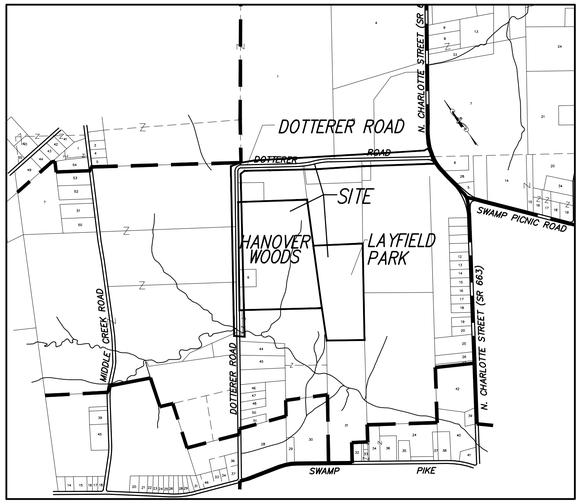
FINAL SUBDIVISION PLANS
PREPARED FOR
HANOVER WOODS

SITUATED IN
NEW HANOVER TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

APPLICANT/OWNER:
HILLTOWN COVENTRY, L.P.
1030 REED STREET
WYOMISSING, PA 19610



SITE LOCATION MAP
SCALE: 1"=800'

ISSUE DATE: DECEMBER, 19, 2012
REVISED: DECEMBER 6, 2013

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Van Cleef
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Municipal Engineering
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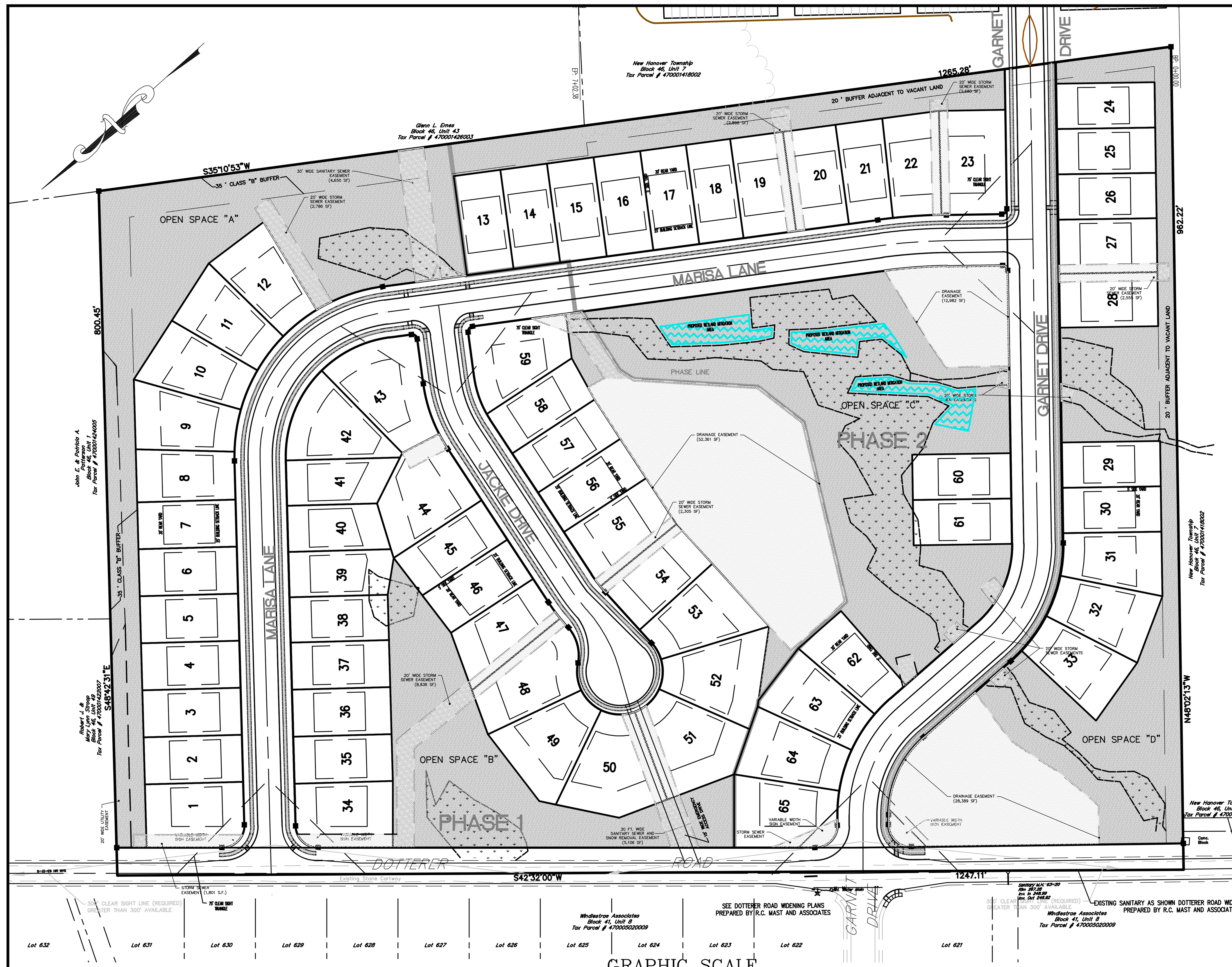
OFFICES THROUGHOUT
NJ, EASTERN PA, DE, AND MD

PLAN NOTATION
ONLY THOSE PLANS WHICH CONTAIN AN IMPRESSED SEAL OR A RED INK SEAL OF THE RESPONSIBLE PROFESSIONAL SHALL BE CONSIDERED VALID. THIS PLAN HAS BEEN SPECIFICALLY PREPARED FOR THE OWNER DESIGNATED HEREON. ANY MODIFICATION, REVISION, DUPLICATION OR USE WITHOUT THE WRITTEN CONSENT OF VAN CLEEF ENGINEERING ASSOCIATES IS PROHIBITED. RELIANCE ON THIS PLAN FOR ANY PURPOSE OTHER THAN THAT WHICH IS INTENDED SHALL BE AT



GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

LEGEND

- EXISTING ADJACENT PROPERTY BOUNDARY
- EXISTING PROPERTY BOUNDARY
- EXISTING ROAD CENTERLINE
- PROPOSED BOUNDARY SETBACK LINE
- PROPOSED BOUNDARY LOT LINE
- PROPOSED ROAD CENTERLINE
- DENOTES WATERS OF THE U.S. INCLUDING FEDERALLY REGULATED WETLANDS
- CONCRETE MONUMENT TO BE INSTALLED
- LOCAL BENCH MARK
- PROPOSED OPEN SPACE

OPEN SPACE SUMMARY

	GROSS	NET
OPEN SPACE "A"	= 2.43 AC.	= 2.43 AC.
OPEN SPACE "B"	= 1.08 AC.	= 1.08 AC.
OPEN SPACE "C"	= 3.51 AC.	= 2.35 AC.
OPEN SPACE "D"	= 2.17 AC.	= 1.52 AC.
TOTAL	= 9.19 AC.	= 7.38 AC.

OPEN SPACE NOTE

OPEN SPACE LAND MAY NOT BE SEPARATELY SOLD, NOR SHALL SUCH LAND BE FURTHER DEVELOPED OR SUBDIVIDED. REFER TO THE LANDSCAPE PLAN FOR MAINTENANCE NOTES FOR OPEN SPACE AREAS.

SITE INVESTIGATION WETLANDS:

A SITE INVESTIGATION WAS PERFORMED BY DEL VAL SOILS AND FIELD LOCATED BY VAN CLEEF ENGINEERING ASSOCIATES IN MARCH, 2012 TO VERIFY THE EXISTENCE OF WETLANDS ON SITE. JD NO. CENAP-R-2012-0088-46

WETLANDS CERTIFICATION

I, ____________, HEREBY CERTIFY THAT A SITE INVESTIGATION WAS MADE BY ME AND THAT THE WETLANDS SHOWN ARE IN ACCORDANCE WITH OUR FIELD INVESTIGATION AND IS BASED ON U.S. ARMY CORPS. OF ENGINEER GUIDELINES.

SIGNATURE ____________ DATE ____________

CERTIFICATE OF ACCURACY

I, DAVID H. ARTMAN, PA PROFESSIONAL LAND SURVEYOR NO. SU-0051039-E, A REGISTERED SURVEYOR OF THE COMMONWEALTH OF PENNSYLVANIA, DO HEREBY CERTIFY THAT THE PROPOSED LOTS, EASEMENTS AND RIGHT OF WAYS ARE CORRECT IN ALL DIMENSIONAL ASPECTS TO THE BEST OF MY KNOWLEDGE.

DAVID H. ARTMAN, PA PLS NO. SU-051039-E

DATE

DETENTION BASIN NOTE

"THE RETENTION/DETENTION BASIN AND STORMWATER FACILITIES (AS SHOWN ON THIS PLAN) ARE A BASIC AND PERPETUAL PART OF THE STORM DRAINAGE SYSTEM OF THE TOWNSHIP OF NEW HANOVER, AND AS SUCH ARE TO BE PROTECTED AND PRESERVED, IN ACCORDANCE WITH THE APPROVED FINAL PLAN BY THE OWNER(S) ON WHOSE LANDS THE STRUCTURE(S) IS(ARE) LOCATED. THE TOWNSHIP OF NEW HANOVER AND/OR ITS AGENTS RESERVES THE RIGHT AND PRIVILEGE TO ENTER UPON SUCH LANDS FROM TIME TO TIME FOR THE PURPOSE OF INSPECTION OF SAID RETENTION/DETENTION BASIN IN ORDER TO DETERMINE THAT THE STRUCTURAL AND DESIGN INTEGRITY ARE BEING MAINTAINED BY THE OWNER(S)."

"IN THE EVENT THAT MAINTENANCE AND STRUCTURAL INTEGRITY ARE NOT MAINTAINED BY THE OWNER(S) AS REQUIRED BY THE TOWNSHIP, THE OWNER(S) HEREBY GRANTS TO THE TOWNSHIP THE RIGHT TO ENTER UPON SUCH PROPERTY AND TO PERFORM ANY AND ALL IMPROVEMENTS, REVISIONS OR MAINTENANCE AS MAY BE DETERMINED NECESSARY BY THE TOWNSHIP AND TO RECOVER THE COSTS THEREOF FROM THE PROPERTY OWNER BY ALL LAWFUL MEANS INCLUDING, BUT NOT LIMITED TO, THE IMPOSITION OF A MUNICIPAL LIEN ON THE PROPERTY."

PHASING

PHASE	NO. OF DWELLINGS	LENGTH OF ROAD
PHASE 1	38	1,435 LF
PHASE 2	27	1,564 LF

SURVEYOR'S CERTIFICATE OF ACCURACY

I, CLIFFORD T. STOUT, PA PROFESSIONAL LAND SURVEYOR NO. 282-A, HEREBY CERTIFY THAT THE BOUNDARY LINE AND TOPOGRAPHIC INFORMATION SHOWN AND DESCRIBED HERON IS TRUE AND CORRECT TO THE ACCURACY REQUIRED BY THE SUBDIVISION AND LAND DEVELOPMENT ORDINANCE OF THE TOWNSHIP OF NEW HANOVER AND WAS PREPARED BY ME OR UNDER MY DIRECTION AND FOR WHICH I ACCEPT FULL RESPONSIBILITY.

CLIFFORD T. STOUT, P.L.S. 282-A

DATE

PLANS TO BE RECORDED

PLAN SHEET NO.2, RECORD SUBDIVISION PLAN
PLAN SHEET NO.3, RECORD SUBDIVISION PLAN
PLAN SHEET NO.21, CONSTRUCTION DETAILS
PLAN SHEET NO.22, PCSWM PLAN

SITE CAPACITY / RESOURCE PROTECTION STANDARDS

1. BASE SITE AREA CALCULATION:

GROSS TRACT AREA	= 25.33 AC.
– ULTIMATE R/W	= 0.85
– EASEMENTS	= 0.59
BASE TRACT AREA	= 23.89

2. NATURAL RESOURCE PROTECTION STANDARDS:

TYPE	RATIO	ACRES	ACRES X RATIO
AREAS WHERE TWO OR MORE RESOURCES OVERLAP	100%	1.81	1.81
FLOOD WAY	100%	N/A	N/A
FLOOD WAY FRINGE	80%	N/A	N/A
FLOOD PLAIN SOILS	100%	0.20	0.20
STEEP SLOPES			
15% – 25%	70%	N/A	N/A
25% OR MORE	80%	N/A	N/A
WOODLANDS (1)			
R-2 , R-2M	80%	N/A	N/A
ALL OTHER ZONING DISTRICTS	50%	N/A	N/A
WATERCOURSES, STREAMS			
PONDS	100%	N/A	N/A
WETLANDS	100%	1.44	1.44
POND SHORELINES	80%	N/A	N/A
WETLAND MARGINS	80%	0.48	0.38
RIPARIAN CORRIDOR	100%	0.33	0.33
LAND WITHIN RESOURCE RESTRICTIONS		4.29	
RESOURCE PROTECTION LAND			4.16

(1) THE EXISTING STAND OF TREES DOES NOT MEET THE DEFINITION OF "WOODLANDS" (1 ACRE OR MORE OF 6" MIN. CALIPER TREES OR MIN. OF 10-10" CALIPER TREES), THEREFORE AREA OF RESOURCE EQUALS "0".

3. RECREATION LAND = 1/3 (0.35) (23.89 AC. – 4.16 AC.) = 2.28 AC.
4. COMBINE RESOURCE PROTECTION LAND WITH RECREATION LAND = 4.16 AC. + 2.28 AC. = 6.44 AC.
5. STANDARD MINIMUM OPEN SPACE = (23.89) (0.30*) = 7.17 AC.
6. REQUIRED OPEN SPACE = 7.17 AC.
7. NET BUILDABLE SITE AREA = 23.89 AC. – 7.17 AC. = 16.72 AC.
8. ALLOWABLE DWELLING UNITS = (23.89) (4.0) = 95 D.U.
9. MAXIMUM IMPERVIOUS COVER = (23.89) (0.30) = 7.17 AC.
10. SITE CAPACITY SUMMARY:
    A. REQUIRED OPEN SPACE = 7.17 AC.
    B. NET BUILDABLE SITE AREA PROVIDED = 16.72 AC.
    C. MAXIMUM DWELLING UNITS ALLOWED = 95 (65 PROPOSED)

* SEE ZONING RELIEF GRANTED

CERTIFICATION OF ACCURACY

I HEREBY CERTIFY THAT THE PLAN SHOWN AND DESCRIBED HEREON, AS WELL AS ALL DRAWINGS BEARING MY SEAL, ARE TRUE AND CORRECT TO THE ACCURACY REQUIRED BY THE NEW HANOVER TOWNSHIP SUBDIVISION AND LAND DEVELOPMENT ORDINANCE AND WERE PREPARED BY ME OR UNDER MY DIRECTION AND FOR WHICH I ACCEPT FULL RESPONSIBILITY. THE PERIMETER MONUMENTS SHALL BE ACCURATELY PLACED AS REQUIRED BY THE TOWNSHIP.

BRIAN S. FOCHT, PA PE #056961 ____________ DATE

SITE STATISTICS

COUNTY PARCEL NO.:	47-00-01420-01-8 (BLOCK 46, UNIT 52)	47-00-01420-00-9 (BLOCK 46, UNIT 6)
OWNER OF RECORD:	HILLTOWN COVENTRY, LP 1030 REED STREET WYOMISSING, PA 19610	HILLTOWN COVENTRY, LP 1030 REED STREET WYOMISSING, PA 19610
DEED REFERENCE:	5552-01703	5465-00721

SOURCE OF TITLE

COUNTY PARCEL NO.:	47-00-01420-01-8 (BLOCK 46, UNIT 52)	47-00-01420-00-9 (BLOCK 46, UNIT 6)
GRANTOR(S):	CS/DAMICO, LP	CS/DAMICO, LP
GRANTEE:	HILLTOWN COVENTRY, LP	HILLTOWN COVENTRY, LP
DEED:	BOOK 5854, PAGE 2145 REC. NOV. 16, 2012	BOOK 5854, PAGE 2145 REC. NOV. 16, 2012

NATURAL RESOURCES PROTECTION NOTE

ALL DEVELOPMENT ACTIVITIES, SUCH AS CLEARING, GRADING, REGRADING, DRIVEWAYS, ROADS, BUILDINGS, RETENTION/DETENTION BASINS AND UTILITY EASEMENTS SHALL BE LIMITED TO THE NATURAL RESOURCE PROTECTION STANDARDS AS SPECIFIED IN THE NEW HANOVER TOWNSHIP ZONING ORDINANCE [CHAPTER 27] AS LAST AMENDED. THE REMAINING NATURAL RESOURCES SHALL REMAIN IN THEIR NATURAL CONDITION, INCLUDING THE NATURAL FOREST GROUND COVER. THIS RESTRICTION SHALL RUN WITH THE LAND AND BE BINDING ON ALL PRESENT AND FUTURE OWNERS AND/OR LESSEES.

PLAN RECORDING NOTE

PLAN WILL NOT BE RECORDED AND NO PERMIT SHALL BE ISSUED FOR ANY INDIVIDUAL BUILDING LOT OR LOTS OR SITE IMPROVEMENTS UNTIL DEVELOPMENT AGREEMENTS, INCLUDING A STORMWATER MANAGEMENT OPERATIONS AND MAINTENANCE AGREEMENT, WITH NEW HANOVER TOWNSHIP HAVE BEEN DULY EXECUTED.

ZONING DATA: R-15 DISTRICT

DESCRIPTION	REQUIRED	PROVIDED
MINIMUM SITE AREA:	10.000 AC.	23.89 AC.
MAXIMUM DENSITY (4 D.U./AC):	95 UNITS	65 UNITS
MINIMUM OPEN SPACE (35%):*	8.36 AC.	7.38 AC. (1)
MAXIMUM IMPERVIOUS SURFACE (30%):	7.17 AC. (30%)	7.17 AC. ** (30%) **
DWELLING TYPES:	ALL	B2.3
MAXIMUM UNIT MIX (60%):*	N/A	N/A
MINIMUM OFF-STREET PARKING (PER D.U.):	2.25	2.25

(1) DOES NOT INCLUDE AREAS DESIGNATED FOR STORM WATER DETENTION/RETENTION.
* RELIEF FROM ZONING ORDINANCE TO ALLOW 30% (7.17 AC.) OPEN SPACE AND ONLY 1 TYPE OF UNIT GRANTED IN SEPTEMBER 2012
** SEE IMPERVIOUS CALCULATIONS FOR BREAKDOWN

VILLAGE HOUSE (B2.3)

DESCRIPTION	REQUIRED	PROVIDED
MINIMUM LOT AREA (SF):	6,000	6,095 (LOT 24)
MAXIMUM BUILDING COVERAGE (%):	35	34.95% (LOT 24) 2130 S.F.
MINIMUM HOUSE SETBACKS (FT):		
FRONT YARD (FT):	15	25
SIDE YARD (FT):	5	5
REAR YARD (FT):	30	30
MINIMUM GARAGE SETBACKS (FT):		
FRONT YARD (FT):	25	25
SIDE YARD (FT):	5	5
REAR YARD (FT):	30	30
MINIMUM LOT WIDTH AT SETBACK (FT):	50	50
MAXIMUM UNIT MIX (%):	N/A	N/A

AVERAGE LOT SIZE AREA: 7,296 SQ. FT. (GROSS)

EACH LOT SHALL HAVE THE FRONT YARD ENCLOSED BY A WALL OR FENCE OF PERMANENT CONSTRUCTION AT LEAST 30 INCHES IN HEIGHT AND ONE FLOWERING SHRUB PER 60 INCHES ACROSS THE WIDTH OF THE FRONT OF THE HOUSE.

EACH LOT SHALL ALSO HAVE A FRONT PORCH ACROSS THE WIDTH OF THE DWELLING.

RELIEF GRANTED

IN SEPTEMBER OF 2012 THE FOLLOWING ZONING VARIANCES WERE GRANTED:

1. VARIANCE FROM SECTION 305.2B(12) TO PROVIDE LESS THE THE REQUIRED OPEN SPACE.
2. VARIANCE FROM SECTION 305.2B(13) PROVIDED LESS THAN THE MINIMUM REQUIRED TYPE OF DWELLING MIX.
3. VARIANCE FROM SECTION 305.2B(2)(B) PROVIDE LESS THAN THE MINIMUM REQUIRED REAR YARD AND LOT AREA.

WAIVER GRANTED

THE FOLLOWING WAIVERS WHERE GRANTED ON APRIL 8, 2013 BY THE NEW HANOVER TOWNSHIP BOARD OF SUPERVISORS

1. SECTION 804.3 TO ALLOW FOR FENCE AND /OR RETAINING WALLS TO BE ALLOWED WITHIN PROPOSED UTILITY EASEMENTS.
2. SECTION 806.3.B TO ALLOW HDPE PIPE TO BE USED FOR THE STORM DRAINAGES CONVEYANCE FACILILITIES THROUGHOUT THE SITE.
3. SECTION 806.5.G TO ALLOWN BASIN BERM SIDE SLOPES TO HAVE 3:1 SLOPE.
4. SECTION 806.5.I TO ALLOW FLAT BOTTOM BASINS, BMP STYLE WITH LOW MARSH AREAS.
5. SETION 813.5, 813.6.C. 8137.C TO ALLOW GARNET DRIVE (PROPOSED FOR DEDICATION) TO HAVE A 32 FT. WIDE CARTWAY WITH ON-STREET PARKING ON ONE SIDE. MARISA LANE AND JACKIE DRIVE (TO REMAIN PRIVATE) TO HAVE A 28 FT. WIDE CARTWAY AND NO ON-STREET PARKING.
6. SECTION 822.1, TO ALLOW FOR SIDEWALKS ON ONE SIDE OF THE ROAD FOR MARISA LANE FROM JACKIE DRIVE TO GARNET DRIVE AND GARNET DRIVE FROM MARISA LANE TO DOTTERER ROAD.
7. SECTION 806.3.C(1) TO ALLOW THE USE OF RATIONAL METHOD FOR THE DESIGN OF BASINS 1 & 3.
8. SECTION 809.5 TO ALLOW JACKIE DRIVE TO BE A SINGLE ACCESS STREET.
9. SECTION 812.5 NOT TO REQUIRED ABUTTING EXISTING STREETS (DOTTERER ROAD) TO UPGRADE REQUIREMENTS.
10. SECTION 835.3B.(1) TO ALLOW A FEE IN LIEU OF RECREATIONAL LAND.
11. IMPACT FEE ORDINANCE NOT TO REQUIRE TOWNSHIP IMPACT FEE, DEVELOPER AGREED TO IMPROVE DOTTERER ROAD.

IMPERVIOUS COVERAGE

ROADS	94,414 S.F.	2.17 AC.
SIDEWALKS	21,876 S.F.	0.50 AC.
DRIVEWAYS WITHIN R-O-W's	11,819 S.F.	0.27 AC.
TOTAL WITHIN R-O-W	128,109 S.F.	2.94 AC.
TOTAL IMPERVIOUS ALLOWED (30%)	312,325 S.F.	7.17 AC.
IMPERVIOUS IN R-O-W's	128,109 S.F.	2.94 AC.
REMAINING IMPERVIOUS FOR LOTS	184,216 S.F.	4.23 AC.
TOTAL NUMBER OF LOTS	65	
ALLOWED IMPERIOUS PER LOT	2834 S.F.	0.07 AC.

LENGTH OF PROPOSED STREETS

MARISA LANE (PRIVATE)	1,494 FT.
JACKIE DRIVE (PRIVATE)	485 FT.
GARNET DRIVE (DEDICATED)	1,020 FT.

DWELLING TYPES PROPOSED

ALL 65 DWELLINGS ARE TO BE VILLAGE HOUSE DWELLING TYPE B2.3

OFF-STREET PARKING

REQUIRED 2.25 PER DWELLING UNIT = 147 SPACES
PROVIDED 2 ON LOT (65 X 2 = 130)
TOTAL PROVIDED = 130 PARKING SPACES **
** DEVELOPER WILL ENTER INTO AN AGREEMENT WITH THE TOWNSHIP TO USE THE 100 SPACE OFF-STREET PARKING LOT LOCATED ON THE ADJOINING TOWNSHIP LAND TO SATISFY THE ADDITIONAL OFF-STREET REQUIRED PARKING SPACES.

GENERAL NOTES

1. TITLE LINE AND TOPOGRAPHIC INFORMATION SHOWN HEREON IS AS DERIVED FROM A PLAN ENTITLED IN PART "EXISTING FEATURES / SURVEY PLAN OF D'AMICO TRACT PREPARED FOR HERITAGE BUILDING GROUP" AS PREPARED BY STOUT, TACCONELLI & ASSOCIATES, INC. DATED JULY 12, 2002 LAST REVISED AUGUST 19, 2005 AND SIGNED AND SEALED BY CLIFFORD T. STOUT, PLS NO. 282-A.
2. CONTOUR DATA AS SHOWN HEREON IS BASED ON USGS VERTICAL DATUM. BENCHMARK IS AN NGS DISK IN TOP OF SOUTHEAST CONCRETE WINGWALL OF BRIDGE ON ROUTE 663 OVER SWAMP CREEK, 300 FEET SOUTHWEST OF HICKORY PARK REST. (PANEL 79 OF 451) D108 RESET 1985. LOCAL BENCHMARK IS THE INVERT OF DW ENDWALL (ELEV. 264.13) LOCATED ON THE NORTHWESTERLY SIDE OF DOTTERER ROAD APPROXIMATELY 135 FEET SOUTHWEST OF MET-ED UTILITY POLE #60274-36254 AND APPROXIMATELY 65 FEET NORTHWEST OF MET-ED UTILITY POLE 360260-36236.
3. TOPOGRAPHIC DATA, INCLUDING UTILITIES AS SHOWN HEREON GATHERED FROM A CURRENT FIELD SURVEY PERFORMED BY STAI JULY 2002. (SEE GEN. NOTE 1)
4. ALL EXISTING UTILITIES WITHIN LIMIT OF DISTURBANCE TO BE REMOVED. ALL EXISTING WELLS, UTILITIES, SANITARY SEWER LINES AND SEPTIC AREAS ASSOCIATED WITH THE EXISTING STRUCTURES MUST BE REMOVED IN ACCORDANCE WITH ALL APPLICABLE GOVERNMENT REGULATIONS.
5. THE SITE WILL BE SERVICED BY PUBLIC SEWER AND WATER.
6. PARKING ALONG STREETS IS PERMITTED ON ONE SIDE ONLY ON GARNET DRIVE. THE DEVELOPER OF THE TRACT SHALL BE RESPONSIBLE FOR THE INSTALLATION OF ALL SIGNAGE DEEMED NECESSARY BY NEW HANOVER TOWNSHIP SUCH AS SPEED LIMIT AND NO PARKING SIGNS.
7. BUILDING FOOTPRINTS SHOWN ARE FOR GRADING PURPOSES ONLY; FINAL FOOTPRINTS TO BE PROVIDED WITH THE BUILDING PERMIT PLAN BY THE DEVELOPER.
8. CONCRETE MONUMENTS ARE TO BE SET ALONG THE SITE BOUNDARY AT EACH CORNER OR CHANGE IN DIRECTION OF THE BOUNDARY, AND IRON PINS SHALL BE INSTALLED AT ALL PROPERTY CORNERS AND CHANGES IN DIRECTION. ALL MONUMENTS SHALL BE PLACED IN THE GROUND AFTER GRADING IS COMPLETED, AT A TIME SPECIFIED BY THE TOWNSHIP ENGINEER. THE MONUMENTS SHALL BE AT LEAST 24 INCHES LONG, 4 INCHES SQUARE AND CONTAIN A STEEL REINFORCING BAR TO ENABLE LOCATION WITH A METAL DETECTOR.
9. PROPOSED GARNET DRIVE AND THE STORM WATER PIPING SYSTEM SHALL BE OFFERED FOR DEDICATION TO NEW HANOVER TOWNSHIP.
10. ALL PUBLIC IMPROVEMENTS SHALL BE CONSTRUCTED IN COMPLIANCE WITH THE NEW HANOVER TOWNSHIP STANDARDS AND SPECIFICATIONS.
11. ALL DEVELOPMENT ACTIVITIES, SUCH AS CLEARING, GRADING, REGRADING, DRIVEWAYS, ROADS, BUILDINGS, SEPTIC SYSTEMS, RETENTION/DETENTION BASINS AND UTILITY EASEMENTS SHALL BE LIMITED TO THE NATURAL RESOURCE PROTECTION STANDARDS AS SPECIFIED IN THE NEW HANOVER TOWNSHIP ZONING ORDINANCE [CHAPTER 27] AS LAST AMENDED. THE REMAINING NATURAL RESOURCES SHALL REMAIN IN THEIR NATURAL CONDITION, INCLUDING THE NATURAL FOREST GROUND COVER. THIS RESTRICTION SHALL RUN WITH THE LAND AND BE BINDING ON ALL PRESENT AND FUTURE OWNERS AND/OR LESSEES.
12. THE DEVELOPER SHALL BE RESPONSIBLE FOR ALL CHARGES OR RATES FOR THE ADEQUATE WATER SUPPLY TO EACH FIRE HYDRANT WITHIN THE SUBDIVISION UNTIL SUCH TIME AS THE STREETS ARE ACCEPTED AS PUBLIC STREETS BY THE BOARD OF SUPERVISORS.
13. STREET NAME SIGNS ARE TO BE POSTED IMMEDIATELY AFTER THE COMPLETION OF THE ROAD BINDER COURSE OR PRIOR TO ISSUANCE OF THE FIRST OCCUPANCY PERMIT. WHICHEVER OCCURS FIRST.
14. A POLE LAMP SHALL BE INSTALLED ON EACH LOT AT THE DRIVEWAY LOCATION, 5 FEET BEHIND THE ULTIMATE RIGHT OF WAY LINE. THE INSTALLATION OF THE LAMP IS TO MEET THE SATISFACTION OF THE TOWNSHIP ENGINEER. DETAILS OF THE PROPOSED LAMP SHALL BE PROVIDED TO THE TOWNSHIP FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
15. PROVISIONS SHALL BE MADE FOR ENERGIZING STREET LIGHTING AFTER 50% OR MORE OF THE DWELLINGS HAVE BEEN OCCUPIED. THE DEVELOPER SHALL BE RESPONSIBLE FOR ALL CHARGES OR RATES OF THE STREETS LIGHTED UNTIL SUCH TIME THAT THE STREETS ARE ACCEPTED OR CONDEMNED AS PUBLIC STREETS BY THE BOARD OF SUPERVISORS.
16. ALL SANITARY FACILITIES MUST BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT NEW HANOVER TOWNSHIP AUTHORITY STANDARDS AND WILL BE OFFERED FOR DEDICATION TO THE AUTHORITY.
17. NO PLANTINGS WILL BE DONE IN THE SANITARY AND STORM SEWER EASEMENTS. FOR LOTS, WHERE SUCH INSTALLATION IS REQUIRED BY ORDINANCE, ONLY FENCES, WALLS AND OR SHRUBS MAY BE SET WITHIN EASEMENT AREAS.
18. IT IS ANTICIPATED THAT ALL UNITS WILL BE PROVIDED WITH BASEMENTS DUAL SUMP PUMPS SHALL BE PROVIDED. SANITARY SERVICE TO EACH BASEMENT IS NOT GUARANTEED.
19. AS-BUILT RECORD DRAWINGS MUST BE SUBMITTED AND APPROVED BEFORE ANY SEWERS ARE ACCEPTED FOR DEDICATION. THE DRAWINGS MUST BE ACCOMPANIED BY A CERTIFICATE FROM THE DEVELOPER'S ENGINEER ATTESTING TO THEIR CORRECTNESS.
20. IN ORDER FOR THE NEW HANOVER TOWNSHIP AUTHORITY TO ACCEPT OWNERSHIP AND MAINTENANCE RESPONSIBILITIES FOR ANY SANITARY SEWER, THE DEVELOPER MUST PROVIDE AN ACCEPTABLE SANITARY SEWER RIGHT-OF-WAY AND EXECUTE ALL APPLICABLE RIGHT-OF-WAY AGREEMENTS, COMPLETE WITH LEGAL DESCRIPTION AND DRAWINGS IN A FORM ACCEPTABLE TO THE AUTHORITY AND ITS SOLICITOR.
21. MARISA LANE, JACKIE DRIVE, OPEN SPACE (A, B, C & D), RETAINING WALLS LOCATED OUTSIDE PUBLIC RIGHT-OF-WAY AS WELL AS THE DETENTION BASINS AS DEPICTED HEREON SHALL BE OWNED AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION.
22. THE HOMEOWNERS ASSOCIATION SHALL MAINTAIN THE SIDEWALKS AND RIGHT OF WAY AREA ALONG THE FRONTAGES OF OPEN SPACE AREAS.
23. A SPECIAL PERMIT FOR ACCESS TO THE SITE FOR CONSTRUCTION VEHICLES MUST BE OBTAINED FROM NEW HANOVER TOWNSHIP PRIOR TO THE START OF CONSTRUCTION.
24. STREET NAME AND TRAFFIC CONTROL SIGNS SHALL BE CONSISTENT IN DESIGN AND SPECIFICATION WITH THOSE IN GENERAL USE WITHIN THE TOWNSHIP. SIGN TYPES, LOCATION AND INSTALLATION SHALL BE SUBJECT TO APPROVAL BY THE TOWNSHIP ENGINEER.
25. RESIDENTIAL MAILBOXES TO BE INSTALLED PER THE REQUIREMENTS OF THE TOWNSHIP'S STANDARD CONSTRUCTION AND MATERIALS SPECIFICATIONS FOR PUBLIC IMPROVEMENTS MANUAL.
26. ALL UTILITIES WILL BE PLACED UNDERGROUND.
27. WATER LINES ARE NOT TO BE CONSTRUCTED UNDER SIDEWALKS, EXCEPT FOR THE NECESSARY CROSSINGS AS SHOWN ON THE PLAN.
28. THE WETLAND AREAS ARE TO BE LOCATED IN THE FIELD AND STAKED PRIOR TO THE START OF CONSTRUCTION. DURING CONSTRUCTION THE WETLAND AREAS ARE TO BE PHYSICALLY PROTECTED FROM ACCESS BY CONSTRUCTION EQUIPMENT AND PERSONNEL.
29. NO GRADING IS PERMITTED WITHIN FIVE (5) FEET OF THE OVERALL TRACT BOUNDARY PROPERTY LINE.
30. NO TOPSOIL SHALL BE REMOVED FROM THE SITE WITHOUT PRIOR APPROVAL FROM THE TOWNSHIP.
31. ALL SIGNAGE SHOULD BE INSTALLED PRIOR TO THE FIRST USE AND OCCUPANCY PERMIT BEING ISSUED FOR THE DEVELOPMENT, OR AT THE TIME OF COMPLETION OF ROAD BINDER COURSE, WHICHEVER COMES FIRST.
32. THE AREA BETWEEN THE SOUTHEASTERLY ULTIMATE RIGHT OF WAY LINE FOR AND THE TITLE LINE WITHIN THE BED OF DOTTERER ROAD AS SHOWN HEREON IS HEREBY OFFERED FOR DEDICATION TO NEW HANOVER TOWNSHIP. THIS DEDICATION SHALL SUPERSEDE AND CORRECT THE DEDICATION THAT WAS PREVIOUSLY MADE AS PART OF A PLAN ENTITLED IN PART "SUBDIVISION – D'AMICO" AS PREPARED BY ASTON SURVEYORS/ENGINEERS, INC. DATED SEPTEMBER 25, 1998 LAST REVISED JANUARY 26, 1999 AND RECORDED IN THE OFFICE OF THE MONTGOMERY COUNTY RECORDER OF DEEDS IN PLAN BOOK A-58 PAGE 315.
33. ALL GRATES FOR YARD INLETS TO BE PENNDOT APPROVED CAST GRAY IRON GRATES.
34. THE INDIVIDUAL LOT OWNER SHALL BE RESPONSIBLE FOR REFUSE STORAGE AND COLLECTION.
35. IN AGREEMENT WITH THE TOWNSHIP THE DEVELOPER HAS AGREED TO REPAVE DOTTERER ROAD FROM THE EXISTING CULVERT TO THE WEST OF THE SITE TO NORTH CHARLOTTE STREET IN ACCORDANCE WITH R.C. MAST AND ASSOCIATES PLANS AND TO CONSTRUCT THE GRAVEL PARKING AREA (EXTENSION OF GARNET DRIVE) AND 3 SOCCER FIELDS ON THE ADJOINING TOWNSHIP OWNED LANDS. SEPARATE PLAN SETS DETAILING THIS CONSTRUCTION IS TO BE PROVIDED BY OTHERS.

LOT RESTRICTIONS

1. ALL LOTS SHALL BE DEED RESTRICTED TO REQUIRE THAT ACCESS BE TAKEN VIA THE LOWER ORDER STREET.
2. A DEED RESTRICTION SHALL BE PLACED ON LOTS AGAINST FILLING IN OF THE WETLAND AREA.
3. THE HOMEOWNERS ASSOCIATION WILL ASSUME RESPONSIBILTY FOR THE MAINTENANCE OF THE DETENTION BASINS AND OPEN SPACE AREAS.
4. LOTS 1, 34 AND 65 SHALL HAVE A SIGHT LINE RESTRICTION AS SHOWN ON THE PLANS, RESTRICTING THE PLACEMENT OF ANY PLANT OR STRUCTURE THAT WILL INHIBIT THE SIGHT LINE AT THIS INTERSECTION.
5. LOT 29 IS RESTRICTED FROM FILLING IN THE AREA DESIGNATED AS WATERS OF THE U.S.
6. MAXIMUM BUILDING COVERAGE PER LOT SHALL NOT EXCEED 2,130 SQ.FT.
7. MAXIMUM IMPERVIOUS COVERAGE PER LOT SHALL NOT EXCEED 2,834 SQ.FT.

REVISION TO APPROVED FINAL PLAN:

THIS PLAN IS A REVISION TO AN APPROVED FINAL PLAN KNOWN AS "THE D'AMICO TRACT SUBDIVISION" BY VANCLEEF ENGINEERING ASSOCIATES, PRELIMINARY PLANS APPROVED ON MARCH 27, 2006 AND FINAL PLAN APPROVED ON APRIL 14, 2008.

UNIFORM PLANNED COMMUNITY ACT

THE HANOVER WOODS SUBDIVISION IS A PLANNED COMMUNITY. THE FOLLOWING IMPROVEMENTS "MUST BE BUILT" IN THE PLANNED COMMUNITY: ALL PUBLIC IMPROVEMENTS SUCH AS STREETS (PUBLIC AND PRIVATE), CURBING AND SIDEWALKS, STORM SEWERS, SWALES, STORMWATER MANAGEMENT FACILITIES, SANITARY SEWERS AND APPURTENANT FACILITIES/STRUCTURES, WATER MAINS AND APPURTENANT FACILITIES/STRUCTURES, LANDSCAPING, STREET LIGHTING AND STREET AND ENTRANCE SIGNAGE.

RECORDING ACKNOWLEDGMENTS

STATE OF PENNSYLVANIA)
COUNTY OF MONTGOMERY) SS:

ON THE ______ DAY OF ______________, A.D. 20_____, BEFORE ME, THE SUBSCRIBER, A NOTARY PUBLIC IN AND FOR THE SAID COUNTY AND STATE, PERSONALLY APPEARED THE SIGNEE BELOW, WHO BEING DULY SWORN ACCORDING TO LAW SAYS THAT THE SAID CORPORATION IS THE OWNER OF RECORD OF THE PROPERTY SHOWN ON THIS PLAN, THAT THE SUBDIVISION PLAN HEREOF WAS MADE AT THE DIRECTION OF THE CORPORATION, THAT HE ACKNOWLEDGES THE SAME TO BE THE CORPORATION'S ACT AND PLAN AND DESIRES THE SAME TO BE RECORDED AS SUCH ACCORDING TO LAW AND THAT ALL STREETS, OPEN SPACES CONTAINED IN LOT NUMBERS AND ALL OTHER PUBLIC IMPROVEMENTS SHOWN AND NOT HERETOFORE DEDICATED ARE HEREBY OFFERED FOR DEDICATION TO THE PUBLIC USE.

BY: ______________________________

ATTEST: ______________________________

SWORN AND SUBSCRIBED TO BEFORE ME THIS _____ DAY OF __________, A.D. 20___.

____
NOTARY PUBLIC

MY COMMISSION EXPIRES ______________

REVIEWED BY THE NEW HANOVER TOWNSHIP PLANNING COMMISSION, AND RECOMMENDED FOR APPROVAL THIS ____ DAY OF __________, 20___.

____
PLANNING COMMISSION CHAIRMAN (RICHARD MULSTAY)

AT A MEETING HELD ON ______________, 20___, THE NEW HANOVER TOWNSHIP AUTHORITY APPROVED THE SUBDIVISION/LAND DEVELOPMENT PLAN OF THE PROPERTY OF HILLTOWN COVENTRY, LP

____
CHAIRMAN OF THE AUTHORITY (THOMAS MISKIEWICZ)

____
AUTHORITY SECRETARY (SHALLY SALLADE)

REVIEWED BY THE NEW HANOVER TOWNSHIP ENGINEER THE _____ DAY OF __________, 20___.

____
TOWNSHIP ENGINEER (DAVID N. LEH)

AT A MEETING HELD ON ______________, 20___, THE BOARD OF SUPERVISORS OF NEW HANOVER TOWNSHIP, BY RESOLUTION ____________, DULY ENACTED AND APPROVED THIS SUBDIVISION/LAND DEVELOPMENT PLAN OF THE PROPERTY OF HILLTOWN COVENTRY, LP.

____
CHAIRMAN OF THE BOARD OF SUPERVISORS (MARTIN DYAS)

______________________ TOWNSHIP SECRETARY (EDWARD C. WAGNER) ______________________ TOWNSHIP SEAL

COUNTY RECORDER OF DEEDS

RECORDED IN THE OFFICE OF RECORDER OF DEEDS IN NORRISTOWN, PENNSYLVANIA, IN PLAN BOOK ______ PAGE ______ THIS ________ DAY OF ____________________, 20_____.

BY ______________________
RECORDER OF DEEDS

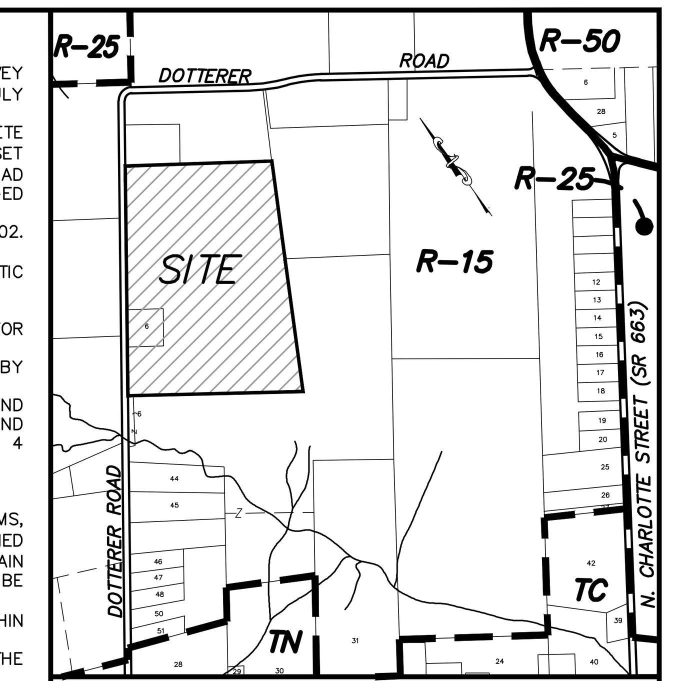
COUNTY PLANNING COMMISSION

MCPC NO. 98-416-2

PROCESSED and REVIEWED. Report by the MONTGOMERY COUNTY PLANNING COMMISSION in accordance with the Municipalities Planning Code.

Certified this date ______________________

For the Director
MONTGOMERY COUNTY PLANNING COMMISSION



LOCATION MAP
SCALE: 1"=800'

NO.	REVISION	INITIALS	DATE
1	PER LTS DATED 1-3-13, 1-4-13 & 2-14-13	JAB	2-20-13
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4	PREP FOR MCCD SUBMISSION	JAB	7-23-13
5	MISC. REVISIONS	JAB	8-11-13
6	MISC. REVISIONS (NPDES)	JAB	8-21-13
7	PER MCCD LTR 9-11-13	JAB	9-16-13
8	REVISE RETAINING WALLS AND GRADES	SPE	12-06-13

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PA Law requires 3 working days notice before you excavate
PA ONE CALL SYSTEM, INC.

ALL CONTRACTORS WORKING ON THIS SITE SHALL COMPLY WITH THE REQUIREMENTS OF ACT 121 OF 2004 (UNDERGROUND UTILITY LINE PROTECTION LAW). VCEA HAS REGISTERED THIS SITE WITH THE PA ONE-CALL SYSTEM ON ______________________

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BY: ______________________
BRIAN S. FOCHT, PA PE DATE
PENNSYLVANIA PROFESSIONAL ENGINEER NO. 056961

Van Cleef ENGINEERING ASSOCIATES
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Environmental Engineering
Municipal Engineering
Land Surveying
Professional Planning
Landscape Architecture
4 WELLINGTON BLVD, WYOMISSING, PA 19610
EMAIL: VCEPA@VCEA.ORG WEB: WWW.VCEA.ORG
PHONE (610) 670-6630 FAX (610) 670-4603
OFFICES THROUGHOUT NJ, EASTERN PA, DE AND MD

PROJECT: 0402NHT.02	DESIGNED BY: –
DATE: 12-19-12	DRAWN BY: JAB
SCALE:	CHECKED BY: BSF

SUBDIVISION PLANS
FOR
HANOVER WOODS
(FORMERLY D'AMICO TRACT)
SITUATED IN
NEW HANOVER TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

TITLE
OVERALL RECORD PLAN

FINAL PLAN

SHEET NUMBER 2 / 36

SAM ERNEY 12/21/2010
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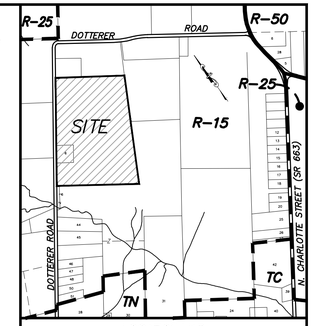
LEGEND

- EXISTING PROPERTY LINE
- EXISTING ADJACENT PROPERTY LINE
- EXISTING LEGAL RIGHT OF WAY
- EXISTING ROAD CENTERLINE
- EXISTING EASEMENT
- EXISTING CONCRETE MONUMENT
- EXISTING PIN
- PROPOSED MONUMENT TO BE SET
- PROPOSED IRON PIN TO BE SET
- PROPOSED RIGHT OF WAY
- PROPOSED BUILDING SETBACK
- PROPOSED ROAD CENTERLINE
- PROPOSED EASEMENT
- PROPOSED BUFFER
- PROPOSED CLEAR SIGHT TRIANGLE



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FOR
HANOVER WOODS
(FORMERLY D'AMICO TRACT)
SITUATED IN
NEW HANOVER TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

TITLE
RECORD PLAN

FINAL PLAN

SHEET NUMBER 3 / 36

SAM ERNEY 12/21/2010
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NATURAL RESOURCE DISTURBANCE

PROTECTED NATURAL RESOURCE	AREA OF RESOURCE AT SITE	ALLOWABLE DISTURBANCE (%)	ALLOWABLE DISTURBANCE (Ac.)	PROPOSED DISTURBANCE ROADWAY (1) (Ac.)	PROPOSED DISTURBANCE NON-ROADWAY (Ac.)
AREAS WHERE TWO OR MORE RESOURCES OVERLAP	1.81	0	0	0.37	0
FLOOD PLAIN	0	0	0	0	0
FLOOD PLAIN SOILS	0.20	0	0	0.09	0
STEEP SLOPES					
15% – 25%	0	30%	0	0	0
25% OR MORE	0	20%	0	0	0
WOODLANDS (1)					
R-2 , R-50	0	20%	0	0	0
ALL OTHER ZONING DISTRICTS	0	50%	0	0	0
WATERCOURSES, STREAMS					
PONDS	0	0	0	0	0
WETLANDS	1.44	0	0	0.18	0
POND SHORELINES	N/A	20%	0	0	0
WETLAND MARGINS	0.48	20%	0.10	0.15	0.06
RIPARIAN CORRIDOR (3)	0.33	0	0	0.11 (3-A)	0

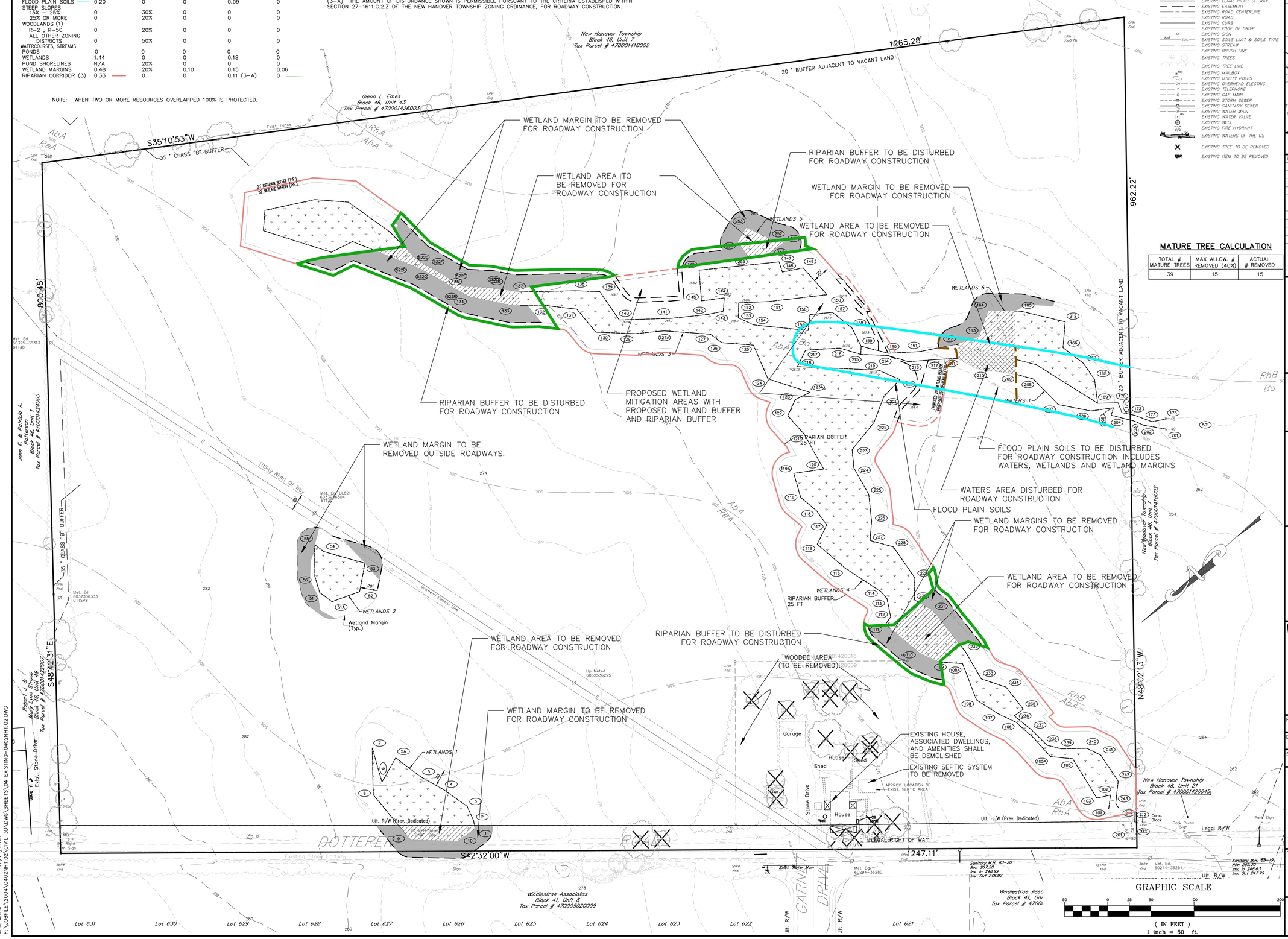
NOTE: WHEN TWO OR MORE RESOURCES OVERLAPPED 100% IS PROTECTED.

(1) THE AMOUNT OF DISTURBANCE SHOWN IS PERMISSIBLE PURSUANT TO THE CRITERIA ESTABLISHED WITHIN SECTION 1601.F OF THE NEW HANOVER TOWNSHIP ZONING ORDINANCE, FOR ROADWAY CONSTRUCTION.
(2) THE EXISTING STAND OF TREES AT THE EXISTING DWELLING DOES NOT MEET THE DEFINITION OF "WOODLANDS" (1 ACRE OR MORE OF 6" MIN. CALIPER TREES OR MIN. OF 10-10" CALIPER TREES), THEREFORE AREA OF RESOURCE EQUALS "0".
(3) SECTION 27-1611.B.2.D. WETLANDS AND WATER BODIES ZONE 1 25 FT FROM EDGE OF WETLAND

(3-A) THE AMOUNT OF DISTURBANCE SHOWN IS PERMISSIBLE PURSUANT TO THE CRITERIA ESTABLISHED WITHIN SECTION 27-1611.C.2.Z OF THE NEW HANOVER TOWNSHIP ZONING ORDINANCE, FOR ROADWAY CONSTRUCTION.

LEGEND

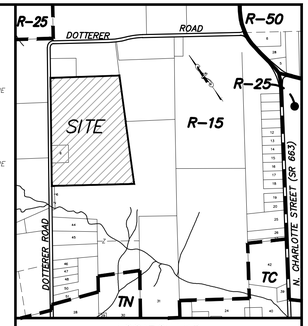
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- EXISTING SPOT ELEVATION
- EXISTING FENCE
- EXISTING PROPERTY LINE
- EXISTING ADJACENT PROPERTY LINE
- EXISTING LEGAL RIGHT OF WAY
- EXISTING EASEMENT
- EXISTING ROAD CENTERLINE
- EXISTING ROAD
- EXISTING CURB
- EXISTING EDGE OF DRIVE
- EXISTING SIGN
- EXISTING SOILS LIMIT & SOILS TYPE
- EXISTING STREAM
- EXISTING BRUSH LINE
- EXISTING TREES
- EXISTING TREE LINE
- EXISTING MAILBOX
- EXISTING UTILITY POLES
- EXISTING OVERHEAD ELECTRIC
- EXISTING TELEPHONE
- EXISTING GAS MAIN
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER
- EXISTING WATER MAIN
- EXISTING WATER VALVE
- EXISTING WELL
- EXISTING FIRE HYDRANT
- EXISTING WATERS OF THE US
- EXISTING TREE TO BE REMOVED
- EXISTING ITEM TO BE REMOVED



MATURE TREE CALCULATION

TOTAL # MATURE TREES	MAX ALLOW. # REMOVED (40%)	ACTUAL # REMOVED
39	15	15

GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)
1 inch = 50 ft.



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PROJECT:	DESIGNED BY:
0402NHT.02	–
DATE:	DRAWN BY:
12-19-12	JAB
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N/A	BSF

SUBDIVISION PLANS
FOR
HANOVER WOODS
(FORMERLY D'AMICO TRACT)
SITUATED IN
NEW HANOVER TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

TITLE
EXISTING FEATURES AND DEMOLITION PLAN

FINAL PLAN

SHEET NUMBER 4 / 36

SAM ERNEY 12/21/2010
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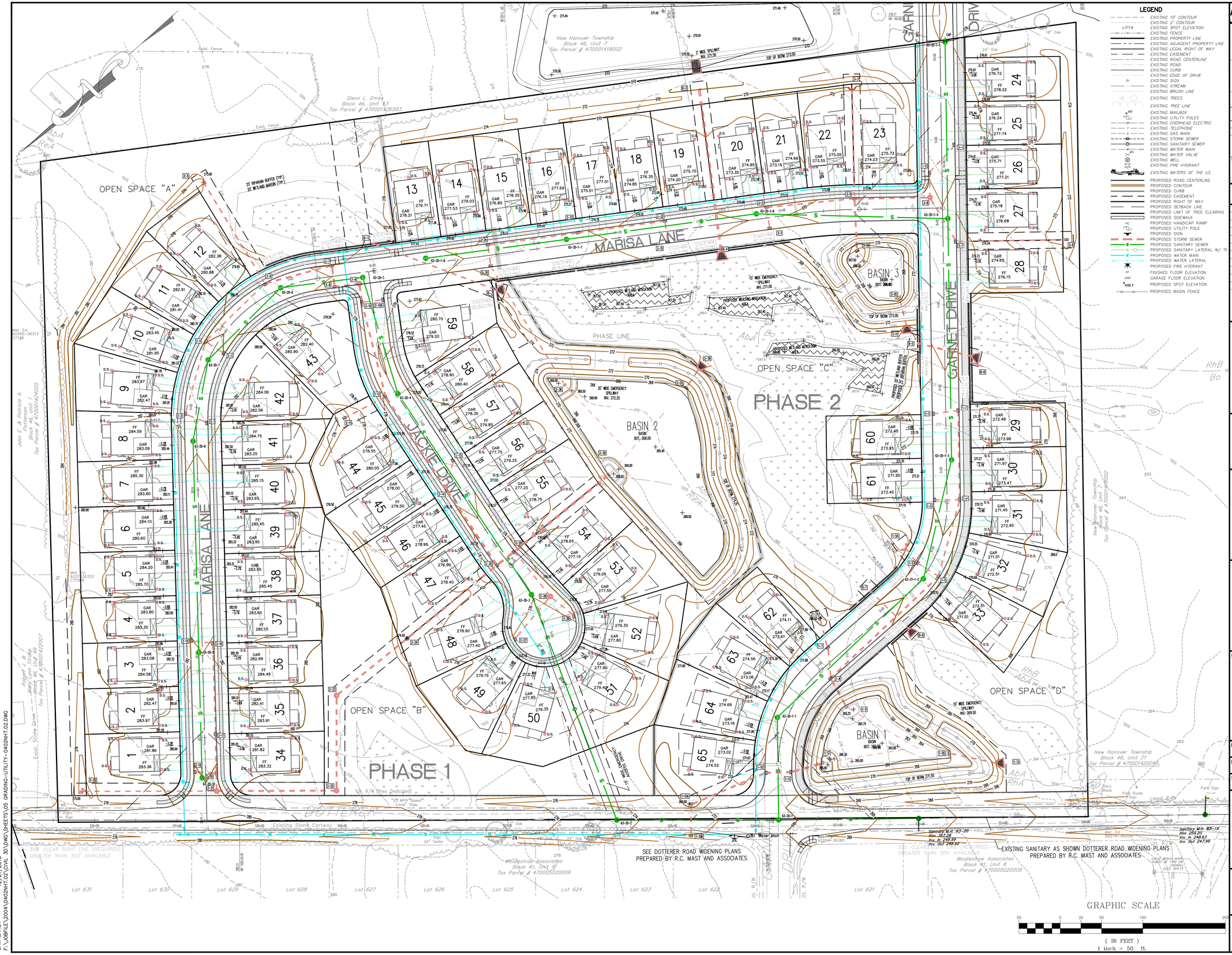

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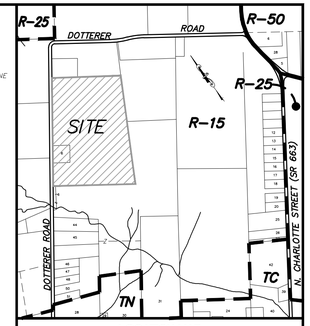
- EXISTING FIRE HYDRANT
- EXISTING WATERS OF THE US
- PROPOSED ROAD CENTERLINE
- PROPOSED CONTOUR
- PROPOSED CURB
- PROPOSED EASEMENT
- PROPOSED RIGHT OF WAY
- PROPOSED SETBACK LINE
- PROPOSED LIMIT OF TREE CLEARING
- PROPOSED SIDEWALK
- PROPOSED HANDICAP RAMP
- PROPOSED UTILITY POLE
- PROPOSED SIGN
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROPOSED SANITARY LATERAL W/ TY
- PROPOSED WATER MAIN
- PROPOSED WATER LATERAL
- PROPOSED FIRE HYDRANT
- FINISHED FLOOR ELEVATION
- GARAGE FLOOR ELEVATION
- PROPOSED SPOT ELEVATION
- PROPOSED BASIN FENCE



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MONTGOMERY COUNTY, PENNSYLVANIA

TITLE
GRADING AND UTILITY PLAN

FINAL PLAN

SHEET NUMBER 5 / 36

SAM ERNEY 12/21/2010
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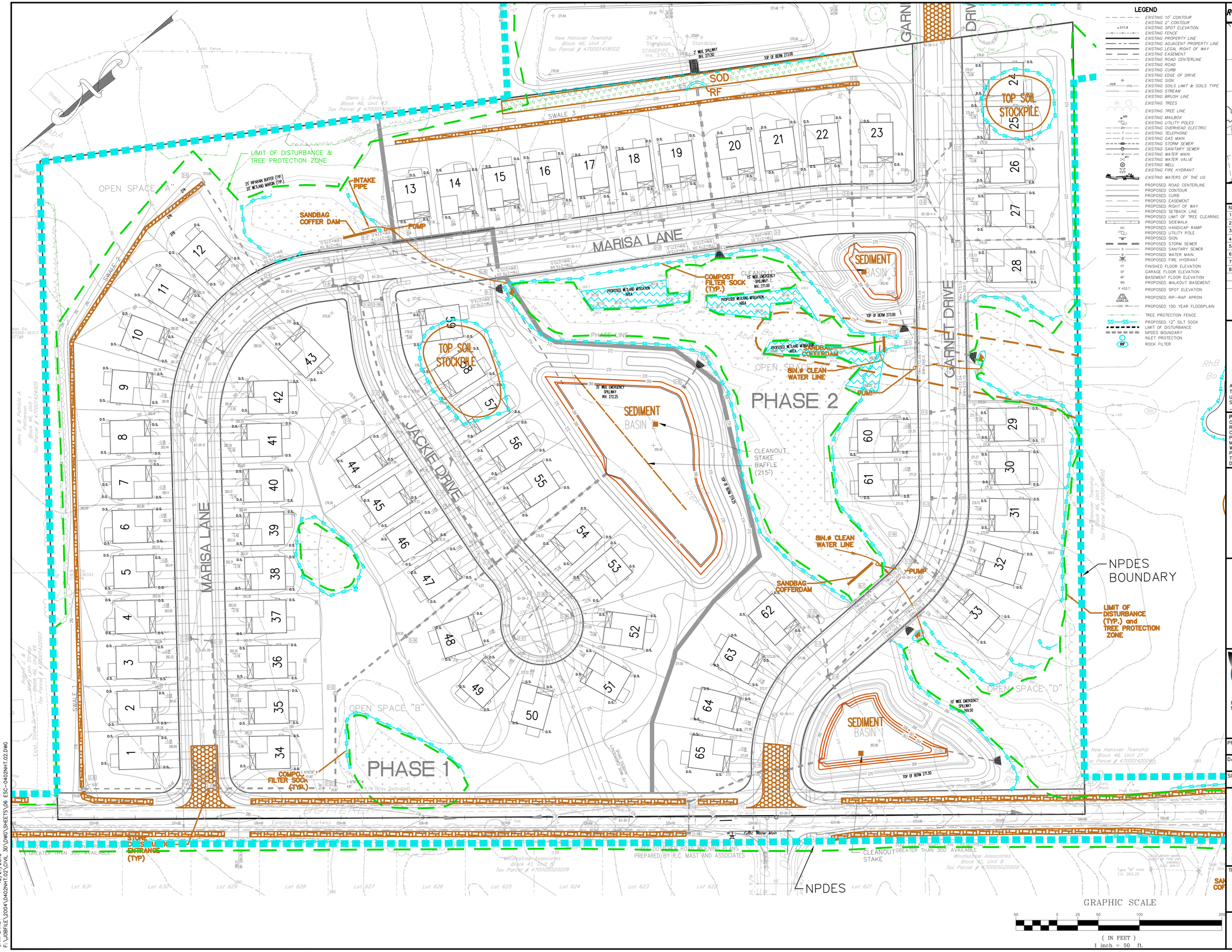

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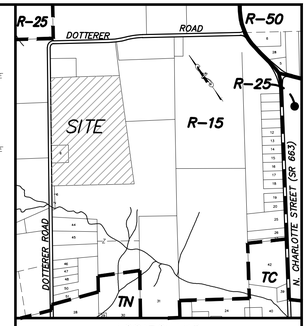
EXISTING EDGE OF DRIVE
EXISTING SIGN
EXISTING SOILS LIMIT & SOILS TYPE
EXISTING STREAM
EXISTING BRUSH LINE
EXISTING TREES
EXISTING TREE LINE
EXISTING MAILBOX
EXISTING UTILITY POLES
EXISTING OVERHEAD ELECTRIC
EXISTING TELEPHONE
EXISTING GAS MAIN
EXISTING STORM SEWER
EXISTING SANITARY SEWER
EXISTING WATER MAIN
EXISTING WATER VALVE
EXISTING WELL
EXISTING FIRE HYDRANT
EXISTING WATERS OF THE US
PROPOSED ROAD CENTERLINE
PROPOSED CONTOUR
PROPOSED CURB
PROPOSED EASEMENT
PROPOSED RIGHT OF WAY
PROPOSED SETBACK LINE
PROPOSED LIMIT OF TREE CLEARING
PROPOSED SIDEWALK
PROPOSED HANDICAP RAMP
PROPOSED UTILITY POLE
PROPOSED SIGN
PROPOSED STORM SEWER
PROPOSED SANITARY SEWER
PROPOSED WATER MAIN
PROPOSED FIRE HYDRANT
FINISHED FLOOR ELEVATION
GARAGE FLOOR ELEVATION
BASEMENT FLOOR ELEVATION
PROPOSED WALKOUT BASEMENT
PROPOSED SPOT ELEVATION
PROPOSED RIP-RAP APRON
PROPOSED 100 YEAR FLOODPLAIN
TREE PROTECTION FENCE
PROPOSED 12" SILT SOCK
LIMIT OF DISTURBANCE
NPDES BOUNDARY
INLET PROTECTION
ROCK FILTER



LOCATION MAP
SCALE: 1"=800'

NO.	REVISION	INITIALS	DATE
1	PER LTR DATED 1-3-13, 1-4-13 & 2-14-13	JAB	2-20-13
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5	MISC. REVISIONS	JAB	8-11-13
6	MISC. REVISIONS (NPDES)	JAB	8-21-13
7	PER MCCD LTR 9-11-13	JAB	9-16-13
8	REVISE RETAINING WALLS AND GRADES	SPE	12-06-13

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BY: _____
BRIAN S. FOCHT, PA PE — DATE
PENNSYLVANIA PROFESSIONAL ENGINEER NO. 056961

Van Cleef ENGINEERING ASSOCIATES
Consulting Civil Engineering
Environmental Engineering
Municipal Engineering
Land Surveying
Professional Planning
Landscape Architecture
4 WELLINGTON BLVD, WYOMISSING, PA 19610
EMAIL: VCEPA@VCEA.ORG WEB: WWW.VCEA.ORG
PHONE (610) 670-6630 FAX (610) 670-4603
OFFICES THROUGHOUT NJ, EASTERN PA, DE AND MD

PROJECT: 0402NHT.02	DESIGNED BY: –
DATE: 12-19-12	DRAWN BY: JAB
SCALE: N/A	CHECKED BY: BSF

SUBDIVISION PLANS
FOR
HANOVER WOODS
(FORMERLY D'AMICO TRACT)
SITUATED IN
NEW HANOVER TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

TITLE
EROSION AND SEDIMENTATION POLLUTION CONTROL PLAN

FINAL PLAN

SHEET NUMBER 6/36

SAM ERNEY 12/21/2010
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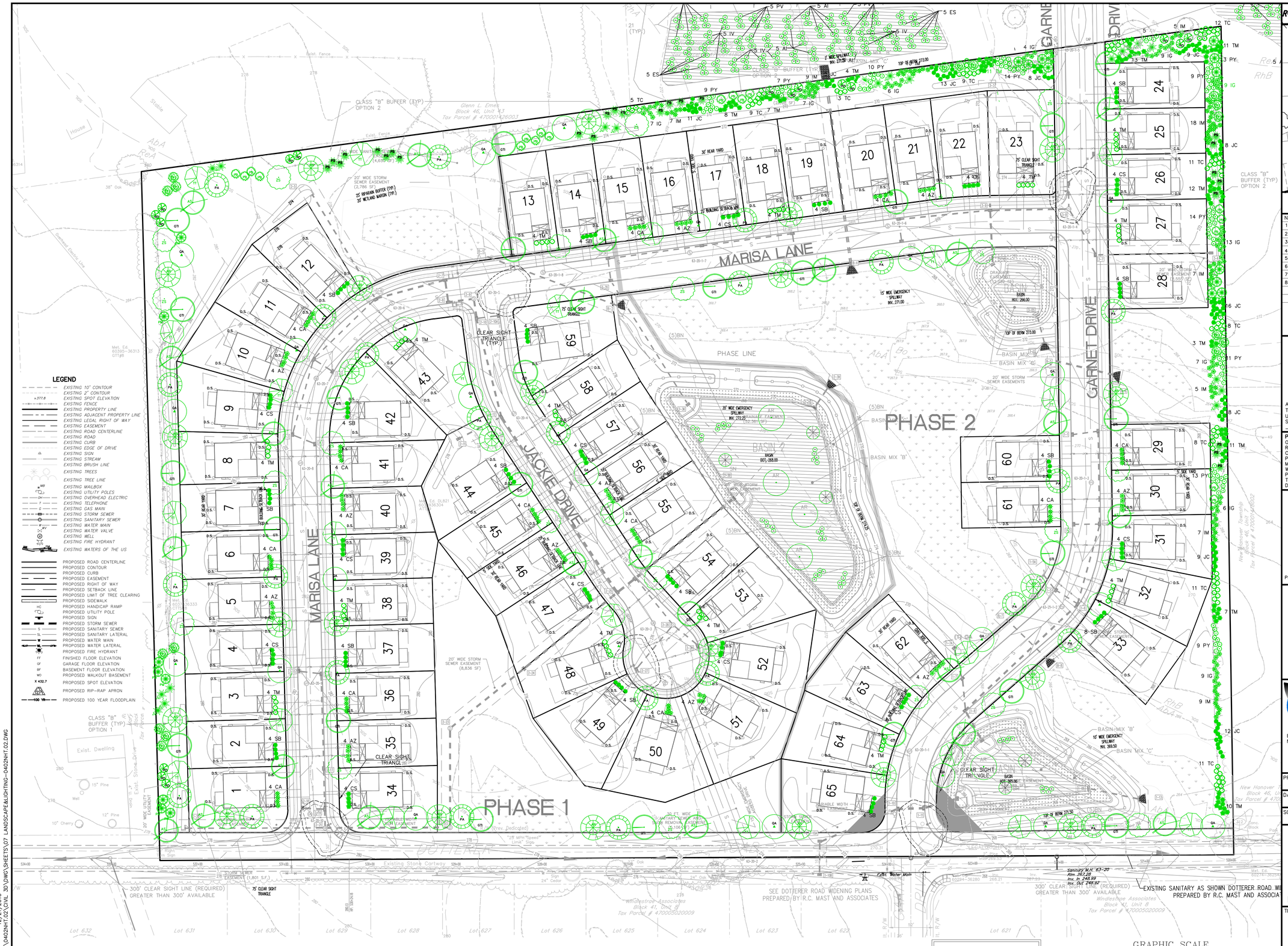

LEGEND

- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- EXISTING SPOT ELEVATION
- EXISTING FENCE
- EXISTING PROPERTY LINE
- EXISTING ADJACENT PROPERTY LINE
- EXISTING LEGAL RIGHT OF WAY
- EXISTING EASEMENT
- EXISTING ROAD CENTERLINE
- EXISTING ROAD
- EXISTING CURB
- EXISTING EDGE OF DRIVE
- EXISTING SIGN
- EXISTING STREAM
- EXISTING BRUSH LINE
- EXISTING TREES
- EXISTING TREE LINE
- EXISTING MAILBOX
- EXISTING UTILITY POLES
- EXISTING OVERHEAD ELECTRIC
- EXISTING TELEPHONE
- EXISTING GAS MAIN
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER
- EXISTING WATER MAIN
- EXISTING WATER VALVE
- EXISTING WELL
- EXISTING FIRE HYDRANT
- EXISTING WATERS OF THE US
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- PROPOSED CONTOUR
- PROPOSED CURB
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- PROPOSED SIDEWALK
- PROPOSED HANDICAP RAMP
- PROPOSED UTILITY POLE
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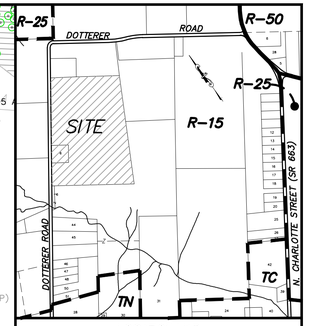
- PROPOSED SANITARY SEWER
- PROPOSED SANITARY LATERAL
- PROPOSED WATER MAIN
- PROPOSED WATER LATERAL
- PROPOSED FIRE HYDRANT
- FFE FINISHED FLOOR ELEVATION
- GF GARAGE FLOOR ELEVATION
- BF BASEMENT FLOOR ELEVATION
- WO PROPOSED WALKOUT BASEMENT
- X 432.7 PROPOSED SPOT ELEVATION
- PROPOSED RIP-RAP APRON
- 100 YR PROPOSED 100 YEAR FLOODPLAIN



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BY: _____
KEVIN A. KESTER, PA. RLA. DATE
PENNSYLVANIA REGISTERED LANDSCAPE ARCHITECT NO. LA-000883-E

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Municipal Engineering
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PROJECT: 0402NHT.02	DESIGNED BY: –
DATE: 12-19-12	DRAWN BY: JAB
SCALE:	CHECKED BY: BSF

SUBDIVISION PLANS
FOR
HANOVER WOODS
(FORMERLY D'AMICO TRACT)
SITUATED IN
NEW HANOVER TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

TITLE
LANDSCAPE AND LIGHTING PLAN

FINAL PLAN

SHEET NUMBER 7 / 36

SAM ERNEY 12/21/2010
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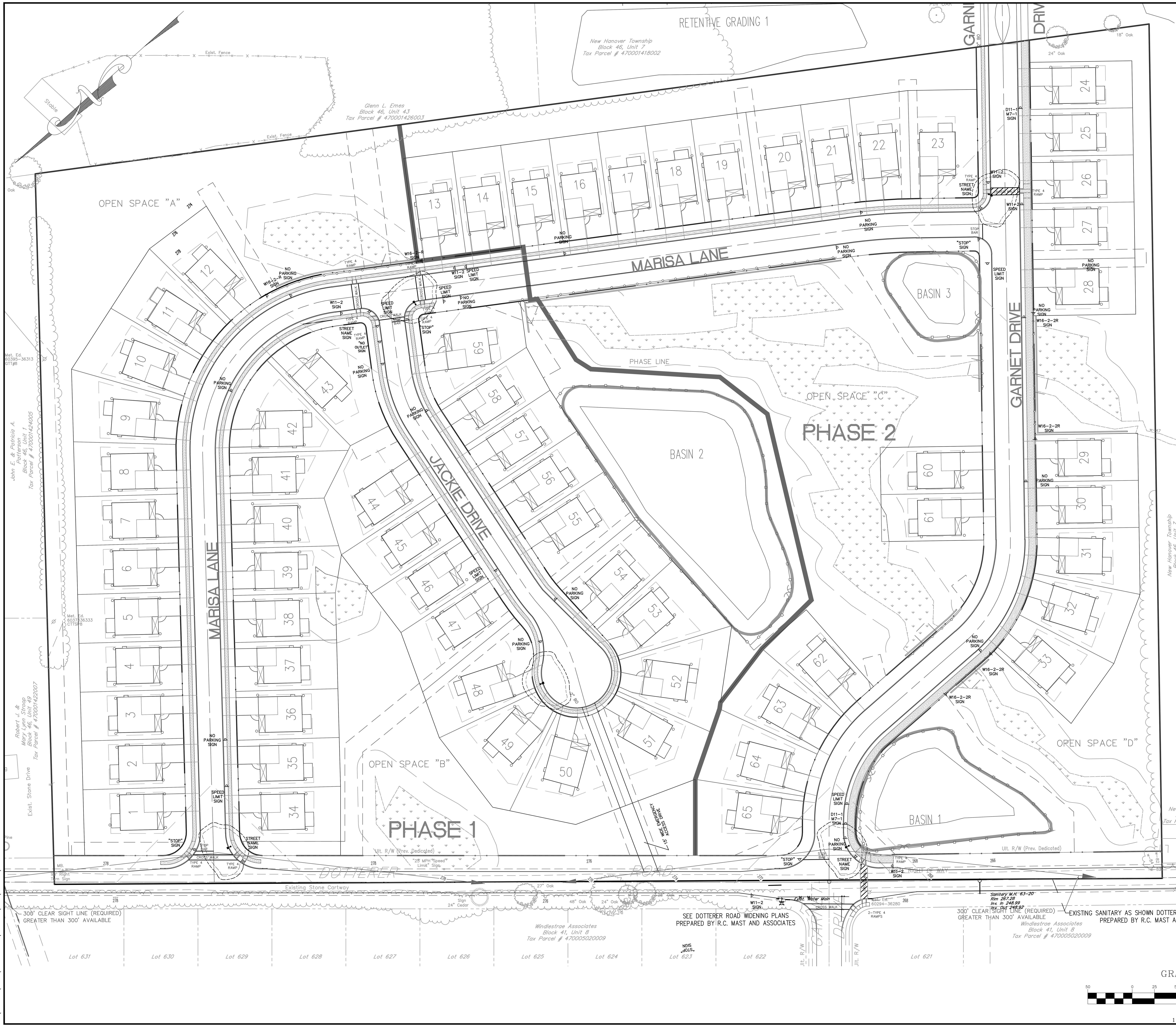

SAM ERNEY 12/21/2010
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LEGEND

EXISTING 10' CONTOUR
EXISTING 2' CONTOUR
EXISTING SPOT ELEVATION
EXISTING FENCE
EXISTING PROPERTY LINE
EXISTING ADJACENT PROPERTY LINE
EXISTING LEGAL RIGHT OF WAY
EXISTING EASEMENT
EXISTING ROAD CENTERLINE
EXISTING ROAD
EXISTING CURB
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EXISTING SIGN
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EXISTING BRUSH LINE
EXISTING TREES
EXISTING TREE LINE
EXISTING MAILBOX
EXISTING UTILITY POLES
EXISTING OVERHEAD ELECTRIC
EXISTING TELEPHONE
EXISTING GAS MAIN
EXISTING STORM SEWER
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EXISTING WATER MAIN
EXISTING WATER VALVE
EXISTING WELL
EXISTING FIRE HYDRANT
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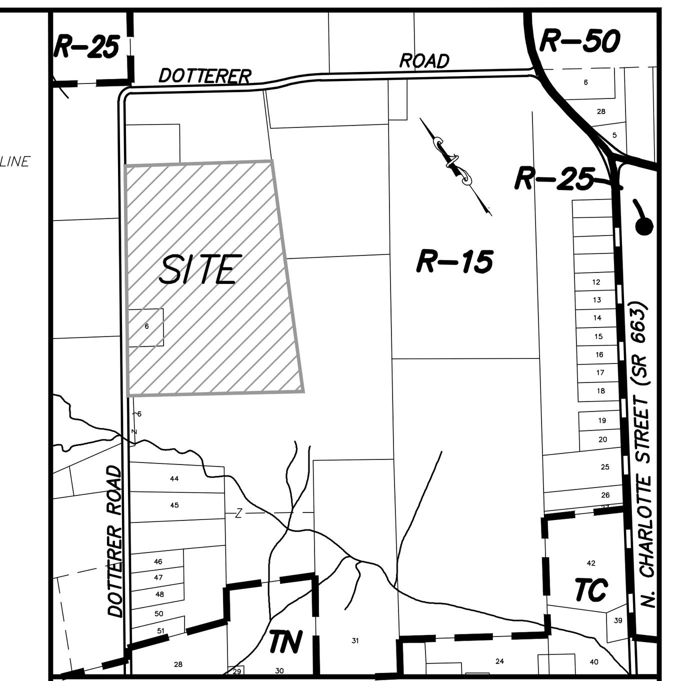
PROPOSED SIDEWALK
PROPOSED HANDICAP RAMP
PROPOSED UTILITY POLE
PROPOSED SIGN
PROPOSED STORM SEWER
PROPOSED SANITARY SEWER
PROPOSED SANITARY LATERAL W/ TR
PROPOSED WATER MAIN
PROPOSED WATER LATERAL
PROPOSED FIRE HYDRANT
FINISHED FLOOR ELEVATION
GARAGE FLOOR ELEVATION
PROPOSED SPOT ELEVATION
PROPOSED BASIN FENCE



LOCATION MAP
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KEVIN A. KESTER, PA. RLA. DATE
PENNSYLVANIA REGISTERED LANDSCAPE ARCHITECT NO. LA-000883-E

BY: ____________
BRIAN S. FOCHT, PA PE DATE
PENNSYLVANIA PROFESSIONAL ENGINEER NO. 056961

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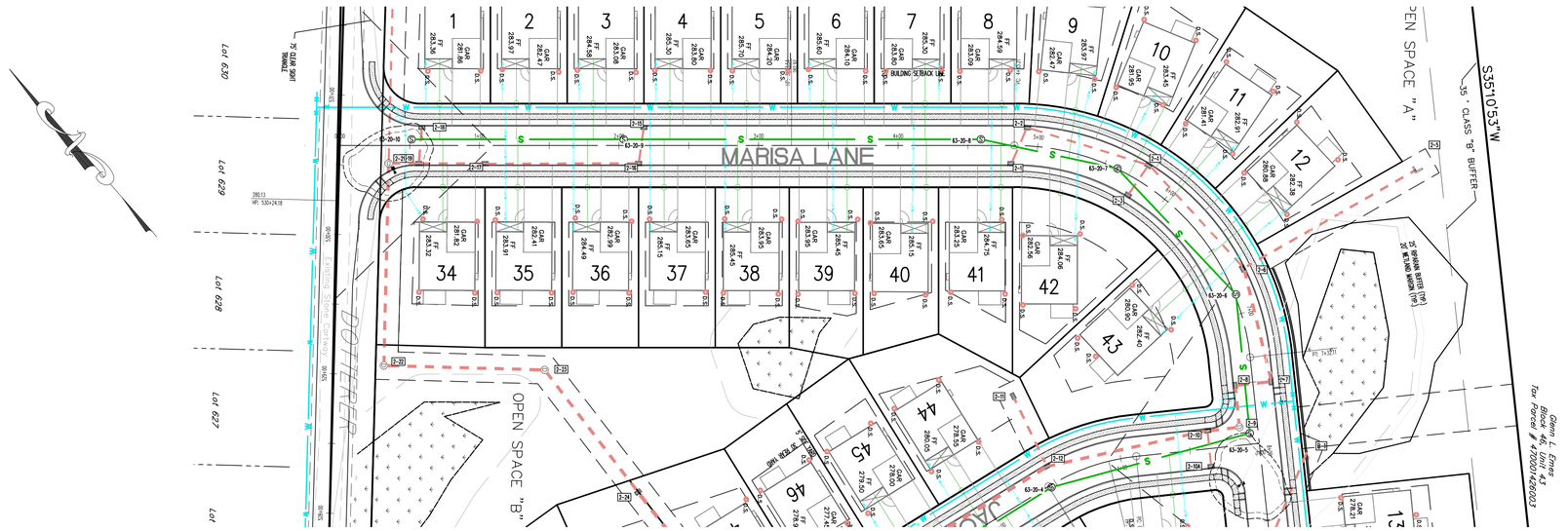
PROJECT: 0402NHT.02	DESIGNED BY: –
DATE: 12-19-12	DRAWN BY: JAB
SCALE: N/A	CHECKED BY: BSF

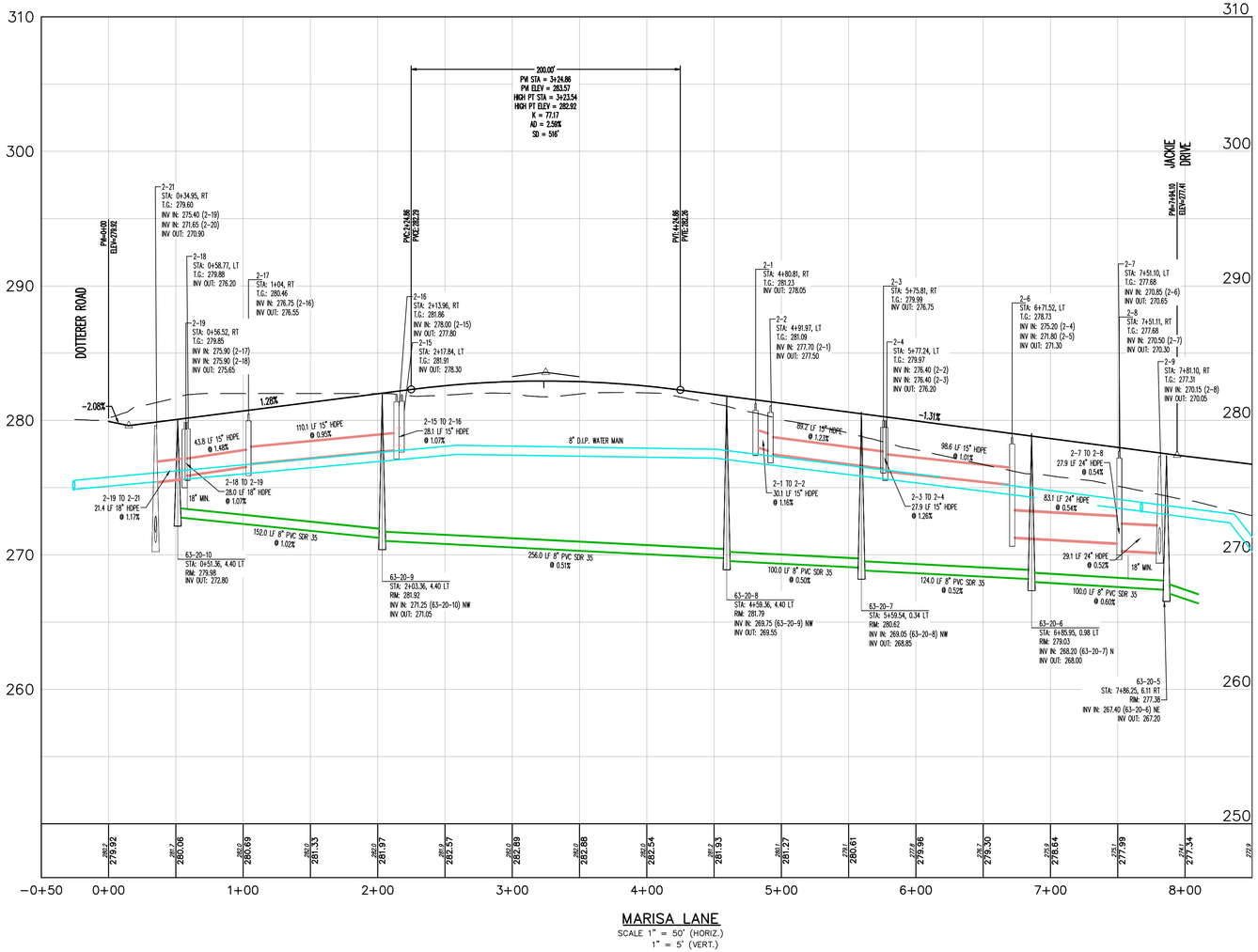
SUBDIVISION PLANS
FOR
HANOVER WOODS
(FORMERLY D'AMICO TRACT)
SITUATED IN
NEW HANOVER TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

TITLE
PAVEMENT MARKING AND SIGNAGE PLAN

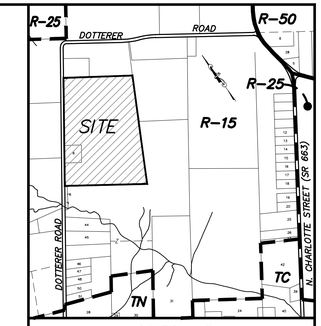
FINAL PLAN

SHEET NUMBER 8 / 36





MARISA LANE
SCALE 1" = 50' (HORIZ.)
1" = 5' (VERT.)



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BY: _____
BRIAN S. FOCHT, PA PE — DATE
PENNSYLVANIA PROFESSIONAL ENGINEER NO. 056961

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Environmental Engineering
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PROJECT: 0402NHT.02	DESIGNED BY: –
DATE: 12-19-12	DRAWN BY: JAB
SCALE:	CHECKED BY: BSF

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FOR
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(FORMERLY D'AMICO TRACT)
SITUATED IN
NEW HANOVER TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

TITLE
MARISA LANE PLAN AND PROFILE

FINAL PLAN

SHEET NUMBER 9/36

SAM ERNEY 12/21/2010
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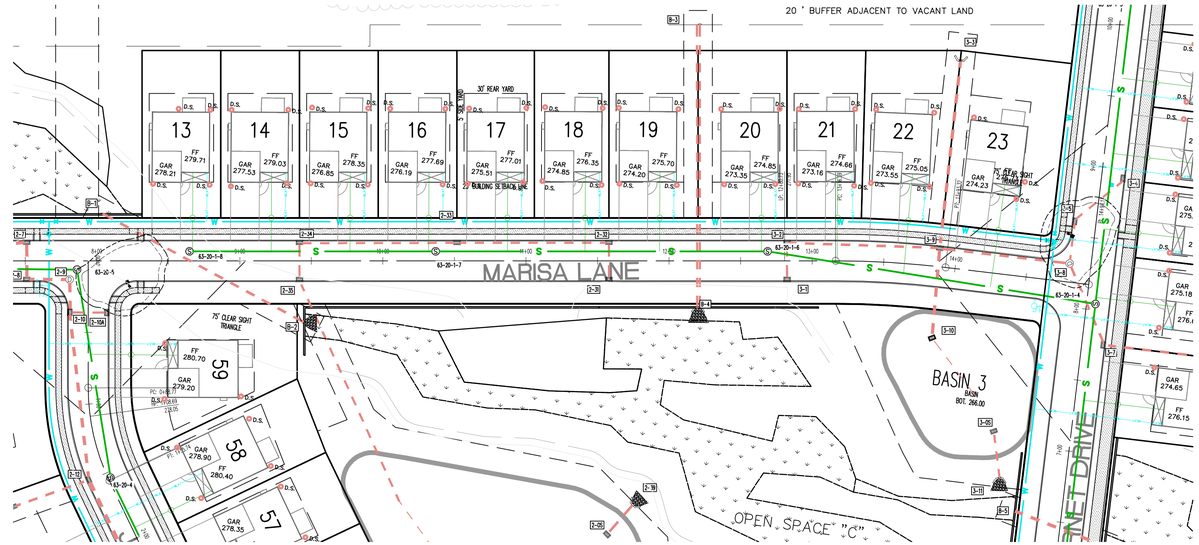

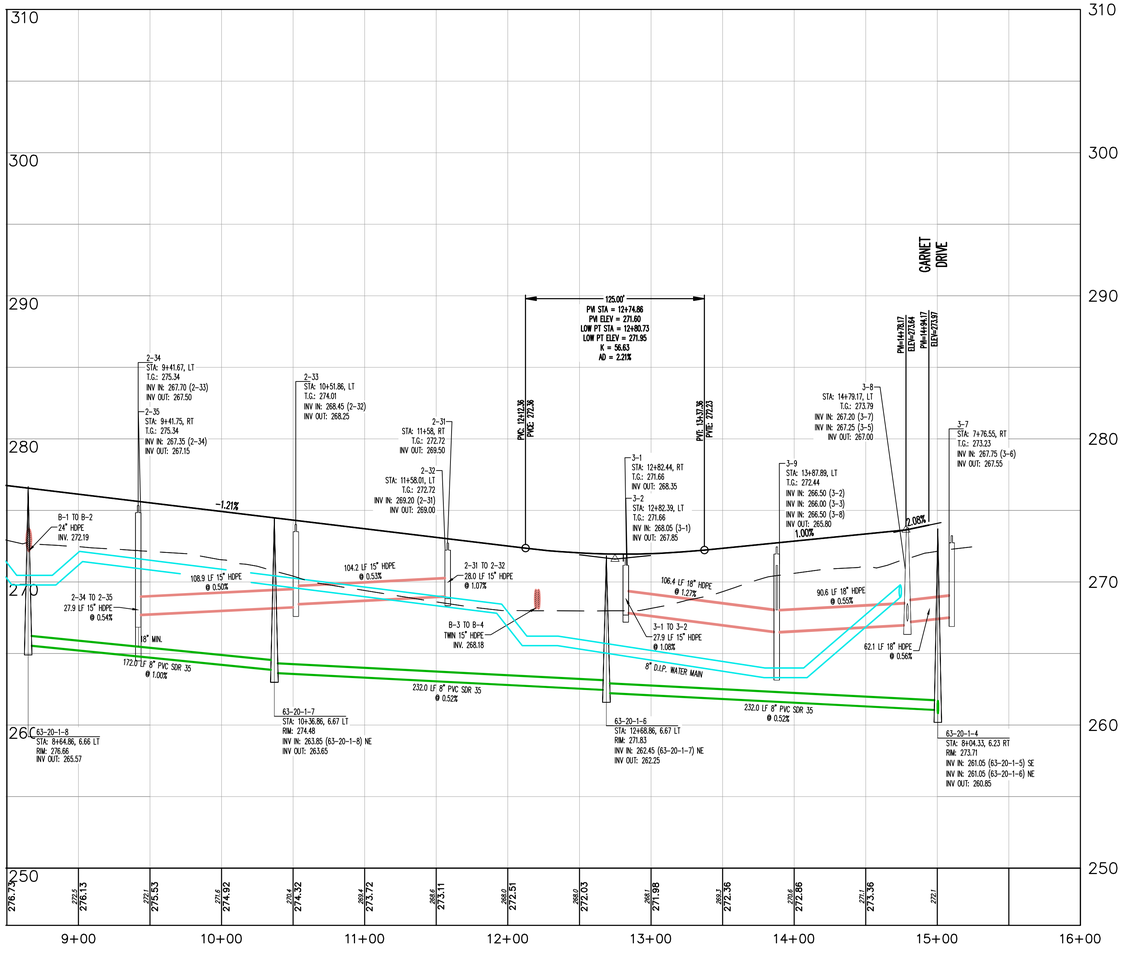

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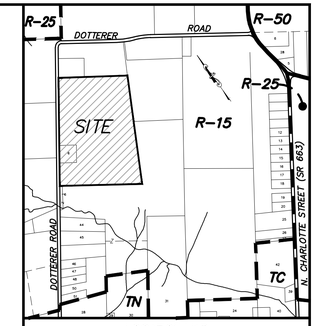

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0402NHT.02	–
DATE:	DRAWN BY:
12-19-12	JAB
SCALE:	CHECKED BY:
	BSF

SUBDIVISION PLANS
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HANOVER WOODS
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SITUATED IN
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MONTGOMERY COUNTY, PENNSYLVANIA

TITLE
MARISA LANE PLAN AND PROFILE

FINAL PLAN

SHEET NUMBER 10 / 36

SAM ERNEY 12/21/2010
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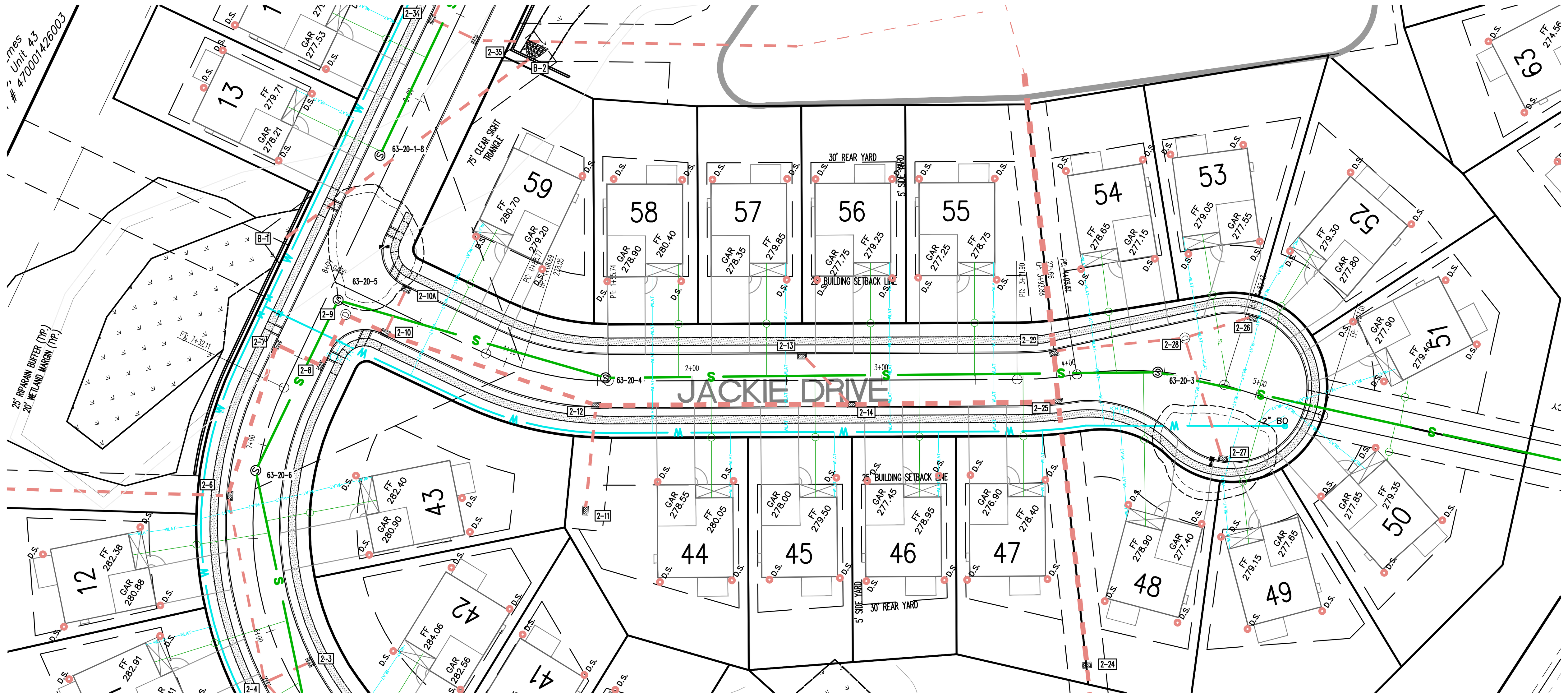

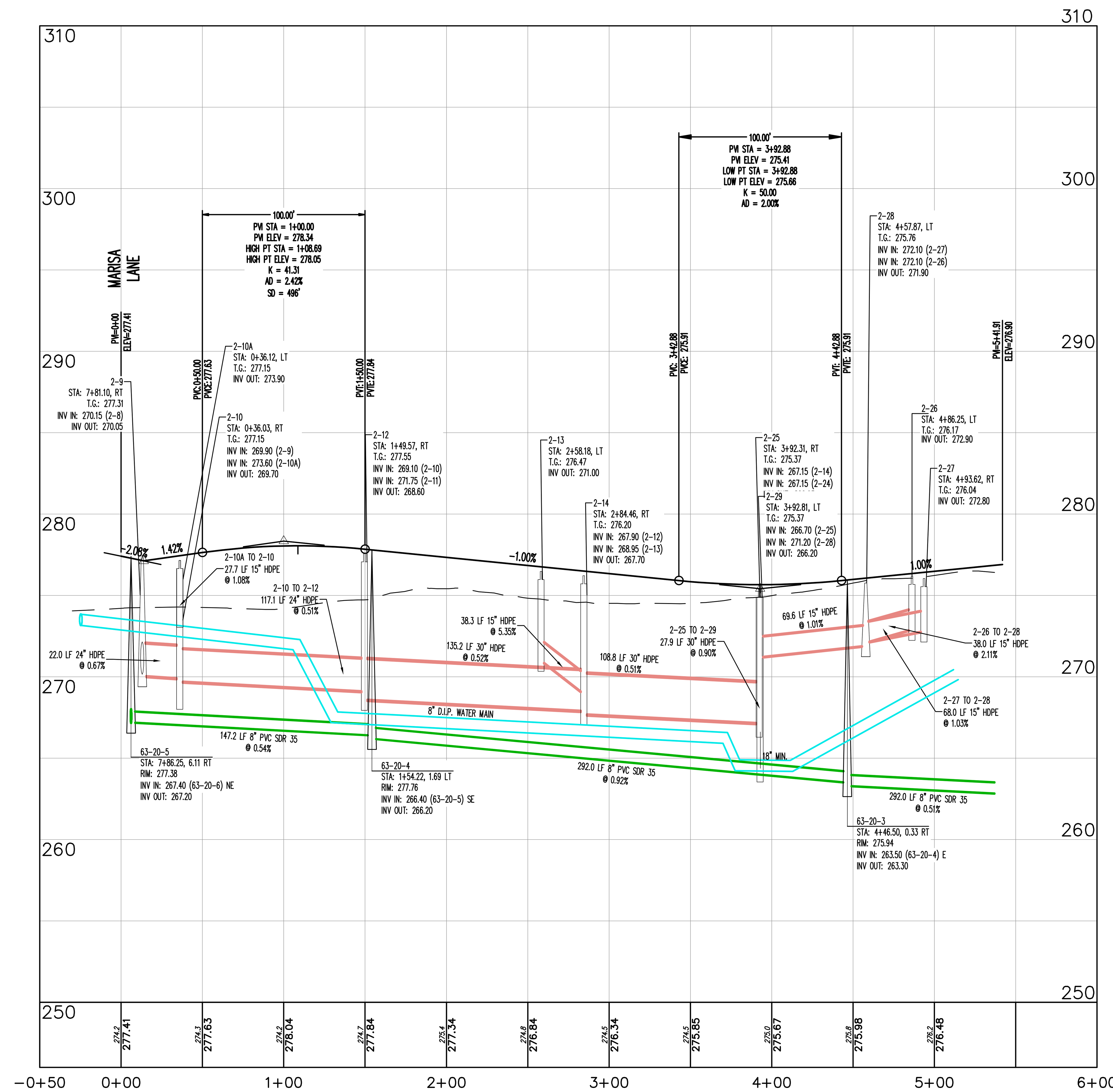

JACKIE DRIVE
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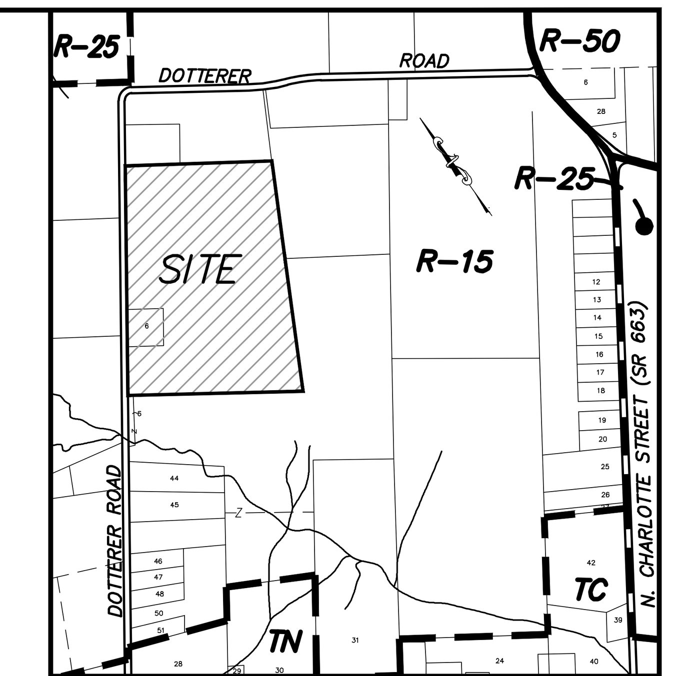
1" = 5' (VERT.)



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BY: ______________________
BRIAN S. FOCHT, PA PE DATE
PENNSYLVANIA PROFESSIONAL ENGINEER NO. 056961

Van Cleef
ENGINEERING ASSOCIATES
Consulting Civil Engineering
Environmental Engineering
Municipal Engineering
Land Surveying
Professional Planning
Landscape Architecture
4 WELLINGTON BLVD, WYOMISSING, PA 19610
EMAIL: VCEPA@VCEA.ORG WEB: WWW.VCEA.ORG
PHONE (610) 670-6630 FAX (610) 670-4603
OFFICES THROUGHOUT NJ, EASTERN PA, DE AND MD

PROJECT: 0402NHT.02	DESIGNED BY: –
DATE: 12-19-12	DRAWN BY: JAB
SCALE:	CHECKED BY: BSF

SUBDIVISION PLANS
FOR
HANOVER WOODS
(FORMERLY D'AMICO TRACT)
SITUATED IN
NEW HANOVER TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

TITLE
JACKIE DRIVE PLAN AND PROFILE

FINAL PLAN

SHEET NUMBER
11
36

SAM ERNEY 12/21/2010
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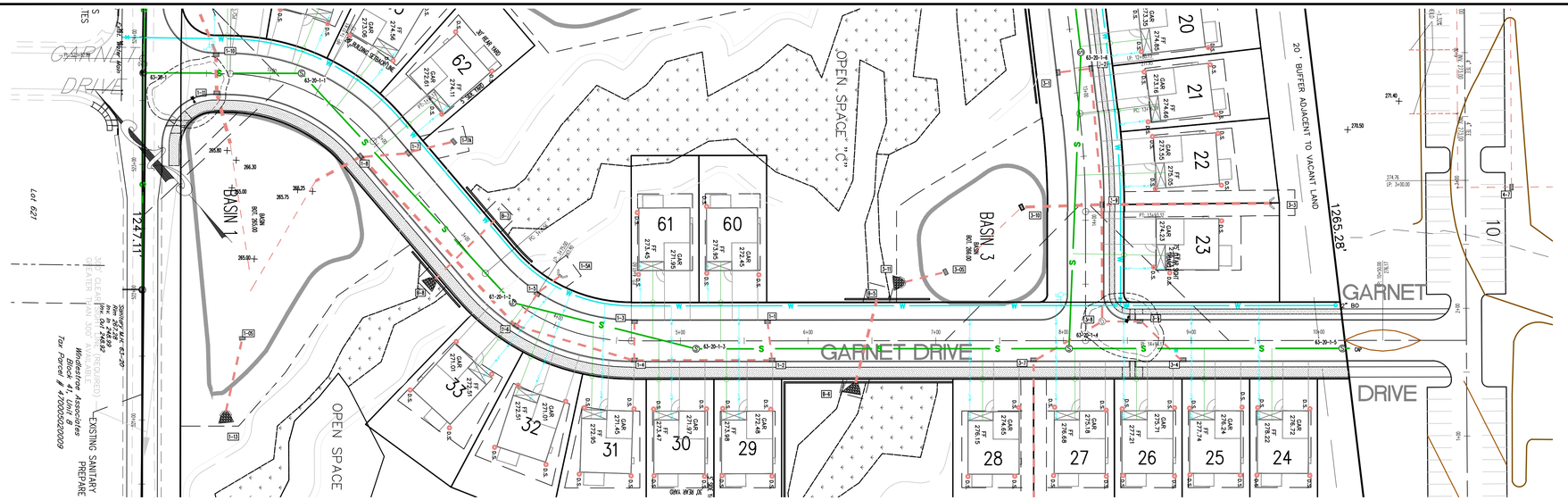

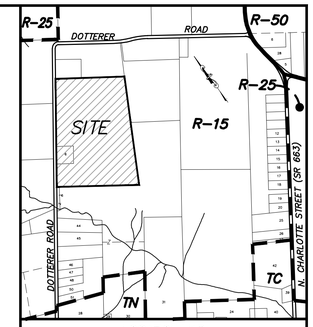

LOCATION MAP
SCALE: 1"=800'

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7	PER MCCD LTR 9-11-13	JAB	9-16-13
8	REVISE RETAINING WALLS AND GRADES	SPE	12-06-13

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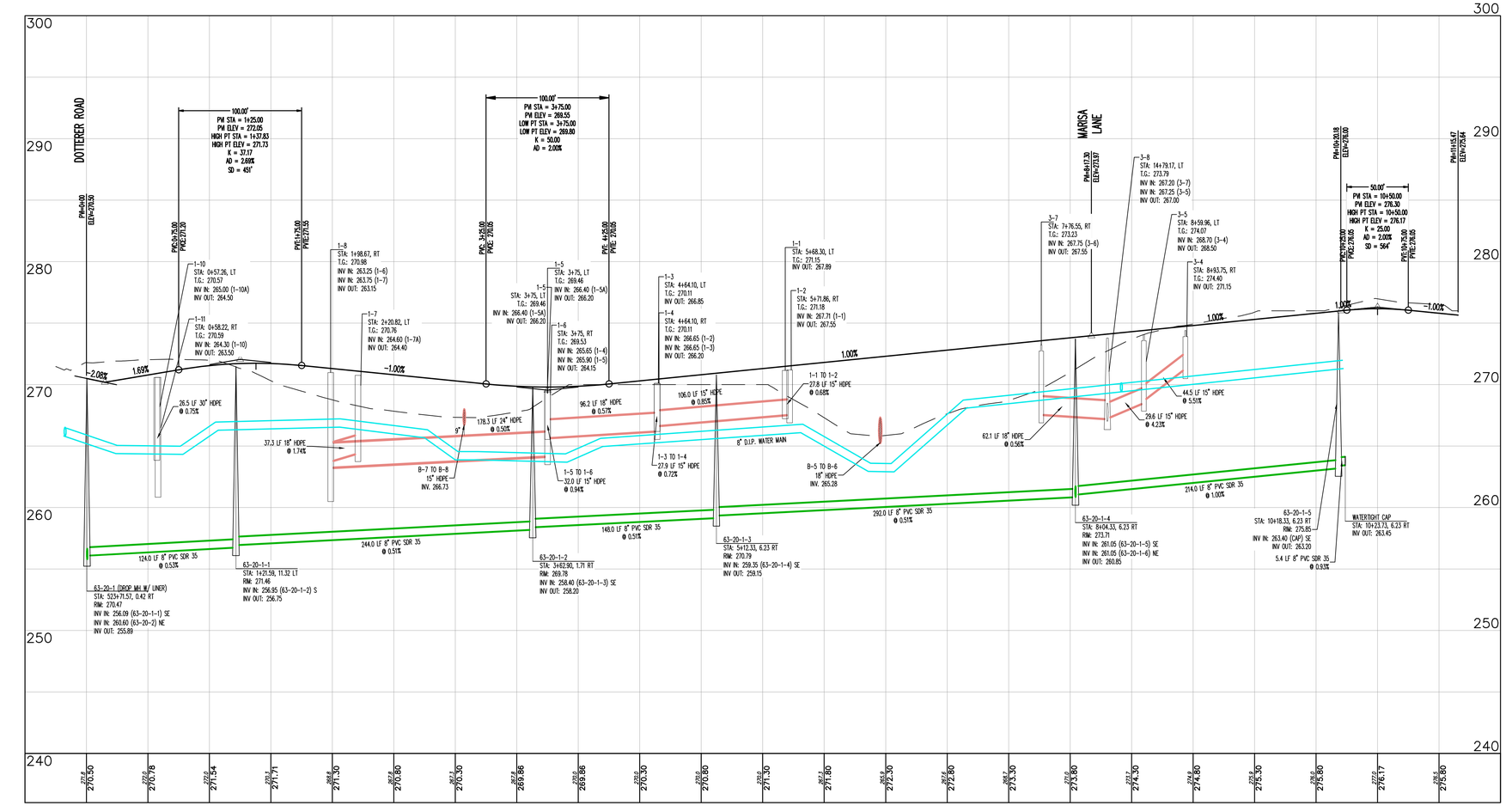
(FORMERLY D'AMICO TRACT)
SITUATED IN
NEW HANOVER TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

TITLE
11 GARNET DRIVE PLAN AND PROFILE

FINAL PLAN

SHEET NUMBER 12/36



GARNET DRIVE
SCALE 1" = 50' (HORIZ.)
1" = 5' (VERT.)

SAM ERNEY 12/21/2010
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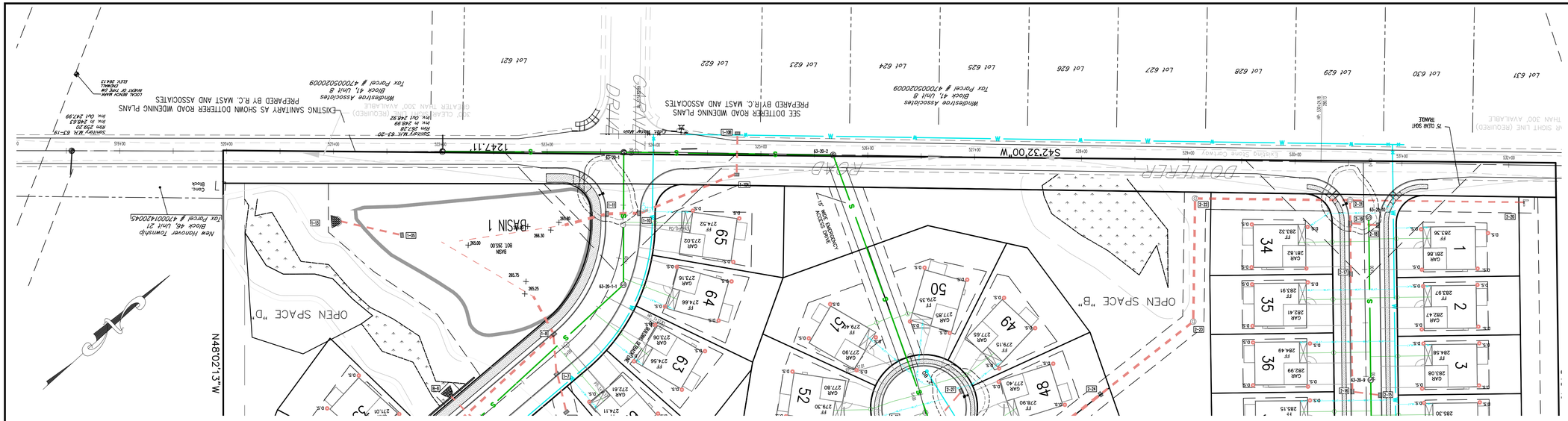
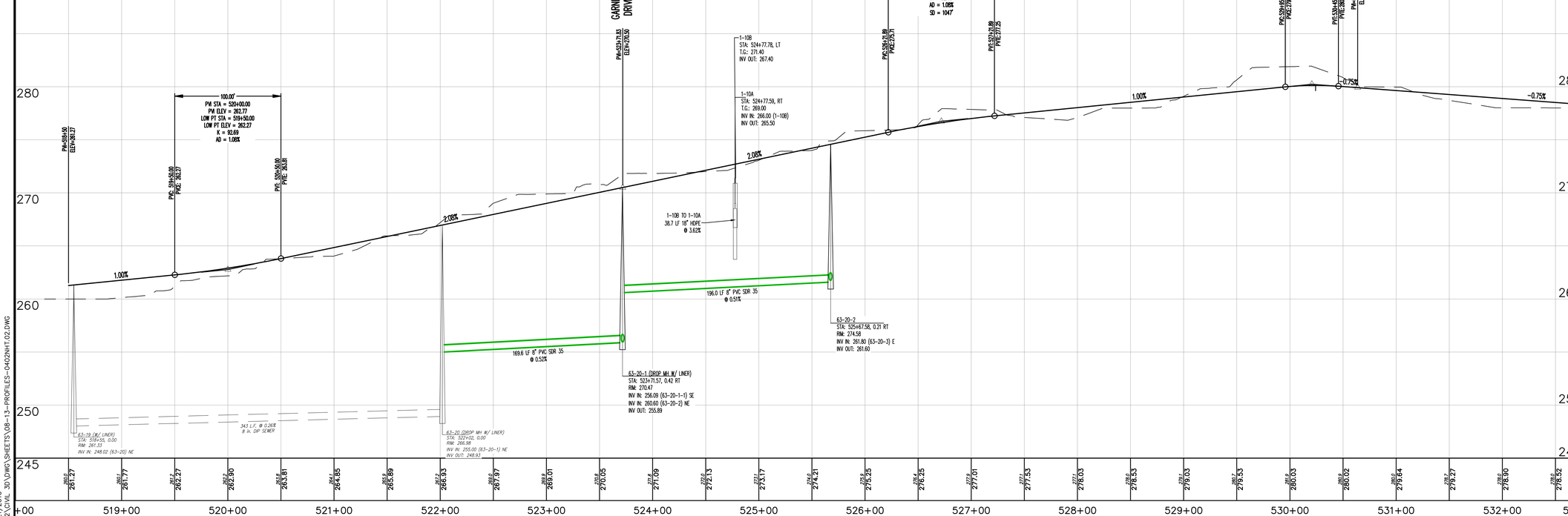
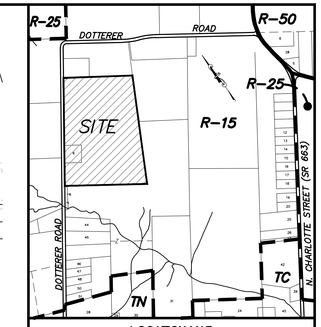




DOTTERER ROAD
SCALE 1" = 50' (HORIZ.)
1" = 5' (VERT.)



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SUBDIVISION PLANS
FOR
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(FORMERLY D'AMICO TRACT)
SITUATED IN
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MONTGOMERY COUNTY, PENNSYLVANIA

TITLE
DOTTERER ROAD PLAN AND PROFILE

FINAL PLAN

SHEET NUMBER 13 / 36

SAM ERNEY
12/21/2010
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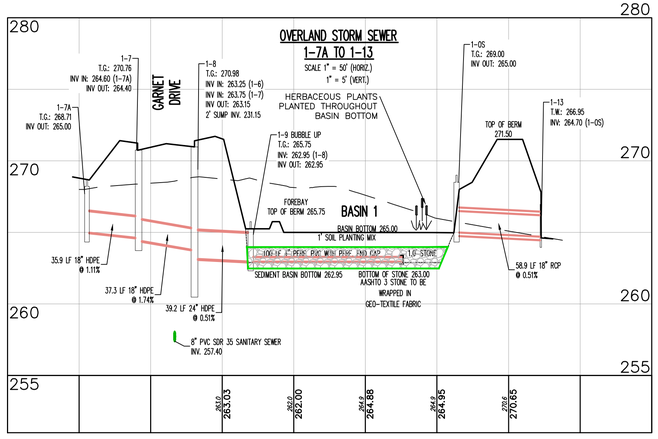
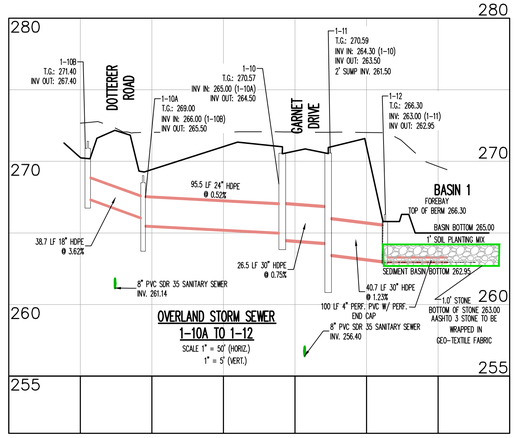
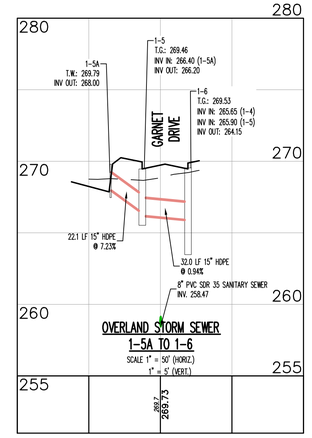
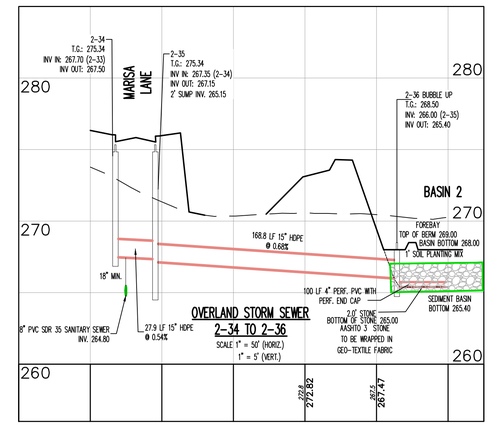
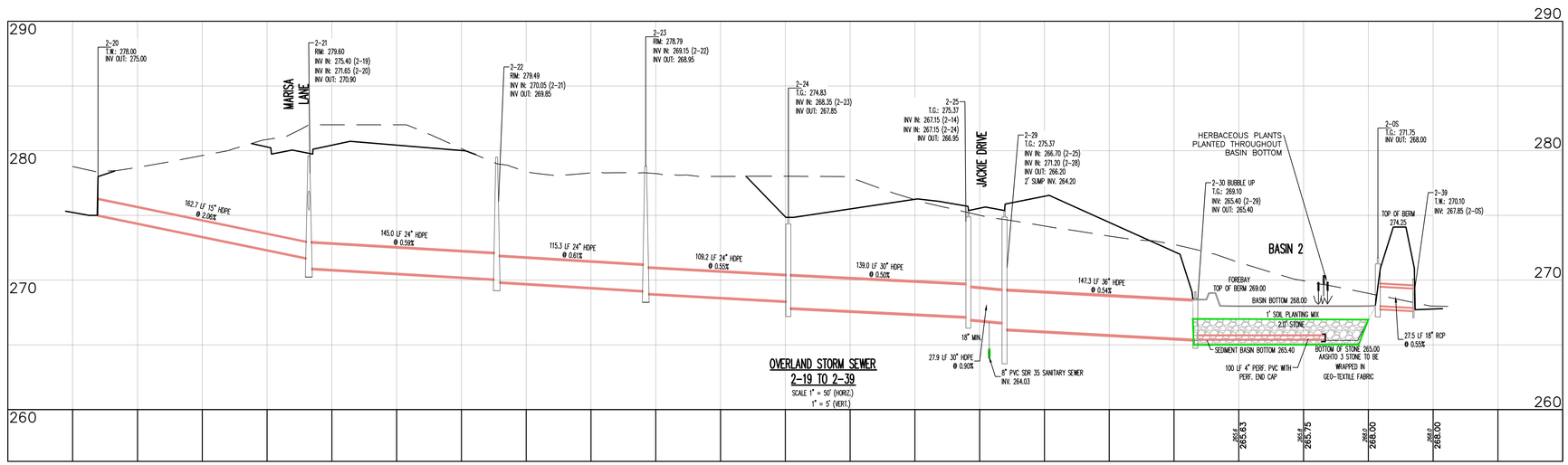


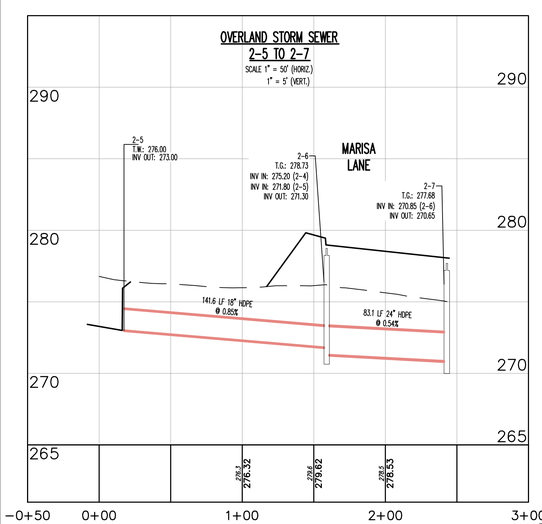


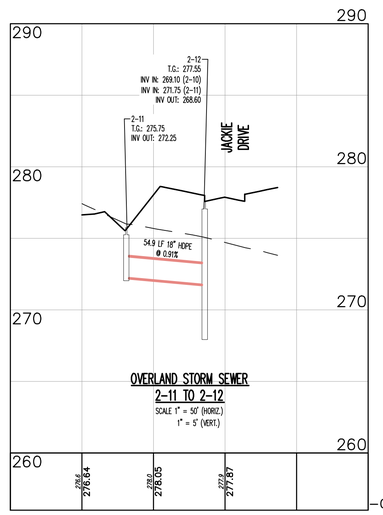


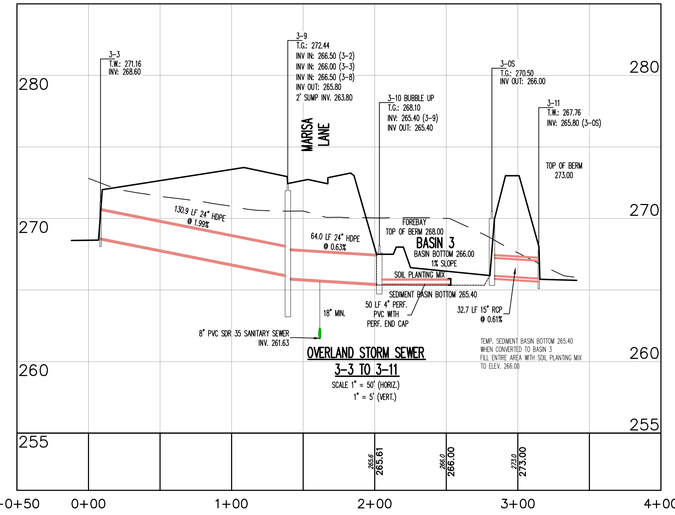


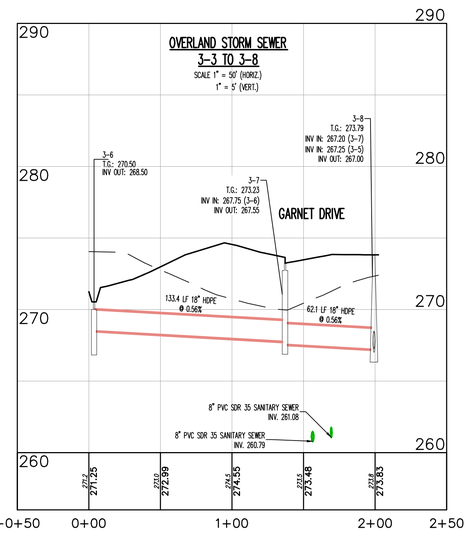


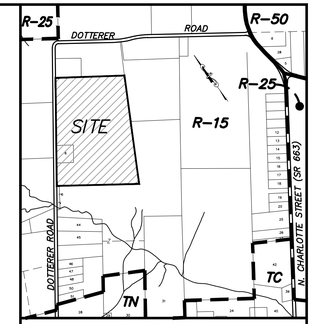
NOTE: BASIN BOTTOM SOIL PLANTING MIX = 25% COMPOST 75% TOP SOIL)











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SITUATED IN
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MONTGOMERY COUNTY, PENNSYLVANIA

TITLE
OVERLAND PROFILES

FINAL PLAN

SHEET NUMBER 14 / 36

SAM ERNEY 12/21/2010
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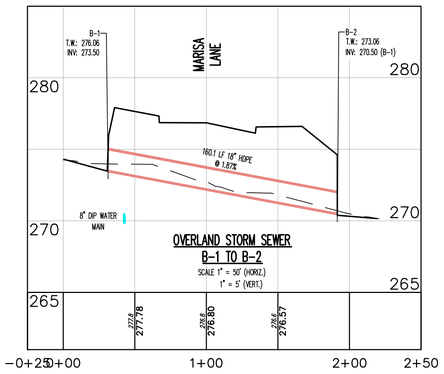

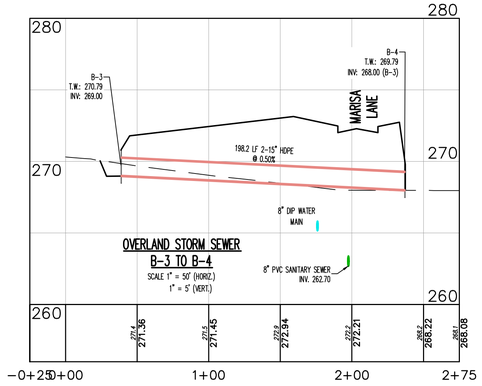

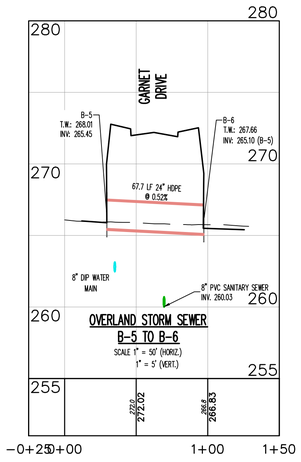

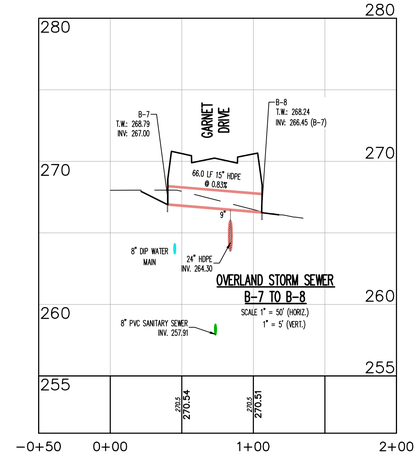

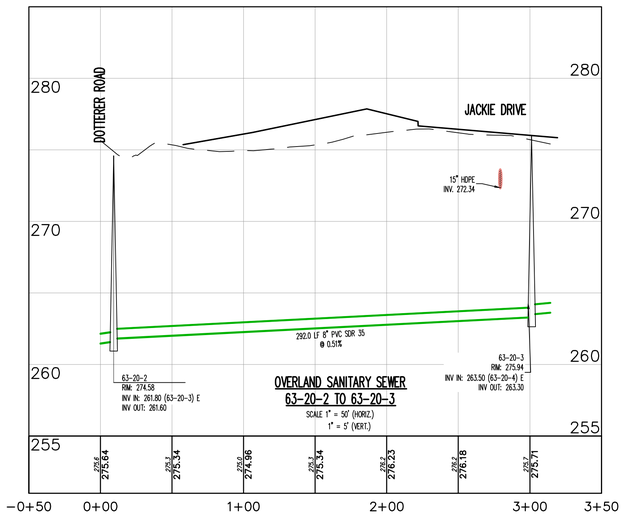

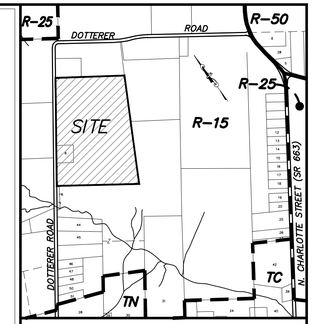

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TITLE
OVERLAND PROFILES

FINAL PLAN

SHEET NUMBER 15/36

SAM ERNEY 12/21/2010
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EROSION & SEDIMENTATION CONTROL NARRATIVE

GENERAL INFORMATION:

PROJECT NAME: HANOVER WOODS
LOCATION: DOTTERER ROAD
NEW HANOVER TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

OWNER IN EQUITY: HILLTOWN COVENTRY
1030 REED AVE, SUITE 100
WYOMISSING, PA 19610
PHONE: (610) 288-7700
PERSON REPONSIBLE: MIKE TULIO

PLAN PREPARER: BRIAN FOCHT, P.E.
VAN CLEEF ENGINEERING ASSOCIATES
4 WELLINGTON BOULEVARD
WYOMISSING, PA 19610
PHONE (610) 670-6630

THIS PROPOSED RESIDENTIAL COMMUNITY IS SITUATED IN NEW HANOVER TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA AND CONSISTS OF 65 PROPOSED SINGLE FAMILY RESIDENTIAL LOTS ON 21.7 ACRES (NET AREA). ACCESS DRIVES AND STORM SEWER SYSTEMS ARE PROPOSED TO COLLECT AND DIRECT FLOWS TO TWO PERMANENT ON-SITE DETENTION BASINS. CALCULATIONS FOR THE DETENTION BASIN CAN BE FOUND IN THE "STORMWATER MANAGEMENT REPORT". DURING CONSTRUCTION, DETENTION BASIN 2 SHALL BE USED AS A SEDIMENT BASIN FOR THE COLLECTION AND REMOVAL OF SEDIMENT. DETENTION BASIN 1 AND 3 IS TO BE USED AS A SEDIMENT TRAP DURING CONSTRUCTION.

EROSION CONTROL MEASURES CONSIST OF:
1.) PLACING TEMPORARY SEEDING ON DISTURBED AREAS AND ON TOPSOIL STOCKPILES AS NECESSARY TO PREVENT EROSION
2.) PLACING MULCH, NETTING AND SEED AS REQUIRED FOR RECURRING ERODED AREAS
3.) PLACING RIP-RAP APRONS AT STORM SEWER ENDWALLS

OTHER SEDIMENT CONTROL MEASURES (BMP's) CONSIST OF:
1.) INSTALLING SILT SOCKS FOR SMALLER AREAS OF SHEET FLOW
2.) PLACEMENT OF ROCK FILTERS IN AREAS OF CONCENTRATED FLOW
3.) PLACING INLET PROTECTION AT STORM GRATES
4.) CONSTRUCTING A ROCK CONSTRUCTION ENTRANCE TO PREVENT VEHICLES FROM TRACKING MUD ONTO THE EXISTING ROADS

THE SEQUENCE OF CONSTRUCTION SHALL BE DESCRIBED IN THE "CONSTRUCTION SEQUENCE" SHOWN BELOW. THIS PLAN HAS BEEN PREPARED BY BRIAN FOCHT, P.E. OF VAN CLEEF ENGINEERING ASSOCIATES. MR. FOCHT IS A PROFESSIONAL ENGINEER LICENSED IN THE COMMONWEALTH OF PENNSYLVANIA AND SPECIALIZES IN LAND DEVELOPMENT DESIGN.

CONSTRUCTION SEQUENCE

(NOTE: THE ANTICIPATED DEVELOPMENT SCHEDULE FOR CONSTRUCTION IS, TO BEGIN IN FALL OF 2013 AND BE COMPLETED BY SPRING 2015.)

1) ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. EACH STAGE SHALL BE COMPLETED IN COMPLIANCE WITH CHAPTER 102 REGULATIONS BEFORE ANY FOLLOWING STAGE IS INITIATED. CLEARING AND GRUBBING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH STAGE.
2) BEFORE IMPLEMENTING ANY REVISIONS 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 MONTGOMERY COUNTY CONSERVATION DISTRICT.
3) THE OPERATOR SHALL REMOVE FROM THE SITE, RECYCLE OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES IN ACCORDANCE WITH THE DEPARTMENTS SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA CODE 260.1 ET SEQ., 271.1 E. SEQ. AND 287.1 ET SEQ.
4) BEFORE DISPOSING OF SOIL OR RECEIVING BORROW FOR THE SITE, THE OPERATOR MUST ASSURE THAT EACH SPOIL OR BORROW AREA HAS AN EROSION AND SEDIMENT CONTROL PLAN APPROVED BY THE MONTGOMERY COUNTY CONSERVATION DISTRICT, AND WHICH IS BEING IMPLEMENTED AND MAINTAINED ACCORDING TO CHAPTER 102 REGULATIONS. THE OPERATOR SHALL ALSO NOTIFY THE MONTGOMERY COUNTY CONSERVATION DISTRICT IN WRITING OF ALL RECEIVING SPOIL AND BORROW AREAS WHEN THEY HAVE BEEN IDENTIFIED.
5) AT LEAST 7 DAYS PRIOR TO ANY EARTH DISTURBANCE ACTIVITIES, THE CONTRACTOR SHALL INVITE ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES, THE LANDOWNER, ALL APPROPRIATE MUNICIPAL OFFICIALS, AND THE MONTGOMERY COUNTY CONSERVATION DISTRICT TO ATTEND AN ON-SITE PRECONSTRUCTION MEETING. ALSO, AT LEAST 3 DAYS BEFORE STARTING ANY EARTH MOVING ACTIVITIES. CONTRACTORS SHALL NOTIFY THE PENNSYLVANIA ONE CALL SYSTEM INCORPORATED AT 1-800-242-1776 FOR BURIED UTILITIES LOCATIONS.
6) ALL TEMPORARY EROSION CONTROL FACILITIES ARE TO BE MAINTAINED BY THE DEVELOPER AND INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT.

NOTE: SEDIMENT BASIN 1 INCLUDING STORM SEWER AND STRUCTURES 1-10B TO 1-12 MUST BE INSTALLED AS PART OF DOTTERER ROAD IMPROVEMENTS. (SEE TYPICAL SEDIMENT TRAP/BASIN CONSTRUCTION SEQUENCE.)

HANOVER WOODS – PHASE I

7) IF WATERCOURSES OR WETLANDS MUST BE CROSSED FOR INSTALLATION OF CONTROLS PRIOR TO INSTALLATION OF THE PERMANENT CROSSING, A TEMPORARY CROSSING MUST BE CONSTRUCTED. SEE TEMPORARY ROAD CROSSING DETAIL.
8) PLACE ORANGE CONSTRUCTION FENCE AROUND AREAS NOT BE DISTURBED. CONSTRUCTION FENCE SHALL BE REPAIRED AND MAINTAINED THROUGHOUT CONSTRUCTION TO INSURE THE INTEGRITY OF THESE AREAS. FENCE MAY BE REMOVED ONCE ALL HEAVY MACHINERY ARE NO LONGER REQUIRED ON SITE.
9) INSTALL ROCK CONSTRUCTION ENTRANCES OFF OF DOTTERER ROAD ON MARISA LANE AS SHOWN ON THE PLAN.
10) INSTALL SILT SOCKS AS SHOWN ON THE PLAN.
11) CONSTRUCT TEMPORARY SEDIMENT/PERMANENT DETENTION BASIN 2. (SEE TYPICAL SEDIMENT TRAP/BASIN CONSTRUCTION SEQUENCE.)
12) PERFORM CLEARING AND GRUBBING OPERATIONS AS SHOWN ON THE PLANS.
13) STRIP AND STOCKPILE TOPSOIL. ALL TOPSOIL STOCKPILES MUST BE SEEDED AND MULCHED IMMEDIATELY AND THE DOWNSTREAM SIDE MUST BE INCLUDE SILT SOCKS.
14) ROUGH GRADE PROPOSED ROADS (MARISA LANE FROM DOTTERER ROAD TO STA. 9+50 AND JACKIE DRIVE) AND STABILIZE WITH STONE SUBBASE CONTINUOUSLY DURING CONSTRUCTION. CONTRACTOR TO ENSURE ALL APPLICABLE EROSION CONTROL DEVICES HAVE BEEN INSTALLED PRIOR TO THE START OF THIS WORK. CONSTRUCT WETLANDS CROSSING IN ACCORDANCE WITH STANDARD DETAILS.
15) SITE UTILITIES INCLUDING STORM SEWER, INLETS, HEADWALLS, OUTLET PROTECTION, SANITARY SEWER INCLUDING MANHOLES AND LATERAL, AND WATER MAINS AND WATER SERVICE LINES. IMMEDIATELY PLACE INLET PROTECTION DEVICES ON STORM SEWER INLETS AS SHOWN ON THE PLANS. INCLUDING STORM SEWERS AND STRUCTURES B-1 TO B-2, SANITARY SEWER FROM MH 63-20-1-8 APPROX. 100' TOWARDS MH 63-20-1-7 AND CAP AND STORM SEWER AND STRUCTURES 2-34 TO 2-36 AND LEADING FROM JACKIE DRIVE TO SEDIMENT BASIN 2. ALSO INSTALL THE SANITARY SEWER AND MANHOLES IN DOTTERER ROAD IF NOT ALREADING CONSTRUCTED.BUILDING CONSTRUCTION ON AN INDIVIDUAL LOT BY LOT BASIS FOR LOTS 1 TO 12 AND 34 TO 59 MAY COMMENCE (SEE TYPICAL BUILDING LOT CONSTRUCTION SEQUENCE AND APPROPRIATE BUILDING LOT DETAIL).
16) REMOVE STONE CONSTRUCTION ENTRANCE
17) INSTALL BITUMINOUS BASE COURSE FOR PROPOSED ROADS.
18) ONCE CONSTRUCTION HAS BEEN COMPLETED ON ALL LOTS, PLACE BITUMINOUS WEARING COURSE ON PROPOSED ROADS.

HANOVER WOODS – PHASE II

19) IF WATERCOURSES OR WETLANDS MUST BE CROSSED FOR INSTALLATION OF CONTROLS PRIOR TO INSTALLATION OF THE PERMANENT CROSSING, A TEMPORARY CROSSING MUST BE CONSTRUCTED. SEE TEMPORARY ROAD CROSSING DETAIL.
20) PLACE ORANGE CONSTRUCTION FENCE AROUND AREAS NOT BE DISTURBED. CONSTRUCTION FENCE SHALL BE REPAIRED AND MAINTAINED THROUGHOUT CONSTRUCTION TO INSURE THE INTEGRITY OF THESE AREAS. FENCE MAY BE REMOVED ONCE ALL HEAVY MACHINERY ARE NO LONGER REQUIRED ON SITE.
21) INSTALL ROCK CONSTRUCTION ENTRANCES OFF OF DOTTERER ROAD ON GARNETT DRIVE AS SHOWN ON THE PLAN.
22) INSTALL SILT SOCKS AS SHOWN ON THE PLAN.
23) CONSTRUCT TEMPORARY SEDIMENT/PERMANENT DETENTION BASIN 1 AND 3. (SEE TYPICAL SEDIMENT TRAP/BASIN CONSTRUCTION SEQUENCE.)
24) PERFORM CLEARING AND GRUBBING OPERATIONS AS SHOWN ON THE PLANS.
25) STRIP AND STOCKPILE TOPSOIL. ALL TOPSOIL STOCKPILES MUST BE SEEDED AND MULCHED IMMEDIATELY AND THE DOWNSTREAM SIDE MUST BE INCLUDE SILT SOCKS.
26) ROUGH GRADE PROPOSED ROADS (MARISA LANE FROM STA 9+50 TO GARNET DRIVE AND GARNET DRIVE) AND STABILIZE WITH STONE SUBBASE CONTINUOUSLY DURING CONSTRUCTION. CONTRACTOR TO ENSURE ALL APPLICABLE EROSION CONTROL DEVICES HAVE BEEN INSTALLED PRIOR TO THE START OF THIS WORK. CONSTRUCT WETLANDS CROSSING IN ACCORDANCE WITH STANDARD DETAILS.
27) INSTALL SITE UTILITIES INCLUDING STORM SEWER, INLETS, HEADWALLS, OUTLET PROTECTION, SANITARY SEWER INCLUDING MANHOLES AND LATERAL, AND WATER MAINS AND WATER SERVICE LINES. IMMEDIATELY PLACE INLET PROTECTION DEVICES ON STORM SEWER INLETS AS SHOWN ON THE PLANS.
28) BUILDING CONSTRUCTION ON AN INDIVIDUAL LOT BY LOT BASIS FOR LOTS 13 TO 33 AND 60 TO 65 MAY COMMENCE (SEE TYPICAL BUILDING LOT CONSTRUCTION SEQUENCE AND APPROPRIATE BUILDING LOT DETAIL).
29) REMOVE STONE CONSTRUCTION ENTRANCE.
30) INSTALL BITUMINOUS BASE COURSE FOR PROPOSED ROADS.
31) ONCE CONSTRUCTION HAS BEEN COMPLETED ON ALL LOTS, PLACE BITUMINOUS WEARING COURSE ON PROPOSED ROADS.
32) REMOVE ALL SEDIMENT FROM BASINS 1, 2 AND 3 AFTER (70% UNIFORM GROWTH) FINAL SITE STABILIZATION HAS TAKEN PLACE. CONVERT SEDIMENT BASINS 1, 2 AND 3 TO DETENTION BASINS AND REMOVE TEMPORARY RISER FROM BASINS AND INSTALL ORIFICE PLATE ON PERMANENT OUTLET STRUCTURE. THE 1" PERFORATIONS IN THE PERMANENT BASIN 2 OUTLET STRUCTURE ARE TO BE SEALED AT THIS TIME. RE-GRADE, SEED, AND MULCH ALL DISTURBED AREAS. RE-GRADE, SEED, AND MULCH ALL DISTURBED AREAS. IMMEDIATELY PERMANENTLY STABILIZE THE SWALE BY LINING WITH THE SPECIFIED EROSION CONTROL BLANKET AND SEEDING.
33) ANY AREA WHERE ACTIVE GRADING HAS CEASED WHICH WILL ALLOW SOIL TO BE EXPOSED MUST BE TEMPORARILY SEEDED AND MULCHED.
34) AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENTATION CONTROLS MUST BE REMOVED. AREAS DISTURBED DURING REMOVAL OF THE CONTROLS MUST BE STABILIZED IMMEDIATELY.

DOTTERER ROAD

1) THE EXISTING STONE/GRAVEL ROAD SHALL BE UTILIZED FOR ALL ACCESS TO PROJECT AREA. ROAD USE SHALL BE RESTRICTED TO LOCAL TRAFFIC ONLY DURING CONSTRUCTION, HOWEVER, ACCESS TO EXISTING DRIVEWAYS/RESIDENCES WITHIN THE WORK AREA MUST BE MAINTAINED TO THE GREATEST EXTENT POSSIBLE.
2) THE LIMITS OF DISTURBANCE FOR THE ROADWAY IMPROVEMENT PROJECT SHALL BE MARKED WITH WOODEN STAKES AT INTERVALS OF NOT GREATER THAN 100-FEET. ALL TREES TO BE REMOVED SHALL BE MARKED IN THE FIELD PRIOR TO CLEARING OPERATIONS.
3) PLACE ALL SILT FENCE, ROCK FILTERS, AND INLET PROTECTION AS DEPICTED ON PLANS. PERFORM TREE CLEARING AND GRUBBING AS NECESSARY.
4) STRIP TOPSOIL ALONG BOTH SIDES OF ROADWAY WITHIN WORK AREA. STOCKPILE TOPSOIL WITHIN 'HANOVER WOODS' DEVELOPMENT AT DESIGNATED AND APPROVED STOCKPILE LOCATIONS.
5) CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY(S) TO PERFORM UTILITY POLE RELOCATIONS NECESSARY FOR ROAD IMPROVEMENTS. COMPLETE POLE AND UTILITY RELOCATIONS.
6) REMOVE STORM PIPING AND STRUCTURES LABELED TO BE REMOVED. CONSTRUCT ALL PROPOSED STORM SEWER FACILITIES. RELOCATE OR PLACE INLET PROTECTION AT NEW INLETS IMMEDIATELY. CONSTRUCT ALL PROPOSED UNDERGROUND UTILITIES.
7) REPLACE EXISTING CULVERTS (STA. 517+50) AS PER "STREAM CROSSING NOTES", "STREAM CROSSING STAGING" (BELOW), AND IN ACCORDANCE WITH THE ISSUED PADEP GENERAL PERMIT.
8) ROUGH GRADE EXISTING ROADWAY SURFACE (STONE/GRAVEL) TO DESIGN SUBGRADE. PERFORM ALL BULK CUTS AND FILLS. COMPLETE ALL MODIFICATIONS TO EXISTING DRIVEWAYS (AS SHOWN) WITHIN WORK AREA.
9) COMPLETE ALL PROPOSED GRADING ALONG ROADWAY INCLUDING CONSTRUCTION OF PROPOSED DRAINAGE SWALES. REPLACE TOPSOIL TO ALL LAWN AREAS. FINISH GRADE AND APPLY PERMANENT SEED AND MULCH. INSTALL EROSION PROTECTION BLANKETS IN SWALES IMMEDIATELY.
10) INSTALL STONE BASE COURSE AND BITUMINOUS BASE COURSE TO ROADWAY AND MODIFIED DRIVEWAYS WITHIN WORK AREA.
11) AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM UNIFORM 70% PERENNIAL VEGETATION 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.
12) AFTER ALL DISTURBED AREAS HAVE ACHIEVED FINAL STABILIZATION, TEMPORARY EROSION AND SEDIMENT BMP CONTROLS MAY BE REMOVED. AREAS DISTURBED DURING REMOVAL OF THE BMPS MUST BE STABILIZED IMMEDIATELY. DISTRIBUTE SEDIMENT COLLECTED IN SILT FENCING AND INLET FILTERS OVER LAWN AREAS WITHIN THE WORK AREA.
14) INSTALL BITUMINOUS WEARING COURSE ON ROADWAY AND DRIVEWAYS. INSTALL ALL ROADWAY SIGNAGE AND PAVEMENT MARKINGS TO THE SATISFACTION OF TOWNSHIP ENGINEER.

LAYFIELD PARK

1) ACCESS TO THE LAYFIELD PARK FOR CONSTRUCTION SHALL BE THROUGH THE HANOVER WOODS DEVELOPMENT.
2) INSTALL ROCK CONSTRUCTION ENTRANCE PLACE ALL SILT SOCKS, ROCK FILTERS, AND INLET PROTECTION AS DEPICTED ON PLANS. PERFORM TREE CLEARING AND GRUBBING AS NECESSARY.
3) STRIP TOPSOIL AS REQUIRED TO CONSTRUCT THE TWO FIELDS AND PARKING LOT. STOCKPILE TOPSOIL AT DESIGNATED AND APPROVED STOCKPILE LOCATIONS.
4) ROUGH GRADE UNDER THE FIELDS AND PARKING AREA TO SUBGRADE. INSTALL INLETS, GEOTEXTILE FABRIC, STORM SEWER DISPERSION PIPING AS REQUIRED AND SHOWN ON THE PLANS. INLET PROTECTION SHOULD ALSO BE INSTALLED.
5) COMPLETE ALL PROPOSED GRADING FOR THE FIELD AND PARKING LOT CONSTRUCTION. INCLUDING CONSTRUCTION OF PROPOSED DRAINAGE SWALES BIO-INFILTRATION AREA AND RETENTIVE GRADING AREAS. REPLACE TOPSOIL TO ALL LAWN AREAS. FINISH GRADE AND APPLY PERMANENT SEED AND MULCH. INSTALL EROSION PROTECTION BLANKETS IN SWALES IMMEDIATELY.

TYPICAL BUILDING LOT CONSTRUCTION SEQUENCE

A. INSTALL INDIVIDUAL DRIVEWAY ROCK CONSTRUCTION ENTRANCES.
B. ROUGH GRADE BUILDING PADS.
C. CONSTRUCT LOT DRIVEWAYS UP TO AND INCLUDING STONE BASE.
D. INSTALL UTILITIES ON AN INDIVIDUAL LOT-BY LOT BASIS TO EACH HOUSE.
E. PAVE LOT DRIVEWAYS UPON COMPLETION OF HEAVY MACHINERY OPERATION.
F. UPON COMPLETION OF THE EXTERIOR OF EACH DWELLING FINE GRADE, TOPSOIL AND PERMANENTLY STABILIZE AREAS NOT TO BE PAVED.

TYPICAL SEDIMENT BASIN/SEDIMENT TRAP CONSTRUCTION SEQUENCE

A. EXCAVATE BASINS/TRAPS AND OUTLET ENDWALLS, OUTLET EMERGENCY STRUCTURES, AND TEMPORARY RISERS. INSTALL TEMPORARY LINING ON EMERGENCY SPILLWAYS. TEMPORARY LINING OF THE SPILLWAY CREST SHALL REMAIN UNTIL THE SITE IS FULLY STABILIZED.
B. INSTALL PROPOSED OUTLET PIPES, RIPRAP, PERMANENT OUTLET STRUCTURE, TEMPORARY BAFFLES, AND STORM SEWER RUNS AND STRUCTURES LEADING TO SEDIMENT BASINS AND SEDIMENT TRAPS.
C. SPREAD TOPSOIL OVER BASIN AND TRAP AREAS. SEED AND MULCH WITH PERMANENT SEED MIXTURE.
D. INSURE BASIN/TRAP OUTLETS ARE FUNCTIONAL AND STABILIZED PRIOR TO DISTURBING ADDITIONAL SITE AREA. STABILIZE ALL AREAS DISTURBED AS A RESULT OF THE BASIN/TRAP INSTALLATION.
E. TOPSOIL FROM THE REMAINDER OF THE SITE MAY NOT BE DISTURBED UNTIL THE ABOVE BASINS/TRAPS ARE INSTALLED AND FUNCTIONING PROPERLY.

TYPICAL CULVERT INSTALLATION CONSTRUCTION SEQUENCE

A. INSTALL TEMPORARY COFFER DAMS, PUMP BYPASSES AND FILTER BAG PER SPECIFIED TYPICAL STREAM CROSSING DETAIL.
B. ONCE COFFERDAM AND PUMP BYPASSES ARE INSTALLED AND FUNCTIONING PROPERLY, INSTALL CULVERT PIPE(S).
C. PLACE/BACKFILL STONE BEDDING TO A MINIMUM AMOUNT THAT IS SHOWN IN THE BEDDING AND BACKFILL DETAIL.
D. PLACE ADEQUATE FILL OF APPROPRIATE MATERIAL (PER TRENCH RESTORATION DETAIL) AND TAPER TO FORM RAMPS SUFFICIENT ENOUGH TO ALLOW THE TRAVERSING OF HEAVY EQUIPMENT.
E. SEED AND STABILIZE ALL DISTURBED BARE SOIL AREAS THAT ARE NOT PART OF THE TRAVERSABLE AREA (STONE/ROAD) SO AS TO HELP MINIMIZE UNNECESSARY SOIL POLLUTION.
F. REMOVE COFFER DAM, PUMP BYPASSES AND FILTER BAG.

SEQUENCE FOR INDIVIDUAL BMP INSTALLATION

INFILTRATION BASIN CONSTRUCTION SEQUENCE:

1. PROTECT INFILTRATION BASIN FROM COMPACTION PRIOR TO INSTALLATION.
2. IF POSSIBLE, INSTALL INFILTRATION BASIN DURING LATER PHASES OF SITE CONSTRUCTION TO PREVENT SEDIMENTATION AND/OR DAMAGE FROM CONSTRUCTION ACTIVITY. AFTER INSTALLATION, PREVENT SEDIMENT-LADEN WATER FROM ENTERING INLETS AND PIPES.
3. INSTALL AND MAINTAIN PROPER EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION.
4. IF NECESSARY, EXCAVATE INFILTRATION BASIN BOTTOM TO AN UNCOMPACTED SUBGRADE FREE FROM ROCKS AND DEBRIS. DO NOT COMPACT SUBGRADE.
5. INSTALL OUTLET CONTROL STRUCTURES.
6. SEED AND STABILIZE TOPSOIL. (VEGETATE IF APPROPRIATE WITH NATIVE PLANTINGS).
7. DO NOT REMOVE INLET PROTECTION OR OTHER EROSION AND SEDIMENT CONTROL MEASURES UNTIL SITE IS FULLY STABILIZED.

SUBSURFACE INFILTRATION BED CONSTRUCTION SEQUENCE:

1. DUE TO THE NATURE OF CONSTRUCTION SITES, SUBSURFACE INFILTRATION SHOULD BE INSTALLED TOWARDS THE END OF THE CONSTRUCTION PERIOD, IF POSSIBLE. (INFILTRATION BEDS MAY BE USED AS TEMPORARY SEDIMENT BASINS OR TRAPS AS DISCUSSED ABOVE).
2. INSTALL AND MAINTAIN ADEQUATE EROSION AND SEDIMENT CONTROL MEASURES (AS PER THE PA EROSION AND SEDIMENTATION CONTROL PROGRAM MANUAL) DURING CONSTRUCTION.
3. THE EXISTING SUBGRADE UNDER THE BED AREAS SHOULD NOT BE COMPACTED OR SUBJECT TO EXCESSIVE CONSTRUCTION EQUIPMENT TRAFFIC PRIOR TO GEOTEXTILE AND STONE BED PLACEMENT.
4. WHERE EROSION OF SUBGRADE HAS CAUSED ACCUMULATION OF FINE MATERIALS AND/OR SURFACE PONDING, THIS MATERIAL SHOULD BE REMOVED WITH LIGHT EQUIPMENT AND THE UNDERLYING SOILS SCARIFIED TO A MINIMUM OF 6 INCHES WITH A YORK RATE (OR EQUIVALENT) AND LIGHT TRACTOR. ALL FINE GRADING SHOULD BE DONE BY HAND. ALL BED BOTTOMS SHOULD BE AT LEVEL GRADE.
5. EARTHEN BERMS (IF USED) BETWEEN INFILTRATION BEDS SHOULD BE LEFT IN PLACE DURING EXCAVATION. THESE BERMS DO NOT REQUIRE COMPACTION IF PROVEN STABLE DURING CONSTRUCTION.
6. INSTALL UPSTREAM AND DOWNSTREAM CONTROL STRUCTURES, CLEANOUTS, PERFORATED PIPING, AND ALL OTHER NECESSARY STORMWATER STRUCTURES.
7. GEOTEXTILE AND BED AGGREGATE SHOULD BE PLACED IMMEDIATELY AFTER APPROVAL OF SUBGRADE PREPARATION AND INSTALLATION OF STRUCTURES. GEOTEXTILE SHOULD BE PLACED IN ACCORDANCE WITH MANUFACTURER'S STANDARDS AND RECOMMENDATIONS. ADJACENT STRIPS OF GEOTEXTILE SHOULD OVERLAP A MINIMUM OF 16 INCHES. IT SHOULD ALSO BE SECURED AT LEAST 4 FEET OUTSIDE OF BED IN ORDER TO PREVENT ANY RUNOFF OF SEDIMENT FROM ENTERING THE STORAGE BED. THIS EDGE STRIP SHOULD REMAIN IN PLACE UNTIL ALL BARE SOILS CONTIGUOUS TO BEDS ARE STABILIZED AND VEGETATED. AS THE SITE IS FULLY STABILIZED, EXCESS GEOTEXTILE ALONG BED EDGES CAN BE CUT BACK TO EDGE OF THE BED.
8. CLEAN-WASHED, UNIFORMLY GRADED AGGREGATE SHOULD BE PLACED IN THE BED IN MAXIMUM 8-INCH LIFTS. EACH LAYER SHOULD BE LIGHTLY COMPACTED, WITH CONSTRUCTION EQUIPMENT KEPT OFF THE BED BOTTOM AS MUCH AS POSSIBLE.
9. APPROVED SOIL MEDIA SHOULD BE PLACE OVER INFILTRATION BED IN MAXIMUM 6 INCH LIFTS.
10. SEED AND STABILIZE TOPSOIL.
11. DO NOT REMOVE INLET PROTECTION OR OTHER EROSION AND SEDIMENT CONTROL MEASURES UNTIL SITE IS FULLY STABILIZED.

RAIN GARDEN/BIORETENTION CONSTRUCTION SEQUENCE:

1. INSTALL TEMPORARY SEDIMENT CONTROL BMP'S AS SHOWN ON THE PLANS.
2. COMPLETE SITE GRADING. IF APPLICABLE, CONSTRUCT CURB CUTS OR OTHER INFLOW ENTRANCE BUT PROVIDE PROTECTION SO THAT DAMAGE IS PROHIBITED FROM ENTERING CONSTRUCTION AREA.
3. STABILIZE GRADING WITHIN THE LIMIT OF DISTURBANCE EXCEPT WITHIN RAIN GARDEN AREA. RAIN GARDEN BED AREAS MAY BE USED AS TEMPORARY SEDIMENT TRAPS PROVIDED THAT THE PROPOSED FINISH ELEVATION OF THE BED IS 12 INCHES LOWER THAT THE BOTTOM ELEVATION OF THE SEDIMENT TRAP.
4. EXCAVATE RAIN GARDEN TO PROPOSED INVERT DEPTH AND SCARIFY THE EXISTING SOIL SURFACES. DO NOT COMPACT IN-SITU SOILS.
5. BACKFILL RAIN GARDEN WITH AMENDED SOILS AS SHOWN ON PLANS AND SPECIFICATIONS. OVERFILLING IS RECOMMENDED TO ACCOUNT FOR SETTLEMENT. LIGHT HAND TAMPING IS ACCEPTABLE IF NECESSARY.
6. PRESOAK THE PLANTING SOIL PRIOR TO PLANING VEGETATION TO AID IN SETTLEMENT.
7. COMPLETE FINAL GRADING TO ACHIEVE PROPOSED DESIGN ELEVATIONS, LEAVING SPACE FOR UPPER LAYER OF COMPOST, MULCH OR TOPSOIL AS SPECIFIED ON PLANS.
8. PLANT VEGETATION ACCORDING TO PLANTING PLAN.
9. MULCH AND INSTALL EROSION PROTECTION AT SURFACE FLOW ENTRANCES WHERE NECESSARY.

RETENTIVE GRADING CONSTRUCTION SEQUENCE:

1. INSTALL TEMPORARY SEDIMENT CONTROL BMP'S AS SHOWN ON THE PLANS.
2. COMPLETE SITE GRADING.
3. STABILIZE GRADING WITHIN THE LIMIT OF DISTURBANCE EXCEPT WITHIN RETENTIVE GRADING LIMITS.
4. EXCAVATE RETENTIVE GRADING AREA AND INSTALL BERM AND SPEILLWAYS TO THE PROPOSED DEPTH AND SCARIFY THE EXISTING SOIL SURFACES. DO NOT COMPACT IN-SITU SOILS.
5. BACKFILL RAIN GARDEN WITH SOILS MIX SPECIFIED ON THE PLANS AND SPECIFICATIONS. OVERFILLING IS RECOMMENDED TO ACCOUNT FOR SETTLEMENT. LIGHT HAND TAMPING IS ACCEPTABLE IF NECESSARY.
6. PRESOAK THE PLANTING SOIL PRIOR TO PLANING VEGETATION TO AID IN SETTLEMENT.
7. COMPLETE FINAL GRADING TO ACHIEVE PROPOSED DESIGN ELEVATIONS, LEAVING SPACE FOR UPPER LAYER OF COMPOST, MULCH OR TOPSOIL AS SPECIFIED ON PLANS.
8. PLANT VEGETATION ACCORDING TO PLANTING PLAN.
9. MULCH AND INSTALL EROSION PROTECTION AT SURFACE FLOW ENTRANCES WHERE NECESSARY.

VEGETATED SWALE CONSTRUCTION SEQUENCE:

1. BEGIN VEGETATED SWALE CONSTRUCTION ONLY WHEN THE UPGRADIENT TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES ARE IN PLACE. VEGETATED SWALES SHOULD BE CONSTRUCTED AND STABILIZED EARLY IN THE CONSTRUCTION SCHEDULE, PREFERABLY BEFORE MASS EARTHWORK AND PAVING INCREASE THE RATE AND VOLUME OF RUNOFF. (EROSION AND SEDIMENT CONTROL METHODS SHALL ADHERE TO THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION'S EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL, MARCH 2000 OR LATEST EDITION.)
2. ROUGH GRADE THE VEGETATED SWALE. EQUIPMENT SHALL AVOID EXCESSIVE COMPACTION AND/OR LAND DISTURBANCE. EXCAVATING EQUIPMENT SHOULD OPERATE FROM THE SIDE OF THE SWALE AND NEVER ON THE BOTTOM. IF EXCAVATION LEADS TO SUBSTANTIAL COMPACTION OF THE SUBGRADE (WHERE AN INFILTRATION TRENCH IS NOT PROPOSED), 18 INCHES SHALL BE REMOVED AND REPLACED WITH A BLEND OF TOPSOIL AND SAND TO PROMOTE INFILTRATION AND BIOLOGICAL GROWTH. AT THE VERY LEAST, TOPSOIL SHALL BE THOROUGHLY DEEP PLOWED INTO THE SUBGRADE IN ORDER TO PENETRATE THE COMPACTED ZONE AND PROMOTE AERATION AND THE FORMATION OF MACROPORES. FOLLOWING THIS, THE AREA SHOULD BE DISKED PRIOR TO FINAL GRADING OF TOPSOIL.
3. CONSTRUCT CHECK DAMS, IF REQUIRED.
4. FINE GRADE THE VEGETATED SWALE. ACCURATE GRADING IS CRUCIAL FOR SWALES. EVEN THE SMALLEST NONCONFORMITIES MAY COMPROMISE FLOW CONDITIONS.
5. SEED, VEGETATE AND INSTALL PROTECTIVE LINING AS PER APPROVED PLANS AND ACCORDING TO FINAL PLANTING LIST. PLANT THE SWALE AT A TIME OF YEAR WHEN SUCCESSFUL ESTABLISHMENT WITHOUT IRRIGATION IS MOST LIKELY. HOWEVER, TEMPORARY IRRIGATION MAY BE NEEDED IN PERIODS OF LITTLE RAIN OR DROUGHT. VEGETATION SHOULD BE ESTABLISHED AS SOON AS POSSIBLE TO PREVENT EROSION AND SCOUR.
6. ONCE ALL TRIBUTARY AREAS ARE SUFFICIENTLY STABILIZED, REMOVE TEMPORARY EROSION AND SEDIMENT CONTROLS. IT IS VERY IMPORTANT THAT THE SWALE BE STABILIZED BEFORE RECEIVING UPLAND STORMWATER FLOW.
7. FOLLOWING MAINTENANCE GUIDELINES, AS DISCUSSED IN PENNSYLVANIA STORMWATER BEST MANAGEMENT PRACTICES MANUAL.

NOTE: IF A VEGETATED SWALE IS USED FOR RUNOFF CONVEYANCE DURING CONSTRUCTION, IT SHOULD BE REGRADED AND RESEEDED IMMEDIATELY AFTER CONSTRUCTION AND STABILIZATION HAS OCCURRED. ANY DAMAGE AREAS SHOULD BE FULLY RESTORED TO ENSURE FUTURE FUNCTIONALITY OF THE SWALE.

GENERAL EROSION & SEDIMENT CONTROL NOTES

1. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE OR AFTER ANY STAGE OR PHASE OF AN ACTIVITY, THE OPERATOR SHALL STABILIZE ANY AREA DISTURBED BY THE ACTIVITIES. DURING NON-GERMINATING PERIODS, MULCH MUST BE APPLIED AT THE SPECIFIED RATES. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE REDISTURBED WITHIN 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 REDISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS.
2. THE PERMITTEE OR CO_PERMITTEE SHALL CONTACT THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT AT LEAST SEVEN DAYS BEFORE CONSTRUCTION IS TO BEGIN TO DETERMINE IF A PRECONSTRUCTION CONFERENCE IS REQUIRED. THE PERMITTEE, CO_PERMITTEE, AND OTHERS UNDERTAKING THE EARTH DISTURBANCE ACTIVITY MUST ATTEND A PRECONSTRUCTION CONFERENCE WHEN REQUESTED BY THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT. THE PERMITTEE OR CO-PERMITTEE MUST BRING A COPY OF THEIR NPDES PERMIT, A COPY OF THE STAMPED PLAN FROM THE CONSERVATION DISTRICT, AND ALL ASSOCIATED DEPARTMENT APPROVALS/PERMITS WHICH MUST BE AVAILABLE AT THE CONFERENCE UPON REQUEST. ALSO, AT LEAST 3 DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTACTORS INVOLVED IN THOSE ACTIVITIES SHALL NOTIFY THE PENNSYLVANIA ONE CALL SYSTEM INCORPORATED AT 1-800-242-1776 FOR BURIED UTILITIES LOCATIONS.
3. UNTIL THE SITE ACHIEVES FINAL STABILIZATION, THE PERMITTEEE AND COPERMITTEE SHALL ASSURE THAT THE BEST MANAGEMENT PRACTICES ARE IMPLEMENTED, OPERATED AND MAINTAINED PROPERLY AND COMPLETELY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL BMP FACILITIES AND MEASURES AFTER EACH RUNOFF EVENT AND EACH WEEK. THE PERMITTEE AND COPPERMITTEE SHALL ALSO MAINTAIN AND MAKE AVAILABLE TO THE MONTGOMERY COUNTY CONSERVATION DISTRICT COMPLETE, WRITTEN LOGS OF ALL THOSE INSPECTIONS. ALL MAINTENANCE WORK INCLUDING CLEARING, REPAIR, REPLACEMENT, REGRADING, RESEEDING AND RESTABILIZATION SHALL BE PERFORMED IMMEDIATELY.
4. EROSION AND SEDIMENTATION CONTROLS MUST BE CONSTRUCTED, STABILIZED, AND FUNCTIONAL BEFORE SITE DISTURBANCE WITHIN THE TRIBUTARY AREAS OF THOSE CONTROLS.
5. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE CONSTRUCTION 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.
6. BEFORE INITIATING ANY REVISION TO THE APPROVED EROSION AND SEDIMENTATION 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 MONTGOMERY COUNTY CONSERVATION DISTRICT.
7. THE OPERATOR SHALL REMOVE FROM THE SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA CODE 260.1 et seq., 271.1 et seq., AND 287.1 et seq. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP OR DISCHARGE MATERIAL OR WASTE AT THE SITE.
8. THE OPERATOR SHALL ASSURE THAT AN EROSION AND SEDIMENT CONTROL PLAN HAS BEEN PREPARED, APPROVED BY THE M.C.C.D. AND IS BEING IMPLEMENTED AND MAINTAINED FOR ALL SOIL AND/OR ROCK SPOIL AND BORROW AREAS, REGARDLESS OF THEIR LOCATIONS.
9. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENTATION CONTROLS MUST BE REMOVED. AREAS DISTURBED DURING REMOVAL OF CONTROLS MUST BE STABILIZED IMMEDIATELY. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING OR OTHER MOVEMENTS.
10. THE OPERATOR SHALL ASSURE THAT THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN IS PROPERLY AND COMPLETELY IMPLEMENTED.
11. UNTIL THE SITE ACHIEVES FINAL STABILIZATION, THE OPERATOR SHALL ASSURE THAT THE BEST MANAGEMENT PRACTICES ARE IMPLEMENTED, OPERATED, AND MAINTAINED PROPERLY AND COMPLETELY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL BEST MANAGEMENT PRACTICE FACILITIES AND MEASURES AFTER EACH RUNOFF EVENT AND EACH WEEK. THE OPERATOR SHALL MAINTAIN AND MAKE AVAILABLE TO M.C.C.D. COMPLETE, WRITTEN INSPECTION LOGS OF ALL THOSE INSPECTIONS. ALL MAINTENANCE WORK, INCLUDING CLEANING, REPAIR, REPLACEMENT, REGRADING, AND RESTABILIZATION SHALL BE PERFORMED IMMEDIATELY.
12. MULCH WITH MULCH CONTROL NETTING OR EROSION CONTROL BLANKETS MUST BE INSTALLED ON ALL SLOPES 3:1 AND STEEPER.
13. TEMPORARY SEDIMENT BASIN CONSTRUCTION ITEMS CONSIST OF: EMERGENCY SPILLWAY, BAFFLE, TEMPORARY RISERS, TRASH RACK AND ANTI-VORTEX DEVICE AND EMERGENCY SPILLWAY PROTECTION.
14. PERMANENT DETENTION BASIN CONSTRUCTION ITEMS CONSIST OF CONVERSION OF TEMPORARY SPILLWAY PROTECTION TO PERMANENT SPILLWAY PROTECTION, INSTALLATION OF OUTLET STRUCTURE, REMOVING TEMPORARY RISER, AND INSTALLATION OF RIPRAP OUTLET PROTECTION.
15. ALL STRUCTURES ASSOCIATED WITH THE CONSTRUCTION OF SEDIMENT REMOVAL FACILITIES MUST BE ON SITE PRIOR TO EARTH DISTURBANCE.
16. ALL TOPSOIL STOCKPILES, EARTH BERMS, TEMPORARY SEDIMENTATION BASIN EMBANKMENTS AND CHANNELS MUST BE SEEDED AND MULCHED IMMEDIATELY. SILT FENCE MUST BE INCLUDED AROUND STOCKPILES ON THE DOWNSTREAM SIDE. STOCKPILE HEIGHT NOT TO EXCEED 35 FEET. STOCKPILE SLOPES MUST BE 2:1 OR FLATTER.
17. ONLY LIMITED UPSLOPE DISTURBANCE WILL BE PERMITTED TO PROVIDE ACCESS TO SEDIMENTATION BASINS, SEDIMENT TRAPS OR DIVERSION BERMS, DITCHES, SWALES AND TERRACES FOR GRADING AND ACQUIRING BORROW TO CONSTRUCT THOSE CONTROLS.
18. NO RIP-RAP APRONS WILL BE PLACED IN FOREBAYS WITHIN THE DETENTION BASIN. ALL OTHER RIP-RAP APRONS, ESPECIALLY APRONS FOR OUTLET STRUCTURE DISCHARGE ENDWALLS, WILL BE PLACED AT TIME OF ENDWALL CONSTRUCTION.
19. A WATER TRUCK WILL BE PROVIDED AS REQUIRED TO PREVENT DUST FROM LEAVING THE PROPERTY DURING DRY PERIODS OF CONSTRUCTION.
20. ALL SEWAGE DISPOSAL SYSTEMS THAT REQUIRE PROPOSED GRADING FOR EROSION CONTROL OR OVERALL CONSTRUCTION PURPOSE WILL BE INSTALLED PRIOR TO ANY EARTH DISTURBANCE. ADDITIONALLY, SUPER SILT FENCE WILL REMAIN AROUND THESE SYSTEM AT ALL TIMES UNTIL ALL CONSTRUCTION IS COMPLETED AND EARTH IS STABILIZED.
21. AT THE END OF EACH WORKING DAY, ANY SEDIMENT TRACKED OR CONVEYED ONTO A PUBLIC ROADWAY WILL BE REMOVED AND REDEPOSITED ONTO THE CONSTRUCTION SITE. REMOVAL CAN BE COMPLETED THROUGH USE OF MECHANICAL OR HAND TOOLS, BUT MUST NEVER BE WASHED OFF THE ROAD BY USE OF WATER.
22. SEDIMENT REMOVED FROM E&SPC CONTROLS & FACILITIES SHALL BE DISPOSED OF IN LANDSCAPED AREAS OUTSIDE OF STEEP SLOPES, WETLANDS, FLOODPLAINS OR DRAINAGE SWALES AND IMMEDIATELY STABILIZED, OR PLACED IN TOPSOIL STOCKPILES.
23. ALL PUMPING OF SEDIMENT LADEN WATER SHALL BE THROUGH A DIRT BAG FILTRATION DEVICE, OR EQUIVALENT SEDIMENT REMOVAL FACILITY, OVER NON-DISTURBED VEGETATED AREAS. DISCHARGE POINTS SHOULD BE ESTABLISHED TO PROVIDE FOR MAXIMUM DISTANCE TO ACTIVE WATERWAYS.
24. SHOULD UNFORESEEN EROSIVE CONDITIONS DEVELOP DURING CONSTRUCTION, THE CONTRACTOR SHALL 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 SHALL BE HELD IN READINESS TO DEAL IMMEDIATELY WITH EMERGENCY PROBLEMS OF EROSION.
25. THE CONTRACTOR IS ADVISED TO BECOME THOROUGHLY FAMILIAR WITH THE PROVISIONS OF THE APPENDIX 64, EROSION CONTROL RULES AND REGULATIONS, TITLE 25, PART 1, DEPARTMENT OF ENVIRONMENTAL PROTECTION, SUBPART C, PROTECTION OF NATURAL RESOURCES, ARTICLE III, WATER RESOURCES, CHAPTER 102, EROSION CONTROL.
26. A COPY OF THIS EROSION AND SEDIMENTATION CONTROL REPORT AND PLANS MUST BE POSTED AT THE CONSTRUCTION SITE.
27. VEHICLES AND EQUIPMENT MAY NEITHER ENTER DIRECTLY TO NOR EXIT DIRECTLY FROM ANY OPEN SPACE AREAS, LOTS 1, 28 & 29 ONTO DOTTERER ROAD.
28. UPON THE INSTALLATION OR STABILIZATION OF ALL PERIMETER SEDIMENT CONTROL BMPS AND AT LEAST 3 DAYS PRIOR TO PROCEEDING WITH THE BULK EARTH DISTURBANCE ACTIVITIES, THE PERMITTEE OR CO-PERMITTEE SHALL PROVIDE NOTIFICATION TO THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT.
29. PERMITTEES AND CO_PERMITTEES ARE RESPONSIBLE FOR ENSURING THAT A LICENSED PROFESSIONAL HAVE OVERSIGHT RESPONSIBILITIES FOR THE DESIGN AND PROPER INSTALLATION OF BMPS IDENTIFIED IN THE PCSM PLAN PRIOR TO THE SUBMISSION OF THE NOT FOR THIS PERMIT. THE LICENSED PROFESSIONAL SHALL CERTIFY THAT THE BMPS IDENTIFIED IN THE PLAN HAVE BEEN INSTALLED IN ACCORDANCE WITH THE APPROVED PLAN THE INSTALLATION SCHEDULE OF PCSM BMPS AND MAINTENANCE REQUIREMENTS CONTAINED WITHIN THE APPROVED PCSM PLAN MUST BE FOLLOWED; AND FAILURE TO COMPLY WITH THE INSTALLATION SCHEDULE IS A VIOLATION OF THIS PERMIT, THE CLEAN STREAMS LAW, AND THE CLEAN WATER ACT.

GENERAL MAINTENANCE NOTES

A. SILT FENCE

1. THE FENCE INSTALLATION SHOULD BE INSPECTED AFTER EACH RUNOFF EVENT. ANY NECESSARY REPAIRS WILL BE MADE IMMEDIATELY.
2. ACCUMULATED SEDIMENTS WILL BE REMOVED AS REQUIRED TO KEEP THE FENCE FUNCTIONAL. IN ALL CASES REMOVE DEPOSITS WHERE ACCUMULATIONS REACH 1/2 THE ABOVE GROUND HEIGHT OF THE FENCE.
3. ANY FENCE SECTION WHICH HAS BE UNDERMINED OR TOPPED MUST BE IMMEDIATELY REPLACED WITH A ROCK FILTER OUTLET. SEE ROCK FILTER OUTLET DETAIL.
4. ADHERE TO ANY MANUFACTURERS RECOMMENDATIONS FOR REPLACING FILTER FABRIC FENCE DUE TO WEATHERING.
5. SUPER SILT FENCE TO BE USED IN PLACE OF LIMIT OF DISTURBANCE FENCING IN ADDITION TO THE PROPOSED SILT FENCE SHOWN ON THE PLANS.

B. CONSTRUCTION ENTRANCE

1. THE STRUCTURES THICKNESS WILL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSION BY ADDING ROCK. A STOCKPILE OF ROCK MATERIAL WILL BE MAINTAINED ON THE SITE FOR THIS PURPOSE. AT THE END OF EACH CONSTRUCTION DAY, ALL SEDIMENT DEPOSITED ON PUBLIC ROADWAYS WILL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE. WASHING THE ROADWAY WITH WATER IS NOT PERMITTED.

C. SEDIMENT BASIN/TRAP

1. SEDIMENT WILL BE REMOVED FROM THE SEDIMENTATION BASIN WHEN THE CAPACITY OF THE BASIN IS REDUCED BY 2000 CUBIC FEET PER ACRE OF PROJECT AREA TRIBUTARY TO IT.
2. A "CLEAN-OUT" ELEVATION WILL BE CLEARLY INDICATED ON THE PLAN DRAWINGS. THIS ELEVATION WILL BE IDENTIFIED BY APPROPRIATE STRUCTURE OR DEVICE WITHIN THE CONSTRUCTED BASIN TO INDICATE WHEN SEDIMENT SHOULD BE REMOVED.
3. SEDIMENT WILL NOT BE ALLOWED TO ENTER WATERS OF THE COMMONWEALTH DURING EITHER SEDIMENT REMOVAL OR DISPOSAL OPERATIONS.
(a) THE LOCATION OF SEDIMENT DISPOSAL AREAS MUST BE SHOWN ON A MAP WHICH IS PART OF THE EROSION AND SEDIMENT CONTROL PLAN.
4. SEDIMENTATION BASIN WILL BE PROTECTED FROM UNAUTHORIZED ACTS OF THIRD PARTIES.
5. SEDIMENT BASIN SHOULD NOT BE CONVERTED TO A PERMANENT DETENTION BASIN UNTIL CONTRIBUTING DRAINAGE AREA IS 70% STABILIZED.

D. ROCK FILTERS

1. ROCK FILTERS WILL BE REMOVED WHEN CLOGGED WITH SEDIMENTS. MATERIALS MUST BE WASHED COMPLETELY FREE OF ALL FOREIGN MATERIALS OR NEW ROCK USED TO REBUILD THE FILTER.

E. BASIN OUTLETS

1. 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.
2. ANY WETLAND PLANTINGS THAT APPEAR TO BE REMOVED OR DEAD WILL BE REPLACED BY HAND.
3. ANY SEDIMENT BUILDUP WILL BE REMOVED BY HAND.
4. ALL MAINTENANCE WILL BE PERFORMED BY THE LOT OWNER OR HOMEOWNERS ASSOCIATION. AT ANYTIME THE TOWNSHIP HAS THE RIGHT TO MAINTAIN THIS FACILITY AT THE OWNERS EXPENSE.

F. POST CONSTRUCTED STORMWATER MANAGEMENT BASIN (BMP)

1. ALL BASINS WILL BE CHECKED ON A REGULAR BASIS FOR DEBRIS BUILDUP (TRASH AND CONSTRUCTION DEBRIS) THAT MAY CAUSE CLOGGING OF ORIFICES WITHIN OUTLET STRUCTURES.

STREAM CROSSING AND WETLAND RESTORATION PROCEDURES

A. THE MAXIMUM SIZE UTILITY LINE ALLOWED IS 36 INCHES IN DIAMETER.

B. ALL UTILITY LINES UNDER STREAMBEDS SHALL BE LOCATED SUCH THAT THERE WILL BE A MINIMUM OF THREE (3) FEET OF COVER BETWEEN THE TOP OF THE UTILITY LINE OR ENCASEMENT AND THE LOWEST POINT IN THE NATURAL CONTOUR OF THE STREAMBED, UNLESS THE UTILITY IS IN ROCK, WHERE A MINIMUM COVER OF ONE (1) FOOT SHALL BE PROVIDED.

C. TRENCHES EXCAVATED FOR THE INSTALLATION OF UTILITY LINES SHALL BE THE MINIMUM WIDTH NECESSARY. AS SOON AS THE UTILITY LINE IS INSTALLED AND TESTED TO ASCERTAIN NO LEAKAGE, APPROPRIATE NEW OR PREVIOUSLY EXCAVATED BACKFILL MATERIAL SHALL BE PLACED IN THE TRENCH AND THE AREA RESTORED TO ITS ORIGINAL CONDITION AND ELEVATION AND STABILIZED. BACKFILL MATERIAL STORED IN CONNECTION WITH THE INSTALLATION MUST BE PROPERLY RETAINED OUT OF THE FLOODWAY SO AS TO PREVENT ITS DISCHARGE, WASHINGS OR RUNOFF FROM ENTERING THE WATERWAY PRIOR TO ITS PLACEMENT AS BACKFILL.

D. ADEQUATE MEASURES SHALL BE USED TO PREVENT SEDIMENTATION FROM THE TRENCH FROM ENTERING THE STREAM.

E. THE BACKFILLING OF THE TRENCH IN WHICH THE PIPE WILL BE LAID SHALL BE DONE SO AS TO ELIMINATE THE FORMATION OF A PERMANENT RIDGE IN THE STREAMBED.

F. DURING CONSTRUCTION ACTIVITIES, ALL PUBLIC AND PRIVATE PROPERTY INCLUDING EXISTING VEGETATION, LANDSCAPE FEATURES AND MONUMENTS WITHIN, ALONG AND ADJACENT TO THE WORK AREA, SHALL BE PROTECTED AND PRESERVED TO THE MAXIMUM DEGREE POSSIBLE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, PRECAUTIONS TAKEN TO MINIMIZE DAMAGE, EROSION, INJURY, OR DESTRUCTION; PREVENT POLLUTION; PROVIDE PROTECTION AL ALL TREES AND OTHER WOODY PLANTS; SPECIAL CARE BEING TAKEN TO PROTECT THE NATURAL VEGETATION AND SURROUNDINGS TO INCLUDE ALL NATURAL DRAINAGE WAYS, PONDS, LAKES, SWAMPS, WOODS AND FIELDS; AND STORAGE OF MATERIALS IN SUCH MANNER TO PREVENT LEACHING WHICH WOULD BE INJURIOUS TO SOILS AND TO PLANTS. PRECAUTIONS SHOULD BE TAKEN TO PREVENT DAMAGE TO PIPES, CONDUITS AND OTHER UNDERGROUND STRUCTURES.

G. OWNERS SHALL INVESTIGATE FOR DRINKING WATER INTAKES OR RESERVOIRS FOR PUBLIC AND PRIVATE WATER SUPPLIES WITHIN FIVE (5) MILES DOWNSTREAM OF THE CROSSING AND WRITTEN NOTICE SHALL BE GIVEN AT LEAST TEN (10) DAYS PRIOR TO CONSTRUCTION TO OPERATORS OF ANY SUCH INTAKES OR RESERVOIRS. OWNERS MUST NOTIFY PUBLIC AND PRIVATE WATER SUPPLY OPERATORS IMMEDIATELY AND NO LONGER THAN ONE (1) HOUR AFTER AN OCCURRENCE AT THE CROSSING SITE WHICH RESULTS IN THE RELEASE OF SUSPENDED SOLIDS AND TURBIDITY TO THE STREAM.

H. TIMBER MATS, PADS, OR OTHER SIMILAR DEVISED SHALL BE USED WHERE CROSSINGS OF WETLAND AREAS BY CONSTRUCTION EQUIPMENT CANNOT BE AVOIDED. ORIGINAL GRADES THOUGH WETLANDS MUST BE RESTORED AFTER TRENCHING AND BACKFILLING. ANY EXCESS FILL MATERIAL MUST BE REMOVED FROM THE WETLAND AND NOT SPREAD ON-SITE. MOUNDING OF FILL MATERIAL TO ALLOW FOR SETTLEMENT IN THE TRENCH WILL BE PERMITTED IN ACCORDANCE WITH BEST CONSTRUCTION METHODS.

I. DEPOSITION OF DREDGED OR EXCAVATED MATERIALS AND ALL EARTHWORK OPERATIONS WILL BE CARRIED OUT IN SUCH A WAY AS TO MINIMIZE EROSION OF THE MATERIAL AND PRECLUDE ITS ENTERING INTO ANY WETLAND ADJACENT TO THE UTILITY LINE CROSSING.

J. UTILITY LINE CROSSINGS OF STREAMS SHOULD BE ACCOMPLISHED SO THAT THE LINE IS AT A RIGHT ANGLE TO THE STREAM WHERE POSSIBLE, UNLESS THE CROSSING IS INSTALLED ON AN EXISTING BRIDGE.

K. WHENEVER POSSIBLE, IN ACCORDANCE WITH BEST CONSTRUCTION METHODS UTILITY LINE CROSSINGS ARE TO BE MADE "IN THE DRY" BY INSTALLING SANDBAG AND PLASTIC DAMS AND PIPING STREAM FLOW THROUGH THE AFFECTED AREA.

PRIOR TO THE USE OF EXPLOSIVES IN A WATERCOURSE OR BODY OF WATER, A WRITTEN PERMIT MUST BE SECURED FROM THE FISH AND BOAT COMMISSION, UNDER THE PENNSYLVANIA FISH AND BOAT CODE 30 PA. C.S. SECTION 2906 (RELATING TO PERMITS FOR USE OF EXPLOSIVES). REQUESTS SHOULD BE DIRECTED TO THE FISH AND BOAT COMMISSION, DIVISION OF ENVIRONMENTAL SERVICES.

L. STAGING AREAS SHOULD BE LOCATED AT LEAST 50 FEET FROM THE EDGE OF WETLAND.

M. MOVEMENT OF VEHICLES ACROSS THE WETLAND SHOULD BE MINIMIZED. WHERE VEHICLES MUST BE MOVED ACROSS WETLANDS, THE USE OF PADS OR TIMBER MATS SHOULD BE USED.

N. EXCAVATED TOPSOIL SHOULD BE CAREFULLY REMOVED AND STOCKPILED SEPARATELY FROM THE SUB-SOIL.

O. APPLY ANNUAL RYEGRASS AT THE RATE OF 40 LB PER ACRE TO AREAS WITHOUT STANDING WATER. STRAW MULCH WITHOUT BINDING AGENTS SHOULD BE APPLIED AT THE RATE OF 3 TONS PER ACRE. LIME AND FERTILIZER SHOULD NOT BE USED.

P. TEMPORARY AND/OR PERMANENT CROSSINGS MUST BE INSTALLED PRIOR TO CROSSING OF A WETLAND OR WATERCOURSE FOR INSTALLATION OF CONTROLS.

Q. WETLANDS SHOULD BE DELINEATED IN THE FIELD AND PROTECTED WITH SAFETY FENCE OR COMBINATION SAFETY/SILT FENCE.

DUE DILIGENCE NOTES:

IF THE SITE WILL NEED TO IMPORT OR EXPORT MATERIAL FROM THE SITE, THE RESPONSIBILITY FOR PERFORMING ENVIRONMENTAL DUE DILIGENCE AND DETERMINATION OF CLEAN FILL WILL REST WITH THE CONTRACTOR.

CLEAN FILL IS DEFINED AS: UNCONTAMINATED, NON-WATER SOLUBLE, NON-DECOMPOSABLE, INERT, SOLID MATERIAL. THE TERM INCLUDES SOIL, ROCK, STONE, DREDGED MATERIAL, USED ASPHALT, AND BRICK, BLOCK OR CONCRETE FROM CONSTRUCTION AND DEMOLITION ACTIVITIES THAT IS SEPARATE FROM OTHER WASTE AND IS RECOGNIZABLE AS SUCH. THE TERM DOES NOT INCLUDE MATERIALS PLACED IN OR ON THE WATERS OF THE COMMONWEALTH UNLESS OTHERWISE AUTHORIZED. (THE TERM "USED ASPHALT" DOES NOT INCLUDE MILLED ASPHALT OR ASPHALT THAT HAS BEEN PROCESSED FOR RE-USE).

CLEAN FILL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE: FILL MATERIALS AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE STILL QUALIFIES AS CLEAN FILL PROVIDED THE TESTING REVEALS THAT THE FILL MATERIAL CONTAINS CONCENTRATIONS OF REGULATED SUBSTANCES THAT ARE BELOW THE RESIDENTIAL LIMITS IN TABLES FP-1A AND FP-1B FOUND IN THE DEPARTMENT'S POLICY "MANAGEMENT OF FILL".

ANY PERSON PLACING CLEAN FILL THAT HAS BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE MUST USE FORM FP-001 TO CERTIFY THE ORIGIN OF THE FILL MATERIAL AND THE RESULTS OF THE ANALYTICAL TESTING TO QUALIFY THE MATERIAL AS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE OWNER OF THE PROPERTY RECEIVING THE FILL. A COPY OF FORM FP-001 CAN BE FOUND AT THE END OF THESE INSTRUCTIONS.

ENVIRONMENTAL DUE DILIGENCE: THE APPLICANT MUST PERFORM ENVIRONMENTAL DUE DILIGENCE TO DETERMINE IF THE FILL MATERIALS ASSOCIATED WITH THE PROJECT QUALIFY AS CLEAN FILL. ENVIRONMENTAL DUE DILIGENCE IS DEFINED AS: INVESTIGATIVE TECHNIQUES, INCLUDING, BUT NOT LIMITED TO, VISUAL PROPERTY INSPECTIONS, ELECTRONIC DATA BASE SEARCHES, REVIEW OF PROPERTY OWNERSHIP, REVIEW OF PROPERTY USE HISTORY, SANBORN MAPS, ENVIRONMENTAL QUESTIONNAIRES, TRANSACTION SCREENS, ANALYTICAL TESTING, ENVIRONMENTAL ASSESSMENTS OR AUDITS. **ANALYTICAL TESTING IS NOT A REQUIRED PART OF DUE DILIGENCE UNLESS VISUAL INSPECTION AND/OR REVIEW OF THE PAST LAND USE OF THE PROPERTY INDICATES THAT THE FILL MAY HAVE BEEN SUBJECTED TO A SPILL OR RELEASE OF 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 FILL".

FILL MATERIAL THAT DOES NOT QUALIFY AS CLEAN FILL IS REGULATED FILL. REGULATED FILL IS WASTE AND MUST BE MANAGED IN ACCORDANCE WITH THE DEPARTMENT'S MUNICIPAL OR RESIDUAL WASTE REGULATIONS BASED ON 25 PA. CODE CHAPTERS 287 RESIDUAL WASTE MANAGEMENT OR 271 MUNICIPAL WASTE MANAGEMENT, WHICHEVER IS APPLICABLE. THESE REGULATIONS ARE AVAILABLE ON-LINE AT WWW.PACODE.COM .

CHAPTER 93 CLASSIFICATION NOTE

THE PROJECTS RECEIVING WATERCOURSE IS SWAMP CREEK AND THE CHAPTER 93 CLASSIFICATION IS TSF-MF.

MONITORING, INSPECTION, AND REPORTING REQUIREMENTS

VISUAL INSPECTIONS

THE PERMITTEE AND CO_PERMITTEE(S) MUST ENSURE THAT VISUAL SITE INSPECTIONS ARE CONDUCTED WEEKLY, AND WITHIN 24 HOURS AFTER EACH MEASURABLE RAINFALL EVENT THROUGHOUT THE DURATION OF CONSTRUCTION AND UNTIL THE RECEIPT AND ACKNOWLEDGEMENT OF THE NOT BY THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT. THE VISUAL SITE INSPECTIONS AND REPORTS SHALL BE COMPLETED IN A FORMAT PROVIDED BY THE DEPARTMENT, AND CONDUCTED BY QUALIFIED PERSONNEL, TRAINED AND EXPERIENCED IN EROSION AND SEDIMENT CONTROL, TO ASCERTAIN THAT E&S BMPS AND PCSM BMPS ARE PROPERLY CONSTRUCTED AND MAINTAINED TO EFFECTIVELY MINIMIZE POLLUTION TO THE WATERS OF THIS COMMONWEALTH. A WRITTEN REPORT OF EACH INSPECTION SHALL BE KEPT AND INCLUDE AT A MINIMUM:

(1) A SUMMARY OF SITE CONDITIONS, E&S BMP AND PCSM BMP, IMPLEMENTATION AND MAINTENANCE AND COMPLIANCE ACTIONS; AND

(2) THE DATE, TIME, NAME AND SIGNATURE OF THE PERSON CONDUCTING THE INSPECTION.

NONCOMPLIANCE REPORTING

WHERE E&S, PCSM OR PPC BMPS ARE FOUND TO BE INOPERATIVE OR INEFFECTIVE DURING AN INSPECTION, OR ANY OTHER TIME, THE PERMITTEE AND CO_PERMITTEE(S) SHALL, WITHIN 24 HOURS, CONTACT THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT, BY PHONE OR PERSONAL CONTACT, FOLLOWED BY THE SUBMISSION OF A WRITTEN REPORT WITHIN 5 DAYS OF THE INITIAL CONTACT. NONCOMPLIANCE REPORTS SHALL INCLUDE THE FOLLOWING INFORMATION:

(1) ANY CONDITION ON THE PROJECT SITE WHICH MAY ENDANGER PUBLIC HEALTH, SAFETY, OR THE ENVIRONMENT, OR INVOLVE INCIDENTS WHICH CAUSE OR THREATEN POLLUTION;

(2) THE PERIOD OF NONCOMPLIANCE, INCLUDING EXACT DATES AND TIMES AND/OR ANTICIPATED TIME WHEN THE ACTIVITY WILL RETURN TO COMPLIANCE;

(3) STEPS BEING TAKEN TO REDUCE, ELIMINATE, AND PREVENT RECURRENCE OF THE NONCOMPLIANCE; AND

(4) THE DATE OR SCHEDULE OF DATES, AND IDENTIFYING REMEDIES FOR CORRECTING NONCOMPLIANCE CONDITIONS.

REDUCTION, LOSS, OR FAILURE OF THE BMPS

UPON REDUCTION, LOSS, OR FAILURE OF THE BMPS, THE PERMITTEE AND CO_PERMITTEE SHALL TAKE IMMEDIATE ACTION TO RESTORE THE BMPS OR PROVIDE AN ALTERNATIVE METHOD OF TREATMENT. SUCH RESTORED BMPS OR ALTERNATIVE TREATMENT SHALL BE AT LEAST AS EFFECTIVE AS THE ORIGINAL BMPS.

TERMINATION OF COVERAGE

NOT: UPON PERMANENT STABILIZATION OF EARTH DISTURBANCE ACTIVITIES ASSOCIATED WITH CONSTRUCTION ACTIVITY THAT ARE AUTHORIZED BY THIS PERMIT AND WHEN BMPS IDENTIFIED IN THE PCSM PLAN HAVE BEEN PROPERLY INSTALLED, THE PERMITTEE AND/OR CO_PERMITTEE OF THE FACILITY MUST SUBMIT A NOT FORM THAT IS SIGNED IN ACCORDANCE WITH PART B, SECTION 1.C, SIGNATORY REQUIREMENTS, OF THIS PERMIT. ALL LETTERS CERTIFYING DISCHARGE TERMINATION ARE TO BE SENT TO THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT. THE NOT MUST CONTAIN THE FOLLOWING INFORMATION: FACILITY NAME, ADDRESS, AND LOCATION, OPERATOR NAME AND ADDRESS, PERMIT NUMBER, IDENTIFICATION AND PROOF OF ACKNOWLEDGMENT FROM THE PERSON(S) WHO WILL BE RESPONSIBLE FOR OPERATION AND MAINTENANCE OF THE PCSM BMPS IN ACCORDANCE WITH THE APPROVED PCSM PLAN, AND THE REASON FOR PERMIT TERMINATION. UNTIL THE PERMITTEE HAS RECEIVED WRITTEN ACKNOWLEDGEMENT OF THE NOT, THE PERMITTEE WILL REMAIN RESPONSIBLE FOR OPERATING AND MAINTAINING ALL E&S BMPS AND PCSM BMPS ON THE PROJECT SITE AND WILL BE RESPONSIBLE FOR VIOLATIONS OCCURRING ON THE PROJECT SITE.

COMPLETION CERTIFICATE AND FINAL PLANS

WITHIN 30 DAYS AFTER THE COMPLETION OF EARTH DISTURBANCE ACTIVITIES AUTHORIZED BY THIS PERMIT, INCLUDING THE PERMANENT STABILIZATION OF THE SITE AND PROPER INSTALLATION OF PCSM BMPS IN ACCORDANCE WITH THE APPROVED PCSM PLAN, OR UPON SUBMISSION OF THE NOT IF SOONER, THE PERMITTEE SHALL FILE WITH THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT A STATEMENT SIGNED BY A LICENSED PROFESSIONAL AND BY THE PERMITTEE CERTIFYING THAT WORK HAS BEEN PERFORMED IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THIS PERMIT AND THE APPROVED E&S AND PCSM PLANS.

PROJECT CONST. RECYCLING AND DISPOSAL METHODS

1. TREES – CHIPPED AND REMOVED OFFSITE FOR MULCH.
2. BUILDING MATERIALS – SHALL BE REMOVED AND DISPOSED OF AT PROPER RECYCLING FACILITY AS PER NOTE #6 OF THE GENERAL EROSION & SEDIMENT CONTROL NOTES.
3. ROCK WASTE – ALL ROCKS THAT ARE SUITABLE FOR LANDSCAPING USES SHALL BE USED ON SITE OR AT ANOTHER FACILITY.
4. SOIL WASTE – ALL EXCAVATED SOIL SHALL BE USED ON SITE, AS FILL MATERIAL WHERE POSSIBLE. ANY EXCESS MATERIAL NOT USED ON SITE MAY ONLY BE DISPOSED AT A FACILITY WITH A VALID EARTH DISTURBANCE AND NPDES PERMIT APPROVED AND WERE ALL BMPS ARE PROPERLY INSTALLED. ALL SEDIMENT REMOVED DURING MAINTENANCE AND CLEANING OF EROSION AND SEDIMENTATION CONTROLS DEVICES WILL BE INCORPORATED INTO THE FINE GRADING UPSTREAM FROM A SEDIMENT CONTROL DEVICE. EXCESS MATERIAL THAT IS REMOVED FROM EROSION AND SEDIMENTATION CONTROL MEASURES AND CANNOT BE INCORPORATED INTO THE FINE GRADING STABILIZATION SHALL BE REMOVED FROM THE SITE AND MAY ONLY BE DISPOSED AT A FACILITY WITH A VALID EARTH DISTURBANCE AND NPDES PERMIT APPROVAL AND WERE ALL BMPS ARE PROPERLY INSTALLED.
5. SEDIMENT REMOVAL FROM ALL SEDIMENT BASINS TO BE RETURNED TO SITE UPSTREAM OF ALL PROPOSED BMP'S.
6. THE OPERATOR SHALL REMOVE FROM THE SITE, RECYCLE OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA CODE 260.1 et seq. 271.1 AND 287.1 et seq. THE CONTRACTOR SHALL NOT ILLEGALLY BUY, DUMP OR DISCHARGE MATERIAL OR WASTE AT THE SITE.

SEDIMENT BASINS

1. APPROVAL OF THE USE OF SKIMMERS DOES NOT APPROVE USE OF ANY SKIMMERS IN VIOLATION OF ANY PATENT, PATENT RIGHTS, AND/OR PATENT LAWS.

2. BAFFLES MUST BE INSTALLED TO ALLOW BASIN MAINTENANCE AND CLEAN OUT.

3. UPON INSTALLATION OF THE TEMPORARY SEDIMENT BASIN RISER(S), AN IMMEDIATE INSPECTION SHALL BE DONE BY A QUALIFIED SITE REPRESENTATIVE AND THE MONTGOMERY COUNTY CONSERVATION DISTRICT SHALL BE NOTIFIED IN WRITING THAT THE RISER IS SEALED.

4. SEDIMENT BASINS MUST BE STRUCTURALLY SOUND AND PROTECTED FROM UNAUTHORIZED ACTS OF THIRD PARTIES.

OTHER BMPS

1. SEDIMENT MUST BE REMOVED FROM STORM WATER INLET PROTECTION AFTER EACH RUNOFF EVENT.

2. AT STREAM CROSSINGS, 50' BUFFER AREAS SHOULD BE MAINTAINED. ON BUFFERS, CLEARING, SOD DISTURBANCES, EXCAVATION, AND EQUIPMENT TRAFFIC SHOULD BE MINIMIZED. ACTIVITIES SUCH AS STACKING LOGS, BURNING CLEARED BRUSH, DISCHARGING RAINWATER FROM TRENCHES, WELDING PIPE SECTIONS, REFUELING AND MAINTAINING EQUIPMENT SHOULD BE ACCOMPLISHED OUTSIDE OF BUFFERS.

STABILIZATION NOTES

1. STOCKPILE HEIGHTS MUST NOT EXCEED 35'. STOCKPILE SLOPES MUST BE 2:1 OR FLATTER.

2. DIVERSION CHANNELS, SEDIMENTATION BASINS, SEDIMENT TRAPS, AND STOCKPILES MUST BE STABILIZED IMMEDIATELY.

3. HAY OR STRAW MULCH MUST BE APPLIED AT RATES OF AT LEAST 3.0 TONS PER ACRE.

4. STRAW MULCH SHALL BE APPLIED IN LONG STRANDS, NOT CHOPPED OR FINELY BROKEN.

5. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMP'S MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT CONTROL BMP'S AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGARDING, RESEEDING, REMULCHING, AND RENETTING, MUST BE DONE IMMEDIATELY. IF EROSION AND SEDIMENT CONTROL BMP'S FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMP'S, OR MODIFICATIONS TO THOSE INSTALLED WILL BE REQUIRED.

6. AN E&S PLAN SHALL BE SUBMITTED TO THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT AND IMPLEMENTED FOR ALL SPOIL AND BORROW AREAS, REGARDLESS OF THEIR LOCATION.

7. THE NPDES BOUNDARY IS EQUAL TO THE LIMITS OF DISTURBANCE OF THE SITE AND ANY OFF-SITE AREAS WITHIN THE LIMITS OF DISTURBANCE THAT ARE THE RESPONSIBILITY OF THE DEVELOPER TO INSTALL. OFF-SITE FACILITIES SUCH AS: UTILITIES AND ROADWAYS.

8. UPON COMPLETION OR TEMPORARY CESSATION OF THE EARTH DISTURBANCE ACTIVITY THE PROJECT SITE SHALL BE IMMEDIATELY STABILIZED IN ACCORDANCE WITH THE RECOMMENDATIONS CONTAINED IN THE EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL (E&S MANUAL), COMMONWEALTH OF PENNSYLVANIA, DEPARTMENT OF ENVIRONMENTAL PROTECTION NO. 363-2134-008, APRIL 2000, AS AMENDED AND UPDATED. EROSION AND SEDIMENT CONTROL BMPS SHALL BE IMPLEMENTED AND MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED AND PCSM BMPS ARE OPERATIONAL.

UTILITY LINE TRENCH EXCAVATION NOTES

1. LIMIT ADVANCED CLEARING AND GRUBBING OPERATIONS TO A DISTANCE EQUAL TO TWO TIMES THE LENGTH OF PIPE INSTALLATION THAT CAN BE COMPLETED IN ONE DAY.

2. 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.

3. ALL SOIL EXCAVATED FROM THE TRENCH WILL BE PLACED ON THE UPHILL SIDE OF THE TRENCH.

4. LIMIT DAILY TRENCH EXCAVATION TO THE LENGTH OF PIPE PLACEMENT, PLUG INSTALLATION AND BACKFILLING THAT CAN BE COMPLETED THE SAME DAY.

5. 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.

6. ON THE DAY FOLLOWING PIPE PLACEMENT AND TRENCH BACKFILLING, THE DISTURBED AREA WILL BE GRADED TO FINAL CONTOURS AND IMMEDIATELY STABILIZED.

7. SOILS EXCAVATED FROM EXISTING SURFACE LAYER SHOULD BE STOCKPILED SEPARATELY AND RETURNED AS FINAL SURFACE LAYER FOLLOWING TRENCH BACKFILLING.

NPDES PERMIT NOTES

1. UPON REDUCTION, LOSS OR FAILURE OF THE BMP'S, THE PERMITEE AND COPERMITEE SHALL TAKE IMMEDIATE ACTION TO RESTORE THE BMPS OR PROVIDE AN ALTERNATIVE METHOD OF TREATMENT.

2. WHERE E&S BMPS ARE FOUND TO BE INOPERATIVE OR INEFFECTIVE DURING AN INSPECTION, OR ANY OTHER TIME, THE PERMITEE AND CO-PERMITEE SHALL IMMEDIATELY CONTACT THE MONTGOMERY COUNTY CONSERVATION DISTRICT, BY PHONE OR PERSONAL CONTACT, FOLLOWED BY THE SUBMISSION OF A WRITTEN REPORT WITHIN 5 DAYS OF THE INITIAL CONTACT.

3. PERMITEES REQUESTING A RENEWAL OF COVERAGE UNDER GENERAL PERMIT MUST SUBMIT TO THE MONTGOMERY COUNTY CONSERVATION DISTRICT AN ADMINISTRATIVELY COMPLETE AND ACCEPTABLE NOL, AT LEAST 90 DAYS PRIOR TO THE EXPIRATION DATE OF THE COVERAGE.

4. PERMITEES REQUESTING A RENEWAL OF COVERAGE UNDER INDIVIDUAL PERMIT MUST SUBMIT TO THE MONTGOMERY COUNTY CONSERVATION DISTRICT AN ADMINISTRATIVELY COMPLETE AND ACCEPTABLE NOL, AT LEAST 180 DAYS PRIOR TO THE EXPIRATION DATE OF THE COVERAGE.

5. NOTICE OF TERMINATION. WHERE ALL STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY THAT ARE AUTHORIZED BY THIS PERMIT ARE ELIMINATED, AND BMPS IDENTIFIED IN THE POST CONSTRUCTION STORMWATER MANAGEMENT (PCSM) PLAN HAVE BEEN INSTALLED, THE PERMITEE OR CO-PERMITEE OF THE FACILITY MUST SUBMIT A NOTICE OF TERMINATION (NOT) FORM THAT IS SIGNED IN ACCORDANCE WITH PART B.1.C (SIGNATORY REQUIREMENTS) OF THIS PERMIT TO THE MONTGOMERY COUNTY CONSERVATION DISTRICT.

PROJECT CONSTRUCTION WASTES

1. TREES – CHIPPED AND REMOVED OFFSITE FOR MULCH.

2. BUILDING MATERIALS – SHALL BE REMOVED AND DISPOSED OF AT PROPER RECYCLING FACILITY AS PER NOTE #6 OF THE GENERAL EROSION & SEDIMENT CONTROL NOTES.

3. ROCK WASTE – ALL ROCKS THAT ARE SUITABLE FOR LANDSCAPING USES SHALL BE USED ON SITE OR AT ANOTHER FACILITY.

4. SOIL WASTE – ALL EXCAVATED SOIL SHALL BE USED ON SITE, AS FILL MATERIAL WHERE POSSIBLE. ANY EXCESS MATERIAL NOT USED ON SITE MAY ONLY BE DISPOSED AT A FACILITY WITH A VALID EARTH DISTURBANCE AND NPDES PERMIT APPROVED AND WERE ALL BMPS ARE PROPERLY INSTALLED. ALL SEDIMENT REMOVED DURING MAINTENANCE AND CLEANING OF EROSION AND SEDIMENTATION CONTROLS DEVICES WILL BE INCORPORATED INTO THE FINE GRADING UPSTREAM FROM A SEDIMENT CONTROL DEVICE. EXCESS MATERIAL THAT IS REMOVED FROM EROSION AND SEDIMENTATION CONTROL MEASURES AND CANNOT BE INCORPORATED INTO THE FINE GRADING STABILIZATION SHALL BE REMOVED FROM THE SITE AND MAY ONLY BE DISPOSED AT A FACILITY WITH A VALID EARTH DISTURBANCE AND NPDES PERMIT APPROVAL AND WERE ALL BMPS ARE PROPERLY INSTALLED.

5. SEDIMENT REMOVAL FROM ALL SEDIMENT BASINS TO BE RETURNED TO SITE UPSTREAM OF ALL PROPOSED BMP'S.

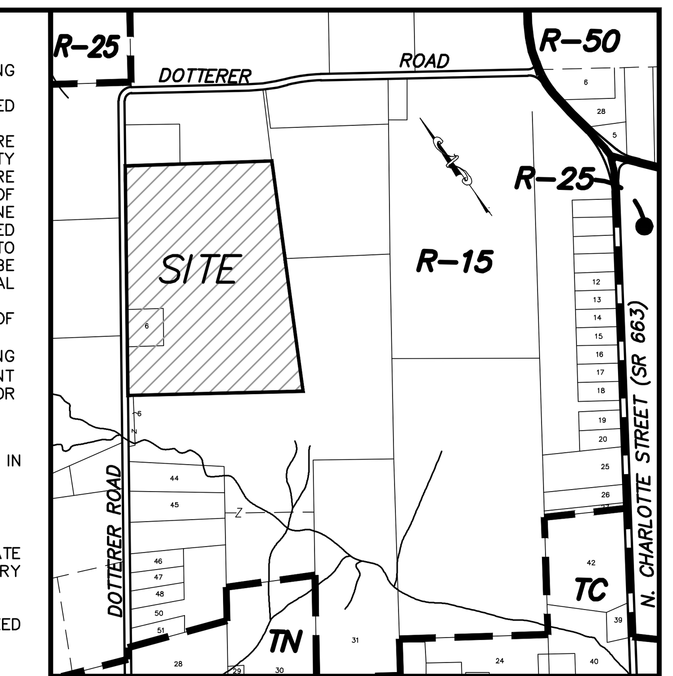
E&S PLAN PLANNING & DESIGN NOTES

1. THE CONTRACTOR SHALL MINIMIZE THE EXTENT AND DURATION OF THE EEARTH DISTURBANCE BY LIMMITING THE CLEARING, GRUBBING AND TOPSOIL STRIPPING TO AREAS IN EACH PHASE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMP'S SPECIFIED BY THE CONSTRUCTION SEQUENCE FOR THAT PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THE E&S PLAN. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE, THE CONTRACTOR SHALL STABILIZE ANY AREAS DISTURBED BY ANY ACTIVITIES.

2. TO MAXIMIZE THE PROTECTION OF EXISTING DRAINAGE FEATURES AND VEGETATION, ONLY LIMITED DISTURBANCE WILL BE PERMITTED TO PROVIDE ACCESS TO THE SEDIMENT BASINS, TRAPS, DIVERSION BERMS AND SWALES FOR GRADING. E&S BMP'S MUST BE CONSTRUCTED, STABILIZED AND FUNCTIONAL UNTIL ALL TRIBUTARY AREAS TO THEM ARE PERMANENTLY STABILIZED. AT NO TIME WILL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARY. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAYS SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER OR SURFACE WATER. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE.

3. TO MINIMIZE SOIL COMPACTION, NO LAND CLEARING AND/OR GRADING SHALL BE PERFORMED OUTSIDE THE LIMIT OF DISTURBANCE FENCING. PROPER CARE SHALL BE TAKEN WITHIN INFILTRATION BMP'S TO MINIMIZE SOIL COMPACTION.

4. THE FOLLOWING MEASURES OR CONTROLS UTILIZED TO MINIMIZE GENERATION OF INCREASED STORMWATER RUNOFF: MULTIPLE STORMWATER BASIN, INFILTRATION BEDS AND INFILTRATION AREAS.



LOCATION MAP
SCALE: 1"=800'

NO.	REVISION	INITIALS	DATE
1	PER LTS DATED 1-3-13, 1-4-13 & 2-14-13	JAB	2-20-13
2	PREP FINAL PLAN PER LTS DATED 3-7, 3-19	JAB	5-03-13
3	PER LTRS DATED 5-29, 6-5	JAB	7-12-13
4	PREP FOR MCCD SUBMISSION	JAB	7-23-13
5	MISC. REVISIONS	JAB	8-11-13
6	MISC. REVISIONS (NPDES)	JAB	8-21-13
7	PER MCCD LTR 9-11-13	JAB	9-16-13
8	REVISE RETAINING WALLS AND GRADES	SPE	12-06-13

Before You Dig Anywhere In... PENNSYLVANIA
PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776 STOP-CALL BEFORE YOU DIG!
STOP! CALL 1-800-242-1776 TOLL FREE
PA Law requires 3 working days notice before you excavate
PA ONE CALL SYSTEM, INC.

ALL CONTRACTORS WORKING ON THIS SITE SHALL COMPLY WITH THE REQUIREMENTS OF ACT 121 OF 2004 (UNDERGROUND UTILITY LINE PROTECTION LAW). VCEA HAS REGISTERED THIS SITE WITH THE PA ONE-CALL SYSTEM ON ______________________

PLAN NOTATION
ONLY THOSE PLANS WHICH CONTAIN AN IMPRESSED SEAL OR A RED INK SEAL OF THE RESPONSIBLE PROFESSIONAL SHALL BE CONSIDERED VALID. THIS PLAN HAS BEEN SPECIFICALLY PREPARED FOR THE OWNER DESIGNATED HEREON. ANY MODIFICATION, REVISION, DUPLICATION OR USE WITHOUT THE WRITTEN CONSENT OF VAN CLEEF ENGINEERING ASSOCIATES IS PROHIBITED. RELIANCE ON THIS PLAN FOR ANY PURPOSE OTHER THAN THAT WHICH IS INTENDED SHALL BE AT THE SOLE DISCRETION AND LIABILITY OF THE APPLICABLE PARTY.

BY: ______________________
BRIAN S. FOCHT, PA PE DATE
PENNSYLVANIA PROFESSIONAL ENGINEER NO. 056961

Van Cleef ENGINEERING ASSOCIATES
Consulting Civil Engineering
Environmental Engineering
Municipal Engineering
Land Surveying
Professional Planning
Landscape Architecture
4 WELLINGTON BLVD, WYOMISSING, PA 19610
EMAIL: VCEPA@VCEA.ORG WEB: WWW.VCEA.ORG
PHONE (610) 670-6630 FAX (610) 670-4603
OFFICES THROUGHOUT NJ, EASTERN PA, DE AND MD

PROJECT: 0402NHT.02	DESIGNED BY: –
DATE: 12-19-12	DRAWN BY: JAB
SCALE: N/A	CHECKED BY: BSF

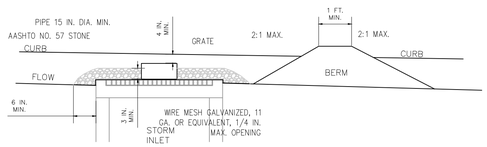
SUBDIVISION PLANS
FOR
HANOVER WOODS
(FORMERLY D'AMICO TRACT)
SITUATED IN
NEW HANOVER TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

TITLE
EROSION AND SEDIMENTATION POLLUTION CONTROL DETAILS

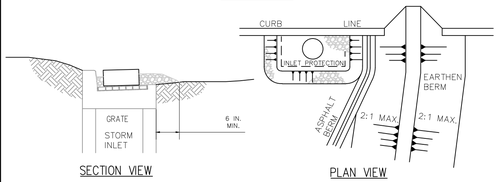
FINAL PLAN

SHEET NUMBER 16/36

SAM ERNEY 12/21/2010
F:\JOBFILE\2004\0402NHT.02\CIVIL 3D\DWG\SHEETS\14-20 DETAILS-0402NHT.01.DWG



SECTION VIEW



SECTION VIEW PLAN VIEW

NOTES:

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

ROLLED EARTHEN BERM SHALL BE PROVIDED AND MAINTAINED IMMEDIATELY DOWN GRADIENT OF THE PROTECTED INLET UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. A 6 IN. MINIMUM HEIGHT ASPHALT BERM SHALL BE MAINTAINED UNTIL ROADWAY SURFACE RECEIVES FINAL COAT.

STONE INLET PROTECTION AND BERM FOR A TYPE C INLET CAN BE USED IN ONE ACRE MAXIMUM DRAINAGE AREA WITH 15 IN OVERFLOW PIPE AND 4 IN. HEAD. A PERFORATED PLATE WELDED TO A METAL RISER MAY NOT BE SUBSTITUTED FOR THE WIRE MESH. A SLOTTED PLATE WELDED TO THE RISER MAY BE USED IN CONJUNCTION WITH THE WIRE MESH IF CALCULATIONS ARE PROVIDED TO SHOW SUFFICIENT CAPACITY OF THE INLET TO ACCEPT THE PEAK RUNOFF FOR A 2-YEAR STORM EVENT FROM THE TRIBUTARY DRAINAGE AREA.

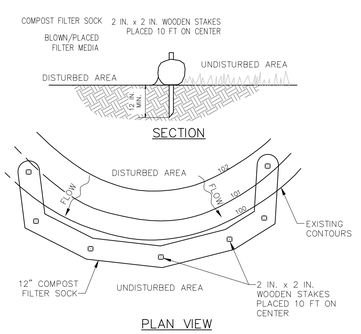
SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE HEIGHT OF THE STONE. DAMAGED OR CLOGGED INSTALLATIONS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

FOR SYSTEMS DISCHARGING TO HQ OR EV SURFACE WATER, A 6 IN. THICK COMPOST LAYER SHALL BE SECURELY ANCHORED ON OUTSIDE AND OVER TOP OF STONE. COMPOST SHALL MEET THE STANDARDS IN TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.

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

STANDARD CONSTRUCTION DETAIL #4-19
STONE INLET PROTECTION AND BERM - TYPE C INLET

NOT TO SCALE



NOTES:

SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.

COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.

TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.

ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

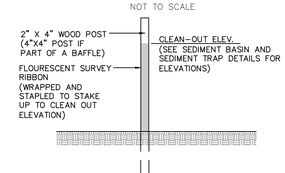
COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.

BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

STANDARD CONSTRUCTION DETAIL #4-1
COMPOST FILTER SOCK

NOT TO SCALE

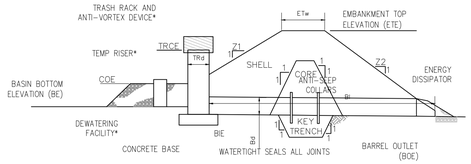


NOTES:

1. A CLEAN OUT STAKE SHALL BE PLACED IN THE CENTER OF EACH SEDIMENT TRAP AND BASIN HALF THE DISTANCE BETWEEN INFLOWS AND OUTFLOWS.
2. WHEN SEDIMENT REACHES THE CLEAN OUT ELEVATION ALL ACCUMULATED SEDIMENT SHALL BE REMOVED FROM SEDIMENT TRAPS AND BASINS. TRAPS AND BASINS MUST BE RESTORED TO ORIGINAL DIMENSIONS.

CLEAN OUT STAKE DETAIL

NTS



* ALSO REFER TO SEDIMENT BASIN TEMPORARY RISER, EMERGENCY SPILLWAY, ENERGY DISSIPATER, TRASH RACK AND ANTI-VORTEX DEVICE, AND SEDIMENT STORAGE DEWATERING FACILITY DETAILS.

BASIN NO.	Z1 (FT)	Z2 (FT)	TEMPORARY RISER			BARREL				
			DIA TRd (IN)	CREST ELEV TRCE (FT)	MAT'L	DIA Bd (IN)	INV. ELEV BIE (FT)	MAT'L	LENGTH (FT)	OUTLET ELEV BOE (FT)
1	3	3	NA	268.33	NA	18	265.00	RCP	59	264.70
2	3	3	NA	271.33	NA	18	268.00	RCP	28	267.85
3	3	3	NA	269.83	NA	15	266.00	RCP	33	265.80

EMBANKMENT				CLEANOUT ELEV COE (FT)	BOTTOM ELEV BE (FT)
TOP ELEV ETE (FT)	TOP WIDTH ETw (FT)	KEY TRENCH DEPTH (FT)	KEY TRENCH WIDTH (FT)		
271.50	10	2	4	263.95	262.95
274.25	10	2	4	266.40	265.40
273.00	10	2	4	266.40	265.40

NOTES:

SEDIMENT BASINS, INCLUDING ALL APPURTENANT WORKS, SHALL BE CONSTRUCTED TO THE DETAIL AND DIMENSIONS SHOWN ON THE E&S PLAN DRAWINGS.

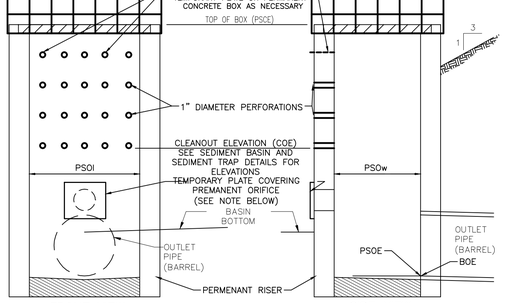
AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO A DEPTH OF TWO FEET PRIOR TO ANY PLACEMENT AND COMPACTION OF EARTHEN FILL. FILL MATERIAL FOR THE EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE COMPACTED IN LAYERED LIFTS OF NOT MORE THAN 6 TO 9 IN. THE MAXIMUM ROCK SIZE SHALL BE NO GREATER THAN 2/3 THE LIFT THICKNESS. UPON COMPLETION, THE EMBANKMENT SHALL BE SEEDED AND MULCHED OR OTHERWISE STABILIZED ACCORDING TO THE SPECIFICATIONS OF THE E&S PLAN DRAWINGS. TREES SHALL NOT BE PLANTED ON THE EMBANKMENT.

ACCESS SHALL BE PROVIDED FOR SEDIMENT REMOVAL AND OTHER REQUIRED MAINTENANCE ACTIVITIES.

A CLEAN OUT STAKE SHALL BE PLACED NEAR THE CENTER OF EACH BASIN. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED THE CLEAN OUT ELEVATION ON THE STAKE AND RESTORE THE BASIN TO ITS ORIGINAL DIMENSIONS. DISPOSE OF MATERIALS REMOVED FROM THE BASIN IN THE MANNER DESCRIBED IN THE E&S PLAN.

INSPECT ALL SEDIMENT BASINS ON AT LEAST A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. CHECK BASIN EMBANKMENTS, SPILLWAYS, AND OUTLETS FOR EROSION, PIPING AND SETTLEMENT. NECESSARY REPAIRS SHALL BE MADE IMMEDIATELY. DISPLACED RIPRAP WITHIN THE OUTLET ENERGY DISSIPATER SHALL BE REPLACED IMMEDIATELY. ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISTURBED AREAS SHALL BE STABILIZED INSIDE THE BASIN BEFORE CONVERSION TO A STORMWATER MANAGEMENT FACILITY. THE DEVICE SHOWN IN STANDARD CONSTRUCTION DETAIL #7-16 MAY BE USED TO DEWATER SATURATED SEDIMENT PRIOR TO ITS REMOVAL. ROCK FILTERS SHALL BE ADDED AS NECESSARY.

STANDARD CONSTRUCTION DETAIL #7-6
SEDIMENT BASIN EMBANKMENT AND SPILLWAY DETAILS
PERFORATED RISER



NOTES:
1. ALL EXPOSED POST CONSTRUCTION ORIFICES ON THE PERMANENT RISERS ARE TO BE BLOCKED WITH A WATERTIGHT SEAL. THE USE OF A STEEL, PLATE AND WATERTIGHT SEAL IS PREFERRED BUT MARINE GRADE PLYWOOD WITH A WATERTIGHT SEAL IS ALSO ACCEPTABLE.
2. SEE OUTLET STRUCTURE DETAILS FOR MORE DETAILED OUTLET STRUCTURE CONSTRUCTION INFORMATION AND SPECIFICATIONS.

BASIN NO.	PERMANENT STRUCTURE				PERFORATIONS			BARREL OUTLET ELEV. BOE (FT)	BASIN BOTTOM ELEV. BE (FT)
	CREST ELEV., PSCE (FT)	OPENING LENGTH PSOl (IN)	OPENING WIDTH PSOw (IN)	CLEANOUT ELEV., COE (FT)	NO. HOLES PER ROW	VERTICAL SPACING OF ROWS (FT)	NUMBER OF ROWS		
1	268.33	48	24	263.95	2	1.0	2	265.00	265.00
2	271.08	48	24	266.40	3	1.0	3	268.00	268.00
3	269.83	48	24	266.40	1	1.0	2	266.00	266.00

* See Trash Rack & Anti-vortex Device and Plywood Box Details.

SEDIMENT BASIN PERMANENT STRUCTURE AS TEMPORARY RISER*

NOT TO SCALE

RESOLUTION OF SOIL TYPE LIMITATIONS

1. NO GRADING SHALL BE PERFORMED IN FROZEN SOIL FOR SOIL TYPES LISTED AS POOR UNDER WINTER GRADING.
2. CARE SHALL BE TAKEN WHEN CONSTRUCTING IMPROVEMENTS IN AREAS SHOWN AS HAVING A HIGH SEASONAL WATER TABLE. ANY SUBSURFACE WATER ENCOUNTERED MUST BE PUMPED AND FILTERED PRIOR TO RELEASE PER THE DETAIL SHOWN ON THE DETAIL SHEET.
3. SOILS LISTED AS DIFFICULT TO ESTABLISH VEGETATION MUST BE LIMED AND FERTILIZED AS OUTLINED IN THE SEEDING SPECIFICATIONS. SHOULD EROSIVE CONDITIONS PERSIST, MATTING, NETTING OR SOD WILL BE UTILIZED AS OUTLINED IN THE SEEDING SPECIFICATIONS.
4. WHEN UNSUITABLE MATERIAL IS ENCOUNTERED IN EMBANKMENT AND WATERWAY AREAS, SUITABLE MATERIAL THAT COMPLIES WITH COMPACTION DETAIL SPECIFICATIONS MUST BE IMPORTED. MATERIAL MUST BE SUITABLE FOR STABILIZATION AND MINIMIZE EROSION.

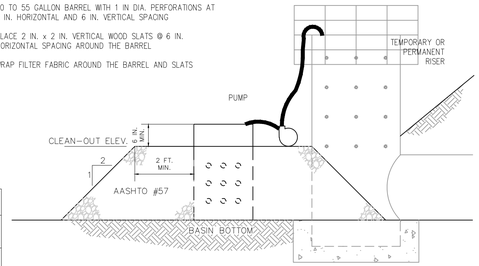
SOIL LIMITATIONS

SOIL TYPES	SEASONAL HIGH WATER TABLE (FT)	DEPTH TO BEDROCK (IN)	ROADS FOR SUBDIVISION	DWELLINGS WITH BASEMENTS	WINTER GRADING	TOPSOIL	EMBANKMENTS	PROPOSED WATERWAYS	HYDRIC SOIL
ABBOTTSTOWN SILT LOAM 0 to 3% SLOPES (AbA)	UPPER 0.5-1.5 LOWER 2.0->6.0	40-60	VERY LIMITED; FROST ACTION, DEPTH TO SATURATED ZONE	VERY LIMITED; DEPTH TO SATURATED ZONE, DEPTH TO BEDROCK	POOR	FAIR	IMPERMEABLE; LACKS STABILITY; USE FOR CORE.	VERY LIMITED; SEEPAGE, DEPTH TO BEDROCK	PARTIALLY HYDRIC
BOWMANSVILLE-KNAUERS SILT LOAM (Bo)	UPPER 0.0-1.5 LOWER >6.0	72-99	VERY LIMITED; FROST ACTION, FLOODING, DEPTH TO SATURATED ZONE	VERY LIMITED; FLOODING, DEPTH TO SATURATED ZONE	POOR	POOR	IMPERMEABLE; LACKS STABILITY; USE FOR CORE.	VERY LIMITED; SEEPAGE	PARTIALLY HYDRIC
READINGTON SILT LOAM 0 to 3% SLOPES (ReA)	UPPER 1.5-3.0 LOWER 1.6-3.0	40-70	SOMEWHAT LIMITED; FROST ACTION, DEPTH TO SATURATED ZONE	VERY LIMITED; DEPTH TO SATURATED ZONE, DEPTH TO BEDROCK	FAIR	FAIR	VARIABLE STABILITY; USE FOR CORE.	SOMEWHAT LIMITED; SEEPAGE, DEPTH TO BEDROCK	PARTIALLY HYDRIC
REAVILLE SILT LOAM 0 to 3% SLOPES (ReA)	UPPER 0.5-3.0 LOWER >6.0	20-40	VERY LIMITED; FROST ACTION, DEPTH TO SATURATED ZONE, DEPTH TO BEDROCK	VERY LIMITED; DEPTH TO SATURATED ZONE, DEPTH TO BEDROCK	POOR	POOR	CONTAINS MANY COURSE FRAGMENTS, SOME LARGER THAN 6" IN DIAMETER	SOMEWHAT LIMITED; SEEPAGE, DEPTH TO BEDROCK	PARTIALLY HYDRIC
REAVILLE SILT LOAM 3 to 8% SLOPES (ReB)	UPPER 0.5-3.0 LOWER >6.0	20-40	VERY LIMITED; FROST ACTION, DEPTH TO SATURATED ZONE, DEPTH TO BEDROCK	VERY LIMITED; DEPTH TO SATURATED ZONE, DEPTH TO BEDROCK	POOR	POOR	CONTAINS MANY COURSE FRAGMENTS, SOME LARGER THAN 6" IN DIAMETER	SOMEWHAT LIMITED; SLOPE, SEEPAGE, DEPTH TO BEDROCK	PARTIALLY HYDRIC

30 TO 55 GALLON BARREL WITH 1 IN DIA. PERFORATIONS AT 6 IN. HORIZONTAL AND 6 IN. VERTICAL SPACING

PLACE 2 IN. x 2 IN. VERTICAL WOOD SLATS @ 6 IN. HORIZONTAL SPACING AROUND THE BARREL

WRAP FILTER FABRIC AROUND THE BARREL AND SLATS



NOTES:

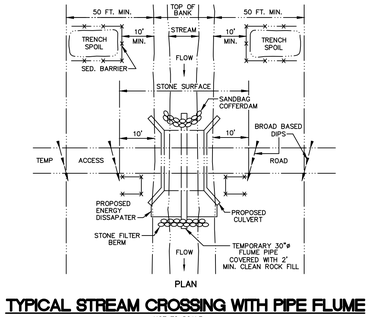
DEWATERING FACILITY SHALL BE INSTALLED IMMEDIATELY UPON COMPLETION OF BASIN/TRAP.

PRIOR TO INITIATING OPERATION OF DEWATERING FACILITY, ALL ACCUMULATED SEDIMENT SHALL BE CLEANED FROM THE INSIDE OF THE BARREL.

DEWATERING FACILITY SHALL BE CONTINUOUSLY MONITORED DURING OPERATION. IF FOR ANY REASON THE DEWATERING FACILITY CEASES TO FUNCTION PROPERLY, IT SHALL BE IMMEDIATELY SHUT DOWN AND NOT RESTARTED UNTIL THE PROBLEM HAS BEEN CORRECTED.

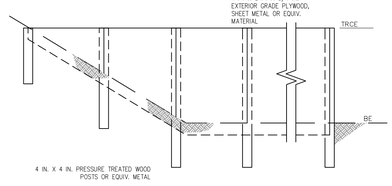
STANDARD CONSTRUCTION DETAIL #7-18
SEDIMENT BASIN OR SEDIMENT TRAP
SEDIMENT STORAGE DEWATERING FACILITY

NOT TO SCALE



TYPICAL STREAM CROSSING WITH PIPE FLUME

NOT TO SCALE



BASIN OR TRAP NO.	BAFFLE		TEMPORARY RISER	BOTTOM
	LENGTH Bal (FT)	HEIGHT Bah (FT)	CREST ELEV. TRCE (FT)	BOTTOM ELEV BE (FT)
2	215	5.68	271.08	265.40

NOTES:

SEE APPROPRIATE BASIN DETAIL FOR PROPER LOCATION AND ORIENTATION.

AN ACCEPTABLE ALTERNATIVE IS TO INSTALL A SUPER SILT FENCE AT THE BAFFLE LOCATION

IN POOLS WITH DEPTHS EXCEEDING 7', THE TOP OF THE PLYWOOD BAFFLE DOES NOT NEED TO EXTEND TO THE TEMPORARY RISER CREST. SUPER SILT FENCE BAFFLES NEED NOT EXTEND TO TRCE ELEVATION.

BAFFLES SHALL BE TIED INTO ONE SIDE OF THE BASIN UNLESS OTHERWISE SHOWN ON THE PLAN DRAWINGS.

SUBSTITUTION OF MATERIALS NOT SPECIFIED IN THIS DETAIL SHALL BE APPROVED BY THE DEPARTMENT OR THE LOCAL CONSERVATION DISTRICT BEFORE INSTALLATION.

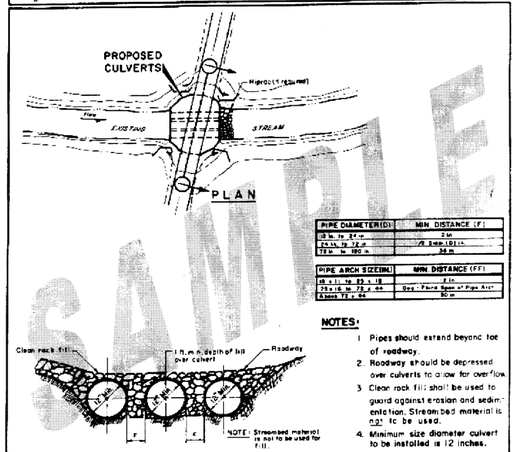
DAMAGED OR WARPED BAFFLES SHALL BE REPLACED WITHIN 7 DAYS OF INSPECTION.

BAFFLES REQUIRING SUPPORT POSTS SHALL NOT BE INSTALLED IN BASINS REQUIRING IMPERVIOUS LINERS.

STANDARD CONSTRUCTION DETAIL #7-14
BAFFLE

NOT TO SCALE

GENERAL PERMIT: B.D.W.M. GP-8
TEMPORARY ROAD CROSSINGS
SERIES OF CULVERTS
Dwg. No. 4

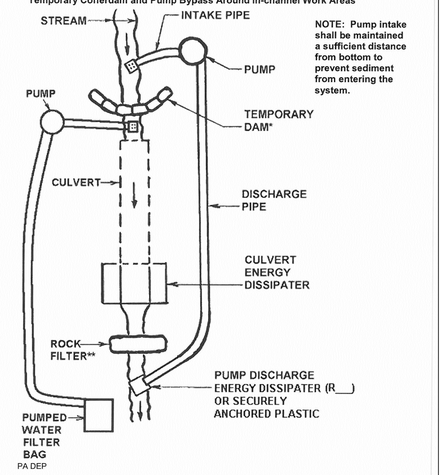


PIPE DIAMETER(D)	MIN. DISTANCE (F)
18 in. to 24 in.	2 m
24 in. to 72 in.	12 feet (D) in
72 in. to 180 in.	3.6 m

PIPE ARCH SIZE(in)	MIN. DISTANCE (FF)
18 x 11 to 53 x 19	2 in.
53 x 19 to 72 x 44	Dep. Thru Span of Pipe Arch
Above 72 x 44	50 cm

NOTES:
1. Pipes should extend beyond toe of roadway.
2. Roadway should be depressed over culverts to allow for overflow.
3. Clear rock fill shall be used to guard against erosion and sedimentation. Streambed material is not to be used.
4. Minimum size diameter culvert to be installed is 12 inches.
5. Approaches to crossings are not to exceed a depth of 6 inches above original grade.
6. Proper erosion and sedimentation control measures must be installed, refer to Item 20.
7. Refer to Item 13, Conditions.

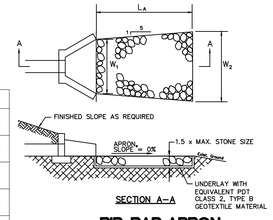
FIGURE 3.11
Temporary Cofferdam and Pump Bypass Around In-channel Work Areas



NOTE: Pump intake shall be maintained a sufficient distance from bottom to prevent sediment from entering the system.

* Sandbags (Standard Construction Detail #3-15), Jersey barriers (Figure 3.13) or other non-erosive material, no earth fill. Do not excavate a sump for the pump intake.

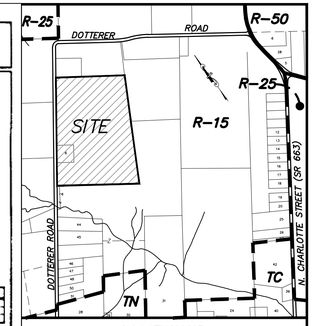
** See Standard Construction Detail # 4-14. For low gradient channels, the rock filter may be replaced by an impervious cofferdam to prevent backflow into the work area.



RIP-RAP APRON

NOT TO SCALE

LOCATION	DIA. (in.)	L_A (ft.)	W_1 (ft.)	W_2 (ft.)	RIP-RAP SIZE	PLACEMENT THICKNESS (in.)
B-2	18	8	4.5	12.5	R-4	18
B-4	15	10	3.8	13.8	R-4	18
B-6	24	8	6.0	14.0	R-4	18
B-8	15	8	3.8	11.8	R-4	18
1-13	18	8	4.5	12.5	R-4	18
2-39	18	8	4.5	12.5	R-4	18
2-39	15	8	3.8	11.8	R-4	18
3-11	15	8	3.8	11.8	R-4	18
DOTTERER RD CV2	2-48	28	40	40	R-6	36



LOCATION MAP
SCALE: 1"=800'

NO.	REVISION	INITIALS	DATE
1	PER LTR DATED 1-3-13, 1-4-13 & 2-14-13	JAB	2-20-13
2	PREP FINAL PLAN PER LTR DATED 3-7, 3-19	JAB	5-03-13
3	PER LTRS DATED 5-29, 6-5	JAB	7-12-13
4	PREP FOR WCCD SUBMISSION	JAB	7-23-13
5	MISC. REVISIONS	JAB	8-11-13
6	MISC. REVISIONS (NPDES)	JAB	8-21-13
7	PER WCCD LTR 9-11-13	JAB	9-16-13
8	REVISE RETAINING WALLS AND GRADES	SPE	12-06-13

Before You Dig Anywhere In... PENNSYLVANIA
STOP! CALL 1-800-242-1776 TOLL FREE
PA Law requires 3 working days notice before you excavate
PA ONE CALL SYSTEM, INC.

ALL CONTRACTORS WORKING ON THIS SITE SHALL COMPLY WITH THE REQUIREMENTS OF ACT 121 OF 2004 (UNDERGROUND UTILITY LINE PROTECTION LAW). VCEA HAS REGISTERED THIS SITE WITH THE PA ONE-CALL SYSTEM ON _____

PLAN NOTATION
ONLY THOSE PLANS WHICH CONTAIN AN IMPRESSED SEAL OR A RED INK SEAL OF THE RESPONSIBLE PROFESSIONAL SHALL BE CONSIDERED VALID. THIS PLAN HAS BEEN SPECIFICALLY PREPARED FOR THE OWNER DESIGNATED HEREON. ANY MODIFICATION, REVISION, DUPLICATION OR USE WITHOUT THE WRITTEN CONSENT OF VAN CLEEF ENGINEERING ASSOCIATES IS PROHIBITED. RELIANCE ON THIS PLAN FOR ANY PURPOSE OTHER THAN THAT WHICH IS INTENDED SHALL BE AT THE SOLE DISCRETION AND LIABILITY OF THE APPLICABLE PARTY.

BY: _____
BRIAN S. FOCHT, PA PE — DATE
PENNSYLVANIA PROFESSIONAL ENGINEER NO. 056961

Van Cleef ENGINEERING ASSOCIATES
Consulting Civil Engineering
Environmental Engineering
Municipal Engineering
Land Surveying
Professional Planning
Landscape Architecture
4 WELLINGTON BLVD, WYOMISSING, PA 19610
EMAIL: VCEPA@VCEA.ORG WEB: WWW.VCEA.ORG
PHONE (610) 670-6630 FAX (610) 670-4603
OFFICES THROUGHOUT NJ, EASTERN PA, DE AND MD

PROJECT: 0402NHT.02	DESIGNED BY: –
DATE: 12-19-12	DRAWN BY: JAB
SCALE: N/A	CHECKED BY: BSF

SUBDIVISION PLANS
FOR
HANOVER WOODS
(FORMERLY D'AMICO TRACT)
SITUATED IN
NEW HANOVER TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

TITLE
EROSION AND SEDIMENTATION POLLUTION CONTROL DETAILS

FINAL PLAN

SHEET NUMBER 17/36

SAM ERNEY 12/21/2010
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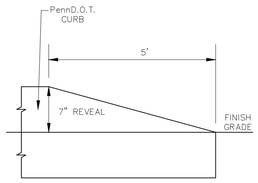
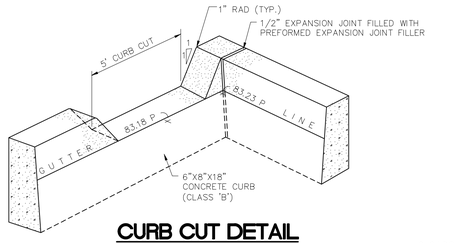
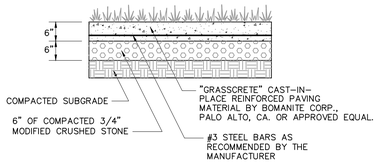


CURB TAPER DETAIL
NOT TO SCALE

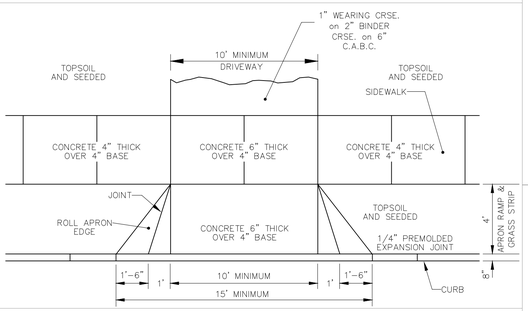


CURB CUT DETAIL
NOT TO SCALE

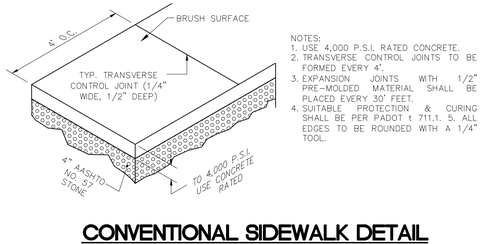
8" C.A.B.C.



EMERGENCY ACCESS DRIVE DETAIL
NO SCALE

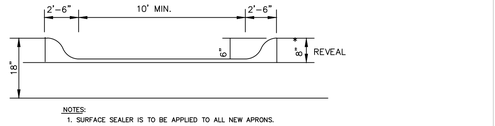


DRIVEWAY APRON
NOT TO SCALE



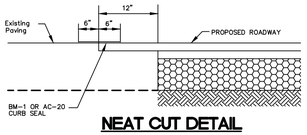
NOTES:
1. USE 4,000 P.S.I. RATED CONCRETE.
2. TRANSVERSE CONTROL JOINTS TO BE FORMED EVERY 4'.
3. EXPANSION JOINTS WITH 1/2" PRE-MOLDED MATERIAL SHALL BE PLACED EVERY 30' FEET.
4. SUITABLE PROTECTION & CURING SHALL BE PER PADOT t 711.1. 5. ALL EDGES TO BE ROUNDED WITH A 1/4" TOOL.

CONVENTIONAL SIDEWALK DETAIL
NOT TO SCALE

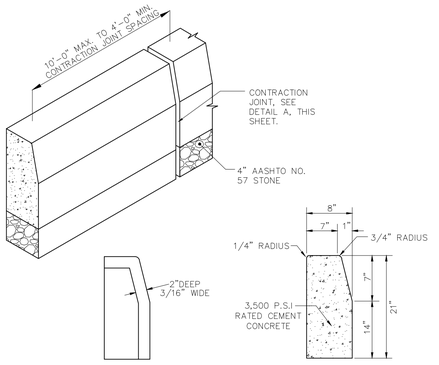


NOTES:
1. SURFACE SEALER IS TO BE APPLIED TO ALL NEW APRONS.

SINGLE DRIVEWAY CURB/DEPRESSION APRON
NOT TO SCALE



NEAT CUT DETAIL
NOT TO SCALE

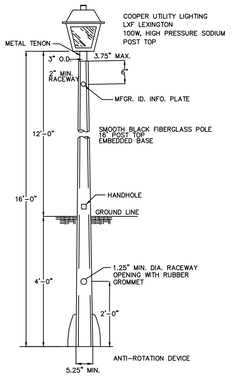


DETAIL A
CONTRACTION JOINT

TYPICAL
CROSS SECTION

NOTES:
1. EXPANSION JOINT TO BE PLACED EVERY 60 FT. MAXIMUM AND AT ALL STRUCTURES. 2. USE CONCRETE RATED FOR 3,500 P.S.I.

PLAIN CEMENT CONCRETE CURB
NOT TO SCALE



STREET LIGHT DETAIL
NOT TO SCALE

SAM ERNEY 12/21/2010
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GENERAL LANDSCAPING NOTES:
1. ALL PLANTS SHALL BE TYPICAL OF THEIR SPECIES OR VARIETY; AND SHALL HAVE NORMAL, WELL-DEVELOPED BRANCHES AND VIGOROUS, FIBROUS ROOT SYSTEMS. ALL PLANTS SHALL BE NURSERY-GROWN UNLESS OTHERWISE STATED; THEY SHALL HAVE BEEN GROWING UNDER THE SAME CLIMATE CONDITIONS AS THE MUNICIPALITY FOR AT LEAST TWO (2) YEARS PRIOR TO DATE OF PLANTING. ALL PLANTS WHICH ARE FOUND UNSUITABLE IN GROWTH OR CONDITION OR WHICH ARE NOT TRUE TO NAME SHALL BE REMOVED AND REPLACED WITH ACCEPTABLE PLANTS.
2. ALL PLANT MATERIAL SHALL BE TWICE TRANSPLANTED, NURSERY-GROWN OF SPECIMEN QUALITY. THEY SHALL BE OF SYMMETRICAL GROWTH OR TYPICAL OF THE VARIETY AND SUPPLIED FROM SOURCES IN THE SAME HARDINESS ZONE AS THE DEVELOPMENT IS LOCATED AND FREE OF INSECT AND DISEASE PROBLEMS OR OBJECTIONABLE DISFIGUREMENTS. ALL PLANT MATERIAL SHALL CONFORM TO THE STANDARDS FOR NURSERY STOCK, ANSI Z60.1-2004, AS PREPARED BY THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION.
3. ALL PRECAUTIONS CUSTOMARY IN GOOD TRADE PRACTICE SHALL BE TAKEN IN PREPARING PLANTS FOR MOVING. ALL BALLED AND BURLAPPED PLANTS SHALL BE DUG TO MEET OR EXCEED THE "STANDARDS FOR NURSERY STOCK" PUBLICATION AS REFERENCED ABOVE.
4. PLANTS SHALL BE PACKED, TRANSPORTED AND HANDLED WITH UTMOST CARE TO INSURE ADEQUATE PROTECTION AGAINST INJURY.
5. ANY PLANT MATERIAL WHICH DOES NOT SURVIVE SHALL BE REPLACED BY THE DEVELOPER. FINANCIAL SECURITY SHALL BE POSTED WITH THE TOWNSHIP IN AN AMOUNT EQUAL TO THE ESTIMATED COST OF TREES AND PLANTINGS, TO BE RELEASED EIGHTEEN (18) MONTHS FROM TOWNSHIP ACCEPTANCE OF THE INSTALLATION AND SATISFACTORY REPLACEMENT OF ALL DEAD PLANTINGS. GUARANTEE PERIOD IS 18 MONTHS FROM TOWNSHIP ACCEPTANCE. 6. ONLY THIS PLAN SHALL BE USED FOR LANDSCAPE PLANTING AND LIGHTING LAYOUT PURPOSES. THE LOCATIONS OF ALL PLANT MATERIAL INDICATED ON THE LANDSCAPE PLANS ARE APPROXIMATE. THE FINAL LOCATION OF ALL PLANT MATERIAL AND PLANTING
7. BED LINES SHALL BE DETERMINED IN THE FIELD UNDER THE DIRECTION OF THE LANDSCAPE ARCHITECT.
8. THE PLANTING PLAN SHALL TAKE PRECEDENCE OVER THE PLANT SCHEDULE SHOULD ANY PLANT QUANTITY DISCREPANCIES OCCUR.
9. ALL SHADE TREES PLANTED NEAR PEDESTRIAN OR VEHICULAR ACCESS SHOULD NOT BE BRANCHED LOWER THAN 7'-0" ABOVE GRADE. ALL SHRUBBERY MATERIAL LOCATED WITHIN SIGHT TRIANGLES SHALL NOT EXCEED A MATURE HEIGHT OF 3' ABOVE THE ELEVATION OF THE ADJACENT CURB. ALL SHADE TREES PLANTED OR EXISTING IN SIGHT TRIANGLES SHALL BE PRUNED SO AS NOT TO HAVE BRANCHES BELOW 7'-0".
10. ALL PLANT MATERIAL SHALL BE PROPERLY GUYED, STAKED, WRAPPED AND PLANTED IN CONFORMANCE WITH THE TYPICAL PLANTING DETAILS. GUY WIRES SHALL BE ATTACHED TO THE TREE AT TWO-THIRDS THE HEIGHT OF THE TREE AND SHOULD BE LOCATED AT POINTS SO AS NOT TO SPLIT THE TRUNKS OF MULTI-STEMMED TREES. PROVIDE TWO THREE TREE STAKES PER TREE AS NOTED ON THE PLANS. INSTALL ALL PLANT MATERIAL ON UNDISTURBED GRADE. PROVIDE BURLAP WRAPPING WITH A 50% OVERLAP. CUT AND REMOVE BURLAP FROM TOP ONE-THIRD OF THE ROOT BALL.
11. THE TOWNSHIP FIELD REPRESENTATIVE HAS THE RIGHT TO REFUSE ANY PLANT MATERIAL THAT IS FOUND TO BE UNACCEPTABLE IN MEETING THE "STANDARDS FOR NURSERY STOCK", OR AS HOW THE MATERIAL WAS HANDLED ON SITE OR IF ITS PLANTING PROCEDURE IS FOUND TO BE QUESTIONABLE.
12. PROVIDE PLANTING PITS AS INDICATED ON PLANTING DETAILS. BACKFILL PLANTING PITS WITH ONE PART EACH OF TOPSOIL, PEAT MOSS AND
PARENT MATERIAL. IF WET SOIL CONDITIONS EXIST, THEN PLANTING PITS SHALL BE EXCAVATED AN ADDITIONAL 12" AND FILLED WITH SAND.
13. ALL PLANT MATERIAL SHALL BEAR THE SAME RELATION TO FINISHED GRADE AS IT DID TO EXISTING GRADE.
14. NEWLY INSTALLED PLANT MATERIAL SHALL BE WATERED AT THE TIME OF INSTALLATION. REGULAR WATERING SHALL BE PROVIDED TO ENSURE THE ESTABLISHMENT, GROWTH AND SURVIVAL OF ALL PLANTS.
15. ALL DISTURBED LAWN AREAS SHALL BE STABILIZED WITH SEED AS INDICATED ON THE LANDSCAPE PLANS. SEED MIXTURE SHALL BE AS LISTED IN THE SEEDING SCHEDULE ON THE SOIL EROSION AND SEDIMENT CONTROL NARRATIVE. ALL DISTURBED LAWN AREAS SHALL BE TOPSOILED, LIMED, FERTILIZED AND FINE GRADED PRIOR TO LAWN INSTALLATION.
16. ALL PLANTING BEDS SHALL RECEIVE MINIMUM 4" OF SHREDDED HARDWOOD BARK.
17. ALL SHRUB MASSES SHALL BE PLANTED IN CONTINUOUS MULCHED BEDS.
18. ALL EXISTING TREES AND SHRUBS TO BE PRESERVED ON SITE SHALL BE PROTECTED AGAINST CONSTRUCTION DAMAGE BY SNOW FENCING. ALL FENCING SHALL BE PLACED OUTSIDE THE INDIVIDUAL TREE CANOPY, OR AT THE SPECIFIC LOCATION DETERMINED APPROPRIATE BY THE LANDSCAPE ARCHITECT. ALL TREES TO REMAIN SHALL BE IDENTIFIED IN THE FIELD PRIOR TO COMMENCEMENT OF CONSTRUCTION, GRADING OR CLEARING. ALL EXISTING VEGETATION BEING PRESERVED AND LOCATED AT THE EDGE OF THE NEW TREELINE SHALL BE PRUNED AND TRIMMED TO REMOVE DEAD OR DAMAGED BRANCHES. SEE DETAILS FOR TREE PRESERVATION.
19. PROPOSED LIGHTING WILL BE INSTALLED AT THE DEVELOPER'S EXPENSE AND THE DEVELOPER SHALL BE RESPONSIBLE FOR COSTS INVOLVED IN LIGHTING PUBLIC STREETS UNTIL SUCH TIME THAT THE STREET IS ACCEPTED BY THE TOWNSHIP.
20. IT IS IMPERATIVE THAT UTILITY COMPANIES ARE NOTIFIED PRIOR TO ANY EXCAVATION AND/OR CONSTRUCTION. CALL 1-800-242-1776 TO ORDER UTILITY MARKOUTS BY OTHERS.
21. TREES THAT DROP NUTS OR FRUITS SHALL NOT BE PLANTED IN PEDESTRIAN AREAS.

SEEDING SPECIFICATIONS
PROVIDE THE FOLLOWING SEED MIXTURE FOR PROPOSED RESIDENTIAL LOT LAWN AREAS AND ROAD RIGHT OF WAYS. (FOR THE DETENTION BASIN BOTTOM, SIDE SLOPES AND ADJACENT OPEN SPACE AREAS, USE MIXES "A", "B" AND "C", RESPECTIVELY, AS PROVIDED ON DETAIL SHEET NO.14)

LAWN AREAS:
PROVIDE THE FOLLOWING SEED MIXTURE FOR ALL DISTURBED AREAS OUTSIDE OF DETENTION BASIN MIXES A, B & C AND WOODLAND AREAS:

SEED MIXTURE	SEEDING RATES LBS./AC.	LBS./1,000 S.F.	
PENNLAWN FESCUE	45	1.03	*OPTIMUM SEEDING
KENTUCKY BLUEGRASS	90	2.07	ARE:
PENNFINE PERENNIAL RYEGRASS	15	0.34	AUGUST 15 TO OCT. 15

SEED MIXES SHOULD BE APPLIED WITH A BROADCAST SPREADER TO ENSURE FULL, EVEN COVERAGE. A SOIL TEST BY A REPUTABLE LABORATORY SHOULD BE TAKEN TO DETERMINE THE NUTRIENT REQUIREMENTS. THE RECOMMENDED AMOUNT OF FERTILIZER SHOULD BE A CONVENTIONAL FAST-RELEASE FORM SO IT IS AVAILABLE TO THE GERMINATED SEEDLINGS.

LIGHTING NOTES
ROADWAY LIGHTING:

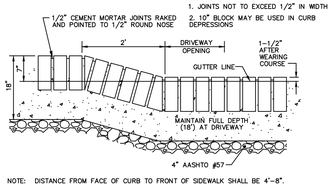
COOPER LIGHTING COMPANY
SINGLE-MOUNTED LXF LEXINGTON
100 WATT H.P.S.
TAPERED ROUND ALUM. POLE
BLACK BAKED ENAMEL FINISH OVER SATIN POLISH
5 FIXTURES (AT STREET INTERSECTIONS)

DRIVEWAY LIGHTING:

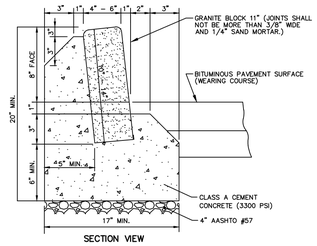
COOPER LIGHTING COMPANY OR APPROVED EQUAL
CATALOG CUTS TO BE SUPPLIED
TO TOWNSHIP PRIOR TO CONSTRUCTION

65 FIXTURES

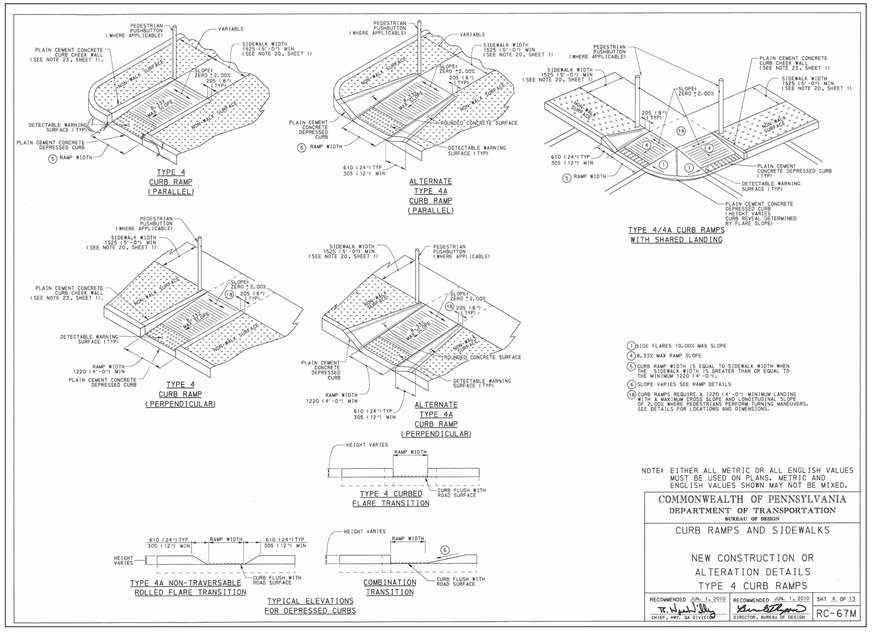
ALL LIGHTING INSTALLATION SHALL CONFORM TO TOWNSHIP REGULATIONS AND THE CONSTRUCTION & MATERIAL SPECIFICATION FOR PUBLIC IMPROVEMENTS



ELEVATION VIEW
INTERIOR ROADWAY APPLICATION ONLY
BELGIAN BLOCK CURB DETAIL
NOT TO SCALE



SECTION VIEW



1) SIDE FLARES 10.00% MAX SLOPE
4) 6.33% MAX RAMP SLOPE
5) CURB RAMP WIDTH IS EQUAL TO SIDEWALK WIDTH WHEN 5' OR GREATER AND 5' WHEN LESS THAN OR EQUAL TO THE MINIMUM 1220 (4'-0") C.
6) SLOPE VARIES SEE RAMP DETAILS
18) CURB RAMPS REQUIRE A 1220 (4'-0") MINIMUM LANDING AT THE TOP OF THE RAMP AND A 1220 (4'-0") MINIMUM AT THE BOTTOM WHERE PROCEEDING PERPENDICULAR TO RAMP/CURB. SEE DETAILS FOR LOCATIONS AND DIMENSIONS.

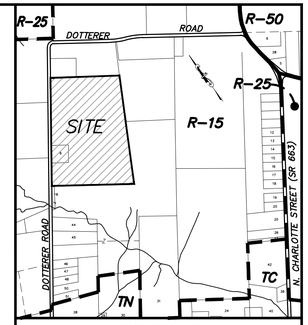
NOTE: EITHER ALL METRIC OR ALL ENGLISH VALUES MUST BE USED ON PLANS. METRIC AND ENGLISH VALUES SHOWN MAY NOT BE MIXED.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF DESIGN

CURB RAMPS AND SIDEWALKS

NEW CONSTRUCTION OR ALTERATION DETAILS
TYPE 4 CURB RAMPS

RECOMMENDED JUN. 1, 2010 CHIEF, HWY. SA DIVISION	RECOMMENDED JUN. 1, 2010 DIRECTOR, BUREAU OF DESIGN	SHT. 6 OF 13 RC-67M



LOCATION MAP
SCALE: 1"=800'

NO.	REVISION	INITIALS	DATE
1	PER LTS DATED 1-3-13, 1-4-13 & 2-14-13	JAB	2-20-13
2	PREP FINAL PLAN PER LTS DATED 3-7, 3-19	JAB	5-03-13
3	PER LTRS DATED 5-29, 6-5	JAB	7-12-13
4	PREP FOR MCCD SUBMISSION	JAB	7-23-13
5	MISC. REVISIONS	JAB	8-11-13
6	MISC. REVISIONS (NPDES)	JAB	8-21-13
7	PER MCCD LTR 9-11-13	JAB	9-16-13
8	REVISE RETAINING WALLS AND GRADES	SPE	12-06-13

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PA Law requires 3 working days notice before you excavate
PA ONE CALL SYSTEM, INC.

ALL CONTRACTORS WORKING ON THIS SITE SHALL COMPLY WITH THE REQUIREMENTS OF ACT 121 OF 2004 (UNDERGROUND UTILITY LINE PROTECTION LAW). VCEA HAS REGISTERED THIS SITE WITH THE PA ONE-CALL SYSTEM ON _____

PLAN NOTATION
ONLY THOSE PLANS WHICH CONTAIN AN IMPRESSED SEAL OR A RED INK SEAL OF THE RESPONSIBLE PROFESSIONAL SHALL BE CONSIDERED VALID. THIS PLAN HAS BEEN SPECIFICALLY PREPARED FOR THE OWNER DESIGNATED HEREON. ANY MODIFICATION, REVISION, DUPLICATION OR USE WITHOUT THE WRITTEN CONSENT OF VAN CLEEF ENGINEERING ASSOCIATES IS PROHIBITED. RELIANCE ON THIS PLAN FOR ANY PURPOSE OTHER THAN THAT WHICH IS INTENDED SHALL BE AT THE SOLE DISCRETION AND LIABILITY OF THE APPLICABLE PARTY.

BY: _____
BRIAN S. FOCHT, PA PE DATE
PENNSYLVANIA PROFESSIONAL ENGINEER NO. 056961

Van Cleef ENGINEERING ASSOCIATES
Consulting Civil Engineering
Environmental Engineering
Municipal Engineering
Land Surveying
Professional Planning
Landscape Architecture
4 WELLINGTON BLVD, WYOMISSING, PA 19610
EMAIL VCEPA@VCEA.ORG WEB: WWW.VCEA.ORG
PHONE (610) 670-6630 FAX (610) 670-4603
OFFICES THROUGHOUT NJ, EASTERN PA, DE AND MD

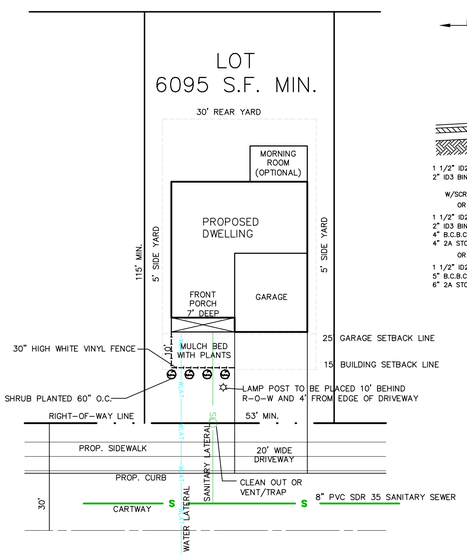
PROJECT: 0402NHT.02	DESIGNED BY: –
DATE: 12-19-12	DRAWN BY: JAB
SCALE: N/A	CHECKED BY: BSF

SUBDIVISION PLANS
FOR
HANOVER WOODS
(FORMERLY D'AMICO TRACT)
SITUATED IN
NEW HANOVER TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

TITLE
CONSTRUCTION DETAILS

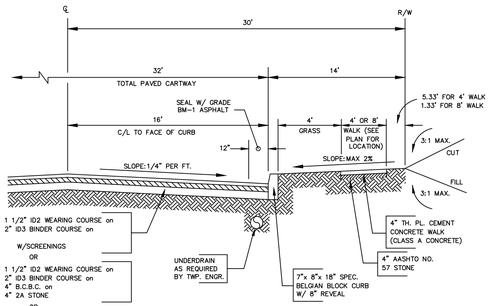
FINAL PLAN

SHEET NUMBER 20 / 36

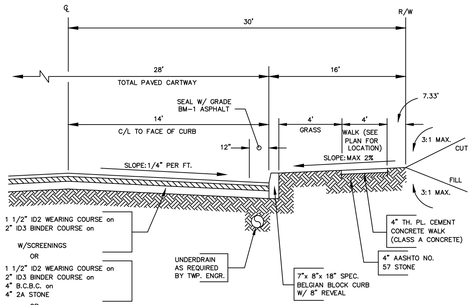


TYPICAL LOT LAYOUT

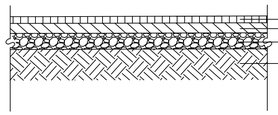
SCALE: 1" = 20'



TYPICAL HALF-SECTION
GARNET DRIVE



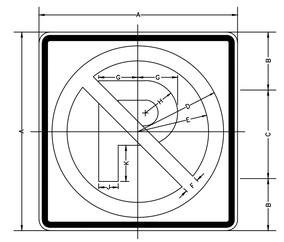
TYPICAL HALF-SECTION
PRIVATE ROADS



BICYCLE / SHARED USE PATH

NOT TO SCALE

PATH TO BE CONSTRUCTED ACCORDING TO SECTION 'E' OF TOWNSHIP STANDARD CONSTRUCTION AND MATERIAL SPECIFICATIONS FOR PUBLIC IMPROVEMENTS



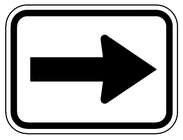
COLOR: SYMBOL AND BORDER — BLACK (NON-REFLECTORIZED)
CIRCLE AND DIAGONAL — RED (REFLECTORIZED)*
BACKROUND — WHITE (REFLECTORIZED)*

SIGN SIZE	DIMENSIONS							
	A	B	C	D	E	F	G	H
12x12	12	3	6	4 7/8	3 7/8	1	2 25/64	1 7/8
24x24	24	6	12	10 1/2	8 1/2	2	4 25/32	3 3/4
36x36	36	9	18	15 3/4	12 3/4	3	7 11/64	5 5/8

SIGN SIZE	DIMENSIONS		SERIES LINE	MAR-GIN	BOR-DER	BLANK STD
	J	K	I			
12x12	1 13/64	2 1/4	E(m)	3/8	3/8	B3-12
24x24	2 13/32	4 1/2	E(m)	3/8	5/8	B3-24
36x36	3 39/64	6 3/4	E(m)	5/8	7/8	B3-36

R7-1

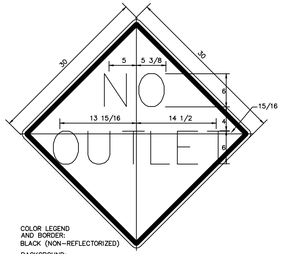
NOT TO SCALE



COLORS: SYMBOL-BLACK
BACKGROUND-WHITE (REFLECTIVE)

M7-1

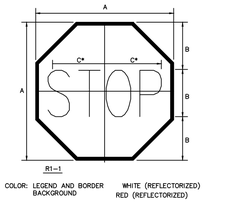
NOT TO SCALE



COLOR LEGEND AND BORDER: BLACK (NON-REFLECTORIZED)
BACKGROUND: YELLOW (REFLECTORIZED)

W14-2

NOT TO SCALE



R1-1

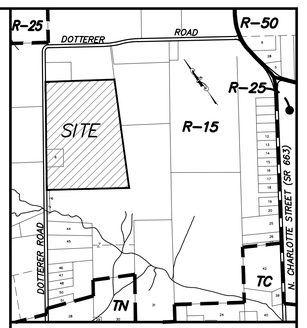
COLOR: LEGEND AND BORDER — WHITE (REFLECTORIZED)
BACKGROUND — RED (REFLECTORIZED)

SIGN SIZE	DIMENSIONS		
	A	B	C
24X24	24	8	10
30X30	30	10	12 1/2
36X36	36	12	15
48X48	48	16	20

*REDUCE SPACING 40%

R1-1

NOT TO SCALE



LOCATION MAP

SCALE: 1"=800'

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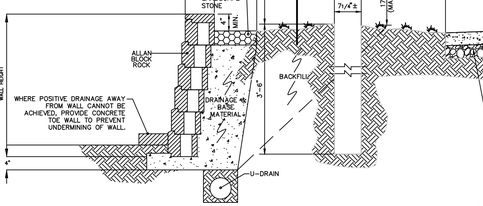
BY: _____

BRIAN S. FOCHT, PA PE — DATE
PENNSYLVANIA PROFESSIONAL ENGINEER NO. 056961



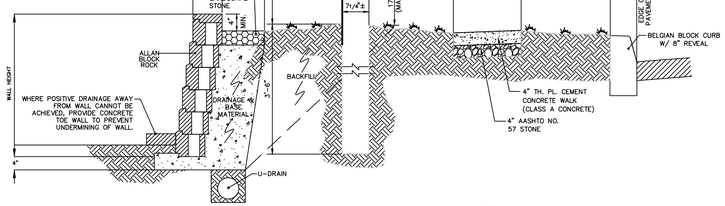
TYPICAL WALL SECTION

ALLAN BLOCK RETAINING WALL AND PRESSURE TREATED TIMBER VEHICULAR GUIDE RAIL DETAIL
(WITH SIDEWALK)

NOT TO SCALE

NOTE:
ALL LUMBER FOR GUIDERAIL CONSTRUCTION TO BE SOUTHERN YELLOW PINE-#2 OR BETTER, WITH A MAXIMUM MOISTURE CONTENT BEFORE TREATMENT OF 19%%. GUIDE RAIL MUST MEET PADOT SPECIFICATIONS.

(DETAILED SIGNED AND SEALED CONSTRUCTION DRAWINGS TO BE SUBMITTED PRIOR TO CONSTRUCTION. DRAINAGE PIPE INVERTS MUST BE INCLUDED).



TYPICAL WALL SECTION

ALLAN BLOCK RETAINING WALL AND PRESSURE TREATED TIMBER VEHICULAR GUIDE RAIL DETAIL
(WITH 8' BIKE PATH)

NOT TO SCALE

NOTE:
ALL LUMBER FOR GUIDERAIL CONSTRUCTION TO BE SOUTHERN YELLOW PINE-#2 OR BETTER, WITH A MAXIMUM MOISTURE CONTENT BEFORE TREATMENT OF 19%%. GUIDE RAIL MUST MEET PADOT SPECIFICATIONS.

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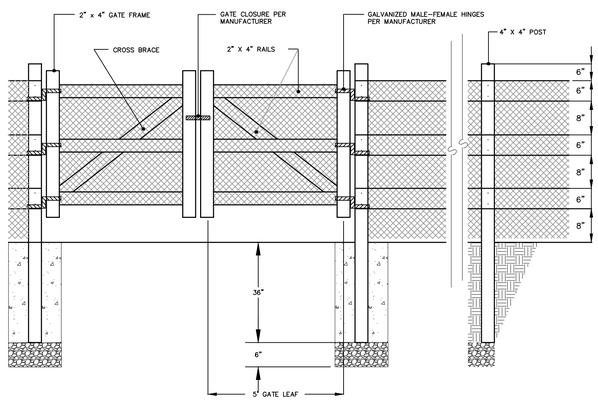
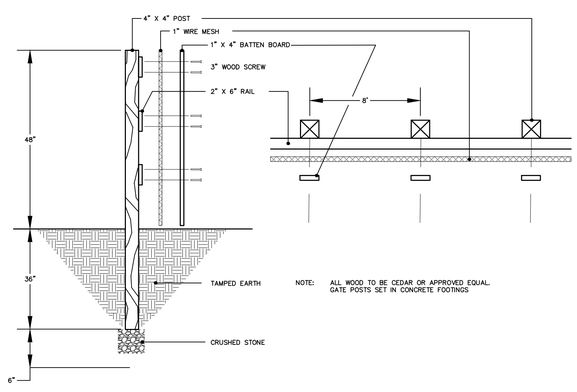


DETENTION BASIN
FENCE AND GATE DETAIL

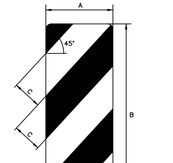
NOT TO SCALE



NOTE: ALL WOOD TO BE CEDAR OR APPROVED EQUAL. GATE POSTS SET IN CONCRETE FOOTINGS

DETENTION BASIN FENCE and GATE DETAIL

NOT TO SCALE

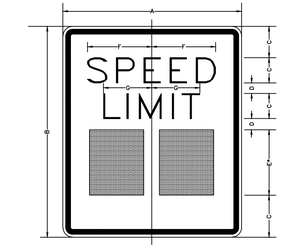


W16-2-2R

SIGN SIZE	DIMENSIONS		
	A	B	C
18X36	18	36	4 TO 6 1/2

NOTE
W16-2L(R) 12X36 YELLOW AND BLACK-USED FOR ABUTMENTS, PARAPETS, HEADWALLS AND ETC.

W16-2L(R) 12X36 YELLOW AND BLACK-USED FOR ABUTMENTS, PARAPETS, HEADWALLS AND ETC.



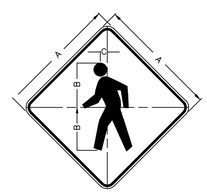
COLOR: LEGEND AND BORDER — BLACK (NON-REFLECTORIZED)
BACKGROUND — WHITE (REFLECTORIZED)

SIGN SIZE	DIMENSIONS						
	A	B	C	D	E	F	G
24X30	24	30	4	2	10	9 9/16	7 5/16
30X36	30	36	5	2	12	12	9 3/16
36X48	36	48	6	5	14	14 3/8	11
48X60	48	60	8	6	16	19 1/8	14 5/8

* OPTICALLY SPACE NUMERALS ABOUT VERTICAL ℄

R2-1

NOT TO SCALE



SIGN SIZE	DIMENSIONS*		MAR-GIN	BOR-DER	BLANK STD
	A	B	C		
30x30	30	13 3/4	1 1/2	1/2	3/4	B3-30

* DIMENSIONS IN INCHES

COLOR: LEGEND AND BORDER — BLACK (NON-REFLECTORIZED)
BACKGROUND — YELLOW (REFLECTORIZED)

W11-2
PEDESTRIAN AREA SIGN
(NOT TO SCALE)

COLORS: LEGEND-WHITE (REFLECTIVE)
SYMBOL-WHITE (REFLECTIVE)
BACKGROUND-BLUE (REFLECTIVE)

A	B	C	D	E	F	G	H	J	K
24	18	.5	1.5	7	3.5	3C	5.5	9.5	1.5
30	24	.625	1.875	8.75	4.375	4C	6.875	12.5	1.5

D11-1

NOT TO SCALE

Van Cleef ENGINEERING ASSOCIATES
Consulting Civil Engineering
Environmental Engineering
Municipal Engineering
Land Surveying
Professional Planning
Landscape Architecture
4 WELLINGTON BLVD, WYOMISSING, PA 19610
EMAIL: VCEPA@VCEA.ORG WEB: WWW.VCEA.ORG
PHONE (610) 670-6630 FAX (610) 670-4603
OFFICES THROUGHOUT NJ, EASTERN PA, DE AND MD

PROJECT:	DESIGNED BY:
0402NHT.02	–
DATE:	DRAWN BY:
12-19-12	JAB
SCALE:	CHECKED BY:
N/A	BSF

SUBDIVISION PLANS
FOR
HANOVER WOODS
(FORMERLY D'AMICO TRACT)
SITUATED IN
NEW HANOVER TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

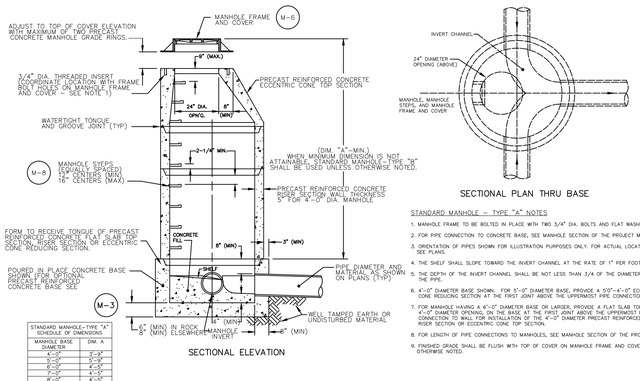
TITLE

CONSTRUCTION DETAILS

FINAL PLAN

SHEET NUMBER 21 / 36

SAM ERNEY 12/21/2010
F:\JOBFILE\2004\0402NHT.02\CIVIL 3D\DWG\SHEETS\14-20 DETAILS-0402NHT.01.DWG



STANDARD MANHOLE-TYPE "A" SCHEDULE OF DIMENSIONS	
MANHOLE BASE DIAMETER	DIM. A
4'-0"	3'-9"
5'-0"	5'-3"
6'-0"	6'-3"
7'-0"	7'-3"
8'-0"	8'-3"
10'-0"	9'-3"

SECTIONAL ELEVATION

STANDARD MANHOLE - TYPE 'A'

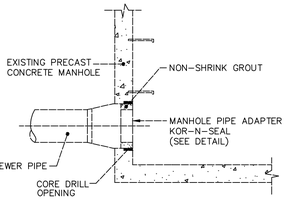
NOT TO SCALE

(NEW HANOVER TOWNSHIP SEWER AUTHORITY) M-4

SECTIONAL PLAN THRU BASE

STANDARD MANHOLE - TYPE "A" NOTES

1. MANHOLE FRAME TO BE BOLTED IN PLACE WITH TWO 3/4" DIA. BOLTS AND FLAT WASHERS.
2. FOR PIPE CONNECTION TO CONCRETE BASE, SEE MANHOLE SECTION OF THE PROJECT MANUAL.
3. ORIENTATION OF PIPES SHOWN FOR ILLUSTRATION PURPOSES ONLY. FOR ACTUAL LOCATIONS SEE PLANS.
4. THE SHELF SHALL SLOPE TOWARD THE INVERT CHANNEL AT THE RATE OF 1" PER FOOT (MIN.).
5. THE DEPTH OF THE INVERT CHANNEL SHALL BE NOT LESS THAN 3/4 OF THE DIAMETER OF THE PIPE.
6. 4'-0" DIAMETER BASE SHOWN. FOR 5'-0" DIAMETER BASE, PROVIDE A 5'0"-4'-0" ECCENTRIC CONE REDUCING SECTION AT THE FIRST JOINT ABOVE THE UPPERMOST PIPE CONNECTION TO WALL.
7. FOR MANHOLE HAVING A 6'-0" DIAMETER BASE OR LARGER, PROVIDE A FLAT SLAB TOP, WITH A 4'-0" DIAMETER OPENING, ON THE BASE AT THE FIRST JOINT ABOVE THE UPPERMOST PIPE CONNECTION TO WALL FOR INSTALLATION OF THE 4'-0" DIAMETER PRECAST REINFORCED CONCRETE RISER SECTION OR ECCENTRIC CONE TOP SECTION.
8. FOR LENGTH OF PIPE CONNECTIONS TO MANHOLES, SEE MANHOLE SECTION OF THE PROJECT MANUAL.
9. FINISHED GRADE SHALL BE FLUSH WITH TOP OF COVER ON MANHOLE FRAME AND COVER, UNLESS OTHERWISE NOTED.

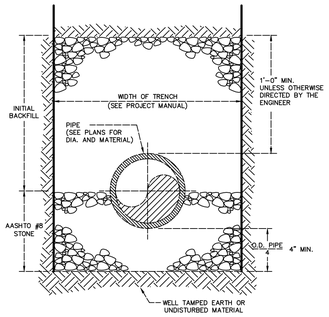


SECTION

NOTE:
AFTER CONNECTION OF PIPE TO MANHOLE, REMOVE CONCRETE CHANNEL AS REQUIRED AND RECONSTRUCT IN ACCORDANCE WITH DETAIL DRAWINGS.

THE CORE DRILL PENETRATION INTO THE EXISTING MANHOLE SHOULD BE A MIMIMUM OF 8" FROM A MANHOLE CONNECTION JOINT.

SANITARY SEWER CONNECTION TO EXISTING MANHOLE



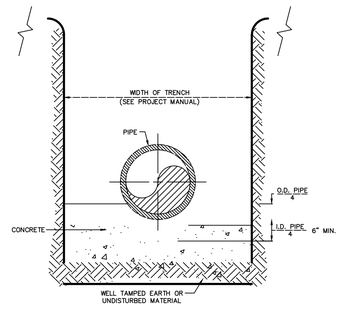
SECTIONAL ELEVATION

FIRST CLASS BEDDING AND INITIAL BACKFILL

NOT TO SCALE

PIPE BEDDING

(NEW HANOVER TOWNSHIP SEWER AUTHORITY)



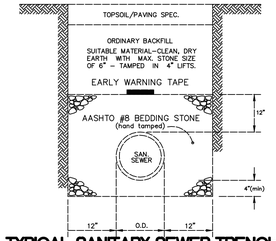
SECTIONAL ELEVATION

CONCRETE CRADLE

NOT TO SCALE

PIPE BEDDING

(NEW HANOVER TOWNSHIP SEWER AUTHORITY)

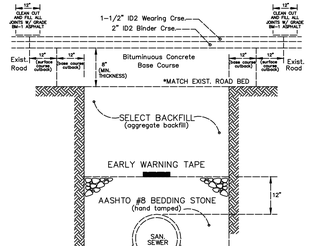


TYPICAL SANITARY SEWER TRENCH DETAIL OUTSIDE EXISTING CARTWAY

NOT TO SCALE

(FOR P.V.C. PIPE)

NOTE:
1. BACKFILL MATERIAL SHALL BE SUITABLE TO NEW HANOVER AUTHORITY AND NEW HANOVER TOWNSHIP.
2. TOP SOIL / PAVING TO MATCH EXISTING DEPTH.



TYPICAL SANITARY SEWER TRENCH DETAIL WITHIN EXISTING CARTWAY

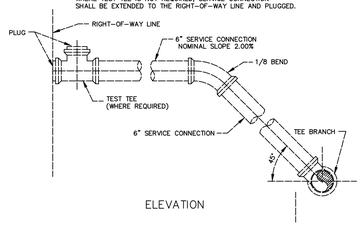
NOT TO SCALE

(FOR P.V.C. PIPE)

NOTE:
1. BACKFILL MATERIAL SHALL BE SUITABLE TO NEW HANOVER AUTHORITY AND NEW HANOVER TOWNSHIP.

SERVICE CONNECTION SHALLOW SEWER NOTE:

WHERE TEST TEE IS NOT REQUIRED, SERVICE CONNECTION SHALL BE EXTENDED TO THE RIGHT-OF-WAY LINE AND PLUGGED.



ELEVATION

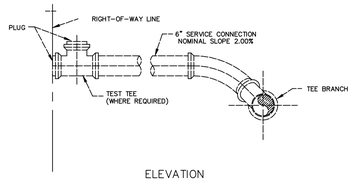
SERVICE CONNECTION DEEP SEWER

NOT TO SCALE

(NEW HANOVER TOWNSHIP SEWER AUTHORITY)

SERVICE CONNECTION SHALLOW SEWER NOTE:

WHERE TEST TEE IS NOT REQUIRED, SERVICE CONNECTION SHALL BE EXTENDED TO THE RIGHT-OF-WAY LINE AND PLUGGED.



ELEVATION

SERVICE CONNECTION SHALLOW SEWER

NOT TO SCALE

(NEW HANOVER TOWNSHIP SEWER AUTHORITY)

Kor-N-Seal® I 706 Series Connector

S706-12A

Our 706 Series 12A connector has been designed specifically to accommodate 8" PVC pipe in 48" manholes and flat wall structures.

The 706 Series 12M connector accommodates pipe O.D. ranges from 6.0 through 10.5 with our unique three-step design. There are separate connector models for flat wall versus round structures.

Sizing Chart		
Part Number	Pipe O.D. Range	Structure Size
S706-12A-485	7.5 - 9.0	48" Round
S706-12A-FLT	7.5 - 9.0	Flat Wall
S706-12M-485	6.0 - 7.0 7.5 - 9.0 9.5 - 10.5	48" Round
S706-12M-FLT	6.0 - 7.0 7.5 - 9.0 9.5 - 10.5	Flat Wall

S706-12M

TRELLEBORG
ENGINEERED SYSTEMS

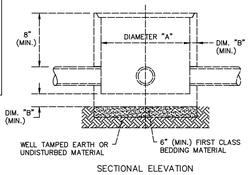
Trelleborg Pipe Seals Milford, Inc.
P.O. Box 301, 250 Elm Street, Milford, New Hampshire 03055 U.S.A.
Tel: 800-626-2180 603-673-8680 Fax: 603-673-7271 www.trelleborg.com/epc

01-10

PRECAST REINFORCED CONCRETE MANHOLE BASES

(NEW HANOVER TOWNSHIP SEWER AUTHORITY)

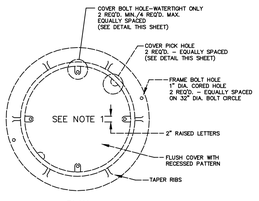
PRECAST REINFORCED CONCRETE MANHOLE BASE SCHEDULE OF DIMENSIONS	
DIA. "A"	DIM. "B"
4'-0"	8"
5'-0"	8"
6'-0"	8"
7'-0"	8"
8'-0"	9"
10'-0"	10"



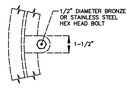
SECTIONAL ELEVATION

PRECAST REINFORCED CONCRETE MANHOLE BASES NOTES:

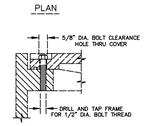
1. FOR PIPE OPENINGS THRU PRECAST REINFORCED CONCRETE MANHOLE WALLS, SEE MANHOLE SECTION OF THE PROJECT MANUAL.
2. ORIENTATION AND DIA. OF PIPE OPENINGS SHOWN FOR ILLUSTRATION PURPOSES ONLY. SEE PLANS FOR LOCATION AND DIAMETER.
3. PRECAST REINFORCED CONCRETE MANHOLE BASE TO CONFORM TO ASTM SPECIFICATION C-478.
4. REINFORCING STEEL TO CONFORM TO ASTM SPECIFICATION A-185.



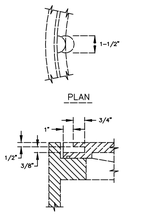
PLAN



PLAN



SECTIONAL ELEVATION

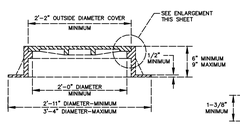


SECTIONAL ELEVATION

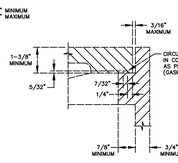
COVER BOLT HOLE

REQUIRED ONLY ON MANHOLES DESIGNATED TO HAVE "WATERTIGHT" COVERS

COVER PICK HOLE



SECTIONAL ELEVATION



ENLARGEMENT

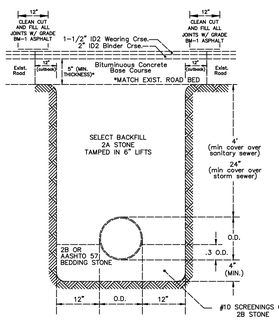
MANHOLE FRAME AND COVER NOTES:

1. "SEWER", "ELECTRIC", "TELEPHONE" OR "STORM" AS APPLICABLE. ALL OTHERS SHALL HAVE NO LETTERING.
2. ALL MANHOLE FRAMES AND COVERS SHALL BE FOR HEAVY-DUTY TRAFFIC, AASHTO HIGHWAY LOADING CLASS HS-20.

STANDARD AND WATERTIGHT MANHOLE FRAME AND COVER

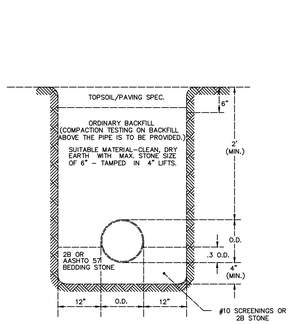
NOT TO SCALE

(NEW HANOVER TOWNSHIP SEWER AUTHORITY)



STORM SEWER TRENCH RESTORATION DETAIL WITHIN EXISTING CARTWAY

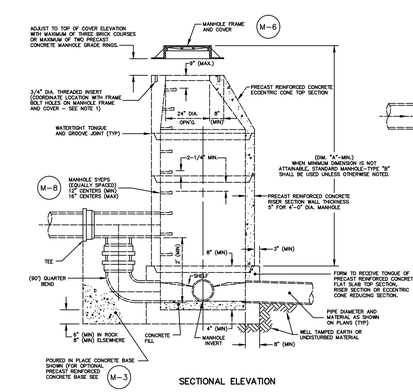
NOT TO SCALE



STORM SEWER TRENCH RESTORATION DETAIL OUTSIDE EXISTING CARTWAY

NOTE: COMPACTION TESTING IS TO BE DONE AT 50' INTERVALS FOR THE BACKFILL AROUND THE STORM SEWER PIPES IN AREAS OF PROPOSED PAVING.

NOTE: COMPACTION TESTING IS TO BE DONE AT 50' INTERVALS FOR THE BACKFILL AROUND THE STORM SEWER PIPES IN AREAS OF PROPOSED PAVING.



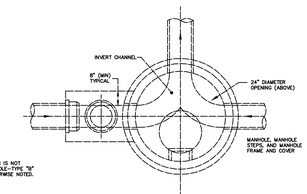
STANDARD MANHOLE-TYPE "A" SCHEDULE OF DIMENSIONS	
MANHOLE BASE DIAMETER	DIM. A
4'-0"	3'-9"
5'-0"	5'-3"
6'-0"	6'-3"
7'-0"	7'-3"
8'-0"	8'-3"
10'-0"	9'-3"

SECTIONAL ELEVATION

DROP MANHOLE - TYPE "A" M-1

NOT TO SCALE

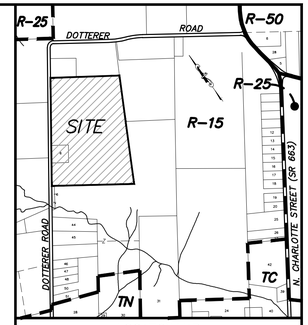
(NEW HANOVER TOWNSHIP SEWER AUTHORITY)



SECTIONAL PLAN THRU BASE

DROP MANHOLE - TYPE "A" NOTES

1. MANHOLE FRAME TO BE BOLTED IN PLACE WITH TWO 3/4" DIA. BOLTS AND FLAT WASHERS.
2. FOR PIPE CONNECTION TO CONCRETE BASE, SEE MANHOLE SECTION OF THE PROJECT MANUAL.
3. ORIENTATION OF PIPES SHOWN FOR ILLUSTRATION PURPOSES ONLY. FOR ACTUAL LOCATIONS SEE PLANS.
4. THE SHELF SHALL SLOPE TOWARD THE INVERT CHANNEL AT THE RATE OF 1" PER FOOT (MIN.).
5. THE DEPTH OF THE INVERT CHANNEL SHALL BE NOT LESS THAN 3/4 OF THE DIAMETER OF 4'-0" DIAMETER BASE SHOWN.
6. FOR 5'-0" DIAMETER BASE, PROVIDE A 5'0"-4'-0" ECCENTRIC CONE REDUCING SECTION AT THE FIRST JOINT ABOVE THE UPPERMOST PIPE CONNECTION TO WALL.
7. FOR MANHOLE HAVING A 6'-0" DIAMETER BASE OR LARGER, PROVIDE A FLAT SLAB TOP, WITH A 4'-0" DIAMETER OPENING, ON THE BASE AT THE FIRST JOINT ABOVE THE UPPERMOST PIPE CONNECTION TO WALL FOR INSTALLATION OF THE 4'-0" DIAMETER PRECAST REINFORCED CONCRETE RISER SECTION OR ECCENTRIC CONE TOP SECTION.
8. FOR LENGTH OF PIPE CONNECTIONS TO MANHOLES, SEE MANHOLE SECTION OF THE PROJECT MANUAL. 9. FINISHED GRADE SHALL BE FLUSH WITH TOP OF COVER ON MANHOLE FRAME AND COVER, UNLESS OTHERWISE NOTED.
9. DROP MANHOLES REQUIRE A SEMI RIGID THERMO PLASTIC LINER (DURA PLATE 100 OR APPROVED EQUAL) BE INSTALLED IN IT AND ONE MANHOLE DOWNSTREAM OF IT, MANHOLES 63-20-1, 63-20 AND 63-16 WILL REQUIRE LINERS.



LOCATION MAP

SCALE: 1"=800'

NO.	REVISION	INITIALS	DATE
1	PER LTR DATED 1-3-13, 1-4-13 & 2-14-13	JAB	2-20-13
2	PREP FINAL PLAN PER LTR DATED 3-7, 3-19	JAB	5-03-13
3	PER LTRS DATED 5-29, 6-5	JAB	7-12-13
4	PREP FOR MCCD SUBMISSION	JAB	7-23-13
5	MISC. REVISIONS	JAB	8-11-13
6	MISC. REVISIONS (NPDES)	JAB	8-21-13
7	PER MCCD LTR 9-11-13	JAB	9-16-13
8	REVISE RETAINING WALLS AND GRADES	SPE	12-06-13

Before You Dig Anywhere in... PENNSYLVANIA

STOP! CALL 1-800-242-1776 TOLL FREE

PA Law requires 3 working days notice before any excavation

PA ONE CALL SYSTEM, INC.

ALL CONTRACTORS WORKING ON THIS SITE SHALL COMPLY WITH THE REQUIREMENTS OF ACT 121 OF 2004 (UNDERGROUND UTILITY LINE PROTECTION LAW). VCEA HAS REGISTERED THIS SITE WITH THE PA ONE-CALL SYSTEM ON

PLAN NOTATION

ONLY THOSE PLANS WHICH CONTAIN AN IMPRESSED SEAL OR A RED INK SEAL OF THE RESPONSIBLE PROFESSIONAL SHALL BE CONSIDERED VALID. THIS PLAN HAS BEEN SPECIFICALLY PREPARED FOR THE OWNER DESIGNATED HEREON. ANY MODIFICATION, REVISION, DUPLICATION OR USE WITHOUT THE WRITTEN CONSENT OF VAN CLEEF ENGINEERING ASSOCIATES IS PROHIBITED. RELIANCE ON THIS PLAN FOR ANY PURPOSE OTHER THAN THAT WHICH IS INTENDED SHALL BE AT THE SOLE DISCRETION AND LIABILITY OF THE APPLICABLE PARTY.

BY: _____

BRIAN S. FOCHT, PA PE DATE

PENNSYLVANIA PROFESSIONAL ENGINEER NO. 056961

Van Cleef ENGINEERING ASSOCIATES

Consulting Civil Engineering
Environmental Engineering
Municipal Engineering
Land Surveying
Professional Planning
Landscape Architecture

4 WELLINGTON BLVD, WYOMISSING, PA 19610
EMAIL: VCEPA@VCEA.ORG WEB: WWW.VCEA.ORG
PHONE (610) 670-6630 FAX (610) 670-6603
OFFICES THROUGHOUT NJ, EASTERN PA, DE AND MD

PROJECT: 0402NHT.02	DESIGNED BY: -
DATE: 12-19-12	DRAWN BY: JAB
SCALE: N/A	CHECKED BY: BSF

SUBDIVISION PLANS

FOR

HANOVER WOODS (FORMERLY D'AMICO TRACT)

SITUATED IN

NEW HANOVER TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

TITLE

CONSTRUCTION DETAILS

FINAL PLAN

SHEET NUMBER 22 / 36

SAM ERNEY 12/21/2010
F:\JOBFILE\2004\0402NHT.02\CIVIL 3D\DWG\SHEETS\14-20 DETAILS-0402NHT.01.DWG

STANDARDS FOR CONSTRUCTION:

DETAILS OTHER THAN THOSE INDICATED ARE ON THE FOLLOWING STANDARD DETAILS FROM PENNDOT PUBLICATION 72M:

NAME	STANDARD DRAWING NUMBER	DRAWING DATE
ENDWALLS	RC-31M	JUNE 1, 2010
ENDSECTIONS FOR PIPE CULVERTS	RC-33M	JUNE 1, 2010
INLETS	RC-34M	JUNE 1, 2010
STANDARD MANHOLES	RC-39M	JUNE 1, 2010
INLET TOPS GRATES AND FRAME	RC-45M	JUNE 1, 2010
INLET BOX	RC-46M	JUNE 1, 2010
CURBS AND GUTTERS	RC-64M	JUNE 1, 2010
CURB RAMPS	RC-67M	JUNE 1, 2010
PERIMETER CONTROL DEVICES	RC-70M	JUNE 1, 2010
INLET AND OUTLET PROTECTION	RC-72M	JUNE 1, 2010
ROCK CONSTRUCTION ENTRANCE	RC-77M	JUNE 1, 2010
TYPE 2 STRONG POST GUIDE RAIL	RC-529M	JUNE 1, 2010

THE PERMITTEE IS REQUIRED TO PROVIDE THE CONTRACTOR WITH COPIES OF THE MOST CURRENT APPLICABLE RC DRAWINGS FROM PENNDOT PUBLICATION 72M.

STANDARDS FOR CONSTRUCTION:

DETAILS OTHER THAN THOSE INDICATED ARE ON THE FOLLOWING STANDARD DETAILS FROM PENNDOT PUBLICATION 72M:

NAME	STANDARD DRAWING NUMBER	DRAWING DATE
SHOULDER	RC-25M	AUGUST 29, 2008
OVERLAY TRANSITIONS AND PAVING NOTCHES	RC-28M	AUGUST 29, 2008
SUBSURFACE DRAINS	RC-30M	AUGUST 29, 2008
ENDWALLS	RC-31M	MARCH 30, 2006
ENDSECTIONS FOR PIPE CULVERTS	RC-33M	MARCH 30, 2006
INLETS	RC-34M	MARCH 30, 2006
STANDARD MANHOLES	RC-39M	APRIL 15, 2004
INLET TOPS GRATES AND FRAME	RC-45M	AUGUST 29, 2008
INLET BOX	RC-46M	AUGUST 29, 2008
CURBS AND GUTTERS	RC-64M	AUGUST 29, 2008
CURB RAMPS	RC-67M	AUGUST 29, 2008
PERIMETER CONTROL DEVICES	RC-70M	AUGUST 29, 2008
INLET AND OUTLET PROTECTION	RC-72M	AUGUST 29, 2008
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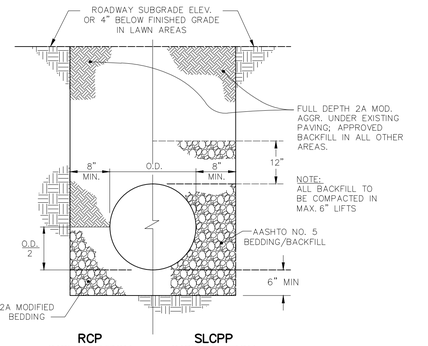
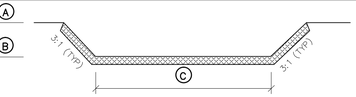


NOTE:
DO NOT PROVIDE STONE BEDDING OR BACKFILL AROUND DETENTION BASIN OUTLET PIPES.

STORM SEWER BEDDING AND BACKFILL

NOT TO SCALE

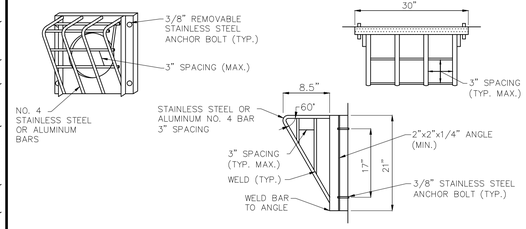


ALL SPILLWAYS TO BE LINED WITH NAG C350, STAPLE PATTERN E, OR APPROVED EQUAL

SPILLWAY DESIGN			
BASIN ID	A TOP OF BERM ELEV. (FT)	B SPILLWAY ELEV. (FT)	C SPILLWAY LENGTH (FT)
1	271.50	269.50	10
2	274.25	272.25	35
3	273.00	271.00	15
			10

DETENTION BASIN EMERGENCY SPILLWAY DETAIL

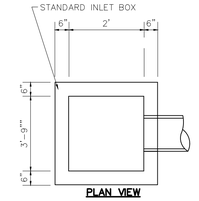
NOT TO SCALE

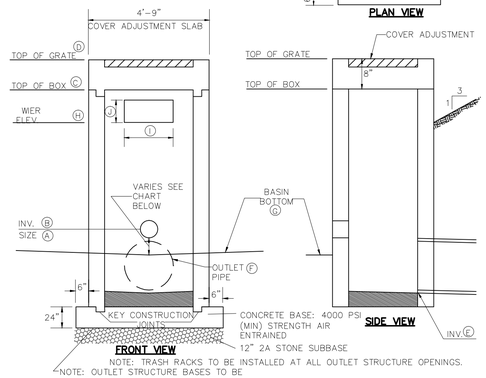


TRASH RACK DETAIL

NOT TO SCALE

NOTES:
1. THE CONCRETE BASE MUST HAVE A MINIMUM 6" OVERLAP AROUND ENTIRE STRUCTURE.
2. ALL INLET STRUCTURES REQUIRE CONSTRUCTION JOINTS OR KEYS FOR RISER SECTIONS.
3. MASTIC OR NON SHRINK GROUT REQUIRED AT ALL CONSTRUCTION JOINTS OR KEYS.
4. THE OUTLET STRUCTURE MUST BE CONSTRUCTED IN ACCORDANCE WITH PENNDOT 408 CURRENT EDITION, SEC. 605, 606 AND 714.
5. MINIMUM CONCRETE COMPRESSIVE STRENGTH 4,000 PSI. REINFORCE PER PENNDOT 408, CURRENT EDITION SEC. 709.
6. A TRASH RACK IS REQUIRED ON ALL LOW FLOW OPENINGS.





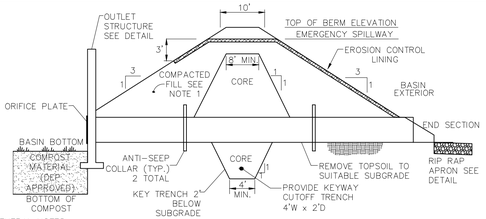
NOTE: TRASH RACKS TO BE INSTALLED AT ALL OUTLET STRUCTURE OPENINGS.

NOTE: OUTLET STRUCTURE BASES TO BE REINFORCED WITH 2 LAYERS OF #5 REBAR, 12" CENTER TO CENTER EACH WAY (TOP AND BOTTOM)

OUTLET STRUCTURE DESIGN										
BASIN ID	A LOW FLOW ORIFICE DIA. (INCHES)	B LOW FLOW ORIFICE ELEV. (FT)	C TOP OF BOX ELEV. (FT)	D TOP OF GRATE ELEV. (FT)	E INV. OUT (FT)	F OUTLET PIPE RCP	G BASIN BOTTOM ELEV. (FT)	H WEIR ELEV (FT)	I WIDTH OF WEIR (IN.)	J HEIGHT OF WEIR (IN.)
1	3	265.00	268.33	269.00	265.00	18"	265.00	N/A	N/A	N/A
2	3	268.00	271.08	271.75	268.00	18"	268.00	270.33	30"	6"
3	3	266.00	269.83	270.50	266.00	15"	266.00	N/A	N/A	N/A

OUTLET STRUCTURE DETAILS

NOT TO SCALE



GENERAL NOTES:
1. REFER TO BASIN BERM CONSTRUCTION DETAIL FOR COMPACTION AND CUT-OFF TRENCH SPECIFICATIONS.
2. SEE REINFORCED PRECAST CONCRETE ANTI-SEEP COLLAR DETAIL FOR ANTI-SEEP COLLAR DIMENSIONS. SEE PROFILES FOR GRAPHICAL DEPICTION OF ANTI-SEEP COLLAR LOCATIONS.
3. USE BIO-DEGRADABLE STAKES ONLY. ONLY NORTH AMERICAN GREEN PRODUCTS ARE SPECIFIED FOR PERMANENT DETENTION FACILITY BERM LININGS. OTHER EQUIVALENT LININGS MAY BE USED WITH APPROVAL OF ENGINEER.
4. ALL BASIN DISCHARGE PIPES SHALL BE O-RING RCP PIPE.

DETENTION BASIN CONSTRUCTION NOTES:
1. THE DEVELOPER SHALL SUPPLY A QUALIFIED SOILS ENGINEER TO INVESTIGATE THE SOIL UPON WHICH THE PROPOSED BERM WILL BE PLACED, FOR PROPER SUPPORT CAPACITY AND FOR RESISTANCE AGAINST WATER PENETRATION. TEST TO BE WITNESSED BY THE TOWNSHIP ENGINEER. ALL LOOSE SOIL, WATER DEPOSITED SOIL, ORGANIC MATERIAL OR SOIL WITH TRACES OF ORGANIC MATERIAL SHALL BE COMPLETELY REMOVED FROM THE AREA UPON WHICH THE PROPOSED BERM WILL BE PLACED.
2. THE SOILS ENGINEER IS TO ALSO EVALUATE THE STABILITY OF THE MATERIAL BEING USED FOR BERM CONSTRUCTION. TOWNSHIP ENGINEER MUST OBSERVE SAID TEST AND APPROVE MATERIAL PRIOR TO USE IN BERM. ADDITIONALLY, PERIODIC COMPACTION TESTS SHALL BE CONDUCTED AT THE OWNERS EXPENSE AT VARIOUS STAGES OF BERM CONSTRUCTION TO INSURE STRUCTURAL STABILITY, WITH THE TOWNSHIP ENGINEER PRESENT. THE RESULTS OF THESE TESTS, TOGETHER WITH SOIL ANALYSIS SHALL BE COMPILED IN THE FORM OF A REPORT AND SUBMITTED TO THE TOWNSHIP ENGINEER.
3. SEE ALSO GENERAL CONSTRUCTION NOTES.
4. A MINIMUM OF 8" OF TOPSOIL MUST BE PLACED ON ALL AREAS AFFECTED BY THE BASIN. AN AS-BUILT DRAWING OF THE BASIN SHALL BE SUBMITTED FOR TOWNSHIP APPROVAL BEFORE FINAL TOPSOILING.
5. EMBANKMENT AND KEY WAY MATERIAL SHALL BE TYPE CL AND/OR ML SOIL. SOIL SHOULD CONTAIN SUFFICIENT MOISTURE SO THAT A BALL MAY BE FORMED BY HAND WITHOUT CRUMBLING. IF WATER CAN BE SQUEEZED OUT OF SOIL, IT IS TOO WET FOR COMPACTION AND SHOULD EITHER BE REJECTED OR ALLOWED TO DRY SUFFICIENTLY.
6. EMBANKMENT AND KEY WAY MATERIAL SHALL BE PLACED IN 8" LIFTS (MAX.) AND COMPACTED TO 95% DRY DENSITY PER ASTMD-1557.

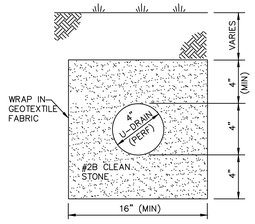
WETLAND BASIN CONSTRUCTION NOTES:
1. PROTECT BASIN AREA FROM COMPACTION PRIOR TO INSTALLATION
2. AFTER INSTALLATION, PROTECT SEDIMENT LADEN WATER FROM ENTERING INLETS AND PIPES.
3. INSTALL AND MAINTAIN PROPER EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION.
4. IF NECESSARY, EXCAVATE BASIN BOTTOM TO AN UNCOMPACTED SUBGRADE FREE FROM ROCKS AND DEBRIS. DO NOT COMPACT SUBGRADE.
5. DO NOT REMOVE INLET PROTECTION OR OTHER EROSION AND SEDIMENT CONTROL MEASURES UNTIL SITE IS FULLY STABILIZED.
6. ANY SEDIMENT THAT ENTERS INLETS DURING CONSTRUCTION IS TO BE REMOVED WITHIN 24 HOURS.

BASIN KEYWAY
THE MINIMUM TOP WIDTH OF THE DETENTION/RETENTION BASIN BERM SHALL BE EIGHT (8) FEET. A CUTOFF TRENCH (KEY-WAY) (KEY-WAY) OF IMPERVIOUS MATERIAL SHALL BE PROVIDED UNDER ALL EMBANKMENTS THAT REQUIRE FILL MATERIAL. THE CUTOFF TRENCH SHALL BE A MINIMUM OF FOUR (4) FEET WIDE, TWO (2) FEET DEEP, AND HAVE SIDE SLOPES OF 1:1.

BASIN BERM
ALL DETENTION BASIN EMBANKMENTS SHALL BE PLACED IN MAXIMUM OF EIGHT (8) INCH LIFTS TO A MINIMUM OF 95% OF MAXIMUM DRY DENSITY AS ESTABLISHED BY ASTM D-1557, PTM NO. 112 OR PTM NO. 402. PRIOR TO PROCEEDING TO THE NEXT LIFT, THE COMPACTION SHALL BE CHECKED BY THE TOWNSHIP ENGINEER OR SOILS ENGINEER. THE DEVELOPERS CONTRACTOR SHALL OBTAIN THE SERVICES OF A QUALIFIED LABORATORY OR TECHNICIAN TO CONDUCT COMPACTION TESTS ON THE LEADING AND THE TRAILING EDGE OF THE BERM ALONG WITH THE TOP OF THE BERM.

PERMANENT DETENTION BASIN FACILITY BERM CROSS-SECTION

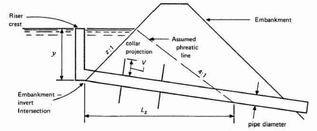
NOT TO SCALE



BASIN U-DRAIN DETAIL

NOT TO SCALE

FIGURE 7.6
Anti-Seep Collar Design



EPA – 625/3-76-006

The following procedure may be used to determine the required increase in flow path by anti-seep collars.

(1) Determine the length of pipe in the saturated zone (L_s). See Figure 7.6.

$$L_s = y(z+4)\left[1+\frac{\text{pipe slope (ft/ft)}}{0.25-\text{pipe slope}}\right]$$

where: L_S = Length of pipe in saturated zone (ft)
y = Distance from upstream invert of principal spillway riser to top of dewatering volume.
z = Horizontal component of upstream embankment slope (ft)

ANTI-SEEP COLLAR CALCULATIONS												
BASIN ID	EMBANKMENT INVERT	RISER CREST	WATER DEPTH (Y) (FT)	EMBANK-MENT SIDE SLOPE Z:1	PIPE SLOPE (FT/FT)	LENGTH IN SATURATED ZONE (Ls)	PIPE DIA. (IN)	NUMBER OF COLLARS	COLLAR PROJECT-ION* (FT)	BARREL O.D. (FT)	COLLAR SIZE (SQUARE) (FT)	MAXIMUM SPACING BETWEEN COLLARS** (FT)
1	265.00	269.00	4.00	3	0.005	28.6	18	2	1.1	1.95	4.12	15.40
2	268.00	271.75	3.75	3	0.005	26.8	18	2	1.0	1.92	3.92	14.00
3	266.00	270.50	4.50	3	0.0061	32.3	15	2	1.2	1.63	4.03	16.80

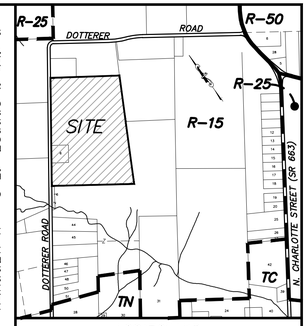
* (Ls x 0.15) ÷ (2 x Number of Collars) This provides a 15% increase in Ls.
** COLLAR LOCATION IS MEASURED FROM THE OUTLET STRUCTURE.

GENERAL CONSTRUCTION GRADING NOTES

1. SITE SHALL BE PROPERLY GRADED TO INSURE DRAINAGE FLOW AWAY FROM THE HOUSES AND TO THE NEAREST INLET OR WATERCOURSE WITHOUT PONDING OR OBSTRUCTION.
2. ALL MATERIAL USED FOR FILL OR BACKFILL SHALL BE FREE OF WOOD, ROOTS, ROCKS, BOULDERS OR ANY OTHER NON-COMPACTIBLE SOIL TYPE MATERIAL. UNSATISFACTORY MATERIALS ALSO INCLUDE MAN-MADE FILLS AND REFUSE DEBRIS DERIVED FROM ANY SOURCE.
3. ALL EXCAVATIONS, INCLUDING TRENCHES, SHALL BE KEPT DRY TO PROTECT THEIR INTEGRITY.
4. MATERIALS USED TO CONSTRUCT EMBANKMENTS FOR ANY PURPOSE, BACKFILL AROUND DRAINAGE STRUCTURES OR IN UTILITY TRENCHES OR ANY OTHER DEPRESSIONS REQUIRING FILL OR BACKFILL SHALL BE COMPACTED TO AT LEAST 95% OF MAXIMUM DENSITY AS DETERMINED BY THE STANDARD PROCTOR TEST AS SET OUT IN ASTM STANDARD D-698 UNLESS SPECIFIED ELSEWHERE WITHIN THE CONSTRUCTION PLANS OR IF SPECIFIED DIFFERENTLY BY THE TOWNSHIP ENGINEER. CONTRACTOR TO VERIFY COMPACTION REQUIREMENTS WITH TOWNSHIP ENGINEER'S OFFICE PRIOR TO EXCAVATION.
5. ALL CONSTRUCTION DEBRIS INCLUDING EXCESS EXCAVATED MATERIAL, SCRAP WOOD, BRICKS, BLOCKS, ETC. SHALL BE DISPOSED OF BY THE CONTRACTOR IN ACCORDANCE WITH FEDERAL, STATE & LOCAL REQUIREMENTS.
6. ELEVATIONS, DIMENSIONS, AND THE LOCATIONS OF LINEAR FEATURES SHALL BE FIELD VERIFIED BY THE CONTRACTOR.
7. ALL DRIVEWAYS SHALL BE AT LEAST 5 FEET FROM ANY SIDE OR REAR PROPERTY LINE.
8. TOPSOIL MAY NOT BE REMOVED FROM THE SITE WITHOUT APPROVAL BY THE TOWNSHIP.
9. THE MINIMUM DEPTH OF TOPSOIL TO BE REPLACED SHALL BE EIGHT (8) INCHES, OR THE EXISTING DEPTH OF TOPSOIL ENCOUNTERED ON THE SITE, WHICHEVER IS GREATER.
10. MUD SEDIMENT AND/OR DEBRIS TRACKED FROM THE SITE ONTO PUBLIC CARTWAY SHALL BE IMMEDIATELY REMOVED BY BROOMING AND/OR MECHANICAL MEANS TO THE SATISFACTION OF THE TOWNSHIP. USE OF A BACKHOE BUCKET TO SCRAPE ROADWAY SURFACE IS PROHIBITED. WHERE MUD AND/OR SEDIMENT IS CAUSING SLICK AND/OR HAZARDOUS CONDITIONS, ROADWAY SURFACE SHALL BE IMMEDIATELY PRESSURE WASHED TO REMOVE CONDITION. ALL SEDIMENT LADEN WATER MUST BE FILTERED IN A MANNER SATISFACTORY TO THE CONSERVATION DISTRICT BEFORE ENTERING STORM SEWERS AND/OR DRAINAGE CHANNELS.
11. MANHOLES IN NON-IMPROVED AREAS MUST BE EXTENDED 18 INCHES ABOVE GRADE.

GENERAL CONSTRUCTION UTILITY NOTES

1. ALL UTILITIES SHALL BE PLACED UNDERGROUND.
2. SUMP PUMPS, IF APPLICABLE, AND ROOF DRAINS SHALL NOT DISCHARGE ONTO DRIVEWAYS, SIDEWALKS, OR STREETS.
3. NO CERTIFICATION IS MADE BY VCEA AS TO THE ACTUAL UNDERGROUND POSITION OF ANY UTILITIES OR TO THE COMPLETENESS OR ACCURACY OF THE UTILITY MARKOUTS BY OTHERS.
4. IT IS IMPERATIVE THAT UTILITY COMPANIES ARE NOTIFIED PRIOR TO ANY EXCAVATION AND/OR CONSTRUCTION. CALL 1-800-242-1776 TO ORDER UTILITY MARKOUTS BY OTHERS.
5. THE LOCATIONS OF EXISTING UTILITIES AS SHOWN ARE APPROXIMATE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL PUBLIC OR PRIVATE UTILITIES WHICH LIE IN OR ADJACENT TO THE CONSTRUCTION SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING, AT HIS EXPENSE, ALL EXISTING UTILITIES DAMAGED DURING CONSTRUCTION.
6. THE CONTRACTOR, DURING THE PERFORMANCE OF ALL WORK ASSOCIATED WITH THE CONSTRUCTION OF THE PROJECT, IS RESPONSIBLE FOR COMPLIANCE WITH ALL FEDERAL, STATE AND AND LOCAL LAWS, CODES AND REGULATIONS.
7. ANY DISCREPANCIES FOUND BETWEEN THE DRAWINGS AND SITE CONDITIONS OR ANY INCONSISTENCIES OR AMBIGUITIES IN DRAWINGS SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER, IN WRITING, WHO SHALL PROMPTLY ADDRESS SUCH INCONSISTENCIES OR AMBIGUITIES. WORK DONE BY THE CONTRACTOR AFTER HIS DISCOVERY OF SUCH DISCREPANCIES, INCONSISTENCIES, OR AMBIGUITIES SHALL BE DONE AT THE CONTRACTOR'S RISK.
8. ELEVATIONS, DIMENSIONS, AND THE LOCATIONS OF LINEAR FEATURES SHALL BE FIELD VERIFIED BY THE CONTRACTOR.
9. BUILDING AND DRIVEWAY LOCATIONS ARE SHOWN SCHEMATICALLY ONLY. MODIFICATIONS SUBJECT TO APPROVAL BY TOWNSHIP ENGINEER.
10. DRAINAGE/STORM SEWER EASEMENTS ARE TO BE MAINTAINED AND NOT ALTERED FROM FINAL APPROVAL GRADES AND LANDSCAPING EXCEPT BY SPECIFIC WRITTEN AUTHORIZATION OF TOWNSHIP OFFICIALS. THE LOT OWNER AND/OR HOMEOWNERS ASSOCIATION SHALL BE RESPONSIBLE FOR LAWN MOWING AND LANDSCAPING UPKEEP WITHIN EASEMENT AREAS IN ADDITION TO LOT AREA. ACCESS OVER AND THROUGH EASEMENTS IS GRANTED TO TOWNSHIP OFFICIALS.
11. STORM SEWER STRUCTURES (I.E. ENDWALLS, INLETS, END SECTIONS, ETC.) MAY NOT BE LOCATED ON TOP OF OR WITHIN TEN (10) FEET OF ELECTRIC, WATER, SANITARY SEWER, AND GAS SERVICE AND/OR MAINS, UNLESS APPROVAL IS RECEIVED FROM THE TOWNSHIP, AND FROM THE AUTHORITY OR UTILITY HAVING JURISDICTION OVER SAME.
12. WATER LINES ARE NOT TO BE CONSTRUCTED AT SIDEWALK LOCATIONS.
13. BUILDING FOOTPRINTS SHOWN ARE FOR GRADING PURPOSES ONLY; FINAL FOOTPRINTS TO BE PROVIDED WITH THE BUILDING PERMIT PLAN.
14. PROPOSED STREETS AND THE STORM WATER PIPING SYSTEM SHALL BE OFFERED FOR DEDICATION TO NEW HANOVER TOWNSHIP.
15. THE AREA BETWEEN THE ULTIMATE RIGHT-OF-WAY AND THE TITLE LINE OF ALL EXISTING STREETS IS OFFERED FOR DEDICATION TO THE AGENCY HAVING JURISDICTION.
16. ALL PUBLIC IMPROVEMENTS SHALL BE CONSTRUCTED IN COMPLIANCE WITH THE NEW HANOVER TOWNSHIP STANDARDS AND SPECIFICATIONS.
17. THE WETLAND AREAS ARE TO BE LOCATED IN THE FIELD AND STAKED PRIOR TO THE START OF CONSTRUCTION. DURING CONSTRUCTION THE WETLAND AREAS ARE TO BE PHYSICALLY PROTECTED FROM ACCESS BY CONSTRUCTION EQUIPMENT AND PERSONNEL.
18. ALL DEVELOPMENT ACTIVITIES, SUCH AS CLEARING, GRADING, REGRADING, DRIVEWAYS, ROADS, BUILDINGS, DETENTION BASINS AND UTILITY EASEMENTS SHALL BE LIMITED TO THE NATURAL RESOURCE PROTECTION STANDARDS AS SPECIFIED IN THE NEW HANOVER TOWNSHIP ZONING ORDINANCE [CHAPTER 27] AS LAST AMENDED. THE REMAINING NATURAL RESOURCES SHALL REMAIN IN THEIR NATURAL CONDITION, INCLUDING THE NATURAL FOREST GROUND COVER. THIS RESTRICTION SHALL RUN WITH THE LAND AND BE BINDING ON ALL PRESENT AND FUTURE OWNERS AND/OR LESSEES.
19. THE DEVELOPER SHALL BE RESPONSIBLE FOR ALL CHARGES OR RATES FOR THE ADEQUATE WATER SUPPLY TO EACH FIRE HYDRANT WITHIN THE SUBDIVISION UNTIL SUCH TIME AS THE STREETS ARE ACCEPTED AS PUBLIC STREETS BY THE BOARD OF SUPERVISORS.
20. A POLE LAMP SHALL BE INSTALLED ON EACH LOT AT THE DRIVEWAY LOCATION, 5 FEET BEHIND THE ULTIMATE RIGHT OF WAY LINE. THE INSTALLATION OF THE LAMP IS TO MEET THE SATISFACTION OF THE TOWNSHIP ENGINEER. DETAILS OF THE PROPOSED LAMP SHALL BE PROVIDED TO THE TOWNSHIP FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
21. PROVISIONS SHALL BE MADE FOR ENERGIZING STREET LIGHTING AFTER 50% OR MORE OF THE DWELLINGS HAVE BEEN OCCUPIED. THE DEVELOPER SHALL BE RESPONSIBLE FOR ALL CHARGES OR RATES OF THE STREETS LIGHTED UNTIL SUCH TIME THAT THE STREETS ARE ACCEPTED OR CONDEMNED AS PUBLIC STREETS BY THE BOARD OF SUPERVISORS.
22. ALL SANITARY FACILITIES MUST BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT NEW HANOVER TOWNSHIP AUTHORITY STANDARDS AND WILL BE OFFERED FOR DEDICATION TO THE NEW HANOVER TOWNSHIP AUTHORITY.
23. IT IS ANTICIPATED THAT ALL UNITS WILL BE PROVIDED WITH BASEMENTS. SANITARY SERVICE TO EACH BASEMENT IS NOT GUARANTEED.
24. NO PLANTINGS WILL BE DONE IN THE SANITARY AND STORM SEWER EASEMENTS.
25. MANHOLES IN NON-IMPROVED AREAS MUST BE EXTENDED 18 INCHES ABOVE GRADE.
26. SANITARY SEWER LATERALS SHOULD NOT CONNECT DIRECTLY INTO MANHOLES. INSTEAD THEY SHOULD CONNECT CONNECT DIRECTLY TO THE SANITARY SEWER MAIN PER NEW HANOVER AUTHORITY STANDARDS.
27. IN ACCORDANCE WITH THE AUTHORITY'S STANDARD CONSTRUCTION AND MATERIAL SPECS. FOR SANITARY SEWER EXTENSIONS, SHOP DRAWINGS OF ALL MATERIALS TO BE USED IN THE CONSTRUCTION OF THE SANITARY SEWER SYSTEM MUST BE SUBMITTED.
28. SANITARY SEWER CONNECTIONS TO EXISTING MANHOLES SHOULD BE MADE BY CUTTING REQUIRED OPENINGS BY SUCH METHODS SO AS TO PREVENT CRACKING AND SPALLING CONCRETE. MAKE OPENINGS OF SUFFICIENT SIZE TO ACCOMMODATE PIPE WITH PVC WATERSTOP INSTALLED AND ONE-INCH ANNULAR GROUT SPACE. GROUT ANNULAR SPACE USING NON-SHRINK, NON-METALLIC GROUT.
29. AS-BUILT RECORD DRAWINGS MUST BE SUBMITTED AND APPROVED BEFORE ANY SEWERS ARE ACCEPTED FOR DEDICATION. THE DRAWINGS MUST BE ACCOMPANIED BY A CERTIFICATE FROM THE DEVELOPER'S ENGINEER ATTESTING TO THEIR CORRECTNESS.
30. IN ORDER FOR THE TOWNSHIP TO ACCEPT OWNERSHIP AND MAINTENANCE RESPONSIBILITIES FOR ANY SANITARY SEWER, THE DEVELOPER MUST PROVIDE AN ACCEPTABLE SANITARY SEWER RIGHT-OF-WAY AND EXECUTE ALL APPLICABLE RIGHT-OF-WAY AGREEMENTS, COMPLETE WITH LEGAL DESCRIPTION AND DRAWINGS IN A FORM ACCEPTABLE TO THE TWP AND ITS SOLICITOR.
31. ALL FIRE HYDRANTS SHALL UTILIZE A 5" STORZ CONNECTION FOR THE MAIN STEAMER OUTLET ON THE HYDRANT WITH NST FOR THE 2 1/2" PORTS.
32. THE EXISTING SEPTIC SYSTEM SHALL BE REMOVED IN ACCORDANCE WITH THE REQUIREMENTS OF NEW HANOVER TOWNSHIP.
33. ALL SIGNAGE SHOULD BE INSTALLED PRIOR TO THE FIRST USE AND OCCUPANCY PERMIT BEING ISSUED FOR THE DEVELOPMENT, OR AT THE TIME OF COMPLETION OF ROAD BINDER COURSE, WHICHEVER COMES FIRST.
34. ALL GRATES FOR YARD INLETS TO BE PENNDOT APPROVED CAST GRAY IRON GRATES.
35. ALL SANITARY MANHOLE JOINTS AND AROUND THE CONE TO FRAME CONNECTION ARE TO BE WRAPID-SEAL TM
36. ALL SANITARY MANHOLE PIPE PENETRATIONS SHALL BE A-LOCK GASKETS.
37. WATER MAINS AND SANITARY SEWER LINES SHALL HAVE A MINIMUM 10 HORIZONTAL SEPARATION. SANITARY SEWER LINES CROSSING A WATER LINE SHALL HAVE A MINIMUM OF 18 INCHES VERTICAL SEPARATION. IF MINIMUM VERTICAL SEPARATION CANNOT BE ACHIEVED, CONCRETE ENCASEMENT MAY BE INSTALLED WITH LESS VERTICAL SEPARATION IF APPROVED BY NEW HANOVER TOWNSHIP AUTHORITY.



LOCATION MAP
SCALE: 1"=800'

NO.	REVISION	INITIALS	DATE
1	PER LTR DATED 1-3-13, 1-4-13 & 2-14-13	JAB	2-20-13
2	PREP FINAL PLAN PER LTR DATED 3-7, 3-19	JAB	5-03-13
3	PER LTRS DATED 5-29, 6-5	JAB	7-12-13
4	PREP FOR MCCD SUBMISSION	JAB	7-23-13
5	MISC. REVISIONS	JAB	8-11-13
6	MISC. REVISIONS (NPDES)	JAB	8-21-13
7	PER MCCD LTR 9-11-13	JAB	9-16-13
8	REVISE RETAINING WALLS AND GRADES	SPE	12-06-13

Before You Dig Anywhere
In... PENNSYLVANIA
STOP! CALL 1-800-242-1776
It's Law
PA Law requires 3 working days notice before excavation
PA ONE CALL SYSTEM, INC.

ALL CONTRACTORS WORKING ON THIS SITE SHALL COMPLY WITH THE REQUIREMENTS OF ACT 121 OF 2004 (UNDERGROUND UTILITY LINE PROTECTION LAW). VCEA HAS REGISTERED THIS SITE WITH THE PA ONE-CALL SYSTEM ON _____

PLAN NOTATION
ONLY THOSE PLANS WHICH CONTAIN AN IMPRESSED SEAL OR A RED INK SEAL OF THE RESPONSIBLE PROFESSIONAL SHALL BE CONSIDERED VALID. THIS PLAN HAS BEEN SPECIFICALLY PREPARED FOR THE OWNER DESIGNATED HEREON. ANY MODIFICATION, REVISION, DUPLICATION OR USE WITHOUT THE WRITTEN CONSENT OF VAN CLEEF ENGINEERING ASSOCIATES IS PROHIBITED. RELIANCE ON THIS PLAN FOR ANY PURPOSE OTHER THAN THAT WHICH IS INTENDED SHALL BE AT THE SOLE DISCRETION AND LIABILITY OF THE APPLICABLE PARTY.

BY: _____
BRIAN S. FOCHT, PA PE — DATE
PENNSYLVANIA PROFESSIONAL ENGINEER NO. 056961

Van Cleef ENGINEERING ASSOCIATES
Consulting Civil Engineering
Environmental Engineering
Municipal Engineering
Land Surveying
Professional Planning
Landscape Architecture
4 WELLINGTON BLVD, WYOMISSING, PA 19610
EMAIL: VCEPA@VCEA.ORG WEB: WWW.VCEA.ORG
PHONE (610) 670-6630 FAX (610) 670-4603
OFFICES THROUGHOUT NJ, EASTERN PA, DE AND MD

PROJECT: 0402NHT.02	DESIGNED BY: –
DATE: 12-19-12	DRAWN BY: JAB
SCALE: N/A	CHECKED BY: BSF

SUBDIVISION PLANS
FOR
HANOVER WOODS
(FORMERLY D'AMICO TRACT)
SITUATED IN
NEW HANOVER TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

TITLE
CONSTRUCTION DETAILS

FINAL PLAN

SHEET NUMBER 19 / 36

SAM ERNEY 12/21/2010
F:\JOBFILE\2004\0402NHT.02\CIVIL 3D\DWG\SHEETS\14-20 DETAILS-0402NHT.01.DWG

SHORTGRASS UPLAND MEADOW

HIGH MARSH – GRASS & PERENNIAL WILDFLOWER SPECIFICATION 'B'

SCIENTIFIC NAME	COMMON NAME	VARIETY	RATE – PLS
GRASSES			
BOUTELOUA CURTIPENDULA	*SIDE OATS GRAMA*	*TRAILWAY*	*1 LB/AC*
BOUTELOUA GRACILIS	*BLUE GRAMA*		*1 LB/AC*
FESTUCA OVINA	*SHEEP'S FESCUE*		*5 LB/AC*
LOLIUM MULTIFLORUM	*ANNUAL RYEGRASS*		*10 LB/AC*
KOELERIA CRISTATA (PYRAMIDATA)	*PRAIRE JUNEGRASS*		*1 LB/AC*
PANICUM CLANDESTINUM	*TIOGA DEERTONGUE*		*0.5 LB/AC*
SCHIZOCHARIUM SCOPARIUS	*LITTLE BLUE STEM*	*CAMPER*	*6 LB/AC*
SPOROBOLUS HETEROLEPIS	*PRAIRIE DROPSEED*		*0.5 LB/AC*

PERENNIAL WILDFLOWERS		% TOTAL WEIGHT
ANEMONE VIRGINIANA	*TALL THIMBLEWEED*	*3.00%*
AQUILEGIA CANADENSIS	*WILD COLUMBINE*	*4.00%*
ASCLEPIAS TUBEROSA	*BUTTERFULY WEED*	*10.00%*
ASTER CONCOLOR	*EASTERN SILVERY ASTER*	*1.00%*
ASTER ERICOIDES	*HEATH ASTER*	*1.00%*
ASTER LATERIFOLIUS	*CALICO ASTER*	*1.00%*
ASTER LAEVIS	*SMOOTH ASTER*	*2.00%*
CASTILLEJA COCCINEA	*INDIAN PAINTBRUSH*	*1.00%*
CHAMAECRISTA FASCICULATA	*PARTRIDGE PEA*	*5.00%*
COREOPSIS LANCEOLATA	*LANCE–LEAVED COREOPSIS*	*7.00%*
ECHINACEA PURPUREA	*PURPLE CONEFLOWER*	*6.00%*
EUPATORIUM COELESTINUM	*HARDY AGERATUM (MISTFLWR)*	*2.00%*
GAILLARDIA ARISTATA	*BLANKET FLOWER*	*7.00%*
GERANIUM MACULATUM	*WILD GERANIUM*	*1.00%*
HELIANTHUS MOLLIS	*DOWNY SUNFLOWER*	*4.00%*
LESPEDEZA CAPITATA OR L. HIRTA	*BUSH CLOVER*	*5.00%*
LIATRIS SPICATA	*GAYFEATHER*	*2.00%*
LUPINUS PERENNIS	*PERENNIAL LUPINE*	*10.00%*
OENOTHERA SPECIOSA	*SHOWY EVENING PRIMROSE*	*1.00%*
PENSTEMON DIGITALIS	*BEARDTONGUE*	*3.00%*
PHLOX PILOSA	*PRAIRIE PHLOX*	*1.00%*
RATIBIDA PINNATA	*YELLOW CONEFLOWER*	*4.00%*
RUDBECKIA HIRTA	*BLACK–EYED SUSAN*	*3.00%*
RUDBECKIA FULGIDA	*BRILLIANT CONEFLOWER*	*7.00%*
RUDBECKIA SUBTOMENTOSA	*SWEET BLACK–EYED SUSAN*	*5.00%*
SOLIDAGO SPECIOSA	*SHOWY GOLDENROD*	*2.00%*

NOTES:

- SEEDING WITH THE ABOVE MIX SHOULD BE COMPLETED ONLY FROM FEBRUARY TO JUNE. IF STABILIZATION IS REQUIRED DURING ANOTHER SEASON, A TEMPORARY (I.E. ANNUAL COVER) SHOULD BE USED.
- LIME AS PER SOIL TEST TO ACHIEVE PH 6.5.
- HAND SEED WILDFLOWERS IN DRIFTS BY INDIVIDUAL SPECIES AT THE RATE OF 1.75 LBS PER ACRE.
- HYDROSEED OR DRILL SEED GRASS (USING TRUAX OR EQUAL). IF HYDROSEEDED, USE HARROW TO RAKE SEED INTO TOP 0.5 INCHES OF SOIL, THEN STRAW MULCH (*DELETE ANNUAL RYEGRASS) AND TACK PER WRITTEN SPECIFICATION.

PLANT SCHEDULE

SYM.	QTY.	BOTANICAL NAME	COMMON NAME	MIN. CALIPER / HEIGHT	CONDITION
TREES					
AS	23	ACER SACCHARUM	SUGAR MAPLE	2 " CALIPER	B & B
AR	24	ACER RUBRUM	RED MAPLE	2 " CALIPER	B & B
CK	0	CORNUS KOUSA	KOUSA DOGWOOD	2 " CALIPER	B & B
GTI	24	GLEDITSIA TRIACANTHOS INERMIS	THORNLESS HONEYLOCUST	2 " CALIPER	B & B
IO	17	ILEX OPACA	AMERICAN HOLLY	6' HEIGHT	B & B
PB	18	PICEA ABIES	NORWAY SPRUCE	6' HEIGHT	B & B
PO	16	PICEA OMORIKA	SERBIAN SPRUCE	6' HEIGHT	B & B
PA	24	PLATANUS ACERIFOLIA	LONDON PLANETREE	2 " CALIPER	B & B
PM	19	PSEUDOTSUGA MENZIESII	DOUGLAS FIR	6' HEIGHT	B & B
PS	25	PINUS STROBUS	WHITE PINE	6' HEIGHT	B & B
QA	23	QUERCUS ALBA	WHITE OAK	2 " CALIPER	B & B
JV	19	JUNIPERUS VIRGINIANA	EASTERN REDCEDAR	6' HEIGHT	B & B
TO	0	THUJA OCCIDENTALIS	AMERICAN ARBORVITAE	6' HEIGHT	B & B
TT	23	TILIA TOMENTOSUM	SILVER LINDEN	2 " CALIPER	B & B
ZS	21	ZELKOVA SERRATA	JAPANESE ZELKOVA	2 " CALIPER	B & B
SHRUBS IN BUFFER					
IG	77	ILEX GLABRA COMPACTA	COMPACT INKBERRY	3' HEIGHT	#3 CAN
IM	82	ILEX MESERVEAE BLUE PRINCESS	BLUE PRINCESS HOLLY	3' HEIGHT	#3 CAN
JC	99	JUNIPERUS CHINENSIS PFITZERIANA	PFITZER JUNIPER	3' HEIGHT	#3 CAN
PY	104	PYRACANTHA COCCINEA LALANDI	LALAND FIRETHORN	3' HEIGHT	#3 CAN
TC	96	TAXAS CAPITATA	UPRIGHT YEW	3' HEIGHT	#3 CAN
TM	97	TAXUS 'X' MEDIA HICKSII	HICKS YEW	3' HEIGHT	#3 CAN
SHRUBS FOR VILLAGE HOUSE REQUIREMENTS					
AZ	44	AZALEA HINO–CRIMSON	HINO–CRIMSON AZALEA	3' HEIGHT	#3 CAN
CA	48	CLETHRA ALNIFOLIA	SUMMERSWEET	3' HEIGHT	#3 CAN
CS	48	CORNUS SERICEA	REDOSIER DOGWOOD	3' HEIGHT	#3 CAN
TM	56	TAXUS X MEDIA HICKSII	HICKS YEW	3' HEIGHT	#3 CAN
SB	64	SPIREA BUMALDA 'ANTHONY WATERER'	ANTHONY WATERER SPIREA	3' HEIGHT	#3 CAN

STREET TREE REQUIREMENTS:
PLANTING REQUIREMENT = 1 TREE / 60 FT. (CANOPY TREES)
LENGTH OF PROPOSED STREETS = 6200 LF (6200 / 60 =103)
REQUIRED STREET STREETS = 103 STREET TREES
PROVIDED STREET TREES = 103 STREET TREES

STREET TREES PROVIDED ALONG DOTTERER ROAD = 1 CANOPY TREE PER 60 FEET
LENGTH OF DOTTERER ROAD FRONTAGE = 1645 LF (1645 / 60 =28)
REQUIRED STREET STREETS = 28 STREET TREES
PROVIDED STREET TREES = 28 STREET TREES

BUFFER REQUIREMENTS:
CLASS B – OPTION 2:
1 CANOPY TREE PER 40 FEET OF PROPERTY LINE PLUS 1 EVERGREEN PER 30 FEET
LENGTH OF CLASS B BUFFER = 1376 LF (1376 / 40 =35)(1376/30=46)
REQUIRED CANOPY TREES = 35 , EVERGREENS = 46
PROVIDED CANOPY TREES = 35, EVERGREENS TREES = 55

ADJACENT TO PARKLAND
CLASS C – OPTION 1:
1 EVERGREEN PER 30 FEET OF PROPERTY LINE PLUS 1 HEDGE SHRUB, 1 PER 3 FEET
LENGTH OF PROPERTY ALONG VACANT LAND = 1645 LF (1645/30 =55)(1645/3=549)
REQUIRED EVERGREENS TREES = 54 , HEDGE SHRUBS = 549
PROVIDED EVERGREENS TREES = 54 , HEDGE SHRUBS = 549

VILLAGE HOUSE PLANTING REQUIREMENTS:
FENCE ENCLOSING FRONT YARD AT 30" MIN. HEIGHT PLUS ONE FLOWERING SHRUB PER 60" (5 FT.) ACROSS THE FRONT OF THE PORCH. PORCHES ARE 20' WIDE /
5' = 4 FLOWERING SHRUBS REQUIRED PER LOT
4 FLOWERING SHRUBS PROVIDED PER LOT.

Landscape Notes

1. ALL BEDS SHALL HAVE THREE (3) INCHES OF SHREDDED HARDWOOD MULCH OR EQUAL.
2. TREE WRAP SHALL NOT BE USED.
3. DO NOT CUT THE LEADER OF DECIDUOUS TREES.
4. NO PLANTS, EXCEPT GROUND COVER, SHALL BE PLANTED LESS THAN TWO (2) FEET FROM A STRUCTURE, WALKS, OR CURBLINES.
5. TREES SHALL NOT INTERFERE WITH OR BE PLANTED IN CLOSE PROXIMITY TO LIGHT STANDARDS.
6. NO TREES AND SHRUBS SHALL BE PLANTED WITHIN STORM AND SANITARY EASEMENTS AND ROAD RIGHT–OF–WAYS. NO TREES OR SHRUBS SHALL BE PLANTED ALONG ANY DETENTION FACILITY BERMS.
7. ALL PLANTS SHALL BE CERTIFIED DISEASE AND PEST FREE.

ALTERNATIVE PLANTINGS
(IF SELECTED MATERIAL IS NOT AVAILABLE)

SELECTION:	ALTERNATES:
SHADE TREES	QUERCUS PHELLOS – WILLOW OAK GLEDITSIA TRIACANTHOS INERMIS – THORNLESS HONEY LOCUST ACER SACCHARUM – SUGAR MAPLE
ORNAMENTAL TREES	CORNUS FLORIDA – FLOWERING DOGWOOD PYRUS CALLERYANA ARISTOCRAT – ARISTOCRAT CALLERY PEAR* MALUS FLORIBUNDA – JAPANESE FLOWERING CRAB**
EVERGREEN TREES	PICEA PUNGENS GLAUCA – COLORADO BLUE SPRUCE ILEX OPACA – AMERICAN HOLLY PICEA OMORIKA – SERBIAN SPRUCE
SHRUBS	EUONYMOUS ALATAS – WINGED EUONYMOUS VIBURNUM DENTATUM – ARROWWOOD VIBURNUM JUNIPERUS VIRGINIANA – UPRIGHT JUNIPER

*NON FRUIT BEARING VARIETY
**THE USE OF THE 'BRADFORD' CULTIVAR IS PROHIBITED.

BASIN 1 PLANT SCHEDULE

SYM.	QTY.	BOTANICAL NAME	COMMON NAME	MIN. CALIPER / HEIGHT	CONDITION
AR	1	ACER RUBRUM	RED MAPLE	2 " CALIPER	#5 CAN
BN	10	BWTULA NIGRA	RIVER BIRCH	6–8' HGT, MULTI STEM	#5 CAN
SN	2	SALIX NIGRA	BLACK WILLOW	6–8' HGT.	#5 CAN

BASIN 2 PLANT SCHEDULE

SYM.	QTY.	BOTANICAL NAME	COMMON NAME	MIN. CALIPER / HEIGHT	CONDITION
AR	4	ACER RUBRUM	RED MAPLE	2 " CALIPER	#5 CAN
BN	40	BWTULA NIGRA	RIVER BIRCH	6–8' HGT, MULTI STEM	#5 CAN
SN	3	SALIX NIGRA	BLACK WILLOW	6–8' HGT.	#5 CAN

LAYFIELD PARK BIO-INFILTRATION AREA PLANT SCHEDULE

SYM.	QTY.	BOTANICAL NAME	COMMON NAME	MIN. CALIPER / HEIGHT	CONDITION
AR	5	ACER RUBRUM	RED MAPLE	2 " CALIPER	#5 CAN
IV	75	Iris versicolor	BLUE FLAG IRIS	#1 CONT. 15" SPREAD	
SN	6	SALIX NIGRA	BLACK WILLOW	6–8' HGT.	#5 CAN

RETENTIVE GRADING AREA 1

SYM.	QTY.	BOTANICAL NAME	COMMON NAME	MIN. CALIPER / HEIGHT	CONDITION
PV	75	Panicum virgatum	SWITCHGRASS	#1 CONT. 15" SPREAD	
IV	75	Iris versicolor	BLUE FLAG IRIS	#1 CONT. 15" SPREAD	
AI	50	Asclepsis incarnata	SWAMP MILKWEED	#1 CONT. 15" SPREAD	
ES	50	Eleocharis spp.	SPIKE RUSHES	#1 CONT. 15" SPREAD	

RETENTIVE GRADING AREA 1

SYM.	QTY.	BOTANICAL NAME	COMMON NAME	MIN. CALIPER / HEIGHT	CONDITION
PV	40	Panicum virgatum	SWITCHGRASS	#1 CONT. 15" SPREAD	
IV	40	Iris versicolor	BLUE FLAG IRIS	#1 CONT. 15" SPREAD	
AI	45	Asclepsis incarnata	SWAMP MILKWEED	#1 CONT. 15" SPREAD	
ES	50	Eleocharis spp.	SPIKE RUSHES	#1 CONT. 15" SPREAD	

SAM ERNEY 12/21/2010
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DETENTION BASIN SEEDING SPECIFICATIONS

BASIN SIDESLOPES (UPLANDS) & DRIEST PORTIONS OF THE BASIN BOTTOM 'C'

SCIENTIFIC NAME	COMMON NAME	VARIETY	QTY (BULK)
GRASSES			
ANDROPOGON VIRGINICUS	*BROOMSEDGE*		*0.5LB/ACRE*
BOUTELOUA CURTIPENDULA	*SIDE OATS GRAMA*	*TRAILWAY*	*2 LB/ACRE*
BOUTELOUA GRACILIS	*BLUE GRAMA*		*2 LB/ACRE*
FESTUCA LONGIFOLIA	*HARD FESCUE*	*SR 3100*	*1 LB/ACRE*
FESTUCA OVINA	*SHEEP'S FESCUE*		*5 LB/ACRE*
FESTUCA RUBRA VAR. COMMUTATE	*CHEWINGS FESCUE*	*SR 5100*	*0.5 LB/ACRE*
KOELERIA CRISTATA (PYRAMIDATA)	*PRAIRIE JUNEGRASS*		*0.5 LB/ACRE*
PANICUM CLANDESTINUM	*TIOGA DEERTONGUE*		*2 LB/ACRE*
SCHIZOCHARIUM SCOPARIUS	*LITTLE BLUE STEM*	*CAMPER*	*4 LB/ACRE*
PANICUM VIRGATUM	*SWITCHGRASS*		*1LB/ACRE*
	*ANNUAL RYEGRASS**		*5 LB/ACRE*
PERENNIAL WILDFLOWERS			
ANEMONE VIRGINIANA	*TALL THIMBLEWEED*		*3.00%*
AQUILEGIA CANADENSIS	*WILD COLUMBINE*		*4.00%*
ASCLEPIAS TUBEROSE	*BUTTERFLY WEED*		*17.00%*
ASTER ERICOIDES	*HEATH ASTER*		*1.00%*
ASTER LATERIFLORUS	*CALICO ASTER*		*1.00%*
ASTER LAEVIS	*SMOOTH ASTER*		*2.00%*
CASTILLEJA COCCINEA	*INDIAN PAINTBRUSH*		*1.00%*
CHAMAECRISTA FASCICULATE	*PARTRIDGE PEA*		*5.00%*
COREOPSIS LANCEOLATA	*LANCE–LEAVED COREOPSIS*		*6.00%*
ECHINACEA ANGUSTIFOLIA	*NARROW–IVD CONEFLOWER*		*3.00%*
ECHINACEA PURPUREA	*PURPLE CONEFLOWER*		*2.00%*
EUPATORIUM RUGOSUM	*WHITE SNAKEROOT*		*1.00%*
GAILLARDIA ARISTATA	*BLANKET FLOWER*		*6.00%*
HELIANTHUS MOLLIS	*DOWNY SUNFLOWER*		*6.00%*
LESPEDEZA CAPITATA OR L. HIRTA	*BUSH CLOVER*		*9.00%*
LIATRIS SPICATA	*GAYFEATHER*		*2.00%*
LUPINUS PERENNIS	*PERENNIAL LUPINE*		*14.00%*
MONARDA FISTULA	*WILD BERGAMOT*		*2.00%*
OENOTHERA SPECIOSA	*SHOWY EVENING PRIMROSE*		*2.00%*
PENSTEMON DIGITALIS	*BEARDTONGUE*		*3.00%*
RATIBIDA PINNATA	*YELLOW CONEFLOWER*		*3.00%*
RUDBECKIA HIRTA	*BLACK–EYED SUSAN*		*3.00%*
RUDBECKIA FULGIDA	*BRILLIANT CONEFLOWER*		*4.00%*
SOLIDAGO SPECIOSA	*SHOWY GOLDENROD*		*1.00%*

NOTES:
- THE DETENTION BASIN SHOULD BE MONITORED DURING CONSTRUCTION AND PRIOR TO VEGETATION INSTALLATION TO DETERMINE ITS HYDROLOGY AND THE EXACT LOCATIONS FOR EACH OF THE SPECIFIED MIXES.
- SEEDING OF BASIN/SWALE SIDESLOPES OR MEADOW AREAS SHOULD BE COMPLETED ONLY FROM MARCH TO JUNE, UNLESS APPROVED BY THE TWP. ENVIRONMENTAL CONSULTANT. IF STABILIZATION IS REQUIRED DURING ANOTHER SEASON, A TEMPORARY (I.E. ANNUAL) COVER SHOULD BE USED AS SPECIFIED BY THE COUNTY CONSERVATION DISTRICT TO PROVIDE COVERAGE UNTIL THE NEXT SPRING PLANTING SEASON.
- IF AN ANNUAL COVER IS USED, TILL OR REGRADE THE SURFACE BEFORE INSTALLING THE SPECIFIED MIXES AS DESCRIBED BELOW.
- LIME AS PER SOIL TEST TO ACHIEVE PH 6.5.
- SEEDED WILDFLOWERS CAN BE APPLIED IN DRIFTS (I.E., HAND SEEDED) BY INDIVIDUAL SPECIES AT THE RATE OF 1.5 LBS PER ACRE.
- HYDROSEED GRASS. USE HARROW OR HAND RAKE SEED INTO TOP 0.5 INCHES OF SOIL.
- STRAW MULCH AT 1 TON PER ACRE AND APPLY MULCH TACKIFIER USING THE HYDROSEEDER.

DETENTION BASIN MAINTENANCE PROGRAM

ARTIFICIAL WETLAND & NATURALIZED FACILITIES

POST–CONSTRUCTION MAINTENANCE INSPECTIONS

A. BASIN SHOULD BE INSPECTED ON THE FOLLOWING BASIS:
1. ANNUALLY FOR THE FIRST 5 YEARS
2. ONCE EVERY 3 YEARS THEREAFTER.
3. DURING OR IMMEDIATELY AFTER THE CESSATION OF A STORM EVENT GREAT THAN 2" IN 24 HOURS.

THE FOLLOWING ITEMS SHALL BE PART OF THE MAINTENANCE PROCEDURES:
1. GRASS MAINTENANCE
2. CONTROL OF NOXIOUS WEEDS AND INVASIVE PLANTS
3. MAINTENANCE OF WETLAND VEGETATION
4. REMOVAL AND DISPOSAL OF TRASH AND DEBRIS
5. REMOVAL AND DISPOSAL OF SEDIMENT
6. MAINTENANCE OF MECHANICAL COMPONENTS
7. ELIMINATION OF MOSQUITO–BREEDING HABITATS

THE ENTITY CONDUCTING THE INSPECTION SHALL BE RESPONSIBLE TO SUBMIT A REPORT TO THE MUNICIPALITY REGARDING THE CONDITION OF THE FACILITY AND RECOMMEND NECESSARY REPAIRS, IF REQUIRED BY THE MUNICIPALITY.

INSPECTION CHECKLIST:

1. OBSTRUCTION OF THE INLET OR OUTLET DEVICES BY TRASH AND DEBRIS
2. EXCESSIVE EROSION OR SEDIMENTATION
3. CRACKING OR SETTLING
4. ANIMAL BORROWING
5. PERMANENTLY PONDED AREAS
6. ALGAE GROWTH, STAGNANT POOLS, OR NOXIOUS ODORS
7. POOR OR DISTRESSED STANDS OF GRASS
8. DISTRESSED AQUATIC VEGETATION
9. DETERIORATION OF PIPES AND CONDUITS
10. DETERIORATION OF SPILLWAY
11. WASHOUT, BULGES, OR SLUMPS
12. SEEPAGE AT THE TOE OF BASIN
13. UNSTABLE SIDE SLOPES AND EMBANKMENTS
14. DETERIORATION OF DOWNSTREAM CHANNELS
15. SIGNS OF VANDALISM
16. PIPING ALONG THE OUTLET BARREL
17. DETERIORATION/SCOURING OF ENERGY DISSIPATERS
18. OUTLET PROTECTION
19. SEDIMENTATION IN RIPRAP CHANNELS

DETENTION BASIN MAINTENANCE REQUIREMENTS

ARTIFICIAL WETLAND & NATURALIZED FACILITIES

THE DETENTION BASIN SHALL BE CLEANED OF SEDIMENT AT THE COMPLETION OF SITE CONSTRUCTION ACTIVITIES. SEDIMENT REMOVAL MAY BE REQUIRED IN A 10 TO 20 YEAR PERIOD. TRASH AND FLOATING DEBRIS SHALL BE REMOVED MONTHLY. A COMPLETE ANNUAL INSPECTION SHALL BE MADE.
EROSION, DISPLACED RIP–RAP, EXPOSED SOIL, AND EMBANKMENT STABILITY ISSUES SHALL BE REPAIRED, IF NOTED. ANY OPENINGS OR DAMAGE TO THE SAFETY FENCE SHALL BE IMMEDIATELY REPAIRED.

MOW BASIN TWICE A YEAR. ONCE A YEAR MOWING IS SUFFICIENT TO KEEP A MEADOW LAWN FROM REVERTING TO WOODLAND, BUT MAY NOT BE SUFFICIENT TO DISCOURAGE WOODY SEEDLINGS, BRAMBLES, INVASIVE VINES AND MULTIFLORA ROSE. RECOMMENDED DATES FOR MOWING ARE EARLY JULY FOR THE FIRST CUTTING AND A SECOND CUTTING IN MARCH UP TO APRIL 15TH. THIS WILL MAXIMIZE BIRD AND ANIMAL HABITAT AND PROMOTE DESIRABLE AND ATTRACTIVE VEGETATION. MOW SEEDED AREAS WHEN THE GROUND IS DRY AND CUT AT HEIGHT OF 6" DURING THE DORMANT SEASON.

MONITOR BASIN FOR INTRUSION BY NOXIOUS AND INVASIVE PLANTS, SUCH AS THISTLE. ELIMINATE UNDESIRABLE PLANTS BY SPOT MOWING, SPOT SPRAYING OR WICK APPLICATION OF AN APPROPRIATE HERBICIDE OR BY MANUAL OR MECHANICAL PULLING. A COMBINATION OF STRATEGIES MAY BE THE BEST APPROACH. DO NOT USE HERBICIDES WITHIN 50 FEET OF STREAMS.

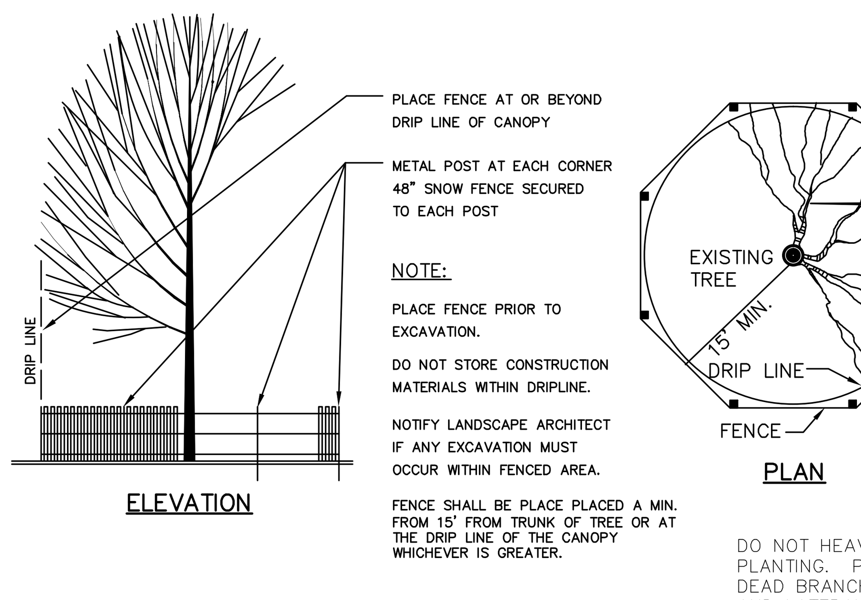
AMENDED SOILS NOTES:

THREE DAYS PRIOR TO PLACEMENT OF AMENDED SOILS THE LICENSED PROFESSIONAL SHALL BE CONTACTED TO OBSERVE THE PLACEMENT OF AMENDED SOILS. THE LICENSED PROFESSIONAL SHALL BE ONSITE TO VERIFY THE ROTOTILLING OF THE SUBSOIL AND THE APPLICATION OF THE APPROVED SOIL AMENDMENT MIXTURE.

AMENDED SOILS SHALL BE COMPOSED OF A SOIL/COMPOST MIXTURE WHERE COMPOST AND SOIL ARE COMBINED AT A RATE OF 2:1 (2 PARTS SOIL:1 PART COMPOST). IF A PROPRIETARY PRODUCT IS USED IN LIEU OF COMPOST, THEN THE MANUFACTURER'S INSTRUCTIONS SHOULD BE FOLLOWED IN TERMS OF MIXING AND APPLICATION RATES.

PRIOR TO PLACEMENT OF AMENDED SOILS THE SUBBASE MUST BE ROTOTILLED TO A MINIMUM DEPTH OF 12". THE AMENDED SOIL SHALL BE PLACED THE SAME DAY THE THE SUBSOIL IS ROTOTILLED. AFTER PLACEMENT OF THE AMENDED SOIL THE AMENDED SOIL SHALL BE ROTOTILLED TO THE DEPTH OF 8".

AMENDED SOIL INSTALLTION
1 SPREAD 2–3 INCHES OF APPROVED COMPOST ON EXISTING SOIL. TILL ADDED SOIL INTO EXISTING SOIL WITH A ROTARY TILLER THAT IS SET TO A DEPTH OF 6 INCHES. ADD AN ADDITIONAL 4 INCHES OF APPROVED COMPOST TO BRING AREA UP TO GRADE.
2. AFTER PERMANENT PLANTING / SEEDING, 2–3 INCHES OF COMPOST BLANKET WILL BE APPLIED TO ALL AREAS NOT PROTECTED BY GRASS OR OTHER PLANTS.



NOTE:

PLACE FENCE PRIOR TO EXCAVATION.

DO NOT STORE CONSTRUCTION MATERIALS WITHIN DRIPLINE.

NOTIFY LANDSCAPE ARCHITECT IF ANY EXCAVATION MUST OCCUR WITHIN FENCED AREA.

FENCE SHALL BE PLACE PLACED A MIN. FROM 15' FROM TRUNK OF TREE OR AT THE DRIP LINE OF THE CANOPY WHICHEVER IS GREATER.

TREE PROTECTION FENCING

NOT TO SCALE

DETENTION BASIN/POND/NATURAL AREAS

MAINTENANCE GUIDELINES

THE FOLLOWING RECOMMENDATIONS ARE OFFERED FOR MONITORING AND MAINTENANCE OF NATURALIZED DETENTION BASINS, PONDS, AND MEADOWS:

1. MEADOW MANAGEMENT – DURING THE ESTABLISHMENT PERIOD (TYPICALLY 2–4 YEARS), MEADOWS SHOULD BE MOWED TO FAVOR THE GROWTH OF THE SEEDED GRASSES AND WILDFLOWERS. THIS TYPICALLY INVOLVES MOWING 1–3 TIMES DURING THE FIRST GROWING SEASON WHEN WEEDS AND COMPETING ANNUAL GRASSES REACH A HEIGHT OF 12–15 INCHES. MEADOWS SHOULD BE MOWED TO A HEIGHT (TYPICALLY 6 INCHES DURING THE FIRST YEAR) JUST ABOVE THE TOPS OF NATIVE GRASSES, WHICH ARE GROWING BELOW THE WEEDS AND ANNUAL GRASSES. DURING THE SECOND GROWING SEASON 2 CUTTINGS MAY BE REQUIRED TO CONTROL ANNUAL OR PERENNIAL COMPETITORS. THE PRESENCE OF PERENNIAL INVASIVE SUCH AS CANADA THISTLE MAY REQUIRE THE USE OF A BROAD–LEAF HERBICIDE (E.G., STINGER) IN ADDITION TO MOWING. FOLLOWING ESTABLISHMENT, MEADOWS SHOULD BE MOWED ONCE A YEAR DURING EARLY SPRING (APRIL), UNLESS ADDITIONAL MOWINGS ARE REQUIRED TO PREVENT THISTLE, MUGWORT, SPOTTED KNAPWEED OR OTHER INVASIVES FROM GOING TO SEED. EARLY SPRING MOWING PROVIDES WINTER HABITAT FOR MANY SPECIES OF WILDLIFE AND ALLOWS REGENERATION OF THE MEADOW TO PROVIDE SUMMER HABITAT, AS WELL AS A SEQUENCE OF BLOOMING WILDFLOWERS.
2. INVASIVE EXOTICS – A LONG–TERM PROGRAM TO CONTROL INVASIVE EXOTIC PLANTS WITHIN NATURALIZED AREAS INCLUDES MONTHLY INSPECTIONS OF THE MEADOWS, PONDS, AND WETLANDS DURING THE GROWING SEASON TO IDENTIFY AND REMOVE INVASIVE VEGETATION. THE KEY TO AN EFFECTIVE ERADICATION PROGRAM BEGINS WITH PROPERLY IDENTIFYING THE VARIOUS INVASIVE PLANTS TO BE ELIMINATED AND DEVELOPING A PLAN SPECIFIC TO THOSE SPECIES. SOME PLANTS (E.G., TREES, LARGE SHRUBS) CAN BE PHYSICALLY REMOVED. HOWEVER, HERBACEOUS SPECIES AND VINES (E.G. JAPANESE HONEYSUCKLE, COMMON REED, CANADA THISTLE) WILL LIKELY REQUIRE THE ACCOMPANYING USE OF A BROAD–LEAF HERBICIDE TO ACHIEVE EFFECTIVE LONG–TERM RESULTS. CATTAILS (BROAD–LEAVED AND NARROW–LEAVED), ALTHOUGH NATIVE SPECIES, HAVE NOT BEEN INCLUDED AS PART OF THE PLANTINGS AND SHOULD BE REMOVED FROM THE BIOFILTERS AND AQUATIC BENCHES OF THE PONDS, AND THE FOREBAYS OF DETENTION BASIN, AT LEAST UNTIL INSTALLED VEGETATION HAS BECOME WELL ESTABLISHED. OTHERWISE, THESE AGGRESSIVE SPECIES MAY OUT–COMPETE THE INSTALLED VEGETATION AND FORM UNDESIRABLE MONOCULTURES.
3. DEER MANAGEMENT – ALTHOUGH ENTIRELY NATIVE, WHITE–TAIL DEER REPRESENT A CHALLENGE SIMILAR TO INVASIVE EXOTIC VEGETATION. AS THEIR POPULATION LEVELS CONTINUE TO GROW OR REMAIN HIGH STATEWIDE, DEER ARE BECOMING INCREASINGLY PROBLEMATIC. IN AREAS OF EXCESSIVE DEER DAMAGE, IT MAY BE DESIRABLE TO INSTALL A DEER FENCE AROUND THE PLANTING AREA DURING THE PLANT ESTABLISHMENT PERIOD. WHEN THIS FENCE IS ULTIMATELY REMOVED, ALL AVAILABLE OPTIONS TO CONTROL THE DEER POPULATION SHOULD BE CONSIDERED.
4. FOREBAY MAINTENANCE – BASIN AND POND FOREBAYS SHOULD BE MAINTAINED ON AN ANNUAL BASIS FOR THE FIRST 2–4 YEARS FOLLOWING COMPLETION OF CONSTRUCTION. ACCUMULATED SEDIMENT CAN BE REMOVED BY HAND (I.E., WITH A SHOVEL) OR BY USING A SMALL FRONT END LOADER (E.G., BOBCAT). FOREBAYS CAN BE MOWED ANNUALLY ON THE SAME SCHEDULE AS THE MEADOWS FOLLOWING ESTABLISHMENT OF THE GRASSES WITHIN THEM. ALTERNATIVELY, IF FOREBAY HYDROLOGY RESULTS IN A MORE WETLAND TYPE PLANT COMMUNITY, ANNUAL MOWING MAY NOT BE DESIRABLE, SINCE POLLUTANT REMOVAL EFFICIENCIES WOULD BE ENHANCED BY LEAVING VEGETATION UNMMOWED. AS THE SITE BECOMES MORE STABILIZED, LESS SEDIMENT SHOULD ACCUMULATE ANNUALLY WITHIN THE FOREBAYS AND THE FREQUENCY OF MAINTENANCE CAN BE ADJUSTED TO MAINTAIN THE FOREBAY'S DESIGNED STORAGE VOLUME AND FUNCTION AS A SEDIMENT TRAP. IF FOREBAYS ARE ULTIMATELY MAINTAINED ON A 3–5 YEAR SCHEDULE (OR LONGER), THE TOP LAYER OF PLANTS, ROOTS, AND SEEDS CAN BE STOCKPILED AND REPLACED AFTER EXCESS UNDERLYING SEDIMENT IS REMOVED TO REGAIN LOST STORAGE VOLUME.
5. POND MAINTENANCE – GOOSE EXCLOSURES INSTALLED DURING THE PLANTING OF THE AQUATIC EMERGENTS WITHIN PONDS SHOULD BE MAINTAINED FOR AT LEAST THE FIRST GROWING SEASON AND THE AQUATIC EMERGENT PLANTINGS SHOULD BE MONITORED TO DETERMINE WHEN REMOVAL OF THE EXCLOSURE WILL NOT UNDULY RISK DEPREDATION OF THE INSTALLED MATERIAL. AS NOTED UNDER ITEM 2, THE POND SHOULD BE INSPECTED AS PART OF THE MONTHLY MONITORING PROGRAM TO ALLOW PRE–EMPTIVE RESPONSES TO SUCH CONCERNS AS:
   - INVASIVE EXOTIC VEGETATION,
   - DEVELOPMENT OF UNACCEPTABLE POPULATION LEVELS OF NUISANCE SPECIES (E.G., MUSKRATS, GEESE),
   - UNDESIRABLE LEVELS OF ALGAL FORMATION,
   - IMPROPER OUTLET FUNCTION, AND
   - OTHER STORMWATER MANAGEMENT OR WATER QUALITY ISSUES.

PCSWM PLAN – GENERAL NOTES:

1. THE INTEGRITY OF THE STREAM CHANNEL WILL BE PROTECTED BY THE 25' NO DISTURBANCE BUFFER. THIS WILL PROTECT THE PHYSICAL, BIOLOGICAL AND CHEMICAL QUALITIES OF THE RECEIVING STREAM. ALSO LANDSCAPE PLANTINGS WILL BE PLACED ALONG THE BUFFER WHICH WILL HELP FILTER STORMWATER RUNOFF AND MAXIMIZE THE PROTECTION OF THE EXISTING DRAINAGE FEATURES AND EXISTING VEGETATION.

2. THE PROPOSED BASINS WILL DECREASE THE RATE OF RUNOFF AND THE PLANTINGS ALONG WITH THE INFILTRATION BEDS WILL REDUCE THE STORMWATER RUNOFF VOLUME.

3. THE SITE HAS BEEN DESIGNED TO MINIMIZE IMPERVIOUS SURFACES.

4. THE INSTALLATION OF FILTER SOCKS AND LIMIT OF DISTURBANCE FENCE WILL ENSURE SENSITIVE/SPECIAL FEATURES, EXISTING DRAINAGE FEATURES AND EXISTING VEGETATION ARE PROTECTED. NO LAND CLEARING AND/OR GRADING MAY BE PERFORMED OUTSIDE OF THE LIMIT OF DISTURBANCE FENCING. THIS WILL HELP MINIMIZE UNNECESSARY SOIL COMPACTION THROUGHOUT THE SITE.

5. PROPER CARE SHALL BE TAKEN WITHIN INFILTRATION BEDS TO MINIMIZE SOIL COMPACTION.

6. THE FOLLOWING BMP'D ARE UTILIZED TO MINIMIZE CHANGES TO THE STORMWATER RUNOFF:
STRUCTURAL – INFILTRATION TRENCHES, BIO–INFILTRATION AREA, STORMWATER BASINS.
NONSTRUCTURAL – LANDSCAPE RESTORATION, ENHANCE RIPARIAN BUFFER.

POST CONSTRUCTION STORMWATER MANAGEMENT NOTES:

1. THE PCSWM PLAN, INSPECTION REPORTS AND MONITORING RECORDS SHALL BE AVAILABLE FOR REVIEW AND INSPECTION BY THE DEPARTMENT OF THE CONSERVATION DISTRICT.

2. A LICENSED PROFESSIONAL, OR A DESIGNEE SHALL BE PRESENT ONSITE AND BE RESPONSIBLE DURING CRITICAL STAGES OF IMPLEMENTATION OF THE APPROVED PCSWM PLAN.

3. THE PERMITTEE SHALL INCLUDE WITH THE NOTICE OF TERMINATION "RECORD DRAWINGS" WITH A FINAL CERTIFICATION STATEMENT FROM A LICENSED PROFESSIONAL PER 025 PA CODE 102.8.PCSM REQUIREMENTS (L).

4. THE PERMITTEE SHALL RETAIN A COPY OF THE RECORD DRAWINGS AS A PART OF THE APPROVED PCSM PLAN.

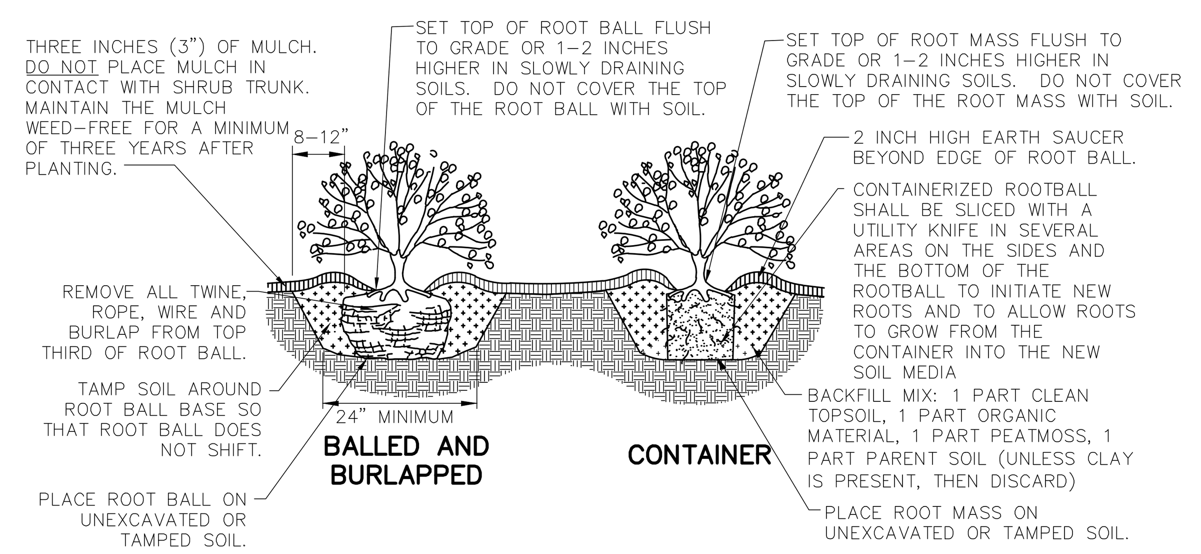
5. THE PERMITTEE SHALL PROVIDE A COPY OF THE RECORD DRAWINGS AS A PART OF THE APPROVED PSCM PLAN TO THE PERSON IDENTIFIED IN THIS SECTION AS BEING RESPONIBLE FOR LONG–TERM OPERATION AND MAINTENANCE OF THE PCSM BMPS.

6. THE PERMITTEE OR –CO–PERMITTEE SHALL BE RESPONSIBLE FOR LONG–TERM OPERATION AND MAINTENANCE OF PCSM BMPS UNLESS A DIFFERENT PERSON IS IDENTIFIED ON THE NOTICE OF TERMINATION AND HAS AGREED TO LONG–TERM OPERATION AND MAINTENANCE OF PCSM BMPS.

7. FOR ANY PROPERTY CONTAINING A PCSM BMP, THE PERMITTEE OR CO–PERMITTEE SHALL RECORD AN INSTRUMENT WITH THE RECORDER OF DEEDS WHICH WILL ASSURE DISCLOSURE OF THE PCSM BMP AND THE RELATED OBLIGATIONS IN THE ORDINARY COURSE OF A TITLE SEARCH OF THE SUBJECT PROPERTY. THE RECORD INSTRUMENT MUST IDENTIFY THE PCSM BMP, PROVIDE FOR NECESSARY ACCESS RELATED TO LONG–TERM OPERATION AND MAINTENANCE FOR PCSM BMPS AND PROVIDE NOTICE THAT THE RESPONSIBILITY FOR LONG–TERM OPERATION AND MAINTENANCE OF THE PCSM BMPS IS A CONVENANT THAT RUNS WITH THE LAND THAT IS BINDING UPON AND ENFORCEABLE BY SUBSEQUENT GRANTEES, AND PROVIDE PROOF OF FILING WITH THE NOTICE OF TERMINATION UNDER SEC. 102.7(B)(5) (RELATING TO PERMIT TERMINATION).

8. THE PERSON RESPONSIBLE FOR PERFORMING LONG–TERM OPERATION AND MAINTENANCE MAY ENTER INTO AN AGREEMENT WITH ANOTHER PERSON INCLUDING A CONSERVATION DISTRICT, NONPROFIT ORGANIZATION, MUNICIPALITY, AUTHORITY, PRIVATE CORPORATION OR OTHER PERSON, TO TRANSFER THE RESPONSIBILITY FOR PCSM BMPS OR TO PERFORM LONG–TERM OPERATION AND MAINTENANCE AND PROVIDE NOTICE THEROF THE DEPARTMENT.

9. A PERMITTEE OR CO–PERMITTEE THAT FAILS TO TRANSFER LONG–TERM OPERATION AND MAINTENANCE OF THE PCSM BMPS OR OTHERWISE FAIL TO COMPLY WITH THIS REQUIREMENT SHALL REMAIN JOINTLY AND SEVERALLY RESPONSIBLE WITH THE LANDOWNER FOR LONG–TERM OPERATION AND MAINTENANCE OF THE PCSM BMPS LOCATED ON TE PROPERTY.



DO NOT HEAVILY PRUNE THE SHRUBS AT PLANTING. PRUNE ONLY BROKEN OR DEAD BRANCHES. SOME INTERIOR TWIGS AND LATERAL BRANCHES MAY BE PRUNED, HOWEVER DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN.

NOTES:
1. PLANTS WITH POOR QUALITY ROOT BALLS OR ROOT BALLS THAT HAVE BEEN CRACKED OR DAMAGED SHALL BE REJECTED.
2. PLANTS THAT DO NOT DISPLAY THE NORMAL CHARACTERISTICS FOR THEIR SPECIES SHALL BE REJECTED.
3. SHRUBS PLANTED LESS THAN SIX FEET APART SHALL BE PLANTED IN A CONTIGUOUS PLANTING PIT (BED).

DECIDUOUS and EVERGREEN SHRUB DETAIL

NOT TO SCALE

STORMWATER MANAGEMENT BEST MANAGEMENT PRACTICES (BMP) NOTES:

ALL STORMWATER MANAGEMENT BMPs IDENTIFIED BELOW ARE INTENDED TO BE PERMANENT FIXTURES THAT CANNOT BE ALTERED OR REMOVED WITHOUT PRIOR APPROVAL OF THE TOWNSHIP.

1. WETLAND BASINS – WATER QUALITY, GROUNDWATER RECHARGE

OPERATION NOTE:
THE MAINTENANCE FOR THE STORMWATER MANAGEMENT BASINS SHALL BE THE RESPONSIBILITY OF THE HOME OWNERS ASSOCIATION.

CONSTRUCTION NOTES:
1) PROTECT BASIN FROM COMPACTION PRIOR TO INSTALLATION.
1) IF POSSIBLE, INSTALL INFILTRATION BASIN DURING LATER PHASES OF SITE CONSTRUCTION TO PREVENT SEDIMENTATION AND/OR DAMAGE FROM CONSTRUCTION ACTIVITY. AFTER INSTALLATION, PROTECT SEDIMENT–LADEN WATER FROM ENTERING INLETS AND PIPES.
2) INSTALL AND MAINTAIN PROPER EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION.
4) IF NECESSARY, EXCAVATE BASIN BOTTOM TO AN UNCOMPACTED SUBGRADE FREE FROM ROCKS AND DEBRIS. DO NOT COMPACT SUBGRADE.
5) PLANTINGS SHALL BE IN ACCORDANCE WITH THE APPROVED LANDSCAPING AND LIGHTING PLAN.
6) DO NOT REMOVE INLET PROTECTION OR OTHER EROSION AND SEDIMENT CONTROL MEASURES UNTIL SITE IS FULLY STABILIZED.
7) ANY SEDIMENT THAT ENTERS INLETS DURING CONSTRUCTION IS TO BE REMOVED WITHIN 24 HOURS.
8) THE USE OF MASTIC OR APPROVED EQUIVALENT SHALL BE USED TO SEAL THE JOINTS OF ALL INLETS LOCATED WITHIN GRASSED AREAS AND PCSWM BMP AREAS TO PREVENT SOIL FROM WASHING INTO THE STORM SEWER OR INFILTRATION AREA THROUGH JOINTS IN THE INLET BOX AND TOP.

MAINTENANCE AND INSPECTION NOTES:
1) CATCH BASINS AND INLETS (UPGRADIENT OF BASIN) ARE TO BE INSPECTED ON AN ANNUAL BASIS AND CLEANED WHEN THE SEDIMENT EXCEEDS THE SAFE LEVEL AS SHOWN ON THE PLANS.
2) THE VEGETATION ALONG THE SURFACE OF THE BASIN SHOULD BE MAINTAINED IN GOOD CONDITION, AND ANY BARE SPOTS IMMEDIATELY REVEGETATED.
3) VEHICLES SHOULD NOT BE PARKED OR DRIVEN ON THE BASIN, AND CARE SHOULD BE TAKEN TO AVOID EXCESS COMPACTION BY MOWERS.
4) INSPECT BASINS AND MAKE SURE THAT RUNOFF DRAINS DOWN WITHIN 72 HOURS. IN THE EVENT THAT A GIVEN BASIN DOES NOT DRAIN DOWN WITHIN THE 72 HOUR TIME PERIOD, IT IS THE RESPONSIBILITY OF THE HOME OWNER'S ASSOCIATION TO ENSURE THAT ANY STANDING WATER IS PUMPED OUT AND THAT THE TOWNSHIP ENGINEER IS PROMPTLY NOTIFIED OF THE ISSUE.
5) ALSO INSPECT FOR ACCUMULATION OF SEDIMENT, DAMAGE TO OUTLET CONTROL STRUCTURES, EROSION CONTROL MEASURES, SIGNS OF WATER CONTAMINATION/SPILLS, AND SLOPE STABILITY IN THE BERMS.
6) MOSQUITOES 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) ONCE ESTABLISHED, THE HOMEOWNERS ASSOCIATION SHOULD MONITOR THE WEED GROWTH CAREFULLY DURING THE FIRST YEAR. THE HEIGHT OF THE GRASS SHOULD BE KEPT BETWEEN 6 AND 8 INCHES. FOR THE SECOND YEAR AND ON, DEPENDING ON THE WETNESS OF THE GROUND AT THE TIME OF MOWING, THE AREA CAN BE MOWED ONCE, AS CLOSE TO THE GROUND AS POSSIBLE, IN THE EARLY SPRING, ALLOWING THE SOIL TO WARM MORE QUICKLY AND YOUNG PLANTS TO EMERGE. AFTER THIS FIRST MOW IN EARLY SPRING, THE HEIGHT OF THE GRASS SHOULD BE KEPT BETWEEN 6 AND 8 INCHES FOR BEST WEED CONTROL.
8) REMOVE SEDIMENT FROM BASIN. RESTORE ORIGINAL CROSS SECTION AND INFILTRATION RATE. PROPERLY DISPOSE OF SEDIMENT.

2. SUMP STRUCTURES – WATER QUALITY

OPERATION NOTE:

THE MAINTENANCE FOR THE SUMP STRUCTURES SHALL BE THE RESPONSIBILITY OF THE TOWNSHIP.

CONSTRUCTION NOTES:
1) INLETS 1–8, 1–11, 2–29, 2–35 AND 3–9 SHALL BE CONSTRUCTED AS SUMP INLETS..
2) PER PA BMP MANUAL, SUMP STRUCTURES TO BE CONSTRUCTED WITH A MINIMUM TWELVE (12) INCH SUMP BELOW OUTFLOW PIPE INVERT. SEVERAL ONE (1) INCH DIAMETER WEEP HOLES TO BE DRILLED INTO THE BOTTOM OF THE STRUCTURE TO PREVENT STANDING WATER FOR LONG PERIODS OF TIME.
3) INSTALL AND MAINTAIN PROPER EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION.
4) DO NOT REMOVE INLET PROTECTION OR OTHER EROSION AND SEDIMENT CONTROL MEASURES UNTIL SITE IS FULLY STABILIZED.
5) ANY SEDIMENT THAT ENTERS INLETS DURING CONSTRUCTION IS TO BE REMOVED WITHIN 24 HOURS.

MAINTENANCE AND INSPECTION NOTES:
1) INLETS SHOULD BE INSPECTED AND CLEANED ON AN ANNUAL BASIS. SEDIMENT SHALL NOT ACCUMULATE TO MORE THAN HALF OF THE STORAGE DEPTH. PROPERLY DISPOSE OF SEDIMENT.
2) THE VEGETATION ALONG THE SURFACE OF THE CATCH BASIN SHOULD BE MAINTAINED IN GOOD CONDITION, AND ANY BARE SPOTS IMMEDIATELY REVEGETATED.
3) INSPECT INLET AND MAKE SURE THAT RUNOFF DRAINS DOWN WITHIN 72 HOURS.
4) SOLIDS REMOVED FROM INLETS MAY BE HIGH IN POLLUTANTS SUCH AS OIL AND GREASE, METALS, ORGANIC AND INORGANIC CHEMICALS, AND NUTRIENTS. PROPER HANDLING OF THIS MATERIAL INCLUDES DISPOSAL SO AS NOT TO CONTAMINATE SURFACE WATER OR GROUNDWATER. THIS MATERIAL MAY NEED TO BE LANDFILLED.

3. DISCONNECTION OF ROOF DRAINS – INFILTRATION

CONSTRUCTION NOTES:
1) ALL ROOF DRAINS SHALL NOT BE DIRECTLY DISCHARGED TO STORMWATER CONVEYANCE SYSTEMS AND IMPERVIOUS SURFACES. ALL ROOF DRAINS SHALL DISCHARGE TO STABILIZED LAWN AREAS.

PROJECT BMP MAINTENANCE WASTES

1. ROCK WASTE – ALL ROCKS THAT ARE SUITABLE FOR LANDSCAPING USES SHALL BE USED ON–SITE OR AT ANOTHER FACILITY.

2. SOIL WASTE – ALL EXCAVATED SOIL SHALL BE USED ON–SITE, AS FILL MATERIAL WHERE POSSIBLE. ANY EXCESS MATERIAL NOT USED ON–SITE MAY ONLY BE DISPOSED AT A FACILITY WITH A VALID EARTH DISTURBANCE AND NPDES PERMIT APPROVED AND WERE ALL BMPS ARE PROPERLY INSTALLED. ALL SEDIMENT REMOVED DURING MAINTENANCE AND CLEANING OF BMPS WILL BE INCORPORATEE INTO THE FINE GRADING UPSTREAM FROM BMPS. EXCESS MATERIAL THAT IS REMOVED FROM BMPS AND CANNOT BE INCORPORATED INTO THE FINE GRADING STABILIZATION SHALL BE REMOVED FROM THE SITE AND MAY ONLY BE DISPOSED AT A FACILITY WITH A VALID EARTH DISTURBANCE AND NPDES PERMIT APPROVAL AND WERE ALL BMPS ARE PROPERLY INSTALLED.

3. THE OPERATOR SHALL REMOVED FROM THE SITE, RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTES IN ACCORDANCE WITH THE DEPARTMENTS 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 MATERIAL OR WASTE AT THE SITE.

CRITICAL STAGE NOTES

A LICENSED PROFESSIONAL OR DESIGNEE SHALL BE PRESENT ON AND INSPECT DURING THE CRITICAL STAGES OF BMP INSTALLATION. THE CRITICAL STAGES ARE:

FILTER SOCKS AND LIMIT OF DISTURBANCE FENCE:
1. ENSURE SENSITIVE/SPECIAL FEATURES, EXISTING DRAINAGE FEATURES, AND EXISTING VEGETATION ARE PROTECTED. NO LAND CLEARING AND/OR GRADING MAY BE PERFORMED OUTSIDE OF THE LIMIT OF DISTURBANCE FENCING.

SUBSURFACE INFILTRATION BEDS:
1. MAKE SURE AREAS TRIBUTARY TO INFILTRATION BMP'S ARE STABILIZED.
2. OBSERVE EARTHWORK/EXCAVATION FOR MINIMIZED SOIL COMPACTION AND DESIGN DEPTH MET.
3. OBSERVE CLEAN CRUSHED STONE, GEOTEXTILE FABRIC AND PIPE INSTALLATION.
4. OBSERVE INSTALLATION OF OUTLET STRUCTURE TO ENSURE CONSTRUCTED PER DESIGN.
5. TEST FACILITY FOR INFILTRATION.

BIO–INFILTRATION / BASIN BOTTOMS:
1. MAKE SURE AREAS TRIBUTARY TO BASINS ARE STABILIZED PRIOR TO CONVERSION FROM SEDIMENT BASIN.
2. OBSERVE EARTHWORK/EXCAVATION FOR MINIMIZED SOIL COMPACTION AND DESIGN DEPTH MET.
3. OBSERVE INSTALLATION OF OUTLET STRUCTURE TO ENSURE CONSTRUCTED PER DESIGN.
4. OBSERVE PREPARED EARTH FOR PLANTINGS, SEEDING, LIME, FERTILIZER AND MULCH AS SPECIFIED.

AMENDED SOILS:
1. ALL CONSTRUCTION SHOULD BE COMPLETED PRIOR TO INSTALLATION OF AMENDED SOILS.
2. COMPOST SHALL BE ADDED AT A RATE OF 2:1 (SOIL:COMPOST)
3. AMENDED SOILS SHALL NOT BE PLACED ON SLOPES GREATER THAN 30%
4. AMENDED SOILS SHALL NOT BE PLACED WITHIN THE DRIP LINE OF EXISTING TREES.

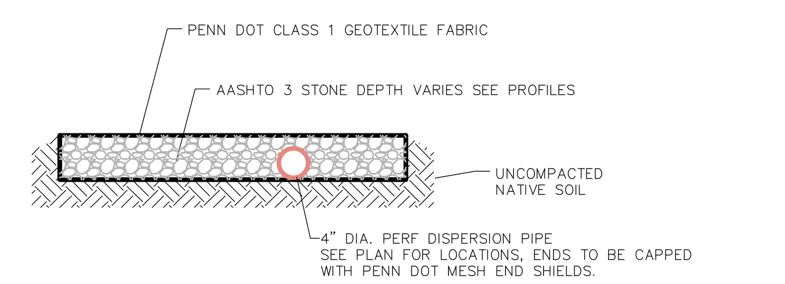
POST CONSTRUCTION MAINTENANCE NOTES:

A. GRASS LINED SWALES:
1. MONITOR SEDIMENT BUILD UP IN THE SWALE.
2. INSPECT AND MAINTAIN VEGETATIVE BUFFER ADJACENT TO SWALE. IMMEDIATELY STABILIZE AND REVEGETATE BARE SPOTS.
3. LIMIT APPLICATION OF FERTILIZERS TO A MINIMUM TO AVOID CONTRIBUTING TO POLLUTION PROBLEMS.

B. BIO–INFILTRATION / BASIN BOTTOMS:
1. DURING THE FIRST GROWING SEASON, VEGETATION SHOULD BE INSPECTED EVERY 2 TO 3 WEEKS.
2. DURING THE FIRST 2 YEARS BASINS SHALL BE INSPECTED AT LEAST 4 TIMES PER YEAR AND AFTER MAJOR STORMS (GREATER THAN 2 INCHES IN 24 HOURS). INSPECTIONS SHOULD ASSESS THE VEGETATION, EROSION, FLOW CHANNELIZATION, BANK STABILITY, INLET/OUTLET CONDITIONS, SEDIMENT/DEBRIS ACCUMULATION, AND POTENTIAL SOURCES OF CONTAMINATION. PROBLEMS SHOULD BE CORRECTED AS SOON AS POSSIBLE. WETLAND AND BUFFERING VEGETATION MAY REQUIRE SUPPORT– WATERING, WEEDING, MULCHING, REPLANTING ETC. – DURING THE FIRST 3 YEARS.
3. REMOVE UNDESIRABLE AND PLANT DESIRABLE REPLACEMENTS IF NECESSARY. CONSULT PLANTING SCHEDULE FOR A LIST OF DESIRABLE PLANTS.
4. ONCE ESTABLISHED, INSPECT SEMIANNUALLY AND AFTER MAJOR STORM VENTS, AS WELL AS RAPID ICE BREAKUP. VEGETATION SHOULD MAINTAIN AT LEAST AN 85 PERCENT COVER OF THE EMERGENT VEGETATION ZONE.
5. SEDIMENT SHOULD BE REMOVED FROM THE FOREBAY BEFORE IT OCCUPIES 50 PERCENT OF THE FOREBAY, TYPICALLY EVERY 3 TO 7 YEARS.

C. UNDERGROUND INFILTRATION BEDS:
1. ALL CATCH BASINS, WHERE APPICABLE SHOULD BE INSPECTED AND CLEANED OUT AT LEAST 2 TIMES PER YEAR.
2. OVERLYING VEGETATION SHOULD BE MAINTAINED IN GOOD CONSITION, AND ANY BARE SPOTS REVEGETATED AS SOON AS POSSIBLE.
3. VEHICULAR SHOULD BE PROHIBITED, AND CARE TAKEN TO AVOID EXCESSIVE COMPACTION BY MOWING EQUIPMENT.

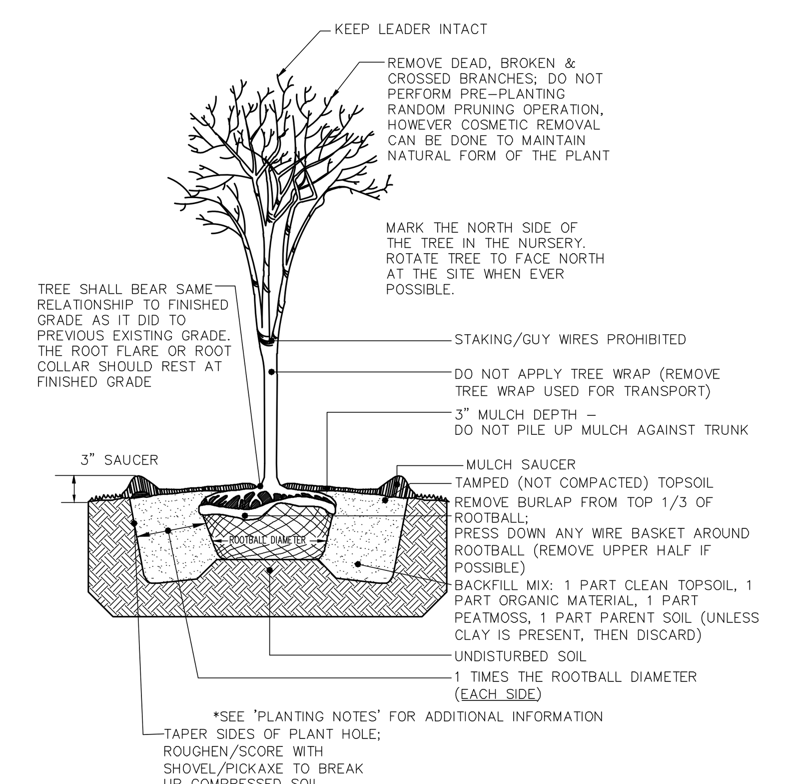
D. RIPARIAN CORRIDOR:
1. EXISTING WOODY AND OTHER NATIVE VEGETATION SHALL BE PRESERVED TO THE GREATEST EXTENT POSSIBLE.
2. FALLEN BRANCHES AND OTHER ORGANIC MATERIAL SHALL BE ALLOWED TO REMAIN WHERE THEY HAVE FALLEN, PROVIDED THEY DO NOT CAUSE A HAZARD.
3 WHERE APPLICABLE, THE CORRIDOR AREA SHALL BE RESTORED OR CONVERTED TO A MORE EFFECTIVE LANDSCAPE BY REMOVING INVASIVE VEGETATION, CLEANING OUT TRASH, CORRECTING STREAM BANK EROSION PROBLEMS, PLANTING APPROPRIATE NATIVE TREES, SHURBS AND HERBACEOUS PLANTS AND PROPERLY MAINTAINING THE CORRIDOR FROM INVASIVE PLANTS, DEER, AND OTHER POTENTIAL PROBLEMS IN THE CORRIDOR.



NOTES:
1. ANY PIPE OR STRUCTURE PROJECTIONS OR PUNCTURES THROUGH OR INTO THE GEOTEXTILE FABRIC, THE GEOTEXTILE FABBRIC SHALL WRAP AROUND THE PIPE OR STRUCTURE A MINIMUM OF 6" ALONG THE STRUCTURE OF PIPE.

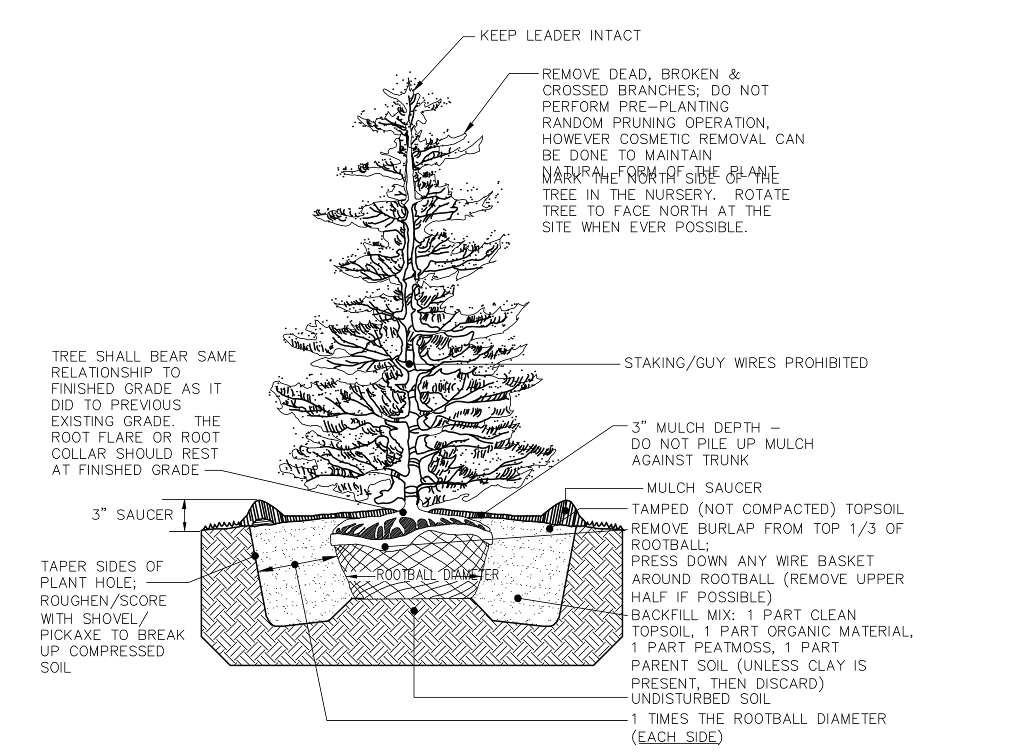
STONE INFILTRATION BED DETAIL

NOT TO SCALE



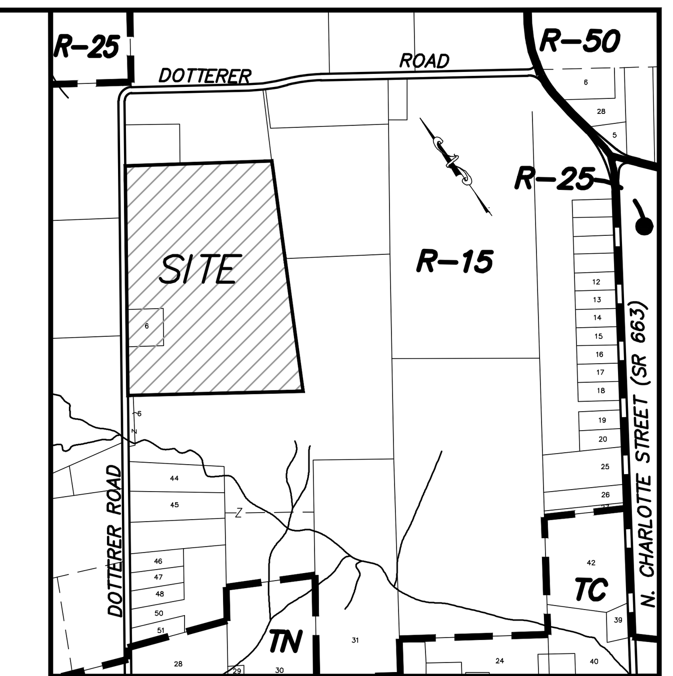
TYPICAL DECIDUOUS TREE PLANTING DETAIL

NOT TO SCALE



*SEE 'PLANTING NOTES' FOR ADDITIONAL INFORMATION

TYPICAL EVERGREEN TREE PLANTING DETAIL



LOCATION MAP
SCALE: 1"=800'

NO.	REVISION	INITIALS	DATE
1	PER LTS DATED 1–3–13, 1–4–13 & 2–14–13	JAB	2–20–13
2	PREP FINAL PLAN PER LTS DATED 3–7, 3–19	JAB	5–03–13
3	PER LTRS DATED 5–29, 6–5	JAB	7–12–13
4	PREP FOR MCCD SUBMISSION	JAB	7–23–13
5	MISC. REVISIONS	JAB	8–11–13
6	MISC. REVISIONS (NPDES)	JAB	8–21–13
7	PER MCCD LTR 9–11–13	JAB	9–16–13
8	REVISE RETAINING WALLS AND GRADES	SPE	12–06–13

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____

PLAN NOTATION
ONLY THOSE PLANS WHICH CONTAIN AN IMPRESSED SEAL OR A RED INK SEAL OF THE RESPONSIBLE PROFESSIONAL SHALL BE CONSIDERED VALID. THIS PLAN HAS BEEN SPECIFICALLY PREPARED FOR THE OWNER DESIGNATED HEREON. ANY MODIFICATION, REVISION, DUPLICATION OR USE WITHOUT THE WRITTEN CONSENT OF VAN CLEEF ENGINEERING ASSOCIATES IS PROHIBITED. RELIANCE ON THIS PLAN FOR ANY PURPOSE OTHER THAN THAT WHICH IS INTENDED SHALL BE AT THE SOLE DISCRETION AND LIABILITY OF THE APPLICABLE PARTY.

BY: ______________________________
BRIAN S. FOCHT, PA PE DATE
PENNSYLVANIA PROFESSIONAL ENGINEER NO. 056961

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PROJECT: 0402NHT.02	DESIGNED BY: –
DATE: 12–19–12	DRAWN BY: JAB
SCALE: N/A	CHECKED BY: BSF

SUBDIVISION PLANS
FOR
HANOVER WOODS
(FORMERLY D'AMICO TRACT)
SITUATED IN
NEW HANOVER TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

TITLE
CONSTRUCTION DETAILS

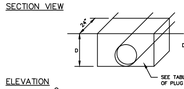
FINAL PLAN

SHEET NUMBER 23 / 36

1. CONSTRUCTION REQUIREMENTS:
   A) LIMIT ADVANCE CLEARING AND GRUBBING OPERATIONS TO A DISTANCE EQUAL TO TWO TIMES THE LENGTH OF PIPE INSTALLATION THAT CAN BE COMPLETED IN ONE DAY.
   B) 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.
   C) LIMIT DAILY TRENCH EXCAVATION TO THE LENGTH OF PIPE PLACEMENT, PLUG INSTALLATION AND BACKFILLING THAT CAN BE COMPLETED THE SAME DAY.
   D) TRENCH PLUGS WILL BE SPACED IN ACCORDANCE WITH TABLE 4.11 AND BE CONSTRUCTED OF THE MATERIALS AND TO THE DETAILS SHOWN IN FIGURE 4.21.
      1) AT ALL CROSSINGS OF WATERS OF THE COMMONWEALTH, TRENCH PLUGS WILL BE INSTALLED AT THE END OF EACH TRENCH EXCAVATION. THE PLUGS MAY BE TEMPORARILY REMOVED WHEN PLACING THE PIPE, BUT THEN REPLACED.
      2) CONSTRUCTION OF THE CROSSING WILL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE PREVIOUS SECTION.
   E) WATER WHICH ACCUMULATES IN THE OPEN TRENCH WILL BE COMPLETELY REMOVED BY PUMPING, IN ACCORDANCE WITH ITEM b.5 OF THE PREVIOUS SECTION, BEFORE PIPE PLACEMENT AND/OR BACKFILLING BEGINS.
   F) ON THE DAY FOLLOWING PIPE PLACEMENT AND TRENCH BACKFILLING, THE DISTURBED AREA WILL BE GRADED TO FINAL CONTOURS AND APPROPRIATE TEMPORARY EROSION AND SEDIMENT POLLUTION CONTROL MEASURES/FACILITIES WILL BE INSTALLED. SEEDING AND MULCHING OF ALL DISTURBED AREAS WILL BE DONE AT THE END OF EACH WEEK.
2. EXCEPTIONS – IN CERTAIN CASES TRENCHES CANNOT BE BACKFILLED UNTIL THE PIPE IS HYDROSTATICALLY TESTED, OR ANCHORS AND OTHER PERMANENT FEATURES ARE INSTALLED. IN THESE CASES, THE REQUIREMENTS LISTED UNDER ITEM 2 WILL REMAIN IN EFFECT WITH THE FOLLOWING EXCEPTIONS:
   2c) DAILY BACKFILLING OF THE TRENCH MAY BE DELAYED FOR SIX DAYS. ALL PRESSURE TESTING AND THE COMPLETE BACKFILLING OF THE OPEN TRENCH MUST BE COMPLETED BY THE SEVENTH WORKING DAY.
   2f) IF DAILY BACKFILLING IS DELAYED, THE DISTURBED AREA WILL BE GRADED TO FINAL CONTOURS, APPROPRIATE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES/FACILITIES WILL BE INSTALLED, AND THE AREAS SEEDED AND MULCHED WITHIN THE NEXT TWO CALENDAR DAYS.

CONSTRUCTION OF TRENCH PLUGS

a. SECTION VIEW



b. ELEVATION

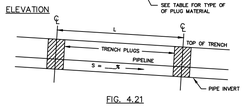


FIG. 4.21

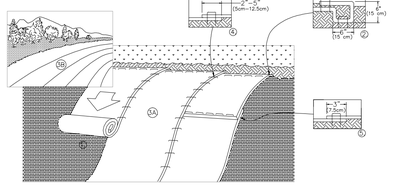
TRENCH SLOPE (%)	L (FEET)	PLUG MATERIAL
0 – 5	—	NONE
5 – 15	500	EARTH FILLED SACKS
15 – 25	300	EARTH FILLED SACKS
25 – 35	200	EARTH FILLED SACKS
35 – 100	100	EARTH FILLED SACKS
OVER 100	50	CEMENT FILLED BAGS, (METRIC), OR MORTARED STONE

UTILITY LINE TRENCH EXCAVATION

NOT TO SCALE

SLOPE INSTALLATION

NORTH AMERICAN GREEN



1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30cm) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30cm) APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM™, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" (5cm-12.5cm) OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5cm) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30cm) APART ACROSS ENTIRE BLANKET WIDTH.

CRITICAL POINTS
A. OVERLAPS AND SEAMS
B. PROJECTED WATER LINE
C. CHANNEL BOTTOM/SIDE SLOPE VERTICES

NOTE:
• HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.
•• IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS IN EXCESS OF 6" (15 CM) MAY BE NECESSARY TO PROPERLY ANCHOR THE BLANKETS.

NOTE:
*ALL BIODEGRADEABLE STAPLES OR STAKES SHALL BE UTILIZED. METAL STAPLES OR STAKES ARE NOT ACCEPTABLE.

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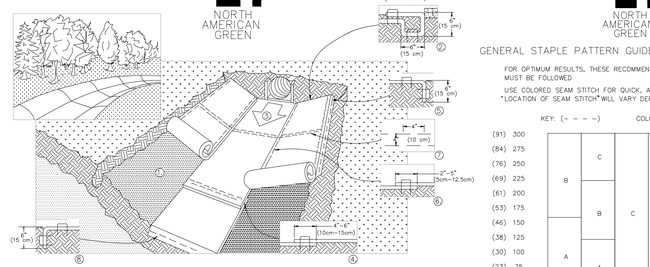
CHANNEL INSTALLATION

NORTH AMERICAN GREEN



1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE BLANKET IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30cm) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30cm) APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL CENTER BLANKET IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM™, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. PLACE CONSECUTIVE BLANKETS END OVER END (SHINGLE STYLE) WITH A 4"-6" (10cm-15cm) OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" (10cm) APART AND 4" (10cm) ON CENTER TO SECURE BLANKETS.
5. FULL LENGTH EDGE OF BLANKETS AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. ADJACENT BLANKETS MUST BE OVERLAPPED APPROXIMATELY 2"–5" (5cm–12.5cm) (DEPENDING ON BLANKET TYPE) AND STAPLED. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE BLANKET BEING OVERLAPPED.
7. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT (9m–12m) INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" (10cm) APART AND 4" (10cm) ON CENTER OVER ENTIRE WIDTH OF THE CHANNEL.
8. THE TERMINAL END OF THE BLANKETS MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.

NOTE:
• HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.
•• IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 cm) MAY BE NECESSARY TO PROPERLY ANCHOR THE BLANKETS.
••• ONLY BIODEGRADEABLE STAPLES OR STAKES SHALL BE UTILIZED. METAL STAPLES OR STAKES ARE NOT ACCEPTABLE.

CRITICAL POINTS
A. OVERLAPS AND SEAMS
B. PROJECTED WATER LINE
C. CHANNEL BOTTOM/SIDE SLOPE VERTICES

14649 HIGHWAY 41 NORTH, EVANSVILLE, INDIANA 47725
USA 1-800-772-2040 CANADA 1-800-448-2040
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CHANNEL APPLICATION INSTALLATION GUIDE

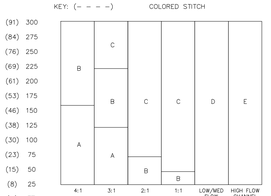
NORTH AMERICAN GREEN

GENERAL STAPLE PATTERN GUIDE AND RECOMMENDATIONS

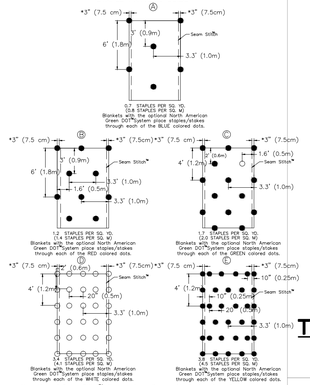
FOR OPTIMUM RESULTS, THESE RECOMMENDED STAPLE PATTERN GUIDES MUST BE FOLLOWED

USE COLORED SEAM STITCH FOR QUICK, ACCURATE SEAM ALIGNMENT. *LOCATION OF SEAM STITCH* WILL VARY DEPENDING ON PRODUCT TYPE.

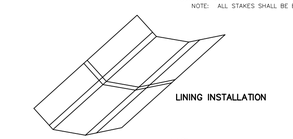
KEY: (– – – –) COLORED STITCH



STAPLE PATTERN GUIDE



Location of Seam Stitch will vary depending on North American Green product type:
–Approx. 5" seam overlap for BioNet erosion control blankets
NOTE: ALL STAKES SHALL BE BIO-DEGRADEABLE



CHANNEL CROSS-SECTION

NOTES:
1. SOME SWALES AND EMBANKMENT PROTECTION SPECIFY NORTH AMERICAN GREEN PRODUCTS. OTHER LININGS AND STAKING PATTERNS SHOWN TO BE EQUIVALENT TO PROTECTION SPECIFIED ON PLANS MAY BE USED WITH APPROVAL OF M.C.C.D. SEE MFG'S LINING INSTALLATION DETAIL FOR STAPLE PATTERNS, AND VEGETATION STABILIZATION SPECIFICATIONS FOR SOIL AMENDMENTS, SEED MIXTURES, AND MULCHING INFORMATION.

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

SWALE DETAIL

NOT TO SCALE

SWALE #	SWALE DEPTH @	SLOPE %	BOTTOM WIDTH @	LINING @ TEMP	LINING @ PERM	NAG STAKING PATTERN	SIDE SLOPE Z_1	SIDE SLOPE Z_2
1	2	1.0	2.0	S75	VEGETATION	D	4	4
2	2	1.0	2.0	S75	VEGETATION	D	4	4
3	2	1.0	2.0	S75	VEGETATION	D	4	4

Dirtbag Specifications
Control of Sediment in Pumped Water

1.0 Description

1.1 This work shall consist of furnishing, placing and removing the Dirtbag pumped sediment control device as directed by the design engineer or as shown on the contract drawings. The Dirtbag pumped-silt control system is marketed by:

AGF Environmental Inc.
2831 Cardwell Drive
Richmond, Virginia 23234

Phone: 800-448-3636
Fax: 804-743-7779

2.0 Materials

2.1 Dirtbag

2.1.1 The Dirtbag shall be a nonwoven bag which is sewn with a double needle matching using a high strength thread.

2.1.2 The Dirtbag seams shall have an average wide width strength per ASTM D-4884 as follows:

Dirtbag Size	Test Method	Test Result
Dirtbag 53	ASTM D-4884	60 Lbs./In.
Dirtbag 55	ASTM D-4884	100 Lbs./In.

2.1.3 Each standard Dirtbag has a fill spout large enough to accommodate a 4" discharge hose. Attached are straps to secure the hose and prevent pumped water from escaping without being filtered.

2.1.4 The geotextile fabric shall be nonwoven fabric with the following properties:

Properties Nonwoven	Test Method	Units		
			53	55
WEIGHT	ASTM D-3776	OZ/YD	8	10
GRAB TENSILE	ASTM D-4632	LBS.	203	250
PUNCTURE	ASTM D-4833	LBS.	130	165
FLOW RATE	ASTM D-4491	GAL./MIN/FT2	80	70
PERMITTIVITY	ASTM D-4491	SEC.-1	1.5	1.3
MULLEN BURST	ASTM D-3786	LBS./IN2	400	550
UV RESISTANT	ASTM D-4355	%	70	70
AOS % RETAINED	ASTM D-4751	%	100	100

All properties are minimum average roll value except the weight of the fabric which is given for information only.

3.0 Construction Sequence

3.1.1 Install Dirtbag in well-vegetated (grassy) level area, and discharge onto stable, erosion resistant areas. Where this is not possible a geotextile flow path shall be provided. Bags shall not be placed on slopes greater than 5%. Strap the neck of the Dirtbag tightly to the discharge hose. To increase the efficiency of the bag, place the bag on an aggregate or haybale bed to maximize water flow through the surface area of the bag.

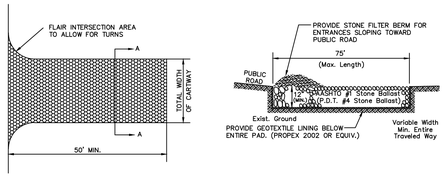
3.1.2 The Dirtbag is full when it no longer can efficiently filter sediment or pass water at a reasonable rate. Flow rates will vary depending on the size of the Dirtbag, the type and amount of sediment discharged into the Dirtbag, the type of ground, rock or other substance under the bag and the degree of the slope on which the bag lies. Under most circumstances, a standard Dirtbag cannot have flow rates of 1500 gallons per minute. Dirtbags exceeding flow rates or overfilling Dirtbag with sediment will cause ruptures of the bags or failure of the hose attachment straps. The allowable pumping rate shall be 750 g.p.m. or half the maximum rate as specified. The bag must be replaced when it reaches half of its total capacity.

3.1.3 Dispose Dirtbag as directed by the site engineer. If allowed, the Dirtbag may be cut open and the contents seeded after removing visible fabric. Dirtbag is strong enough to be lifted with added straps if it must be hauled away (extra option). Off-site disposal may be facilitated by placing the Dirtbag in the back of a dump truck or flatbed prior to use and allowing the water to drain from the bag in place, thereby dismissing the need to lift the Dirtbag.

4.0 Basis of Payment

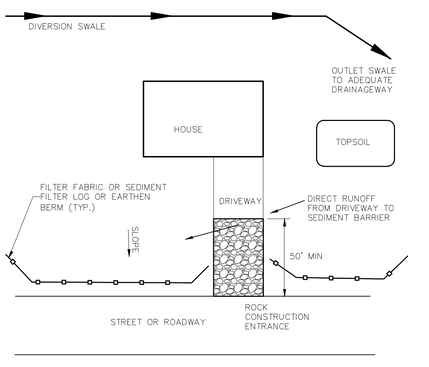
4.1 The payment for any Dirtbag used during construction is to be included in the bid of overall erosion and sediment control plan unless a unit price is requested.

SIMILAR DEVICE BY OTHER MANUFACTURES ALLOWED WITH APPROVAL OF MCCD



TIRE CLEANING AREA TEMP. DURING CONSTRUCTION

NOT TO SCALE



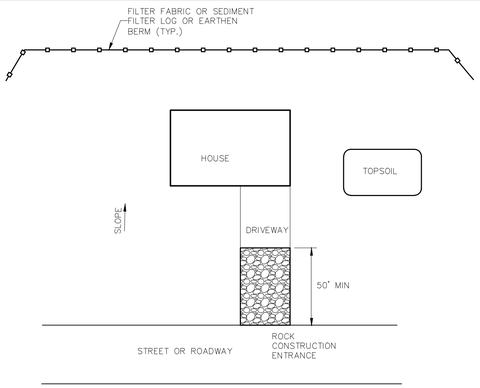
THE UPSLOPE DIVERSION CHANNEL SHOULD BE INSTALLED WHEREVER THE LOT EXTENDS MORE THAN 150 FEET ABOVE THE ROADWAY OR WHERE RUNOFF FROM AREAS ABOVE THE LOT IS NOT OTHERWISE DIVERTED AWAY FROM THE LOT. THE CHANNEL SHOULD BE PROPERLY SIZED AND PROVIDED WITH A SUITABLE PROTECTIVE LINING. THE DESIGNER MUST EXERCISE CAUTION TO PROTECT ALL DOWNSTREAM PROPERTY OWNERS WHEN SELECTION THE DISCHARGE POINT FOR THE CHANNEL.

TYPICAL ON-LOT BMP'S FOR LOT ABOVE ROADWAY

STANDARD CONSTRUCTION DETAIL #10-1

NOT TO SCALE

FILTER FABRIC OR SEDIMENT

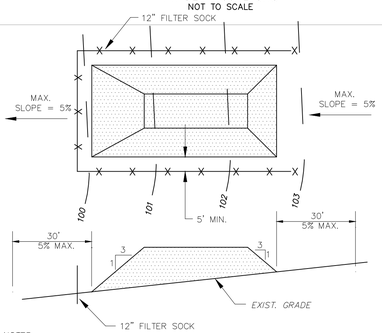


THE AREA DOWNSLOPE FROM THE FILTER FABRIC FENCE MAY NOT BE UNDER DEVELOPMENT OR OTHERWISE DISTURBED.

TYPICAL ON-LOT BMP'S FOR LOT BELOW ROADWAY

STANDARD CONSTRUCTION DETAIL #10-2

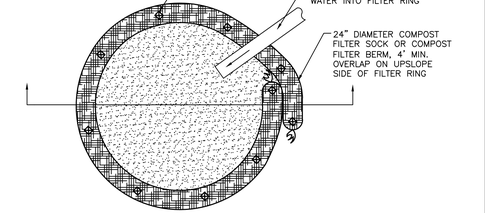
NOT TO SCALE



NOTES
1. PLACE STOCKPILES AT LOCATIONS AS SHOWN ON THE SOIL EROSION AND SEDIMENT CONTROL PLAN.
2. ALL SIDE SLOPES SHALL BE 3 TO 1 OR FLATTER.
3. STOCKPILE SHALL RECIEVE A VEGETATIVE COVER IN ACCORDANCE WITH MINIMUM STABILIZATION REQUIREMENTS.
4. SILT FENCE SHALL BE INSTALLED AS DETAILED HEREON.

TOPSOIL STOCKPILE

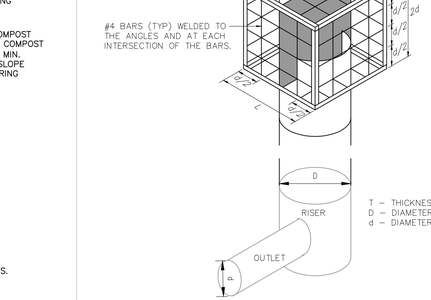
NOT TO SCALE



NOTES:
1. INSTALL ON FLAT GRADE (2% MAXIMUM SLOPE) FOR OPTIMAL PERFORMANCE
2. 18" DIAMETER FILTER SOCK MAY BE STACKED ONTO DOUBLE 24" DIAMETER FILTER SOCKS IN PYRAMIDAL CONFIGURATION FOR ADDED HEIGHT.
3. ALL CONCRETE WASHOUT FACILITIES SHOULD BE INSPECTED DAILY. COMPOST SOCK MUST REMAIN IN CONTINUOUS CONTACT WITH THE GEOMEMBRANE AT ALL LOCATIONS. DAMAGED OR LEAKING WASHOUTS SHOULD BE DEACTIVATED AND REPAIRED OR REPLACED IMMEDIATELY.
4. ACCUMULATED MATERIALS TO BE REMOVED WHEN THEY REACH 75% CAPACITY.

TYPICAL COMPOST SOCK CONCRETE WASHOUT

PA DEP FIGURE 3.18
NOT TO SCALE

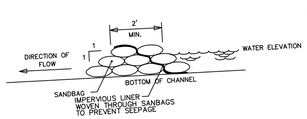


T – THICKNESS OF RISER PIPE
D – DIAMETER OF RISER PIPE
d – DIAMETER OF OUTLET PIPE

ANTI-VORTEX DEVICE

STANDARD CONSTRUCTION DETAIL #7-5
TRASH RACK AND ANTI-VORTEX DEVICE

NOT TO SCALE

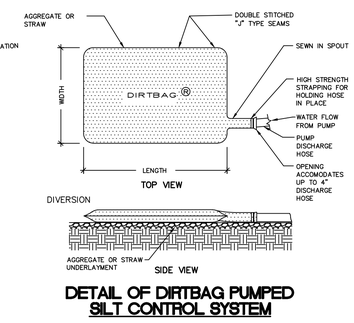


PROFILE VIEW

NOTES:
1. STREAM BANK PROTECTION INSTALLATION SHOULD ONLY BE UNDERTAKEN DURING PERIODS OF LOW OR NO STREAM FLOW.
2. BANK EXCAVATION SHOULD BE UNDERTAKEN FROM THE TOP OF THE STREAMBANK WHEREVER POSSIBLE
3. ALL EXCAVATED CHANNEL MATERIAL WHICH WILL SUBSEQUENTLY BE USED AS BACK FILL SHALL BE PLACED IN A TEMPORARY STOCKPILE LOCATED OUTSIDE OF THE CHANNEL. PLACE SILT FENCE BARRIER AROUND THE PERIMETER OF THE STOCKPILES TO PREVENT SEDIMENT LADEN RUNOFF FROM RE-ENTERING THE CHANNEL.
4. STABILIZE DISTURBED BANK AREAS IMMEDIATELY UPON COMPLETION OF THE INSTALLATION OF THE PROTECTION (SEE PERMANENT SEEDING PROCEDURES).

SANDBAG COFFERDAM DETAIL

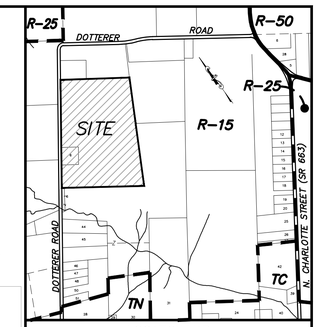
NOT TO SCALE



SIDE VIEW

DETAIL OF DIRTBAG PUMPED SILT CONTROL SYSTEM

NOT TO SCALE



LOCATION MAP
SCALE: 1"=800'

NO.	REVISION	INITIALS	DATE
1	PER LTR DATED 1-3-13, 1-4-13 & 2-14-13	JAB	2-20-13
2	PREP FINAL PLAN PER LTR DATED 3-7, 3-19	JAB	5-03-13
3	PER LTRS DATED 5-29, 6-5	JAB	7-12-13
4	PREP FOR MCCD SUBMISSION	JAB	7-23-13
5	MISC. REVISIONS	JAB	8-11-13
6	MISC. REVISIONS (NPDES)	JAB	8-21-13
7	PER MCCD LTR 9-11-13	JAB	9-16-13
8	REVISE RETAINING WALLS AND GRADES	SPE	12-06-13

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BY: _____
BRIAN S. FOCHT, P.A. PE DATE
PENNSYLVANIA PROFESSIONAL ENGINEER NO. 056961

Van Cleef ENGINEERING ASSOCIATES
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Environmental Engineering
Municipal Engineering
Land Surveying
Professional Planning
Landscape Architecture
4 WELLINGTON BLVD, WYOMISSING, PA 19610
EMAIL: VCEPA@VCEA.ORG WEB: WWW.VCEA.ORG
PHONE (610) 670-6630 FAX (610) 670-4603
OFFICES THROUGHOUT NJ, EASTERN PA, DE AND MD

PROJECT: 0402NHT.02	DESIGNED BY: –
DATE: 12-19-12	DRAWN BY: JAB
SCALE: N/A	CHECKED BY: BSF

SUBDIVISION PLANS

FOR

HANOVER WOODS
(FORMERLY D'AMICO TRACT)

SITUATED IN

NEW HANOVER TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

TITLE

EROSION AND SEDIMENTATION POLLUTION CONTROL DETAILS

FINAL PLAN

SHEET NUMBER 18 / 36

SAM ERNEY 12/21/2010
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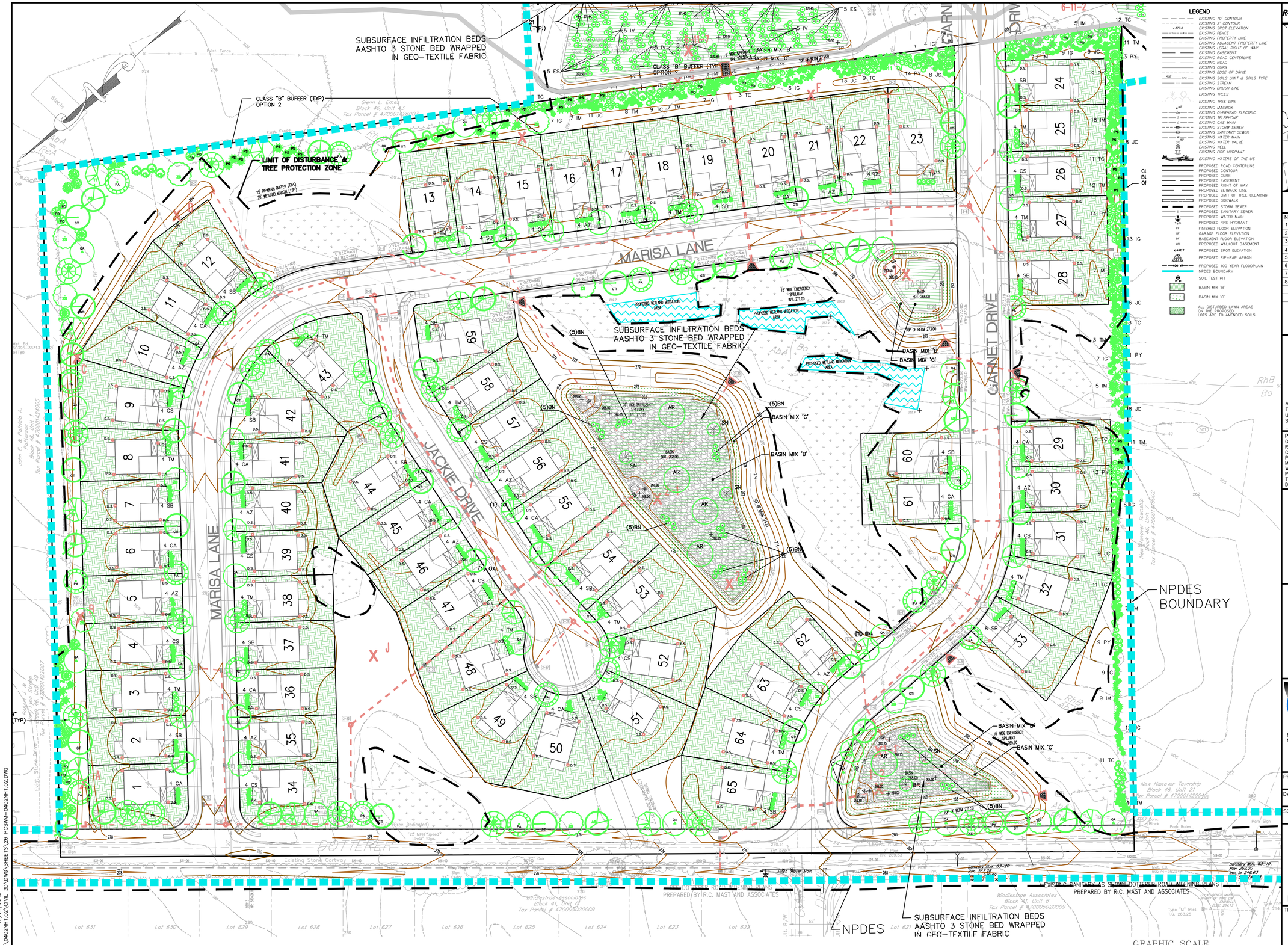
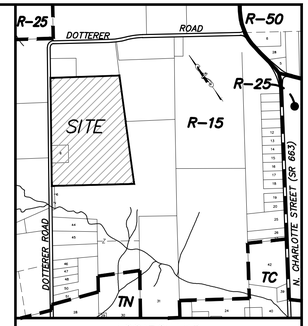


GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.



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PROJECT:	DESIGNED BY:
0402NHT.02	–
DATE:	DRAWN BY:
12-19-12	JAB
SCALE:	CHECKED BY:
N/A	BSF

SUBDIVISION PLANS
FOR
HANOVER WOODS
(FORMERLY D'AMICO TRACT)
SITUATED IN
NEW HANOVER TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA

TITLE
POST CONSTRUCTION STORM WATER MANAGEMENT PLAN

FINAL PLAN

SHEET NUMBER 24 / 36

SAM ERNEY
12/21/2010
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