

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

**AGENDA**

**Wednesday  
February 24, 2016  
6:30 PM**

Pledge of Allegiance

209 Matsonford Road                      GP # 16-13  
Archbishop Carroll High School  
Baseball and Lacrosse Fields  
9,300 CY of dirt (keep on site)

131/133 Garrett Avenue                      2015-S-03  
Subdivide property into two  
Construct 2 new single family dwellings

Clem Macrone Park                      C # 16-01  
810 Conestoga Road  
Remove 30 trees  
Alterations and renovations to park

Radnor Memorial Library                      C # 16-02  
114 W. Wayne Ave.  
Remove 5 trees  
Renovations and expansion

***Tree Removals  
Not approved for removal***

836 Milmar Road  
14 trees were removed (6) of which were heritage  
Numerous ground stumps observed as well

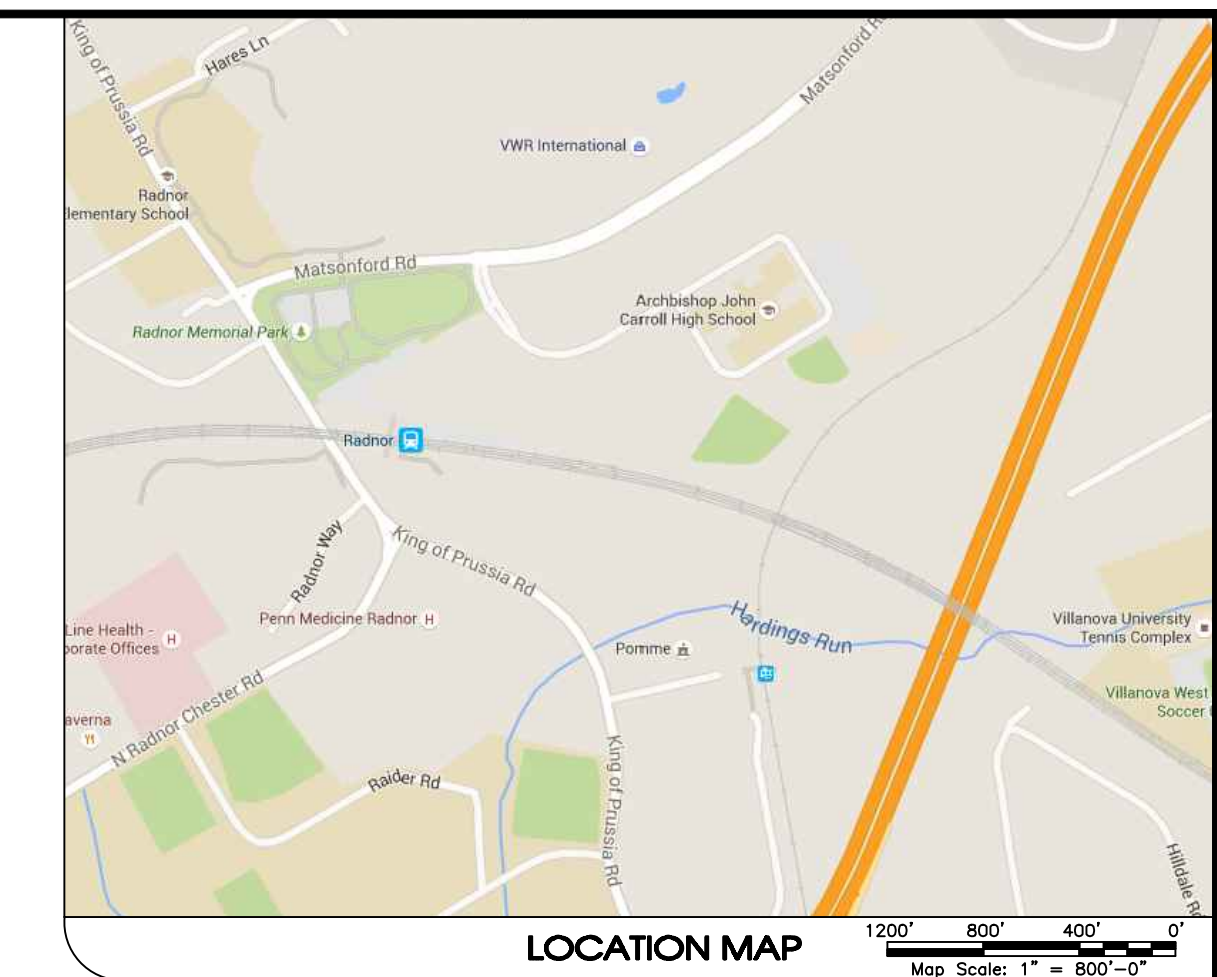
***Hazardous Tree Removals  
Approved for removal by Township Arborist***

Radnor Station Office Building                      Applicant was asked to plant a tree  
40" Ash  
Tree has declined and is dead  
Hazard to parking lot and next to building



# ARCHBISHOP CARROLL HIGH SCHOOL

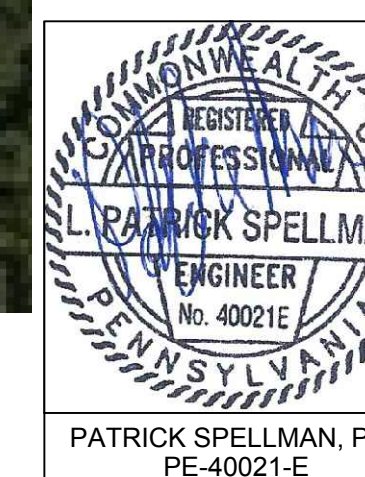
## 2016 ATHLETIC FIELD RENOVATIONS



### DRAWING SCHEDULE

1. COVER SHEET
2. EXISTING FEATURES, DEMOLITION & SOIL, VEGETATION & WATER RESOURCES PLAN
3. PROPOSED SITE & POST CONSTRUCTION STORMWATER MANAGEMENT SITE PLAN – BASEBALL FIELD
4. PROPOSED SITE & POST CONSTRUCTION STORMWATER MANAGEMENT SITE PLAN – LACROSSE AND FIELD HOCKEY
5. POST CONSTRUCTION STORMWATER MANAGEMENT & GENERAL CONSTRUCTION DETAILS
6. EROSION & SEDIMENTATION CONTROL PLAN
7. EROSION & SEDIMENTATION CONTROL DETAILS

NUM.	DATE	REVISION
PLAN PREPARED BY: <b>SITE ENGINEERING CONCEPTS, LLC</b> P.O. BOX 1992 SOUTHEASTERN, PA 19399 P: 610-240-0450 F: 610-240-0451 E: INFO@SITE-ENGINEERS.COM		
NPDES PERMIT APPLICATION PLAN PREPARED FOR: <b>ARCHBISHOP CARROLL</b> 211 MATSONFORD ROAD WAYNE, PA 19087 RADNOR TOWNSHIP DELAWARE COUNTY PENNSYLVANIA		
<b>OVERALL PROPOSED SITE PLAN</b>		SHEET 1 of 7 SCALE: 1"=100'

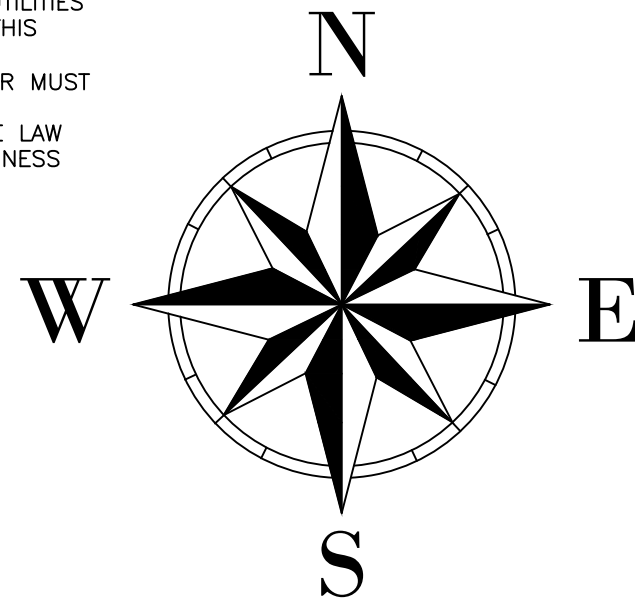


PATRICK SPELLMAN, P.E.  
PE-40021-E



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.

DESIGN S/N:



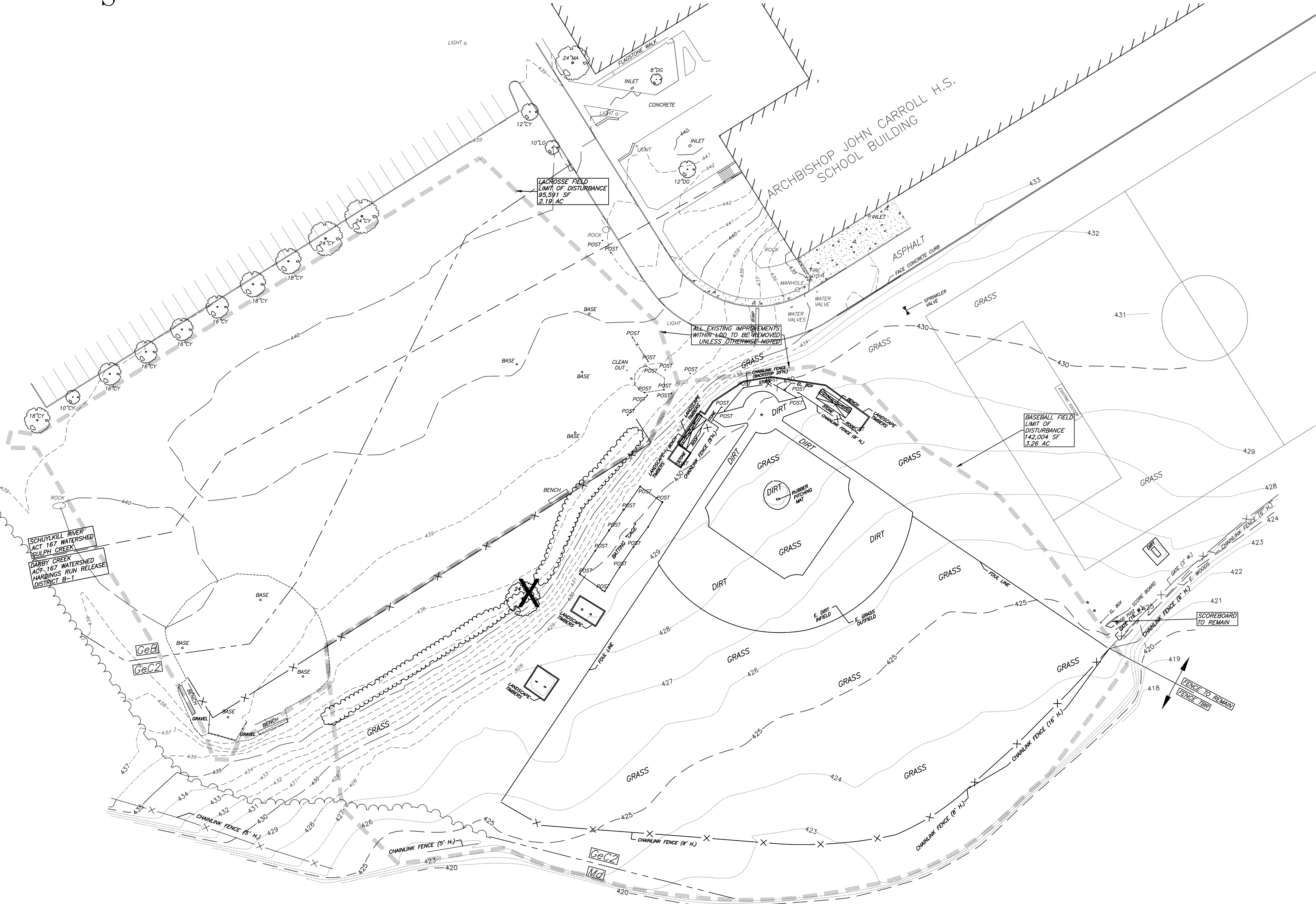
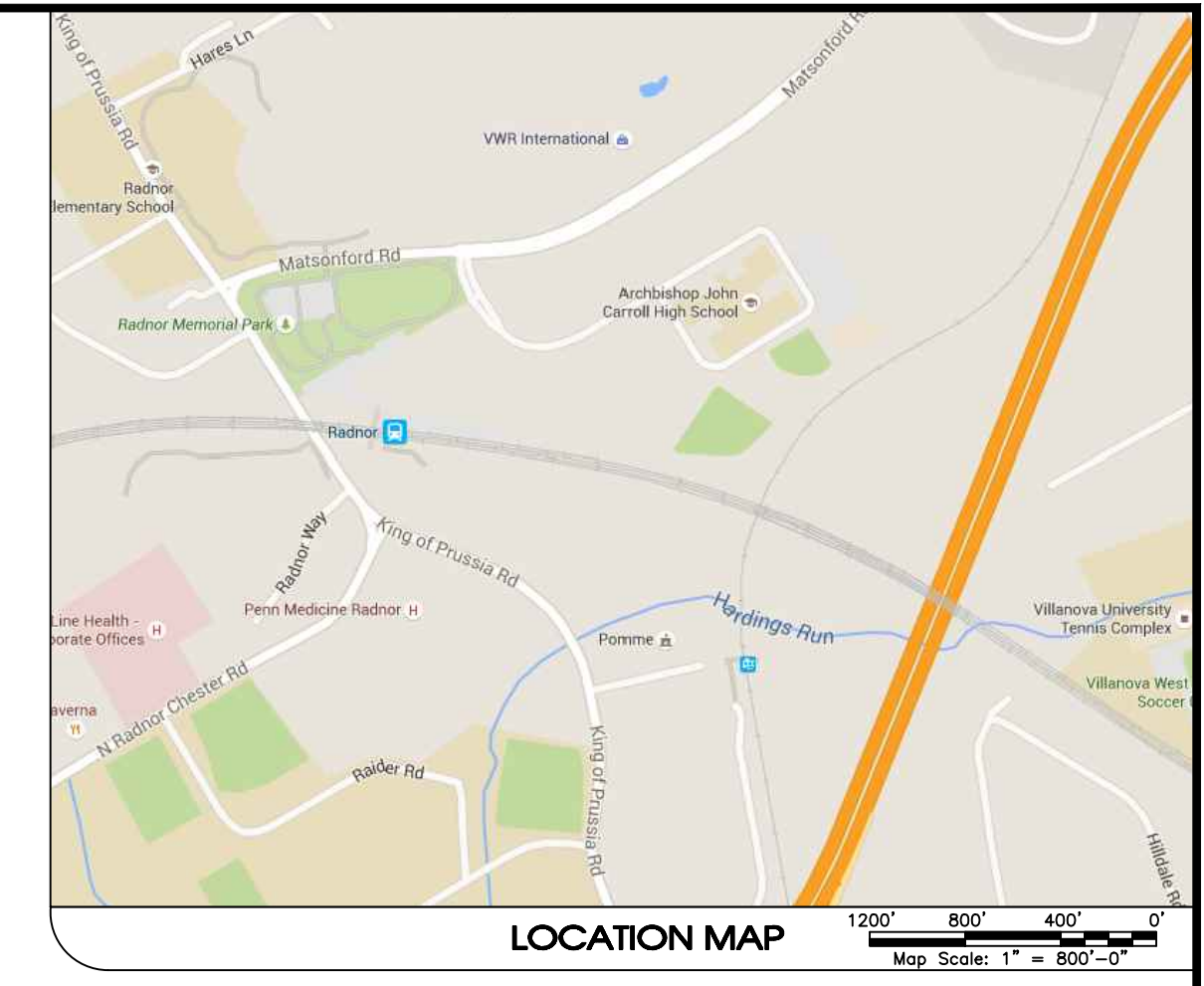
**SOIL SUMMARY**

THIS PROJECT AREA IS COMPOSED PREDOMINANTLY OF GeB SOILS WITH A SMALL PORTION OF GeC2 AND Md SOIL ACCORDING TO THE USDA WEB SOIL SURVEY.

- GeB - GLENELG CHANNERY LOAM  
SLOPE: 3-8 PERCENT  
BEDROCK: 76 TO 94 INCHES  
DRAINAGE CLASS: WELL DRAINIED  
CAPACITY TO TRANSMIT WATER: 0.01-0.2 INCHES/HR  
DEPTH TO WATER TABLE >80 INCHES  
LAND CAPABILITY: 2e
- GeC2 - GLENELG CHANNERY SILT LOAM  
SLOPE: 8-15 PERCENT  
BEDROCK: 76 TO 94 INCHES  
DRAINAGE CLASS: WELL DRAINIED  
CAPACITY TO TRANSMIT WATER: 0.6-2.0 INCHES/HR  
DEPTH TO WATER TABLE >80 INCHES  
LAND CAPABILITY: 3e

**EXISTING NATURAL SENSITIVE RESOURCES**

- WATER BODIES: NONE
- FLOODPLAINS: NONE
- RIPARIAN AREAS: NONE
- WETLANDS: NO WETLANDS WERE DEPICTED ON US DEPARTMENT OF THE INTERIOR, FISH AND WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY AS OF JANUARY 26, 2016.
- WOODLANDS: AS SHOWN ON PLAN
- NATURAL DRAINAGE WAYS: NONE
- STEEP SLOPES, 15-25%: NONE
- STEEP SLOPES, >25%: NONE
- OTHER: GEOLOGIC FORMATIONS: FELSIC GNEISS, PRECAMBRIAN
- OTHER: SOILS: SHOWN IN SOILS TABLE
- OTHER: VEGETATION: SHOWN ON PLAN



**GENERAL NOTES**

- BASEBALL FIELD REFERENCE PLAN: "PLAN OF TOPOGRAPHIC SURVEY, BASEBALL FIELD AT ARCHBISHOP CARROLL HIGH SCHOOL" PREPARED BY E.B. WALSH AND ASSOCIATES, INC. DATED 4.14.14.
- LACROSSE FIELD SHOWN IN ACCORDANCE WITH ACTUAL FIELD INSTRUMENT SURVEY CONDUCTED UPON THE GROUNDS ON AUGUST 2015 BY JEFFERY P. TURNER, PLS FROM VARIOUS DEEDS AND PLANS OF RECORD; SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT; PROPERTY MAY BE SUBJECT TO CERTAIN RIGHTS OF OTHERS.
- ELEVATIONS ARE BASED ON BENCHMARK PROVIDED ON REFERENCE PLAN.
- EXISTING SUBSURFACE UTILITY INFORMATION INDICATED IS BASED UPON VISUAL FIELD INSPECTION BY SURVEYORS 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 WAS OBTAINED. THERE IS NO EXPRESSED OR IMPLIED AGREEMENT THAT UTILITY SIZE, LOCATION, DEPTH, QUANTITY, ETC. AS SHOWN EXISTS BETWEEN EXPLORED LOCATIONS. ACCORDINGLY, UTILITY INFORMATION SHOWN SHOULD NOT BE RELIED UPON FOR CONSTRUCTION PURPOSES. IT IS INCUMBENT UPON THE CONTRACTOR TO VERIFY THE SIZE, LOCATION, DEPTH, QUANTITY, ETC. OF ALL UTILITIES BEFORE EXCAVATION.

**DEMOLITION NOTES**

- RADNOR TOWNSHIP SHALL BE NOTIFIED PRIOR TO DEMOLITION WORK TO ASCERTAIN IF ANY PERMITS ARE REQUIRED.
- THIS PLAN DOES NOT SHOW ALL UTILITIES. CONTRACTOR SHALL NOTIFY UNDERGROUND UTILITY USERS AT LEAST THREE DAYS PRIOR TO CONSTRUCTION IN ACCORDANCE WITH PA ONE CALL REGULATIONS (CALL 1-800-242-1776) AND SHALL FIELD LOCATE ALL UTILITIES THAT MAY BE PRESENT IN WORK AREA. 2. IF ANY EXISTING UTILITIES CONFLICT WITH CONSTRUCTION, PLANS SHALL BE MADE WITH UTILITY COMPANY FOR RELOCATION.
- CONTRACTOR SHALL FOLLOW ALL REQUIREMENTS OF THE DURING CONSTRUCTION EROSION AND SEDIMENT CONTROL PLAN, AS APPLICABLE, INCLUDING THE STABILIZED CONSTRUCTION ENTRANCE, SILT FENCE, TREE PROTECTION, AND IMMEDIATE STABILIZATION OF ANY DISTURBED AREAS.

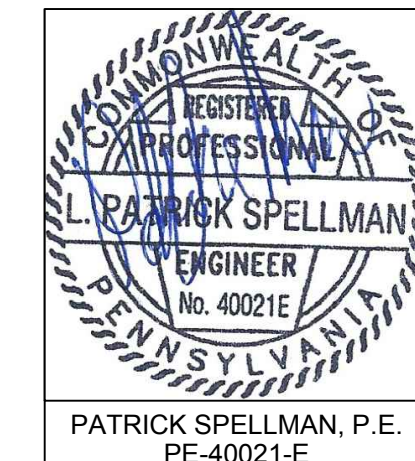
**PLAN LEGEND**

- BOLD LINES: FEATURES TO BE DEMOLISHED
- FADED LINES: FEATURES TO REMAIN
- SUPPLEMENTAL CONTOUR (1' INTERVAL)
- - - INDEX CONTOUR (5' INTERVAL)
- ST --- EXISTING STORM SEWER PIPING
- S --- EXISTING SANITARY SEWER PIPING
- G --- EXISTING GAS MAIN
- W --- EXISTING WATER MAIN / SERVICE
- E --- EXISTING OVERHEAD UTILITY WIRES
- EXISTING EDGE OF WOODS
- EXISTING CURB LINE
- X --- EXISTING FENCE LINE
- GeC2 / GeB SOIL BOUNDARY AND ID

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RADNOR TOWNSHIP DELAWARE COUNTY PENNSYLVANIA  
DATE: 28 JANUARY 2016



**EXISTING FEATURES PLAN  
DEMOLITION PLAN  
SOIL, VEGETATION &  
WATER RESOURCES PLAN**  
SHEET 2 of 7  
SCALE: 1"= 40'



**GENERAL NOTES**

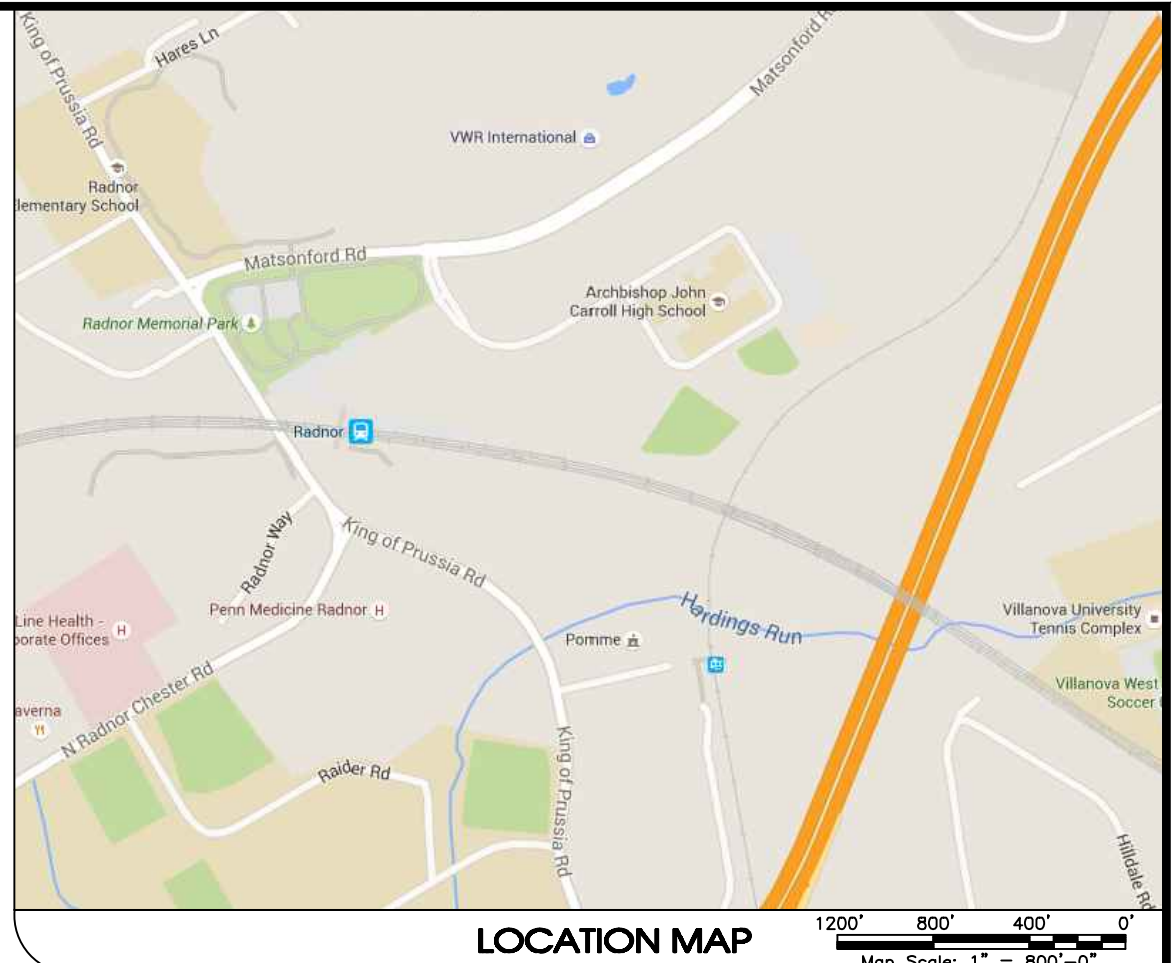
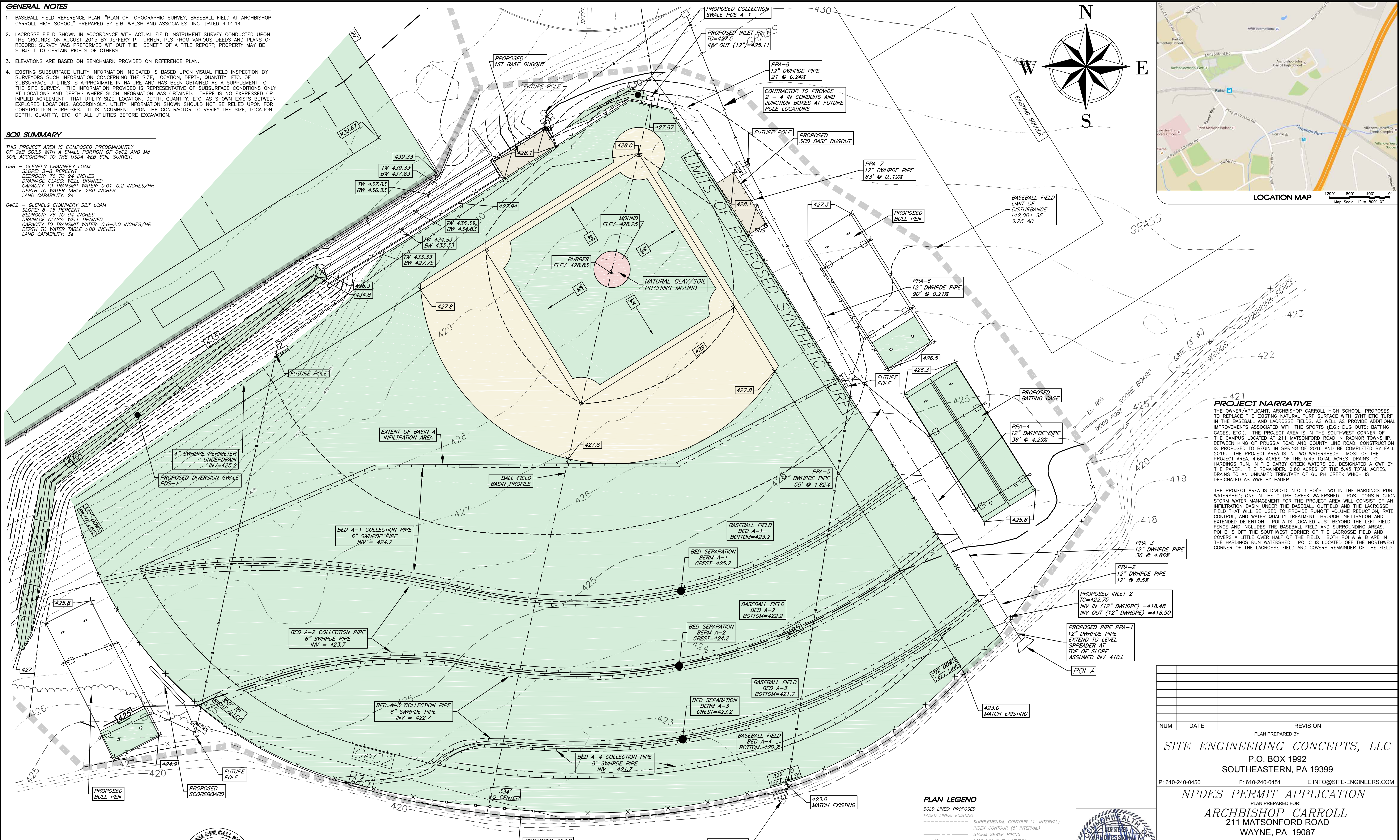
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 SLOPE: 3-8 PERCENT  
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 DRAINAGE CLASS: WELL DRAINED  
 CAPACITY TO TRANSMIT WATER: 0.01-0.2 INCHES/HR  
 DEPTH TO WATER TABLE >80 INCHES  
 LAND CAPABILITY: 2e

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 DRAINAGE CLASS: WELL DRAINED  
 CAPACITY TO TRANSMIT WATER: 0.6-2.0 INCHES/HR  
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**PROJECT NARRATIVE**  
 THE OWNER/APPLICANT, ARCHBISHOP CARROLL HIGH SCHOOL, PROPOSES TO REPLACE THE EXISTING NATURAL TURF SURFACE WITH SYNTHETIC TURF IN THE BASEBALL AND LACROSSE FIELDS, AS WELL AS PROVIDE ADDITIONAL IMPROVEMENTS ASSOCIATED WITH THE SPORTS (E.G.: DUG OUTS; BATTING CAGES, ETC.). THE PROJECT AREA IS IN THE SOUTHWEST CORNER OF THE CAMPUS LOCATED AT 211 MATSONFORD ROAD IN RADNOR TOWNSHIP, BETWEEN KING OF PRUSSIA ROAD AND COUNTY LINE ROAD. CONSTRUCTION IS PROPOSED TO BEGIN IN SPRING OF 2016 AND BE COMPLETED BY FALL 2016. THE PROJECT AREA IS IN TWO WATERSHEDS. MOST OF THE PROJECT AREA, 4.66 ACRES OF THE 5.45 TOTAL ACRES, DRAINS TO HARDINGS RUN, IN THE DARBY CREEK WATERSHED, DESIGNATED A CWF BY THE PADEP. THE REMAINDER, 0.80 ACRES OF THE 5.45 TOTAL ACRES, DRAINS TO AN UNNAMED TRIBUTARY OF GULPH CREEK WHICH IS DESIGNATED AS WWF BY PADEP.

THE PROJECT AREA IS DIVIDED INTO 3 POI'S, TWO IN THE HARDINGS RUN WATERSHED; ONE IN THE GULPH CREEK WATERSHED. POST CONSTRUCTION STORM WATER MANAGEMENT FOR THE PROJECT AREA WILL CONSIST OF AN INFILTRATION BASIN UNDER THE BASEBALL OUTFIELD AND THE LACROSSE FIELD THAT WILL BE USED TO PROVIDE RUNOFF VOLUME REDUCTION, RATE CONTROL, AND WATER QUALITY TREATMENT THROUGH INFILTRATION AND EXTENDED DETENTION. POI A IS LOCATED JUST BEYOND THE LEFT FIELD FENCE AND INCLUDES THE BASEBALL FIELD AND SURROUNDING AREAS. POI B IS OFF THE SOUTHWEST CORNER OF THE LACROSSE FIELD AND COVERS A LITTLE OVER HALF OF THE FIELD. BOTH POI A & B ARE IN THE HARDINGS RUN WATERSHED. POI C IS LOCATED OFF THE NORTHWEST CORNER OF THE LACROSSE FIELD AND COVERS REMAINDER OF THE FIELD.

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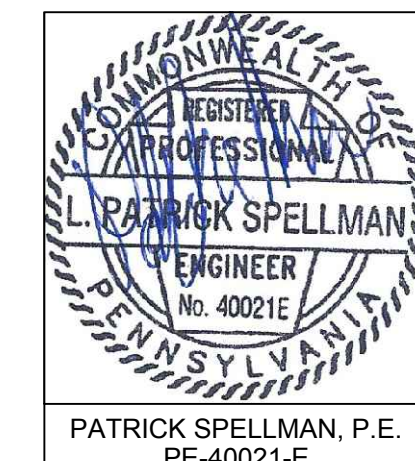
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 DATE: 28 JANUARY 2016

**PROPOSED SITE & PCSM PLAN - BASEBALL FIELD** SHEET 3 of 7  
 SCALE: 1"=20'

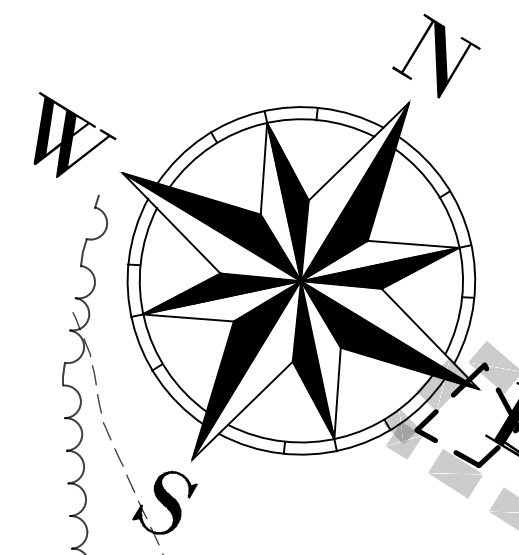
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  - EDGE OF WOODS
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  - SOIL BOUNDARY AND ID



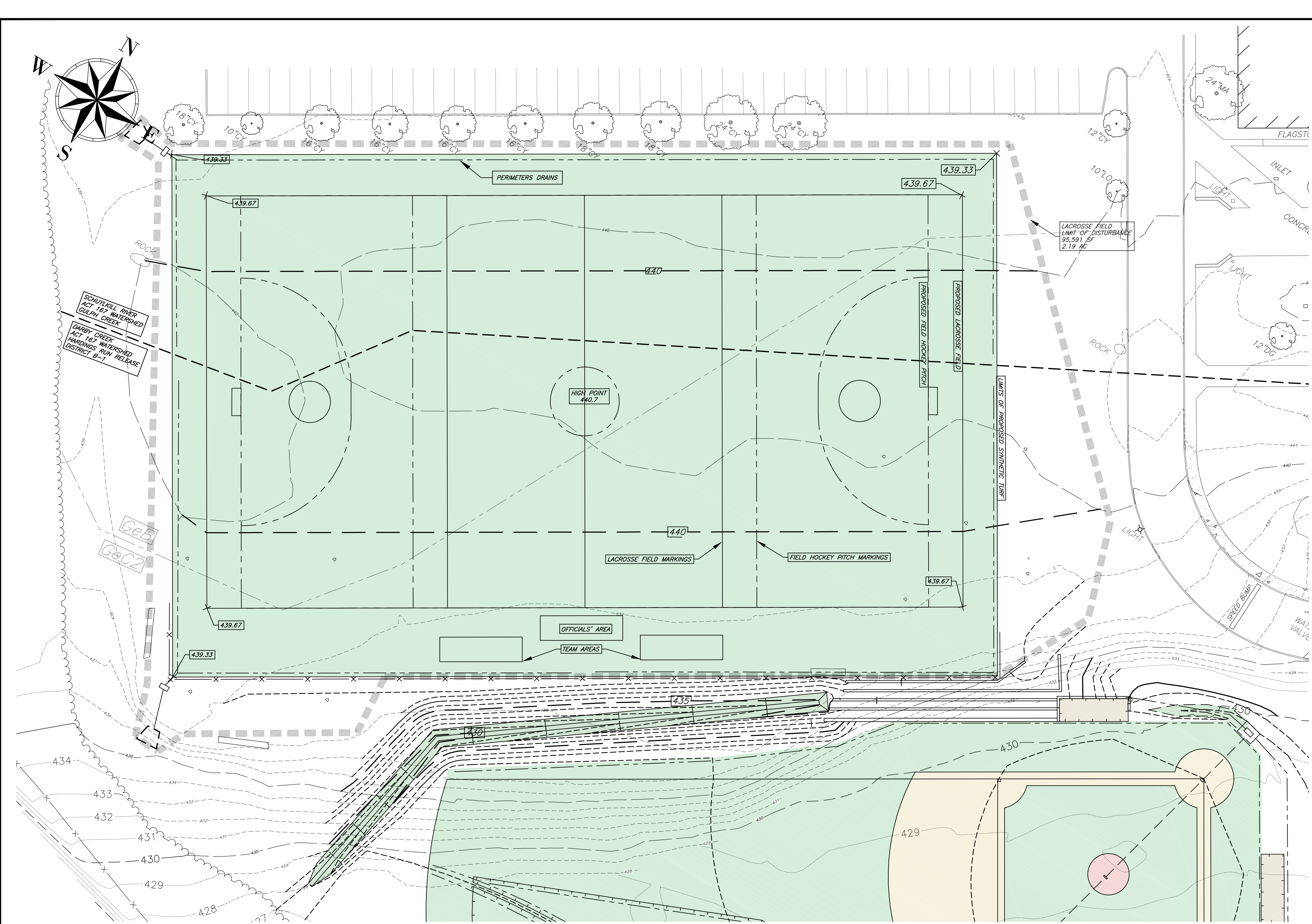
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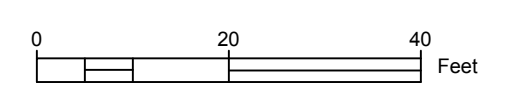
**PLAN LEGEND**

<b>BOLD LINES: PROPOSED</b>	---	SUPPLEMENTAL CONTOUR (1' INTERVAL)	
---	---	INDEX CONTOUR (5' INTERVAL)	
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---	---	S - SANITARY SEWER PIPING	
---	---	G - GAS MAIN	
---	---	W - WATER MAIN / SERVICE	
---	---	E - UNDERGROUND UTILITY CONDUITS	
---	---	--- (wavy line) ---	EDGE OF WOODS
---	---	---	CURB LINE
---	---	---	FENCE LINE
---	---	---	GeC2 - SOIL BOUNDARY AND ID
---	---	---	GeB - SOIL BOUNDARY AND ID

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**PROPOSED SITE & PCSM  
 PLAN - LACROSSE FIELD &  
 FIELD HOCKEY PITCH**

**SHEET  
 4 of 7**

SCALE: 1"= 20'



**ENGINEERING CONSTRUCTION OVERSIGHT**

THE CONTRACTOR SHALL PROVIDE ENGINEERING CONSTRUCTION OVERSIGHT FOR THE PROPOSED STORMWATER BMPs. ADDITIONAL SOIL TESTING MAY BE REQUIRED PRIOR TO THE INSTALLATION OF INFILTRATION BMPs TO ENSURE PROPER LOCATION AND FUNCTION. A LICENSED PROFESSIONAL KNOWLEDGEABLE IN THE DESIGN AND CONSTRUCTION OF STORMWATER BMPs, PREFERABLY THE DESIGN ENGINEER, SHALL CONDUCT THE OVERSIGHT. OVERSIGHT IS NECESSARY FOR THE FIVE INFILTRATION BEDS.

AT LEAST THREE INSPECTIONS SHALL BE CONDUCTED FOR THE INFILTRATION BED: AFTER EXCAVATION OF BED, AFTER ALL PIPING IS INSTALLED BUT BEFORE PIPING IS COVERED WITH STONE/GEOTEXTILE, AND AFTER INFILTRATION BED IS COMPLETED.

FINAL CERTIFICATION FROM THE LICENSED PROFESSIONAL THAT THE INFILTRATION BED HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE PLAN IS REQUIRED PRIOR TO PADEP'S ACCEPTANCE OF THE NOTICE OF TERMINATION FOR THE NPDES PERMIT.

**PCSM LONG TERM OPERATIONS AND MAINTENANCE REQUIREMENTS**

UNTIL THE PERMITTEE OR CO-PERMITTEE HAS RECEIVED WRITTEN APPROVAL OF A NOTICE OF TERMINATION, THE PERMITTEE OR CO-PERMITTEE WILL REMAIN RESPONSIBLE FOR COMPLIANCE WITH THE PERMIT TERMS AND CONDITIONS INCLUDING LONG-TERM OPERATION AND MAINTENANCE OF ALL PCSM BMPs ON THE PROJECT SITE AND IS RESPONSIBLE FOR THE PERPETUAL MAINTENANCE OF THE PCSM BMPs. THE PERMITTEE OR CO-PERMITTEE SHALL BE RESPONSIBLE FOR LONG-TERM OPERATION AND MAINTENANCE OF PCSM BMPs AS A DIFFERENT IN THE NOTICE OF TERMINATION AND HAS AGREED TO LONG-TERM OPERATION AND MAINTENANCE OF PCSM BMPs. FOR ANY PROPERTY CONTAINING A PCSM BMP, THE PERMITTEE OR CO-PERMITTEE SHALL RECORD AN INSTRUMENT WITH THE RECORDER OF DEEDS WHICH WILL ASSURE DISCLOSURE AND RELATED OBLIGATIONS IN THE ORDINARY COURSE OF A TITLE SEARCH OF THE SUBJECT PROPERTY. THE RECORDED INSTRUMENT MUST IDENTIFY THE PCSM BMP, PROVIDE FOR NECESSARY ACCESS RELATED TO LONG-TERM OPERATION AND MAINTENANCE FOR PCSM BMPs AND PROVIDE NOTICE THAT THE RESPONSIBILITY FOR LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMP IS A COVENANT THAT RUNS WITH THE LAND THAT IS BINDING UPON AND ENFORCEABLE BY SUBSEQUENT GRANTEE, AND PROVIDE PROOF OF FILING WITH THE NOTICE OF TERMINATION UNDER PA CODE CHAPTER 102.7(b)(5) (RELATING TO PERMIT TERMINATION). THE PERSON RESPONSIBLE FOR PERFORMING LONG-TERM OPERATION AND MAINTENANCE MAY ENTER INTO AN AGREEMENT WITH ANOTHER PERSON INCLUDING A MUNICIPALITY, NONPROFIT ORGANIZATION, MUNICIPALITY, AUTHORITY, PRIVATE CORPORATION OR OTHER PERSON, TO TRANSFER THE RESPONSIBILITY FOR PCSM BMPs OR TO PERFORM LONG-TERM OPERATION AND MAINTENANCE AND PROVIDE NOTICE THEREOF TO THE DEPARTMENT. A PERMITTEE OR CO-PERMITTEE THAT FAILS TO TRANSFER LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMP OR OTHERWISE FAILS TO COMPLY WITH THIS REQUIREMENT SHALL REMAIN JOINTLY AND SEVERALLY RESPONSIBLE WITH THE LANDOWNER FOR LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMPs LOCATED ON THE PROPERTY.

**PCSM REPORTING AND RECORDKEEPING**

THE PCSM PLAN, INSPECTION REPORTS AND MONITORING RECORDS SHALL BE AVAILABLE FOR REVIEW AND INSPECTION BY THE DEPARTMENT OR THE CONSERVATION DISTRICT.

**NOTICE OF TERMINATION**

UPON PERMANENT STABILIZATION OF THE EARTH DISTURBANCE ACTIVITY UNDER CH. 102.22(a)(2) (RELATING TO PERMANENT STABILIZATION), AND INSTALLATION OF BMPs IN ACCORDANCE WITH AN APPROVED PLAN PREPARED AND IMPLEMENTED IN ACCORDANCE WITH CH. 102.4 AND 102.8 (RELATING TO EROSION AND SEDIMENT CONTROL REQUIREMENTS, AND PCSM 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 BMPs IN ACCORDANCE WITH CH. 102.8(m) AND PROOF OF COMPLIANCE WITH CH. 102.8(m)(2).

**FINAL CERTIFICATION**

THE PERMITTEE SHALL INCLUDE WITH THE NOTICE OF TERMINATION "RECORD DRAWINGS" WITH A FINAL CERTIFICATION STATEMENT FROM A LICENSED PROFESSIONAL, WHICH READS AS FOLLOWS: "I (NAME) DO HEREBY CERTIFY PURSUANT TO THE PROVISIONS OF 18 PA. C.S.A. CHAPTER 4804 TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF, THAT THE ACCOMPANYING RECORD DRAWINGS ACCURATELY REFLECT THE AS-BUILT CONDITIONS, ARE TRUE AND CORRECT, AND ARE IN CONFORMANCE WITH CHAPTER 102 OF THE RULES AND REGULATIONS OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION AND THAT THE PROJECT SITE WAS CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PCSM PLAN, ALL APPROVED PLAN CHANGES AND ACCEPTED CONSTRUCTION PRACTICES."

- THE PERMITTEE SHALL RETAIN A COPY OF THE RECORD DRAWINGS AS A PART OF THE APPROVED PCSM PLAN.
- (1) THE PERMITTEE SHALL PROVIDE A COPY OF THE RECORD DRAWINGS AS A PART OF THE APPROVED PCSM PLAN TO THE PERMITTEE OR CO-PERMITTEE AS BEING RESPONSIBLE FOR THE LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMPs.

**AMOUNT OF STABILIZATION REQUIRED BEFORE ANY STORMWATER RUNOFF CAN ENTER ANY PCSM BMP.**

BEFORE ANY STORMWATER RUNOFF CAN ENTER ANY PCSM BMP, ALL CONTRIBUTORY UPSLOPE DRAINAGE AREAS MUST HAVE ACHIEVED FINAL STABILIZATION. FINAL STABILIZATION IS WHEN AN AREA HAS ACHIEVED A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER (STONE/PAVING) WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS.

**STORM WATER MANAGEMENT (BMP) FACILITY OWNERSHIP, OPERATIONS, & MAINTENANCE NOTES:**

ALL STORMWATER CONVEYANCE AND MANAGEMENT FACILITIES SHOWN ON THIS PLAN ARE PERMANENT AND ARE NOT TO BE REMOVED OR FILLED. THE PROPERTY OWNER AND THEIR HEIRS, ASSIGNS OR SUCCESSORS SHALL BE RESPONSIBLE FOR THE PERPETUAL MAINTENANCE OF THE SAID FACILITIES. THE TOWNSHIP MAINTAINS THE RIGHT, BUT NOT THE RESPONSIBILITY, TO ENTER SAID PREMISES TO OBSERVE OR INSPECT THE FUNCTIONING OF THESE FACILITIES. IF THE PROPERTY OWNER, HIS/HER HEIRS, ASSIGNS, OR SUCCESSORS FAILS IN ANY WAY TO MAINTAIN THE SAID FACILITIES OR CAUSES THESE FACILITIES TO BE ALTERED OR REMOVED, UPON WRITTEN NOTIFICATION BY THE TOWNSHIP, THE DEFECTS SHALL PROMPTLY BE CORRECTED BY THE PROPERTY OWNER. UPON THE OWNER'S FAILURE TO CORRECT THE DEFECTS WITHIN THE SPECIFIED TIME FRAME, 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 LIEN 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:

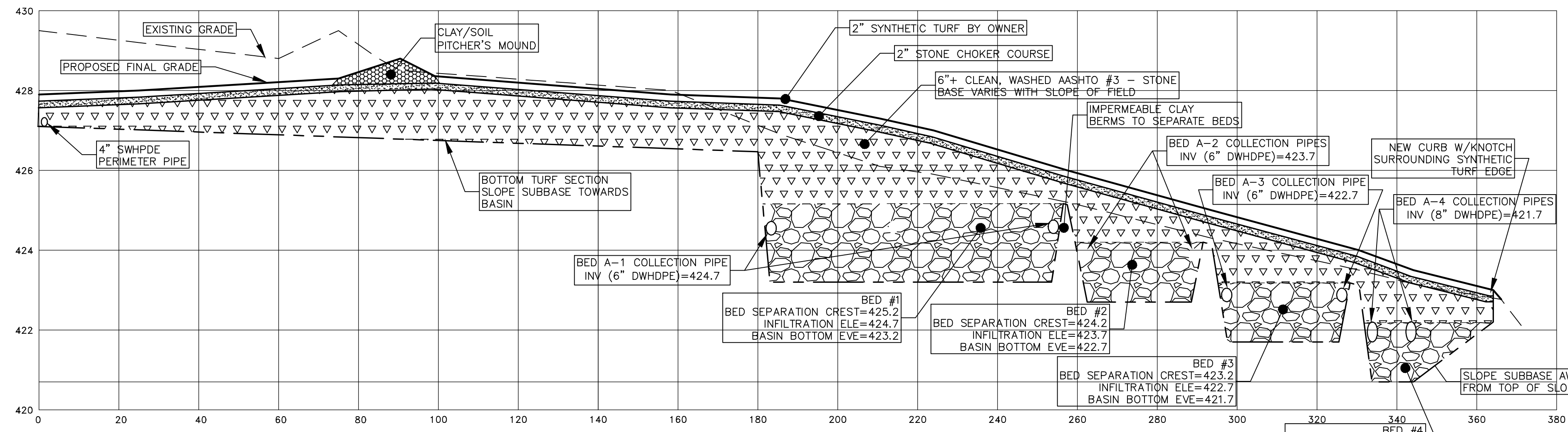
1. MAINTAINING THE GRASS ON AND AROUND STORM WATER FACILITIES TO PREVENT LARGE VEGETATION AND ROOT SYSTEMS FROM GROWING ON OR NEAR FACILITIES AND TO PREVENT THE FORMATION OF NONVEGETATED AREAS THAT COULD FLOW INTO AND CLOG THE FACILITIES.
2. KEEPING ALL DEBRIS, INCLUDING GRASS CLIPPINGS AND LEAVES CLEAR OF INLET AND OUTLET STRUCTURES AND REMOVING ANY DEBRIS.
3. INLET AND OUTLET STRUCTURES SHALL BE INSPECTED MONTHLY.
4. NO TREES OR SHRUBBERY SHALL BE PLACED OVER THE LOCATION OF THE INFILTRATION BED.
5. IF INFILTRATION BED DOES NOT DRAIN WITHIN 72 HOURS AFTER THE LAST STORM EVENT IT SHALL BE INSPECTED AND THEN FIXED OR REPLACED AS NECESSARY.

**STORMWATER INFILTRATION BED NOTES**

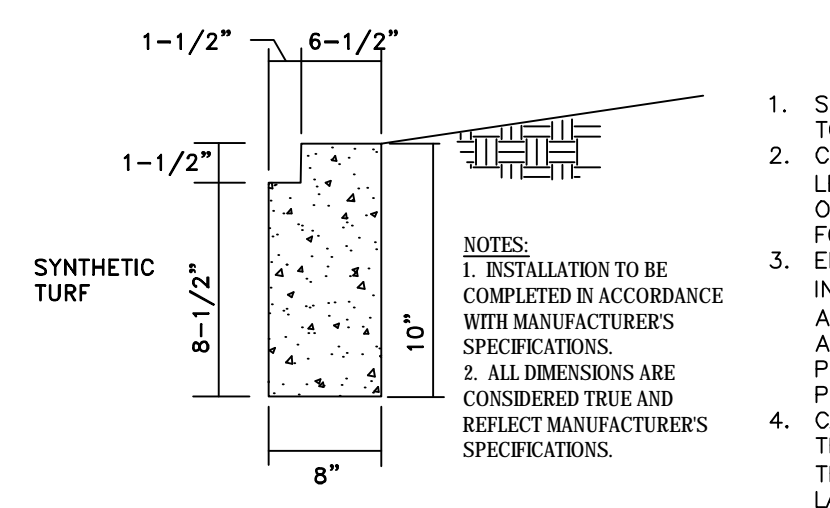
1. SCARIFY BOTTOM AND SIDES OF BASIN, TAKING CARE NOT TO COMPACT SOIL.
2. PERFORATED PIPE MUST HAVE PERFORATIONS NO LESS THAN 5/16" DIAMETER AND PROVIDE AN OPEN AREA OF NOT LESS THAN 3.31 SQUARE INCHES PER SQUARE FOOT OF PIPE SURFACE.
3. ENTIRE BED, SIDES TOP AND BOTTOM, SHALL BE WRAPPED IN SYNTHETIC INDUSTRIES NON-WOVEN #1201 OR ENGINEER APPROVED EQUAL. PROVIDE A MINIMUM 1" OVERLAP AT ALL SEAMS AND JOINTS. WHERE PROTRUSIONS OR PENETRATIONS OCCUR, GEOTEXTILE SHALL BE PERMANENTLY AFFIXED TO OBJECT.
4. CARE SHOULD BE TAKEN IN THE PLACING OF STONE ATOP THE GEOTEXTILE SO AS TO AVOID TEARING OR RIPPING OF THE FABRIC. STONE SHOULD NOT BE DUMPED UNTIL A 6" LAYER OF STONE IS IN PLACE.
5. ALL INLETS AND DRAIN BODIES TO INFILTRATION BEDS SHALL HAVE SHOUT OIL AND DEBRIS FILTERS ATTACHED TO THE PIPE ENTERING THE INFILTRATION BED.

**INFILTRATION BED CONSTRUCTION SEQUENCE**

- STAGE 1. BEFORE SITE DISTURBANCE TAKES PLACE, INSTALL CONSTRUCTION FENCING AROUND INFILTRATION BED TO PROTECT IT FROM CONSTRUCTION TRAFFIC AND
- STAGE 2. INSTALL SILT FENCE AS SHOWN ON PLAN.
- STAGE 3. CONSTRUCT INFILTRATION BED (AND INLETS/PIPING THAT DRAINS TO THEM) AFTER ALL AREAS TRIBUTARY TO IT HAVE ACHIEVED A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER (STONE/PAVING). THEY MAY BE CONSTRUCTED EARLIER AS LONG AS IT DOES NOT RECEIVE RUNOFF FROM AREAS THAT HAVE NOT BEEN PERMANENTLY STABILIZED. INSTALL INLET PROTECTION/SILT SACKS OVER INLETS.
- STAGE 4. EXCAVATE BED. EXISTING SUB-GRADE SHALL NOT BE COMPACTED OR SUBJECT TO EXCESSIVE CONSTRUCTION EQUIPMENT TRAFFIC. A LICENSED PROFESSIONAL ENGINEER OR DESIGNER SHALL APPROVE EXCAVATED BED BEFORE CONSTRUCTION PROCEEDS. WHERE THERE IS ANY ACCUMULATION OF FINE MATERIALS OR SURFACE PONDING, THIS MATERIAL SHALL BE REMOVED WITH LIGHT EQUIPMENT AND THE UNDERLYING SOILS SCARIFIED TO A MINIMUM DEPTH OF 6 INCHES WITH A YORK RAKE (OR EQUIVALENT) AND LIGHT TRACTOR. ALL FINE GRADING SHALL BE DONE BY HAND. ALL BED BOTTOMS SHOULD
- STAGE 5. GEOTEXTILE AND BED AGGREGATE SHOULD BE PLACED IMMEDIATELY AFTER APPROVAL OF SUBGRADE PREPARATION. NO SEDIMENT IS TO ENTER THE BEDS. CLEAN WASHED STONE SHALL BE USED TO CONSTRUCT BED. IF SEDIMENT ENTERS STONE, STONE SHALL BE REPLACED AND THE GEOTEXTILE FABRIC SHALL BE CLEANED OR REPLACED AS NECESSARY. INLETS SHALL ONLY COLLECT RUNOFF ONCE ALL AREAS TRIBUTARY TO THEM HAVE ACHIEVED A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER (STONE/PAVING).
- STAGE 6. STONE SHALL BE PLACED IN THE BED IN MAXIMUM 8 INCH LIFTS. EACH LAYER SHALL BE LIGHTLY COMPACTED, WITH CONSTRUCTION EQUIPMENT KEPT OFF THE BED BOTTOM AS MUCH AS POSSIBLE. BEFORE PIPES ARE COVERED WITH STONE AND GEOTEXTILE, A LICENSED PROFESSIONAL ENGINEER OR DESIGNER SHALL INSPECT.
- STAGE 7. WHEN BED IS COMPLETE, BACKFILL WITH SOIL IN MAXIMUM OF 6 INCH LIFTS, LIGHTLY COMPACT, PLACE TOPSOIL, AND STABILIZE WITH PERMANENT SEED MIX.
- STAGE 8. REMOVE INLET PROTECTION, SILT FENCE, AND ANY OTHER EROSION AND SEDIMENT CONTROL MEASURES ONLY AFTER SITE IS FULLY STABILIZED AND APPROVAL IS OBTAINED FROM THE CONSERVATION DISTRICT.



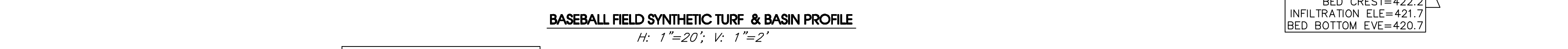
**LACROSSE FIELD SYNTHETIC TURF & BASIN SECTION**



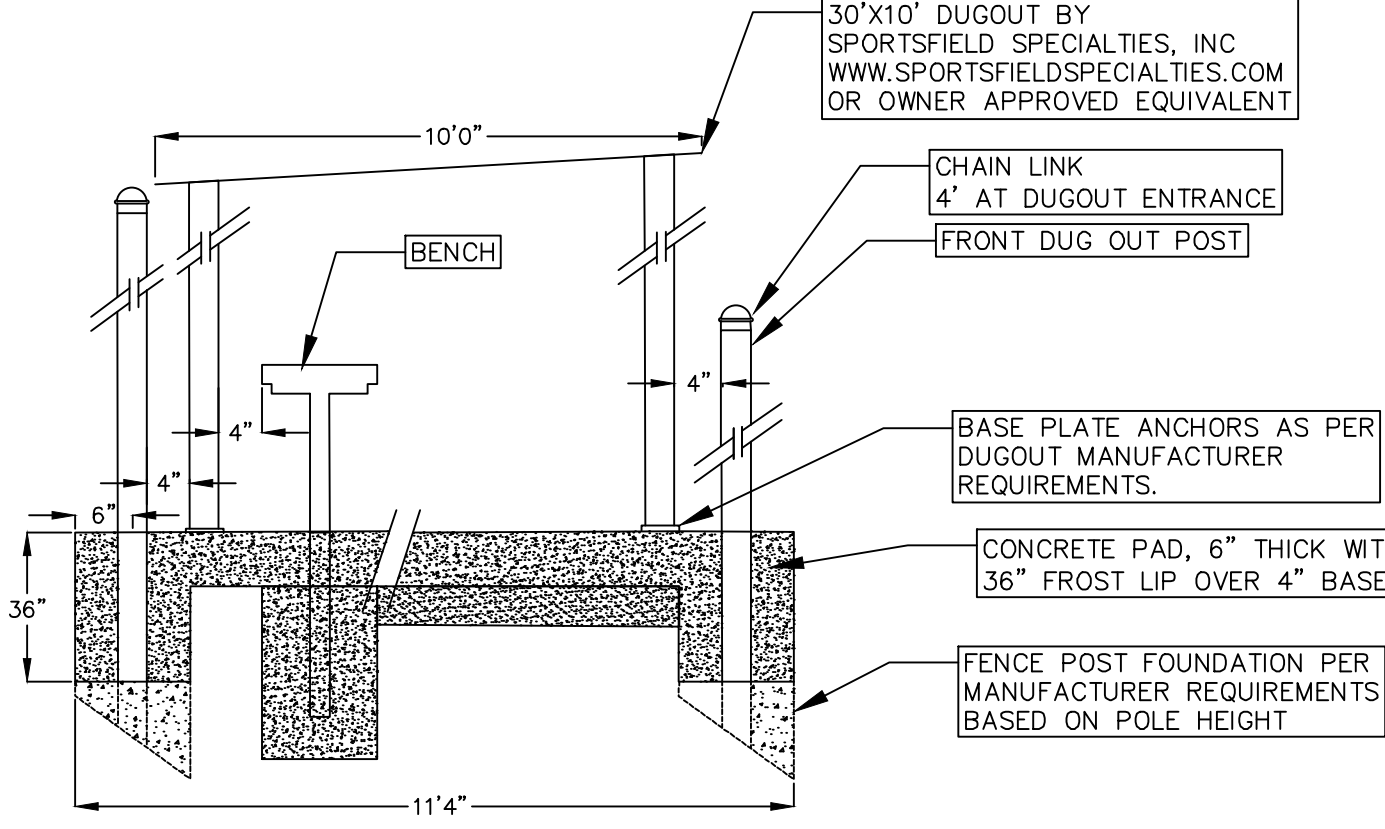
**CONCRETE CURB W/KNOTCH**

- NOTES: CLASS A CONCRETE
1. MINIMUM 2-DAY COMPRESSIVE STRENGTH OF 4000 PSI
  2. CONTAIN 6% AIR-ENTRAINMENT BY VOLUME
  3. TO BE USED AT SYNTHETIC TURF EDGE

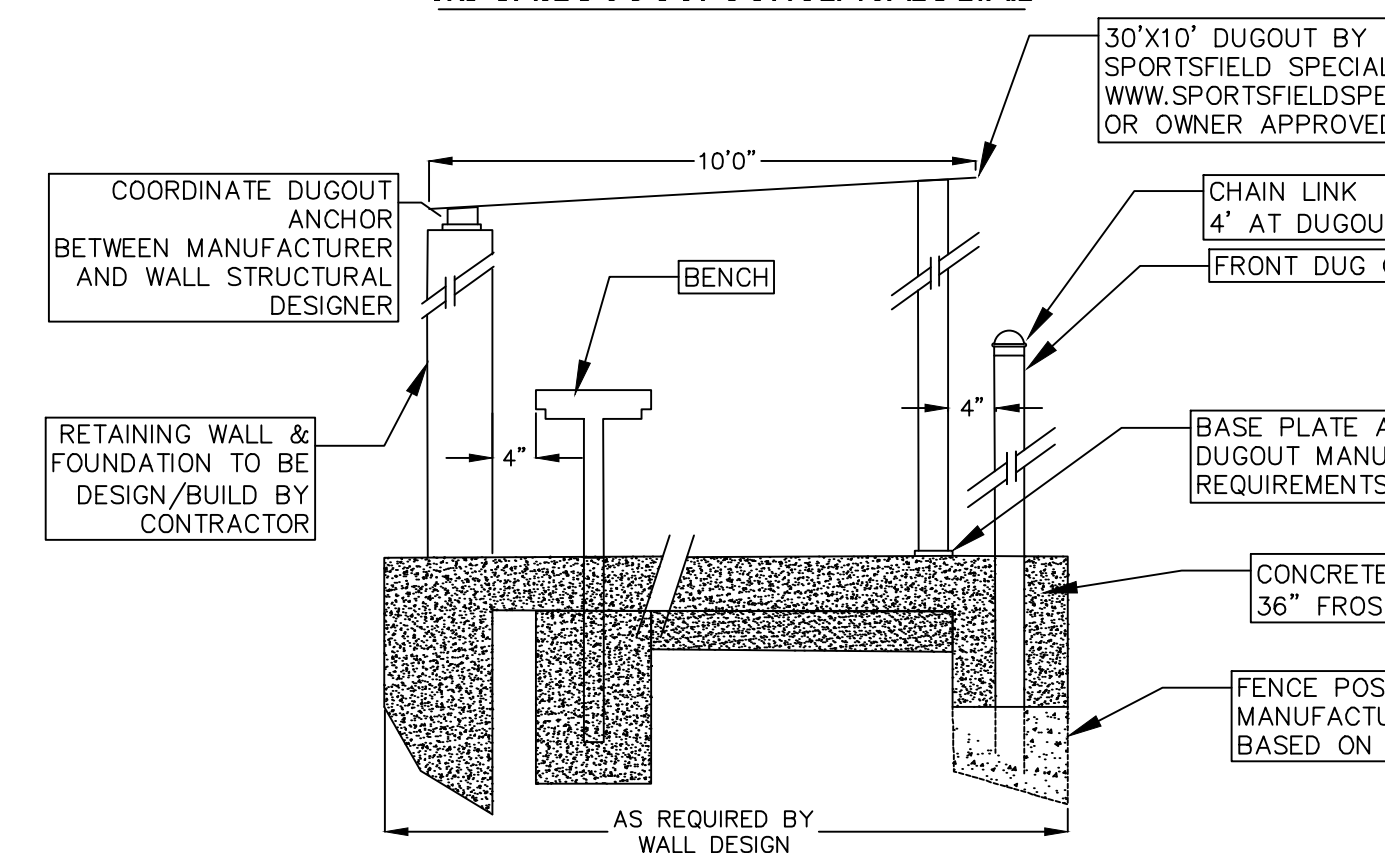
- SYNTHETIC TURF NOTES**
1. SCARIFY BOTTOM AND SIDES OF BASIN, TAKING CARE NOT TO COMPACT SOIL.
  2. CLASS 2 PERFORATED PIPE OR HAVE PERFORATIONS NO LESS THAN 5/16" DIAMETER AND PROVIDE AN OPEN AREA OF NOT LESS THAN 3.31 SQUARE INCHES PER SQUARE FOOT OF PIPE SURFACE.
  3. ENTIRE BED, SIDES TOP AND BOTTOM, SHALL BE WRAPPED IN PROPEX GEOTEX NON-WOVEN #801 OR ENGINEER APPROVED EQUAL. PROVIDE A MINIMUM 1" OVERLAP AT ALL SEAMS AND JOINTS. WHERE PROTRUSIONS OR PENETRATIONS OCCUR, GEOTEXTILE SHALL BE PERMANENTLY AFFIXED TO OBJECT.
  4. CARE SHOULD BE TAKEN IN THE PLACING OF STONE ATOP THE GEOTEXTILE SO AS TO AVOID TEARING OR RIPPING OF THE FABRIC. STONE SHOULD NOT BE DUMPED UNTIL A 6" LAYER OF STONE IS IN PLACE.



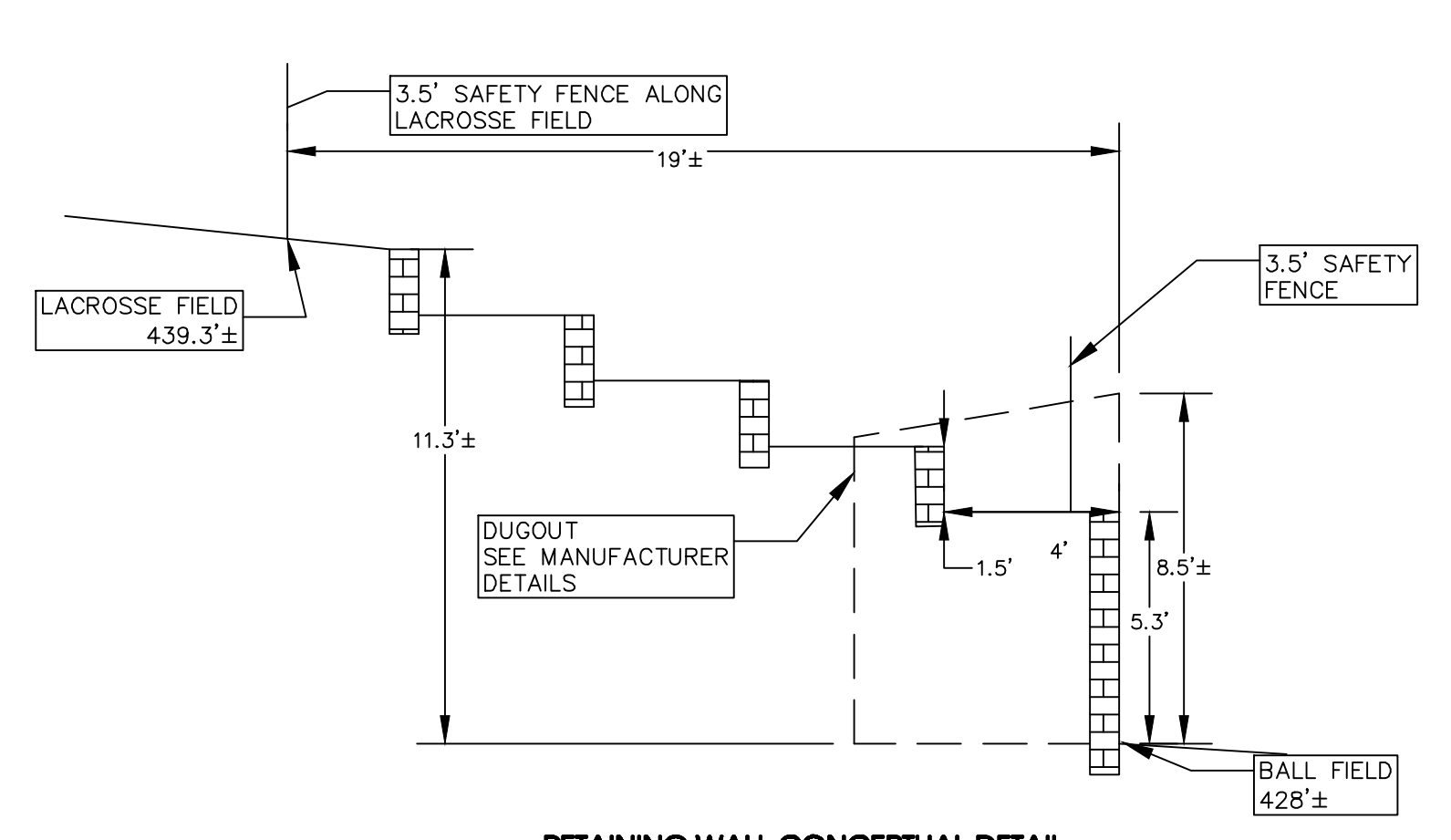
**BASEBALL FIELD SYNTHETIC TURF & BASIN PROFILE**



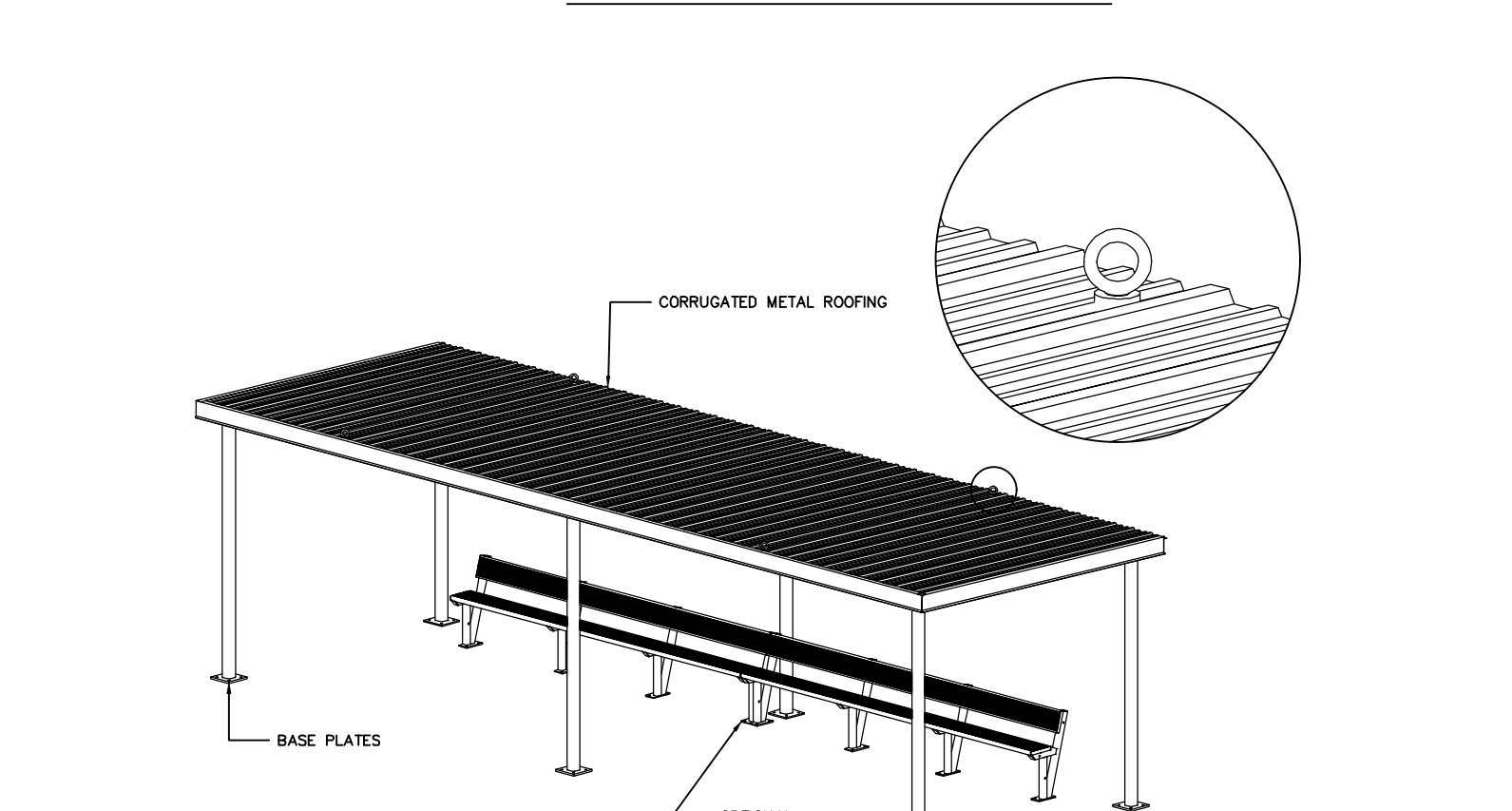
**3RD BASE DUGOUT CONCEPTUAL DETAIL**



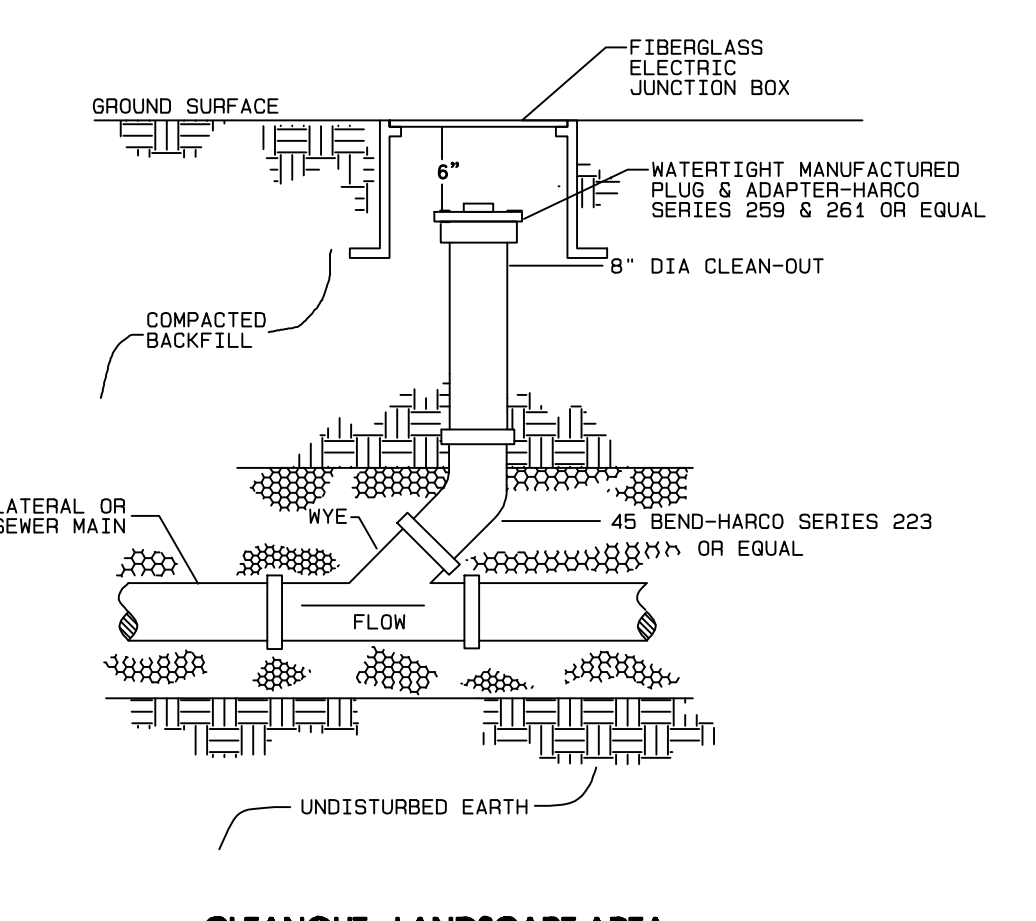
**1ST BASE DUGOUT CONCEPTUAL DETAIL**



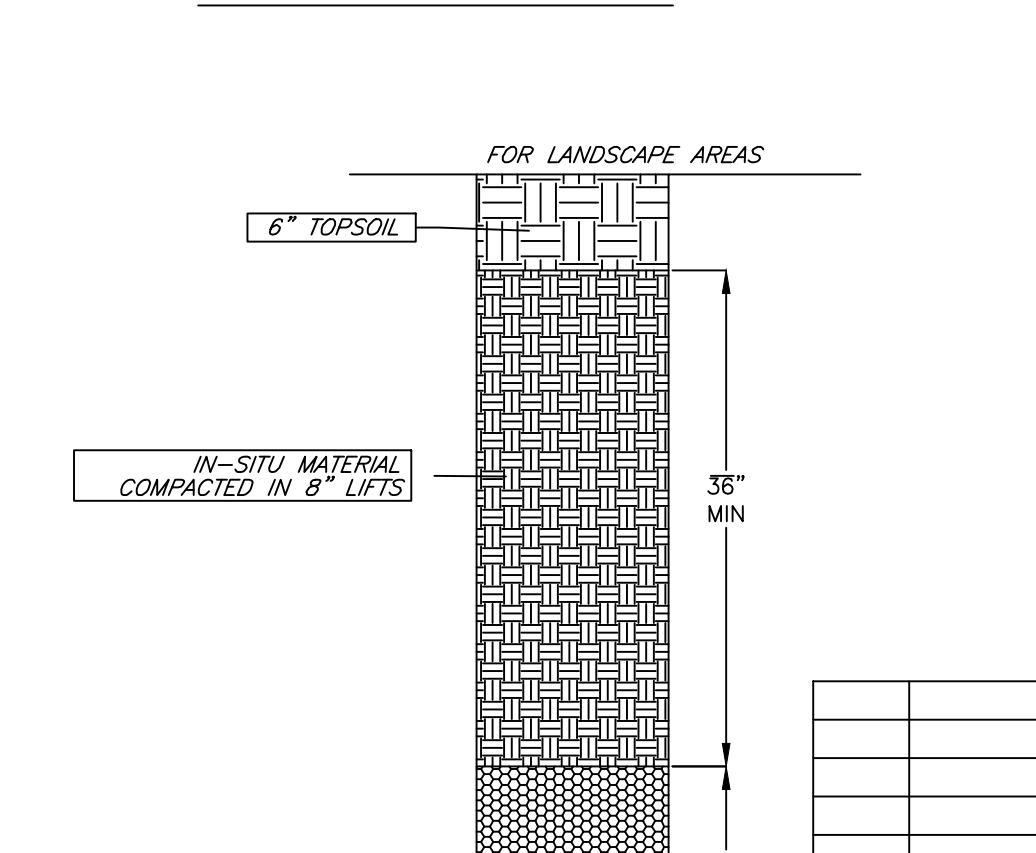
**RETAINING WALL CONCEPTUAL DETAIL**



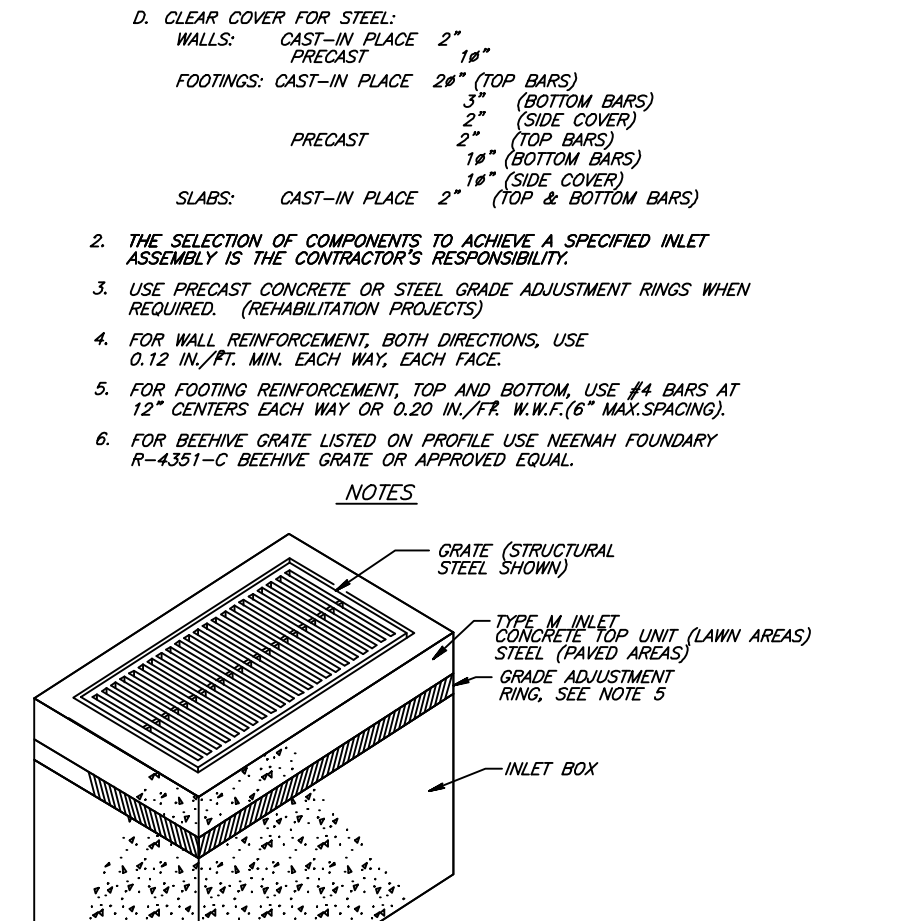
**DUGOUT MANUFACTURER DETAIL**



**CLEANOUT - LANDSCAPE AREA**



**TYPICAL UTILITY TRENCH**



**PROPOSED CONVEYANCE INLETS**

**GRASS-LINED SWALE DETAIL**

CHANNEL SLOPES FT/FT:	MIN SS	MIN D	MIN B
PCS-1	0.022	2	1.5
PDS-1	0.031	2	1.5

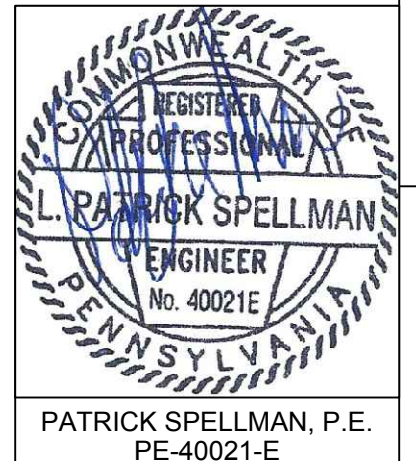
**GRASS-LINED SWALE DETAIL**

NUM.	DATE	REVISION

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

**NPDES PERMIT APPLICATION**  
 ARCHBISHOP CARROLL  
 211 MATSONFORD ROAD  
 WAYNE, PA 19087  
 RANOR TOWNSHIP DELAWARE COUNTY PENNSYLVANIA  
**POST CONSTRUCTION STORMWATER MANAGEMENT & GENERAL CONSTRUCTION DETAILS**  
 SHEET 5 of 7  
 SCALE: NTS



PATRICK SPELLMAN, P.E.  
 PE-40021-E



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.

DESIGN S/N: 20142412485

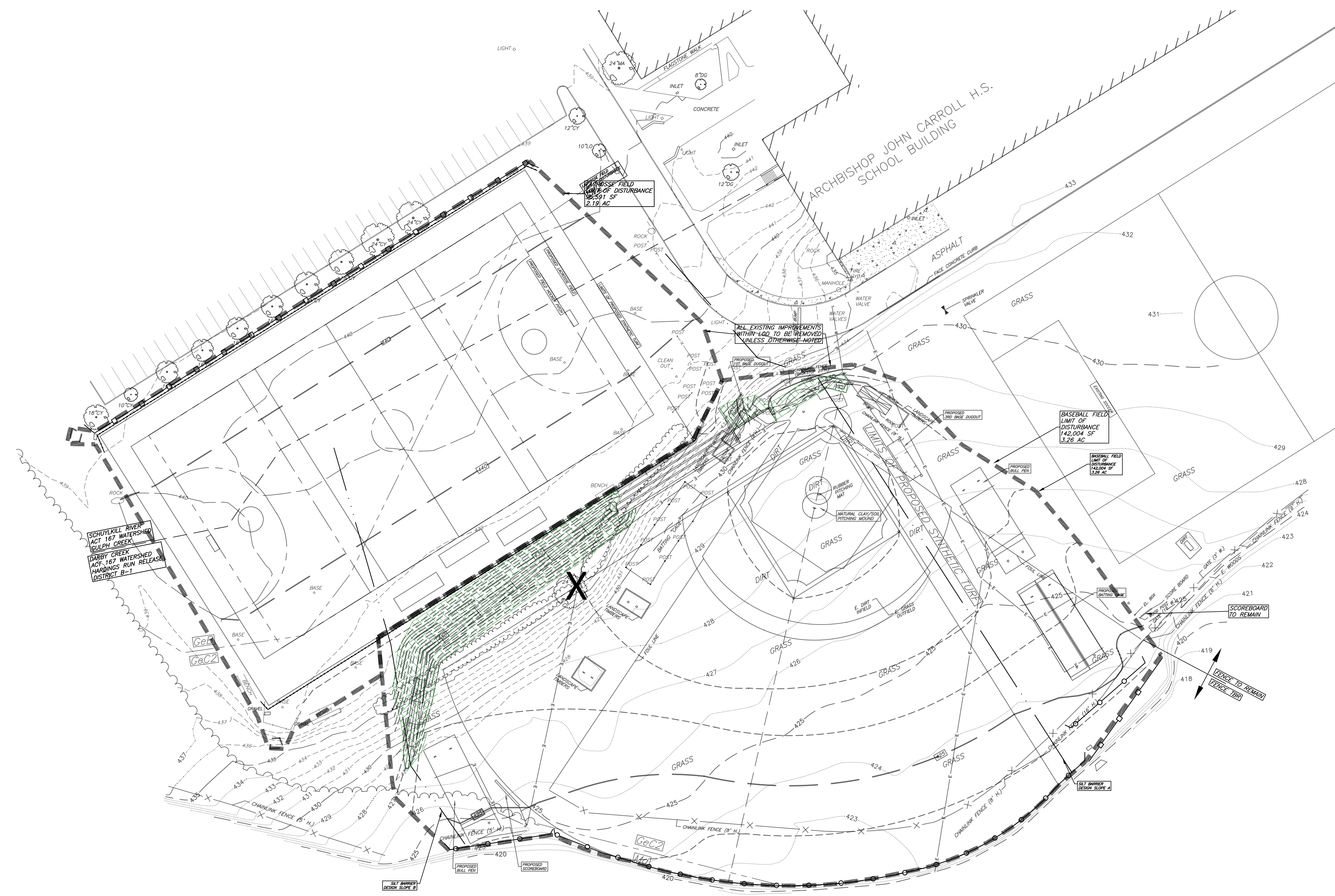
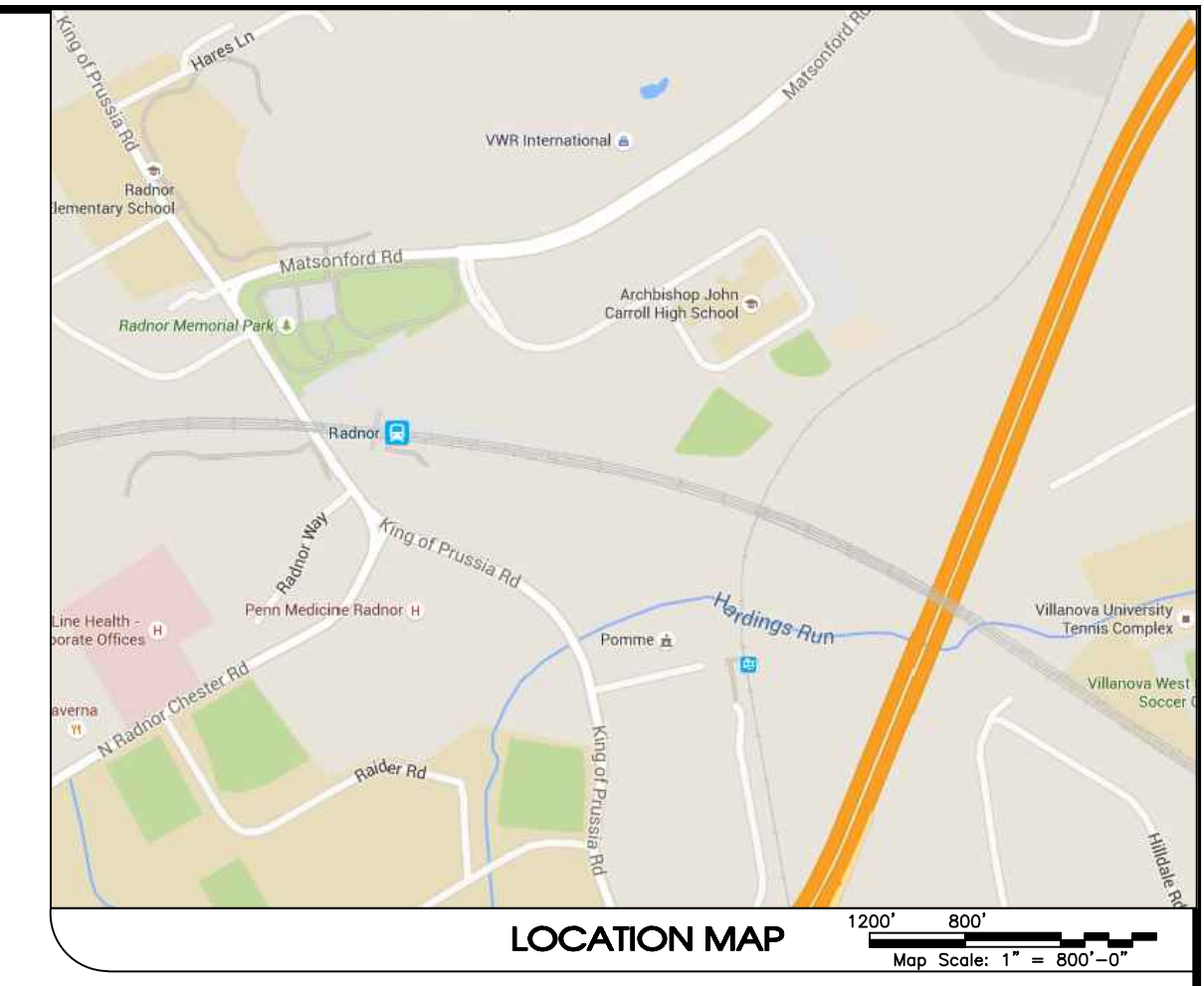


**SOIL SUMMARY**

THIS PROJECT AREA IS COMPOSED PREDOMINANTLY OF G6B SOILS WITH A SMALL PORTION OF G6C2 AND M4 SOIL ACCORDING TO THE USDA WEB SOIL SURVEY:

G6B - GLENELG CHANNERY LOAM  
 SLOPE: 3-8 PERCENT  
 BEDROCK: 76 TO 94 INCHES  
 DRAINAGE CLASS: WELL DRAINED  
 CAPACITY TO TRANSMIT WATER: 0.01-0.2 INCHES/HR  
 DEPTH TO WATER TABLE >80 INCHES  
 LAND CAPABILITY: 2e

G6C2 - GLENELG CHANNERY SILT LOAM  
 SLOPE: 8-15 PERCENT  
 BEDROCK: 76 TO 94 INCHES  
 DRAINAGE CLASS: WELL DRAINED  
 CAPACITY TO TRANSMIT WATER: 0.6-2.0 INCHES/HR  
 DEPTH TO WATER TABLE >80 INCHES  
 LAND CAPABILITY: 3e

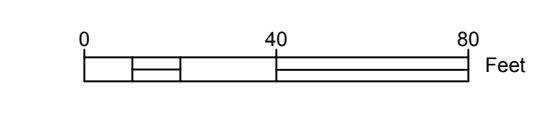


**LEGEND - E & S CONTROL FEATURES**

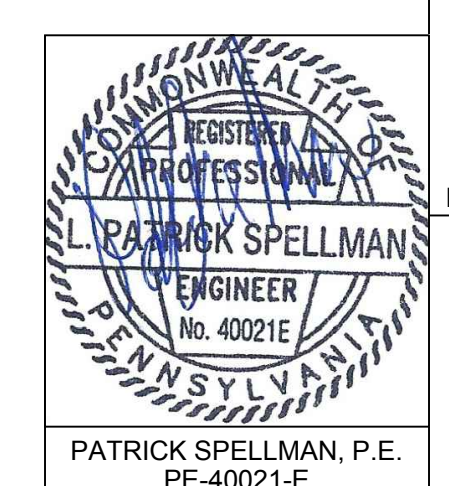
- ROCK CONSTRUCTION ENTRANCE
- PROPOSED SUPER SILT FENCE OR 18" FILTREXX SOXX
- PROPOSED 18" SILT FENCE OR 6" FILTREXX SOXX
- PROPOSED TREE PROTECTION FENCING
- DRAINAGE AREA LINE TO BMP
- SLOPE LENGTH CALCULATION
- PROPOSED LIMIT OF DISTURBANCE LINE
- EROSION MATTING

**PLAN LEGEND**

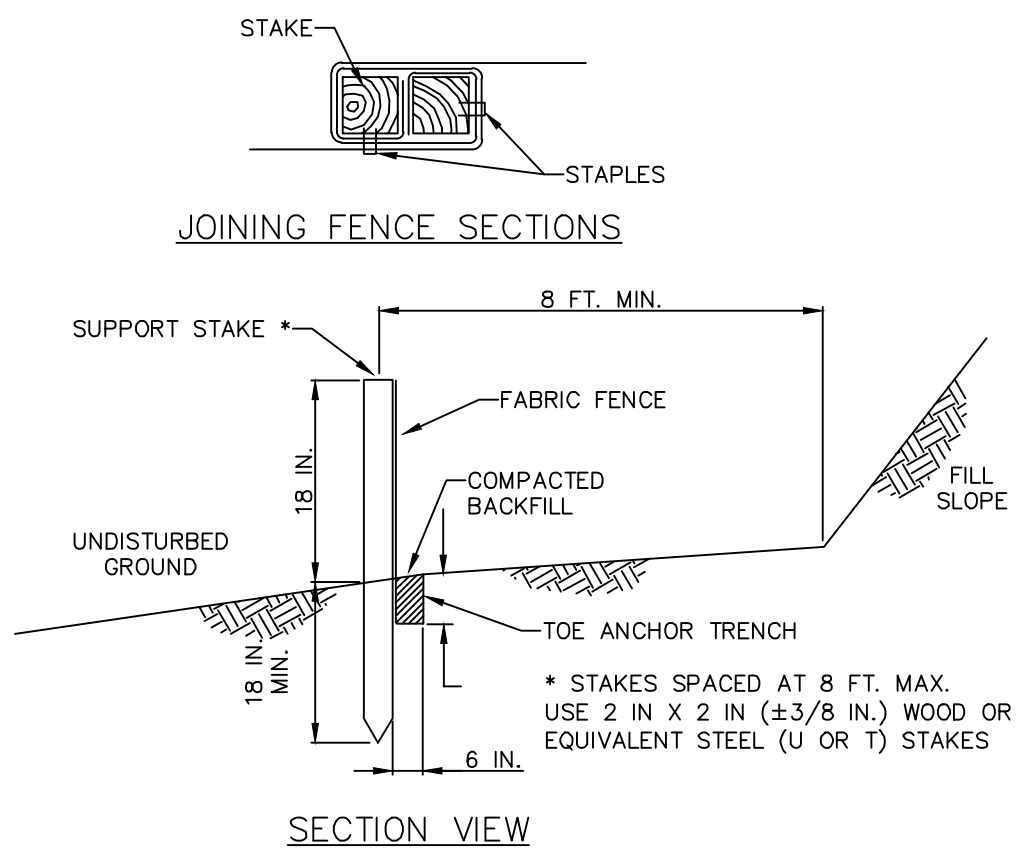
- BOLD LINES:** PROPOSED
- FADED LINES:** EXISTING
- SUPPLEMENTAL CONTOUR (1' INTERVAL)
- INDEX CONTOUR (5' INTERVAL)
- ST - STORM SEWER PIPING
- S - SANITARY SEWER PIPING
- G - GAS MAIN
- W - WATER MAIN / SERVICE
- E - UNDERGROUND UTILITY CONDUITS
- EDGE OF WOODS
- CURB LINE
- FENCE LINE
- G6C2 / G6B - SOIL BOUNDARY AND ID



NUM.	DATE	REVISION
PLAN PREPARED BY: <b>SITE ENGINEERING CONCEPTS, LLC</b> P.O. BOX 1992 SOUTHEASTERN, PA 19399 P: 610-240-0450 F: 610-240-0451 E: INFO@SITE-ENGINEERS.COM		
NPDES PERMIT APPLICATION PLAN PREPARED FOR: <b>ARCHBISHOP CARROLL</b> 211 MATSONFORD ROAD WAYNE, PA 19087		
RADNOR TOWNSHIP DELAWARE COUNTY		PENNSYLVANIA DATE: 28 JANUARY 2016
<b>PROPOSED EROSION &amp; SEDIMENT CONTROL PLAN</b>		<b>SHEET 6 of 7</b> SCALE: 1" = 40'

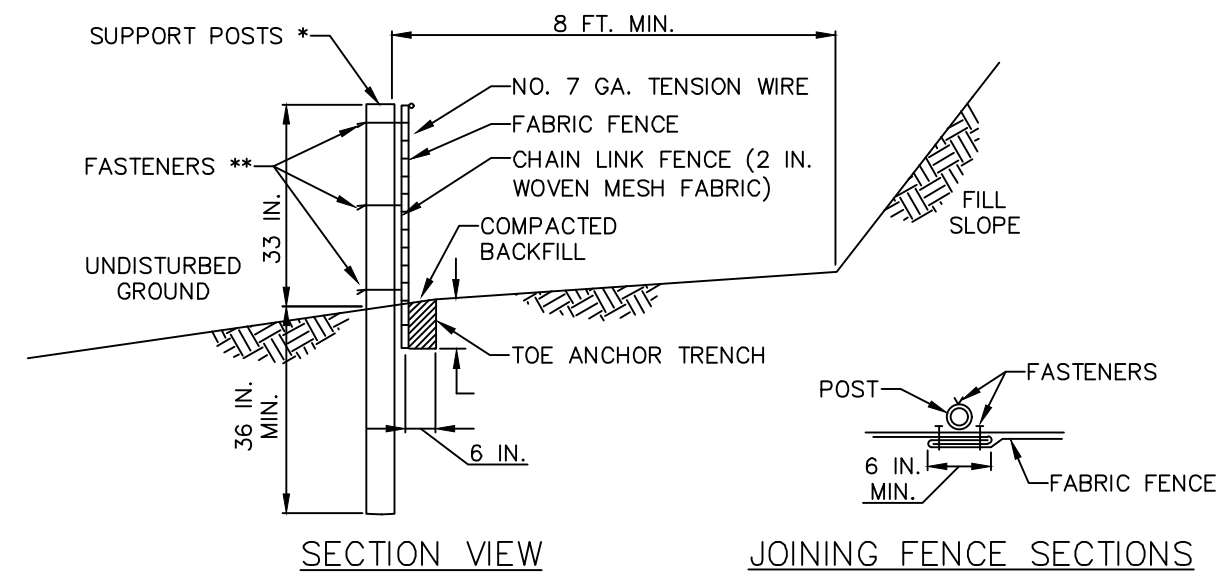






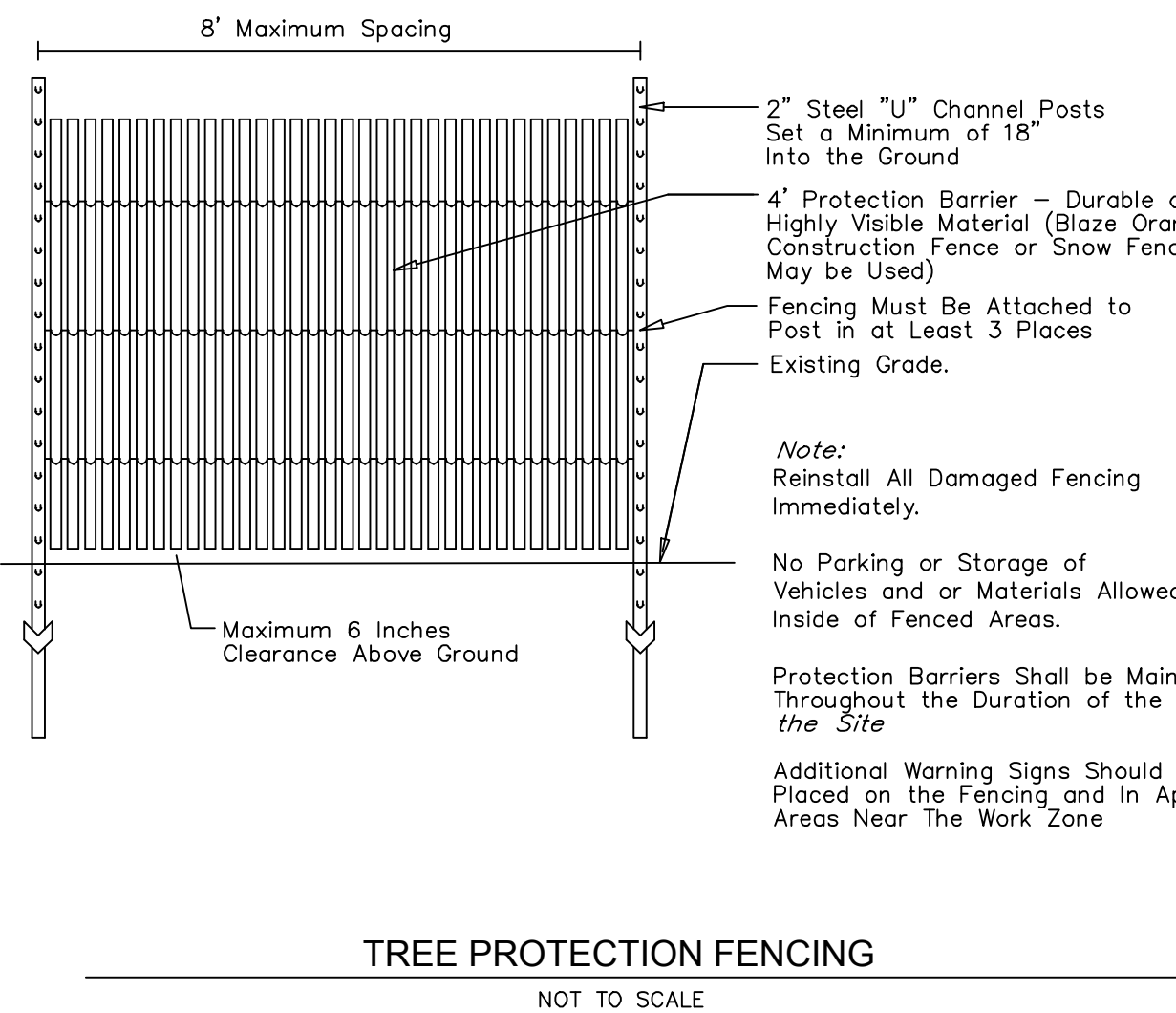
**NOTES:**  
 FABRIC SHALL HAVE THE MINIMUM PROPERTIES AS SHOWN IN TABLE 4.3 OF THE PA DEP EROSION CONTROL MANUAL.  
 FABRIC WIDTH SHALL BE 30 IN. MINIMUM. STAKES SHALL BE HARDWOOD OR EQUIVALENT STEEL (U OR T) STAKES.  
 SILT FENCE SHALL BE PLACED AT LEVEL EXISTING GRADE. BOTH ENDS OF THE FENCE SHALL 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.

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



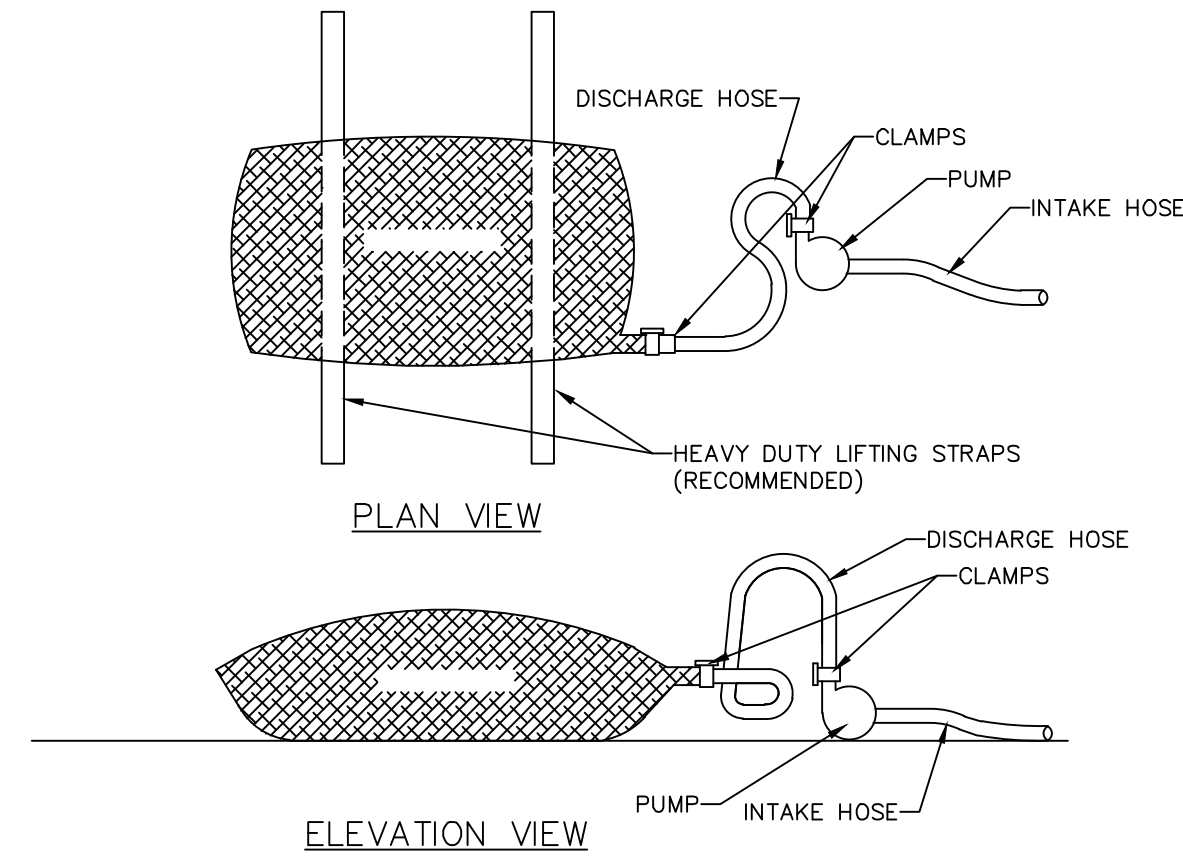
**NOTES:**  
 FABRIC SHALL HAVE THE MINIMUM PROPERTIES AS SHOWN IN TABLE 4.3 OF THE PA DEP EROSION CONTROL MANUAL.  
 FABRIC WIDTH SHALL BE 42 IN. MINIMUM.  
 POSTS SHALL BE INSTALLED USING A POSTHOLE DRILL.  
 CHAIN LINK SHALL BE GALVANIZED NO. 11.5 GA. STEEL WIRE WITH 2-1/4 IN. OPENING, NO. 11 GA. ALUMINUM COATED STEEL WIRE IN ACCORDANCE WITH ASTM-A491, OR GALVANIZED NO. 9 GA. STEEL WIRE TOP AND BOTTOM WITH GALVANIZED NO. 11 GA. STEEL INTERMEDIATE WIRES. NO. 7 GAGE TENSION WIRE TO BE INSTALLED HORIZONTALLY THROUGH HOLES AT TOP AND BOTTOM OF CHAIN-LINK FENCE OR ATTACHED WITH HOG RINGS AT 5 FT. MAX. CENTERS.  
 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.  
 FENCE SHALL BE REMOVED AND PROPERLY DISPOSED OF WHEN TRIBUTARY AREA IS PERMANENTLY STABILIZED.

**STANDARD CONSTRUCTION DETAIL #4-10  
 SUPER SILT FENCE**



**TREE PROTECTION FENCING**

NOT TO SCALE



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

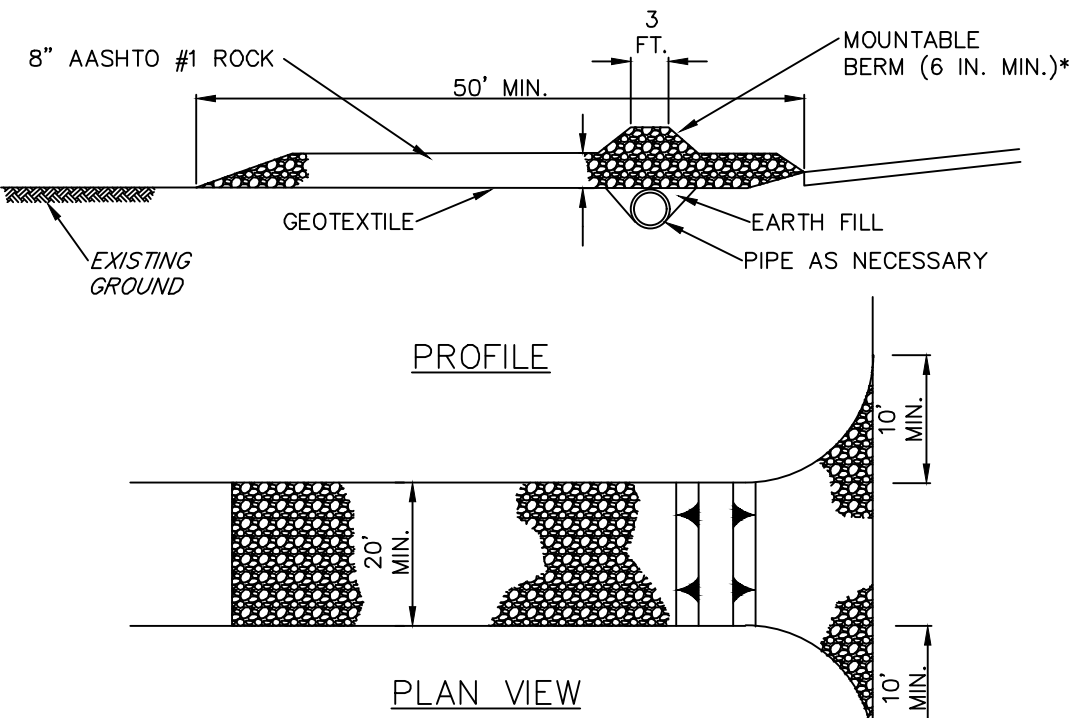
PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D-4864	60 LB/IN
GRAB TENSILE	ASTM D-4632	205 LB
PUNCTURE	ASTM D-4833	110 LB
MULLEN BURST	ASTM D-3786	350 PSI
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-4751	80 SIEVE

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

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

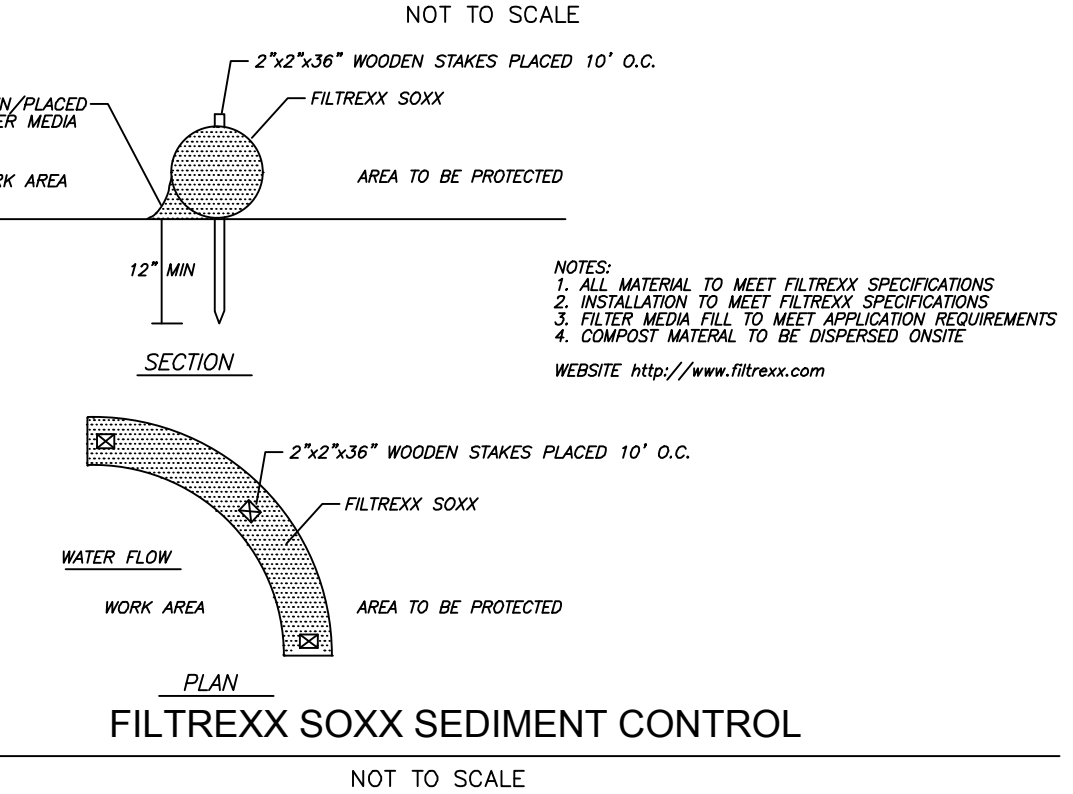
NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HO OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.  
 THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE 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 #3-16  
 PUMPED WATER FILTER BAG**



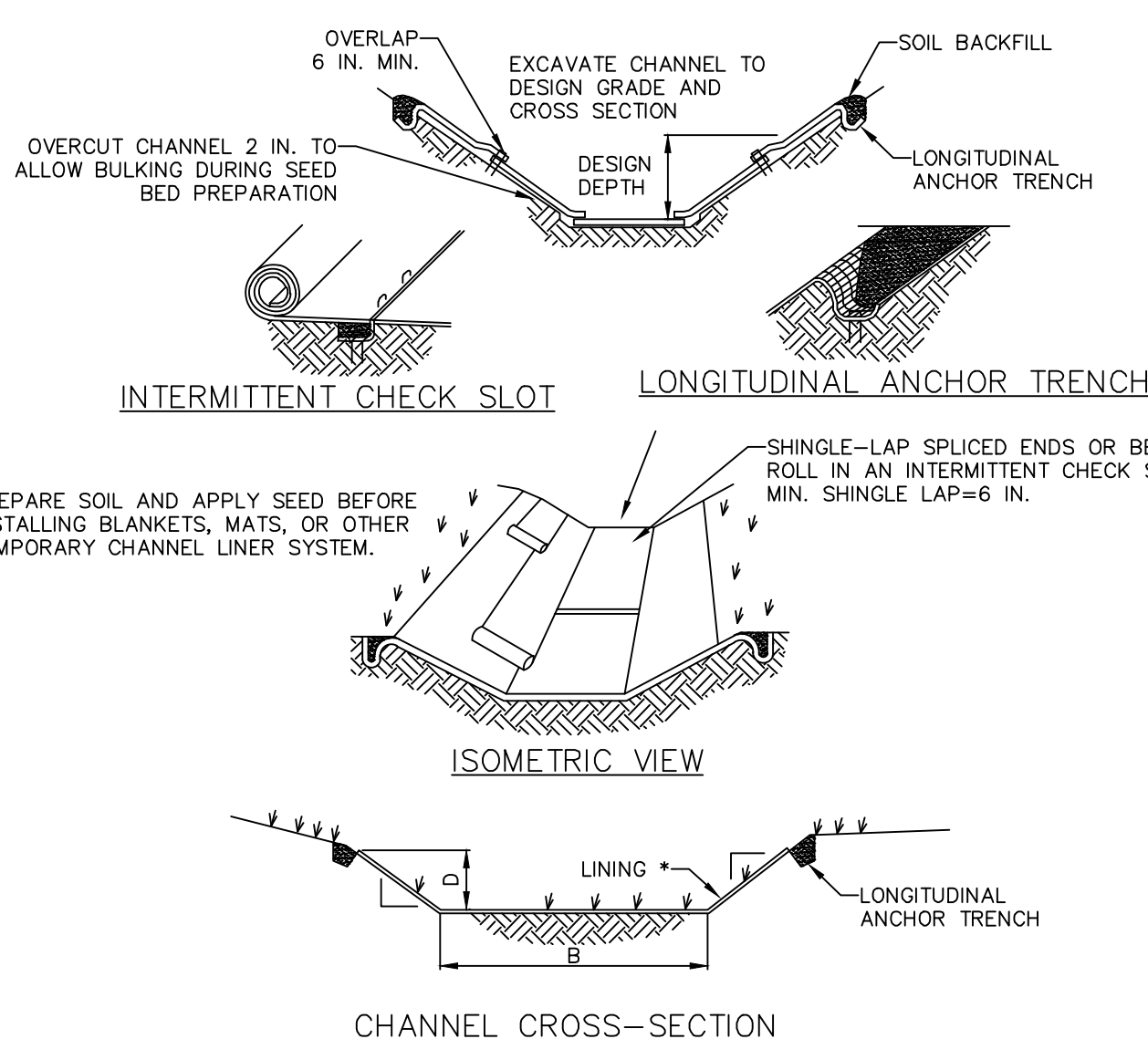
**NOTES:**  
 REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.  
 RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.  
 MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.  
 MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY, IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK, WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

**STANDARD CONSTRUCTION DETAIL #3-1  
 ROCK CONSTRUCTION ENTRANCE**



**FILTREXX SOXX SEDIMENT CONTROL**

NOT TO SCALE

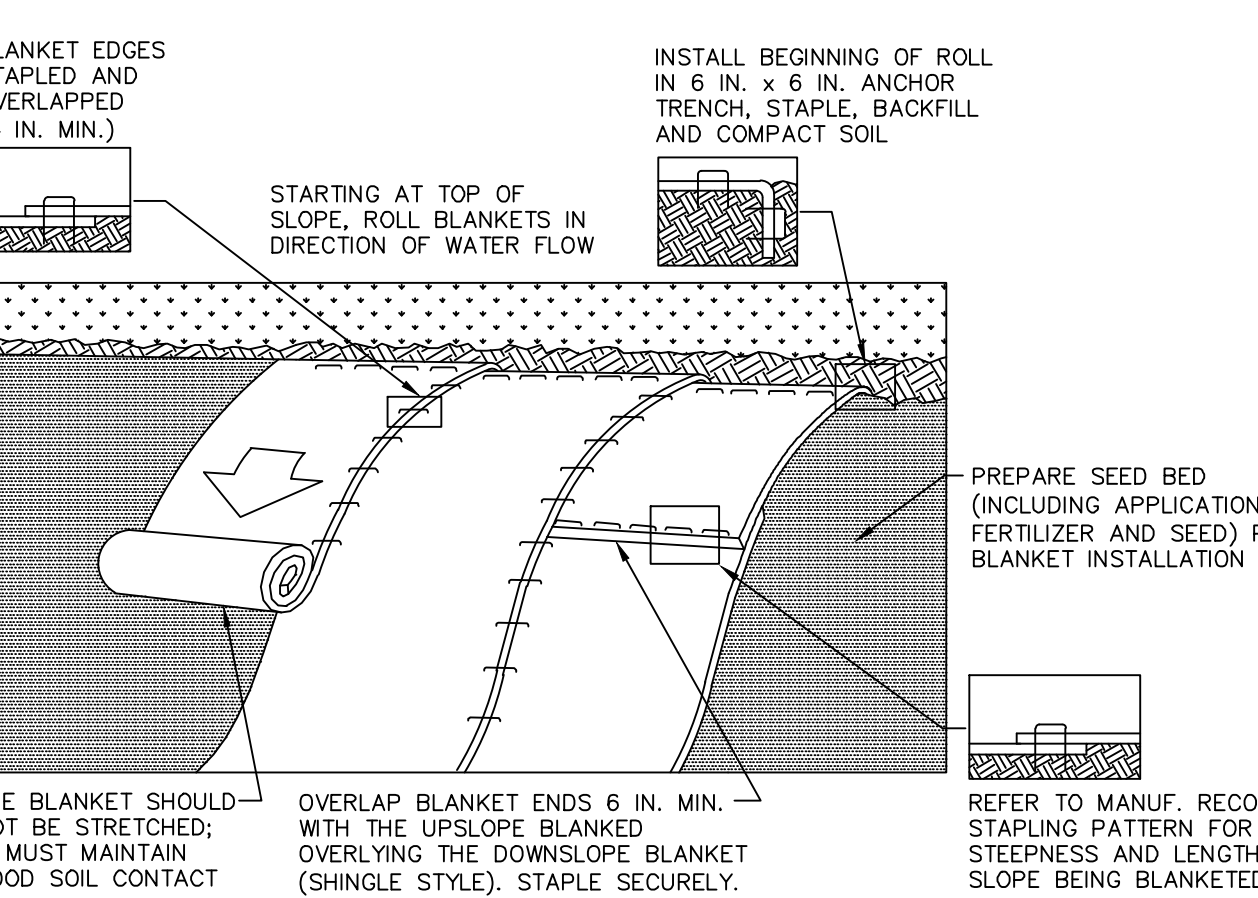


\* SEE MANUFACTURER'S LINING INSTALLATION DETAIL FOR STAPLE PATTERNS, VEGETATIVE STABILIZATION FOR SOIL AMENDMENTS, SEED MIXTURES AND MULCHING INFORMATION

CHANNEL NO.	STATIONS	BOTTOM WIDTH (FT)	DEPTH (FT)	TOP WIDTH (FT)	Z1 (FT)	Z2 (FT)	LINING *
PDS-1		2	1.5	6	2	2	GRASS
CDSA-1		2	1.5	6	2	2	GRASS

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

**STANDARD CONSTRUCTION DETAIL #6-1  
 VEGETATED CHANNEL**



**NOTES:**  
 SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET.  
 PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.  
 SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.  
 BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.  
 THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.  
 BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.

**STANDARD CONSTRUCTION DETAIL #11-1  
 EROSION CONTROL BLANKET INSTALLATION**

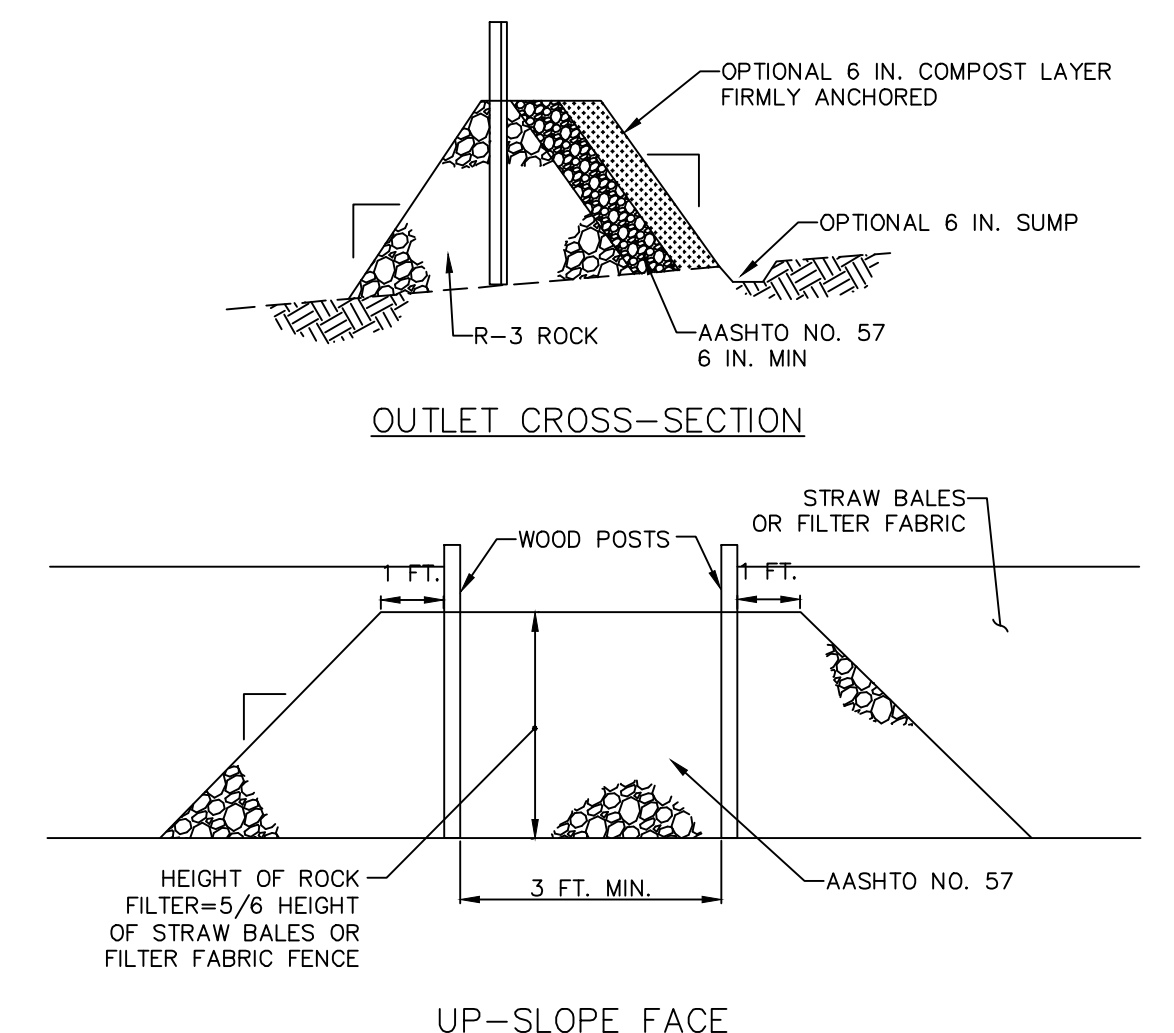
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**EROSION AND SEDIMENTATION CONTROL NOTES**

- ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED EAS PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
- AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL NOTIFY ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE EAS PLAN PREPARER, THE PCSM PLAN PREPARER, A LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING.
- AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
- ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
- AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOTE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
- CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE EAS BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS EAS PLAN.
- AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
- TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAP(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2H:1V OR FLATTER.
- IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
- ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 29 PA. CODE 2601 ET SEQ. 271.1, AND 281.1 ET SEQ. NO. BUILDING MATERIALS OR WASTES OF UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
- ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN EAS PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
- THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A LIQUID SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING. IF THE SITE WILL HAVE EXCESS FILL THAT WILL NEED TO BE EXPORTED TO AN OFFSITE LOCATION, THE RESPONSIBILITY OF CLEAN FILL DETERMINATION AND ENVIRONMENTAL DUE DILIGENCE RESTS ON THE APPLICANT.
- ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS.
- UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPs SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL BE DONE AT THE LOCATION(S) OF ALL EROSION AND SEDIMENT BMPs AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY. THE EAS BMPs FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPs, OR MODIFICATIONS TO THOSE INSTALLED WILL BE REQUIRED.
- A LOG SHOWING DATES THAT EAS BMPs WERE INSPECTED AS WELL AS ANY DEFICIENCIES AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
- SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEEP INTO ANY ROADWAY, DITCH, STORM SEWER, OR SURFACE WATER.
- ALL SEDIMENT REMOVED FROM BMPs SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
- AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES (6 TO 12 INCHES PRIOR TO PLACEMENT OF TOPSOIL) TO PREPARE A BED OF TOPSOIL TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
- ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REGULATIONS OR CODES.
- ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
- FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOIL, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
- FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
- FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
- SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
- ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES OR SLOPES WITH EXPOSED BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDS AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.
- IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL CONDUCT A FINAL INSPECTION OF ALL DISTURBED AREAS. DURING NON-GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS FOR AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
- PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION, CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
- EAS BMPs SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
- UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE EAS BMPs.
- FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPs MUST BE REMOVED OR CONVERTED TO PERMANENT CONSTRUCTION STORMWATER MANAGEMENT BMPs. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPs SHALL BE STABILIZED IMMEDIATELY, IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.
- UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
- FAILURE TO CORRECTLY INSTALL EAS BMPs, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF EAS BMPs MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO \$10,000 PER DAY IN CIVIL PENALTIES, UP TO \$10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO \$25,000 IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.

**E&S MAINTENANCE NOTES**

ALL EROSION CONTROL FACILITIES, INCLUDING BUT NOT LIMITED TO THE STABILIZED CONSTRUCTION ENTRANCE, SILT FENCE, AND FILTREXX SOXX, AND INLET FILTER BAGS SHALL BE INSPECTED ON A REGULAR BASIS (AT LEAST WEEKLY) AND BEFORE AND AFTER STORM EVENTS TO ENSURE THEY ARE FUNCTIONING PROPERLY. IF THEY ARE NOT FUNCTIONING PROPERLY AND/OR HAVE BEEN KNOCKED DOWN OR OVERTOPPED, THEY SHALL BE IMMEDIATELY REPLACED. ACCUMULATED SEDIMENT SHALL BE REMOVED FROM SILT FENCE, FILTREXX SOXX, AND INLET FILTER BAGS WHEN SILT HAS ACCUMULATED TO NO HIGHER THAN 1/2 OF THE HEIGHT OF THE SILT FENCE/FILTREXX SOXX/FILTER BAG AND BE UTILIZED ON SITE.



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

NOT TO SCALE

**CONSTRUCTION STAGING**

- CONTRACTOR MUST NOTIFY TOWNSHIP ENGINEER 48 HOURS PRIOR TO CONSTRUCTION OR TO SCHEDULE REQUIRED INSPECTIONS.
- INSTALL SILT FENCE, FILTREXX SOXX, AND TREE PROTECTION FENCING.
  - INSTALL ROCK CONSTRUCTION ENTRANCES.
  - FIELD LOCATE ALL UTILITIES AND COORDINATE WITH UTILITIES FOR SHUTOFF/REMOVAL/RELOCATION AS NECESSARY. IMMEDIATELY STABILIZE ANY DISTURBED AREAS.
  - REMOVE IMPROVEMENTS AS SHOWN. IMMEDIATELY STABILIZE AREAS WITH MULCH AND SEED MIX UNLESS IMMEDIATE CONSTRUCTION TAKES PLACE ON THESE AREAS.
  - STRIP TOPSOIL AND ROUGH GRADE AREA OF PROPOSED SYNTHETIC TURF. IMMEDIATELY STABILIZE DORMANT DISTURBED AREAS WITH THE APPROPRIATE SEED MIXTURE. TOPSOIL STOCKPILES ARE TO BE LIMITED TO 35 FEET WITH A MAXIMUM SIDE SLOPE OF 2:1. IMMEDIATELY STABILIZE STOCKPILE.
  - CONSTRUCT RETAINING WALLS.
  - CONSTRUCT SYNTHETIC TURF SUBBASE AND CONSTRUCT DRAINAGE SYSTEM
  - COMPLETE SYNTHETIC TURF CONSTRUCTION. FINAL GRADE AND IMMEDIATELY STABILIZE DORMANT DISTURBED AREAS WITH THE APPROPRIATE SEED MIXTURE.
  - ONCE SITE IS STABILIZED WITH 70% COVERAGE, CONTRACTOR MUST REMOVE EROSION AND SEDIMENTATION CONTROL. AREAS DISTURBED DURING REMOVAL MUST BE STABILIZED IMMEDIATELY.
- ANTICIPATED START OF CONSTRUCTION - SPRING 2016  
 ANTICIPATED COMPLETION OF CONSTRUCTION - FALL 2016

**NOTE (IF NECESSARY):**  
 THE PERMITEE SHALL PROVIDE ENGINEERING CONSTRUCTION OVERSIGHT FOR THE PROPOSED STORMWATER BMPs. ADDITIONAL SOIL TESTING MAY BE REQUIRED PRIOR TO THE INSTALLATION OF INFILTRATION BMPs TO ENSURE PROPER LOCATION AND FUNCTION. A LICENSED PROFESSIONAL KNOWLEDGEABLE IN THE DESIGN AND CONSTRUCTION OF STORMWATER BMPs, PREFFERENTIALLY A LICENSED PROFESSIONAL, SHALL CONDUCT THE OVERSIGHT. OVERSIGHT IS NECESSARY FOR THE FOUR INFILTRATION BEDS.  
 AT LEAST THREE INSPECTIONS SHALL BE CONDUCTED FOR THE INFILTRATION BEDS. THE LOCATION OF BEDS, AFTER ALL PIPING IS INSTALLED, BUT BEFORE PIPING IS COVERED WITH STONE/GEOTEXTILE, AND AFTER INFILTRATION BED IS COMPLETED.  
 FINAL CERTIFICATION FROM THE LICENSED PROFESSIONAL THAT THE INFILTRATION BED HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE PLAN IS REQUIRED PRIOR TO PADEP'S ACCEPTANCE OF THE NOTICE OF TERMINATION FOR THE NPDES PERMIT.

NUM.	DATE	REVISION

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

**NPDES PERMIT APPLICATION**

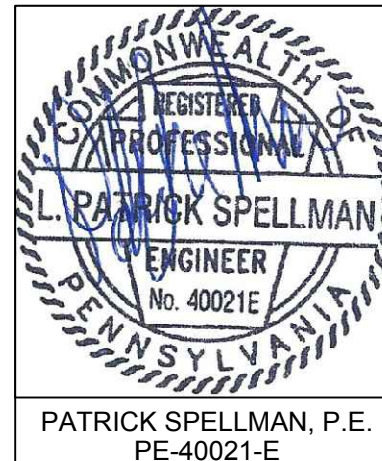
PLAN PREPARED FOR:  
**ARCHBISHOP CARROLL**  
 211 MATSONFORD ROAD  
 WAYNE, PA 19087

RADNOR TOWNSHIP DELAWARE COUNTY PENNSYLVANIA  
 DATE: 28 JANUARY 2016

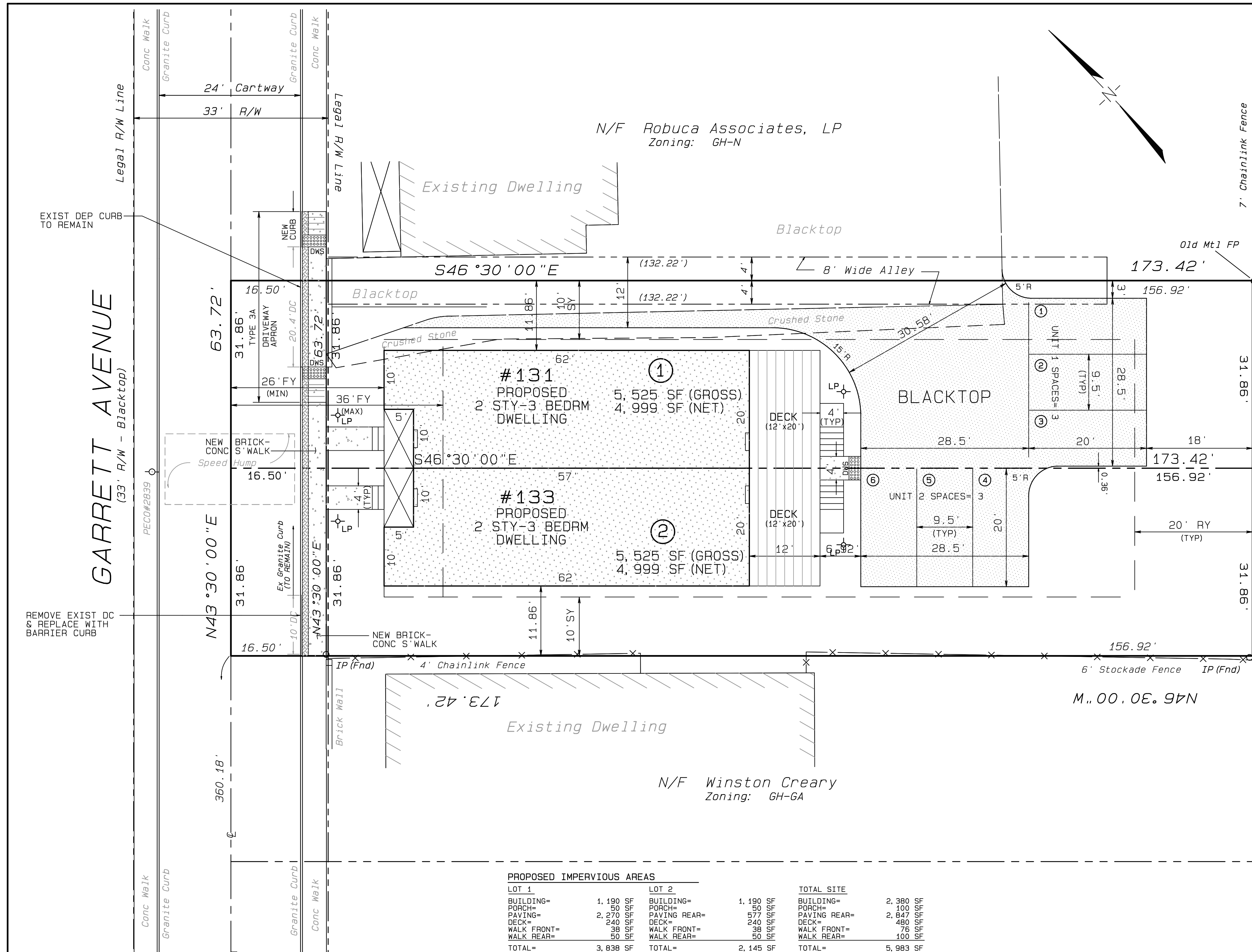
**EROSIONS & SEDIMENT CONTROL DETAILS**

**SHEET 7 of 7**

SCALE: NTS







**LEGEND**

- CENTERLINE
- TRACT BOUNDARY
- PROPERTY LINE
- LEGAL R.O.W., EASEMENTS
- REQUIRED R.O.W.
- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING WATER LINE
- PROPOSED WATER LINE
- EXISTING SAN. SEWER LINE
- PROPOSED SAN. SEWER LINE
- EXISTING TELEPHONE LINE
- PROPOSED TELEPHONE LINE
- EXISTING GAS LINE
- PROPOSED GAS LINE
- EXISTING ELECTRIC LINE
- PROPOSED ELECTRIC LINE
- EXISTING STORM SEWER/INLET
- PROPOSED STORM SEWER/INLET
- EXISTING MANHOLE
- PROPOSED MANHOLE
- EXISTING CURBLINE
- PROPOSED CURBLINE
- UTILITY POLE
- EXISTING VALVE, VENT, CO.
- EXISTING VALVE, VENT, CO.

**PROPOSED BUILDING**  
SINGLE-FAMILY SEMIDETACHED  
3 BEDROOM DWELLING

**PROPOSED CONCRETE**  
WALKS, PATIOS, PADS

**PROPOSED LAMPOST**

**SITE DATA:**

**OWNER OF RECORD:**  
NASTRA YASMIN MAJID  
267 BEECHWOOD DRIVE  
ROSEMONT, PA 19010

**EQUITABLE OWNER/APPLICANT:**  
DJB PROPERTIES, LP  
C/O DAVID J. BROSSO  
PO BOX 988  
CONSHOHOCKEN, PA 19428  
610-310-5055 (CELL)

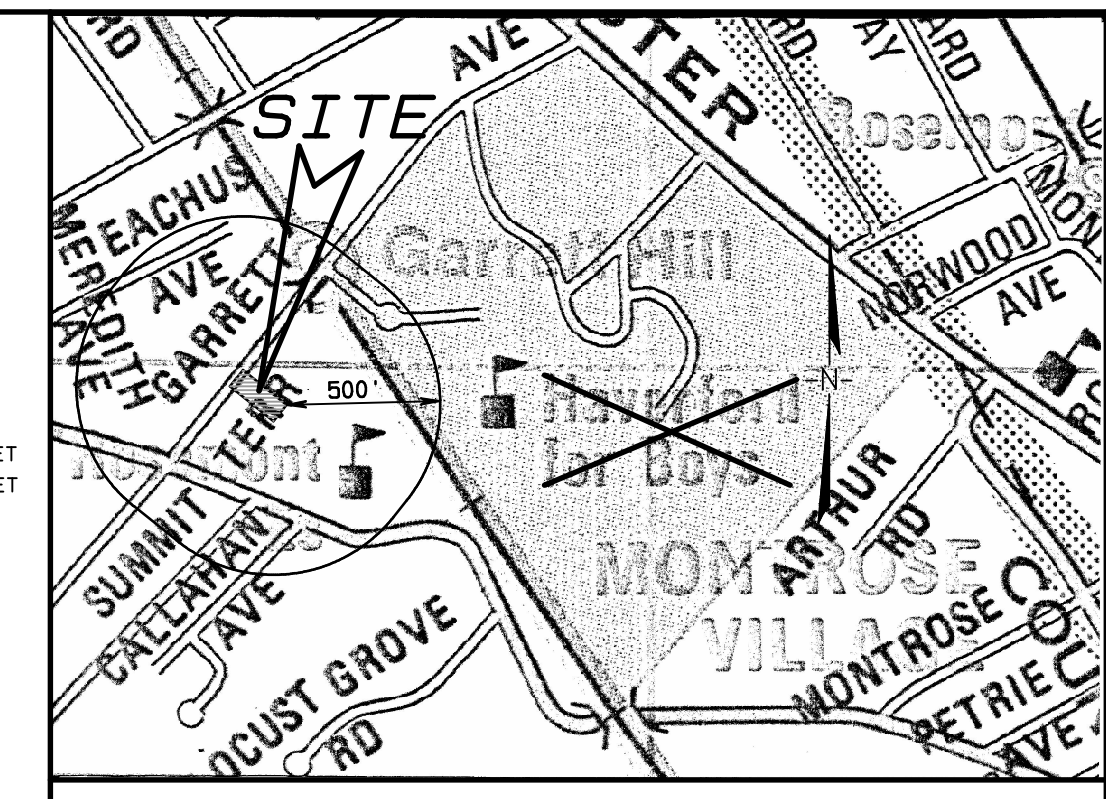
**PREMISES:**  
MAP NO. 36-32-207  
FOLIO 36-07-04810-00  
DEED BOOK 792 PAGE 588

**TRACT AREA:**  
11,050 SF (GROSS)  
9,999 SF (NET)

**PROPOSED BLDG COVER=** 21.5%  
**NET BLDG COVER=** 23.8%  
**GROSS IMP COVER=** 69.5%  
**NET IMP COVER=** 76.8%

**GROSS BLDG COVER=** 21.5%  
**NET BLDG COVER=** 23.8%  
**GROSS IMP COVER=** 69.5%  
**NET IMP COVER=** 76.8%

**GROSS BLDG COVER=** 21.5%  
**NET BLDG COVER=** 23.8%  
**GROSS IMP COVER=** 69.5%  
**NET IMP COVER=** 76.8%



COMMONWEALTH OF PENNSYLVANIA  
COUNTY OF DELAWARE

ON THIS, THE \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_, BEFORE ME THE UNDERSIGNED OFFICER PERSONALLY APPEARED DAVID J. BROSSO OF DJB PROPERTIES, LP WHO BEING DULY SWORN ACCORDING TO LAW, DEPOSES AND SAYS THAT THEY ARE THE OWNERS OF THE PROPERTY SHOWN ON THIS PLAN, THAT THE SUBDIVISION PLAN THEREOF WAS MADE AT THEIR DIRECTION AND THAT IT ACKNOWLEDGES THE SAME TO BE THEIR ACT AND PLAN AND DESIRES THE SAME TO BE RECORDED AS SUCH ACCORDING TO LAW.

WITNESS MY HAND AND SEAL THE DAY AND DATE ABOVE WRITTEN

(SIGNATURE)

(SIGNATURE)

NOTARY PUBLIC OR OTHER OFFICER

- MY COMMISSION EXPIRES:** \_\_\_\_\_
- WAIVERS REQUESTED:**
- \$255-22.B.(1)(e) RELIEF FROM PROVIDING A LOCATION MAP SHOWING THE RELATION OF THE SITE TO ADJOINING PROPERTIES AND STREETS WITHIN 500 FEET.
  - \$255-22.B.(1)(k) RELIEF FROM SHOWING REQUIRED EXISTING FEATURES WITHIN 500 FEET OF THE SITE.
  - \$255-27.C.(1) RELIEF FROM PROVIDING THE REQUIRED 28' CARTWAY AND 50' RIGHT-OF-WAY WIDTHS TO ALLOW FOR THE EXISTING 24' CARTWAY AND 33' RIGHT-OF-WAY TO REMAIN.
  - \$255-38.B RELIEF FROM THE REQUIREMENT TO PROVIDE 2.1 STREET TREES, TWO (2) STREET TREES ARE PROPOSED.
  - \$255-94.A.(2) RELIEF FROM PROVIDING STREETLIGHTS SPACED A MAXIMUM OF 40 FEET APART.

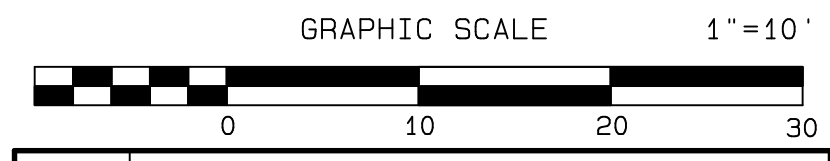
- GENERAL NOTES:**
- ALL LOT CORNERS MUST BE PINNED BY A REGISTERED PROFESSIONAL LAND SURVEYOR WITH AT LEAST A 5/8 INCH STEEL ROD HAVING A MINIMUM LENGTH OF 24 INCHES.
  - THE DIMENSIONS OF THE PROPOSED STRUCTURES ARE APPROXIMATE AND ARE SUBJECT TO CHANGE WHEN FINAL ARCHITECTURAL DRAWINGS ARE PREPARED.
  - A CROSS-ACCESS EASEMENT MUST BE GRANTED TO LOT 2 FOR INGRESS, EGRESS AND REGRESS ACROSS LOT 1 AND THE ALLEY.
  - THE OWNERS MUST SIGN AND RECORD AN OPERATIONS AND MAINTENANCE AGREEMENT WITH THE MUNICIPALITY COVERING ALL STORMWATER FACILITIES AND BMPs THAT ARE PRIVATELY OWNED. THE MAINTENANCE AGREEMENT MUST BE TRANSFERRED WITH TRANSFER OF OWNERSHIP.
  - A STORMWATER MANAGEMENT EASEMENT GRANTING THE MUNICIPALITY THE RIGHT, BUT NOT THE OBLIGATION, TO ENTER, INSPECT AND IMPROVE STORMWATER FACILITIES MUST BE PROVIDED.
  - AN ASSOCIATION OF BOTH OWNERS MUST BE FORMED FOR THE CONTINUED MAINTENANCE AND OPERATION OF THE DRIVEWAY, PARKING AREAS AND ALL STORMWATER FACILITIES.
  - IN ACCORDANCE WITH ZONING ORDINANCE §280-49.11.G, ATTACHED BUILDINGS SHALL HAVE DIFFERENTIATED BUILDING MATERIAL AND/OR ARCHITECTURAL OFFSETS SO THAT THEY ARE ARTICULATED AS INDIVIDUAL BUILDINGS, SUBJECT TO REVIEW BY THE DESIGN REVIEW BOARD.
  - FINAL APPROVAL OF THE STORMWATER MANAGEMENT PLAN WILL BE REQUIRED AS PART OF THE GRADING PERMIT PROCESS. ANY REVISIONS TO THE SIZE OR LOCATION OF THE INDIVIDUAL STRUCTURES OR OTHER FEATURES WILL BE ADDRESSED AT THAT TIME.
  - THE SEPTIC TANK MUST BE REMOVED AND DECOMMISSIONED IN ACCORDANCE WITH THE TOWNSHIP SEO AND THE PA DEP.

PROPOSED IMPERVIOUS AREAS		TOTAL SITE	
LOT 1	LOT 2	LOT 1	LOT 2
BUILDING= 1,190 SF	BUILDING= 1,190 SF	BUILDING= 2,380 SF	BUILDING= 2,380 SF
PORCH= 50 SF	PORCH= 50 SF	PORCH= 100 SF	PORCH= 100 SF
PAVING= 2,270 SF	PAVING= 577 SF	PAVING= 2,847 SF	PAVING= 2,847 SF
DECK= 240 SF	DECK= 240 SF	DECK= 480 SF	DECK= 480 SF
WALK FRONT= 36 SF	WALK FRONT= 36 SF	WALK FRONT= 72 SF	WALK FRONT= 72 SF
WALK REAR= 50 SF	WALK REAR= 50 SF	WALK REAR= 100 SF	WALK REAR= 100 SF
<b>TOTAL= 3,838 SF</b>	<b>TOTAL= 2,145 SF</b>	<b>TOTAL= 5,983 SF</b>	<b>TOTAL= 5,983 SF</b>
GROSS BLDG COVER= 21.5%	GROSS BLDG COVER= 21.5%	GROSS BLDG COVER= 21.5%	GROSS BLDG COVER= 21.5%
NET BLDG COVER= 23.8%	NET BLDG COVER= 23.8%	NET BLDG COVER= 23.8%	NET BLDG COVER= 23.8%
GROSS IMP COVER= 69.5%	GROSS IMP COVER= 69.5%	GROSS IMP COVER= 69.5%	GROSS IMP COVER= 69.5%
NET IMP COVER= 76.8%	NET IMP COVER= 76.8%	NET IMP COVER= 76.8%	NET IMP COVER= 76.8%

**ZONING DISTRICT: GARRETT HILL  
GARRETT AVENUE NEIGHBORHOOD (GH-N)**

USE: SINGLE-FAMILY SEMIDETACHED DWELLING

REQUIREMENTS:	REQUIRED	PROPOSED LOT 1	PROPOSED LOT 2	GROSS SITE	NET SITE
LOT AREA:	3,000 SF (MIN)	4,999 SF	4,999 SF		
LOT WIDTH:	70 FT (MAX)	31.86 FT	31.86 FT		
SETBACKS:					
FRONT YARD:	26 FT (MIN)	26 FT	26 FT		
(FROM C/L RD)	36 FT (MAX)	36 FT	36 FT		
SIDE YARD:	10 FT (MIN)	11.86 FT	11.86 FT		
REAR YARD:	20 FT (MIN)	85.42 FT	85.42 FT		
BUILDING HEIGHT:	30 FT (MAX)	≤30 FT	≤30 FT		
BUILDING WIDTH:	30 FT (MAX)	20 FT	20 FT		
BUILDING COVERAGE:	60% (MAX)	23.8%	23.8%	21.5%	23.8%
IMPERVIOUS COVERAGE:	60% (MAX)	69.5%	69.5%	69.5%	76.8%
ACCESSORY STRUCTURES:					
HEIGHT:	20 FT (MAX)				
SETBACKS:					
FROM PRINCIPLE BUILDING:	10 FT (MIN)				
FROM LOT LINE:	3 FT (MIN)				
PARKING:					
1 BEDROOM UNITS:	2 PS/UNIT (MIN)				
2 BEDROOM UNITS:	3 PS/UNIT (MIN)				
3 BEDROOM UNITS:	4 PS/UNIT (MIN)	3 SPACES	3 SPACES	6 SPACES	6 SPACES
4 BEDROOM UNITS:	4 PS/UNIT (MAX)				
ALL OTHER UNITS:					



DATE	REVISIONS
02-05-16	REV LOTS, BUILDINGS, PAVING
12-22-15	REV PER TWP. REVIEW

**PROJECT TITLE:**  
**131-133 GARRETT AVENUE**  
RADNOR TOWNSHIP - DELAWARE COUNTY - PENNSYLVANIA

**DRAWING TITLE:**  
**RECORD PLAN**

**REVISION NO.**

**PREPARED BY:**  
**JOSEPH M. ESTOCK**  
Consulting Engineers & Land Surveyors

**SCALE:** 1" = 10'  
**DATE:** 27 APRIL 2015  
**FILE NO.:** 15003  
**FIELD BOOK:** 327  
**SHT. NO.:** 1 OF 6

**CONESTOGA ROAD**  
(Formerly Old Lancaster Road)

**GARRETT AVENUE**  
(33' R/W - Blacktop)

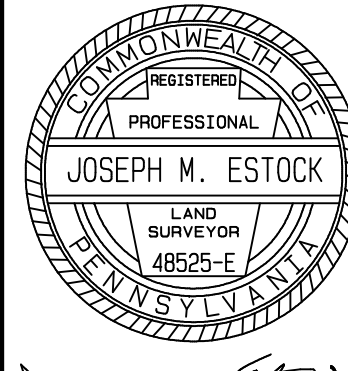
N/F Robuca Associates, LP  
Zoning: GH-8C

63.72'

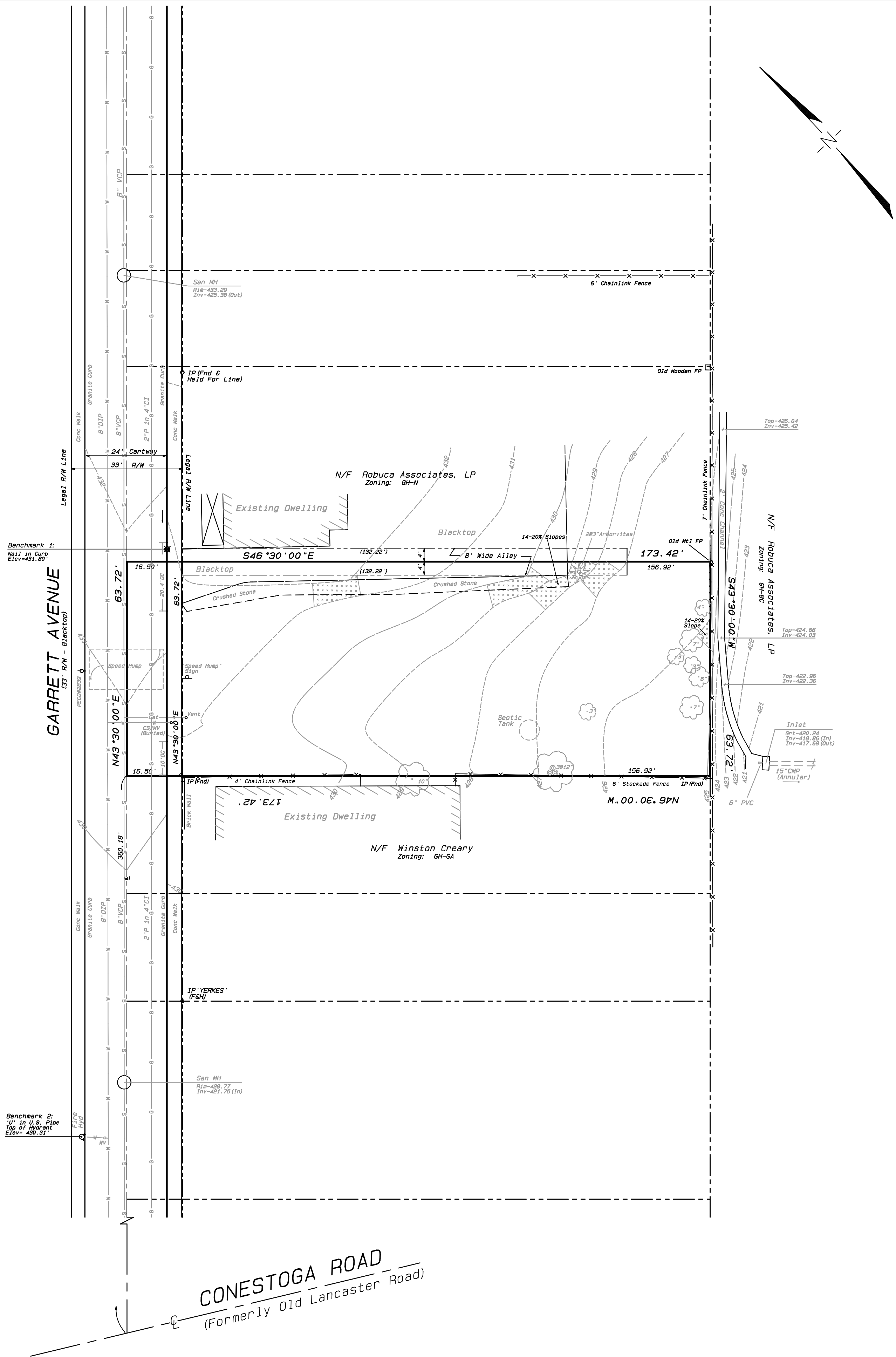
543.30'00" M

TOWNSHIP  
STAMP

COUNTY  
STAMP







**LEGEND**

---	CENTERLINE
---	TRACT BOUNDARY
---	PROPERTY LINE
---	LEGAL R.O.W., EASEMENTS
---	REQUIRED R.O.W.
---	EXISTING CONTOUR
---	EXISTING WATER LINE
---	EXISTING SAN. SEWER LINE
---	EXISTING TELEPHONE LINE
---	EXISTING GAS LINE
---	EXISTING ELECTRIC LINE
---	EXISTING STORM SEWER/INLET
○ MH	EXISTING MANHOLE
○	EXISTING CURBLINE
○	UTILITY POLE
○	EXISTING VALVE, VENT, CO.

**SITE DATA:**

OWNER OF RECORD: NASTRA YASMIN MAJID  
267 BEECHWOOD DRIVE  
ROSEMONT, PA 19010

EQUITABLE OWNER/  
APPLICANT: DJB PROPERTIES, LP  
C/O DAVID J. BROSSO  
PO BOX 988  
CONSHOHOCKEN, PA 19428  
610-310-5055 (CELL)

PREMISES: MAP NO. 36-32-207  
FOLIO 36-07-04610-00  
DEED BOOK 792 PAGE 588

TRACT AREA: 11,050 SF (GROSS)  
9,999 SF (NET)

**SOILS LEGEND**

THE ENTIRE SITE IS COMPRISED OF THE FOLLOWING SOIL TYPE:

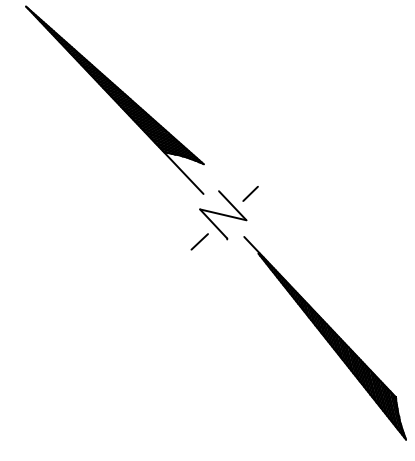
Me Made Land, Schist and Gneiss Materials

**STEEP SLOPE LEGEND**

14%-20% SLOPES

**TOPOGRAPHY**

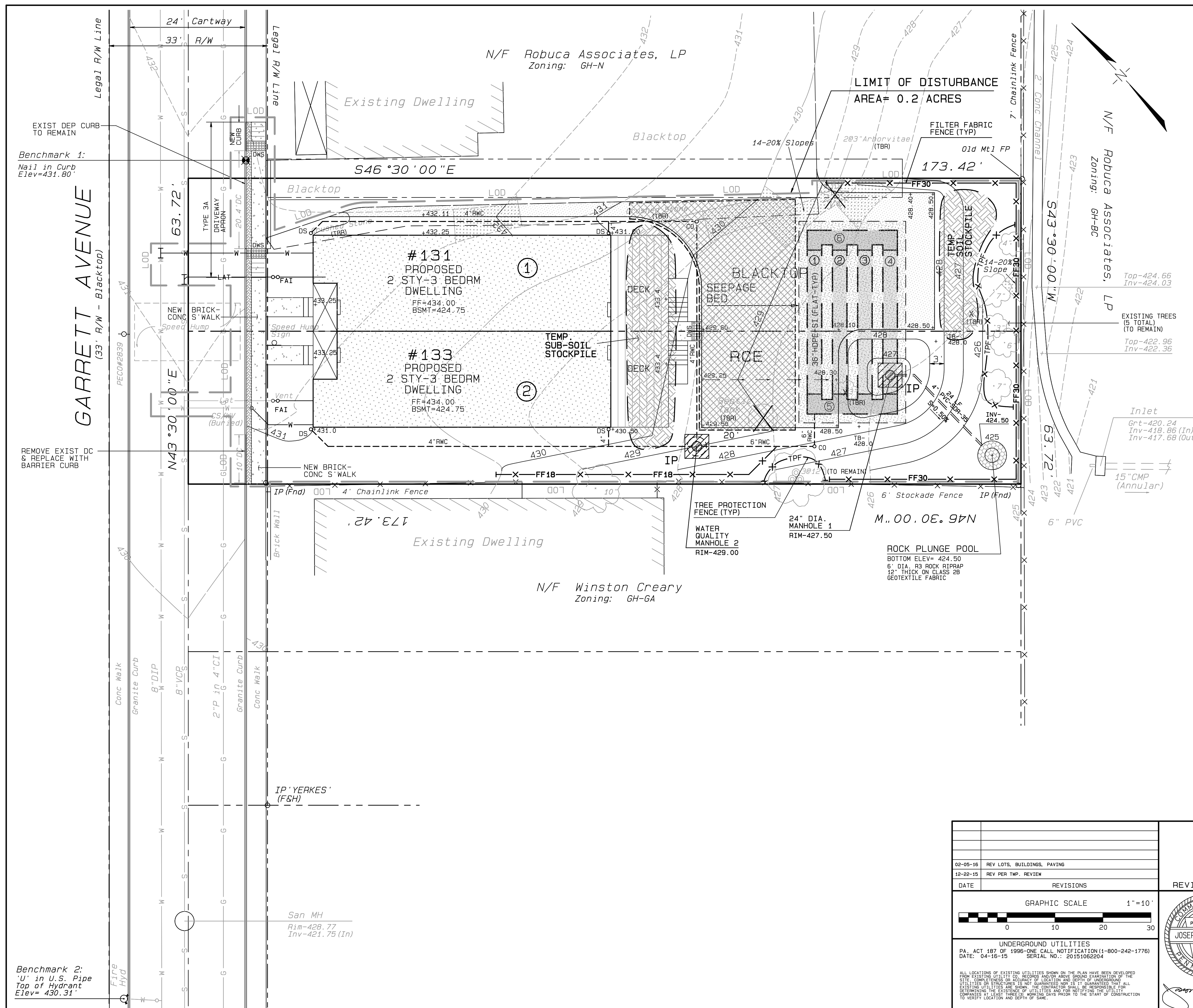
BOUNDARY AND TOPOGRAPHIC INFORMATION HAS BEEN OBTAINED FROM A RECENT FIELD SURVEY PREPARED BY JOSEPH M. ESTOCK, PE, PLS  
DATUM BASED ON NAVD 1988



**CONESTOGA ROAD**  
(Formerly Old Lancaster Road)

12-22-15 REV PER TWP. REVIEW DATE REVISIONS		REVISION NO.	PROJECT TITLE : <h2 style="text-align: center;">131-133 GARRETT AVENUE</h2> RADNOR TOWNSHIP - DELAWARE COUNTY - PENNSYLVANIA
GRAPHIC SCALE 1"=20' 		REVISION NO.	DRAWING TITLE : <h2 style="text-align: center;">EXISTING CONDITIONS PLAN</h2>
UNDERGROUND UTILITIES PA. ACT 187 OF 1996-ONE CALL NOTIFICATION(1-800-242-1776) DATE: 04-16-15 SERIAL NO.: 20191062204			PREPARED BY : <b>JOSEPH M. ESTOCK</b> Consulting Engineers & Land Surveyors
ALL LOCATIONS OF EXISTING UTILITIES SHOWN ON THE PLAN HAVE BEEN DEVELOPED FROM EXISTING UTILITY CO. RECORDS AND/OR ABOVE GROUND EXAMINATION OF THE SITE. CONSTRUCTION OF ANY STRUCTURE OR IMPROVEMENT SHALL BE RESPONSIBLE FOR DETERMINING THE EXISTENCE OF UTILITIES AND FOR NOTIFYING THE UTILITY COMPANIES AT LEAST THREE(3) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION TO VERIFY LOCATION AND DEPTH OF SAME.			355 South Henderson Road King of Prussia, PA 19406-2407 (610) 265-3035 - Fax (610) 962-9855 joe@josephmestock.com
SCALE 1" = 20'	DATE 27 APRIL 2015	FILE NO. 15003	FIELD BOOK 327
		SHT. NO. 2 OF 6	





**SOILS LEGEND**  
 THE ENTIRE SITE IS COMPRISED OF THE FOLLOWING SOIL TYPE:  
 Me Made Land, Schist and Gneiss Materials

**STEEP SLOPE LEGEND**  
 14%-20% SLOPES  
 STEEP SLOPE: 20% OR MORE

**EROSION & SEDIMENT CONTROL LEGEND**  
 RCE ROCK CONSTRUCTION ENTRANCE  
 IP INLET PROTECTION  
 TOPSOIL STOCKPILE  
 FF18 FILTER FABRIC FENCE (18" HIGH)  
 FF30 FILTER FABRIC FENCE (30" HIGH)  
 SFFF SUPER FILTER FABRIC FENCE  
 TPF TREE PROTECTION FENCE  
 SAF SAFETY FENCE  
 LOD LIMIT OF DISTURBANCE LINE

**LEGEND**  
 CENTERLINE  
 TRACT BOUNDARY  
 PROPERTY LINE  
 LEGAL R.O.W., EASEMENTS  
 REQUIRED R.O.W.  
 EXISTING CONTOUR  
 PROPOSED CONTOUR  
 EXISTING WATER LINE  
 EXISTING SAN. SEWER LINE  
 EXISTING TELEPHONE LINE  
 EXISTING GAS LINE  
 EXISTING ELECTRIC LINE  
 EXISTING STORM SEWER/INLET  
 PROPOSED WATER LINE  
 PROPOSED SAN. SEWER LINE  
 PROPOSED ELECTRIC LINE  
 PROPOSED TELEPHONE LINE  
 PROPOSED GAS LINE  
 EXISTING MANHOLE  
 PROPOSED MANHOLE  
 EXISTING CURBLINE  
 EXISTING CURBLINE  
 UTILITY POLE  
 EXISTING VALVE, VENT, CO.  
 PROPOSED BUILDING  
 SINGLE-FAMILY SEMI-DETACHED  
 3 BEDROOM DWELLING  
 PROPOSED BLACKTOP  
 PROPOSED CONCRETE  
 WALKS, PATIOS, PADS

- CONSTRUCTION SEQUENCE:**
1. INSTALL ALL SILT FENCING AND ALL TREE PROTECTION FENCING.
  2. INSTALL ROCK CONSTRUCTION ENTRANCE.
  3. CLEAR AND GRUB SITE OF VEGETATION IN CONFLICT WITH CONSTRUCTION ACTIVITY. REMOVE SEPTIC TANK.
  4. STRIP TOPSOIL AND STOCKPILE AT DESIGNATED LOCATION.
  5. COMMENCE WITH BASEMENT EXCAVATION AND SUBSEQUENT BUILDING CONSTRUCTION. STOCKPILE SUB-SOIL AT DESIGNATED LOCATIONS.
  6. UPON COMPLETION OF THE INSTALLATION OF THE FOUNDATION WALLS, ROUGH GRADE ENTIRE SITE TO SUBGRADE ELEVATIONS.
  7. INSTALL ALL UTILITY CONNECTIONS.
  8. COMPLETE GARRETT AVENUE ROADWAY/FRONTAGE IMPROVEMENTS (E.G. CURBS AND SIDEWALKS).
  9. INSTALL SEEPAGE BED, ALL RAINWATER CONDUCTORS, AND SEEPAGE BED OUTLET PIPE.
  10. COMPLETE ROUGH GRADING.
  11. CONSTRUCT DRIVEWAY AND COMPLETE ALL PAVING OPERATIONS, EXCEPT FINAL WEARING COURSE.
  12. FINISH GRADE AND TOPSOIL ALL DISTURBED AREAS.
  13. SEED AND MULCH ALL DISTURBED AREAS AND ESTABLISH PERMANENT VEGETATIVE COVER. DO NOT PROCEED TO THE NEXT ITEM IN THE SEQUENCE UNTIL PERMANENT STABILIZATION IS ACHIEVED.  
 (FOR AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY TO BE CONSIDERED PERMANENTLY STABILIZED, THE DISTURBED AREA SHALL BE COVERED BY A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER, WITH A DENSITY CAPABLE OF RESISTING ACCELERATED EROSION AND SEDIMENTATION.)
  14. REMOVE ALL REMAINING TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES.
  15. PLACE WEARING COURSE ON ALL PAVED SURFACES.

DATE	REVISIONS	REVISION NO.
02-05-15	REV LOTS, BUILDINGS, PAVING	
12-22-15	REV PER TMP. REVIEW	

GRAPHIC SCALE 1"=10'  
 0 10 20 30

UNDERGROUND UTILITIES  
 PA. ACT 187 OF 1996-ONE CALL NOTIFICATION (1-800-242-1776)  
 DATE: 04-16-15 SERIAL NO.: 20191062204

ALL LOCATIONS OF EXISTING UTILITIES SHOWN ON THE PLAN HAVE BEEN DEVELOPED FROM EXISTING UTILITY CO. RECORDS AND/OR ABOVE GROUND EXAMINATION OF THE SITE. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES AT THE TIME OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXISTENCE OF UTILITIES AND FOR NOTIFYING THE UTILITY COMPANIES AT LEAST THREE (3) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION TO VERIFY LOCATION AND DEPTH OF SAME.

PROJECT TITLE:  
**131-133 GARRETT AVENUE**  
 RADNOR TOWNSHIP - DELAWARE COUNTY - PENNSYLVANIA

DRAWING TITLE:  
**EROSION AND SEDIMENT CONTROL PLAN**

PREPARED BY:  
**JOSEPH M. ESTOCK**  
 Consulting Engineers & Land Surveyors

355 South Henderson Road  
 King of Prussia, PA 19406-2407  
 (610) 265-3035 - Fax (610) 962-9855  
 joe@josephmestock.com

SCALE: 1" = 10'  
 DATE: 27 APRIL 2015  
 FILE NO.: 15003  
 FIELD BOOK: 327  
 SHT. NO.: 3 OF 6

Benchmark 2:  
 'U' in U.S. Pipe  
 Top of Hydrant  
 Elev= 430.31'

San MH  
 Rim=428.77  
 Inv=421.75 (1n)



EROSION AND SEDIMENTATION CONTROL NOTES

A. GENERAL NOTES

- EROSION AND SEDIMENT BMP'S MUST BE CONSTRUCTED, STABILIZED AND FUNCTIONAL BEFORE SITE DISTURBANCE BEGINS WITHIN THE TRIBUTARY AREAS OF THOSE BMP'S.
- STORMWATER INLETS WHICH DO NOT DISCHARGE TO SEDIMENT TRAPS OR BASINS, MUST BE PROTECTED UNTIL THE TRIBUTARY AREAS ARE STABILIZED.
- STOCKPILE HEIGHTS MUST NOT EXCEED 35 FEET. STOCKPILE SLOPES MUST BE 2:1 OR FLATTER.
- AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMP CONTROLS MUST BE REMOVED. AREAS DISTURBED DURING REMOVAL OF THE BMP'S MUST BE STABILIZED IMMEDIATELY.
- VEHICLES AND EQUIPMENT MUST ENTER DIRECTLY TO AND EXIT FROM THE SITE AT THE POINT WHERE THE ROCK CONSTRUCTION ENTRANCE HAS BEEN PLACED.
- ONLY LIMITED DISTURBANCE WILL BE PERMITTED TO PROVIDE ACCESS TO THE CONTROLS FOR GRADING AND ACQUIRING BORROW TO CONSTRUCT THOSE CONTROLS.
- AT LEAST THREE DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES SHALL NOTIFY THE PENNSYLVANIA ONE CALL SYSTEM INCORPORATED AT 1-800-242-1776 FOR BURIED UTILITY LOCATIONS.
- ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE. EACH STAGE SHALL BE COMPLETED BEFORE ANY FOLLOWING STAGE IS INITIATED. CLEARING AND GRUBBING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE.
- THE PROJECTS RECEIVING WATERCOURSE IS MEADOWBROOK RUN WITHIN THE DARBY CREEK WATERSHED, AND THE CHAPTER 93 CLASSIFICATION IS CWF, NF.

B. FILTER FABRIC FENCING & STRAW BALE BARRIERS

- FILTER FABRIC FENCING AND STRAW BALE BARRIERS MUST BE INSTALLED AT LEVEL GRADE. BOTH ENDS OF EACH FENCE OR BARRIER SECTION MUST EXCEED 8 FEET UP SLOPE AT 45 DEGREES TO THE ALIGNMENT OF THE MAIN FENCE OR BARRIER.
- SEDIMENT MUST BE REMOVED WHERE ACCUMULATIONS REACH 1/2 THE ABOVE GROUND HEIGHT OF FILTER FABRIC FENCING OR 1/3 THE ABOVE GROUND HEIGHT OF STRAW BALE BARRIERS.
- ANY FILTER FABRIC FENCING OR STRAW BALE BARRIER WHICH HAS BEEN UNDERMINED OR TOPPED MUST BE IMMEDIATELY REPLACED WITH ROCK FILTER OUTLETS.
- STRAW BALE BARRIERS SHOULD NOT BE USED FOR MORE THAN 3 MONTHS.

C. SEDIMENT REMOVAL

- SEDIMENT MUST BE REMOVED FROM STORM WATER INLET PROTECTION AFTER EACH RUNOFF EVENT.
- ALL SILT AND FOREIGN MATTER SHALL BE REMOVED FROM THE TOP OF THE BINDER COURSE AND PROPERLY DISPOSED OF BEFORE WEARING SURFACE IS INSTALLED.
- ALL PUMPING OF SEDIMENT LADEN WATER SHALL BE THROUGH A SEDIMENT CONTROL BMP, SUCH AS A PUMPED WATER FILTER BAG DISCHARGING OVER NON-DISTURBED AREAS.
- SEDIMENT REMOVED FROM BMP'S SHALL BE DISPOSED OF IN LANDSCAPED AREAS OUTSIDE OF STEEP SLOPES, WETLANDS, FLOODPLAINS OR DRAINAGE SWALES AND IMMEDIATELY STABILIZED OR PLACED IN TOPSOIL STOCKPILES.

D. OPERATOR'S RESPONSIBILITY

- MAINTENANCE OF ALL SEDIMENT AND EROSION CONTROL DEVICES IS THE RESPONSIBILITY OF THE OPERATOR DURING CONSTRUCTION.
- THE RETENTION/SEDIMENT BASIN WILL BE CONSTRUCTED AND MAINTAINED BY THE OPERATOR. THE MAINTENANCE OF THIS BASIN WILL BE TRANSFERRED TO THE PERMITTEE UPON THE COMPLETION OF FINAL STABILIZATION.
- THE OPERATOR IS RESPONSIBLE FOR PROVIDING DIVERSION TRENCHES, EROSION CHECKS, BENS, ETC., OTHER MEANS OF CONSTRUCTION PRACTICES AS REQUIRED ON THE SITE TO PREVENT ACCELERATED RUNOFF AND EROSION, WHICH MAY NOT BE INDICATED, BUT IS WITHIN THE INTENT OF THIS PLAN.
- THE OPERATOR MUST INSURE THE PROPER OPERATION OF THE DEVICES IS NOT HINDERED DUE TO EXCESSIVE SEDIMENT BUILD-UP OR UNAUTHORIZED ACTS OF THIRD PARTIES.
- SHOULD ANY MEASURES CONTAINED WITHIN THIS PLAN PROVE INCAPABLE OF ADEQUATELY REMOVING SEDIMENT FROM ON-SITE FLOWS PRIOR TO DISCHARGE OR OF STABILIZING THE SURFACES INVOLVED, ADDITIONAL MEASURES MUST BE IMMEDIATELY IMPLEMENTED BY THE OPERATOR TO ELIMINATE ALL SUCH PROBLEMS.
- UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMP'S MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT CONTROL BMP'S AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND RECREATIONAL MAINTENANCE WORK, INCLUDING CLEAN-OUT, REPAIR, REPLACEMENT, REGROUTING, RESEEDING, REGRUBBING, AND FENCING MUST BE PERFORMED IMMEDIATELY. IF EROSION AND SEDIMENT CONTROL BMP'S FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMP'S OR MODIFICATIONS TO THOSE INSTALLED WILL BE INSTALLED IMMEDIATELY.
- 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, CHAPTER 102, 103 AND 104. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP OR DISCHARGE ANY BUILDING MATERIAL OR WASTES AT THIS SITE.
- IT IS THE INTENT OF THIS PLAN TO MEET REQUIREMENTS OF SOIL EROSION CONTROL.
- THE OPERATOR IS ADVISED TO BECOME THOROUGHLY FAMILIAR WITH THE PROVISIONS OF APPENDIX 5A, EROSION CONTROL RULES AND REGULATIONS, TITLE 25 PA, CHAPTER 251, DEPARTMENT OF ENVIRONMENTAL PROTECTION, SUB-PART C, PROTECTION OF NATURAL RESOURCES, ARTICLE II, WATER RESOURCES, CHAPTER 102 EROSION CONTROL.
- A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES.
- AT ANY TIME PRIOR TO STABILIZATION SHOULD ANY E & S PROBLEMS OCCUR WHICH REQUIRE ADDITIONAL MEASURES, IMMEDIATE ACTION MUST BE TAKEN TO CORRECT THE PROBLEM.
- THE OPERATOR SHALL ASSURE THAT THE APPROVED EROSION AND SEDIMENT CONTROL PLAN IS PROPERLY AND COMPLETELY IMPLEMENTED.
- IMMEDIATELY UPON DISCOVERING UNFOSSEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO ELIMINATE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION.
- ONLY LIMITED DISTURBANCE WILL BE PERMITTED TO PROVIDE ACCESS TO BMP'S FOR GRADING AND ACQUIRING BORROW TO CONSTRUCT THOSE BMP'S.
- AT STREAM CROSSINGS, 50 FOOT STREAM BANK BUFFER AREAS SHOULD BE MAINTAINED. ON BUFFERS, CLEARING, SOIL DISTURBANCES, EXCAVATION, AND EQUIPMENT TRAFFIC SHOULD BE MINIMIZED. ACTIVITIES SUCH AS STACKING CUT LOGS, BURNING CLEARED BRUSH, DISCHARGING RAINWATER FROM TRENCHES, WELDING PIPE SECTIONS, REFUELING AND MAINTAINING EQUIPMENT SHOULD BE ACCOMPLISHED OUTSIDE OF BUFFERS.

E. MULCHING

- MULCHING OF DISTURBED OR SEEDED AREA SHALL BE FURNISHED PLACED, ANCHORED AND MAINTAINED IN ACCORDANCE WITH PENNDOT PUBL. #08, SECTION 409.
- MULCHING SHALL BE PLACED IMMEDIATELY AFTER SEEDING OR WITHIN 48 HOURS AFTER SEEDING IS COMPLETE.
- HAY OR STRAW SHALL BE UNIFORMLY PLACED IN A CONTINUOUS BLANKET, AT A MINIMUM RATE OF 3.0 TONS PER ACRE.
- MULCH WITH MULCH CONTROL NETTING OR EROSION CONTROL BLANKETS SHOULD BE INSTALLED ON ALL SLOPES 2:1 OR STEEPER.
- STRAW MULCH SHOULD BE APPLIED IN LONG STRANDS, NOT CHOPPED OR FINELY BROKEN

F. SEEDING

- SEEDING SHALL BE PLACED IN ACCORDANCE WITH PENNDOT PUBL. #08, SECTION 404.

2. SEED FORMULAS:

FORMULA AND SPECIES	% PURITY	MIN. % ACTION	MIN. % SEEDING RATE	MAX. % SEEDING RATE	SEEDING RATE
FORMULA B * PERENNIAL RYEGRASS MIXTURE * CREEPING RED FESCUE OR CHEWINGS FESCUE * KENTUCKY BLUEGRASS MIXTURE	20 30 50	98 98 98	90 85 80	0.15 0.15 0.20	21.0 TOTAL 6.0 11.0
FORMULA C * CROWNVEITCH ANNUAL RYEGRASS	45	98	70	0.10 0.15	9.0 TOTAL 4.0 5.0
FORMULA D * TALL FESCUE * CREEPING RED FESCUE OR CHEWINGS FESCUE	70 30	98 98	85 85	0.15 0.15	21.0 TOTAL 15.0 6.0
FORMULA E * ANNUAL RYEGRASS	100	98	90	0.15	10.0 TOTAL 10.0
FORMULA I * HARD FESCUE MIXTURE * CREEPING RED FESCUE * ANNUAL RYEGRASS	55 10 10	98 98 98	85 85 90	0.15 0.15 0.15	24.0 TOTAL 13.0 5.0 6.0
FORMULA W * TALL FESCUE * BUDROOP TREFOIL MIXTURE * REDTOP	60 20 10	98 98 98	85 85 80	0.15 0.15 0.15	10.5 TOTAL 7.5 3.0 0.0

\* MINIMUM 20% HARD SEED AND 60% NORMAL SPROUTS

3. APPLICATION DATES:

FORMULA	B, D, E & L	C	W	I
FORMULA B, D, E & L	MARCH 15 TO JUNE 15 AUGUST 1 TO OCTOBER 15			
FORMULA C		RYEGRASS PORTION: MARCH 1 TO OCTOBER 15 CROWNVEITCH PORTION: ANYTIME EXCEPT SEPTEMBER & OCTOBER		
FORMULA E	MARCH 15 TO OCTOBER 15			
FORMULA W	APRIL 1 TO JUNE 15 AUGUST 16 TO SEPTEMBER 15			

- SOIL SUPPLEMENTS MAY BE ADDED IN ACCORDANCE WITH SECTION 804 OR AS FOLLOWS:  
FERTILIZER - STANDARD QUALITY (20-10-10) STARTER FERTILIZER 200 LBS. PER 1000 S.Y.  
10-10-10 STARTER FERTILIZER 100 LBS. PER 1000 S.Y.  
LIME - AGRICULTURAL LIMESTONE 90X MINIMUM OF CARBONATES 500 LBS. PER 1000 S.Y.
- FORMULA B SHALL BE USED TO ESTABLISH FINAL VEGETATION IN LAWN AREAS, FORMULA D SHALL BE USED TO ESTABLISH FINAL VEGETATION IN ROUGH AREAS, AND FORMULA E SHALL BE USED TO ESTABLISH TEMPORARY VEGETATION. FORMULAS C, W, I, AND N SHALL BE USED AS SPECIFICALLY INDICATED ON THE PLAN.
- SEEDING AND MULCHING SCHEDULE

- THE DIVERSIONS, CHANNELS, SEDIMENT BASINS, SEDIMENT TRAPS, AND STOCKPILES, WHEN USED, MUST BE STABILIZED IMMEDIATELY.
- IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE, THE OPERATOR SHALL STABILIZE ANY AREAS DISTURBED BY THE ACTIVITIES. DURING NON-GERMINATING PERIODS, MULCH MUST BE APPLIED AT THE SPECIFIED RATES. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE REDISTURBED WITHIN ONE YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY VEGETATIVE STABILIZATION SPECIFICATIONS. DISTURBED AREAS WHICH ARE AT FINISHED GRADE OR WHICH WILL NOT BE REDISTURBED WITHIN ONE YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS.
- AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM UNIFORM PERMANENT VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS.

H. UTILITY LINE TRENCH EXCAVATION

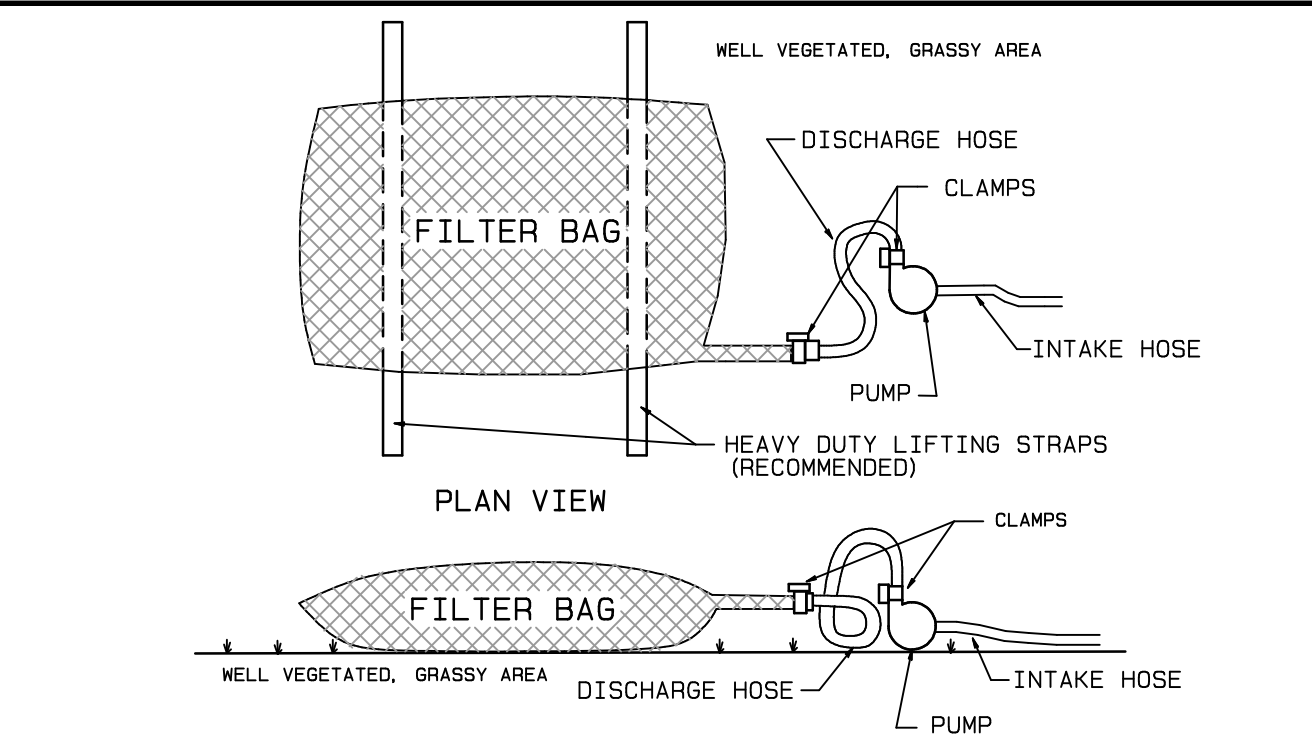
- CONSTRUCTION REQUIREMENTS
  - LIMIT ADVANCE CLEARING AND GRUBBING OPERATIONS TO A DISTANCE EQUAL TO TWO TIMES THE LENGTH OF PIPE INSTALLATION THAT CAN BE COMPLETED IN ONE DAY.
  - WORK CREWS AND EQUIPMENT FOR TRENCHING, PLACEMENT OF PIPE, PLUG CONSTRUCTION AND BACKFILLING WILL BE SELF CONTAINED AND SEPARATE FROM CLEARING AND GRUBBING AND SITE RESTORATION AND STABILIZATION OPERATIONS.
  - LIMIT DAILY TRENCH EXCAVATION TO THE LENGTH OF PIPE PLACEMENT. PLUG INSTALLATION AND BACKFILLING THAT CAN BE COMPLETED IN THE SAME DAY.
  - WATER WHICH ACCUMULATES IN THE OPEN TRENCH WILL BE COMPLETELY REMOVED BY PUMPING BEHIND PIPE AND/OR BACKFILLING BEGINS. WATER REMOVED FROM THE TRENCH SHALL BE PUMPED THROUGH A FILTRATION DEVICE.
  - ON THE DAY FOLLOWING PIPE PLACEMENT AND TRENCH BACKFILLING, THE DISTURBED AREA WILL BE GRADED TO FINAL CONTOURS AND IMMEDIATELY STABILIZED.
  - ALL SOIL EXCAVATED FROM THE TRENCH WILL BE PLACED ON THE UPHILL SIDE OF THE TRENCH.
  - SOILS EXCAVATED FROM EXISTING SURFACE LAYER SHOULD BE STOCKPILED SEPARATELY AND RETURNED AS FINAL SURFACE LAYER FOLLOWING TRENCH BACKFILLING.
- TRENCH PLUGS WILL BE SPACED IN ACCORDANCE WITH AND BE CONSTRUCTED OF THE MATERIALS AS INDICATED ON THE TRENCH PLUG DETAIL.
  - AT ALL CROSSINGS OF WATERS OF THE COMMONWEALTH, TRENCH PLUGS WILL BE INSTALLED AT THE BANKS AFTER TRENCH EXCAVATION. THE PLUGS MAY BE TEMPORARILY REMOVED WHEN PLACING THE PIPE, BUT THEN REINSTALLED IMMEDIATELY.
  - CONSTRUCTION OF THE CROSSING WILL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE "PIPELINES AND UTILITY LINE PROJECTS" SECTION OF THE EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL.

2. EXCEPTIONS

- IN CERTAIN CASES TRENCHES CANNOT BE BACKFILLED UNTIL THE PIPE IS HYDROSTATICALLY TESTED AND THE COMPLETE BACKFILLING IS COMPLETED. THESE CASES, ALL OF THE REQUIREMENTS LISTED UNDER ITEM 1 WILL REMAIN IN EFFECT WITH THE FOLLOWING EXCEPTIONS:
- DAILY BACKFILLING OF THE TRENCH MAY BE DELAYED FOR SIX DAYS. ALL PRESSURE TESTING AND THE COMPLETE BACKFILLING OF THE OPEN TRENCH MUST BE COMPLETED BY THE SEVENTH WORKING DAY.
  - IF DAILY BACKFILLING IS DELAYED, THE DISTURBED AREA WILL BE GRADED TO FINAL CONTOURS. APPROPRIATE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES/FACILITIES WILL BE INSTALLED, AND THE AREAS SEEDED AND MULCHED WITHIN THE NEXT TWO CALENDAR DAYS.

1. CLEAN FILL

- IF THE SITE WILL NEED TO IMPORT OR EXPORT MATERIAL FROM THE SITE, THE RESPONSIBILITY FOR PERFORMING ENVIRONMENTAL DUE DILIGENCE AND DETERMINATION OF CLEAN FILL WILL REST WITH THE CONTRACTOR.
- CLEAN FILL IS DEFINED AS: UNCONTAMINATED, NON-WATER SOLUBLE, NON-DECOMPOSABLE, INERT, SOLID MATERIAL. THE TERM INCLUDES SOIL, ROCK, STONE, DREGGED MATERIAL, USED ASPHALT, AND BRICK, BLOCK OR CONCRETE FROM CONSTRUCTION AND DEMOLITION ACTIVITIES THAT IS SEPARATE FROM OTHER WASTE AND IS RECOGNIZABLE AS SUCH. THE TERM DOES NOT INCLUDE MATERIALS PLACED IN OR ON THE WATERS OF THE COMMONWEALTH (UNLESS OTHERWISE AUTHORIZED), (THE TERM "USED ASPHALT" DOES NOT INCLUDE MILLED ASPHALT OR ASPHALT THAT HAS BEEN PROCESSED FOR RE-USE).
- CLEAN FILL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE; FILL MATERIALS AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE STILL QUALIFIES AS CLEAN FILL PROVIDED THE TESTING REVEALS THAT THE FILL MATERIAL CONTAINS CONCENTRATIONS OF REGULATED SUBSTANCES THAT ARE BELOW THE RESIDENTIAL LIMITS IN TABLES FP-1A AND FP-1B FOUND IN THE DEPARTMENT'S POLICY "MANAGEMENT OF FILL".
- ANY PERSON PLACING CLEAN FILL THAT HAS BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE MUST USE FORM FP-001 TO CERTIFY THE ORIGIN OF THE FILL MATERIAL AND THE RESULTS OF THE ANALYTICAL TESTING TO QUALIFY THE MATERIAL AS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE OWNER OF THE PROPERTY RECEIVING THE FILL. A COPY OF FORM FP-001 CAN BE FOUND AT THE END OF THESE INSTRUCTIONS.
- ENVIRONMENTAL DUE DILIGENCE: THE APPLICANT MUST PERFORM ENVIRONMENTAL DUE DILIGENCE TO DETERMINE IF THE FILL MATERIALS ASSOCIATED WITH THE PROJECT QUALIFY AS CLEAN FILL. ENVIRONMENTAL DUE DILIGENCE IS DEFINED AS: INVESTIGATIVE TECHNIQUES, INCLUDING, BUT NOT LIMITED TO, VISUAL PROPERTY INSPECTIONS, ELECTRONIC DATA BASE SEARCHES, REVIEW OF PROPERTY OWNERSHIP, REVIEW OF PROPERTY USE HISTORY, SANBORN MAPS, ENVIRONMENTAL QUESTIONNAIRES, TRANSACTION SCREENS, ANALYTICAL TESTING, ENVIRONMENTAL ASSESSMENTS OR AUDITS, ANALYTICAL TESTING IS NOT A REQUIRED PART OF DUE DILIGENCE UNLESS VISUAL INSPECTION AND/OR REVIEW OF THE PAST LAND USE OF THE PROPERTY INDICATES THAT THE FILL MAY HAVE BEEN SUBJECT TO A SPILL OR RELEASE OF A REGULATED SUBSTANCE. IF THE FILL MAY HAVE BEEN SUBJECT TO A SPILL OR RELEASE OF A REGULATED SUBSTANCE, IT MUST BE TESTED TO DETERMINE IF IT QUALIFIES AS CLEAN FILL. TESTING SHOULD BE PERFORMED IN ACCORDANCE WITH APPENDIX A OF THE DEPARTMENT'S POLICY "MANAGEMENT OF FILL".
- FILL MATERIAL THAT DOES NOT QUALIFY AS CLEAN FILL IS REGULATED FILL. REGULATED FILL IS WASTE AND MUST BE MANAGED IN ACCORDANCE WITH THE DEPARTMENT'S MUNICIPAL OR REGIONAL WASTE REGULATIONS BASED ON 25 PA, CODE CHAPTERS 297 RESIDUAL WASTE MANAGEMENT OR 271 MUNICIPAL WASTE MANAGEMENT, WHICHEVER IS APPLICABLE. THESE REGULATIONS ARE AVAILABLE ONLINE AT [www.pacode.com](http://www.pacode.com).



LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH DOUBLE STITCHED "Y" TYPE SEAMS. THE BAG SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 50 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE STANDARDS LISTED IN THE EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL.

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. 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.

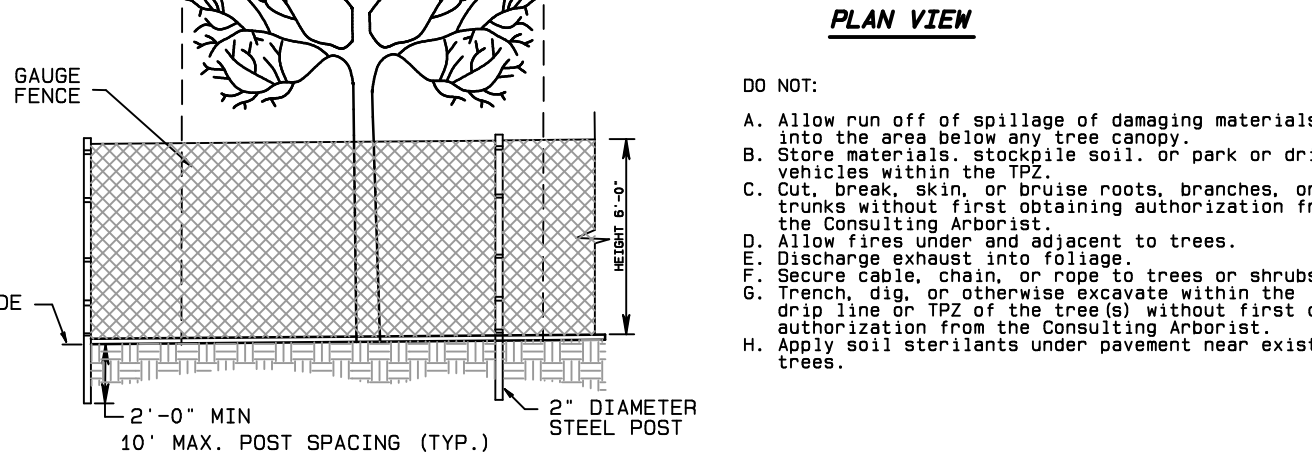
BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREAS, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS WHERE THIS IS NOT POSSIBLE. A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 2:1. FOR SLOPES GREATER THAN 6:1, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HD 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, WHICHEVER IS LESS. PUMP INTAKES SHOULD BE FLOATING AND SCREENED.

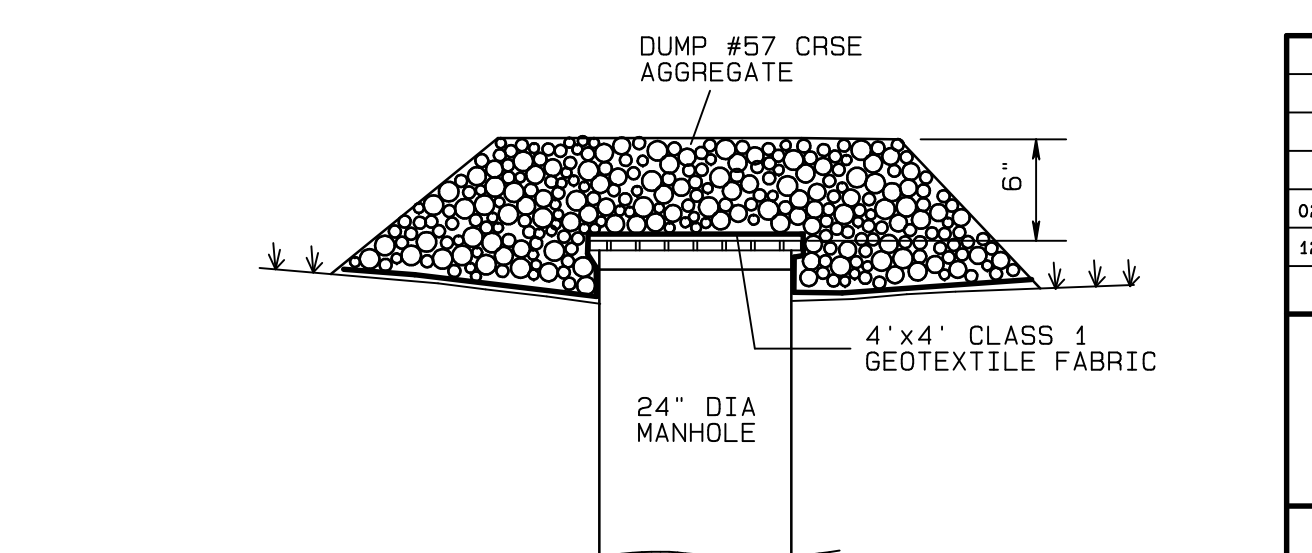
THE PUMPING RATE SHOULD BE NO GREATER THAN 750 GPM OR 1/2 RHE MAXIMUM SPECIFIED SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHOULD BE FLOATING AND SCREENED.

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

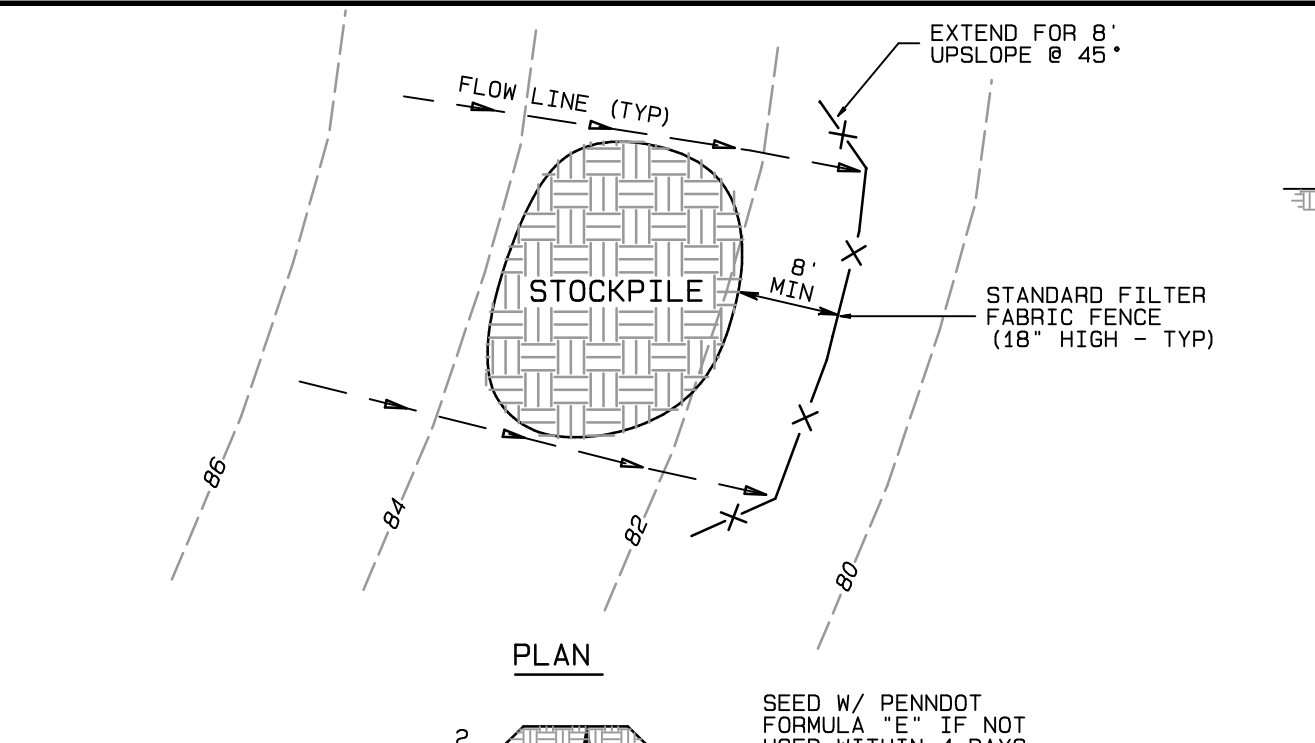


DO NOT:

- A 4" layer of coarse mulch or woodchips is to be placed beneath the drip line of the protected trees. Mulch is to be kept 12" from the trunk.
- A protective barrier of 6 foot chain link fencing shall be installed around the drip line of protected trees (a) the fencing can be moved within the drip line if authorized by the Consulting Arborist but not closer than 2 feet from the trunk of any tree. Fence posts shall be 2 inches in diameter and one to be driven 2 feet into the ground. The distance between posts shall not be more than 10 feet. This enclosed area is the Tree Protection Zone (TPZ).
- Moveable barriers of chain link fencing secured to concrete blocks can be substituted for "fixed" fencing if the Consulting Arborist agrees that the fencing will have to be moved to accommodate certain phases of construction. The builder may not move the fence without authorization from the Consulting Arborist.
- Where the Consulting Arborist has determined that tree protection fencing will interfere with the safety of work crews, tree wraps may be used as an alternative form of tree protection. Wooden slats at least one inch thick are to be bound securely, edge to edge, around the trunk. A single layer or more of orange plastic construction fencing is to be wrapped and secured around the outside of the wooden slats. Major pipefitter lines may require protection as determined by the Consulting Arborist. Straw waddle may also be used as a trunk wrap by cutting the waddle around the trunk up to a minimum height of six feet from grade. A single layer or more of orange plastic construction fencing is to be wrapped and secured around the straw waddle.



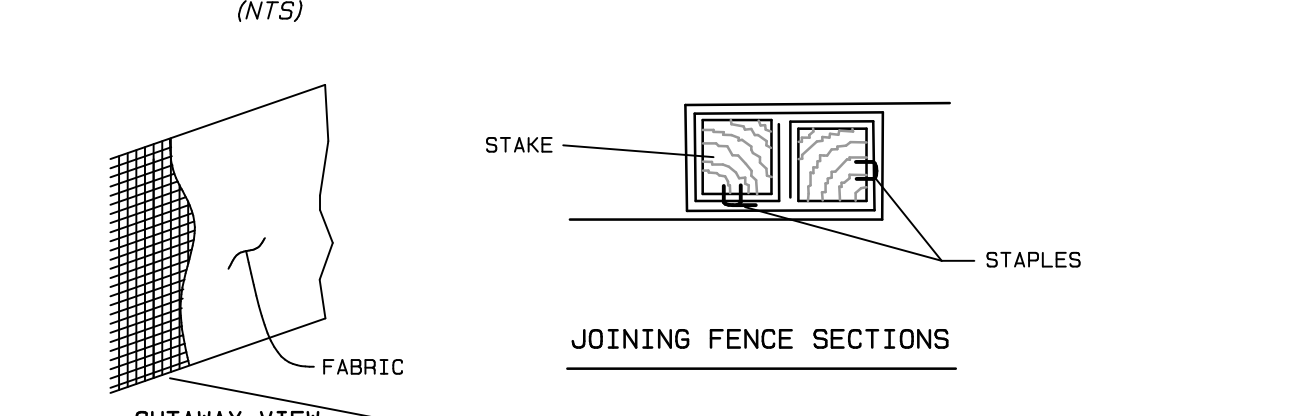
INLET PROTECTION (TEMP.) MANHOLES 1 & 2 (NTS)



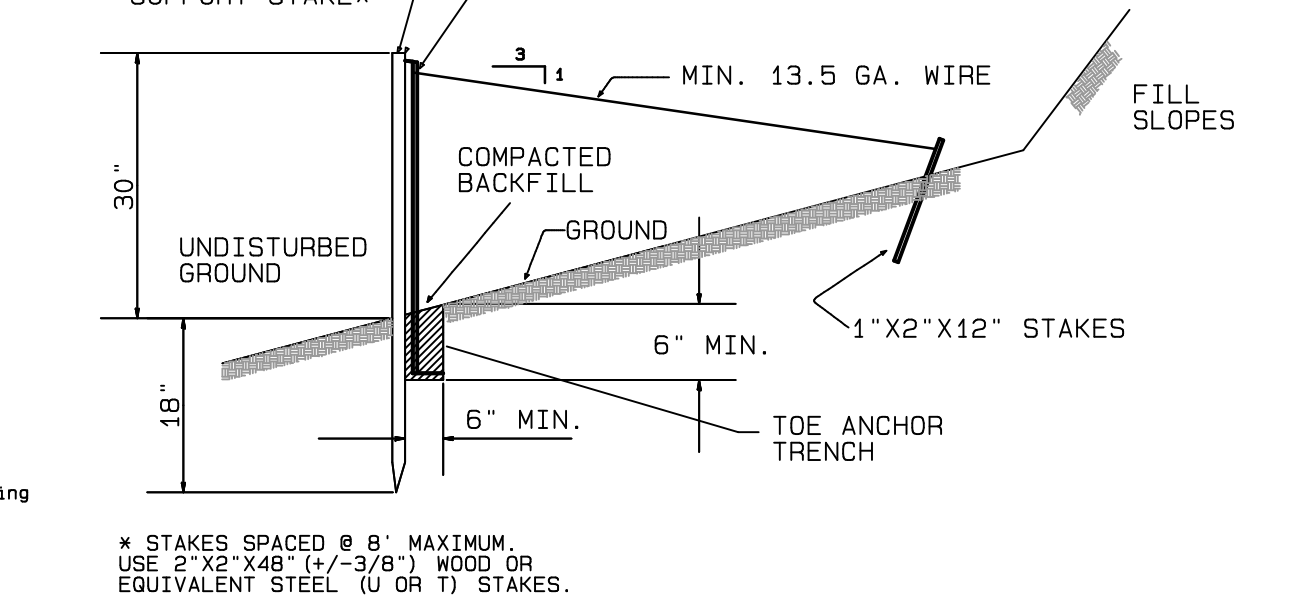
TEMPORARY SOIL STOCKPILE AND MAINTENANCE DETAIL (NTS)

- INSTALL SILT FENCE DOWNSLOPE OF AREA OF STOCKPILE.
- PLACE STOCKPILE IN AREAS SHOWN ON EROSION CONTROL PLAN WITHOUT BLOCKING NATURAL DRAINAGE PATTERNS.
- FOLLOW DIMENSIONS SHOWN ABOVE. HEIGHT SHOULD NOT EXCEED 35 FEET. SIDE SLOPES SHOULD NOT BE STEEPER THAN 3:1 TO 1:1.
- USED IMMEDIATELY WITH PENNDOT FORM #18. FOR SLOPES GREATER THAN 2:1, FOLLOW MULCHING AND SEEDING SPECIFICATIONS AND SCHEDULE.

STANDARD CONSTRUCTION DETAIL #3-1 TEMPORARY SOIL STOCKPILE AND MAINTENANCE DETAIL (NTS) (RCE)



JOINING FENCE SECTIONS



STANDARD CONSTRUCTION DETAIL #4-7 STANDARD SILT FENCE (18" HIGH) (SF18)

- ALLOW RUN OFF OF SPILLAGE OF DAMAGING MATERIALS INTO THE AREA BELOW ANY TREE CANOPY.
- STONE MATERIALS STOCKPILE SOIL OF PARK OR DRIVE VEHICLES WITHIN THE TPZ.
- CUT, OPEN, OR CUT OFF BRANCHES, TRUNKS OR TRUNKS WITHOUT FIRST OBTAINING AUTHORIZATION FROM THE CONSULTING ARBORIST.
- ALLOW FIRES UNDER AND ADJACENT TO TREES.
- DITCHGRAB EXISTING INTO FOLIAGE.
- SECURE CABLE, CHAIN, OR ROPE TO TREES OR SHRUBS.
- TRENCH, DIG, OR OTHERWISE EXCAVATE WITHIN THE DRIP LINE OR TPZ OF THE TREE(S) WITHOUT FIRST OBTAINING AUTHORIZATION FROM THE CONSULTING ARBORIST.
- Apply soil sterilants under pavement near existing trees.

\* STAKES SPACED @ 8' MAXIMUM. USE 2"X2" (+/- 3/8") WOOD OR EQUIVALENT STEEL (U OR T) STAKES.

FABRIC SHALL HAVE THE MINIMUM PROPERTIES AS SHOWN IN TABLE 4.3 EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL.

FABRIC WIDTH SHALL BE 42" MINIMUM. STAKES SHALL BE HARDWOOD OR EQUIVALENT STEEL (U OR T) STAKES. AN 18" SUPPORT STAKE SHALL BE DRIVEN 12" MINIMUM INTO UNDISTURBED GROUND.

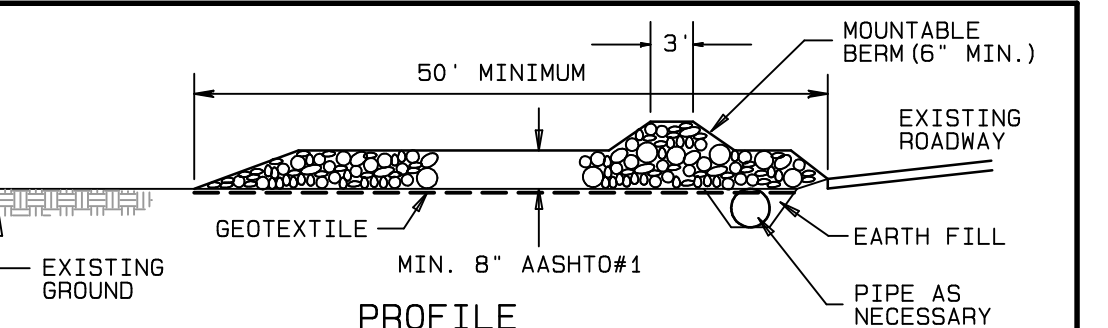
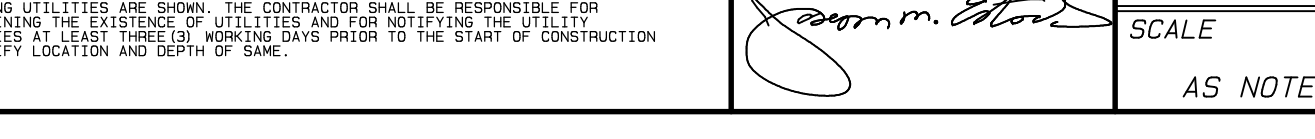
SILT FENCE SHALL BE INSTALLED AT EXISTING LEVEL GRADE. BOTH ENDS OF FENCE SECTION SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT.

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. SEE STANDARD CONSTRUCTION DETAIL #4-6.

FENCE SHALL BE REMOVED AND PROPERLY DISPOSED OF WHEN TRIBUTARY ARE IS PERMANENTLY STABILIZED.

STANDARD CONSTRUCTION DETAIL #4-8 REINFORCED SILT FENCE (30" HIGH) (FF30)



STANDARD CONSTRUCTION DETAIL #3-1 ROCK CONSTRUCTION ENTRANCE (NTS) (RCE)

REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCING ROCK. A STOCKPILE OF ROCK MATERIAL PRIOR TO ENTERING ROCK 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 WILL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE OF ROCK MATERIAL WILL BE MAINTAINED ON THE SITE FOR THIS PURPOSE. ANY SEDIMENT LOCATED ON THE PUBLIC ROADWAY SHOULD BE REMOVED IMMEDIATELY AND RETURNED TO THE CONSTRUCTION SITE.

STANDARD CONSTRUCTION DETAIL #4-9 STANDARD SILT FENCE (18" HIGH) (SF18)

- ALLOW RUN OFF OF SPILLAGE OF DAMAGING MATERIALS INTO THE AREA BELOW ANY TREE CANOPY.
- STONE MATERIALS STOCKPILE SOIL OF PARK OR DRIVE VEHICLES WITHIN THE TPZ.
- CUT, OPEN, OR CUT OFF BRANCHES, TRUNKS OR TRUNKS WITHOUT FIRST OBTAINING AUTHORIZATION FROM THE CONSULTING ARBORIST.
- ALLOW FIRES UNDER AND ADJACENT TO TREES.
- DITCHGRAB EXISTING INTO FOLIAGE.
- SECURE CABLE, CHAIN, OR ROPE TO TREES OR SHRUBS.
- TRENCH, DIG, OR OTHERWISE EXCAVATE WITHIN THE DRIP LINE OR TPZ OF THE TREE(S) WITHOUT FIRST OBTAINING AUTHORIZATION FROM THE CONSULTING ARBORIST.
- Apply soil sterilants under pavement near existing trees.

\* STAKES SPACED @ 8' MAXIMUM. USE 2"X2" (+/- 3/8") WOOD OR EQUIVALENT STEEL (U OR T) STAKES.

FABRIC SHALL HAVE THE MINIMUM PROPERTIES AS SHOWN IN TABLE 4.3 EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL.

FABRIC WIDTH SHALL BE 30" MINIMUM. STAKES SHALL BE HARDWOOD OR EQUIVALENT STEEL (U OR T) STAKES. AN 18" SUPPORT STAKE SHALL BE DRIVEN 12" MINIMUM INTO UNDISTURBED GROUND.

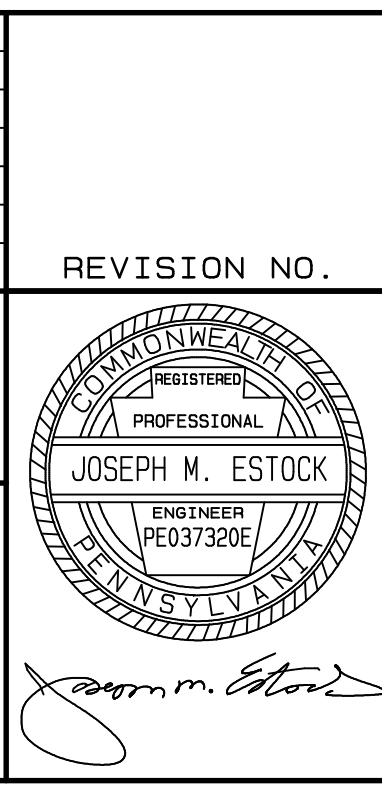
SILT FENCE SHALL BE INSTALLED AT EXISTING LEVEL GRADE. BOTH ENDS OF FENCE SECTION SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT.

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. SEE STANDARD CONSTRUCTION DETAIL #4-6.

FENCE SHALL BE REMOVED AND PROPERLY DISPOSED OF WHEN TRIBUTARY ARE IS PERMANENTLY STABILIZED.

DATE	REVISIONS	REVISION NO.
02-05-16	REV DETAILS	
12-22-15	REV PER TMP. REVIEW	



PROJECT TITLE :  
**131-133 GARRETT AVENUE**  
RADNOR TOWNSHIP - DELAWARE COUNTY - PENNSYLVANIA

DRAWING TITLE :  
**EROSION AND SEDIMENT CONTROL NARRATIVE AND DETAILS**

PREPARED BY :  
**JOSEPH M. ESTOCK**  
Consulting Engineers & Land Surveyors

SCALE : AS NOTED DATE : 27 APRIL 2015 FILE NO. : 15003 FIELD BOOK : 327 SHT. NO. : 4 OF 6



**RADNOR TOWNSHIP  
LANDSCAPE COMPLIANCE CHART**

§ 255.38. SHADE TREES	REQUIRED PROVIDED	
	YES	YES
§ 255-38.A STREET TREES REQUIRED ALONG EXIST. STREETS		
§ 255-38.B STREET TREES AT INTERVALS OF NO MORE THAN 30 FEET		
GARRETT AVENUE: 63.72 LF = 2.1 TREES	2.1 TREES	2 TREES

**PLANT LIST:**

SYMBOL	QTY.	BOTANICAL NAME	COMMON NAME	CAL.	HGT.	B&B
	2	ACER TRIFOLIUM	THREE-FLOWER MAPLE	2.5"-3"	14'-16'-10'	

**LANDSCAPE GENERAL NOTES:**

- ALL PLANT MATERIAL SHALL MEET THE AMERICAN STANDARD FOR NURSERY STOCK BY THE AMERICAN NURSERYMAN'S ASSOCIATION.
- ALL PLANT MATERIAL IS TO BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM THE TIME OF FINAL APPROVAL.
- ALL STREET TREES TO BE PRUNED TO PROVIDE 12' CLEARANCE FROM THE GROUND.
- ALL CANOPY TREES TO BE PRUNED TO HAVE A SPREAD EQUAL TO 50% OF THE HEIGHT.

**LEGEND**

	CENTERLINE
	PROPERTY LINE
	LEGAL R.O.W., EASEMENTS
	REQUIRED R.O.W.
	EXISTING CONTOUR
	PROPOSED CONTOUR
	EXISTING WATER LINE
	PROPOSED WATER LINE
	EXISTING TELEPHONE LINE
	PROPOSED TELEPHONE LINE
	EXISTING GAS LINE
	PROPOSED GAS LINE
	EXISTING ELECTRIC LINE
	PROPOSED ELECTRIC LINE
	EXISTING STORM SEWER/INLET
	PROPOSED STORM SEWER/INLET
	PROPOSED WATER LINE
	PROPOSED SAN. SEWER LINE
	PROPOSED ELECTRIC LINE
	PROPOSED TELEPHONE LINE
	PROPOSED GAS LINE
	EXISTING MANHOLE
	PROPOSED MANHOLE
	EXISTING CURBLINE
	PROPOSED CURBLINE
	UTILITY POLE
	EXISTING VALVE, VENT, CO.
	PROPOSED BUILDING
	PROPOSED SINGLE-FAMILY SEMI-DETACHED 3 BEDROOM DWELLING
	PROPOSED BLACKTOP
	PROPOSED CONCRETE
	PROPOSED WALKS, PATIOS, PADS
	PROPOSED LAMPPOST (PRIVATE-RESIDENTIAL)
	PROPOSED STREET TREE (SHADE TREE)

**GENERAL NOTES:**

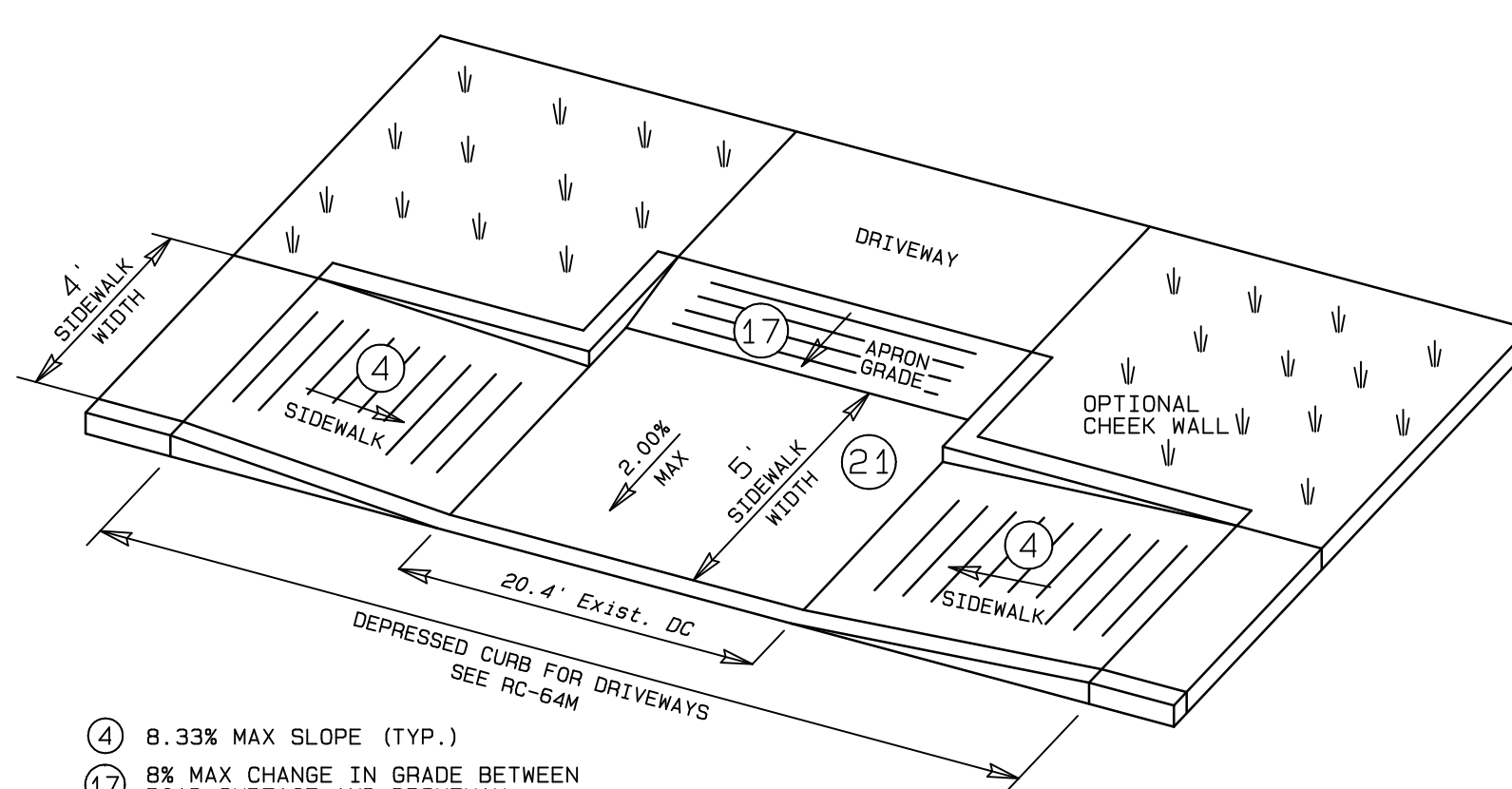
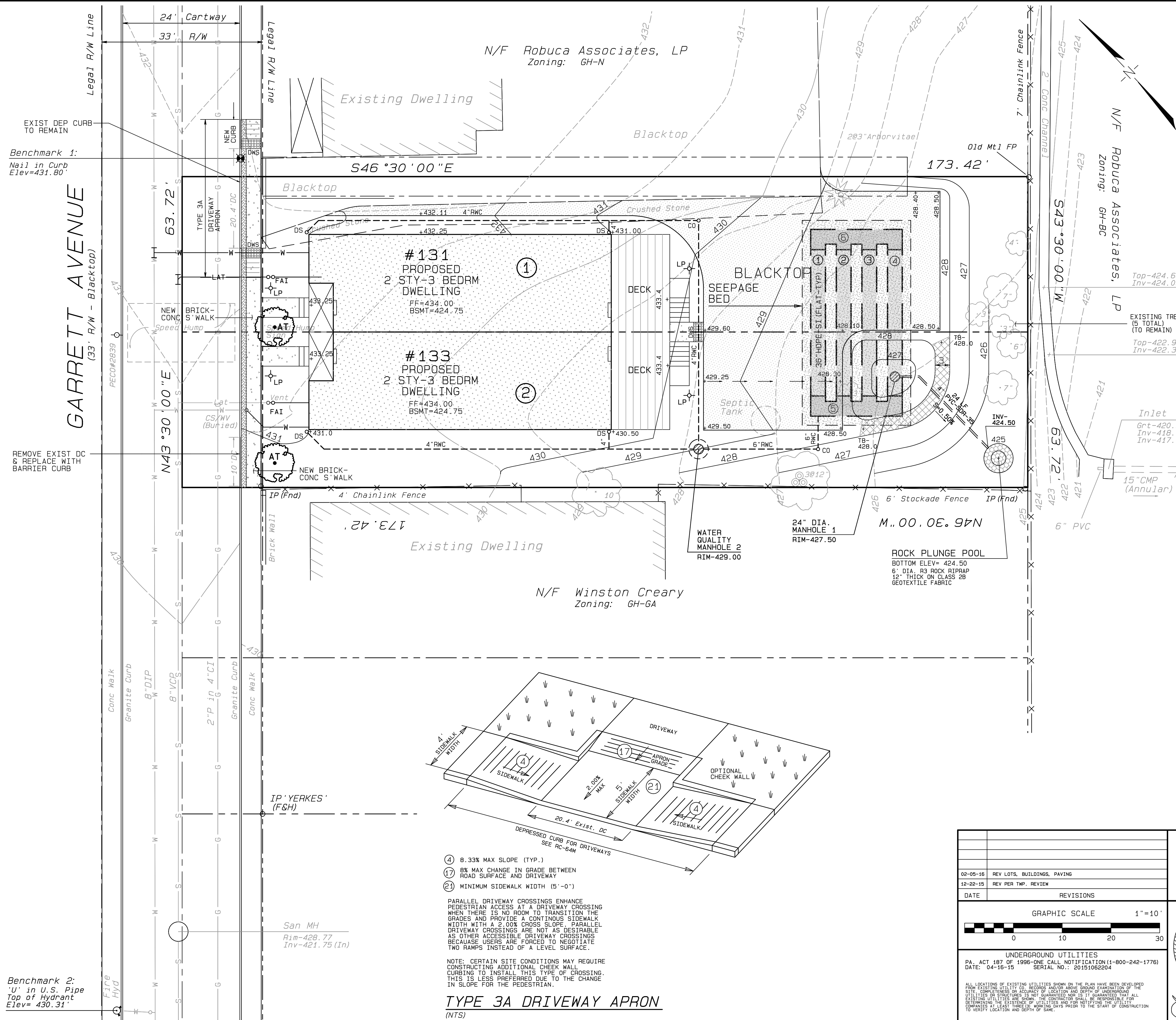
- SUMP PUMPS FOR FOUNDATION DRAINAGE SHALL BE CONNECTED TO THE SEEPAGE BED.
- ALL CONSTRUCTION AND MATERIALS SHALL BE IN CONFORMANCE WITH PADOT PUBLICATION 408, PADOT PUBLICATION 72 AND THE RADNOR TOWNSHIP STANDARD SPECIFICATIONS AND DETAILS.
- THE OWNER MUST SIGN AND RECORD AN OPERATIONS AND MAINTENANCE AGREEMENT WITH THE MUNICIPALITY COVERING ALL STORMWATER FACILITIES AND BMPs THAT ARE PRIVATELY OWNED. THE MAINTENANCE AGREEMENT MUST BE TRANSFERRED WITH TRANSFER OF OWNERSHIP.
- A STORMWATER MANAGEMENT EASEMENT GRANTING THE MUNICIPALITY THE RIGHT BUT NOT THE OBLIGATION TO ENTER, INSPECT AND IMPROVE STORMWATER FACILITIES MUST BE PROVIDED.
- ALL RAINWATER CONDUCTORS TO BE PVC SCHEDULE 40 OR PVC-SDR-35 OR HIGH DENSITY POLYETHYLENE - SMOOTH INTERIOR (HDPE-SI) HAVING A MINIMUM SLOPE OF 2%. SEE PLAN FOR PIPE SIZE.
- BOUNDARY AND TOPOGRAPHIC INFORMATION OBTAINED FROM A RECENT SURVEY PERFORMED BY JOSEPH M. ESTOCK, PE, PLS.
- BENCHMARK 1: NAIL SET IN SOUTHEASTELY CURBLINE OF GARRETT AVENUE NEAR THE NORTHERLY CORNER OF PROPERTY. ELEVATION = 431.80 FEET BASED UPON NAVD-1983 DATUM.  
BENCHMARK 2: TOP OF THE LETTER 'U' IN 'US PIPE' ON THE FIRE HYDRANT ALONG THE NORTHWESTELY CURBLINE OF GARRETT AVENUE ABOUT 108 FEET SOUTHWEST OF THE PROPERTY. ELEVATION = 430.31 FEET BASED UPON NAVD-1983 DATUM.
- PROPOSED LAMPPOSTS SHALL BE A MIN SIX (6) FEET HIGH. FIXTURES SHALL MEET ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICA "CUTOFF" OR "FULL CUTOFF" CRITERIA. SHOP DRAWINGS OF THE LAMPPOST AND FIXTURE MUST BE SUBMITTED TO THE TOWNSHIP FOR REVIEW AND APPROVAL BEFORE INSTALLATION.
- THE CONDITION OF THE EXISTING SANITARY SEWER LATERAL AND WATER SERVICE LATERAL SHALL BE ASSESSED AND APPROVED BY THE RADNOR TOWNSHIP PLUMBING INSPECTOR PRIOR TO CONNECTION.
- THE EXISTING SEPTIC TANK IS TO BE REMOVED AND BACKFILLED.

I, DAVID J. BROSSO OF DJB PROPERTIES, LP, OWNER OF THE PROPERTY SHOWN ON THESE PLANS 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 CONSERVATION DISTRICT FOR A DETERMINATION OF ADEQUACY.

DATE: \_\_\_\_\_ DAVID J. BROSSO OF DJB PROPERTIES, LP (OWNER)

I, JOSEPH M. ESTOCK, PE, PLS., ON THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_, HEREBY CERTIFY THAT THE DRAINAGE PLAN MEETS ALL DESIGN STANDARDS AND CRITERIA OF THE RADNOR TOWNSHIP STORMWATER MANAGEMENT ORDINANCE.

DATE: \_\_\_\_\_ JOSEPH M. ESTOCK (PROFESSIONAL)



- ④ 8.33% MAX SLOPE (TYP.)
  - ①⑦ 8% MAX CHANGE IN GRADE BETWEEN ROAD SURFACE AND DRIVEWAY
  - ②① MINIMUM SIDEWALK WIDTH (5'-0")
- PARALLEL DRIVEWAY CROSSINGS ENHANCE PEDESTRIAN ACCESS AT A DRIVEWAY CROSSING WHEN THERE IS NO ROOM TO TRANSITION THE GRADES AND PROVIDE A CONTINUOUS SIDEWALK WIDTH WITH A 2.00% CROSS SLOPE. PARALLEL DRIVEWAY CROSSINGS ARE NOT AS DESIRABLE AS OTHER ACCESSIBLE DRIVEWAY CROSSINGS BECAUSE USERS ARE FORCED TO NEGOTIATE TWO RAMPS INSTEAD OF A LEVEL SURFACE.

NOTE: CERTAIN SITE CONDITIONS MAY REQUIRE CONSTRUCTING ADDITIONAL CHECK WALL CURBING TO INSTALL THIS TYPE OF CROSSING. THIS IS LESS PREFERRED DUE TO THE CHANGE IN SLOPE FOR THE PEDESTRIAN.

**TYPE 3A DRIVEWAY APRON (NTS)**

**GARRETT AVENUE**  
(33' R/W - Blacktop)

Benchmark 1:  
Nail in Curb  
Elev=431.80'

REMOVE EXIST DC & REPLACE WITH BARRIER CURB

Benchmark 2:  
'U' in U.S. Pipe  
Top of Hydrant  
Elev= 430.31'

02-05-16	REV LOTS, BUILDINGS, PAVING
12-22-15	REV PER TWP. REVIEW
DATE	REVISIONS

GRAPHIC SCALE 1" = 10'  
0 10 20 30

UNDERGROUND UTILITIES  
PA. ACT 187 OF 1996-ONE CALL NOTIFICATION (1-800-242-1776)  
DATE: 04-16-15 SERIAL NO.: 20191062204

ALL LOCATIONS OF EXISTING UTILITIES SHOWN ON THE PLAN HAVE BEEN DEVELOPED FROM EXISTING UTILITY CO. RECORDS AND/OR ABOVE GROUND EXAMINATION OF THE SITE. THE USER SHALL BE RESPONSIBLE FOR LOCATING AND DEPTH OF UNDERGROUND UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXISTENCE OF UTILITIES AND FOR NOTIFYING THE UTILITY COMPANIES AT LEAST THREE (3) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION TO VERIFY LOCATION AND DEPTH OF SAME.

PROJECT TITLE:  
**131-133 GARRETT AVENUE**  
RADNOR TOWNSHIP - DELAWARE COUNTY - PENNSYLVANIA

REVISION NO. \_\_\_\_\_

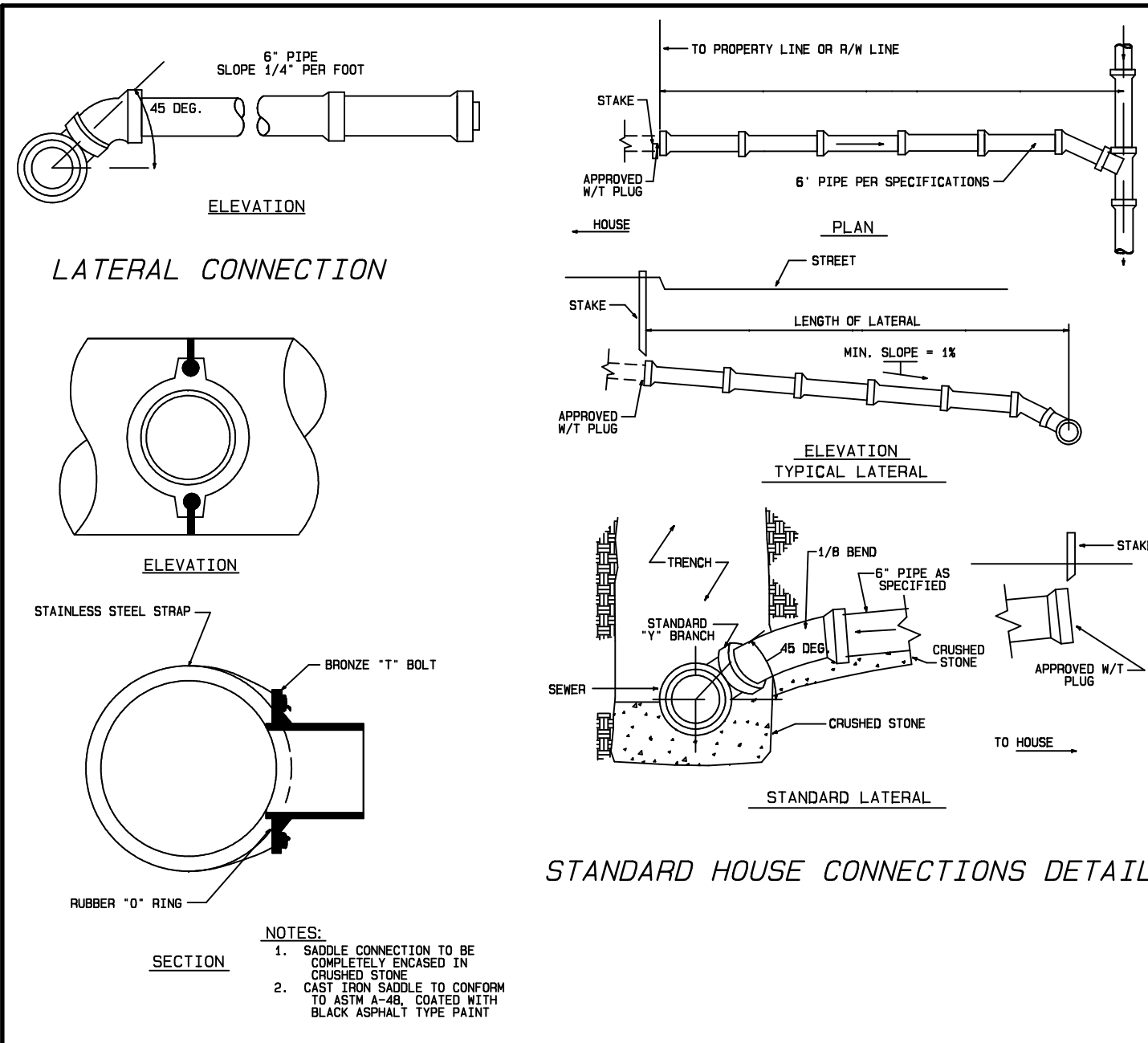
DRAWING TITLE:  
**POST CONSTRUCTION  
STORMWATER MANAGEMENT PLAN**

PREPARED BY:  
**JOSEPH M. ESTOCK**  
Consulting Engineers & Land Surveyors

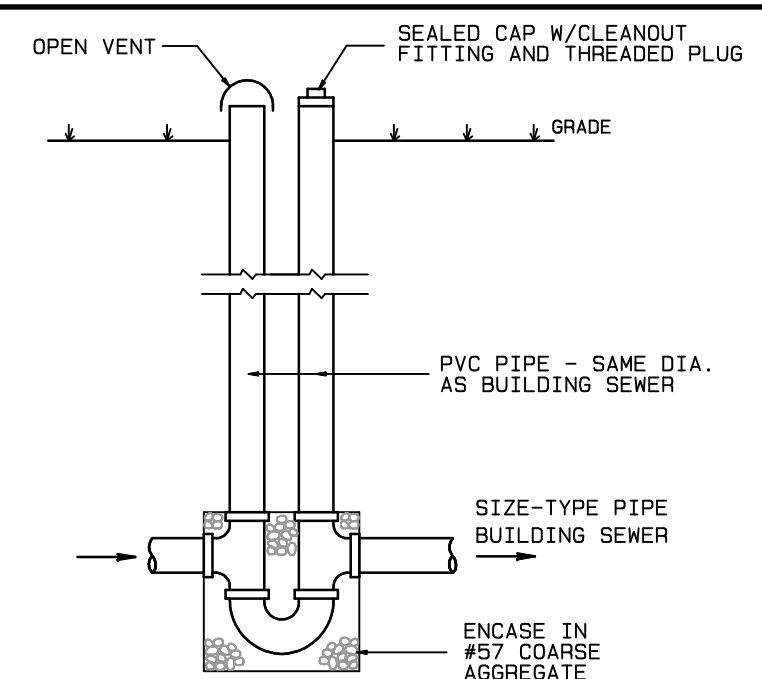
355 South Henderson Road  
King of Prussia, PA 19406-2407  
(610) 265-3035 - Fax (610) 962-9855  
joe@josephmestock.com

SCALE: 1" = 10'  
DATE: 27 APRIL 2015  
FILE NO.: 15003  
FIELD BOOK: 327  
SHT. NO.: 5 OF 6





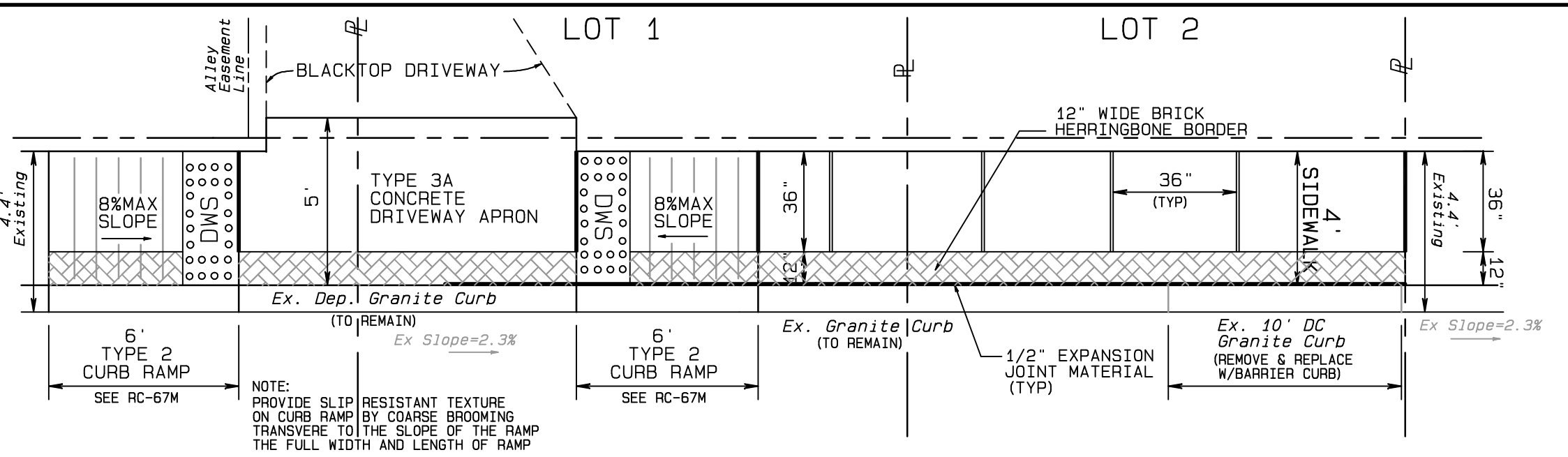
**SANITARY SEWER LATERAL DETAILS**  
(NTS)



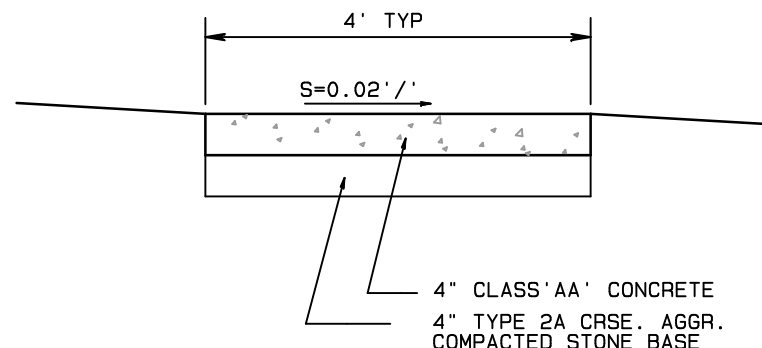
**FRESH AIR INTAKE**  
(NTS)



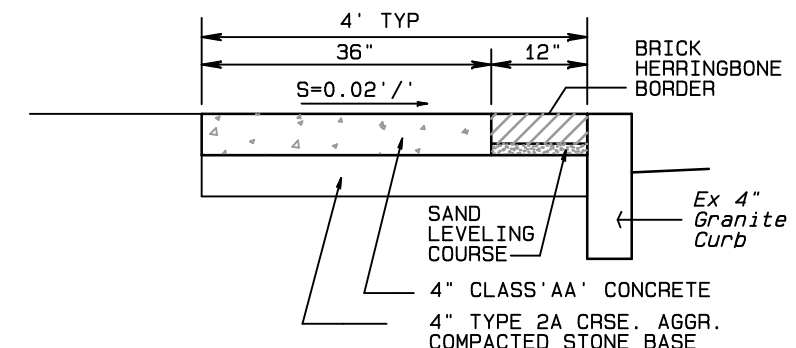
**LAMPPOST DETAILS**  
(NTS)



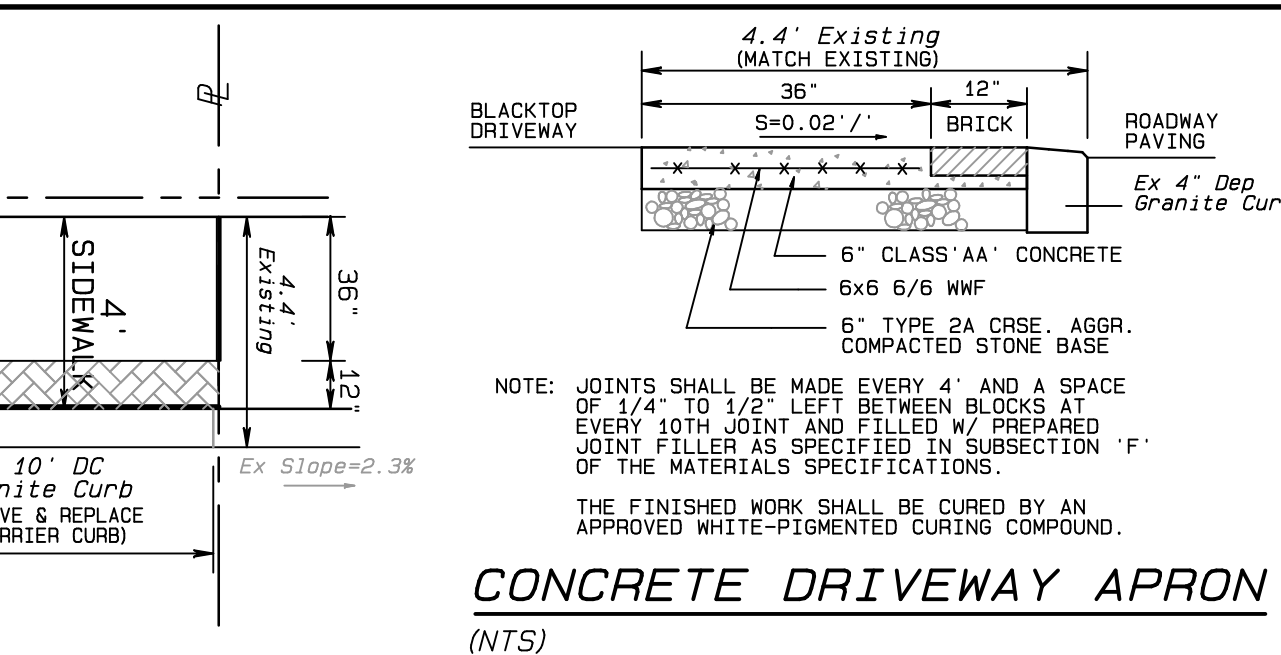
**CONCRETE DRIVEWAY APRON CURB RAMP AND SIDEWALK DETAIL**  
(NTS)



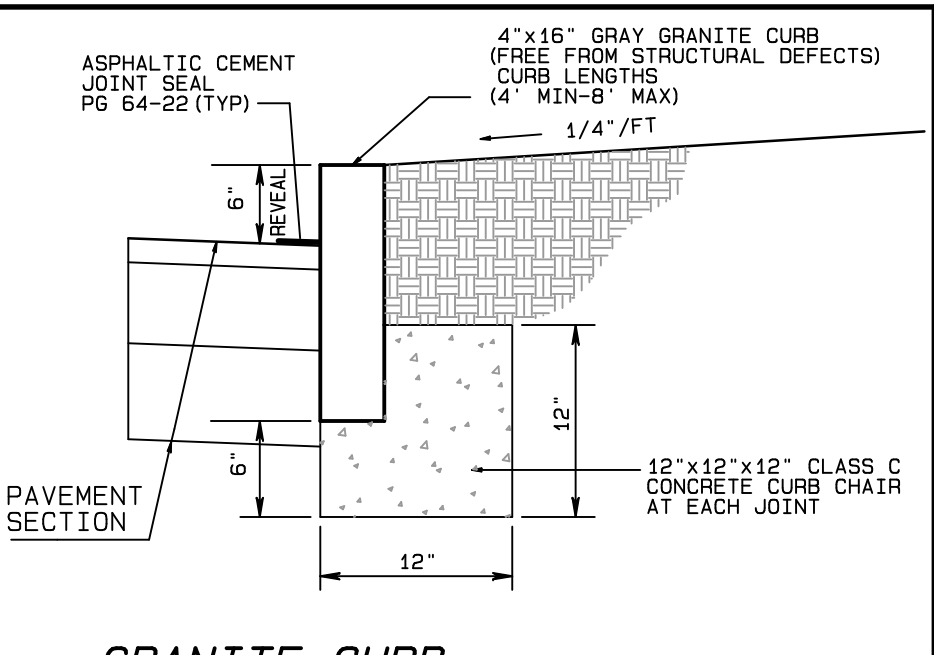
**CONCRETE SIDEWALK SECTION**  
(NTS)



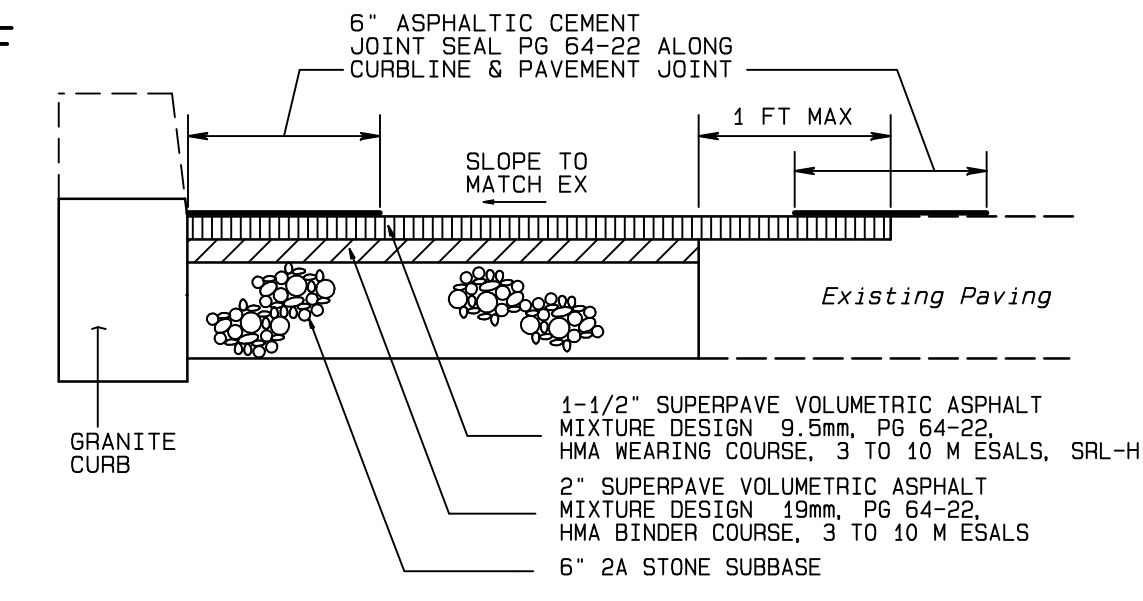
**CONCRETE SIDEWALK SECTION**  
(NTS)



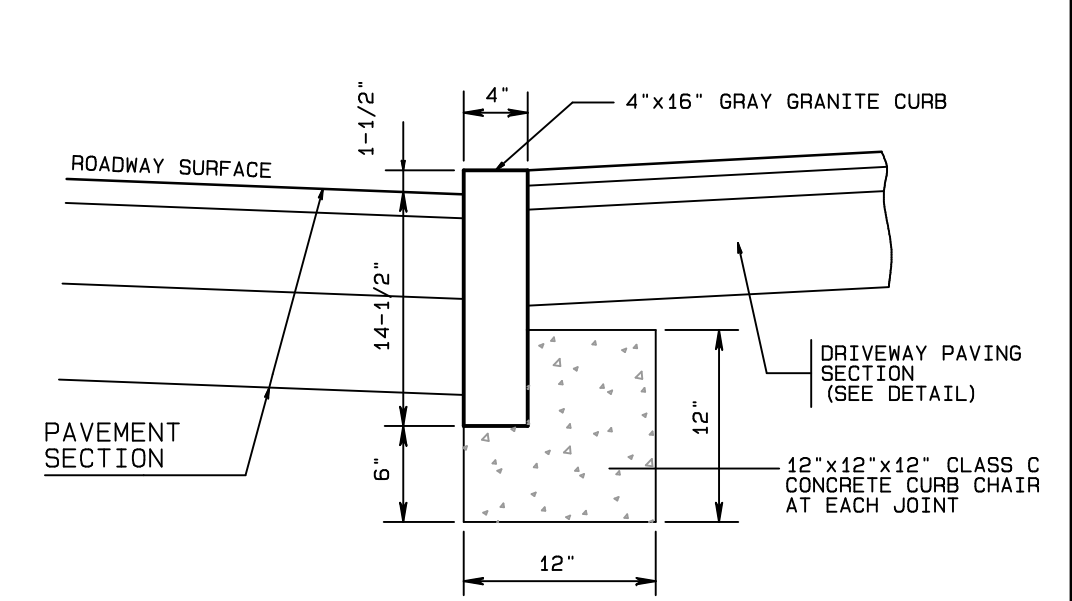
**CONCRETE DRIVEWAY APRON**  
(NTS)



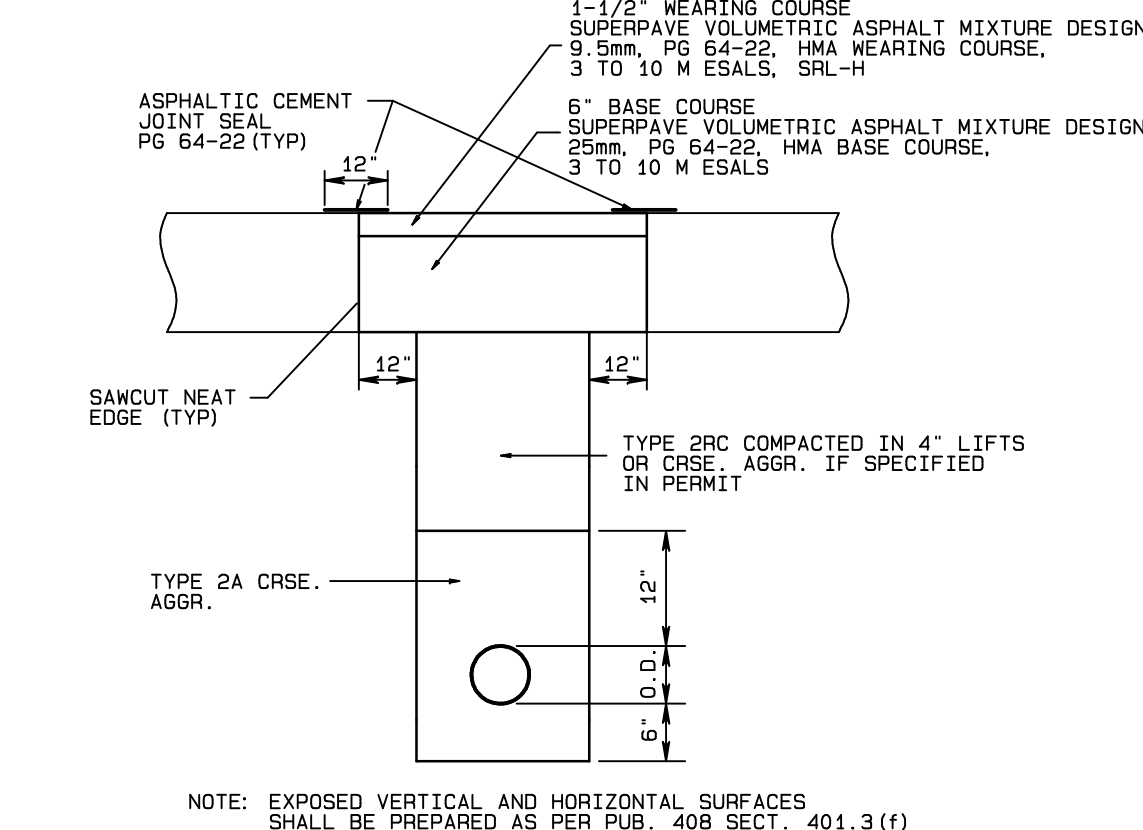
**GRANITE CURB**  
(NTS)



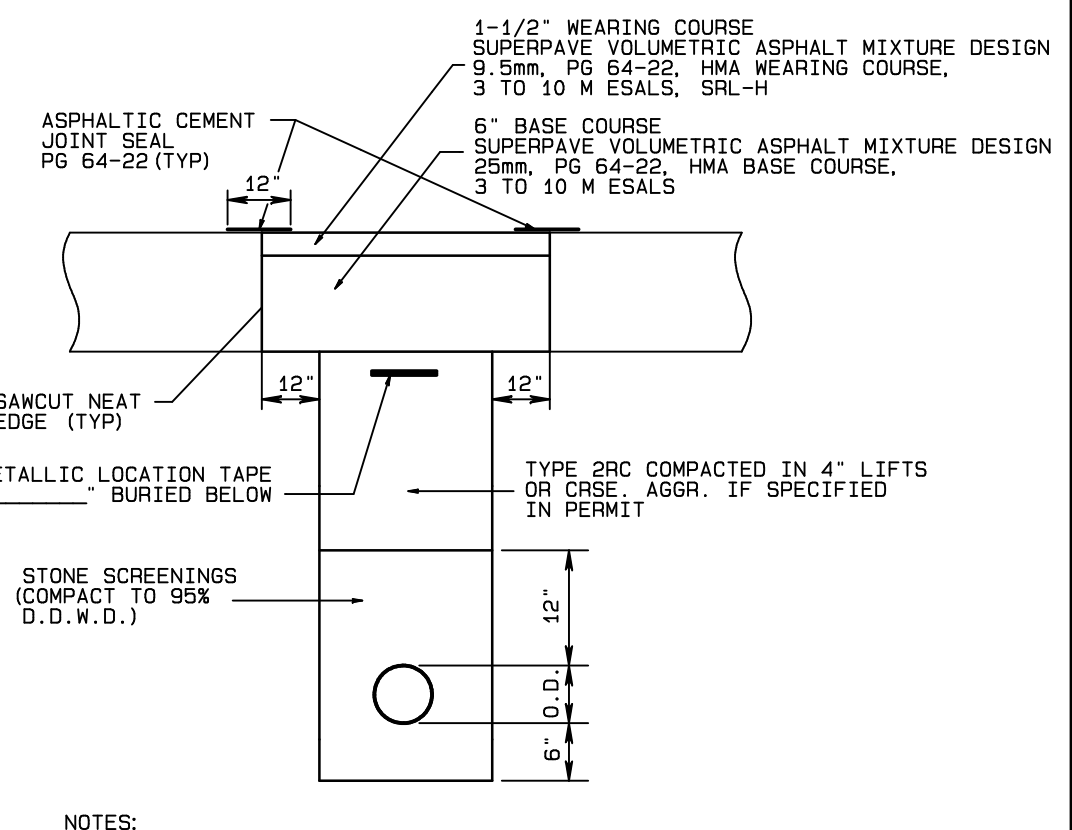
**ROADWAY RESTORATION DETAIL**  
(NTS)



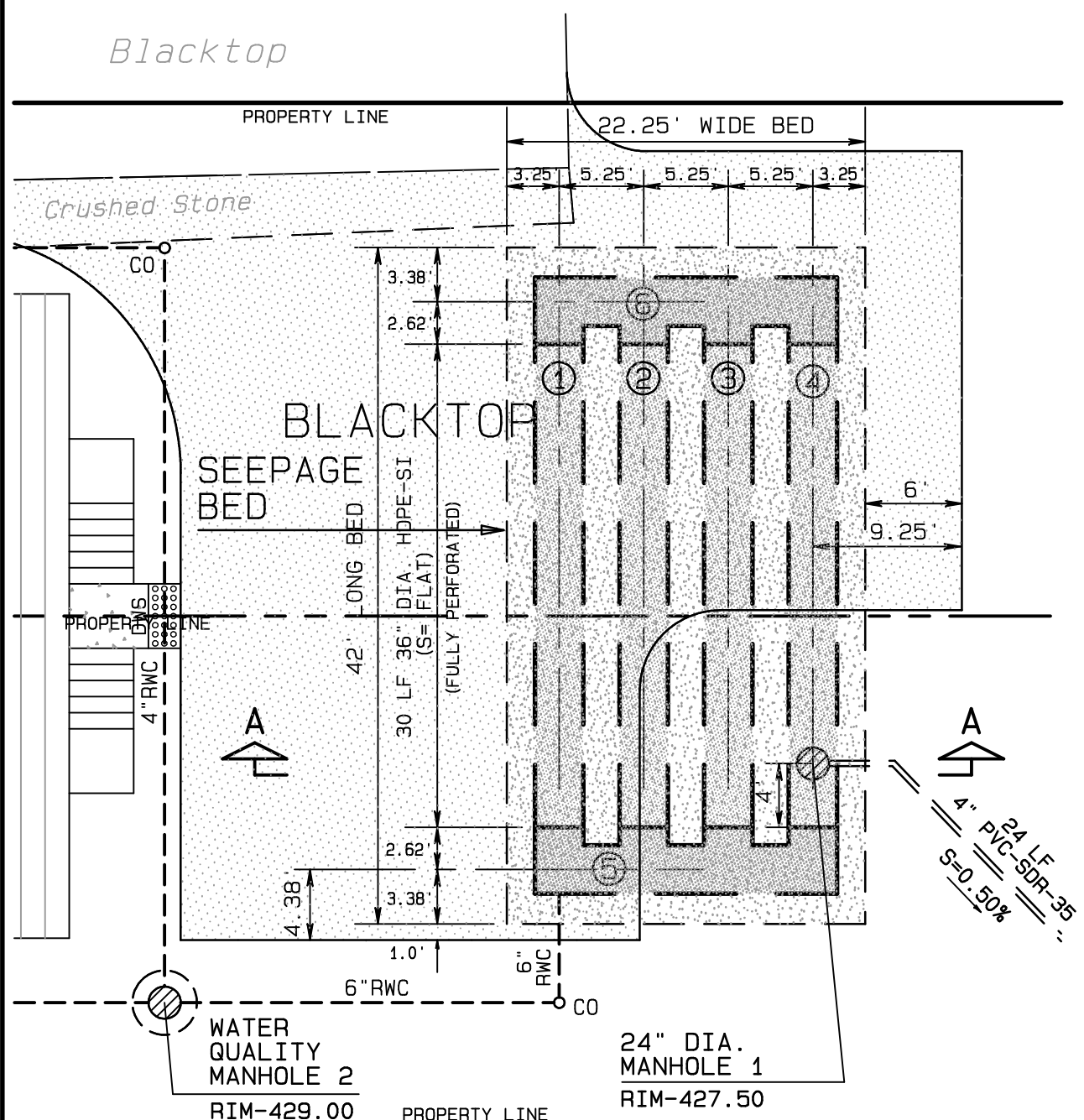
**DEPRESSED GRANITE CURB FOR DRIVEWAYS**  
(NTS)



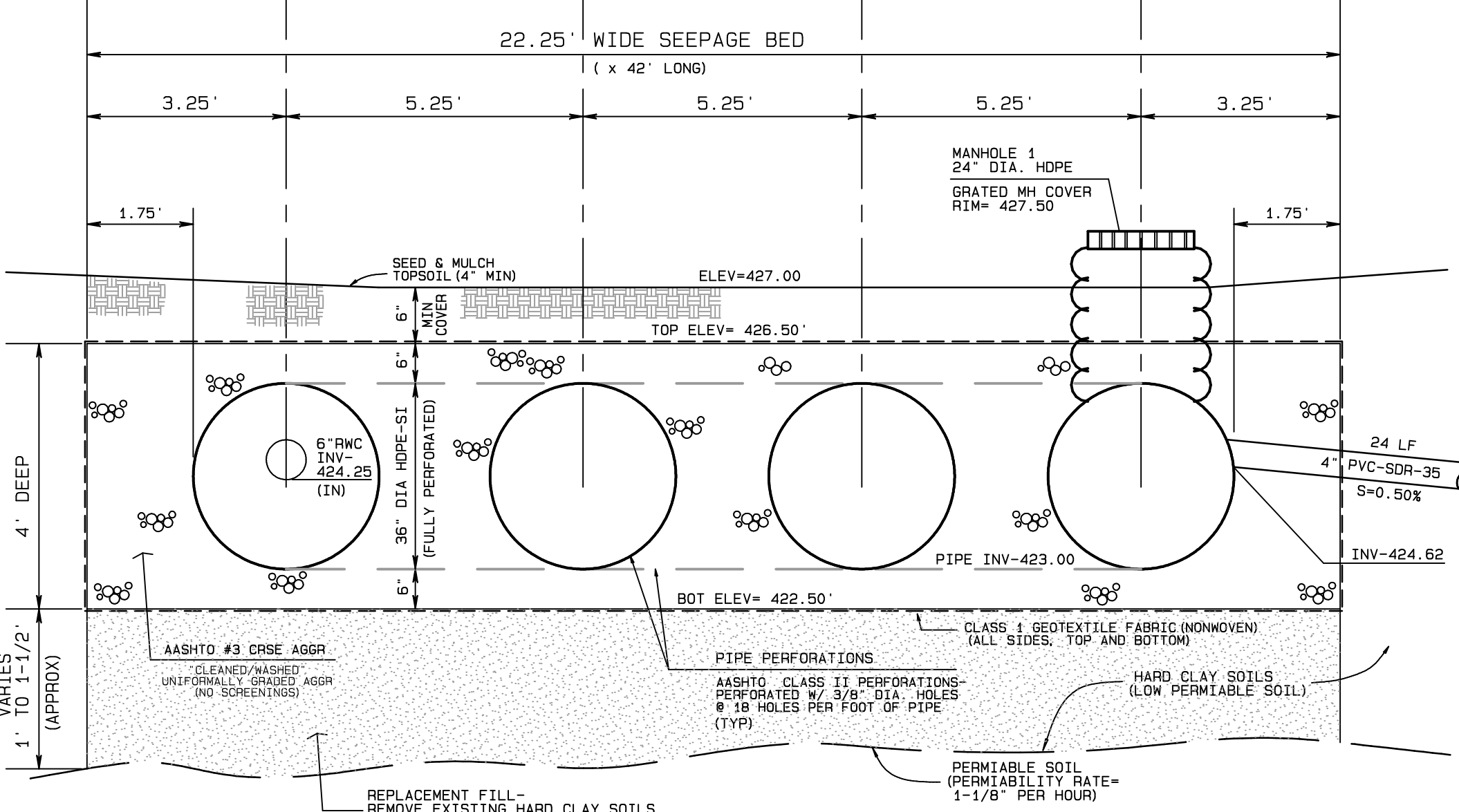
**FLEXIBLE PAVEMENT RESTORATION**  
(NTS)



**UTILITY TRENCH DETAIL**  
(NTS)

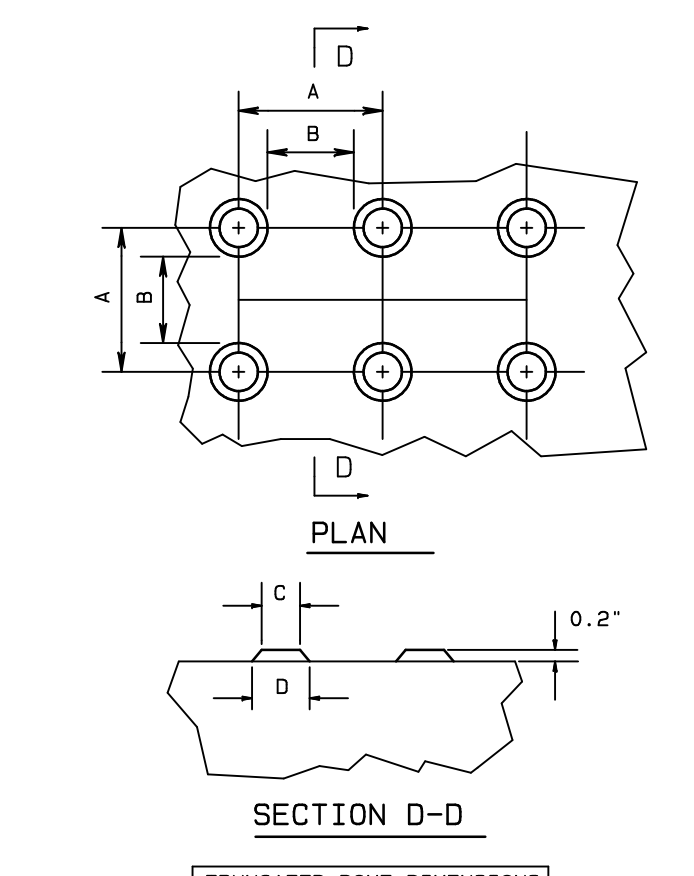


**SEEPAGE BED LAYOUT DETAIL**  
SCALE: 1" = 10'

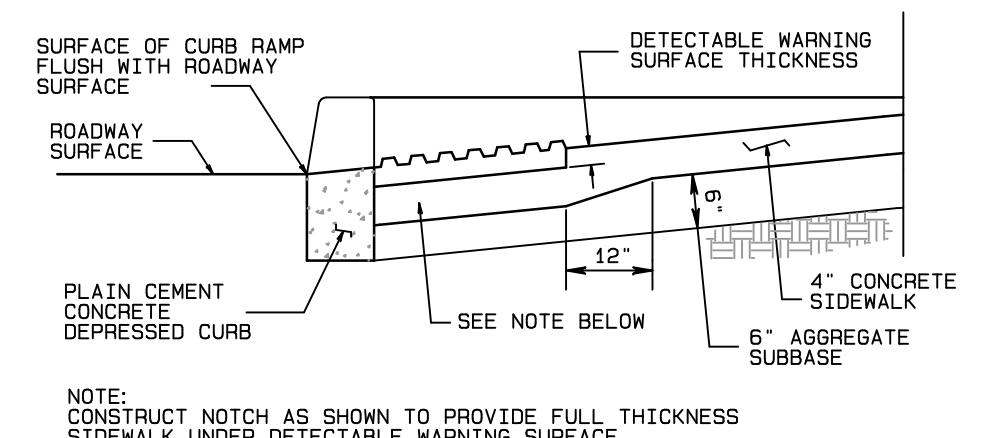


- NOTES:**
- THE UNDERGROUND SEEPAGE BED PIPE SHALL BE HIGH DENSITY POLYETHYLENE PIPE (HDPE) WITH AN ESSENTIALLY SMOOTH INTERIOR WALL (E.S. 11-12). THIS PIPE SHALL HAVE A FULL CIRCULAR CROSS SECTION WITH AN ANNULARLY CORRUGATED OUTER WALL MEETING THE REQUIREMENTS OF AASHTO TYPE S.
  - ALL ELBOWS TO BE SHOP FABRICATED.
  - PIPE PERFORATIONS TO BE AASHTO CLASS II PERFORATIONS.
  - ALL ROOF DRAINAGE CONDUITORS MUST BE PIPED INTO THE SEEPAGE BED. HOPE TO BE INSTALLED PER AAS PRODUCT NOTE 3.115.
  - REPLACEMENT FILL IS TO BE SAND.
  - SAND SUPPLIERS SHALL PROVIDE CERTIFICATION IN WRITING TO THE MUNICIPALITY WITH THE FIRST DELIVERY TO THE JOB SITE FROM EVERY SAND SOURCE LISTING THE AMOUNT OF SAND DELIVERED, AND THAT ALL SAND SUPPLIED MEETS THE REQUIREMENTS POSTED IN THE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS PUBLICATION #408, SECTION 703. THE SIZE AND GRADING SHALL MEET BITUMINOUS CONCRETE SAND TYPE B #1 OR #3 REQUIREMENTS FROM A DEPARTMENT OF TRANSPORTATION CERTIFIED STOCKPILE. THE SIEVE ANALYSIS SHALL BE CONDUCTED IN ACCORDANCE WITH P1M #516 AND #100.
  - SYSTEMS THAT ENCOUNTER ROCK LESS THAN 24" FROM THE BOTTOM OF BED ELEVATION MUST HAVE A MINIMUM OF 24" OF REPLACEMENT FILL PROVIDED FROM THE BOTTOM OF BED TO ROCK.
  - SOIL REMOVAL AND REPLACEMENT FILL TO BE INSPECTED BY A SOIL SCIENTIST.

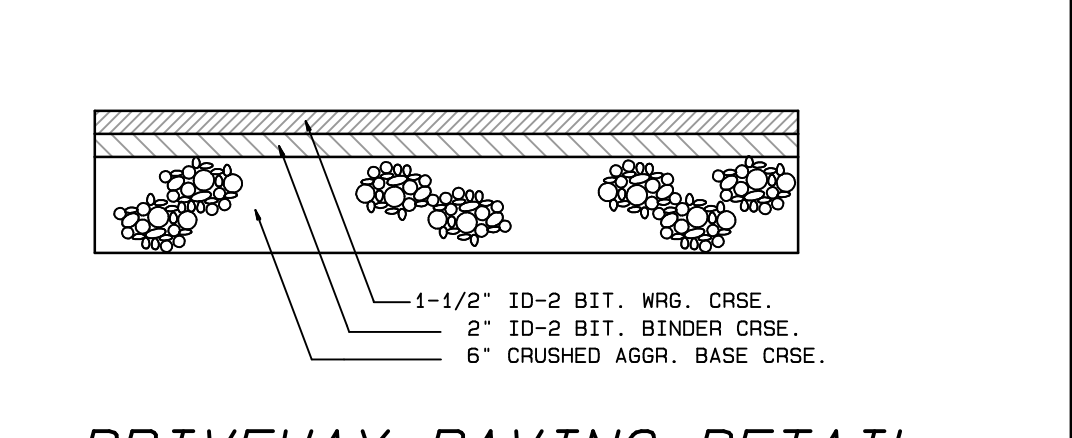
**SEEPAGE BED DETAIL SECTION A-A**  
(NTS)



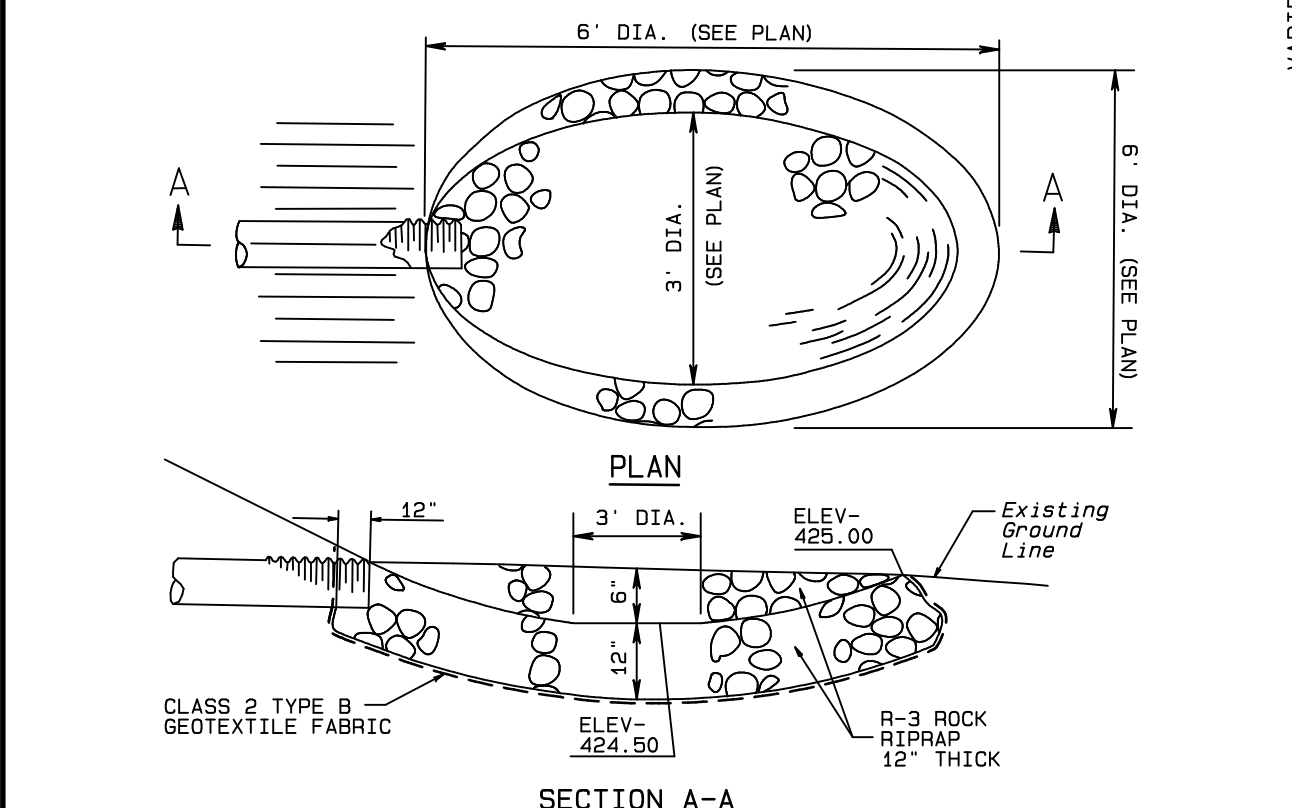
**DETECTABLE WARNING SURFACE (DWS) TRUNCATED DOME DETAILS**  
(NTS)



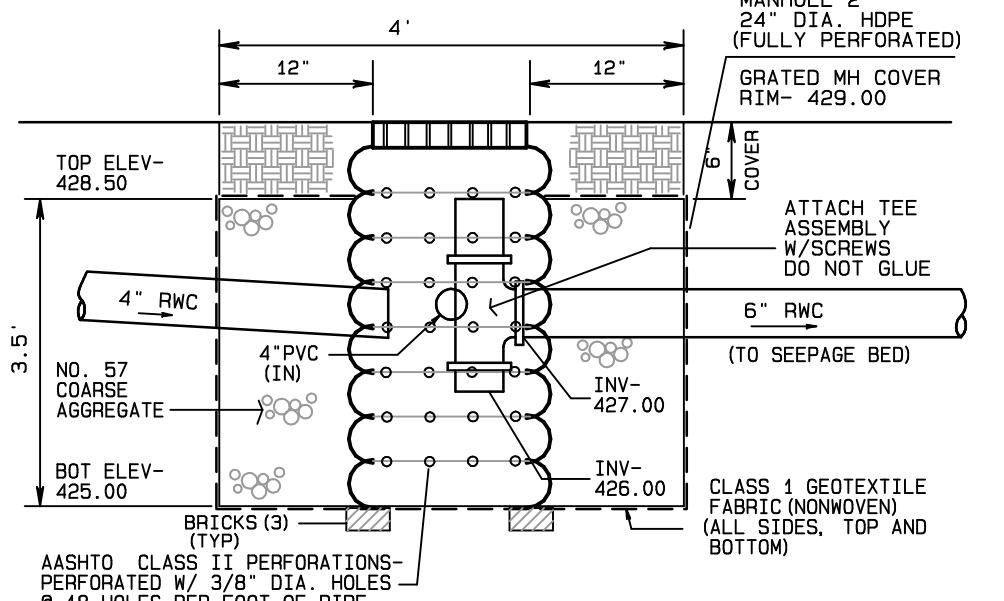
**DETECTABLE WARNING SURFACE (DWS) EMBEDDING DETAIL**  
(NTS)



**DRIVEWAY PAVING DETAIL**  
(NTS)



**ROCK PLUNGE POOL**  
(NTS)



**WATER QUALITY MANHOLE DETAIL**  
(NTS)

DATE	REVISIONS
02-05-16	REV SEEPAGE BED DETAILS
12-22-15	REV PER TWP. REVIEW

UNDERGROUND UTILITIES  
 PA. ACT 187 OF 1996-ONE CALL NOTIFICATION (1-800-242-1776)  
 DATE: 04-16-15 SERIAL NO.: 20191062204

PROJECT TITLE:  
**131-133 GARRETT AVENUE**  
RADNOR TOWNSHIP - DELAWARE COUNTY - PENNSYLVANIA

DRAWING TITLE:  
**CONSTRUCTION DETAILS**

REVISION NO. [ ]

PREPARED BY:  
**JOSEPH M. ESTOCK**  
Consulting Engineers & Land Surveyors

SCALE: AS NOTED

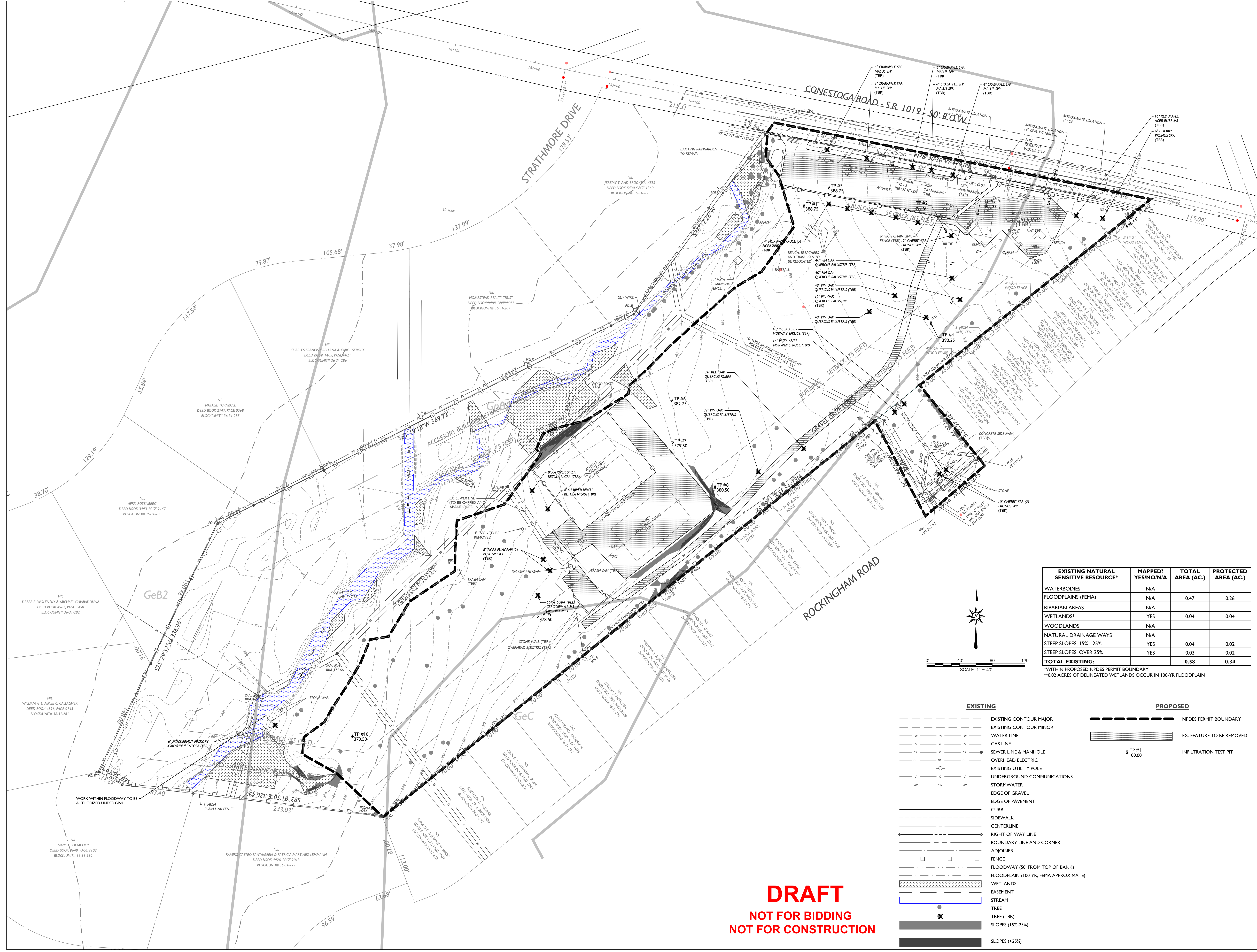
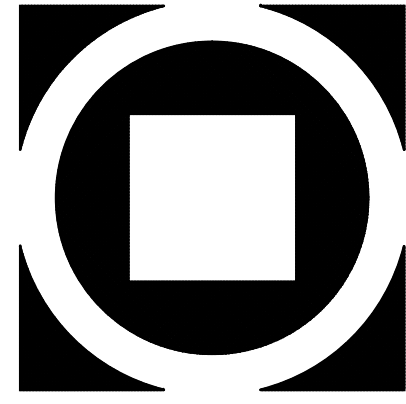
DATE: 27 APRIL 2015

FILE NO.: 15003

FIELD BOOK: 327

SHT. NO.: 6 OF 6





EXISTING NATURAL SENSITIVE RESOURCE*	MAPPED? YES/NO/N/A	TOTAL AREA (AC.)	PROTECTED AREA (AC.)
WATERBODIES	N/A		
FLOODPLAINS (FEMA)	N/A	0.47	0.26
RIPARIAN AREAS	N/A		
WETLANDS*	YES	0.04	0.04
WOODLANDS	N/A		
NATURAL DRAINAGE WAYS	N/A		
STEEP SLOPES, 15% - 25%	YES	0.04	0.02
STEEP SLOPES, OVER 25%	YES	0.03	0.02
<b>TOTAL EXISTING:</b>		<b>0.58</b>	<b>0.34</b>

\*WITHIN PROPOSED NPDES PERMIT BOUNDARY  
 \*\*0.02 ACRES OF DELINEATED WETLANDS OCCUR IN 100-YR FLOODPLAIN

**EXISTING**

- EXISTING CONTOUR MAJOR
- EXISTING CONTOUR MINOR
- W --- WATER LINE
- G --- GAS LINE
- SE --- SEWER LINE & MANHOLE
- OE --- OVERHEAD ELECTRIC
- UE --- EXISTING UTILITY POLE
- UC --- UNDERGROUND COMMUNICATIONS
- SW --- STORMWATER
- EG --- EDGE OF GRAVEL
- EP --- EDGE OF PAVEMENT
- CURB
- SIDEWALK
- CENTERLINE
- RIGHT-OF-WAY LINE
- BOUNDARY LINE AND CORNER
- ADJOINER
- FENCE
- FLOODWAY (50' FROM TOP OF BANK)
- FLOODPLAIN (100-YR, FEMA APPROXIMATE)
- WETLANDS
- EASEMENT
- STREAM
- TREE
- TREE (TBR)
- SLOPES (15%-25%)
- SLOPES (>25%)

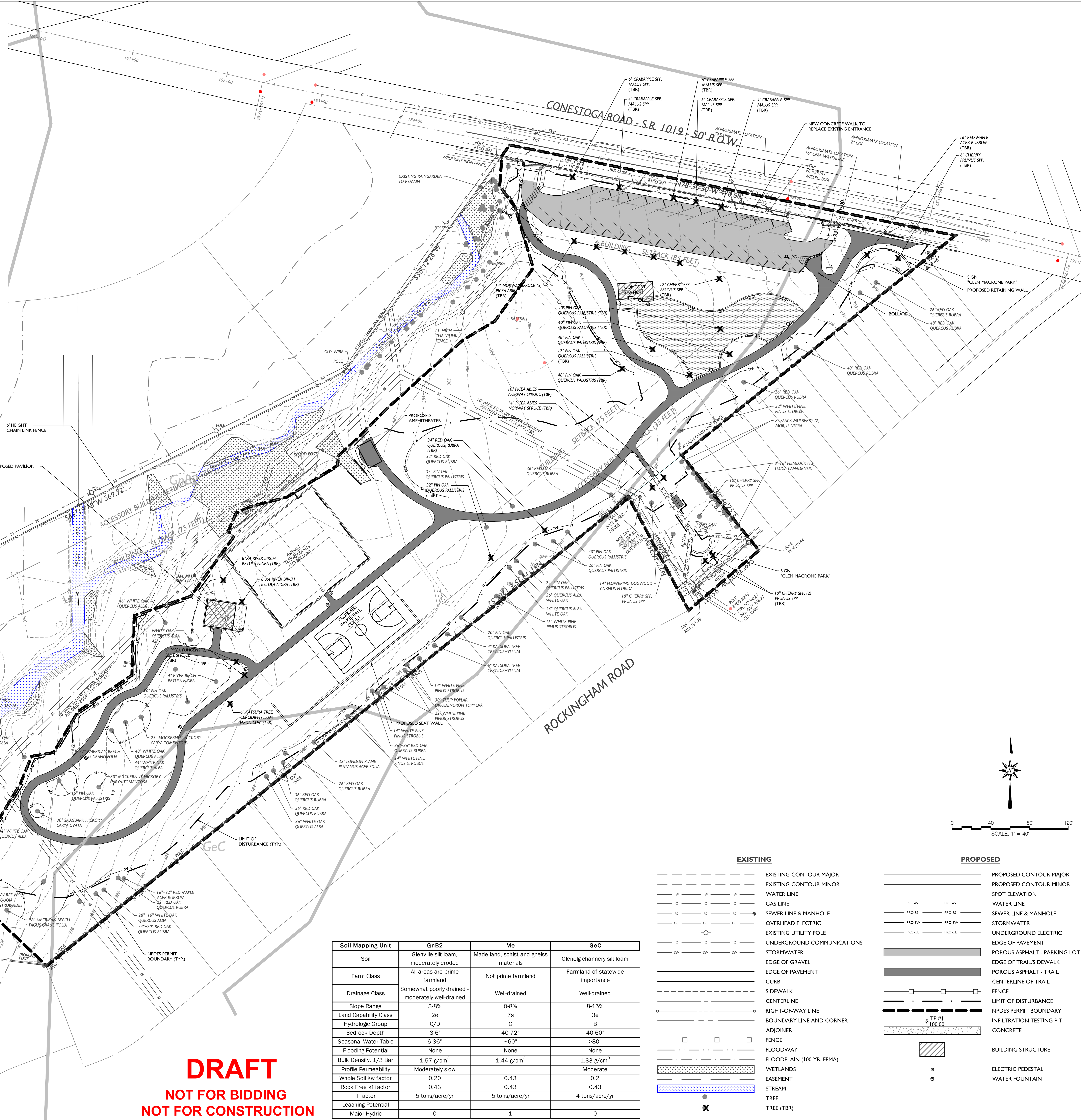
**PROPOSED**

- NPDES PERMIT BOUNDARY
- EX. FEATURE TO BE REMOVED
- TP #1 100.00 INFILTRATION TEST PIT

**DRAFT**  
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**NOT FOR CONSTRUCTION**

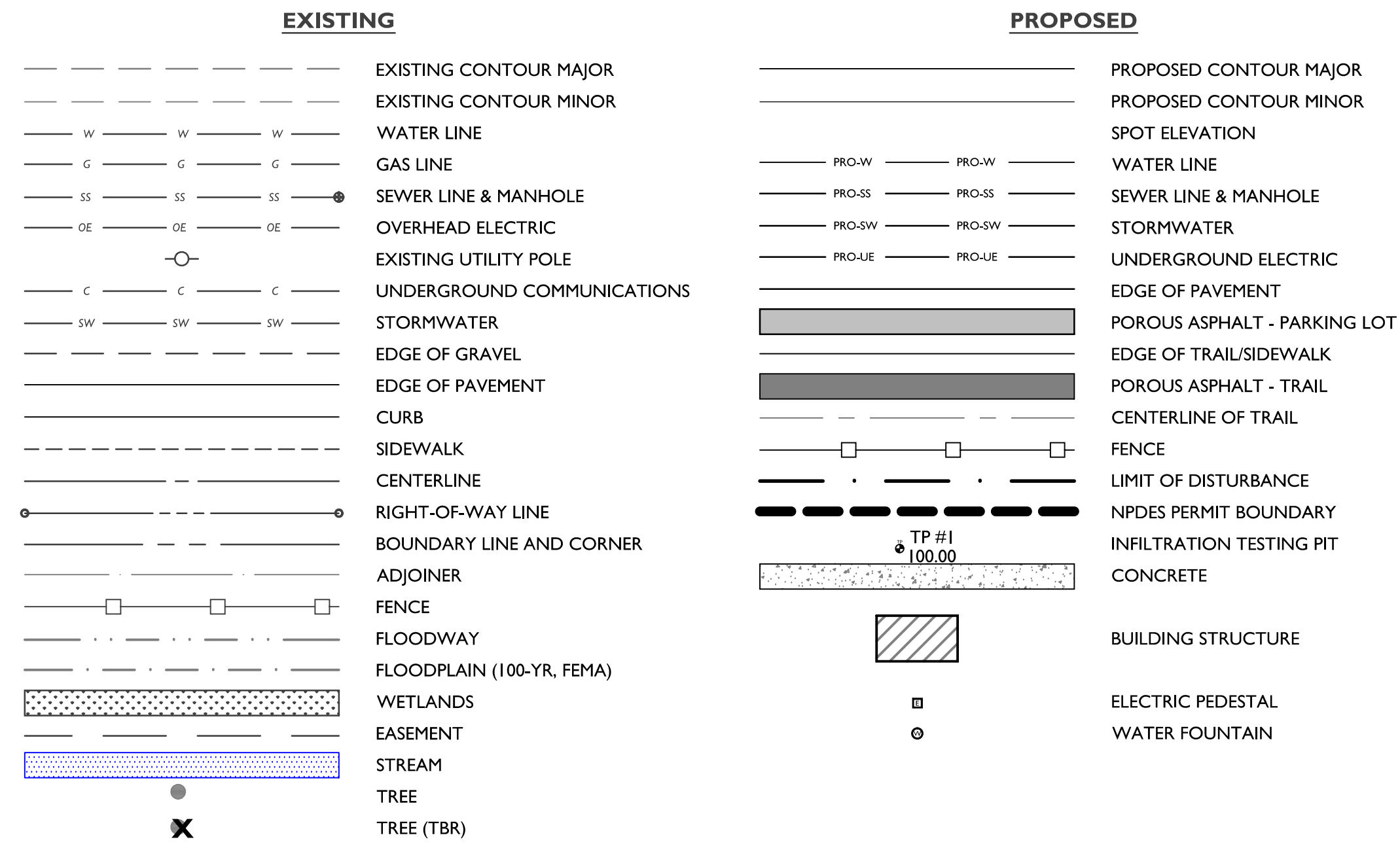


TREE REMOVAL SCHEDULE				
BOTANICAL NAME	COMMON NAME	SIZE	REQUIRED REPLACEMENT TREES	NOTES
ACER RUBRUM	RED MAPLE	16"	1	
BETULA NIGRA	RIVER BIRCH	8"x4 (32")	6	4 OF 6 TO BE CANOPY TREES
BETULA NIGRA	RIVER BIRCH	8"x4 (32")	6	4 OF 6 TO BE CANOPY TREES
CARYA TOMENTOSA	MOCKERNUT HICKORY	6"	1	
CERCIDIPHYLLUM JAPONICUM	KATERSA TREE	6"	1	
MALUS SPP.	CRAB APPLE	6"	1	
MALUS SPP.	CRAB APPLE	4"	0	
MALUS SPP.	CRAB APPLE	6"	1	
MALUS SPP.	CRAB APPLE	6"	1	
MALUS SPP.	CRAB APPLE	4"	0	
PICEA ABIES	NORWAY SPRUCE	14"	1	
PICEA ABIES	NORWAY SPRUCE	10"	1	
PICEA ABIES	NORWAY SPRUCE	14"	1	
PICEA ABIES	NORWAY SPRUCE	14"	1	
PICEA ABIES	NORWAY SPRUCE	14"	1	
PICEA ABIES	NORWAY SPRUCE	14"	1	
PICEA ABIES	NORWAY SPRUCE	14"	1	
PICEA PUNGENS	BLUE SPRUCE	6"	1	
PICEA PUNGENS	BLUE SPRUCE	6"	1	
PRUNUS SPP.	CHERRY	6"	1	
PRUNUS SPP.	CHERRY	12"	1	
PRUNUS SPP.	CHERRY	10"	1	
PRUNUS SPP.	CHERRY	10"	1	
QUERCUS PALUSTRIS	PIN OAK	48"	6	4 OF 6 TO BE CANOPY TREES
QUERCUS PALUSTRIS	PIN OAK	48"	6	4 OF 6 TO BE CANOPY TREES
QUERCUS PALUSTRIS	PIN OAK	40"	6	4 OF 6 TO BE CANOPY TREES
QUERCUS PALUSTRIS	PIN OAK	40"	6	4 OF 6 TO BE CANOPY TREES
QUERCUS PALUSTRIS	PIN OAK	32"	6	4 OF 6 TO BE CANOPY TREES
QUERCUS PALUSTRIS	PIN OAK	12"	1	
QUERCUS RUBRA	RED OAK	34"	6	4 OF 6 TO BE CANOPY TREES
<b>TOTAL REPLACEMENT TREES REQUIRED</b>			<b>68</b>	
MIN. CANOPY TREES			32	



Soil Mapping Unit	GnB2	Me	GeC
Soil	Glenville silt loam, moderately eroded	Made land, schist and gneiss materials	Glenelg channery silt loam
Farm Class	All areas are prime farmland	Not prime farmland	Farmland of statewide importance
Drainage Class	Somewhat poorly drained - moderately well-drained	Well-drained	Well-drained
Slope Range	3-8%	0-8%	8-15%
Land Capability Class	2e	7s	3e
Hydrologic Group	C/D	C	B
Bedrock Depth	3-6'	40-72"	40-60"
Seasonal Water Table	6-36'	-60"	>80"
Flooding Potential	None	None	None
Bulk Density, 1/3 Bar	1.57 g/cm <sup>3</sup>	1.44 g/cm <sup>3</sup>	1.33 g/cm <sup>3</sup>
Profile Permeability	Moderately slow	Moderate	Moderate
Whole Soil kw factor	0.20	0.43	0.2
Rock Free kf factor	0.43	0.43	0.43
T factor	5 tons/acre/yr	5 tons/acre/yr	4 tons/acre/yr
Leaching Potential			
Major Hydric	0	1	0

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**KIMMEL BOGRETTE**  
**Architecture + Site**

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ALTERATIONS AND RENOVATIONS TO  
**CLEM MACRONE PARK**  
 810 CONESTOGA ROAD  
 RADNOR TOWNSHIP - DELAWARE COUNTY

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Construction Issue Date:  
 2016.3.23  
 Drawn By: AK/MS  
 Checked By: BJ/EJK  
 Scale: 1" = 40'

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Sheet Name: SHADE TREE PLAN  
 Progress Prints:  
 Revisions:

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**L8.0**



**BIORETENTION PLANTING**

BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	SPACING	QTY	RG1	RG2	RG3
BOUTELOUA 'BLONDE AMBITION'	BLONDE AMBITION' BLUE GRAMA GRASS	PLUG DP50	12" OC	505	183	171	150	
CALTHA PALUSTRIS	MARSH MARIGOLD	QT. CONT.	12" OC	390	141	132	116	
CAREX AMPHIBOLA	CREEK SEDGE	PLUG DP50	12" OC	505	183	171	150	
CAREX APPALACHIA	APPALACHIAN SEDGE	PLUG DP50	12" OC	505	183	171	150	
CAREX EBURNEA	BRISTLELEAF SEDGE	PLUG DP50	12" OC	505	183	171	150	
CAREX PENNSYLVANICA	PENNSYLVANIA SEDGE	PLUG DP50	12" OC	505	183	171	150	
CAREX RADIATA	RADIANT SEDGE	PLUG DP50	12" OC	505	183	171	150	
CAREX STRICTA	TUSSOCK SEDGE	PLUG DP50	12" OC	505	183	171	150	
CHELONE GLABRA	TURTLEHEAD	QT. CONT.	12" OC	390	141	132	116	
IRIS VERSICOLOR	BLUEFLAG	QT. CONT.	12" OC	390	141	132	116	
JUNCUS EFFUSUS	SOFT RUSH	PLUG DP50	12" OC	505	183	171	150	
JUNCUS TENUIS	PATH RUSH	PLUG DP50	12" OC	505	183	171	150	
LOBELIA CARDINALIS	CARDINAL FLOWER	QT. CONT.	12" OC	390	141	132	116	
VERNONIA NOVEBORACENSIS	NEW YORK IRONWEED	QT. CONT.	12" OC	390	141	132	116	

\* FIELD LOCATED BASED ON EXISTING CONDITIONS

**HERBACEOUS PLANTING**

KEY BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	SPACING	QTY
AB	AMSONIA 'BLUE ICE'	DWARF BLUESTAR	PLUG DP50	24" OC	100
AH	AMSONIA HUBRICHTII	THREADLEAF BLUESTAR	PLUG DP50	24" OC	100
AT	ASCLEPIAS TUBEROSA	BUTTERFLY WEED	QT. CONT.	24" OC	136
BB	BOUTELOUA 'BLONDE AMBITION'	BLONDE AMBITION' BLUE GRAMA GRASS	QT. CONT.	24" OC	120
HE	HEUCHERA AMERICANA	ALUMROOT	QT. CONT.	24" OC	42
HV	HEUCHERA VILLOSA 'AUTUMN BRIDE'	AUTUMN BRIDE HEUCHERA	PLUG DP50	24" OC	200

**FLOWERING BULB PLANTING**

BOTANICAL NAME	COMMON NAME	CONDITION	SPACING	QTY
ALLIUM SPP.	ORNAMENTAL ONION	BULB	12" OC	1100
NARCISSUS SPP.	DAFFODIL	BULB	12" OC	1100
TULIPA SPP.	TULIP	BULB	12" OC	1100

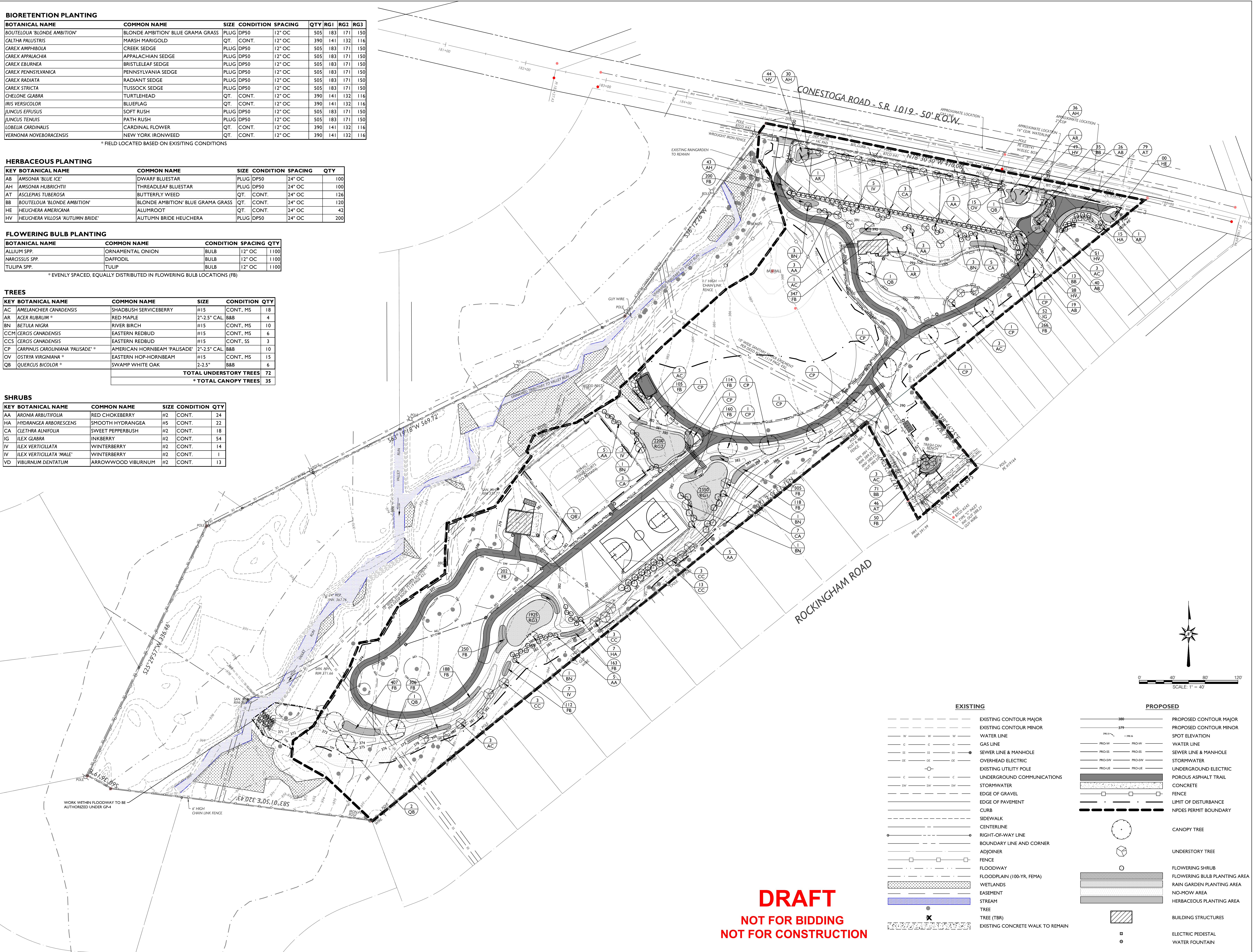
\* EVENLY SPACED, EQUALLY DISTRIBUTED IN FLOWERING BULB LOCATIONS (FB)

**TREES**

KEY BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	QTY
AC	AMELANCHIER CANADENSIS	SHADBUSH SERVICEBERRY	#15 CONT. MS	18
AR	ACER RUBRUM *	RED MAPLE	2"-2.5" CAL. B&B	4
BN	BETULA NIGRA	RIVER BIRCH	#15 CONT. MS	10
CCM	CERCIS CANADENSIS	EASTERN REDBUD	#15 CONT. MS	6
CCS	CERCIS CANADENSIS	EASTERN REDBUD	#15 CONT. SS	3
CP	CARPINUS CAROLINIANA 'PALISADE' *	AMERICAN HORNBEAM 'PALISADE'	2"-2.5" CAL. B&B	10
OV	Ostrya virginiana *	EASTERN HOP-HORNBEAM	#15 CONT. MS	15
QB	QUERCUS BICOLOR *	SWAMP WHITE OAK	2-2.5" B&B	6
<b>TOTAL UNDERSTORY TREES</b>				<b>72</b>
<b>* TOTAL CANOPY TREES</b>				<b>35</b>

**SHRUBS**

KEY BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	QTY
AA	ARONIA ARBUTIFOLIA	RED CHOKEBERRY	#2 CONT.	24
HA	HYDRANGEA ARBORESCENS	SMOOTH HYDRANGEA	#5 CONT.	22
CA	CLETHRA ALNIFOLIA	SWEET PEPPERBUSH	#2 CONT.	18
IG	ILEX GLABRA	INKBERRY	#2 CONT.	54
IV	ILEX VERTICILLATA	WINTERBERRY	#2 CONT.	14
IV	ILEX VERTICILLATA 'MALE'	WINTERBERRY	#2 CONT.	1
VD	VIBURNUM DENTATUM	ARROWWOOD VIBURNUM	#2 CONT.	13



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EXISTING		PROPOSED	
---	EXISTING CONTOUR MAJOR	---	PROPOSED CONTOUR MAJOR
---	EXISTING CONTOUR MINOR	---	PROPOSED CONTOUR MINOR
---	WATER LINE	---	SPOT ELEVATION
---	GAS LINE	---	WATER LINE
---	SEWER LINE & MANHOLE	---	SEWER LINE & MANHOLE
---	OVERHEAD ELECTRIC	---	STORMWATER
---	EXISTING UTILITY POLE	---	UNDERGROUND ELECTRIC
---	UNDERGROUND COMMUNICATIONS	---	POROUS ASPHALT TRAIL
---	STORMWATER	---	CONCRETE
---	EDGE OF GRAVEL	---	FENCE
---	EDGE OF PAVEMENT	---	LIMIT OF DISTURBANCE
---	CURB	---	NPDES PERMIT BOUNDARY
---	SIDEWALK	---	CANOPY TREE
---	CENTERLINE	---	UNDERSTORY TREE
---	RIGHT-OF-WAY LINE	---	FLOWERING SHRUB
---	BOUNDARY LINE AND CORNER	---	FLOWERING BULB PLANTING AREA
---	ADJOINER	---	RAIN GARDEN PLANTING AREA
---	FENCE	---	NO-MOW AREA
---	FLOODWAY	---	HERBACEOUS PLANTING AREA
---	FLOODPLAIN (100-YR. FEMA)	---	BUILDING STRUCTURES
---	EASEMENT	---	ELECTRIC PEDESTAL
---	STREAM	---	WATER FOUNTAIN
---	TREE	---	
---	TREE (T&R)	---	
---	EXISTING CONCRETE WALK TO REMAIN	---	

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**Land Studies**

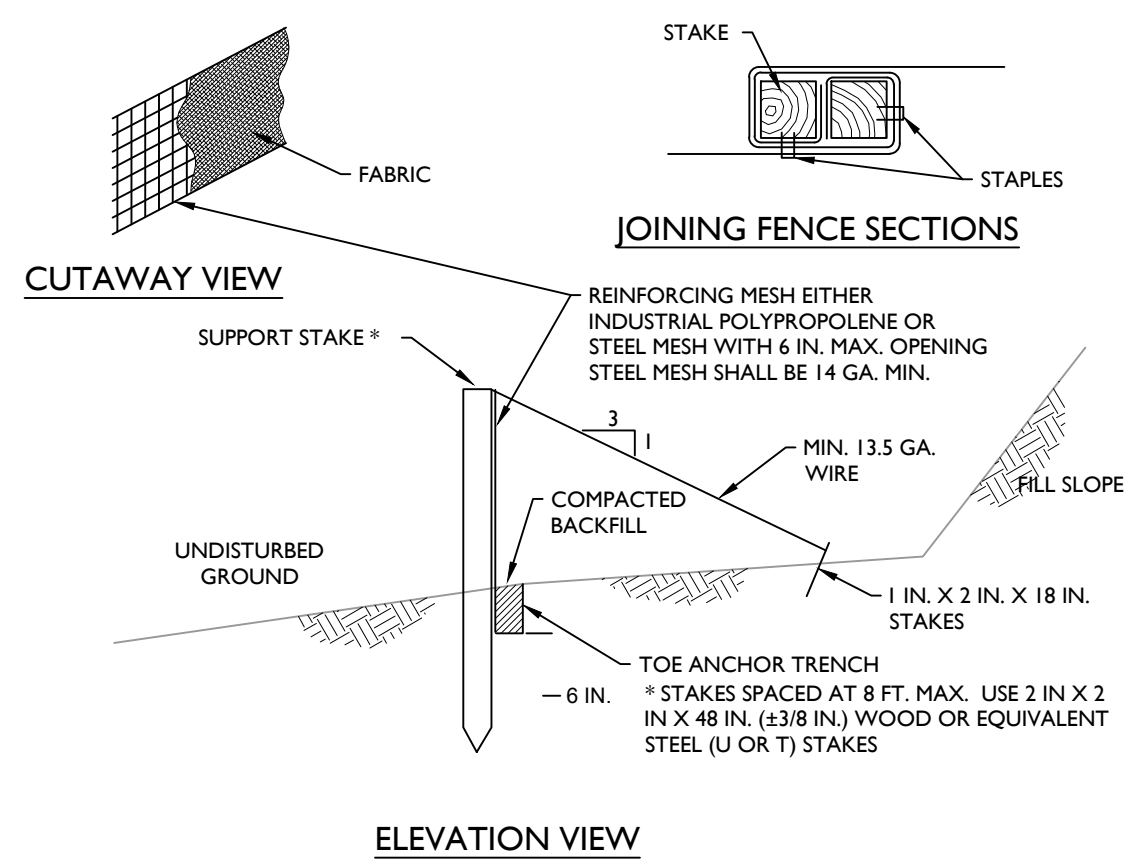
ALTERATIONS AND RENOVATIONS TO  
**CLEM MACRONE PARK**  
 810 CONESTOGA ROAD  
 RADNOR TOWNSHIP - DELAWARE COUNTY

Construction Issue Date: 2016.3.23  
 Drawn By: AK/MS  
 Checked By: BJ/EKG  
 Scale: 1" = 40'

Sheet Name: LANDSCAPE PLAN  
 Progress Prints: Revisions:

**L9.0**

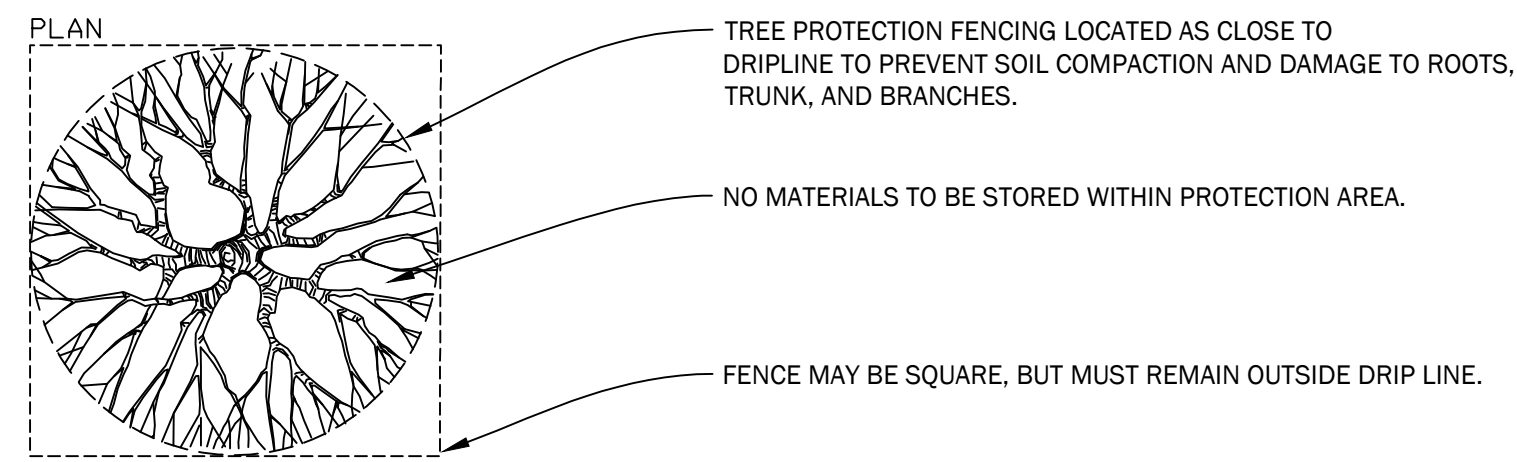
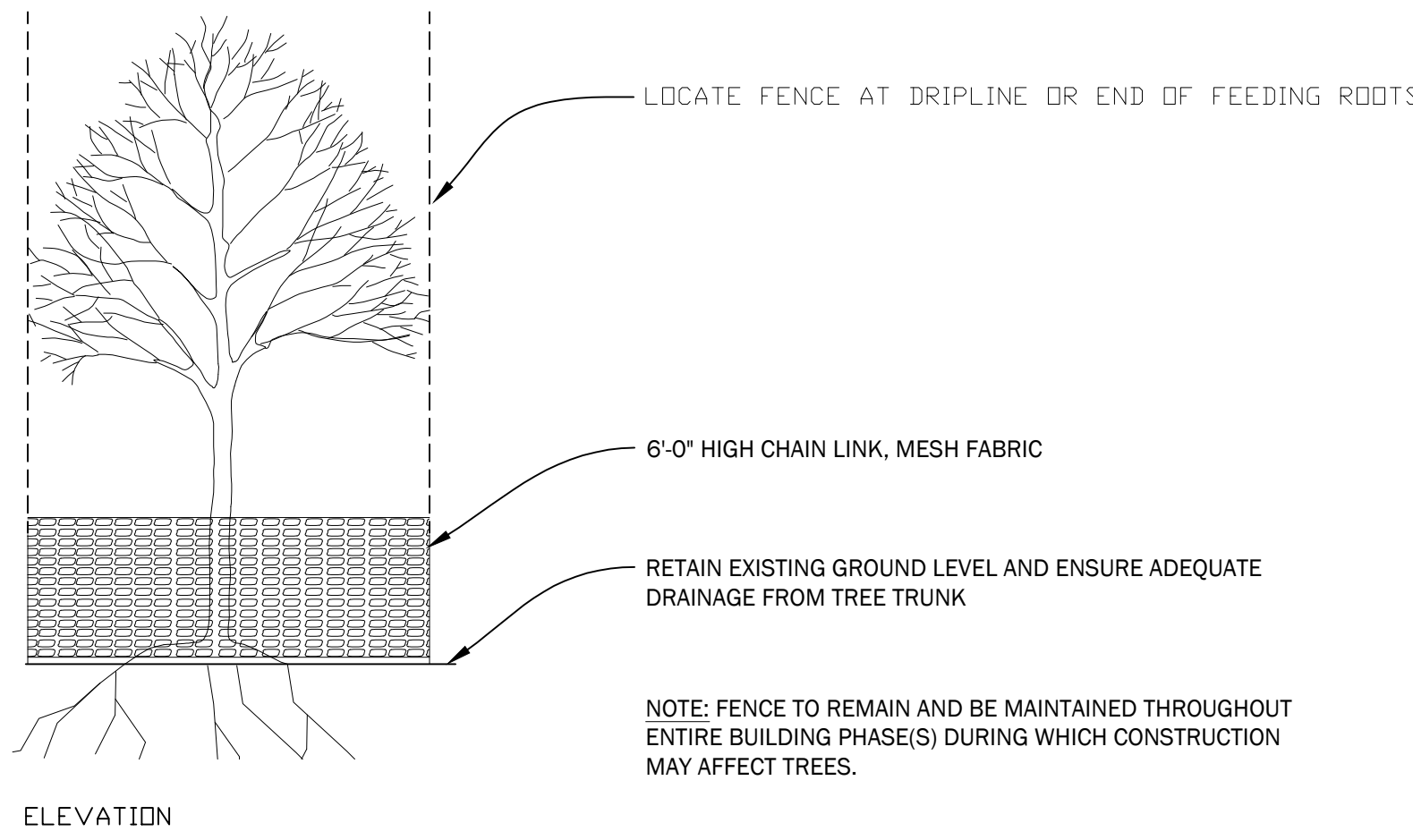




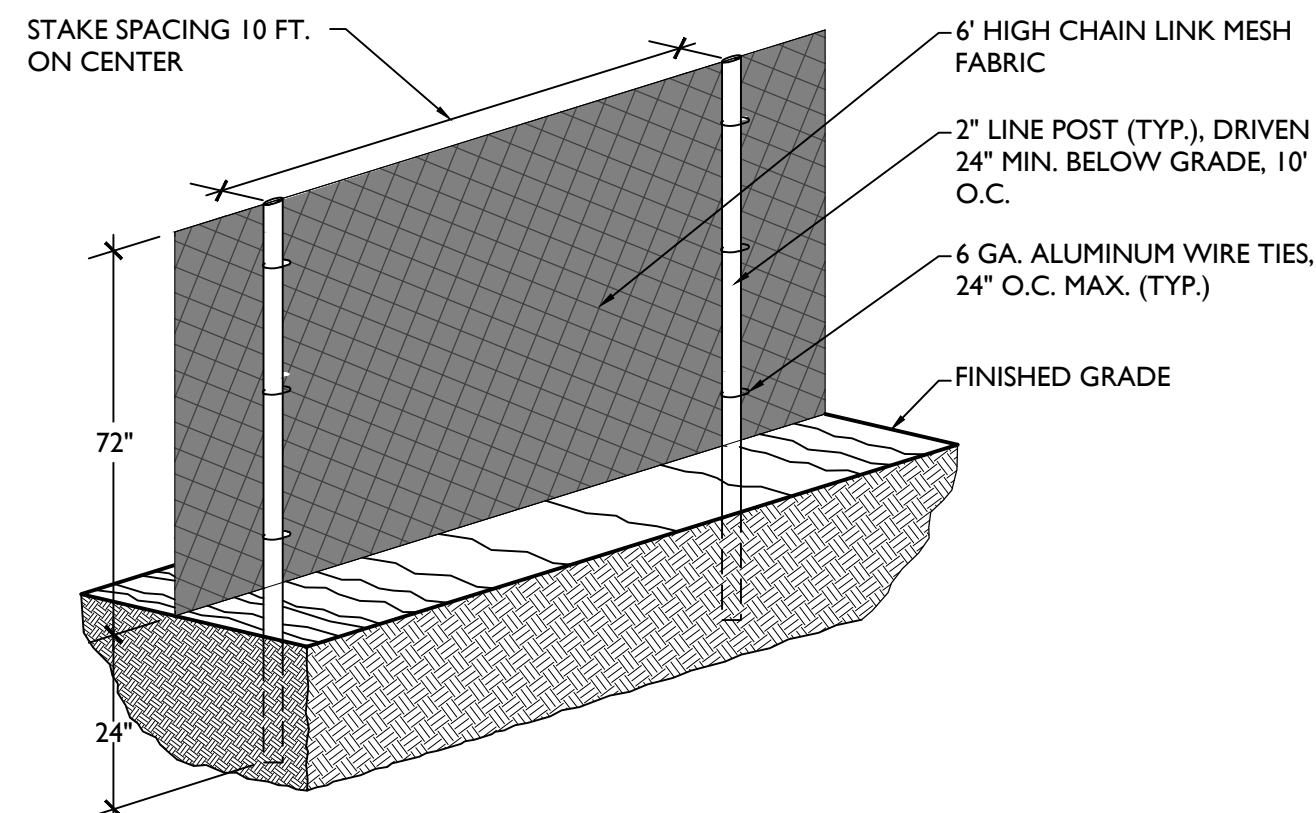
**NOTES:**  
 FABRIC SHALL HAVE THE MINIMUM PROPERTIES AS SHOWN IN TABLE 4.3 OF THE PA DEP EROSION CONTROL MANUAL.  
 FABRIC WIDTH SHALL BE 42 IN. MINIMUM. STAKES SHALL BE HARDWOOD OR EQUIVALENT STEEL (U OR T) STAKES. AN 18 IN. SUPPORT STAKE SHALL BE DRIVEN 12 IN. MINIMUM INTO UNDISTURBED GROUND.  
 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.

FENCE NO.	LOCATION	SLOPE PERCENT	SLOPE LENGTH ABOVE BARRIER (FT)
RSF-1	WEST OF PARKING AREA	2.67%	300'
RSF-2	SOUTH OF RSF-1	2.76%	271'
RSF-3	EAST OF BALLFIELD	3.00%	351'
RSF-4	BELOW TOPSOIL STOCKPILE	2.48%	242'
RSF-5	WEST OF RSF-4	4.00%	50'
RSF-6	SOUTH OF TENNIS COURTS AND NEW PAVILLION	3.11%	160.5'
RSF-7	SOUTHWEST OF NEW PAVILLION	3.21%	342'
RSF-8	SOUTH OF RSF-5	3.84%	265.5'
RSF-9	SOUTHWEST OF RSF-6	5.74%	184'

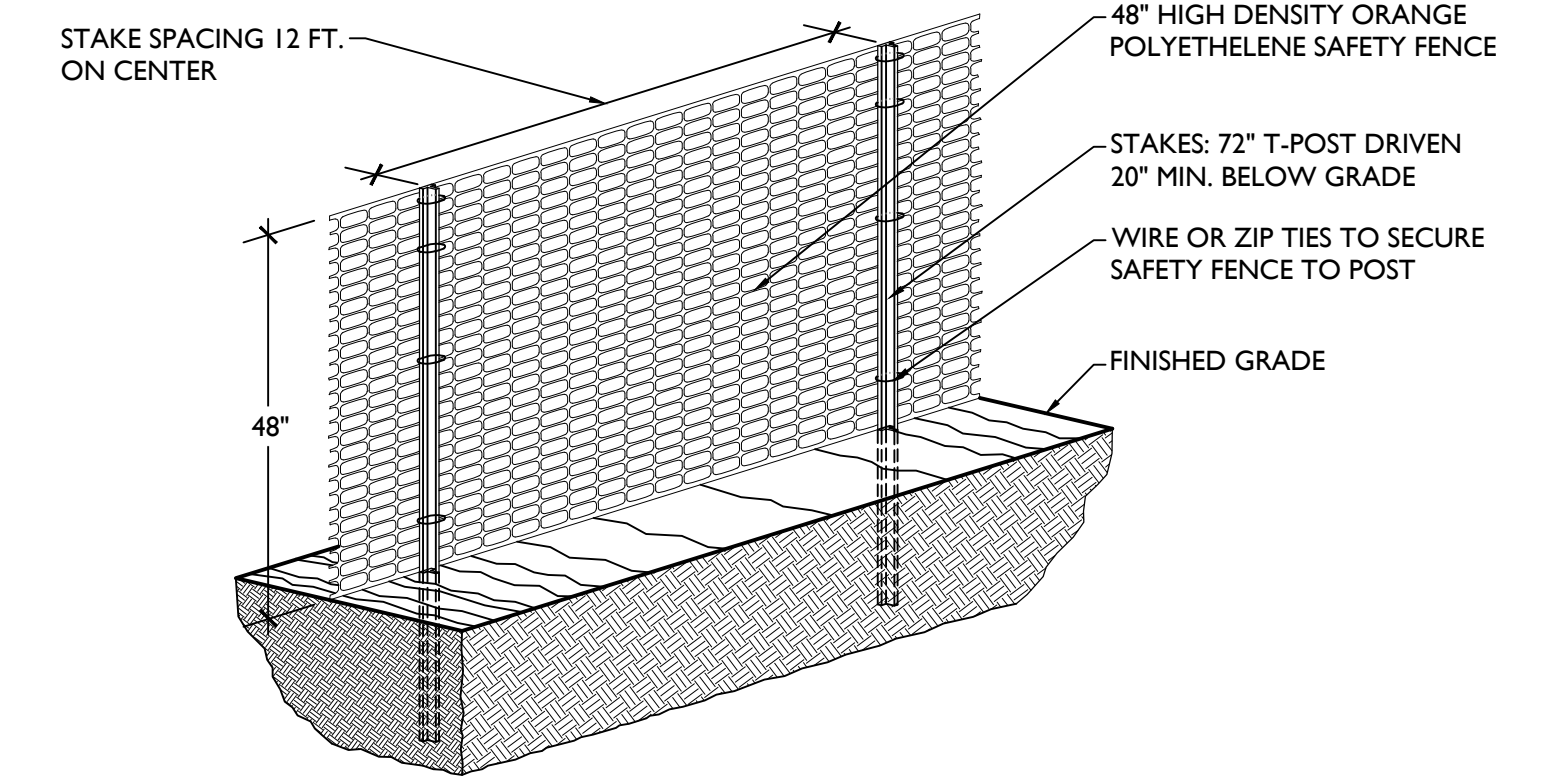
**E-1 C11.0** STANDARD CONSTRUCTION DETAIL #4-8 REINFORCED SILT FENCE (30" HIGH) NOT TO SCALE



**E-2 C11.0** TREE PROTECTION FENCING NOT TO SCALE

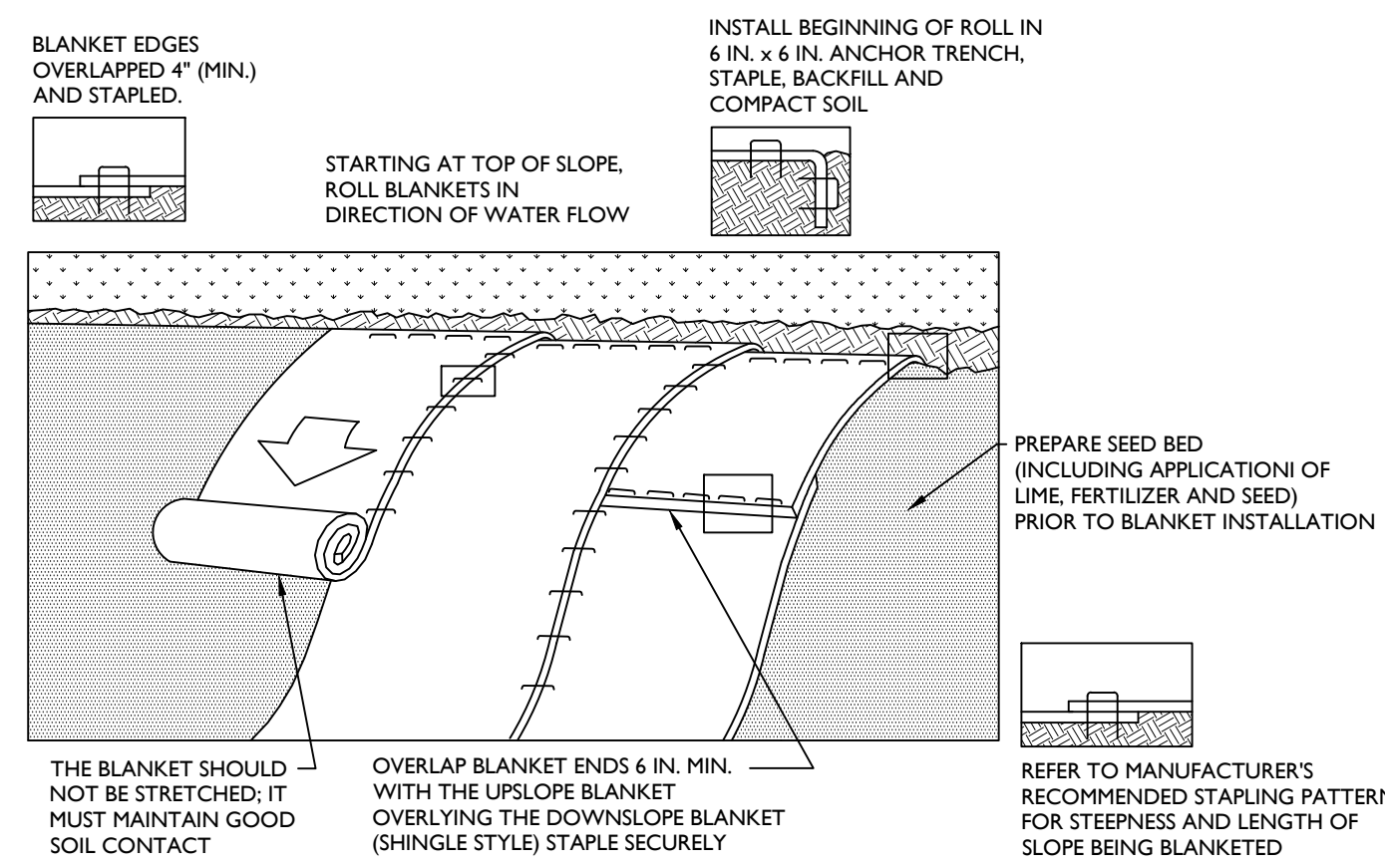


**NOTES:**  
 1. ALL WOODY VEGETATION TO BE RETAINED WITHIN 25 FEET OF A BUILDING SITE, PARKING AREA, DRIVEWAY OR OTHER PROPOSED IMPROVEMENT SHALL BE PROTECTED FROM EQUIPMENT DAMAGE BY FENCING OR OTHER EFFECTIVE BARRIERS APPROVED BY THE TOWNSHIP ENGINEER AND/OR ARBORIST. FENCING OR BARRIERS SHALL BE PLACED AS MUCH AS IS PRACTICAL AT THE DRIPLINE. LOCATION AND IMPROVEMENTS AS SHOWN ON THE PLANS. BARRIER LOCATION SHALL BE SUBJECT TO APPROVAL BY THE TOWNSHIP ENGINEER AND/OR ARBORIST.  
 2. PROTECTION BARRIERS SHALL BE 6 FEET HIGH, CONSTRUCTED OF 2" CHAIN LINK MESH FABRIC.  
 3. FABRIC SHALL BE SECURED TO 2" POSTS WITH 6 GA. ALUMINUM WIRE TIES AT 24" O.C.  
 4. POST SHALL BE A MINIMUM OF 2 FEET IN THE GROUND AND SPACED 10 FEET ON CENTER MAX.  
 5. PLASTIC ZIP-TIES MAY NOT BE USED TO SECURE FABRIC TO POSTS.



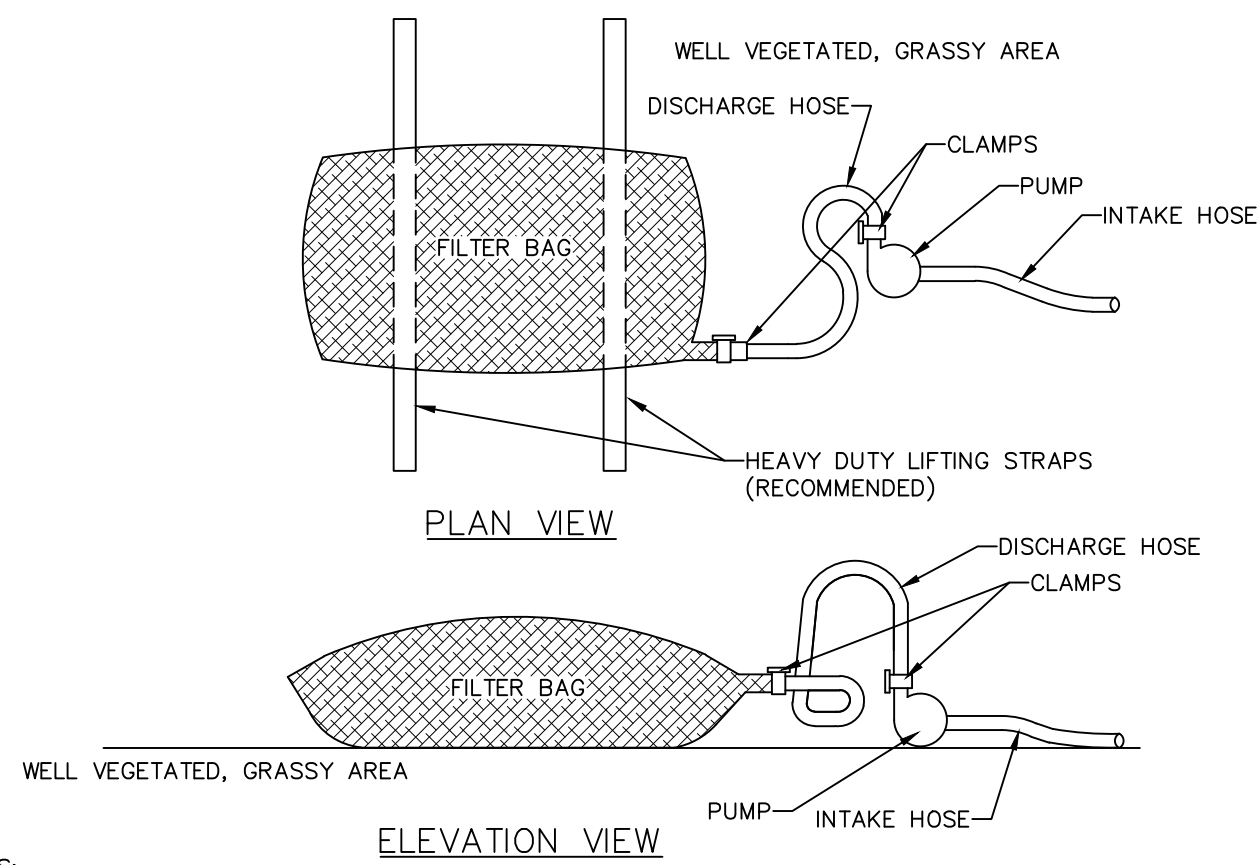
**NOTES:**  
 1. FENCING SHALL BE FASTENED SECURELY TO THE T-POSTS.  
 2. FENCING MUST REMAIN IN PLACE DURING ALL PHASES OF CONSTRUCTION. ANY CHANGE TO THE LOCATION OF THE FENCING MUST BE APPROVED.  
 3. TEMPORARY GATES MAY BE UTILIZED TO ALLOW ACCESS TO CONSTRUCTION EQUIPMENT, BUT MUST BE CLOSED WHEN NOT IN USE.

**E-3 C11.0** CONSTRUCTION/SAFETY FENCE NOT TO SCALE



**NOTES:**  
 SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET.  
 PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.  
 SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.  
 BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.  
 THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.  
 BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 75% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.

**E-4 C11.0** STANDARD CONSTRUCTION DETAIL #11-1 EROSION CONTROL BLANKET INSTALLATION NOT TO SCALE



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

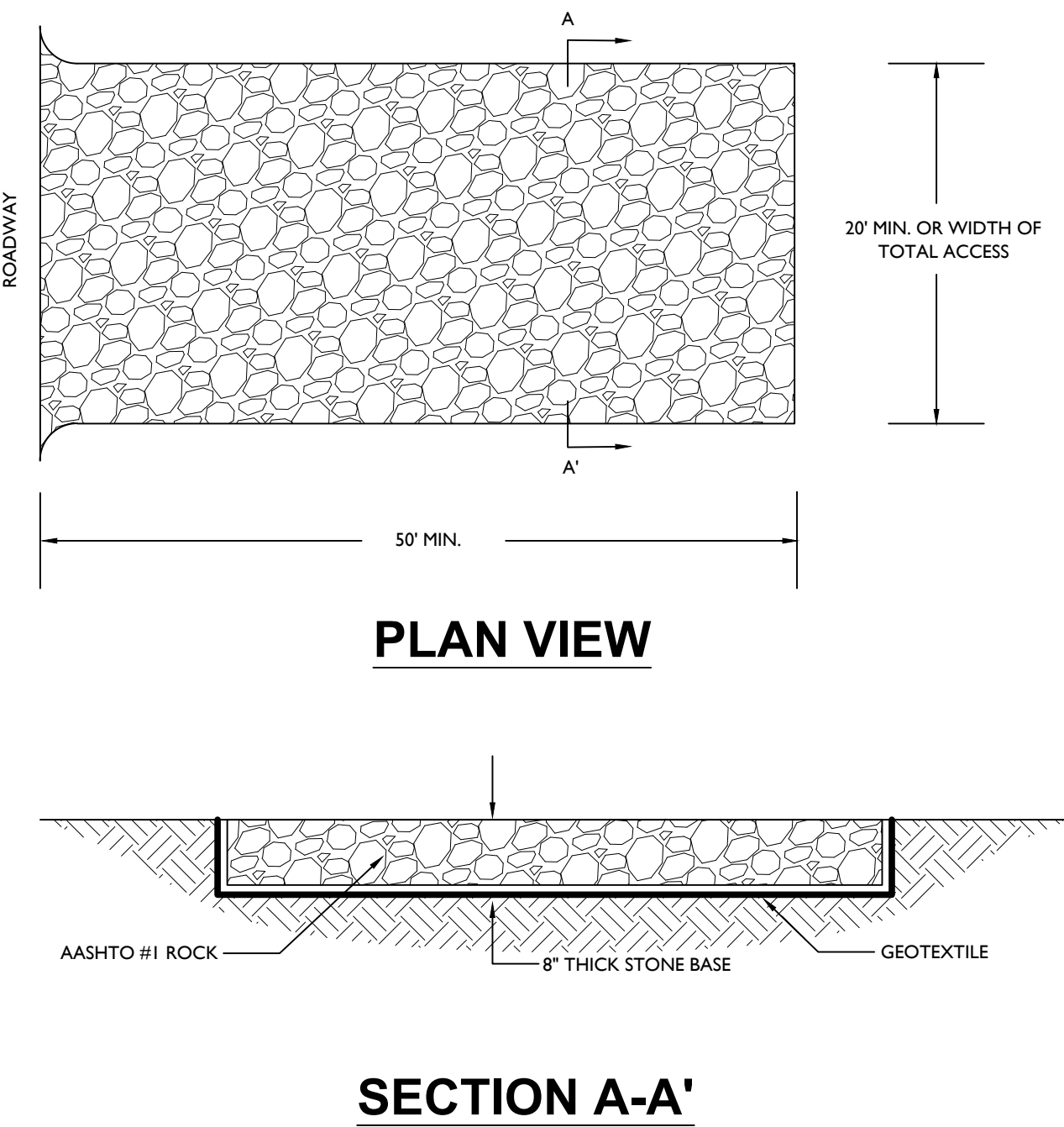
PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D-4884	60 LB/IN
GRAB TENSILE	ASTM D-4632	205 LB
PUNCTURE	ASTM D-4833	110 LB
MULLEN BURST	ASTM D-3786	350 PSI
UV RESISTANCE	ASTM D-4355	70%
LOSS % RETAINED	ASTM D-4791	80% SIEVE

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL, UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.  
 BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5% FOR SLOPES EXCEEDING 5%. CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN 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.

**E-5 C12.0** STANDARD CONSTRUCTION DETAIL #3-16 PUMPED WATER FILTER BAG NOT TO SCALE

TEMPORARY STABILIZATION SEED MIX				
%	Botanical Name	Common Name	Seeding window	Application Rate
75	<i>Stachys crinita</i>	Conical Top	Sept. 1 - Oct. 16	40 lbs./Acre
25	<i>Lolium multiflorum</i>	Annual Ryegrass		
		OR		
75	<i>Avena sativa</i>	Oats	May 1 - Sept. 15	40 lbs./Acre
25	<i>Lolium multiflorum</i>	Annual Ryegrass		



**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. AT THE END OF EACH CONSTRUCTION DAY, ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE.

**E-6 C11.0** STANDARD CONSTRUCTION DETAIL #3-1 ROCK CONSTRUCTION ENTRANCE NOT TO SCALE

**DRAFT**  
 NOT FOR BIDDING  
 NOT FOR CONSTRUCTION

PA 042324

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ALTERATIONS AND RENOVATIONS TO  
**CLEM MACRONE PARK**  
 810 CONESTOGA ROAD  
 RADNOR TOWNSHIP - DELAWARE COUNTY

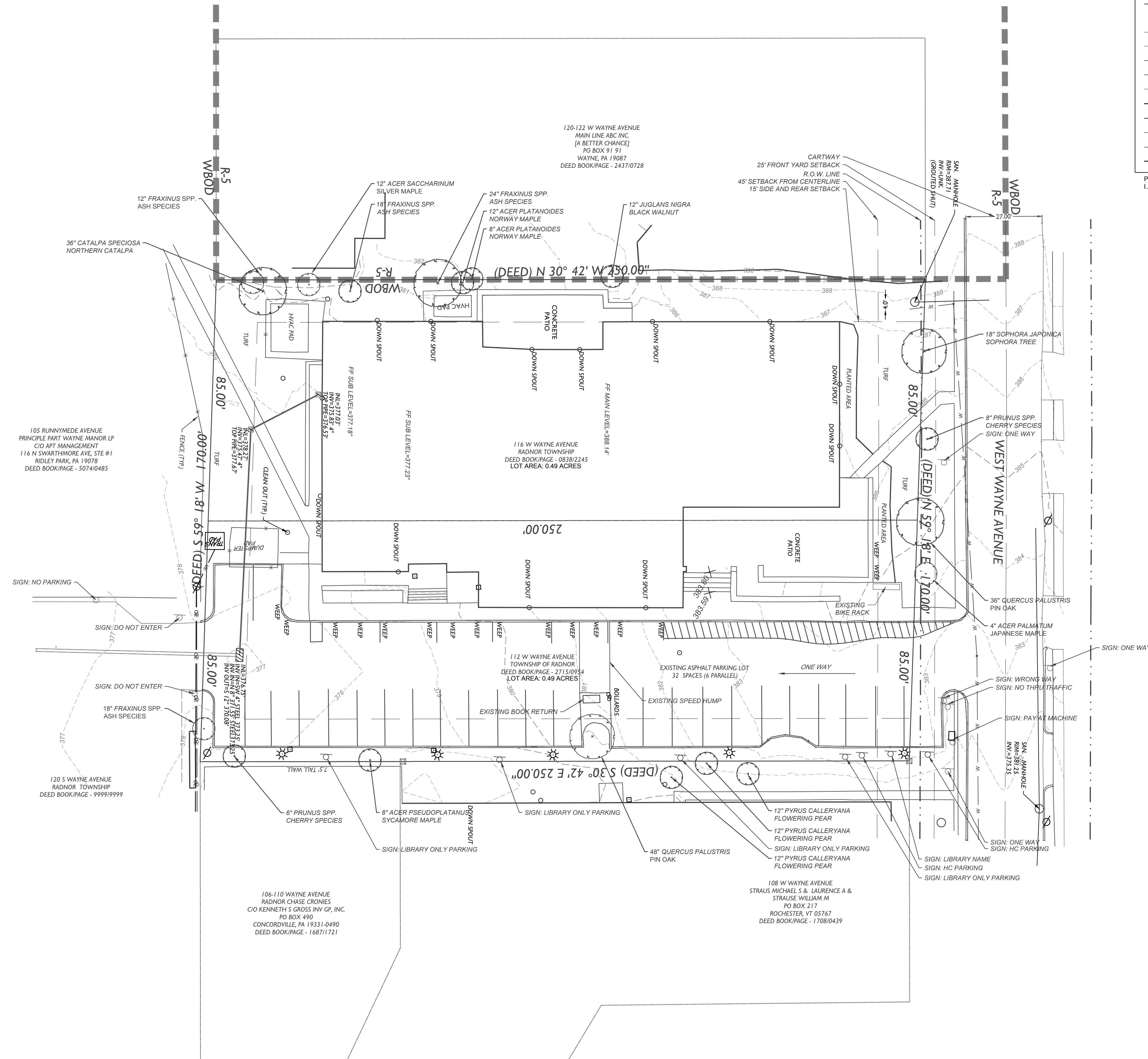
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 Drawn By: AK/MS  
 Checked By: BJ/EKG  
 Scale: AS NOTED

Sheet Name:	Progress Prints:	Revisions:
EROSION AND SEDIMENT CONTROL DETAILS		

**C12.0**



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 EMAIL: SNORCINI@RADNOR.ORG

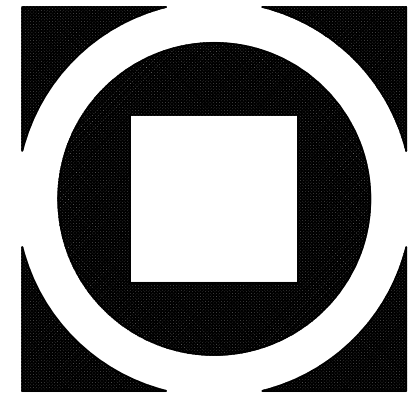


**LEGEND**

	EXISTING CONTOUR MAJOR
	EXISTING CONTOUR MINOR
	EXISTING WATER LINE
	EXISTING GAS LINE
	EXISTING SEWER LINE & MANHOLE
	EXISTING OVERHEAD ELECTRIC
	EXISTING UNDERGROUND ELECTRIC
	EXISTING COMMUNICATIONS
	EXISTING UTILITY POLE
	EXISTING STORMWATER
	EXISTING EDGE OF PAVEMENT
	EXISTING CURB
	EXISTING SIDEWALK
	CENTERLINE ROAD
	RIGHT-OF-WAY LINE
	PROPERTY LINE
	ADJOINER
	EXISTING FENCE
	EASEMENT

PLAN NOTES:  
 1. SOIL TYPES PRESENT ON THE SITE, PER THE SOIL SURVEY OF DELAWARE COUNTY, PENNSYLVANIA, AS FOLLOWS:

SYMBOL	NAME	SLOPE	HYDRO GROUP
Mg	MADE LAND, GABBRIO AND DIABASE MATERIALS	0-8%	C



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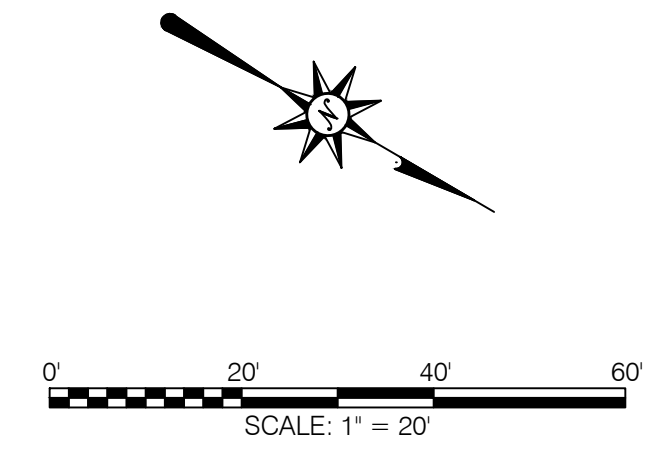
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Progress Prints:	Revisions:	TWP COMMENTS

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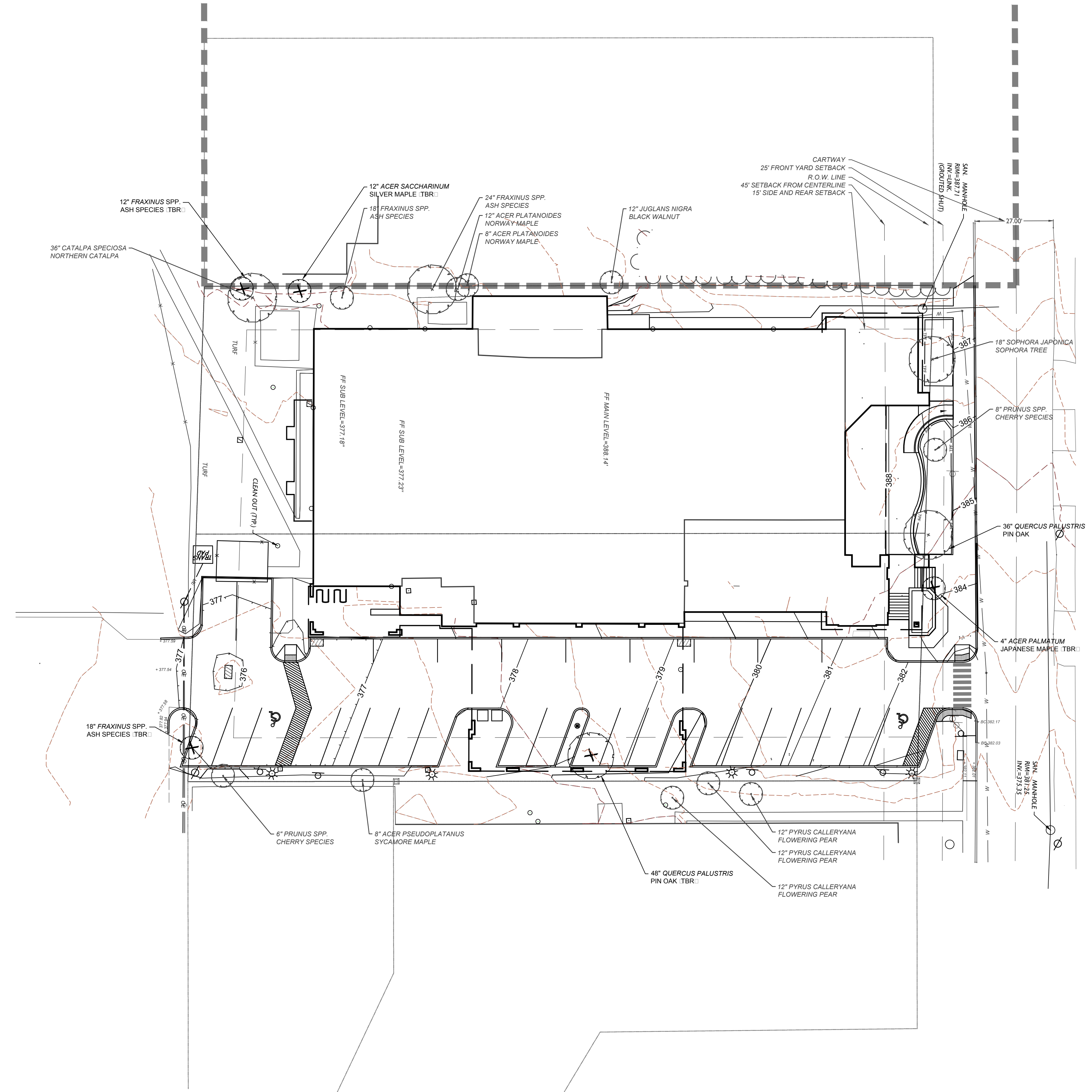




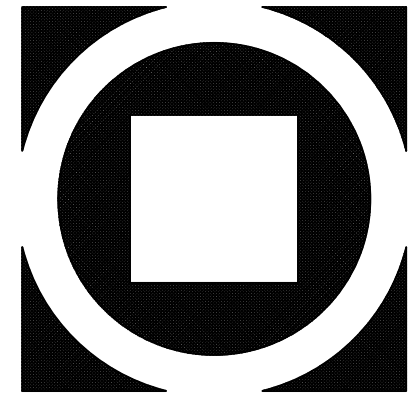
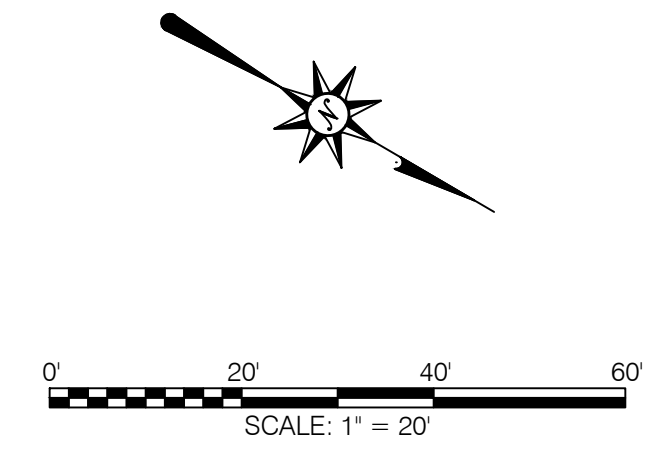
TREE REMOVAL SCHEDULE				
BOTANICAL NAME	COMMON NAME	SIZE (DBH)	REQ'D REPLACEMENT TREES	NOTES
ACER PALMATUM	JAPANESE MAPLE	4"	0	
ACER SACCHARINUM	SILVER MAPLE	12"	1	
FRAXINUS SPP.	ASH SPECIES	12"	1	
FRAXINUS SPP.	ASH SPECIES	18"	1	
QUERCUS PALUSTRIS	PIN OAK	48"	6	4 OF 6 TO BE CANOPY TREES
<b>TOTAL REQ'D REPLACEMENT TREES</b>			<b>9</b>	
MIN. REQ'D CANOPY TREES			4	

**LEGEND**

	EXISTING CONTOUR MAJOR
	EXISTING CONTOUR MINOR
	EXISTING WATER LINE
	EXISTING GAS LINE
	EXISTING SEWER LINE & MANHOLE
	EXISTING OVERHEAD ELECTRIC
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1	2.15.16	TWP COMMENTS

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 OF 14



**PLANT SCHEDULE - SHADE MIX**

KEY	BOTANICAL NAME	COMMON NAME	QTY	SIZE	CONDITION	SPACING	SM 1	SM 2	SM 3	SM 4	SM 5	SM 6	
VA	<i>VIOLA AFFINIS</i>	SAND VIOLET	100	PLUG	CONTAINER	18"		17	23	20		17	23
VC	<i>VIOLA CANADENSIS</i>	CANADIAN WHITE VIOLET	100	PLUG	CONTAINER	18"		18	26	21	10		26
VS	<i>VIOLA SAGITTATA</i>	ARROWLEAF VIOLET	100	PLUG	CONTAINER	18"		18	26	21	10		26
ED	<i>ASTER DIVARICATA</i>	WHITE WOOD ASTER	67	QUART	CONTAINER	18"		12	17	13	4	4	17
HA	<i>HEUCHERA AMERICANA 'DALE STRAIN'</i>	AMERICAN ALUMROOT	46	QUART	CONTAINER	18"		6	15	10		3	12
HL	<i>HEUCHERA LONGIFLORA</i>	LONGFLOWER ALUMROOT	47	QUART	CONTAINER	18"		6	9	13	5	2	12
HM	<i>HEUCHERA MACROPHYLLA 'AUTUMN BRIDE'</i>	HAIRY ALUMROOT	25	QUART	CONTAINER	18"		6		7		5	7
HT	<i>HEUCHERA 'TIRAMISU'</i>	CORAL BELLS	12	QUART	CONTAINER	18"			9	0	3		
TO	<i>TIARELLA CORDIFOLIA</i>	FOAMFLOWER	45	QUART	CONTAINER	18"		12	9	10	2		12
PA	<i>POLYSTICHUM ACROSTICHOIDES</i>	CHRISTMAS FERN	30	QUART	CONTAINER	36"		4	6	9	4		7
OC	<i>OSMUNDASTRUM CINNAMOMEUM</i>	CINNAMON FERN	27	QUART	CONTAINER	36"		4	5	7		4	7
OS	<i>ONOCLEA SENSIBILIS</i>	SENSITIVE FERN	21	QUART	CONTAINER	36"		4	7	5			5
							107	151	135	38	35	154	

**PLANT SCHEDULE - GROUNDCOVER & SEASONAL FLOWERS**

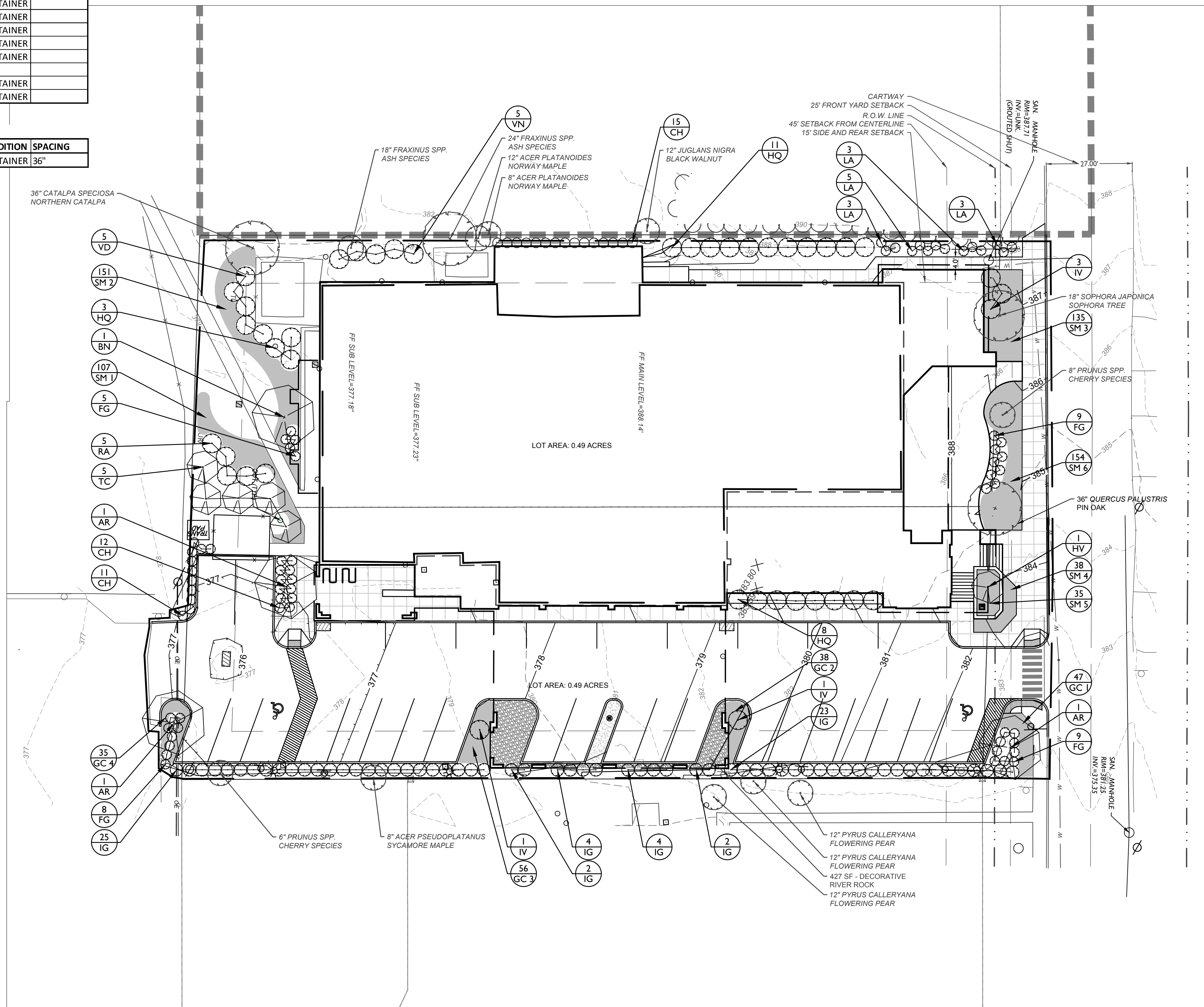
KEY	BOTANICAL NAME	COMMON NAME	QTY	SIZE	CONDITION	SPACING	GC 1	GC 2	GC 3	GC 4	
CP	<i>CAREX PENNSYLVANICA</i>	PENNSYLVANIA SEDGE	58	QUART	CONTAINER	18"		16	13	18	12
		SPRING FLOWERING BULBS	44					12	10	14	9
EP	<i>ECHINACEA PURPUREA</i>	PURPLE CONEFLOWER	29	QUART	CONTAINER	18"		8	5	12	4
EA	<i>ECHINACEA PARADOXA</i>	YELLOW CONEFLOWER	24	QUART	CONTAINER	18"		5	6	6	7
RL	<i>RUDBECKIA MAXIMA</i>	GREAT CONEFLOWER	21	QUART	CONTAINER	18"		7	5	6	3
							47	38	56	35	

**PLANT SCHEDULE - TREES AND SHRUBS**

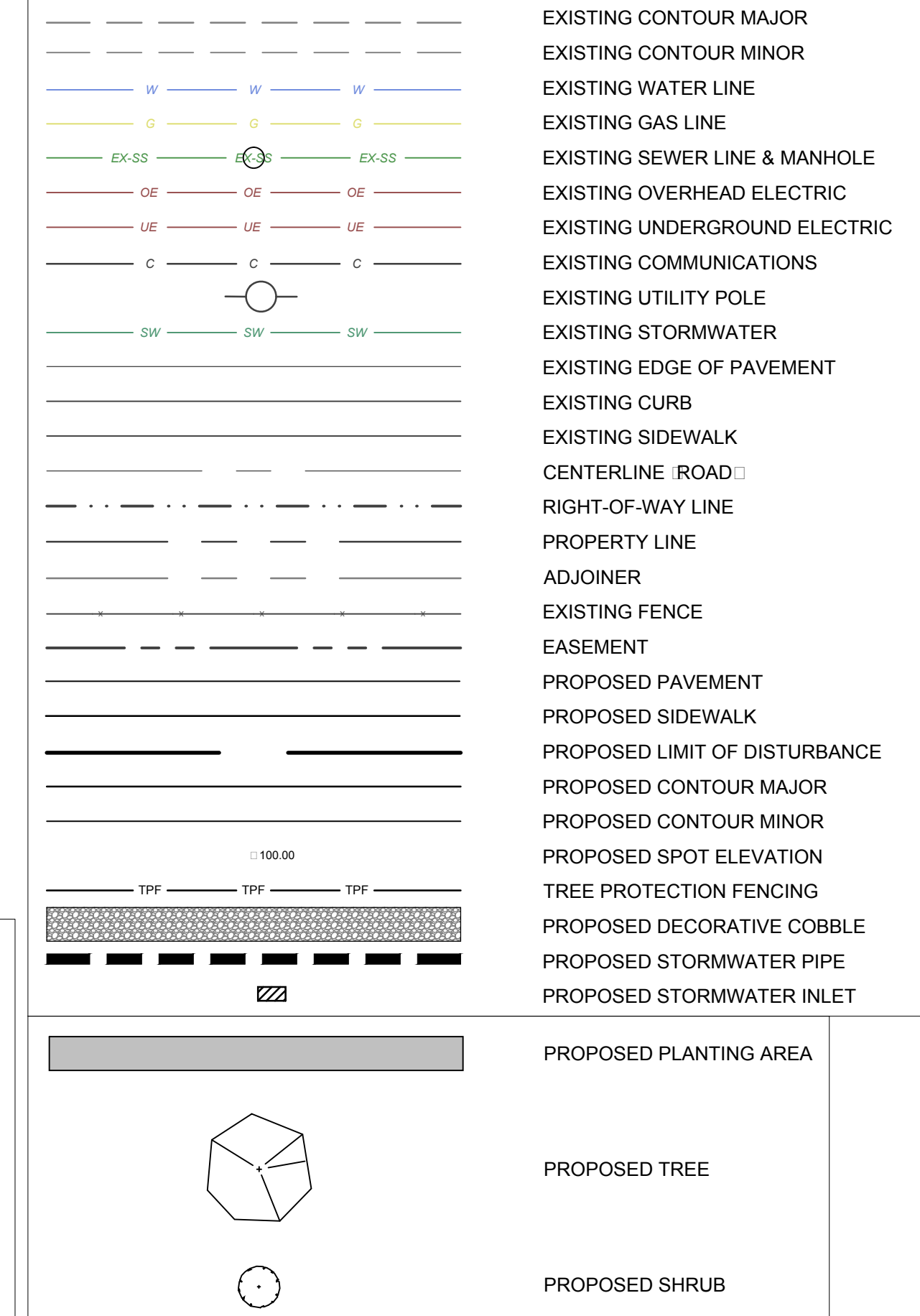
KEY	BOTANICAL NAME	COMMON NAME	QTY	SIZE	CONDITION	NOTES
AR	<i>ACER RUBRUM</i>	RED MAPLE	3	2-2.5"	B&B	
BN	<i>BETULA NIGRA</i>	RIVER BIRCH	1	2-2.5"	B&B	MULTI-STEM
FG	<i>FOTHERGILLA GARDENII</i>	DWARF FOTHERGILLA	31	QUART	CONTAINER	
HV	<i>HAMAMELIS VIRGINIANA</i>	WITCHHAZEL	1	#7	CONTAINER	
HQ	<i>HYDRANGEA QUERCIFOLIA</i>	OAKLEAF HYDRANGEA	22	#3	CONTAINER	
IG	<i>ILEX GLABRA</i>	INKBERRY	60	#3	CONTAINER	
IV	<i>ILEX VERTICILLATA</i>	WINTERBERRY	5	#3	CONTAINER	
LA	<i>LEUCOTHOE AXILLARIS</i>	LEUCOTHOE	14	#3	CONTAINER	
RA	<i>RHODODENDRON ARBORESCENS</i>	SMOOTH AZALEA	5	#3	CONTAINER	
TC	<i>TSUGA CANADENSIS</i>	CANADIAN HEMLOCK	5	6-8"	B&B	
VD	<i>VIBURNUM DENTATUM</i>	ARROWWOOD VIBURNUM	5	#3	CONTAINER	
VN	<i>VIBURNUM NUDENS</i>	POSSUMHAW VIBURNUM	5	#3	CONTAINER	

**PLANT SCHEDULE - SCREENING**

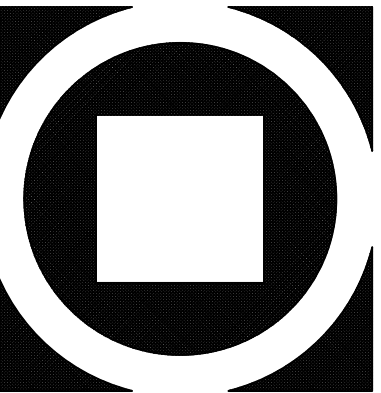
KEY	BOTANICAL NAME	COMMON NAME	QTY	SIZE	CONDITION	SPACING
CH	<i>CHASMANTHIUM</i>	NORTHERN SEA OATS	38	QUART	CONTAINER	36"



**LEGEND**



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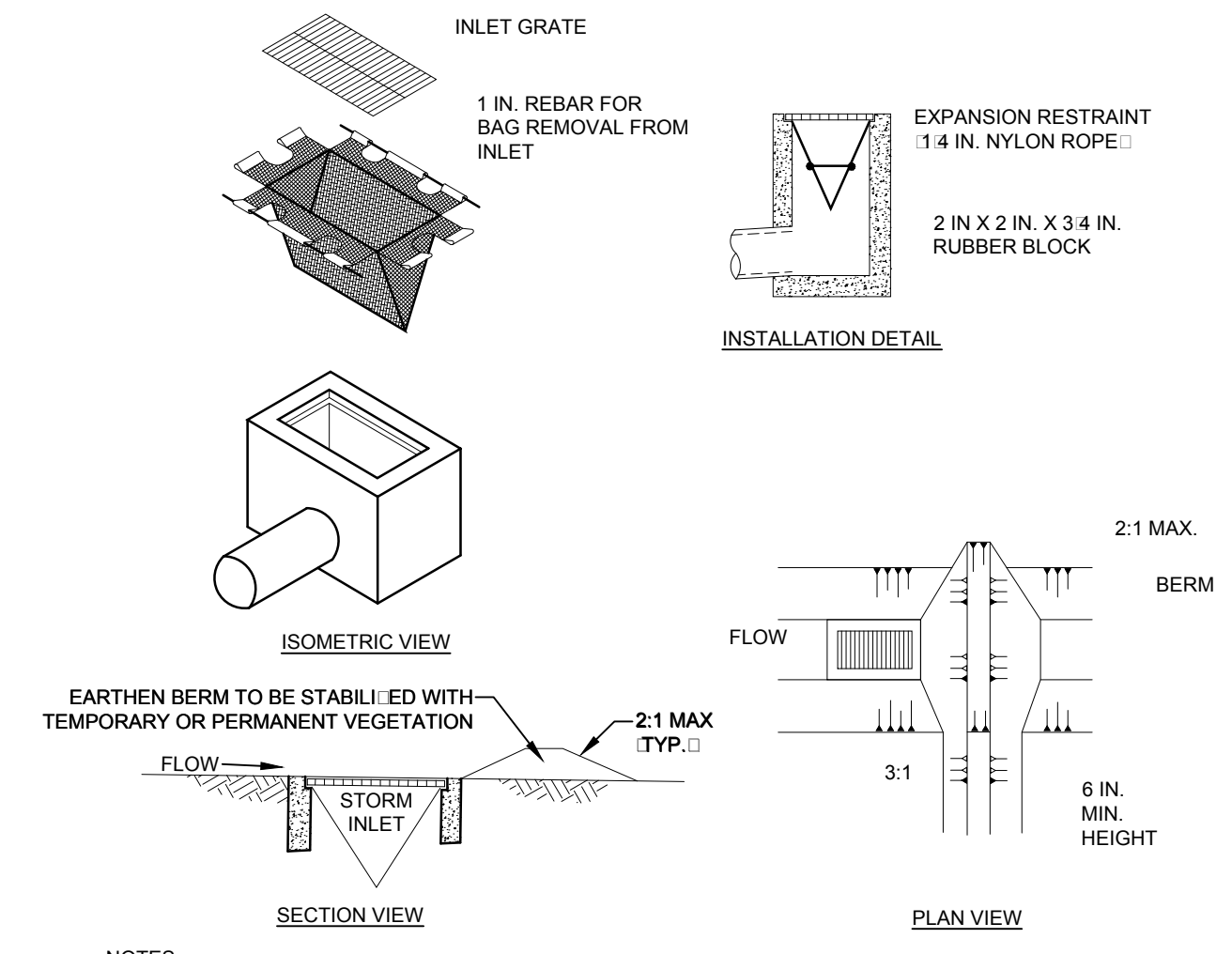
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 OF 14





**NOTES:**

MAXIMUM DRAINAGE AREA = 1.2 ACRE.

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

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

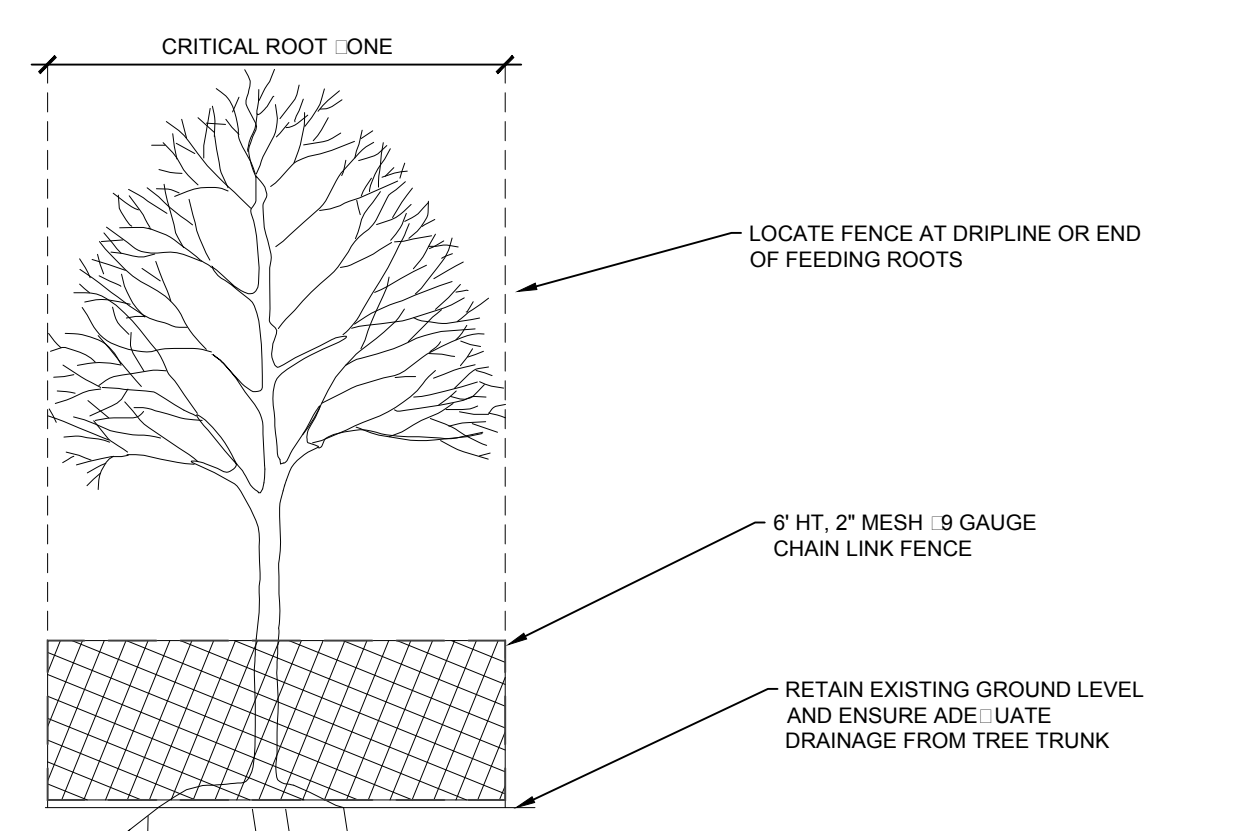
AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS., A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.

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

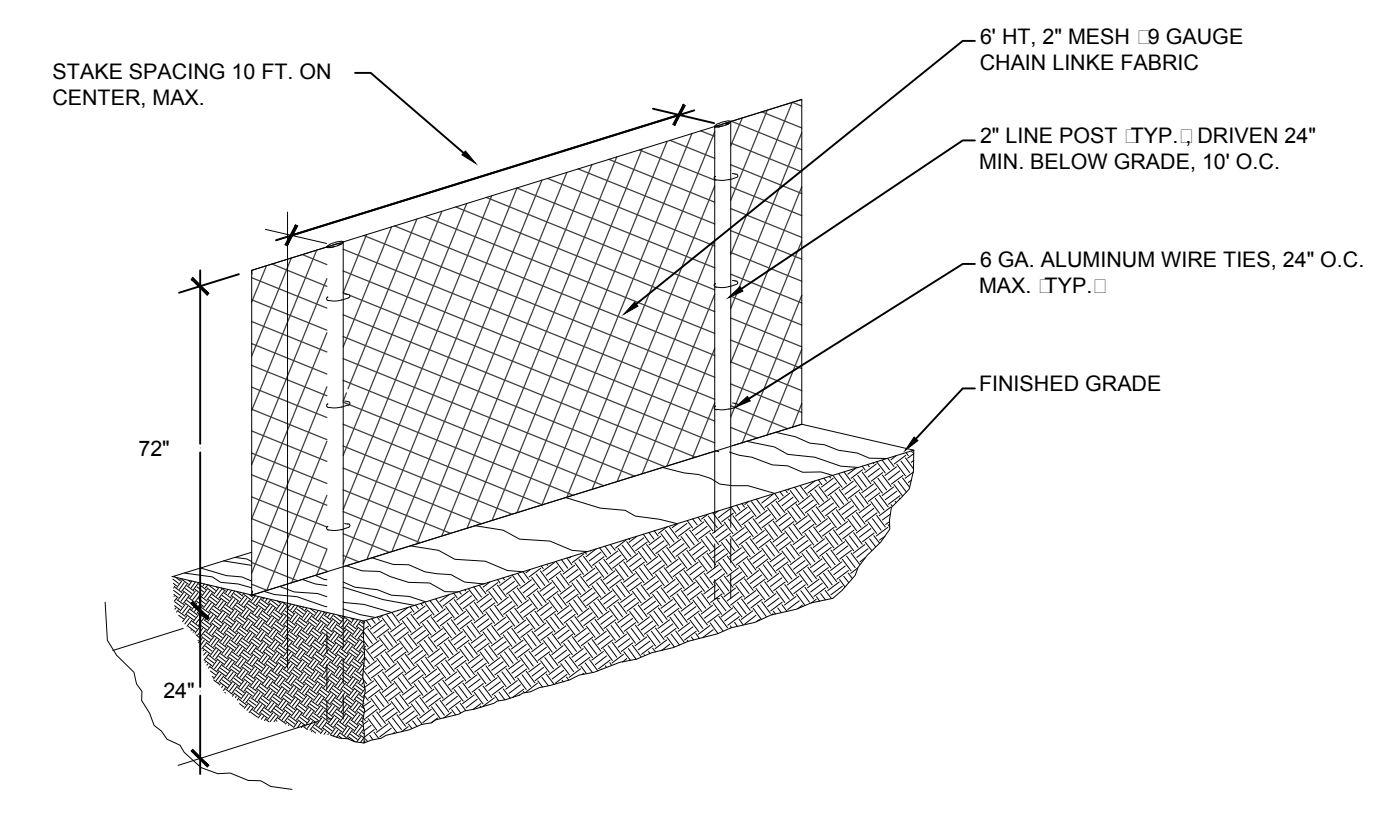
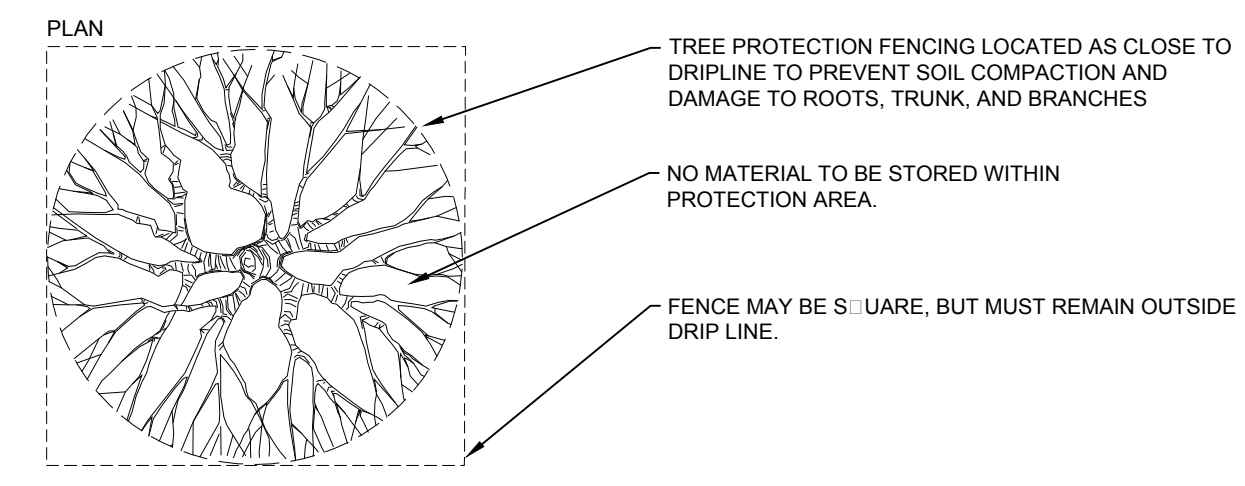
DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

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

E-1  
C4.0



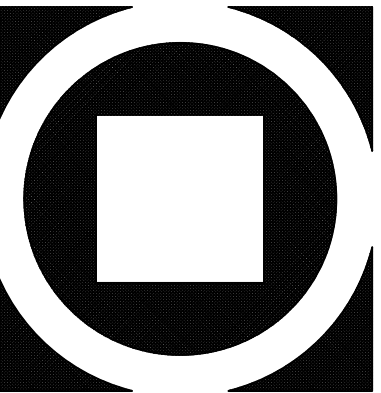
**NOTE:** FENCE TO REMAIN AND BE MAINTAINED THROUGHOUT ENTIRE BUILDING PHASES DURING WHICH CONSTRUCTION MAY AFFECT TREES.



- DO NOT:**
- ALLOW RUN OFF OF SPILLAGE AND DAMAGING MATERIALS INTO THE AREA BELOW ANY TREE CANOPY.
  - STORE MATERIALS, STOCKPILE SOIL, OR PARK OR DRIVE VEHICLES WITHIN THE TREE PROTECTION AREA.
  - CUT, BREAK, SKIN, OR BRUISE ROOTS, BRANCHES, OR TRUNKS WITHOUT FIRST OBTAINING AUTHORIZATION FROM THE CONSULTING ARBORIST.
  - ALLOW FIRES UNDER AND ADJACENT TO TREES.
  - DISCHARGE EXHAUST INTO FOLIAGE.
  - SECURE CABLE, CHAIN, OR ROPE TO TREES OR SHRUBS.
  - TRENCH, DIG, OR OTHERWISE EXCAVATE WITHIN THE DRIFLINE OR TPZ OF THE TREE(S) WITHOUT FIRST OBTAINING AUTHORIZATION FROM THE CONSULTING ARBORIST.
  - APPLY SOIL STERILANTS UNDER PAVEMENT NEAR EXISTING TREES.

- TREE PROTECTION NOTES**
- A 4" LAYER OF COARSE MULCH OR WOODCHIPS IS TO BE PLACED BENEATH THE DRIFLINE OF THE PROTECTED TREES. MULCH IS TO BE KEPT 12" FROM THE TRUNK.
  - A PROTECTIVE BARRIER OF 6" CHAIN LINK FENCING SHALL BE INSTALLED AROUND THE DRIFLINE OF PROTECTED TREE(S). THE FENCING CAN BE MOVED WITHIN THE DRIFLINE IF AUTHORIZED BY THE CONSULTING ARBORIST, BUT NOT CLOSER THAN 2' INTO THE GROUND. THE DISTANCE BETWEEN POSTS SHALL NOT BE MORE THAN 10'. THIS ENCLOSED AREA IS THE TREE PROTECTION ZONE (TPZ).
  - MOVABLE BARRIERS OR CHAIN LINK FENCING SECURED TO CEMENT BLOCKS CAN BE SUBSTITUTED FOR "FIXED" FENCING IF THE CONSULTING ARBORIST AGREES THAT THE FENCING WILL HAVE TO BE MOVED TO ACCOMMODATE CERTAIN PHASES OF CONSTRUCTION. THE BUILDER MAY NOT MOVE THE FENCE WITHOUT AUTHORIZATION FROM THE CONSULTING ARBORIST.
  - WHERE THE CONSULTING ARBORIST HAS DETERMINED THAT TREE PROTECTION FENCING WILL INTERFERE WITH THE SAFETY OF WORK CREWS, TREE WRAP MAY BE USED AS AN ALTERNATIVE FORM OF TREE PROTECTION. WOODEN SLATES AT LEAST ONE (1) INCH THICK ARE TO BE BOUND SECURELY, EDGE TO EDGE, AROUND THE TRUNK. A SINGLE LAYER OR MORE OF ORANGE CONSTRUCTION FENCING IS TO BE WRAPPED AND SECURED AROUND THE OUTSIDE OF THE WOODEN SLATS. STRAW WADDLE MAY ALSO BE USED AS A TRUNK WRAP BY COILING THE WADDLE AROUND THE TRUNK UP TO A MINIMUM HEIGHT OF SIX (6) FEET FROM GRADE. A SINGLE LAYER OR MORE OF ORANGE PLASTIC CONSTRUCTION FENCING IS TO BE WRAPPED AND SECURED AROUND THE STRAW WADDLE.

**E-2**  
**C4.0**  
**TREE PROTECTION FENCING**  
 NOT TO SCALE



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Sheet Name:	E&S DETAILS															
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**C4.0**  
 OF 14





**RADNOR TOWNSHIP SHADE TREE COMMISSION**  
*Hazardous Tree Report*

Resident Dave Falcone  
Address 836 Milmar Rd Newtown Square 19073

Tree (Type, species, size, diameter at breast height) White Ash 36" DBH,  
Silver Maple 32" DBH,  
Tulip Poplar 42" DBH, and ~15 understory trees/small saplings

Certified arborist's narrative report (attach separate sheet if required) Attached  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Certified arborist's name, address and # Marc Conaty  
907 Edgewood Terrace Wilmington, DE 19809  
302 545 8225

Pictures attached \_\_\_\_\_ Plot plan drawing attached \_\_\_\_\_  
Township arborist's report (attach separate sheet if required) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Shade Tree Commission removal recommended yes  no

*The General Powers and Duties of the Shade Tree Commission section of the Ordinance (126.5 B) stipulates: In case of immediate necessity for the protection of life or property. Any shade or street tree described in this ordinance may be removed without first obtaining a permit, after inspection by a member(s) of the Shade Tree Commission or its designee.*



**White ash 36" DBH Front of home**

Tree has large overextended leaders over the roof. Many branches have existing dead tips that indicate decline and possible Emerald Ash Borer infestation. Branch reductions would leave large stub cuts that are not practical to heal over in a reasonable amount of time.

**Silver Maple 32" DBH Behind Home**

Tree had previous lightning strike that has not formed callous tissue to seal damage. Open face decay began to form at location of damage. Decay fungus fruiting structures formed on trunk in areas of decay. Most likely Ganoderma a common decay fungi. This causes structural issues and makes the tree more likely to fail.

**Tulip Poplar 42" DBH Back Rear**

Tree had a high live crown ratio and poor trunk taper from developing in the woods. Surface roots showed signs of cavities and decay. Damage was likely caused by mechanical damage. Due to the rapid growth and poor root system the tree is more likely to fail in a storm causing extensive property damage. Poplar trees are known to be poor compartmentalizers and have low wood density.



Radnor Township  
Engineering Department

Field Report

301 Iven Avenue, Wayne PA 19087-5297

610.688.5600

610.971.0450 (fax)

ADDRESS/SITE 836 MILMAR

Inspector: DOUG

Weather Conditions SONNY 50'S

Time in: 9:30

Time Out: \_\_\_\_\_

Date 12/09/15

Inspection

E & S \_\_\_ Escrow \_\_\_ SWM \_\_\_ SS \_\_\_ Paving \_\_\_ Other/Complaint \_\_\_\_\_

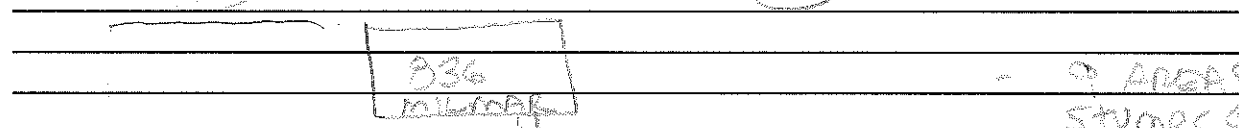
Present at Site (18)

Notes: (24) (27) (34) (22)

(24) (10) (38) (35)

(34) (13) (17) (32)

(13) (13) (17) (32)



- 14 STUMPS  
MEASURED

- 9 AREAS  
STUMP GROUND

- NO ONE WK @ 9:30  
took pictures +  
CALLED SUE

A - I AREAS STUMP GROUND

**ACTION ITEMS**

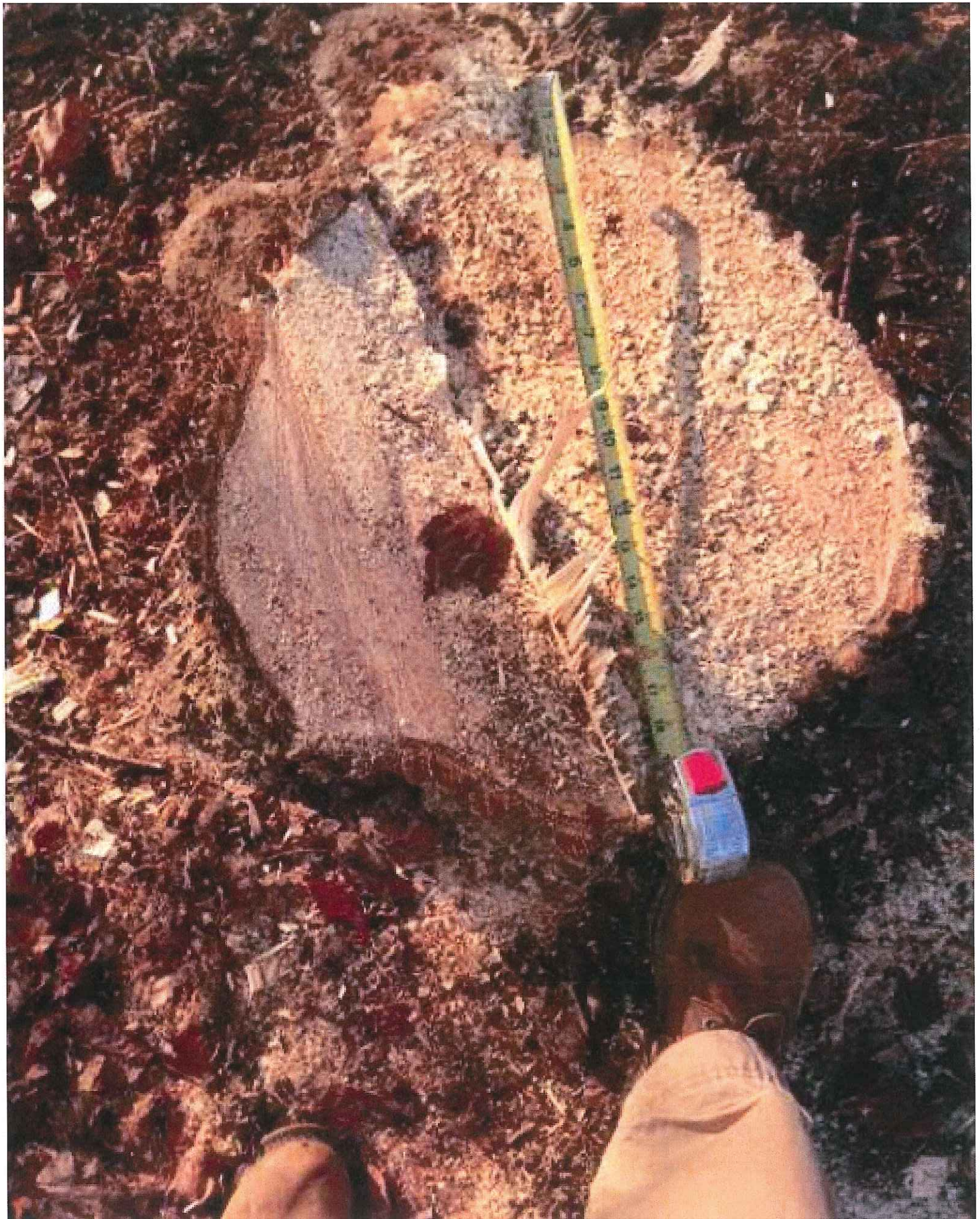
Back @ 1:00 STROBERT TRUCK ONSITE GRINDING STUMPS  
I TOLD HIM NO MORE REMOVAL + GAVE HIM A NOTICE +  
PLACED ONE ON THE DOOR OF THE HOUSE.

Inspector's Signature [Signature]

















































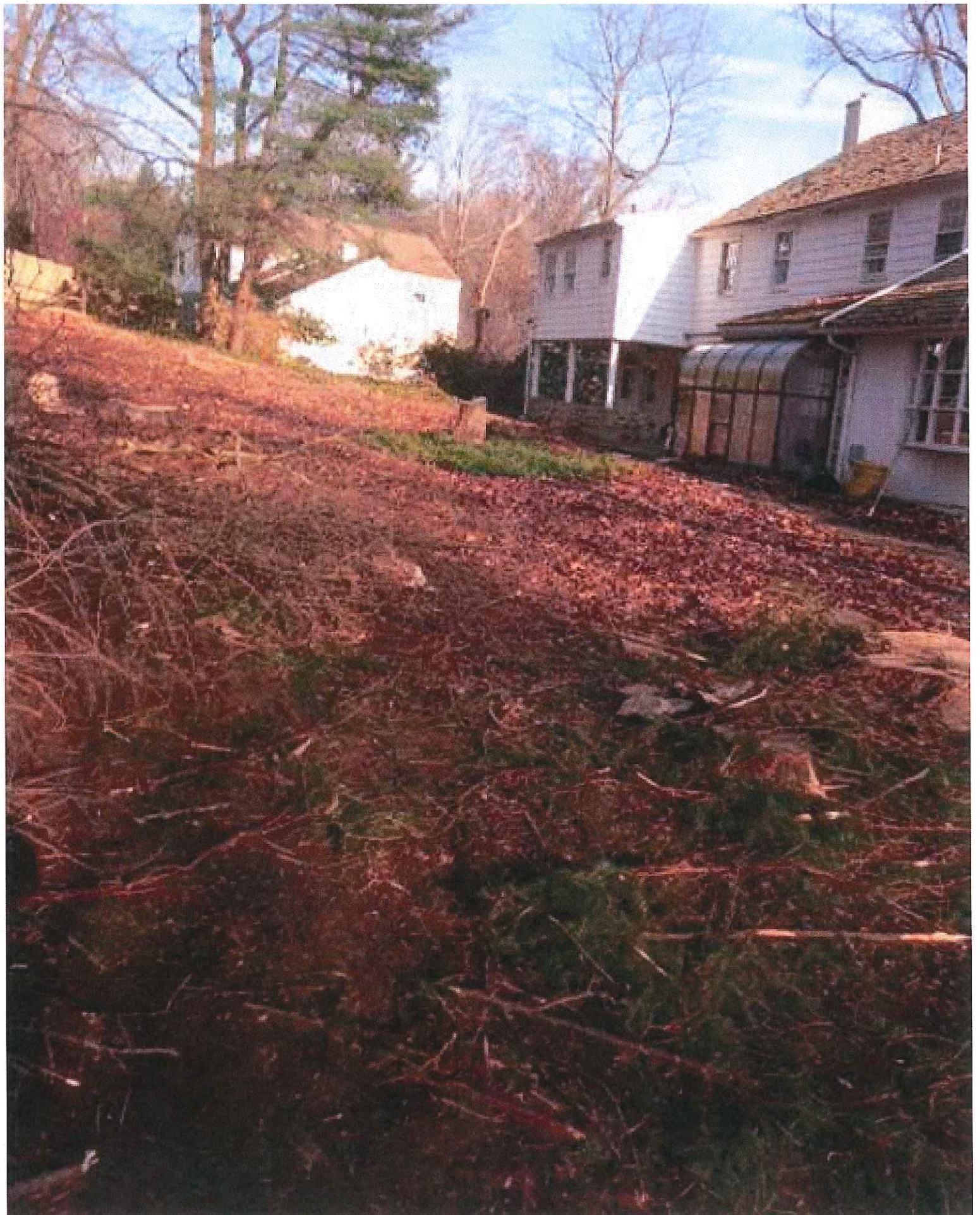








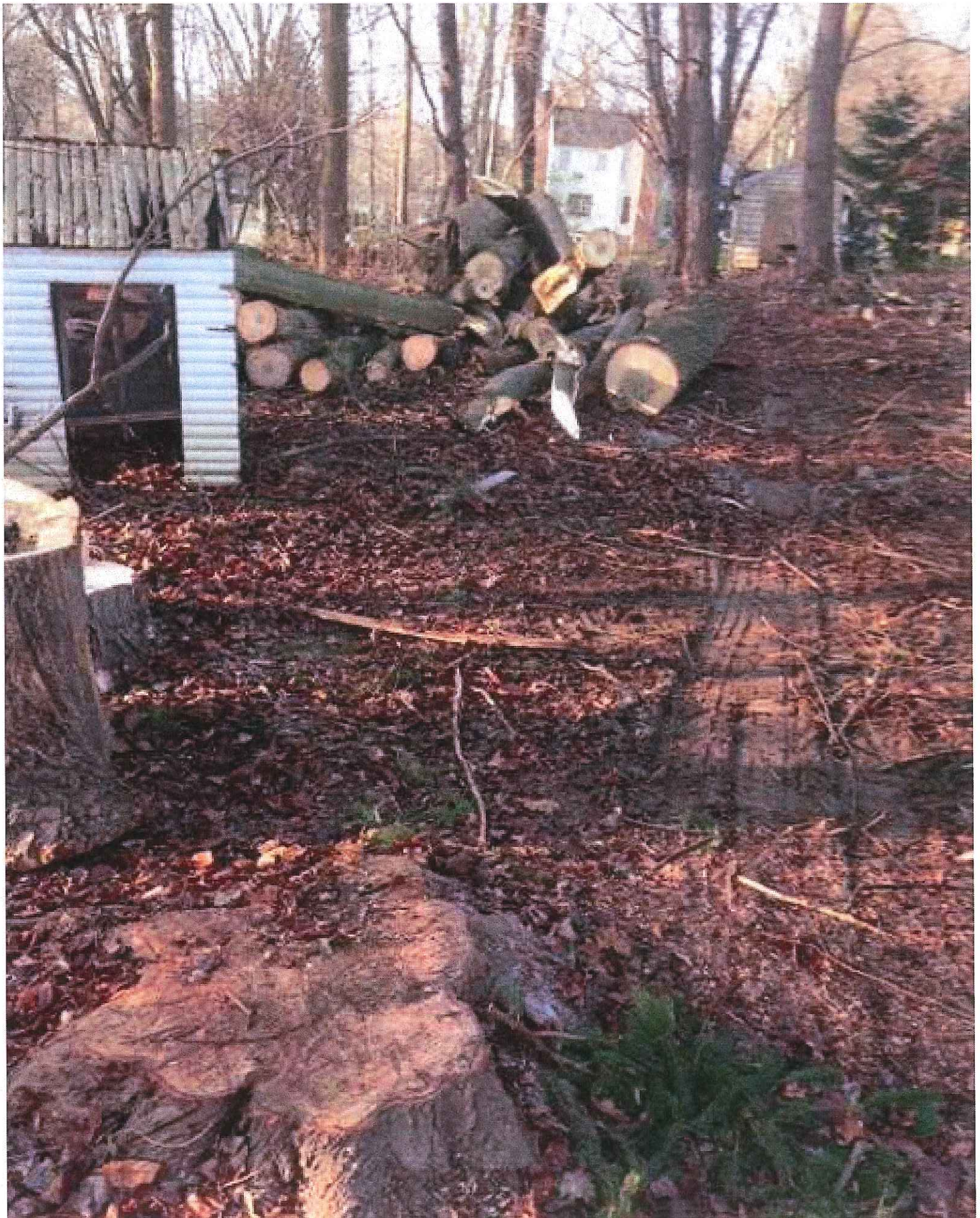




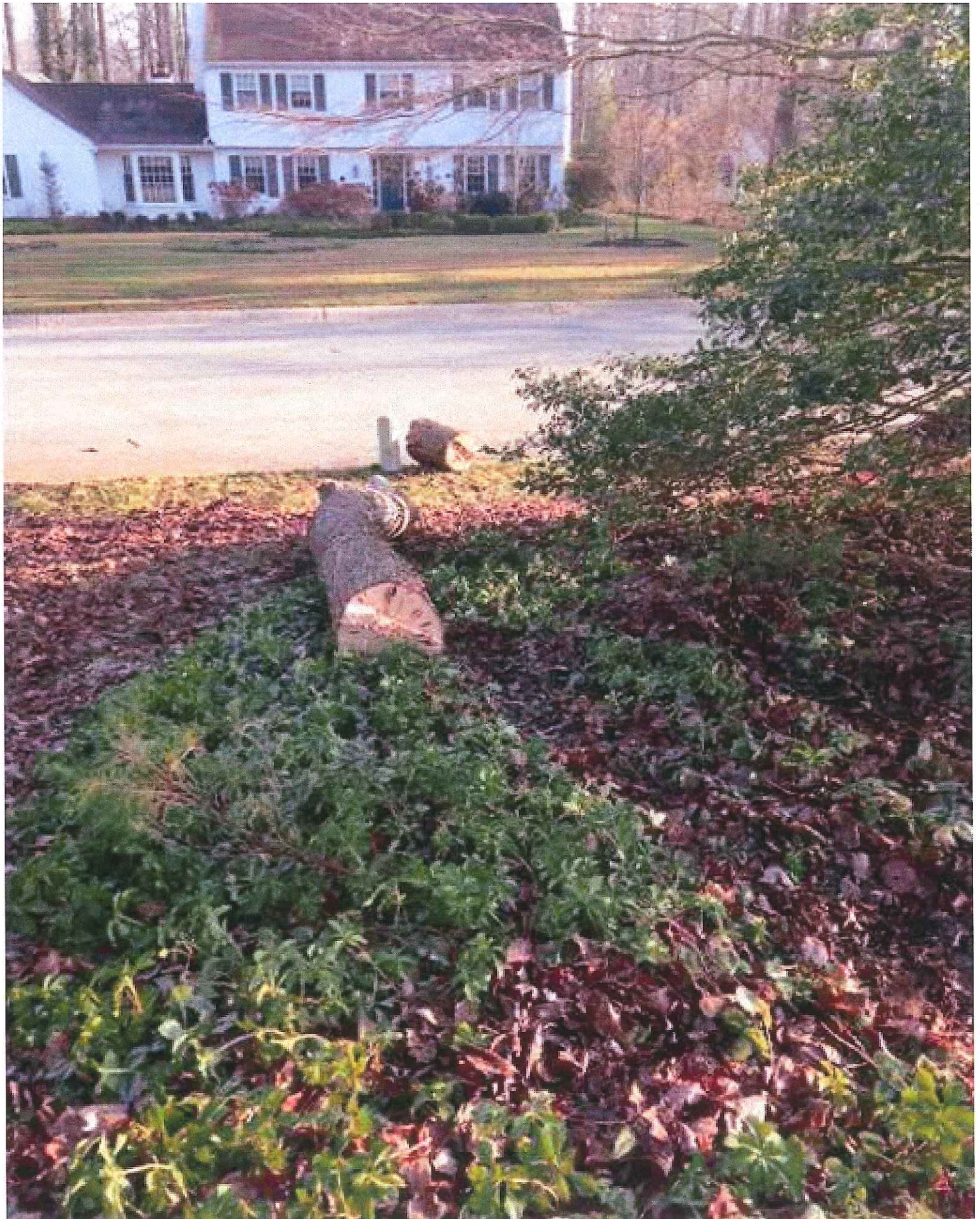




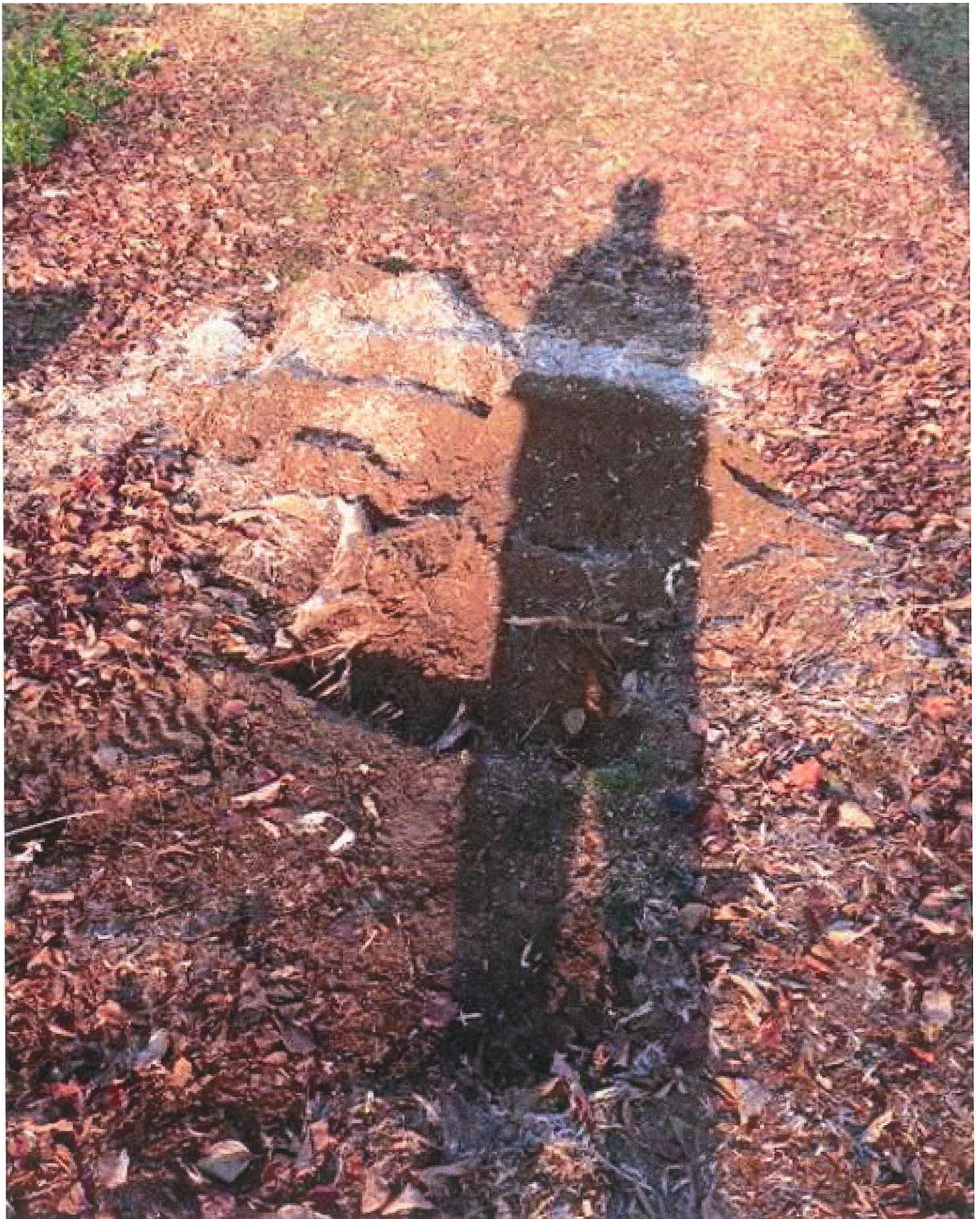
















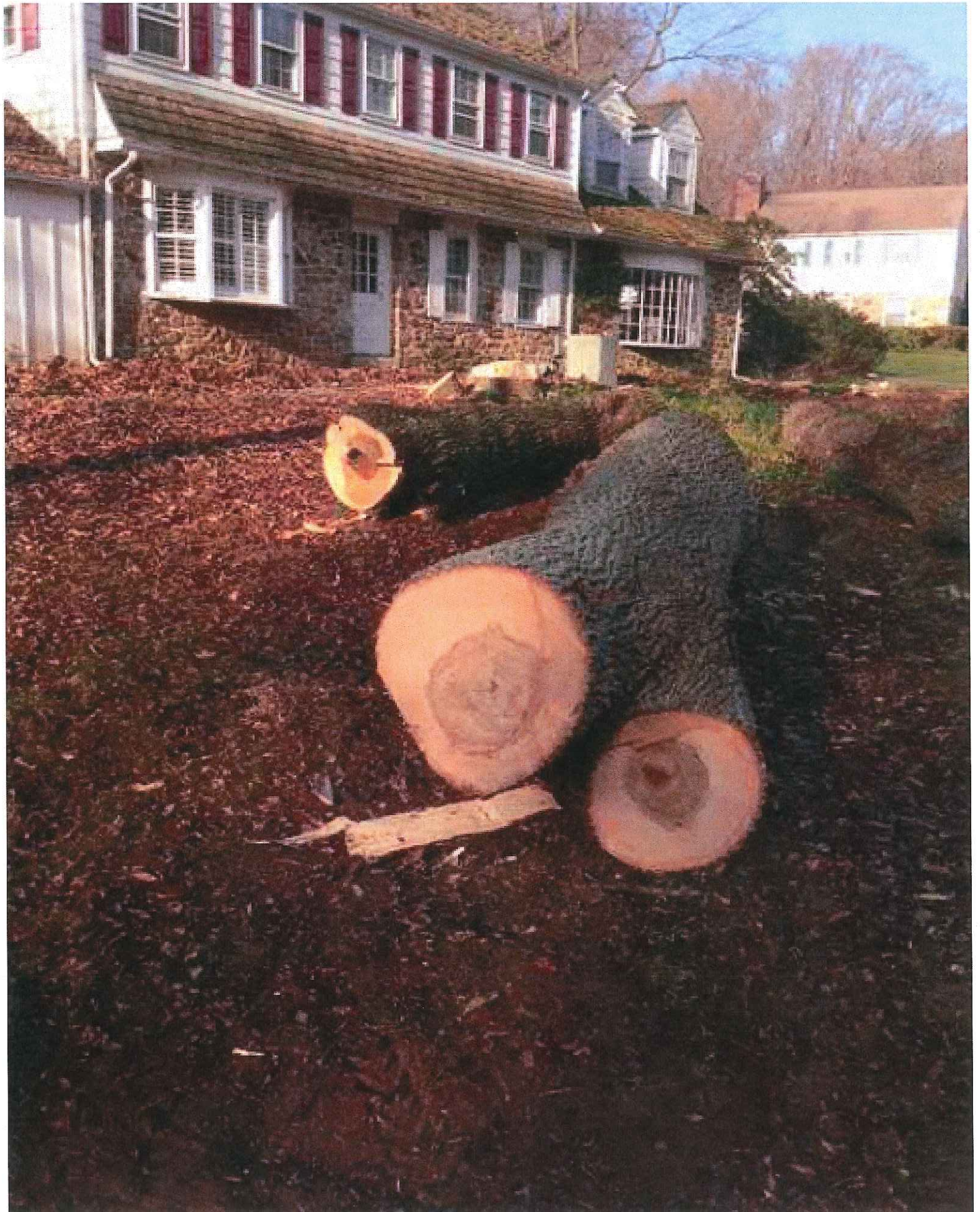




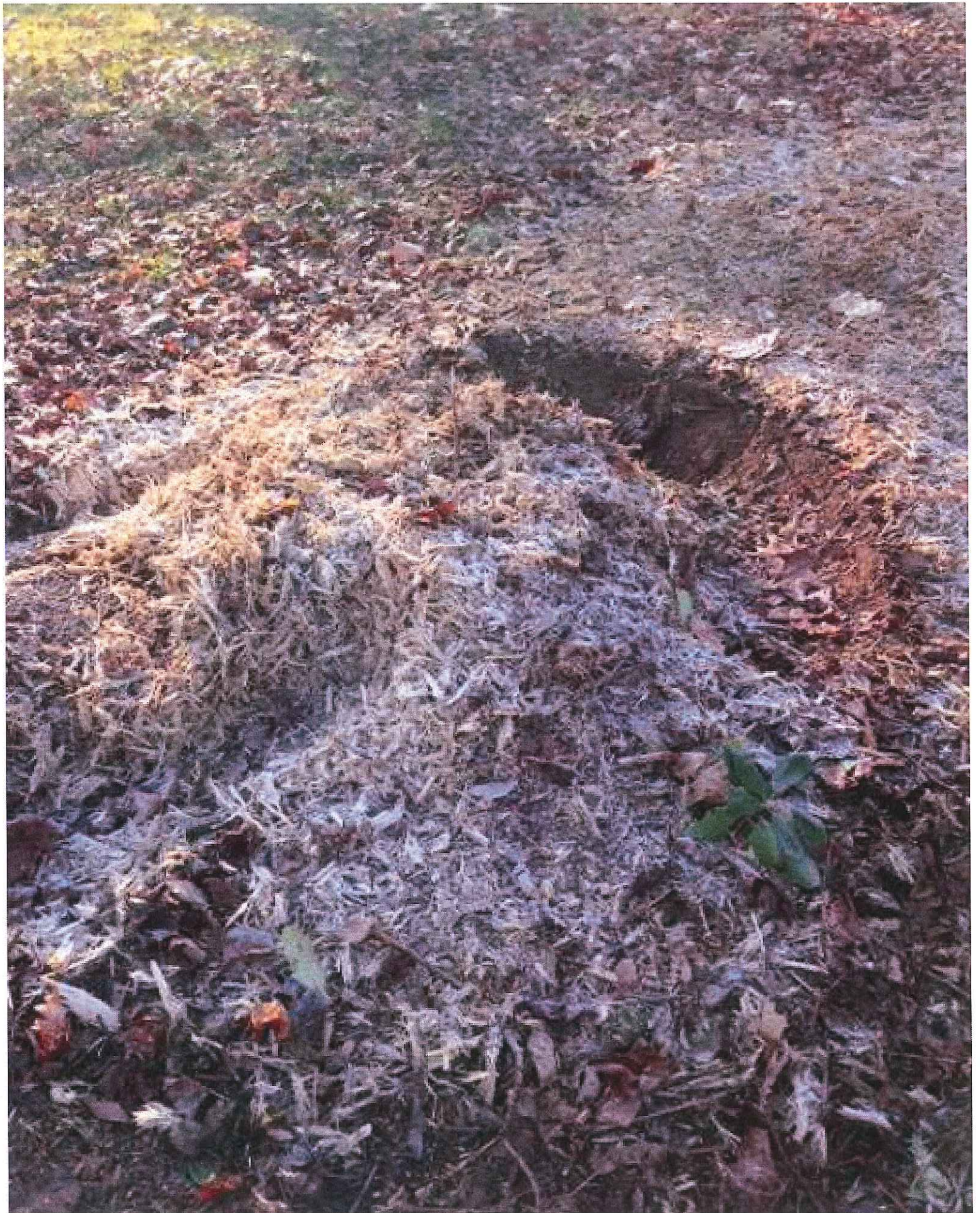














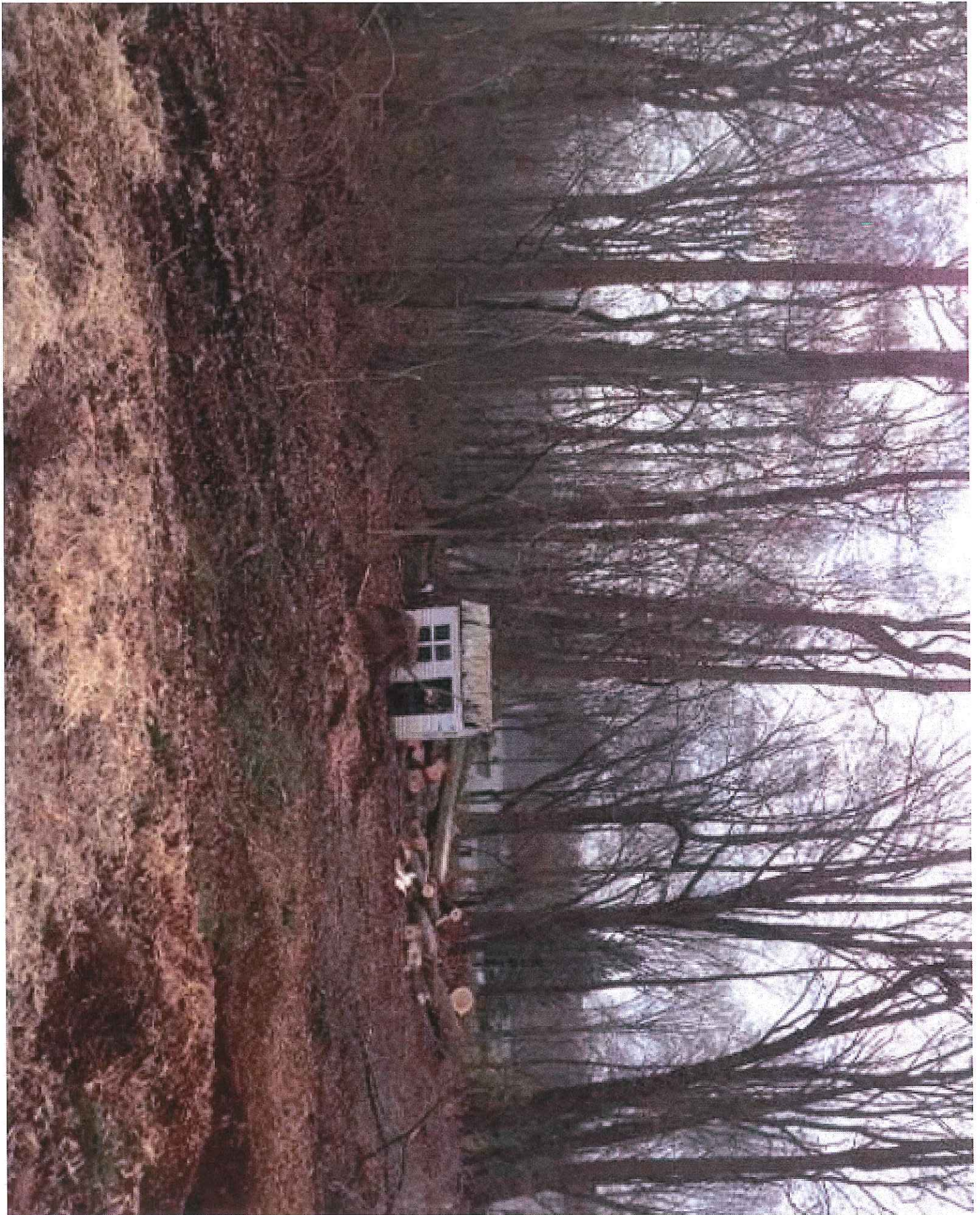
**STROBERT**

Land Clearing Operations

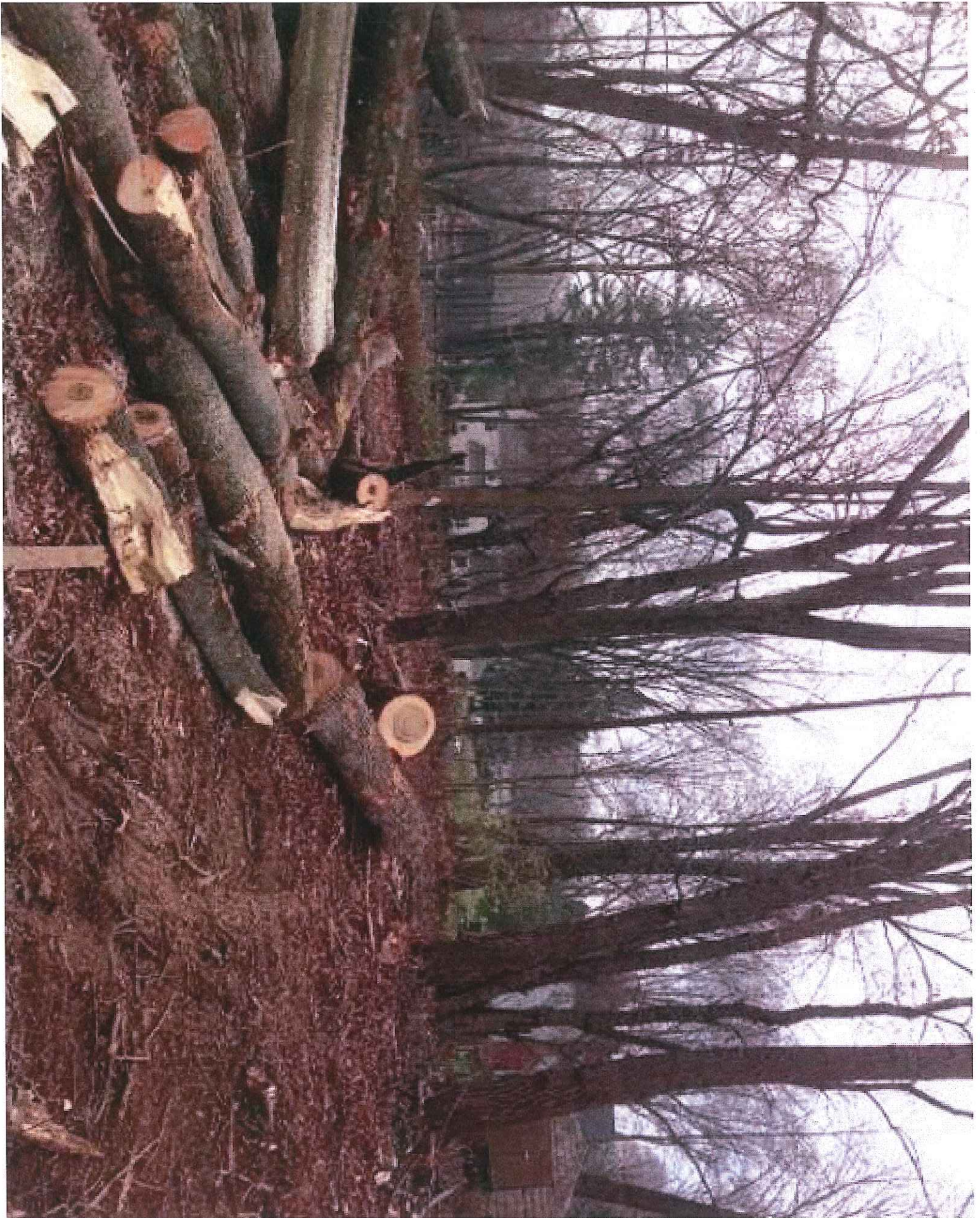
(302) **656-6077**

USDOT1287979





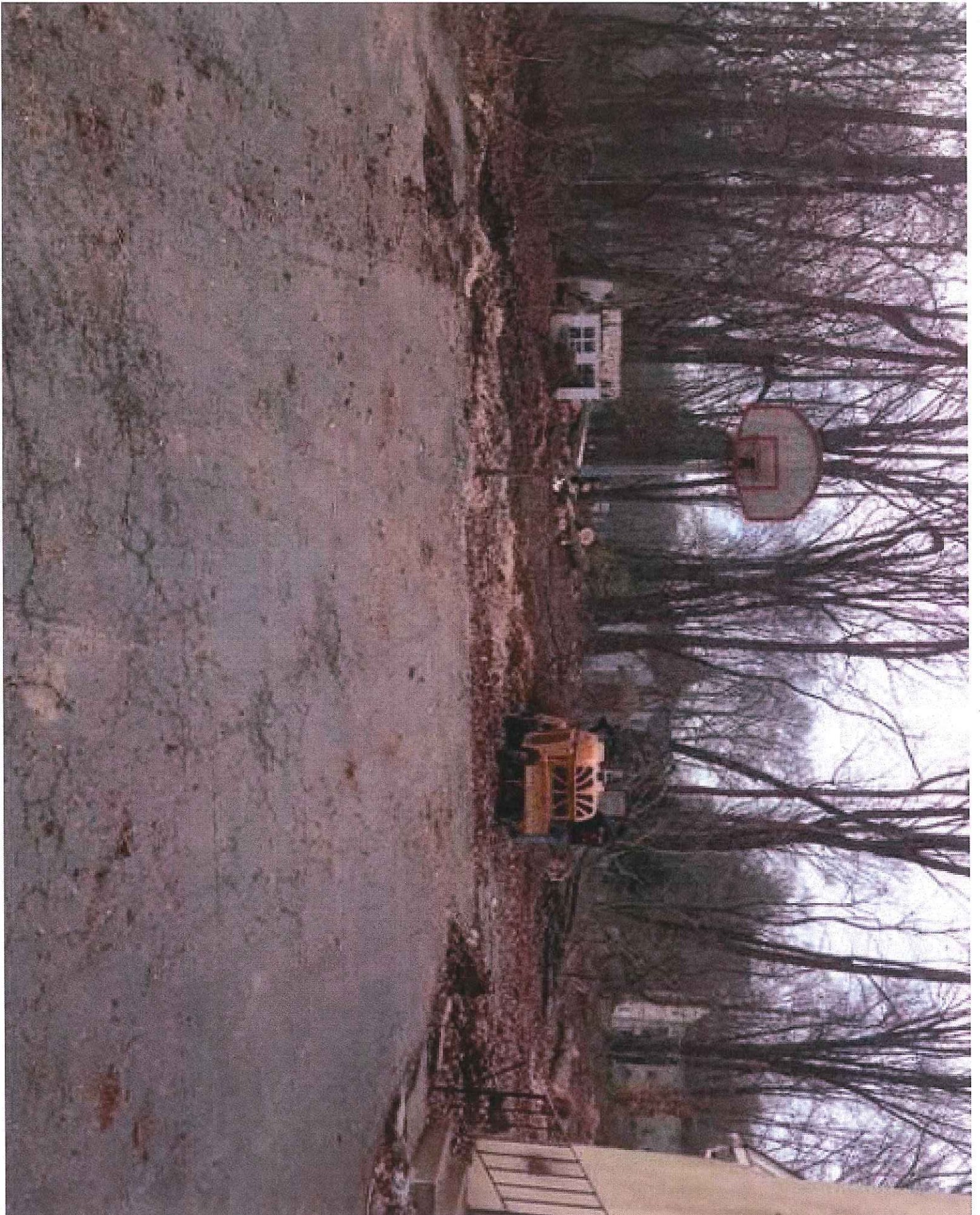




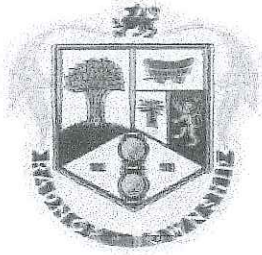












**RADNOR TOWNSHIP SHADE TREE COMMISSION**  
*Hazardous Tree Report*

Resident Radnor Station office Bld

Address 190 King of Prussia Rd

Tree (Type, species, size, diameter at breast height) 1 40" cal Ash tree

Certified arborist's narrative report (attach separate sheet if required)

Tree is in Decline, Top is All Dead and No Way  
To Fertilize, Tree is in The Parking lot And is A Hazard  
Tree is located on left side of Bld 2

Certified arborist's name, address and # Robert E Bascome  
201 Hansell Rd Newtown Sq 19073

Pictures attached

Plot plan drawing attached

Township arborist's report (attach separate sheet if required)

Repl due

**Shade Tree Commission removal recommended yes / no**

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