

ZONING DISTRICT: RU  
ZONING DISTRICT: PHC

WEST CHESTER PIKE - S.R.0003  
(VARIABLE WIDTH R/W)

LAND DEVELOPMENT PLAN  
SCALE: 1"=50'  
GRAPHIC SCALE  
1 inch = 50 feet

UPI #: 54-8-13.1

ZONING ORDINANCE

PLANNED HIGHWAY CORRIDOR DISTRICT (ARTICLE XXII)

PERMITTED CONDITIONAL USE (SECTION 139-131)

D. A COMBINATION OF USES PURSUANT TO A SINGLE UNIFIED MASTER DEVELOPMENT PLAN.

AREA AND HEIGHT REGULATIONS (SECTION 139-132.B.)

|                                   | REQUIRED | EXISTING        | PROPOSED        | RESERVED |
|-----------------------------------|----------|-----------------|-----------------|----------|
| (1) MIN. BOUNDARY BUFFER          | 100 FEET | 5 FEET [1], [2] | 5 FEET [1], [2] |          |
| (2) MIN. LOT AREA                 | 10 ACRES | 11.02 AC NET    | 11.02 AC NET    |          |
| (3) MIN. LOT WIDTH                | 450 FEET | 652 FEET        | 652 FEET        |          |
| (4) BUILDING PLACEMENT            |          |                 |                 |          |
| MIN. STREET LINE SETBACK          | 35 FEET  | 300 FEET        | 300 FEET        |          |
| MIN. BUILDING SEPARATION          | 40 FEET  | 51 FEET         | 51 FEET         |          |
| (5) BLDG. AND FLOOR AREA COVERAGE |          |                 |                 |          |
| MAX. BUILDING COVERAGE            | 30 %     | 2.43 %          | 3.47 %          | 2.11 %   |
| MAX. TOTAL IMP. COVERAGE          | NONE     | 9.50 %          | 13.97 %         | 19.55 %  |
| MAX. TOTAL FLOOR AREA             | 60 %     | 3.44 %          | 5.52 %          |          |
| (6) MAX. BUILDING HEIGHT          | 40 FEET  | 36 FEET         | 36 FEET         |          |

[1] ALONG ALL PUBLIC ROADS AND LANDS LOCATED OUTSIDE THE DISTRICT - 139-132.B.(1)  
[2] PERMITTED REDUCTION IN ACCORDANCE WITH CONDITIONAL USE DECISION ORDER 9/10/2001

OFF STREET PARKING (SECTION 139-98)

D.(3) SIZE, AISLE WIDTH: 10' X 20', 24' AISLE  
H. NONRESIDENTIAL REQUIREMENTS: PROFESSIONAL OFFICE

|                              | REQUIRED    | EXISTING | PROPOSED | RESERVED         | TOTAL   |
|------------------------------|-------------|----------|----------|------------------|---------|
| FLOOR AREA                   | 5/1000 S.F. |          |          | 20% LESS [1] [2] |         |
| EXISTING OFFICE BUILDINGS    | 22,974 S.F. | 115 SP.  | 100 SP.  | 16 SP.           |         |
| (1) PROPOSED OFFICE BUILDING | 10,000 S.F. | 50 SP.   | 41 SP.   | 19 SP.           |         |
| TOTAL FLOOR AREA & PARKING   | 32,974 S.F. | 165 SP.  | 100 SP.  | 35 SP.           | 176 SP. |

[1] REDUCTION IN REQUIRED PARKING AS PERMITTED BY SECTION 139-98.1. THE APPLICANT IS REQUESTING THE REDUCTION FOR THE PURPOSE OF REDUCING THE VISUAL IMPACT ON THE EXISTING HISTORIC STRUCTURE.  
[2] REDUCTION IN REQUIRED PARKING AS PERMITTED BY SECTION 139-98.1. THE APPLICANT IS REQUESTING THE REDUCTION FOR THE PURPOSE OF REDUCING THE IMPACT TO EXISTING PRECAUTIONARY STEEP SLOPES

SITE DEVELOPMENT DATA

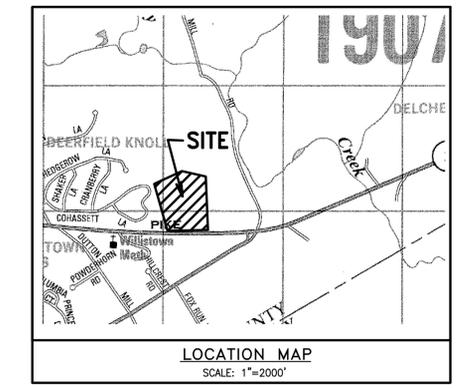
| EXISTING LOT AREA                          | ACRES       | S.F.         | % OF NET AREA |
|--|-------------|--------------|---------------|
| GROSS AREA                                 | 12.30 ACRES | 535,788 S.F. |               |
| AREA NET OF RT 3 R.O.W.                    | 11.02 ACRES | 479,901 S.F. |               |
| EXISTING LOT COVERAGE                      |             |              |               |
| FARMHOUSE BLDG. (4,814 S.F.), FOOTPRINT    |             | 3,947        | 0.82 %        |
| 3 STORY OFFICE (8,160 S.F.), FOOTPRINT     |             | 2,720        | 0.57 %        |
| 2 STORY OFFICE (10,000 S.F.), FOOTPRINT    |             | 5,000        | 1.04 %        |
| PAVING (93 PARKING SPACES & DRIVES, WALKS) |             | 45,603       | 9.50 %        |
| EXISTING TOTAL LOT COVERAGE                |             | 57,270       | 11.93 %       |
| PROPOSED LOT COVERAGE                      |             |              |               |
| 1, 2 STORY OFFICE 10,000 S.F. TOTAL        |             | 5,000        | 1.04 %        |
| PAVING (41 PARKING SPACES & DRIVES, WALKS) |             | 20,776       | 4.27 %        |
| TOTAL PROPOSED LOT COVERAGE                |             | 25,776       | 5.51 %        |

| (RESERVED) LOT COVERAGE                      | ACRES  | RATIO   | PROTECTED ACREAGE |
|--|--------|---------|-------------------|
| PAVING (46 RESERVED PARKING SPACES & DRIVES) | 10,111 | 2.11 %  |                   |
| TOTAL (RESERVED) LOT COVERAGE                | 10,111 | 2.11 %  |                   |
| TOTAL LOT COVERAGE                           |        |         |                   |
| BUILDING FOOTPRINTS                          | 16,667 | 3.47 %  |                   |
| PAVING                                       | 67,042 | 13.97 % |                   |
| RESERVED PAVING                              | 10,126 | 2.11 %  |                   |
| GRAND TOTAL LOT COVERAGE                     | 93,835 | 19.55 % |                   |

| NET DEVELOPABLE AREA              | ACRES       | RATIO | PROTECTED ACREAGE |
|-----------------------------------|-------------|-------|-------------------|
| GROSS SITE ACREAGE                | 12.30 ACRES |       |                   |
| BASE SITE ACREAGE                 | 11.02 ACRES |       |                   |
| LESS 100 FT. BUFFER               |             |       | - 5.30 ACRES      |
| NATURAL RESOURCES (NOT IN BUFFER) |             |       |                   |
| FLOODPLAIN/FLOODWAY               | N/A         | 100 % |                   |
| WETLAND                           | .39 AC.     | 100 % | .39 AC.           |
| STEEP SLOPES (>25%)               | .17 AC.     | 100 % | .17 AC.           |
| STEEP SLOPES (15-25%)             | .47 AC.     | 50 %  | .24 AC.           |
| WOODLAND                          | 1.08 AC.    | 75 %  | .81 AC.           |
| HYDRIC SOILS                      | N/A         | 50 %  |                   |
| RIPIARIAN BUFFER                  | 2.05 AC.    | 100 % | 2.05 AC.          |
| TOTAL PROTECTED LANDS             |             |       | - 3.66 AC.        |
| NET DEVELOPABLE ACREAGE           |             |       | 2.06 AC.          |

NET DEVELOPABLE AREA

| GENERAL NOTES:   |
|--|
| 1. OWNER: MICHAEL A. STOLPER & JANE C. STOLPER, 6022 WEST CHESTER PIKE, EDGEMONT, PA 19028-0419 (610) 647-8771, DEED REF. BOOK 4162, PG 884  |
| 2. AREA: 54-8-13.1, 12.300 AC.(GROSS), 11.017 AC.(NET)   |
| 3. BOUNDARY AND TOPOGRAPHICAL DATA WAS TAKEN FROM PLAN PREPARED BY BEIDEMAN & ASSOC. INC. PROJECT NO. 3331 DATED 8-23-01 WITH NO REVISION DATE. BENCHMARK: FINISHED HARD WOOD FLOOR OF OLD STONE HOUSE; MIDDLE DOOR ELEVATION: 298.9 DATUM: ASSUMED U.S.G.S. (PER REF. #9)   |
| 4. THERE IS NO FLOODPLAIN ON THIS PROPERTY AS PER THE FLOOD INSURANCE RATE MAP FOR WILLISTOWN TOWNSHIP, PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, COMMUNITY PANEL NO. 422282-0010-A.  |
| 5. WETLANDS WERE DELINEATED BY MCCREA RESEARCH, STEVENS, PA. SEPTEMBER 10, 11, AND 12 1992.  |
| 6. THE DEVELOPER SHALL CONFORM OR CAUSE CONFORMANCE WITH ALL OF THE APPLICABLE REQUIREMENTS OF THE WILLISTOWN TOWNSHIP ZONING, SUBDIVISION AND ENVIRONMENTAL PROTECTION ORDINANCES, AS WELL AS ANY APPLICABLE STATE, LOCAL AND FEDERAL LAWS, STATUTES, REGULATIONS AND ORDINANCES.   |
| 7. WILLISTOWN TOWNSHIP TRAILS ASSOCIATION HAS CONFIRMED THAT THERE ARE NO TRAILS ACROSS THE PROPERTY.  |
| 8. THERE ARE NO EXISTING OR PROPOSED WELLS WITHIN 100 FEET OF THE EXISTING OR PROPOSED SEPTIC SYSTEMS ON THE PROPERTY.   |
| 9. ON-SITE SEWER AND PUBLIC WATER ARE PROPOSED WITH THIS APPLICATION.  |
| 10. SECTION 139.107 OF THE WILLISTOWN TOWNSHIP ZONING ORDINANCE PROHIBITS CONSTRUCTION OF STRUCTURES ON SLOPES STEEPER THAN 15 PERCENT. ANY SUCH CONSTRUCTION SHALL CONFORM TO THE THEN EXISTING ORDINANCE REQUIREMENT OR MUST BE PERMITTED BY VARIANCE OR OTHER APPROPRIATE APPROVALS.  |
| 11. THE SUBDIVISION AND LAND DEVELOPMENT ORDINANCE SECTION 123.28.1 REQUIRES A 75 FOOT CLEAR SIGHT TRIANGLE. LOW STORY VEGETATION SHALL BE MAINTAINED AT A MAXIMUM HEIGHT OF 24 INCHES AND TREE BRANCHES SHALL BE MAINTAINED AT A MINIMUM HEIGHT OF 10 FEET. IF NECESSARY TO PROVIDE SAFE SIGHT LINES, THE MINIMUM NUMBER OF TREES SHALL BE REMOVED. |
| 12. THE PROPOSED COMMERCIAL USE DOES NOT REQUIRE LOADING AND UNLOADING AREAS AND, THEREFORE, COMPLIANCE WITH WILLISTOWN TOWNSHIP ZONING ORDINANCE SECTION 139-98.K IS NOT NECESSARY.   |
| 14. THE EXISTING OFFICE/FARMHOUSE IS A HISTORIC STRUCTURE KNOWN AS THE LEVI GARRET FARMHOUSE.  |
| 15. TOWNSHIP BOARD OF SUPERVISORS ON SEPTEMBER 10, 2001, TO PERMIT THE CONSTRUCTION OF TWO PROFESSIONAL OFFICE BUILDINGS WITH ASSOCIATED PARKING AND RESERVE PARKING.  |
| 16. A TRAFFIC IMPACT STUDY WAS PREVIOUSLY SUBMITTED FOR THE STOLPER OFFICE EXPANSION CONSISTING OF THE ADDITION OF 20,000 S.F. OF PROFESSIONAL OFFICES WITH ASSOCIATED PARKING. THE STUDY WAS PREPARED BY TRAFFIC PLANNING AND DESIGN INC. DATED JULY 18, 2000 TPD #1653.A2 A CONDITIONAL USE DECISION AND ORDER WAS ADOPTED BY THE WILLISTOWN       |
| 17. RESERVE PARKING INDICATED ON THIS PLAN IS SHOWN TO DEMONSTRATE COMPLIANCE WITH THE ZONING ORDINANCE OFF STREET PARKING REGULATIONS.  |
| 18. THE TOTAL IMPERVIOUS COVERAGE PERMITTED FOR THE PROPERTY SHALL NOT EXCEED THE AMOUNT OF COVERAGE PERMITTED FOR THE PROPERTY WITHOUT ENCROACHMENT INTO ANY BUFFER AREA.   |
| 19. THE PLACEMENT OF FIRE HYDRANTS AND THE COMPONENTS OF THE SYSTEM HAVE BEEN REVIEWED BY THE FIRE MARSHALL AND THAT BOTH ARE COMPATIBLE WITH FIRE FIGHTING METHODS AND EQUIPMENT UTILIZED BY THE LOCAL FIRE COMPANY.  |
| 19. A 20% REDUCTION IN THE RESERVE PARKING HAS BEEN AUTHORIZED BY THE BOARD OF SUPERVISORS IN ACCORDANCE WITH SECTION 139-98.1 OF THE WILLISTOWN TOWNSHIP ZONING ORDINANCE. THIS IS FOR THE EXISTING RESERVE PARKING.  |



COMMONWEALTH OF PENNSYLVANIA COUNTY OF CHESTER

ON THIS THE \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_ A.D. BEFORE ME, THE SUBSCRIBER, A NOTARY PUBLIC OF THE COMMONWEALTH OF PENNSYLVANIA, RESIDING IN \_\_\_\_\_, PERSONALLY APPEARED \_\_\_\_\_ WHO ACKNOWLEDGES \_\_\_\_\_ SELF TO BE THE \_\_\_\_\_ OF \_\_\_\_\_ AND THAT AS SUCH TO DO SO, \_\_\_\_\_ EXECUTED THE FOREGOING PLAN BY SIGNING THE NAME OF THE SAID \_\_\_\_\_ THAT THE SAID \_\_\_\_\_ IS THE OWNER OF THE DESIGNATED LAND, IS ENDORSED THEREON AND THAT THE SAID DESIRES THAT THE FOREGOING PLAN MAY BE DULY RECORDED.

NOTARY PUBLIC  
MY COMMISSION EXPIRES: \_\_\_\_\_

REVIEWED BY THE PLANNING COMMISSION OF WILLISTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA, THIS DAY OF \_\_\_\_\_, 20\_\_\_\_

PAINT LEGEND  
4" S.W.L. 4" WIDE SOLID WHITE LINE  
HANDICAPPED SPACE  
48"x48" BLUE AND WHITE HANDICAPPED SYMBOL  
4" WIDE SOLID BLUE LINE

SIGN LEGEND  
S1 1 RESERVED PARKING SIGN FOR HANDICAPPED R7-18 12"x18"  
TOW-AWAY ZONE SIGN R7-20 12"x6"  
\$ 250 FINE NOTICE SIGN 12"x6"  
S2 1 RESERVED PARKING SIGN FOR HANDICAPPED R7-B 12"x18"  
"VAN ACCESSIBLE" SIGN R7-BA 6"x12"  
TOW-AWAY ZONE SIGN R7-20 12"x6"  
\$ 250 FINE NOTICE SIGN 12"x6"

CERTIFICATE OF CONFORMANCE  
I HEREBY CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE, THESE PLANS ARE IN CONFORMITY WITH ENGINEERING, ZONING, BUILDING, SANITATION AND OTHER APPLICABLE TOWNSHIP ORDINANCES AND REGULATIONS.

DENNY LEE HOWELL II, P.E. LICENSE NO. 053098-E

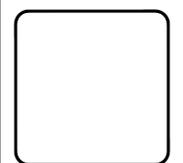
REVIEWED BY THE CHESTER COUNTY PLANNING COMMISSION  
REVIEWED BY THE WILLISTOWN TOWNSHIP ENGINEER  
TOWNSHIP ENGINEER THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_  
RECORDED IN THE OFFICE OF THE RECORDER OF DEEDS OF CHESTER COUNTY AT WEST CHESTER, PENNSYLVANIA, IN PLAN BOOK \_\_\_\_\_ PAGE \_\_\_\_\_ ON THE \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_  
(DEPUTY) RECORDER OF DEEDS

| DRAWING INDEX |                |                          |
|---------------|----------------|--------------------------|
| SHEET NUMBER  | DRAWING NUMBER | SHEET TITLE              |
| 01            | C01.1          | LAND DEVELOPMENT PLAN    |
| 02            | C01.2          | LAND DEVELOPMENT NOTES   |
| 03            | C02.1          | CONSERVATION PLANS       |
| 04            | C03.1          | GRADING & UTILITIES PLAN |
| 05            | C04.1          | PCSMM PLAN               |
| 06            | C04.2          | PCSMM NOTES              |
| 07            | C04.3          | PCSMM DETAILS            |
| 08            | C05.1          | EROSION CONTROL PLAN     |
| 09            | C05.2          | EROSION CONTROL NOTES    |
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| 12            | L1             | LANDSCAPE PLAN           |
| 13            | L2             | LANDSCAPE DETAILS        |



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| REV. | DATE     | DESCRIPTION                        |
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| 1    | 09/16/16 | REVISIONS PER COCD REVIEW 09/08/16 |

PRELIMINARY/FINAL  
LAND DEVELOPMENT PLAN  
CLIENT: MICHAEL A. STOLPER  
PROJECT: PHASE II - 10,000 S.F. OFFICE BLDG.  
LOCATION: 6022 WEST CHESTER PIKE, EDGEMONT, PA 19028  
WILLISTOWN TOWNSHIP, CHESTER COUNTY, PA

DATE: 04/29/16  
SCALE: 1"=50'  
DRAWN BY: ACB  
CHECKED BY: JSR  
PROJECT NO.: 1155  
CAD FILE: 01 LAND DEVELOPMENT PLANS.dwg  
PLOTTED: 09/16/16  
DRAWING NO.: C01.1  
SHEET 01 OF 13

**PREVIOUSLY GRANTED CONDITIONAL USES FOR STEEP SLOPES:**

1. A CONDITIONAL USE WAS GRANTED BY THE WILLISTOWN TWP. BOARD OF SUPERVISORS ON MAY 28, 2002, ORDER NUMBER C-1-02, IN ACCORDANCE WITH SECTION 73-32.D(4) TO ALLOW A SANITARY SEWER FORCE MAIN TO BE CONSTRUCTED WITHIN PRECAUTIONARY AND PROHIBITIVE SLOPES.

**PREVIOUSLY GRANTED CONDITIONAL USES FOR RBA ZONE 1:**

2. A CONDITIONAL USE WAS GRANTED BY THE WILLISTOWN TWP. BOARD OF SUPERVISORS ON MAY 28, 2002, ORDER NUMBER C-1-02, IN ACCORDANCE WITH SECTION 73-62A.(2)(b) TO ALLOW CONSTRUCTION OF THE SANITARY SEWER FORCE MAIN TO CROSS PERPENDICULAR TO THE BODY OF WATER.
3. A CONDITIONAL USE WAS GRANTED BY THE WILLISTOWN TWP. BOARD OF SUPERVISORS ON MAY 28, 2002, ORDER NUMBER C-1-02, IN ACCORDANCE WITH SECTION 73-62A.(2)(g) TO ALLOW OUTFALL INTO THE ZONE 1 RBA FROM SEEPAGE BED #2.

**PREVIOUSLY GRANTED CONDITIONAL USES FOR RBA ZONE 2:**

4. A CONDITIONAL USE WAS GRANTED BY THE WILLISTOWN TWP. BOARD OF SUPERVISORS ON MAY 28, 2002, ORDER NUMBER C-1-02, IN ACCORDANCE WITH SECTION 73-62.B.(2)(b) TO ALLOW WATER AND SEWER LINES TO RUN PARALLEL TO A BODY OF WATER ALONG THE RBA.
5. A CONDITIONAL USE WAS GRANTED BY THE WILLISTOWN TWP. BOARD OF SUPERVISORS ON MAY 28, 2002, ORDER NUMBER C-1-02, IN ACCORDANCE WITH SECTION 73-62A.(2)(g) TO ALLOW OUTFALL INTO THE ZONE 2 RBA FROM SEEPAGE BED #1.

**PREVIOUSLY GRANTED WAIVER REQUESTS:**

1. A WAIVER IS HEREBY REQUESTED FROM SECTION 123-47 OF THE SUBDIVISION AND LAND DEVELOPMENT ORDINANCE PER THE REQUIREMENTS OF CHAPTER 73, ARTICLE X, SECTION 73-54-A, 1, AND 3, TO RELAX THE REQUIRED LANDSCAPE MATERIAL QUANTITIES DUE TO THE EXISTING PLANT MATERIAL WHICH ACHIEVES THE MITIGATION OF VISUAL IMPACTS OF NEW CONSTRUCTION.
2. A WAIVER IS HEREBY REQUESTED FROM SECTION 123-47 OF THE SUBDIVISION AND LAND DEVELOPMENT ORDINANCE PER THE REQUIREMENTS OF CHAPTER 73, ARTICLE X, SECTION 73-54-A, 4, AND 5, TO RELAX THE REQUIRED LANDSCAPE MATERIAL QUANTITIES DUE TO THE EXISTING PLANT MATERIAL WHICH IS ALREADY PROVIDED WITH BOTH EXISTING TOPOGRAPHY AND EXISTING VEGETATION. FURTHERMORE, WOULD ALSO REQUIRE AN ADDITIONAL 160 TREES AND SHRUBS FOR WHICH THERE IS VERY LITTLE ROOM TO ADD THIS MATERIAL TO THE SITE.

**VARIANCE GRANTED:**

VARIANCE RELIEF FROM §73-32.C WAS GRANTED BY THE ZONING HEARING BOARD ON AUGUST 24, 2016 TO ALLOW PARKING, RETAINING WALL, AND GRADING WITHIN THE PRECAUTIONARY SLOPE AREAS.

**CONDITIONAL USE REQUIRED:**

A CONDITIONAL USE HEARING IS REQUIRED PER §73-32.D TO ALLOW FOR PRIMARY ACCESS TO THE USE THROUGH THE STEEP SLOPES AND FOR UNDERGROUND UTILITIES TO PASS THROUGH THE STEEP SLOPES.

UPI #: 54-8-13.1



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| 21   | 09/16/16 | REVISIONS PER CDDI REVIEW 09/08/16 |

**PRELIMINARY/FINAL  
LAND DEVELOPMENT NOTES**  
 CLIENT: MICHAEL A. STOLPER  
 PROJECT: PHASE II - 10.00 S.F. OFFICE BLDG.  
 LOCATION: 6022 WEST CHESTER PIKE, EDMONT, PA 19028  
 WILLISTOWN TOWNSHIP, CHESTER COUNTY, PA

DATE: 04/29/16  
 SCALE: 1"=50'  
 DRAWN BY: ACB  
 CHECKED BY: JSR  
 PROJECT NO.: 1155  
 CDDI FILE OF LAND DEVELOPMENT PLANS.dwg  
 PLOTTED: 09/16/16  
 DRAWING NO.: C01.2  
 SHEET 02 OF 13





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PRELIMINARY/FINAL  
**GRADING & UTILITIES PLAN**  
CLIENT: MICHAEL A. STOLPER  
PROJECT: PHASE II - 10,000 S.F. OFFICE BLDG.  
LOCATION: 6022 WEST CHESTER PIKE, EDGE MONT, PA 19028  
WILLISTOWN TOWNSHIP, CHESTER COUNTY, PA

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| DATE:        | 04/29/16                        |
| SCALE:       | 1"=50'                          |
| DRAWN BY:    | ACB                             |
| CHECKED BY:  | JSR                             |
| PROJECT NO.: | 1155                            |
| CAD FILE:    | 04 GRADING & UTILITIES PLAN.dwg |
| PLOTTED:     | 09/16/16                        |
| DRAWING NO.: | C03.1                           |
| SHEET:       | 04 OF 13                        |

ACT 38 SERIAL NUMBER 230680

D. L. HOWELL & ASSOCIATES, INC. DO NOT GUARANTEE THE ACCURACY OF THE LOCATIONS FOR EXISTING SUBSURFACE UTILITY LINES, STRUCTURES, ETC. SHOWN ON THESE PLANS NOR DOES D. L. HOWELL & ASSOCIATES, INC. GUARANTEE THAT ALL SUBSURFACE UTILITY LINES, STRUCTURES, ETC. ARE SHOWN.

THE CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF ALL SUBSURFACE UTILITY LINES, STRUCTURES, ETC. BEFORE THE START OF ANY WORK. PHONE: 1-800-242-1776.

UTILITIES NOTIFIED

- WILLISTOWN TOWNSHIP
- WORLD COMM
- PHILA. SUBURBAN WATER CO.
- COMCAST
- PECO ENERGY
- ATT LOCAL COMMUNICATIONS
- VERIZON
- TRANSCONTINENTAL GAS PIPELINE
- MOBILE PIPELINE
- VALLEY FORGE SEWER AUTHORITY

STEEP SLOPES LEGEND

- STEEP SLOPES (15-25%)
- STEEP SLOPES (>25%)
- STEEP SLOPES TO BE DISTURBED (10,949 S.F.)

LEGEND

- EX. PROPERTY LINE
- PROP. PROPERTY LINE
- EX. RIGHT-OF-WAY
- PROP. RIGHT-OF-WAY
- EX. MONUMENT
- PROP. MONUMENT
- EX. EASEMENT
- PROP. EASEMENT
- EX. WETLANDS
- EX. EXISTING CONTOUR
- PROP. CONTOUR
- EX. EXISTING SPOT ELEV.
- NEW SPOT ELEV.
- EX. SOILS TYPE
- EX. CONC. CURB
- PROP. CONC. CURB
- EX. EDGE OF PAVING
- PROP. EDGE OF PAVING
- EX. LIGHT POLE
- PROP. LIGHT POLE
- EX. FENCE
- EX. MAIL BOX
- EX. SIGN
- PROP. SIGN
- EX. PARKING SPACES
- PROP. PARKING SPACES TO BE REMOVED
- EX. TELE. LINE
- PROP. TELE. LINE
- EX. ELEC. LINE
- PROP. ELEC. LINE
- EX. PROP. UTILITY POLE
- EX. CUY. ANCHOR
- EX. GAS LINE
- PROP. GAS LINE
- EX. GAS VALVE
- PROP. GAS VALVE
- EX. STORM SEWER LINE
- PROP. STORM SEWER LINE
- EX. STORM INLET
- PROP. STORM INLET
- EX. STORM INLET ID
- PROP. STORM INLET ID
- EX. SEEPAGE BED
- PROP. SEEPAGE BED
- EX. SANITARY SEWER LINE
- PROP. SAN. SEWER LINE
- EX. SAN. SEWER LATERAL
- PROP. SANITARY MH. ID
- EX. WATER LINE
- PROP. WATER LINE
- EX. WATER LATERAL
- PROP. FIRE WATER LINE
- EX. WATER VALVE
- EX. HYDRANT
- PROP. HYDRANT
- EX. MANHOLE
- PROP. MANHOLE

GENERAL NOTES:

- PRIOR TO STARTING CONSTRUCTION, ALL UTILITY SERVICES IN THE AREA SHALL BE LOCATED AND MEASURES TAKEN TO PROTECT THE EXISTING FACILITIES. ANY DAMAGE TO EXISTING FACILITIES SHALL BE IMMEDIATELY AND COMPLETELY REPAIRED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT ALL PERSONS VEHICLES AND BUILDINGS WITHIN THE CONSTRUCTION AREAS FROM INJURY AND DAMAGE DURING THE COURSE OF WORK.
- CONSTRUCTION SHALL BE LOCATED, AND MEASURES TAKEN TO PROTECT THE EXISTING FACILITIES IN ACCORDANCE WITH PENNSYLVANIA ACT 38. ANY DAMAGE TO EXISTING FACILITIES RESULTING FROM THE NEGLIGENCE OF THE CONTRACTOR SHALL BE IMMEDIATELY AND COMPLETELY REPAIRED AT THE CONTRACTOR'S EXPENSE.
- LOCATION OF EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM FIELD SURVEY AND EXISTING RECORDS. COMPLETENESS AND ACCURACY OF EXISTING UTILITY INFORMATION IS NOT GUARANTEED. PRIOR TO THE START OF ANY CONSTRUCTION, THE CONTRACTOR SHALL ACCURATELY FIELD MEASURE LOCATION AND ELEVATION OF EXISTING UTILITIES AT POINTS OF CONNECTION AND POTENTIAL CONFLICT. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND ENGINEER OF ANY DEVIATION FROM INFORMATION SHOWN ON THESE PLANS.
- ALL SITE IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE LOCAL, COUNTY, STATE AND FEDERAL STATUTES AND REGULATIONS.
- ALL TRENCHING, SHORING AND EXCAVATING OPERATIONS SHALL BE PERFORMED IN COMPLIANCE WITH THE REQUIREMENTS OF THE U.S. DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).
- SCALED DIMENSIONS FROM THIS PLAN SHALL NOT BE USED FOR CONSTRUCTION WITHOUT CONFIRMATION FROM D.L. HOWELL & ASSOC. INC.
- IF ANY UNSUITABLE SOIL IS ENCOUNTERED DURING EXCAVATION, THE CONTRACTOR SHALL REMOVE IT AND REPLACE IT WITH COMPACTED STRUCTURAL MATERIAL.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE LOCAL AUTHORITY OR GOVERNING AGENCY OF THE BEGINNING DATE OF CONSTRUCTION AND TO ENSURE THAT NO WORK IS PERFORMED WITHOUT THE REQUIRED PERMITS AND INSPECTIONS BY THE LOCAL AUTHORITY OR GOVERNING AGENCY.
- IF CONDITIONS IN THE FIELD DIFFER FROM THOSE SHOWN ON THE PLAN, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED TRAFFIC CONTROL, SHEETING, SHORING AND BARRICADING OF OPEN EXCAVATIONS.
- ALL MATERIALS AND METHODS OF CONSTRUCTION FOR STORMWATER FACILITIES AND SEEDING SHALL CONFORM TO PENNDOT FORM 408 SPECIFICATIONS, 1994.
- ALL INLETS, MANHOLES AND ASSEMBLIES SHALL BE PRECAST CONCRETE.
- THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR AND HAVE CONTROL OVER CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES, SAFETY PRECAUTIONS, AND PROGRAMS IN CONNECTION WITH THE WORK AND FOR COORDINATION OF ALL PORTIONS OF THE WORK UNDER CONTRACT.
- CONTRACTOR SHALL REVIEW VARIOUS PHASES OF WORK WITH THE OWNER TO DETERMINE WHETHER ANY PHASE WILL CONFLICT WITH THE OWNER'S DAILY OPERATIONS. WHERE CONFLICT IS APPARENT THE CONTRACTOR SHALL COORDINATE WITH THE OWNER THE WORK TO BE PERFORMED SO AS TO BE THE LEAST DISRUPTIVE.
- ALL INLETS SHALL BE CONSTRUCTED FLUSH WITH THE BINDER COURSE.
- ALL CURBING, CONCRETE OR PAVING TO BE REMOVED SHALL BE SAW CUT FIRST TO ENSURE A CLEAN SEPARATION FROM EXISTING.
- ANY PAVING DAMAGED DURING CONSTRUCTION ACTIVITIES SHALL BE REMOVED TO SUBGRADE AND REPLACED WITH THE PAVING SECTION.
- WHERE ALL NEW BITUMINOUS PAVING MEETS EXISTING BITUMINOUS A HOT BITUMINOUS SEALANT SHALL BE POURED ALONG THE SAW CUT JOINT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER REMOVAL, REPLACEMENT, AND MAINTENANCE OF ALL EXISTING LANDSCAPING DURING CONSTRUCTION. THIS INCLUDES PROPERLY STORING MATERIAL TO BE REUSED, PRUNING WHERE REQUIRED AND PROTECTING EXISTING ROOT STRUCTURES OF TREES WHERE CONSTRUCTION OCCURS WITHIN THE DRIP LINE.

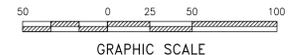
SEEPAGE BED NOTES:

- IF THE CONTRACTOR ENCOUNTERS HIGH WATER TABLE LEVELS OR BEDROCK DURING CONSTRUCTION OF THE SEEPAGE BEDS, THE CONTRACTOR IS TO CONTACT THE DESIGN ENGINEER TO REDESIGN THE SEEPAGE BEDS, THE TOWNSHIP ENGINEER IS TO BE NOTIFIED OF THE CHANGE, AND THE REDESIGN IS TO BE RESUBMITTED TO THE TOWNSHIP FOR REVIEW AND APPROVAL BEFORE THE SEEPAGE BEDS ARE COMPLETED.

WETLAND AREA = 22,893 S.F.



GRADING & UTILITIES PLAN  
SCALE: 1"=50'

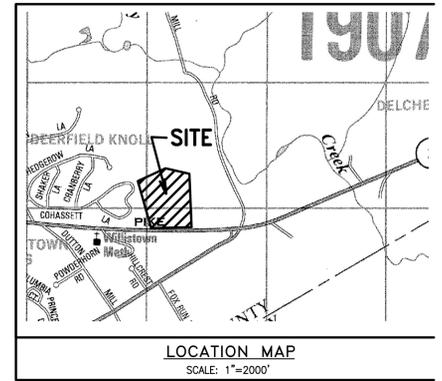




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**RECEIVING SURFACE WATERS - 102.8(f)(5)**  
\*THE PENNSYLVANIA TITLE 25, CHAPTER 93 CLASSIFICATION FOR THE RECEIVING WATERS OF THE COMMONWEALTH  
HILLSIDE RUN, A TRIBUTARY TO THE ROULEY CREEK IN THE ROULEY CREEK WATERSHED, A HIGH QUALITY (HQ) WATER COURSE  
**SURFACE WATERS NOTE**  
1. THE SITE IS SITUATED WITHIN THE ROULEY CREEK WATERSHED AND WILL DISCHARGE TO HILLSIDE RUN. PEAK FLOWS AND THE NECESSARY VOLUME REDUCTIONS ARE PROVIDED TO THIS POINT OF INTEREST.

**ACKNOWLEDGMENT OF RESPONSIBILITY**  
ON THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_ A.D., BEFORE ME, THE SUBSCRIBER, PERSONALLY APPEARED \_\_\_\_\_ KNOWN TO ME OR SATISFACTORILY PROVEN TO BE THE PERSON(S) OR ORGANIZATION WHO, DULY SWORN ACCORDING TO LAW, DEPOSE AND SAY THAT THEY ARE THE OWNERS OF THE PROPERTY SHOWN ON THIS PLAN, AND THAT THEY ACKNOWLEDGE THAT STORMWATER BMP'S ARE PERMANENT FEATURES THAT CAN BE ALTERED AND REMOVED ONLY AFTER APPROVAL BY THE DEP, THE CHESTER COUNTY CONSERVATION DISTRICT AND THE TOWNSHIP.

PRINT \_\_\_\_\_  
SIGNATURE \_\_\_\_\_  
NOTARY PUBLIC \_\_\_\_\_  
COUNTY: \_\_\_\_\_  
MY COMMISSION EXPIRES: \_\_\_\_\_  
DATE \_\_\_\_\_

**CERTIFICATE OF CONFORMANCE - P.E.**  
I, DENNY L. HOWELL, P.E., ON THIS DATE, HEREBY CERTIFY THAT THE SWM SITE PLAN MEETS ALL DESIGN STANDARDS AND CRITERIA OF THE WEST GOSHEN TOWNSHIP STORMWATER MANAGEMENT ORDINANCE.

DENNY L. HOWELL, PE DATE \_\_\_\_\_

**IMPERVIOUS NOTE**  
THE PLAN PROPOSES NINETEEN FUTURE PARKING SPACES TO BE HELD IN RESERVE FOR POSSIBLE FUTURE NEEDS. ALL STORMWATER MANAGEMENT CALCULATIONS INCLUDE THE IMPERVIOUS SURFACES CREATED FROM THE INSTALLATION OF THE FUTURE PARKING SPACES.

**BMP GENERAL NOTE**  
UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENTATION BMP'S MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENTATION BMP'S AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL SITE INSPECTIONS WILL BE DOCUMENTED IN AN INSPECTION LOG KEPT FOR THIS PURPOSE. THE COMPLIANCE ACTIONS AND THE DATE, TIME AND NAME OF THE PERSON CONDUCTING THE INSPECTION. THE INSPECTION LOGS WILL BE KEPT ON SITE AT ALL TIMES AND MADE AVAILABLE TO THE DISTRICT UPON REQUEST. ALL PREVENTIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, REMULCHING, RESEEDING, AND RESETTING MUST BE PERFORMED IMMEDIATELY IF EROSION AND SEDIMENTATION BMP'S FAIL TO PERFORM AS EXPECTED. REPLACEMENT BMP'S OR MODIFICATIONS OF THOSE INSTALLED WILL BE NEEDED. WHERE BMP'S ARE FOUND TO FAIL TO ADEQUATELY EROSION OR SEDIMENTATION POLLUTION THE PERMITTEE OR CO-PERMITTEE SHALL INCLUDE THE FOLLOWING INFORMATION:  
THE LOCATION AND SEVERITY OF THE BMP'S FAILURE AND ANY POLLUTION EVENTS.  
ALL STEPS TAKEN TO REDUCE, ELIMINATE AND PREVENT THE REOCCURENCE OF THE NON-COMPLIANCE.  
THE TIME FRAME TO CORRECT THE NON-COMPLIANCE, INCLUDING THE EXACT DATES WHEN THE ACTIVITY WILL RETURN TO COMPLIANCE.

**RESULTS OF INFILTRATION ANALYSIS**

| TEST ID | GROUND ELEVATION | TEST ELEVATION | TEST DEPTH (IN.) | DEPTH TO LIMITING ZONE (IN.) | AVG. INFILTRATION RATE (IN/HR) |
|---------|------------------|----------------|------------------|------------------------------|--------------------------------|
| TP-1    | 288.0            | 284.0          | 48               | NE                           | 0.924                          |
| TP-2    | 294.0            | 284.0          | 120              | NE                           | 0.695                          |

**HIGH QUALITY WATERSHED NOTES:**

- THE PROJECT IS LOCATED IN A HIGH QUALITY WATERSHED. THE SPECIAL PROTECTION WATERSHED IMPLEMENTATION HANDBOOK BEST MANAGEMENT PRACTICES APPLY TO ALL NON-AGRICULTURAL ACTIVITIES/PROJECTS RESULTING IN AN EARTH DISTURBANCE ON HIGH QUALITY OR EXCEPTIONAL VALUE WATERSHEDS. IMPLEMENTATION OF THESE PRACTICES AND THE ADDITIONAL REQUIREMENTS FOR SPECIFIC ACTIVITIES LISTED IN THE HANDBOOK PLUS SELECTED STORMWATER MANAGEMENT PRACTICES DESCRIBED IN SECTION TWO OF THE HANDBOOK CONSTITUTE APPROPRIATE, REASONABLE AND COST EFFECTIVE BEST MANAGEMENT PRACTICES FOR NON-POINT SOURCE CONTROL. PERSONS ENGAGED IN THESE LAND DISTURBANCE ACTIVITIES ARE EXPECTED TO COMPLY WITH BOTH THE GENERAL AND PROGRAM SPECIFIC REQUIREMENTS LISTED IN THIS APPENDIX.
- THIS PROJECT IS IN A HIGH QUALITY STREAM WATERSHED. EXTREME CARE SHOULD BE EXERCISED IN ALL DISTURBANCE ACTIVITIES TO PREVENT DEGRADATION TO THE WATERS OF THE COMMONWEALTH.
- BECAUSE THIS PROJECT IS IN A SPECIALLY PROTECTED HIGH QUALITY OR EXCEPTIONAL VALUE WATERSHED, UPON COMPLETION OR TEMPORARY CESSATION OF EARTH DISTURBANCE ACTIVITIES, THE PROJECT SITE MUST BE IMMEDIATELY STABILIZED WITH THE APPROPRIATE TEMPORARY OR PERMANENT STABILIZATION.

**LEGEND**

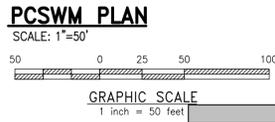
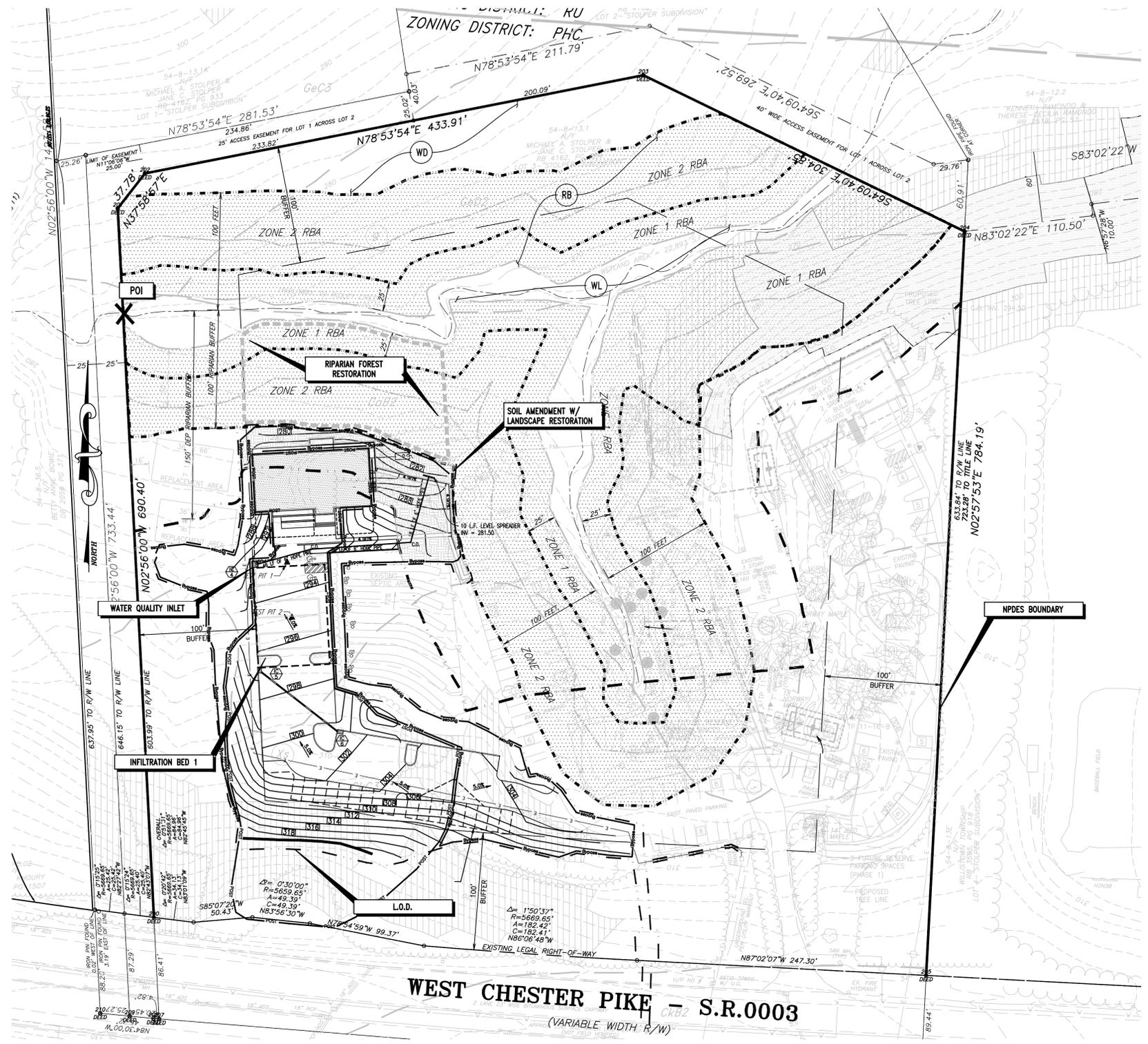
- PROP. PROPERTY LINE
- PROP. RIGHT-OF-WAY
- EX. MONUMENT
- PROP. MONUMENT
- EX. IRON PIPE
- PROP. IRON PIPE
- EX. EASEMENT
- PROP. EASEMENT
- EX. WETLANDS
- EX. EXISTING CONTOUR
- [724] PROPOSED CONTOUR
- [723.00] EX. FINISH ELEV.
- [723.00] NEW SPOT ELEV.
- GEB2 SOILS TYPE
- EX. CONC. CURB
- PROP. CONC. CURB
- PROP. EDGE OF PAVING
- EX. LIGHT POLE
- PROP. LIGHT POLE
- EX. FENCE
- EX. MAIL BOX
- EX. SIGN
- PROP. SIGN
- EX. EXIST. PARKING SPACES
- PROP. PARKING SPACES TO BE REMOVED
- EX. TELE. LINE
- PROP. TELE. LINE
- EX. ELEC. LINE
- PROP. ELEC. LINE
- EX. UTILITY POLE
- PROP. UTILITY POLE
- EX. GUY ANCHOR
- PROP. GAS LINE
- EX. PROP. GAS VALVE
- EX. STORM SEWER LINE
- PROP. STORM SEWER LINE
- PROP. STORM INLET
- PROP. STORM INLET ID
- PROP. SEEPAGE BED
- EX. SANITARY SEWER LINE
- PROP. SAN. SEWER LINE
- L PROP. SAN. SEWER LATERAL
- PROP. SANITARY MH. ID
- EX. WATER LINE
- PROP. WATER LINE
- WL PROP. WATER LATERAL
- FW PROP. FIRE WATER LINE
- EX. WATER VALVE
- W.V. VALV PROP. WATER VALVE
- EX. HYDRANT
- PROP. HYDRANT
- EX. MANHOLE
- PROP. MANHOLE

**NATURAL SENSITIVE RESOURCE LEGEND**

|                           | TOTAL AREA (AC.) | PROTECTED AREA (AC.) |
|---------------------------|------------------|----------------------|
| ⊙ RIPARIAN BUFFER AREA    | 4.02 AC.         | 4.02 AC.             |
| ⊙ WETLANDS                | 0.53 AC.         | 0.53 AC.             |
| ⊙ WOODLAND AREA           | 2.58 AC.         | 2.58 AC.             |
| ⊙ STEEP SLOPES 25%+       | 0.46 AC.         | 0.17 AC.             |
| ⊙ STEEP SLOPES 15% TO 25% | 1.36 AC.         | 0.74 AC.             |

**STORMWATER BMP LEGEND**

|  |                                  |
|--|----------------------------------|
| BMP 6.4.3: SUBSURFACE INFILTRATION BED | BMP 6.7.2: LANDSCAPE RESTORATION |
| BMP 6.6.4: WATER QUALITY FILTERS       | BMP 6.7.3: SOIL AMENDMENTS       |
| BMP 6.7.1: RIPARIAN BUFFER RESTORATION | BMP 6.8.1: LEVEL SPREADER        |



Stormwater BMP Information Chart 5.8 revised March 15, 2016

| Proposed Structural BMP's (Site specific) | Infiltration Information                       |                  |                                 |                                   | Drainage Information                                      |                                    |   |                                       | BMP Information                                |  |   |   |   |  |  |   |   |
|---|--|------------------|---------------------------------|-----------------------------------|---|------------------------------------|---|---------------------------------------|--|--|---|---|---|--|--|---|---|
|   | Measured Infiltration Rate <sup>1</sup> in/hr. | Factor of Safety | Design Infiltration Rate in/hr. | Dewatering Time <sup>1</sup> hrs. | Elevation of Limiting Zone - Water Table, Bedrock, etc. 2 | Total Drainage Area to BMP sq. ft. | Total Impervious Drainage Area to BMP sq. ft. | Infiltration BMP Surface Area sq. ft. | Total Drainage Area Loading Ratio <sup>3</sup> | Impervious Area Loading Ratio <sup>3</sup> | Volume of Runoff Tributary to BMP During the 2-year Storm <sup>4</sup> (cf) | Calculated Infiltration Volume from storms up to and including 2yr(24hr) cf | Calculated Management Volume from storms up to and including 2yr(24hr) cf | Maximum water surface elevation in BMP from 2yr storm <sup>5</sup> | Infiltration Elevation (Bottom of Bed/Basin) 3 | Elevation of Infiltration Test <sup>4</sup> | Elevation of E&S Sediment Basin (Bottom if applies) |
| BMP 6.4.3 Subsurface Infiltration Bed     | 0.80   | 2                | 0.40                            | 36                                | N/A   | 52,438                             | 36,497  | 5,168                                 | 10   | 7  | 8,135   | 6,222   | 0   | 291.0  | 288.0  | 284.0                                       | N/A   |

All information should be based on the 2-year/24-hour storm.  
Provide page numbers from the stormwater narrative identifying the location of the above information.

PRELIMINARY/FINAL  
PCSWM PLAN



| NO. | DATE     | REVISIONS | DESCRIPTION              |
|-----|----------|-----------|--------------------------|
| 6   |          |           |                          |
| 7   |          |           |                          |
| 8   |          |           |                          |
| 9   |          |           |                          |
| 10  |          |           |                          |
| 11  | 09/16/16 | REVISIONS | PER CDDC REVIEW 09/08/16 |

CUSTOMER: MICHAEL A. STOLPER  
PROJECT: PHASE II - 10.00 S.F. OFFICE BLDG.  
LOCATION: 6022 WEST CHESTER PIKE, EDGE MOUNT, PA 19028  
WILLISTOWN TOWNSHIP, CHESTER COUNTY, PA

DATE: 04/29/16  
SCALE: 1"=50'  
DRAWN BY: ACB  
CHECKED BY: JSR  
PROJECT NO.: 1155  
CDD FILE: 57 PCSWM DETAILS.dwg  
PLOTTED: 09/16/16  
DRAWING NO.: C04.1  
SHEET 05 OF 13



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### BMP 6.7.1 RIPARIAN BUFFER RESTORATION

**THE INSTALLATION OF THIS BMP IS A CRITICAL STAGE WHERE THE DESIGN ENGINEER MUST BE CONTACTED AT LEAST 48 HOURS IN ADVANCE TO PROVIDE CONSTRUCTION OVERSIGHT.**

#### CONSTRUCTION SEQUENCE

- THE EXISTING BUFFER SHALL BE MAINTAINED AS IS WITH MINIMAL TO NO DISTURBANCES AND ALSO BE PROTECTED FROM ANY FUTURE DISTURBANCES.

#### MAINTENANCE

- APPLICATION OF A CAREFULLY SELECTED HERBICIDE (ROUNDUP OR SIMILAR GLYPHOSATE HERBICIDE) AROUND THE PROTECTIVE TREE SHELTER/TUBES MAY BE NECESSARY, REINFORCED BY SELECTIVE CUTTING/ANNUAL REMOVAL.
- THE INITIAL MAINTENANCE ROUTINE IS NECESSARY FOR THE INITIAL 2 TO 3 YEARS OF GROWTH AND MAY BE NECESSARY FOR UP TO 5 YEARS UNTIL TREE GROWTH AND TREE CANOPY BEGINS TO FORM. NATURALLY INHIBITING WEED GROWTH (ONCE SHADING IS ADEQUATE), GROWTH OF INVASIVES AND OTHER WEEDS WILL BE NATURALLY PREVENTED, AND THE WOODLAND BECOMES SELF-MAINTAINING.
- REVIEW OF THE NEW WOODLAND SHOULD BE UNDERTAKEN INTERMITTENTLY TO DETERMINE IF REPLACEMENT TREES SHOULD BE PROVIDED (SOME MODERATE RATE OF PLANTING FAILURE IS USUAL).

#### SPECIFICATIONS

- VEGETATION:**
- MAINTAIN EXISTING VEGETATION

### BMP 6.7.2 LANDSCAPE RESTORATION

**THE INSTALLATION OF THIS BMP IS A CRITICAL STAGE WHERE THE DESIGN ENGINEER MUST BE CONTACTED AT LEAST 48 HOURS IN ADVANCE TO PROVIDE CONSTRUCTION OVERSIGHT.**

#### CONSTRUCTION SEQUENCE

##### REFORESTATION

1. ALL WEEDS OR EXISTING VEGETATION MUST BE ELIMINATED PRIOR TO SEEDING.
2. PERENNIAL WEEDS MAY REQUIRE YEAR LONG SMOTHERING, REPEATED SPRAYINGS WITH HERBICIDES, OR REPEATED TILLAGE WITH EQUIPMENT THAT CAN UPROOT AND KILL PERENNIAL WEEDS.
3. PLANTING CAN TAKE PLACE FROM SPRING THRU THROUGH JUNE 30 OR FROM SEPTEMBER 1 THROUGH SOIL FREEZE-UP (DORMANT SEEDING)
4. PLANTING IN JULY AND AUGUST IS GENERALLY NOT RECOMMEND DUE TO THE FREQUENCY OF DROUGHT DURING THIS TIME.
5. SEE LANDSCAPE PLAN FOR ADDITIONAL SEQUENCING OF LANDSCAPE INSTALLATION

#### MAINTENANCE

- APPLICATION OF A CAREFULLY SELECTED HERBICIDE (ROUNDUP OR SIMILAR GLYPHOSATE HERBICIDE) AROUND THE PROTECTIVE TREE SHELTER/TUBES MAY BE NECESSARY, REINFORCED BY SELECTIVE CUTTING/ANNUAL REMOVAL.
- THE INITIAL MAINTENANCE ROUTINE IS NECESSARY FOR THE INITIAL 2 TO 3 YEARS OF GROWTH AND MAY BE NECESSARY FOR UP TO 5 YEARS UNTIL TREE GROWTH AND TREE CANOPY BEGINS TO FORM. NATURALLY INHIBITING WEED GROWTH (ONCE SHADING IS ADEQUATE), GROWTH OF INVASIVES AND OTHER WEEDS WILL BE NATURALLY PREVENTED, AND THE WOODLAND BECOMES SELF-MAINTAINING.
- REVIEW OF THE NEW WOODLAND SHOULD BE UNDERTAKEN INTERMITTENTLY TO DETERMINE IF REPLACEMENT TREES SHOULD BE PROVIDED (SOME MODERATE RATE OF PLANTING FAILURE IS USUAL).

#### SPECIFICATIONS

- VEGETATION:**
- PLANT WITH NATIVE SPECIES (SEE LANDSCAPE PLAN FOR PLANT TYPE AND LOCATIONS)

### BMP 6.7.3 SOIL AMENDMENT & RESTORATION

**THE INSTALLATION OF THIS BMP IS A CRITICAL STAGE WHERE THE DESIGN ENGINEER MUST BE CONTACTED AT LEAST 48 HOURS IN ADVANCE TO PROVIDE CONSTRUCTION OVERSIGHT.**

#### CONSTRUCTION SEQUENCE

1. ALL CONSTRUCTION SHOULD BE COMPLETED AND STABILIZED BEFORE BEGINNING SOIL RESTORATION.
2. COMPOST SHOULD BE ADDED AT A RATE OF 2:1 (SOIL:COMPOST), IF A PROPRIETARY PRODUCT IS USED, THE MANUFACTURER'S INSTRUCTIONS SHOULD BE FOLLOWED IN TERMS OF MIXING AND APPLICATION RATE.
3. ON-SITE SOILS WITH A MINIMUM ORGANIC CONTENT OF 5% CAN BE PROPERLY STOCKPILED (TO MAINTAIN ORGANIC CONTENT) AND REUSED.
4. PROCEDURE: ROTOTILL OR RIP THE SUBGRADE, REMOVE ROCKS, DISTRIBUTE THE COMPOST, SPREAD THE NUTRIENTS, ROTOTILL AGAIN.
5. SPREAD 2-3 INCHES OF APPROVED COMPOST ON EXISTING SOIL. TILL ADDED SOIL INTO EXISTING SOIL WITH ROTARY TILLER THAT IS SET TO A DEPTH OF 6 INCHES. ADD AN ADDITIONAL 4 INCHES OF APPROVED COMPOST TO BRING THE AREA UP TO GRADE.
6. ALL PADEP GUIDELINES (PA BMP MANUAL) REGARDING SOIL AMENDMENTS SHOULD BE ADHERED TO BY CONTRACTOR.

#### MAINTENANCE

- THE SOIL RESTORATION PROCESS MAY NEED TO BE REPEATED OVER TIME, DUE TO COMPACTION BY USE AND/OR SETTLING.

#### SPECIFICATIONS

- SOIL AMENDMENT:**
- 2:1 (SOIL:COMPOST RATIO)

**NOTE:** FERTILIZER COMPOST BLANKETS INSTALLED PER THE MANUFACTURER'S SPECIFICATIONS MAY BE USED AS AN APPROVED ALTERNATIVE TO THE ABOVE STIPULATED SOIL AMENDMENT. CONTACT DESIGN ENGINEER FOR SPECIFICATION INFORMATION AND JAMES WEAVER, WEAVER'S MULCH, STRASBURG ROAD, COATESVILLE, PA 19320 AT 610 383-6818 FOR INSTALLATION INFORMATION.

#### SITE SOILS

**MAP UNIT: C08-CHROME SILT LOAM, 3 TO 8 PERCENT SLOPES**

**COMPONENT: CHROME (C08)**

THE CHROME COMPONENT MAKES UP 70% PERCENT OF THE MAP UNIT. SLOPES ARE 3 TO 8 PERCENT. THIS COMPONENT IS ON GENTLY SLOPING HILLS, UPLAND PLAINS. THE PARENT MATERIAL CONSISTS OF RESIDUAL WEATHERED FROM SERRANITE, DEPTH TO A ROOT RESTRICTIVE LAYER, BEDROCK, LITHIC, IS 20 TO 40 INCHES. THE NATURAL DRAINAGE CLASS IS WELL DRAINED. WATER MOVEMENT IN THE MOST RESTRICTIVE LAYER IS VERY LOW. AVAILABLE WATER TO A DEPTH OF 60 INCHES (OR RESTRICTED DEPTH) IS LOW. SHRINK-SWELL POTENTIAL IS MODERATE. THIS SOIL IS NOT FLOODED. IF IT IS NOT FLOODED, THERE IS NO ZONE OF WATER SATURATION WITHIN A DEPTH OF 72 INCHES. ORGANIC MATTER CONTENT IN THE SURFACE HORIZON IS ABOUT 4 PERCENT. NONIRREGULAR LAND CAPABILITY CLASSIFICATION IS S6. THIS SOIL DOES NOT MEET HYDRO CRITERIA.

**COMPONENT: LITHIC HELLOULDS (L08)**

GENERATED BREF SOIL DESCRIPTIONS ARE CREATED FOR MAJOR SOIL COMPONENTS. THE LITHIC HELLOULDS SOIL IS A MINOR COMPONENT.

**COMPONENT: TRAWAIL LOAM**

GENERATED BREF SOIL DESCRIPTIONS ARE CREATED FOR MAJOR SOIL COMPONENTS. THE TRAWAIL SOIL IS A MINOR COMPONENT.

**COMPONENT: CONRINGO (S)**

GENERATED BREF SOIL DESCRIPTIONS ARE CREATED FOR MAJOR SOIL COMPONENTS. THE CONRINGO SOIL IS A MINOR COMPONENT.

**MAP UNIT: C09-CHROME SILT LOAM, 8 TO 15 PERCENT SLOPES**

**COMPONENT: CHROME (C09)**

THE CHROME COMPONENT MAKES UP 70% PERCENT OF THE MAP UNIT. SLOPES ARE 8 TO 15 PERCENT. THIS COMPONENT IS ON GENTLY SLOPING HILLS, UPLAND PLAINS. THE PARENT MATERIAL CONSISTS OF RESIDUAL WEATHERED FROM SERRANITE, DEPTH TO A ROOT RESTRICTIVE LAYER, BEDROCK, LITHIC, IS 20 TO 40 INCHES. THE NATURAL DRAINAGE CLASS IS WELL DRAINED. WATER MOVEMENT IN THE MOST RESTRICTIVE LAYER IS VERY LOW. AVAILABLE WATER TO A DEPTH OF 60 INCHES (OR RESTRICTED DEPTH) IS LOW. SHRINK-SWELL POTENTIAL IS MODERATE. THIS SOIL IS NOT FLOODED. IF IT IS NOT FLOODED, THERE IS NO ZONE OF WATER SATURATION WITHIN A DEPTH OF 72 INCHES. ORGANIC MATTER CONTENT IN THE SURFACE HORIZON IS ABOUT 4 PERCENT. NONIRREGULAR LAND CAPABILITY CLASSIFICATION IS S6. THIS SOIL DOES NOT MEET HYDRO CRITERIA.

**COMPONENT: LITHIC HELLOULDS (L09)**

GENERATED BREF SOIL DESCRIPTIONS ARE CREATED FOR MAJOR SOIL COMPONENTS. THE LITHIC HELLOULDS SOIL IS A MINOR COMPONENT.

**COMPONENT: TRAWAIL LOAM**

GENERATED BREF SOIL DESCRIPTIONS ARE CREATED FOR MAJOR SOIL COMPONENTS. THE TRAWAIL SOIL IS A MINOR COMPONENT.

**COMPONENT: CONRINGO (S)**

GENERATED BREF SOIL DESCRIPTIONS ARE CREATED FOR MAJOR SOIL COMPONENTS. THE CONRINGO SOIL IS A MINOR COMPONENT.

**MAP UNIT: C46-CONRINGO SILT LOAM, 3 TO 8 PERCENT SLOPES**

**COMPONENT: CONRINGO (C06)**

THE CONRINGO COMPONENT MAKES UP 100 PERCENT OF THE MAP UNIT. SLOPES ARE 3 TO 8 PERCENT. THIS COMPONENT IS ON A NEARLY LEVEL TO MODERATELY STEEP DISSECTED HILLS, UPLANDS. THE PARENT MATERIAL CONSISTS OF RESIDUAL WEATHERED FROM SERRANITE, DEPTH TO A ROOT RESTRICTIVE LAYER, BEDROCK, LITHIC, IS 20 TO 40 INCHES. THE NATURAL DRAINAGE CLASS IS MODERATELY WELL DRAINED. WATER MOVEMENT IN THE MOST RESTRICTIVE LAYER IS MODERATELY HIGH. AVAILABLE WATER TO A DEPTH OF 60 INCHES (OR RESTRICTED DEPTH) IS MODERATE. SHRINK-SWELL POTENTIAL IS MODERATE. THIS SOIL IS NOT FLOODED. IF IT IS NOT FLOODED, THERE IS NO ZONE OF WATER SATURATION WITHIN A DEPTH OF 72 INCHES. ORGANIC MATTER CONTENT IN THE SURFACE HORIZON IS ABOUT 7 PERCENT. NONIRREGULAR LAND CAPABILITY CLASSIFICATION IS U6. THIS SOIL DOES NOT MEET HYDRO CRITERIA.

**MAP UNIT: C06-GLASSBORO GRAVELLY LOAM, 3 TO 8 PERCENT SLOPES**

**COMPONENT: GLASSBORO (C06)**

THE GLASSBORO COMPONENT MAKES UP 85 PERCENT OF THE MAP UNIT. SLOPES ARE 3 TO 8 PERCENT. THIS COMPONENT IS ON FOOT HILLS, HILLS, PLAINS. THE PARENT MATERIAL CONSISTS OF LOAMY COLLUMULUM AND RESIDUAL WEATHERED FROM GRANITE AND GNEISS, DEPTH TO A ROOT RESTRICTIVE LAYER, BEDROCK, LITHIC, IS 60 TO 100 INCHES. THE NATURAL DRAINAGE CLASS IS MODERATELY WELL DRAINED. WATER MOVEMENT IN THE MOST RESTRICTIVE LAYER IS MODERATELY HIGH. AVAILABLE WATER TO A DEPTH OF 60 INCHES (OR RESTRICTED DEPTH) IS MODERATE. SHRINK-SWELL POTENTIAL IS MODERATE. THIS SOIL IS NOT FLOODED. IF IT IS NOT FLOODED, THERE IS NO ZONE OF WATER SATURATION WITHIN A DEPTH OF 72 INCHES. ORGANIC MATTER CONTENT IN THE SURFACE HORIZON IS ABOUT 3 PERCENT. NONIRREGULAR LAND CAPABILITY CLASSIFICATION IS U6. THIS SOIL DOES NOT MEET HYDRO CRITERIA.

**COMPONENT: ANNANDALE (C04)**

GENERATED BREF SOIL DESCRIPTIONS ARE CREATED FOR MAJOR SOIL COMPONENTS. THE ANNANDALE SOIL IS A MINOR COMPONENT.

**COMPONENT: CALTON (S)**

GENERATED BREF SOIL DESCRIPTIONS ARE CREATED FOR MAJOR SOIL COMPONENTS. THE CALTON SOIL IS A MINOR COMPONENT.

**COMPONENT: PARKER (S)**

GENERATED BREF SOIL DESCRIPTIONS ARE CREATED FOR MAJOR SOIL COMPONENTS. THE PARKER SOIL IS A MINOR COMPONENT.

**MAP UNIT: C02-GLASSBORO GRAVELLY LOAM, 8 TO 15 PERCENT SLOPES**

THE GLASSBORO COMPONENT MAKES UP 80 PERCENT OF THE MAP UNIT. SLOPES ARE 8 TO 15 PERCENT. THIS COMPONENT IS ON HILLSLOPES, COLLUMULUM & GRANITE GNEISS HILLS. THE PARENT MATERIAL CONSISTS OF LOAMY COLLUMULUM AND RESIDUAL WEATHERED FROM GRANITE AND GNEISS, DEPTH TO A ROOT RESTRICTIVE LAYER, BEDROCK, LITHIC, IS 60 TO 100 INCHES. THE NATURAL DRAINAGE CLASS IS MODERATELY WELL DRAINED. WATER MOVEMENT IN THE MOST RESTRICTIVE LAYER IS MODERATELY HIGH. AVAILABLE WATER TO A DEPTH OF 60 INCHES (OR RESTRICTED DEPTH) IS MODERATE. SHRINK-SWELL POTENTIAL IS MODERATE. THIS SOIL IS NOT FLOODED. IF IT IS NOT FLOODED, THERE IS NO ZONE OF WATER SATURATION WITHIN A DEPTH OF 72 INCHES. ORGANIC MATTER CONTENT IN THE SURFACE HORIZON IS ABOUT 4 PERCENT. NONIRREGULAR LAND CAPABILITY CLASSIFICATION IS U6. THIS SOIL DOES NOT MEET HYDRO CRITERIA.

**COMPONENT: CONESBURG (S)**

GENERATED BREF SOIL DESCRIPTIONS ARE CREATED FOR MAJOR SOIL COMPONENTS. THE CONESBURG SOIL IS A MINOR COMPONENT.

**COMPONENT: CALTON (S)**

GENERATED BREF SOIL DESCRIPTIONS ARE CREATED FOR MAJOR SOIL COMPONENTS. THE CALTON SOIL IS A MINOR COMPONENT.

**MAP UNIT: U06-URBAN LAND-UDURBENT, SCHECT AND GNEISS COMPLEX, 4 TO 24 PERCENT SLOPES**

**COMPONENT: URBAN LAND (U06)**

GENERATED BREF SOIL DESCRIPTIONS ARE CREATED FOR MAJOR SOIL COMPONENTS. THE URBAN LAND IS A MISCELLANEOUS AREA.

**COMPONENT: UDURBENT, SCHECT AND GNEISS (U06)**

THE UDURBENT, SCHECT AND GNEISS COMPONENT MAKES UP 15 PERCENT OF THE MAP UNIT. SLOPES ARE 0 TO 8 PERCENT. THIS COMPONENT IS ON UPLANDS, HILLS. THE PARENT MATERIAL CONSISTS OF GRADED AREAS OF SCHECT AND/OR GNEISS, DEPTH TO A ROOT RESTRICTIVE LAYER, BEDROCK, LITHIC, IS 20 TO 40 INCHES. THE NATURAL DRAINAGE CLASS IS WELL DRAINED. WATER MOVEMENT IN THE MOST RESTRICTIVE LAYER IS MODERATELY HIGH. AVAILABLE WATER TO A DEPTH OF 60 INCHES (OR RESTRICTED DEPTH) IS MODERATE. SHRINK-SWELL POTENTIAL IS MODERATE. THIS SOIL IS NOT FLOODED. IF IT IS NOT FLOODED, THERE IS NO ZONE OF WATER SATURATION WITHIN A DEPTH OF 72 INCHES. ORGANIC MATTER CONTENT IN THE SURFACE HORIZON IS ABOUT 7 PERCENT. NONIRREGULAR LAND CAPABILITY CLASSIFICATION IS U6. THIS SOIL DOES NOT MEET HYDRO CRITERIA.

**COMPONENT: GLASSBORO (U)**

GENERATED BREF SOIL DESCRIPTIONS ARE CREATED FOR MAJOR SOIL COMPONENTS. THE GLASSBORO SOIL IS A MINOR COMPONENT.

**COMPONENT: ANNANDALE (U)**

GENERATED BREF SOIL DESCRIPTIONS ARE CREATED FOR MAJOR SOIL COMPONENTS. THE ANNANDALE SOIL IS A MINOR COMPONENT.

**COMPONENT: CALTON (U)**

GENERATED BREF SOIL DESCRIPTIONS ARE CREATED FOR MAJOR SOIL COMPONENTS. THE CALTON SOIL IS A MINOR COMPONENT.

**MAP UNIT: U08-WETLANDS, SILT LOAM, 3 TO 8 PERCENT SLOPES**

**COMPONENT: WETLANDS, SILT LOAM (U08)**

THE WETLANDS, SILT LOAM COMPONENT MAKES UP 80 PERCENT OF THE MAP UNIT. SLOPES ARE 3 TO 8 PERCENT. THIS COMPONENT IS ON DEPRESSIONS, HILLS. THE PARENT MATERIAL CONSISTS OF RESIDUAL WEATHERED FROM GABBRO, DEPTH TO A ROOT RESTRICTIVE LAYER, BEDROCK, LITHIC, IS 60 TO 80 INCHES. THE NATURAL DRAINAGE CLASS IS POORLY DRAINED. WATER MOVEMENT IN THE MOST RESTRICTIVE LAYER IS VERY LOW. AVAILABLE WATER TO A DEPTH OF 60 INCHES (OR RESTRICTED DEPTH) IS HIGH. SHRINK-SWELL POTENTIAL IS MODERATE. THIS SOIL IS NOT FLOODED. IT IS A PERMANENTLY HIGH WATER TABLE DURING EXHAUSTION ACTIVITIES. ORGANIC MATTER CONTENT IN THE SURFACE HORIZON IS ABOUT 7 PERCENT. NONIRREGULAR LAND CAPABILITY CLASSIFICATION IS W. THIS SOIL MEETS HYDRO CRITERIA.

**COMPONENT: LINDSEY (L)**

GENERATED BREF SOIL DESCRIPTIONS ARE CREATED FOR MAJOR SOIL COMPONENTS. THE LINDSEY SOIL IS A MINOR COMPONENT.

**COMPONENT: MOUNT LUGGS, SILT LOAM (S)**

GENERATED BREF SOIL DESCRIPTIONS ARE CREATED FOR MAJOR SOIL COMPONENTS. THE MOUNT LUGGS SOIL IS A MINOR COMPONENT.

**COMPONENT: NESHANNY CHANNELLY SILT LOAM (S)**

GENERATED BREF SOIL DESCRIPTIONS ARE CREATED FOR MAJOR SOIL COMPONENTS. THE NESHANNY SOIL IS A MINOR COMPONENT.

**COMPONENT: CROTON (L)**

GENERATED BREF SOIL DESCRIPTIONS ARE CREATED FROM MAJOR SOIL COMPONENTS. THE CROTON SOIL IS A MINOR COMPONENT.

#### SOIL USE LIMITATIONS AND RESOLUTIONS

**ACID SOIL TYPES: pH LOWER THAN 5.5**

SOIL TESTS SHOULD BE TAKEN TO DETERMINE THE ACTUAL SOIL pH. REACTION AT A pH OF 5.5 SHOULD BE ACHIEVED TO RESOLVE THIS LIMITATION. THE SOIL pH SHOULD BE ADJUSTED BY APPLYING LIME RATES IN ACCORDANCE WITH THE PENN STATE AGRONOMY GUIDE AND THE RECOMMENDATIONS FROM A REPUTABLE LABORATORY.

**WET SOIL TYPES**

TO RESOLVE THIS LIMITATION VEGETATIVE SPECIES THAT ARE TOLERANT TO WET CONDITIONS SHOULD BE SELECTED FOR LANDSCAPE.

**EROSION/SLURRY**

SOIL SHOULD BE IMPORTED FROM OTHER AREAS ON SITE. THE CHESTER COUNTY CONSERVATION DISTRICT MUST APPROVE ANY DEVIATION FROM THE EASC'S SPECIFICATIONS.

**WET SOIL TYPES / HIGH WATER TABLE DURING EXHAUSTION ACTIVITIES**

WATER TO BE PUMPED TO A DRAINAGE STRUCTURE, SEE DETAIL.

**POOR SUSTAINABILITY FOR WINTER GRASSING / FROST ACTION**

ADEQUATE COMPACTION OF SOIL IS REQUIRED FOR THE ENHANCEMENTS, POE BACKFILL, AND CONSTRUCTION AND THE BUILDING PAD. IF ADEQUATE COMPACTION CANNOT BE ACHIEVED DUE TO FROST ACTION OR WET SOIL TYPE, OTHER SOIL SHOULD BE IMPORTED FROM OTHER AREAS ON SITE OR CONSTRUCTION OF THESE FACILITIES SHOULD NOT BE WORKED ON DURING PERIODS PRIOR TO FROST. THE CHESTER COUNTY CONSERVATION DISTRICT MUST APPROVE ANY DEVIATION FROM THE EASC'S SPECIFICATIONS.

**PERMISSIBLE SOIL FOR DRAINAGE/CONSTRUCTION**

SOIL SHOULD BE IMPORTED FROM OTHER AREAS ON SITE. THE CHESTER COUNTY CONSERVATION DISTRICT MUST APPROVE ANY DEVIATION FROM THE EASC'S SPECIFICATIONS.

**POORLY SITED AS SOURCES OF TESSOL**

IDENTIFYING AND RESOLVING CHARACTERISTICS THAT RENDER SOIL TYPES POORLY SITED AS TESSOL.

**ERODIBLE SOIL**

TYPES EXHIBITING A VALUES GREATER THAN 0.36 OR PLASTICITY INDEX VALUES LOWER THAN 10, LIMIT VEGETATIVE STABILIZATION OF CHANNELS, RESOLUTIONS, TEMPORARY CHANNEL LINING, PROVIDING PERMANENT CHANNEL LINING, DESIGNING CHANNEL WALLS, SELECTING VEGETATIVE WITH GREATER PERMANENCE, SELECTING PERMANENT LININGS OTHER THAN GRASSES, AND IMPLEMENTING COMBINATION OF THESE AND OTHER METHODS.

**SOILS SUSCEPTIBLE TO SINKHOLE FORMATION**

LOCATING FACILITIES, SUCH AS SEDIMENT BASINS OR TRAPS OR STORMWATER DETENTION OR RETENTION BASINS, ON OTHER SOIL TYPES, LINDS RESECTOR AREAS WITH IMPERMEABLE LININGS, LIMITING STANDING WATER DEPTHS, LIMITING RETENTION TIMES AND IMPLEMENTING COMBINATIONS OF THESE AND/OR OTHER METHODS.

### PCSM PLANNING DESIGN NOTE: - 102.8(b)

THE STORMWATER MANAGEMENT SYSTEMS HAVE BEEN DESIGNED TO MAXIMIZE INFILTRATION BEST MANAGEMENT PRACTICE (BMP) TECHNOLOGIES AND MINIMIZE POINT SOURCE DISCHARGES. THIS PLAN WILL FURTHER ACT TO PERFORM/PROVIDE THE FOLLOWING:

- PREVENT THE NECESSITY OF STREAM CHANNELS AND MAINTAIN AND PROTECT THE PHYSICAL, BIOLOGICAL AND CHEMICAL QUALITIES OF THE RECEIVING STREAM
- PREVENT AN INCREASE IN THE RATE OF STORMWATER RUNOFF
- MINIMIZE ANY INCREASE IN STORMWATER BRANIT VOLUME
- MINIMIZE IMPROVED AREAS
- MINIMIZE THE PROTECTION OF EXISTING DRAINAGE FEATURES AND EXISTING VEGETATION
- MINIMIZE LAND CLEARING AND GRADING
- MINIMIZE SOIL COMPACTION
- UTILIZE OTHER STRUCTURAL OR NONSTRUCTURAL BMPs THAT PREVENT OR MINIMIZE CHANGES IN STORMWATER RUNOFF

### GENERAL PCSM NOTES:

1. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS. IMMEDIATELY AFTER DRAIN DISTURBANCE ACTIVITIES CEASE, THE OPERATOR SHALL STABILIZE ANY AREAS DISTURBED BY THE ACTIVITIES DURING NON-CONSTRUCTION PERIODS. MOUND MUST BE APPLIED AT THE SPECIFIED RATES. DISTURBED AREAS WHICH ARE AT FINISHED GRADE OR WHICH WILL BE RE-DISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY VEGETATIVE STABILIZATION SPECIFICATIONS. DISTURBED AREAS WHICH ARE AT FINISHED GRADE OR WHICH WILL NOT BE RE-DISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS.
2. THE PERMITTEE OR CO-PERMITTEE SHALL BE RESPONSIBLE FOR LONG-TERM OPERATION AND MAINTENANCE OR REPLACEMENT OF PCSM BMPs UNLESS A DIFFERENT PERSON IS IDENTIFIED IN THE NOTICE OF TERMINATION AND HAS AGREED TO LONG-TERM OPERATION AND MAINTENANCE OF PCSM BMPs.
3. IF THE CONTRACTOR ENCOUNTERS HIGH WATER TABLE, SHALLOW BEDROCK, SINKHOLES OR SOIL INSTABILITY DURING SITE CONSTRUCTION, THE DESIGN ENGINEER OR THE ON-SITE GEOTECHNICAL ENGINEER MUST BE CONTACTED IMMEDIATELY FOR CORRECTIVE MEASURES.
4. IF GROUNDWATER OR BEDROCK IS ENCOUNTERED DURING THE INSTALLATION OF THE INFILTRATION BMPs STOP WORK AND CONTACT THE TOWNSHIP AND DESIGN ENGINEER FOR AN ALTERNATE STORMWATER BMP LOCATION OR NEW DESIGN.
5. THE EROSION AND SEDIMENTATION CONTROL PLAN HAS BEEN DESIGNED IN AN EFFORT TO MINIMIZE THE EXTENT AND DURATION OF EARTH DISTURBANCE, WHILE PROTECTING THE EXISTING DRAINAGE FEATURES AND VEGETATION. THE LBS PLAN AND CONSTRUCTION SEQUENCE HAS BEEN DEVELOPED SO TO MINIMIZE SOIL COMPACTION, LAND CLEARING, AND IMPROVED AREAS.
6. THE DESIGN WILL PRESERVE THE INTEGRITY OF STREAM CHANNELS AND MAINTAIN AND PROTECT THE PHYSICAL, BIOLOGICAL AND CHEMICAL QUALITIES OF THE DOWNSTREAM WATERBODY.
7. THE OPERATOR SHALL REMOVE FROM THE SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIAL AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA CODE 2601.1 ET SEQ., 271.1 ET SEQ., AND 287.1 ET SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP, OR DISCHARGE ANY BUILDING MATERIAL OR WASTES AT THE SITE.
8. IF ANY UNFAVORABLE CONDITIONS ARE ENCOUNTERED DURING THE INSTALLATION OF THE BMPs (I.E. GROUNDWATER AND/OR BEDROCK, ETC.), THE OWNER/ENGINEER SHALL BE NOTIFIED AND THE PROPOSED SYSTEM SHALL BE RE-EVALUATED TO A MORE SUITABLE LOCATION ON THE PROPERTY.
9. THE PENNSYLVANIA TITLE 25, CHAPTER 93 CLASSIFICATION FOR THE RECEIVING WATERS OF THE COMMONWEALTH, UP TO THE EAST BRANCH OF CHESTER CREEK WITH WEST GOSHEN TOWNSHIP IS CLASSIFIED AS TROUT SPawning FOREST (TF).
10. DLH HAS PROPOSED TO UTILIZE INLETS AND CONVEYANCE PIPING TO COLLECT AND CONVEY THE STORMWATER RUNOFF INTO THE STORMWATER MANAGEMENT SYSTEM. THERMAL IMPACTS WILL BE MITIGATED BY ROUTING HEATED RUNOFF THROUGH BELOW GROUND INFILTRATION FACILITIES WHICH WILL ALLOW INFILTRATED RUNOFF TO COOL PRIOR TO REACHING SURFACE WATERS.

### STORMWATER MANAGEMENT NOTES:

1. NO PROPERTY OWNER SHALL OBSTRUCT OR ALTER THE FLOW, LOCATION OR CARRYING CAPACITY OF A STREAM, CHANNEL OR DRAINAGE SLEAVE TO THE DETRIMENT OF ANY OTHER PROPERTY OWNER, WHETHER UPSTREAM OR DOWNSTREAM.
2. THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR THE OPERATIONS AND MAINTENANCE OF ALL STORMWATER FACILITIES INCLUDING:
  - INFILTRATION BED
  - RIPARIAN FOREST BUFFER
  - WATER QUALITY FILTER
  - SOIL AMENDMENTS
  - SOIL AMENDMENTS
3. ALL STORMWATER FACILITIES LISTED ABOVE ARE IDENTIFIED ON THE STORMWATER PLAN CONTAINED ON THE PCSM PLANS.
4. A BLANKET EASEMENT WILL BE PROVIDED OVER THE ENTIRE SITE AND EACH LOT TO ALLOW THE TOWNSHIP ACCESS TO ANY STORMWATER MANAGEMENT AREA SHOULD THE PROPERTY OWNER FAIL TO MAINTAIN SAID AREAS PROPERLY.
5. THE APPLICANT SHALL BE RESPONSIBLE FOR COMPLETING AN AS-BUILT SURVEY OF ALL STORMWATER BMPs INSTALLED IN THE APPROVED PROJECT PLAN.
6. THE TOWNSHIP ENGINEER SHALL RECEIVE COPIES OF THE AS-BUILT PLANS IN DIGITAL CAD FORMAT (OR SIMILAR DIGITAL DATA).
7. THE OWNERS OF THE STORMWATER FACILITIES SHALL PREPARE AND SUBMIT A REPORT TO THE TOWNSHIP ENGINEER DESCRIBING ALL MAINTENANCE ACTIVITIES AND INSPECTIONS ANNUALLY.
8. A COPY OF THE STORMWATER FACILITY OPERATIONS AND MAINTENANCE PLAN SHALL BE SUBMITTED TO THE TOWNSHIP ENGINEER.
9. SEDIMENT REMOVAL SHALL OCCUR WHEN THE BED IS THOROUGHLY DRY. DISPOSAL OF DEBRIS, TRASH, SEDIMENT, AND OTHER WASTE MATERIAL SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.
10. DURING SITE CONSTRUCTION, ALL INFILTRATION BMPs SHALL BE PROTECTED FROM SEDIMENTATION USING APPROPRIATE PROTECTION IN CONFORMANCE WITH PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (PA DEP) BEST MANAGEMENT PRACTICES (BMPs) AND THE EROSION AND SEDIMENT CONTROL MANUAL. AS A MINIMUM, PROTECTION SHALL REMAIN UNTIL THE CONSTRUCTION DRAINAGE AREA HAS ACHIEVED FULL STABILIZATION.

### BMP FAILURE DEFINED (PROTOCOL 2 DEP BMP MANUAL):

- 102.11(a)(2)

BMP 6.4.3 SURFACE INFILTRATION BED FAILURE OF THE BED OCCURS WHEN THE BOTTOM OF THE BED BECOMES OVERLY COMPACTED AND/OR SEDIMENT OR DEBRIS ENTERS THE BED AND CLOSSES THE STONE VENTS OR WHEN THE FACILITY DOES NOT DRAIN WITHIN 72 HOURS.

PRIMARY CAUSES OF FAILURE INCLUDE SOIL COMPACTION/WEARING WHICH LEADS TO POOR INFILTRATION RATES, LACK OF PROPER STABILIZATION PRIOR TO BMP INSTALLATION WHICH LEADS TO SEDIMENTATION, LACK OF PROTECTION LEADING TO SEDIMENTATION, AND LACK OF PROPER BMP MAINTENANCE.

SHOULD ANY OF THE ABOVE CONDITIONS BE OBSERVED, THE DESIGN ENGINEER AND TOWNSHIP ENGINEER SHOULD BE CONTACTED TO IMPLEMENT CORRECTIVE ACTIONS.

### POST CONSTRUCTION STORMWATER FACILITIES OPERATION AND MAINTENANCE PROCEDURES:

WITHIN THREE (3) MONTHS OF THE APPLICATION FOR NOTICE OF TERMINATION OF THE NPDES PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES TO THE DEPARTMENT OF ENVIRONMENTAL PROTECTION, THE PROPERTY OWNER SHALL ASSUME RESPONSIBILITY FOR STORMWATER RELATED DISCHARGES FROM THE SITE. SUBSEQUENTLY ALL INSPECTIONS AND ANY MAINTENANCE REQUIRED FOR THE CONTINUED OPERATION OF POST CONSTRUCTION STORMWATER MANAGEMENT BMPs SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER. INSPECTIONS SHALL BE COMPLETED FOR EACH INSPECTION PERIOD INDICATED AND FILED PROMPTLY WITH THE TOWNSHIP USA ADMINISTRATOR. ALL INSPECTIONS SHALL BE IN ACCORDANCE WITH THE OPERATIONS AND MAINTENANCE AGREEMENT.

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

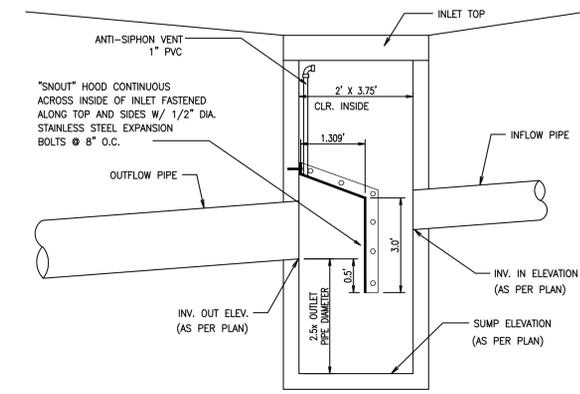
#### INLETS AND DRAINS (OWNER RESPONSIBILITY)

INSPECTION, STORMWATER INLETS AND DRAINS SHALL BE INSPECTED QUARTERLY AND AFTER MAJOR RAINFALL EVENTS FOR THE FIRST TWO (2) YEARS AND THEN YEARLY AFTER THAT. CHECK FOR SEDIMENT DEPOSITION IN THE SUMP. THE ACCUMULATION OF SEDIMENT CAN BE DETERMINED BY PROBING WITH A MEASURING STICK. IF APPLICABLE, FOR WATER QUALITY INLETS (THOSE WITH A HOOD DEVICE INSTALLED), CHECK FOR PROPER STRUCTURE ALIGNMENT AND ATTACHMENT, AND BLOCKAGE OF THE ANTI-SIPHON TUBE.

MAINTENANCE: SEDIMENT SHALL BE REMOVED FROM THE SUMP WHEN IT HAS REACHED 6 INCHES IN DEPTH OR CLEARLY WHOEVER COMES FIRST. VACUUM TRUCKS ARE THE RECOMMENDED METHOD FOR CLEARING THE DRAIN LINES IN THE BOTTOM OF THE INLET. REMOVED SEDIMENT SHALL BE DISPOSED OF IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION REGULATIONS. IN WATER QUALITY INLETS, IF APPLICABLE, CHECK THE ANTI-SIPHON TUBE AS NECESSARY AND RE-

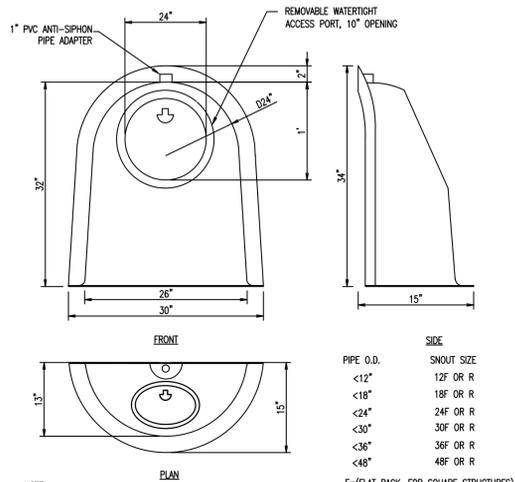
### BMP 6.6.4: WATER QUALITY FILTERS

THE INSTALLATION OF THIS BMP IS A CRITICAL STAGE WHERE THE DESIGN ENGINEER MUST BE CONTACTED AT LEAST 48 HOURS IN ADVANCE TO PROVIDE CONSTRUCTION OVERSIGHT.



NOTE:  
INLETS IC2 & IC5 TO BE FITTED WITH OIL & DEBRIS STOP.

### WATER QUALITY STRUCTURE DETAIL NOT TO SCALE



NOTE:  
1. DIMENSIONS SHOWN FOR 18" SNOUT OIL & DEBRIS STOP. DIMENSIONS VARY DEPENDING ON SNOUT SIZE. SEE TABLE FOR SNOUT SIZES GUIDE.  
2. SNOUTS SHALL BE SIZED AND INSTALLED PER MANUFACTURER'S SPECIFICATIONS.

### 18" SNOUT OIL & DEBRIS STOP NOT TO SCALE

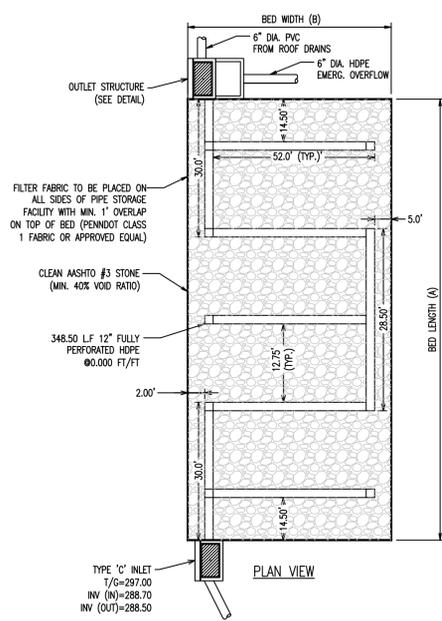
### STORMWATER WATER QUALITY STRUCTURE OPERATION AND MAINTENANCE SPECIFICATIONS:

- THE PROPERTY OWNER SHALL AT ALL TIMES PROPERLY OPERATE AND MAINTAIN THE WATER QUALITY STRUCTURES PER MANUFACTURER'S SPECIFICATIONS. AN INSPECTION REPORT SHALL BE PROVIDED TO THE TOWNSHIP FOLLOWING EACH INSPECTION EVENT. INSPECTIONS OF THE WATER QUALITY UNITS SHALL BE PERFORMED QUARTERLY FOR THE FIRST YEAR OF OPERATION AND SEMIANNUALLY THEREAFTER.
- THE INSPECTION REPORT SHALL INCLUDE THE FOLLOWING INFORMATION FOR EACH INSPECTION EVENT:
  - THE DATE AND TIME OF INSPECTION;
  - THE NAME OF THE INDIVIDUAL(S) WHO PERFORMED THE INSPECTION;
  - THE TOTAL DEPTH OF SEDIMENT IN THE STRUCTURE;
  - THE TOTAL DEPTH OF OIL AND GREASE IN THE STRUCTURE; AND
  - TRANSPORT AND DISPOSAL RECORDS OF REMOVED PRODUCT(S).
- PER MANUFACTURER RECOMMENDATION, THE STRUCTURE SHALL BE CLEANED WHEN THE SUMP IS HALF FULL. FOR IC12, IC14, AND IC16, THE SUMP IS 3.12 FEET DEEP AND SHOULD THEREFORE BE CLEANED OUT WHEN 1.5 FEET OF MATERIAL COLLECTS IN THE SUMP.
- MAINTENANCE IS BEST DONE WITH A VACUUM TRUCK. TRANSPORT AND DISPOSAL OF SEDIMENT AND OIL SHALL BE DONE IN ACCORDANCE WITH APPLICABLE STATE AND FEDERAL REGULATIONS.
- TO MAINTAIN THE SNOUT HOOD THEMSELVES, AN ANNUAL INSPECTION OF THE ANTI-SIPHON VENT AND ACCESS HATCH ARE RECOMMENDED. A SIMPLE FLUSHING OF THE VENT, OR A GENTLE ROOING WITH A FLEXIBLE WIRE ARE ALL THAT'S TYPICALLY NEEDED TO MAINTAIN THE ANTI-SIPHON PROPERTIES. OPENING AND CLOSING THE ACCESS HATCH ONCE A YEAR ENSURES A LIFETIME OF TROUBLE-FREE SERVICE.
- THE OWNER SHALL PERMIT THE TOWNSHIP OFFICIALS AND/OR THEIR AGENTS TO ENTER THE PROPERTY TO INSPECT THE STORMWATER WATER QUALITY STRUCTURE AND TO SAMPLE ANY DISCHARGE OF STORMWATER.

| SNOUT INLET SCHEDULE |      |
|----------------------|------|
| INLET                | SIZE |
| IC4                  | 18"  |

### BMP 6.4.3: SUBSURFACE INFILTRATION BED

THE INSTALLATION OF THIS BMP IS A CRITICAL STAGE WHERE THE DESIGN ENGINEER MUST BE CONTACTED AT LEAST 48 HOURS IN ADVANCE TO PROVIDE CONSTRUCTION OVERSIGHT.



| BED   | DIS. PIPE DIAMETER | BED LENGTH | BED WIDTH | BED DEPTH | PIPE INVERT | BOTTOM OF BED | OUTLET PIPE INV. |
|-------|--------------------|------------|-----------|-----------|-------------|---------------|------------------|
| BED 1 | 12                 | 85         | 61        | 3.00      | 288.50      | 288.00        | 288.00           |

NOTES:  
1. ALL DIMENSIONS ARE IN FEET.  
2. ASHTO #3 STONE TO BE WRAPPED IN FILTER FABRIC.

### INFILTRATION BED DETAIL NOT TO SCALE

### CONSTRUCTION SEQUENCE

- PROTECT INFILTRATION BED AREA FROM COMPACTION PRIOR TO INSTALLATION.
- CRITICAL STAGE: PRIOR TO INSTALLATION OF THE PROPOSED SUBSURFACE INFILTRATION BED, THE BED AREA SHALL BE RE-TESTED TO VERIFY THE DESIGN INFILTRATION RATES. IF THE MEASURED RATE IS LESS THAN THE DESIGN RATE, THE DESIGN ENGINEER SHALL BE CONTACTED.
- IF GROUNDWATER OR BEDROCK IS ENCOUNTERED DURING THE INSTALLATION OF THE INFILTRATION SYSTEMS STOP WORK AND CONTACT THE TOWNSHIP AND DESIGN ENGINEER FOR AN ALTERNATE SEEPAGE BED LOCATION OR NEW DESIGN.
- IF POSSIBLE, INSTALL INFILTRATION BED DURING LATER PHASES OF SITE CONSTRUCTION TO PREVENT SEDIMENTATION AND/OR DAMAGE FROM CONSTRUCTION ACTIVITY.
- INSTALL AND MAINTAIN PROPER EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION.
- IF NECESSARY, EXCAVATE INFILTRATION BED BOTTOM TO AN UNCOMPACTED SUBGRADE FREE FROM ROCKS AND DEBRIS. DO NOT COMPACT SUBGRADE. PRIOR TO PLACEMENT OF AGGREGATE, THE SOIL SURFACE AT THE BOTTOM OF THE BED SHALL BE SCARIFIED TO FURTHER PROMOTE INFILTRATION.
- SEED AND STABILIZE TOPSOIL.

### NOTES:

- COMPACTION IS TO BE MINIMIZED IN THE AREAS DESIGNATED FOR INFILTRATION.
- SEEPAGE BED FILTER FABRIC AND STONE SHOULD BE KEPT CLEAN OF SOIL/SEDIMENT DURING THE INSTALLATION PROCESS. IF INSPECTION INDICATES THAT SOIL SEDIMENT HAS ENTERED ANY OF THE INFILTRATION SEEPAGE BEDS, APPROPRIATE MEASURES (I.E. CLEANING THE SOIL/SEDIMENT FROM THE FABRIC, STONE, BED ETC. AND OR REPLACEMENT OF THE FABRIC AND STONE) SHOULD BE ADDRESSED.
- ALL STONE FOR THE CONSTRUCTION OF THE STONE SEEPAGE BEDS SHOULD BE UNIFORMLY GRADED AND CLEAN WASHED AGGREGATE.
- THE BOTTOM OF ALL SEEPAGE BEDS SHALL BE UNDISTURBED OR UNCOMPACTED SUBGRADE.

### SPECIFICATIONS

**STONE:**  
1. SHALL BE 2-INCH TO 1-INCH UNIFORMLY GRADED COARSE AGGREGATE, WITH A WASH LOSS OF NO MORE THAN 0.5%, ASHTO SIZE NUMBER 3 PER ASHTO SPECIFICATIONS, PART 1, 19TH ED., 1998, OR LATER AND SHALL HAVE VOIDS 40% AS MEASURED BY ASTM-C29.

**NON-WOVEN GEOTEXTILE:**  
1. SHALL CONSIST OF NEEDLED NON-WOVEN POLYPROPYLENE FIBERS AND MEET THE FOLLOWING PROPERTIES:

- GRAB TENSILE STRENGTH (ASTM-D4632) 120 LBS
- MULLEN BURST STRENGTH (ASTM-D3786) 225 PSI
- FLOW RATE (ASTM-D4491) 95 GAL/MIN/FT<sup>2</sup>
- UV RESISTANCE AFTER 500 HRS (ASTM-D4355) 70%
- HEAT-SET OR HEAT-CALCENDARED FABRICS ARE NOT PERMITTED
- ACCEPTABLE TYPES INCLUDE MIRAFI 140N, AMOCO 4547, AND GEOTEX 451.

**TOPSOIL:**  
1. MAY BE AMENDED WITH COMPOST (IF APPLICABLE)

**PIPE:**  
1. SHALL BE CONTINUOUSLY PERFORATED, SMOOTH INTERIOR, WITH A MINIMUM INSIDE DIAMETER OF 6-INCHES.  
2. HIGH-DENSITY POLYETHYLENE (HDPE) PIPE SHALL MEET ASHTO M252, TYPE S OR ASHTO M294, TYPE S.

**STORM DRAIN INLETS AND STRUCTURES:**  
1. CONCRETE CONSTRUCTION: CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH SECTION 1001, PENNDOT SPECIFICATIONS, 1990 OR LATEST EDITION.  
2. PRECAST CONCRETE INLETS AND MANHOLES: PRECAST CONCRETE INLETS MAY BE SUBSTITUTED FOR CAST-IN-PLACE STRUCTURES AND SHALL BE CONSTRUCTED AS SPECIFIED FOR CAST-IN-PLACE STRUCTURES. PRECAST STRUCTURES MAY BE USED IN ONLY THOSE AREAS WHERE THERE IS NO CONFLICT WITH EXISTING UNDERGROUND STRUCTURES THAT MAY NECESSITATE REVISION OF INVERTS. TYPE M STANDARD PENNDOT INLET BOXES WILL BE MODIFIED TO PROVIDE MINIMUM 12 INCH SUMP STORAGE AND BOTTOM LEACHING BASINS, OPEN TO GRAVEL SUMPS IN SUB-GRADE, WHEN SITUATED IN THE RECHARGE BED.  
3. ALL PVC CATCH BASINS/CLEANOUTS/INLINE DRAINS SHALL HAVE H-10 OR H-20 RATED GRATES, DEPENDING ON THEIR PLACEMENT (H-20 IF VEHICULAR LOADING).  
4. STEEL REINFORCING BARS OVER THE TOP OF THE OUTLET STRUCTURE SHALL CONFORM TO ASTM A615, GRADES 60 AND 40.  
5. PERMANENT TYPED REINFORCEMENT MATING SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS. (IF APPLICABLE)

**ALTERNATIVE STORAGE MEDIA (IF APPLICABLE):**  
1. FOLLOW MANUFACTURER'S SPECIFICATIONS

**VEGETATION (IF APPLICABLE):**  
1. PLANT WITH NATIVE SPECIES

**OPERATION AND MAINTENANCE:**  
1. SEEPAGE BED FILTER FABRIC AND STONE SHOULD BE KEPT CLEAN OF SOIL/SEDIMENT DURING THE INSTALLATION PROCESS. IF INSPECTION INDICATES THAT SOIL/ SEDIMENT HAS ENTERED ANY OF THE INFILTRATION SEEPAGE BEDS, APPROPRIATE MEASURES (I.E. CLEANING THE SOIL/SEDIMENT FROM THE FABRIC, STONE, BED ETC. AND OR REPLACEMENT OF THE FABRIC AND STONE) SHOULD BE ADDRESSED.  
2. INFLOW AND OUTFLOW POINTS INTO THE INFILTRATION SYSTEMS SHOULD BE KEPT CLEAR OF LEAVES AND OTHER DEBRIS. ANY LEAVES OR DEBRIS WILL NEGATIVELY IMPACT THE PERFORMANCE OF THESE SYSTEMS. ALL DOWNSPOUTS AND OVERFLOW PIPES SHOULD BE KEPT IN GOOD WORKING ORDER.  
3. IF GROUNDWATER OR BEDROCK IS ENCOUNTERED DURING THE INSTALLATION OF THE ON-LOT SEEPAGE BEDS STOP WORK AND CONTACT THE TOWNSHIP AND DESIGN ENGINEER FOR AN ALTERNATE SEEPAGE BED LOCATION OR NEW DESIGN.  
4. COMPACTION IS TO BE MINIMIZED IN AREAS DESIGNATED FOR INFILTRATION.  
5. CATCH BASINS AND INLETS (UPGRADIENT OF INFILTRATION BED) SHOULD BE INSPECTED AND CLEANED AT LEAST TWICE PER YEAR AND AFTER MAJOR RUNOFF EVENTS.  
6. INSPECT THE BED AFTER RUNOFF EVENTS AND MAKE SURE THAT RUNOFF DRAINS DOWN WITHIN 72 HOURS. MOSQUITOS SHOULD NOT BE A PROBLEM IF THE WATER DRAINS IN 72 HOURS. MOSQUITOES REQUIRE A CONSIDERABLY LONG BREEDING PERIOD WITH RELATIVELY STATIC WATER LEVELS.  
7. ALSO INSPECT FOR ACCUMULATION OF SEDIMENT, DAMAGE TO OUTLET CONTROL STRUCTURES, EROSION CONTROL MEASURES, AND SIGNS OF WATER CONTAMINATION/SPILLS  
8. REMOVE ACCUMULATED SEDIMENT FROM BASIN AS REQUIRED. RESTORE ORIGINAL CROSS SECTION AND INFILTRATION RATE. PROPERLY DISPOSE OF SEDIMENT.

**INFILTRATION BED OUTLET STRUCTURE DETAIL**  
SCALE: NOT TO SCALE

NOTES:  
1. ALL DIMENSIONS ARE IN FEET.  
2. ASHTO #3 STONE TO BE WRAPPED IN FILTER FABRIC.

**CONSTRUCTION SEQUENCE**

- PROTECT INFILTRATION BED AREA FROM COMPACTION PRIOR TO INSTALLATION.
- CRITICAL STAGE: PRIOR TO INSTALLATION OF THE PROPOSED SUBSURFACE INFILTRATION BED, THE BED AREA SHALL BE RE-TESTED TO VERIFY THE DESIGN INFILTRATION RATES. IF THE MEASURED RATE IS LESS THAN THE DESIGN RATE, THE DESIGN ENGINEER SHALL BE CONTACTED.
- IF GROUNDWATER OR BEDROCK IS ENCOUNTERED DURING THE INSTALLATION OF THE INFILTRATION SYSTEMS STOP WORK AND CONTACT THE TOWNSHIP AND DESIGN ENGINEER FOR AN ALTERNATE SEEPAGE BED LOCATION OR NEW DESIGN.
- IF POSSIBLE, INSTALL INFILTRATION BED DURING LATER PHASES OF SITE CONSTRUCTION TO PREVENT SEDIMENTATION AND/OR DAMAGE FROM CONSTRUCTION ACTIVITY.
- INSTALL AND MAINTAIN PROPER EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION.
- IF NECESSARY, EXCAVATE INFILTRATION BED BOTTOM TO AN UNCOMPACTED SUBGRADE FREE FROM ROCKS AND DEBRIS. DO NOT COMPACT SUBGRADE. PRIOR TO PLACEMENT OF AGGREGATE, THE SOIL SURFACE AT THE BOTTOM OF THE BED SHALL BE SCARIFIED TO FURTHER PROMOTE INFILTRATION.
- SEED AND STABILIZE TOPSOIL.

**NOTES:**  
1. COMPACTION IS TO BE MINIMIZED IN THE AREAS DESIGNATED FOR INFILTRATION.  
2. SEEPAGE BED FILTER FABRIC AND STONE SHOULD BE KEPT CLEAN OF SOIL/SEDIMENT DURING THE INSTALLATION PROCESS. IF INSPECTION INDICATES THAT SOIL SEDIMENT HAS ENTERED ANY OF THE INFILTRATION SEEPAGE BEDS, APPROPRIATE MEASURES (I.E. CLEANING THE SOIL/SEDIMENT FROM THE FABRIC, STONE, BED ETC. AND OR REPLACEMENT OF THE FABRIC AND STONE) SHOULD BE ADDRESSED.  
3. ALL STONE FOR THE CONSTRUCTION OF THE STONE SEEPAGE BEDS SHOULD BE UNIFORMLY GRADED AND CLEAN WASHED AGGREGATE.  
4. THE BOTTOM OF ALL SEEPAGE BEDS SHALL BE UNDISTURBED OR UNCOMPACTED SUBGRADE.

**SPECIFICATIONS**

**STONE:**  
1. SHALL BE 2-INCH TO 1-INCH UNIFORMLY GRADED COARSE AGGREGATE, WITH A WASH LOSS OF NO MORE THAN 0.5%, ASHTO SIZE NUMBER 3 PER ASHTO SPECIFICATIONS, PART 1, 19TH ED., 1998, OR LATER AND SHALL HAVE VOIDS 40% AS MEASURED BY ASTM-C29.

**NON-WOVEN GEOTEXTILE:**  
1. SHALL CONSIST OF NEEDLED NON-WOVEN POLYPROPYLENE FIBERS AND MEET THE FOLLOWING PROPERTIES:

- GRAB TENSILE STRENGTH (ASTM-D4632) 120 LBS
- MULLEN BURST STRENGTH (ASTM-D3786) 225 PSI
- FLOW RATE (ASTM-D4491) 95 GAL/MIN/FT<sup>2</sup>
- UV RESISTANCE AFTER 500 HRS (ASTM-D4355) 70%
- HEAT-SET OR HEAT-CALCENDARED FABRICS ARE NOT PERMITTED
- ACCEPTABLE TYPES INCLUDE MIRAFI 140N, AMOCO 4547, AND GEOTEX 451.

**TOPSOIL:**  
1. MAY BE AMENDED WITH COMPOST (IF APPLICABLE)

**PIPE:**  
1. SHALL BE CONTINUOUSLY PERFORATED, SMOOTH INTERIOR, WITH A MINIMUM INSIDE DIAMETER OF 6-INCHES.  
2. HIGH-DENSITY POLYETHYLENE (HDPE) PIPE SHALL MEET ASHTO M252, TYPE S OR ASHTO M294, TYPE S.

**STORM DRAIN INLETS AND STRUCTURES:**  
1. CONCRETE CONSTRUCTION: CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH SECTION 1001, PENNDOT SPECIFICATIONS, 1990 OR LATEST EDITION.  
2. PRECAST CONCRETE INLETS AND MANHOLES: PRECAST CONCRETE INLETS MAY BE SUBSTITUTED FOR CAST-IN-PLACE STRUCTURES AND SHALL BE CONSTRUCTED AS SPECIFIED FOR CAST-IN-PLACE STRUCTURES. PRECAST STRUCTURES MAY BE USED IN ONLY THOSE AREAS WHERE THERE IS NO CONFLICT WITH EXISTING UNDERGROUND STRUCTURES THAT MAY NECESSITATE REVISION OF INVERTS. TYPE M STANDARD PENNDOT INLET BOXES WILL BE MODIFIED TO PROVIDE MINIMUM 12 INCH SUMP STORAGE AND BOTTOM LEACHING BASINS, OPEN TO GRAVEL SUMPS IN SUB-GRADE, WHEN SITUATED IN THE RECHARGE BED.  
3. ALL PVC CATCH BASINS/CLEANOUTS/INLINE DRAINS SHALL HAVE H-10 OR H-20 RATED GRATES, DEPENDING ON THEIR PLACEMENT (H-20 IF VEHICULAR LOADING).  
4. STEEL REINFORCING BARS OVER THE TOP OF THE OUTLET STRUCTURE SHALL CONFORM TO ASTM A615, GRADES 60 AND 40.  
5. PERMANENT TYPED REINFORCEMENT MATING SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS. (IF APPLICABLE)

**ALTERNATIVE STORAGE MEDIA (IF APPLICABLE):**  
1. FOLLOW MANUFACTURER'S SPECIFICATIONS

**VEGETATION (IF APPLICABLE):**  
1. PLANT WITH NATIVE SPECIES

**OPERATION AND MAINTENANCE:**  
1. SEEPAGE BED FILTER FABRIC AND STONE SHOULD BE KEPT CLEAN OF SOIL/SEDIMENT DURING THE INSTALLATION PROCESS. IF INSPECTION INDICATES THAT SOIL/ SEDIMENT HAS ENTERED ANY OF THE INFILTRATION SEEPAGE BEDS, APPROPRIATE MEASURES (I.E. CLEANING THE SOIL/SEDIMENT FROM THE FABRIC, STONE, BED ETC. AND OR REPLACEMENT OF THE FABRIC AND STONE) SHOULD BE ADDRESSED.  
2. INFLOW AND OUTFLOW POINTS INTO THE INFILTRATION SYSTEMS SHOULD BE KEPT CLEAR OF LEAVES AND OTHER DEBRIS. ANY LEAVES OR DEBRIS WILL NEGATIVELY IMPACT THE PERFORMANCE OF THESE SYSTEMS. ALL DOWNSPOUTS AND OVERFLOW PIPES SHOULD BE KEPT IN GOOD WORKING ORDER.  
3. IF GROUNDWATER OR BEDROCK IS ENCOUNTERED DURING THE INSTALLATION OF THE ON-LOT SEEPAGE BEDS STOP WORK AND CONTACT THE TOWNSHIP AND DESIGN ENGINEER FOR AN ALTERNATE SEEPAGE BED LOCATION OR NEW DESIGN.  
4. COMPACTION IS TO BE MINIMIZED IN AREAS DESIGNATED FOR INFILTRATION.  
5. CATCH BASINS AND INLETS (UPGRADIENT OF INFILTRATION BED) SHOULD BE INSPECTED AND CLEANED AT LEAST TWICE PER YEAR AND AFTER MAJOR RUNOFF EVENTS.  
6. INSPECT THE BED AFTER RUNOFF EVENTS AND MAKE SURE THAT RUNOFF DRAINS DOWN WITHIN 72 HOURS. MOSQUITOS SHOULD NOT BE A PROBLEM IF THE WATER DRAINS IN 72 HOURS. MOSQUITOES REQUIRE A CONSIDERABLY LONG BREEDING PERIOD WITH RELATIVELY STATIC WATER LEVELS.  
7. ALSO INSPECT FOR ACCUMULATION OF SEDIMENT, DAMAGE TO OUTLET CONTROL STRUCTURES, EROSION CONTROL MEASURES, AND SIGNS OF WATER CONTAMINATION/SPILLS  
8. REMOVE ACCUMULATED SEDIMENT FROM BASIN AS REQUIRED. RESTORE ORIGINAL CROSS SECTION AND INFILTRATION RATE. PROPERLY DISPOSE OF SEDIMENT.

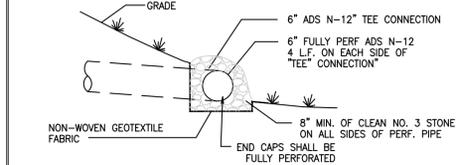
### BMP 6.8.1: LEVEL SPREADER

THE INSTALLATION OF THIS BMP IS A CRITICAL STAGE WHERE THE DESIGN ENGINEER MUST BE CONTACTED AT LEAST 48 HOURS IN ADVANCE TO PROVIDE CONSTRUCTION OVERSIGHT.

THE PROPOSED LEVEL SPREADER IS A POST CONSTRUCTION STORMWATER MANAGEMENT BMP ONLY. IT IS NOT AN EROSION AND SEDIMENT CONTROL BMP.

| BED # | LS # | PIPE MATERIAL | PIPE SIZE | LENGTH | INV.   |
|-------|------|---------------|-----------|--------|--------|
| 1     | 1    | HDPE          | 6"        | 10     | 281.50 |

NOTE: ALL DIMENSIONS ARE IN FEET.



### TYPICAL LEVEL SPREADER DETAIL NOT TO SCALE

### CONSTRUCTION SEQUENCE

- LEVEL SPREADERS ARE CONSIDERED A PERMANENT PART OF A SITE'S STORMWATER MANAGEMENT SYSTEM. THEREFORE, THE UPHILL DEVELOPMENT SHOULD BE STABILIZED BEFORE DIVERTING RUNOFF TO ANY DISPERSING FLOW TECHNIQUES. IF THE LEVEL SPREADER IS USED AS AN EROSION AND SEDIMENTATION CONTROL MEASURE, IT MUST BE RECONFIGURED (FLUSH PERFORATED PIPE, CLEAN OUT ALL SEDIMENT), TO ITS ORIGINAL STATE BEFORE USE AS A PERMANENT STORMWATER FEATURE.
- ALL CONTRIBUTING STORMWATER ELEMENTS (INFILTRATION BEDS, INLETS, OUTLET CONTROL STRUCTURES, PIPES, ETC) SHOULD BE INSTALLED.
- PERFORATED PIPE SHOULD BE INSTALLED ALONG A CONTOUR, WITH CARE TAKEN TO CONSTRUCT A LEVEL BOTTOM. THE PIPE CAN BE UNDERGROUND IN A SHALLOW INFILTRATION TRENCH (SEE INFILTRATION TRENCH FOR DESIGN GUIDANCE), OR CLOSER TO THE SURFACE AND COVERED WITH A 12-INCH THICK LAYER OF ASHTO #57 STONE. IF THE PERFORATED PIPE IS IN A TRENCH, EXCAVATE TO THE DESIGN DIMENSIONS. IF THE PIPE IS TO BE AT OR NEAR THE SURFACE, SOME MINOR EXCAVATION OR FILLING MAY BE NECESSARY TO MAINTAIN A LEVEL BOTTOM.
- IF NECESSARY, INSTALL EROSION CONTROL MATING ALONG THE LENGTH OF THE LEVEL SPREADER AND TO A DISTANCE DOWNHILL, AS SPECIFIED BY THE MANUFACTURER/SUPPLIER. COVER THE PIPE WITH ASHTO #57 STONE.

### SPECIFICATIONS

- STONE SHALL BE 2-INCH TO 1-INCH UNIFORMLY GRADED COARSE AGGREGATE, WITH A WASH LOSS OF NO MORE THAN 0.5%, ASHTO SIZE NUMBER 3 PER ASHTO SPECIFICATIONS, PART 1, 19TH EDITION, 1998, OR LATER AND SHALL HAVE VOIDS 35% AS MEASURED BY ASTM-C29.
- NON-WOVEN GEOTEXTILE SHALL CONSIST OF NEEDLED NON-WOVEN POLYPROPYLENE FIBERS AND MEET THE FOLLOWING PROPERTIES:
  - GRAB TENSILE STRENGTH (ASTM-D4632) 120 LBS
  - MULLEN BURST STRENGTH (ASTM-D3786) 225 PSI
  - FLOW RATE (ASTM-D4491) 95 GAL/MIN/FT<sup>2</sup>
  - UV RESISTANCE AFTER 500 HRS (ASTM-D4355) 70%
  - HEAT-SET OR HEAT-CALCENDARED FABRICS NOT PERMITTED
  - ACCEPTABLE TYPES INCLUDE MIRAFI 140N, AMOCO 4547, AND GEOTEX 451.
- TOPSOIL AMEND WITH COMPOST (SEE BMP 6.7.3, SOIL AMENDMENT RESTORATION)
- PIPE SHALL BE SOLID OR CONTINUOUSLY PERFORATED, SMOOTH INTERIOR, WITH A MINIMUM INSIDE DIAMETER OF 4-INCHES. HIGH-DENSITY POLYETHYLENE (HDPE) PIPE SHALL MEET ASHTO M252, TYPE S OF ASHTO M294, TYPE S.
- VEGETATION SEE NATIVE PLANT LIST APPENDIX B

### MAINTENANCE

COMPARED WITH OTHER BMPs, LEVEL SPREADERS REQUIRE ONLY MINIMAL MAINTENANCE EFFORTS, MANY OF WHICH MAY OVERLAP WITH STANDARD LANDSCAPING DEMANDS. THE FOLLOWING RECOMMENDATIONS REPRESENT THE MINIMUM MAINTENANCE EFFORT FOR LEVEL SPREADERS:

- MAINTENANCE ACTIVITIES TO BE DONE ANNUALLY AND WITHIN 48 HOURS AFTER EVERY MAJOR STORM EVENT (> 1 INCH RAINFALL DEPTH):
- CATCH BASINS AND INLETS DRAINING TO A LEVEL SPREADER SHOULD BE INSPECTED AND CLEANED ON AN ANNUAL BASIS.
  - THE RECEIVING LAND AREA SHOULD BE IMMEDIATELY RESTORED TO DESIGN CONDITIONS AFTER ANY DISTURBANCE. VEGETATED AREAS SHOULD BE SEEDED AND BLANKETED.
  - IT IS CRITICAL THAT EVEN SHEET FLOW CONDITIONS ARE SUSTAINED THROUGHOUT THE LIFE OF THE LEVEL SPREADER, AS THEIR EFFECTIVENESS CAN DETERIORATE DUE TO LACK OF MAINTENANCE, INADEQUATE DESIGN/LOCATION AND POOR VEGETATIVE COVER.

**INSPECTION** – THE AREA BELOW A LEVEL SPREADER SHOULD BE INSPECTED FOR CLOGGING, DENSITY OF VEGETATION, DAMAGE BY FOOT OR VEHICULAR TRAFFIC, EXCESSIVE ACCUMULATIONS, AND CHANNELIZATION. INSPECTIONS SHOULD BE MADE ON A QUARTERLY BASIS FOR THE FIRST TWO YEARS FOLLOWING INSTALLATION, AND THEN ON AN ANNUAL BASIS THEREAFTER. INSPECTIONS SHOULD ALSO BE MADE AFTER EVERY STORM EVENT GREATER THAN 1-INCH.

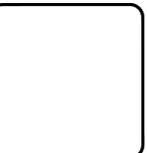
**REMOVAL** – SEDIMENT AND DEBRIS SHOULD BE ROUTINELY REMOVED (BUT NEVER LESS THAN SEMIANNUALLY), OR UPON OBSERVATION, WHEN BUILDUP OCCURS IN THE CLEAN OUTS. REGRADING AND RESEEDING MAY BE NECESSARY IN THE AREAS BELOW THE LEVEL SPREADER. REGRADING MAY ALSO BE REQUIRED WHEN POOLS OF STANDING WATER ARE OBSERVED ALONG THE SLOPE. (IN NO CASE SHOULD STANDING WATER BE ALLOWED FOR LONGER THAN 72 HOURS).

**VEGETATION** – MAINTAINING A VIGOROUS VEGETATIVE COVER ON THE AREAS BELOW A LEVEL SPREADER IS CRITICAL FOR MAXIMIZING POLLUTANT REMOVAL EFFICIENCY AND EROSION PREVENTION. IF VEGETATIVE COVER IS NOT FULLY ESTABLISHED WITHIN THE DESIGNATED TIME, IT MAY NEED TO BE REPLACED WITH AN ALTERNATIVE SPECIES. (IT IS STANDARD PRACTICE TO CONTRACTUALLY REQUIRE THE CONTRACTOR TO REPLACE DEAD VEGETATION.) UNWANTED OR INVASIVE GROWTH SHOULD BE REMOVED ON AN ANNUAL BASIS. BIWEEKLY INSPECTIONS ARE RECOMMENDED FOR AT LEAST THE FIRST GROWING SEASON, OR UNTIL THE VEGETATION IS PERMANENTLY ESTABLISHED. ONCE THE VEGETATION IS ESTABLISHED, INSPECTIONS OF HEALTH, DIVERSITY AND DENSITY SHOULD BE PERFORMED AT LEAST TWICE PER YEAR, DURING BOTH THE GROWING AND NON-GROWING SEASONS. VEGETATIVE COVER SHOULD BE SUSTAINED AT 85% AND REPLACED IF DAMAGE GREATER THAN 50% IS OBSERVED.



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| NO. | REVISIONS | DATE                              | DESCRIPTION |
|-----|-----------|-----------------------------------|-------------|
| 6   |           |                                   |             |
| 5   |           |                                   |             |
| 4   |           |                                   |             |
| 3   |           |                                   |             |
| 2   |           |                                   |             |
| 1   | 09/16/16  | REVISIONS PER CDD REVIEW 09/08/16 |             |

**PRELIMINARY/FINAL  
PCSWM DETAILS**  
CLIENT: MICHAEL A. STOLPER  
PROJECT: PHASE II - 10.00 S.F. OFFICE BLDG.  
LOCATION: 6022 WEST CHESTER PIKE, EDGE MONT, PA 19028  
WILLISTOWN TOWNSHIP, CHESTER COUNTY, PA

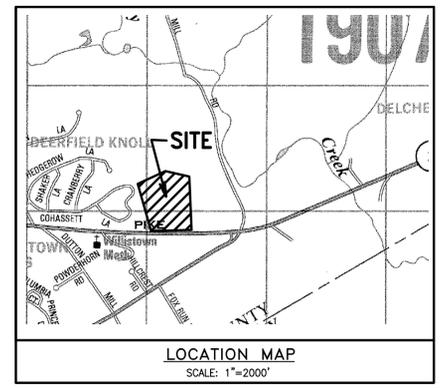
|              |                   |
|--------------|-------------------|
| DATE:        | 04/29/16          |
| SCALE:       | 1"=50'            |
| DRAWN BY:    | ACB               |
| CHECKED BY:  | JSR               |
| PROJECT NO.: | 1155              |
| CAD FILE:    | PCSWM DETAILS.dwg |
| PLOTTED:     | 09/16/16          |
| DRAWING NO.: | C04.3             |
| SHEET:       | 07 of 13          |



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**EROSION AND SEDIMENT CONTROL NARRATIVE**

THE PURPOSE OF THIS NARRATIVE AND THE EROSION CONTROL ASPECTS OF THE PLANS ARE TO PREVENT THE ACCELERATED EROSION OF EXPOSED SITE SOILS DURING CONSTRUCTION AND TO RETAIN ON SITE ALL SEDIMENT PRODUCED BY CONSTRUCTION ACTIVITIES. THIS WILL BE ACCOMPLISHED BY STRICT ADHERENCE TO THE FOLLOWING NOTES, SEQUENCE OF CONSTRUCTION, AND EROSION AND SEDIMENT CONTROL DETAILS SHOWN ON THE PLAN. THIS PLAN WILL FURTHER ACT TO PROVIDE THE FOLLOWING:

- MINIMIZE EXTENT AND DURATION OF EARTH DISTURBANCE
- MAXIMIZE PROTECTION OF EXISTING DRAINAGE FEATURES AND VEGETATION
- MINIMIZE SOIL COMPACTION
- UTILIZE OTHER MEASURES OR CONTROLS THAT PREVENT OR MINIMIZE GENERATION OF INCREASED STORMWATER RUNOFF

**RECEIVING SURFACE WATERS**

\*THE PENNSYLVANIA TITLE 25, CHAPTER 93 CLASSIFICATION FOR THE RECEIVING WATERS OF THE COMMONWEALTH

THE SITE IS SITUATED WITHIN THE RIDELEY CREEK WATERSHED WHICH FLOWS IN A SOUTHEAST TO A NORTH, NORTHWEST DIRECTION. PER PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, 25 PA. CODE, §3.90 "WATER QUALITY STANDARDS" RIDELEY CREEK WITHIN WILLISTOWN TOWNSHIP IS CLASSIFIED AS HIGH QUALITY WATERSHED (HQ).

**RIPARIAN BUFFER NOTE:**

§102.14(c)(3) BUFFER LINE WAS MEASURED HORIZONTALLY AND PERPENDICULARLY TO THE BANK WITH NO MORE THAN 10% WIDTH BELOW THE MINIMUM WIDTH FROM THE TOP OF STREAMBANK

**MAINTENANCE - 102.4(b)(5)(x)**

MAINTENANCE OF EROSION AND SEDIMENTATION CONTROL DEVICES WILL CONSIST OF WEEKLY INSPECTIONS OF EACH DEVICE TO DETERMINE HOW WELL THE SLOPE STABILIZATION MEASURES USED ARE WORKING. ALL FACILITIES WILL BE INSPECTED AFTER EVERY STORM TO DETERMINE THEIR DURABILITY TO WITHSTAND DRIVING RAIN AND EROSION. ALL LOCAL REGULATIONS SHALL BE COMPLIED WITH. ALL DAMAGES CAUSED BY SOIL EROSION OR CONSTRUCTION EQUIPMENT SHALL BE REPAIRED BEFORE THE END OF EACH WORKING DAY. A WRITTEN REPORT DOCUMENTING ALL INSPECTIONS AND REPAIRS MUST BE KEPT ON SITE AT ALL TIMES.

THE FOLLOWING MAINTENANCE PROCEDURES SHALL APPLY:

1. ANY SEEDED OR SODDED AREAS THAT HAVE BECOME STRIPPED OF VEGETATION SHALL BE REESTABLISHED WITH APPROPRIATE STABILIZATION MATERIALS. THIS PROCEDURE SHALL BE REPEATED AFTER EVERY SIZEABLE STORM (2"+) UNTIL NO MORE SIGNS OF EROSION ARE EVIDENT.
2. AT WEEKLY INSPECTIONS AND AFTER EACH RAIN EVENT NECESSARY CLEANING WILL BE PERFORMED.
3. ANY FILTER FABRIC FENCE, WHICH HAS BEEN UNDERMINED OR OVER TOPPED, MUST BE IMMEDIATELY REPLACED WITH A ROCK FILTER OUTLET.
4. ANY SEDIMENT REMOVED FROM BMPs DURING CONSTRUCTION WILL BE RETURNED TO UPLAND AREAS ON SITE AND INCORPORATED INTO THE SITE GRADING.

**PROJECT WASTE NOTE: - 102.4(b)(5)(xi)**

THE OPERATOR SHALL REMOVE FROM THE SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIAL AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1 ET SEQ., AND 287.1 ET SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP, OR DISCHARGE ANY BUILDING MATERIAL OR WASTES AT THE SITE.

**GEOLOGIC FORMATION NOTE:**

NO KNOWN GEOLOGIC FORMATIONS THAT WOULD NEGATIVELY IMPACT SITE DEVELOPMENT (i.e. SINKHOLES, FAULTS, FRACTURES, KARST).

**THERMAL IMPACTS NOTE: - 102.4(b)(5)(xiii)**

PERIMETER EROSION CONTROL MEASURES, I.E. SILT FENCE, ROCK FILTER OUTLETS, AND/OR COMPOST FILTER SOCKS, THEN THROUGH EXISTING WELL VEGETATED SWALE WHICH ALLOWS FURTHER COOLING BEFORE ENTERING SURFACE WATERS.

**RECYCLING OR DISPOSAL OF MATERIALS**

ANY OFF-SITE WASTE AND BORROW AREA MUST HAVE AN EAS PLAN REVIEWED AND APPROVED BY COCD PRIOR TO BEING ACTIVATED.

**SOILS DATA AND SOIL TYPE USE LIMITATIONS**

| SYMBOL | SOIL NAME  | DEPTH TO SEASONALLY HIGH WATER TABLE | DEPTH TO BEDROCK | DEPTH FROM SURFACE                | BLDG. GROUP | COMMENTS                |
|--------|--|--------------------------------------|------------------|-----------------------------------|-------------|-------------------------|
| CaB2   | CAVERT SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED.              | 0-1 FT. +                            | 3+ FT.           | 0 - 8 INCHES<br>8 - 46<br>46 - 60 | #12         | IMPERMEABLE SUB-STRATUM |
| CkB2   | CHROME GRAVELLY SILTY CLAY LOAM 3 TO 8 PERCENT SLOPES MODERATELY ERODED. | 5 FT. +                              | 1 - 2.5 FT.      | 0 - 7 INCHES<br>7 - 15<br>15 - 30 | #7          | IMPERMEABLE SUB-STRATUM |
| CkC3   | CHROME GRAVELLY SILTY CLAY LOAM 8 TO 15 PERCENT SLOPES SEVERELY ERODED.  | 5 FT. +                              | 1 - 2.5 FT.      | 0 - 7 INCHES<br>7 - 15<br>15 - 30 | #8          | IMPERMEABLE SUB-STRATUM |
| GeB2   | GLENELG CHANNERY SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED.    | 5 FT. +                              | 3 - 5 FT.        | 0 - 8 INCHES<br>8 - 26<br>26 - 42 | #5          | PERMEABLE SUB-STRATUM   |
| GeC3   | GLENELG CHANNERY SILT LOAM, 3 TO 8 PERCENT SLOPES, SEVERELY ERODED.      | 5 FT. +                              | 3 - 5 FT.        | 0 - 8 INCHES<br>8 - 26<br>26 - 42 | #5          | PERMEABLE SUB-STRATUM   |

**EROSION CONTROL PLAN**



**EXCEPTIONAL VALUE WATERSHED NOTES**

1. THIS PROJECT IS IN A SPECIALLY PROTECTED EXCEPTIONAL VALUE WATERSHED. EXTREME CARE SHOULD BE EXERCISED IN ALL DISTURBANCE ACTIVITIES TO PREVENT DEGRADATION TO THE WATERS OF
2. BECAUSE THIS PROJECT IS IN A SPECIALLY PROTECTED EXCEPTIONAL VALUE WATERSHED, ALL AREAS REQUIRING INTERIM OR FINAL STABILIZATION MUST BE ADDRESSED IMMEDIATELY UPON COMPLETION OF DISTURBANCE.

**COMPOST FILTER SOCK TABLE**

| FENCE # | SIZE  | LOCATION                           | SLOPE | SLOPE LENGTH ABOVE BARBER (FT.) |
|---------|-------|------------------------------------|-------|---------------------------------|
| 1       | 24 IN | NORTH OF PROPOSED SOUTHERN PARKING | 15%   | 200'                            |
| 2       | 32 IN | SOUTH OF PROPOSED BUILDING         | 11%   | 357'                            |

**LEGEND**

- EX. PROPERTY LINE
- PROP. PROPERTY LINE
- EX. RIGHT-OF-WAY
- PROP. RIGHT-OF-WAY
- EX. MONUMENT
- PROP. MONUMENT
- EX. IRON PIPE
- PROP. IRON PIPE
- EX. EASEMENT
- PROP. EASEMENT
- EX. METEOROLOGICAL
- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING ELEV.
- NEW SPOT ELEV.
- SOILS TYPE
- SOILS LINE
- EX. CONC. CURB
- PROP. CONC. CURB
- EX. EDGE OF PAVING
- PROP. EDGE OF PAVING
- EX. LIGHT POLE
- PROP. LIGHT POLE
- EX. FENCE
- EX. MAIL BOX
- EX. SIGN
- PROP. SIGN
- EXIST. PARKING SPACES
- PROP. PARKING SPACES
- TO BE REMOVED
- EX. TELE. LINE
- PROP. TELE. LINE
- EX. ELEC. LINE
- PROP. ELEC. LINE
- EX. UTILITY POLE
- PROP. UTILITY POLE
- EX. GAS ANCHOR
- EX. GAS LINE
- PROP. GAS LINE
- EX. GAS VALVE
- PROP. GAS VALVE
- EX. STORM SEWER LINE
- PROP. STORM SEWER LINE
- EX. STORM INLET
- PROP. STORM INLET
- PROP. STORM INLET ID
- PROP. STORM INLET ID
- PROP. SEEPAGE BED
- EX. SANITARY SEWER LINE
- PROP. SAN. SEWER LINE
- PROP. SAN. SEWER LATERAL
- PROP. SANITARY MH. ID
- EX. WATER LINE
- PROP. WATER LINE
- PROP. WATER LATERAL
- PROP. FIRE WATER LINE
- PROP. WATER VALVE
- PROP. HYDRANT
- EX. MANHOLE
- PROP. MANHOLE

**EROSION CONTROL LEGEND**

- DRAINAGE AREA
- LIMIT OF DISTURBANCE
- FF18 18" SILT FENCE
- FF30 30" SILT FENCE
- SSF 30" SILT FENCE REINFORCED W/ STRAW HAY BALES
- OCF ORANGE CONSTRUCTION FENCE
- TS TOPSOIL STOCKPILE
- RCE STABILIZED ROCK CONSTRUCTION ENTRANCE
- RF ROCK FILTER OUTLET
- RD ROCK DISSIPATOR
- DC DIVERSION CHANNEL
- IP INLET PROTECTION
- ST SEDIMENT TRAP
- TR TEMPORARY RISER
- EROSION CONTROL BLANKET

**NATURAL SENSITIVE RESOURCE LEGEND**

| RESOURCE                | TOTAL AREA (AC.) | PROTECTED AREA (AC.) |
|-------------------------|------------------|----------------------|
| RIPARIAN BUFFER AREA    | 4.02 AC.         | 4.02 AC.             |
| WETLANDS                | 0.53 AC.         | 0.53 AC.             |
| WOODLAND AREA           | 2.58 AC.         | 2.58 AC.             |
| STEEP SLOPES 25%+       | 0.46 AC.         | 0.17 AC.             |
| STEEP SLOPES 15% TO 25% | 1.36 AC.         | 0.74 AC.             |

**STORMWATER BMP LEGEND**

- BMP 6.4.3: SUBSURFACE INFILTRATION BED
- BMP 6.4.4: WATER QUALITY FILTERS
- BMP 6.7.1: RIPARIAN BUFFER RESTORATION
- BMP 6.7.2: LANDSCAPE RESTORATION
- BMP 6.7.3: SOIL AMENDMENTS
- BMP 6.8.1: LEVEL SPREADER

THIS PLAN IS TO BE USED FOR EROSION AND SEDIMENTATION CONTROL PURPOSES ONLY.

**PRELIMINARY/FINAL EROSION CONTROL PLAN**

CLIENT: MICHAEL A. STOLPER  
PROJECT: PHASE II - 10,000 S.F. OFFICE BLDG.  
LOCATION: 6022 WEST CHESTER PIKE, EDGEWORTH, PA, 19028  
WILLISTOWN TOWNSHIP, CHESTER COUNTY, PA

DATE: 04/29/16  
SCALE: 1"=50'  
DRAWN BY: ACB  
CHECKED BY: JSR  
PROJECT NO.: 1155  
CADD FILE: 10 EROSION CONTROL DETAILS.dwg  
PLOTTED: 09/16/16  
DRAWING NO.: C05.1  
SHEET 08 of 13

## EROSION AND SEDIMENTATION CONTROL NARRATIVE

THE PURPOSE OF THIS NARRATIVE AND THE EROSION CONTROL ASPECTS OF THE PLANS ARE TO PREVENT THE ACCELERATED EROSION OF EXPOSED SITE SOILS DURING CONSTRUCTION AND TO RETAIN ON SITE ALL SEDIMENT PRODUCED BY CONSTRUCTION ACTIVITIES. THIS WILL BE ACCOMPLISHED BY STRICT ADHERENCE TO THE FOLLOWING NOTES, SEQUENCE OF CONSTRUCTION, AND EROSION AND SEDIMENT CONTROL DETAILS SHOWN ON THE PLAN. THE EROSION CONTROL PROVIDED WILL MINIMIZE THE EXTENT AND DURATION OF EARTH DISTURBANCE, SOIL COMPACTION, AND MAXIMIZE PROTECTION OF EXISTING DRAINAGE FEATURES AND VEGETATION. THE DESIGN FURTHER UTILIZES OTHER MEASURES AND CONTROLS THAT PREVENT OR MINIMIZE OCCURRENCE OF INCREASED STORMWATER RUNOFF.

## EROSION AND SEDIMENTATION CONTROL GENERAL NOTES

- A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES.
- IF ANY SIGNIFICANT CHANGES ARE TO BE MADE TO THE LIMITS OF DISTURBANCE OR TO THE EROSION AND SEDIMENTATION CONTROL PLAN, THE CONTRACTOR OR LAND OWNER MUST CONTACT THE CHESTER COUNTY CONSERVATION DISTRICT AT 610-925-4920 FOR ADJUDICATION OF THESE CHANGES.
- THE OPERATOR SHALL REMOVE FROM THE SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIAL AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 2601.1 ET SEQ., 2711.1 ET SEQ., AND 287.1 ET SEQ. THE CONTRACTOR SHALL NOT BURN, DUMP, OR DISCHARGE ANY BUILDING MATERIAL OR WASTES AT THE SITE.
- SHOULDN UNFORESEEN EROSION CONDITIONS DEVELOP DURING CONSTRUCTION, THE CONTRACTOR MUST TAKE ACTION TO REMEDY SUCH CONDITIONS AND TO PREVENT DAMAGE TO ADJACENT PROPERTIES AS A RESULT OF INCREASED RUNOFF AND/OR SEDIMENT DISPLACEMENT. STOCKPILES OF WOOD CHIPS, HAY BALES, CRUSHED STONE AND OTHER MULCHES SHOULD BE HELD IN READINESS TO DEAL IMMEDIATELY WITH EMERGENCY PROBLEMS OF EROSION.
- 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 CONTRACTOR TO ELIMINATE SUCH PROBLEMS.
- THE CONTRACTOR IS ADVISED TO BECOME THOROUGHLY FAMILIAR WITH THE PROVISIONS OF APPENDIX 6A, EROSION CONTROL RULES AND REGULATIONS, TITLE 25, PART 1, DEPARTMENT OF ENVIRONMENTAL RESOURCES, SUB-PART C, PROTECTION OF NATURAL RESOURCES, ARTICLE III, WATER RESOURCES, CHAPTER 102, EROSION CONTROL.
- THE CONTRACTOR MUST DEVELOP AND HAVE APPROVED BY THE CHESTER COUNTY CONSERVATION DISTRICT, A SEPARATE EROSION AND SEDIMENTATION CONTROL PLAN FOR EACH SPILL, BORROW OR OTHER WORK AREA NOT DETAILLED IN THE APPROVED PLAN, WHETHER LOCATED WITHIN OR OUTSIDE THE CONSTRUCTION LIMITS.
- ALL PUMPING OF SEDIMENT LADEN WATER SHALL BE THROUGH A SEDIMENT CONTROL BMP, SUCH AS A PUMPED WATER FILTER BAG OR EQUIVALENT SEDIMENT REMOVAL FACILITY, OVER UNDISTURBED VEGETATED AREAS.
- SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SURFACE DRAIN (SEE OTHER PROVIDED METHOD).
- LIMITS OF DISTURBANCE MUST BE CLEARLY MARKED IN THE FIELD PRIOR TO ANY DISTURBANCE, ANY CHANGE OR ENDOCHMENT ONTO THESE AREAS WITHOUT CONSERVATION DISTRICT REVIEW AND APPROVAL MAY REQUIRE THE CONTRACTOR TO CEASE DISTURBANCE AND OBTAIN AN EARTH DISTURBANCE PERMIT FROM THE DISTRICT.
- UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENTATION CONTROLS MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENTATION CONTROLS AFTER EACH STORM EVENT AND ON A WEEKLY BASIS. ALL SITE INSPECTIONS WILL BE DOCUMENTED IN AN INSPECTION LOG KEPT FOR THIS PURPOSE. THE COMPLIANCE ACTIONS AND THE DATE, TIME AND NAME OF THE PERSON CONDUCTING THE INSPECTION, THE INSPECTION LOG WILL BE KEPT ON SITE AT ALL TIMES AND MADE AVAILABLE TO THE DISTRICT UPON REQUEST.

ALL PREVENTIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, REMULCHING, RESEEDING, AND REINSTATEMENT MUST BE PERFORMED IMMEDIATELY, IF EROSION AND SEDIMENTATION BMP'S FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMP'S OR MODIFICATIONS OF THOSE INSTALLED WILL BE NEEDED.

WHERE BMP'S ARE FOUND TO FAIL TO ALLEVIATE EROSION OR SEDIMENT POLLUTION THE PERMITTEE OR CO-PERMITTEE SHALL INCLUDE THE FOLLOWING INFORMATION:  
A. THE LOCATION & SEVERITY OF THE BMP'S FAILURE & ANY POLLUTION EVENTS  
B. ALL STEPS TAKEN TO REDUCE, ELIMINATE & PREVENT THE REOCCURRENCE OF THE NON-COMPLIANCE  
C. THE TIME FRAME TO CORRECT THE NON-COMPLIANCE, INCLUDING THE EXACT DATES WHEN THE ACTIVITY WILL RETURN TO COMPLIANCE.

UPON COMPLETION OR TEMPORARY CESSATION OF THE EARTH DISTURBANCE ACTIVITY, OR ANY STAGE THEREOF, THE PROJECT SHALL BE IMMEDIATELY STABILIZED WITH THE APPROPRIATE TEMPORARY OR PERMANENT STABILIZATION. ALL AREAS REQUIRING INTERIM OR FINAL STABILIZATION MUST BE ADDRESSED WITH IMMEDIATE STABILIZATION OF DISTURBANCE AREAS UTILIZING VEGETATIVE STABILIZATION MUST BE SEEDED & PLANTED AND MULCHED TO GERMINATE BY OCTOBER 15 OF EACH YEAR. SEEDING WILL BE ACCOMPLISHED THROUGH THE USE OF CONVENTIONAL SEEDING AND MULCHING AT A RATE OF 3.0 TONS PER ACRE AS RECOMMENDED IN THE PENN STATE AGRONOMY GUIDE.

AFTER FINAL STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMP'S MUST BE REMOVED, AREAS DISTURBED DURING REMOVAL OF THE BMP'S MUST BE STABILIZED IMMEDIATELY.

SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/2 ABOVE GROUND HEIGHTS OF COMPOST FILTER SOCKS AND WHEN THEY REACH THE CLEAN-OUT ELEVATION IN THE SEDIMENT BASIN.

THE CONTRACTOR WILL BE RESPONSIBLE FOR THE PROPER CONSTRUCTION, STABILIZATION, AND MAINTENANCE OF ALL EROSION AND SEDIMENTATION CONTROLS AND RELATED ITEMS INCLUDED WITH THIS PLAN.

EROSION AND SEDIMENTATION CONTROL, INSPECTIONS SHALL BE PERFORMED ON A WEEKLY BASIS AND AFTER EVERY RAIN EVENT.

ALL SLOPES STEEPER THAN 3:1 MUST UTILIZE EROSION CONTROL BLANKET (CURELX BLANKET OR APPROVED EQUAL).

IF UNSUITABLE MATERIAL IS ENCOUNTERED DURING CONSTRUCTION, A GEOLOGICAL ENGINEER SHOULD BE ON-SITE FOR RESOLUTIONS TO THE UNSUITABLE SOIL.

TEMPORARY TOPSOIL STOCKPILE HEIGHTS MUST NOT EXCEED 35 FEET, AND SLOPES MUST BE 2:1 OR FLATTER.

BEFORE INITIATING ANY REVISION TO THE APPROVED EROSION AND SEDIMENT CONTROL PLAN OR REVISIONS TO OTHER PLANS WHICH MAY AFFECT THE EFFECTIVENESS OF THE APPROVED E & S CONTROL PLAN, THE OPERATOR MUST RECEIVE APPROVAL OF THE REVISIONS FROM THE CHESTER COUNTY CONSERVATION DISTRICT. THE OPERATOR SHALL ASSURE THAT THE APPROVED EROSION AND SEDIMENT CONTROL PLAN IS PROPERLY AND COMPLETELY IMPLEMENTED IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO ELIMINATE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION.

ALL PUMPING OF SEDIMENT LADEN WATER OR POTENTIALLY SEDIMENT LADEN WATER SHALL BE THROUGH A SEDIMENT CONTROL BMP, SUCH AS A PUMPED WATER FILTER BAG DISCHARGING OVER NON-DISTURBED AREAS.

THE OPERATOR SHALL ASSURE THAT AN EROSION AND SEDIMENT CONTROL PLAN HAS BEEN PREPARED, APPROVED BY THE CHESTER COUNTY CONSERVATION DISTRICT, AND IS BEING IMPLEMENTED AND MAINTAINED FOR ALL SOIL AND/OR ROCK SPILL AND BORROW AREAS, REGARDLESS OF THEIR LOCATIONS. ANY OFF-SITE WASTE AND BORROW AREA MUST HAVE AN EROSION AND SEDIMENT CONTROL PLAN REVIEWED AND APPROVED BY THE CHESTER COUNTY CONSERVATION DISTRICT PRIOR TO BEING ACTIVATED.

AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS 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 RE-DISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY VEGETATIVE STABILIZATION SPECIFICATIONS. DISTURBED AREAS WHICH ARE AT FINISHED GRADE OR WHICH WILL NOT BE RE-DISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS.

SEDIMENT TRAPS MUST BE PROTECTED FROM UNAUTHORIZED ACTS OF THIRD PARTIES.

IF THE CONTRACTOR ENCOUNTERS HIGH WATER TABLE, SHALLOW BEDROCK, OR SOIL INSTABILITY DURING SITE CONSTRUCTION, THE DESIGN ENGINEER OR THE ON-SITE GEOLOGICAL ENGINEER MUST BE CONTACTED IMMEDIATELY FOR CORRECTIVE MEASURES.

IF THE SITE CONSTRUCTION YIELDS A NET OUT RESULTING IN EXCESS SOIL BEING REMOVED FROM THE SITE THE SOIL MUST BE REFERRED TO A SITE WITH A VALID NPDES PERMIT.

AS-BUILT PLANS OF THE STORMWATER BMP'S SHALL BE PROVIDED WITHIN SIX MONTHS FOLLOWING THE COMPLETION OF EACH PHASE. THE AS-BUILT PLANS SHALL BE SIGNED AND SEALED BY A PA REGISTERED PROFESSIONAL ENGINEER.

A NOTICE OF TERMINATION (N.O.T.) WILL BE REQUIRED TO BE SUBMITTED FOLLOWING APPROVAL OF THE FINAL AS-BUILT PLANS. PRIOR TO CLOSING THE N.O.T., THE DEPARTMENT AND/OR CONSERVATION DISTRICT STAFF WILL PERFORM A FINAL INSPECTION TO ENSURE SITE STABILIZATION AND VERY ADEQUATE INSTALLATION AND FUNCTION OF STORMWATER BMP'S.

IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO USE CLEAN FILL AND TO PERFORM ENVIRONMENTAL DUE DILIGENCE, AS REQUIRED BY THE DISTRICT, TO DETERMINE THAT ALL FILL IMPORTED TO THE SITE MEETS THE DEP'S DEFINITION OF CLEAN FILL. SEE DEFINITIONS OF CLEAN FILL AND ENVIRONMENTAL DUE DILIGENCE THIS SHEET.

AN EROSION CONTROL BLANKET WILL BE INSTALLED ON ALL DISTURBED SLOPES STEEPER THAN 3:1, ALL AREAS OF CONCENTRATED FLOWS, AND DISTURBED AREAS WITHIN 50' OF WATERS OF THE COMMONWEALTH.

CLEAN FILL IS DEFINED AS: UNCONTAMINATED, NON-WATER SOLUBLE, NON-DECOMPOSABLE, INERT, SOLID MATERIAL. THE TERM INCLUDES SOIL, ROCK, STONE, DREDGED MATERIAL, USED ASPHALT, AND BRICK, BLOCK OR CONCRETE FROM CONSTRUCTION AND DEMOLITION ACTIVITIES THAT IS SEPARATE FROM OTHER WASTE AND IS RECONSTRUCTIBLE 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).

THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP-201 MUST BE RETURNED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.

ENVIRONMENTAL DUE DILIGENCE MUST BE PERFORMED 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, HISTORY OF PROPERTY, HISTORY, SANBORN MAPS, ENVIRONMENTAL QUESTIONNAIRES, TRANSACTION SCREENS, ANALYTICAL TESTING, ENVIRONMENTAL ASSESSMENTS OR AUDITS. ANALYTICAL TESTING IS NOT A REQUIRED PART OF DUE DILIGENCE UNLESS VISUAL INSPECTION AND/OR REVIEW OF THE PAST LAND USE OF THE PROPERTY INDICATES THAT THE FILL MAY HAVE BEEN SUBJECTED TO A SPILL OR RELEASE OF A REGULATED SUBSTANCE. IF THE FILL MAY HAVE BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE, IT MUST BE TESTED TO DETERMINE IF IT QUALIFIES AS CLEAN FILL. TESTING SHOULD BE PERFORMED IN ACCORDANCE WITH APPENDIX A OF THE DEPARTMENT'S POLICY MANAGEMENT OF CLEAN FILL.

AREAS WHICH ARE TO BE TOP-SOLED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES (6 TO 12 INCHES ON COMPACTED SOILS) PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING, I.E. YARDS.

SEDIMENT TRACKED ONTO ANY ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORKDAY OR AS DIRECTED BY THE COCO OR MUNICIPALITY AND DISPOSED AS A MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE MOVED, SHOVELLED OR SHEPT INTO ANY ROAD, SIDEWALK, STORM SEWER, OR SURFACE WATER.

ANY DAMAGE THAT OCCURS AS A RESULT OF THE BERM OR TRAP DISCHARGE SHALL BE REPAIRED IN A PERMANENT MANNER THAT IS SATISFACTORY TO THE MUNICIPALITY, CONSERVATION DISTRICT AND DOWN SLOPE LANDOWNERS.

ANY CHANGES RECOMMENDED BY ANY REVIEWING BODY OF THE WATERWAY AND WETLAND ENCROACHMENT/IMPACTS THAT WILL AFFECT THE PCSM OR E&S PLANS ASSOCIATED WITH THE WATER DISTURBANCE OR ENCROACHMENT ACTIVITIES SHOULD HAVE THOSE PLAN UPDATED AND SUBMITTED TO CHESTER COUNTY CONSERVATION DISTRICT.

## LINE TRENCH EXCAVATION NOTES:

- LIMIT ADVANCED CLEARING AND GRUBBING OPERATIONS TO A DISTANCE EQUAL TO TWO TIME 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.
- ALL SOIL EXCAVATED FROM THE TRENCH WILL BE PLACED ON THE UPHILL SIDE OF THE TRENCH. COMPOST FILTER SOCK SHALL BE PLACED DOWNSLOPE OF THE TRENCH AREA WHEN EXCAVATING ADJACENT TO THE RIPARIAN BUFFER ZONE (WATER LINE EXTENSION).
- LIMIT DAILY TRENCH EXCAVATION TO THE LENGTH OF PIPE PLACEMENT, PLUG INSTALLATION AND BACKFILLING THAT CAN BE COMPLETED THE SAME DAY.
- WATER WHICH ACCUMULATES IN THE OPEN TRENCH WILL BE COMPLETELY REMOVED BY PUMPING BEFORE PIPE PLACEMENT 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.

## CONSTRUCTION SEQUENCE NOTES:

- ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. EACH STAGE SHALL BE COMPLETED BEFORE ANY FOLLOWING STAGE IS INITIATED. CLEARING AND GRUBBING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH STAGE.
- AT LEAST 7 DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, THE OPERATOR SHALL WRITE ALL CONTRACTORS INVOLVED IN THESE ACTIVITIES, THE LANDOWNER, ALL APPROPRIATE MUNICIPAL OFFICIALS, THE EROSION AND SEDIMENTATION CONTROL PLAN PREPARER, AND A REPRESENTATIVE OF THE CHESTER COUNTY CONSERVATION DISTRICT.
- THE OPERATOR SHALL REMOVE FROM THE SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIAL AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 2601.1 ET SEQ., 2711.1 ET SEQ., AND 287.1 ET SEQ. THE CONTRACTOR SHALL NOT BURN, DUMP, OR DISCHARGE ANY BUILDING MATERIAL, WASTES AT THE SITE.
- UPON COMPLETION OR TEMPORARY CESSATION OF THE EARTH DISTURBANCE ACTIVITY THAT WILL EXCEED 4 DAYS, OR ANY STAGE THEREOF, THE PROJECT SITE MUST BE IMMEDIATELY STABILIZED WITH THE APPROPRIATE TEMPORARY OR PERMANENT STABILIZATION.
- IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO ELIMINATE THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION.
- SHOULD ANY MEASURES CONTAINED WITHIN THIS PLAN PROVE INCAPABLE OF ADEQUATELY MITIGATING STORMWATER DRAINAGE THERMAL IMPACTS PRIOR TO THE DISCHARGE TO SURFACE WATERS, THE DESIGN ENGINEER MUST BE CONTACTED IMMEDIATELY AND ADDITIONAL MEASURES MUST BE IMMEDIATELY IMPLEMENTED BY THE CONTRACTOR TO ELIMINATE SUCH PROBLEMS.

## SEQUENCE OF CONSTRUCTION:

ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. EACH STAGE SHALL BE COMPLETED BEFORE ANY FOLLOWING STAGE IS INITIATED. CLEARING AND GRUBBING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH STAGE. EROSION AND SEDIMENTATION CONTROL MEASURES AND EARTH MOVING ACTIVITIES WILL BE STAGED AS FOLLOWS:

- AT LEAST 7 DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES THE OPERATOR SHALL WRITE ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES INCLUDING BUT NOT LIMITED TO: THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE EROSION AND SEDIMENTATION CONTROL PLAN PREPARER, AND A REPRESENTATIVE FROM THE CHESTER COUNTY CONSERVATION DISTRICT FOR AN ON-SITE PRE-CONSTRUCTION MEETING.
- 72 HOURS PRIOR TO ANY SOIL DISTURBANCE, CONTRACTOR SHALL CONTACT THE CHESTER COUNTY SOIL CONSERVATION DISTRICT AT WILLOWDALE TOWN CENTER, 488 UNIONDALE ROAD, SUITE 200, PENNETT SQUARE, PA 16848, (610) 925-4920.
- INSTALL STABILIZED ROCK CONSTRUCTION ENTRANCE AS SHOWN AND DETAILED ON THE PLANS.

STAKE LIMITS OF DISTURBANCE IN THE FIELD PRIOR TO CLEARING OF ANY EARTH DISTURBANCE. ANY CHANGE OR ENCROACHMENT ONTO THESE AREAS WITHOUT CONSERVATION DISTRICT REVIEW AND APPROVAL MAY REQUIRE THE CONTRACTOR TO CEASE DISTURBANCE AND OBTAIN AN EARTH DISTURBANCE PERMIT. INSTALL ORANGE CONSTRUCTION FENCING AROUND INFILTRATION AREAS AS SHOWN ON THE PLANS TO PROTECT FROM CONSTRUCTION. INSTALL ALL TREE PROTECTION FENCING AS SHOWN ON THE PLANS.

INSTALL ORANGE CONSTRUCTION FENCING AROUND THE EXISTING SEPTIC FIELD TO PREVENT HEAVY EQUIPMENT FROM TRAVELING ACROSS. THIS IS TO REMAIN UNTIL CONSTRUCTION HAS BEEN COMPLETED.

INSTALL THE COMPOST FILTER SOCKS AS SHOWN ON THE PLANS AND AS DIRECTED BY THE CONSERVATION DISTRICT. MAINTAIN TEMPORARY CONTROL MEASURES UNTIL PERMANENT COVER IS ESTABLISHED. THE CONTRACTOR WILL INSTALL THE SYSTEMS IN CONFORMANCE WITH THE DETAILS AND MANUFACTURER'S SPECIFICATIONS.

ALL EROSION AND SEDIMENT CONTROLS MUST BE COMPLETELY CONSTRUCTED AND STABILIZED PRIOR TO DISTURBANCE OF THE TRIBUTARY TO THEM.

ANY DISTURBED OR REGRADED AREAS HAVING A FINAL GRADE OF THIRTY PERCENT (33%) OR GREATER SHALL BE STABILIZED IMMEDIATELY. DURING GRADING ACTIVITIES, THESE AREAS SHALL BE IMMEDIATELY LINED WITH A STABILIZING EROSION CONTROL BLANKET (ECS) (ECS: EAST COAST EROSION BLANKETS TYPE ECS-1 OR APPROVED EQUAL) PRIOR TO TEMPORARY SEEDING. ECS SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.

BEFORE ALL SITE CLEARING, CLEARING AND GRUBBING WITHIN THE LIMITS OF DISTURBANCE. EXERCISE CARE TO PROTECT ALL THOSE TREES SELECTED TO REMAIN AND SURROUNDING WITH TREE PROTECTION FENCING.

STRIP TOPSOIL WITHIN SITE, AT ALL BUILDINGS, DRIVEWAY AND PARKING AREAS AND STOCKPILE AT PROPOSED LOCATION. FOLLOW ALL PROCEDURES FOR PLACEMENT AND PROTECTION OF TOPSOIL STOCKPILES AS INDICATED ON THE PLANS.

ROUGH GRADE FOR THE PROPOSED PARKING AND DRIVE, ROUGH GRADE BUILDING, IMMEDIATELY SEED AND STABILIZE ANY SLOPES THAT ARE 3:1 OR GREATER WITH EROSION CONTROL BLANKETING. INSTALL SUPER SILT FENCE ALONG THE NORTH SIDE OF THE BUILDING AND ALONG THE SOUTHERN END OF THE EXISTING SEPTIC FIELD TO THE FIRST RICE SUPER SILT FENCE SHALL BE INSTALLED AT THESE LOCATIONS AS SHOWN ON THE PLAN.

BEFORE INSTALLATION OF UNDERGROUND STORMWATER BEDS, INSTALL STORM SEWER INLET, INLET PROTECTION, LEVEL SPREADER (SEE DETAIL ON SHEET 02 - POST CONSTRUCTION BMP ONLY) AND PIPING ASSOCIATED WITH THESE SYSTEMS. THIS IS CRITICAL STAGE WHERE THE DESIGN ENGINEER MUST BE CONTACTED AT LEAST 48 HOURS IN ADVANCE TO PROVIDE CONSTRUCTION OVERSIGHT. ALL INLETS FOR THE UNDERGROUND BEDS MUST BE SEALED UNTIL THE AREAS CONTRIBUTORY TO THEM ARE FULLY STABILIZED TO ENSURE SEDIMENT DOES NOT ENTER THE SYSTEM. AT THAT TIME THE BEDS CAN BE UNSEALED AND PUT INTO SERVICE. ALL STORM PIPES AND ROOF DRAIN LEADERS SHALL ALSO BE SEALED UNTIL THE AREAS CONTRIBUTORY TO THEM ARE FULLY STABILIZED TO ENSURE SEDIMENT DOES NOT ENTER THE SYSTEM.

INSTALL ALL UNDERGROUND UTILITIES WITHIN THE PROPOSED PARKING AREA (WATER SERVICES, ELECTRIC, GAS, COMMUNICATIONS, ETC.) ASSOCIATED WITH THE BUILDING. THE WATER MAIN SHALL BE EXCAVATED, INSTALLED, BACKFILLED AND STABILIZED ON A DAILY BASIS, WITH ONLY AS MUCH EXCAVATED AS CAN BE BACKFILLED AND STABILIZED EACH WORKING DAY.

INSTALL ALL ROOF DRAIN PIPING, AND THE ROOF DRAIN LEADER FOR THE PROPOSED BUILDING. ALL INLETS AND PIPING LEADING TO THE UNDERGROUND BEDS MUST BE SEALED UNTIL THE AREAS CONTRIBUTORY TO THEM ARE FULLY STABILIZED TO ENSURE SEDIMENT DOES NOT ENTER THE SYSTEM. AT THAT TIME THE BEDS CAN BE UNSEALED AND PUT INTO SERVICE.

FINE GRADE ALL OF THE PARKING AREA AND DRIVE. PLACE STONE BASE COURSE ON THEN COMPACT ALL AREAS TO BE PAVED EXCLUDING WHERE THE INFILTRATION BED HAS BEEN INSTALLED. TAKE CARE TO NOT CRUSH THE SYSTEM WHEN COMPACTING THE SOIL.

PAVE ALL PARKING AND DRIVE AREAS WITH BANDER COURSE IN ACCORDANCE WITH PAVING SPECIFICATIONS ON THE PLANS.

STABILIZE ALL REMAINING AREAS IMMEDIATELY WITH PROPER SEEDING AND EROSION CONTROL BLANKETS AS INDICATED.

ONCE ALL OTHER DRAINAGE AREAS ARE ADEQUATELY STABILIZED, UNBLOCK INLETS AND COMPLETE ANY REMAINING CONNECTION BETWEEN STORMWATER CONVEYANCE PIPING AND UNDERGROUND PIPE STORAGE BEDS. SMOOTH WATER QUALITY INSERTS SHALL BE INSTALLED ON THE APPLICABLE INLETS AT THIS TIME. THIS IS CRITICAL STAGE WHERE THE DESIGN ENGINEER MUST BE CONTACTED AT LEAST 48 HOURS IN ADVANCE TO PROVIDE CONSTRUCTION OVERSIGHT.

UPON COMPLETION OF BUILDING - BRUSH SIX (6) INCHES OF TOPSOIL ON ALL DISTURBED AREAS. SEED AND MULCH ALL DISTURBED AREAS WITH PERMANENT SEED MIXTURE SPECIFICATIONS. ALL TOPSOIL, PLACEMENT, SEEDING, SOIL SUPPLEMENTS AND/OR MULCHING SHALL BE COMPLETED IN ACCORDANCE WITH THE STANDARDS FOR EROSION AND SEDIMENT POLLUTION CONTROL IN PENNSYLVANIA.

ALL IMPORTED TOPSOIL, IF REQUIRED, SHALL BE FERTILE AND TYPICAL OF THE LOCALITY AND SHALL BE FREE FROM STONE, CLAY AND OTHER OBSTRUCTIVE MATERIAL.

UPON COMPLETION OF BUILDING - INSTALL ALL LANDSCAPING MATERIAL.

INSTALL ALL LANDSCAPING ASSOCIATED WITH THE LANDSCAPE RESTORATION AND AMENDED SOILS WITHIN THIS IS CRITICAL STAGE WHERE THE DESIGN ENGINEER MUST BE CONTACTED AT LEAST 48 HOURS IN ADVANCE TO PROVIDE CONSTRUCTION OVERSIGHT. REFER TO THE LANDSCAPING PLANS.

PAVE ACCESS ROAD WITH WEARING COURSE.

UPON COMPLETION OF CONSTRUCTION ACTIVITIES, ALL DISTURBED AREAS WILL BE STABILIZED. ONCE ALL DISTURBED AREAS HAVE BEEN STABILIZED AND THERE ARE NO FUTURE SOONS OF EROSION EXEPT AND UPON FINAL APPROVAL BY THE CHESTER COUNTY SOIL CONSERVATION DISTRICT, REMOVE ALL TEMPORARY EROSION CONTROL STRUCTURES, REMOVE ORANGE CONSTRUCTION FENCING FROM SEPTIC FIELDS.

A NOTICE OF TERMINATION (N.O.T.) WILL BE REQUIRED TO BE SUBMITTED FOLLOWING APPROVAL OF THE FINAL AS-BUILT PLANS. PRIOR TO CLOSING THE N.O.T., THE DEPARTMENT AND/OR CONSERVATION DISTRICT STAFF WILL PERFORM A FINAL INSPECTION TO ENSURE SITE STABILIZATION AND VERY ADEQUATE INSTALLATION AND FUNCTION OF STORMWATER BMP'S.

## MAINTENANCE & INSPECTION OF EROSION CONTROLS:

MAINTENANCE OF EROSION AND SEDIMENTATION CONTROL DEVICES WILL CONSIST OF WEEKLY INSPECTIONS OF EACH DEVICE TO DETERMINE HOW WELL THE SLOPE STABILIZATION MEASURES AND SEDIMENT CONTROL FACILITIES USED ARE WORKING. ALL FACILITIES WILL BE INSPECTED AFTER EVERY STORM TO DETERMINE WHETHER MAINTENANCE OR REPAIR IS REQUIRED. INSPECTIONS WILL BE COMPLETED WITHIN 24 HOURS OF EACH WORKING DAY. ALL DAMAGES CAUSED BY SOILS EROSION OR CONSTRUCTION EQUIPMENT SHALL BE REPAIRED BEFORE THE END OF EACH WORKING DAY. JUSTICE DOCUMENTATION OF THE INSPECTIONS SHALL BE LOGGED ONTO DEP FORM 3150-FM-BNWOBS, DATED FEBRUARY 2012, AND SHALL BE KEPT ON SITE AT ALL TIMES AND/OR PROVIDED TO THE NECESSARY AGENCIES UPON REQUEST.

THE FOLLOWING MAINTENANCE PROCEDURES SHALL APPLY:

- ANY SEEDS OR SODDED AREAS THAT HAVE BECOME STRIPPED OF VEGETATION SHALL BE REESTABLISHED WITH APPROPRIATE STABILIZATION MATERIALS. THIS PROCEDURE SHALL BE REPEATED AFTER EVERY STABLE STORM (2") UNTIL NO MORE SIGNS OF EROSION ARE EVIDENT.
- AT WEEKLY INSPECTIONS AND AFTER EACH RAIN EVENT NECESSARY CLEANING WILL BE PERFORMED.
- ANY FILTER FABRIC FENCE, WHICH HAS BEEN UNDERMINED OR OVER TOPPED, MUST BE IMMEDIATELY REPLACED WITH A ROCK FILTER OUTLET.
- ANY SEDIMENT REMOVED FROM BMP'S DURING CONSTRUCTION WILL BE RETURNED TO UPWARD AREAS ON SITE AND INCORPORATED INTO THE SITE GRADING.

**DEFINITIONS (PER THE DEPARTMENT OF ENVIRONMENTAL PROTECTION):**

**CLEAN FILL:** UNCONTAMINATED, NONWATER-SOLUBLE, NONDECOMPOSABLE INERT SOLID MATERIAL. THE TERM INCLUDES SOIL, ROCK, STONE, DREDGED MATERIAL, USED ASPHALT, AND BRICK, BLOCK OR CONCRETE FROM CONSTRUCTION AND DEMOLITION ACTIVITIES THAT IS SEPARATE FROM OTHER WASTE AND RECONSTRUCTIBLE AS SUCH. (25 PA. CODE §§ 271.101 AND 287.101) THE TERM DOES NOT INCLUDE MATERIALS PLACED IN OR ON THE WATERS OF THE COMMONWEALTH UNLESS OTHERWISE AUTHORIZED.

**ENVIRONMENTAL DUE DILIGENCE:** INVESTIGATIVE TECHNIQUES, INCLUDING, BUT NOT LIMITED TO, VISUAL PROPERTY INSPECTIONS, ELECTRONIC DATA BASE SEARCHES, REVIEW OF OWNERSHIP AND USE HISTORY OF PROPERTY, SANBORN MAPS, ENVIRONMENTAL QUESTIONNAIRES, TRANSACTION SCREENS, ANALYTICAL TESTING, ENVIRONMENTAL ASSESSMENTS OR AUDITS.

**BMP GENERAL NOTE:**

UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENTATION BMP'S MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENTATION BMP'S AFTER EACH RAIN EVENT AND ON A WEEKLY BASIS. ALL SITE INSPECTIONS WILL BE DOCUMENTED IN AN INSPECTION LOG KEPT FOR THIS PURPOSE. THE COMPLIANCE ACTIONS AND THE DATE, TIME AND NAME OF THE PERSON CONDUCTING THE INSPECTION, THE INSPECTION LOG WILL BE KEPT ON SITE AT ALL TIMES AND MADE AVAILABLE TO THE DISTRICT UPON REQUEST. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, REMULCHING, RESEEDING, AND REINSTATEMENT MUST BE PERFORMED IMMEDIATELY, IF EROSION AND SEDIMENTATION BMP'S FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMP'S OR MODIFICATIONS OF THOSE INSTALLED WILL BE NEEDED. WHERE BMP'S ARE FOUND TO FAIL TO ALLEVIATE EROSION OR SEDIMENTATION POLLUTION THE PERMITTEE OR CO-PERMITTEE SHALL INCLUDE THE FOLLOWING INFORMATION:

- THE LOCATION AND SEVERITY OF THE BMP'S FAILURE AND ANY POLLUTION EVENTS
- ALL STEPS TAKEN TO REDUCE, ELIMINATE AND PREVENT THE REOCCURRENCE OF THE NON-COMPLIANCE.
- THE TIME FRAME TO CORRECT THE NON-COMPLIANCE, INCLUDING THE EXACT DATES WHEN THE ACTIVITY WILL RETURN TO COMPLIANCE.

## SEEDING, MULCHING AND SODDING

ALL SEEDING, MULCHING AND SODDING SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS OF THE CHESTER COUNTY CONSERVATION DISTRICT. ALL SLOPES STEEPER THAN 3:1 SHALL BE STABILIZED WITH EITHER SOI OR PERMANENT SEEDING AND MULCH ANCHORED IN PLACE WITH ANTE NETTING. NO SLOPES SHALL BE STEEPER THAN 2H:1V.

TEMPORARY AND PERMANENT SEEDING SHALL BE IN ACCORDANCE WITH THE PENN STATE AGRONOMY GUIDE OR AS RECOMMENDED BELOW. DURING NON-GERMINATING PERIODS APPLY MULCH AT THE RATES RECOMMENDED BELOW.

SHOULD UNFORESEEN EROSION CONDITIONS DEVELOP DURING CONSTRUCTION, THE CONTRACTOR SHALL TAKE ACTION TO REMEDY SUCH CONDITIONS AND TO PREVENT DAMAGE TO ADJACENT/DOWN GRADIENT PROPERTIES AS A RESULT OF INCREASED SEDIMENT DISPLACEMENT. STOCKPILES OF WOOD CHIPS, HAY BALES, CRUSHED STONE AND/OR OTHER MULCHES SHALL BE HELD IN READINESS TO DEAL IMMEDIATELY WITH EMERGENCY PROBLEMS OF EROSION.

**TEMPORARY SEEDING SPECIFICATIONS**

WHERE IT IS NOT POSSIBLE TO PERMANENTLY STABILIZE A DISTURBED AREA IMMEDIATELY AFTER THE FINAL EARTH MOVING HAS BEEN COMPLETED, TEMPORARY SEEDING SHALL BE DONE IN ACCORDANCE TO THE CHESTER COUNTY CONSERVATION DISTRICT, THE E&S MANUAL AND/OR THE PENN STATE AGRONOMY GUIDE.

AREAS TO BE STABILIZED MUST BE SEEDING/PLANTED IN SUFFICIENT TIME TO GERMINATE, AT LEAST 4 TO 6 WEEKS OF GROWTH PRIOR TO HARD FROSTS. IF SEEDING IS COMPLETE, MULCH THE SEEDED AREAS WITH UNROTTED SMALL GRASS STRAW AT A RATE OF 3 TONS PER ACRE.

**SITE PREPARATION:** APPLY 4 TONS AGRICULTURAL GRADE LIMESTONE (EQUIVALENT TO 190 LBS. PER 1000 S.F.) PER ACRE PLUS 10-20 LBS FERTILIZER AT A RATE 800 LBS (EQUIVALENT TO 25 LBS. PER 1000 S.F.) PER ACRE AND WORK IN WHERE POSSIBLE. SECURE A SOIL TEST BEFORE MAKING A PERMANENT SEEDING. AFTER SEEDING, MULCH WITH STRAW AT A RATE OF 3.0 TONS PER ACRE.

**TEMPORARY SEED MIXTURE:** APPLY ANNUAL RYE GRASS AT 40 PLS (LBS/ACRE) (EQUIVALENT TO 1 LBS. PER 1000 S.F.) MINIMUM GERMINATION PERCENTAGE - 85%

**PERMANENT SEEDING SPECIFICATIONS**

**MATERIALS:**

- LIMESTONE - RAW, GROUND AGRICULTURAL LIMESTONE CONTAINING MORE THAN 90% CARBONATES.
- COMMERCIAL FERTILIZER (10-20-20) - USE 500 LBS. TO THE ACRE MIXED INTO THE SEEDBED PRIOR TO SEEDING, OR MIXED IN WITH THE SEED IF HYDROSEEDING.

MULCH - CLEAN OAT OR STRAW SHALL BE FREE FROM MATURE SEED-BEARING STALKS OR ROOTS OF PROHIBITED OR NOXIOUS WEEDS. APPLY AT A RATE OF 3.0 TONS PER ACRE. THE MULCH SHOULD BE STABILIZED UNTIL THE VEGETATIVE COVER IS ESTABLISHED. SPREAD MULCH UNIFORMLY IN A LOOSE LAYER 1/2" TO 1" DEEP. MULCH ANCHORING (MULCH NETTING, PEG AND TWINE, LIQUID MULCH BINDER) SHALL BE ACCOMPLISHED IMMEDIATELY AFTER MULCH PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER.

SEED MIXTURE - SHALL BEAR A GUARANTEED STATEMENT OF ANALYSIS.

**PERMANENT SEEDING SPECIFICATIONS**

**LAWN AND MOWED AREAS: (PLS = PURE LIVE SEED PERCENTAGE) MIN. GERMINATION S.F.**

A. KENTUCKY BLUEGRASS 30 PLS (LBS/ACRE) 12 OZ. PER 1,000 S.F. 75%  
PERENNIAL PREGRASS 20 PLS (LBS/ACRE) 8 OZ. PER 1,000 S.F. 80%  
REDTOP 3 PLS (LBS/ACRE) 2 OZ. PER 1,000 S.F. 80%

B. PENN-LAWN-FINE FESCUE 40 PLS (LBS/ACRE) 16 OZ. PER 1,000 S.F. 85%  
PERENNIAL PREGRASS 20 PLS (LBS/ACRE) 8 OZ. PER 1,000 S.F. 85%  
REDTOP 3 PLS (LBS/ACRE) 2 OZ. PER 1,000 S.F. 80%

**SLOPES OR UN-MOWED AREAS:**

C. ANNUAL RYE GRASS 25 PLS (LBS/ACRE) 10 OZ. PER 1,000 S.F. 85%  
PERENNIAL PREGRASS 25 PLS (LBS/ACRE) 10 OZ. PER 1,000 S.F. 85%

AREAS TO BE STABILIZED MUST BE SEEDING/PLANTED IN SUFFICIENT TIME TO GERMINATE, AT LEAST 4 TO 6 WEEKS OF GROWTH PRIOR TO HARD FROSTS. AFTER SEEDING IS COMPLETE, MULCH THE SEEDED AREAS WITH UNROTTED SMALL GRASS STRAW AT A RATE OF 3 TONS PER ACRE.

PERMANENT SEEDING SHALL ONLY OCCUR DURING THE DATES LISTED ABOVE. IF AREAS ARE PREPARED FOR SEEDING AT OTHER TIMES, THEN THE PREPARED SEEDBED SHALL BE HEAVILY MULCHED WITH CLEAN UNROTTED SMALL GRASS STRAW OR SALT HAY AT A RATE OF 3 TONS PER ACRE. THE MULCH SHALL REMAIN IN PLACE UNTIL SEEDING DATES ARE APPROPRIATE. THE MULCH SHALL BE DRESSED, SEEDS AND REMULCHED AS DESCRIBED ABOVE.

## SOIL USE LIMITATIONS AND RESOLUTIONS:

**ACID SOIL TYPES - pH LOWER THAN 4.5**

SOIL TESTS SHOULD BE TAKEN TO DETERMINE THE ACTUAL SOIL pH REACTION. A pH OF 5.5 SHOULD BE ACHIEVED. TO RESOLVE THIS LIMITATION THE SOIL SHOULD BE ADJUSTED BY APPLYING LIME RATES IN ACCORDANCE WITH THE PENN STATE AGRONOMY GUIDE AND THE RECOMMENDATIONS FROM A REPUTABLE LABORATORY.

**WET SOIL TYPES**

TO RESOLVE THIS LIMITATION VEGETATIVE SPECIES THAT ARE TOLERANT TO WET CONDITIONS SHOULD BE SELECTED FOR LANDSCAPING.

**POOR TOPSOIL**

SOIL SHOULD BE IMPORTED FROM OTHER AREAS ON SITE. THE CHESTER COUNTY CONSERVATION DISTRICT MUST APPROVE ANY DEVIATION FROM THE E&S SPECIFICATION.

**WET SOIL TYPES / HIGH WATER TABLE DURING EXCAVATION ACTIVITIES**

WATER TO BE PUMPED TO A DENATURING STRUCTURE, SEE DETAIL.



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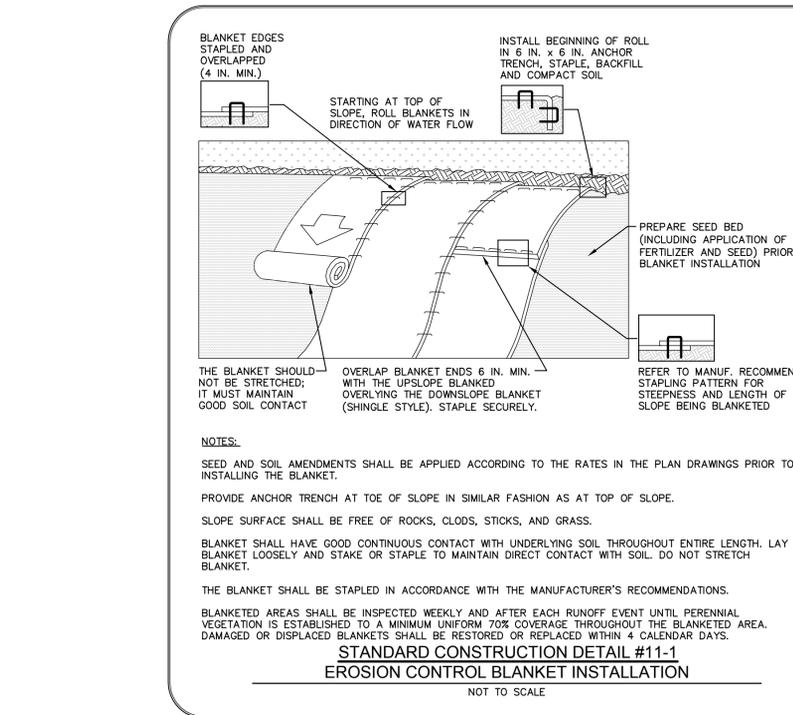
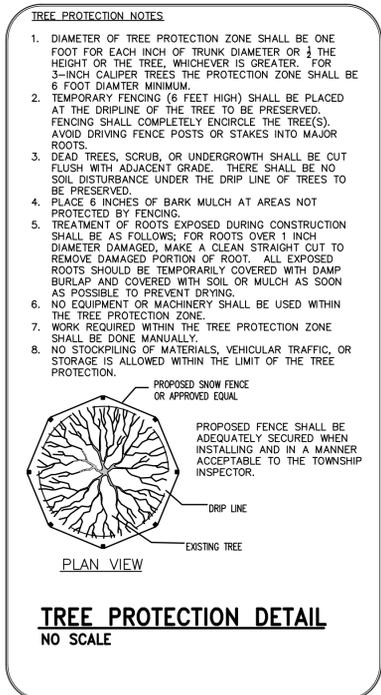
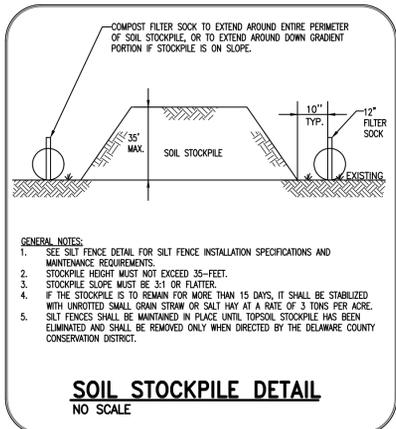
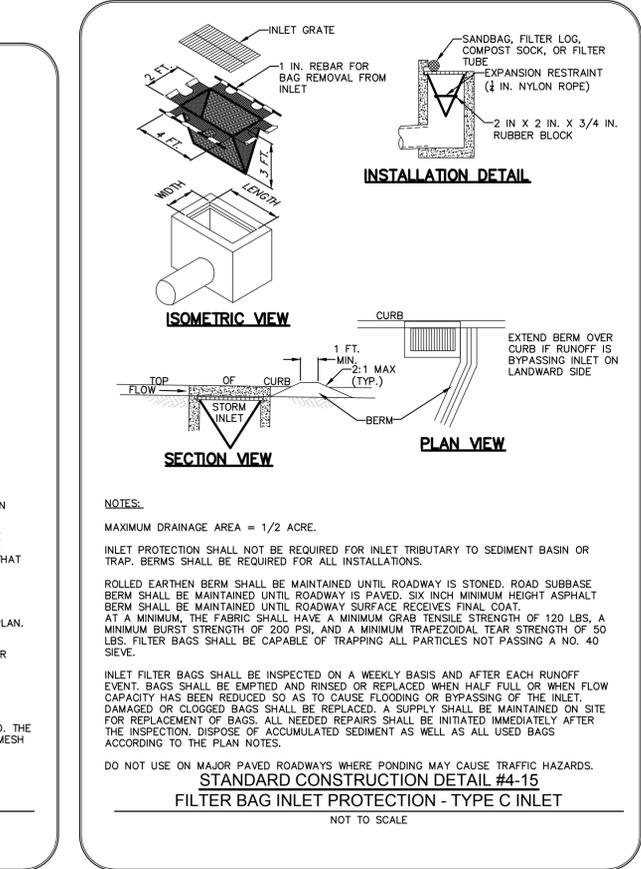
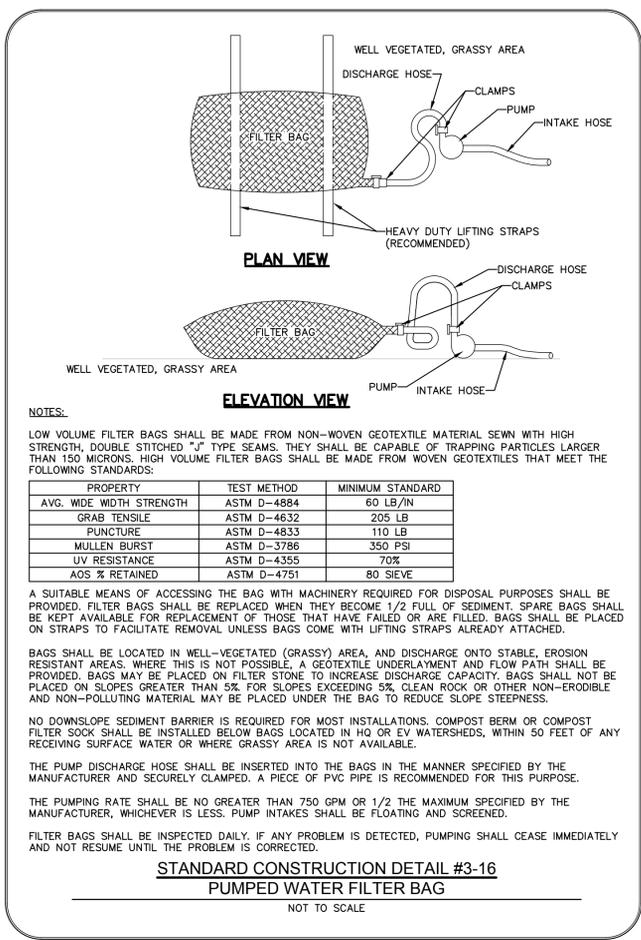
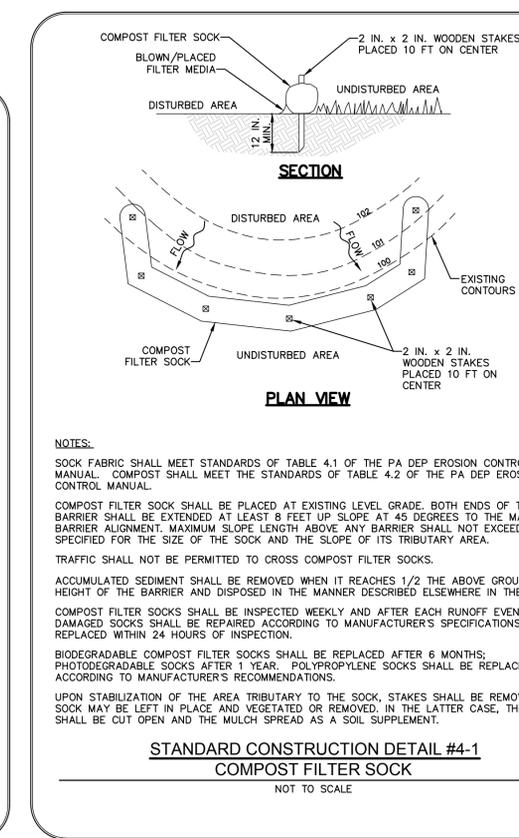
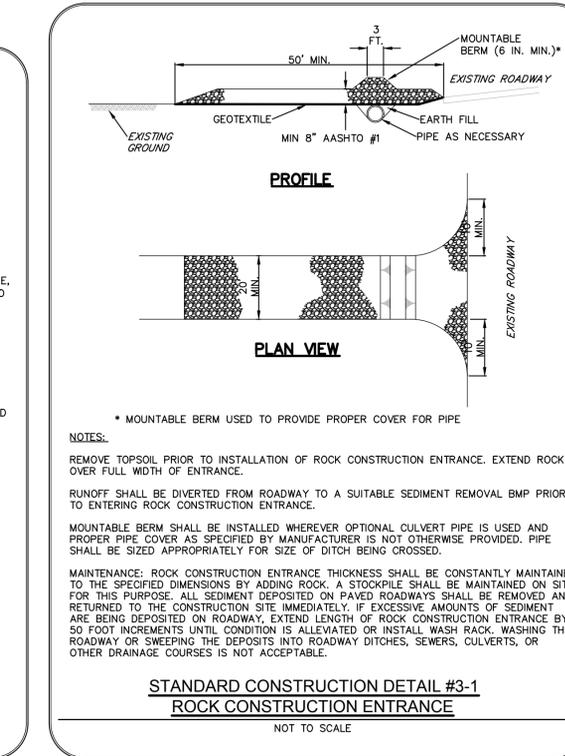
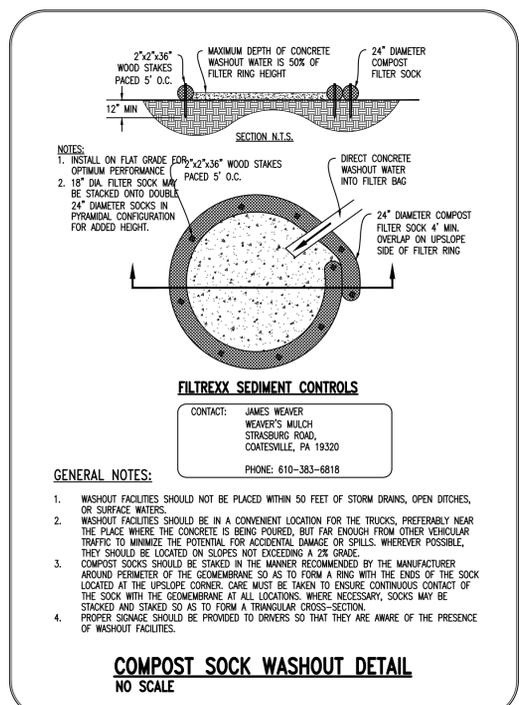
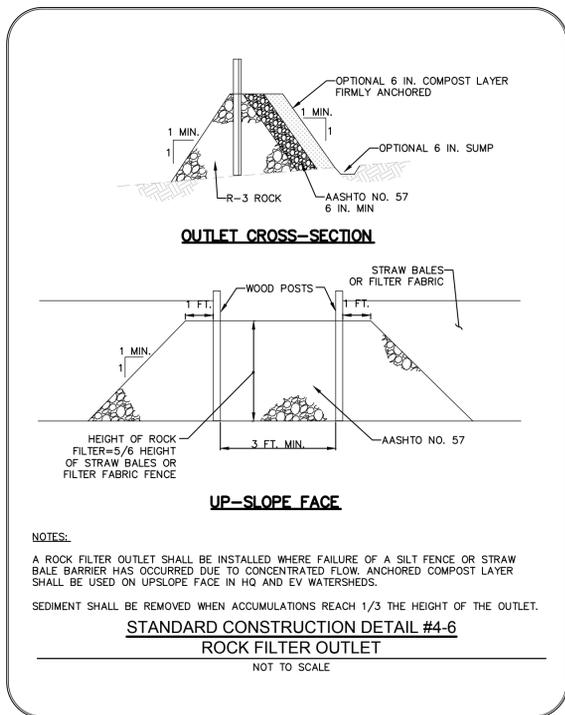
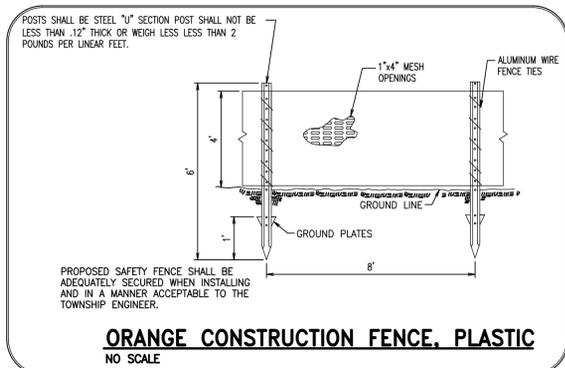


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| 3   |          |           |                          |
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PRELIMINARY/FINAL  
EROSION CONTROL DETAILS

CLIENT: MICHAEL A. STOLPER  
PROJECT: PHASE II - 10,000 S.F. OFFICE BLDG.  
LOCATION: 6022 WEST CHESTER PIKE, EDGE MONT, PA, 19028  
WILLISTOWN TOWNSHIP, CHESTER COUNTY, PA

DATE: 04/29/16  
SCALE: 1"=50'  
DRAWN BY: ACB  
CHECKED BY: JSR  
PROJECT NO.: 1155  
CDD FILE: EROSION CONTROL DETAILS.dwg  
PLOTTED: 09/16/16  
DRAWING NO.: C05.3  
SHEET 10 OF 13

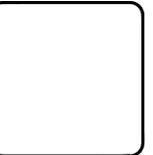
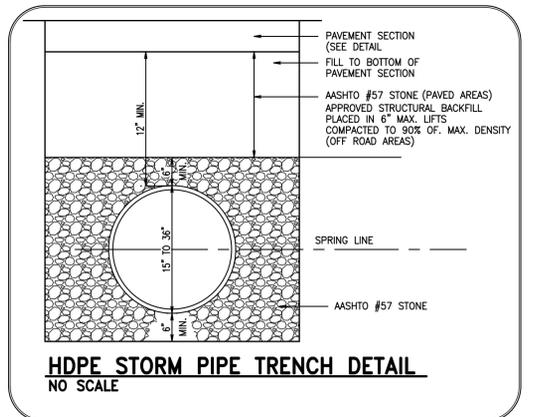
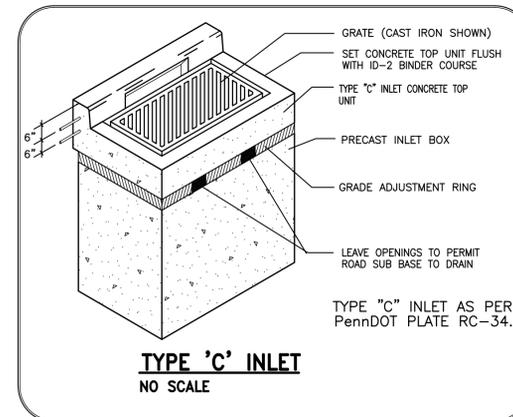
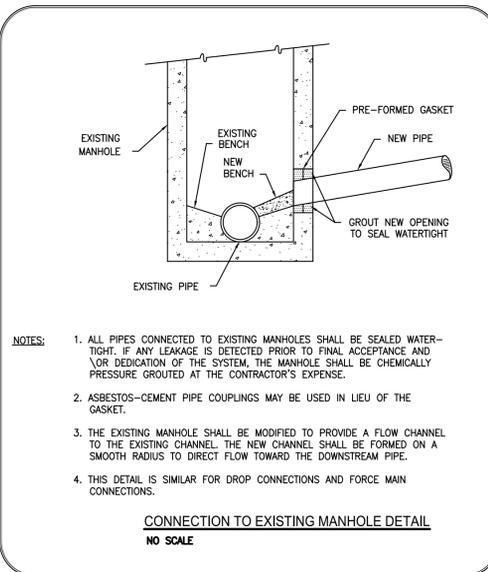
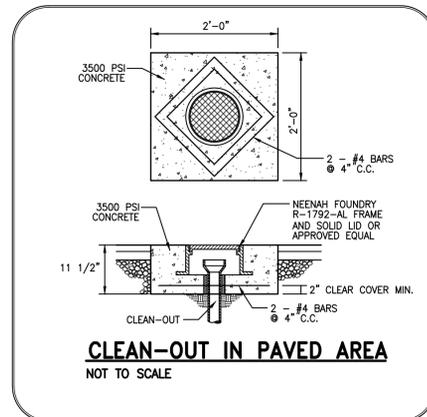
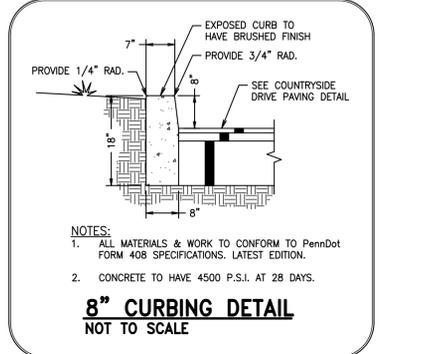
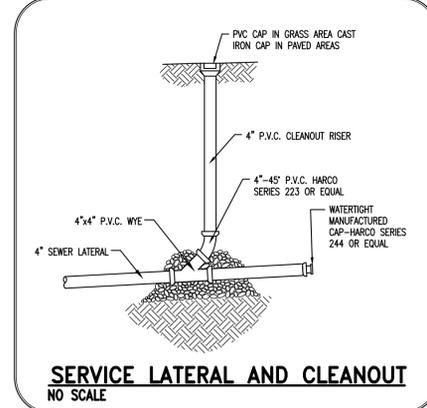
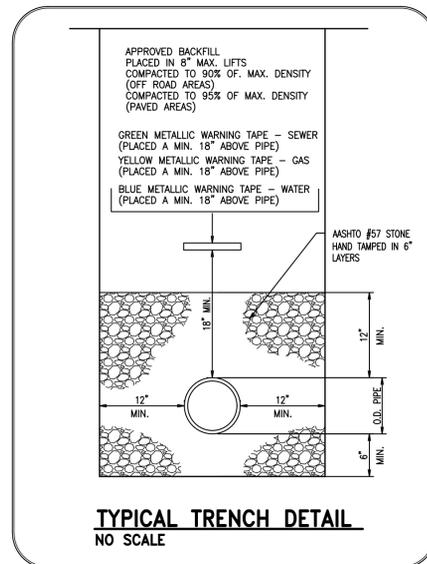
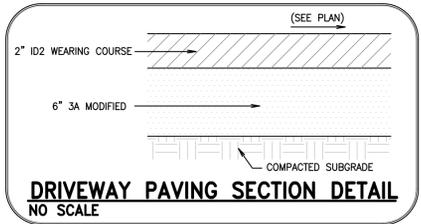
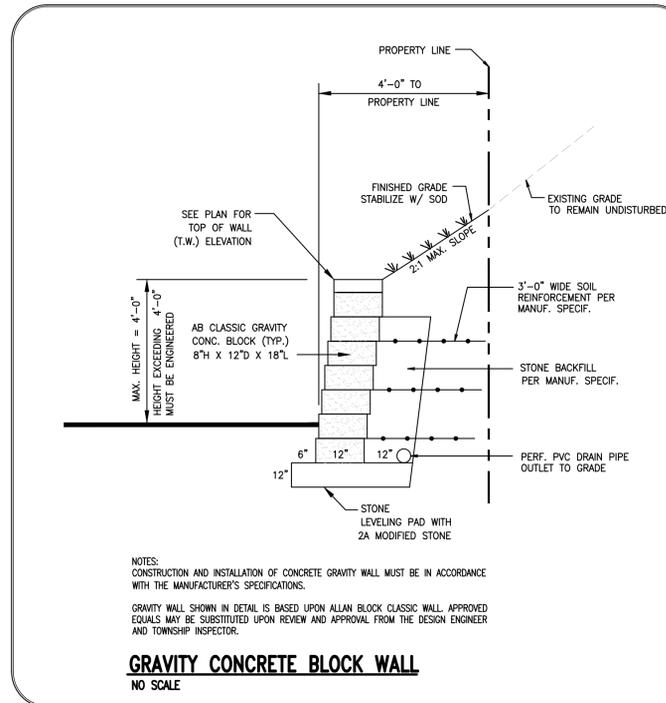
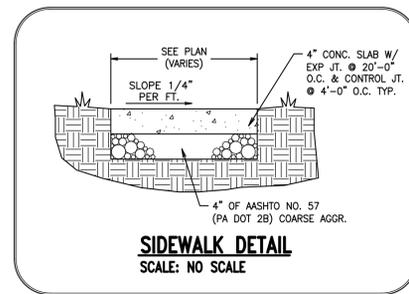
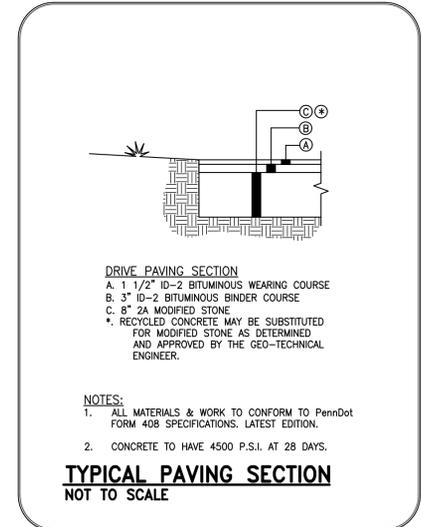
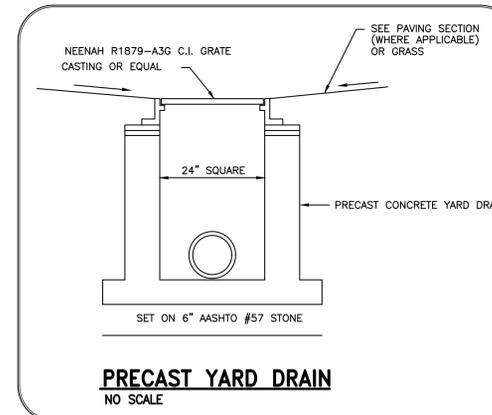
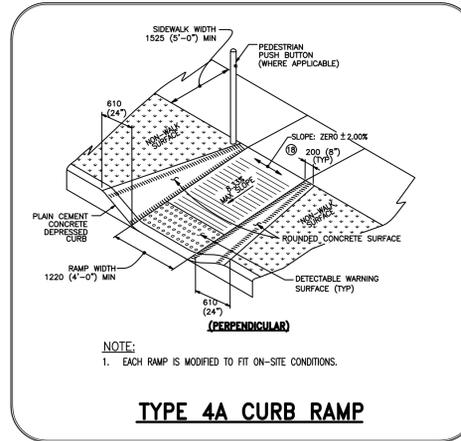




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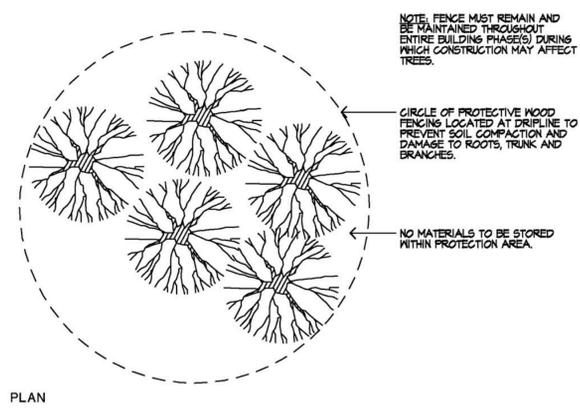
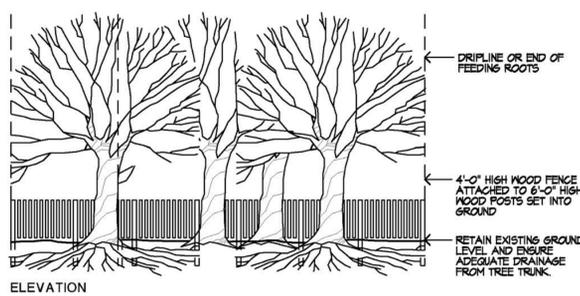


| NO. | DATE     | DESCRIPTION                        |
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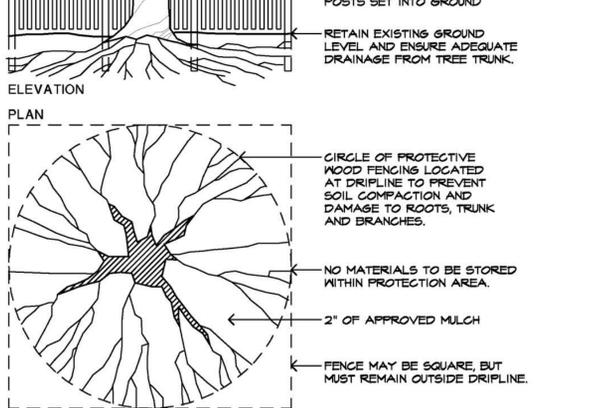
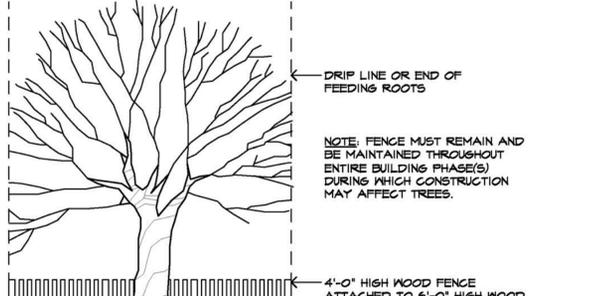
**PRELIMINARY/FINAL CONSTRUCTION DETAILS**  
CLIENT: MICHAEL A. STOLPER  
PROJECT: PHASE II - 10,00 S.F. OFFICE BLDG.  
LOCATION: 6022 WEST CHESTER PIKE, EDGE MOUNT, PA, 19028  
WILLISTOWN TOWNSHIP, CHESTER COUNTY, PA

|              |                             |
|--------------|-----------------------------|
| DATE:        | 04/29/16                    |
| SCALE:       | 1"=50'                      |
| DRAWN BY:    | ACB                         |
| CHECKED BY:  | JSR                         |
| PROJECT NO.: | 1155                        |
| CAD FILE:    | 12 CONSTRUCTION DETAILS.dwg |
| PLOTTED:     | 09/16/16                    |
| DRAWING NO.: | C06.1                       |
| SHEET:       | 11 OF 13                    |

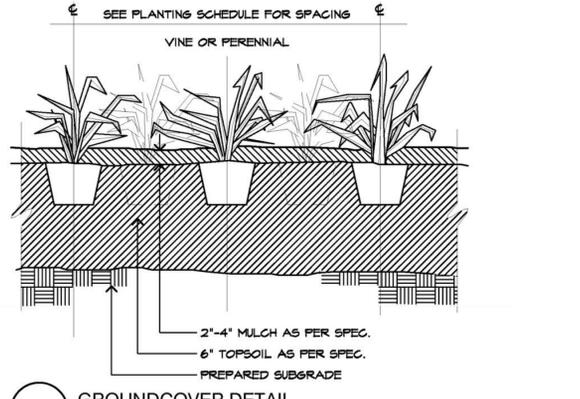




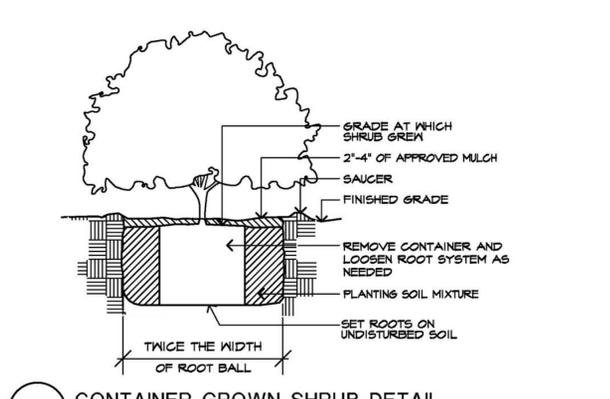
**TREE PROTECTION DETAIL (TREE GROUP)**  
NO SCALE



**TREE PROTECTION DETAIL (SINGLE TREE)**  
NO SCALE



**GROUNDCOVER DETAIL**  
NO SCALE



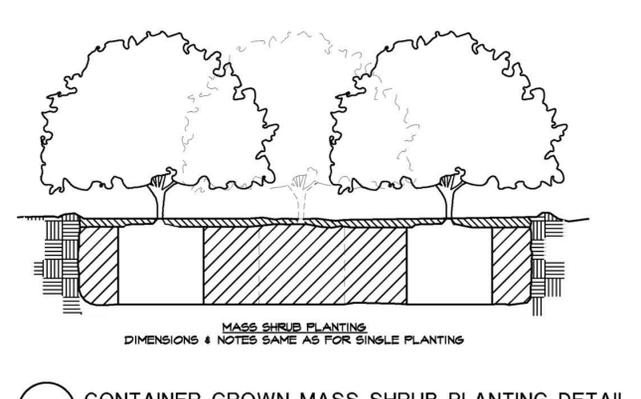
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**PROTECTION OF VEGETATION FROM MECHANICAL INJURY & GRADING CHANGE**

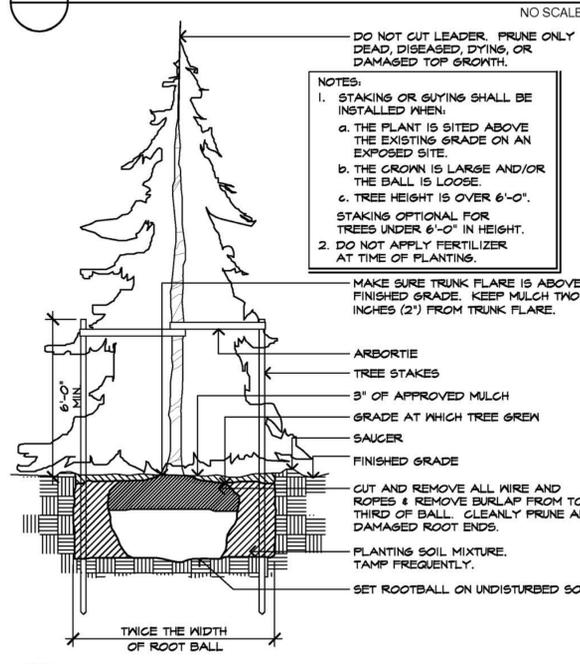
- Heavy equipment operators shall not damage existing tree trunks and root systems by driving heavy equipment within or otherwise disturbing the area circumscribed by the drip line of any tree. In addition, roots shall not be cut or disturbed within the area circumscribed by the drip line of any tree. If there is no alternative but to locate a utility line within the tree drip line, it is strongly encouraged that tunneling, rather than trenching, be used to minimize potential damage to tree root systems. In such cases, the Township shall determine the most desirable location for the survival of the tree(s). Where trenching is unavailable, trenched holes shall be filled as soon as possible and tamped lightly to avoid the creation of air spaces.
- Tree trunks and exposed roots damaged during construction shall be protected from further damage by fencing or other structural barrier. Treatment of damaged areas shall be dictated by the nature of the injury, e.g., damaged bark shall be cut back to a point where the bark is intact and tight to the tree; exposed roots shall be cleaned up and covered with top soil; tree limbs shall be cut back in proportion to root area loss. In some cases, it may be prudent to apply liquid or dry fertilizer to trees with disturbed root zones (so as to compensate for loss of roots).
- Trees shall not be used for roping, cables, signs, fencing, or lighting. Nails and spikes shall not be driven into trees.
- The area around the base of existing woody vegetation shall be left open. Storage of equipment, materials, debris, or fill shall not be allowed within the drip line of any existing tree.
- Grade changes to occur at any location on the property shall not result in an alteration to soil or drainage conditions which would adversely affect existing vegetation to be retained following site disturbance, unless adequate provisions are made to protect such vegetation and its root systems.

**LANDSCAPE NOTES**

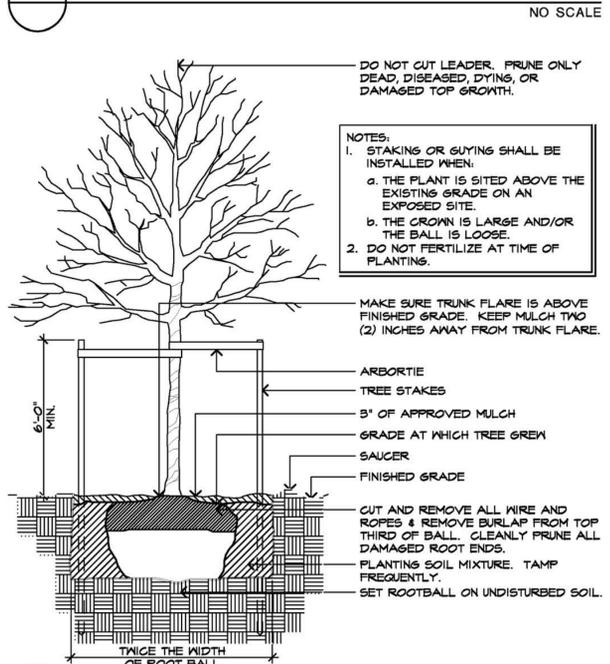
- All information on this Sheet shall also refer to all Landscape Plans.
- These Landscape Plans shall be regarded as a schematic in nature. All plant locations shall be subject to field adjustment by the Owner's Representative.
- Lighting fixtures, plant material, retaining walls, walkways, rights-of-way and easements are depicted hereon, as well as elsewhere on the Drawings, as appropriate.
- All necessary precautions shall be taken to protect existing woodland vegetation and individual specimens during construction, as per details depicted herein.
- All areas that may be underlain by rock are to be excavated to the minimum depth necessary to permit placement of backfill and topsoil required to ensure proper drainage and growing conditions for the landscape material identified for placement on the Drawings. The Owner's Representative is to be notified of field conditions not conducive to the proper execution of the Landscape Plans, and all required remedial action is to be conducted under his/her direction.
- All disturbed areas, and areas to be planted, are to receive four inches (4") of topsoil, minimum, and three inches (3"), minimum, of shredded hardwood or cedar bark mulch. In areas where bedrock or very large non-removable rocks are encountered, apply a minimum of six inches (6") of topsoil; (hydro-) seed and cover with coir matting, in strict accordance with the Manufacturer's instructions.
- Areas that are shown blank are to be lawn.
- All areas consisting of slopes that are greater than 3:1 shall be planted with an approved stabilizing ground cover if not specifically set forth on the Drawings. These areas shall not be mowed or maintained as lawn.
- Filling of soil over the roots of trees to be preserved is strictly prohibited.
- All trees and shrubs are to be planted in beds, lawn areas, or plant islands with approved mulch at minimum depth specified and as may be depicted on the details, unless otherwise noted on the Drawings. Prior to installation, the Landscape Contractor shall lay out all tree and shrub areas (with plants still in their containers). Proposed plant materials shall be laid out according to plan dimensions. In the absence of plan dimensions, he/she shall lay out plantings from scale measurements on the Drawings and/or as required to achieve the prescribed spacing. Any discrepancies or questions should be reported immediately to the Owner's Representative. Final location and layout of all proposed plantings shall be approved by the Owner's Representative prior to installation.
- The Landscape Contractor shall be responsible to locate all underground utilities and piping prior to the performance of any excavation. Not all piping and/or utilities have been shown on the Landscape Plans and those that are shown shall be considered for general reference purposes only. The Landscape Contractor shall be responsible to reference all Plans in the Drawing set and shall also check with the appropriate utilities reporting services, the Project Engineer, General Contractor and/or Construction Manager, as appropriate, prior to the commencement of planting-related operations.
- All proposed landscape material is to be nursery grown, typical of its species and/or variety, and exhibit normal growth habit, vigorous root systems development, and be free from any defects, diseases, infections or infestations.
- All proposed plantings shall be installed as per the standards of the American Association of Nurserymen with regard to planting, pit size, backfill mixture and placement, staking and guying, or as may be indicated otherwise on the Drawings. The Landscape Contractor shall be responsible to notify the Owner's Representative if impervious drainage conditions are encountered prior to planting.
- Planting Details:
  - Container Plants - The Landscape Contractor shall scarify the sides and bottom of the root ball of any container grown plants prior to planting.
  - Planting Backfill Mix - All planting backfill shall consist of fifty percent (50%) existing soil and fifty percent (50%) shredded bark mulch completely mixed prior to being placed.
  - Fertilizer Amendments - All plantings shall be treated with the following supplements: (1) Apply ROOTS 2, or approved equal, in accordance with the Manufacturer's recommended rates. Apply after mulching operations have been completed; (2) Apply initial time release fertilizer in accordance with the Manufacturer's recommended rates. The minimum release period shall be six (6) months. Obtain the approval of the Owner's Representative prior to the application of the fertilizer amendments.
  - Watering - The Landscape Contractor shall thoroughly water all new plantings so as to saturate the entire root ball/pit at the time of installation. Additional watering shall be provided by the Landscape Contractor, as required, by plant and weather conditions until Final Acceptance of the planting installation.
- A Maintenance and Replacement Guarantee, for a period of eighteen (18) months following Final Acceptance, shall be provided, as appropriate, to the Owner, or the Township, by the Landscape Contractor. All plantings that do not survive by the time of the expiration of the Guarantee Period, shall be replaced. During the Guarantee Period, the Owner, either directly, or by contractual arrangement with the Landscape Contractor, shall provide complete, normal, and customary maintenance and watering of the installed plant materials, as may be required.
- Plant Characteristics and Maintenance:
  - All Plants shall conform with the most recent edition of the "American Standard for Nursery Stock" of the American Association of Nurserymen.
  - Trees and shrubs shall be typical of their species and variety, have normal growth habits, well developed, densely foliated branches, and vigorous fibrous root systems.
  - Trees and shrubs shall be free from defects and injuries and be certified by the appropriate Federal and State Authorities having jurisdiction, to be free from all diseases and infestations.
  - Trees and shrubs shall be nursery grown and freshly dug. They shall have been grown under climatic conditions similar to those characteristic of the Township/site or properly acclimated by approved means before delivery to the site and planting.
  - Any tree or shrub which dies within the term of the Guarantee Period, or a maintenance agreement, shall be replaced. Any tree or shrub which is deemed, in the opinion of the Township, not to have survived, or grown in a manner uncharacteristic of its type, shall be replaced. Substitutions for certain species of plants may only be made when approved in writing by the Owner's Representative.
  - It shall be the responsibility of the Landowner(s), tenant(s) or other occupant(s) of the premises to adequately and properly maintain the landscaped areas, which responsibility shall include removal of debris, watering, weeding, pruning and trimming, as may be indicated by pruning details and/or pruning notes, prompt replacement of dead or diseased plantings, and fertilizing to maintain healthy growth.
  - All trees along the right-of-way of any property shall be kept trimmed nine feet (9') above any sidewalk and thirteen feet six inches (13'-6") above all streets.
  - All shrubs and other growth abutting any sidewalk shall be kept out back six inches (6") from the edge of the walkway surface.
  - Existing trees and shrubs at the corner of an intersection of streets, driveways, or other access-ways and parking lots, shall be trimmed or cut to avoid blocking clear sight triangles and required sight distances to oncoming traffic - i.e. seven feet (7') height, minimum. Shrubs and groundcovers shall be maintained so as not to exceed thirty inches (30") in height from the top of the paved surface of any street, driveway, other access-way, or parking lot.



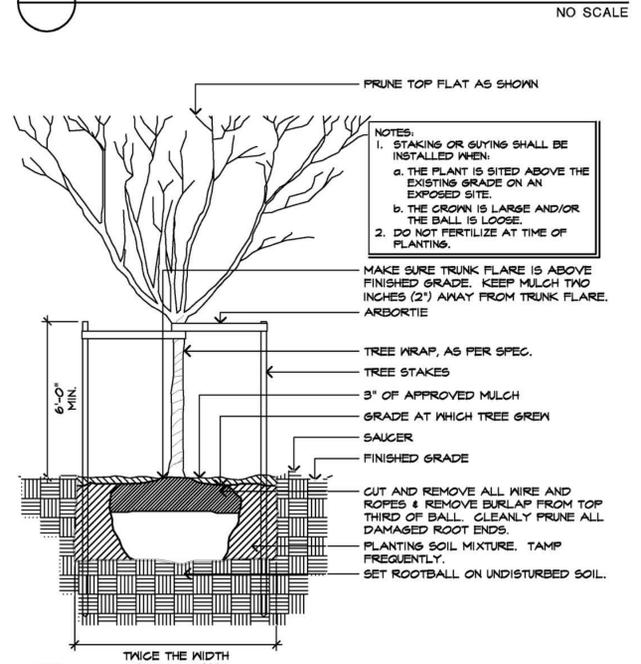
**CONTAINER GROWN MASS SHRUB PLANTING DETAIL**  
NO SCALE



**EVERGREEN TREE DETAIL**  
NO SCALE



**DECIDUOUS TREE DETAIL**  
NO SCALE

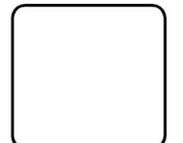


**KWANZAN CHERRY DETAIL**  
NO SCALE



**DLHowell**  
Civil Engineering & Land Planning  
www.DLHowell.com

D.L. Howell & Assoc., Inc.  
1250 Wrights Lane  
West Chester, PA 19380  
Phone: (610) 918-9002  
Fax: (610) 918-9003



*Charles J. Frederick*

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**PRELIMINARY/FINAL LANDSCAPE PLAN**  
CLIENT: MICHAEL A. STOLPER  
PROJECT: OFFICE BUILDING AND PARKING LOT EXPANSION  
LOCATION: 6022 WEST CHESTER PIKE, EDGE MOUNT, PA 19028  
WILLISTOWN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

**RAY OTT & ASSOCIATES**  
LAND AND TOWN PLANNING  
17 SOUTH CHURCH STREET  
WEST CHESTER, PENNSYLVANIA 19382  
Approved by: \_\_\_\_\_ Checked by: \_\_\_\_\_ Drawn by: \_\_\_\_\_

**CEE JAY FREDERICK ASSOCIATES**  
DESIGN AND PLANNING CONSULTANTS  
CHARLES J. FREDERICK, JR., FLSA  
29 SOUTH WALNUT STREET  
WEST CHESTER, PENNSYLVANIA 19382  
Approved by: \_\_\_\_\_ Checked by: \_\_\_\_\_ Drawn by: \_\_\_\_\_

DATE: 08/18/18  
SCALE: AS SHOWN  
DRAWN BY: JCU  
CHECKED BY: SCT/CJF  
PROJECT NO.: 0429.001.002  
CJF FILE: 04-LANDSCAPE DETAILS & NOTES.dwg  
PLOTTED: --  
DRAWING NO.: L2  
SHEET 2 of 2