, ELEV = 380.66.
 11- OWNER/APPLICANT: THOMAS P. NERNEY, 400 IVERARY, VILLANOVA, PA 19085

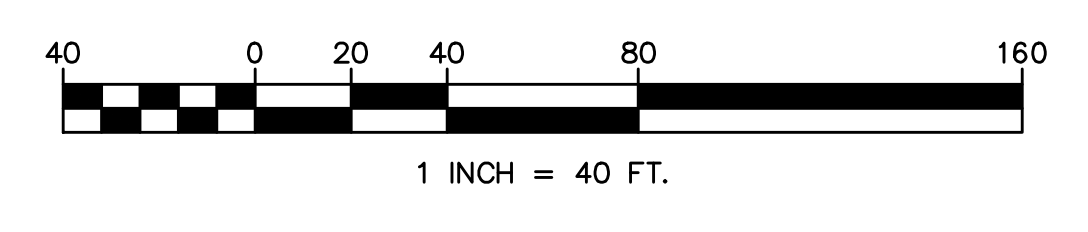
12- IF ADDITIONAL EARTH DISTURBANCE IS PROPOSED OUTSIDE OF THE PERMITTED LIMIT OF DISTURBANCE AND NPDES PERMIT AREA, A PERMIT MODIFICATION MAY BE REQUIRED. THE DELAWARE COUNTY CONSERVATION DISTRICT SHALL BE CONTACTED PRIOR TO CONDUCTING ADDITIONAL EARTH DISTURBANCE OUTSIDE THE PERMITTED AREA.

AS-BUILT PLANS:
 1. AS-BUILT PLANS OF THE INFILTRATION BEDS SHALL BE SUBMITTED TO RADNOR TOWNSHIP UPON COMPLETION OF CONSTRUCTION.



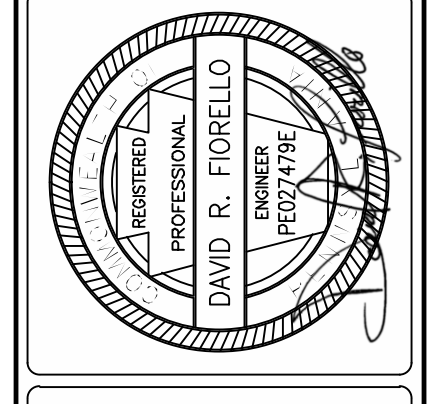
SOILS INFORMATION					
SYMBOL	NAME	%SLOPE	HYDROLOGIC GROUP	DEPTH TO SH	DEPTH TO WATER BEDROCK
GeB	GLENNELG CHANNERY SILT LOAM	3 TO 8 PERCENT SLOPES	B	6.6+	4.16
GeB2	GLENNELG CHANNERY SILT LOAM	3 TO 8 PERCENT SLOPES	B	6.6+	6.6+
GeC	GLENNELG CHANNERY SILT LOAM	8 TO 15 PERCENT SLOPES	B	6.6+	4.16
GeC2	GLENNELG CHANNERY SILT LOAM	8 TO 15 PERCENT SLOPES	B	6.6+	6.6+
GhB2	GLENNVILLE SILT LOAM	3 TO 8 PERCENT SLOPES	C	1.73	6.62
NsB2	NESHAMINY GRAVELLY SILT LOAM	3 TO 8 PERCENT SLOPES	B	5.51	4.98
NsD	NESHAMINY VERY STONY SILT LOAM	8 TO 23 PERCENT SLOPES	B	6.6+	4.49

RESOLUTION TO SOIL LIMITATIONS:
 BASED ON THE EXISTING SOIL TYPES AND IF THE PROPOSED EROSION AND SEDIMENTATION CONTROL MEASURES ARE INSTALLED AND MAINTAINED PROPERLY, NO UNFORESEEN SOIL LIMITATIONS OR PROBLEMS ARE LIKELY. NEVERTHELESS, IF A PROBLEM DOES DEVELOP, THE DEVELOPER MUST TEMPORARILY SEED AND MULCH THE DISTURBED AREA. SUITABLE TOPSOIL SHALL BE IMPORTED TO SITE IF INADEQUATE QUANTITIES OF SUITABLE TOPSOIL EXIST ON SITE. ADEQUACY OF SOIL TO BE DETERMINED BY SITE GEOTECHNICAL ENGINEER IN CONJUNCTION WITH THE LANDSCAPE ARCHITECT. SOIL AMENDMENTS SHALL BE ADDED AS REQUIRED. ALL UNSUITABLE MATERIAL SHALL BE DISPOSED OF PROPERLY. SITE GEOTECHNICAL ENGINEER SHALL ALSO BE CONSULTED DURING WINTER GRADING OPERATIONS.



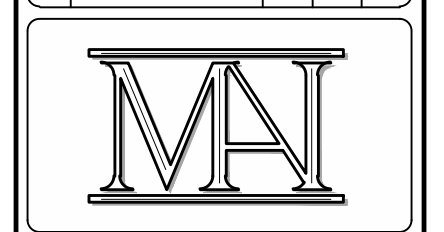
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Stamp: **CALL BEFORE YOU DIG!**
 PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR ALL UTILITIES TO BE LOCATED PRIOR TO ANY EXCAVATION WORK.
 Dave W. Eskin, Inc. One Call System, Inc.
 Pennsylvania One Call System, Inc.
 1-800-242-1776

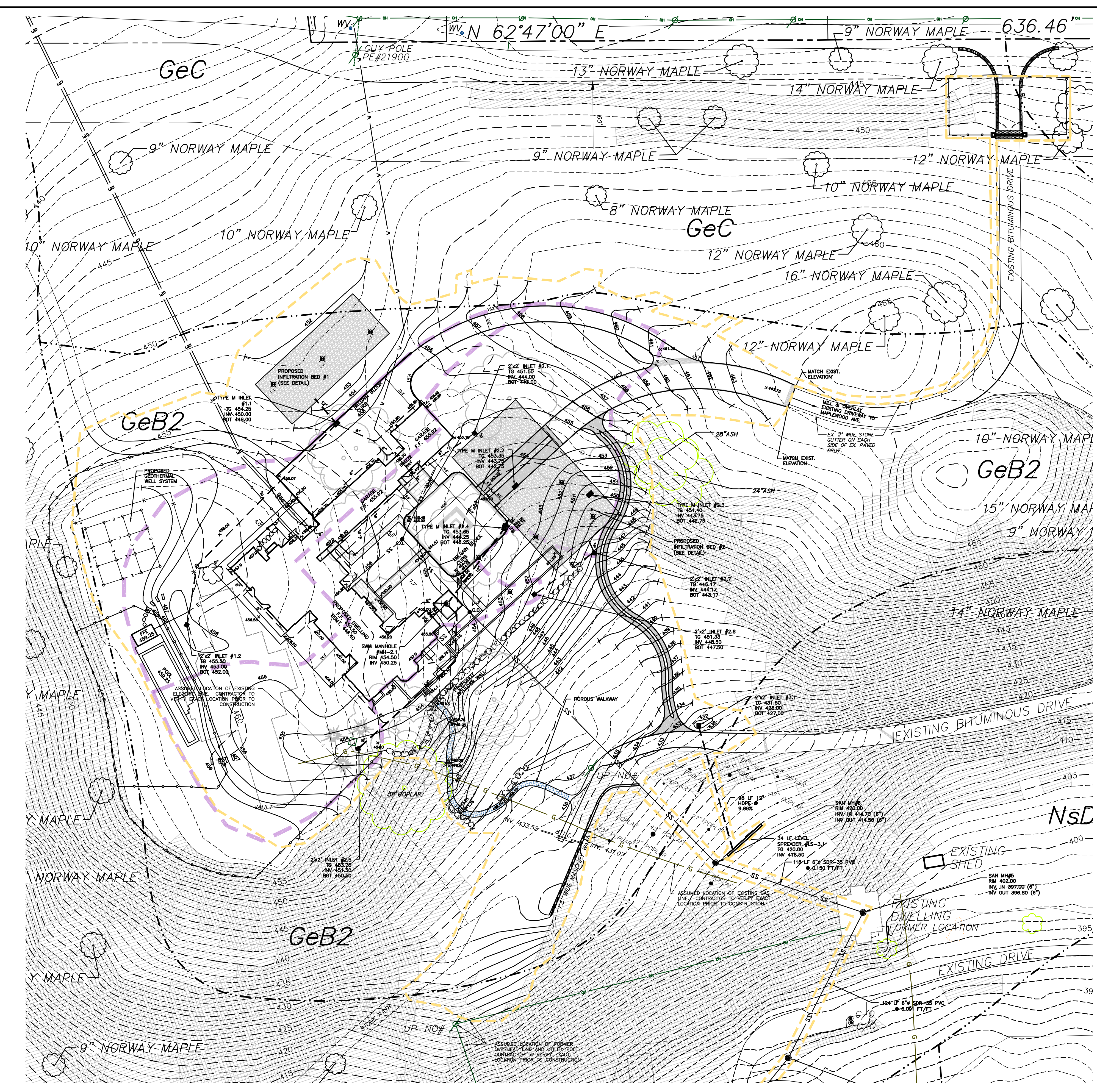


MOMENEE & ASSOCIATES, INC.
 CIVIL ENGINEERS AND LAND SURVEYORS
 400 IVERARY
 VILLANOVA, PA 19085
 PHONE: (610) 957-3000 FAX: (610) 427-9900

EXISTING CONDITIONS / DEMOLITION PLAN
 GRADING PERMIT PLAN - SUPPLEMENT
 600 MAPLEWOOD AVENUE
 RADNOR TOWNSHIP • DELAWARE COUNTY • PENNSYLVANIA
 ONE-CALL: BDM
 DRAWN BY: BDM
 CHECKED BY: DRE



DATE: MAY 21, 2014
 SHEET NO. 2
 SCALE: 1" = 40'
 FILE NO.: 14-015



TREE REPLACEMENT NOTES
NO TREES TO BE REMOVED:

TREE REPLACEMENT FORMULA:
 18 - 24 INCH DBH REMOVED = 1 REPLACEMENT TREE
 25 - 29 INCH DBH REMOVED = 3 REPLACEMENT TREES, 2 BEING LARGE CANOPY TREES
 30 INCH DBH & GREATER REMOVED = 6 REPLACEMENT TREES, 4 BEING LARGE CANOPY TREES

TOTAL TREES BEING REMOVED:
 18 - 24 INCH DBH = 0
 25 - 29 INCH DBH = 0
 30 INCH DBH & GREATER = 0
 TOTAL = 0

REPLACEMENT TREES REQUIRED = 0, 0 BEING LARGE CANOPY TREES
 [ALL REPLACEMENT TREES SHALL HAVE A MINIMUM DBH OF 2 - 2.5"]

NOTE: SHOULD ANY ADDITIONAL TREES BE REMOVED, ADDITIONAL REPLACEMENT TREES SHALL BE PROVIDED IN ACCORDANCE WITH THE RADNOR TOWNSHIP ORDINANCE No. 2012-05.

CARE OF EXISTING TREES:

1. ALL WOODY VEGETATION TO BE RETAINED WITHIN TWENTY-FIVE FEET OF A BUILDING SITE OR DISTURBED AREA SHALL BE PROTECTED FROM EQUIPMENT DAMAGE BY FENCING PLACED AT THE DRIPLINES. TREE PROTECTION FENCING SHALL BE INSTALLED TO PROTECT ALL EXISTING TREES FROM DAMAGE DUE TO LANDSCAPE OPERATIONS, OPERATIONS BY OTHER CONTRACTORS AND TRADES, AND OTHERS. MAINTAIN PROTECTION FENCING FOR THE DURATION OF THE PROJECT.
2. GRADE CHANGES AROUND THE DRIPLINES OF TREES TO BE RETAINED SHALL BE MINIMIZED. TREATMENT OF THE TREES PRIOR TO CONSTRUCTION TO PROTECT THE ROOT SYSTEM SHALL BE PERFORMED.
3. SELECTIVELY PRUNE EXISTING TREES AT THE EDGE OF ALL TREE PROTECTION ZONES, AND OTHER EXISTING TREES AFFECTED BY CONSTRUCTION, UNDER LANDSCAPE ARCHITECT'S DIRECTION. REMOVE SUCKER SHOOTS, DEAD, RUBBING AND DAMAGED BRANCHES.
4. ANY EXCAVATION NEAR ADJACENT ROOT SYSTEMS WILL REQUIRE ROOT PRUNING OF AFFECTED TREES. ALL DISTURBED ROOTS MUST BE CUT AS CLEANLY AS POSSIBLE. THE TRENCH MUST BE BACKFILLED AS QUICKLY AS POSSIBLE, AVOIDING COMPACTION. TREE LIMBS MUST BE CUT BACK IN PROPORTION TO THE ROOT AREA LOSS.
5. FERTILIZE PRUNED EXISTING TREES WITH 3 TO 4 LBS. OF LIQUID FERTILIZER PER 1,000 SQUARE FEET OF DRIP AREA, OR 5 GALLONS OF LIQUID FERTILIZER PER CALIPER INCH OF TRUNK DIAMETER.
6. FERTILIZE IN EARLY SPRING BEFORE GROWTH BEGINS.
7. FERTILIZE BEGINNING 2' FROM TRUNK AT INTERVALS 2' TO 3' ON CENTER IN A GRID-LIKE PATTERN TO A DEPTH OF 6-18" WITHIN THE DRIPLINE AND BEYOND WHERE POSSIBLE. INJECTION FERTILIZATION METHOD SHALL BE ACCEPTABLE SUBJECT TO LANDSCAPE ARCHITECT'S APPROVAL.

OPERATION AND MAINTENANCE PROCEDURE:
THE PERMITTEE SHALL BE RESPONSIBLE FOR THE PROPER CONSTRUCTION, STABILIZATION AND MAINTENANCE OF ALL EROSION AND SEDIMENTATION CONTROL MEASURES.

THE OPERATION AND MAINTENANCE REQUIREMENTS FOR THE POST CONSTRUCTION STORMWATER MANAGEMENT FOR THIS PROJECT INCLUDE THE FOLLOWING:

1. ON-LOT INFILTRATION BEDS:
 - a. CLEAN GUTTERS OF LEAVES AND OTHER DEBRIS TWICE A YEAR (LATE FALL AND LATE SPRING).
 - b. INSPECT AREA DRAINS FOUR TIMES A YEAR AND CLEAN SLUICERS OF ANY ACCUMULATED DEBRIS AND SEDIMENT.
 - c. CHECK INFILTRATION BED AT OBSERVATION POINT ANNUALLY AND AFTER EACH RAINFALL EXCEEDING 3.0 INCHES IN 24 HOURS. IF STANDING WATER IS OBSERVED WITHIN 96 HOURS OF A RAIN EVENT, CONSULT WITH A PROFESSIONAL ENGINEER TO OBTAIN RECOMMENDATIONS FOR CORRECTIVE MEASURES. CHECK SURFACE AREA OF INFILTRATION BED FOR EVIDENCE OF SUBSIDENCE, EROSION, OR OTHER FAILURES AND REPAIR AS NECESSARY.
2. ALL INSPECTIONS OF POST CONSTRUCTION STORMWATER MANAGEMENT FACILITIES SHALL BE PERFORMED BY THE PERMITTEE.

DISPOSAL AND RECYCLING
PROPERTY OWNER IS RESPONSIBLE FOR THE PROPER DISPOSAL OF ALL WASTES ON-SITE. GARBAGE SHALL BE COLLECTED ON-SITE UNTIL REMOVED BY AN APPROVED DISPOSAL OR RECYCLING COMPANY. CONTRACTOR SHALL NOT INCUR EXCESS MATERIALS.

LIKELY WASTE TO BE GENERATED DURING MAINTENANCE OF THE POST-CONSTRUCTION BMP'S ARE:

- ACCUMULATED SEDIMENT IN THE CONVEYANCE SYSTEM
- ACCUMULATED GARBAGE AND DEBRIS IN THE CONVEYANCE SYSTEM.

SPECIAL GEOLOGIC AND SOIL CONSIDERATIONS
NO SPECIAL SOIL OR GEOLOGIC ISSUES ARE KNOWN.

THERMAL IMPACTS
POST CONSTRUCTION RUNOFF FROM THE PROJECT AREA WILL DRAIN FIRST THROUGH AN UNDERGROUND INFILTRATION SYSTEM AND THEN FOLLOW A 700-FOOT LONG HEAVILY WOODED FLOW PATH.

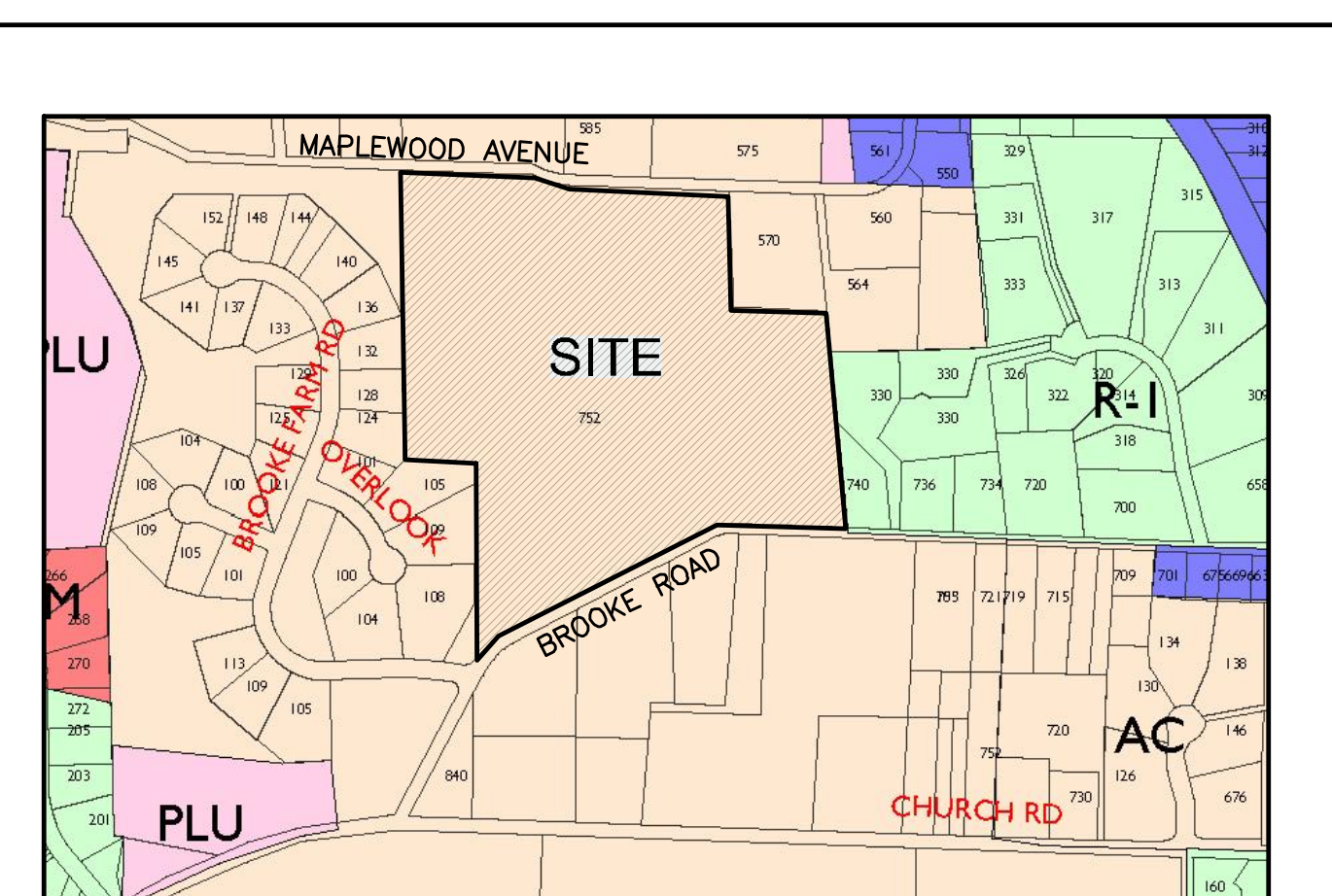
THE INFILTRATION SYSTEM HAS BEEN DESIGNED TO STORE AND INFILTRATE STORMWATER VOLUMES GREATER THAN THOSE GENERATED DURING THE 2-YEAR/24-HOUR STORM. THE SIGNIFICANT RUNOFF IN STORMWATER VOLUME REDUCES THE POTENTIAL FOR HEAT ENERGY ABSORBED BY THE STORMWATER RUNOFF TO IMPACT THE TEMPERATURE OF THE RECEIVING WATERS.

DISCHARGING POST CONSTRUCTION STORMWATER OVER THE SHADED POOL AND COOL, 700-FOOT LONG FLOW PATH DOES NOT ALLOW THE HEAT ENERGY THAT RUNOFF ABSORBS FROM THE PAVED SURFACES TO ENTER THE RECEIVING WATERS.

INFILTRATION TEST INFORMATION

TEST ID	EX. GROUND ELEVATION	INF. TEST ELEVATION	INFILTRATION TEST RESULT
1-1	452.50	447.00	0.24 IN./HR
1-2	452.50	447.00	0.08 IN./HR
1-3	453.00	447.00	0.13 IN./HR
2-1	448.75	440.00	0.11 IN./HR
2-2	449.00	440.00	0.11 IN./HR
2-3	446.50	440.00	0.25 IN./HR
2-4	446.75	440.00	0.08 IN./HR
2-5	446.75	440.00	0.12 IN./HR

NOTES:
INFILTRATION TEST INFORMATION OBTAINED FROM STORMWATER INFILTRATION TESTING REPORT PREPARED BY DAVID BLACKMORE, & ASSOCIATES, INC. DATED APRIL 23, 2013.



LOCATION MAP
SCALE: 1" = 400'

ZONING DISTRICT A-C (AGRICULTURAL-CONSERVATION DISTRICT)
 LOT SIZE: 2 ACRES MIN
 LOT WIDTH: 180' MIN
 BUILDING AREA: 125K MAX
 FRONT YARD: 60' MIN
 SIDE YARD: 50' MIN
 REAR YARD: 60' MIN
 BUILDING HEIGHT: 35' MAX OR 3 STORIES

SITE AREA CALCULATIONS:
 GROSS TRACT AREA (TO TITLE LINES): 35.982 ACRES
 - FLOOD PLAIN: 0 * 75% = 0
 - WETLANDS: 0.185 * 75% = 0.139
 - SLOPES 20% AND GREATER: 7.464 * 75% = 5.598
 NET AREA CLEAR OF R/W = 30.245 ACRES

IMPERVIOUS COVERAGE TO BE REMOVED (AS PART OF THIS SUPPLEMENT):
 BUILDINGS: 4,422 S.F.
 DRIVEWAY: 4,252 S.F.
 TOTAL: 9,357 S.F.

IMPERVIOUS COVERAGE TO BE ADDED (AS PART OF THIS SUPPLEMENT):
 POOL: 170 S.F.
 PATIO: 925 S.F.
 WALKS: 2,101 S.F.
 DRIVEWAY/CURBS: 3,104 S.F.
 WISC: 330 S.F.
 TOTAL: 6,330 S.F.

POST CONSTRUCTION STORMWATER NOTES:

- 1) THE STORMWATER MANAGEMENT FACILITIES ON SITE ARE DESIGNED TO ACCOUNT FOR NEW AND/OR REPLACEMENT IMPERVIOUS COVER. IN ADDITION, THE STORMWATER FACILITIES HAVE BEEN DESIGNED TO ACCOUNT FOR AN ADDITIONAL 2,000 SF FOR POSSIBLE FUTURE DEVELOPMENT. IF THIS IMPERVIOUS COVER IS CONSTRUCTED IN THE FUTURE, 500 SF MAY BE DIRECTED TO THE STORMWATER MANAGEMENT SYSTEM #1, 500 SF MAY BE DIRECTED TO STORMWATER MANAGEMENT SYSTEM #2, AND 1,000 SF MAY REMAIN UNCONTROLLED.
- 2) THE RESPONSIBILITY FOR THE CONTINUED MAINTENANCE AND OPERATION OF THE STORMWATER MANAGEMENT SYSTEMS AND OTHER DRAINAGE FACILITIES SHALL BE THE OBLIGATION OF THE PROPERTY OWNER.
- 3) THE TOWNSHIP ENGINEER'S OFFICE SHALL BE NOTIFIED 48 HOURS PRIOR TO THE CONSTRUCTION OF THE STORMWATER MANAGEMENT SYSTEMS AND PRIOR TO THE START OF EARTHMOVING ACTIVITIES.
- 4) THE PERMITTEE SHALL PROVIDE ENGINEERING CONSTRUCTION OVERSIGHT FOR THE PROPOSED STORMWATER MANAGEMENT SYSTEMS. TESTING PRIOR TO THE INSTALLATION OF INFILTRATION BEDS TO ENSURE PROPER LOCATION AND FUNCTION. A LICENSED PROFESSIONAL ENGINEER KNOWLEDGEABLE IN THE DESIGN AND CONSTRUCTION OF STORMWATER BMP'S, PREFERABLY THE DESIGN ENGINEER, SHALL CONDUCT THE OVERSIGHT.
- 5) UPON PERMANENT STABILIZATION OF THE EARTH DISTURBANCE ACTIVITY UNDER 102.22(g)(2) (RELATING TO PERMANENT STABILIZATION), AND INSTALLATION OF BMP'S IN ACCORDANCE WITH AN APPROVED PLAN PREPARED AND IMPLEMENTED IN ACCORDANCE WITH 102.4 AND 102.8 (RELATING TO EROSION AND SEDIMENT CONTROL REQUIREMENTS), THE PERMITTEE OR CO-PERMITTEE SHALL SUBMIT A NOTICE OF TERMINATION TO THE DEPARTMENT OR CONSERVATION DISTRICT.

THE NOTICE OF TERMINATION MUST INCLUDE:
 (1) THE FACILITY NAME, ADDRESS AND LOCATION
 (2) THE OPERATOR NAME AND ADDRESS
 (3) THE PERMIT NUMBER
 (4) THE REASON FOR PERMIT TERMINATION
 (5) IDENTIFICATION OF THE PERSONS WHO HAVE AGREED TO AND WILL BE RESPONSIBLE FOR LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMP'S IN ACCORDANCE WITH 102.8(m)(2).

PRIOR TO ACCEPTING THE NOT, THE DEPARTMENT AND/OR CONSERVATION DISTRICT STAFF WILL PERFORM A FINAL INSPECTION AND APPROVE OR DENY THE NOTICE OF TERMINATION.

6) MAINTENANCE NOTES:
 A. THE BMP'S LISTED BELOW WILL BE OWNED AND MAINTAINED BY THE PROPERTY OWNERS:
 • UNDERGROUND SEEPAGE BED
 • COMMON AREA LANDSCAPING
 • STORM SEWER

B. THE PARTY RESPONSIBLE FOR THE LONG TERM OPERATIONS AND MAINTENANCE OF STORMWATER MANAGEMENT FACILITIES SHALL MAKE RECORDS OF THE INSTALLATION AND ALL MAINTENANCE AND REPAIRS, AND SHALL RETAIN THE RECORDS FOR AT LEAST TEN (10) YEARS. THESE RECORDS SHALL BE SUBMITTED TO THE TOWNSHIP AS ESTABLISHED BY THE OPERATION AND MAINTENANCE PLAN OR IF OTHERWISE REQUIRED BY THE TOWNSHIP.

7) DESIGN CONSIDERATIONS:
 UNDERGROUND SEEPAGE BEDS DESIGNED TO STORE AND MITIGATE POST-DEVELOPMENT RUNOFF TO RATES LESS THAN THOSE REQUIRED BY THE TOWNSHIP CODE.

8) THE POST CONSTRUCTION STORMWATER MANAGEMENT PLAN HAS BEEN DESIGNED TO MEET THE FOLLOWING GOALS AND GUIDELINES:
 A. PRESERVE THE INTEGRITY OF STREAM CHANNELS AND MAINTAIN AND PROTECT THE PHYSICAL, BIOLOGICAL, AND CHEMICAL QUALITIES OF RECEIVING STREAMS.
 B. PREVENT AN INCREASE IN THE RATE OF STORMWATER RUNOFF.
 C. MINIMIZE ANY INCREASE IN THE STORMWATER RUNOFF VOLUME.
 D. MINIMIZE IMPERVIOUS AREAS.
 E. MINIMIZE PROTECTION OF EXISTING DRAINAGE FEATURES AND EXISTING VEGETATION.
 F. MINIMIZE LAND CLEARING AND GRADING.
 G. MINIMIZE SOIL COMPACTION.
 H. UTILIZE OTHER STRUCTURAL OR NONSTRUCTURAL BMP'S THAT PREVENT OR MINIMIZE CHANGES IN STORMWATER RUNOFF.

9) THE RECEIVING WATERS FOR THIS PROJECT ARE THOSE OF AN UNNAMED TRIBUTARY TO LITTLE DARBY CREEK, THE CHAPTER 93 CLASSIFICATION FOR THE RECEIVING WATER DISCHARGING FROM THE PROJECT SITE IS CWF (COLD WATER FISHERIES).

10) 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 25 PA. CODE 2801 ET SEQ. 2711 ET SEQ. AND 2811 ET SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP, OR DISCHARGE ANY BUILDING MATERIAL OR WASTES AT THE SITE. CONSTRUCTION WASTES MUST BE RECYCLED TO THE EXTENT PRACTICABLE, AND DISPOSAL METHODS MUST COMPLY WITH FEDERAL, STATE, AND LOCAL REQUIREMENTS.

11) NO PERSON SHALL MODIFY, REMOVE, FILT, LANDSCAPE, OR ALTER ANY EXISTING STORMWATER OR BMP, UNLESS IT IS PART OF AN APPROVED MAINTENANCE PROGRAM, WITHOUT THE WRITTEN APPROVAL OF RADNOR TOWNSHIP.

12) NO PERSON SHALL PLACE ANY STRUCTURE, FILT, LANDSCAPING, OR VEGETATION INTO A CROSSING OVER A BMP OR WITHIN A DRAINAGE EASEMENT WHICH WOULD LIMIT OR ALTER THE FUNCTIONING OF THE STORMWATER CONTROL OR BMP WITHOUT THE WRITTEN APPROVAL OF RADNOR TOWNSHIP.

13) A BLANKET EASEMENT IS HEREBY GRANTED TO RADNOR TOWNSHIP FOR THE PURPOSE OF ACCESSING THE PROPOSED INFILTRATION BEDS FROM MAPLEWOOD AVENUE.

14) AS-BUILT PLANS OF THE INFILTRATION BEDS SHALL BE SUBMITTED TO RADNOR TOWNSHIP UPON COMPLETION OF CONSTRUCTION.

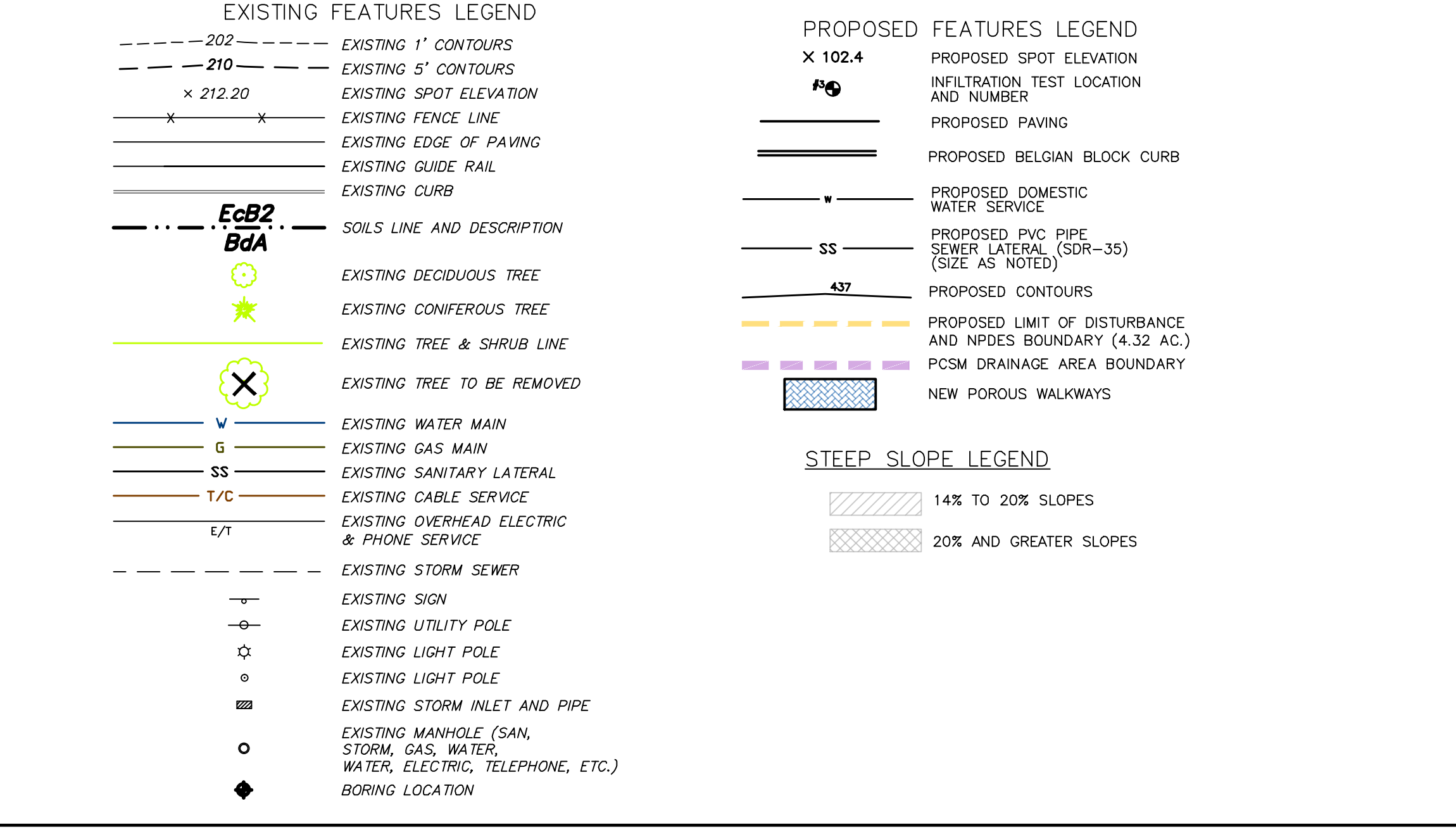
15) THE PROPERTY OWNER IS RESPONSIBLE FOR THE MAINTENANCE OF THE ON-LOT STORMWATER MANAGEMENT FACILITIES. THE FACILITIES ARE PERMANENT AND MAY NOT BE REMOVED WITHOUT WRITTEN PERMISSION FROM THE TOWNSHIP.

NOTE: THE PROPERTY OWNER IS RESPONSIBLE FOR MAINTENANCE OF THE ON-LOT STORMWATER MANAGEMENT FACILITIES. FACILITIES ARE PERMANENT AND MAY NOT BE REMOVED WITHOUT WRITTEN PERMISSION FROM THE TOWNSHIP.

SOILS INFORMATION

SYMBOL	NAME	%SLOPE	HYDROLOGIC GROUP	DEPTH TO SH WATER	DEPTH TO BEDROCK
GeB	GLENELG CHANNERY SILT LOAM	3 TO 8 PERCENT SLOPES	B	6.6+	4.16
GeB2	GLENELG CHANNERY SILT LOAM	3 TO 8 PERCENT SLOPES	B	6.6+	6.6+
GeC	GLENELG CHANNERY SILT LOAM	8 TO 15 PERCENT SLOPES	B	6.6+	4.16
GeC2	GLENELG CHANNERY SILT LOAM	8 TO 15 PERCENT SLOPES	B	6.6+	6.6+
GnB2	GLENVILLE SILT LOAM	3 TO 8 PERCENT SLOPES	C	1.73	6.62
NnB2	NESHAMINY DRAVELLY SILT LOAM	3 TO 8 PERCENT SLOPES	B	5.51	4.98
NnD	NESHAMINY VERY STONY SILT LOAM	8 TO 25 PERCENT SLOPES	B	6.6+	4.49

RESOLUTION TO SOIL LIMITATIONS:
 BASED ON THE EXISTING SOIL TYPES AND IF THE PROPOSED EROSION AND SEDIMENTATION CONTROL MEASURES ARE INSTALLED AND MAINTAINED PROPERLY, NO UNFORESEEN SOIL LIMITATIONS OR PROBLEMS ARE LIKELY. NEVERTHELESS, IF A PROBLEM DOES DEVELOP, THE DEVELOPER MUST TEMPORARILY SEED AND MULCH THE DISTURBED AREA. SUITABLE TOPSOIL SHALL BE IMPORTED TO SITE IF INADEQUATE QUANTITIES OF SUITABLE TOPSOIL EXIST ON SITE. ADEQUACY OF SOIL TO BE DETERMINED BY SITE GEOTECHNICAL ENGINEER IN CONJUNCTION WITH THE LANDSCAPE ARCHITECT. SOIL AMENDMENTS SHALL BE ADDED AS REQUIRED. ALL UNSUITABLE MATERIAL SHALL BE DISPOSED OF PROPERLY. SITE GEOTECHNICAL ENGINEER SHALL ALSO BE CONSULTED DURING WINTER GRADING OPERATIONS.



Stamp Number: 20130004 & 20130005

CALL BEFORE YOU DIG
 3 WORKING DAYS NOTICE FOR
 ANY UTILITY LOCATIONS
 DATE IN DESIGN SHALL BE 9:00 AM
 PENNSYLVANIA ONE CALL SYSTEM, INC.
 1-800-242-1776

DAVID R. FORELLO
 CIVIL ENGINEER
 400 INVERARY ROAD
 VILLANOVA, PA 19085

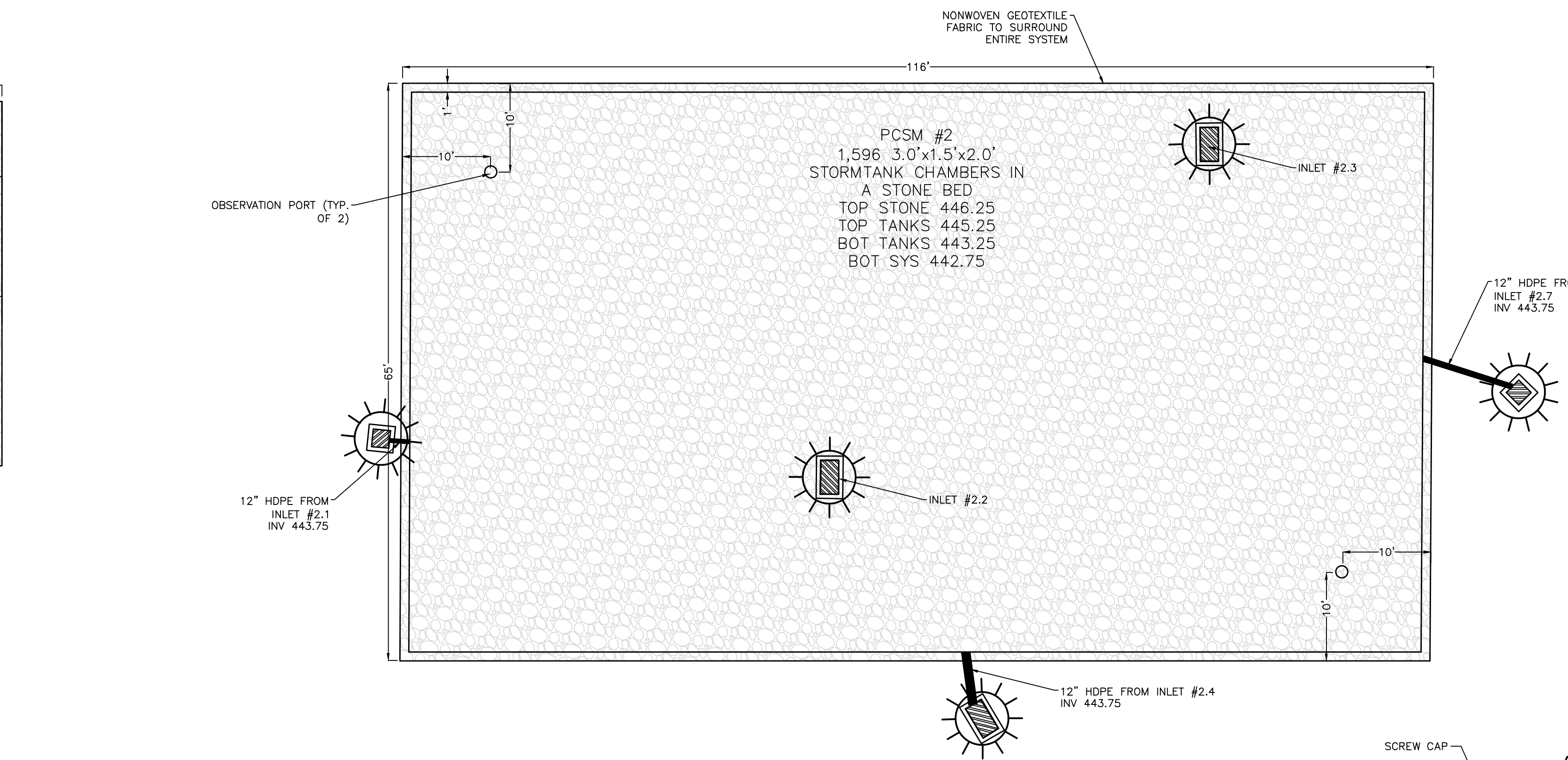
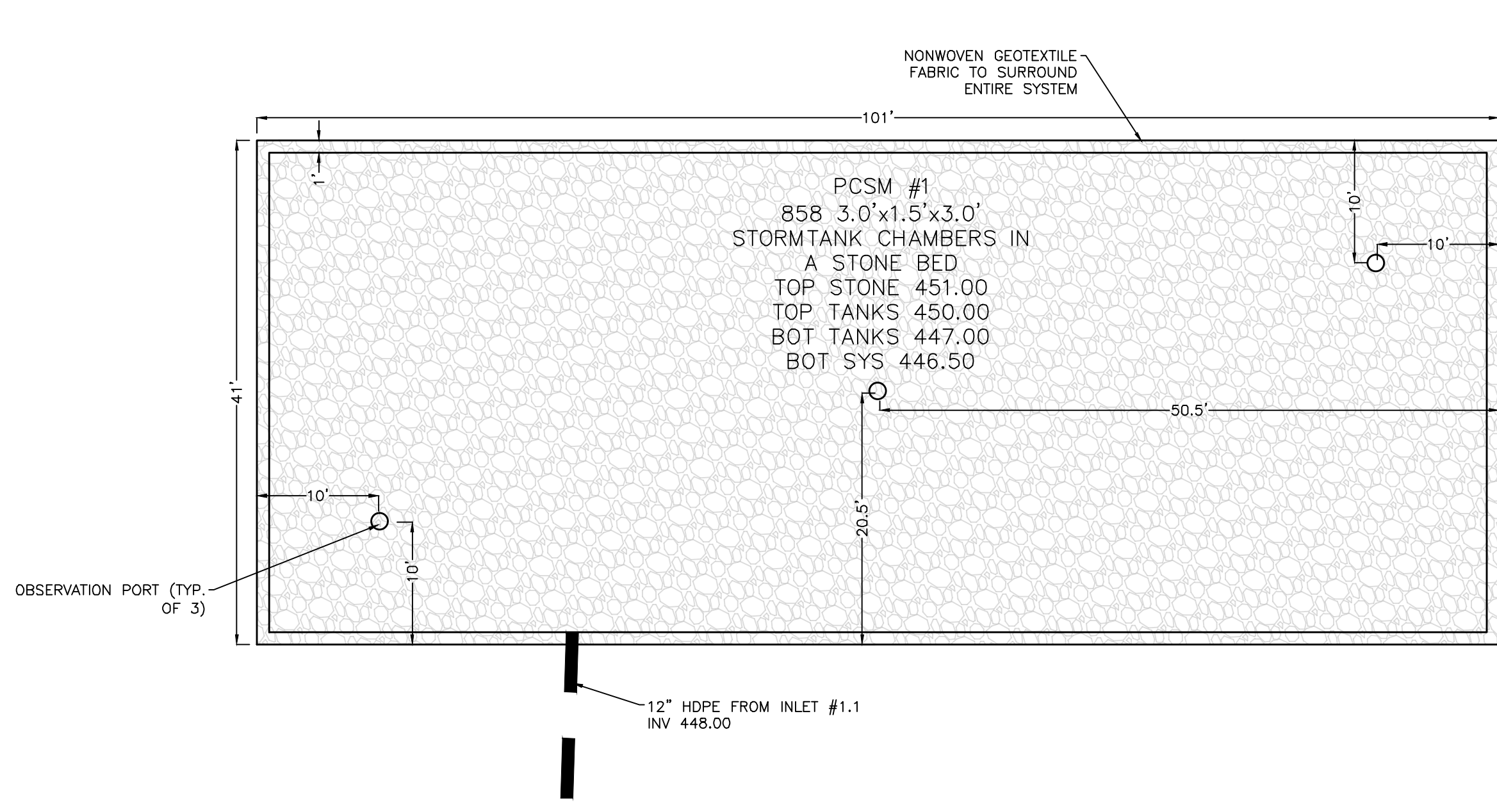
MOMENEE & ASSOCIATES, INC.
 CIVIL ENGINEERS AND LAND SURVEYORS
 600 MAPLEWOOD AVENUE
 RADNOR TOWNSHIP • DELAWARE COUNTY • PENNSYLVANIA
 PHONE: (610) 957-3030 FAX: (610) 427-9909

OWNER/APPLICANT: THOMAS P. NENEY
 400 INVERARY ROAD
 VILLANOVA, PA 19085

ONE-CALL: BDM
 DRAWN BY: DRE
 CHECKED BY: DRE

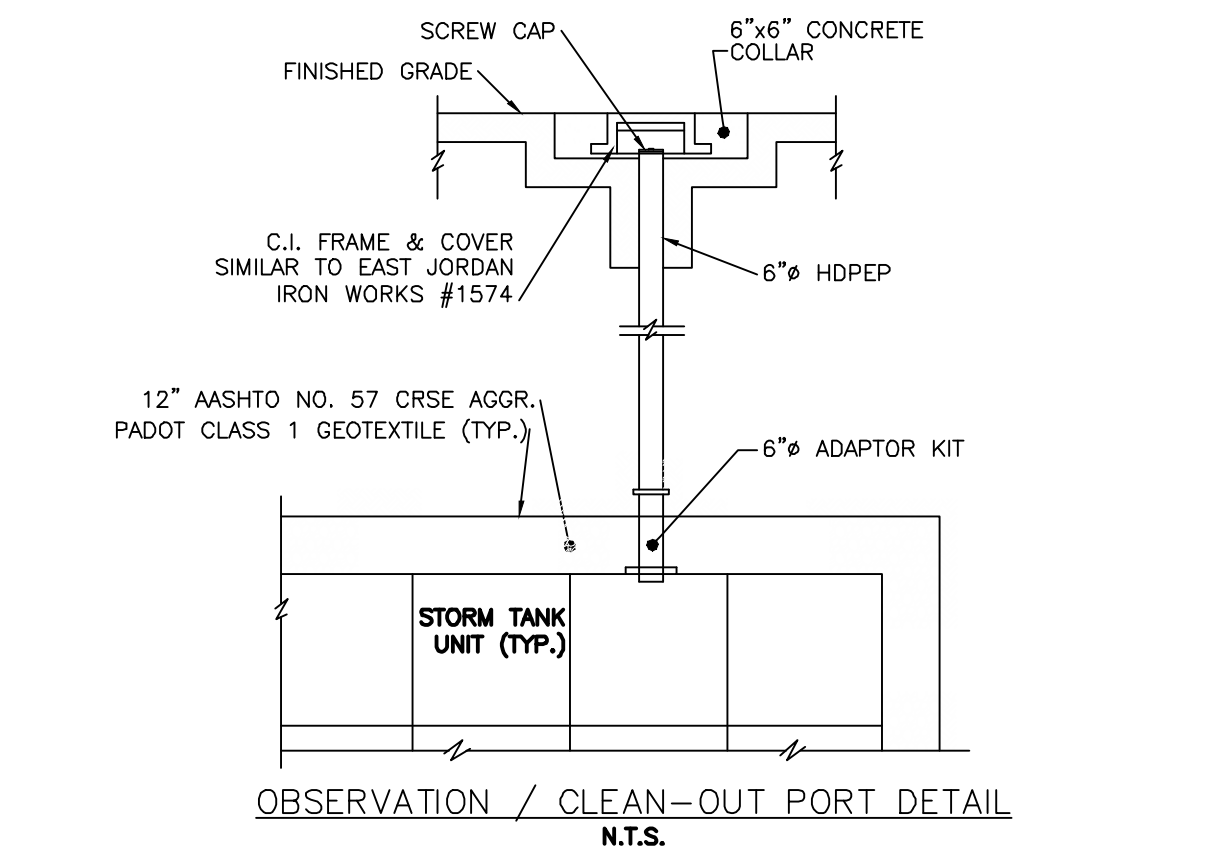
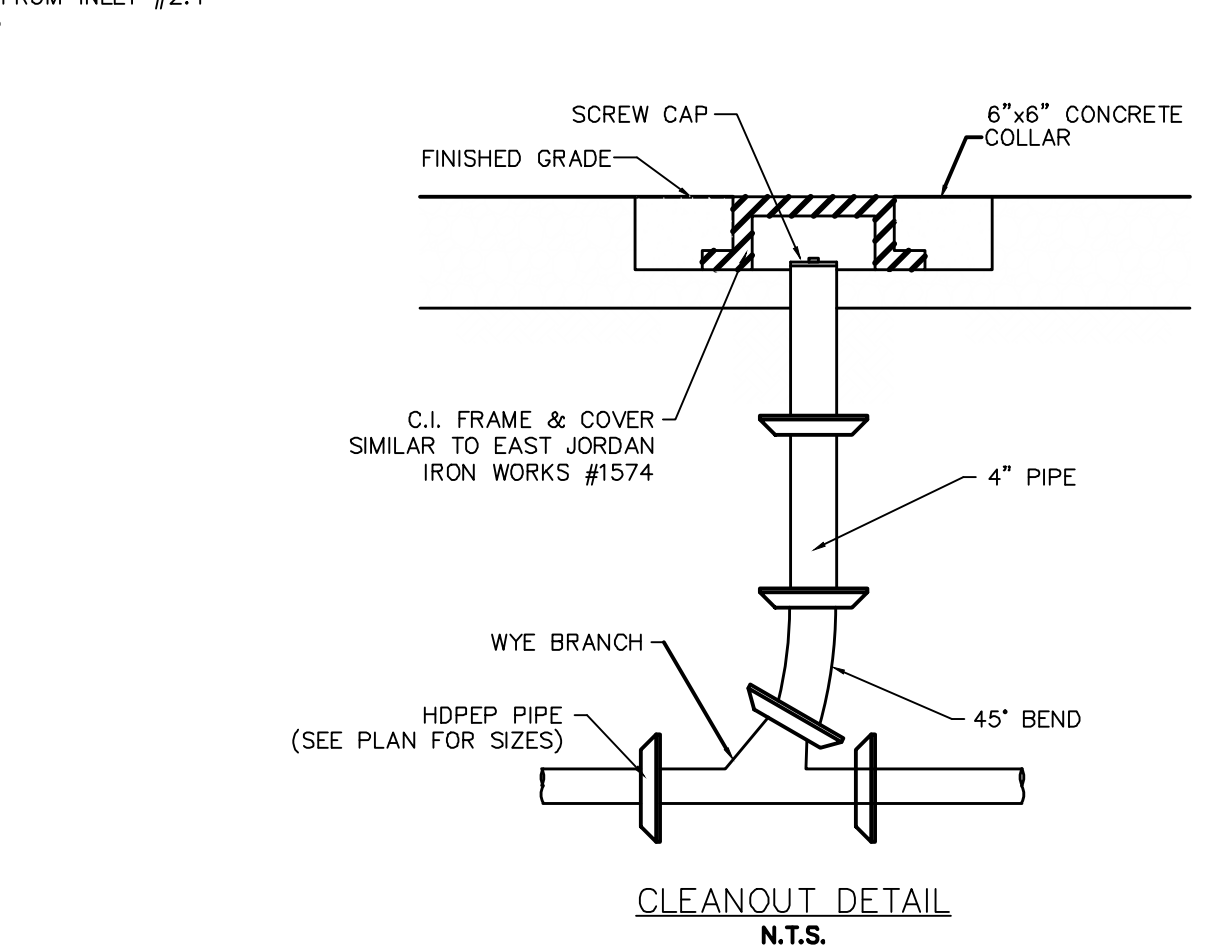
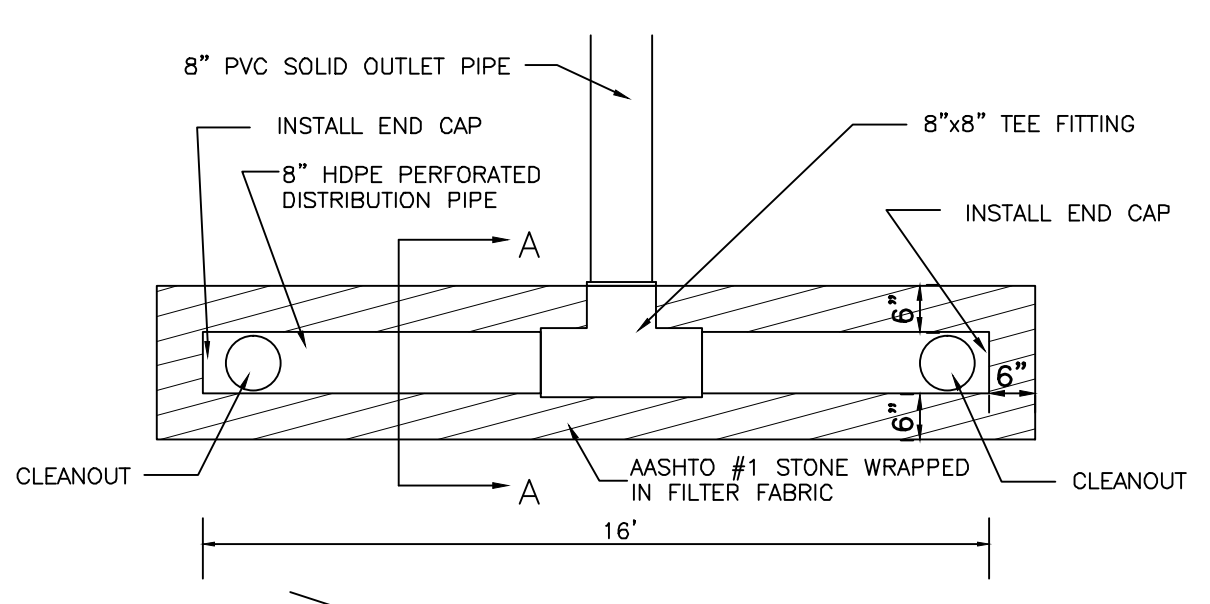
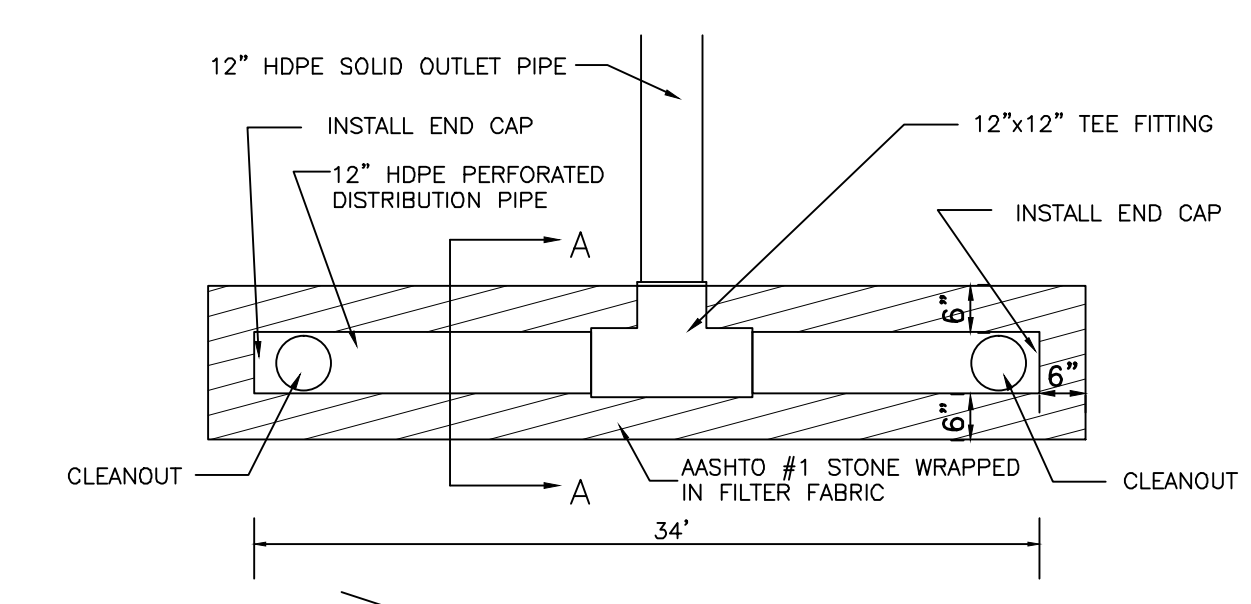
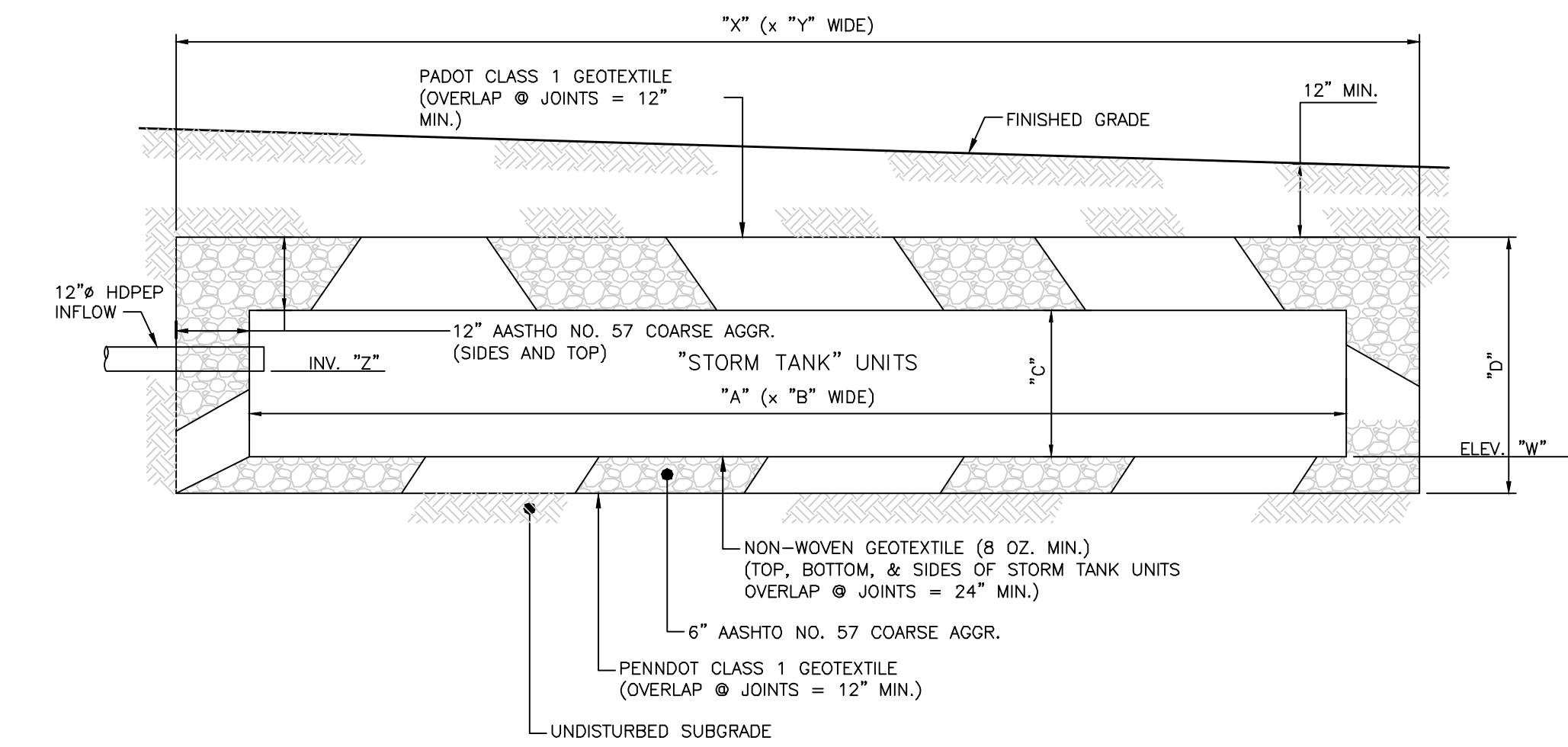
POST CONSTRUCTION STORMWATER MANAGEMENT PLAN
 GRADING PERMIT PLAN - SUPPLEMENT
 600 MAPLEWOOD AVENUE
 RADNOR TOWNSHIP • DELAWARE COUNTY • PENNSYLVANIA

DATE: MAY 21, 2014
 SHEET NO. 3
 SCALE: 1" = 40'
 FILE NO.: 14-015

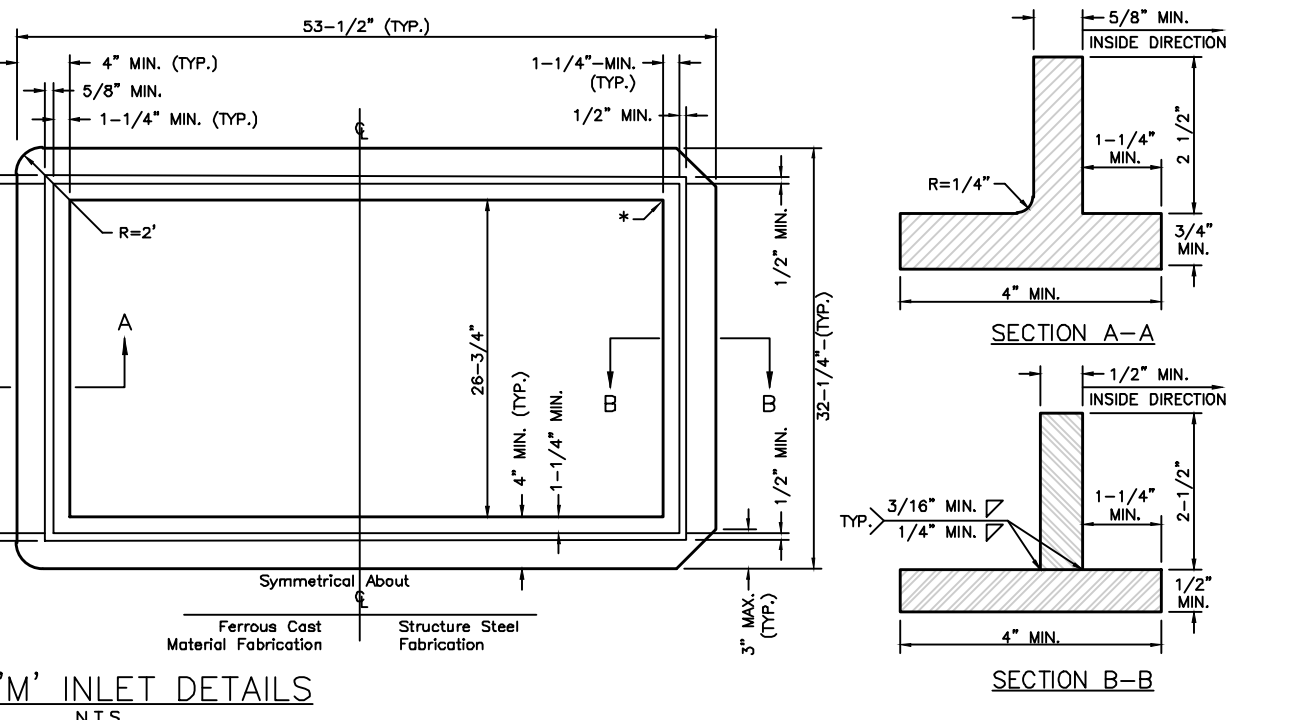
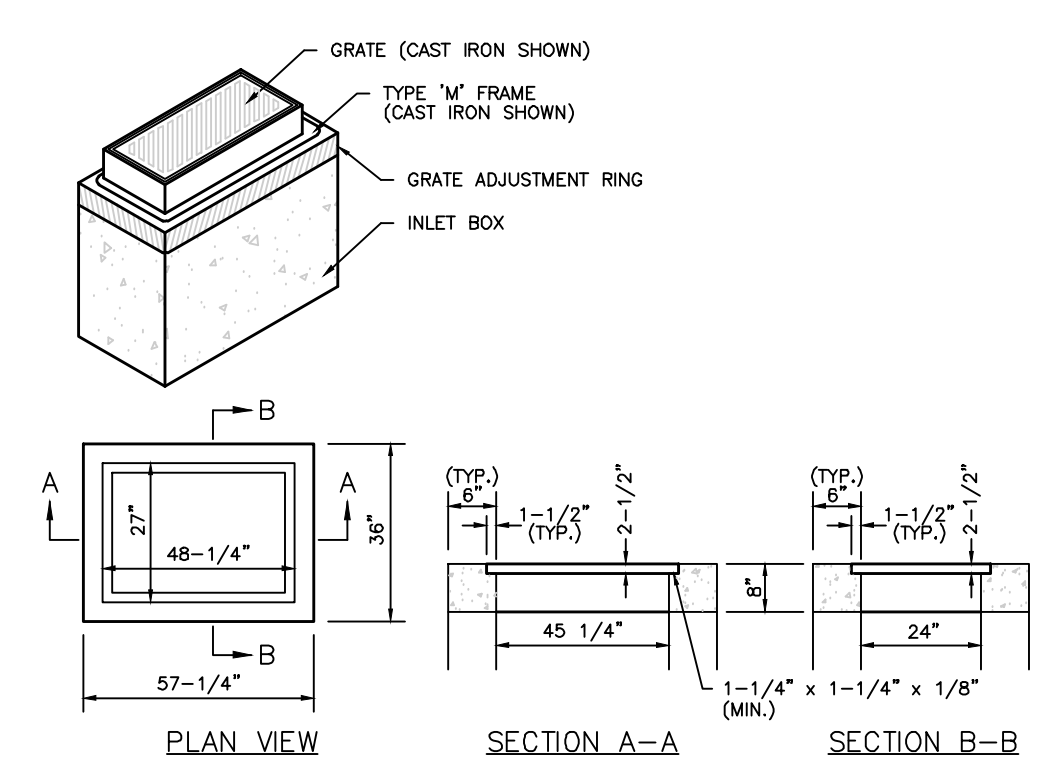
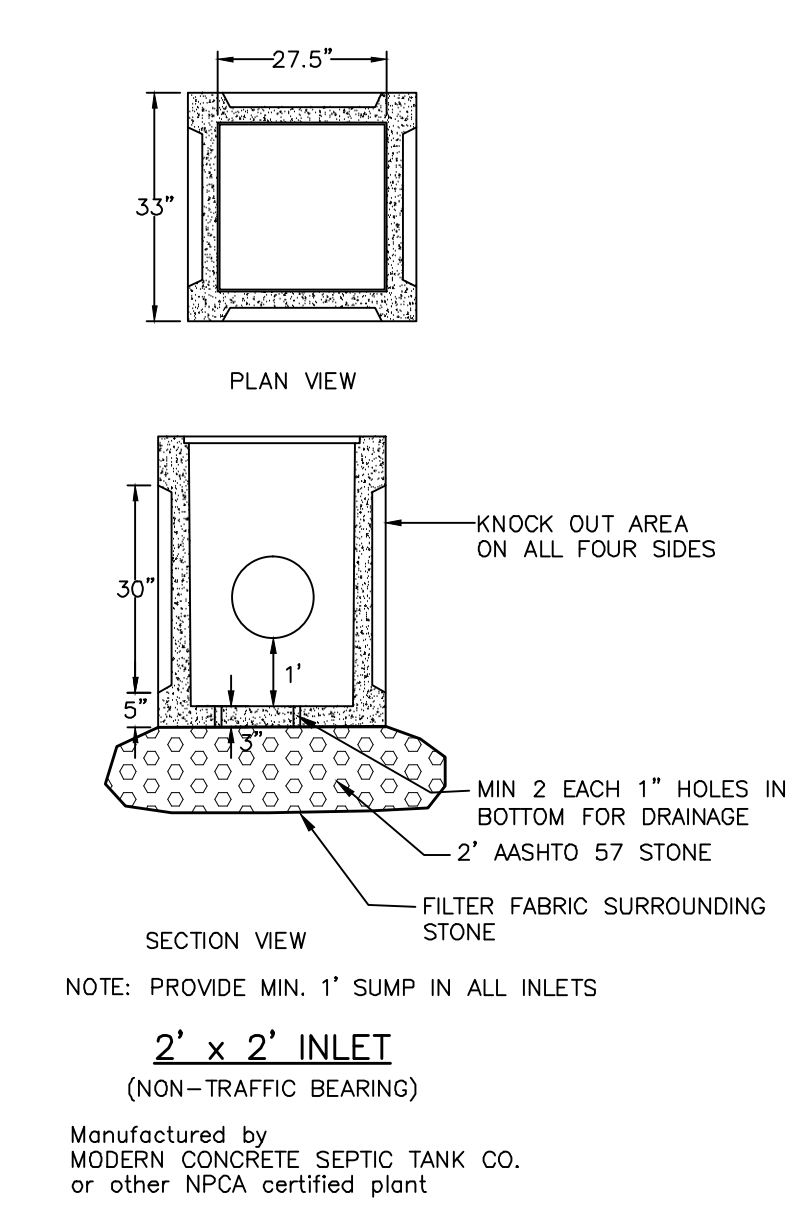


- INFILTRATION BED NOTES:**
1. THE INSTALLATION OF THE INFILTRATION BED SHOULD BE DONE DURING NON-RAINY PERIODS TO PREVENT SEDIMENT DEPOSITION AND CLOGGING OF THE SOIL STRUCTURE. IF RAIN BEGINS AFTER THE EXCAVATION OF THE INFILTRATION BED HAS BEEN COMPLETED, FILTER FABRIC SHALL BE PLACED ON THE BED AREA. THE FILTER FABRIC SHALL BE REMOVED AND REPLACED IF SEDIMENT ACCUMULATES IN THE BED AREA.
 2. BOTTOM OF BED SHOULD BE LEVEL TO A TOLERANCE OF 2 INCHES PER 100 FEET.
 3. LEAF GUTTER GUARDS SHALL BE USED ON ROOF GUTTERS AND STRAINERS ON DOWNPOUTS TO PREVENT CLOGGING OF THE SYSTEM.
 4. EXCAVATION OF THE INFILTRATION BED SHALL BE PERFORMED WITH EQUIPMENT WHICH WILL NOT COMPACT THE BOTTOM OF THE BED.
 5. THE BOTTOM OF THE BED SHALL BE SCARIFIED PRIOR TO THE PLACEMENT OF AGGREGATE.
 6. OWNER OF SYSTEM SHALL HAVE SYSTEM CLEANED AS REQUIRED.

- OPERATION AND MAINTENANCE REQUIREMENTS:**
- THE PERMITTEE SHALL BE RESPONSIBLE FOR THE PROPER CONSTRUCTION, STABILIZATION AND MAINTENANCE OF ALL EROSION AND SEDIMENTATION CONTROL MEASURES.
- THE OPERATION AND MAINTENANCE REQUIREMENTS FOR THIS POST CONSTRUCTION STORMWATER MANAGEMENT FOR THIS PROJECT INCLUDE THE FOLLOWING:
1. ON-LOT INFILTRATION BEDS:
 - a. CLEAN GUTTERS OF LEAVES AND OTHER DEBRIS TWICE A YEAR (LATE FALL AND LATE SPRING)
 - b. INSPECT AREA DRAINS FOUR TIMES A YEAR AND CLEAN SUMP OF ANY ACCUMULATED DEBRIS AND SEDIMENT.
 - c. CHECK INFILTRATION BED AT OBSERVATION PORT ANNUALLY AND AFTER EACH RAINFALL EXCEEDING 3.0 INCHES IN 24 HOURS. IF STANDING WATER IS OBSERVED WITHIN 96 HOURS OF A RAIN EVENT, CONSULT WITH A PROFESSIONAL ENGINEER TO OBTAIN RECOMMENDATIONS FOR CORRECTIVE MEASURES. CHECK SURFACE AREA OF INFILTRATION BED FOR EVIDENCE OF SUBSIDENCE, EROSION, OR OTHER FAILURES AND REPAIR AS NECESSARY.
 2. ALL INSPECTIONS OF POST CONSTRUCTION STORMWATER MANAGEMENT FACILITIES SHALL BE PERFORMED BY THE PERMITTEE.

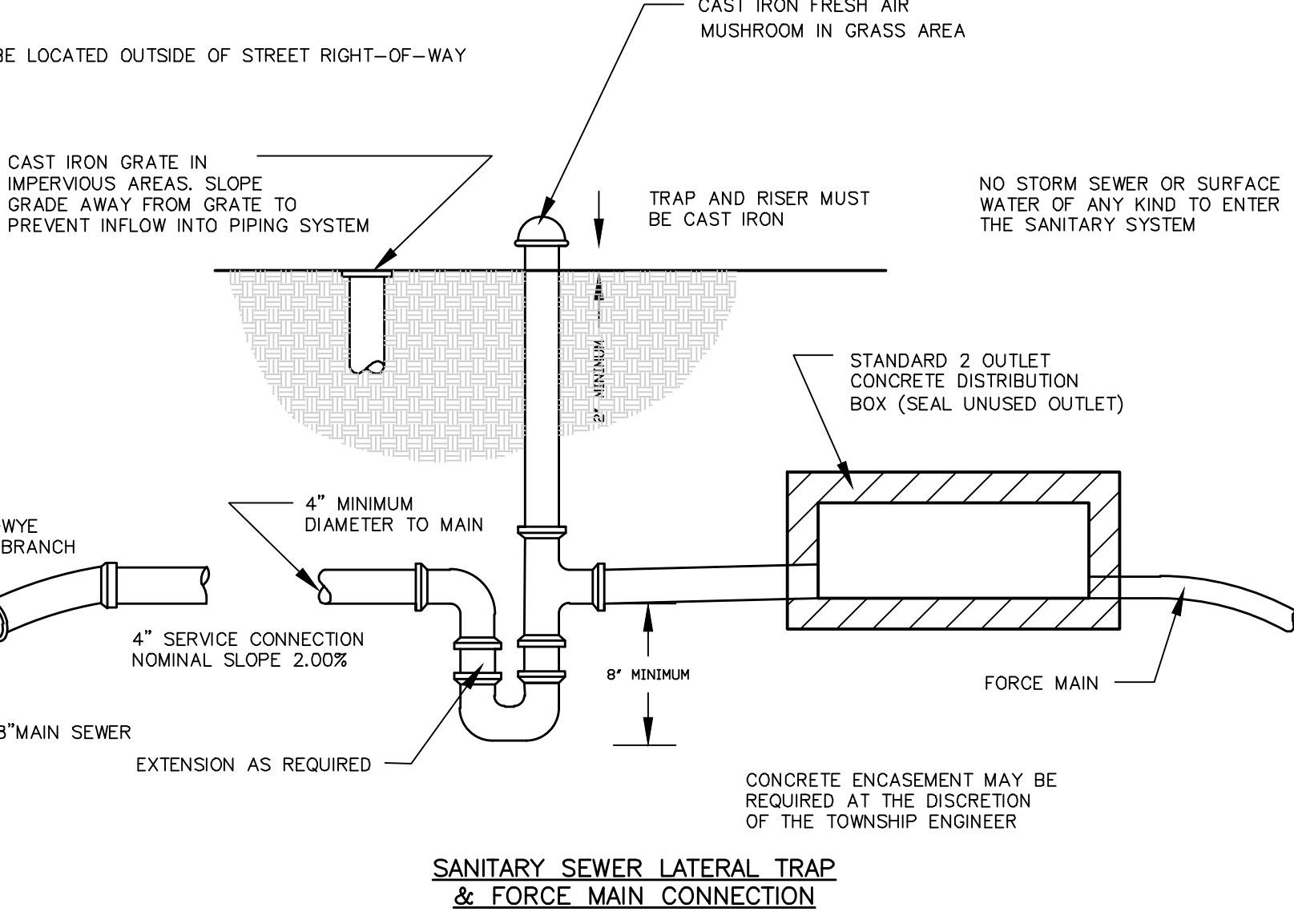
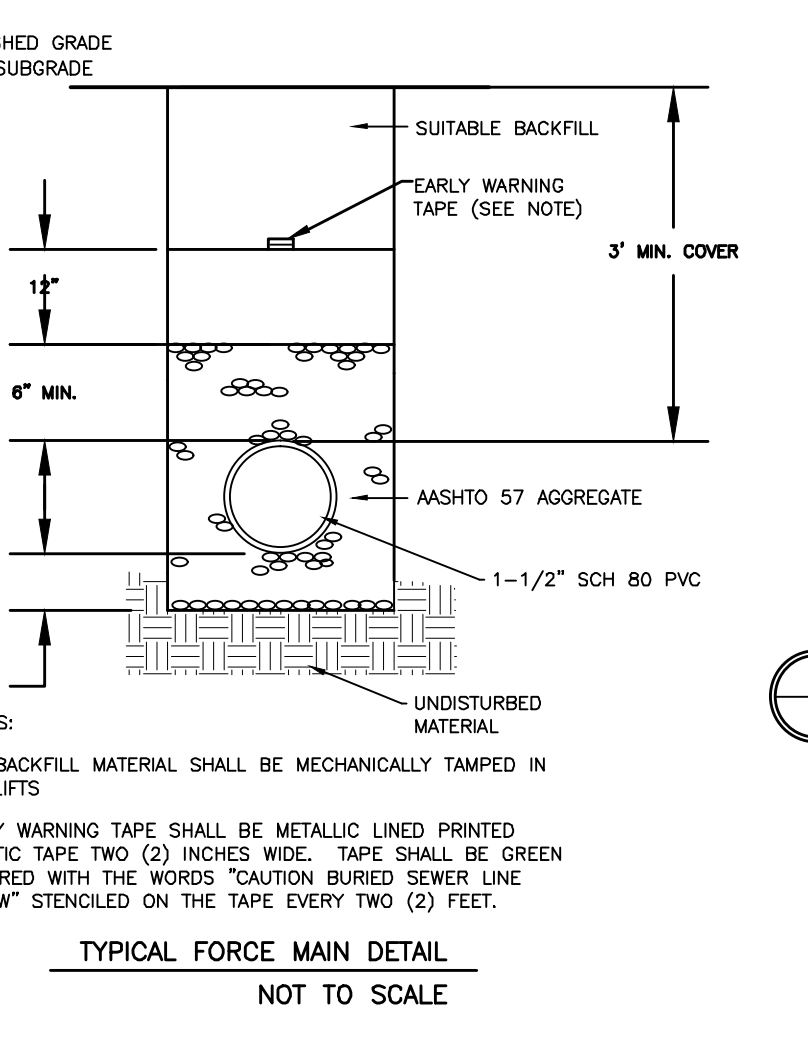
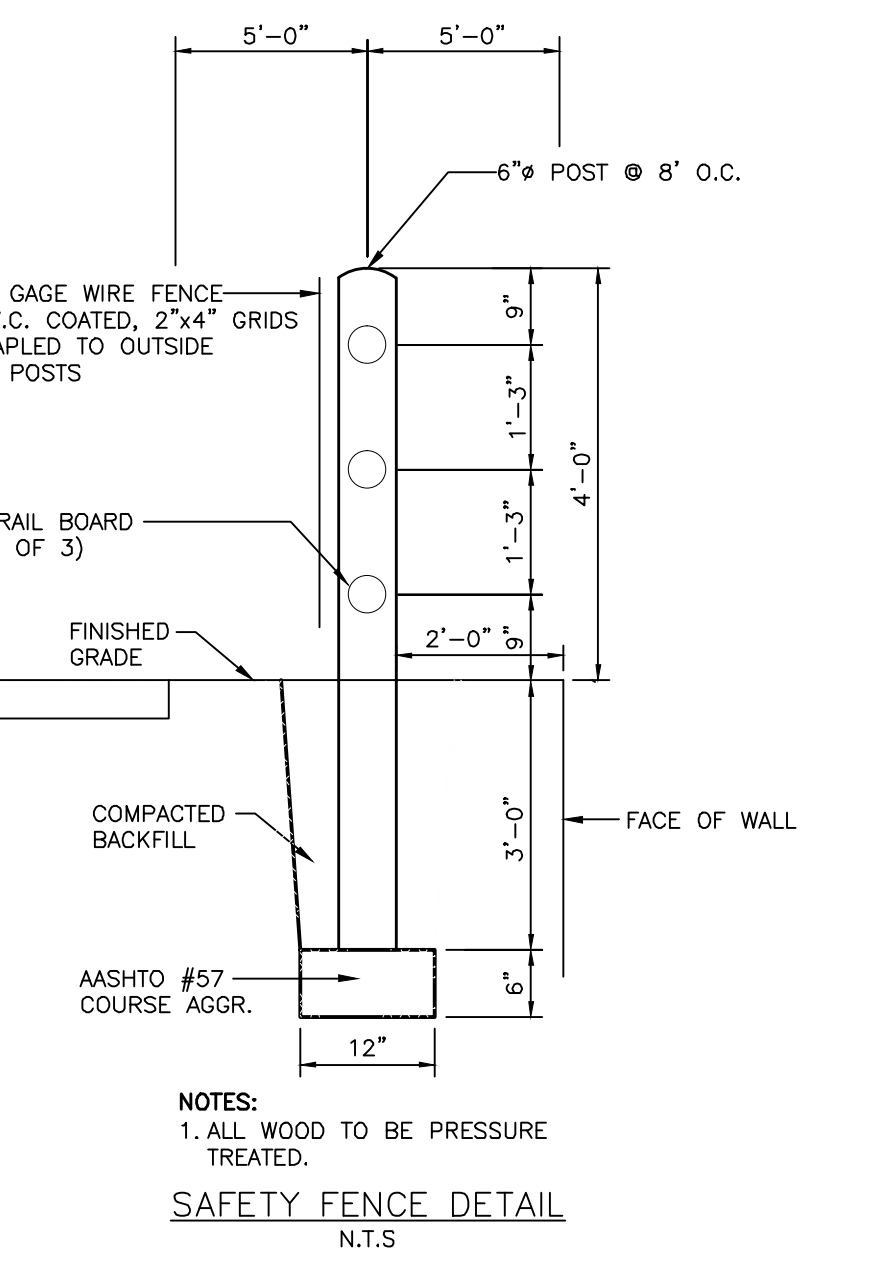
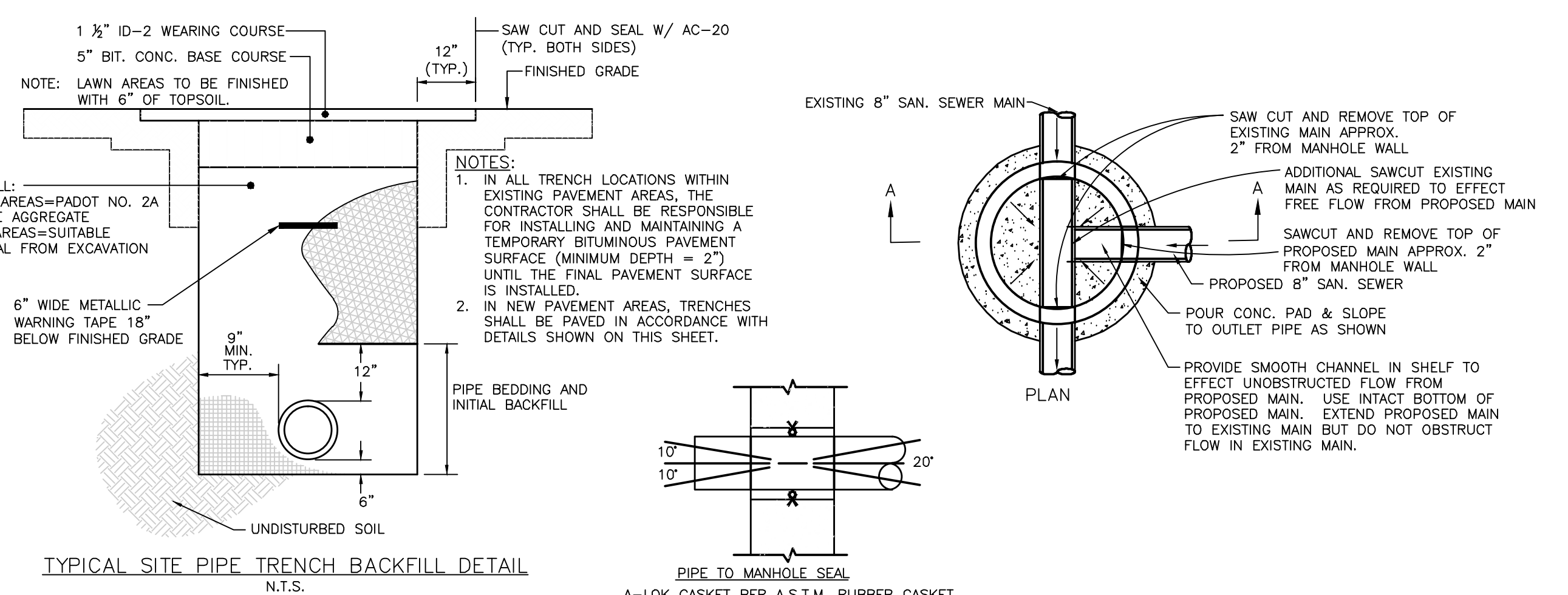


BED #	LENGTH "x"	WIDTH "y"	DEPTH "d"	BED INV. "w"	TANK INV. "a"	TANK WIDTH "b"	TANK HEIGHT "c"
INFILTRATION BED #1	101'	41'	4.5'	447.0	448.0	39"	3'-0"
INFILTRATION BED #2	116'	65'	3.5'	443.25	443.75	114"	2'-0"



TRENCH REQUIREMENTS (SEE NOTES)

PIPE TYPE	BEDDING, INITIAL BACKFILL	BACKFILL TO SUBGRADE	ALL OTHER AREAS
STORM	PA DOT NO. 2A COARSE AGGR.	BENEATH EXISTING AND NEW BITUMINOUS PAVEMENT	NATIVE (SEE NOTE 2)
ELECTRIC	PA DOT NO. 2A COARSE AGGR.		NATIVE (SEE NOTE 2)
GAS	ASHTO NO. 8		NATIVE (SEE NOTE 2)
SANITARY	ASHTO NO. 8		NATIVE (SEE NOTE 2)
WATER	PA DOT NO. 2A COARSE AGGR.		NATIVE (SEE NOTE 2)



Spring Number: 20080804 & 20080805

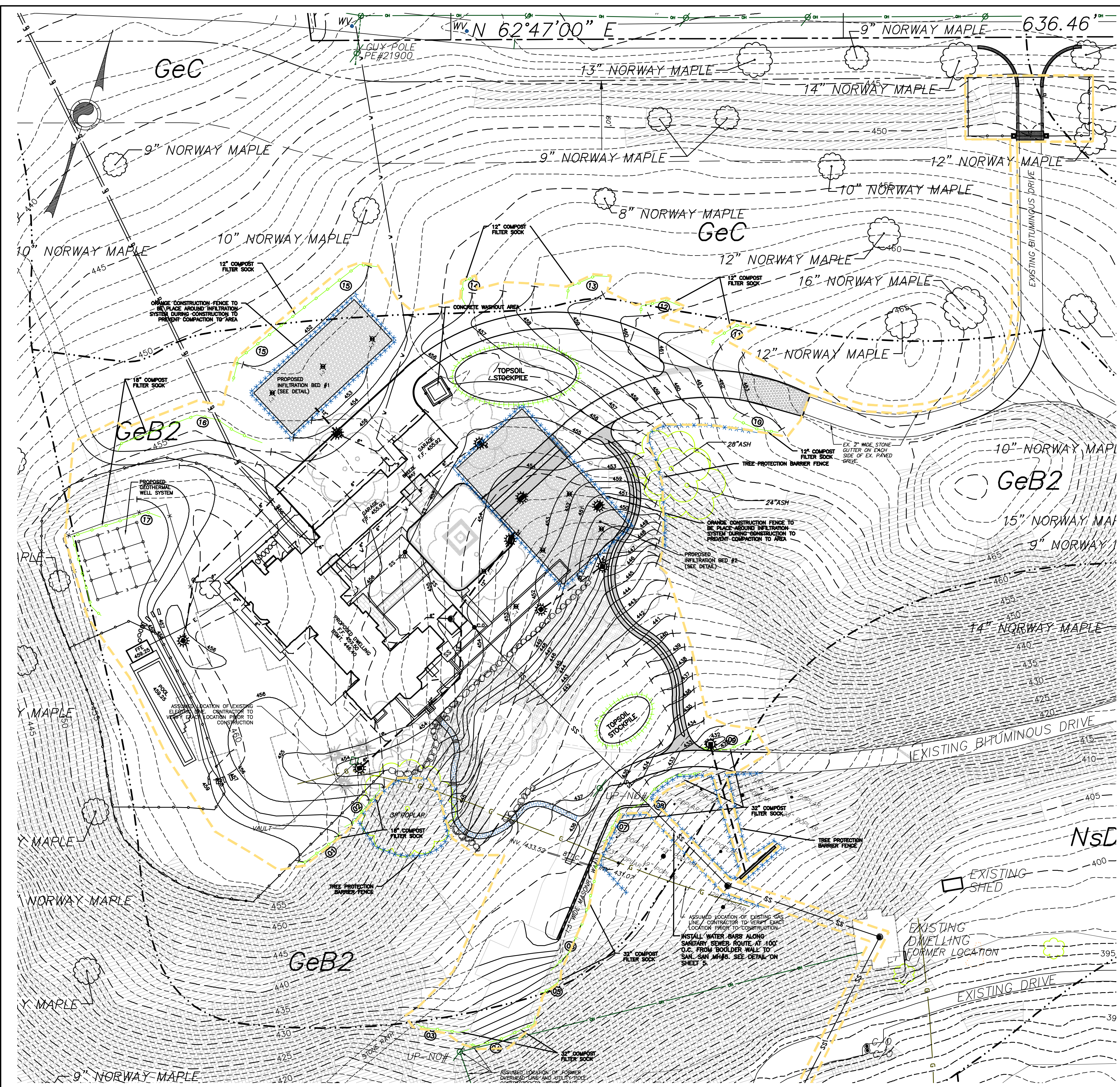
CALL BEFORE YOU DIG
PENNSYLVANIA LAW REQUIRES
3 WORKING DAYS NOTICE FOR
UTILITY LOCATIONS
DAVID R. FORELLO
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Pennsylvania Drilling & Construction, Inc.
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MOMENIE & ASSOCIATES, INC.
CIVIL ENGINEERS AND LAND SURVEYORS
1000 N. MARKET ST. SUITE 200
HARRISBURG, PA 17102
PHONE: (610) 657-3000 FAX: (610) 627-9900

PCSM DETAILS
GRADING PERMIT PLAN - SUPPLEMENT
600 MAPLEWOOD AVENUE
RADUOR TOWNSHIP • DELAWARE COUNTY • PENNSYLVANIA
ONE-CALL: 800-488-7243
DRAWN BY: BDM
CHECKED BY: DBF

M

DATE: MAY 21, 2014
SHEET NO. 4
OF 7
SCALE: AS NOTED
FILE NO.: 14-015



- ### GENERAL EROSION AND SEDIMENTATION CONTROL NOTES
- OWNER / OPERATOR WILL BE RESPONSIBLE FOR THE PROPER CONSTRUCTION, STABILIZATION, AND MAINTENANCE OF ALL EROSION AND SEDIMENTATION CONTROLS AND RELATED ITEMS INCLUDED WITH THESE PLANS.
- ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS, SHALL BE DONE IN ACCORDANCE WITH APPROVED E&S PLANS. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN (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 THE IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
- THE OPERATOR SHALL ASSURE THAT AN EROSION AND SEDIMENT CONTROL PLAN HAS BEEN PREPARED, APPROVED BY THE DELAWARE COUNTY CONSERVATION DISTRICT AND IS BEING MAINTAINED AND MAINTAINED FOR ALL SOIL AND/OR ROCK SPILL AND BORROW AREAS, REGARDLESS OF THEIR LOCATIONS.
- THE PROJECT SITE SHALL AT ALL TIMES BE AVAILABLE FOR INSPECTION BY AUTHORIZED OFFICERS AND EMPLOYEES OF THE FOLLOWING AGENCY: DELAWARE COUNTY CONSERVATION DISTRICT (DCCD) ROSE TREE PARK - HUNT CLUB 1551 NORTH PROVIDENCE ROAD MEDIA, PA 19063 PHONE: (610) 892-9484 FAX: (610) 892-9489
 - THE RECEIVING WATERS FOR THIS PROJECT ARE THOSE OF AN UNNAMED TRIBUTARY TO THE UTILE DARBY CREEK. THE CHAPTER 83 CLASSIFICATION FOR THE RECEIVING WATER DISCHARGING FROM THE PROJECT SITE IS CWF (COLD WATER FISHES).
 - NOTIFY THE DELAWARE COUNTY CONSERVATION DISTRICT AND ARRANGE A PRE-CONSTRUCTION MEETING FOR ALL INVOLVED PARTIES (INCLUDING DCCD, APPLICANT, ENGINEER, AND TOWNSHIP OFFICIALS).
 - NOTIFY THE TOWNSHIP ENGINEER AT LEAST 48 HOURS PRIOR TO ANY EARTH DISTURBANCE ACTIVITIES.
 - CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN A MANNER SUCH THAT ALL EROSION AND AIR/WATER POLLUTION IS MINIMIZED. STATE AND LOCAL LAWS CONCERNING ABATEMENT SHALL BE FOLLOWED.
 - AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL.
 - THE LIMITS OF WORK SHOWN ON THIS PLAN ARE THE REAL EXTENT REQUIRED FOR CONSTRUCTION. THE CONTRACTOR SHALL ADHERE TO THESE LIMITS IN MINIMIZING DISTURBED LAND, AND ALL CONSTRUCTION SHALL BE CONDUCTED WITHIN THESE LIMITS. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
 - TOPSOIL TAKEN FROM CONSTRUCTION AREAS SHALL BE SEEDING WITH A VEGETATIVE COVER AND STOCKPILED FOR REUSE IN FINISH GRADING. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2:1 OR FLATTER. SEDIMENT BARRIER SHALL BE INSTALLED ON THE LOW SIDE OF THE PILE. THERE SHALL BE NO EARTH DISTURBANCE WITHIN THE STOCKPILE AREA.
 - SHOULD UNFORESEEN EROSION CONDITIONS DEVELOP DURING CONSTRUCTION, THE CONTRACTOR SHALL TAKE ACTION TO REMEDY SUCH CONDITIONS AND TO PREVENT DAMAGE TO ADJACENT PROPERTIES AND STREAMS IN ACCORDANCE WITH PADOT 408, SECTION 845. STOCKPILES OF CRUSHED STONE AND MULCHES MUST BE MAINTAINED AT THE SITE IN READINESS TO DEAL IMMEDIATELY WITH EMERGENCY PROBLEMS OF EROSION.
 - 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 2601 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. CONSTRUCTION WASTES MUST BE RECYCLED TO THE EXTENT PRACTICABLE, AND DISPOSAL METHODS MUST COMPLY WITH FEDERAL, STATE AND LOCAL REQUIREMENTS.
 - ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
 - THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL FORM FP-001 MUST BE RETAINED BY PROJECT OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.
 - ALL PUMPING OF SEDIMENT LADEN WATER OR POTENTIALLY SEDIMENT LADEN WATER SHALL BE THROUGH A SEDIMENT CONTROL BMP, SUCH AS A PUMPED WATER FILTER BAG DISCHARGING OVER NON-DISTURBED AREAS.
 - UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENTATION BMP'S MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENTATION BMP'S AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS.
 - ALL SITE INSPECTIONS WILL BE DOCUMENTED IN AN INSPECTION LOG KEPT FOR THIS PURPOSE. THE COMPLIANCE ACTIONS AND THE DATE, TIME AND NAME OF THE PERSON CONDUCTING THE INSPECTION. THE INSPECTION LOG WILL BE KEPT ON SITE AT ALL TIMES AND MADE AVAILABLE TO THE DISTRICT UPON REQUEST.
 - ALL PREVENTIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, RE-MULCHING AND RESETTING, MUST BE PERFORMED IMMEDIATELY. IF EROSION AND SEDIMENTATION BMP'S FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMP'S OR MODIFICATIONS OF THOSE INSTALLED WILL BE NEEDED.
 - SEDIMENT TRACKED ONTO A 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, SHOVED, OR SWEEP INTO ANY ROADSIDE DITCH, STORM WATER OR SURFACE WATER.
 - ALL SEDIMENT REMOVED FROM BMP'S SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
 - AREAS WHICH ARE TO BE TOP-SOILED 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, I.E. YARDS.
 - ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES, CONDUCITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR OTHER APPROVED METHOD.
 - ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
 - FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
 - FROZEN MATERIALS OF SOFT, MUDDY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
 - FILLS SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
 - SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATIONS FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
 - ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPLETE BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED, SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THE PLAN.
 - ANY DISTURBED AREA, ON WHICH ACTIVITY HAS CEASED FOR ANY AMOUNT OF TIME, MUST BE SEEDING AND MULCHED IMMEDIATELY DURING NON-GERMINATING PERIODS. MULCH OR PROTECTIVE BLANKET SHALL BE APPLIED AS DESCRIBED IN THE PLAN. DISTURBED AREAS WHICH ARE NOT AT FINISH GRADE AND WHICH WILL BE RE-DISTURBED WITHIN ONE YEAR MAY BE SEEDING AND MULCHED WITH A QUICK GROWING TEMPORARY SEED MIXTURE AND MULCHED DISTURBED AREAS WHICH ARE EITHER AT FINISH GRADE OR WILL NOT BE RE-DISTURBED WITHIN ONE YEAR MUST BE SEEDING WITH A PERMANENT SEED MIXTURE AND MULCHED.
 - AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED PERMANENT STABILIZATION WHEN IT HAS A MINIMUM UNIFORM 70% PERCENT VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
 - E&S BMP'S SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
 - UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMP'S.
 - AFTER FINAL STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMP'S MUST BE REMOVED OR CONVERTED TO PERMANENT POST-CONSTRUCTION STORMWATER MANAGEMENT BMP'S. AREAS DISTURBED DURING THE REMOVAL OR CONVERSION OF THE BMP'S SHALL BE STABILIZED IMMEDIATELY IN ORDER TO ENSURE RAPID RE-VEGETATION OF DISTURBED AREAS. SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.
 - UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.

RESOLUTION OF SOIL LIMITATIONS

BASED ON THE EXISTING SOIL TYPES AND IF THE PROPOSED EROSION AND SEDIMENTATION CONTROL MEASURES ARE INSTALLED AND MAINTAINED PROPERLY, NO UNFORESEEN SOIL LIMITATIONS OR PROBLEMS ARE LIKELY. NEVERTHELESS, IF A PROBLEM DOES DEVELOP, THE DEVELOPER MUST TEMPORARILY SEED AND MULCH THE DISTURBED AREA. SUITABLE TOPSOIL SHALL BE IMPORTED TO THE SITE IF INADEQUATE QUANTITIES OF SUITABLE SOIL EXIST ON SITE. ADEQUACY OF SOIL TO BE DETERMINED BY SITE GEOTECHNICAL ENGINEER IN CONJUNCTION WITH THE LANDSCAPE ARCHITECT. SOIL AMENDMENTS SHALL BE ADDED AS REQUIRED. ALL UNSUITABLE MATERIAL SHALL BE DISPOSED OF PROPERLY. SITE GEOTECHNICAL ENGINEER SHALL ALSO BE CONSULTED DURING WINTER GRADING OPERATIONS.

SOILS INFORMATION

SYMBOL	NAME	%SLOPE	HYDROLOGIC GROUP	DEPTH TO SH WATER BEDROCK	DEPTH TO SH WATER BEDROCK
GeB	GLENELG CHANNERY SILT LOAM	3 TO 8 PERCENT SLOPES	B	6.6+	4.16
GeB2	GLENELG CHANNERY SILT LOAM	3 TO 8 PERCENT SLOPES	B	6.6+	6.6+
GeC	GLENELG CHANNERY SILT LOAM	8 TO 15 PERCENT SLOPES	B	6.6+	4.16
GeC2	GLENELG CHANNERY SILT LOAM	8 TO 15 PERCENT SLOPES	B	6.6+	6.6+
GnB2	GLENWILLE SILT LOAM	3 TO 8 PERCENT SLOPES	C	1.73	6.62
NbS2	NESHAMINY GRAVELLY SILT LOAM	3 TO 8 PERCENT SLOPES	B	5.51	4.98
NsD	NESHAMINY VERY STONY SILT LOAM	8 TO 25 PERCENT SLOPES	B	6.6+	4.40

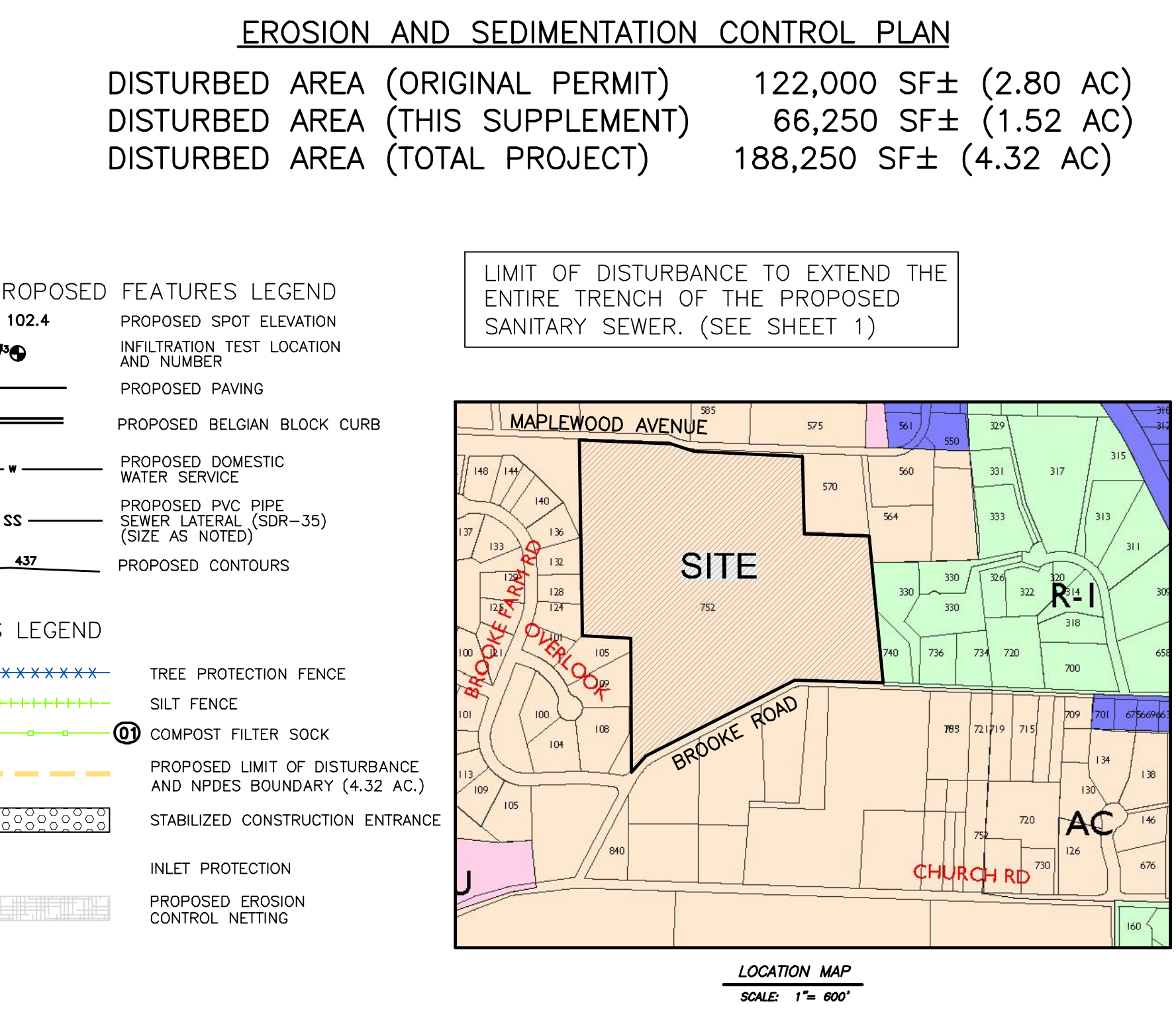
ALL LOCATIONS OF EXISTING UTILITIES, SHOWN ON THIS PLAN, HAVE BEEN DEVELOPED FROM FIELD LOCATIONS OF VISIBLE ABOVE GROUND UTILITY STRUCTURES AND INFORMATION FURNISHED BY THE UTILITY COMPANIES.

ALL LOCATIONS SHOULD BE CONSIDERED APPROXIMATE. COMPLETENESS OR ACCURACY OF THE LOCATIONS AND DEPTH OF ALL STRUCTURES CANNOT BE GUARANTEED. CONTRACTORS MUST VERIFY ALL LOCATIONS AND DEPTHS OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE THE START OF ANY WORK.

AS PER ACT 187 HOUSE BILL 2627, BEFORE THE START OF ANY EXCAVATION WORK THE CONTRACTOR SHALL NOTIFY THE AFFECTED UTILITY COMPANIES THROUGH THE PENNSYLVANIA "ONE CALL SYSTEM" 1-800-242-1776 THREE DAYS PRIOR TO THE START OF ANY EXCAVATION. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO THE START OF ANY CONSTRUCTION.

- #### CONSTRUCTION SEQUENCE
- PRIOR TO INITIATING ANY SITE WORK, ARRANGE FOR A PRE-CONSTRUCTION MEETING WITH THE TOWNSHIP ENGINEER, DESIGN ENGINEER, OWNER AND ANY INVOLVED SUB-CONTRACTORS.
 - DELINEATE LIMIT OF DISTURBANCE BY ACCEPTABLE METHOD TO TOWNSHIP.
 - INSTALL STABILIZED CONSTRUCTION ENTRANCE AND COMPOST FILTER SOCKS IN LOCATIONS SHOWN ON DRAWINGS AND IN ACCORDANCE WITH DETAILS PROVIDED.
 - INSTALL TREE PROTECTION FENCING AROUND EXISTING TREES TO REMAIN, AS SHOWN ON THE PLAN.
 - INSTALL ORANGE CONSTRUCTION FENCING AROUND THE PROPOSED INFILTRATION BED AREAS TO PREVENT VEHICLE TRAFFIC AND COMPACTATION TO THE AREA.
 - ESTABLISH TOPSOIL STOCKPILE AREA. INSTALL 18" SILT FENCE AROUND THE STOCKPILE AREA.
 - REMOVE EXISTING TREES INDICATED TO BE REMOVED AND DISPOSE OF DEBRIS OFF SITE AND IN A LAWFUL MANNER.
 - STRIP TOPSOIL FROM INFILTRATION BED#1 AREA AND STORE IN TEMPORARY TOPSOIL STOCKPILE AREA. CONSTRUCT PROPOSED INFILTRATION BED#1 IN THE LOCATION SHOWN AND IN ACCORDANCE WITH THE DETAILS AND "INFILTRATION BED CONSTRUCTION SEQUENCE" PROVIDED. BACKFILL OVER INFILTRATION BED AREA TO SUBGRADE ELEVATIONS SHOWN.
 - STRIP TOPSOIL FROM INFILTRATION BED#2 AREA AND STORE IN TEMPORARY TOPSOIL STOCKPILE AREA. CONSTRUCT PROPOSED INFILTRATION BED#2 IN THE LOCATIONS #2.1, #2.2, #2.3, AND #2.4 FOR THE BED IN THE LOCATIONS SHOWN AND IN ACCORDANCE WITH THE DETAILS AND "INFILTRATION BED CONSTRUCTION SEQUENCE" PROVIDED. INSTALL TEMPORARY INLET PROTECTION, AS SHOWN ON THE EROSION AND SEDIMENTATION CONTROL PLAN, OVER AREA DRAINS. BACKFILL OVER INFILTRATION BED AREA TO SUBGRADE ELEVATIONS SHOWN.
 - STRIP TOPSOIL FROM REMAINING AREAS TO BE DISTURBED AND STORE IN THE TOPSOIL STOCKPILE AREA.
 - EXCAVATE FOR PROPOSED HOUSE FOOTINGS AND FOUNDATION WALLS. CONSTRUCT FOOTINGS AND FOUNDATION WALLS FOR HOUSE AND BACKFILL AROUND FOUNDATION WALLS TO SUBGRADE ELEVATION. WHILE BACKFILLING AROUND FOUNDATION WALLS, INSTALL ROOF DRAIN COLLECTION PIPES AND STORM DRAINAGE SYSTEM. INSTALL INLET PROTECTION ON ALL INLETS AND AREA DRAINS AS SHOWN ON THE EROSION AND SEDIMENTATION CONTROL PLAN.
 - EXCAVATE FOR AND CONSTRUCT PROPOSED POOL. HOUSE FOOTINGS AND FOUNDATION WALLS. BACKFILL AROUND FOUNDATION WALLS TO SUBGRADE ELEVATION.
 - INSTALL INLETS #3.1 AND #3.2. LEVEL SPREADERS #3.1-3.1 AND #3.5-3.2, AND ALL ASSOCIATED CONVEYANCE PIPING. INSTALL INLET PROTECTION ON THE INLETS.
 - CONSTRUCT PROPOSED RETAINING WALLS TO THE LINES AND GRADES SHOWN. INSTALL TRENCH DRAIN IN FRONT OF POOL. HOUSE AND CONNECT OVERFLOW AND UNDERDRAINS TO INLET #3.2.
 - USING EXCESS EXCAVATED MATERIAL FROM FOUNDATION, INFILTRATION BED AND RETAINING WALL EXCAVATIONS, FINISH GRADING FOR PROPOSED DRIVEWAYS AND PAD AREAS TO SUBGRADE ELEVATION. STABILIZE AREA WITH PERMANENT SEEDING AND MULCH. PROVIDE EROSION CONTROL BLANKET ON AREAS WITH SLOPES 3:1 OR GREATER.
 - CONSTRUCT PROPOSED SANITARY SEWER LATERAL, WATER MAIN AND OTHER UTILITY EXTENSIONS IN ACCORDANCE WITH THE DETAILS PROVIDED. INSTALL UTILITY CONNECTIONS TO THE BUILDING.
 - CONTINUE CONSTRUCTION OF PROPOSED HOUSE, AS SOON AS OUTTERS HAVE BEEN INSTALLED, CONNECT ROOF DOWNSPUTS TO ROOF DRAIN COLLECTION PIPE IN ACCORDANCE WITH DETAILS PROVIDED.
 - INSTALL STONE BASE COURSE FOR PROPOSED DRIVEWAYS AND PAD AREAS.
 - EXCAVATE FOR AND CONSTRUCT THE POOL AND BACKFILL WHEN COMPLETED.
 - UPON POOL CONSTRUCTION COMPLETION, INSTALL THE POOL DECKING AND UTILITIES.
 - RESURFACE TOPSOIL AND FINALIZE GRADING FOR AREAS AROUND THE PROPOSED HOUSE AND DRIVEWAYS, AS WELL AS ANY OTHER AREAS THAT HAVE YET TO BE DISTURBED. STABILIZE ALL DISTURBED AREAS WITH PERMANENT SEEDING AND MULCH. PROVIDE EROSION CONTROL BLANKET ON AREAS WITH SLOPES 3:1 OR GREATER.
 - PLACE FINAL CONCRETE SURFACE ON PADS.
 - ONCE ALL DISTURBED AREAS HAVE BEEN STABILIZED, REMOVE REMAINING EROSION CONTROL MEASURES FROM SITE. STABILIZE THOSE AREAS DISTURBED DURING THE REMOVAL PROCESS WITH PERMANENT SEEDING AND MULCH ONLY.
 - CONSTRUCTION START DATE: JULY 2013 CONSTRUCTION COMPLETION DATE: DECEMBER 2015

- #### INFILTRATION BED CONSTRUCTION SEQUENCE
- STAKE OUT THE LIMITS OF THE BED TO BE INSTALLED.
 - EXCAVATE SEEPAGE AREA TO THE BOTTOM OF THE PROPOSED BED. EXCAVATION SHALL BE DONE IN A MANNER THAT DOES NOT DISTURB THE SOIL STRUCTURE OF THE INFILTRATION PIPE.
 - PLACE THE FILTER FABRIC IN THE EXCAVATION AND TACK IT UP TO THE SIDES. ALLOW SUFFICIENT FABRIC TO OVERLAP THE TOP OF THE BED. PROVIDE OPENING IN FABRIC FOR OUTFLOW PIPE.
 - PLACE 6" OF ASH20 NO. 57 AGGREGATE IN THE BOTTOM OF THE BED AND EVENLY DISTRIBUTE ON THE BOTTOM. CARE SHALL BE TAKEN TO ENSURE THAT THE FILTER FABRIC IN THE BED IS NOT TORN DURING INSTALLATION. INSTALL STONE TO A UNIFORM DEPTH OF 6".
 - PLACE SECOND LAYER OF FILTER FABRIC OVER STONE BASE. ALLOW SUFFICIENT FABRIC TO OVERLAP THE TOP OF THE "STORM TANK" UNITS.
 - INSTALL "STORM TANK" UNITS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDED PRACTICES. CONNECT AREA DRAINS TO "STORM TANK" UNITS. INSTALL SEEPAGE BED INFLOW PIPE.
 - COMPLETELY WRAP "STORM TANK" UNITS WITH FILTER FABRIC.
 - BACKFILL AREA BETWEEN EXCAVATION AND "STORM TANK" UNITS WITH ASH20 NO. 57 AGGREGATE. PLACE ASH20 NO. 57 COARSE OVER TOP OF "STORM TANK" UNITS TO A MINIMUM DEPTH OF 12".
 - COMPLETELY COVER TOP OF AGGREGATE WITH FILTER FABRIC. OVERLAP JOINTS IN FABRIC A MINIMUM OF 12".
 - BACKFILL AND COMPACT REMAINDER OF EXCAVATION WITH EXCAVATED MATERIAL TO FINAL GRADE.
- #### THERMAL IMPACTS
- THE RUNOFF FROM THE PROJECT AREA THAT OUTLETS TO THE EXISTING STORM SEWER SYSTEM DRAIN THROUGH EXISTING UNDERGROUND STORM DRAINAGE SYSTEMS, BIORETENTION AREAS, AND ABOVE GROUND BASINS.
- INTERCEPTING THE RUNOFF WITH THE ONSITE STORMWATER FACILITIES AND BMP'S HELPS TO DISSIPATE THE HEAT ENERGY THAT THE STORMWATER ABSORBS FROM THE DISTURBED PROJECT AREA.
- A MAJORITY OF ONSITE RUNOFF FROM DISTURBED AREAS WILL TRAVEL THROUGH AN UNDERGROUND STORM DRAINAGE SYSTEM. THE DRAINAGE SYSTEM HAS LIMITED SUNLIGHT EXPOSURE AND RESULTS IN A COOL ENVIRONMENT THAT CAN DISSIPATE HEAT ENERGY THAT THE RUNOFF CAN POTENTIALLY ABSORB.
- THE COOLING INFLUENCES OF THE ONSITE BMP'S WILL NEUTRALIZE AND REMOVE THE HEAT ENERGY ABSORBED BY THE PROJECT SITE RUNOFF PRIOR TO DISCHARGE INTO THE RECEIVING WATERCORPSE.
- #### WATERSHED NOTES
- ANY DISTURBED AREA ON WHICH ACTIVITY HAS CEASED MUST BE STABILIZED IMMEDIATELY. REFER TO E&S DETAILS SHEET FOR IMMEDIATE STABILIZATION CRITERIA.
- THE NON-GERMINATING PERIODS ARE BETWEEN JUNE 15 THROUGH AUGUST 15 AND BETWEEN SEPTEMBER 30 THROUGH APRIL 15. AREAS DISTURBED DURING THESE PERIODS MUST BE STABILIZED IMMEDIATELY.
- IF ANY SIGNIFICANT CHANGES ARE MADE TO THE EROSION AND SEDIMENTATION CONTROL PLANS, THE BUILDER OR LANDOWNER MUST CONTACT THE DELAWARE COUNTY CONSERVATION DISTRICT FOR THE ACCURACY OF THE CHANGES.
- #### SPECIAL GEOLOGIC AND SOIL CONDITIONS
- THIS SITE IS LOCATED WITHIN A CARBONATE GEOLOGIC DISTRICT. REFER TO SHEET 3 FOR CARBONATE DISTRICT CONSTRUCTION NOTES.



OWNER / OPERATOR WILL BE RESPONSIBLE FOR THE PROPER CONSTRUCTION, STABILIZATION, AND MAINTENANCE OF ALL EROSION AND SEDIMENTATION CONTROLS AND RELATED ITEMS INCLUDED WITH THESE PLANS.

DEL A. B. K. ENGINEERS & ARCHITECTS
1520 MARKET STREET, PHOENIX, ARIZONA 85004
PHONE: (602) 263-3300
FAX: (602) 263-3305
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A PENNSYLVANIA LAW REQUIREMENT
FOR ALL PROJECTS INVOLVING
CONSTRUCTION OR EXCAVATION
OF ANY KIND TO BE PERFORMED
WITHIN THE STATE OF PENNSYLVANIA.
PENNSYLVANIA ONE CALL SYSTEM, INC.
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REGISTERED PROFESSIONAL CIVIL ENGINEER
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PENNSYLVANIA

MOMENE & ASSOCIATES, INC.
CIVIL ENGINEERS AND LAND SURVEYORS
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OWNER/APPLICANT
THOMAS P. NESHAMINY
1520 MARKET STREET
VILLANOVA, PA 19085

GRADING PERMIT PLAN - SUPPLEMENT
600 MAPLEWOOD AVENUE
RADNOR TOWNSHIP • DELAWARE COUNTY • PENNSYLVANIA
ONE-CALL: 1-800-242-1776
DRAWN BY: BDM
CHECKED BY: DRE

DATE: MAY 21, 2014
SHEET NO. 5
OF 7
SCALE: 1" = 40'
FILE NO.: 14-015

- INFILTRATION BED NOTES:**
1. THE INSTALLATION OF THE INFILTRATION BED SHALL BE DONE DURING NON-RAINY PERIODS TO PREVENT SEDIMENT DEPOSITION AND CLOGGING OF THE SOIL STRUCTURE. IF RAIN BEGINS AFTER THE EXCAVATION OF THE INFILTRATION BED HAS BEEN COMPLETED, FILTER FABRIC SHALL BE PLACED ON THE BED AREA. THE FILTER FABRIC SHALL BE REMOVED AND REPLACED IF SEDIMENT ACCUMULATES IN THE BED AREA.
 2. BOTTOM OF BED SHOULD BE LEVEL TO A TOLERANCE OF 2 INCHES PER 100 FEET.
 3. LEAF GUTTER GUARDS SHALL BE USED ON ROOF GUTTERS AND STRAINERS ON DOWNPOUTS TO PREVENT CLOGGING OF THE SYSTEM.
 4. EXCAVATION OF THE INFILTRATION BED SHALL BE PERFORMED WITH EQUIPMENT WHICH WILL NOT COMPACT THE BOTTOM OF THE BED.
 5. THE BOTTOM OF THE BED SHALL BE SCARIFIED PRIOR TO THE PLACEMENT OF AGGREGATE.
 6. OWNER OF SYSTEM SHALL HAVE SYSTEM CLEANED AS REQUIRED.

OPERATION AND MAINTENANCE PROCEDURE:
THE PERMITTEE SHALL BE RESPONSIBLE FOR THE PROPER CONSTRUCTION, STABILIZATION AND MAINTENANCE OF ALL EROSION AND SEDIMENTATION CONTROL MEASURES.

THE OPERATION AND MAINTENANCE REQUIREMENTS FOR THIS POST CONSTRUCTION STORMWATER MANAGEMENT FOR THIS PROJECT INCLUDE THE FOLLOWING:

1. ON-LOT INFILTRATION BEDS:
 - a. CLEAN GUTTERS OF LEAVES AND OTHER DEBRIS TWICE A YEAR (LATE FALL AND LATE SPRING).
 - b. INSPECT AREA DRAINS FOUR TIMES A YEAR AND CLEAN SUMPS OF ANY ACCUMULATED DEBRIS AND SEDIMENT.
 - c. CHECK INFILTRATION BED AT OBSERVATION PORT ANNUALLY AND AFTER EACH RAINFALL EXCEEDING 3.0 INCHES IN 24 HOURS. IF STANDING WATER IS OBSERVED WITHIN 60 HOURS OF A RAIN EVENT, CONSULT WITH A PROFESSIONAL ENGINEER TO OBTAIN RECOMMENDATIONS FOR CORRECTIVE MEASURES. CHECK SURFACE AREA OF INFILTRATION BED FOR EVIDENCE OF SUBSIDENCE, EROSION, OR OTHER FAILURES AND REPAIR AS NECESSARY.
2. ALL INSPECTIONS OF POST CONSTRUCTION STORMWATER MANAGEMENT FACILITIES SHALL BE PERFORMED BY THE PERMITTEE.

COMPOST SOCK FABRIC MINIMUM SPECIFICATIONS

MATERIAL TYPE	3 MIL HDPE	5 MIL HDPE	5 MIL HDPE	MULTI-FILAMENT POLYPROPYLENE (MFPF)	HEAVY DUTY MULTI-FILAMENT POLYPROPYLENE (HDMFPF)
MATERIAL CHARACTERISTICS	PHOTO-DEGRADABLE	PHOTO-DEGRADABLE	BIO-DEGRADABLE	PHOTO-DEGRADABLE	PHOTO-DEGRADABLE
SOCK DIAMETERS	12" 18"	12" 18" 24"	18" 24"	12" 18" 24" 32"	12" 18" 24" 32"
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

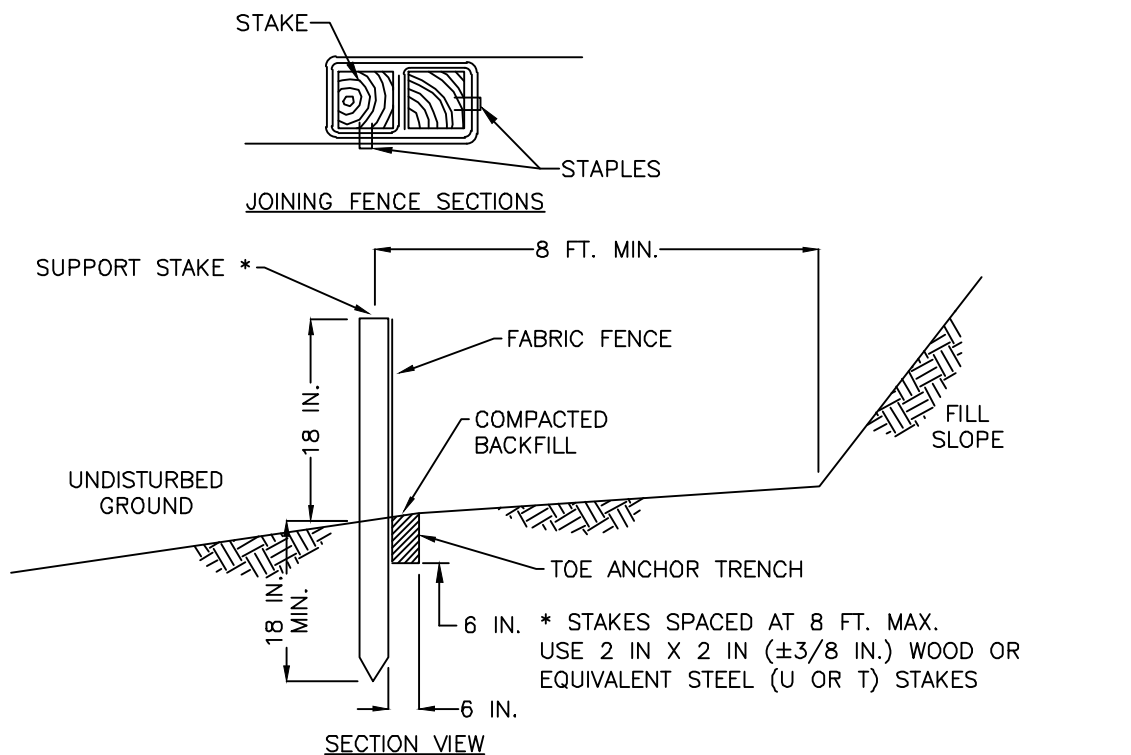
TWO-PLY SYSTEMS

HDPE BIAXIAL NET	CONTINUOUSLY WOUND
INNER CONTAINMENT NETTING	FUSION-WELDING JUNCTURES
	3/4"x3/4" MAX. APERTURE SIZE
OUTER FILTRATION MESH	COMPOSITE POLYPROPYLENE FABRIC (WOVEN LAYER AND NON-WOVEN FLEECE MECHANICALLY FUSED VIA NEEDLE PUNCH)
	3/16" MAX. APERTURE SIZE

SOCK FABRICS COMPOSED OF BURLAP MAY BE USED ON PROJECTS LASTING 6 MONTHS OR LESS.

COMPOST 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



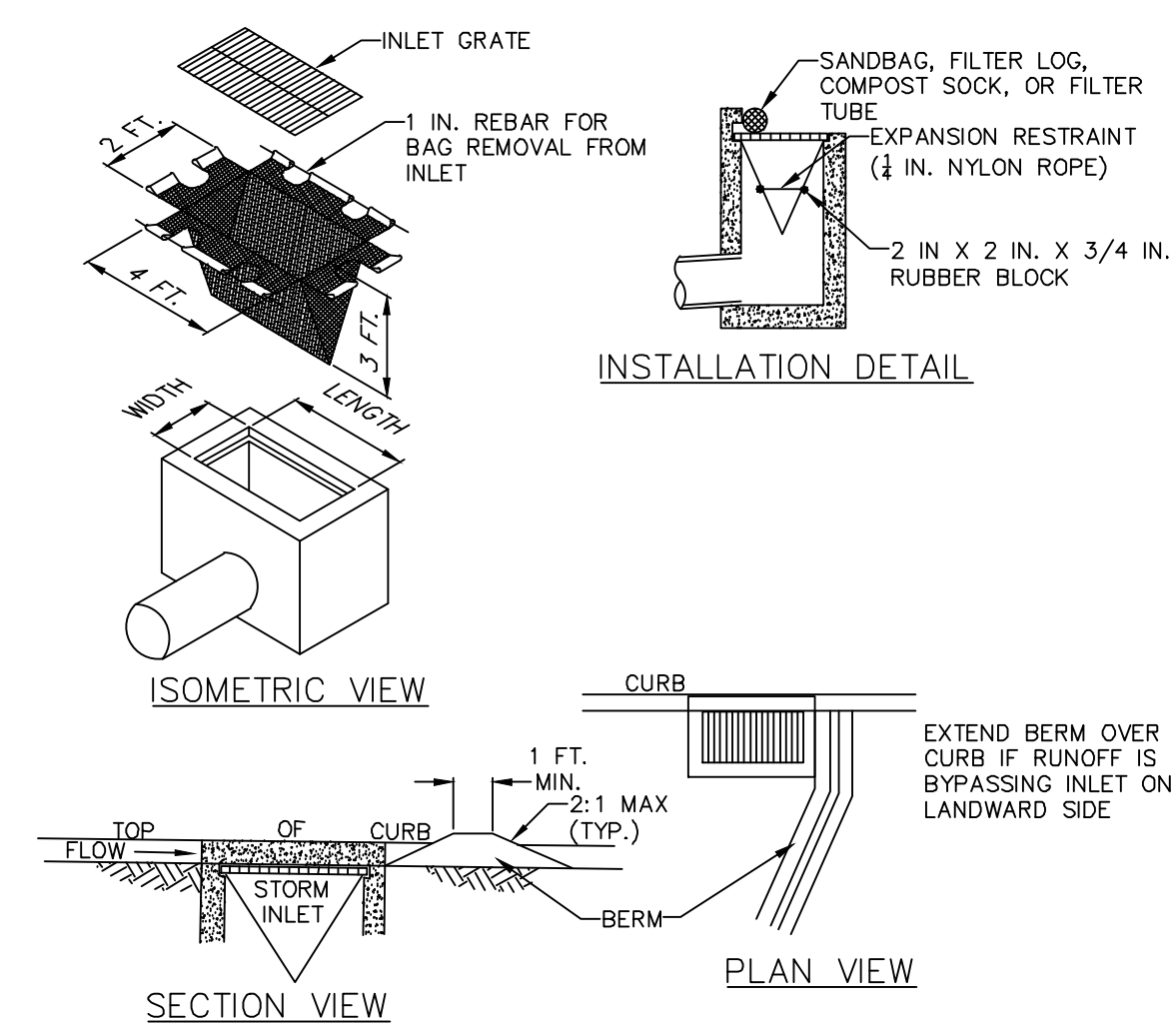
NOTES:

- FABRIC SHALL HAVE THE MINIMUM PROPERTIES AS SHOWN IN TABLE 4.3 OF THE PA DEP EROSION CONTROL MANUAL.
FABRIC WIDTH SHALL BE 30 IN. MINIMUM. STAKES SHALL BE HARDWOOD OR EQUIVALENT STEEL (U OR T).
SILT FENCE SHALL BE PLACED AT LEVEL EXISTING GRADE. BOTH ENDS OF THE FENCE SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT.
SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH HALF THE ABOVE GROUND HEIGHT OF THE FENCE.
ANY SECTION OF SILT FENCE WHICH HAS BEEN UNDERMINED OR TOPPED SHALL BE IMMEDIATELY REPLACED WITH A ROCK FILTER OUTLET STANDARD CONSTRUCTION DETAIL # 4-6.
FENCE SHALL BE REMOVED AND PROPERLY DISPOSED OF WHEN TRIBUTARY AREA IS PERMANENTLY STABILIZED.

SYMBOL	LOCATION	SLOPE - %	SLOPE LENGTH ABOVE FENCE (FT)
	STOCKPILES	1/4"	N/A

**STANDARD CONSTRUCTION DETAIL #4-7
STANDARD SILT FENCE (18" HIGH)**

NOT TO SCALE



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 SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. SIX INCH MINIMUM HEIGHT ASPHALT BERM SHALL BE MAINTAINED UNTIL ROADWAY SURFACE RECEIVES FINAL COAT.
AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS, A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.
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 #4-15
FILTER BAG INLET PROTECTION - TYPE C INLET**

NOT TO SCALE

PLACING TOPSOIL OR TOPSOIL MIXTURE

PREPARATION OF AREAS TO BE TOPSOILED

GRADE AREAS TO BE COVERED BY TOPSOIL, USING ACCEPTABLE METHODS. LOOSEN SOIL TO A DEPTH OF 2 INCHES BEFORE PLACING THE TOPSOIL. REMOVE STONES AND OTHER FOREIGN MATERIAL 2 INCHES OR LARGER IN DIMENSION. REMOVE AND SATISFACTORILY DISPOSE OF UNSUITABLE AND SURPLUS MATERIAL.

PLACING AND SPREADING TOPSOIL

PLACE TOPSOIL ON THE PREPARED AREAS AND, UNLESS OTHERWISE INDICATED, SPREAD AND COMPACT TO A 4-INCH UNIFORM DEPTH ± 1/2 INCHES. CONTACT WITH A ROLLER WEIGHING NOT OVER 1200 POUNDS PER FOOT WIDTH OF ROLLER OR BY OTHER ACCEPTABLE METHODS AS DIRECTED. REMOVE OVERDEPTH TOPSOIL, UNLESS OTHERWISE AGREED UPON IN WRITING. DO NOT PLACE TOPSOIL IN A WET OR FROZEN CONDITION.

SEEDING SPECIFICATIONS

WHERE DENUEDED AREAS ARE DESIRED TO BE LAWN:

1. PERFORM ALL CULTURAL OPERATION AT RIGHT ANGLES TO THE SLOPE.
2. APPLY LIME ACCORDING TO TEST OR AT THE RATE OF 25 LBS. OF GROUND LIMESTONE PER 1,000 SQ. FT.
3. APPLY FERTILIZER ACCORDING TO SOIL TEST OR WORK IN DEEPLY 20 LBS. OF 0-20-20 OR EQUIVALENT PER 1,000 SQ. FT. AND AT THE TIME OF SEEDING, WORK INTO THE SURFACE 10 LBS. OF 10-10-10 OR EQUIVALENT PER 1,000 SQ. FT. OR OTHER APPROVED MIXTURE.
4. SMOOTH AND FIRM SEEDS PRIOR TO SEEDING.
5. SEED USING A MIXTURE OF 60% PENNSTAR KENTUCKY BLUEGRASS, 30% PENNLAWN RED RESCUE, AND 10% PENNFINE PERENNIAL RYEGRASS AT THE RATE OF FIVE (5) POUNDS PER 1,000 SQ. FT. OF OTHER APPROVED MIXTURE.
6. COVER GRASS AND LEGUME SEEDS WITH 1/4" OF SOIL WITH SOIL EQUIPMENT, MULCH, USING 2 BALES/1,000 SQ. FT.
7. MOW AS REQUIRED.
8. WHERE SLOPES EXCEED 25% JUTE NETTING OR OTHER APPROVED (EQUAL) SOPE STABILIZATION MEASURES SHALL BE UTILIZED. IN ADDITION, THE SEEDING SPECIFICATIONS FOR STEEP SLOPES SHALL BE INCREASED TO INCLUDE 3 LBS/1,000 SQ. FT. OF ANNUAL RYEGRASS FOR RAPID VEGETAL ESTABLISHMENT.

HYDROSEEDING SPECIFICATIONS

DEFINITION: STABILIZING SEDIMENT PRODUCING AND SEVERELY ERODED AREAS BY ESTABLISHING PERMANENT GRASS COVER.

PURPOSE: TO PROVIDE PERMANENT VEGETATIVE COVER TO CONTROL RAPID RUN-OFF AND EROSION.

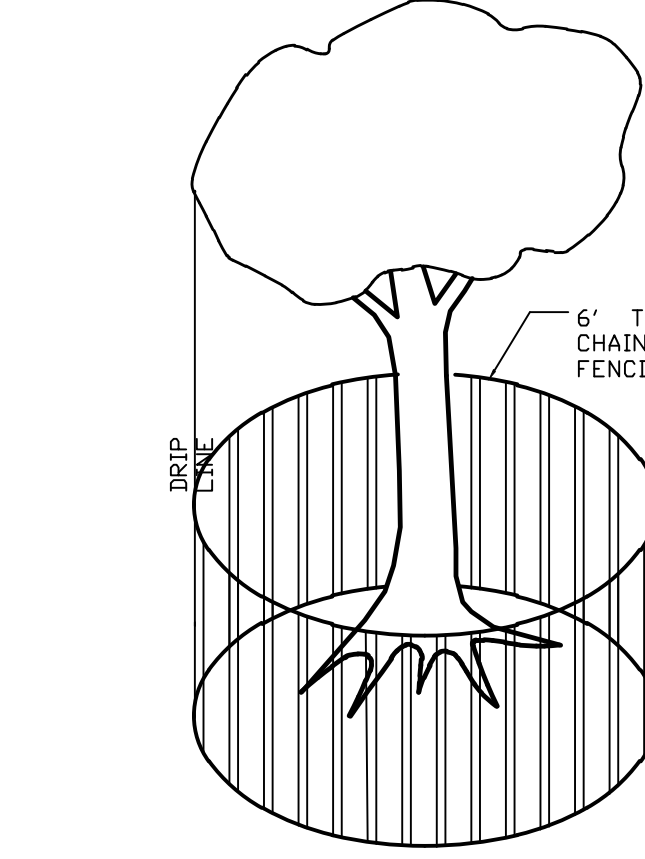
PROCEDURE: SURFACE TO BE HYDRO-SEEDED SHALL BE CLEANED OF ALL DEBRIS AND OTHER HARMFUL MATERIAL. UNIFORM GERMINANTS, A WATER-SLURRY MIXTURE COMPOSED OF THE BELOW MENTIONED "MATERIALS" SHALL BE SPRAYED UNIFORMLY OVER THE AREA TO BE HYDRO-SEEDED.

MATERIALS: NAME DESCRIPTION APPLICATION RATE (PER ACRE)

- PERMANENT SEEDING**
- 1) SEED MIXTURE: 60% PENNSTAR KENTUCKY BLUEGRASS, 30% PENNLAWN RED RESCUE, 10% PENNFINE PERENNIAL RYEGRASS. 260 LBS.
 - 2) COMMERCIAL FERTILIZER: 10-20-20. 1,000 LBS.
 - 3) LIME: GROUND AGRICULTURAL LIMESTONE. 2 TONS.
 - 4) MULCH: HAY OR STRAW. 3 TONS.
 - 5) SOIL STABILIZER: TERRA TACK OR EQUIVALENT. 20 LBS.

TEMPORARY

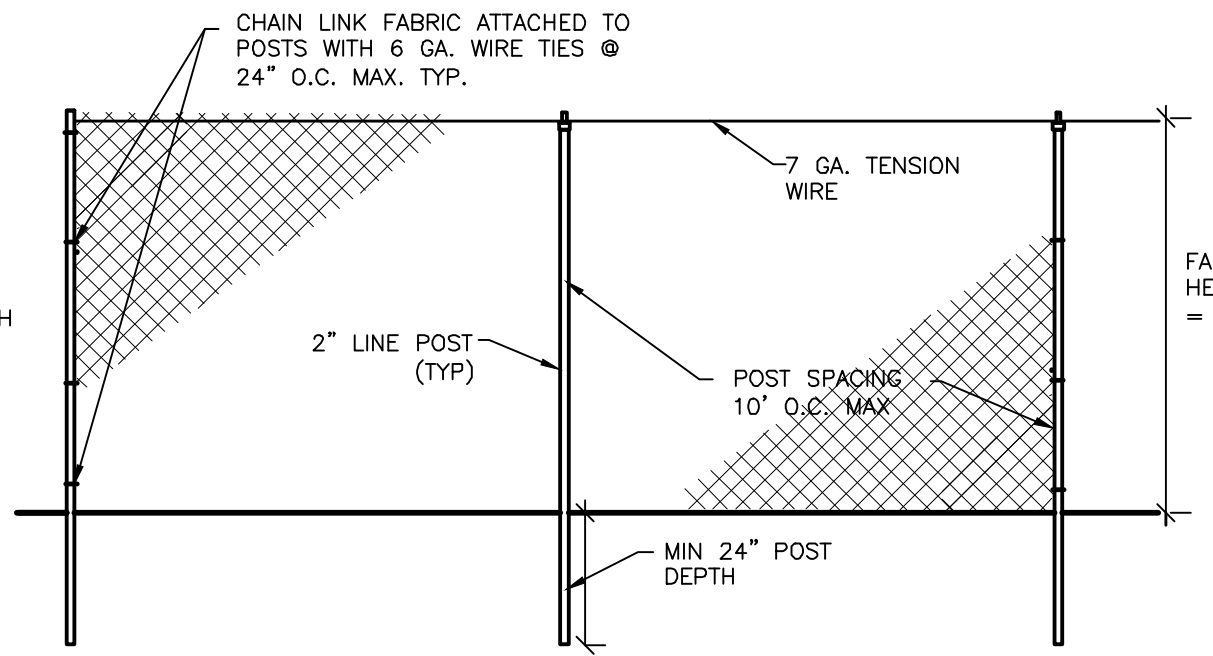
- 1) SEED: ANNUAL RYEGRASS (90% PURE). 40 LBS.
- 2) COMMERCIAL FERTILIZER: 5-5-5. 1,000 LBS.
- 3) GROUND AGRICULTURAL LIMESTONE (MAY BE APPLIED SEPARATELY). 1 TON LIME.
- 4) MULCH: HAY OR STRAW. 3 TONS.



TREE PROTECTION FENCE PLACEMENT

NTS

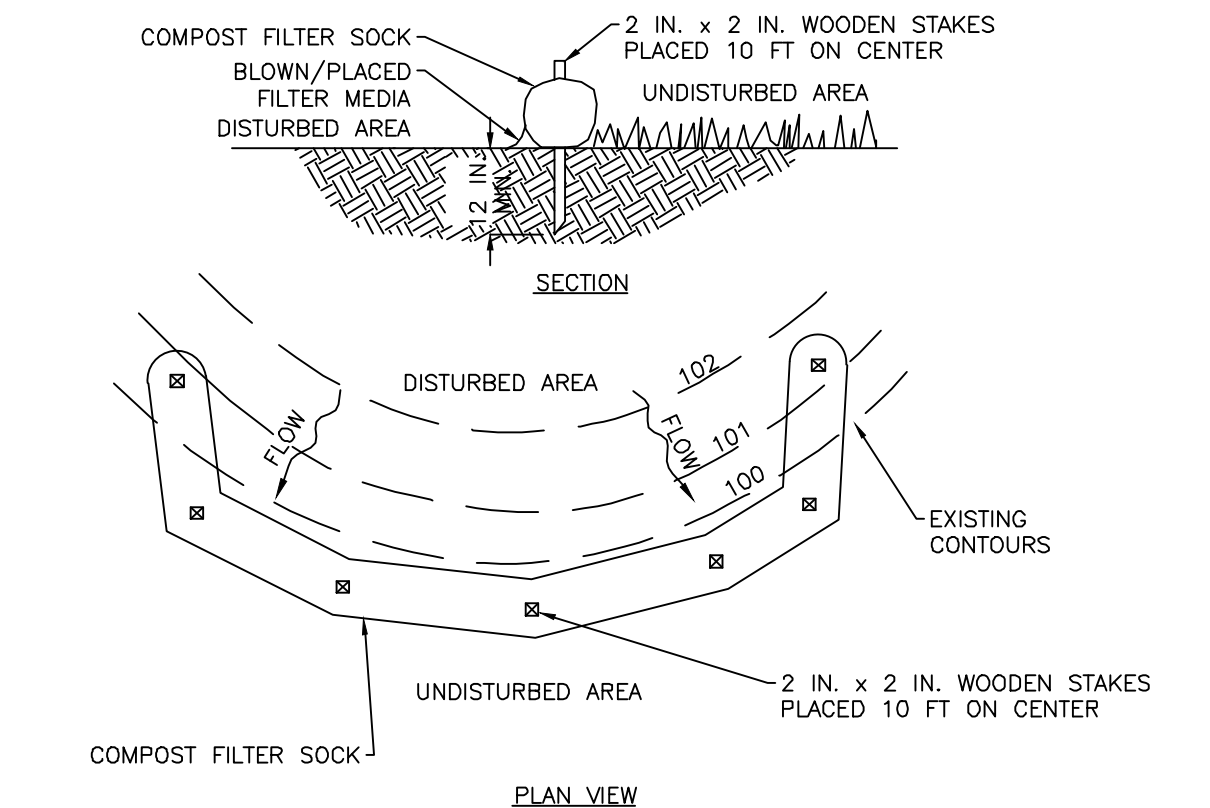
ALL WOODY VEGETATION TO BE RETAINED WITHIN 25 FEET OF A BUILDING SITE, PARKING AREA, DRIVEWAY OR OTHER PROPOSED IMPROVEMENT SHALL BE PROTECTED FROM EQUIPMENT DAMAGE BY FENCING OR OTHER EFFECTIVE BARRIERS APPROVED BY THE TOWNSHIP ENGINEER AND/OR ARBORIST. FENCING OR BARRIERS SHALL BE PLACED AS MUCH AS IS PRACTICAL AT THE DIAPHRANE. LOCATION MAY BE ALTERED TO AVOID INTERFERENCE WITH PROPOSED GRADING AND IMPROVEMENTS AS SHOWN ON THE PLANS. BARRIER LOCATION SHALL BE SUBJECT TO APPROVAL BY THE TOWNSHIP ENGINEER AND/OR ARBORIST.



1. PROTECTION BARRIERS SHALL BE 6 FEET HIGH, CONSTRUCTED OF 2" CHAIN LINK MESH FABRIC.
2. FABRIC SHALL BE SECURED TO 2" POSTS WITH 6 GA. ALUMINUM WIRE TIES AT 24" O.C.
3. POSTS SHALL BE A MINIMUM OF 2 FEET IN THE GROUND AND SPACED 10 FEET ON CENTER MAX.
4. PLASTIC ZIP-TIES MAY NOT BE USED TO SECURE FABRIC TO POSTS.

TREE PROTECTION BARRIER FENCING

NTS

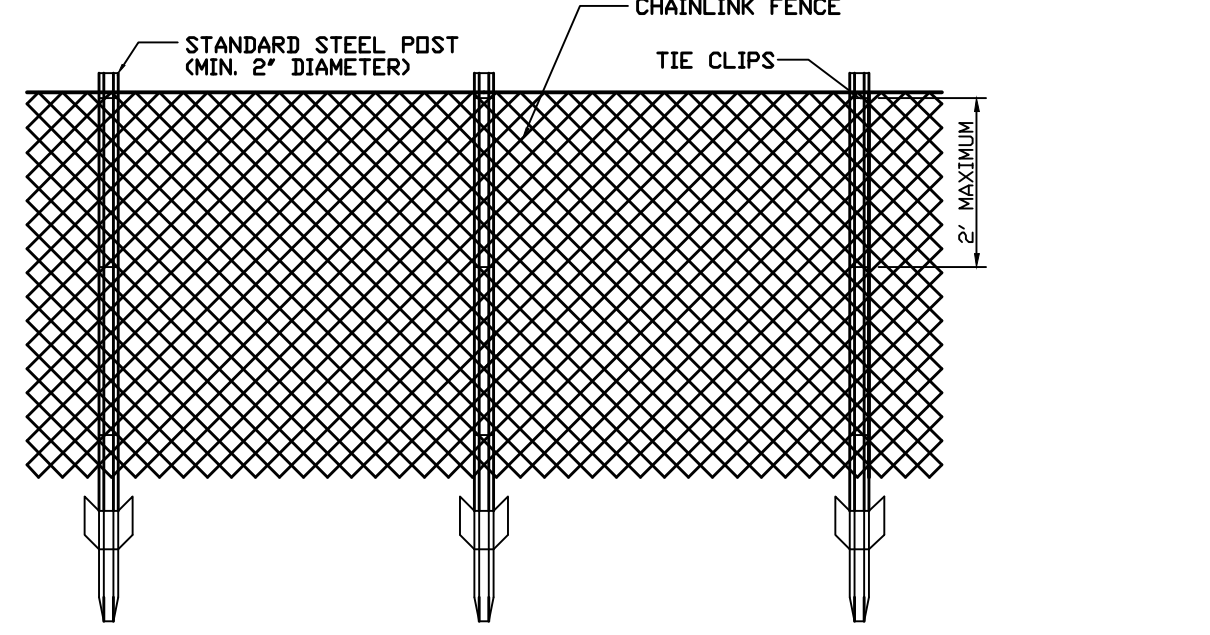


**STANDARD CONSTRUCTION DETAIL #4-1
COMPOST FILTER SOCK**

NOT TO SCALE

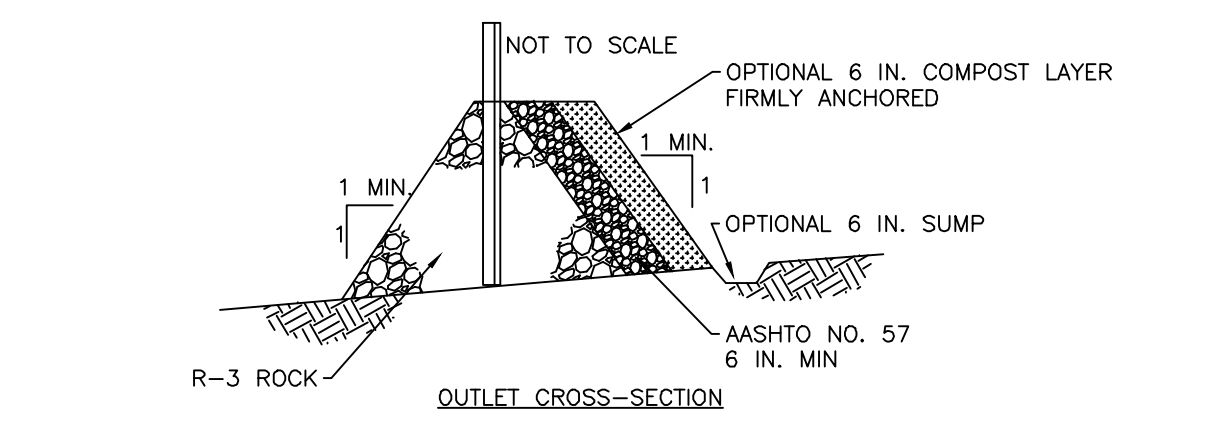
- NOTES:**
1. SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.
 2. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE, BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 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.
 3. TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.
 4. 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.
 5. 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.
 6. 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.
 7. 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.

LOCATION	SIZE	SLOPE - %	SLOPE LENGTH ABOVE FILTER SOCK (FT)
#1-2 - S. SIDE OF HOUSE	18"	5.9	220
#3-4 - S. SIDE OF POOL HOUSE	32"	16.7	265
#5-9 - S.E. SIDE OF POOL	32"	10.0	350
#10 - S. SIDE OF NEW DRIVE	12"	6.7	70
#11-14 - N. SIDE OF NEW DRIVE	12"	4.0	100
#15 - N. SIDE OF ROSE HILL	12"	5.0	70
#16-17 - N.W. SIDE OF HOUSE	18"	8.5	115



TEMPORARY CONSTRUCTION FENCING

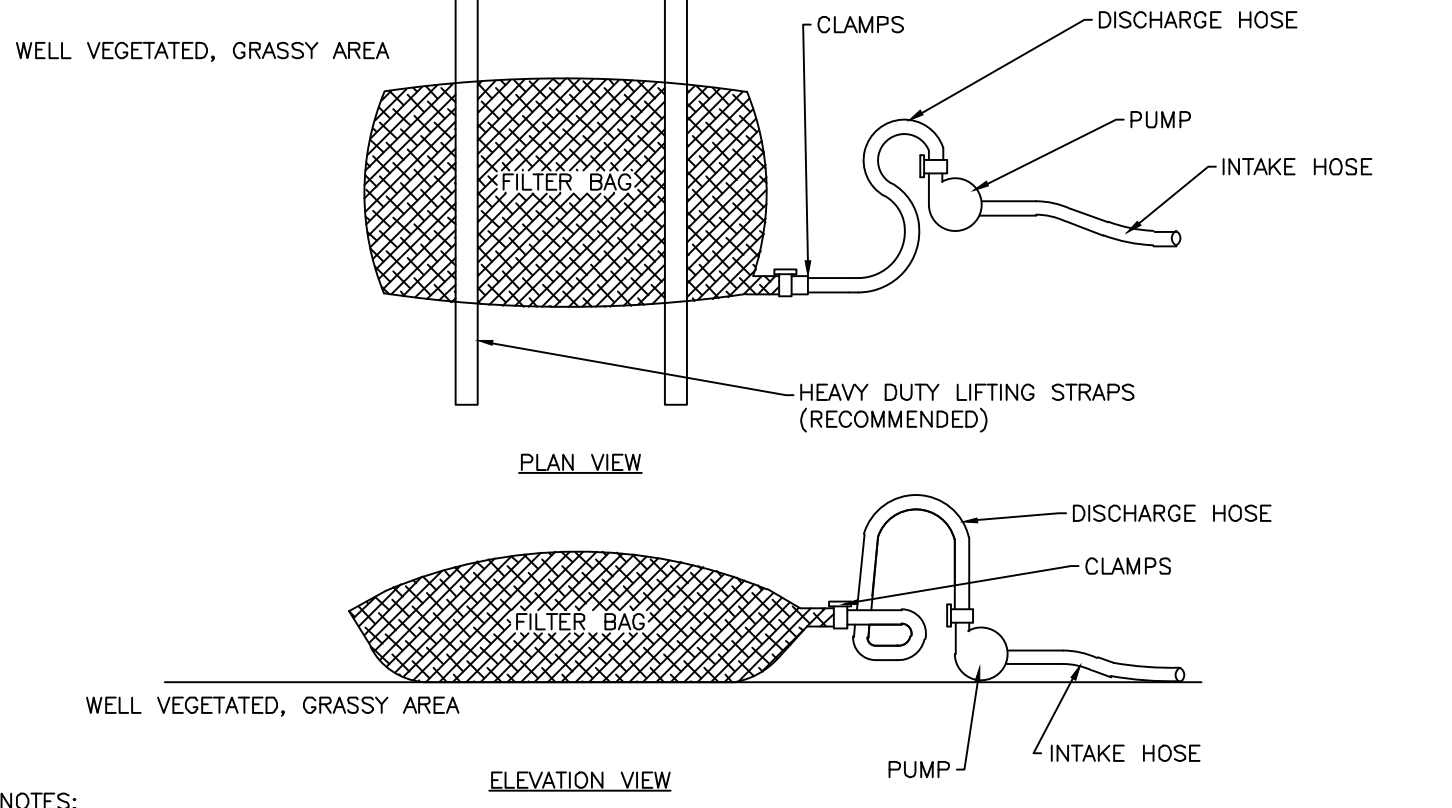
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**STANDARD CONSTRUCTION DETAIL #4-6
ROCK FILTER OUTLET**

NOT TO SCALE

- NOTES:**
- A ROCK FILTER OUTLET SHALL BE INSTALLED WHERE FAILURE OF A SILT FENCE OR STRAW BALE BARRIER HAS OCCURRED DUE TO CONCENTRATED FLOW ANCHORED COMPOST LAYER SHALL BE USED ON UP-SLOPE FACE IN HO AND EV WATERSHEDS.
SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH 1/3 THE HEIGHT OF THE OUTLET.



**STANDARD CONSTRUCTION DETAIL #3-16
PUMPED WATER FILTER BAG**

NOT TO SCALE

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D-4884	60 LB/LB
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.

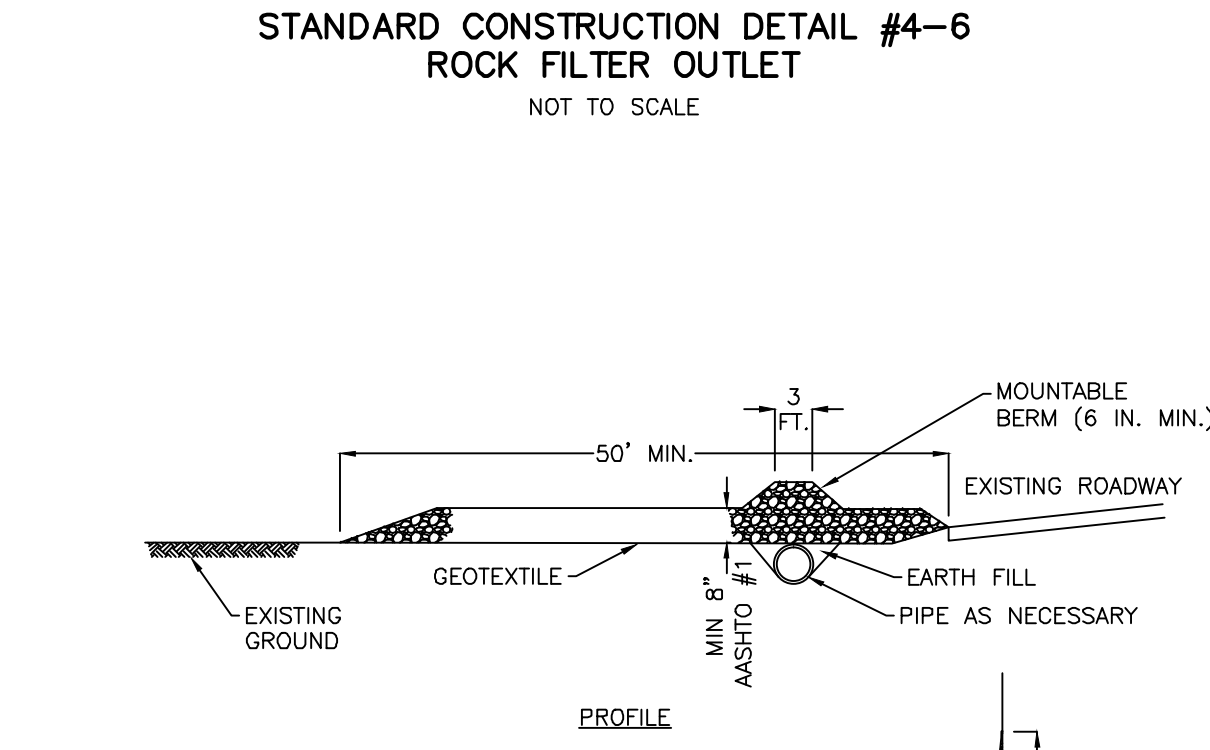
BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER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

NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HO 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 #3-1
ROCK CONSTRUCTION ENTRANCE**

NOT TO SCALE

- NOTES:**
- MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE.
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 ROCK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

CALL BEFORE YOU DIG
PENNSYLVANIA LAW REQUIRES
3 WORKING DAYS NOTICE FOR
UTILITY LOCATIONS
DATE: 05/27/14
DRAWN BY: BDM
CHECKED BY: DRE

OWNER/APPLICANT
RADUOR TOWNSHIP • DELAWARE COUNTY • PENNSYLVANIA
600 MAPLEWOOD AVENUE
VILLANOVA, PA 19085
PHONE: (610) 957-3020 FAX: (610) 427-9909

DAVID R. FORELLO
REGISTERED PROFESSIONAL ENGINEER
NO. 100180
PA. REG. EXPIRES 12/31/16

MOMENEE & ASSOCIATES, INC.
CIVIL ENGINEERS AND LAND SURVEYORS

EROSION & SEDIMENTATION CONTROL DETAILS
GRADING PERMIT PLAN - SUPPLEMENT
600 MAPLEWOOD AVENUE
RADUOR TOWNSHIP • DELAWARE COUNTY • PENNSYLVANIA
ONE-CALL: (610) 957-3020
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DATE: MAY 21, 2014

SHEET NO. 6
OF 7
SCALE: AS NOTED
FILE NO.: 14-015

