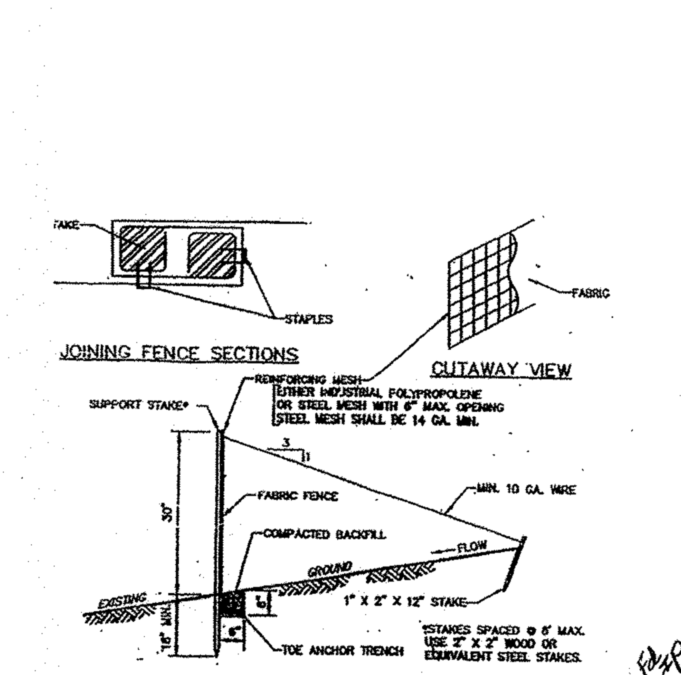


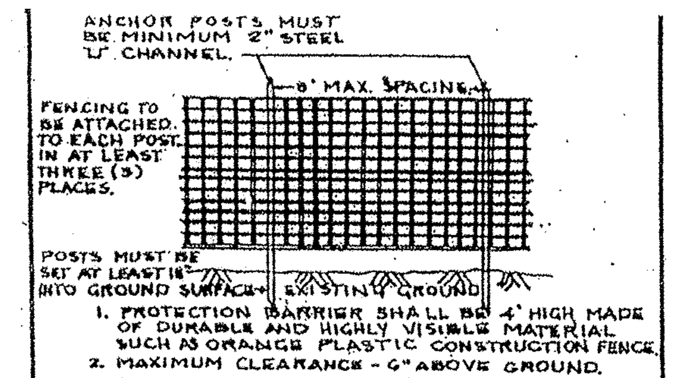
FILTER FABRIC FENCE MUST BE INSTALLED AT EXISTING LEVEL GRADE. BOTH ENDS OF EACH FENCE SECTION MUST BE EXTENDED AT LEAST 8 FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT.

SEDIMENT MUST BE REMOVED WHERE ACCUMULATIONS REACH 1/2 THE ABOVE GROUND HEIGHT OF THE FENCE.

(RFF) ANY FENCE SECTION WHICH HAS BEEN UNDERMINED OR TOPPED MUST BE IMMEDIATELY REPLACED WITH A ROCK FILTER OUTLET. (SEE ROCK FILTER OUTLET DETAIL)

REINFORCED FILTER FABRIC FENCE(30" HIGH)

N.T.S.



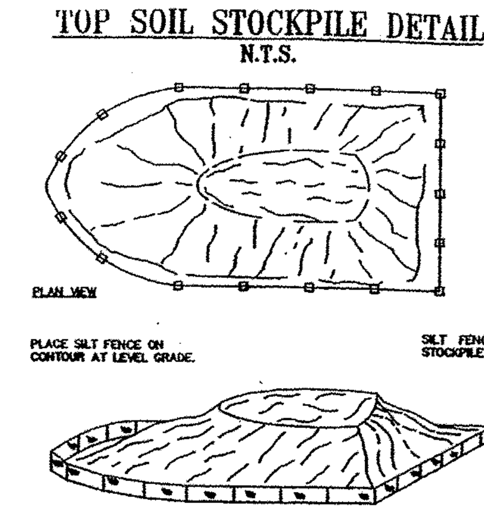
1. PROTECTION BARRIER SHALL BE 4' HIGH MADE OF DURABLE AND HIGHLY VISIBLE MATERIAL SUCH AS ORANGE PLASTIC CONSTRUCTION FENCE.
2. MAXIMUM CLEARANCE - 6" ABOVE GROUND.
3. PROTECTION BARRIERS SHALL BE MAINTAINED FOR THE DURATION OF THE WORK AT THE SITE.

TREE PROTECTION DETAIL

(CONSTRUCTION FENCING)

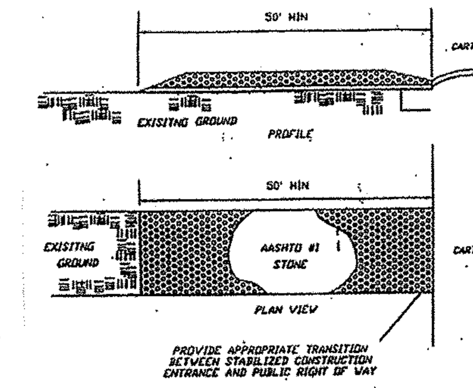
TOP SOIL STOCKPILE DETAIL

N.T.S.



NOTES:

1. TOPSOIL STOCKPILES MUST BE COMPLETELY ENCIRCLED WITH SILT FENCE AND SEEDED & MULCHED.
2. STOCKPILE HEIGHTS MUST NOT EXCEED 35'.
3. STOCKPILE SLOPES MUST BE 2:1 OR FLATTER.



STABILIZED CONSTRUCTION ENTRANCE

NTS

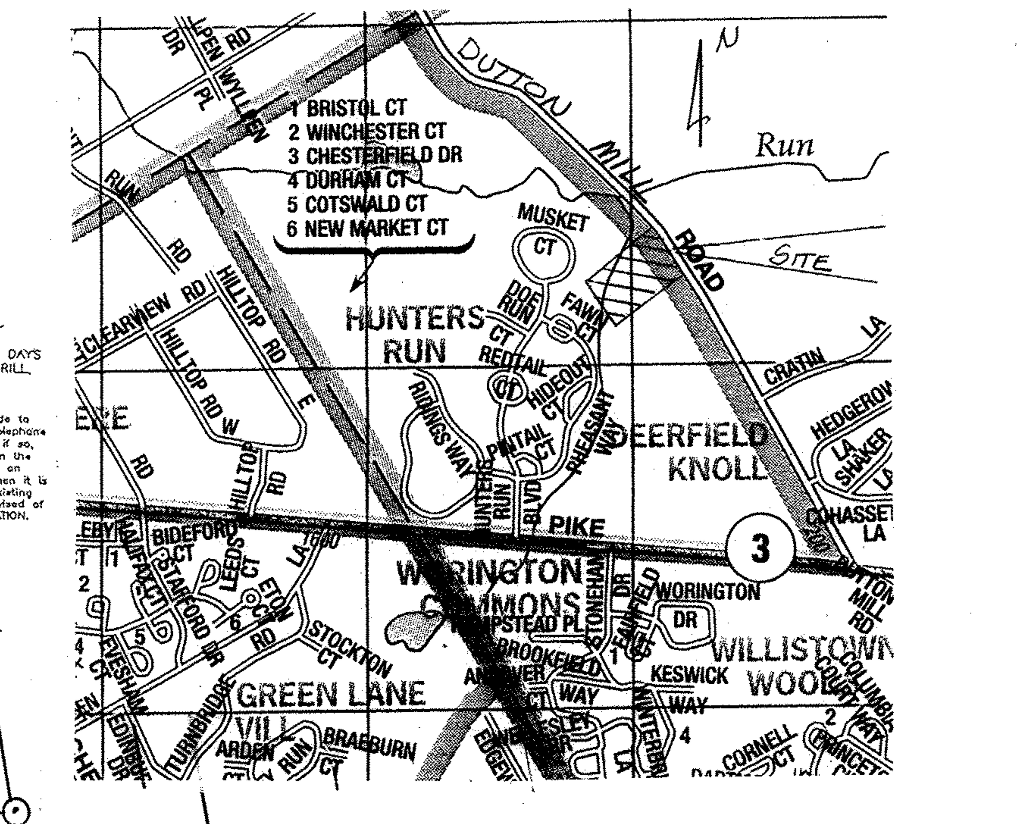
1. THICKNESS -- NOT LESS THAN EIGHT (8) INCHES.
2. WIDTH -- NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
3. WASHING -- WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVED SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH, OR WATERCOURSE THROUGH USE OF SAND BAGS, GRAVEL, BOARDS, OR OTHER APPROVED METHODS.
4. MAINTENANCE -- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.

CONSTRUCTION SEQUENCE

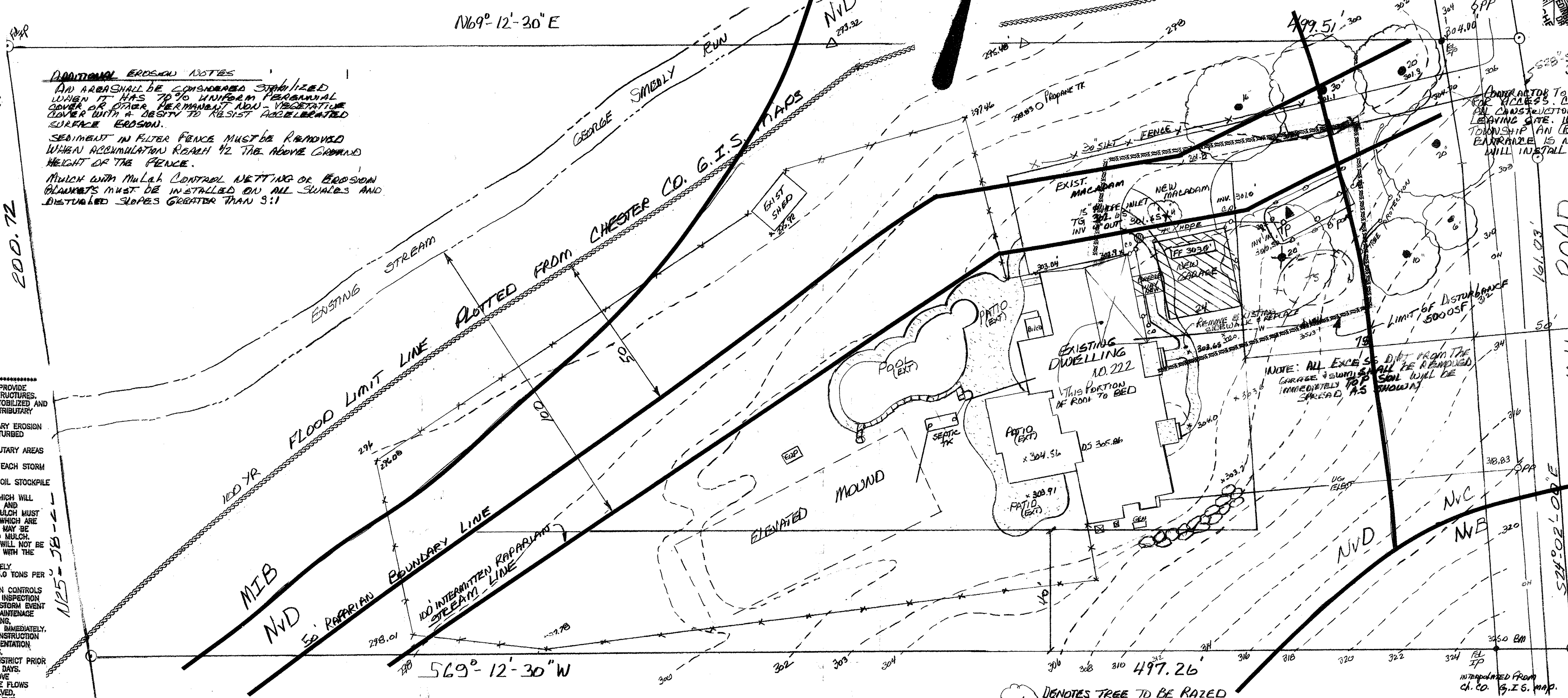
1. NOTIFY TWP. THAT DISTURBANCE WILL COMMENCE IN 48HRS.
2. INSTALL SILT FENCE & TREE PROTECTION
3. STRIP TOP SOIL. REMOVE TREES. STOCKPILE TOPSOIL. REMOVE WALK.
4. FENCE OFF B.M.P.
5. EXCAVATE GARAGE & DRIVEWAY
6. INSTALL GARAGE
7. STONE DRIVEWAY
8. INSTALL U.G. PIPING TO BMP
9. INSTALL BMP. REMOVE EXCESS DIRT.
10. GRADE, SEED & MULCH DISTURBED AREA.
11. PAVE DRIVEWAY
12. REMOVE E&S CONTROLS.

BEFORE YOU DIG ANYWHERE IN PENNSYLVANIA! CALL 1-800-242-1776
NON-MEMBERS MUST BE CONTACTED DIRECTLY
PA. ACT 172 (1986) REQUIRES THREE WORKING DAYS NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL, BLAST OR DEMOLISH.
OSHA 1926.651 Special Excavation Requirements
(a) Prior to opening an excavation, effort shall be made to determine whether underground installations; i.e., sewer, telephone water, fuel, electric lines, etc. will be encountered, and if so, where such underground installations are located. When the excavation approaches the estimated location of such an installation, the exact location shall be determined and when it is uncovered, proper supports shall be provided for the existing installation. Utility companies shall be contacted and advised of proposed work PRIOR TO THE START OF ACTUAL EXCAVATION.
OUTSIDE PENNA. OR IN THE PITTSBURGH AREA WE CAN ALSO BE REACHED AT 412-323-7100

PA ONE CALL
SERIAL NO. ________



LOCATION PLAN
1" = 1000'



NOTE: SHADED GAS PIPELINE WITHIN THE CARTWAY OF DUTTON MILL ROAD. EXISTING MARKERS DENOTE PIPE LINE OFFSET DISTANCES.

DENOTES 2 TREES TO BE RAZED

DENOTES TREE TO BE RAZED

MAINTENANCE OF TEMPORARY SEDIMENTATION CONTROLS

A ROUTINE "END OF DAY CHECK" SHALL BE MADE DURING CONSTRUCTION TO MAKE SURE THAT ALL CONTROL MEASURES ARE WORKING PROPERLY. ALL PERSONS ENGAGED IN LAND DISTURBANCE ACTIVITIES SHALL PREVENT ACCELERATED EROSION AND SEDIMENTATION. THERE SHALL BE NO ADVERSE DISCHARGE OF THE SEDIMENT OR OTHER SOLID MATERIALS FROM THE SITE AS A RESULT OF STORMWATER RUNOFF.

UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENTATION MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENTATION CONTROL 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.

STABILIZED CONSTRUCTION ENTRANCE: THE STABILIZED CONSTRUCTION ENTRANCES ARE TO BE CONSTRUCTED PER THE DETAIL. 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. AT THE END OF EACH CONSTRUCTION DAY, ALL SEDIMENT DEPOSITED ON PUBLIC ROADWAYS WILL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE.

INLET PROTECTION: INLET PROTECTION SHALL BE CONSTRUCTED PER THE DETAIL AND CLEANED AFTER EACH STORM EVENT OR AS DIRECTED BY THE CONSERVATION DISTRICT OR TOWNSHIP ENGINEER.

SILT FENCE: SILT FENCE SHALL BE INSTALLED PER THE DETAIL. SEDIMENT SHALL BE REMOVED FROM SILT FENCES WHEN IT REACHES 1/2 THE FENCE HEIGHT OR AS DIRECTED BY THE CONSERVATION DISTRICT OR TOWNSHIP ENGINEER. SILT FENCING WHICH AS BEEN UNDERMINED OR TOPPED WILL BE REPLACED WITH ROCK FILTER OUTLETS IMMEDIATELY.

SEDIMENT DISPOSAL: SILT REMOVED FROM TEMPORARY SEDIMENT CONTROL STRUCTURES SHALL BE DISPOSED OF ON-SITE IN LANDSCAPED AREAS LOCATED OUTSIDE OF FLOOD PLAINS, WETLANDS, STEEP SLOPES AND DRAINAGE SWALES.

DUST CONTROL: DUST AND OTHER PARTICLES SHALL BE KEPT WITHIN TOLERABLE LIMITS BY USING WATER. APPLICATION SHALL BE AS NEEDED OR AS DIRECTED BY THE TOWNSHIP ENGINEER OR THE CONSERVATION DISTRICT.

EROSION CONTROL NOTES

1- ONLY LIMITED UPSLODE DISTURBANCE WILL BE PERMITTED TO PROVIDE ACCESS FOR GRADING AND CONSTRUCT SEDIMENT CONTROL STRUCTURES.
2- EROSION AND SEDIMENT CONTROLS MUST BE CONSTRUCTED STOBILIZED AND FUNCTIONAL BEFORE GENERAL SITE DISTURBANCE WITHIN THE TRIBUTARY AREAS OF THOSE CONTROLS.
3- AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENTATION CONTROLS MUST BE REMOVED. AREAS DISTURBED DURING REMOVAL OF THE CONTROLS MUST BE STABILIZED.
4- STORMWATER INLETS MUST BE BE PROTECTED UNTIL THE TRIBUTARY AREAS ARE STABILIZED.
5- SEDIMENT MUST BE REMOVED FROM INLET PROTECTION AFTER EACH STORM EVENT.
6- TOPSOIL STOCKPILE HEIGHTS MUST NOT EXCEED 35 FEET. TOPSOIL STOCKPILE SLOPES MUST BE 2:1 OR FLATER.
7- ANY DISTURBED AREA ON WHICH ACTIVITY HAS CEASED AND WHICH WILL REMAIN EXPOSED [redacted] MUST BE SEEDED AND MULCHED IMMEDIATELY. DURING NON-GERMINATING PERIODS, MULCH MUST BE APPLIED AT THE RECOMMENDED RATES. DISTURBED AREAS WHICH ARE NOT FINISHED GRADE OR WILL BE REDISTURBED WITHIN 1YEAR MAY BE SEEDED AND MULCHED THE TEMPORARY SEEDING MIXTURE AND MULCH. DISTURBED AREAS WHICH ARE EITHER AT FINISHED GRADE OR WILL NOT BE REDISTURBED WITHIN 1 YEAR MUST BE SEEDED AND MULCHED WITH THE PERMANENT SEED MIXTURE AND MULCH.
8- TOPSOIL STOCKPILE MUST BE SEEDED AND MULCHED IMMEDIATELY
9- HAY OR STRAW MULCH MUST BE APPLIED AT THE RATES OF 3.0 TONS PER ACRE
10- UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENTION CONTROLS MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTION OF ALL EROSION AND SEDIMENTATION CONTROLS AFTER EACH STORM 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.
11- THE DEVELOPER WILL BE RESPONSIBLE FOR THE PROPER CONSTRUCTION STABILIZATION AND MAINTENANCE OFF ALL EROSION AND SEDIMENTATION CONTROLS AND RELATED ITEMS INCLUDED WITHIN THESE PLANS.
12- THE DEVELOPER SHALL NOTIFY THE COUNTY CONSERVATION DISTRICT PRIOR TO ANY CEASE IN EARTHMOVING ACTIVITIES OF MORE THAN 20 DAYS.
13- SHOULD ANY MEASURES CONTAINED WITHIN THESE PLANS 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 DEVELOPER TO ELIMINATE ALL SUCH PROBLEMS.
14- IN THE EVENT THAT IN THE AREA OF ANY [redacted] SILT FENCE FAILURE IS DISCOVERED, A ROCK FILTER BERM SHALL BE INSTALLED IMMEDIATELY.
15- IF MATERIAL IS TO BE REMOVED OFFSITE, IT MUST BE EXPORTED TO ANOTHER SITE TAAT HAS AN APPROVED E&S PLAN.

SEEDING REQUIREMENTS

ANY DISTURBED AREA ON WHICH ACTIVITY HAS CEASED AND WHICH WILL REMAIN EXPOSED FOR MORE THAN 20 DAYS MUST BE SEEDED AND MULCHED IMMEDIATELY DURING NON-GERMINATING PERIODS, MULCH MUST BE APPLIED AT THE RECOMMENDED RATES. DISTURBED AREAS WHICH ARE NOT FINISHED GRADE OR WILL BE REDISTURBED WITHIN 1YEAR MAY BE SEEDED AND MULCHED THE TEMPORARY SEEDING MIXTURE AND MULCH. DISTURBED AREAS WHICH ARE EITHER AT FINISHED GRADE OR WILL NOT BE REDISTURBED WITHIN 1 YEAR MUST BE SEEDED AND MULCHED WITH THE PERMANENT SEED MIXTURE AND MULCH.

1- TEMPORARY SEEDING= PADOT FORMULA "E"

FERTILIZER	
0-20-20	@20 LBS./1000 SQ. FT.
10-5-5	@10 LBS./1000 SQ. FT.
LIME	@4 TONS/1000 SQ. FT.
SEEDING MIXTURE	
ANNUAL RYE GRASS	@4 LBS./1000 SQ. FT.
MULCH (HAY)	@3 TONS/1000 SQ. FT.
GERMINATED PERIOD	MARCH 15 TO OCTOBER 15

2- PERMANENT SEEDING= PADOT FORMULA "B"

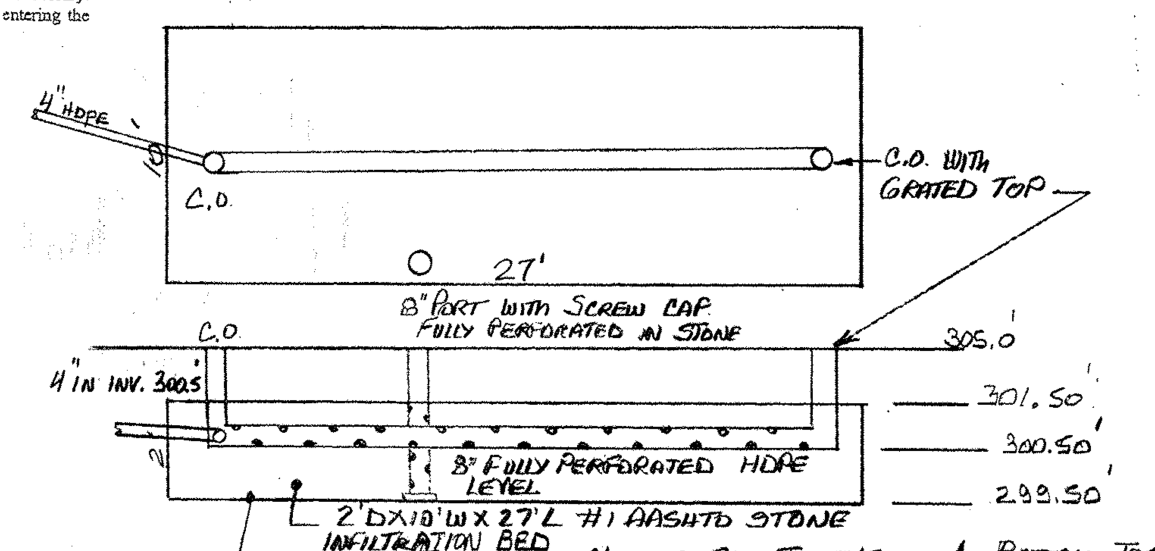
FERTILIZER	
0-20-20	@20 LBS./1000 SQ. FT.
10-5-5	@10 LBS./1000 SQ. FT.
LIME	@4 TONS/1000 SQ. FT.
SEEDING MIXTURE	@4 LBS./1000 SQ. FT.
KENTUCKY BLUE GRASS	50%
PENNLAWN RED FESCUE	30%
PENNFINE PERENNIAL RYE GRASS	20%
MULCH (HAY)	@3 TONS/ ACRE
GERMINATING PERIOD	MARCH 15 TO JUNE 1
	AUGUST 1 TO OCTOBER 15

- SEEDING AND MULCHING OPERATIONS ARE TO BE DONE IN CONFORMANCE WITH PADOT PUBLICATION FORM 408, SECTION 800.
- SITE PREPARATIONS INCLUDES WORKING THE LIME AND FERTILIZER INTO THE TOP 24" OR MORE, IF POSSIBLE.
- GRASS HAY AND CEREAL STRAW ARE PREFERRED MULCHES AND SHOULD BE APPLIED TO PRODUCE A LOOSE LAYER 0.75 TO 1 INCHES DEEP. AS A GUIDELINE, A THICKNESS OF 5 TO 6 OVERLAPPING STRAW OR HAY STEMS ARE ACCEPTABLE.
- A UNIFORM EROSION RESISTANT PERENNIAL VEGETATIVE COVER OF AT LEAST 70 PERCENT OF THE DISTURBED AREA MUST BE ESTABLISHED BEFORE A SITE IS CONSIDERED PERMANENTLY STABILIZED WITH VEGETATION.
- UNTIL THE SITE IS PERMANENTLY STABILIZED WITH VEGETATION, INTERIM STABILIZATION MEASURES AND TEMPORARY EROSION AND SEDIMENTATION CONTROL FACILITIES MUST BE MAINTAINED. DIVERSIONS, CHANNEL, SEDIMENTATION BASINS, SEDIMENT TRAPS AND STOCKPILE MUST BE SEEDED AND MULCHED IMMEDIATELY.

The Landowner hereby grants permission to the Municipality, its authorized agents, and employees to enter upon the property, at reasonable times and upon presentation of proper identification, to inspect the BMP(s) whenever it deems necessary. Whenever possible, the Municipality shall notify the Landowner prior to entering the property.

INFILTRATION BED CONSTRUCTION NOTES

a. Excavation shall be performed with equipment that will not compact the bottom of the bed. Equipment shall not be allowed on excavated areas of the seepage beds at any time during its construction.
b. The bottom of the bed shall be scarified immediately prior to the placement of the geotextile fabric on the bottom of the bed.
c. The bed shall be protected during construction. Sediment shall not be allowed to be washed back into the bed both during the time when the bottom of the bed is open and once the stone is in place.
d. Only uniformly graded, clean aggregate, free of fines, slate, shale, clay, silt, and vegetative material shall be used. The porosity of the stone must meet that which is specified on the plan. The supplier of the stone shall provide certification of the porosity of the stone delivered to the site. The design engineer shall verify that the porosity meets or exceeds the requirements of the design and submit such verification to the Township.
e. Compaction of the infiltration bed shall be avoided to the fullest extent possible. Heavy equipment and traffic shall be restricted from traveling over the proposed location of the infiltration trench to minimize compaction of the soil. Excavation of the bed shall be completed with relatively light tracked equipment or from outside the bed to avoid compaction of the bed floor.
Construction equipment shall only be allowed on the top of the stone after it has been placed to its full depth and to allow completion of the placement of the stone and backfill.
f. Drainage filter fabric shall be placed in accordance with manufacturer's directions, including pipe penetrations, and should overlap a minimum of 18 inches.
g. During site construction all facility components shall be protected from sedimentation using storm inlet protection in conformance with the Pennsylvania Department of Environmental Protection (PADEP) Chapter 102 regulations, as amended, and the Erosion and Sediment Pollution Control Manual, as amended. Inlet protection shall remain until the contributory drainage area has achieved full stabilization.
h. Infiltration/Seepage Bed shall be protected to the maximum extent possible from vehicular traffic and material laydown during construction.

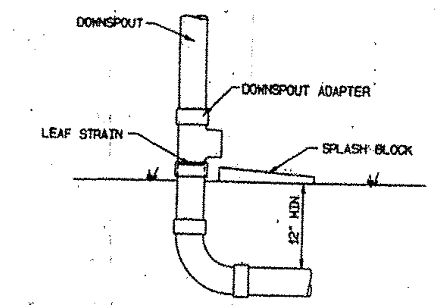


NOTES:

1. ENTIRE BED TO BE WRAPPED WITH NON-WOVEN GEOTEXTILE FABRIC WITH MINIMUM OVERLAP OF 12". FABRIC TO BE CLASS IV NON-WOVEN GEOTEXTILE FABRIC OR EQUAL.
2. AVOID COMPACTION IN AREA OF BED. BED BOTTOM TO BE SCARIFIED PRIOR TO PLACEMENT OF STONE.
3. STONE TO BE CLEAN WASHED AASHTO #1 AGGREGATE, OR WASHED 2B STONE
4. TOWNSHIP ENGINEER TO BE NOTIFIED 48 HOURS PRIOR TO CONSTRUCTION OF BED.

NEW WORK	
GARAGE	624SF
BREEZEWAY	60SF
MACADAM	495SF
NEW WORK	1179SF

IMPERVIOUS COVER		
DWELLING	3960 SF	
BILCO	30 SF	
POOL / DECKING	2754 SF	
PATIO (R)	704 SF	
STOOP/WALK	376 SF	
SHED	160 SF	
MACADAM	2305 SF	
EXISTING COVER	10389 SF	10.91%
NEW WORK	1179 SF	
PROPOSED COVER	11568 SF	12.15%



DOWNSPOUT DETAIL

SOIL TYPES

NeB	NESHAMINY SILT LOAM	3-8%	SLOPED
NvC	" "	8-15%	SLOPED
NvD	" "	15-25%	SLOPED
MIB	MOUNT LUCAS SILT LOAM	3-8%	SLOPED

PROJECT DESCRIPTION

THE OWNERS SHALL ERECT A NEW ATTACHED GARAGE AND BREEZWAY WITH AN INCREASED AREA OF MACADAM TO CONNECT TO EXISTING MACADAM. THE NEW 1179 SF OF IMPERVIOUS COVER WILL BE DIRECTED INTO A NEW B.M.P. ALL DISTURBED AREA WILL BE RETURNED TO LAWN.

PROJECT START APRIL 2017
COMPLETION DATE AUG 2017

I, John Smirga,P.E., on this date 9-13-2016, hereby certify to the best of my knowledge that the SWM Site Plan meets all design standards and criteria of the WILLISTOWN TWP. STORMWATER ORDINANCE.

John Smirga (signature)
John Smirga,P.E. Civil Engineer, Lic. No. 014584

LOCATION PLAN

1" = 1000'

ZONING REQUIREMENTS

ZONED	RA
AREA	2AC MIN.
WIDTH	200FT MIN.
BLDG COVER	12% MAX.
TOTAL COVER	15% MAX.
FY	75FT MIN.
SY	40FT MIN
RY	40FT MIN

UPI	54-8-3.4
LOT AREA	2.30AC
	95,188 SF NET

APPLICANTS CERTIFICATION OF PLAN:

"The Landowner acknowledges that, per the provisions of the Municipality's Stormwater Management Ordinance, it is unlawful to modify, remove, fill, landscape, alter or impair the effectiveness of, or place any structure, other vegetation, yard waste, brush cuttings, or other waste or debris into any permanent stormwater management BMP or Conveyance described in this O&M Plan or to allow the BMP or Conveyance to exist in a condition which does not conform to this O&M Plan, without written approval from the Municipality."

APPLICANT ________ DATE ________

NEW GARAGE PLAN

PATRICK & MELISSA MARKOWSKI
222 DUTTON MILL RD
WILLISTOWN TWP. CHESTER CO. PA.
1" = 20.0' AUG. 15, 2016

JOHN SMIRGA
7 VILLAGE CIRCLE
NEWTOWN SQUARE PA.
19073 610-202-2537
NFTLO@COMCAST.NET

Scale 1" = 20'