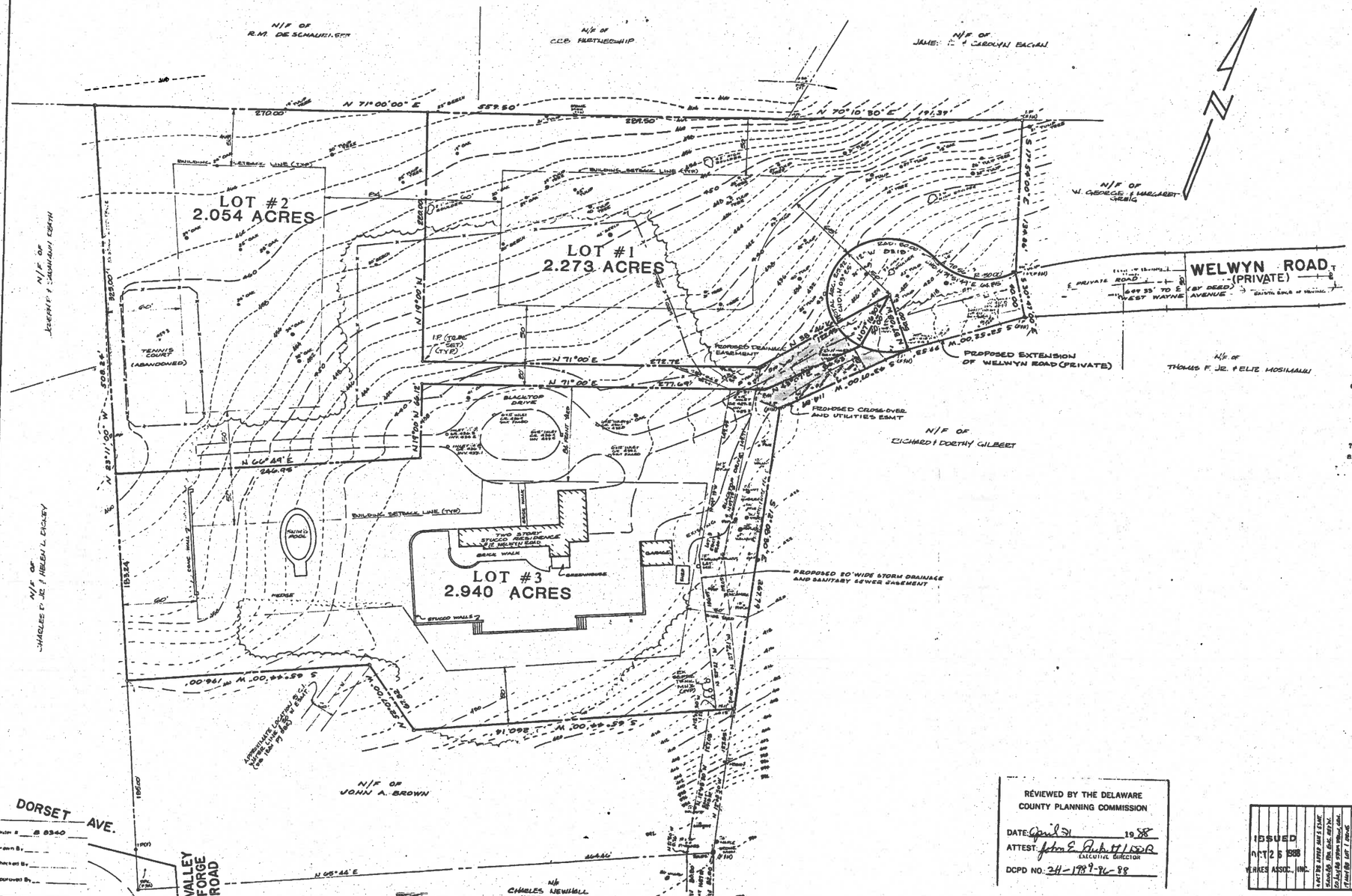
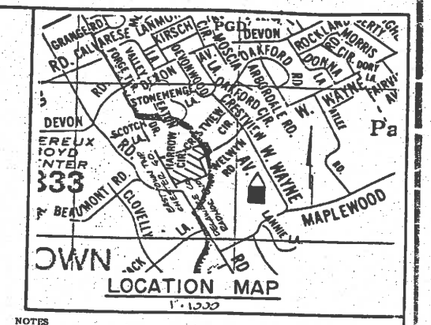




NOTES

1. Total Area - 7.267 Acres
2. Zoning - A-2 (Present)

Minimum Lot Size	2 Acres/87,120 S.F.
Front Yard	60' Min (60x1.4 = 84' Interior Lots)
Side Yard	2 @ 50' Min.
Rear Yard	60' Min.
Lot Width	180' @ Building Line
Building Height	Three Story/35'
Building Area	15% (Excluding Road Area)

3. Reference Plan - Plan of Survey for John A. Brown, dated 7 DECEMBER, 1987 by Yerkes Associates, Inc., Bryn Mawr, Pa. (topo field run; datum - approximate USGS).
4. Proposed utilities public water (Philadelphia Suburban Water Company) and on-site sewage disposal.
5. Lot layout and area shown in accordance with variance granted by Zoning Hearing Board (Appeal #1895) from Section 135-107.2(M) concerning minimum lot area as affected by steep slopes.
6. Property subject to the following rights or easements.
   A. Rights granted to Bell Telephone Company and Philadelphia Electric Company as in Misc. Deed Book 1424, Page 285.
   B. Rights granted Philadelphia Suburban Water Company as in Misc. Deed Book 1881, Page 582.
7. Act 17E (formerly Act 287) Serial #3456440.
8. Individual on-lot detention basins to be maintained by individual lot owners and shall not be altered once constructed and approved by Township Engineer.

STATE OF PENNSYLVANIA
COUNTY OF DELAWARE

On the 20TH day of MAY, 19 88 before me the subscriber, a notary public of the Commonwealth of Pennsylvania residing in RADNOR TWP personally appeared _____ who acknowledged this plan to be the official plan of the highways and property shown thereon, situate in the Township of RADNOR, DELAWARE County, Pennsylvania and desired that this plan be recorded according to law.

Witness my hand and notarial seal the day and year aforesaid:

_____
Notary Public

My Commission Expires _____

Recorded this _____ day of _____, 19__ in the office for the recording of deeds, etc., in and for the County of _____ in _____, Pennsylvania, in Plan Book No. ___, Page ___.

_____
Recorder

Approved by the Board of Commissioners of _____ Township, this _____ day of _____, 19__.

_____
Chairman

_____
Secretary

Reviewed: _____ Township Engineer.

_____ Date

REVIEWED BY THE DELAWARE COUNTY PLANNING COMMISSION
DATE: April 21 1988
ATTEST: John E. Aubert III, AICP
EXECUTIVE DIRECTOR
DCPD NO. 34-1989-96-88

ISSUED
OCT 26 1988
YERKES ASSOC., INC.

REVISIONS	
1	MET WITH WAYNE ESMC
2	MET WITH DEL. CO. PLAN. COMM.
3	SUBMITTED TO DEL. CO. PLAN. COMM.
4	ADDED BOUNDARY LINE
5	ADDED LOT 1 DETAIL
6	ADDED DEL. CO. PLAN. COMM. REVISIONS

1"=40' scale 40 0 40 80 feet

YERKES ASSOCIATES, INC.
101 CHARLES DRIVE • BOX 1060 • BRYN MAWR, PA 19010 • (215) 525-6200
CONSULTING ENGINEERS · LANDSCAPE ARCHITECTS · SITE PLANNERS · ARCHITECTS · SURVEYORS

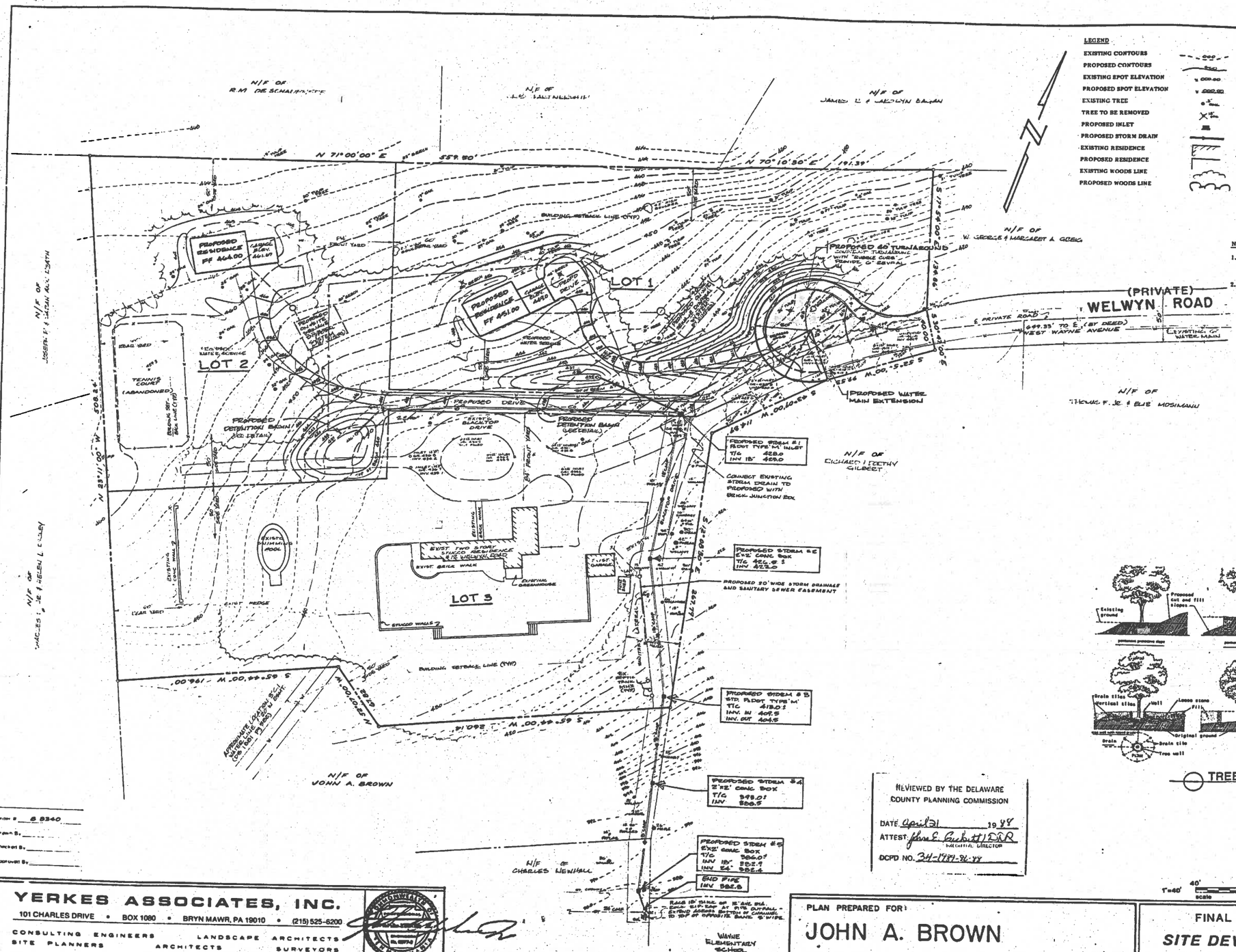
JOHN B. YERKES, JR. LAND SURVEYOR No. 200-A PENNSYLVANIA

PLAN PREPARED FOR:
JOHN A. BROWN
RADNOR TOWNSHIP • DELAWARE COUNTY • PENNSYLVANIA

FINAL SUBDIVISION PLAN
TITLE PLAN

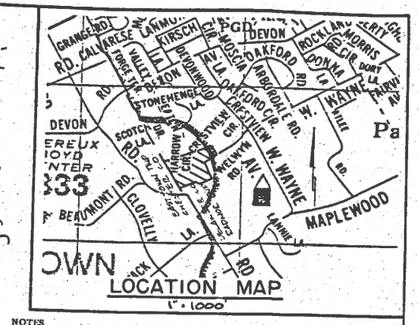
DATE: 7 MARCH 88
SHEET 2 OF 5
SCALE: 1" = 40'

B-1999



LEGEND

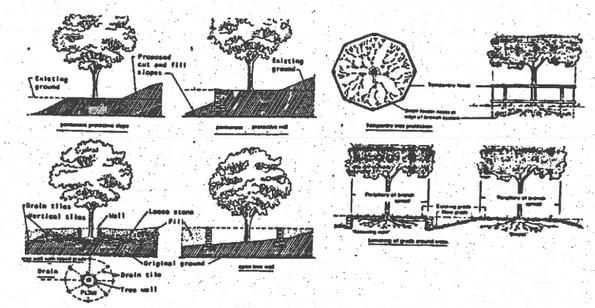
- EXISTING CONTOURS
- PROPOSED CONTOURS
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- EXISTING TREE
- TREE TO BE REMOVED
- PROPOSED INLET
- PROPOSED STORM DRAIN
- EXISTING RESIDENCE
- PROPOSED RESIDENCE
- EXISTING WOODS LINE
- PROPOSED WOODS LINE



NOTES

1. INDIVIDUAL ON-LOT DETENTION BASINS TO BE MAINTAINED BY INDIVIDUAL LOT OWNERS AND SHALL NOT BE ALTERED ONCE CONSTRUCTED AND APPROVED BY TOWNSHIP ENGINEER.
2. ALL LOCATIONS OF EXISTING UTILITIES SHOWN ON THE PLAN HAVE BEEN DEVELOPED FROM EXISTING UTILITY RECORDS AND/OR ABOVE GROUND EXAMINATION OF THE SITE. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH OF UNDERGROUND UTILITIES OR STRUCTURE CAN NOT BE GUARANTEED. CONTRACTOR MUST CONTACT ALL UTILITIES LISTED BELOW NOT LESS THAN 3 DAYS PRIOR TO START OF CONSTRUCTION, AS PER ACT 172 (FORMERLY ACT 287). SERIAL #2450440.

USER	ADDRESS	PHONE
Philadelphia Electric Co.	213 W. County Line Rd. Ardmore, PA 19003	215-645-1600
Phila. Suburban Water Co.	762 Lancaster Avenue Bryn Mawr, PA 19010	215-525-1400
Board of Commissioners of Radnor Township H. Duncan Hubley, P.E.	301 Iven Avenue Wayne, PA 19087	215-MUR-5600
Bell Telephone Company	Valley Forge Executive Mall, Wayne, PA 19087	215-964-6138



TREE PRESERVATION DETAILS

REVIEWED BY THE DELAWARE COUNTY PLANNING COMMISSION
DATE April 21 1988
ATTEST: Jane E. Corbett / DAR
MEMBER, DIRECTOR
DCPD NO. 34-1881-86-88

ISSUED
OCT 26 1988
YERKES ASSOC. INC.

1"=40' 40' 0 40' 80' scale feet

YERKES ASSOCIATES, INC.
101 CHARLES DRIVE • BOX 1080 • BRYN MAWR, PA 19010 • (215) 525-6200
CONSULTING ENGINEERS LANDSCAPE ARCHITECTS
SITE PLANNERS ARCHITECTS SURVEYORS

PLAN PREPARED FOR:
JOHN A. BROWN
RADNOR TOWNSHIP • DELAWARE COUNTY • PENNSYLVANIA

FINAL SUBDIVISION PLAN
SITE DEVELOPMENT PLAN

DATE 7 MARCH 88
SHEET 3 OF 5
SCALE 1" = 40'

B-1079

12 WELWYN ROAD

AMENDED PLAN

N

LOCATION MAP WITHIN 500 FEET

Scale: 1" = 200'

DRAWING SCHEDULE

1. COVER SHEET
2. EXISTING FEATURES PLAN
3. IMPROVEMENT CONSTRUCTION PLAN FOR COMMON DRIVEWAY
4. DETAILS

NUM.	DATE	REVISION
2	12/23/16	PER TWP ENGINEER COMMENTS
1	12/12/16	PER TWP & TRAFFIC ENGINEERS LETTERS DATED 11/28/16 & 11/18/16

PLAN PREPARED BY:

SITE ENGINEERING CONCEPTS, LLC

P.O. BOX 1992
SOUTHEASTERN, PA 19399

P: 610-240-0450 F: 610-240-0451 E:INFO@SITE-ENGINEERS.COM

AMENDED PLAN

FOR:

12 WELWYN RD
RADNOR, PA 19087

RADNOR TOWNSHIP DELAWARE COUNTY PENNSYLVANIA

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
ROBERT M. LAMBERT
ENGINEER
PE060743

ROBERT M. LAMBERT, P.E.
PE060743

COVER SHEET

DATE: OCTOBER 17, 2016

SHEET 1 of 4

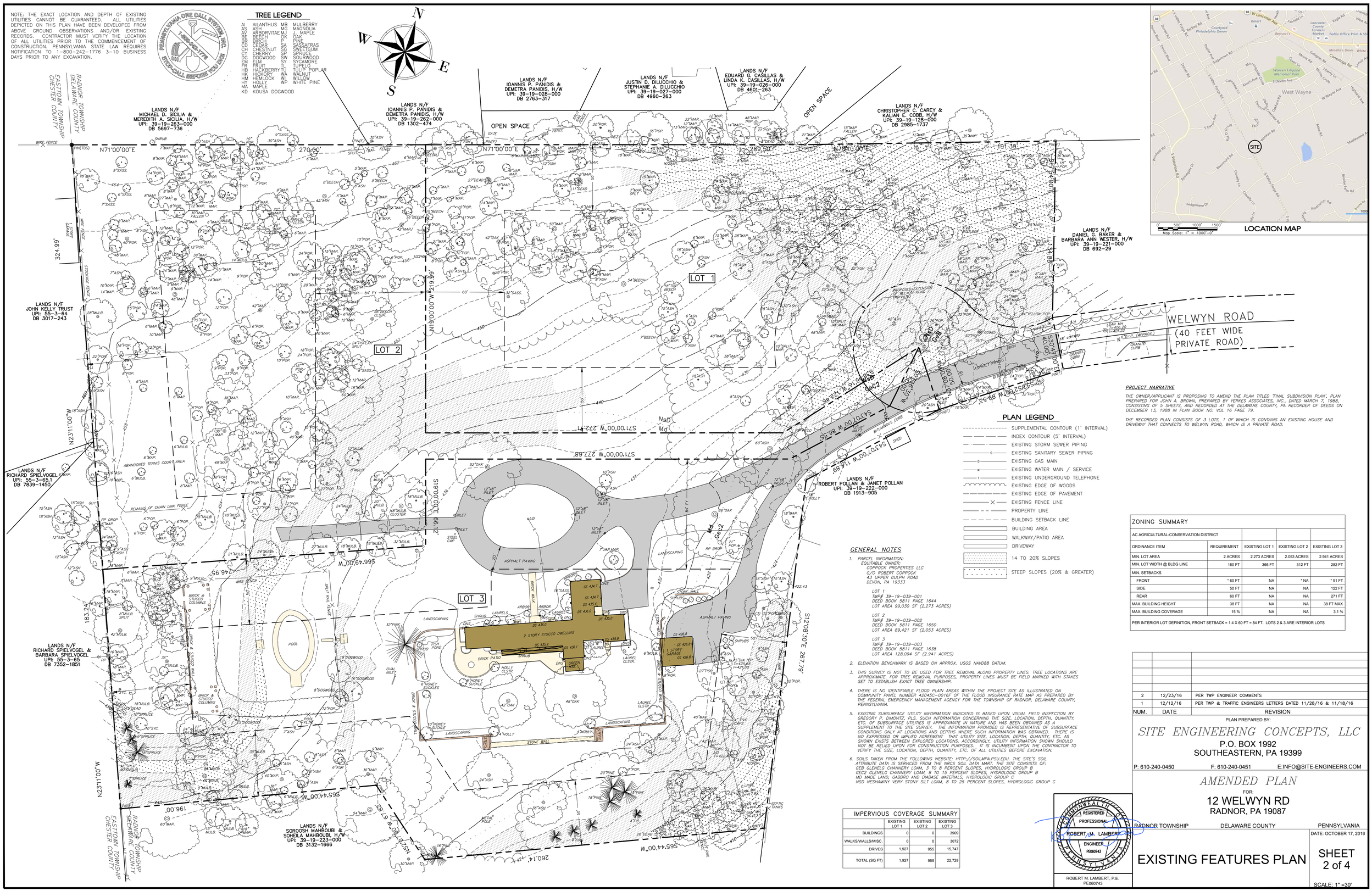
SCALE: 1" =30'

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

PENNSYLVANIA ONE CALL SYSTEM, INC.
1-800-242-1776
STOP-CALL BEFORE YOU DIG!

TREE LEGEND

AI	AILANTHUS	MB	MULBERRY
AS	ASH	MG	MAGNOLIA
AV	ARBORVITAE	MJ	J. MAPLE
BE	BEECH	OK	OAK
BR	BIRCH	P	PINE
CD	CEDAR	SA	SASSAFRAS
CH	CHESTNUT	SG	SWEETGUM
CY	CHERRY	SP	SPRUCE
DG	DOGWOOD	SW	SOURWOOD
EM	ELM	SY	SYCAMORE
FR	FRUIT	TL	TUPELO
HB	HACKBERRY	TU	TULIP POPLAR
HK	HICKORY	WA	WALNUT
HM	HEMLOCK	WI	WILLOW
HY	HOLLY	WP	WHITE PINE
MA	MAPLE		
KD	KOUSA DOGWOOD		



PROJECT NARRATIVE

THE OWNER/APPLICANT IS PROPOSING TO AMEND THE PLAN TITLED 'FINAL SUBDIVISION PLAN', PLAN PREPARED FOR JOHN A. BROWN, PREPARED BY YERKES ASSOCIATES, INC., DATED MARCH 7, 1988, CONSISTING OF 5 SHEETS, AND RECORDED AT THE DELAWARE COUNTY, PA RECORDER OF DEEDS ON DECEMBER 13, 1988 IN PLAN BOOK NO. VOL 16 PAGE 79.

THE RECORDED PLAN CONSISTS OF 3 LOTS, 1 OF WHICH IS CONTAINS AN EXISTING HOUSE AND DRIVEWAY THAT CONNECTS TO WELWYN ROAD, WHICH IS A PRIVATE ROAD.

PLAN LEGEND

- SUPPLEMENTAL CONTOUR (1' INTERVAL)
- INDEX CONTOUR (5' INTERVAL)
- EXISTING STORM SEWER PIPING
- EXISTING SANITARY SEWER PIPING
- EXISTING GAS MAIN
- EXISTING WATER MAIN / SERVICE
- EXISTING UNDERGROUND TELEPHONE
- EXISTING EDGE OF WOODS
- EXISTING EDGE OF PAVEMENT
- EXISTING FENCE LINE
- PROPERTY LINE
- BUILDING SETBACK LINE
- BUILDING AREA
- WALKWAY/PATIO AREA
- DRIVEWAY
- 14 TO 20% SLOPES
- STEEP SLOPES (20% & GREATER)

GENERAL NOTES

1. PARCEL INFORMATION:
   EQUITABLE OWNER:
   COPPOCK PROPERTIES LLC
   C/O ROBERT COPPOCK
   43 UPPER GULPH ROAD
   DEVON, PA 19333

   LOT 1
   TMP# 39-19-039-001
   DEED BOOK 5811 PAGE 1644
   LOT AREA 99,030 SF (2.273 ACRES)

   LOT 2
   TMP# 39-19-039-002
   DEED BOOK 5811 PAGE 1650
   LOT AREA 89,421 SF (2.053 ACRES)

   LOT 3
   TMP# 39-19-039-003
   DEED BOOK 5811 PAGE 1638
   LOT AREA 128,094 SF (2.941 ACRES)
2. ELEVATION BENCHMARK IS BASED ON APPROX. USGS NAVD88 DATUM.
3. THIS SURVEY IS NOT TO BE USED FOR TREE REMOVAL ALONG PROPERTY LINES. TREE LOCATIONS ARE APPROXIMATE. FOR TREE REMOVAL PURPOSES, PROPERTY LINES MUST BE FIELD MARKED WITH STAKES SET TO ESTABLISH EXACT TREE OWNERSHIP.
4. THERE IS NO IDENTIFIABLE FLOOD PLAIN AREAS WITHIN THE PROJECT SITE AS ILLUSTRATED ON COMMUNITY PANEL NUMBER 42045C-0016F OF THE FLOOD INSURANCE RATE MAP AS PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY FOR THE TOWNSHIP OF RADNOR, DELAWARE COUNTY, PENNSYLVANIA.
5. EXISTING SUBSURFACE UTILITY INFORMATION INDICATED IS BASED UPON VISUAL FIELD INSPECTION BY GREGORY P. DIMOVITZ, PLS. SUCH INFORMATION CONCERNING THE SIZE, LOCATION, DEPTH, QUANTITY, ETC. OF SUBSURFACE UTILITIES IS APPROXIMATE IN NATURE AND HAS BEEN OBTAINED AS A SUPPLEMENT TO THE SITE SURVEY. THE INFORMATION PROVIDED IS REPRESENTATIVE OF SUBSURFACE CONDITIONS ONLY AT LOCATIONS AND DEPTHS WHERE SUCH INFORMATION WAS OBTAINED. THERE IS NO EXPRESSED OR IMPLIED AGREEMENT THAT UTILITY SIZE, LOCATION, DEPTH, QUANTITY, ETC. AS SHOWN EXISTS BETWEEN EXPLORED LOCATIONS. ACCORDINGLY, UTILITY INFORMATION SHOWN SHOULD NOT BE RELIED UPON FOR CONSTRUCTION PURPOSES. IT IS INCUMBENT UPON THE CONTRACTOR TO VERIFY THE SIZE, LOCATION, DEPTH, QUANTITY, ETC. OF ALL UTILITIES BEFORE EXCAVATION.
6. SOILS TAKEN FROM THE FOLLOWING WEBSITE: HTTP://SOILMPA.PSU.EDU. THE SITE'S SOIL ATTRIBUTE DATA IS SERVICED FROM THE NRCS SOIL DATA MART. THE SITE CONSISTS OF:
   GEB GLENELG CHANNERY LOAM, 3 TO 8 PERCENT SLOPES, HYDROLOGIC GROUP B
   GEC2 GLENELG CHANNERY LOAM, 8 TO 15 PERCENT SLOPES, HYDROLOGIC GROUP B
   MD MADE LAND, GABBRO AND DIABASE MATERIALS, HYDROLOGIC GROUP C
   NSD NESHAMINY VERY STONY SILT LOAM, 8 TO 25 PERCENT SLOPES, HYDROLOGIC GROUP C

IMPERVIOUS COVERAGE SUMMARY

	EXISTING LOT 1	EXISTING LOT 2	EXISTING LOT 3
BUILDINGS	0	0	3909
WALKS/WALLS/MISC.	0	0	3072
DRIVES	1,927	955	15,747
TOTAL (SQ FT)	1,927	955	22,728

ZONING SUMMARY

AC AGRICULTURAL-CONSERVATION DISTRICT

ORDINANCE ITEM	REQUIREMENT	EXISTING LOT 1	EXISTING LOT 2	EXISTING LOT 3
MIN. LOT AREA	2 ACRES	2.273 ACRES	2.053 ACRES	2.941 ACRES
MIN. LOT WIDTH @ BLDG LINE	180 FT	366 FT	312 FT	282 FT
MIN. SETBACKS				
FRONT	* 60 FT	NA	* NA	* 91 FT
SIDE	50 FT	NA	NA	122 FT
REAR	60 FT	NA	NA	271 FT
MAX. BUILDING HEIGHT	38 FT	NA	NA	38 FT MAX.
MAX. BUILDING COVERAGE	15 %	NA	NA	3.1 %

PER INTERIOR LOT DEFINITION, FRONT SETBACK = 1.4 X 60 FT = 84 FT. LOTS 2 & 3 ARE INTERIOR LOTS

NUM.	DATE	REVISION
2	12/23/16	PER TWP ENGINEER COMMENTS
1	12/12/16	PER TWP & TRAFFIC ENGINEERS LETTERS DATED 11/28/16 & 11/18/16

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

AMENDED PLAN
FOR:
12 WELWYN RD
RADNOR, PA 19087

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
ROBERT M. LAMBERT
ENGINEER
PE060743

ROBERT M. LAMBERT, P.E.
PE060743

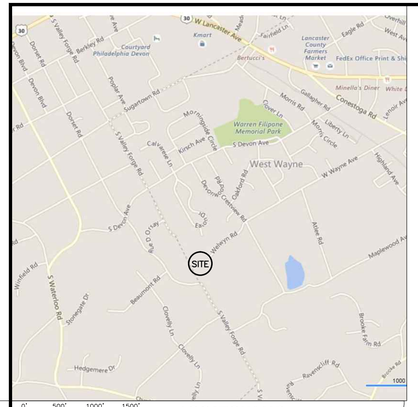
RADNOR TOWNSHIP | DELAWARE COUNTY | PENNSYLVANIA

DATE: OCTOBER 17, 2016

EXISTING FEATURES PLAN

SHEET 2 of 4

SCALE: 1" =30'



0' 500' 1000' 1500'
Map Scale: 1" = 1000'-0"

LOCATION MAP

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

PENNSYLVANIA ONE CALL SYSTEM, INC.
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STOP-CALL BEFORE YOU DIG!

PLAN LEGEND

- SUPPLEMENTAL CONTOUR (1' INTERVAL)
- INDEX CONTOUR (5' INTERVAL)
- ST — EXISTING STORM SEWER PIPING
- S — EXISTING SANITARY SEWER PIPING
- G — EXISTING GAS MAIN
- W — EXISTING WATER MAIN / SERVICE
- T — EXISTING UNDERGROUND TELEPHONE
- EXISTING EDGE OF WOODS
- EXISTING EDGE OF PAVEMENT
- X — EXISTING FENCE LINE
- PROPERTY LINE
- BUILDING SETBACK LINE
- BUILDING AREA
- WALKWAY/PATIO AREA
- DRIVEWAY
- 14 TO 20% SLOPES
- STEEP SLOPES (20% & GREATER)

TREE LEGEND

AI	AILANTHUS	MB	MULBERRY
AS	ASH	MG	MAGNOLIA
AV	ARBORVITAE	MJ	J. MAPLE
BE	BEECH	OK	OAK
BR	BIRCH	P	PINE
CD	CEDAR	SA	SASSAFRAS
CH	CHESTNUT	SG	SWEETGUM
CY	CHERRY	SP	SPRUCE
DG	DOGWOOD	SW	SOURWOOD
EM	ELM	SY	SYCAMORE
FR	FRUIT	TL	TUPELO
HB	HACKBERRY	TU	TULIP POPLAR
HK	HICKORY	WA	WALNUT
HM	HEMLOCK	WI	WILLOW
HY	HOLLY	WP	WHITE PINE
MA	MAPLE		
KD	KOUSA DOGWOOD		

- TREES TO BE REMOVED
- PROPOSED LARGE CANOPY TREE – SUGAR MAPLE
- PROPOSED LARGE CANOPY TREE – RED MAPLE
- PROPOSED NORWAY SPRUCE

TREE REPLACEMENT

TOTAL TREES TO BE REMOVED = 7 TREES

TOTAL ALLOWED TREES TO BE REMOVED PER PROPERTY PER YEAR = 5

REPLACEMENTS REQUIRED FOR 2 TREES (THE 2 HERITAGE TREES)

HERITAGE TREE REMOVAL/REPLACEMENT

HERITAGE TREES TO BE REMOVED = 2
REQUIRED REPLACEMENT TREES* = 12, INCLUDING 8 LARGE CANOPY TREES
PROPOSED* = 17**, INCLUDING 8 LARGE CANOPY TREES

* TREES ARE AND MUST BE FROM TOWNSHIP APPROVED LIST OF TREES TREES MUST BE 2"–2.5" MIN DBH
** PER THE REQUEST OF THE SHADE TREE COMMISSION, 5 ADDITIONAL TREES (SHADE OR ORNAMENTAL) ARE PROPOSED TO REPLACE THE 5 THAT ARE ALLOWED TO BE REMOVED PER YEAR

IMPERVIOUS COVERAGE SUMMARY LOT 3

	EXISTING	REMOVE	ADD	PROPOSED
BUILDINGS	3909	0	0	3909
WALKS/WALLS/MISC.	3072	0	0	3072
DRIVES	15,747	4007	906	12,646
* TOTAL (SQ FT)	22,728	4,007	906	19,627

* 4114 SF OF IMPERVIOUS ADDED TO LOT 2 FLAG STRIP

TREE SUMMARY CHART

TREES TO BE REMOVED	CALIPER (IN)	PROPOSED TREES	CALIPER (IN)
OAK	52	4 SUGAR MAPLE & 2 NORWAY SPRUCE	2-2.5
ASH	60	4 RED MAPLE & 2 NORWAY SPRUCE	2-2.5
ASH	9	NORWAY SPRUCE	2-2.5
ASH	10	NORWAY SPRUCE	2-2.5
ASH	15	NORWAY SPRUCE	2-2.5
ASH	16	NORWAY SPRUCE	2-2.5
MAPLE	18	SUGAR MAPLE	2-2.5

ZONING SUMMARY

AC AGRICULTURAL-CONSERVATION DISTRICT

ORDINANCE ITEM	REQUIREMENT	EXISTING LOT 3	PROPOSED LOT 3
MIN. LOT AREA	2 ACRES	2.941 ACRES	2.941 ACRES
MIN. LOT WIDTH @ BLDG LINE	180 FT	282 FT	282 FT
MIN. SETBACKS			
FRONT	* 60 FT	* 91 FT	* 91 FT
SIDE	50 FT	122 FT	122 FT
REAR	60 FT	271 FT	271 FT
MAX. BUILDING HEIGHT	38 FT	38 FT MAX	38 FT MAX
MAX. BUILDING COVERAGE	15 %	3.1 %	3.1 %

PER INTERIOR LOT DEFINITION, FRONT SETBACK = 1.4 X 60 FT = 84 FT

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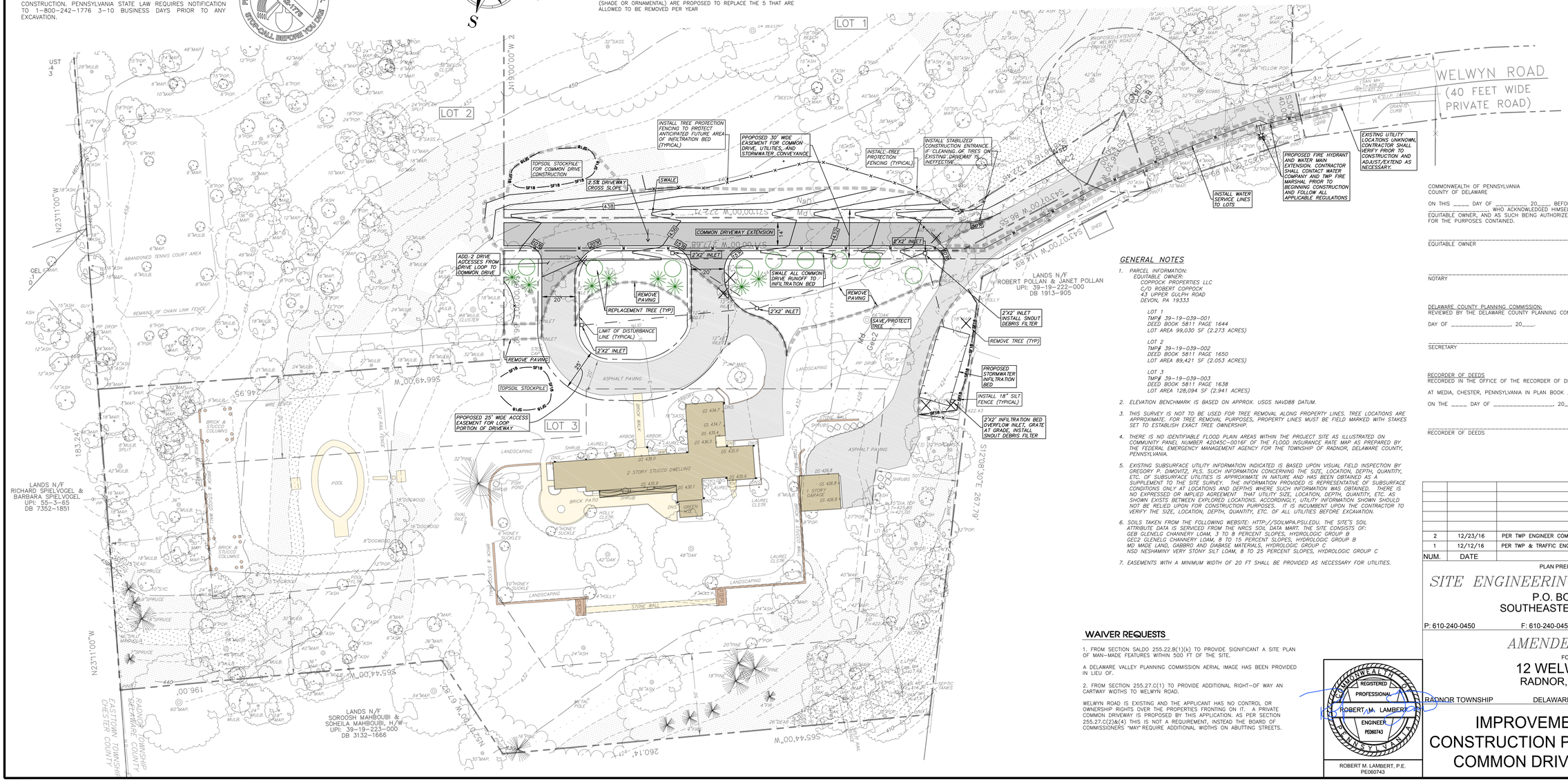
THE RECORDED PLAN CONSISTS OF 3 LOTS, 1 OF WHICH IS CONTAINS AN EXISTING HOUSE AND DRIVEWAY THAT CONNECTS TO WELWYN ROAD, WHICH IS A PRIVATE ROAD. THE PLAN PROPOSED TO ADD 40 FOOT TURNAROUND AT THE END OF WELWYN ROAD. RATHER THAN CONSTRUCT THE TURNAROUND, THIS AMENDED PLAN PROPOSES A COMMON DRIVEWAY TO SERVE THE 3 LOTS. MODIFICATIONS TO THE EXISTING DRIVEWAY WILL ALLOW FOR TURNING MOVEMENTS FOR EMERGENCY VEHICLES. THE RECORDED PLAN ALSO INCLUDED A PROPOSED STORMWATER PIPE CONNECTION TO THE SOUTH OF THE PROPERTY FOR CONTROL OF OVERFLOW FROM THE PROPOSED STORMWATER BASINS. THIS AMENDED PLAN UTILIZES ON-SITE STORMWATER FACILITIES TO MANAGE BOTH VOLUME AND RATE CONTROLS WHICH ELIMINATES THE NEED FOR THE DISCHARGE PIPE THROUGH THE WOODED AREAS AND ACROSS OTHER PROPERTIES.

AN INFILTRATION BED IS PROPOSED TO MANAGE POST DEVELOPMENT RUNOFF AND PROVIDE FOR GROUNDWATER RECHARGE, RATE CONTROL, AND WATER QUALITY BENEFITS FOR THE COMMON DRIVEWAY IMPROVEMENTS.

DURING CONSTRUCTION EROSION AND SEDIMENT CONTROL IS ACCOMPLISHED THROUGH LIMITED DISTURBANCE, IMMEDIATE STABILIZATION, AND SILT FENCING. THE LIMIT OF DISTURBANCE IS 21,800 SF (0.5 ACRES).



GENERAL NOTES

1. PARCEL INFORMATION:
   EQUITABLE OWNER:
   COPPOCK PROPERTIES LLC
   C/O ROBERT COPPOCK
   43 UPPER GULPH ROAD
   DEVON, PA 19333

   LOT 1
   TMP# 39-19-039-001
   DEED BOOK 5811 PAGE 1644
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   LOT 2
   TMP# 39-19-039-002
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   LOT AREA 89,421 SF (2.053 ACRES)

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   TMP# 39-19-039-003
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4. THERE IS NO IDENTIFIABLE FLOOD PLAIN AREAS WITHIN THE PROJECT SITE AS ILLUSTRATED ON COMMUNITY PANEL NUMBER 42045C-0016F OF THE FLOOD INSURANCE RATE MAP AS PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY FOR THE TOWNSHIP OF RADNOR, DELAWARE COUNTY, PENNSYLVANIA.
5. EXISTING SUBSURFACE UTILITY INFORMATION INDICATED IS BASED UPON VISUAL FIELD INSPECTION BY GREGORY P. DIMOVITZ, PLS. SUCH INFORMATION CONCERNING THE SIZE, LOCATION, DEPTH, QUANTITY, ETC. OF SUBSURFACE UTILITIES IS APPROXIMATE IN NATURE AND HAS BEEN OBTAINED AS A SUPPLEMENT TO THE SITE SURVEY. THE INFORMATION PROVIDED IS REPRESENTATIVE OF SUBSURFACE CONDITIONS ONLY AT LOCATIONS AND DEPTHS WHERE SUCH INFORMATION WAS OBTAINED. THERE IS NO EXPRESSED OR IMPLIED AGREEMENT THAT UTILITY SIZE, LOCATION, DEPTH, QUANTITY, ETC. AS SHOWN EXISTS BETWEEN EXPLORED LOCATIONS. ACCORDINGLY, UTILITY INFORMATION SHOWN SHOULD NOT BE RELIED UPON FOR CONSTRUCTION PURPOSES. IT IS INCUMBENT UPON THE CONTRACTOR TO VERIFY THE SIZE, LOCATION, DEPTH, QUANTITY, ETC. OF ALL UTILITIES BEFORE EXCAVATION.
6. SOILS TAKEN FROM THE FOLLOWING WEBSITE: HTTP://SOLMAP4.PSU.EDU. THE SITE'S SOIL ATTRIBUTE DATA IS SERVICED FROM THE NRCS SOIL DATA MART. THE SITE CONSISTS OF:
   GEB GLENELG CHANNERY LOAM, 3 TO 8 PERCENT SLOPES, HYDROLOGIC GROUP B
   GEC2 GLENELG CHANNERY LOAM, 8 TO 15 PERCENT SLOPES, HYDROLOGIC GROUP B
   MD MADE LAND, GABBRO AND DIABASE MATERIALS, HYDROLOGIC GROUP C
   NSD NESHAMINY VERY STONY SILT LOAM, 8 TO 25 PERCENT SLOPES, HYDROLOGIC GROUP C
7. EASEMENTS WITH A MINIMUM WIDTH OF 20 FT SHALL BE PROVIDED AS NECESSARY FOR UTILITIES.

WAIVER REQUESTS

1. FROM SECTION SALDO 255.22.B(1)(k) TO PROVIDE SIGNIFICANT A SITE PLAN OF MAN-MADE FEATURES WITHIN 500 FT OF THE SITE.

A DELAWARE VALLEY PLANNING COMMISSION AERIAL IMAGE HAS BEEN PROVIDED IN LIEU OF.

2. FROM SECTION 255.27.C(1) TO PROVIDE ADDITIONAL RIGHT-OF WAY AN CARTWAY WIDTHS TO WELWYN ROAD.

WELWYN ROAD IS EXISTING AND THE APPLICANT HAS NO CONTROL OR OWNERSHIP RIGHTS OVER THE PROPERTIES FRONTING ON IT. A PRIVATE COMMON DRIVEWAY IS PROPOSED BY THIS APPLICATION. AS PER SECTION 255.27.C(2)&(4) THIS IS NOT A REQUIREMENT, INSTEAD THE BOARD OF COMMISSIONERS "MAY" REQUIRE ADDITIONAL WIDTHS ON ABUTTING STREETS.

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
ROBERT M. LAMBERT
ENGINEER
PE060743

ROBERT M. LAMBERT, P.E.
PE060743

COMMONWEALTH OF PENNSYLVANIA
COUNTY OF DELAWARE

ON THIS _____ DAY OF _____, 20___, BEFORE ME, THE UNDERSIGNED NOTARY PUBLIC APPEARED _____ WHO ACKNOWLEDGED HIMSELF TO BE THE PRESIDENT OF _____ EQUITABLE OWNER, AND AS SUCH BEING AUTHORIZED TO DO SO, EXECUTED THE FOREGOING INSTRUMENT FOR THE PURPOSES CONTAINED.

_____
EQUITABLE OWNER

_____
NOTARY

DELAWARE COUNTY PLANNING COMMISSION:
REVIEWED BY THE DELAWARE COUNTY PLANNING COMMISSION THIS ____

DAY OF _____, 20____.

_____
SECRETARY

RECORDER OF DEEDS
RECORDED IN THE OFFICE OF THE RECORDER OF DEEDS OF DELAWARE COUNTY

AT MEDIA, CHESTER, PENNSYLVANIA IN PLAN BOOK _____ PAGE _____

ON THE _____ DAY OF _____, 20____

_____
RECORDER OF DEEDS

NUM.	DATE	REVISION
2	12/23/16	PER TWP ENGINEER COMMENTS
1	12/12/16	PER TWP & TRAFFIC ENGINEERS LETTERS DATED 11/28/16 & 11/18/16

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

AMENDED PLAN
FOR:
12 WELWYN RD
RADNOR, PA 19087

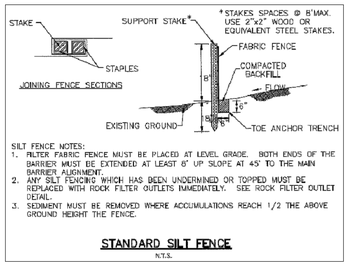
RADNOR TOWNSHIP DELAWARE COUNTY PENNSYLVANIA

IMPROVEMENT CONSTRUCTION PLAN FOR COMMON DRIVEWAY

DATE: OCTOBER 17, 2016

SHEET 3 of 4

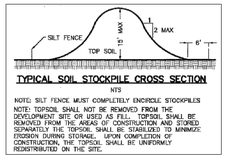
SCALE: 1" =30'



SILT FENCE NOTES:
1. FILTER FABRIC FENCE MUST BE PLACED AT LEVEL GRADE. BOTH ENDS OF THE BARRIER MUST BE EXTENDED AT LEAST 6' UP SLOPE AT 45° TO THE MAIN BARRIER ALIGNMENT.
2. ANY SILT FENCING WHICH HAS BEEN UNDERMINED OR TOPPED MUST BE REPLACED WITH ROCK FILTER OUTLETS IMMEDIATELY. SEE ROCK FILTER OUTLET DETAIL.
3. SEDIMENT MUST BE REMOVED WHERE ACCUMULATIONS REACH 1/2 THE ABOVE GROUND HEIGHT THE FENCE.

STANDARD SILT FENCE

N.T.S.

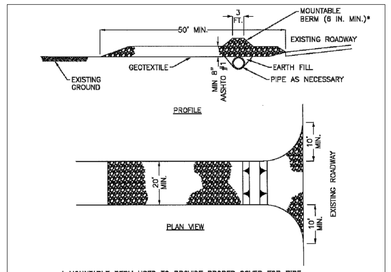


TYPICAL SOIL STOCKPILE CROSS SECTION

NTS

NOTE: SILT FENCE MUST COMPLETELY ENCIRCLE STOCKPILES

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



* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

NOTES:

REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

STANDARD CONSTRUCTION DETAIL
ROCK CONSTRUCTION ENTRANCE

NOT TO SCALE

EROSION AND SEDIMENTATION CONTROL NOTES

1. EROSION AND SEDIMENT BMPS MUST BE CONSTRUCTED, STABILIZED, AND FUNCTIONAL BEFORE SITE DISTURBANCE BEGINS WITHIN THE TRIBUTARY AREAS OF THOSE BMPS.

2. AFTER FINAL SITE STABLIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED. AREAS DISTURBED DURING REMOVAL OF THE BMPS MUST BE STABILIZED IMMEDIATELY.

3. CONTRACTOR MUST WASH VEHICLE TIRES PRIOR TO LEAVING SITE. SHOULD WASHING TIRES PROVE INEFFECTIVE, CONTRACTOR MUST INSTALL ROCK CONSTRUCTION ENTRANCE.

4. CONTRACTOR MUST CLEAN DRIVEWAY AND ROAD OF ANY SEDIMENT AT THE END OF EACH WORK DAY.

5. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF EROSION AND SEDIMENT CONTROL BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR

MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.

CONSTRUCTION STAGING

CONTRACTOR MUST NOTIFY TOWNSHIP 48 HOURS PRIOR TO BEGINNING OF CONSTRUCTION TO SCHEDULE ANY REQUIRED TOWNSHIP INSPECTIONS.

STAGE 1. INSTALL SILT FENCE AND TREE PROTECTION FENCING.

STAGE 2. INSTALL ROCK CONSTRUCTION ENTRANCE IF CLEANING OF TIRES ON EXISTING DRIVEWAY IS INEFFECTIVE.

STAGE 3. FIELD LOCATE ALL UTILITIES AND COORDINATE WITH UTILITIES FOR SHUTOFF/REMOVAL/CONSTRUCTION AS NECESSARY. IMMEDIATELY STABILIZE ANY DISTURBED AREAS.

STAGE 4. REMOVE IMPROVEMENTS AS SHOWN. IMMEDIATELY STABILIZE AREAS WITH MULCH AND SEED MIX UNLESS IMMEDIATE CONSTRUCTION TAKES PLACE ON THESE AREAS.

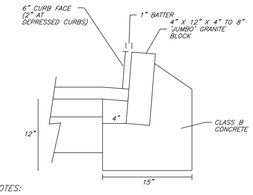
STAGE 5. STRIP TOPSOIL AND ROUGH GRADE AREA OF PROPOSED IMPROVEMENTS. IMMEDIATELY STABILIZE DORMANT DISTURBED AREAS WITH THE APPROPRIATE SEED MIXTURE. PLACE TOPSOIL IN STOCKPILES AND IMMEDIATELY STABILIZE STOCKPILE.

STAGE 7. COMPLETE CONSTRUCTION. IMMEDIATELY STABILIZE DORMANT DISTURBED AREAS WITH THE APPROPRIATE SEED MIXTURE.

STAGE 8. STAGE CONSTRUCTION OF STORMWATER INFILTRATION BED IN SUCH A WAY THAT NO SEDIMENT ENTERS THE BED. INLETS SHALL BE OFFLINE TO BED UNTIL TRIBUTARY AREAS ARE AT LEAST 70% STABILIZED WITH PERMANENT COVER. CLEAN WASHED STONE SHALL BE USED TO CONSTRUCT BED. IF SEDIMENT ENTERS STONE, STONE SHALL BE REPLACED AND THE GEOTEXTILE FABRIC SHALL BE CLEANED OR REPLACED AS NECESSARY. IMMEDIATELY STABILIZE ALL DORMANT DISTURBED AREAS WITH THE APPROPRIATE SEED MIXTURE.

STAGE 9. ONCE SITE IS STABILIZED WITH 70% COVERAGE, CONTRACTOR MUST REMOVE EROSION AND SEDIMENTATION CONTROLS. AREAS DISTURBED DURING REMOVAL MUST BE STABILIZED IMMEDIATELY.

ANTICIPATED START OF CONSTRUCTION – FALL 2016
ANTICIPATED COMPLETION OF CONSTRUCTION – SPRING 2017



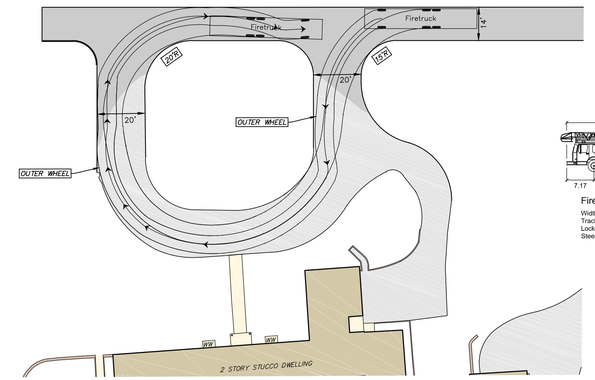
NOTES:

1. ON TRANSITIONS FROM AND TO PROPOSED CURB, USE ONE LARGE BLOCK SLOPED AND CUT TO FIT.

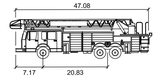
2. CURB IMMEDIATELY ADJACENT TO INLET CASTING MUST HAVE PREFORMED EXPANSION MATERIAL.

3. CONCRETE JOINTS USE MORTAR WITH COMPOSITION: 3 SAND, 1 CEMENT. JOINTS TO BE 1/2" WIDE

GRANITE COBBLE CURB



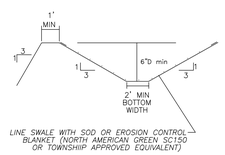
FIRE TRUCK TURNAROUND PLAN



Firetruck	feet
Width	: 8.33
Track	: 8.00
Lock to Lock Time	: 6.0
Steering Angle	: 30.0

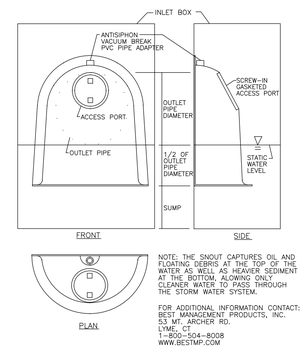
1.5"(MIN) ID-2 WEARING COURSE
2.5"(MIN) ID-2 BINDER COURSE
6"(MIN) 2A STONE

DRIVEWAY CROSS SECTION



LINE SWALE WITH SOD OR EROSION CONTROL BLANKET (NORTH AMERICAN GREEN SC150 OR TOWNSHIP APPROVED EQUIVALENT)

SWALE DETAIL



NOTE: THE SNOUT CAPTURES OIL AND FLOATING DEBRIS AT THE TOP OF THE WATER AS WELL AS HEAVIER SEDIMENT AT THE BOTTOM, ALOWING ONLY CLEANER WATER TO PASS THROUGH THE STORM WATER SYSTEM.

FOR ADDITIONAL INFORMATION CONTACT:
BEST MANAGEMENT PRODUCTS, INC.
53 MT. ARCHER RD.
LYME, CT
1-800-504-8008
WWW.BESTMP.COM

NOTE: SNOUTS ARE CONNECTED TO OUTLET END OF INLET BOX AND/OR CONNECTIONS TO INFILTRATION BEDS

SNOUT OIL AND DEBRIS FILTER

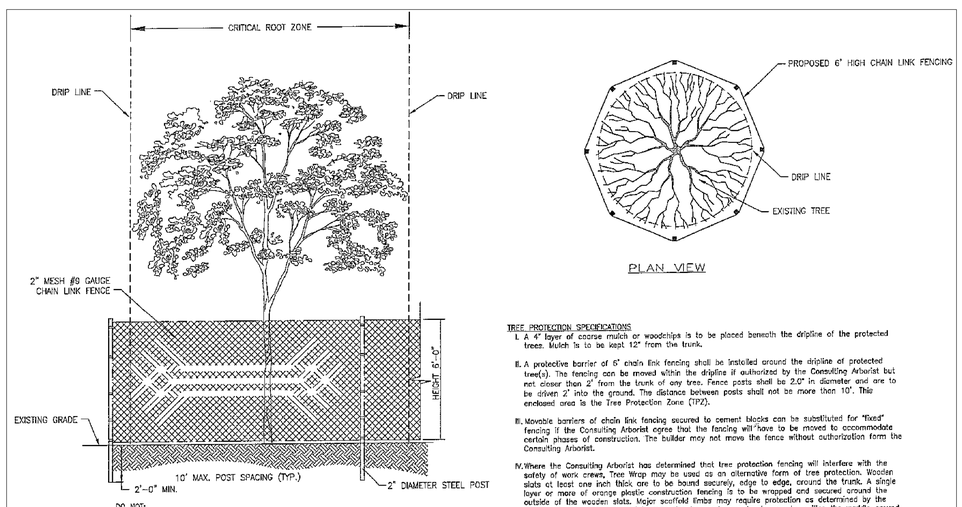
Not To Scale

INFILTRATION BED NOTES

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

STORM WATER MANAGEMENT FACILITY OWNERSHIP AND MAINTENANCE NOTES:

ALL STORMWATER CONVEYANCE AND MANAGEMENT FACILITIES SHOWN ON THIS PLAN ARE PERMANENT AND ARE NOT TO BE REMOVED OR FILLED. THE INDIVIDUAL LOT OWNER, HIS/HER HEIRS, ASSIGNS OR SUCCESSORS SHALL BE RESPONSIBLE FOR THE PERPETUAL MAINTENANCE OF THE SAID FACILITIES. THE TOWNSHIP MAINTAINS THE RIGHT, BUT NOT THE RESPONSIBILITY, TO ENTER SAID PREMISES TO OBSERVE OR INSPECT THE FUNCTIONING OF THESE FACILITIES. IF THE PROPERTY OWNER, HIS/HER HEIRS, ASSIGNS, OR SUCCESSORS FAILS IN ANY WAY TO MAINTAIN THE SAID FACILITIES OR CAUSES THESE FACILITIES TO BE ALTERED OR REMOVED, UPON WRITTEN NOTIFICATION BY THE TOWNSHIP, THE DEFECTS SHALL PROMPTLY BE CORRECTED BY THE PROPERTY OWNER. UPON THE OWNER'S FAILURE TO CORRECT THE DEFECTS WITHIN TIME SPECIFIED BY THE TOWNSHIP, THE OWNER, HIS/HER HEIRS, ASSIGNS, OR SUCCESSORS DO HEREBY AUTHORIZE THE TOWNSHIP AND/OR THEIR CONTRACTOR TO ENTER UPON THE SAID PROPERTY AND CAUSE THE REPAIR, MAINTENANCE, AND/OR CORRECTIONS TO BE MADE. A LIEN MAY BE FILED AGAINST THE PROPERTY FOR THE COSTS OF ALL CORRECTIONS INCLUDING APPLICABLE ENGINEERING AND/OR ATTORNEY'S FEES. THE TOWNSHIP IS UNDER NO OBLIGATION TO TAKE ANY ACTION. MAINTENANCE RESPONSIBILITIES SHALL INCLUDE THE FOLLOWING:
– MAINTAINING THE GRASS ON AND AROUND STORM WATER FACILITIES TO PREVENT LARGE VEGETATION AND ROOT SYSTEMS FROM GROWING ON OR NEAR FACILITIES AND TO PREVENT THE FORMATION OF NONVEGETATED AREAS THAT COULD FLOW INTO AND CLOG THE FACILITIES. THIS INCLUDES REGULAR WEEKLY MOWING.
– NO TREES OR SHRUBBERY MAY BE PLACED OVER THE LOCATION OF THE INFILTRATION BED.
– KEEPING ALL DEBRIS, INCLUDING GRASS CLIPPINGS, LEAVES, AND MOTOR OIL CLEAR OF INLET AND OUTLET STRUCTURES. THIS INCLUDES ROOF GUTTERS, INLET GRATES, AND OUTLET PIPES.
– REMOVING ANY ACCUMULATED DEBRIS IN INLETS.
– IF STORM WATER FACILITIES DO NOT DRAIN WITHIN 48 HOURS AFTER THE LAST STORM EVENT, THEY SHALL BE INSPECTED AND THEN FIXED OR REPLACED AS DETERMINED NECESSARY.
– INLET AND OUTLET STRUCTURES SHALL BE INSPECTED MONTHLY. THE STONE BED SHALL BE INSPECTED ANNUALLY AND AFTER EVERY STORM EXCEEDING 1" OF RAINFALL.



TREE PROTECTION SPECIFICATIONS

I. A 4" layer of coarse mulch or woodchips is to be placed beneath the dripline of the protected trees. Mulch is to be kept 12" from the trunk.

II. A protective barrier of 6' chain link fencing shall be installed around the dripline of protected tree(s). The fencing can be moved within the dripline if authorized by the Consulting Arborist but not closer than 2' from the trunk of any tree. Fence posts shall be 2.0" in diameter and are to be driven 2' into the ground. The distance between posts shall not be more than 10'. This enclosed area is the Tree Protection Zone (TPZ).

III. Movable barriers of chain link fencing secured to cement blocks can be substituted for "fixed" fencing if the Consulting Arborist agree that the fencing will have to be moved to accommodate certain phases of construction. The builder may not move the fence without authorization form the Consulting Arborist.

IV. Where the Consulting Arborist has determined that tree protection fencing will interfere with the safety of work crews, Tree Wrap may be used as an alternative form of tree protection. Wooden slats at least one inch thick are to be bound securely, edge to edge, around the trunk. A single layer or more of orange plastic construction fencing is to be wrapped and secured around the outside of the wooden slats. Major scaffold limbs may require protection as determined by the Consulting Arborist. Straw waddle may also be used as a trunk wrap by coiling the waddle around the trunk up to a minimum height of six feet from grade. A single layer or more of orange plastic construction fencing is to be wrapped and secured around the straw waddle.

DO NOT:
A. Allow run off of spillage of damaging materials into the area below any tree canopy.
B. Store materials, stockpile soil, or park or drive vehicles within the TPZ.
C. Cut, break, skin, or bruise roots, branches, or trunks without first obtaining authorization from the Consulting Arborist.
D. Allow fires under and adjacent to trees.
E. Discharge exhaust into foliage.
F. Secure cable, chain, or rope to trees or shrubs.
G. Trench, dig, or otherwise excavate within the dripline or TPZ of the tree(s) without first obtaining authorization from the Consulting Arborist.
H. Apply soil sterilants under pavement near existing trees.

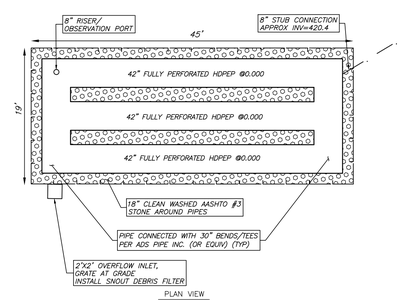
TREE PROTECTION DETAIL

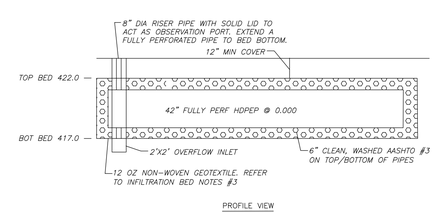
NO SCALE

ROCKWELL ASSOCIATES, LLC
Arboriculture • Urban Forestry • Horticulture
Consulting • Planning • Management

P.O. Box 542, Ridley Park, PA 19078
Phone (610) 731-7969
Fax (610) 521-0108

jhtrees@verizon.net
www.rockwellconsultants.com





STORMWATER INFILTRATION BED DETAIL

NUM.	DATE	REVISION
2	12/23/16	PER TWP ENGINEER COMMENTS
1	12/12/16	PER TWP & TRAFFIC ENGINEERS LETTERS DATED 11/28/16 & 11/18/16

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

AMENDED PLAN

FOR:

12 WELWYN RD
RADNOR, PA 19087

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
ROBERT M. LAMBERT
ENGINEER
PE060743

ROBERT M. LAMBERT, P.E.
PE060743

RADNOR TOWNSHIP | DELAWARE COUNTY | PENNSYLVANIA

DETAILS

DATE: OCTOBER 17, 2016

SHEET 4 of 4

SCALE: 1" =30'

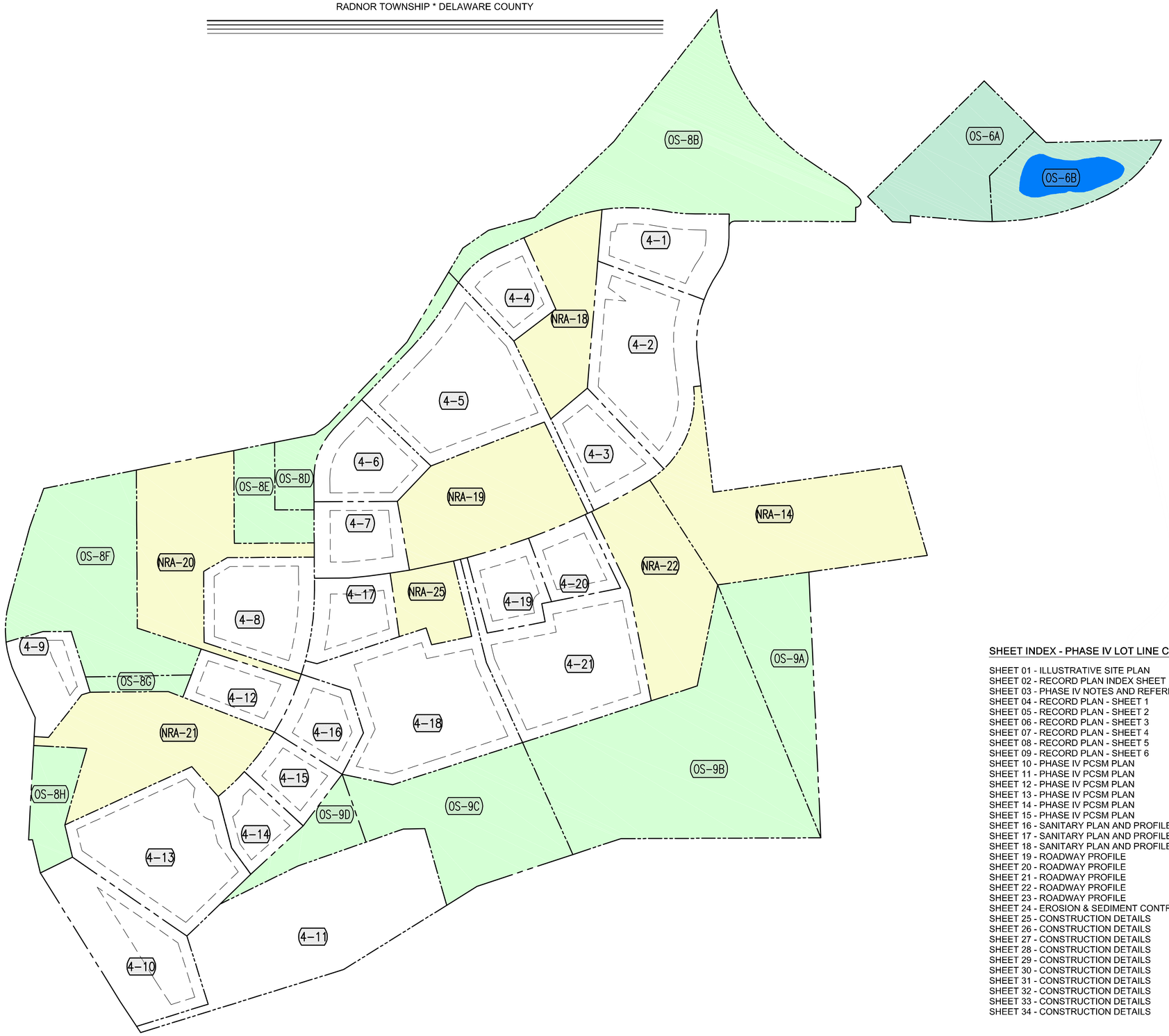
PHASE 4

LOT LINE CHANGE PLAN

for

THE ARDROSSAN FARM

RADNOR TOWNSHIP * DELAWARE COUNTY



SHEET INDEX - PHASE IV LOT LINE CHANGE:

SHEET 01 - ILLUSTRATIVE SITE PLAN
SHEET 02 - RECORD PLAN INDEX SHEET
SHEET 03 - PHASE IV NOTES AND REFERENCES
SHEET 04 - RECORD PLAN - SHEET 1
SHEET 05 - RECORD PLAN - SHEET 2
SHEET 06 - RECORD PLAN - SHEET 3
SHEET 07 - RECORD PLAN - SHEET 4
SHEET 08 - RECORD PLAN - SHEET 5
SHEET 09 - RECORD PLAN - SHEET 6
SHEET 10 - PHASE IV PCSM PLAN
SHEET 11 - PHASE IV PCSM PLAN
SHEET 12 - PHASE IV PCSM PLAN
SHEET 13 - PHASE IV PCSM PLAN
SHEET 14 - PHASE IV PCSM PLAN
SHEET 15 - PHASE IV PCSM PLAN
SHEET 16 - SANITARY PLAN AND PROFILE
SHEET 17 - SANITARY PLAN AND PROFILE
SHEET 18 - SANITARY PLAN AND PROFILE
SHEET 19 - ROADWAY PROFILE
SHEET 20 - ROADWAY PROFILE
SHEET 21 - ROADWAY PROFILE
SHEET 22 - ROADWAY PROFILE
SHEET 23 - ROADWAY PROFILE
SHEET 24 - EROSION & SEDIMENT CONTROL
SHEET 25 - CONSTRUCTION DETAILS
SHEET 26 - CONSTRUCTION DETAILS
SHEET 27 - CONSTRUCTION DETAILS
SHEET 28 - CONSTRUCTION DETAILS
SHEET 29 - CONSTRUCTION DETAILS
SHEET 30 - CONSTRUCTION DETAILS
SHEET 31 - CONSTRUCTION DETAILS
SHEET 32 - CONSTRUCTION DETAILS
SHEET 33 - CONSTRUCTION DETAILS
SHEET 34 - CONSTRUCTION DETAILS

Serial Number: 2014-203-0820

CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PLANS AND TO WORKING DAYS NOTICE FOR ACTUAL EXCAVATION.
Pennsylvania One Call System, Inc.
1-800-242-1776

REGISTERED PROFESSIONAL LAND SURVEYOR
DAVID R. FIORELLO
PROFESSIONAL LAND SURVEYOR
PS024786

MOMENEE, INC.
a Karins Company
ENGINEERING | PLANNING | SURVEYING
924 COUNTY LINE ROAD - BRYN MWAR - PA - 19010

ILLUSTRATIVE PLAN

PHASE IV LOT LINE CHANGE PLAN
THE ARDROSSAN FARM
RADNOR TOWNSHIP * DELAWARE COUNTY * PENNSYLVANIA

APPLICANT
ESIII LP
107 TWADDELL MILL ROAD
WILMINGTON, DE 19807

ONE-CALL:	203-0820		
DRAWN BY:	TFD		
CHECKED BY:	DRF		

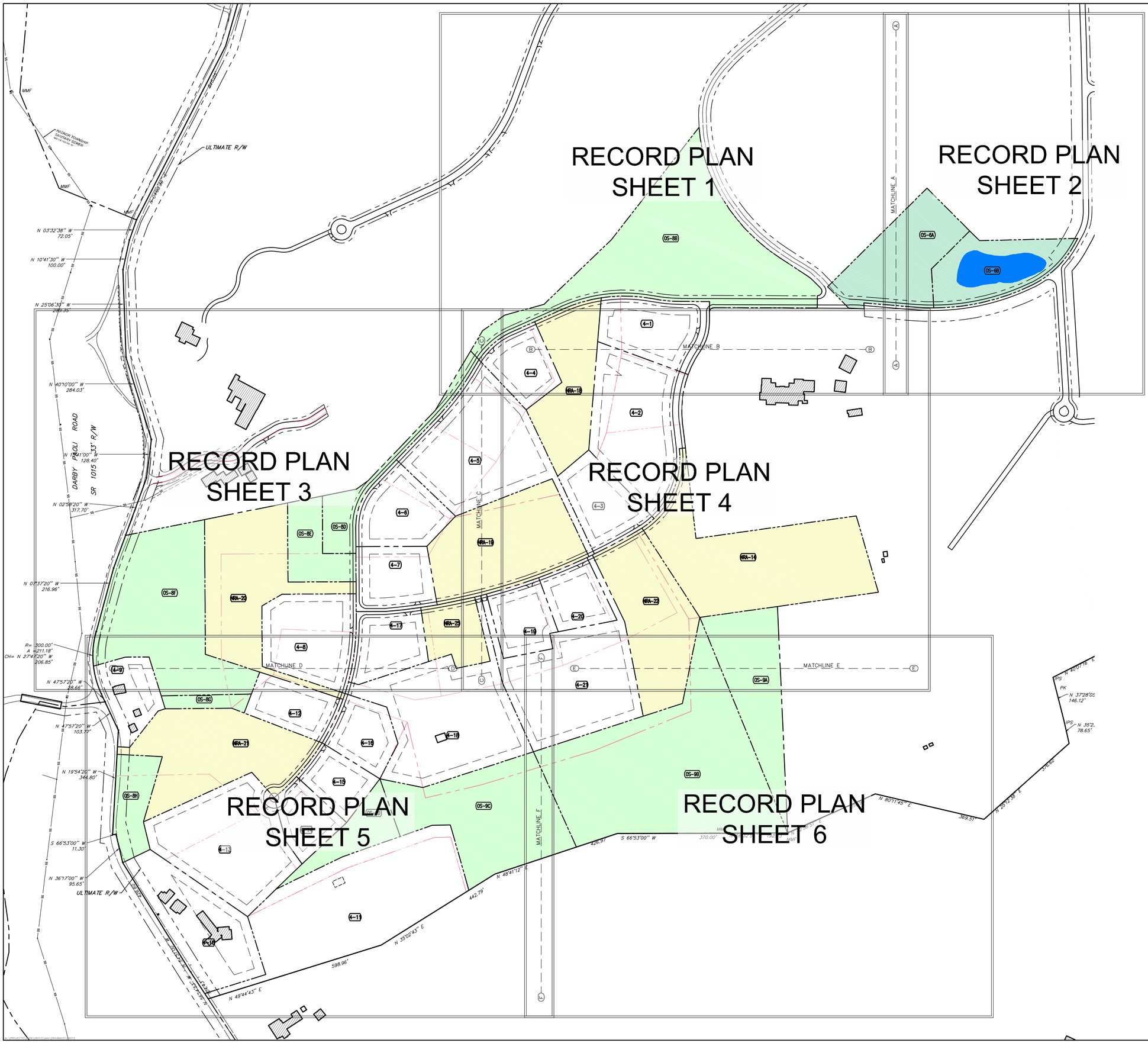
REV.	DATE	COMMENTS

FILE NO.: 06-012

SHEET 1 OF 33

DATE: NOVEMBER 4, 2016

SCALE: AS NOTED



LOCATION MAP
SCALE: 1" = 2,000'

LINETYPE LEGEND

- EXISTING TRACT BOUNDARY
- EXISTING RIGHT OF WAY
- EXISTING FENCE
- PROPOSED PROPERTY LINE
- PROPOSED RIGHT OF WAY
- PROPOSED BUILDING SETBACK
- PROPOSED EASEMENT
- PROPOSED CENTERLINE
- EXISTING LOT LINE TO BE REMOVED
- PROPOSED OPEN SPACE
- PROPOSED NON-RESIDENTIALLY APPROVED LOT

IPF	IRON PIN FOUND
CMF	CONCRETE MONUMENT FOUND
MMF	MARBLE MONUMENT FOUND
AC	EXISTING AIR CONDITIONER
GV	EXISTING GAS VALVE
GM	EXISTING GAS METER
EM	EXISTING ELECTRIC METER
CO	EXISTING CLEANOUT
ROH	ROOF OVERHANG
	EXISTING TREE
UP	EXISTING UTILITY POLE
100.00	EXISTING SPOT ELEVATION
DS 100.00	EXISTING DOOR SILL ELEVATION
	SOIL PERC TEST LOCATION
	PROPOSED TEST PIT LOCATION
	PROPOSED TYPE "M" INLET
	PROPOSED LOT
	PROPOSED OPEN SPACE LOT
	PROPOSED NON-RESIDENTIALLY APPROVED LOT

STATE OF PENNSYLVANIA
COUNTY OF DELAWARE SS

ON THIS _____ DAY OF _____, 20____, BEFORE ME A NOTARY PUBLIC IN AND FOR THE COMMONWEALTH OF PENNSYLVANIA, THE UNDERSIGNED OFFICER, PERSONALLY APPEARED_____, WHO ACKNOWLEDGED HIMSELF TO BE THE OWNER OF THE PROPERTY SHOWN ON THIS PLAN AND THE SUBDIVISION PLAN THEREOF WAS MADE AT HIS DIRECTION AND THAT HE ACKNOWLEDGES THE SAME TO BE HIS ACT AND PLAN AND DESIRES THE SAME TO BE RECORDED AS SUCH ACCORDING TO LAW.

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

_____
(SIGNATURE)

_____
NOTARY PUBLIC OR OTHER OFFICER

MY COMMISSION EXPIRES:_____

120 0 60 120 240 480

1 INCH = 120 FT.

Serial Number: 2014-203-0820

CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PLANS AND 10 WORKING DAYS NOTICE FOR ACTUAL EXCAVATION.
Pennsylvania One Call System, Inc.
1-800-242-1776

REGISTERED PROFESSIONAL LAND SURVEYOR
DAVID R. FIORELLO
No. PS024785-E
COMMONWEALTH OF PENNSYLVANIA

MOMENEE, INC.
a Karins Company
ENGINEERING | PLANNING | SURVEYING
924 COUNTY LINE ROAD - BRYN MWAR - PA - 19010

RECORD PLAN INDEX SHEET
PHASE IV LOT LINE CHANGE PLAN
THE ARDROSSAN FARM
RADNOR TOWNSHIP - DELAWARE COUNTY - PENNSYLVANIA

APPLICANT
ESIII LP
107 TWADDELL MILL ROAD
WILMINGTON, DE 19807

ONE-CALL:	203-0820
DRAWN BY:	TED
CHECKED BY:	DRF

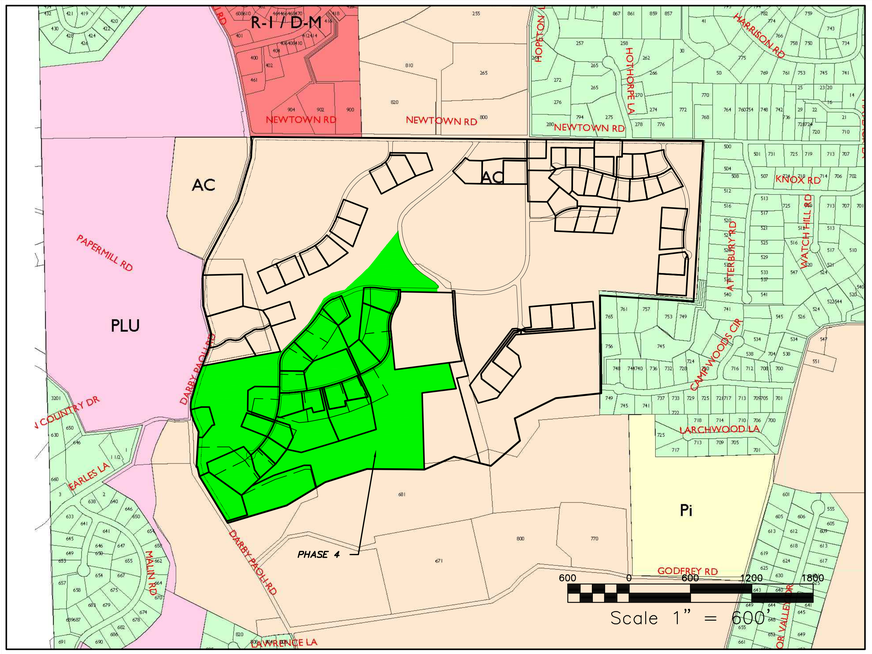
REV.	DATE	COMMENTS

FILE NO.: 06-012

SHEET 2 OF 33

DATE: NOVEMBER 4, 2016

SCALE: 1" = 120'



LOCATION MAP
SCALE: 1" = 600'

CONDITIONAL USE DECISION – ISSUED JANUARY 6, 2014:

THE CONDITIONAL USE REQUEST OF THE APPLICANT IS HEREBY APPROVED FOR THE DEVELOPMENT OF THE SUBJECT PROPERTY INTO UP TO 87 SINGLE FAMILY RESIDENTIAL LOTS AS DEPICTED IN THE PLAN, SUBJECT TO COMPLIANCE WITH ALL OTHER APPLICABLE GOVERNMENTAL ORDINANCES AND REGULATIONS AND THE FOLLOWING SPECIFIC CONDITIONS:

1. ALL NEW CONSTRUCTION PROPOSED FOR LOTS 3–2 THROUGH 3–10 SHALL BE DONE IN A FASHION WHICH PROVIDES FOR MAXIMUM PROTECTION OF THE DARBY- PAOLI/NEWTOWN ROAD VIEWSHED WHEN VIEWED FROM THE INTERSECTION OF THOSE ROADS. THE TOWNSHIP BOARD OF COMMISSIONERS SHALL APPROVE THE ULTIMATE PLACEMENT OF PROPOSED BUILDINGS ON EACH OF THESE LOTS SO AS TO MAXIMIZE THE VIEWSHED FROM THE EXISTING PUBLIC ROADS AND SOFTEN THE IMPACT OF THE VIEW OF THE RESIDENTIAL STRUCTURES TO BE CONSTRUCTED THERE, PRIOR TO THE ISSUANCE OF GRADING AND BUILDING PERMITS.

2. A LANDSCAPE PLAN, IN ACCORDANCE WITH THE RADNOR TOWNSHIP SHADE TREE ORDINANCE, SUFFICIENT TO SCREEN LOTS 3–2 THROUGH 3–10 FROM THE ABOVE REFERENCED INTERSECTION, WITHIN THE 100 FOOT BUFFER STRIP ADJACENT TO THE RYE FIELD, SHALL BE PREPARED AND SUBMITTED AND SUBJECT TO APPROVAL BY THE BOARD OF COMMISSIONERS DURING THE LAND DEVELOPMENT PROCESS.

3. ALL PROPOSED NEW CONSTRUCTION ON ALL LOTS SHALL BE LIMITED IN HEIGHT TO 35 FEET FROM THE AVERAGE GRADE (THE AVERAGE OF THE GRADE TAKEN AT 20 FOOT INTERVALS AROUND THE BUILDING PERIMETER) TO THE TOP OF THE HIGHEST ROOF BEAMS OF A FLAT ROOF WIDTH OR TO THE MEAN LEVEL OF A SLOPED ROOF, PROVIDED THAT CHIMNEYS AND SPIRES SHALL NOT BE INCLUDED IN MEASURING THE HEIGHT. THE HEIGHT SHALL BE MEASURED FROM FINISHED GRADE AND, IN NO EVENT, SHALL ANY FILL MATERIAL RESULT IN AN INCREASE IN BUILDING HEIGHT BEYOND 35 FEET, UNLESS SOIL CONDITIONS NECESSITATE THE PLACEMENT OF FILL, AS DETERMINED BY THE RADNOR TOWNSHIP MUNICIPAL ENGINEER.

4. IN THE EVENT THAT THE APPLICANT, OR ANY OF ITS SUCCESSORS OR ASSIGNS, PROPOSES TO BUILD ANY ADDITIONAL DWELLINGS BEYOND THE PROPOSED MAXIMUM LIMIT OF 64 OR 87, DEPENDING UPON WHICH PLAN IS APPROVED, SUCH ADDITIONAL DEVELOPMENT SHALL BE CONSIDERED THROUGH SUBMISSION OF A NEW CONDITIONAL USE APPLICATION, MEETING ALL ZONING ORDINANCE REQUIREMENTS OF ARTICLE XIX FOR A DENSITY MODIFICATION DEVELOPMENT, AND SHALL REQUIRE A NEW SUBDIVISION APPLICATION. ANY SUCH SUBMISSION SHALL NOT BE CONSIDERED AN AMENDMENT OF THE EXISTING PROPOSED PLAN FOR DEVELOPMENT.

5. THE 100 FOOT PROPOSED BUFFER STRIP ADJACENT TO THE RYE FIELD SHALL CONTAIN NO BUILDINGS OR STRUCTURES; AND SHALL BE DEED RESTRICTED IN A FORM AND MANNER TO THE SATISFACTION OF APPROPRIATE RADNOR TOWNSHIP OFFICIALS.

6. ALL NEW LOTS AND PROPOSED NEW OR EXISTING RESIDENTIAL BUILDINGS SHALL PROVIDE FOR INDIVIDUAL ON–LOT STORM WATER MANAGEMENT THROUGH SEEPAGE PITS OR OTHER NON–STRUCTURAL BMPS IN ACCORDANCE WITH THE RADNOR TOWNSHIP STORM WATER ORDINANCE. ANY AND ALL ROOF DRAINS AND SUMP PUMPS SHALL BE TIED INTO SUCH ON–LOT STORM WATER FACILITIES.

7. THE APPLICANT SHALL PERFORM SUCH STUDIES AND MAKE SUCH IMPROVEMENTS AS ARE NECESSARY IN ORDER TO ESTABLISH SUFFICIENT SEWAGE CAPACITY WITHIN THE TOWNSHIP'S MAIN TRANSMISSION LINE SERVICING THE PROPERTY.

8. THE APPLICANT SHALL MODIFY AND UPDATE THE TRAFFIC IMPACT STUDY WITH REGARD TO CONDUCTING NEW TRAFFIC COUNTS WHEN THE NEARBY SCHOOLS ARE IN SESSION AND RE–EXAMINATION OF ANY INTERSECTION, AS DETERMINED BY THE RADNOR TOWNSHIP TRAFFIC ENGINEER.

9. THE PLAN SHALL BE SUBJECT TO MODIFICATION BY THE BOARD OF COMMISSIONERS OF RADNOR TOWNSHIP, AS APPROPRIATE, DURING THE SUBDIVISION AND LAND DEVELOPMENT REVIEW PROCESS.

RESPECTFULLY SUBMITTED,

/S/ WILLIAM J BOLLA
WILLIAM J. BOLLA, ESQUIRE
MCNAMARA, BOLLA & PANZER
116 EAST COURT STREET
DOYLESTOWN, PA 18901
HEARING OFFICER

GENERAL NOTES:

1. OWNERS:
   THE ROBERT L MONTGOMERY TRUST DATED 6/4/12,
   MELLON BANK, N.A. AND W. GRESHAM O'MALLEY, TRUSTEES:
   MONTGOMERY, McCRACKEN, WALKER & RHOADS, LLP
   123 SOUTH BROAD STREET
   PHILADELPHIA, PA 19109

   THE SYDNEY F. TYLER TRUST #6 DATED 5/30/17,
   FIRST UNION BANK, TRUSTEE
   MONTGOMERY, McCRACKEN, WALKER & RHOADS, LLP
   123 SOUTH BROAD STREET
   PHILADELPHIA, PA 19109

2. EQUITABLE OWNER/APPLICANT:
   ESII LP
   107 TWADDELL MILL ROAD
   WILMINGTON, DE 19807
   ATTN: MR. EDGAR SCOTT III

3. THE INTENT OF THE PLAN IS TO MODIFY THE LOT LINES IN THE PHASE 4 SECTION OF THE APPROVED ARDROSSAN FARM SUBDIVISION. THERE WERE 21 APPROVED RESIDENTIAL LOTS WITHIN PHASE 4 AND WITH THE LOT LINE MODIFICATIONS THERE WILL CONTINUE TO BE 21 LOTS. THE EXISTING RESIDENTIAL STRUCTURES ARE TO BE MAINTAINED AND MADE PART OF LOTS 4–9 AND 4–10. ALL NEW LOTS WITH THE EXCEPTION OF LOT 4–11 WILL BE DEVELOPED WITH SINGLE FAMILY RESIDENCES. LOT 4–11 IS TO BE PURCHASED BY THE ADJOINING PROPERTY OWNER AND BE MERGED WITH THAT LOT. NO ADDITIONAL DEVELOPMENT IS PROPOSED FOR LOT 4–11 AS PART OF THIS APPLICATION. THE OWNER RESERVES THE RIGHT TO INCLUDE LOT 4–11 WITH LOT 4–10.

4. LOT 4–10 CONTAIN EXISTING DWELLINGS TOTALING 3 UNITS. THESE UNITS MAY BE SOLD AS A SINGLE LOT OR BE SUBJECT TO A 3–UNIT CONDOMINIUM.

5. PUBLIC WATER SUPPLY AND SANITARY SEWER SERVICE ARE PROPOSED FOR ALL LOTS.

6. DRAINAGE EASEMENTS ARE HEREBY BE CREATED IN ACCORDANCE WITH SECTION 255–35D FOR STREAMS WITHIN THE SITE. LIMIT OF EASEMENT SHALL COINCIDE WITH TOWNSHIP RIPARIAN BUFFER AND/OR THE CALCULATED 100–YEAR FLOODPLAIN WHICHEVER IS GREATER.

7. DARBY CREEK FLOOD PLAIN LIMIT TAKEN FROM FEMA FLOOD INSURANCE RATE MAP #42045C0019F REVISED NOVEMBER 18, 2009. FLOODPLAIN FOR STREAMS WITHIN THE PROJECT LIMIT CALCULATED BY MOMENEE AND ASSOCIATES INC.

8. ALL PROPOSED PUBLIC ROADS, STORM SEWERS AND SANITARY SEWERS TO BE OFFERED FOR DEDICATION.

9. PRIVATE ROADS AND COMMON STORMWATER MANAGEMENT DETENTION SYSTEMS TO BE OWNED AND MAINTAINED BY A HOMEOWNERS ASSOCIATION.

10. THE PROPOSED COMMON OPEN SPACE LAND MAY NOT BE SEPARATELY SOLD, NOR SHALL SUCH LAND BE FURTHER DEVELOPED OR SUBDIVIDED. LOTS IDENTIFIED AS NON–RESIDENTIALLY APPROVED LOTS ARE TO BE HELD AS INVESTMENT PROPERTY AND MAY BE SUBDIVIDED INTO PARCELS FOR THAT PURPOSE, BUT MAY NOT BE USED AS RESIDENTIAL LOTS WITHOUT FURTHER CONDITIONAL USE AND SUBDIVISION APPROVAL.

11. BOUNDARY INFORMATION TAKEN FROM A FIELD VERIFIED SURVEY BY MOMENEE SURVEY GROUP INC., PLAN ENTITLED "BOUNDARY SURVEY OF ARDROSSAN FARM" DATED JULY 27,1999, FILE No. 99079.

12. DEED INFORMATION FURNISHED BY CLIENT: "RECORD OWNER AND LIEN CERTIFICATE" BY COMMONWEALTH LAND TITLE INSURANCE COMPANY, TWO LOGAN SQUARE, 5TH FLOOR, PHILADELPHIA, PA 19103. ORDER NO. D168624ED EFFECTIVE DATE: 08/09/97. PREMISES: PORTION OF ARDROSSAN FARM, RADNOR TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA.

13. TOPOGRAPHY BY AERIAL DATA REDUCTION ASSOCIATES INC., PENNSAUKEN NJ 08110. NEGATIVE SCALE 1"=500'. DATE OF PHOTOGRAPHY 01/15/97. DIGITAL MAP COMPILATION AT 1"=50'. CONTOUR INTERVAL 2'. MAPPING COMPILED WITHOUT BENEFIT OF A FIELD EDIT. AREAS OBSCURED BY DENSE VEGETATION OR SHADDOW ARE ENCLOSED BY A LINE LABELED "DENSE WOODS", "SHADDOW" OR "OBSCURED AREA". WITHIN THESE AREAS THERE IS NO GUARANTEE OR IMPLIED HORIZONTAL OR VERTICAL ACCURACIES.

14. HORIZONTAL AND VERTICAL GROUND CONTROL BY MOMENEE SURVEY GROUP INC.

15. TREE DATA AND LOCATIONS FROM A FIELD SURVEY BY MOMENEE SURVEY GROUP INC. INDIVIDUAL TREES LOCATED IN AREAS OF PROPOSED DEVELOPMENT ONLY

16. WETLAND DELINEATION CONDUCTED BY MARATHON ENGINEERING AND ENVIRONMENTAL SERVICES INC. IN MARCH & APRIL OF 2014.

17. A PENNDOT HIGHWAY OCCUPANCY PERMIT IS REQUIRED PURSUANT TO SECTION 420 OF THE ACT OF JUNE 1, 1945(P.L.1242, No.428), KNOWN AS THE STATE HIGHWAY LAW BEFORE DRIVEWAY ACCESS TO NEWTOWN ROAD OR DARBY–PAOLI ROAD IS PERMITTED.

18. TEST PITS TO DETERMINE INFILTRATION FEASIBILITY WERE EXCAVATED AND EVALUATED BY EVANS MILL ENVIRONMENTAL, INC. IN APRIL, JUNE AND JULY, 2014.

19. THE EXISTENCE AND/OR LOCATION OF ALL EXISTING AND PROPOSED UTILITY SERVICES ARE APPROXIMATE AND MUST BE CONFIRMED INDEPENDENTLY WITH LOCAL UTILITY COMPANIES PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION OR EXCAVATION.

20. THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF EXISTING TOPOGRAPHIC INFORMATION AND UTILITY INVERT ELEVATIONS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. ANY DISCREPANCIES THAT MAY AFFECT THE PUBLIC SAFETY OR PROJECT COST, MUST BE IDENTIFIED TO THE ENGINEER IN WRITING IMMEDIATELY. PROCEEDING WITH CONSTRUCTION WITH DESIGN DISCREPANCIES IS DONE SO AT THE CONTRACTOR'S OWN RISK.

21. THE RESPONSIBILITY OF THE CONTINUED MAINTENANCE AND OPERATION OF THE COMMON STORMWATER MANAGEMENT SYSTEMS SHALL BE THE OBLIGATION OF THE HOMEOWNERS ASSOCIATION. THE RESPONSIBILITY OF THE CONTINUED MAINTENANCE AND OPERATION OF THE INDIVIDUAL ON–LOT STORMWATER MANAGEMENT SYSTEMS AND OTHER ON–LOT BMP FACILITIES SHALL BE THE OBLIGATION OF THE PROPERTY OWNER.

22. CLEANOUTS SHALL BE PLACED AT ALL GRADE CHANGES OR CHANGES IN ALIGNMENT OF THE RAIN WATER CONDUCTORS.

23. THE COMMON STORMWATER MANAGEMENT FACILITIES HAVE BEEN DESIGNED FOR THE IMPERVIOUS COVERAGE SHOWN ON THE PLANS RESULTING FROM THE ROADWAY AND OPEN SPACE IMPROVEMENTS. THESE FACILITIES PROVIDE FOR BOTH RATE CONTROL AND GROUND WATER RECHARGE REQUIREMENTS OF THE TOWNSHIP STORMWATER MANAGEMENT ORDINANCE. IN ADDITION, STORMWATER SYSTEMS 'G' AND 'H' PROVIDE FOR RATE CONTROL FOR LOTS 2–1 THRU 2–4, 2–6 THRU 2–8 AND 2–11 THRU 2–19 FOR UP TO 20,000 SF OF IMPERVIOUS COVER PER LOT. GROUNDWATER RECHARGE FACILITIES FOR THESE LOTS ARE TO BE PROVIDED ON LOT AS PART OF THE DEVELOPMENT BY THE INDIVIDUAL PROPERTY OWNER.

24. STORMWATER MANAGEMENT FOR THE INDIVIDUAL LOTS ARE TO BE PROVIDED BY THE PROPERTY OWNER ON THE INDIVIDUAL LOTS AT TIME OF DEVELOPMENT BY THE INDIVIDUAL OWNERS.

25. THE PHASING NOTED IS SHOWN FOR THE SALE OF LOTS ONLY. CONSTRUCTION IS PHASED TO EXTEND NECESSARY UTILITIES AND INFRASTRUCTURE TO SERVE EACH DEVELOPMENT PHASE AND IS SHOWN AS PART OF THE SEDIMENTATION AND EROSION CONTROL PLANS FOR EACH PHASE.

26. PRIOR TO THE INSTALLATION OF THE PERMANENT STORMWATER MANAGEMENT SYSTEM AND PRIOR TO SYSTEM BEING RENDERED OPERATIONAL, THE CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER FOR FIELD REVIEW OF THE SITE GRADING, STORMWATER FACILITIES AND GENERAL PCSM PLAN COMPLIANCE IN ORDER TO FACILITATE FINAL CERTIFICATION THAT THE SITE WAS CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PCSM PLAN.

27. PARKING IS PROHIBITED ALONG ARDROSSAN DRIVE AND AYRSHIRE DRIVE FROM STATION 0+00 TO STA 22+25. ROADS ARE TO BE POSTED WITH NO PARKING SIGNS.

28. BENCHMARK – USGS NGVD1929 BENCHMARK RM–11, SQUARE CUT IN EAST END OF SOUTHERLY WALL OFSAW MILL ROAD BRIDGE OVER DARBY CREEK, ELEV.=236.18.

29. MONUMENTS ARE TO BE SET AS INDICATED ON THE RECORD PLAN AT ANGLE POINTS OF THE RIGHTS OF WAY. ALL PROPERTY CORNERS ARE TO BE PERMANENTLY MARKED WITH IRON PINS.

30. NO PLANTING OR OTHER STRUCTURES ARE PERMITTED WITHIN THE STORM OR SANITARY SEWER EASEMENTS.

31. ALL SANITARY SEWER PIPES ARE TO BE 8" PVC, SDR–35, UNLESS OTHERWISE SPECIFIED ON THE PLANS.

32. ALL UTILITIES ARE TO BE INSTALLED UNDERGROUND.

33. NO TOPSOIL SHALL BE REMOVED FROM THE SITE.

34. THE FOLLOWING CONDITIONS APPLY WITHIN ALL CLEAR SIGHT TRIANGLES:
    a) NO OBSTRUCTIONS TO VISIBILITY FROM 2 1/2 FEET TO 12 FEET IN HEIGHT ABOVE THE EDGE OF PAVING.
    b) ANY PLANT MATERIALS MUST BE PROPERTY MAINTAINED TO CONTINUALLY COMPLY WITH THE VISIBILITY REQUIREMENTS AND ARE SUBJECT TO TRIMMING AND REMOVAL BY THE TOWNSHIP.

37. ALL SANITARY FACILITIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH RADNOR TOWNSHIP STANDARD SPECIFICATIONS. ALL STORM SEWER AND ROADWAY CONSTRUCTION SHALL BE IN ACCORDANCE WITH PENNDOT FORM 408, LATEST REVISION, AND/OR PENNDOT ROADWAY CONSTRUCTION STANDARDS, AND IN ACCORDANCE WITH RADNOR TOWNSHIP CONSTRUCTION AND MATERIALS SPECIFICATIONS.

38. STORM SEWERS SHALL BE CORRUGATED POLYETHYLENE PIPE (W/SMOOTH INTERIOR) MEETING PENNDOT SPECIFICATIONS.

39. A MINIMUM OF 20 L.F. OF CONCRETE ENCASEMENT SHALL BE PROVIDED FOR THE SANITARY SEWER PIPING WHEN LESS THAN 18" OF VERTICAL CLEARANCE IS PROVIDED WITH ANY WATER MAIN AND STORM SEWER.

40. NO TREES SHALL BE PERMITTED WITHIN TEN FEET OF THE SANITARY SEWER MAIN OR LATERALS.

41. TEN (10) FEET OF HORIZONTAL SEPARATION SHALL BE PROVIDED BETWEEN SANITARY LATERALS AND WATER SERVICES ON EACH LOT.

42. INDIVIDUAL LOT GRADING PLANS MUST BE SUBMITTED FOR REVIEW AND APPROVAL BY THE TOWNSHIP ENGINEER AS PART OF A GRADING PERMIT FOR EACH LOT.

43. THE TOWNSHIP SHALL REVIEW ALL PENNDOT SUBMISSIONS, BE GIVEN THE OPPORTUNITY TO ATTEND ALL MEETINGS WITH PENNDOT AND INCLUDED ON ALL CORRESPONDENCE RELATIVE TO PENNDOT SUBMISSIONS.

44. A GRADING PERMIT PLAN SHOWING GRADING, STORMWATER MANAGEMENT AND EROSION AND SEDIMENTATION CONTROL SHALL BE SUBMITTED TO AND APPROVED BY THE TOWNSHIP PRIOR TO THE ISSUANCE OF ANY BUILDING PERMITS. PLANS SHALL ALSO BE SUBMITTED TO THE DELAWARE COUNTY CONSERVATION DISTRICT FOR APPROVAL AS A MODIFICATION TO THE NPDES PERMIT.

45. SINCE DEVELOPER WILL BE PROVIDING FINANCIAL SECURITY FOR COMPLETION OF THE IMPROVEMENTS ON A PHASE BY PHASE BASIS, NO WORK SHALL BE PERMITTED TO COMMENCE, NO BUILDING PERMIT WILL BE ISSUED AND NO LOT SHALL BE PERMITTED TO BE SOLD IN ANY PHASE FOR WHICH FINANCIAL SECURITY FOR THE COMPLETION OF THE IMPROVEMENTS IN THAT PHASE HAS NOT BEEN POSTED WITH THE TOWNSHIP. FOR EACH PHASE, INCLUDING PHASE 1,THE PROVISIONS OF ARTICLE V OF THE DEVELOPMENT AGREEMENT BETWEEN TOWNSHIP AND DEVELOPER FOR THIS PROJECT SHALL GOVERN THE POSTING OF FINANCIAL SECURITY.ONCE FINANCIAL SECURITY FOR A PHASE HAS BEEN POSTED IN ACCORDANCE WITH THE DEVELOPMENT AGREEMENT AND THE ORDINANCES OF THE TOWNSHIP, THE DEVELOPER AND THE TOWNSHIP SHALL EXECUTE AND DEVELOPER SHALL RECORD A NOTICE NAMING THE PHASE AND THE LOTS (BY LOT NUMBER ON THE PLAN) WITHIN THE DEVELOPMENT THAT ARE THEREUPON AVAILABLE FOR SALE AND DEVELOPMENT.

46. SINCE DEVELOPER MAY SELL LOTS PRIOR TO THE COMPLETION OF THE IMPROVEMENTS FOR ANY PHASE, TOWNSHIP AND DEVELOPER AGREE THAT IF DEVELOPER SHALL FAIL TO CONSTRUCT ANY IMPROVEMENTS AND THE HOMEOWNERS' ASSOCIATION FOR THE COMMUNITY, ARDROSSAN FARMS OWNERS ASSOCIATION (THE 'ASSOCIATION'), CONTRACTS FOR AND COMPLETES ANY SUCH IMPROVEMENTS IN ACCORDANCE WITH THE PLAN AND TO THE SATISFACTION OF THE TOWNSHIP INSPECTORS, THE TOWNSHIP MAY AND SHALL AUTHORIZE THE RELEASE OF THE RESPECTIVE AMOUNT OF THE FINANCIAL SECURITY TO THE ASSOCIATION AS REIMBURSEMENT FOR THE COSTS OF SUCH IMPROVEMENTS.

47. ANY ADDITIONAL DWELLINGS ON ANY LOTS BEYOND THE 70 INDIVIDUAL RESIDENTIAL LOTS AS SHOWN ON THE PLAN SHALL REQUIRE A NEW CONDITIONAL USE APPLICATION MEETING ALL ZONING ORDINANCE REQUIREMENTS OF CHAPTER 280, ARTICLE XIX FOR A DENSITY MODIFICATION DEVELOPMENT AND A NEW SUBDIVISION APPLICATION WITH FULL PUBLIC IMPROVEMENTS IN ACCORDANCE WITH EXISTING ORDINANCES. IT IS THE INTENT OF THIS CONDITION THAT SUCH FUTURE PUBLIC IMPROVEMENTS SHALL BE NECESSARY IN CONSIDERATION OF THE WAIVERS WHICH HAVE BEEN GRANTED TO PERMIT THE SUBDIVISION OF THE PROPERTY IN ITS PRESENT CONFIGURATION AS APPROVED.

ZONING DISTRICT AC RESIDENTIAL DISTRICT

AREA:	2 AC
LOT WIDTH:	80' AT BSBL
BUILDING AREA:	15% MAX
FRONT YARD:	60 FT
SIDE YARD:	50 FT MIN,
	40 FT NON–RESIDENTIAL BUILDINGS.
REAR YARD:	60FT

NOTE: THIS SITE TO BE DEVELOPED UNDER DENSITY MODIFICATION REGULATIONS PERMITTED UNDER ARTICLE XIX OF THE RADNOR TOWNSHIP ZONING CODE.

MINIMUM TRACT AREA:	20 AC
PERIMETER BUILDING SETBACK:	75 FT FROM RIGHT OF WAY
	50 FT FROM ADJACENT PROPERTY
FRONT YARD:	35 FT FROM OUTSIDE EDGE OF CURB
SIDE YARD:	25 FT
REAR YARD:	30 FT

FOLIO NUMBER:

36–04–02463–00 & 36–04–02464–00

DENSITY CALCULATIONS PER SECTION 280–92 (ENTIRE SITE)

GROSS AREA: 311.54 ACRES

[AREA NET OF ULTIMATE R/W = 311.54 – 6.73 = 304.81 AC]

DEDUCTIONS:

1/2 FLOOD PLAIN (CALCULATED) = 13.62AC/2 =	6.82 AC
1/2 STEEP SLOPES (> 20%) = 21.94 AC ÷ 2 =	10.97 AC
TOTAL DEDUCTIONS =	17.78 AC

TOTAL ADJUSTED TRACT AREA = 304.81 AC – 17.78 AC = 287.03 AC
PERMITTED DENSITY: 287.03 AC/2 AC ZONING = 143.52 UNITS
NET COMMON OPEN SPACE = 84.056 AC (CLEAR OF ROAD R/W AND BUFFER)
COMMON OPEN SPACE AS A PERCENT OF TOTAL NET TRACT AREA = 27.57%
PERCENT DENSITY INCREASE PERMITTED = 27.57%/3% = 9.19%
BONUS DENSITY PERMITTED BY DENSITY MODIFICATION = 109.19% = 156 UNITS
DENSITY PROPOSED = 76 DWELLING UNITS (72 LOTS)
OVERALL DENSITY: 76 UNITS/304.81 AC = 0.2493 UNITS/ACRE OR 1 UNIT PER 4.01 ACRES

OPEN SPACE CALCULATIONS:
REQUIRED PER SECTION 280–91 = 15%
MINIMUM AREA REQUIRED = 304.81 AC x 15% = 45.72 AC
PROPOSED COMMON OPEN SPACE: 84.07 AC = 27.57% (NET OF ROAD R/W & BUFFER)

PROPOSED STANDARDS:
DENSITY: 76 UNITS/304.81 AC = 0.2493 UNITS/AC
OPEN SPACE RATIO: OPEN SPACE = 84.07 AC/304.81 AC = 27.57%

TOTAL NUMBER OF LOTS: 72
10 LOTS CONTAIN EXISTING STRUCTURES/DWELLINGS. THE BUILDINGS ON LOTS 2–5 & 2–9 CONTAIN 2 UNITS AS A DUPLEX, AND THE BUILDINGS ON LOT 4–10 CONTAIN 3 UNITS.
62 LOTS ARE TO BE SOLD INDIVIDUALLY AND ULTIMATELY BE DEVELOPED BY THE NEW OWNERS WITH NEW SINGLE FAMILY DWELLINGS

DWELLING MIX: SINGLE FAMILY DETACHED

SIZE OF UNITS: 3–5 BEDROOM TYPICAL

APPROVED WAIVERS:

WAIVERS WERE GRANTED FROM THE FOLLOWING SECTIONS OF SUBDIVISION AND LAND DEVELOPMENT ORDINANCE AS PART OF FINAL PLAN APPROVAL FOR THIS PROJECT

ARTICLE 5: DESIGN STANDARDS:

255–27, STREETS:
255–27 (A–5) CUL–DE–SAC TERMINUS AT ROAD D
255–27 (C–1) 60' R/W, 24' CARTWAY & SIDEWALKS ALONG MINOR COLLECTOR STREETS (NEWTOWN ROAD)
255–27 (C–1) 60' R/W, 24' CARTWAY & SIDEWALKS ALONG PROPOSED LOCAL STREETS
255–27 (D)(1) CULS–DE–SAC; LENGTH
255–27 (D)(2) CULS–DE–SAC; TURNAROUND DIMENSIONS
255–27 (E)(2) R/W WIDTH OF A PRIVATE STREET
STREET INTERSECTIONS
255–27 (H)(1) INTERSECTIONS LESS THAN 90 DEGREES FOR ROAD E AT NEWTOWN ROAD, ROAD E AND ROAD C & ROAD C AND ROAD H.

255–36. CURBS
255–36 CURBS WHEN REQUIRED BY THE TOWNSHIP

255.37. SIDEWALKS AND PEDESTRIAN PATHS
255–37 (A) SIDEWALKS AND PATHS WHEN REQUIRED BY THE BOARD OF COMMISSIONERS.

255–38. SHADE TREES
255–38 (A) STREET TREES TO BE PLANTED WHERE STREET TREES DO NOT EXIST
255–38 (B & C) STREET TREE PLANTING INTERVALS

255–39. CROSSWALKS
255.39 (A) INTERIOR CROSSWALK REQUIREMENTS
255–39 (B) CROSSWALK MARKINGS

ARTICLE 6: REQUIRED IMPROVEMENTS:

255–49. STREETLIGHTS
255–49 INSTALLATION OF STREETLIGHTS

255.51. SIDEWALKS
255.51 INSTALLATION OF SIDEWALKS

255.52. CURBS
255.52 INSTALLATION OF CURBS

PHASE IV

PHASE 4
GROSS AREA = 85.42 AC
NET AREA = 83.89 AC
15% REQUIRED OPEN SPACE = 12.58 AC
OPEN SPACE PROVIDED = 26.107 ACRES GROSS
21.76 AC NET OF ROAD R/W & BUFFER = 25.94%

PROPOSED LOTS: 21
PROPOSED HOMES: 18 NEW DWELLINGS / 2 EXISTING RESIDENCES
(1 EXISTING RESIDENCE CONTAINING 3 DWELLING UNITS)
1 LOT TO BE MERGED WITH ADJOINING PROPERTY

PARCEL	EXISTING AREA	PROPOSED AREA
OPEN SPACE 8B	12.39 AC	OPEN SPACE 8B 5.634 AC OPEN SPACE 8D 0.888 AC OPEN SPACE 8E 0.956 AC OPEN SPACE 8F 4.086 AC OPEN SPACE 8G 0.298 AC OPEN SPACE 8H 0.899 AC
OPEN SPACE 9	13.34 AC	OPEN SPACE 9A 2.218 AC OPEN SPACE 9B 6.790 AC OPEN SPACE 9C 3.475 AC OPEN SPACE 9D 0.863 AC
NRA–14	4.58 AC	4.376 AC
NRA–18	5.52 AC	1.944 AC
NRA–19	3.84 AC	3.087 AC
NRA–20	3.42 AC	NRA–20 3.083 AC
NRA–21	4.12 AC	3.107 AC
NRA–22	7.23 AC	NRA–22 2.688 AC NRA–25 0.877 AC
LOT 4–1	1.37 AC	1.608 AC
LOT 4–2	1.14 AC	3.005 AC
LOT 4–3	1.30 AC	1.253 AC
LOT 4–4	1.02 AC	0.999 AC
LOT 4–5	1.05 AC	3.444 AC
LOT 4–6	1.43 AC	1.408 AC
LOT 4–7	1.31 AC	1.212 AC
LOT 4–8	1.08 AC	1.974 AC
LOT 4–9	1.01 AC	1.011 AC
LOT 4–10	2.38 AC	2.387 AC
LOT 4–11	4.14 AC	4.807 AC
LOT 4–12	1.72 AC	0.997 AC
LOT 4–13	2.18 AC	3.215 AC
LOT 4–14	0.93 AC	0.829 AC
LOT 4–15	0.93 AC	0.821 AC
LOT 4–16	0.93 AC	0.964 AC
LOT 4–17	1.67 AC	1.133 AC
LOT 4–18	1.33 AC	3.818 AC
LOT 4–19	1.33 AC	0.971 AC
LOT 4–20	1.33 AC	0.877 AC
LOT 4–21	1.33 AC	3.371 AC

ROADWAY COMPLIANCE CHART

ROAD	LOTS SERVED	PHASE	TYPE OF ROAD	CONDITION	R.O.W WIDTH REQUIRED	R.O.W WIDTH PROPOSED	EXISTING CARTWAY WIDTH	REQUIRED CARTWAY WIDTH	PROPOSED CARTWAY WIDTH	FLOW TYPE	CONDITION	CUL–DE–SAC R/W RADIUS REQUIRED	CUL–DE–SAC R/W RADIUS PROVIDED	CUL–DE–SAC RADIUS REQUIRED	CUL–DE–SAC RADIUS PROVIDED	CUL–DE–SAC MAX LENGTH REQUIRED	CUL–DE–SAC MAX LENGTH PROVIDED
A IVY LANE	2–1;2–8 2–11 2–13;2–19	2	PUBLIC ROAD	PROPOSED	60'	50'	N/A	24' CURBED	24' CURBED W/ SIDEWALKS	TWO–WAY CUL–DE–SAC	PROPOSED	60'	60'	40'	50' WITH ISLAND	800'	1,217'
B SCOTT LANE	1–7:1–10	1	PUBLIC ROAD	PROPOSED	60'	40'	N/A	28' CURBED & 24' CURBED	24' & 20' NO CURBS **	TWO–WAY LOCAL/CUL–DE–SAC	PROPOSED	60'	45'	40'	35' WITH ISLAND	800'	940'
C AYRSHIRE DRIVE	2–10 M–1 4–4:4–8 4–12:4–16	1, 2 & 4	PUBLIC ROAD	EXISTING TO BE WIDENED	60'	40'	12'–16'	28' CURBED 24' CURBED	18' & 20' NO CURBS ***	TWO–WAY LOCAL/CUL–DE–SAC	EXISTING TO BE WIDENED & PROPOSED	60'	45'	40'	35' WITH ISLAND	800'	811'
D MURRAY LANE	1–4:1–6 2–12	1 & 2	PRIVATE STREET	EXISTING TO BE EXTENDED	60'	40'	12'±	N/A	20' NO CURBS	TWO–WAY PRIVATE STREET	EXISTING TO BE EXTENDED						
E ARDROSSAN DRIVE	1–1:1–3	1, 2 & 4	PUBLIC ROAD	EXISTING	60'	40'	12'–16'	28' CURBED	MAINTAIN EXISTING 12' – 16' NO CURBS	ONE–WAY SOUTHERLY LOCAL	EXISTING						
F TYLER LANE	3–2:3–10 5–1	3	PUBLIC ROAD	PROPOSED	60'	40'	N/A	24' CURBED	20' NO CURBS	TWO–WAY CUL–DE–SAC	PROPOSED	60'	45'	40'	35' WITH ISLAND	800'	1,800'
G BINNEY LANE	4–1:4–3 4–17;4–21	4	PUBLIC ROAD	PROPOSED	60'	40'	N/A	28' CURBED	20' NO CURBS	TWO–WAY LOCAL	PROPOSED						
H WHEELER LANE	1–11:1–16	1	PUBLIC ROAD	EXISTING TO BE RECONSTRUCTED	60'	40'	12'	24' CURBED	20' NO CURBS	TWO–WAY CUL–DE–SAC	EXISTING TO BE WIDENED	60'	45'	40'	35' WITH ISLAND	800'	540'
I THOMAS LANE	5–1:5–3 5–4:5–5	5	PRIVATE STREET	EXISTING TO BE WIDENED	60'	40'	12'±	N/A	20'	TWO–WAY PRIVATE STREET	EXISTING TO BE WIDENED						

** SCOTT LANE CARTWAY WIDTH: 24' FROM STA 0+00 TO STA 3+24, VARIABLE 24 TO 20' FROM STA 3+24 TO STA 4.43.5, AND 20' FROM STA 4+43.5 TO END.
*** AYRSHIRE DRIVE CARTWAY WIDTH: 18' FROM STA 0+00 TO STA 22+00, AND 20' FROM STA 22+00 TO END.

Serial Number: 2014–203–0820
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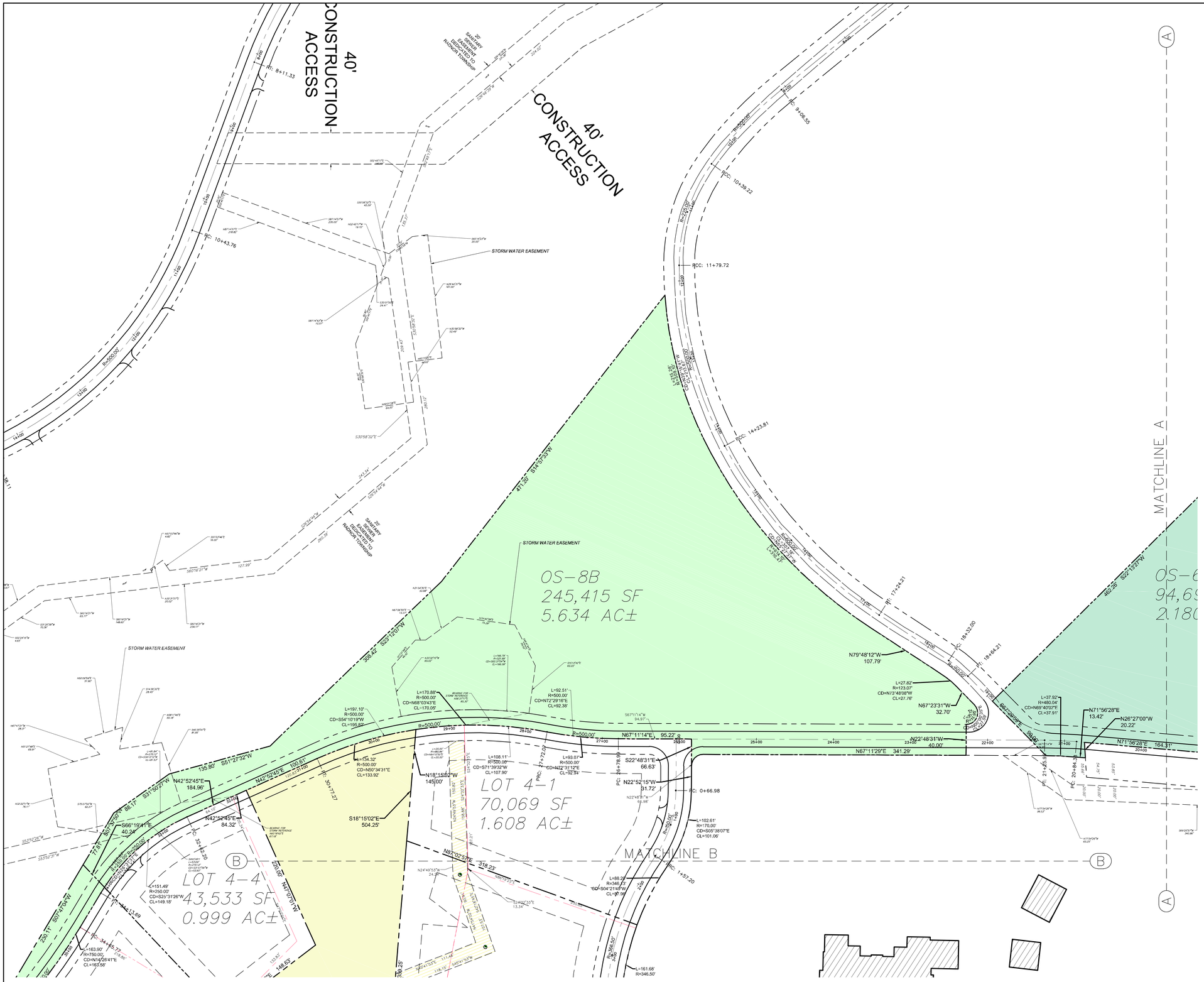
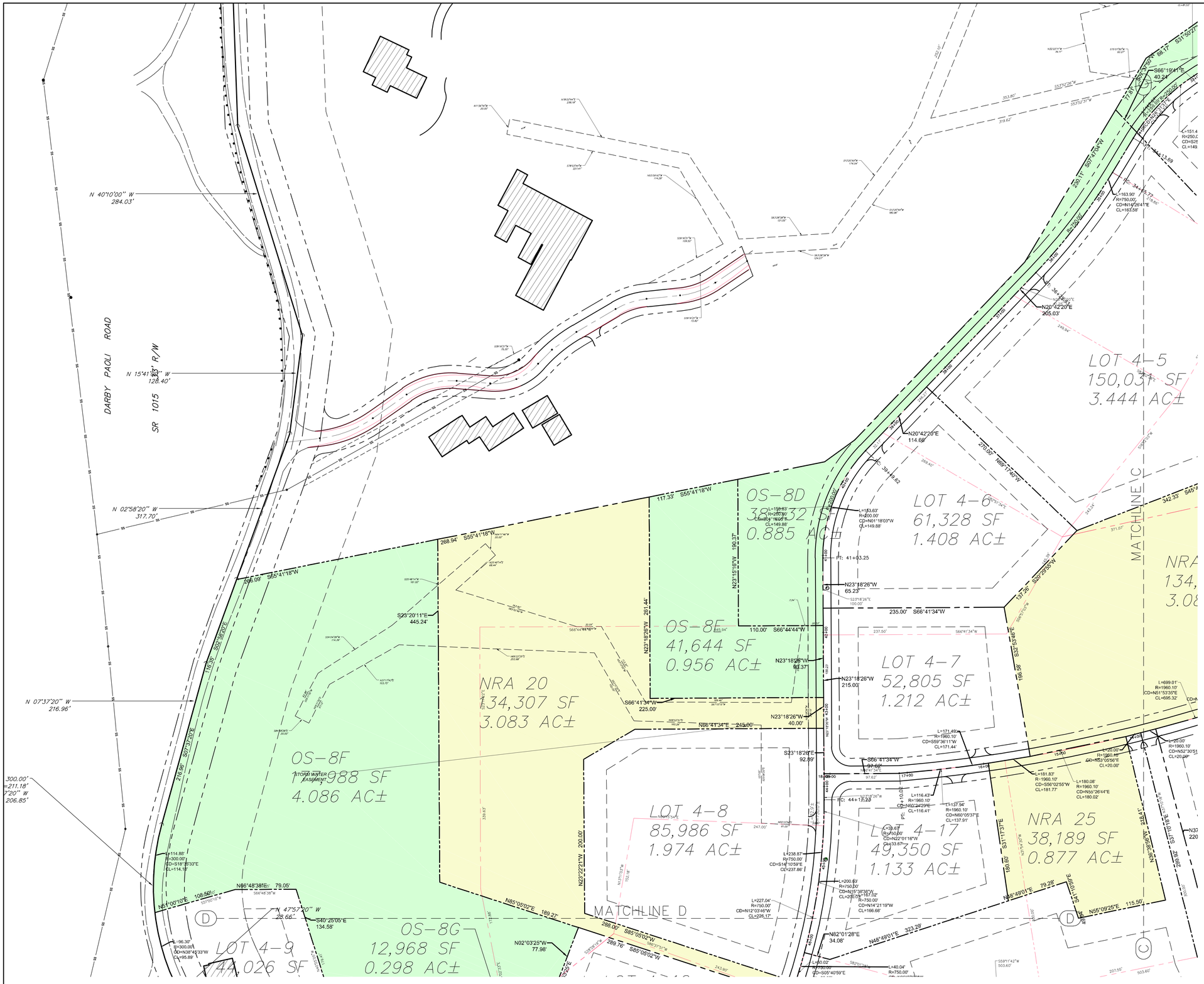
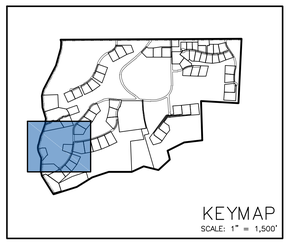
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOT


40' CONSTRUCTION ACCESS
40' CONSTRUCTION ACCESS
20' SANITARY SEWER EASEMENT DEDICATED TO RADNOR TOWNSHIP
STORM WATER EASEMENT
OS-8B
245,415 SF
5.634 AC±
LOT 4-1
70,069 SF
1.608 AC±
LOT 4-4
43,533 SF
0.999 AC±
MATCHLINE A
MATCHLINE B
S51°27'32"W 309.42'
S22°12'07"W 308.42'
S51°27'32"W 135.80'
N42°52'45"E 184.96'
N42°52'45"E 100.61'
N42°52'45"E 84.32'
S66°19'41"E 40.24'
S18°15'02"E 504.25'
N18°15'02"W 145.00'
N87°02'02"E 318.23'
N67°11'14"E 95.22'
N67°11'29"E 341.29'
N22°48'31"W 40.00'
S22°48'31"E 66.63'
N22°52'15"W 31.72'
N79°48'12"W 107.79'
N67°23'31"W 32.70'
N71°56'28"E 13.42'
N26°27'00"W 20.22'
N71°56'28"E 164.31'
S57°57'46"W 4.82'
S57°57'46"W 34.00'
S60°16'27"E 121.99'
S60°16'27"E 206.31'
S60°16'27"E 206.31'
S60°16'27"E 206.31

MATCHLINE A
OS-6A
94,697 SF
2.180 AC±
OS-6B
76,432 SF
1.755 AC±
20' SANITARY SEWER EASEMENT DEDICATED TO RADNOR TOWNSHIP
30' STORM WATER EASEMENT
PC: 6+32.29
PT: 7+19.20
PC: 1+42.31
PC: 11+90.89
PC: 13+28.24
PC: 4+11.15
PCC: 15+54.43
PT: 17+24.21
PC: 18+32.00
PT: 18+64.21
PT: 21+25.59
PC: 20+84.39
PT: 19+29.77
N79°48'12"W
107.79'
N67°23'31"W
32.70'
N22°48'31"W
40.00'
N67°11'29"E 341.29'
L=27.82'
R=123.07'
CD=N73°48'08"W
CL=27.76'
L=37.92'
R=480.04'
CD=N69°40'02"E
CL=37.91'
N71°56'28"E
13.42'
N26°27'00"W
20.22'
N71°56'28"E 164.31'
R=750.00'
CL=67.74'
N69°21'09"E
200.00' N68°01'54"W
460.26' S22°15'21"W
178.54'
N22°13'22"E
178.54' S22°15'21"W
N68°01'54"W
45.18'
325.46' S65°43'07"W
L=105.55'
R=325.28'
CD=N31°05'43"E
CL=105.09'
N05°49'40"E
22.69'
L=90.64'
R=325.00'
CD=N13°49'02"E
CL=90.34'
L=337.58'
R=750.00'
CD=N53°52'10"E
CL=334.74'
N35°32'25"W
129.02'
S26°30'25"E
129.07'
R=750.00'
L=67.77'
CL=67.74'
S66°23'57"E
504.61'
505.34'
15.00'
STONE GARDEN
BLOCK WALL
PROPOSED 2-FAMILY DWELLING
R=225.00'
R=250.00'
R=325.00'
R=275.00'
R=325.00'
R=275.00'
R=325.00'
R=275





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

SOILS INFORMATION

SYMBOL	NAME	%SLOPE	HYDROLOGIC GROUP	DEPTH TO SH WATER	DEPTH TO BEDROCK
BrE	BRANDYWINE LOAM	25 TO 40 PERCENT SLOPES	A	6.6+	5.83
Ch	CHEWACLA SILT LOAM	NOT RATED	C	1.50	6.6+
GeA	GLENELG CHANNERY SILT LOAM	0 TO 3 PERCENT SLOPES	B	6.6+	4.98
GeB	GLENELG CHANNERY SILT LOAM	3 TO 8 PERCENT SLOPES	B	6.6+	4.16
GeB2	GLENELG CHANNERY SILT LOAM	3 TO 8 PERCENT SLOPES	B	6.6+	6.6+
GeC	GLENELG CHANNERY SILT LOAM	8 TO 15 PERCENT SLOPES	B	6.6+	4.16
GeC2	GLENELG CHANNERY SILT LOAM	8 TO 15 PERCENT SLOPES	B	6.6+	6.6+
GeC3	GLENELG CHANNERY SILT LOAM	8 TO 15 PERCENT SLOPES	B	6.6+	4.98
GeD	GLENELG CHANNERY SILT LOAM	15 TO 25 PERCENT SLOPES	B	6.6+	4.16
GeD2	GLENELG CHANNERY SILT LOAM	15 TO 25 PERCENT SLOPES	B	6.6+	6.6+
GeD3	GLENELG CHANNERY SILT LOAM	15 TO 25 PERCENT SLOPES	B	6.6+	4.98
GeE	GLENELG CHANNERY SILT LOAM	25 TO 35 PERCENT SLOPES	B	6.6+	4.98
GnB	GLENVILLE SILT LOAM	3 TO 8 PERCENT SLOPES	C	1.73	1.57
GnB2	GLENVILLE SILT LOAM	3 TO 8 PERCENT SLOPES	C	1.73	6.62
GsB	GLENVILLE VERY STONY SILT LOAM	0 TO 8 PERCENT SLOPES	C	1.73	2.42
Me	MADE LAND SCHIST AND GNEISS MATERIALS	NOT RATED	B	4.98	5.41
MgB2	MANOR LOAM	3 TO 8 PERCENT SLOPES	B	6.6+	7.11
MgD2	MANOR LOAM	15 TO 25 PERCENT SLOPES	B	6.6+	4.49
MkF	MANOR SOILS	35 TO 60 PERCENT SLOPES	B	6.6+	7.11
We	WEHADKEE SILT LOAM	NOT RATED	D	0.26	6.6+
WoA	WORSHAM SILT LOAM	0 TO 3 PERCENT SLOPES	D	0.26	6.6+
WoB	WORSHAM SILT LOAM	3 TO 8 PERCENT SLOPES	D	0.26	6.6+

SYMBOL LEGEND

- IRON PIN FOUND
- CONCRETE MONUMENT FOUND
- MARBLE MONUMENT FOUND
- EXISTING AIR CONDITIONER
- EXISTING GAS VALVE
- EXISTING GAS METER
- EXISTING ELECTRIC METER
- EXISTING CLEANOUT
- ROOF OVERHANG
- EXISTING TREE
- EXISTING UTILITY POLE
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- SOIL PERC TEST LOCATION
- PROPOSED TEST PIT LOCATION
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- PROPOSED LOT
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- PROPOSED FIRE HYDRANT
- PROPOSED STORMWATER MANAGEMENT SYSTEM
- PROPOSED SIGN

LINETYPE LEGEND

- EXISTING PROPERTY LINE
- EXISTING RIGHT OF WAY
- EXISTING FENCE
- EXISTING EASEMENT
- EXISTING CALCULATED FLOODPLAIN
- EXISTING FEMA FLOODPLAIN
- EXISTING RIPARIAN BUFFER
- EXISTING STREAM
- EXISTING SOILS
- EXISTING WETLAND
- EXISTING TREE LINE
- EXISTING WOODED AREAS
- 378 EXISTING 2' CONTOUR
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- E EXISTING ELECTRIC LINE
- G EXISTING GAS LINE
- W EXISTING WATER LINE
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- ST EXISTING STORM PIPES
- EXISTING SLOPES 20% AND GREATER
- IMPERVIOUS TO BE REMOVED
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- NPDES PERMIT BOUNDARY
- LIMIT OF DISTURBANCE
- PCSM DRAINAGE AREA BOUNDARY
- VEGETATED SWALE DRAINAGE AREA
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50 0 25 50 100 200
1 INCH = 50 FT.

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PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PLACE AND 10 WORKING DAYS NOTICE FOR DESIGN PLACE.
Pennsylvania One Call System, Inc.
1-800-242-1776

REGISTERED PROFESSIONAL ENGINEER
DAVID R. FIORELLO
PE-073478-E
PROFESSIONAL ENGINEER

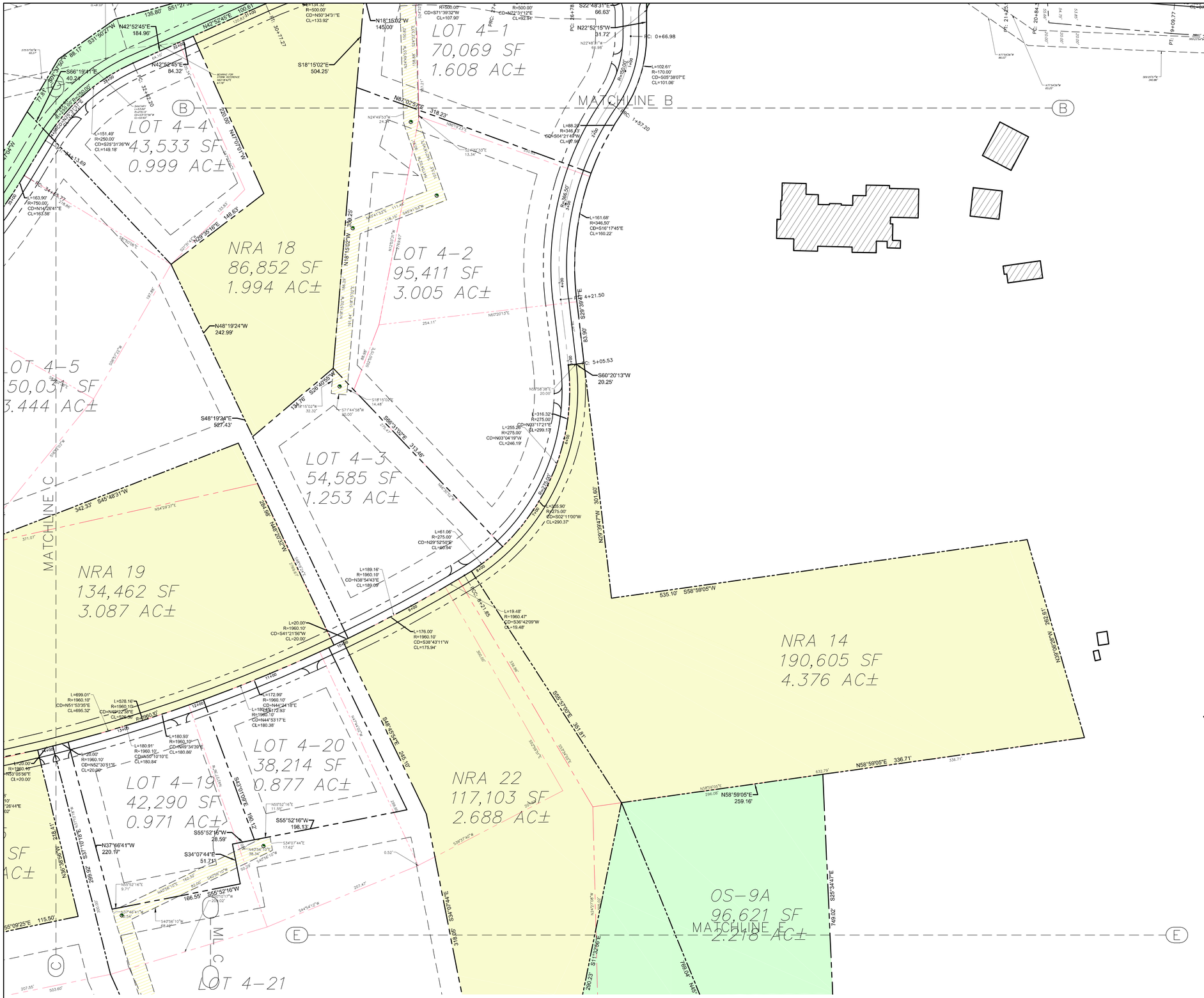
MOMENEE, INC.
a Karins Company
ENGINEERING | PLANNING | SURVEYING
924 COUNTY LINE ROAD - BRYN MWAR - PA - 19010

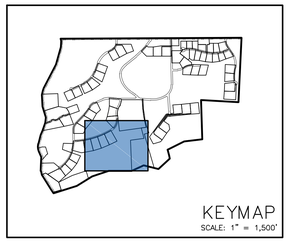
RECORD PLAN – SHEET 3
PHASE IV LOT LINE CHANGE PLAN
THE ARDROSSAN FARM
RADNOR TOWNSHIP - DELAWARE COUNTY - PENNSYLVANIA
APPLICANT
ESII LP
107 TWADDELL MILL ROAD
WILMINGTON, DE 19807

ONE-CALL:	203-0820
DRAWN BY:	TED
CHECKED BY:	DRF

REV.	DATE	COMMENTS

FILE NO.: 06-012
SHEET 6 OF 33
DATE: NOVEMBER 4, 2016
SCALE: 1" = 50'





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GeD2	GLENELG CHANNERY SILT LOAM	15 TO 25 PERCENT SLOPES	B	6.6+	6.6+
GeD3	GLENELG CHANNERY SILT LOAM	15 TO 25 PERCENT SLOPES	B	6.6+	4.98
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MgB2	MANOR LOAM	3 TO 8 PERCENT SLOPES	B	6.6+	7.11
MgD2	MANOR LOAM	15 TO 25 PERCENT SLOPES	B	6.6+	4.49
MkF	MANOR SOILS	35 TO 60 PERCENT SLOPES	B	6.6+	7.11
We	WEHADKEE SILT LOAM	NOT RATED	D	0.26	6.6+
WoA	WORSHAM SILT LOAM	0 TO 3 PERCENT SLOPES	D	0.26	6.6+
WoB	WORSHAM SILT LOAM	3 TO 8 PERCENT SLOPES	D	0.26	6.6+

SYMBOL LEGEND

- IRON PIN FOUND
- CONCRETE MONUMENT FOUND
- MARBLE MONUMENT FOUND
- EXISTING AIR CONDITIONER
- EXISTING GAS VALVE
- EXISTING GAS METER
- EXISTING ELECTRIC METER
- EXISTING CLEANOUT
- ROOF OVERHANG
- EXISTING TREE
- EXISTING UTILITY POLE
- 100.00 EXISTING SPOT ELEVATION
- DS 100.00 EXISTING DOOR SILL ELEVATION
- SOIL PERC TEST LOCATION
- PROPOSED TEST PIT LOCATION
- PROPOSED TYPE 'M' INLET
- PROPOSED LOT
- PROPOSED OPEN SPACE LOT
- PROPOSED NON-RESIDENTIALLY APPROVED LOT
- PROPOSED FIRE HYDRANT
- PROPOSED STORMWATER MANAGEMENT SYSTEM
- PROPOSED SIGN

LINETYPE LEGEND

- EXISTING PROPERTY LINE
- EXISTING RIGHT OF WAY
- EXISTING FENCE
- EXISTING EASEMENT
- EXISTING FEMA FLOODPLAIN
- EXISTING CALCULATED FLOODPLAIN
- EXISTING RIPARIAN BUFFER
- EXISTING STREAM
- EXISTING SOILS
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- EXISTING TREE LINE
- EXISTING WOODED AREAS
- 378 EXISTING 2' CONTOUR
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DATE: NOVEMBER 4, 2016
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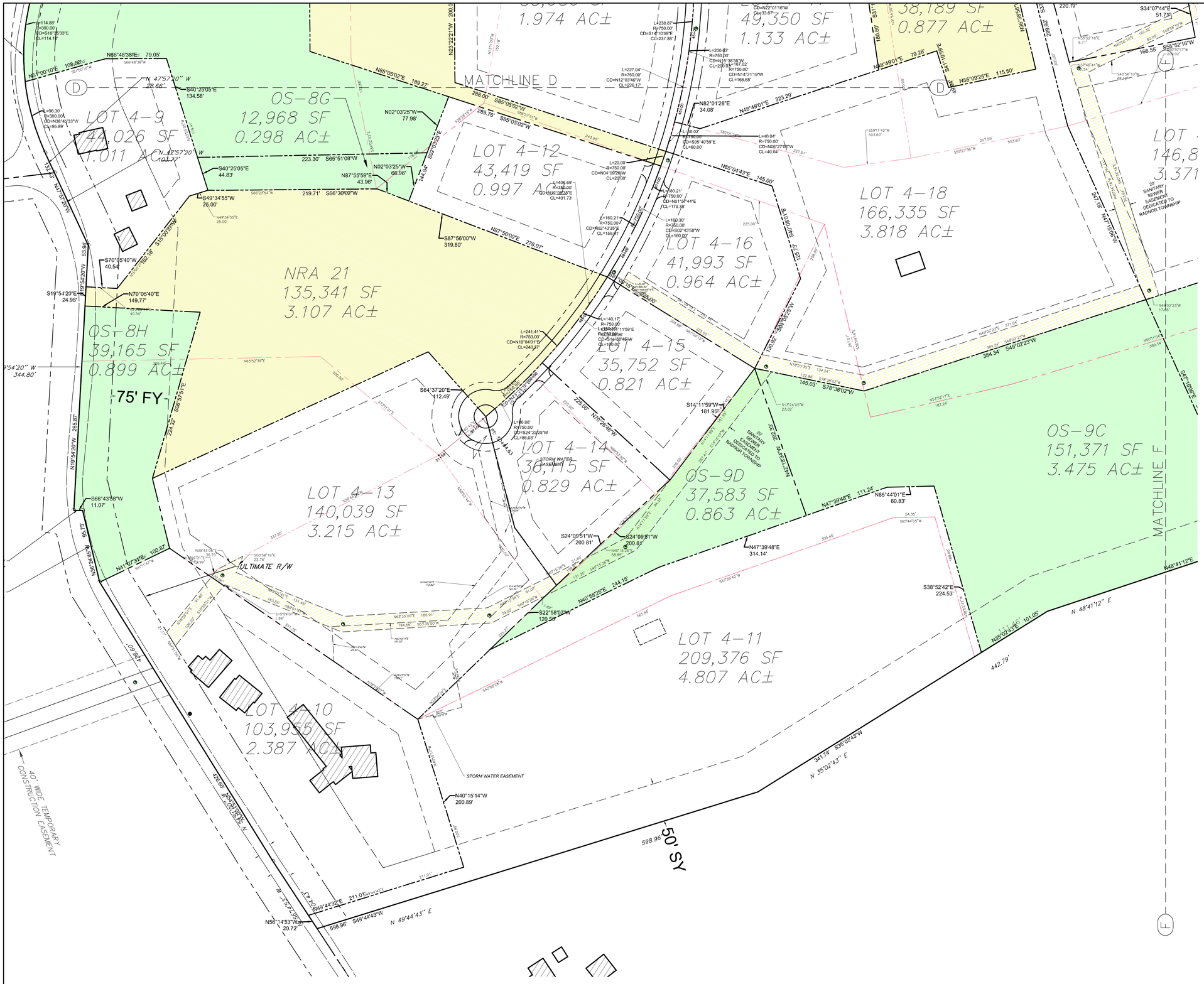

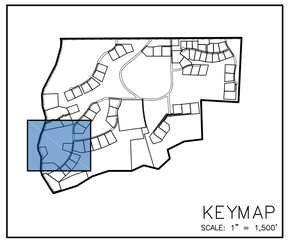

RESOLUTION TO SOIL LIMITATIONS:
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SOILS INFORMATION

SYMBOL	NAME	%SLOPE	HYDROLOGIC GROUP	DEPTH TO SH WATER	DEPTH TO BEDROCK
BrE	BRANDYWINE LOAM	25 TO 40 PERCENT SLOPES	A	6.6+	5.83
Ch	CHEWACLA SILT LOAM	NOT RATED	C	1.50	6.6+
GeA	GLENELG CHANNERY SILT LOAM	0 TO 3 PERCENT SLOPES	B	6.6+	4.98
GeB	GLENELG CHANNERY SILT LOAM	3 TO 8 PERCENT SLOPES	B	6.6+	4.16
GeB2	GLENELG CHANNERY SILT LOAM	3 TO 8 PERCENT SLOPES	B	6.6+	6.6+
GeC	GLENELG CHANNERY SILT LOAM	8 TO 15 PERCENT SLOPES	B	6.6+	4.16
GeC2	GLENELG CHANNERY SILT LOAM	8 TO 15 PERCENT SLOPES	B	6.6+	6.6+
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GeD2	GLENELG CHANNERY SILT LOAM	15 TO 25 PERCENT SLOPES	B	6.6+	6.6+
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GeE	GLENELG CHANNERY SILT LOAM	25 TO 35 PERCENT SLOPES	B	6.6+	4.98
GnB	GLENVILLE SILT LOAM	3 TO 8 PERCENT SLOPES	C	1.73	1.57
GnB2	GLENVILLE SILT LOAM	3 TO 8 PERCENT SLOPES	C	1.73	6.62
GsB	GLENVILLE VERY STONY SILT LOAM	0 TO 8 PERCENT SLOPES	C	1.73	2.42
Me	MADE LAND SCHIST AND GNEISS MATERIALS	NOT RATED	B	4.98	5.41
MgB2	MANOR LOAM	3 TO 8 PERCENT SLOPES	B	6.6+	7.11
MgD2	MANOR LOAM	15 TO 25 PERCENT SLOPES	B	6.6+	4.49
MkF	MANOR SOILS	35 TO 60 PERCENT SLOPES	B	6.6+	7.11
We	WEHADKEE SILT LOAM	NOT RATED	D	0.26	6.6+
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LINETYPE LEGEND

	EXISTING PROPERTY LINE
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X X X	EXISTING FENCE
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NOTE:
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ESII LP
107 TWADDELL MILL ROAD
WILMINGTON, DE 19807

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SHEET 8 OF 33
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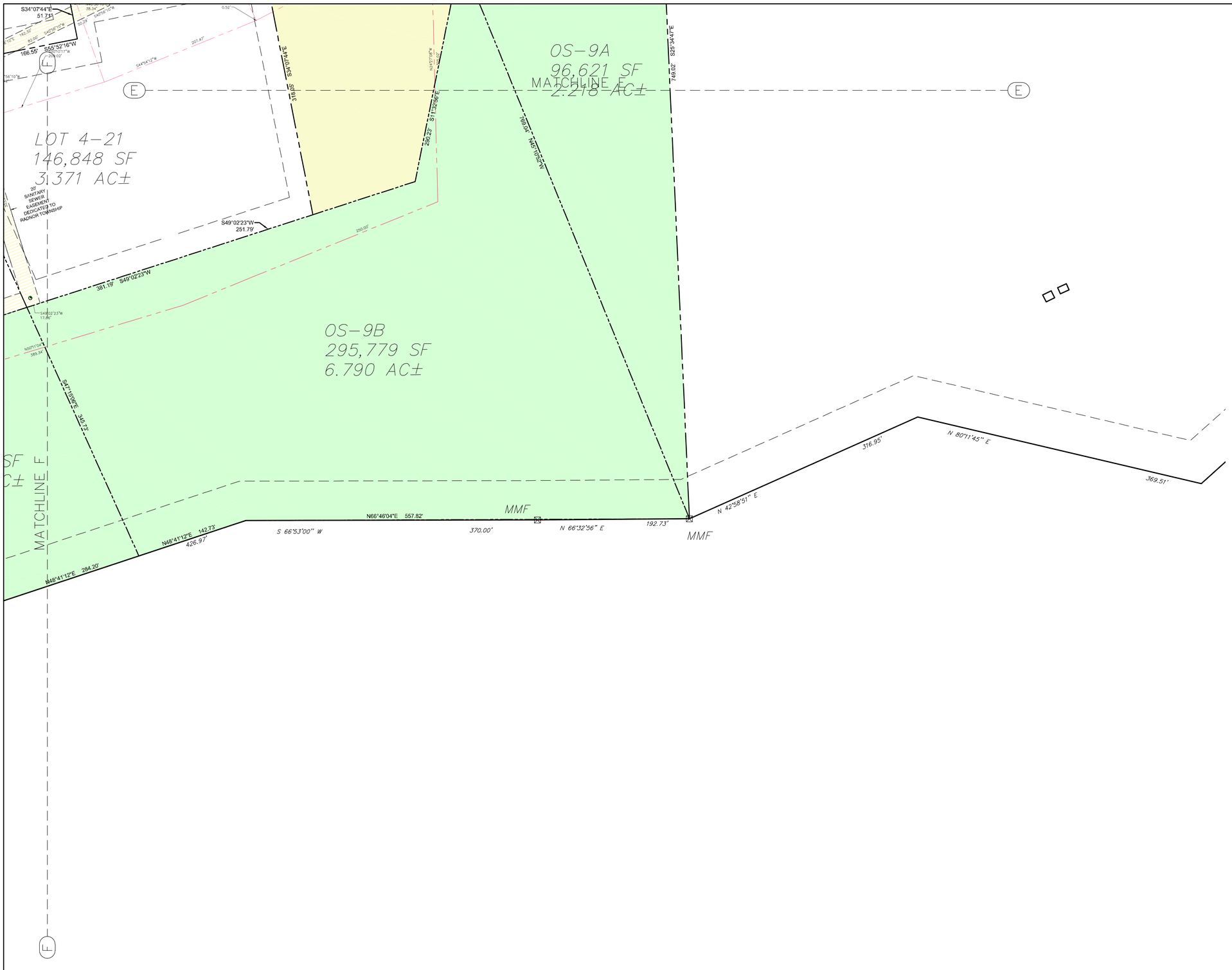

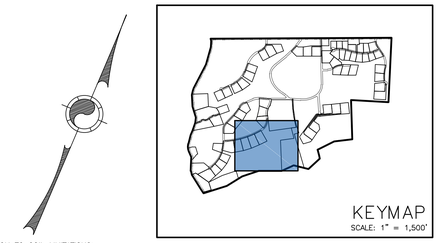

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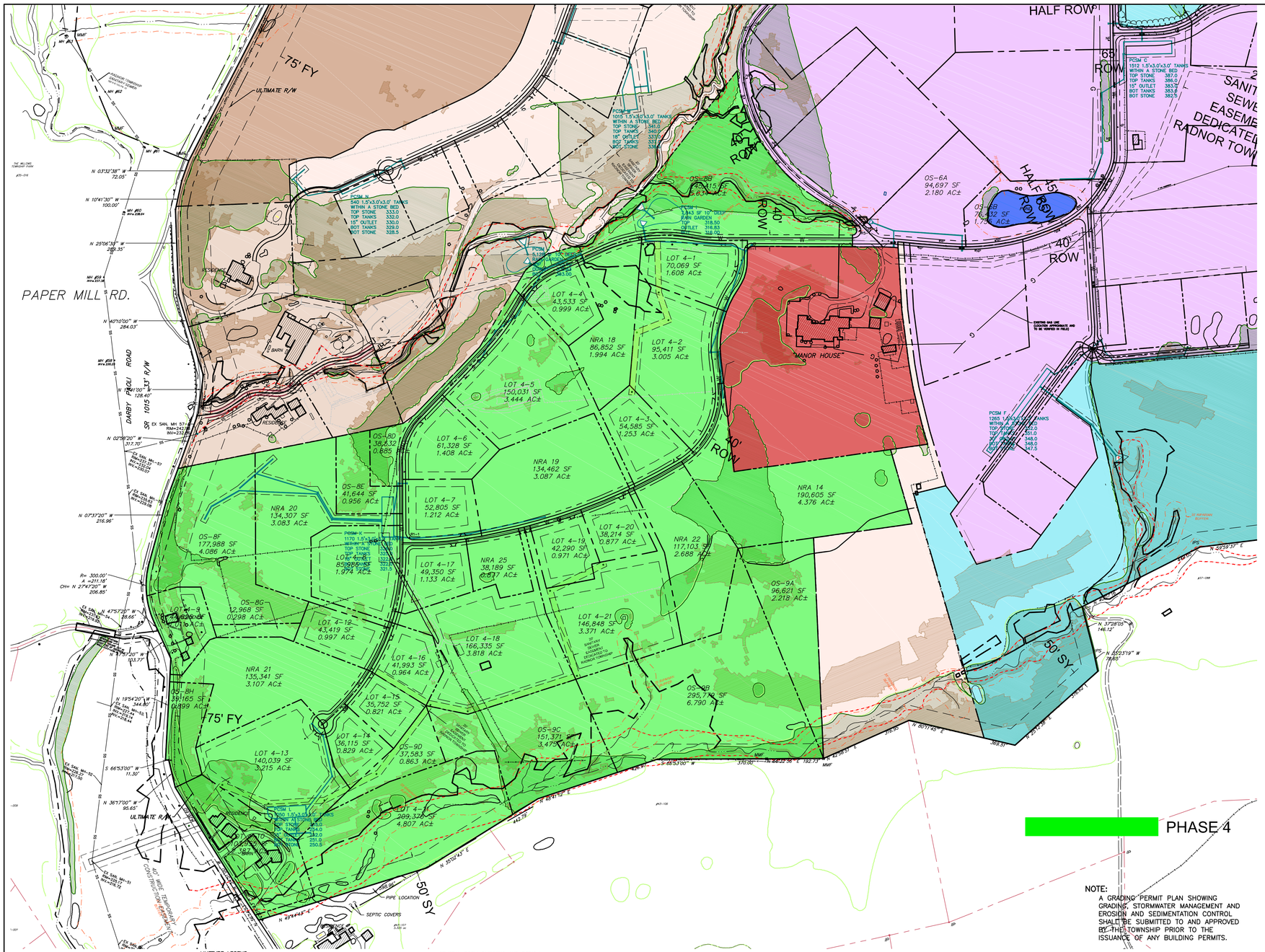

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	NPDES PERMIT BOUNDARY

GENERAL PCSM PLANNING AND DESIGN:

STRUCTURAL AND/OR NONSTRUCTURAL BMPs SHALL BE UTILIZED TO PREVENT OR MINIMIZE CHANGES IN STORMWATER RUNOFF; THESE SHALL INCLUDE BUT ARE NOT LIMITED TO SUBSURFACE INFILTRATION BEDS, BIORETENTION RAIN GARDENS, MINIMIZING TOTAL DISTURBED AREAS, MINIMIZING THE IMPERVIOUS COVER ON SITE, AND PRESERVING THE EXISTING NATURAL RESOURCES.

THE COMBINATION OF THESE FACILITIES AND PRACTICES ARE USED TO MEET THE REGULATORY STANDARD FOR STORMWATER MANAGEMENT, CONTROL GUIDANCE-1 AND LOCAL MUNICIPAL ORDINANCES. REFER TO THE POST CONSTRUCTION STORMWATER MANAGEMENT REPORT FOR MORE DETAILS AND CALCULATIONS.

DISCHARGE FROM THE STRUCTURAL BMPs ARE CONVEYED TO THE EXISTING NATURAL DRAINAGEWAYS WHICH MAINTAINS EXISTING DRAINAGE PATTERNS WITH REDUCTIONS IN OVERALL SITE RUNOFF.

BY IMPLEMENTING THESE MEASURES THE FOLLOWING CRITERIA HAVE BEEN ATTAINED:

- THE PCSM PLAN PRESERVES THE INTEGRITY OF STREAM CHANNELS AND MAINTAIN AND PROTECT THE PHYSICAL, BIOLOGICAL AND CHEMICAL QUALITIES OF THE RECEIVING STREAM.
- THE PCSM PLAN PREVENTS AN INCREASE IN THE RATE OF STORMWATER RUNOFF – THE PROPOSED STORMWATER FACILITIES REDUCE THE RATE OF STORMWATER RUNOFF FROM THE 2-YR THROUGH THE 100-YR STORM EVENTS.
- THE PCSM PLAN MINIMIZES ANY INCREASE IN STORMWATER RUNOFF VOLUME – THE STORMWATER FACILITIES ARE DESIGNED TO REDUCE THE POST CONSTRUCTION RUNOFF FOR THE 2-YR STORM EVENT UTILIZING BMPS FOR A 24-HOUR STORM, WITH ALL OF THE POST CONSTRUCTION PERVIOUS AREA CONSIDERED AS MEADOW AND 80% OF THE EXISTING IMPERVIOUS COVERAGE CONSIDERED AS A MEADOW CONDITION.
- THE PCSM PLAN MINIMIZES IMPERVIOUS AREA – THE OVERALL IMPERVIOUS COVER IS MINIMIZED ON SITE BY DEVELOPING A NON-TRADITIONAL SUBDIVISION TO SIGNIFICANTLY REDUCE THE AMOUNT OF IMPERVIOUS AREA ON THE PROPERTY. THE PROPOSED DESIGN INCLUDES LOW IMPACT DEVELOPMENT (LID) TECHNIQUES TO REDUCE THE OVERALL IMPERVIOUS COVERAGE AND STORMWATER MANAGEMENT DEMAND PROVIDING FAR LESS DEVELOPMENT THAN WHAT IS PERMITTED BY THE TOWNSHIP ZONING ORDINANCE AND BY REQUESTING WAIVERS OF THE REQUIRED ROADWAY WIDTHS, CUL-DE-SAC RADII, SIDEWALK REQUIREMENTS, AND OTHER DESIGN STANDARDS.
- THE PCSM PLAN MAXIMIZES THE PROTECTION OF EXISTING DRAINAGE FEATURES AND EXISTING VEGETATION – THE SITE CURRENTLY DRAINS UNCONTROLLED TO THE THREE SEPARATE WATERSHEDS (CAMP RUN, RYE FIELD, AND WIG WAM RUN). THE RUNOFF FROM THE PROPOSED IMPROVEMENTS IS COLLECTED, MANAGED AND THE SYSTEMS DISCHARGE TO THE EXISTING DRAINAGE WAYS. THE PROPOSED STORMWATER FACILITIES ARE LOCATED WITHIN THE AREAS OF DISTURBANCE NECESSARY FOR CONSTRUCTION IN ORDER TO FURTHER PROTECT THE EXISTING VEGETATION ON SITE. THE OVERALL SITE LAYOUT WAS DESIGNED TO AVOID DISTURBANCE OF THE EXISTING DRAINAGE FEATURES AND TO PROTECT THE EXISTING VEGETATION.
- THE PCSM PLAN MINIMIZES LAND CLEARING AND GRADING – THE PLAN MINIMIZES LAND CLEARING AND GRADING BY MINIMIZING THE AMOUNT OF GRADING TO THE EXTENT FEASIBLE. THE PROPOSED STORMWATER FACILITIES, UTILITIES AND E&S CONTROLS WERE ALSO LOCATED WITHIN THE AREA OF PROPOSED IMPROVEMENTS TO THE EXTENT POSSIBLE. THE OVERALL LAND CLEARING IS GREATLY REDUCED AS A RESULT OF PROVIDING LESS DEVELOPMENT THAN WHAT IS PERMITTED BY THE TOWNSHIP ZONING ORDINANCE AND BY REQUESTING WAIVERS OF THE REQUIRED ROADWAY WIDTHS, CUL-DE-SAC RADII, SIDEWALK REQUIREMENTS, AND OTHER DESIGN STANDARDS.
- THE PCSM PLAN MINIMIZES SOIL COMPACTION – THE CONTRACTOR SHALL MINIMIZE COMPACTION DURING CONSTRUCTION. THE TYPE OF EQUIPMENT USED DURING CONSTRUCTION SHALL NOT CAUSE UNDUE COMPACTION AND TRAFFIC OVER DISTURBED AREAS SHALL BE KEPT AT A MINIMUM.
- THE PCSM UTILIZES OTHER STRUCTURAL OR NONSTRUCTURAL BMPS THAT PREVENT OR MINIMIZE CHANGES IN STORMWATER RUNOFF – THESE SHALL INCLUDE BUT ARE NOT LIMITED TO SUBSURFACE INFILTRATION BEDS, RAIN GARDENS, DISCONNECTION OF IMPERVIOUS AREAS TO VEGETATED SWALES, MAINTAINING EXISTING DRAINAGE PATTERNS, AND PRESERVING EXISTING VEGETATION. THE OVERALL RATE AND VOLUME OF RUNOFF IS REDUCED ON SITE. OTHER BMPS INCLUDE THE INSTALLATION LEVEL SPREADERS AND RIP RAP APRONS. THE COMBINATION OF THESE FACILITIES AND PRACTICES ARE USED TO MEET THE REGULATORY STANDARD FOR CONSTRUCTION STORMWATER MANAGEMENT, CONTROL GUIDANCE-1 AND LOCAL MUNICIPAL ORDINANCES.

OPERATION AND MAINTENANCE NOTES:

1. THE RESPONSIBILITY FOR THE CONTINUED MAINTENANCE AND OPERATION OF THE STORMWATER MANAGEMENT SYSTEM AND OTHER DRAINAGE FACILITIES SHALL BE THE OBLIGATION OF THE PROPERTY OWNER.

2. THE PROPERTY OWNER SHALL NOT ALTER OR REMOVE THE STORMWATER FACILITIES ON THE SITE.

3. GENERAL OBJECTIVES OF MAINTENANCE ARE TO PREVENT CLOGGING OF THE INLETS, OUTLETS, PREVENT STANDING WATER, AND PREVENT THE GROWTH OF WEEDS AND NOXIOUS PLANTS.

4. REGULAR INSPECTIONS SHOULD BE MADE OF INFILTRATION FACILITIES ESPECIALLY DURING WET WEATHER TO ENSURE THAT THE FACILITY IS MAINTAINING DESIRABLE RETENTION TIMES.

5. ANUALLY ASSESS THE VARIOUS SPECIES OF THE PLANT COVER. IT MAY BE NECESSARY TO SUPPLEMENT AND/OR REMOVE VARIOUS SPECIES DUE TO THEIR GROWING PATTERNS.

6. AFTER ANY STORM RAINFALL EVENT OF A 2-YR OR GREATER MAGNITUDE, THE INFILTRATION BED AND ASSOCIATED OUTLET WORKS SHOULD BE INSPECTED. ANY DAMAGE OR BLOCKAGE TO THE OUTLET STRUCTURES SHOULD BE REPAIRED OR REMOVED IMMEDIATELY. ANY ERODED AREAS SHOULD BE TOPSOILED AND PERMANENTLY SEEDED AND MULCHED.

STORMWATER PERCOLATION NOTES:

DOUBLE RING INFILTROMETER STORMWATER PERCOLATION TESTING WAS PERFORMED ON SITE BY EVANS MILL ENVIRONMENTAL LLC. TESTING WAS PERFORMED THROUGHOUT THE SITE AS NOTED ON THE PLANS.

GENERAL PCSM NOTES:

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

2. 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 UTILITIES SUCH AS: UTILITIES AND ROADWAYS.

3. CHAPTER 93 STREAM CLASSIFICATION: CWF, MF
RECEIVING WATER: CAMP RUN / WIG WAM RUN TO DARBY CREEK.

4. 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 ANY BUILDING MATERIAL OR WASTES AT THE SITE.

5. THE RESPONSIBLE PARTY SHALL UTILIZE PROPER HANDLING AND/OR DISPOSAL OF ALL MATERIALS WHICH COULD CAUSE POLLUTION.

6. WHERE POTENTIAL THERMAL IMPACTS TO SURFACE WATERS EXISTS, APPROPRIATE MEASURES SHALL BE TAKEN TO AVOID/MINIMIZE/OR MITIGATE THESE IMPACTS INCLUDING BUT NOT LIMITED TO MINIMIZING IMPERVIOUS, MINIMIZING THE EXTENT AND DURATION OF SITE DISTURBANCE, PROTECTING EXISTING SHADE TREES, INSTALLING NEW PLANTINGS AS SOON AS FEASIBLE, MAXIMIZING VEGETATED SWALES, MINIMIZING DENUDED AND CONCRETE CHANNELS AND MAXIMIZING DETENTION FACILITY AREAS WHILE MINIMIZING POOL DEPTHS.

RECYCLING OR DISPOSAL OF MATERIALS:

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 ANY BUILDING MATERIAL OR WASTES AT THE SITE.

PCSM WASTE IS LIMITED TO THE SEDIMENT THAT COLLECTS IN INLET SUMPS AND/OR SWM SYSTEMS. THESE STRUCTURES SHALL BE CLEANED OUT IN ACCORDANCE WITH THE PROVIDED OPERATION AND MAINTENANCE REQUIREMENTS OF THOSE STRUCTURES AND DISPOSED OF PROPERLY.

IN THE EVENT A POLLUTION INCIDENT OCCURS WHICH CAUSES OR THREATENS TO CAUSE SURFACE OR GROUNDWATER POLLUTION, THE OWNER SHALL:
(1) PROMPTLY NOTIFY THE DEPARTMENT BY TELEPHONE OF THE LOCATION AND NATURE OF THE DANGER,
(2) NOTIFY ALL KNOWN DOWNSTREAM USERS OF THE WATER,
(3) IMMEDIATELY TAKE ALL NECESSARY STEPS TO PREVENT INJURY TO PROPERTY AND DOWNSTREAM USERS, AND PROTECT WATERS FROM POLLUTION OR DANGER OF POLLUTION,
(4) REMOVE ANY CONTAMINATION FROM AFFECTED GROUND OR SURFACE WATER TO THE EXTENT REQUIRED BY THE DEPARTMENT.

MAINTENANCE OF PERMANENT STORMWATER MANAGEMENT FACILITIES

A. THE RESPONSIBILITY FOR THE INSTALLATION AND MAINTENANCE AND OPERATION DURING CONSTRUCTION OF THE PERMANENT STORMWATER MANAGEMENT SYSTEMS AND OTHER FACILITIES SHALL BE THE OBLIGATION OF THE CONTRACTOR.

B. THE RESPONSIBILITY FOR THE CONTINUED MAINTENANCE AND OPERATION OF THE PERMANENT STORMWATER MANAGEMENT SYSTEMS AND OTHER FACILITIES SHALL BE THE OBLIGATION OF THE PROPERTY OWNER.

C. EFFECTIVE STORMWATER MANAGEMENT SHALL REQUIRE MAINTENANCE AND OPERATION OF DRAINAGE INFRASTRUCTURE FOR PURPOSES OF MAINTAINING FLOW TO PREVENT FLOODING OR EROSIVE CONDITIONS. ALL STORMWATER FACILITY REPAIRS SHALL BE PERFORMED IN A MANNER THAT DOES NOT EXACERBATE EXISTING STORMWATER PROBLEMS.

STORMWATER BMP – INFILTRATION BEDS

1. THE STONE RECHARGE BED MUST BE INSPECTED FOR ROUTINE MAINTENANCE A MINIMUM OF TWO TIMES A YEAR, ONCE IN THE EARLY SPRING AND ONCE IN THE FALL AFTER THE MAJORITY OF THE LEAVES HAVE FALLEN. ANY ACCUMULATED DEBRIS OR SEDIMENT SHALL BE REMOVED AND ANY STRUCTURAL FAILURES SHALL BE REPAIRED.

2. ONCE A YEAR FOLLOWING A STORM EVENT, THE STONE RECHARGE BED MUST BE INSPECTED TO DETERMINE IF IT IS DRAINING WITHIN THE REQUIRED TIME PERIOD (USUALLY TWENTY-FOUR HOURS). THE INSPECTION PORT SHALL BE OPENED AT LEAST TWENTY-FOUR HOURS FOLLOWING A STORM AND THE LEVEL OF WATER IN THE BED NOTED. VENTED CLEAN-OUTS MUST BE CHECKED TO ENSURE OPENINGS ARE CLEAR. ADJUSTMENTS TO THE CLEANOUTS MUST BE MADE IF SOIL OR OTHER LAWN DEBRIS IS OBSERVED TO BE ENTERING THE SYSTEM. IF IT IS DETERMINED THAT THE SYSTEM WILL NOT RECHARGE THE STORMWATER RUNOFF AS DESIGNED, THE SYSTEM WILL NEED TO BE REPAIRED OR REPLACED. THE TOWNSHIP SHALL BE CONTACTED FOR APPROVAL OF ANY MODIFICATION OR REPLACEMENT OF THE SYSTEM.

3. THE OUTLET PIPE OR CONNECTION OF THE OUTLET OF THE BASIN MUST BE CHECKED TO ENSURE THAT IT IS PERMITTING FREE FLOW OF WATER OUT OF THE BASIN. ALSO, THE CONVEYANCE PIPE TO THE EXISTING INLET SHALL BE INSPECTED AND REPAIRED AS REQUIRED.

4. TREES SHALL NOT BE PLANTED OR PERMITTED TO GROW IN THE VICINITY OF STONE RECHARGE BEDS OR STRUCTURES TO ENSURE THAT TREE ROOTS DO NOT PUNCTURE THE FILTER FABRIC OF THE STONE RECHARGE BED OR DAMAGE ANY STORMWATER COLLECTION/CONVEYANCE STRUCTURE.

5. ROOF GUTTER SYSTEMS THAT ARE INTEGRAL WITH THE STONE RECHARGE BED MUST BE FUNCTIONAL. REPAIRS OR REPLACEMENT MUST BE MADE. LEAF GUARDS SHALL BE INSTALLED AND MAINTAINED IN CONJUNCTION WITH GUTTER SYSTEMS.

6. PREVENTATIVE MAINTENANCE SHALL BE PERFORMED WHICH WOULD INCLUDE REMOVAL OF LEAVES FROM GUTTER SYSTEMS AND LAWN AREAS AS SOON AS POSSIBLE TO AVOID CONTAMINATION OR CLOGGING OF THE SYSTEM. LOCATING LANDSCAPE-MULCHED AREAS AWAY FROM CONCENTRATED RUNOFF AREAS OR SWALES THAT COULD WASH MULCH INTO INLETS IS RECOMMENDED.

7. THE PROPERTY OWNER SHALL MAINTAIN RECORDS OF ALL INSPECTIONS AND MAINTENANCE ACTIVITY.

STORMWATER FACILITY – INLETS

1. ALL SEDIMENT TRAPS AND INLETS MUST BE VISUALLY INSPECTED FOR ACCUMULATED SOIL AND DEBRIS A MINIMUM OF ONCE A YEAR. INLET GRATES MUST BE KEPT FREE OF LEAVES, STICKS, MULCH, AND OTHER LAWN DEBRIS OR TRASH THAT WOULD PREVENT INFLOW OF RUNOFF. SUMPS IN SEDIMENT TRAPS OR INLET BOTTOMS SHALL BE CLEARED AT THE TIME OF INSPECTION AND AT ANY POINT WHEN SEDIMENT HAS ACCUMULATED TO THE EXTENT THAT DEBRIS IS ABLE TO FLOW INTO THE CONVEYANCE PIPING. ANY WEEP HOLES IN THE BOTTOM OF THE INLETS OR SEDIMENT TRAP SHALL BE CLEARED TO ALLOW WATER TO SEEP OUT.

2. UNSOUND STRUCTURES OR STRUCTURES SHOWING SIGNS OF SOIL ENTERING THE INLET THROUGH CRACKS SHALL BE REPAIRED OR REPLACED ACCORDING TO DESIGN STANDARDS.

STORMWATER BMP – VEGETATED SWALES

1. VEGETATED SWALES SHALL BE INSPECTED ANNUALLY FOR EROSION PROBLEMS, DAMAGE TO VEGETATION, AND SEDIMENT AND DEBRIS ACCUMULATION.
2. INSPECT VEGETATION ON SIDE SLOPES FOR EROSION AND FORMATION OF RILLS OR GULLIES. CORRECT AS NEEDED.
3. INSPECT FOR POOLS OF STANDING WATER; DEWATER AND DISCHARGE TO AN APPROVED LOCATION AND RESTOR TO DESIGN GRADE.
4. MOW AND TRIM VEGETATION TO ENSURE SAFETY, AESTHETICS, PROPER SWALE OPERATION, OR TO SUPPRESS WEEDS AND INVASIVE VEGETATION. DISPOSE OF CUTTINGS TO A LOCAL COMPOSTING FACILITY. MOW ONLY WHEN SWALE IS DRY AND AVOID RUTTING.
5. INSPECT FOR LITTER.
6. INSPECT FOR UNIFORMITY IN CROSS-SECTION AND LONGITUDINAL SLOPE. AND CORRECT AS NEEDED.
7. INSPECT SWALE INLET AND OUTLET PIPES FOR SIGNS OF EROSION OR BLOCKAGE. CORRECT AS NEEDED.

STORMWATER BMP – RAIN GARDEN

1. WHILE VEGETATION IS BEING ESTABLISHED, PRUNING AND WEEDING MAY BE REQUIRED. DETRITUS MAY ALSO NEED TO BE REMOVED EVERY YEAR. PERENNIAL PLANTINGS MAY BE CUT DOWN AT THE END OF THE GROWING SEASON. MULCH SHOULD BE RE-SPREAD WHEN EROSION IS EVIDENT AND BE REPLENISHED AS NEEDED. ONCE EVERY 2 TO 3 YEARS THE ENTIRE AREA MAY REQUIRE MULCH REPLACEMENT. RAIN GARDEN AREAS SHOULD BE INSPECTED AT LEAST TWO TIMES PER YEAR FOR SEDIMENT BUILDUP, EROSION, VEGETATIVE CONDITIONS, ETC. DURING PERIODS OF EXTENDED DROUGHT, RAIN GARDEN AREAS MAY REQUIRE WATERING. TREES AND SHRUBS SHOULD BE INSPECTED TWICE PER YEAR TO EVALUATE HEALTH.

STORMWATER BMP – LANDSCAPE RESTORATION

THE FOLLOWING MAINTENANCE ACTIVITIES SHALL BE PERFORMED ANNUALLY AND WITHIN 48 HOURS AFTER EVERY MAJOR STORM EVENT (> 3 INCH RAINFALL DEPTH):

1. INSPECT AND CORRECT EROSION PROBLEMS, DAMAGE TO VEGETATION, AND SEDIMENT AND DEBRIS ACCUMULATION (ADDRESS WHEN > 3 INCHES AT ANY SPOT OR COVERING VEGETATION)

2. INSPECT FOR POOLS OF STANDING WATER; DEWATER AND DISCHARGE TO AN APPROVED LOCATION AND RESTORE TO DESIGN GRADE

3. MOW AND TRIM VEGETATION TO ENSURE SAFETY, AESTHETICS, OR TO SUPPRESS WEEDS AND INVASIVE VEGETATION; DISPOSE OF CUTTINGS IN A LOCAL COMPOSTING FACILITY; MOW ONLY WHEN GROUND IS DRY TO AVOID RUTTING

4. INSPECT FOR LITTER; REMOVE PRIOR TO MOWING

THE FOLLOWING MAINTENANCE ACTIVITIES SHALL BE PERFORMED BI-ANNUALLY:

1. PLANT ALTERNATIVE GRASS SPECIES IN THE EVENT OF UNSUCCESSFUL ESTABLISHMENT

2. RESEED BARE AREAS; INSTALL APPROPRIATE EROSION CONTROL MEASURES WHEN NATIVE SOIL IS EXPOSED OR EROSION CHANNELS ARE FORMING

3. WATER DURING DROUGHT PERIODS, FERTILIZE AND APPLY PESTICIDE ONLY WHEN ABSOLUTELY NECESSARY

BMP NOTES:

- NS BMP 5.4.2 – PROTECT/CONSERVE/ENHANCE RIPARIAN BUFFERS – ALL PROPOSED WORK WILL BE KEPT OUTSIDE THE LIMITS OF THE DESIGNATED RIPARIAN BUFFERS. NO DISTURBANCE ACTIVITIES WILL BE LOCATED WITHIN THE RIPARIAN BUFFER.
- NS BMP 5.6.1 – MINIMIZE TOTAL DISTURBED AREA – TOTAL SITE DISTURBANCE IS LIMITED TO 2.54 ACRES OUT OF THE TOTAL 12.73 ACRE PROPERTY.
- STRUCTURAL BMP 6.4.3 – SUBSURFACE INFILTRATION BED – A SUBSURFACE INFILTRATION BED WILL BE INSTALLED IN ORDER TO PROVIDE TEMPORARY STORAGE AND INFILTRATION OF STORMWATER RUNOFF.
- STRUCTURAL BMP 6.4.8 – VEGETATED SWALE (GRADED SWALE) – GRASS SWALES WILL BE PROVIDED TO FILTER THE RUNOFF PRIOR TO COLLECTION AND CONVEYANCE INTO THE INFILTRATION FACILITIES.
- NS BMP 5.4.1 – PROTECT SENSITIVE/SPECIAL VALUE FEATURES – EXISTING FEATURES ON SITE WILL BE PROTECTED FROM CONSTRUCTION ACTIVITIES INCLUDING NATURAL DRAINAGEWAYS, WETLANDS, RIPARIAN BUFFERS, WOODLANDS, AND STEEP SLOPES.
- NS BMP 5.4.3 – PROTECT/UTILIZE NATURAL DRAINAGE FEATURES – THE EXISTING NATURAL DRAINAGE FEATURES WILL BE PROTECTED FROM CONSTRUCTION ACTIVITIES. THE NATURAL DRAINAGE PATHS WILL BE MAINTAINED THROUGHOUT CONSTRUCTION.

PCSM LONG TERM OPERATIONS AND MAINTENANCE REQUIREMENTS:

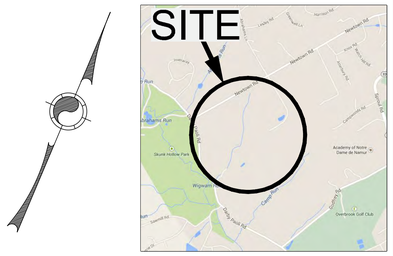
UNTIL THE PERMITTEE OR CO-PERMITTEE HAS RECEIVED WRITTEN APPROVAL OF A NOTICE OF TERMINATION, THE PERMITTEE OR CO-PERMITTEE WILL REMAIN RESPONSIBLE FOR COMPLIANCE WITH THE PERMIT TERMS AND CONDITIONS INCLUDING LONG-TERM OPERATION AND MAINTENANCE OF ALL PCSM BMPs ON THE PROJECT SITE AND IS RESPONSIBLE FOR VIOLATIONS OCCURRING ON THE PROJECT SITE.

THE PERMITTEE OR CO-PERMITTEE SHALL BE RESPONSIBLE FOR LONG-TERM OPERATION AND MAINTENANCE OF PCSM BMPs UNLESS A DIFFERENT PERSON IS IDENTIFIED IN THE NOTICE OF TERMINATION AND HAS AGREED TO LONG-TERM OPERATION AND MAINTENANCE OF PCSM BMPs.

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 RECORDED INSTRUMENT MUST IDENTIFY THE PCSM BMP, PROVIDE FOR NECESSARY ACCESS RELATED TO LONG-TERM OPERATION AND MAINTENANCE FOR PCSM BMPs AND PROVIDE NOTICE THAT THE RESPONSIBILITY FOR LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMP IS A COVENANT THAT RUNS WITH THE LAND THAT IS BINDING UPON AND ENFORCEABLE BY SUBSEQUENT GRANTEES, AND PROVIDE PROOF OF FILING WITH THE NOTICE OF TERMINATION UNDER 102.7(b)(5) RELATING TO PERMIT TERMINATION.

THE PERSON RESPONSIBLE FOR PERFORMING LONG-TERM OPERATION AND MAINTENANCE MAY ENTER INTO AN AGREEMENT WITH ANOTHER PERSON INCLUDING A 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 THEREOF TO THE DEPARTMENT.

A PERMITTEE OR CO-PERMITTEE THAT FAILS TO TRANSFER LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMP OR OTHERWISE FAILS TO COMPLY WITH THIS REQUIREMENT SHALL REMAIN JOINTLY AND SEPARATELY RESPONSIBLE WITH THE LANDOWNER FOR LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMPs LOCATED ON THE PROPERTY.



LOCATION MAP
SCALE: 1" = 2,000'

NOTES:

1) THE STORMWATER MANAGEMENT FACILITIES WERE DESIGNED TO CONTROL THE INCREASE IN RUNOFF GENERATED BY THE NEW IMPROVEMENTS IN ACCORDANCE WITH RADNOR TOWNSHIP REGULATIONS.

2) THE RESPONSIBILITY OF THE CONTINUED MAINTENANCE AND OPERATION OF THE STORMWATER MANAGEMENT SYSTEM AND OTHER FACILITIES SHALL BE THE OBLIGATION OF THE PROPERTY OWNER.

3) THE TOWNSHIP ENGINEER'S OFFICE SHALL BE NOTIFIED 48 HOURS PRIOR TO THE CONSTRUCTION OF THE SEEPAGE BEDS AND RAIN GARDENS AND PRIOR TO THE START OF EARTHMOVING ACTIVITIES.

4) CLEANOUTS SHALL BE PLACED AT ALL GRADE CHANGES OR CHANGES IN ALIGNMENT OF THE RAIN WATER CONDUCTORS. RAIN WATER CONDUCTORS ARE TO COLLECT ALL ROOF RUNOFF AND CONVEY IT TO THE STORMWATER MANAGEMENT SYSTEM.

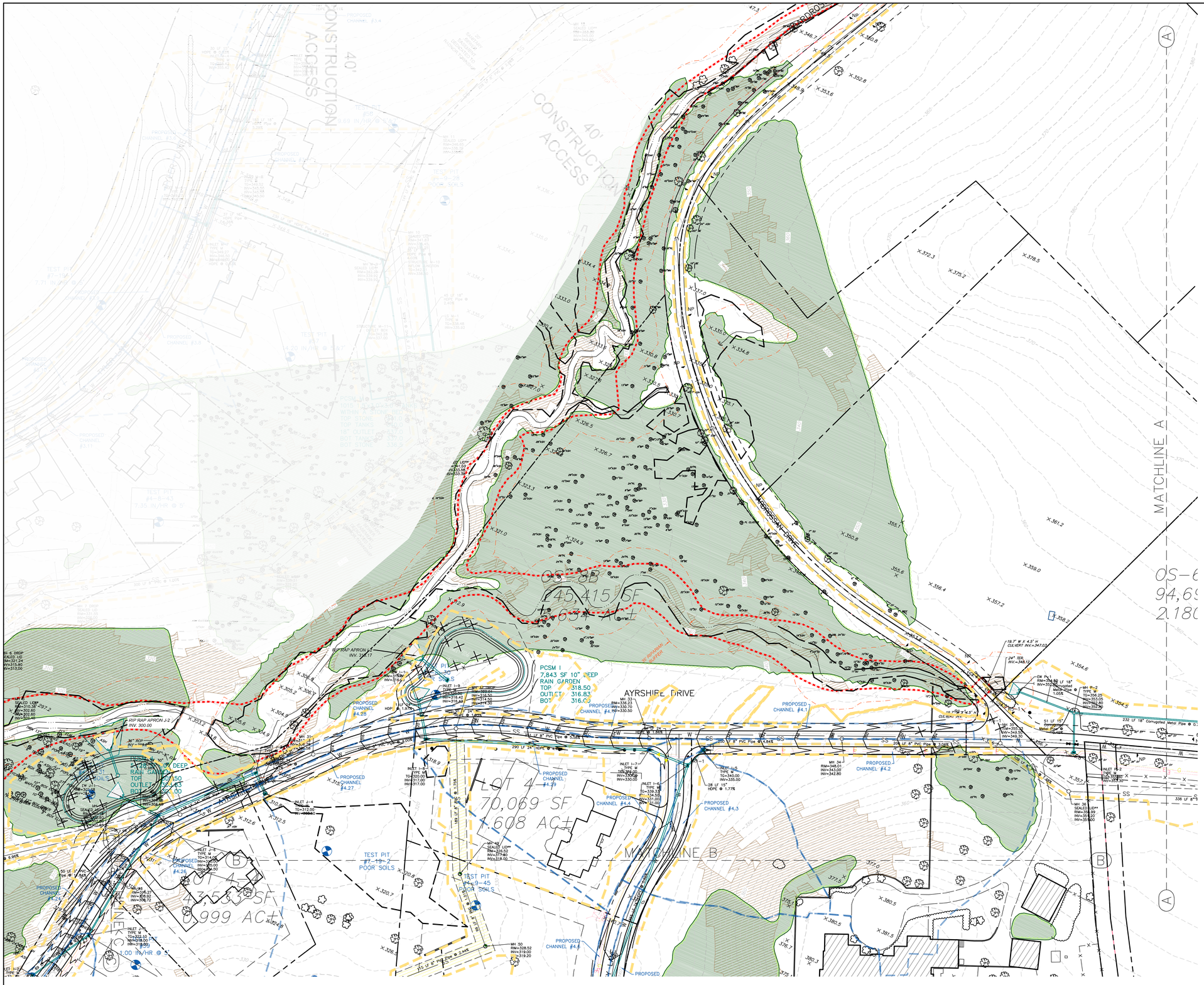
5) THE PERMITTEE SHALL PROVIDE ENGINEERING CONSTRUCTION OVERSIGHT FOR THE PROPOSED STORMWATER BMPS. ADDITIONAL SOIL TESTING MAY BE REQUIRED PRIOR TO THE INSTALLATION OF INFILTRATION BMPS TO ENSURE PROPER LOCATION AND FUNCTION. A LICENSED PROFESSIONAL ENGINEER KNOWLEDGEABLE IN THE DESIGN AND CONSTRUCTION OF STORMWATER BMPS, PREFERABLY THE DESIGN ENGINEER, SHALL CONDUCT THE OVERSIGHT.

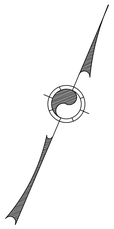
6) UPON PERMANENT STABILIZATION OF THE EARTH DISTURBANCE ACTIVITY UNDER 102.22(a)(2) (RELATING TO PERMANENT STABILIZATION), AND INSTALLATION OF BMPs IN ACCORDANCE WITH AN APPROVED PLAN PREPARED AND IMPLEMENTED IN ACCORDANCE WITH 102.4 AND 102.8 (RELATING TO EROSION AND SEDIMENT CONTROL REQUIREMENTS; AND PCSM REQUIREMENTS), THE PERMITTEE OR CO-PERMITTEE SHALL SUBMIT A NOTICE OF TERMINATION TO THE DEPARTMENT OR CONSERVATION DISTRICT.

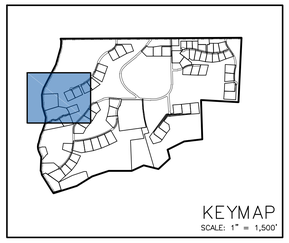
THE NOTICE OF TERMINATION MUST INCLUDE:
(1) THE FACILITY NAME, ADDRESS AND LOCATION
(2) THE OPERATOR NAME AND ADDRESS
(3) THE PERMIT NUMBER
(4) THE REASON FOR PERMIT TERMINATION
(5) IDENTIFICATION OF THE PERSONS WHO HAVE AGREED TO AND WILL BE RESPONSIBLE FOR LONG-TERM OPERATION AND MAINTENANCE OF THE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

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

**PC







SYMBOL LEGEND

IPF	IRON PIN FOUND
CMF	CONCRETE MONUMENT FOUND
MMF	MARBLE MONUMENT FOUND
AC	EXISTING AIR CONDITIONER
GV	EXISTING GAS VALVE
GM	EXISTING GAS METER
EM	EXISTING ELECTRIC METER
CO	EXISTING CLEANOUT
RGH	ROOF OVERHANG
	EXISTING TREE
UP	EXISTING UTILITY POLE
×100.00	EXISTING SPOT ELEVATION
×DS 100.00	EXISTING DOOR SILL ELEVATION
	SOIL PERC TEST LOCATION
	PROPOSED TEST PIT LOCATION
	PROPOSED TYPE 'M' INLET
	PROPOSED LOT
	PROPOSED OPEN SPACE LOT
	PROPOSED NON-RESIDENTIALLY APPROVED LOT
	PROPOSED FIRE HYDRANT
	PROPOSED STORMWATER MANAGEMENT SYSTEM
	PROPOSED SIGN

LINETYPE LEGEND

	EXISTING PROPERTY LINE
	EXISTING RIGHT OF WAY
X	EXISTING FENCE
	EXISTING EASEMENT
	EXISTING CALCULATED FLOODPLAIN
	EXISTING FEMA FLOODPLAIN
	EXISTING RIPARIAN BUFFER
	EXISTING STREAM
	EXISTING SOILS
	EXISTING WETLAND
	EXISTING TREE LINE
	EXISTING WOODED AREAS
378	EXISTING 2' CONTOUR
380	EXISTING 10' CONTOUR
E	EXISTING ELECTRIC LINE
G	EXISTING GAS LINE
W	EXISTING WATER LINE
SS	EXISTING SANITARY LINE
ST	EXISTING STORM PIPES
	EXISTING SLOPES 20% AND GREATER
	IMPERVIOUS TO BE REMOVED
	PROPOSED PROPERTY LINE
	PROPOSED RIGHT OF WAY
	PROPOSED BUILDING SETBACK
	PROPOSED EASEMENT
	PROPOSED CENTERLINE
	PROPOSED BUFFER
	PROPOSED OPEN SPACE
378	PROPOSED GRADING
W	PROPOSED WATER LINE
SS	PROPOSED SANITARY LINE
	PROPOSED STORM PIPES
	NPDES PERMIT BOUNDARY
	LIMIT OF DISTURBANCE
	PCSM DRAINAGE AREA BOUNDARY
	VEGETATED SWALE DRAINAGE AREA
	PHASE 1 BOUNDARY

NOTE:
A GRADING PERMIT PLAN SHOWING GRADING, STORMWATER MANAGEMENT AND EROSION AND SEDIMENTATION CONTROL SHALL BE SUBMITTED TO AND APPROVED BY THE TOWNSHIP PRIOR TO THE ISSUANCE OF ANY BUILDING PERMITS.

50 0 25 50 100 200
1 INCH = 50 FT.

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

APPLICANT DATE

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

DAVID R. FIORELLO, P.E. DATE

Serial Number: 2014-203-0820
CALL BEFORE YOU DIG!
PROVIDE 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS NOTICE FOR DESIGN PHASE.
Pennsylvania One Call System, Inc.
1-800-242-1776

REGISTERED PROFESSIONAL ENGINEER
DAVID R. FIORELLO
PROJECT MANAGER
PE027478E

MOMENEE, INC.
a Karins Company
ENGINEERING | PLANNING | SURVEYING
924 COUNTY LINE ROAD - BRYN MAWR - PA - 19010

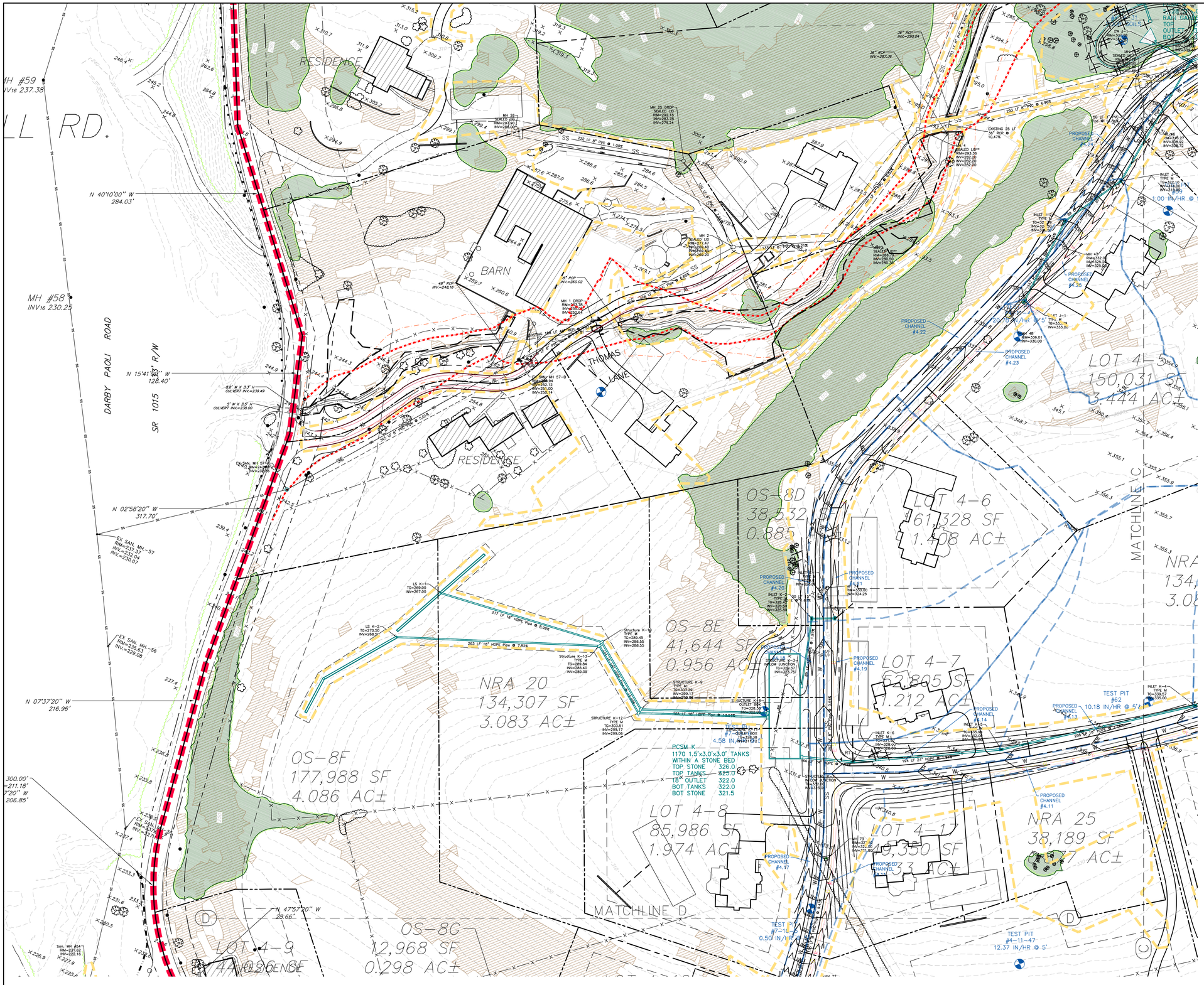
PHASE IV PCSM PLAN
PHASE IV LOT LINE CHANGE PLAN
THE ARDROSSAN FARM
RADNOR TOWNSHIP · DELAWARE COUNTY · PENNSYLVANIA

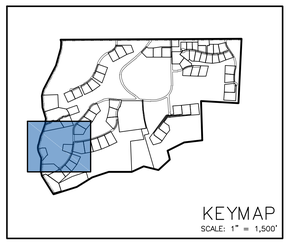
APPLICANT
ESIII LP
107 TWADDELL MILL ROAD
WILMINGTON, DE 19807

DWG.-CALL:	203-0820		
DRAWN BY:	TED	CHECKED BY:	DRF

REV.	DATE	COMMENTS

FILE NO.: 06-012
SHEET 11 OF 33
DATE: NOVEMBER 4, 2016
SCALE: 1" = 50'





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

SOILS INFORMATION

SYMBOL	NAME	%SLOPE	HYDROLOGIC GROUP	DEPTH TO SH WATER	DEPTH TO BEDROCK
BrE	BRANDYWINE LOAM	25 TO 40 PERCENT SLOPES	A	6.6+	5.83
Ch	CHEWACLA SILT LOAM	NOT RATED	C	1.50	6.6+
GeA	GLENELG CHANNERY SILT LOAM	0 TO 3 PERCENT SLOPES	B	6.6+	4.98
GeB	GLENELG CHANNERY SILT LOAM	3 TO 8 PERCENT SLOPES	B	6.6+	4.16
GeB2	GLENELG CHANNERY SILT LOAM	3 TO 8 PERCENT SLOPES	B	6.6+	6.6+
GeC	GLENELG CHANNERY SILT LOAM	8 TO 15 PERCENT SLOPES	B	6.6+	4.16
GeC2	GLENELG CHANNERY SILT LOAM	8 TO 15 PERCENT SLOPES	B	6.6+	6.6+
GeC3	GLENELG CHANNERY SILT LOAM	8 TO 15 PERCENT SLOPES	B	6.6+	4.98
GeD	GLENELG CHANNERY SILT LOAM	15 TO 25 PERCENT SLOPES	B	6.6+	4.16
GeD2	GLENELG CHANNERY SILT LOAM	15 TO 25 PERCENT SLOPES	B	6.6+	6.6+
GeD3	GLENELG CHANNERY SILT LOAM	15 TO 25 PERCENT SLOPES	B	6.6+	4.98
GeE	GLENELG CHANNERY SILT LOAM	25 TO 35 PERCENT SLOPES	B	6.6+	4.98
GnB	GLENVILLE SILT LOAM	3 TO 8 PERCENT SLOPES	C	1.73	1.57
GnB2	GLENVILLE SILT LOAM	3 TO 8 PERCENT SLOPES	C	1.73	6.62
GsB	GLENVILLE VERY STONY SILT LOAM	0 TO 8 PERCENT SLOPES	C	1.73	2.42
Me	MADE LAND SCHIST AND GNEISS MATERIALS	NOT RATED	B	4.98	5.41
MgB2	MANOR LOAM	3 TO 8 PERCENT SLOPES	B	6.6+	7.11
MgD2	MANOR LOAM	15 TO 25 PERCENT SLOPES	B	6.6+	4.49
MkF	MANOR SOILS	35 TO 60 PERCENT SLOPES	B	6.6+	7.11
We	WEHADKEE SILT LOAM	NOT RATED	D	0.26	6.6+
WoA	WORSHAM SILT LOAM	0 TO 3 PERCENT SLOPES	D	0.26	6.6+
WoB	WORSHAM SILT LOAM	3 TO 8 PERCENT SLOPES	D	0.26	6.6+

SYMBOL LEGEND

- IPF — IRON PIN FOUND
- CMF — CONCRETE MONUMENT FOUND
- MMF — MARBLE MONUMENT FOUND
- AC — EXISTING AIR CONDITIONER
- GV — EXISTING GAS VALVE
- GM — EXISTING GAS METER
- EM — EXISTING ELECTRIC METER
- CO — EXISTING CLEANOUT
- ROH — ROOF OVERHANG
- TREE — EXISTING TREE
- UP — EXISTING UTILITY POLE
- ×100.00 — EXISTING SPOT ELEVATION
- ×DS 100.00 — EXISTING DOOR SILL ELEVATION
- SOIL PERC TEST LOCATION
- TP — PROPOSED TEST PIT LOCATION
- PROPOSED TYPE 'M' INLET
- PROPOSED LOT
- OS — PROPOSED OPEN SPACE LOT
- NR — PROPOSED NON-RESIDENTIALLY APPROVED LOT
- PROPOSED FIRE HYDRANT
- PROPOSED STORMWATER MANAGEMENT SYSTEM
- PROPOSED SIGN

LINETYPE LEGEND

- EXISTING PROPERTY LINE
- EXISTING RIGHT OF WAY
- EXISTING FENCE
- EXISTING EASEMENT
- EXISTING CALCULATED FLOODPLAIN
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REGISTERED PROFESSIONAL ENGINEER
DAVID R. FIORELLO
No. PE-036047-E
COMMONWEALTH OF PENNSYLVANIA

MOMENEE, INC.
a Karins Company
ENGINEERING | PLANNING | SURVEYING
924 COUNTY LINE ROAD - BRYN MWAR - PA - 19010

PHASE IV PCSM PLAN
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ONE-CALL:	203-0820	
DRAWN BY:	TED	
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REV.	DATE	COMMENTS

FILE NO.: 06-012
SHEET 12 OF 33
DATE: NOVEMBER 4, 2016
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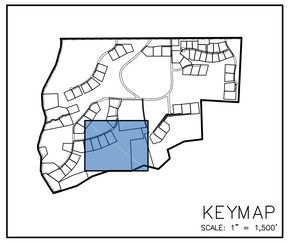

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BrE	BRANDYWINE LOAM	25 TO 40 PERCENT SLOPES	A	6.6+	5.83
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GeA	GLENELG CHANNERY SILT LOAM	0 TO 3 PERCENT SLOPES	B	6.6+	4.98
GeB	GLENELG CHANNERY SILT LOAM	3 TO 8 PERCENT SLOPES	B	6.6+	4.16
GeB2	GLENELG CHANNERY SILT LOAM	3 TO 8 PERCENT SLOPES	B	6.6+	6.6+
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SYMBOL LEGEND

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- CMF — CONCRETE MONUMENT FOUND
- MMF — MARBLE MONUMENT FOUND
- AC — EXISTING AIR CONDITIONER
- GV — EXISTING GAS VALVE
- GM — EXISTING GAS METER
- EM — EXISTING ELECTRIC METER
- CO — EXISTING CLEANOUT
- ROH — ROOF OVERHANG
- EXISTING TREE
- UP — EXISTING UTILITY POLE
- 100.00 — EXISTING SPOT ELEVATION
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PROFILE/SEAL

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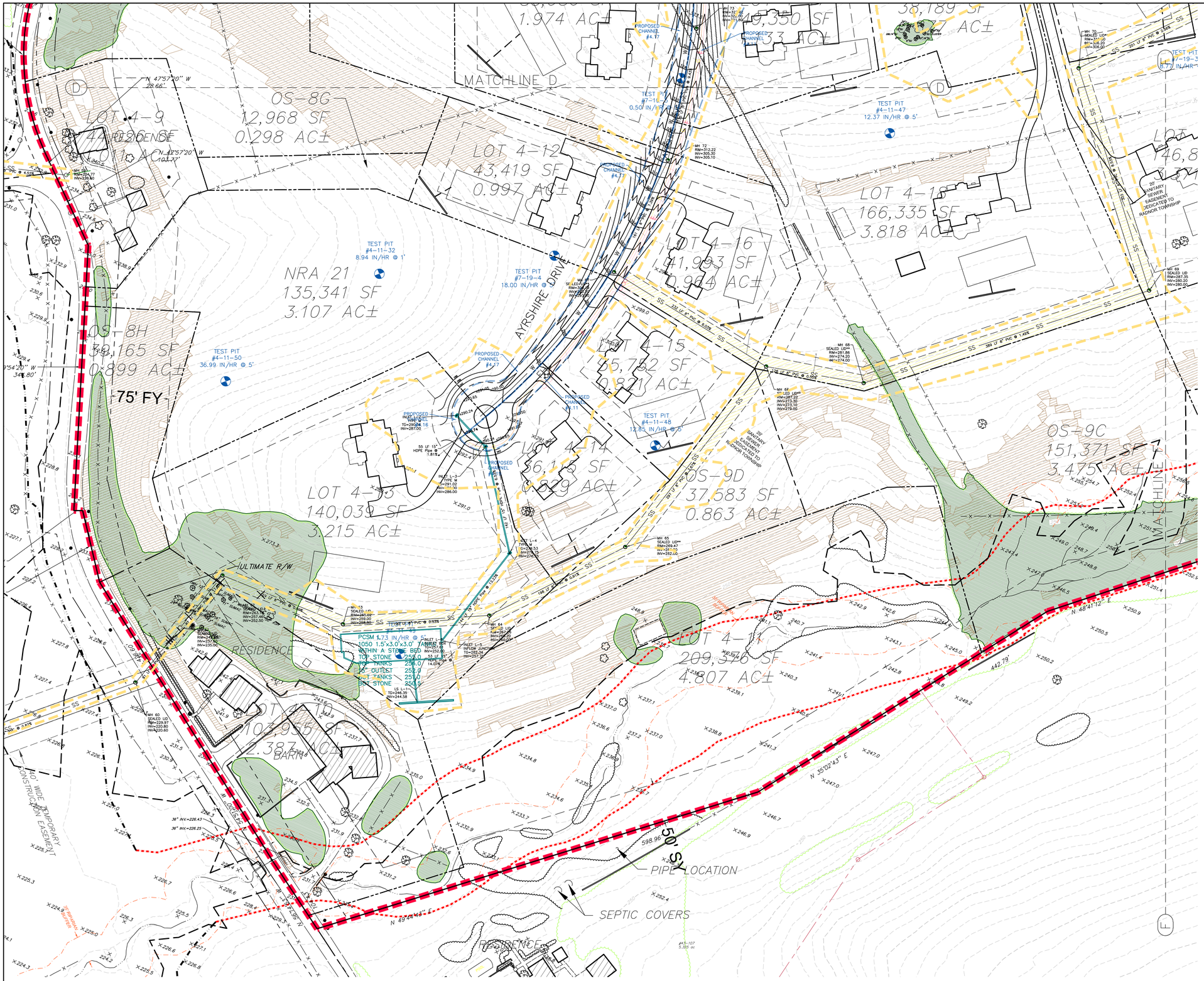

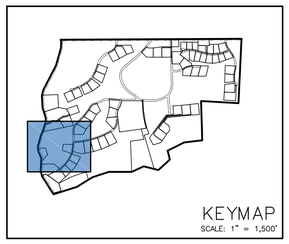

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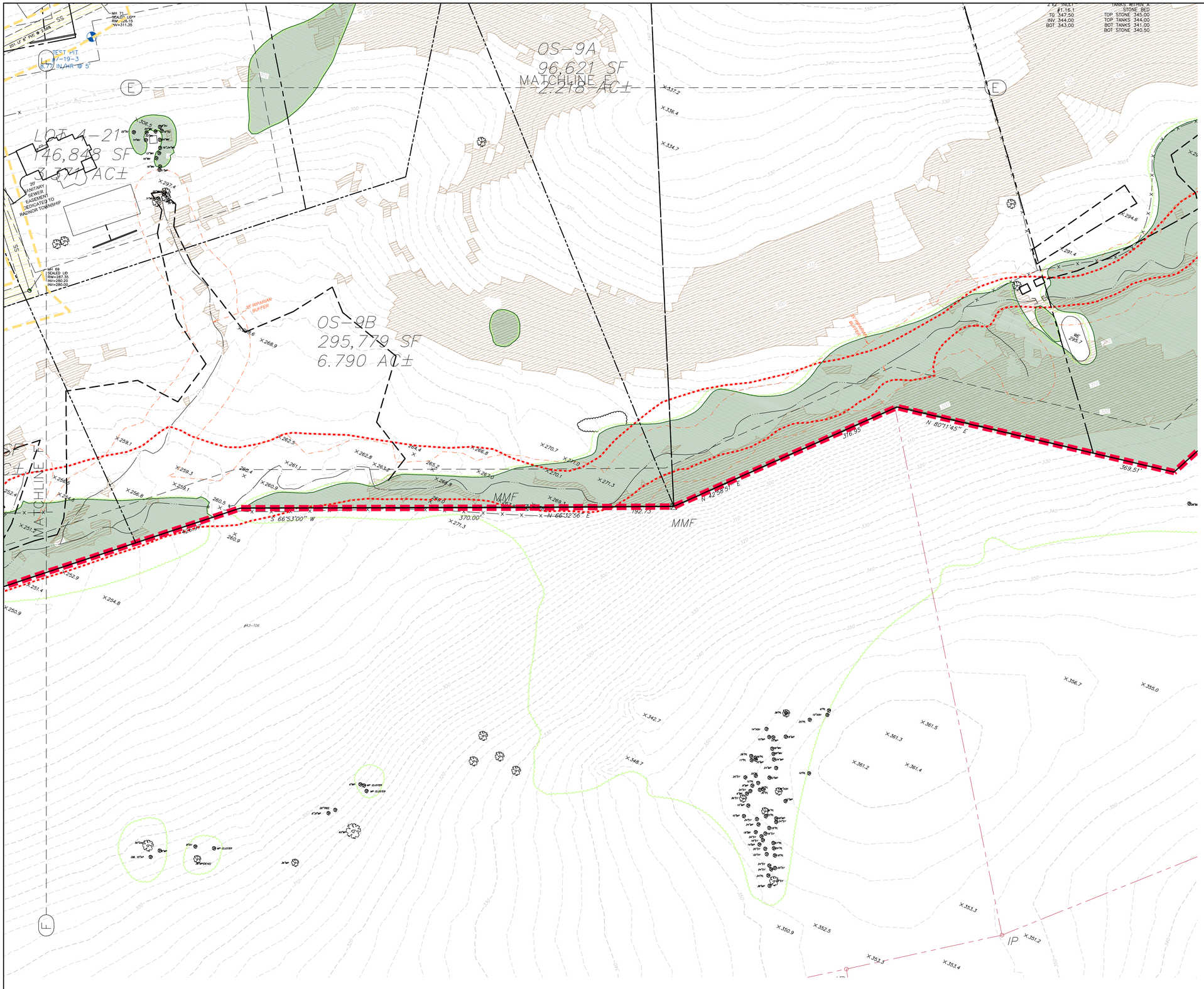

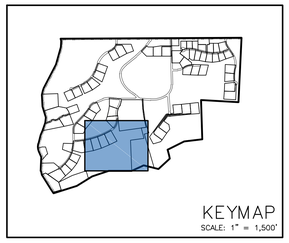

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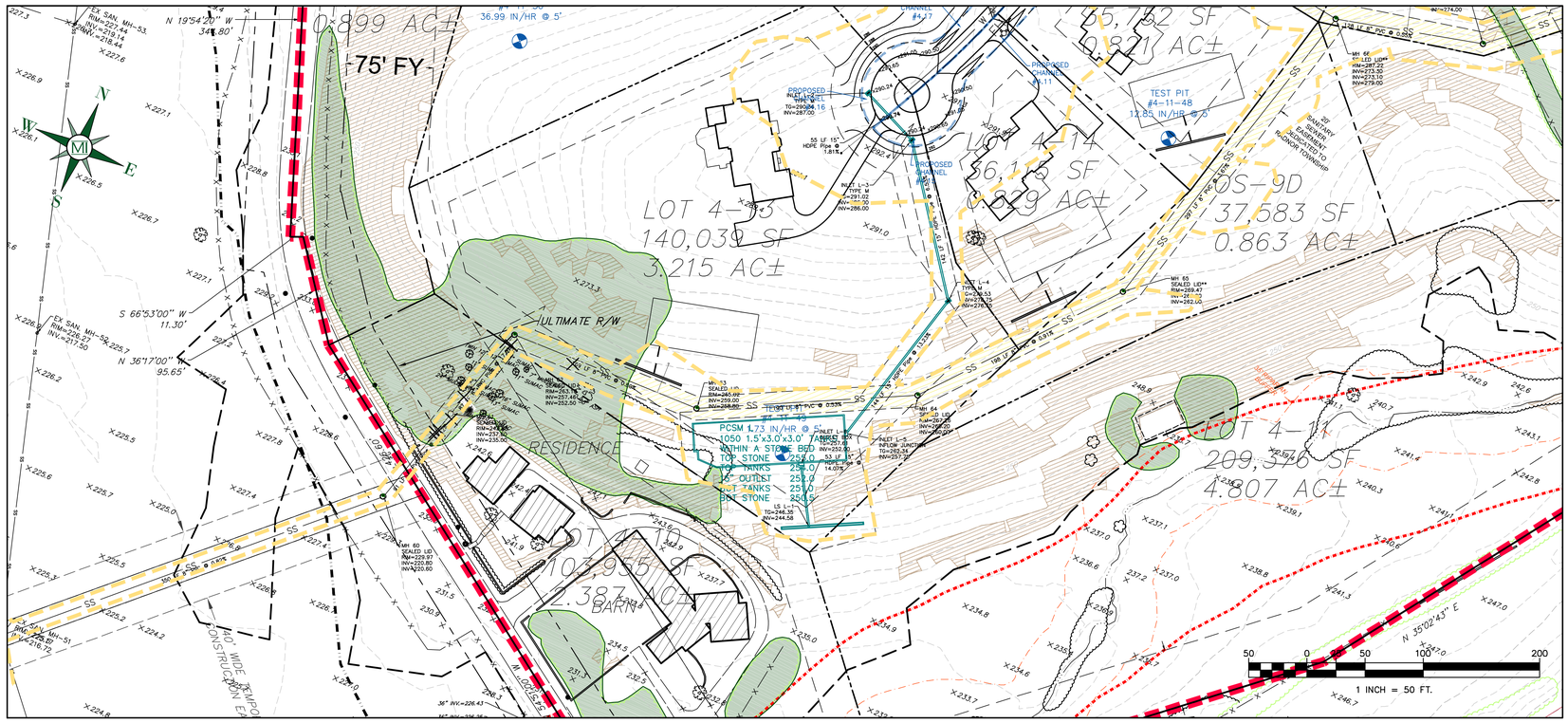
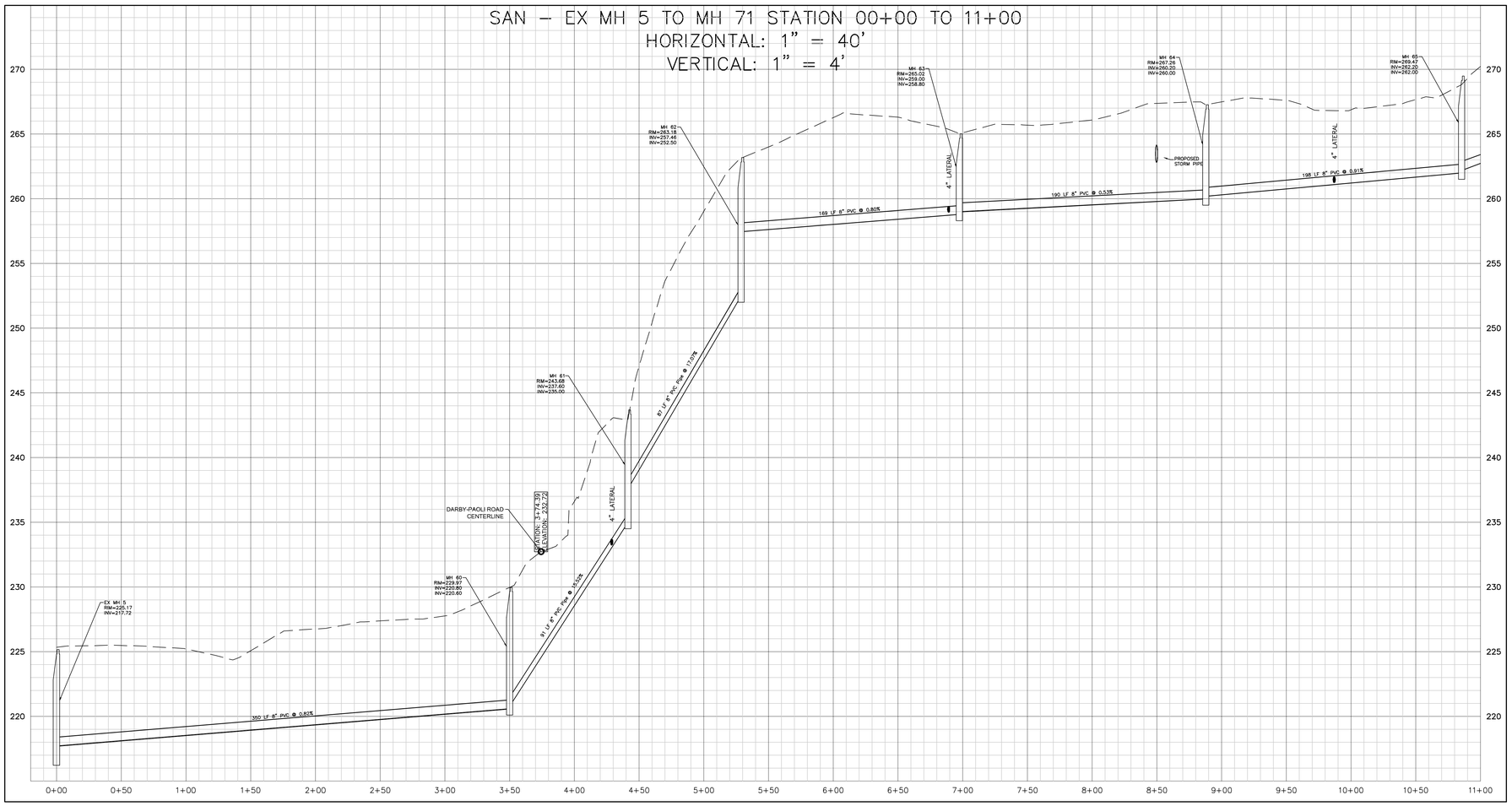




Serial Number: 2014-203-0820

CALL BEFORE YOU DIG!
PENNSYLVANIA 1-800-242-1776
PROVIDE 3 WORKING DAYS NOTICE PRIOR TO CONSTRUCTION PHASE AND 10 WORKING DAYS NOTICE PRIOR TO REMOVAL OF TRAFFIC CONTROL DEVICES.
Pennsylvania One Call System, Inc.
1-800-242-1776

REGISTERED PROFESSIONAL LAND SURVEYOR
DAVID R. FIORELLO
PROFESSIONAL ENGINEER
PE052478E

MOMENEE, INC.
a Karins Company
ENGINEERING | PLANNING | SURVEYING
924 COUNTY LINE ROAD - BRYN MAWR - PA - 19010

SANITARY PLAN AND PROFILE

PHASE IV LOT LINE CHANGE PLAN
THE ARDROSSAN FARM
RADNOR TOWNSHIP - DELAWARE COUNTY - PENNSYLVANIA

APPLICANT
ESIII LP
107 TWADDELL MILL ROAD
WILMINGTON, DE 19807

ONE-CALL:	203-0820
DRAWN BY:	FED
CHECKED BY:	DRF

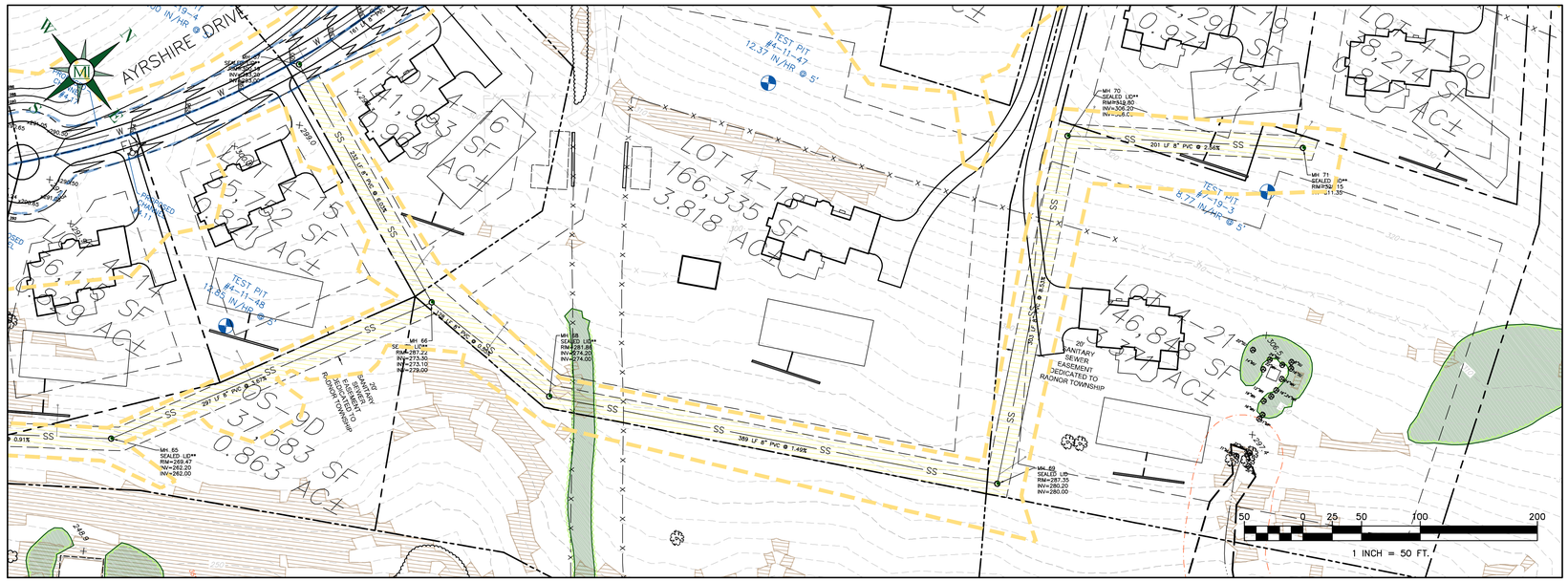
REV.	DATE	COMMENTS

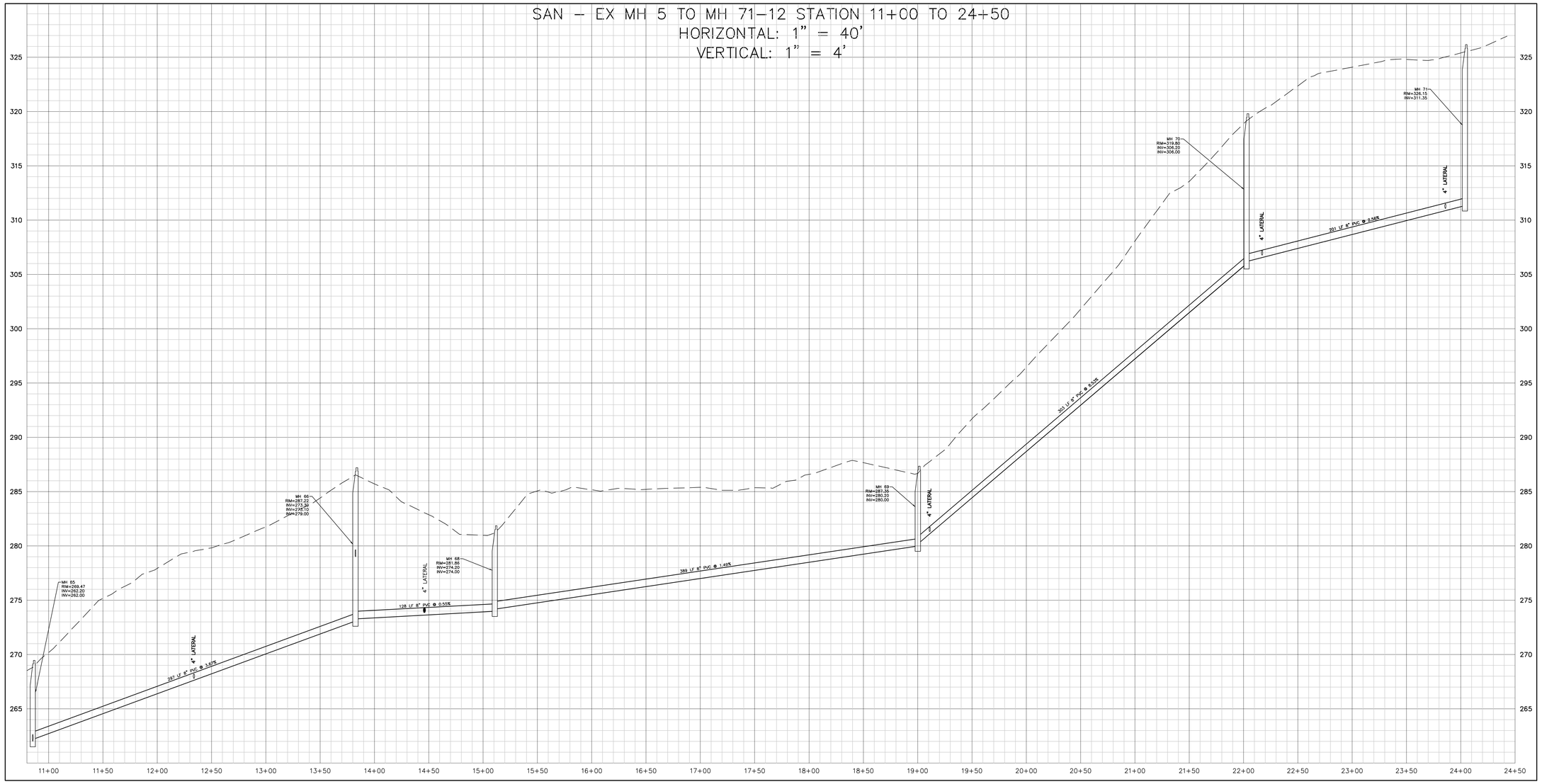
FILE NO.: 06-012

SHEET 16 OF 33

DATE: NOVEMBER 4, 2016

SCALE: 1" = 50'





Serial Number: 2014-203-0820

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

REGISTERED PROFESSIONAL ENGINEER
DAVID R. FIORELLO
No. PE037478-E
COMMONWEALTH OF PENNSYLVANIA

MOMENEE, INC.
a Karins Company
ENGINEERING | PLANNING | SURVEYING
924 COUNTY LINE ROAD - BRYN MWAR - PA - 19010

SANITARY PLAN AND PROFILE

PHASE IV LOT LINE CHANGE PLAN
THE ARDROSSAN FARM
RADNOR TOWNSHIP - DELAWARE COUNTY - PENNSYLVANIA

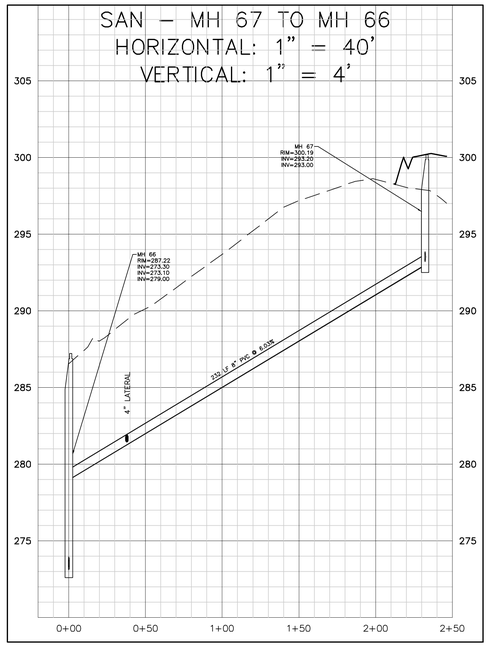
APPLICANT
ESII LP
107 TWADDELL MILL ROAD
WILMINGTON, DE 19807

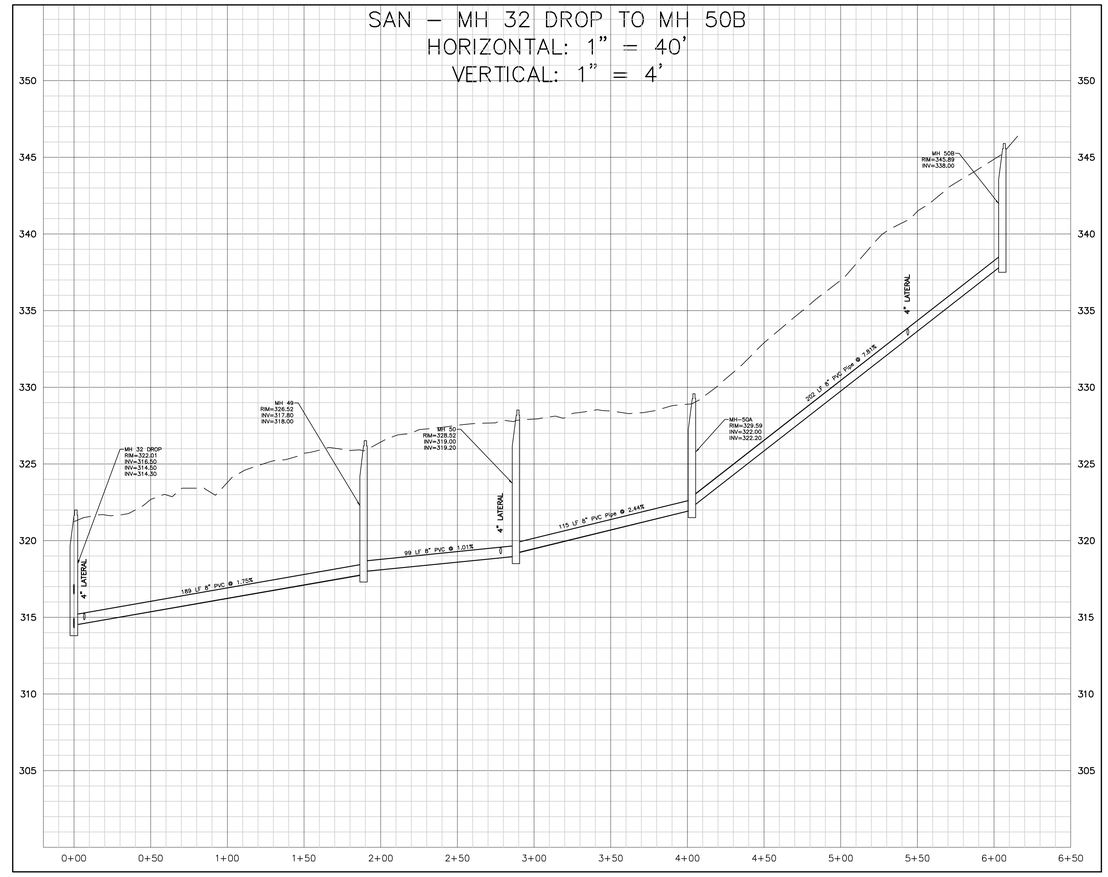
ONE-CALL:	203-0820	
DRAWN BY:	TED	
CHECKED BY:	DRF	

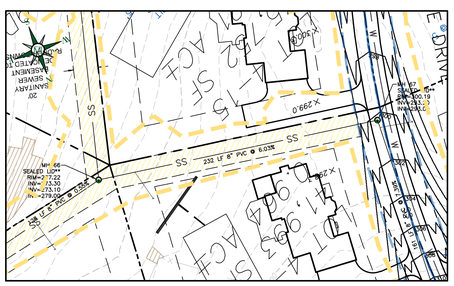
REV.	DATE	COMMENTS

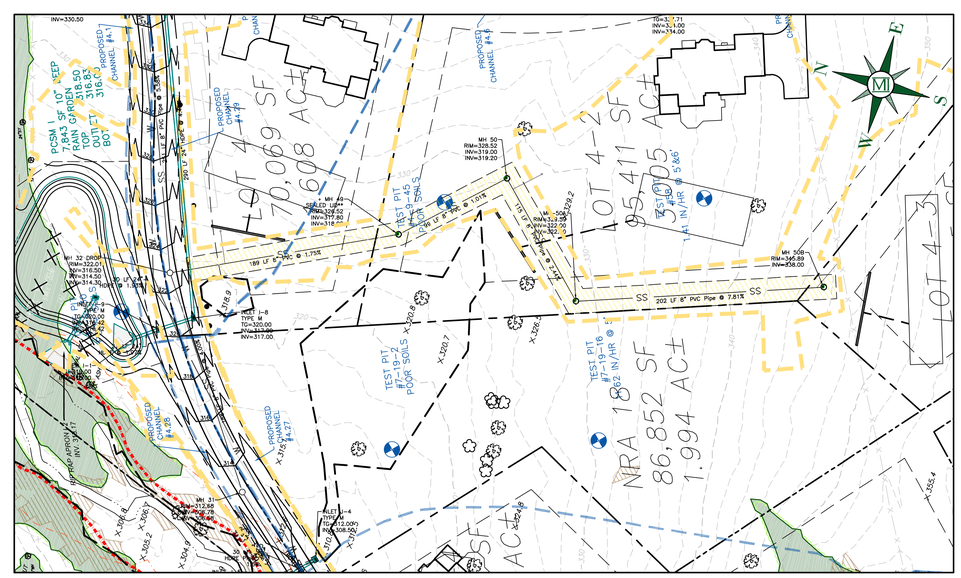
FILE NO.: 06-012

SHEET 17 OF 33
DATE: NOVEMBER 4, 2016
SCALE: 1" = 50'








LOT 4-2
70,069 SF
1.608 AC±
LOT 4-2
95,411 SF
2.190 AC±
NRA 18
86,852 SF
1.994 AC±
LOT 4-3
PCSM
7,843 SF 10' DEEP
RAIN GARDEN
INV IN 318.50
TOP OF BERM 319.50
OUT CT 316.0
BOT
PROPOSED CHANNEL #4.7
PROPOSED CHANNEL #4.8
PROPOSED CHANNEL #4.9
PROPOSED CHANNEL #4.28
PROPOSED CHANNEL #4.27
PROPOSED CHANNEL #4.29
PROPOSED APRON
TEST PIT #P-1 POOR SOILS
TEST PIT #P-2 POOR SOILS
TEST PIT #P-3 1.41 IN/HR @ 5.66
TEST PIT #P-9-16 1.62 IN/HR @ 5.
MH 50
RIM=328.52
INV=319.00
INV=319.20
MH 49
SEALED LID
RIM=328.52
INV=317.80
INV=318.00
MH 50A
RIM=329.59
INV=322.00
INV=322.50
MH 50B
RIM=345.89
INV=338.00
MH 32 DROP
RIM=322.01
INV=316.50
INV=314.50
INV=314.30
MH 31
RIM=312.88
INV=308.50
INLET I-8
TYPE M
TG=320.00
INV=317.00
INLET I-4
TYPE M
TG=312.09
INV=308.50
MH 66
SEALED LID
RIM=273.22
INV=273.30
INV=273.10
INV=279.00
MH 67
RIM=300.19
INV=293.20
INV=293.00
189 LF 8" PVC @ 1.75%
99 LF 8" PVC @ 1.01%
115 LF 8" PVC Pipe @ 2.44%
202 LF 8" PVC Pipe @ 7.81%
232 LF 8" PVC @ 6.03%
SS
INV=330.50
INV=311.71
INV=311.00
INV=314.00
X-305.4
X-306.8
X-306.7
X-308.2
X-309.8
X-310.2
X-312.8
X-313.2
X-314.8
X-315.2
X-316.8
X-317.2
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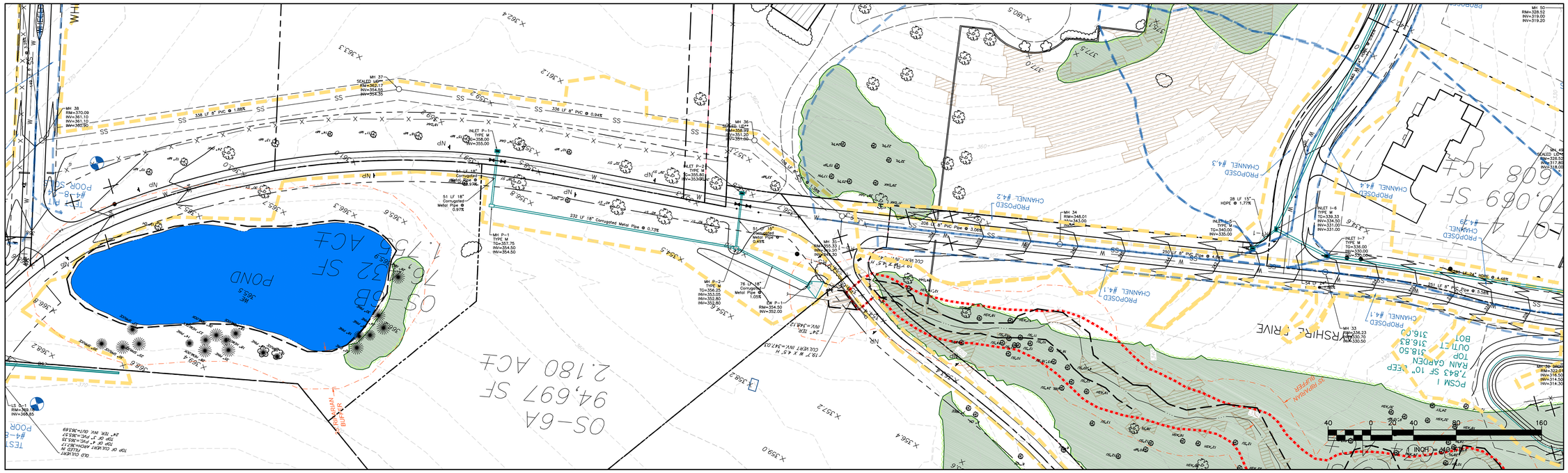
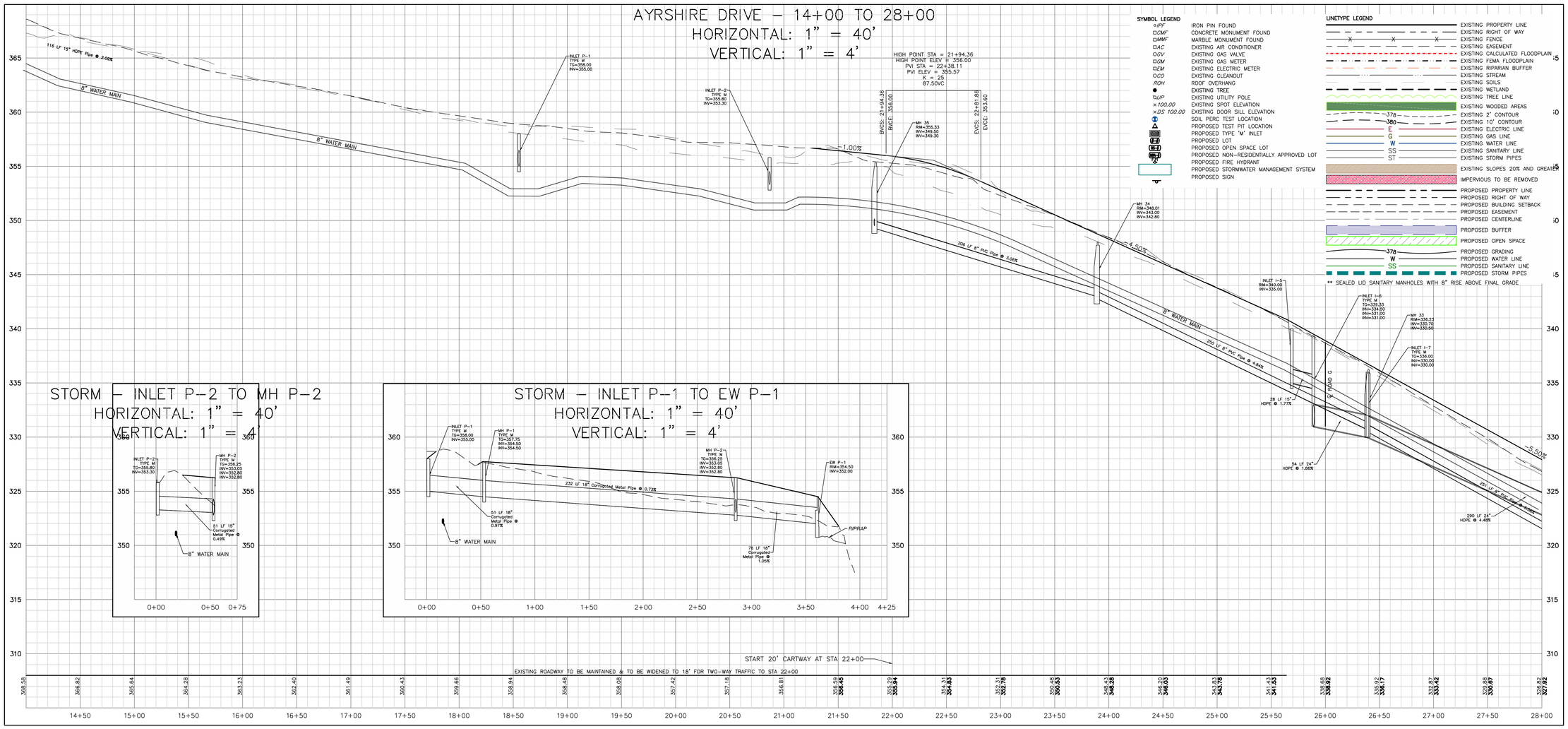
X-350.8
X-351.2



NOTE: ROADWAYS ARE DEVELOPED FOR A DESIGN SPEED OF 25 MPH



Serial Number: 2014-203-0820

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

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL LAND SURVEYOR DAVID R. FIORELLO PS-PROFESSIONAL PS047478E

MOMENEE, INC.
a Karins Company
ENGINEERING | PLANNING | SURVEYING
924 COUNTY LINE ROAD - BRYN MAWR - PA - 19010

ROADWAY PROFILE
PHASE IV LOT LINE CHANGE PLAN
THE ARDROSSAN FARM
RADNOR TOWNSHIP - DELAWARE COUNTY - PENNSYLVANIA

APPLICANT
ESIII LP
107 TWADDELL MILL ROAD
WILMINGTON, DE 19807

ONE-CALL:	203-0820
DRAWN BY:	FED
CHECKED BY:	DRF

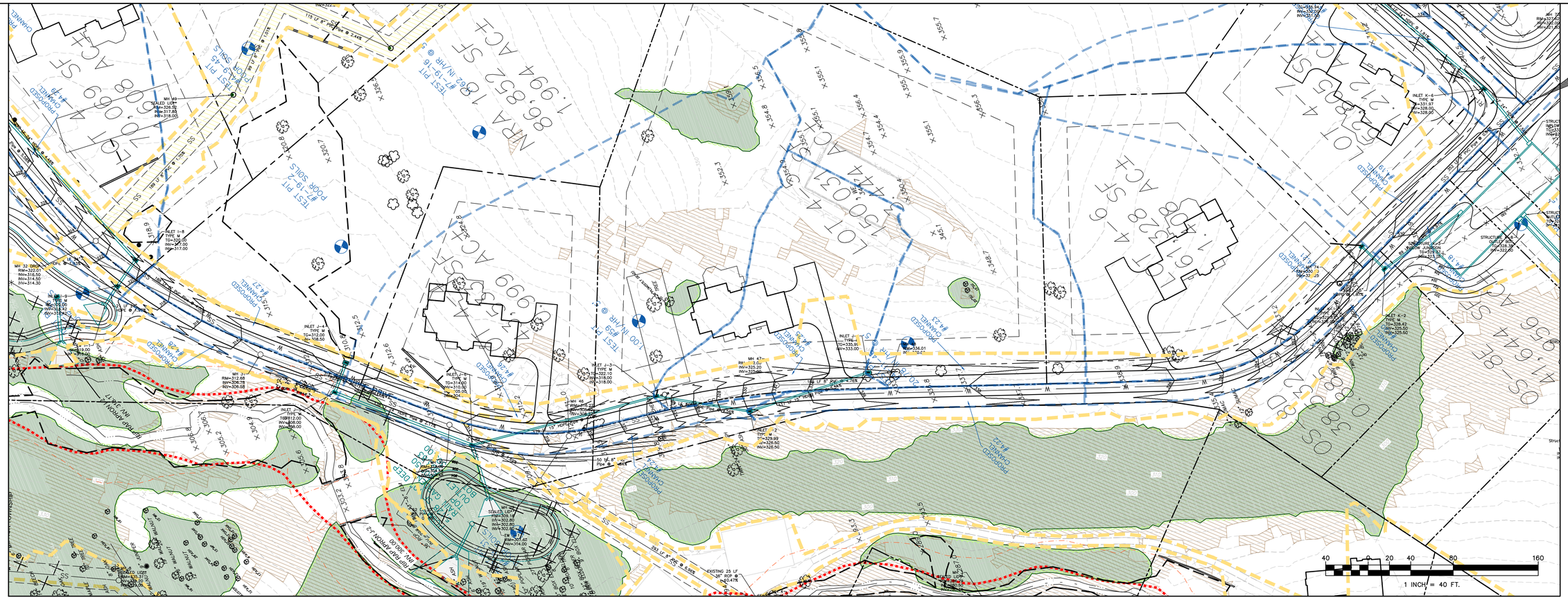
REV.	DATE	COMMENTS

FILE NO.: 06-012

SHEET 19 OF 33

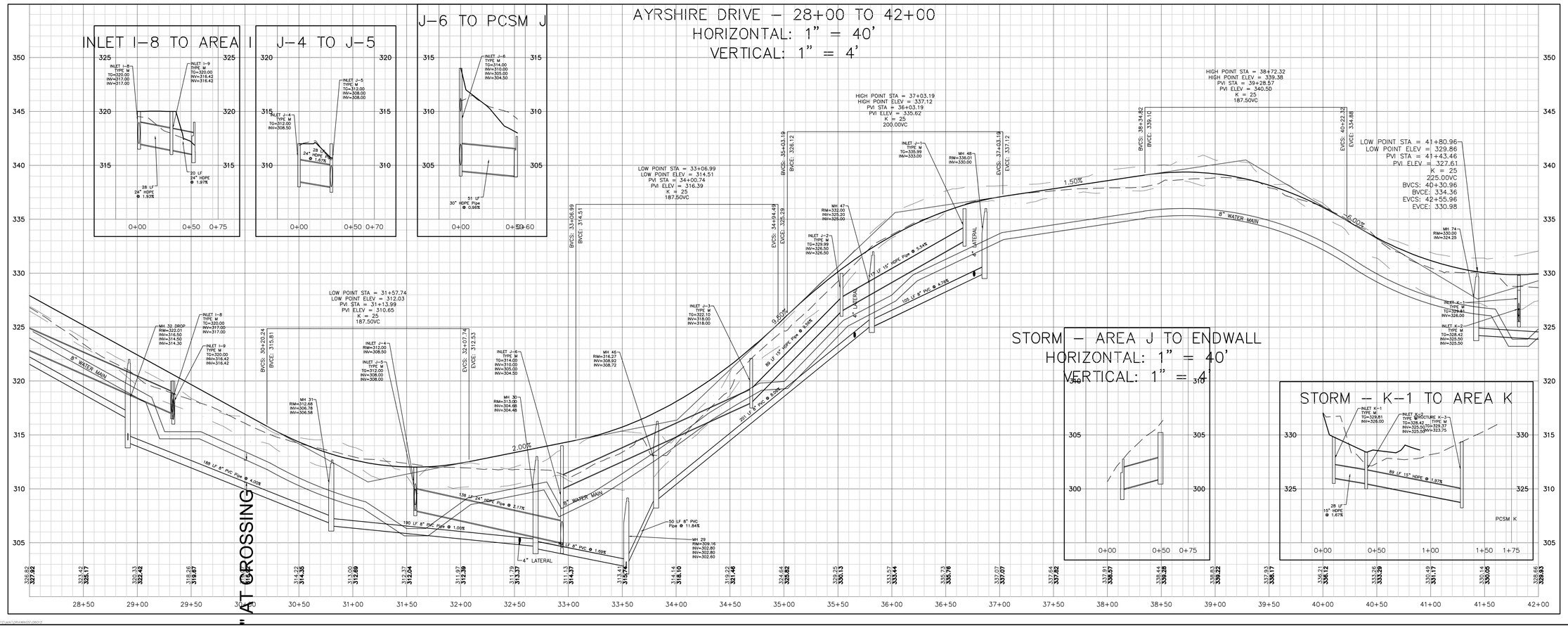
DATE: NOVEMBER 4, 2016

SCALE: 1" = 40'



NOTE: THERE SHALL BE NO PLANTINGS LOCATED IN SANITARY SEWER EASEMENTS

NOTE: ROADWAYS ARE DEVELOPED FOR A DESIGN SPEED OF 25 MPH



Serial Number: 2014-203-0820

CALL BEFORE YOU DIG!
NOTIFICATION OF INTENT TO EXCAVATE
3 WORKING DAYS NOTICE PRIOR TO CONSTRUCTION PHASE AND TO WORKING DAYS NOTICE PRIOR TO EXCAVATION PHASE
Pennsylvania One Call System, Inc.
1-800-242-1776

REGISTERED PROFESSIONAL ENGINEER
DAVID R. FIORELLO
No. PE037478E
COMMONWEALTH OF PENNSYLVANIA

MOMENEE, INC.
a Karins Company
ENGINEERING | PLANNING | SURVEYING
924 COUNTY LINE ROAD - BRYN MWAR - PA - 19010

ROADWAY PROFILE
PHASE IV LOT LINE CHANGE PLAN
THE ARDROSSAN FARM
RADNOR TOWNSHIP - DELAWARE COUNTY - PENNSYLVANIA
APPLICANT
ESIII LP
107 TWADDELL MILL ROAD
WILMINGTON, DE 19807

ONE-CALL:	203-0820	
DRAWN BY:	TED	
CHECKED BY:	DRF	

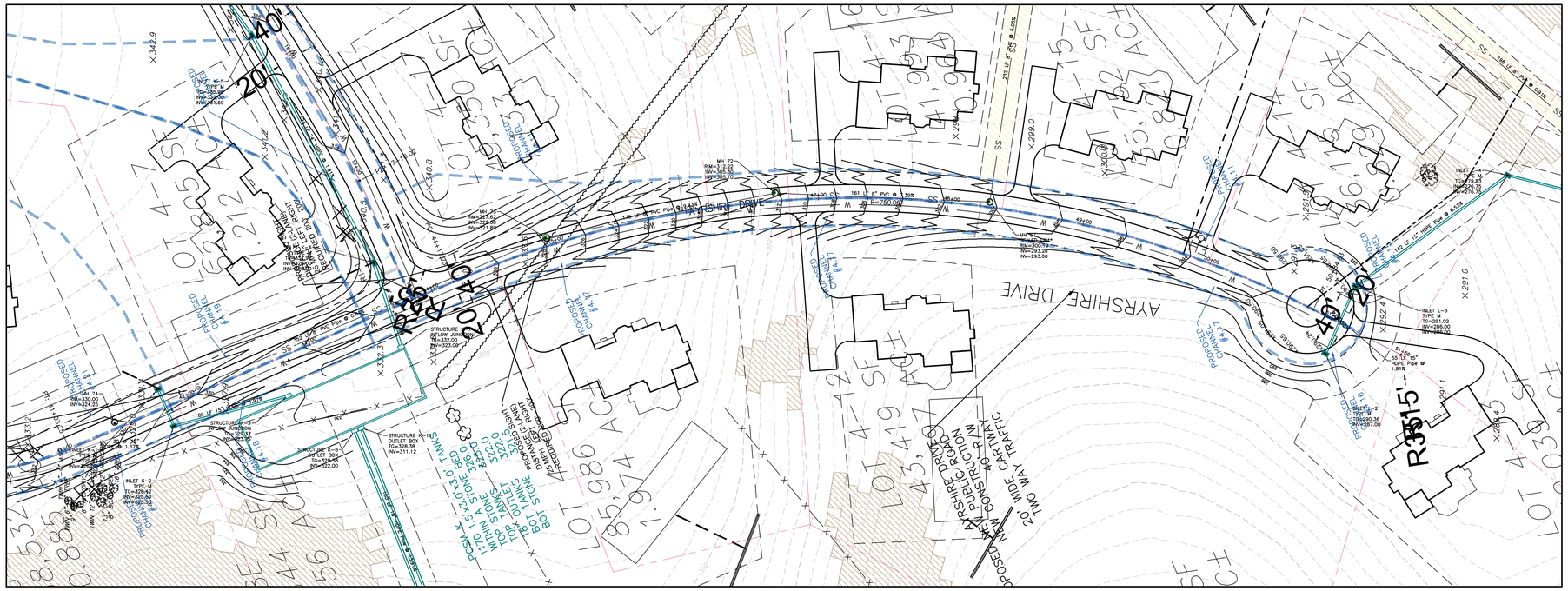
REV.	DATE	COMMENTS

FILE NO.: 06-012

SHEET 20 OF 33

DATE: NOVEMBER 4, 2016

SCALE: 1" = 40'



SYMBOL LEGEND

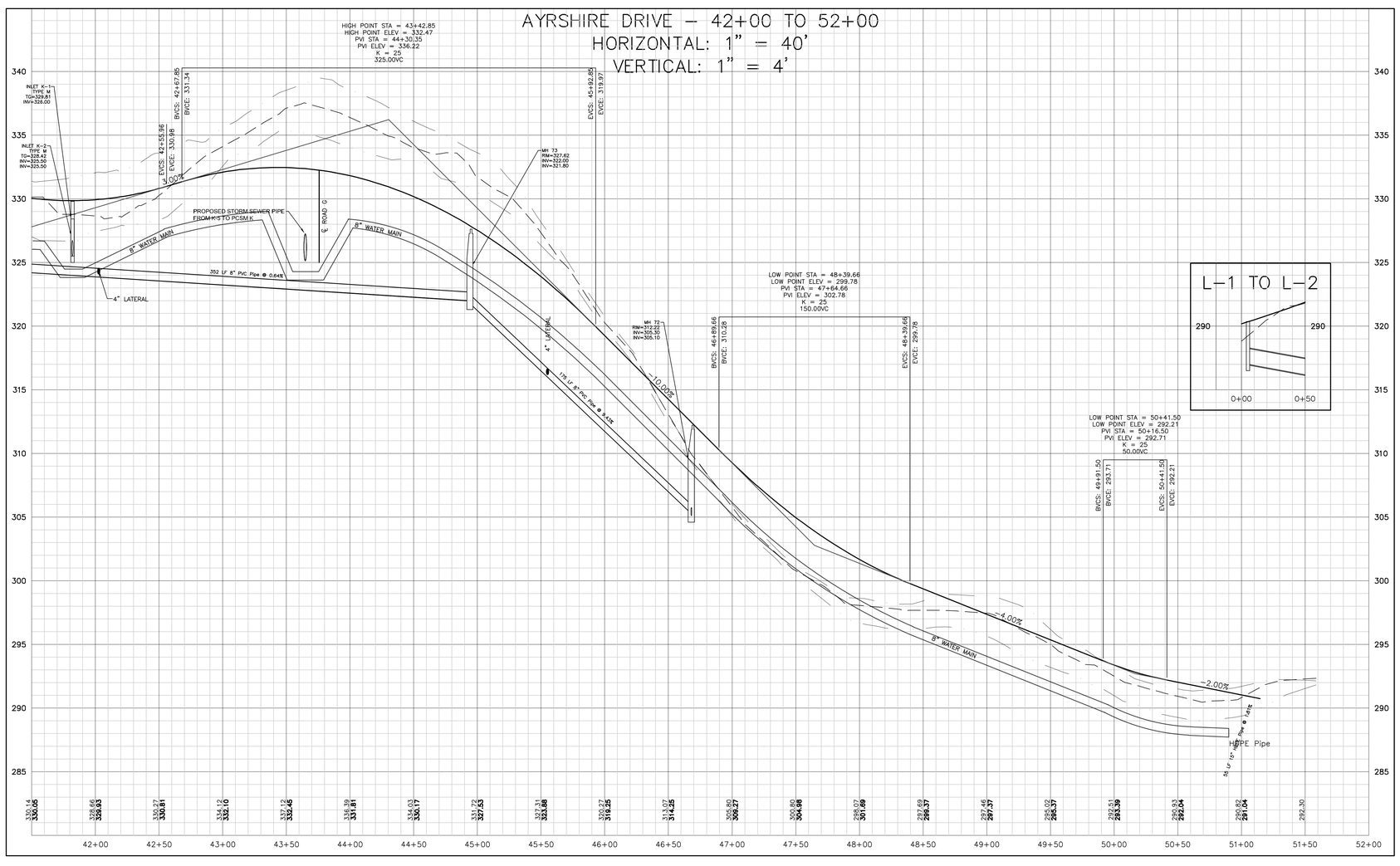
IRP	IRON PIN FOUND
CMF	CONCRETE MONUMENT FOUND
MMF	MARBLE MONUMENT FOUND
AC	EXISTING AIR CONDITIONER
GV	EXISTING GAS VALVE
GM	EXISTING GAS METER
EM	EXISTING ELECTRIC METER
CO	EXISTING CLEANOUT
RGH	ROOF OVERHANG
	EXISTING TREE
UP	EXISTING UTILITY POLE
×100.00	EXISTING SPOT ELEVATION
×DS 100.00	EXISTING DOOR SILL ELEVATION
	SOIL PERC TEST LOCATION
	PROPOSED TEST PIT LOCATION
	PROPOSED TYPE "M" INLET
	PROPOSED LOT
	PROPOSED OPEN SPACE LOT
	PROPOSED NON-RESIDENTIALLY APPROVED LOT
	PROPOSED FIRE HYDRANT
	PROPOSED STORMWATER MANAGEMENT SYSTEM
	PROPOSED SIGN

LINETYPE LEGEND

	EXISTING PROPERTY LINE
	EXISTING RIGHT OF WAY
	EXISTING FENCE
	EXISTING EASEMENT
	EXISTING CALCULATED FLOODPLAIN
	EXISTING FEMA FLOODPLAIN
	EXISTING RIPARIAN BUFFER
	EXISTING STREAM
	EXISTING SOILS
	EXISTING WETLAND
	EXISTING TREE LINE
	EXISTING WOODED AREAS
378	EXISTING 2' CONTOUR
380	EXISTING 10' CONTOUR
E	EXISTING ELECTRIC LINE
G	EXISTING GAS LINE
W	EXISTING WATER LINE
SS	EXISTING SANITARY LINE
ST	EXISTING STORM PIPES
	EXISTING SLOPES 20% AND GREATER
	IMPERVIOUS TO BE REMOVED
	PROPOSED PROPERTY LINE
	PROPOSED RIGHT OF WAY
	PROPOSED BUILDING SETBACK
	PROPOSED EASEMENT
	PROPOSED CENTERLINE
	PROPOSED BUFFER
	PROPOSED OPEN SPACE
378	PROPOSED GRADING
W	PROPOSED WATER LINE
SS	PROPOSED SANITARY LINE
	PROPOSED STORM PIPES

** SEALED LID SANITARY MANHOLES WITH 8" RISE ABOVE FINAL GRADE

NOTE: ROADWAYS ARE DEVELOPED FOR A DESIGN SPEED OF 25 MPH



1 INCH = 40 FT.

Serial Number: 2014-203-0820

CALL BEFORE YOU DIG!
PROVIDE 1 FULL BUSINESS DAY (MINIMUM 3 WORKING DAYS) NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS NOTICE FOR DESIGN PHASE.
Pennsylvania One Call System, Inc.
1-800-242-1776

REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF PENNSYLVANIA
DAVID R. FIORELLO
No. PE072478E

MOMENEE, INC.
a Karins Company
ENGINEERING | PLANNING | SURVEYING
924 COUNTY LINE ROAD - BRYN MWAR - PA - 19010

ROADWAY PROFILE
PHASE IV LOT LINE CHANGE PLAN
THE ARDROSSAN FARM
RADNOR TOWNSHIP - DELAWARE COUNTY - PENNSYLVANIA

APPLICANT
ESIII LP
107 TWADDELL MILL ROAD
WILMINGTON, DE 19807

DWG.-CALL:	203-0820
DRAWN BY:	TED
CHECKED BY:	DRF

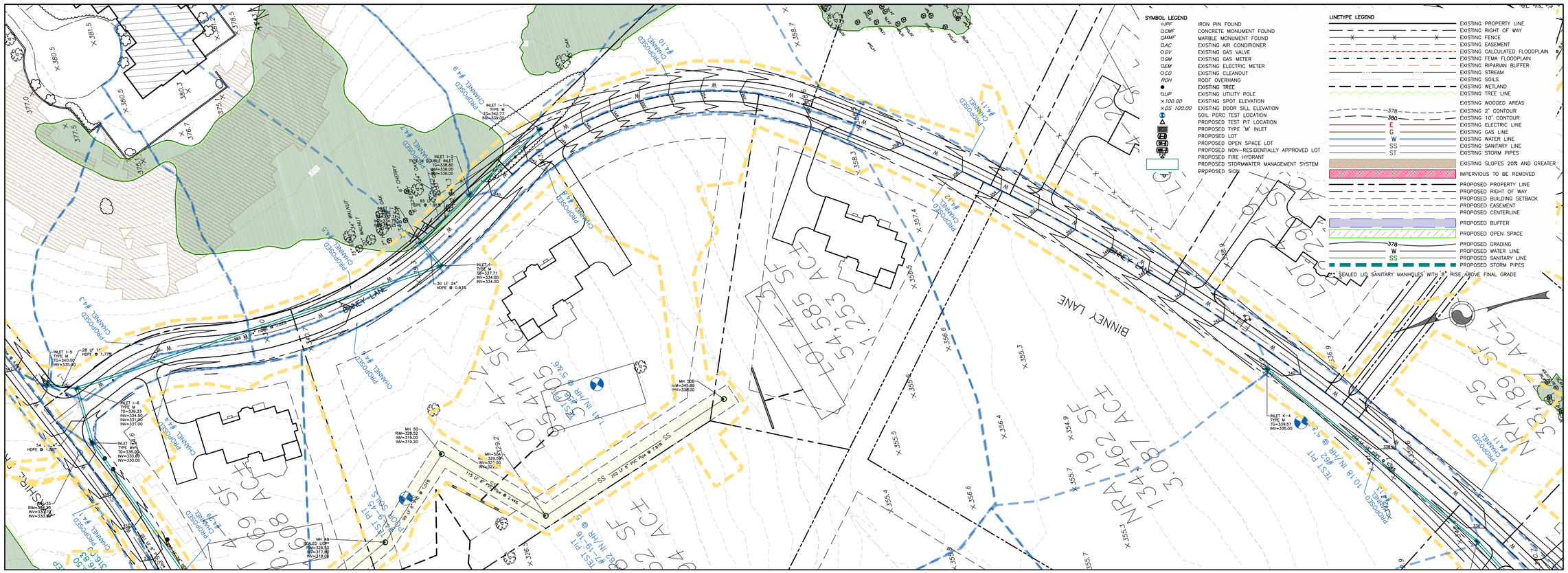
REV.	DATE	COMMENTS

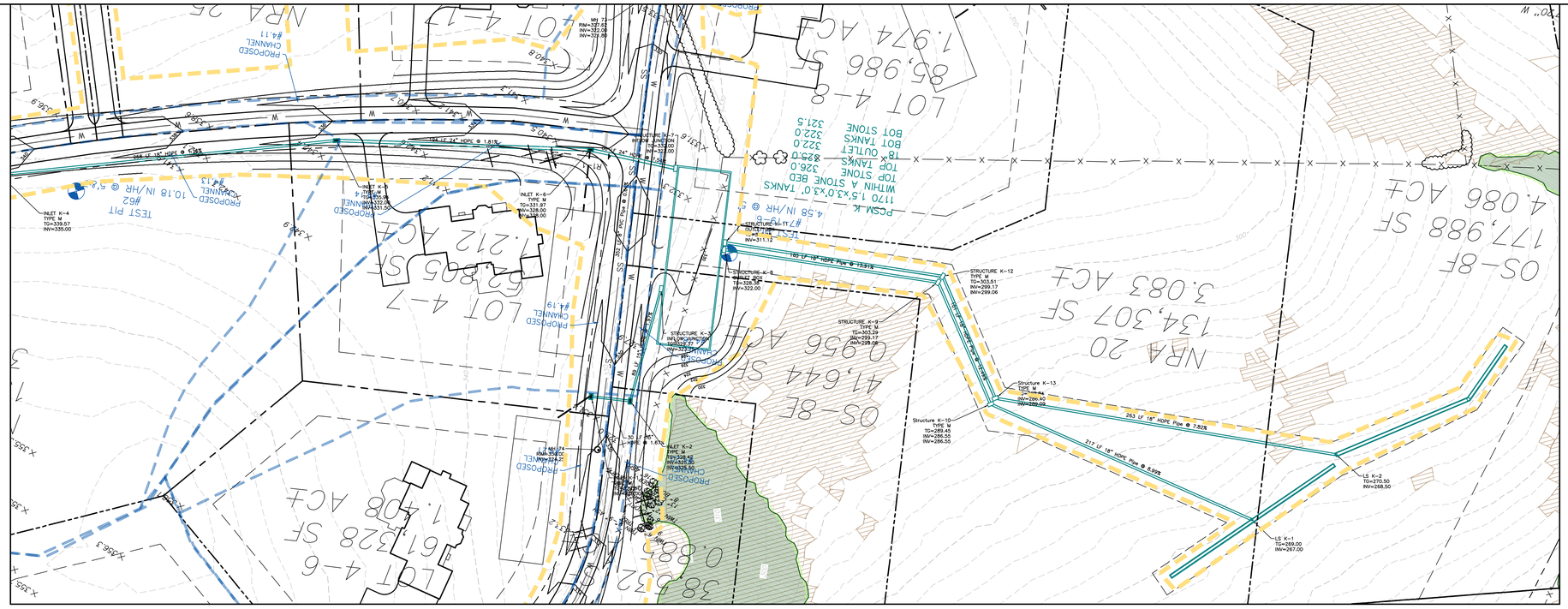
FILE NO.: 06-012

SHEET 21 OF 33

DATE: NOVEMBER 4, 2016

SCALE: 1" = 40'


SYMBOL LEGEND
IRON PIN FOUND
CONCRETE MONUMENT FOUND
MARBLE MONUMENT FOUND
EXISTING AIR CONDITIONER
EXISTING GAS VALVE
EXISTING GAS METER
EXISTING ELECTRIC METER
EXISTING CLEANOUT
ROOF OVERHANG
EXISTING TREE
EXISTING UTILITY POLE
EXISTING SPOT ELEVATION
EXISTING DOOR SILL ELEVATION
SOIL PERC TEST LOCATION
PROPOSED TEST PIT LOCATION
PROPOSED TYPE "M" INLET
PROPOSED LOT
PROPOSED OPEN SPACE LOT
PROPOSED NON-RESIDENTIALLY APPROVED LOT
PROPOSED FIRE HYDRANT
PROPOSED STORMWATER MANAGEMENT SYSTEM
PROPOSED SIGN
LINETYPE LEGEND
EXISTING PROPERTY LINE
EXISTING RIGHT OF WAY
EXISTING FENCE
EXISTING EASEMENT
EXISTING CALCULATED FLOODPLAIN
EXISTING FEMA FLOODPLAIN
EXISTING RIPARIAN BUFFER
EXISTING STREAM
EXISTING SOILS
EXISTING WETLAND
EXISTING TREE LINE
EXISTING WOODED AREAS
EXISTING 2' CONTOUR
EXISTING 10' CONTOUR
EXISTING ELECTRIC LINE
EXISTING GAS LINE
EXISTING WATER LINE
EXISTING SANITARY LINE
EXISTING STORM PIPES
EXISTING SLOPES 20% AND GREATER
IMPERVIOUS TO BE REMOVED
PROPOSED PROPERTY LINE
PROPOSED RIGHT OF WAY
PROPOSED BUILDING SETBACK
PROPOSED EASEMENT
PROPOSED CENTERLINE
PROPOSED BUFFER
PROPOSED OPEN SPACE
PROPOSED GRADING
PROPOSED WATER LINE
PROPOSED SANITARY LINE
PROPOSED STORM PIPES
** SEALED LID SANITARY MANHOLES WITH 8" RISE ABOVE FINAL GRADE
BINNEY LANE
LOT 1 A 5.585 AC
LOT 1 A 4.253 AC
LOT 1 A 2.089 AC
LOT 1 A 1.189 AC
LOT 1 A 2.087 AC
LOT 1 A 1.962 AC
NRA 25 SF
NRA 19 SF
NRA 20 SF
PROPOSED CHANNEL #1.1
PROPOSED CHANNEL #1.2
PROPOSED CHANNEL #1.3
PROPOSED CHANNEL #1.4
PROPOSED CHANNEL #1.5
PROPOSED CHANNEL #1.6
PROPOSED CHANNEL #1.7
PROPOSED CHANNEL #1.8
PROPOSED CHANNEL #1.9
PROPOSED CHANNEL #1.10
PROPOSED CHANNEL #1.11
PROPOSED CHANNEL #1.12
PROPOSED CHANNEL #1.13
TEST PIT #1-16 @ 5 MIN/HR
TEST PIT #1-17 @ 5 MIN/HR
TEST PIT #1-18 @ 5 MIN/HR
TEST PIT #1-19 @ 5 MIN/HR
TEST PIT #2 10.18 IN/HR @ 5 MIN/HR
TEST PIT #3 @ 5 MIN/HR
INLET I-1 TYPE M TG=342.77 INV=339.00
INLET I-2 TYPE M DOUBLE INLET TG=336.60 INV=336.00 INV=336.00
INLET I-3 TYPE M TG=337.71 INV=334.75 INV=334.25
INLET I-4 TYPE M TG=337.71 INV=334.00 INV=334.00
INLET I-5 TYPE M TG=340.00 INV=335.00
INLET I-6 TYPE M TG=339.33 INV=334.50 INV=331.00 INV=331.00
INLET I-7 TYPE M TG=336.00 INV=335.00 INV=330.00
INLET K-4 TYPE M TG=338.57 INV=335.00
INLET K-5 TYPE M TG=338.65 INV=335.00
INLET M-1 TYPE M TG=337.71 INV=334.00 INV=334.00
INLET M-2 TYPE M TG=337.71 INV=334.00 INV=334.00
INLET M-3 TYPE M TG=337.71 INV=334.00 INV=334.00
INLET M-4 TYPE M TG=337.71 INV=334.00 INV=334.00
INLET M-5 TYPE M TG=337.71 INV=334.00 INV=334.00
INLET



SYMBOL LEGEND

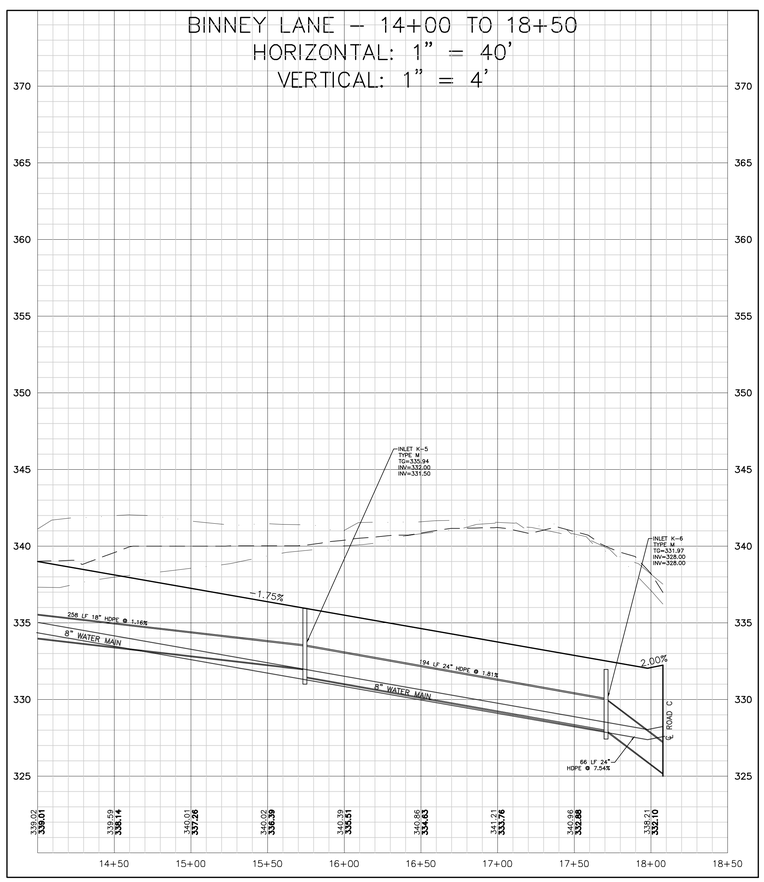
IPF	IRON PIN FOUND
CMF	CONCRETE MONUMENT FOUND
MMF	MARBLE MONUMENT FOUND
AC	EXISTING AIR CONDITIONER
GV	EXISTING GAS VALVE
GM	EXISTING GAS METER
EM	EXISTING ELECTRIC METER
CO	EXISTING CLEANOUT
ROH	ROOF OVERHANG
	EXISTING TREE
UP	EXISTING UTILITY POLE
×100.00	EXISTING SPOT ELEVATION
×DS 100.00	EXISTING DOOR SILL ELEVATION
	SOIL PERC TEST LOCATION
	PROPOSED TEST PIT LOCATION
	PROPOSED TYPE 'M' INLET
	PROPOSED LOT
	PROPOSED OPEN SPACE LOT
	PROPOSED NON-RESIDENTIALLY APPROVED LOT
	PROPOSED FIRE HYDRANT
	PROPOSED STORMWATER MANAGEMENT SYSTEM
	PROPOSED SIGN

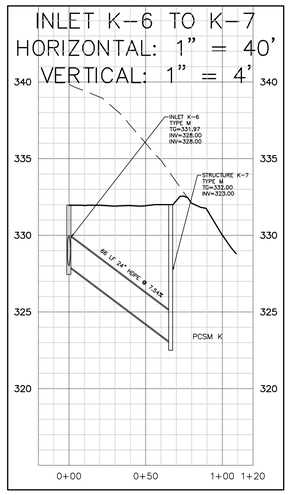
LINETYPE LEGEND

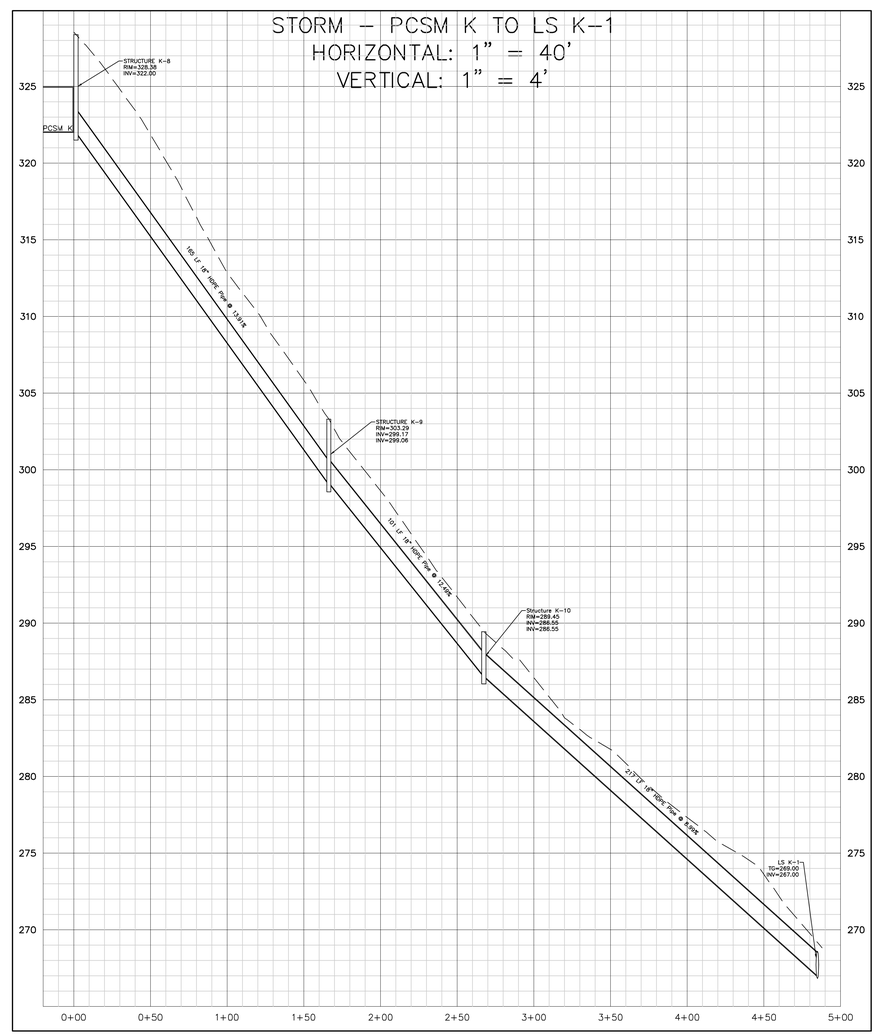
	EXISTING PROPERTY LINE
	EXISTING RIGHT OF WAY
	EXISTING FENCE
	EXISTING EASEMENT
	EXISTING CALCULATED FLOODPLAIN
	EXISTING FEMA FLOODPLAIN
	EXISTING RIPARIAN BUFFER
	EXISTING STREAM
	EXISTING SOILS
	EXISTING WETLAND
	EXISTING TREE LINE
	EXISTING WOODED AREAS
378	EXISTING 2' CONTOUR
380	EXISTING 10' CONTOUR
E	EXISTING ELECTRIC LINE
G	EXISTING GAS LINE
W	EXISTING WATER LINE
SS	EXISTING SANITARY LINE
ST	EXISTING STORM PIPES
	EXISTING SLOPES 20% AND GREATER
	IMPERVIOUS TO BE REMOVED
	PROPOSED PROPERTY LINE
	PROPOSED RIGHT OF WAY
	PROPOSED BUILDING SETBACK
	PROPOSED EASEMENT
	PROPOSED CENTERLINE
	PROPOSED BUFFER
	PROPOSED OPEN SPACE
378	PROPOSED GRADING
W	PROPOSED WATER LINE
SS	PROPOSED SANITARY LINE
	PROPOSED STORM PIPES

** SEALED LID SANITARY MANHOLES WITH 8" RISE ABOVE FINAL GRADE

NOTE: ROADWAYS ARE DEVELOPED FOR A DESIGN SPEED OF 25 MPH







40 0 20 40 80 160

1 INCH = 40 FT.

Serial Number: 2014-203-0820

CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PLANS AND TO WORKING MEMBERS OF THE PENNSYLVANIA One Call System, Inc.
1-800-242-1776

REGISTERED PROFESSIONAL ENGINEER
DAVID R. FIORELLO
PE-044178E

MOMENEE, INC.
a Karins Company
ENGINEERING | PLANNING | SURVEYING
924 COUNTY LINE ROAD - BRYN MAWR - PA - 19010

ROADWAY PROFILE
PHASE IV LOT LINE CHANGE PLAN
THE ARDROSSAN FARM
RADNOR TOWNSHIP · DELAWARE COUNTY · PENNSYLVANIA

APPLICANT
ESIII LP
107 TWADDELL MILL ROAD
WILMINGTON, DE 19807

DWG. NO.:	203-0820
DRAWN BY:	TED
CHECKED BY:	DRF

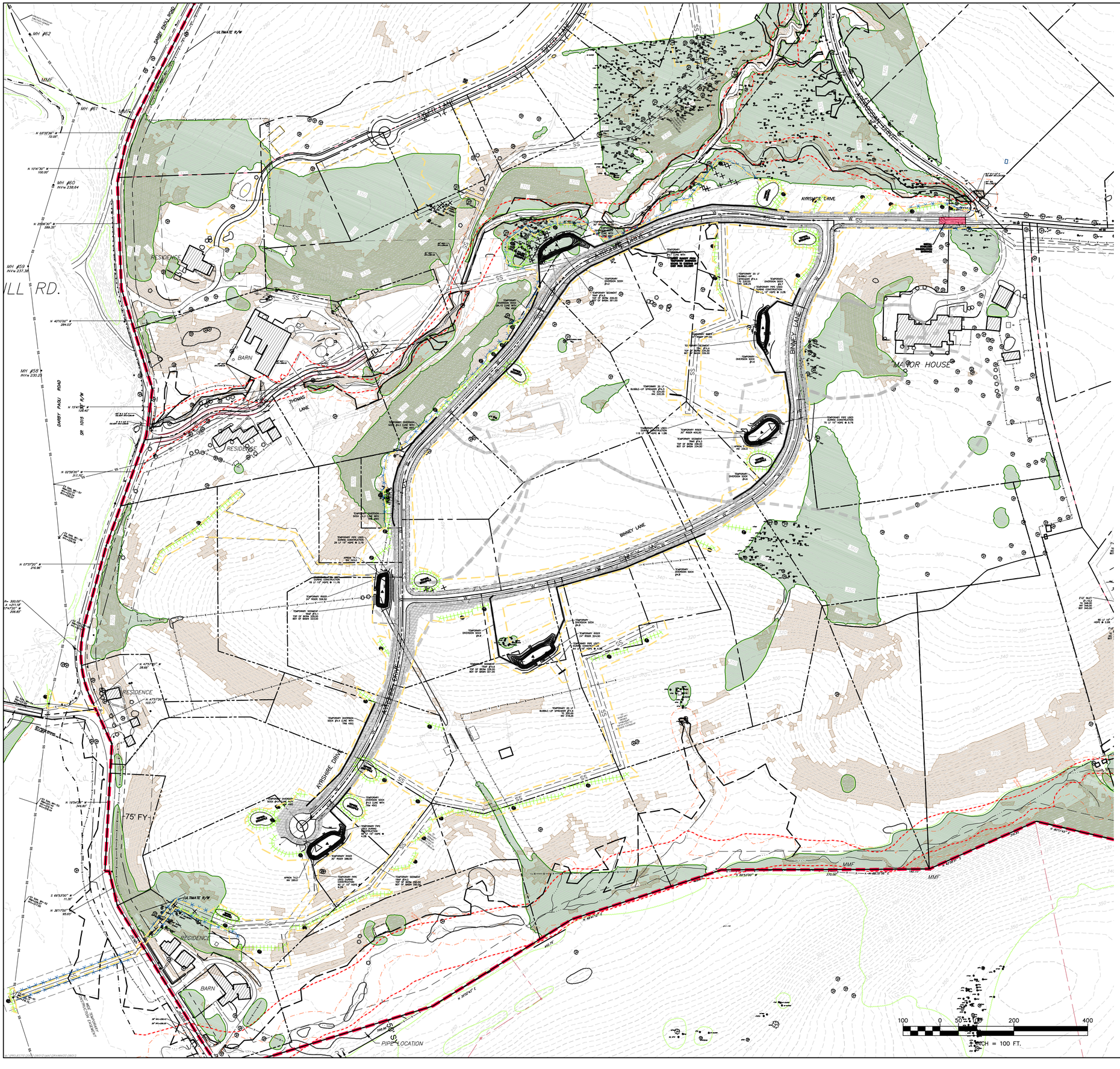
REV.	DATE	COMMENTS

FILE NO.: 06-012

SHEET 23 OF 33

DATE: NOVEMBER 4, 2016

SCALE: 1" = 40'



LOCATION MAP
SCALE: 1" = 2,000'

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

SOILS INFORMATION

SYMBOL	NAME	%SLOPE	HYDROLOGIC GROUP	DEPTH TO SH WATER	DEPTH TO BEDROCK
BrE	BRANDYWINE LOAM	25 TO 40 PERCENT SLOPES	A	6.6+	5.83
Ch	CHEWACLA SILT LOAM	NOT RATED	C	1.50	6.6+
GeA	GLENELG CHANNERY SILT LOAM	0 TO 3 PERCENT SLOPES	B	6.6+	4.98
GeB	GLENELG CHANNERY SILT LOAM	3 TO 8 PERCENT SLOPES	B	6.6+	4.16
GeB2	GLENELG CHANNERY SILT LOAM	3 TO 8 PERCENT SLOPES	B	6.6+	6.6+
GeC	GLENELG CHANNERY SILT LOAM	8 TO 15 PERCENT SLOPES	B	6.6+	4.16
GeC2	GLENELG CHANNERY SILT LOAM	8 TO 15 PERCENT SLOPES	B	6.6+	6.6+
GeC3	GLENELG CHANNERY SILT LOAM	8 TO 15 PERCENT SLOPES	B	6.6+	4.98
GeD	GLENELG CHANNERY SILT LOAM	15 TO 25 PERCENT SLOPES	B	6.6+	4.16
GeD2	GLENELG CHANNERY SILT LOAM	15 TO 25 PERCENT SLOPES	B	6.6+	6.6+
GeD3	GLENELG CHANNERY SILT LOAM	15 TO 25 PERCENT SLOPES	B	6.6+	4.98
GeE	GLENELG CHANNERY SILT LOAM	25 TO 35 PERCENT SLOPES	B	6.6+	4.98
GnB	GLENVILLE SILT LOAM	3 TO 8 PERCENT SLOPES	C	1.73	1.57
GnB2	GLENVILLE SILT LOAM	3 TO 8 PERCENT SLOPES	C	1.73	6.62
GsB	GLENVILLE VERY STONY SILT LOAM	0 TO 8 PERCENT SLOPES	C	1.73	2.42
Me	MADE LAND SCHIST AND GNEISS MATERIALS	NOT RATED	B	4.98	5.41
MgB2	MANOR LOAM	3 TO 8 PERCENT SLOPES	B	6.6+	7.11
MgD2	MANOR LOAM	15 TO 25 PERCENT SLOPES	B	6.6+	4.49
MkF	MANOR SOILS	35 TO 60 PERCENT SLOPES	B	6.6+	7.11
We	WEHADKEE SILT LOAM	NOT RATED	D	0.26	6.6+
WoA	WORSHAM SILT LOAM	0 TO 3 PERCENT SLOPES	D	0.26	6.6+
WoB	WORSHAM SILT LOAM	3 TO 8 PERCENT SLOPES	D	0.26	6.6+

SYMBOL LEGEND

- IRON PIN FOUND
- CONCRETE MONUMENT FOUND
- MARBLE MONUMENT FOUND
- EXISTING AIR CONDITIONER
- EXISTING GAS VALVE
- EXISTING GAS METER
- EXISTING ELECTRIC METER
- EXISTING CLEANOUT
- ROOF OVERHANG
- EXISTING TREE
- EXISTING UTILITY POLE
- 100.00 EXISTING SPOT ELEVATION
- DS 100.00 EXISTING DOOR SILL ELEVATION
- SOIL PERC TEST LOCATION
- PROPOSED TEST PIT LOCATION
- PROPOSED TYPE "M" INLET
- PROPOSED LOT
- PROPOSED OPEN SPACE LOT
- PROPOSED NON-RESIDENTIALLY APPROVED LOT
- PROPOSED FIRE HYDRANT
- PROPOSED STORMWATER MANAGEMENT SYSTEM
- PROPOSED SIGN

LINETYPE LEGEND

- EXISTING PROPERTY LINE
- EXISTING RIGHT OF WAY
- EXISTING FENCE
- EXISTING EASEMENT
- EXISTING FEMA FLOODPLAIN
- EXISTING CALCULATED FLOODPLAIN
- EXISTING RIPARIAN BUFFER
- EXISTING STREAM
- EXISTING SOILS
- EXISTING WETLAND
- EXISTING TREE LINE
- EXISTING WOODED AREAS
- 378 EXISTING 2' CONTOUR
- 380 EXISTING 10' CONTOUR
- E EXISTING ELECTRIC LINE
- G EXISTING GAS LINE
- W EXISTING WATER LINE
- SS EXISTING SANITARY LINE
- ST EXISTING STORM PIPES
- EXISTING SLOPES 20% AND GREATER
- IMPERVIOUS TO BE REMOVED
- PROPOSED PROPERTY LINE
- PROPOSED RIGHT OF WAY
- PROPOSED BUILDING SETBACK
- PROPOSED EASEMENT
- PROPOSED CENTERLINE
- PROPOSED BUFFER
- PROPOSED OPEN SPACE
- 378 PROPOSED GRADING
- W PROPOSED WATER LINE
- SS PROPOSED SANITARY LINE
- PROPOSED STORM PIPES
- NPDES PERMIT BOUNDARY
- LIMIT OF DISTURBANCE
- PCSM DRAINAGE AREA BOUNDARY
- VEGETATED SWALE DRAINAGE AREA
- PHASE 1 BOUNDARY

Serial Number: 2014-203-0820

CALL BEFORE YOU DIG!
NOTIFICATION MUST BE GIVEN 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS NOTICE FOR DESIGN PHASE.
Pennsylvania One Call System, Inc.
1-800-242-1776

REGISTERED PROFESSIONAL LANDSCAPE ARCHITECT
DAVID R. FIORELLO
PROJECT ARTIST

MOMENEE, INC.
a Karins Company
ENGINEERING | PLANNING | SURVEYING
924 COUNTY LINE ROAD - BRYN MAWR - PA - 19010

EROSION AND SEDIMENT CONTROL PLAN

PHASE IV LOT LINE CHANGE PLAN

THE ARDROSSAN FARM

RADNOR TOWNSHIP - DELAWARE COUNTY - PENNSYLVANIA

APPLICANT
ESIII LP
107 TWADDELL MILL ROAD
WILMINGTON, DE 19807

DWG-CALC:	203-0820
DRAWN BY:	DFP
CHECKED BY:	DRF

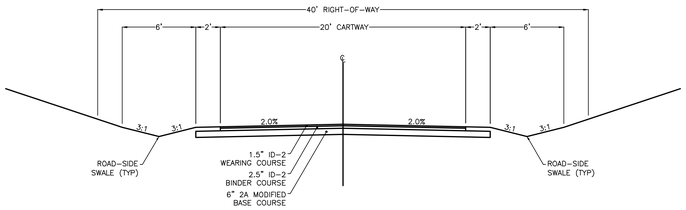
REV.	DATE	COMMENTS

FILE NO.: 06-012

SHEET 24 OF 33

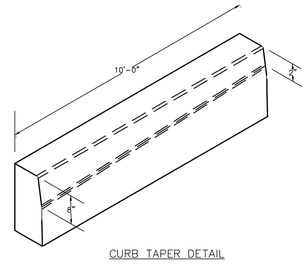
DATE: NOVEMBER 4, 2016

SCALE: 1" = 100'



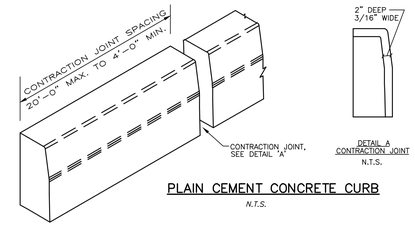
SCOTT LANE STATION 4+43.5 TO 11+92
AYRSHIRE DRIVE STA 22+25 TO END
WHEELER LANE, TYLER LANE, BINNEY LANE,
MURRAY LANE
40' R.O.W. & 20' CARTWAY

NOTE: ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF PENNDOT 408, LATEST REVISION

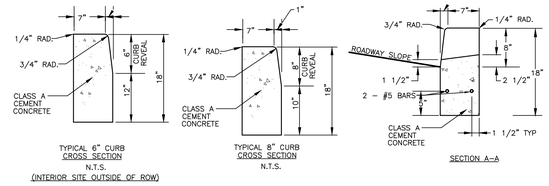


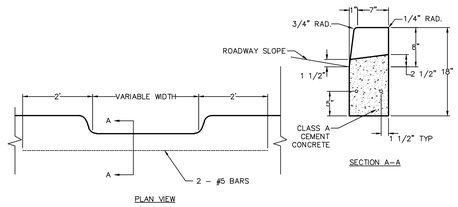
CURB TAPER DETAIL
N.T.S.

1. MATERIALS AND CONSTRUCTION SHALL MEET THE REQUIREMENTS OF PUBLICATION 408, SECTION 630 AND 640 FOR PLAIN CEMENT CONCRETE CURB.
2. SPACE CONTRACTION JOINTS IN UNIFORM LENGTHS OR SECTIONS.
3. PLACE 3/4" PREMOLDED EXPANSION JOINT FILLER MATERIAL AT STRUCTURES AND AT THE END OF THE WORK DAY. CUT MATERIAL TO CONFORM TO AREA ADJACENT TO CURB OR TO CONFORM TO CROSS SECTIONAL AREA OF CURB.



PLAIN CEMENT CONCRETE CURB
N.T.S.





DEPRESSED CURB FOR DRIVEWAYS
N.T.S.

PLAIN CEMENT CONCRETE CURB

N.T.S.

1. MATERIALS AND CONSTRUCTION SHALL MEET THE REQUIREMENTS OF PUBLICATION 408, SECTION 630 AND 640 FOR PLAIN CEMENT CONCRETE CURB.

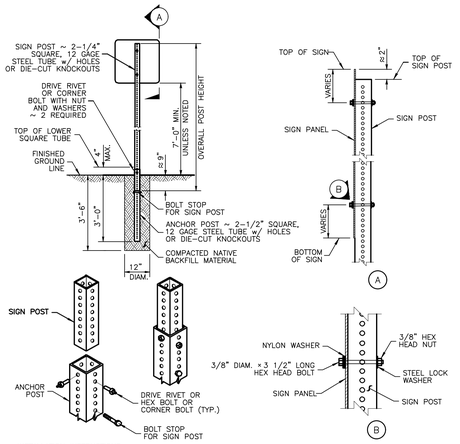
2. SPACE CONTRACTION JOINTS IN UNIFORM LENGTHS OR SECTIONS.

3. PLACE 1/2" PREMOLDED EXPANSION JOINT FILLER MATERIAL AT STRUCTURES AND AT THE END OF THE WORK DAY. CUT MATERIAL TO CONFORM TO AREA ADJACENT TO CURB OR TO CONFORM TO CROSS SECTIONAL AREA OF CURB.

4. IN ACCORDANCE WITH SECTION 141.20.G.(5), CURB TO BE CONSTRUCTED IN UNIFORM LENGTHS OR BLOCKS, SEPARATED BY CONTRACTION JOINTS EVERY TEN FEET (SEE DETAIL 'A') AND EXPANSION JOINTS EVERY 50 FEET (SEE DETAIL 'B').

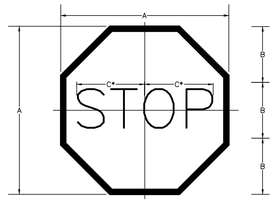
5. ALL WEARING COURSE SURFACES SHALL BE SEALED TO THE CONCRETE CURB WITH A ONE-FOOT WIDE GRADE BM-1 OR A-1 BITUMINOUS GUTTER SEAL.

6. ALL CONCRETE SHALL BE CURED WITH THE USE OF AN APPROVED WHITE-PIGMENTED CURING COMPOUND.



INSTALLATION INSTRUCTIONS
1. DETERMINE THE PROPER POST LENGTH.
2. DRIVE THE ANCHOR POST INTO THE GROUND, USING A DRIVE CAP, UNTIL ONLY THREE HOLES REMAIN ABOVE THE FINISHED GRADE.
3. SLIDE A MINIMUM OF 12" OF THE SIGN POST INTO THE ANCHOR POST.
4. ATTACH THE SIGN POST TO THE ANCHOR POST WITH TWO CORNER BOLTS AND NUTS (OR ALTERNATELY TWO BOLTS AND NUTS OR TWO DRIVE RIVETS) THROUGH THE TOP TWO HOLES OF THE ANCHOR SLEEVE.
5. TIGHTEN THE BOLTS AND NUTS BY THE TURN-OF-NUT METHOD. BRING NUT TO A SNUG CONDITION TO ENSURE THAT ALL PARTS ARE BROUGHT TOGETHER INTO FULL CONTACT WITH EACH OTHER, THEN TIGHTEN AN ADDITIONAL 1/2 TURN.
6. ALL BOLTS AND/OR DRIVE RIVETS SHALL BE CADMIUM PLATED STEEL.

TRAFFIC SIGN POST DETAIL

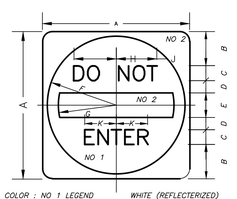


COLOR : LEGEND AND BORDER — WHITE (REFLECTORIZED)
BACKGROUND — RED (REFLECTORIZED)

* REDUCE SPACING 40%

SIGN SIZE	DIMENSIONS A	B	C	SERIES C	BORDER 3/4	BLANK STD B1-30
30x30	30	10	12.5			

STOP SIGN (R1-1)



COLOR : NO 1 LEGEND — WHITE (REFLECTERIZED)
BACKGROUND — RED (REFLECTERIZED)
NO 2 BACKGROUND — WHITE (REFLECTERIZED)
BLANK STD : B3-30

DIMENSIONS (30"x30" SIGN)										SERIES	
A	B	C	D	E	F	G	H	J	K	C*	
30	6.5	4	2	5	14.5	12.5	9.75	10	7.875	0	0

DO NOT ENTER SIGN (R5-1)
N.T.S.

FILL NOTES:

1. 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 PERMITTEE.

2. 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).

3. 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".

4. 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.

5. 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".

6. 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. REGULATED FILL MAY NOT BE USED AT THIS SITE.

CLEAN FILL REQUIREMENTS:

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 APPLICANT.

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 *"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.

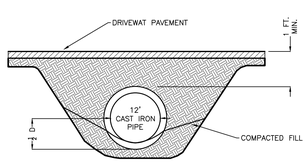
SOILS NOTES:
SITE PREPARATION
THE PROPOSED DEVELOPMENT SHOULD INCLUDE THE COMPLETE REMOVAL OF ALL REMNANT FOUNDATIONS, FLOOR SLABS, CONCRETE PADS, PAVEMENTS AND UTILITIES LOCATED WITHIN AND TEN FEET BEYOND THE PERIMETER OF THE PROPOSED WORK AREA. THE REMAINDER OF THESE STRUCTURES MAY GENERALLY REMAIN IN PLACE IF REMOVED TO A MINIMUM DEPTH OF TWO FEET BELOW FINAL GRADES, PROVIDING THEIR LOCATION DOES NOT CONFLICT WITH OTHER CONSTRUCTION SUCH AS UTILITY INSTALLATION. ACTIVE UTILITIES THAT ARE PRESENT ON SITE SHOULD BE RELOCATED TO AREAS OUTSIDE OF THE PROPOSED BUILDING AREA.
BACKFILL OF ALL DEMOLITION AND UTILITY RELOCATION AREAS SHOULD BE PERFORMED IN ACCORDANCE WITH THE FILL AND COMPACTION CRITERIA SECTION THAT FOLLOWS. THE BACKFILL MATERIAL SHOULD BE INSPECTED AND TESTED BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER OF RECORD.
PRIOR TO THE PLACEMENT OF ANY REQUIRED FILL, AREAS EXTENDING A MINIMUM OF TEN (10) FEET BEYOND THE PROPOSED CONSTRUCTION SHOULD BE STRIPPED OF ALL TOPSOIL, ROOT MAT, ASPHALT, CONCRETE, STONE, AND OTHER DELETERIOUS MATERIALS. FOLLOWING REMOVAL OF THE SURFACE MATERIALS AND PRIOR TO STRUCTURAL FILL PLACEMENT TO THE PROPOSED GRADES, ALL AREAS SHOULD BE PROOF-ROLLED AND COMPACTED. IT IS RECOMMENDED THAT A STEEL DRUM ROLLER HAVING A MINIMUM STATIC WEIGHT OF TEN (10) TONS BE UTILIZED FOR THIS PURPOSE. PROOF-ROLLING AND COMPACTION PROCEDURES ARE NECESSARY TO COMPACT AND VERIFY THE INTEGRITY OF THE UPPER ZONES OF THE SOILS. ANY LOOSE OR UNSTABLE AREAS ENCOUNTERED DURING PROOF-ROLLING, WHICH ARE THE RESULT OF EXCESSIVE MOISTURE WITHIN THE SOIL MATRIX, CAN BE AERATED AND DRIED IN-PLACE. FOLLOWING ADEQUATE DRYING TIME, THESE SOILS CAN BE DENSIFIED IN-PLACE. ALTERNATELY, ANY LOOSE OR SOFT ZONES OF SOIL CAN BE REMOVED AND REPLACED WITH STRUCTURAL FILL AS OUTLINED IN THE FILL AND COMPACTION SECTIONS BELOW
DUE TO THE FINED-GRAINED NATURE OF THE EXISTING RESIDUAL SOILS, REPEATED CONSTRUCTION TRAFFIC ACROSS THE SITE WILL LEAD TO INSTABILITIES. CONSTRUCTION TRAFFIC SHOULD BE LIMITED ACROSS THE SITE. IT IS RECOMMENDED THAT ALL CONSTRUCTION AREAS, INCLUDING THOSE WHICH WERE EXCAVATED TO ACHIEVE THE PLANNED SUBGRADE ELEVATION, BE PROOF-ROLLED IMMEDIATELY PRIOR TO THE PLACEMENT OF THE SUBBASE STONE AND AGAIN BEFORE THE CONCRETE SLAB OR THE ASPHALT PAVEMENT SECTION. THIS WILL ALLOW FOR SOFT AND WEAK AREAS TO BE OBSERVED AND REMEDIATED, IF REQUIRED.

FILL CRITERIA
FILL MATERIAL, WHICH SUPPORTS FOUNDATIONS, FLOOR SLABS, PAVEMENTS, AS WELL AS MATERIAL USED FOR RETAINING WALL BACKFILL AND TO CONSTRUCT BASIN BERMS, IS CONSIDERED STRUCTURAL FILL. FOLLOWING SITE PREPARATION MEASURES, STRUCTURAL FILL REQUIRED TO ELEVATE THE BUILDING PADS, FIELDS AND PAVEMENT AREAS MAY BE PLACED. IT IS ANTICIPATED THAT EXCAVATIONS TO ACHIEVE THE PROPOSED BUILDING AND SITE GRADES WILL MAKE AVAILABLE THE RESIDUAL SOILS, WEATHERED ROCK, AND POSSIBLY THE BEDROCK FOR USE AS STRUCTURAL FILL. OTHER FILL WILL HAVE TO BE IMPORTED.
THE ADDITION OF WATER MAY BE REQUIRED TO ACHIEVE OPTIMUM MOISTURE CONTENT. EXCAVATED ROCK MAY ALSO BE UTILIZED AS STRUCTURAL FILL PROVIDED IT IS PROCESSED TO LESS THAN 4 INCHES IN SIZE, AND MIXED WITH THE SUITABLE RESIDUAL SOILS TO PROVIDE A WELL-GRADED STRUCTURAL FILL.
SOILS EXCAVATED AT THE SITE SHOULD BE MAINTAINED BY THE CONTRACTOR. IN ORDER TO MINIMIZE PROBLEMS WITH STOCKPILED SOILS BECOMING TOO WET FOR USE AS STRUCTURAL FILL, THE SOILS EXCAVATED AND STOCKPILED SHOULD BE GRADED TO SHED WATER AND ROLLED WITH A SMOOTH DRUM ROLLER. DURING PERIODS OF WET SITE CONDITIONS, TRAVEL UPON THE BUILDING PADS, FIELDS AND WITHIN THE PAVEMENTS SHOULD BE LIMITED TO MINIMIZE DISTURBANCES WHICH WILL LEAD TO INSTABILITIES.
ANY STRUCTURAL OR LOAD BEARING SOIL WHICH IS IMPORTED TO THE SITE (IF REQUIRED) SHOULD MEET THE FOLLOWING CRITERIA: 1) FREE OF ORGANIC MATTER, ASH, CINDERS, AND DEMOLITION DEBRIS, 2) PARTICLE SIZE DISTRIBUTION THAT IS WELL GRADED, 3) PLASTICITY INDEX LESS THAN 10, AND 4) LESS THAN 15 PERCENT BY WEIGHT ROCK FRAGMENTS LARGER THAN 3", LESS THAN 30 PERCENT BY WEIGHT LARGER THAN 3/4" AND LESS THAN 30 PERCENT BY WEIGHT SMALLER THAN THE NO. 200 SIEVE.

THE ABOVE CRITERIA ARE PROVIDED AS A GENERAL GUIDELINE FOR SOIL MATERIALS IMPORTED TO THE SITE. SOIL MATERIALS, AVAILABLE FOR USE AS A STRUCTURAL FILL, SHOULD BE SUBMITTED TO A GEOTECHNICAL ENGINEER FOR EVALUATION PRIOR TO IMPORTATION TO THE SITE.

COMPACTION CRITERIA
STRUCTURAL FILL SHOULD GENERALLY BE PLACED IN HORIZONTAL LIFTS NOT EXCEEDING EIGHT (8) INCHES IN LOOSE THICKNESS AND COMPACTED WITH A SHEEPSFOOT OR SMOOTH DRUM VIBRATORY ROLLER WITH A MINIMUM STATIC WEIGHT OF 10 TONS. USE OF A SHEEPSFOOT ROLLER WILL AID IN CRUSHING EXCAVATED WEATHERED ROCK MATERIAL FOR USE AS STRUCTURAL FILL.
THE FILL SHOULD BE PLACED IN HORIZONTAL LIFTS OF SIX (6) INCHES LOOSE THICKNESS WHERE COMPACTION BY HAND-OPERATED EQUIPMENT IS NECESSARY. THE OPTIMUM LIFT THICKNESS AND NUMBER OF REPETITIONS NECESSARY TO ACHIEVE THE REQUIRED PERCENTAGE COMPACTION VALUES SHOULD BE DETERMINED IN THE FIELD WITH TEST PASSES OF THE CHOSEN COMPACTION EQUIPMENT. THE FILL MATERIAL SHOULD BE PLACED AT, OR DEVIATE NOMINALLY FROM, THE OPTIMUM MOISTURE CONTENT AS DETERMINED IN ACCORDANCE WITH ASTM STANDARD D698 AND COMPACTED TO A MINIMUM PERCENTAGE OF THE MAXIMUM DRY DENSITY AS INDICATED IN THE FOLLOWING TABLE.

FILL AREA	PERCENT OF MAXIMUM DRY DENSITY AS PER ASTM STANDARD D 698
PAVEMENTS, SLAB-ON-GRADE AND FOUNDATION BEARING AREAS	98
WALKWAYS, AND BASIN BERMS	95
NON-STRUCTURAL	92



SECTION VIEW

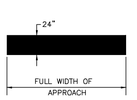
NOTES:

MINIMUM DIAMETER FOR ANY CULVERT IS 12". PLACE CULVERT SO BOTTOM IS AT SAME LEVEL AS BOTTOM OF DITCH OR ADJOINING SLOPE. CULVERTS SHALL BE PLACED WITH A SLOPE OF 2 TO 4%. LOWER END SHALL BE AT LEAST 2" BELOW UPPER END.

EXTEND CULVERT 12" BEYOND BASE OF ROAD FILL ON BOTH SIDES. FIRMLY PACK FILL AROUND CULVERT, ESPECIALLY THE BOTTOM HALF.

THIS DETAIL MAY BE USED FOR DITCH RELIEF CULVERTS AND FOR CROSSINGS OF ROADSIDE DITCHES. IT IS NOT APPROPRIATE FOR STREAM CROSSINGS.

DRIVEWAY SWALE CROSSING
NOT TO SCALE



SOLID WHITE STOP BAR

SOLID DOUBLE YELLOW
N.T.S.

SIGN SIZE 12"x18"
NO PARKING BY ORDER OF FIRE MARSHAL SIGN (B)
N.T.S.

NO PARKING SIGN (NP)

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COMMONWEALTH OF PENNSYLVANIA

MOMENEE, INC.
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ENGINEERING | PLANNING | SURVEYING

CONSTRUCTION DETAILS
PHASE IV LOT LINE CHANGE
THE ARDROSSAN FARM
RADNOR TOWNSHIP / DELAWARE COUNTY / PENNSYLVANIA

APPLICANT
ESIII LP
107 TWADDELL MILL ROAD
WILMINGTON, DE 19807

DWG.-CALL:	203-0820
DRAWN BY:	TED
CHECKED BY:	DRF

REV.	DATE	COMMENTS

FILE NO.: 06-012
SHEET 25 OF 33
DATE: NOVEMBER 4, 2016
SCALE: 1" =

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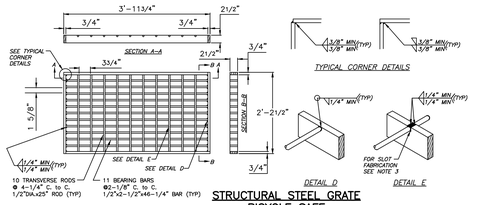
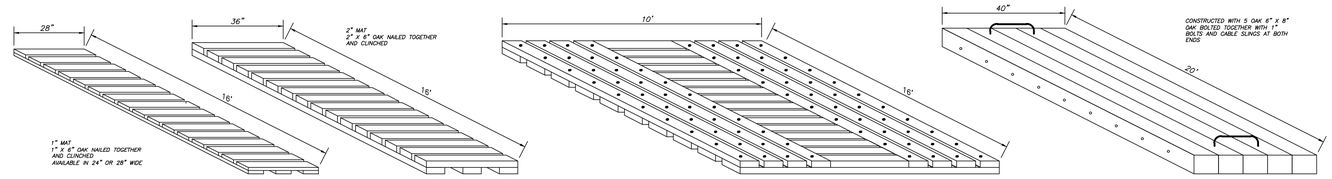


STRUCTURAL STEEL GRATE BICYCLE SAFE

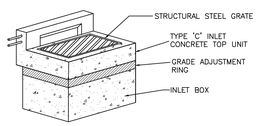
NOTES:
1. WELD STRUCTURAL STEEL GRATES IN ACCORDANCE WITH THE REQUIREMENTS OF PUBLICATION 408, SECTION 1105.03(R). WELDING SHOPS ARE NOT REQUIRED TO BE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) CERTIFIED.
2. PROVIDE TRANSVERSE RODS, MEETING THE REQUIREMENTS OF AASHTO–M227 OR M255, GRADE 70, 75, OR 80, FLUSH WITH THE GRATE SURFACE.
3. FABRICATE SLOTS BY BURNING, DRILLING, SHEARING OR PUNCHING. HAVE THE BOTTOM OF ALL BURNED OR DRILLED SLOTS CONFORM TO THE SHAPE OF THE ROD.
4. REFER TO RC–34, SHEET 3 OF 9 FOR COMPLETE COMPLIANCE WITH DETAIL AND NOTES.



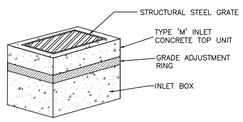
SINGLE–TRACK LOGGING MATS
AVAILABLE IN 14' OR 16' LENGTHS
N.T.S.

DOUBLE–TRACK LOGGING MAT
CONSTRUCTED WITH 3" X 8" OAK BOLTED TOGETHER WITH ½" BOLTS
N.T.S.

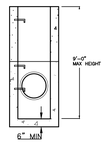
DRAGLINE MAT
AVAILABLE IN 16' OR 20' LENGTHS
N.T.S.

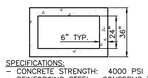


TYPE "C" INLET TOP

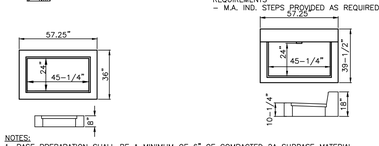


TYPE "M" INLET TOP

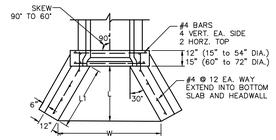




SPECIFICATIONS:
– CONCRETE STRENGTH: 4000 PSI MIN @ 28 DAYS
– REINFORCING STEEL: CONFORMS TO ASTM A615 & A185
– TOP AND PIPES TO BE GROUTED IN PLACE ON SITE BY CONTRACTOR
– DESIGN: TRAFFIC LOADS, HS–20 LOADING
– SPECIAL ORDERS ARE PROVIDED WITH HOLES TO MEET REQUIREMENTS
– M.A. IND. STEPS PROVIDED AS REQUIRED

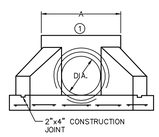


NOTES:
1. BASE PREPARATION SHALL BE A MINIMUM OF 6" OF COMPACTED 2A SUBBASE MATERIAL.
2. PROVIDE STRUCTURAL STEEL GRATES WITH TYPE 'C' & 'M' INLET TOPS.
3. PROVIDE ALL INLET BOTTOMS WITH 1' SUMP AND HOLES TO DRAIN INLET BOTTOM.
4. INSTALL NEW TYPE 'C' INLET TOP UNIT AND NEW BICYCLE SAFE STRUCTURAL STEEL GRATE ON EXISTING INLET AND PROPOSED INLET ALONG PROPERTY FRONTAGE ON LANCASTER AVENUE, MATCH EXISTING ROAD GRADES.
5. INLET GRATES TO BE DEPRESSED 1" AT BACK UNLESS NOTED OTHERWISE
6. COAT ALL SURFACES WITH ANTI–SPALLING COMPOUND.
7. MORTAR GROUT INLET FRAME TO BASIN.
8. AN 8" MAXIMUM LEVELING COURSE MAY BE USED WITH PRECAST INLETS.
9. INLET BOX CONSTRUCTION AS PER PENN–DOT SPECIFICATIONS.
10. CONCRETE BLOCK CONSTRUCTION IS NOT ALLOWED.
11. CAST IN PLACE CONCRETE, PRECAST CONCRETE, AND BRICK ARE THE ONLY APPROVED METHODS OF INLET BOX CONSTRUCTION.

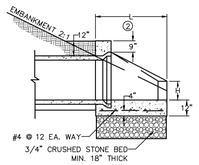


TYPE D–W ENDWALL
N.T.S.

PLAN



END VIEW



SECTION

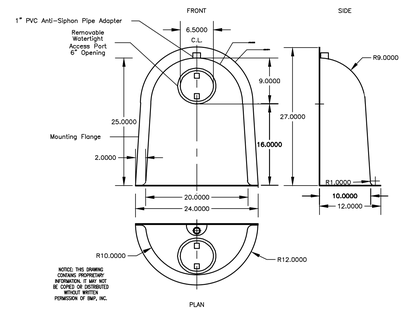
DIA.	A	L	L_1	W	H
15"	3'–9"	3'–0"	2'–4"	3'–7"	12"
18"	4'–0"	3'–6"	2'–10"	4'–5"	12"
21"	4'–3"	4'–0"	3'–6"	5'–3"	12"
24"	4'–6"	4'–6"	4'–0"	6'–0"	12"
27"	4'–9"	4'–6"	4'–0"	6'–3"	14"
30"	5'–0"	4'–6"	4'–0"	6'–6"	15"
36"	5'–10"	4'–8"	4'–3"	7'–3"	18"

① INSTALLATION OF STANDARD CHAIN LINK FENCE ON HEADWALL TO BE DETERMINED BY THE CHIEF OF DESIGN
② LENGTH OF PAVED OUTLET TO BE BE CHECKED OR DETERMINED BY VELOCITY OF FLOW
CONCRETE – 3,500 PSI AIR – ENTRAINED

REINFORCING BARS SHALL CONFORM TO ASTM A615 GRADE 40

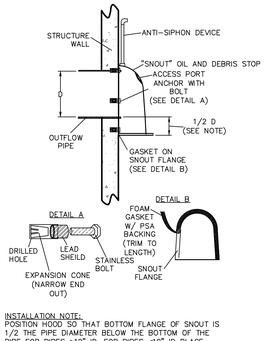
TYPE "DW" ENDWALL

Best Management Products, Inc.
18F SNOUT Oil & Debris Stop

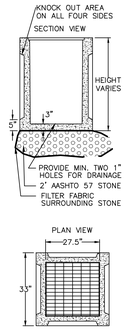


BMP NOTES:
- STRUCTURAL BMP (OTHER) – SNOUTS WITH BIO–SKIRTS – SNOUTS WILL BE INSTALLED WITH BIO–SKIRTS IN ALL INLETS DIRECTLY CONNECTED TO THE SUBSURFACE INFILTRATION BED IN ORDER TO REDUCE GROSS POLLUTANTS SUCH AS FLOATABLES AND TRASH, AS WELL AS FREE OILS AND SEDIMENT. THE BIO–SKIRT REDUCES BACTERIA AND CAPTURES AND RETAINS HYDROCARBONS.

BEST MANAGEMENT PRODUCTS, INC. "SNOUT" OIL & DEBRIS STOP INSTALLATION DIAGRAM (TYPICAL)

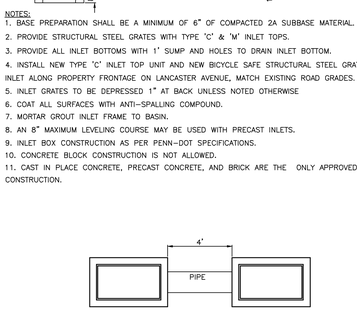


INSTALLATION NOTE:
POSITION HOOD SO THAT BOTTOM FLANGE OF SNOUT IS 1/2 THE PIPE DIAMETER BELOW THE BOTTOM OF THE PIPE FOR PIPES >12" ID. FOR PIPES <10" ID PLACE SNOUT 5" (MIN.) BELOW BOTTOM OF PIPE.

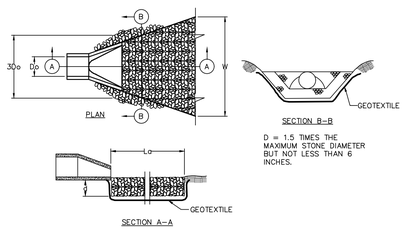


2' x 2' YARD DRAIN
(NON–TRAFFIC BEARING)

Manufactured by
MODERN CONCRETE
or other NPCA certified plant



TYPICAL DOUBLE INLET PLACEMENT

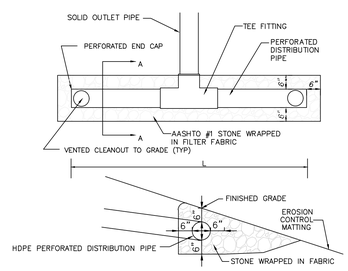


OUTLET NO.	PIPE DIA. Do	TAILWATER CONDITION	Q (CFS)	V (FPS)	RIPRAP SIZE	Lo (ft)	W (ft)	d (in)
EW F–1	30"	MINIMUM	40.61	17.05	R–8	16.0'	23.5'	63"
EW I–1	24"	MINIMUM	39.98	12.57	R–6	22.0'	28.0'	36"
EW I–2	24"	MINIMUM	39.98	9.76	R–6	22.0'	28.0'	36"
EW J–1	30"	MINIMUM	34.55	12.72	R–6	16.0'	23.5'	36"
EW J–2	24"	MINIMUM	40.19	9.76	R–6	22.0'	28.0'	36"
EW P–1	18"	MINIMUM	11.46	7.62	R–4	12.0'	16.5'	18"

* REFER TO SWMGT REPORT FOR CALCS. OF ROCK RIPRAP ENERGY DISAPATOR.

* THE ANTICIPATED VELOCITY (V) SHOULD NOT EXCEED THE MAXIMUM PERMISSIBLE SHOWN IN THE PROGRAM MANUAL FOR THE PROPOSED RIPRAP PROTECTION.

RIPRAP APRON OUTLET PROTECTION
N.T.S.



SECTION A–A

LEVEL SPREADER DETAIL
N.T.S.

PIPE PERFORATIONS

REQUIRED 3.31 SQ. IN/SQ. FT
FOR 12"dia. DISTRIBUTION PIPE
C12" = 2*Pi*r = 2(Pi).5 = 3.14 FT

FOR 1 LF OF PIPE
A12" = 3.14 SQ. FT
AREA OF HOLES = 3.31*3.14 = 10.39 SQ. IN

FOR 3/4"dia. HOLES
A3/4" = 0.442 SQ. IN

NO. HOLES NEEDED =10.39/0.442 = 24 HOLES
USE 6–3/4" dia. HOLES SPACED EQUALLY AROUND THE CIRCUMFERENCE @ 3"o.c. PER LENTGH OF PIPE STARTING @ 1.5" FROM EITHER END OF PIPE.

PIPE PERFORATIONS

REQUIRED 3.31 SQ. IN/SQ. FT
FOR 15"dia. DISTRIBUTION PIPE
C15" = 2*Pi*r = 2(Pi).625 = 3.93 FT

FOR 1 LF OF PIPE
A15" = 3.93 SQ. FT
AREA OF HOLES = 3.31*3.93 = 13.01 SQ. IN

FOR 3/4"dia. HOLES
A3/4" = 0.442 SQ. IN

NO. HOLES NEEDED =13.01/0.442 = 30 HOLES
USE 10–3/4" dia. HOLES SPACED EQUALLY AROUND THE CIRCUMFERENCE @ 4"o.c. PER LENTGH OF PIPE STARTING @ 2" FROM EITHER END OF PIPE.

PIPE PERFORATIONS

REQUIRED 3.31 SQ. IN/SQ. FT
FOR 18"dia. DISTRIBUTION PIPE
C18" = 2*Pi*r = 2(Pi).75 = 4.71 FT

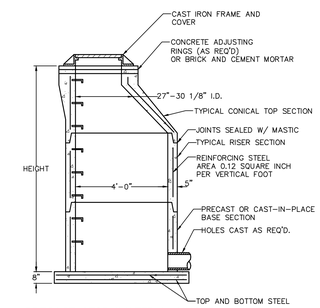
FOR 1 LF OF PIPE
A18" = 4.71 SQ. FT
AREA OF HOLES = 3.31*4.71 = 15.60 SQ. IN

FOR 3/4"dia. HOLES
A3/4" = 0.442 SQ. IN

NO. HOLES NEEDED =15.60/0.442 = 36 HOLES
USE 12–3/4" dia. HOLES SPACED EQUALLY AROUND THE CIRCUMFERENCE @ 4"o.c. PER LENTGH OF PIPE STARTING @ 2" FROM EITHER END OF PIPE.

LEVEL SPREADER TABLE

LEVEL SPREADER #	LENGTH "L"	DISTRIBUTION PIPE
SPREADER A	35'	12" HDPE
SPREADER C	115'	15" HDPE
SPREADER D	115'	18" HDPE
SPREADER G	150'	18" HDPE
SPREADER H	150'	18" HDPE
SPREADER N	55'	15" HDPE
SPREADER M	140'	18" HDPE
SPREADER L	70'	15" HDPE
SPREADER K–1	150'	18" HDPE
SPREADER K–2	150'	18" HDPE
SPREADER TYP	60	12" HDPE

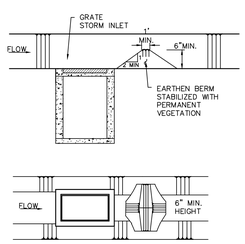


PRECAST STORMWATER MANHOLE
N.T.S.

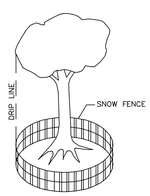
NOTES:

1. PRECAST MANHOLES, MEETING THE REQUIREMENTS OF PUBLICATION 408 SPECIFICATIONS, SECTION 713.2(C), MAY BE SUBSTITUTED FOR TYPES A AND B MANHOLES.

2. PROVIDE MANHOLE STEPS MEETING THE REQUIREMENTS OF PUBLICATION 408 SPECIFICATIONS, SECTION 606.2(C). ALTERNATE CONFIGURATIONS AND DIMENSIONS, AS APPROVED BY THE ENGINEER, MAY BE USED.

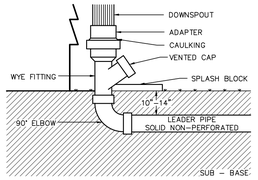


ROADSIDE SWALE
STORM INLET BERM

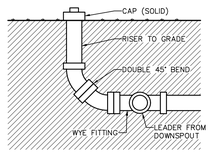


ALL WOODY VEGETATION TO BE RETAINED WITHIN 25 FEET OF A BUILDING SITE, PARKING AREA, DRIVEWAY OR OTHER PROPOSED IMPROVEMENT SHALL BE PROTECTED FROM EQUIPMENT DAMAGE BY FENCING OR OTHER EFFECTIVE BARRIERS APPROVED BY THE TOWNSHIP ENGINEER AND/OR ARBORIST. FENCING OR BARRIERS SHALL BE PLACED AS MUCH AS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

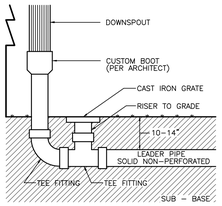
ALTERNATE TREE PROTECTION
NTS



DOWNSPOUT DETAIL IN LANDSCAPE AREA
N.T.S.



TERMINAL CLEANOUT (TYPICAL)
N.T.S.



DOWNSPOUT DETAIL IN PAVED AREA
N.T.S.

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Pennsylvania One Call System, Inc.
1–800–242–1776

REGISTERED PROFESSIONAL ENGINEER
DAVID R. FIORELLO
No. PE052478E

MOMENEE, INC.
a Karins Company
ENGINEERING | PLANNING | SURVEYING

CONSTRUCTION DETAILS
PHASE IV LOT LINE CHANGE
THE ARDROSSAN FARM
RADNOR TOWNSHIP · DELAWARE COUNTY · PENNSYLVANIA

APPLICANT
ESII LP
107 TWADDELL MILL ROAD
WILMINGTON, DE 19807

ONE–CALL:	203–0820
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CHECKED BY:	DRF

REV.	DATE	COMMENTS

FILE NO.: 06–012
SHEET 26 OF 33
DATE: NOVEMBER 4, 2016
SCALE: 1" =

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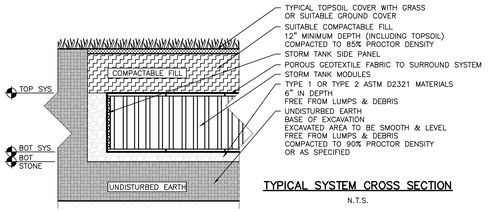
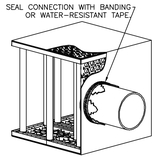


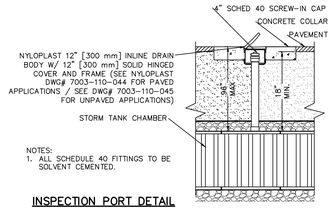
TYPICAL SYSTEM CROSS SECTION

N.T.S.



PIPE CONNECTION DETAIL

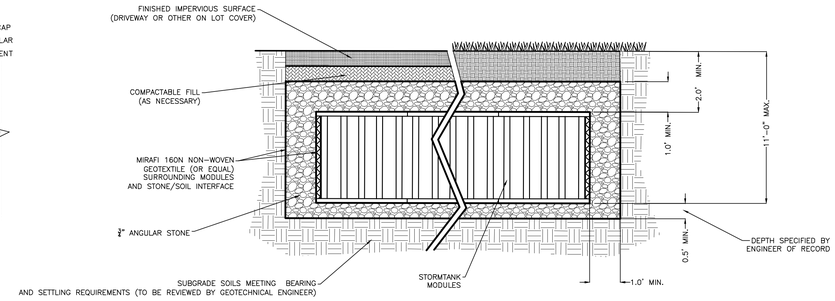
N.T.S.

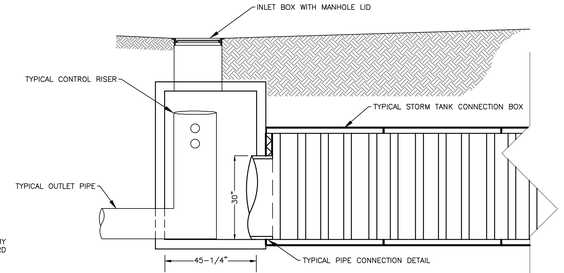


INSPECTION PORT DETAIL

N.T.S.

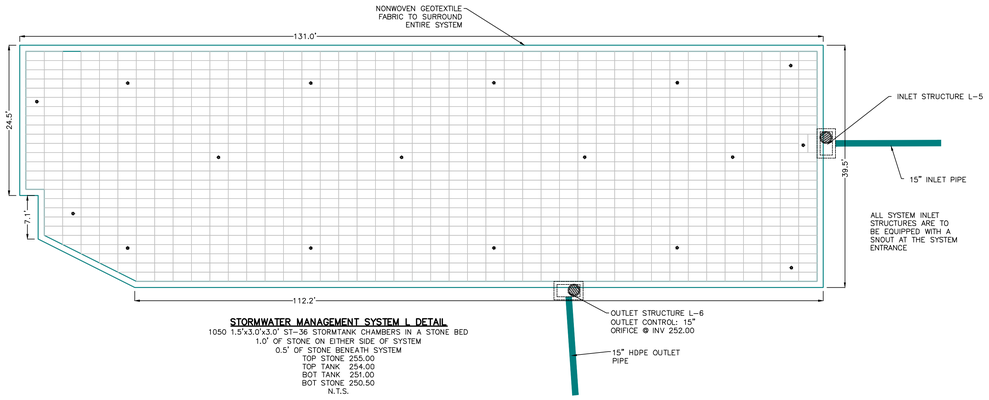
TYPICAL STORMTANK DETAILS





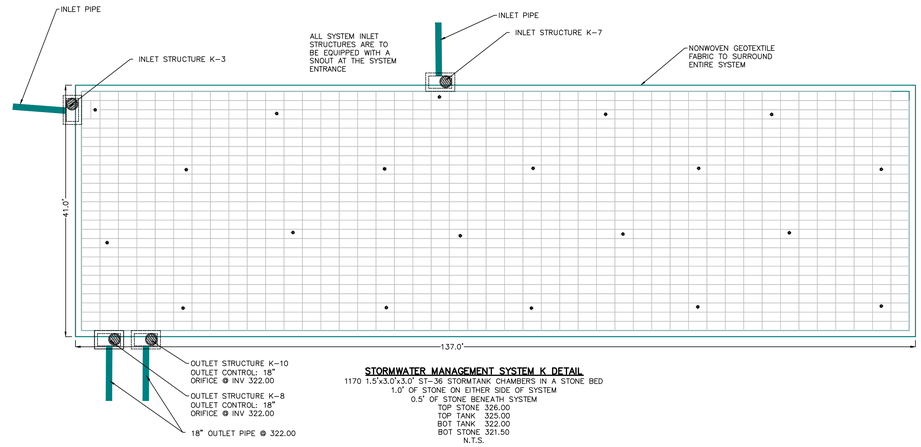
TYPICAL OUTLET STRUCTURE CONNECTION

N.T.S.



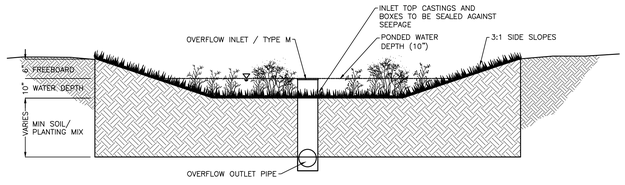
STORMWATER MANAGEMENT SYSTEM L DETAIL

1050 1.5'x3.0'x3.0' ST-36 STORMTANK CHAMBERS IN A STONE BED
1.0' OF STONE ON EITHER SIDE OF SYSTEM
0.5' OF STONE BENEATH SYSTEM
TOP STONE 255.00
TOP TANK 254.00
BOT TANK 251.00
BOT STONE 250.50
N.T.S.



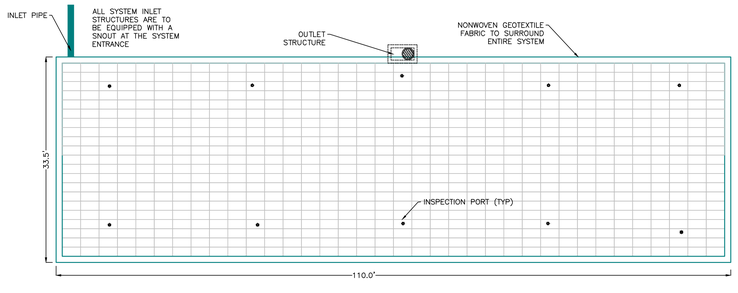
STORMWATER MANAGEMENT SYSTEM K DETAIL

1170 1.5'x3.0'x3.0' ST-36 STORMTANK CHAMBERS IN A STONE BED
1.0' OF STONE ON EITHER SIDE OF SYSTEM
0.5' OF STONE BENEATH SYSTEM
TOP STONE 326.00
TOP TANK 325.00
BOT TANK 322.00
BOT STONE 321.50
N.T.S.



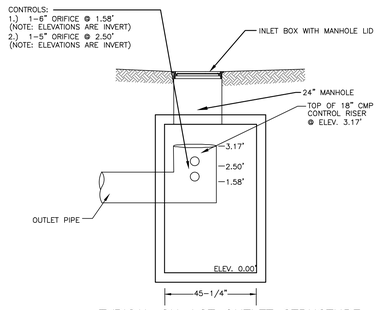
RAIN GARDEN DETAIL

RAIN GARDEN SYSTEM	PCSM "i"	PCSM "j"
TOP OF RAIN GARDEN/BERM ELEV.	318.50	305.50
TOP OF INLET/WATER ELEV.	316.83	303.83
BOTTOM OF GARDEN/TOP OF SOIL ELEV.	316.00	303.00
BOTTOM OF SOIL ELEV.	314.00	301.00
OUTLET PIPE INVERT	313.75	300.75



TYPICAL ON-LOT STORMWATER MANAGEMENT SYSTEM DETAIL

756 1.5'x3.0'x3.0' ST-36 STORMTANK CHAMBERS IN A STONE BED
1.0' OF STONE ON EITHER SIDE OF SYSTEM
0.5' OF STONE BENEATH SYSTEM
TOP STONE 4.50'
TOP TANK 3.50'
BOT TANK 0.50
BOT STONE 0.00
N.T.S.



TYPICAL ON-LOT OUTLET STRUCTURE

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Serial Number: 2014-203-0820

CALL BEFORE YOU DIG!
PROVIDE 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS NOTICE FOR DESIGN PHASE
Pennsylvania One Call System, Inc.
1-800-242-1776

REGISTERED PROFESSIONAL ENGINEER
DAVID R. FIORELLO
No. PE072478E
COMMONWEALTH OF PENNSYLVANIA

MOMENEE, INC.
a Karins Company
ENGINEERING | PLANNING | SURVEYING

CONSTRUCTION DETAILS

PHASE IV LOT LINE CHANGE
THE ARDROSSAN FARM
RADNOR TOWNSHIP ~ DELAWARE COUNTY ~ PENNSYLVANIA

APPLICANT
ESIII LP
107 TWADDELL MILL ROAD
WILMINGTON, DE 19807

ONE-CALL:	203-0820
DRAWN BY:	TTD
CHECKED BY:	DRF

REV.	DATE	COMMENTS

FILE NO.: 06-012

SHEET 27 OF 33

DATE: NOVEMBER 4, 2016

SCALE: 1" =

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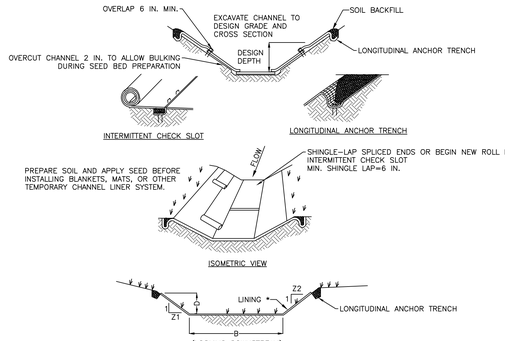


* SEE MANUFACTURER'S LINING INSTALLATION DETAIL FOR STAPLE PATTERNS, VEGETATIVE STABILIZATION FOR SOIL AMENDMENTS, SEED MIXTURES AND MULCHING INFORMATION

NOTES:

ANCHOR TRENCHES SHALL BE INSTALLED AT BEGINNING AND END OF CHANNEL IN THE SAME MANNER AS LONGITUDINAL ANCHOR TRENCHES.

CHANNEL DIMENSIONS SHALL BE CONSTANTLY MAINTAINED. CHANNEL SHALL BE CLEANED WHENEVER TOTAL CHANNEL DEPTH IS REDUCED BY 25% AT ANY LOCATION.
SEDIMENT DEPOSITS SHALL BE REMOVED WITHIN 24 HOURS OF DISCOVERY OR AS SOON AS SOIL CONDITIONS PERMIT ACCESS TO CHANNEL WITHOUT FURTHER DAMAGE. DAMAGED LINING SHALL BE REPAIRED OR REPLACED WITHIN 48 HOURS OF DISCOVERY.

NO MORE THAN ONE THIRD OF THE SHOOT (GRASS LEAF) SHALL BE REMOVED IN ANY MOWING. GRASS HEIGHT SHALL BE MAINTAINED BETWEEN 2 AND 3 INCHES UNLESS OTHERWISE SPECIFIED. EXCESS VEGETATION SHALL BE REMOVED FROM PERMANENT CHANNELS TO ENSURE SUFFICIENT CHANNEL CAPACITY.

STANDARD CONSTRUCTION DETAIL #6–1
VEGETATED CHANNEL

NOT TO SCALE

CHANNEL	LOCATION	B	D	F	Z_1	Z_2	*LINING
SWALE #1.1	SCOTT LANE	1	0.17	0.83	3	3	GRASS
SWALE #1.2	SCOTT LANE	1	0.25	0.75	3	3	GRASS
SWALE #1.3	SCOTT LANE	1	0.37	0.63	3	3	GRASS
SWALE #1.4	SCOTT LANE	1	0.17	0.83	3	3	GRASS
SWALE #1.5	SCOTT LANE	1	0.42	0.58	3	3	GRASS
SWALE #1.6	SCOTT LANE	1	0.17	0.83	3	3	GRASS
SWALE #1.7	SCOTT LANE	1	0.42	0.58	3	3	GRASS
SWALE #1.8	SCOTT LANE	1	0.25	0.75	3	3	GRASS
SWALE #1.9	SCOTT LANE	1	0.25	0.75	3	3	GRASS
SWALE #1.10	SCOTT LANE	5	0.50	0.50	3	3	GRASS
SWALE #1.11	SCOTT LANE	1	0.20	0.50	3	3	GRASS
SWALE #1.12	MURRAY LANE	4	0.50	0.50	3	3	GRASS
SWALE #1.13	MURRAY LANE	4	0.38	0.62	3	3	GRASS
SWALE #1.14	WHEELER LANE	1	0.25	0.75	3	3	GRASS
SWALE #1.15	WHEELER LANE	3	0.35	0.65	3	3	GRASS
SWALE #1.16	WHEELER LANE	1	0.17	0.83	3	3	GRASS
SWALE #1.17	WHEELER LANE	1	0.30	0.70	3	3	GRASS
SWALE #1.18	WHEELER LANE	1	0.17	0.83	3	3	GRASS
SWALE #1.19	WHEELER LANE	2	0.36	0.64	3	3	GRASS
SWALE #1.20	WHEELER LANE	1	0.17	0.83	3	3	GRASS
SWALE #1.21	WHEELER LANE	2	0.33	0.67	3	3	GRASS
SWALE #1.22	WHEELER LANE	1	0.17	0.83	3	3	GRASS
SWALE #1.23	WHEELER LANE	2	0.45	0.55	3	3	GRASS
SWALE #1.24	WHEELER LANE	1	0.20	0.80	3	3	GRASS
SWALE #1.25	WHEELER LANE	4	0.45	0.55	3	3	GRASS
SWALE #1.26	WHEELER LANE	1	0.17	0.83	3	3	GRASS
SWALE #1.27	WHEELER LANE	2	0.50	0.50	3	3	GRASS
SWALE #1.28	WHEELER LANE	1	0.17	0.83	3	3	GRASS
SWALE #1.29	SHARE DRIVE CE	1	0.25	0.75	3	3	GRASS
SWALE #1.30	SHARE DRIVE CE	2.25	0.50	0.50	3	3	GRASS
SWALE #3.1	TYLER LANE	2	0.33	0.67	3	3	GRASS
SWALE #3.2	TYLER LANE	2	0.42	0.58	3	3	GRASS
SWALE #3.3	TYLER LANE	2.5	0.50	0.50	3	3	GRASS
SWALE #3.4	TYLER LANE	2	0.25	0.75	3	3	GRASS
SWALE #3.5	TYLER LANE	2.5	0.25	0.75	3	3	GRASS
SWALE #3.6	TYLER LANE	2	0.20	0.80	3	3	GRASS
SWALE #3.7	TYLER LANE	2	0.17	0.83	3	3	GRASS
SWALE #3.8	TYLER LANE	2	0.33	0.67	3	3	GRASS
SWALE #3.9	TYLER LANE	2	0.20	0.80	3	3	GRASS
SWALE #3.10	TYLER LANE	2	0.35	0.65	3	3	GRASS
SWALE #3.11	TYLER LANE	2	0.25	0.75	3	3	GRASS

CHANNEL	LOCATION	B	D	F	Z_1	Z_2	*LINING
SWALE #4.1	AYRSHIRE DRIVE	2.0	0.25	0.75	3	3	GRASS
SWALE #4.2	AYRSHIRE DRIVE	2.0	0.48	0.52	3	3	GRASS
SWALE #4.3	BINNEY LANE	2.0	0.50	0.50	3	3	GRASS
SWALE #4.4	BINNEY LANE	2.0	0.17	0.83	3	3	GRASS
SWALE #4.5	BINNEY LANE	2.0	0.45	0.55	3	3	GRASS
SWALE #4.6	BINNEY LANE	2.0	0.30	0.70	3	3	GRASS
SWALE #4.7	BINNEY LANE	2.0	0.50	0.50	3	3	GRASS
SWALE #4.8	BINNEY LANE	2.0	0.20	0.80	3	3	GRASS
SWALE #4.9	BINNEY LANE	4.0	0.50	0.50	3	3	GRASS
SWALE #4.10	BINNEY LANE	2.0	0.35	0.65	3	3	GRASS
SWALE #4.11	BINNEY/AYRSHIRE	2.0	0.30	0.70	3	3	GRASS
SWALE #4.12	BINNEY LANE	2.0	0.45	0.55	3	3	GRASS
SWALE #4.13	BINNEY LANE	3.0	0.50	0.50	3	3	GRASS
SWALE #4.14	BINNEY LANE	2.0	0.35	0.65	3	3	GRASS
SWALE #4.15	AYRSHIRE DRIVE	2.0	0.20	0.80	3	3	GRASS
SWALE #4.16	AYRSHIRE DRIVE	2.0	0.20	0.80	3	3	GRASS
SWALE #4.17	AYRSHIRE DRIVE	2.0	0.25	0.75	3	3	GRASS
SWALE #4.18	AYRSHIRE DRIVE	2.0	0.17	0.83	3	3	GRASS
SWALE #4.19	AYRSHIRE DRIVE	2.0	0.45	0.55	3	3	GRASS
SWALE #4.20	AYRSHIRE DRIVE	2.0	0.17	0.83	3	3	GRASS
SWALE #4.21	AYRSHIRE DRIVE	2.0	0.45	0.55	3	3	GRASS
SWALE #4.22	AYRSHIRE DRIVE	2.0	0.17	0.83	3	3	GRASS
SWALE #4.23	AYRSHIRE DRIVE	3.0	0.50	0.50	3	3	GRASS
SWALE #4.24	AYRSHIRE DRIVE	2.0	0.17	0.83	3	3	GRASS
SWALE #4.25	AYRSHIRE DRIVE	2.0	0.30	0.70	3	3	GRASS
SWALE #4.26	AYRSHIRE DRIVE	3.0	0.50	0.50	3	3	GRASS
SWALE #4.27	AYRSHIRE DRIVE	3.0	0.50	0.50	3	3	GRASS
SWALE #4.28	AYRSHIRE DRIVE	2.0	0.17	0.83	3	3	GRASS
SWALE #4.29	AYRSHIRE DRIVE	2.0	0.35	0.65	3	3	GRASS

CONSTRUCTION NOTES:

1. GEOTEXTILE FABRIC SHALL BE CLEAN NON–WOVEN GEOTEXTILE (PERMEABLE FILTER FABRIC) CLASS 1 AND SHALL BE IN ACCORDANCE WITH PADOT SPECIFICATION FROM 408. THE TYPE AND/OR THICKNESS SHALL BE DUPONT TYPAR #3401, AMOCO PROPEX #4545 OR APPROVED EQUAL OR AS OTHERWISE INDICATED ON THE PLAN.

2. ALL STONE USED FOR THE CONSTRUCTION OF THE INFILTRATION BMP SHALL BE UNIFORMLY GRADED, CLEAN, AND WASHED CRUSHED STONE AGGREGATE MEETING PENNDOT/AASHTO #3 SPECIFICATIONS.

3. ALL PERSONS ENTERING ACTIVE TANKS, MANHOLES, INLETS, ETC. MUST COMPLY WITH OSHA REQUIREMENTS FOR ENTRY INTO CONFINED SPACES.

4. RAIN WATER CONDUCTORS ARE TO COLLECT ALL ROOF RUNOFF AND CONVEY IT TO THE APPROPRIATE STORMWATER MANAGEMENT FACILITY.

5. CLEANOUTS ARE REQUIRED AT ALL CHANGES IN DIRECTION OF THE ROOF DRAINS AND SANITARY SEWER LATERALS.

6. ALL SEEPAGE BEDS SHALL BE INSTALLED WITH A MINIMUM SEPARATION DISTANCE OF 10 FEET FROM ALL BASEMENT WALLS.

7. ALL CMP AND HCMP SHALL BE ALUMINUM OR ALUMINIZED STEEL.

8. ALL HDPE PIPE SHALL BE SMOOTH INTERIOR FLOW.

9. ALL PVC PIPE SHALL BE SDR 35.

10. THE RISER CONNECTIONS IN THE STORMWATER MANAGEMENT SYSTEM SHALL BE WATERTIGHT. REFER TO DETAILS.

11. PERFORATIONS FOR SHALL SATISFY AASHTO DESIGNATION M36/M 36M–90 FOR CLASS 2 PERFORATIONS. THE PERFORATIONS SHALL BE CIRCULAR HOLES WITH NOMINAL DIAMETERS OF 5/16 TO 3/8 INCH. THE PERFORATIONS SHALL BE UNIFORMLY SPACED AROUND THE FULL PERIPHERY OF THE PIPE. THE PERFORATIONS SHALL PROVIDE AN OPENING AREA OF NOT LESS THAN 3.3 SQ. IN. PER SQ. FT. OF PIPE SURFACE BASED ON NOMINAL DIAMETER AND LENGTH OF PIPE.

12. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PLANS AND OTHER DOCUMENTS BY ALL OF THE PERMITTING AUTHORITIES.

13. THE OWNER/CONTRACTOR SHALL BE FAMILIAR WITH AND RESPONSIBLE FOR ANY/ALL CERTIFICATIONS, INSPECTIONS, ETC. REQUIRED BY ALL GOVERNING JURISDICTIONAL AGENCIES DURING AND AFTER CONSTRUCTION FOR SIGN–OFF AND CERTIFICATE OF OCCUPANCY ISSUANCE, INCLUDING BUT NOT LIMITED TO PROCUREMENT OF SERVICES, SCHEDULING OF FIELD OBSERVATIONS AND COORDINATION WITH REPRESENTATIVES OF THE APPROPRIATE PARTIES. CONTRACTOR IS RESPONSIBLE TO COORDINATE CERTIFICATIONS, SIGN–OFFS, ETC. NECESSARY FOR JOB CLOSEOUT AND ISSUANCE OF CERTIFICATE OF OCCUPANCY.

14. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND THE REQUIREMENTS AND STANDARDS OF THE LOCAL GOVERNING AUTHORITY.

15. THESE PLANS ARE BASED ON INFORMATION PROVIDED TO OUR OFFICE AT THE TIME OF PLAN PREPARATION. CONTRACTOR SHALL FIELD–VERIFY EXISTING CONDITIONS AND NOTIFY OUR OFFICE IF ACTUAL SITE CONDITIONS DIFFER FROM THAT SHOWN ON THE PLAN, OR IF THE PROPOSED WORK WOULD BE INHIBITED BY ANY OTHER SITE FEATURES.

16. ALL DIMENSIONS SHOWN ON THE PLANS SHALL BE FIELD–VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY ENGINEER IN WRITING IF ANY DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION. NO EXTRA COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR WORK HAVING TO BE REDONE DUE TO DIMENSIONS OR GRADES SHOWN INCORRECTLY ON THESE PLANS IF SUCH NOTIFICATION HAS NOT BEEN GIVEN.

17. DEBRIS SHALL NOT BE BURIED ON THE SUBJECT SITE. ALL EXCAVATED MATERIAL AND DEBRIS (SOLID WASTE) SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL TOWNSHIP, COUNTY, STATE AND FEDERAL LAWS AND APPLICABLE CODES. CONTRACTOR SHALL PROPERLY REMOVE & DISPOSE OF HAZARDOUS/UNSUITABLE MATERIAL–SITE IN ACCORDANCE WITH ALL APPLICABLE CODES, ORDINANCES & LAWS.

18. CONTRACTOR IS RESPONSIBLE FOR ALL SHORING REQUIRED DURING EXCAVATION AND SHALL BE PERFORMED IN ACCORDANCE WITH CURRENT OSHA STANDARDS, AS WELL AS ADDITIONAL PROVISIONS TO ASSURE STABILITY OF CONTINGUOUS STRUCTURES, AS FIELD CONDITIONS DICTATE.

19. CONTRACTOR IS TO EXERCISE EXTREME CARE WHEN PERFORMING ANY WORK ACTIVITIES ADJACENT TO PAVEMENT, STRUCTURE, ETC. TO REMAIN. CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING THE APPROPRIATE MEASURES AS NECESSARY TO ENSURE THE STRUCTURAL STABILITY OF SIDEWALKS AND PAVEMENT TO REMAIN, AND PROVIDE A SAFE WORK AREA.

20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR AND SHALL REPLACE ALL SIGNAL INTERCONNECT CABLE, CONDUITS AND ANY UNDERGROUND ACCESSORY EQUIPMENT DAMAGED DURING CONSTRUCTION.

21. CONTRACTOR IS RESPONSIBLE FOR REPAIRING THE DAMAGE DONE TO ANY EXISTING ITEM DURING CONSTRUCTION SUCH AS BUT NOT LIMITED TO DRAINAGE, UTILITIES, PAVEMENT, STRIPING, CURB, ETC. REPAIR SHALL BE EQUAL TO, OR BETTER THAN, EXISTING CONDITIONS. CONTRACTOR IS RESPONSIBLE TO DOCUMENT ALL EXISTING DAMAGE NOTIFY CONSTRUCTION MANAGER PRIOR TO CONSTRUCTION START.

22. ALL CONCRETE SHALL HAVE THE MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS AS INDICATED IN SPECIFICATIONS UNLESS OTHERWISE NOTED ON THE PLANS, DETAILS AND/OR GEOTECHNICAL REPORT.

23. ENGINEER NOT RESPONSIBLE FOR CONSTRUCTION METHODS/MEANS FOR COMPLETION OF THE WORK DEPICTED ON THESE PLANS NOR ANY CONFLICTS/SCOPE REVISIONS WHICH RESULT FROM SAME. CONTRACTOR RESPONSIBLE FOR DETERMINING METHODS/MEANS FOR COMPLETION OF THE WORK PRIOR TO THE COMMENCEMENT OF CONSTRUCTION AND NOTIFICATION OF OWNER AND ENGINEER OF RECORD WHEN A CONFLICT IS IDENTIFIED.

24. ENGINEER OF RECORD HEREIN IS NOT RESPONSIBLE FOR JOB SITE SAFETY, NOR HAS HE BEEN RETAINED FOR SUCH PURPOSES.

25. SITE GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND ANY RECOMMENDATIONS PROVIDED BY THE OWNER'S GEOTECHNICAL ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND REPLACING ANY SOFT, YIELDING OR UNSUITABLE MATERIALS AND REPLACING WITH SUITABLE MATERIALS AS SPECIFIED IN THE SOILS REPORT. ALL EXCAVATED OR FILLED AREAS SHALL BE COMPACTED TO 95% OF MODIFIED PROCTOR MAXIMUM DENSITY PER A.S.T.M. TEST D–1557. MOISTURE CONTENT AT TIME OF PLACEMENT SHALL BE NO MORE THAN 2% ABOVE NOR 3% BELOW OPTIMUM. CONTRACTOR SHALL SUBMIT A COMPACTION REPORT PREPARED BY A QUALIFIED SOILS ENGINEER, REGISTERED WITHIN THE STATE WHERE THE WORK IS PERFORMED, VERIFYING THAT ALL FILLED AREAS AND SUBGRADE AREAS WITHIN THE BUILDING PAD, FIELDS AND AREAS TO BE PAVED HAVE BEEN COMPACTED IN ACCORDANCE WITH THESE PLANS AND SPECS AND THE RECOMMENDATIONS SET FORTH IN THE SOILS REPORT.

26. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF EXISTING TOPOGRAPHIC INFORMATION AND UTILITY INVERT ELEVATIONS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR TO ENSURE 0.75% MIN. SLOPE AGAINST ANY AND ALL CURBS, ISLANDS AND GUTTERS, AND 1.0% MIN. ON GRAVEL, TO PREVENT PONDING. ANY DISCREPANCIES THAT MAY AFFECT THE PUBLIC SAFETY OR PROJECT COST, MUST BE IDENTIFIED TO THE ENGINEER IN WRITING IMMEDIATELY. PROCEEDING WITH CONSTRUCTION WITH DESIGN DISCREPANCIES IS DONE SO AT THE CONTRACTOR'S OWN RISK.

27. LOCATION OF ALL EXISTING AND PROPOSED SERVICES ARE APPROXIMATE AND MUST BE CONFIRMED INDEPENDENTLY WITH LOCAL UTILITY COMPANIES PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION OR EXCAVATION. SANITARY SEWER AND ALL OTHER UTILITY SERVICE CONNECTION POINTS SHALL BE CONFIRMED INDEPENDENTLY BY THE CONTRACTOR IN FIELD PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. ALL DISCREPANCIES SHALL BE REPORTED IMMEDIATELY IN WRITING TO THE ENGINEER. CONSTRUCTION SHALL COMMENCE BEGINNING AT THE LOWEST INVERT (POINT OF CONNECTION) AND PROGRESS UP GRADIENT. INTERFACE POINTS (CROSSINGS) WITH EXISTING UNDERGROUND INSTALLATIONS SHALL BE FIELD–VERIFIED BY TEST PIT PRIOR TO COMMENCEMENT OF CONSTRUCTION.

28. IN CASE OF DISCREPANCIES BETWEEN PLANS, THE SITE PLAN WILL SUPERCEDE IN ALL CASES. NOTIFY ENGINEER OF RECORD OF ANY CONFLICT.

29. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY UTILITY "ONE–CALL" NUMBER 72 HOURS PRIOR TO ANY EXCAVATION ON THIS SITE. CONTRACTOR SHALL ALSO NOTIFY LOCAL WATER & SEWER DEPARTMENTS TO MARK OUT THEIR UTILITIES.

30. SUBBASE MATERIAL FOR SIDEWALKS, CURB, OR ASPHALT SHALL BE FREE OF ORGANICS AND OTHER UNSUITABLE MATERIALS. SHOULD SUBBASE BE DEEMED UNSUITABLE, SUBBASE IS TO BE REMOVED AND FILLED WITH APPROVED FILL MATERIAL COMPACTED TO 95% OPTIMUM DENSITY (AS DETERMINED BY MODIFIED PROCTOR METHOD). NO UNSUITABLE MATERIAL IS TO BE USED IN ANY PORTION OF THE PAVED AREA OF CONSTRUCTION. REMOVE ANY SUBGRADE THAT CANNOT BE PROPERLY COMPACTED AND THAT IS UNSUITABLE MATERIAL. UNDERCUTTING AND/OR SUBGRADE STABILIZATION MAY BE REQUIRED.

31. ALL DRAINAGE STRUCTURES SHALL BE PRE–CAST.

32. ALL DRAINAGE STRUCTURES AND STORM SEWER PIPES SHALL MEET HEAVY–DUTY TRAFFIC (H20) LOADING AND BE INSTALLED ACCORDINGLY.

33. ALL TRENCHING, PIPE LAYING AND BACKFILLING SHALL BE IN ACCORDANCE WITH FEDERAL OSHA REGULATIONS.

34. GENERAL CONTRACTOR SHALL HAVE APPROVAL OF ALL GOVERNING AGENCIES HAVING JURISDICTION OVER THIS SITE PRIOR TO COMMENCING CONSTRUCTION.

35. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL FIELD ELEVATIONS PRIOR TO CONSTRUCTION, IF THERE ARE ANY DISCREPANCIES BETWEEN THE ACTUAL FIELD ELEVATIONS AND ELEVATIONS SHOWN IN THE PRELIMINARY/FINAL SUBDIVISION PLANS, THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE OWNER. NEITHER MOMENEE AND ASSOCIATES INC., NOR MOMENEE SURVEY GROUP ARE RESPONSIBLE FOR DESIGN ISSUES THAT MAY ARISE DUE TO DISCREPANCIES BETWEEN ACTUAL SITE ELEVATIONS AND EXISTING AND/OR PROPOSED ELEVATIONS SHOWN IN THE FINAL SUBDIVISION PLANS FOR THIS PROPERTY.

36. GAS AND ELECTRIC SERVICES TO BE DESIGNED IN COORDINATION WITH PECO SERVICE CONTRACT. ALL ELECTRIC AND GAS CONSTRUCTION SHALL BE IN ACCORDANCE WITH PER PECO SPECIFICATIONS.

37. ALL PROPOSED UTILITY SERVICES SHALL BE INSTALLED UNDERGROUND.

38. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH PENNDOT PUBLICATION 408 AND RC STANDARDS (LATEST ADDITIONS).

39. CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT HANDICAP ACCESSIBLE SPACES AND LOADING AREAS MAINTAIN A 2% MAXIMUM SLOPE IN ALL DIRECTIONS AND THAT HANDICAP CURB RAMPS MEET THE LATEST ADA REQUIREMENTS FOR ACCESSIBIL

SEQUENCE OF BMP INSTALLATITON:

1. **CRITICAL STAGE –** UPON FINAL STABILIZATION OF THE CONTRIBUTORY AREA, EXCAVATE FOR AND INSTALL THE PERMANENT STORM WATER SYSTEM AND LEVEL SPREADER. THE INFILTRATION SYSTEM SHALL REMAIN PROTECTED FROM DISTURBANCE UNTIL THE CONTRIBUTORY AREAS ARE COMPLETELY STABILIZED. PRIOR TO THE INSTALLATION OF THE PERMANENT STORMWATER MANAGEMENT SYSTEM AND PRIOR TO THE SYSTEM BEING RENDERED OPERATIONAL, THE CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER FOR FIELD REVIEW OF THE SITE GRADING, STORMWATER FACILITIES AND GENERAL PCSM PLAN COMPLIANCE IN ORDER TO FACILITATE FINAL CERTIFICATION THAT THE SITE WAS CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PCSM PLAN.
2. EXCAVATE TO THE BOTTOM OF THE PERMANENT SYSTEM AS INDICATED ON THE PLANS. EXCAVATION SHALL BE DONE IN A MANNER THAT DOES NOT DISTURB THE SOIL STRUCTURE OF THE INFILTRATION ZONE.
3. PLACE THE FILTER FABRIC IN THE EXCAVATION AND TACK IT UP TO THE SIDES. ALLOW SUFFICIENT FABRIC TO OVERLAP THE TOP OF THE BED. PROVIDE OPENING IN FABRIC FOR OUTFLOW PIPE.
4. PLACE 6" OF AASHTO NO. 57 AGGREGATE IN THE BOTTOM OF THE BED AND EVENLY DISTRIBUTE ON THE BOTTOM. CARE SHALL BE TAKEN TO ENSURE THAT THE FILTER FABRIC IN THE BED IS NOT TORN DURING INSTALLATION. INSTALL STONE TO THE NOTED UNIFORM DEPTH.
5. PLACE SECOND LAYER OF FILTER FABRIC OVER STONE BASE. ALLOW SUFFICIENT FABRIC TO OVERLAP THE TOP OF THE "STORM TANK" UNITS.
6. INSTALL "STORM TANK" UNITS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDED PRACTICES. CONNECT INLETS TO "STORM TANK" UNITS. INSTALL SEEPAGE BED INFLOW PIPE. INSTALL PERMANENT LEVEL SPREADER AND CONNECT OUTFLOW PIPE TO THE SPREADER.
7. COMPLETELY WRAP "STORM TANK" UNITS WITH FILTER FABRIC.
8. BACKFILL AREA BETWEEN EXCAVATION AND "STORM TANK" UNITS WITH AASHTO NO. 57 AGGREGATE. PLACE AASHTO NO. 57 COARSE OVER TOP OF "STORM TANK" UNITS TO A MINIMUM DEPTH OF 12".
9. COMPLETELY COVER TOP OF AGGREGATE WITH FILTER FABRIC. OVERLAP JOINTS IN FABRIC A MINIMUM OF 12".
10. BACKFILL AND COMPACT REMAINDER OF EXCAVATION WITH EXCAVATED MATERIAL TO FINAL GRADE.

11. **CRITICAL STAGE – RAIN GARDEN CONSTRUCTION.** INSTALL PROTECTION FENCING AROUND RAIN GARDEN AREAS TO PROTECT AREAS DURING CONSTRUCTION.
12. UPON FINAL STABILIZATION OF THE RESPECTIVE CONTRIBUTARY AREAS, EXCAVATE FOR AND INSTALL THE PERMANENT RAIN GARDENS, OUTLET CONTROLS, AND RIP RAP APRONS. EXCAVATE TO THE BOTTOM OF THE RAIN GARDEN. INSTALL THE GRAVEL BASE AND SURROUND THE GRAVEL WITH GEOTEXTILE FABRIC. INSTALL THE SAND BED AND SURROUND BY GEOTEXTILE FABRIC. INSTALL THE SOIL/PLANTING MIX, PERFORATED UNDERDRAIN, AND THE RISER. THE TOWNSHIP ENGINEER SHALL BE NOTIFIED 48 HOURS PRIOR TO THE INSTALLATION OF THE RAIN GARDENS. THE RAIN GARDENS SHALL NOT RECEIVE RUNOFF UNTIL THE ENTIRE AREA CONTRIBUTORY TO THE INFILTRATION BMP HAS ACHIEVED FINAL STABILIZATION. THE BOTTOM OF ALL INFILTRATION BMPS SHALL BE UNDISTURBED OR UNCOMPACTED SUBGRADE.
13. CONNECT THE RAIN GARDENS TO THE RIP RAP APRONS. CONNECT THE INLETS TO THE RAIN GARDENS AS SHOWN ON THE PLANS.
14. UPON FINAL GRADING OF RAIN GARDENS, INSTALL VEGETATION WITHIN THE RAIN GARDENS.

CONSTRUCTION SPECIFICATIONS FOR STORMWATER MANAGEMENT SYSTEMS

1. INFILTRATION BMP FILTER FABRIC AND STONE SHOULD BE KEPT CLEAN OF SOIL/SEDIMENT DURING THE INSTALLATION PROCESS. IF INSPECTION INDICATES THAT SOIL SEDIMENT HAS ENTERED ANY OF THE INFILTRATION SEEPAGE BEDS, APPROPRIATE MEASURES (i.e. CLEANING THE SOIL/SEDIMENT FROM FABRIC, STONE, BED ETC. AND OR REPLACEMENT OF THE FABRIC AND STONE) SHOULD BE ADDRESSED.

2. ALTER AND REFINE THE GRADES AS NECESSARY TO BRING SUBGRADE TO REQUIRED GRADES AND SECTIONS AS SHOWN IN THE DRAWINGS.

3. THE TYPE OF EQUIPMENT USED IN SUBGRADE PREPARATION CONSTRUCTION SHALL NOT CAUSE UNDUE SUBGRADE COMPACTION. TRAFFIC OVER SUBGRADE SHALL BE KEPT AT A MINIMUM.

4. ADDITIONAL INFILTRATION TESTING SHALL BE PERFORMED DURING CONSTRUCTION VERIFYING THAT SUBSOIL COMPACTION DID NOT TAKE PLACE. CALCULATIONS SHALL BE SUBMITTED TO THE TOWNSHIP FOR REVIEW AND APPROVAL. UPON VERIFYING THE SUITABILITY OF THE SOILS, EXCAVATE TO THE BOTTOM OF THE PERMANENT SYSTEM, AS INDICATED ON THE PLANS.

5. INSTALL POLYPROPYLENE NONWOVEN GEOTEXTILE FABRIC WHICH MEETS PADOT CLASS 1 SPECIFICATIONS (I.E., DUPONT TYPAR #3401, AMOCO PROPEX #4545, OR APPROVED EQUAL) ON BOTTOM OF BED AREAS AND TACK UP SIDES OF EXCAVATION. WHERE EDGES OF ROLLS OVERLAP, THEY SHALL DO SO BY AT LEAST EIGHTEEN INCHES. ADEQUATE FABRIC SHALL BE LEFT ON THE ROLLS (NOT CUT FROM SIDE INSTALLATION) TO FACILITATE OVERTOPPING THE SYSTEM AT COMPLETION OF INSTALLATION.

6. ALL STONE FOR THE CONSTRUCTION OF THE OF THE STONE RECHARGE BED SHALL BE UNIFORMLY GRADED AND CLEAN, WASHED, AGGREGATE. THE STONE SHALL MEET PENNDOT/AASHTO #3 SPECIFICATIONS. STONE TO BE CHECKED BY THE DESIGN OR SITE ENGINEER PRIOR TO INSTALLATION.

7. STONE BASE COURSE SHALL BE LAID OVER A DRY SUBGRADE TO A DEPTH SHOWN IN DRAWINGS. DO NOT ROLL OR COMPACT THE STONE BASE COURSE. KEEP THE BASE COURSE CLEAN FROM DEBRIS, CLAY AND ERODING SOIL. INSTALL TANKS AND PIPE AS SHOWN AND BACKFILL WITH STONE.

8. COVER SYSTEM WITH REMAINING FABRIC, ALLOWING OPENINGS FOR ACCESS COVERS.

9. SYSTEM TO BE TOTALLY ENCLOSED IN THE NON–WOVEN GEOTEXTILE FABRIC.

10. STONE RECHARGE BED FILTER FABRIC AND STONE SHOULD BE KEPT CLEAN OF SOIL/SEDIMENT DURING THE INSTALLATION PROCESS.

11. THE BOTTOM OF ALL STONE RECHARGE BED'S SHALL BE UNDISTURBED OR UNCOMPACTED SUBGRADE.

12. INFLOW AND OUTFLOW POINTS INTO THE INDIVIDUAL ON–LOT SYSTEMS SHOULD BE KEPT CLEAR OF LEAVES AND OTHER DEBRIS. ANY LEAVES OR DEBRIS WILL NEGATIVELY IMPACT THE PERFORMANCE OF THESES SYSTEMS. ALL DOWNSPOUTS AND OVERFLOW PIPES SHOULD BE KEPT IN GOOD WORKING ORDER.

13. STONE RECHARGE BEDS SHALL NOT RECEIVE RUNOFF UNTIL THE ENTIRE DRAINAGE AREA CONTRIBUTING TO THE STONE RECHARGE BED HAS ACHIEVED FINAL STABILIZATION.

14. AFTER THE INFILTRATION BED IS COMPLETELY INSTALLED, ALL HEAVY CONSTRUCTION EQUIPMENT SHALL BE RESTRICTED FROM THE INFILTRATION BEDS TO ELIMINATE IMPACTS WHICH MAY COMPROMISE IT. IN THE EVENT ANY IMPACTS COMPROMISE THE FUNCTIONALITY OF THE INFILTRATION BEDS, IT MUST BE IMMEDIATELY REPAIRED OR REPLACED TO DESIGN SPECIFICATIONS.

INFILTRATION BMP NOTES:

1. INFILTRATION BMP FILTER FABRIC AND STONE SHOULD BE KEPT CLEAN OF SOIL/SEDIMENT DURING THE INSTALLATION PROCESS. IF INSPECTION INDICATES THAT SOIL SEDIMENT HAS ENTERED ANY OF THE INFILTRATION SEEPAGE BEDS, APPROPRIATE MEASURES (i.e. CLEANING THE SOIL/SEDIMENT FROM FABRIC, STONE, BED ETC. AND OR REPLACEMENT OF THE FABRIC AND STONE) SHOULD BE ADDRESSED.
2.

GENERAL E&S PLANNING AND DESIGN:

THE EROSION AND SEDIMENTATION CONTROL PLAN IS DESIGNED IN ORDER TO DEMONSTRATE THAT THE FOLLOWING CRITERIA HAVE BEEN ATTAINED:

- THE E&S PLAN MINIMIZES THE EXTENT AND DURATION OF EARTH DISTURBANCE TO THE EXTENT POSSIBLE, BY LOCATING THE EROSION CONTROLS WITHIN AREAS THAT WILL ALREADY BE DISTURBED FOR THE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS AND BECAUSE THE CONSTRUCTION SEQUENCE HAS BEEN PREPARED TO LIMIT THE DURATION OF EARTH DISTURBANCE. THE INTENT OF THE PROPOSED DEVELOPMENT IS TO BE A LOW IMPACT DEVELOPMENT TO MINIMIZE THE AMOUNT OF TOTAL EARTH DISTURBANCE AS MUCH AS FEASIBLE. THE CONTRACTOR SHALL MINIMIZE THE DURATION OF EARTH DISTURBANCE TO THE EXTENT FEASIBLE.

- THE E&S PLAN MAXIMIZES PROTECTION OF EXISTING DRAINAGE FEATURES AND VEGETATION BY LOCATING THE EROSION CONTROLS WITHIN AREAS THAT WILL ALREADY BE DISTURBED FOR THE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS AND BY MAINTAINING THE SURROUNDING VIABLE VEGETATION TO THE EXTENT FEASIBLE. THE PROPOSED SITE LAYOUT HAS BEEN DESIGNED TO AVOID DISTURBANCE OF THE EXISTING DRAINAGE FEATURES AND TO PROTECT THE EXISTING VEGETATION.

- E&S PLAN MINIMIZES SOIL COMPACTION – THE TYPE OF EQUIPMENT USED DURING CONSTRUCTION SHALL NOT CAUSE UNDUE COMPACTION AND TRAFFIC OVER DISTURBED AREAS SHALL BE KEPT AT A MINIMUM IN ORDER TO MINIMIZE SOIL COMPACTION.

- THE E&S PLAN UTILIZES OTHER MEASURES OR CONTROLS THAT PREVENT OR MINIMIZE GENERATION OF INCREASED STORMWATER RUNOFF BY OVERSIZING THE FILTER SOCK WHERE FEASIBLE, PROPOSING THE INSTALLATION OF THE STORMWATER FACILITIES AND NEW LANDSCAPING, ETC. AS SOON AS FEASIBLE.

- THE CONTRACTOR SHALL UTILIZE PROPER HANDLING AND/OR DISPOSAL OF ALL MATERIALS WHICH COULD CAUSE POLLUTION.

- WHERE POTENTIAL THERMAL IMPACTS TO SURFACE WATERS EXIST, APPROPRIATE MEASURES SHALL BE TAKEN TO AVOID/MINIMIZE/OR MITIGATE THESE IMPACTS INCLUDING BUT NOT LIMITED TO MINIMIZING IMPERVIOUS AREAS, MINIMIZING THE EXTENT AND DURATION OF SITE DISTURBANCE, PROTECTING EXISTING SHADE TREES, INSTALLING NEW PLANTINGS AS SOON AS FEASIBLE, MAXIMIZING VEGETATED SWALES, MINIMIZING DENUDED AND CONCRETE CHANNELS AND MAXIMIZING DETENTION FACILITY AREAS WHILE MINIMIZING POOL DEPTHS.

EROSION AND SEDIMENT CONTROL NOTES:

1. STOCKPILE HEIGHTS MUST NOT EXCEED 15 FEET. STOCKPILE SLOPES MUST BE 2: 1 OR FLATTER.
2. THE OPERATOR SHALL ASSURE THAT THE APPROVED EROSION AND SEDIMENT CONTROL PLAN IS PROPERLY AND COMPLETELY IMPLEMENTED.
3. UNTIL THE SITE ACHIEVES FINAL STABILIZATION, THE PERMITTEE AND COPERMITTEE 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 MAINTAIN AND MAKE AVAILABLE TO THE DELAWARE COUNTY CONSERVATION DISTRICT COMPLETE, WRITTEN INSPECTION LOGS OF ALL THOSE INSPECTIONS. ALL MAINTENANCE WORK, INCLUDING CLEANING, REPAIR, REPLACEMENT, REGRADING, RESEEDING, AND RESTABILIZATION SHALL BE PERFORMED IMMEDIATELY.
4. 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.
5. BEFORE INITIATING ANY REVISIONS TO THE APPROVED EROSION AND SEDIMENT CONTROL PLAN OR REVISIONS TO OTHER PLANS WHEN MAY AFFECT THE APPROVED EROSION AND SEDIMENT CONTROL PLAN, THE OPERATOR MUST RECEIVE APPROVAL OF THE REVISIONS FROM THE DELAWARE COUNTY CONSERVATION DISTRICT.
6. THE OPERATOR SHALL ASSURE THAT AN EROSION AND SEDIMENT CONTROL PLAN HAS BEEN PREPARED, APPROVED BY THE APPROPRIATE CONSERVATION DISTRICT, AND IS BEING IMPLEMENTED AND MAINTAINED FOR ALL SOIL AND/OR ROCK SPOIL AND BORROW AREAS, REGARDLESS OF THEIR LOCATIONS.
7. ALL PUMPING OF SEDIMENT LADEN WATER SHALL BE THROUGH A SEDIMENT CONTROL BMP, SUCH AS A PUMPED WATER FILTER BAG DISCHARGING OVER NON-DISTURBED AREAS.
8. THE CONTRACTOR IS ADVISED TO BECOME THOROUGHLY FAMILIAR WITH THE PROVISIONS OF THE APPENDIX 64, EROSION CONTROL RULES AND REGULATIONS, TITLE 25, PART I, DEPARTMENT OF ENVIRONMENTAL PROTECTION, SUBPART C, PROTECTION OF NATURAL RESOURCES, ARTICLE III, WATER RESOURCES, CHAPTER 102, EROSION CONTROL.
9. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES.
10. ONLY LIMITED DISTURBANCE WILL BE PERMITTED TO PROVIDE ACCESS TO THE SEDIMENT TRAPS/BMPS AND TEMPORARY DIVERSION BERMS FOR GRADING AND ACQUIRING BORROW TO CONSTRUCT THOSE BMP'S.
11. EROSION AND SEDIMENT BMP'S MUST BE CONSTRUCTED, STABILIZED, AND FUNCTIONAL BEFORE SITE DISTURBANCE BEGINS WITHIN THE TRIBUTARY AREAS OF THOSE BMP'S.
12. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMP CONTROLS MUST BE REMOVED. AREAS DISTURBED DURING REMOVAL OF THE BMP'S MUST BE STABILIZED IMMEDIATELY.
13. 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 INVOLVED WITH EROSION AND SEDIMENTATION 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 CONTRACTORS INVOLVED IN THOSE ACTIVITIES MUST NOTIFY THE PENNSYLVANIA ONE CALL SYSTEM INCORPORATED AT 1-800-242-1776 FOR BURIED UTILITIES LOCATIONS.
14. 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.
15. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. EACH STAGE SHALL BE COMPLETED BEFORE ANY FOLLOWING STAGE IS INITIATED. CLEARING AND GRUBBING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE.
16. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE, THE OPERATOR SHALL STABILIZE ANY AREAS DISTURBED BY THE ACTIVITIES. DURING NON-GERMINATING PERIODS, MULCH MUST BE APPLIED AT THE SPECIFIED RATES.
17. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE REDISTURBED WITHIN ONE YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY VEGETATIVE STABILIZATION SPECIFICATIONS. DISTURBED AREAS WHICH ARE AT FINISHED GRADE OR WHICH WILL NOT BE REDISTURBED WITHIN ONE YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS.
18. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS.
19. 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.
20. SEDIMENT MUST BE REMOVED FROM STORM WATER INLET PROTECTION AFTER EACH RUNOFF EVENT.
21. HAY OR STRAW MULCH MUST BE APPLIED AT 3.0 TONS PER ACRE.
22. SOD, MULCH WITH MULCH CONTROL NETTING, OR EROSION CONTROL BLANKETS MUST BE INSTALLED ON ALL SLOPES 4:1 OR STEEPER.
23. STRAW MULCH SHALL BE APPLIED IN LONG STRANDS, NOT CHOPPED OR FINELY BROKEN.
24. INSPECT SEDIMENT BARRIERS FREQUENTLY, ESPECIALLY AFTER HEAVY STORMS. REPLACE AND REPAIR SEDIMENT BARRIERS AS NECESSARY.
25. 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, REGRADING, 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.
26. SEDIMENT REMOVED FROM BMP'S SHALL BE DISPOSED OF IN LANDSCAPE AREAS OUTSIDE OF STEEP SLOPES, WETLANDS, FLOODPLAINS OR DRAINAGE SWALES AND IMMEDIATELY STABILIZED, OR PLACED IN TOPSOIL STOCKPILES.
27. THE OPERATOR SHALL REMOVE FROM THIS 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. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP, OR DISCHARGE ANY BUILDING MATERIAL OR WASTES AT THIS SITE.
28. 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.
29. THE NPDES BOUNDARY IS EQUAL TO THE PROPERTY BOUNDARY.
30. THE NORTHERN PORTION OF THE SITE'S RECEIVING WATERCOURSE IS WIG-WAM RUN, A TRIBUTARY TO DARBY CREEK; THE CHAPTER 93 CLASSIFICATION IS CWF AND THE SOUTHERN PORTION OF THE SITE'S RECEIVING WATERCOURSE IS CAMP RUN, A TRIBUTARY TO DARBY CREEK; THE CHAPTER 93 CLASSIFICATION IS CWF, MF.
31. 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.
32. TOPSOIL TAKEN FROM CONSTRUCTION AREAS SHALL BE SEEDED WITH VEGETATIVE COVER AND STOCKPILED FOR RE-USE IN FINISH GRADING.
33. CRUSHED STONE BASE COURSE TO BE PLACED ON DRIVEWAYS AS SOON AS POSSIBLE AFTER GRADING TO PREVENT EROSION OF SUBGRADE.
34. THE CONTRACTOR SHALL, BY SCHEDULING THE CONSTRUCTION, UTILIZE NEW PLANTINGS AND PROPERLY INSTALL EROSION CONTROL FENCING, HAY BALES AND OTHER EROSION CONTROL MEASURES TO MINIMIZE EROSION DAMAGE.
35. ALL CONSTRUCTION VEHICLES MUST PASS THROUGH A STABILIZED CONSTRUCTION ENTRANCE BEFORE LEAVING THE SITE.
36. PROVIDE CONSTRUCTION FENCING AS NECESSARY TO SECURE THE CONSTRUCTION SITE FROM UNAUTHORIZED ACCESS.
37. GRADING AND EARTHMOVING OPERATIONS SHALL BE MINIMIZED DURING THE PERIOD FROM NOVEMBER 15 TO APRIL 1 WHEN RE-VEGETATION OF EXPOSED GROUND SURFACE IS DIFFICULT. MULCH, STRAW, STONE AND/OR SOD SHALL BE USED TO STABILIZE ALL AREAS DENUDED DURING THIS TIME PERIOD.
38. THE RUNOFF CROSSING TO THE ADJACENT PROPERTIES DURING THE CONSTRUCTION PHASE OF THE PROJECT SHALL BE MANAGED SO THAT THE WATER QUALITY / QUANTITY IMPACT IS MINIMIZED TO THE ADJACENT PROPERTIES. ADDITIONAL DIVERSION BERMS, STONED CONSTRUCTION STAGING AREAS, AND INLETS/PIPING SHALL BE PROVIDED AS NECESSARY / DIRECTED IN ORDER TO ENSURE ACCEPTABLE CONDITIONS DURING THE CONSTRUCTION PHASE.

MAINTENANCE OF TEMPORARY SEDIMENTATION CONTROL

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

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

WHERE BMP'S ARE FOUND TO FAIL TO ALLEVIATE EROSION ON SEDIMENT POLLUTION THE PERMITTEE OR CO-PERMITTEE SHALL INCLUDE THE FOLLOWING INFORMATION:

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

1. STABILIZED CONSTRUCTION ENTRANCE: THE STABILIZED CONSTRUCTION ENTRANCES ARE TO BE CONSTRUCTED PER THE DETAIL. THICKNESS WILL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE OF ROCK MATERIAL WILL BE MAINTAINED ON THE SITE FOR THIS PURPOSE. AT THE END OF EACH CONSTRUCTION DAY, ALL SEDIMENT DEPOSITED ON PUBLIC ROADWAYS WILL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE.

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

3. ROCK FILTER OUTLETS: ROCK FILTER OUTLETS SHALL BE INSTALLED PER THE DETAIL. SEDIMENT SHALL BE REMOVED FROM BEHIND ROCK FILTER OUTLET AFTER EACH STORM EVENT. WHEN STONE BECOMES CLOGGED WITH SEDIMENT, THE ROCK FILTER OUTLET SHALL BE REPLACED WITH CLEAN STONE.

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

5. SWALES: ALL SWALES MUST BE TEMPORARY LINED WITH CURLEX TO ALLOW VEGETATION TO ESTABLISH. IF VEGETATION CAN NOT GROW THEN THAT AREA MUST BE SODDED.

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

7. DUST CONTROL: DUST AND OTHER PARTICLES SHALL BE KEPT WITHIN TOLERABLE LIMITS BY USING WATER. APPLICATION SHALL BE AS NEEDED OR AS DIRECTED BY THE TOWNSHIP ENGINEER OR THE CONSERVATION DISTRICT. USE OF CALCIUM CHLORIDE OR OTHER SIMILAR APPROVED ADDITIVES SHALL BE LIMITED TO ONLY THOSE PARTICULAR SITUATIONS IN WHICH PERIODIC CLEANING AND/OR WETTING IS NOT FEASIBLE DUE TO CONDITIONS CAUSED BY WEATHER, TRAFFIC, ETC.

8. AIR POLLUTION: BURNING OF TREES, STUMPS, CUTTINGS, AND OTHER PERISHABLE MATERIALS WILL NOT BE PERMITTED UNLESS SPECIFICALLY ALLOWED BY THE MUNICIPALITY, THE COUNTY HEALTH DEPARTMENT, OR THE AIR POLLUTION CONTROL ACT, JANUARY 8, 1990, AS AMENDED TO DATE, WILL GOVERN AND AREA A PART OF THIS PLAN BY REFERENCE.

9. STREET SWEEPING/VACUUMING – STREET SWEEPING WILL BE PROVIDED TO REMOVE LARGER DEBRIS AND SMALLER PARTICULATE POLLUTANTS, PREVENTING THIS MATERIAL FROM WASHING INTO RECEIVING WATERWAYS/WATERBODIES.

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
NOTE: 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.

CARE OF EXISTING TREES:

1. TREE PROTECTION FENCING SHALL BE INSTALLED TO PROTECT ALL EXISTING TREES FROM DAMAGE DUE TO LANDSCAPE OPERATIONS, OPERATIONS BY OTHER CONTRACTORS AND TRADES, AND OTHERS. MAINTAIN PROTECTION FENCING FOR THE DURATION OF PROJECT.

2. SELECTIVELY PRUNE EXISTING TREES AT THE EDGE OF ALL TREE PROTECTION ZONES, AND OTHER EXISTING TREES AFFECTED BY CONSTRUCTION, UNDER LANDSCAPE ARCHITECT'S DIRECTION. REMOVE SUCKER SHOOTS, DEAD, RUBBING AND DAMAGED BRANCHES.

3. ANY EXCAVATION NEAR ADJACENT ROOT SYSTEMS WILL REQUIRE ROOT PRUNING OF AFFECTED TREE(S).

4. FERTILIZE PRUNED EXISTING TREES WITH 3 TO 4 LBS. OF LIQUID FERTILIZER PER 1,000 SQUARE FEET OF DRIP AREA, OR, 5 GALLONS OF LIQUID FERTILIZER PER CALIPER INCH OF TRUNK DIAMETER.

5. FERTILIZE IN EARLY SPRING BEFORE GROWTH BEGINS.

6. FERTILIZE BEGINNING 2' FROM TRUNK AT INTERVALS 2' TO 3' ON CENTER IN A GRID-LIKE PATTERN TO A DEPTH OF 6-18" WITHIN THE DRIPLINE AND BEYOND WHERE POSSIBLE. INJECTION FERTILIZATION METHOD SHALL BE ACCEPTABLE SUBJECT TO LANDSCAPE ARCHITECT'S APPROVAL.

PLACING TOPSOIL OR TOPSOIL MIXTURE:

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

PLACING AND SPREADING TOPSOIL
PLACE TOPSOIL ON THE PREPARED AREAS AND, UNLESS OTHERWISE INDICATED, SPREAD AND COMPACT TO A 4-INCH UNIFORM DEPTH ± 1 1/2 INCHES. COMPACT WITH A ROLLER WEIGHING NOT OVER 120 POUNDS PER FOOT WIDTH OF ROLLER OR BY OTHER ACCEPTABLE METHODS, AS DIRECTED. REMOVE OVERDEPTH TOPSOIL, UNLESS OTHERWISE AGREED UPON IN WRITING. DO NOT PLACE TOPSOIL IN A WET OR FROZEN CONDITION.

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

PERMANENT STABILIZATION NOTE:

AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS.

PHASE IV

NOTE: THE DEVELOPMENT OF PHASE IV IS INDEPENDENT OF THE CONSTRUCTION ACTIVITIES IN OTHER PHASES OF THIS PROJECT AND THE DEVELOPMENT OF PHASE IV MAY COMMENCE AT ANY TIME AFTER PHASE 1 INFRASTRUCTURE CONSTRUCTION IS COMPLETE.

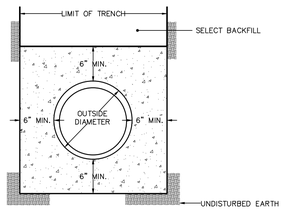
NOTIFY THE TOWNSHIP & DELAWARE COUNTY CONSERVATION DISTRICT THAT CONSTRUCTION IS GOING TO COMMENCE. AT LEAST 7 DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES THE OPERATOR SHALL INVITE ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES; INCLUDING BUT NOT LIMITED TO: THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, AND A REPRESENTATIVE FROM THE DELAWARE COUNTY CONSERVATION DISTRICT FOR AN ON-SITE PRE-CONSTRUCTION MEETING. ANTICIPATED DATE: SPRING 2017.

PHASE 2 IS TO BE CONSTRUCTED IN TWO STAGES AS FOLLOWS:

STAGE ONE:

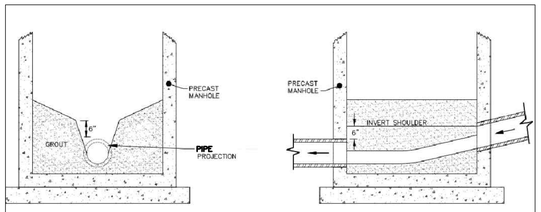
ANTICIPATED START DATE: SPRING 2017.

1. INSTALL EROSION AND SEDIMENTATION CONTROL DEVICES AS LISTED BELOW:
   A. INSTALL TREE PROTECTION FENCING WHERE INDICATED ON PLANS. THE LIMIT OF DISTURBANCE AND TREE PROTECTION FENCING IS TO BE FIELD DELINEATED PRIOR TO THE START OF ANY EARTH DISTURBANCE.
   B. INSTALL SILT FENCE/SEDIMENT BARRIERS WHERE INDICATED ON PLANS. ADDITIONAL SEDIMENT BARRIERS SHALL BE INSTALLED DOWNGRADE OF ANY DISTURBANCE AREAS AS NEEDED THROUGHOUT THE ENTIRE PROJECT. INSTALL TEMPORARY DIVERSION SOCK #4.2 TO DIVERT RUNOFF TO THE EXIST



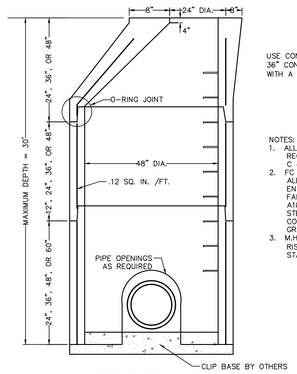
CONCRETE TO BE PENNDOT CLASS A CEMENT CONCRETE

CONCRETE ENCASEMENT
NTS



NOTES:
1. NO HORIZONTAL ALIGNMENT CHANGE CAN BE MADE WITHIN THIS MANHOLE TYPE. USE ON GRADES OF 10% OR GREATER.
2. EACH JOINT OF PIPE BETWEEN HIGH VELOCITY MANHOLE & MANHOLE UPGRADE SHALL HAVE A THRUST COLLAR (SEE STANDARD DETAIL TC-1).

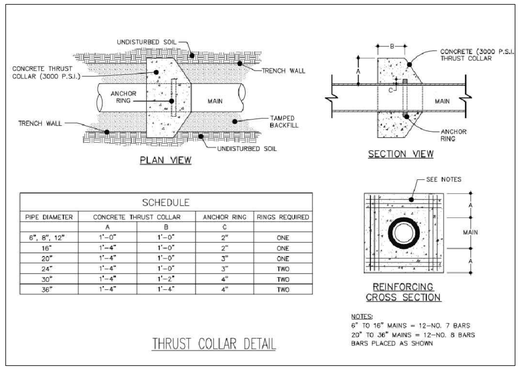
HIGH VELOCITY MANHOLE INVERT



USE CONE OR FLAT TOP 36" CONE AVAILABLE WITH A 30"DIA. OPENING.

NOTES:
1. ALL MANHOLES MEET THE REQUIREMENTS OF ASTM C 478.
2. FC = 4000 PSI @ 28 DAYS; ALL CONCRETE IS AIR ENTRAINED; WELDED WIRE FABRIC CONFORMS TO ASTM A185 & A82. DEFORMED STEEL REINFORCING BAR CONFORM TO ASTM A615 GRADE 60.
3. M.H. WEIGHT: RISER OR CONE = 860 LBS/V.F. STANDARD BASE = 1850 LBS.

DOGHOUSE MANHOLE
NTS



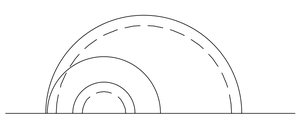
SCHEDULE

PIPE DIAMETER	CONCRETE THRUST COLLAR		ANCHOR RING	RINGS REQUIRED
	A	B	C	
6", 8", 12"	1'-0"	1'-0"	2"	ONE
16"	1'-4"	1'-0"	2"	ONE
20"	1'-4"	1'-0"	3"	ONE
24"	1'-4"	1'-0"	3"	TWO
30"	1'-4"	1'-2"	4"	TWO
36"	1'-6"	1'-4"	4"	TWO

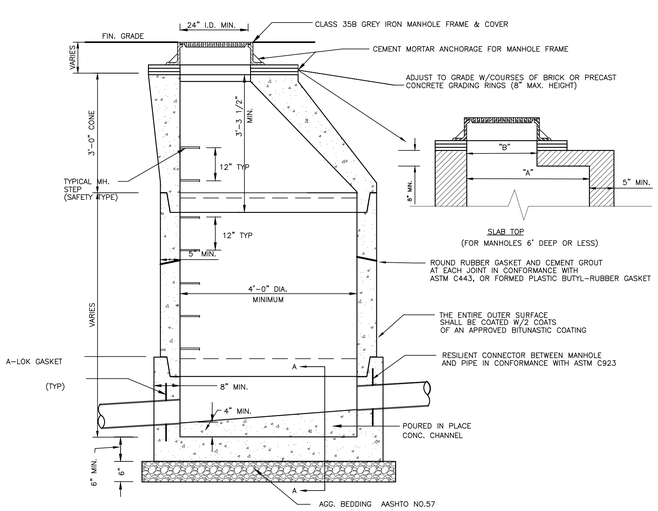
NOTES:
6" TO 16" MAINS = 12-NO. 7 BARS
20" TO 36" MAINS = 12-NO. 8 BARS
BARS PLACED AS SHOWN

THRUST COLLAR DETAIL

HIGH VELOCITY CHANNEL NOTES:
- HIGH VELOCITY CHANNEL AND THRUST COLLARS TO BE PROVIDED FOR PIPE RUN FROM MH-27 TO MH-5.

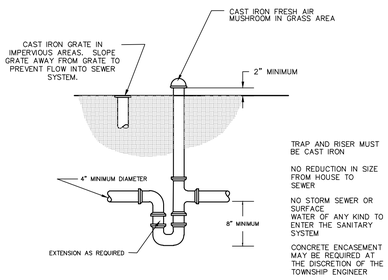


HALF PLAN OF TOP



NOTE:
PRECAST MANHOLE SECTIONS & BASES SHALL BE USED IN LIEU OF BRICK, UNLESS SPECIFICALLY NOTED. OUTSIDE OF MANHOLE TO BE COATED WITH TWO COATS OF BITUMINOUS RESIN.

PRECAST CONCRETE MANHOLE
(SANITARY SEWER)
N.T.S.



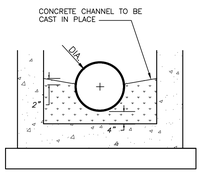
TRAP AND RISER MUST BE CAST IRON

NO REDUCTION IN SIZE FROM HOUSE TO SEWER

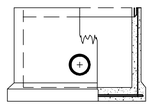
NO STORM SEWER OR SURFACE WATER OF ANY KIND TO ENTER THE SANITARY SYSTEM

CONCRETE ENCASEMENT MAY BE REQUIRED AT THE DISCRETION OF THE TOWNSHIP ENGINEER

SANITARY SEWER LATERAL TRAP
N.T.S.

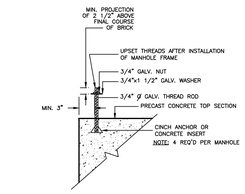


PARTIAL SECTION A-A

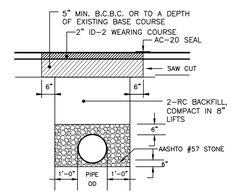


MANHOLE DESIGN SPECIFICATIONS CONFORMS TO: PRECAST REINFORCED CONCRETE MANHOLE SECTIONS: A.S.T.M. DESIGNATION C478, LATEST REVISION. DESIGNED TO MEET RESILIENT CONNECTORS REQUIREMENTS OF A.S.T.M. C-923.

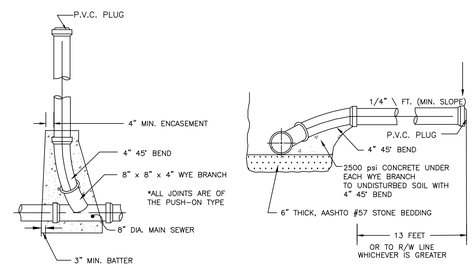
SANITARY SEWER NOTES:
1. THE CONTRACTOR IS TO VERIFY THE EXISTING SANITARY LINES BEFORE CONSTRUCTION.
2. EXFILTRATION TESTS TO BE PERFORMED ON ALL 8" SANITARY SEWER LINES IN ACCORDANCE WITH PA DEPARTMENT OF ENVIRONMENTAL PROTECTION.
3. CONSTRUCTION IN ACCORDANCE WITH TOWNSHIP STANDARDS AND SPECIFICATIONS.



ANCHOR BOLT DETAIL FOR PRE-CAST MANHOLE
N.T.S.

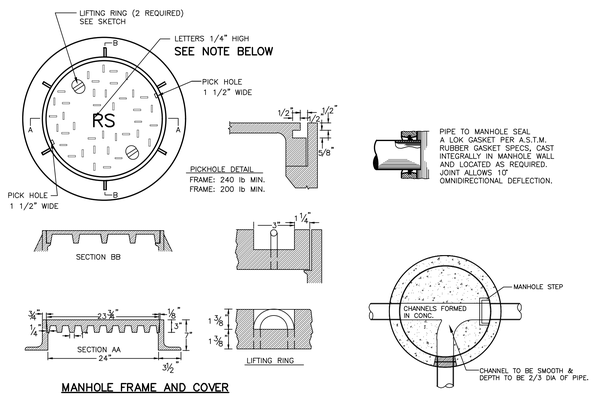


RADNOR TOWNSHIP ROAD RESTORATION
N.T.S.



WYE BRANCH CONNECTION
N.T.S.

SANITARY LATERAL NOTES:
- WYE CONNECTIONS AND LATERAL STUBS ARE TO BE INSTALLED AS PART OF THE SEWER MAIN CONSTRUCTION.
- LATERALS ARE TO BE EXTENDED A MINIMUM OF 10-FEET INTO THE AS MEASUED FROM THE R/W LINE OR ADJACENT LOT LINE.
- LATERALS ARE TO BE CAPPED FOR FUTURE CONNECTION BY LOT DEVELOPER AND ENDS OF LATERAL SHALL BE MARKED WITH A 2X4 STAKE.
- CLEANOUTS ARE TO BE PROVIDED AT ALL BENDS ON SANITARY LATERALS.
- THERE SHALL BE A MINIMUM DISTANCE OF 5-FEET BETWEEN LATERALS AND BETWEEN LATERALS AND MANHOLES.

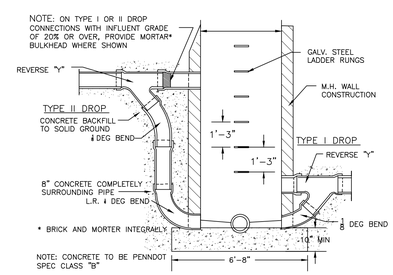


MANHOLE FRAME AND COVER
N.T.S.

LETTERING NOTE:
ALL NEW SANITARY MANHOLE LIDS TO BE LABELED "RS"

STANDARD MANHOLE: NEENAH FOUNDRY COMPANY, TYPE N FRAMED. MANHOLE FRAME AND COVER – CATALOG NUMBER R-1788-A1, SOLID FRAME, HEAVY DUTY. FURNISH WITH FOUR 7/8 INCH ANCHOR HOLES ON 27-15/16 INCH DIAMETER BOLT CIRCLE.

WATERTIGHT MANHOLE: NEENAH FOUNDRY COMPANY, CATALOG NUMBER R-1916-D, SOLID FRAME, HEAVY DUTY. FURNISH WITH FOUR 7/8 INCH ANCHOR HOLES ON 27-15/16 INCH DIAMETER BOLT CIRCLE. ALL MANHOLES NOT LOCATED IN PAVED AREAS ARE TO BE EQUIPTED WITH WATERTIGHT FRAMES AND COVERS



DROP MANHOLE TYPE I OR II
N.T.S.

DISCLAIMER: VARIOUS, IF ANY, UTILITIES SHOWN ON THIS PLAN WERE PLOTTED FROM AVAILABLE RECORDS. THE ACCURACY OF THE UTILITIES SHOWN ON THIS DRAWING IS NOT GUARANTEED. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO THE START OF CONSTRUCTION. IF ANY UTILITIES NOT SHOWN ON THIS PLAN ARE ENCOUNTERED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER. THE ENGINEER SHALL ASSUME NO RESPONSIBILITY FOR ANY DAMAGE TO UTILITIES NOT SHOWN ON THIS PLAN.

Serial Number: 2014-203-0820

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

REGISTERED PROFESSIONAL ENGINEER
DAVID R. FIORELLO
PE052478E

MOMENEE, INC.
a Karins Company
ENGINEERING | PLANNING | SURVEYING

CONSTRUCTION DETAILS
PHASE IV LOT LINE CHANGE
THE ARDROSSAN FARM
RADNOR TOWNSHIP • DELAWARE COUNTY • PENNSYLVANIA

APPLICANT:
ESII LP
107 TWADDELL MILL ROAD
WILMINGTON, DE 19807

ONE-CALL:	203-0820	REV.	DATE	COMMENTS
DRAWN BY:	TED			
CHECKED BY:	DRF			

FILE NO.: 06-012
SHEET 30 OF 33
DATE: NOVEMBER 4, 2016
SCALE: 1" =

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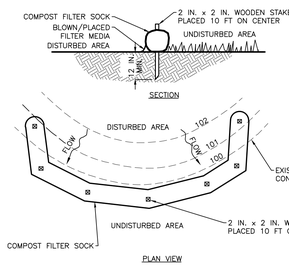
COMPOST SOCK FABRIC MINIMUM SPECIFICATIONS

MATERIAL TYPE	3 MIL HDPE	5 MIL HDPE	5 MIL HDPE	MULTI-FILAMENT POLYPROPYLENE (MFPP)	HEAVY DUTY MULTI-FILAMENT POLYPROPYLENE (HDMFPP)
MATERIAL CHARACTERSTICS	PHOTO-DEGRADABLE	PHOTO-DEGRADABLE	BIO-DEGRADABLE	PHOTO-DEGRADABLE	PHOTO-DEGRADABLE
SOCK DIAMETERS	12" 18"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"
MESH OPENING	3/8"	3/8"	3/8"	3/8"	1/8"
TENSILE STRENGTH		28 PSI	26 PSI	44 PSI	202 PSI
ULTRAVIOLET STABILITY % ORIGINAL STRENGTH (ASTM G-155)	23% AT 1000 HR.	23% AT 1000 HR.		100% AT 1000 HR.	100% AT 1000 HR.
MINIMUM FUNTIONAL LONGEVITY	6 MONTHS	9 MONTHS	6 MONTHS	1 YEAR	2 YEARS

TWO-PLY SYSTEMS	
INNER CONTAINMENT NETTING	HDPE BIAXIAL NET
	CONTINUOUSLY WOUND
	FUSION-WELDING JUNCTURES
	3/4"x3/4" MAX. APERTURE SIZE
OUTER FILTRATION MESH	COMPOSITE POLYPROPYLENE FABRIC (WOVEN LAYER AND NON-WOVEN FLECCE MECHANICALLY FUSED VIA NEEDLE PUNCH)
	3/16" MAX. APERTURE SIZE
SOCK FABRICS COMPOSED OF BURLAP MAY BE USED ON PROJECTS LASTING 6 MONTHS OR LESS.	

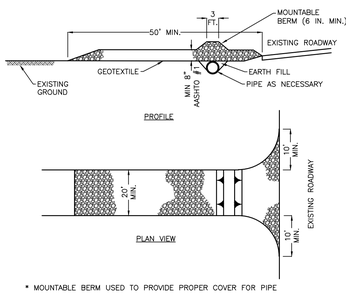
COMPOST STANDARDS

ORGANIC MATTER CONTENT	80% - 100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FIBROUS AND ELONGATED
pH	5.5 - 8.0
MOISTURE CONTENT	35% - 55%
PARTICLE SIZE	98% PASS THROUGH 1" SCREEN
SOLUBLE SALT CONCENTRATION	5.0 dS/m (mmhos/cm) MAXIMUM



NOTES:
1. SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.
2. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.
3. TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.
4. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.
5. COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
6. BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
7. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

STANDARD CONSTRUCTION DETAIL #4-1
COMPOST FILTER SOCK
NOT TO SCALE



* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

NOTES:

REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

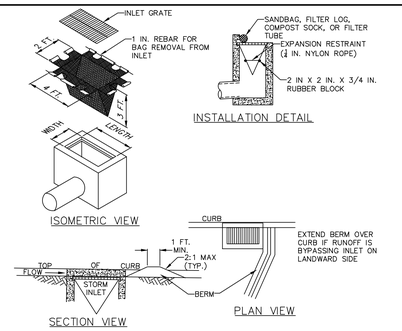
STANDARD CONSTRUCTION DETAIL #3-1
ROCK CONSTRUCTION ENTRANCE
NOT TO SCALE

#	LOCATION	SIZE (IN)	TOTAL AVG SLOPE (%)	TOT SLOPE LENGTH ABOVE FILTER SOCK
1	N. SCOTT LANE	12" SS	3%	34 (FT)
2	N. SCOTT LANE	12" SS	3%	40
3	N. SCOTT LANE	12" SS	2%	280
4	N. SCOTT LANE	18" SS	7%	255
5	N. SCOTT LANE	18" SS	6%	270
6	S. SCOTT LANE	18" SS	5%	390
9	S. SCOTT LANE	12" SS	7%	165
10	S. SCOTT LANE	12" SS	6%	145
11	WEST LOT 1-8	32" SS	5%	685
12	WEST LOT 1-8	32" SS	4%	720
12a	NORTH LOT NRA-3	32" SS	6%	550
12b	NORTH LOT NRA-3	32" SS	6%	520
13	WEST LOT NRA-3	32" SS	10%	380
14	WEST LOT NRA-3	32" SS	8%	405
15	SOUTH LOT 1-6	24" SS	5%	525
16	SOUTH LOT 1-5	24" SS	6%	445
17	SOUTH LOT 1-4	32" SS	8%	415
18	SOUTH LOT 1-4	32" SS	7%	470
19	WEST LOT 1-4	24" SS	6%	405
19a	WEST LOT NRA-5	32" SS	5%	530
24	NORTH LOT 1-5	12" SS	3%	180
25	SOUTH LOT NRA-5	18" SS	4%	475
26	SOUTH LOT NRA-5	18" SS	4%	475
27	SOUTH LOT NRA-5	24" SS	6%	360
28	EAST LOT OS-6	32" SS	4%	830
28a	EAST LOT OS-6	18" SS	5%	265
29	EAST LOT OS-6	12" SS	4%	315
30	EAST LOT OS-6	12" SS	4%	220
31	EAST LOT OS-6	12" SS	4%	195
32	EAST LOT OS-6	12" SS	4%	240
33	SOUTH LOT OS-6	12" SS	3%	240
34	SOUTH LOT OS-6	18" SS	3%	570
35	SOUTH LOT OS-6	24" SS	5%	440
36	SOUTH LOT OS-6	18" SS	5%	315
37	NORTH LOT M-1	24" SS	11%	290
38	NORTH LOT M-1	32" SS	11%	310
39	NORTH LOT M-1	24" SS	13%	260
40	NORTH LOT M-1	12" SS	7%	135
41	NORHT LOT 4-1	12" SS	6%	155
42	NORHT LOT 4-1	12" SS	7%	150
43	NORHT LOT 4-1	12" SS	8%	155
44	NORTH LOT NRA-1B	12" SS	7%	90
45	NORTH LOT NRA-1B	12" SS	7%	90
46	NORTH LOT NRA-1B	12" SS	7%	90
47	NORTH LOT NRA-1B	12" SS	7%	90
48	NORTH LOT 4-4	12" SS	7%	90
49	NORTH LOT 4-4	12" SS	7%	90
50	EAST LOT 5-5	18" SS	8%	250
51	EAST LOT 5-5	32" SS	12%	400
52	EAST LOT 5-5	32" SS	12%	400
53	EAST LOT 5-5	12" SS	5%	50
54	SOUTH LOT 5-5	12" SS	5%	90
55	EAST LOT 5-2	18" SS	11%	200
56	EAST LOT 5-2	32" SS	11%	310
57	SOUTH LOT 5-2	32" SS	9%	415
58	SOUTH LOT 3-4	32" SS	9%	380
59	SOUTH LOT 3-4	24" SS	11%	285
60	S.E. LOT 3-5	24" SS	15%	220
61	S.E. LOT 3-5	18" SS	13%	220
62	S.E. LOT 3-5	18" SS	13%	210
63	S.E. LOT 3-5	18" SS	13%	210
64	EAST LOT 3-6	18" SS	12%	240
65	EAST LOT 3-6	24" SS	10%	285
66	EAST LOT 3-7	18" SS	9%	265
67	EAST LOT 3-7	32" SS	7%	600
68	EAST LOT NRA-16	32" SS	6%	590
69	EAST LOT NRA-16	32" SS	7%	535
70	SOUTH LOT 3-10	32" SS	7%	540
71	SOUTH LOT NRA-15	32" SS	7%	500
72	SOUTH LOT NRA-15	32" SS	9%	390
73	WEST LOT 1-1	24" SS	8%	380
74	WEST LOT 1-1	32" SS	9%	350
75	WEST LOT 1-1	32" SS	9%	350
76	WEST LOT 1-1	32" SS	8%	405
77	WEST LOT 1-1	24" SS	8%	310
78	NORTH LOT 1-1	32" SS	5%	645
79	NORTH LOT 1-2	32" SS	6%	520
80	NORTH LOT 1-2	24" SS	6%	410
80a	NORTH LOT 1-2	24" SS	6%	405
81	NORTH LOT 1-3	24" SS	6%	335
82	WEST LOT 2-9	12" SS	2%	20
83	WEST LOT 2-9	12" SS	2%	20
84	NORTH LOT OS-10	12" SS	3%	30
85	NORTH LOT OS-10	12" SS	5%	135
86	EAST LOT OS-10	18" SS	6%	235
87	WEST LOT 1-15	32" SS	5%	595
88	WEST LOT 1-15 TO 1-14	24" SS	6%	445
102	SOUTH LOT 1-11	18" SS	9%	195
103	NORTH LOT 1-13	18" SS	11%	180
104	NORTH LOT 1-13	18" SS	7%	270
105	NORTH LOT 1-12	18" SS	7%	215
106	RYE FIELD BERM	18" SS	9%	260
107	RYE FIELD BERM	32" SS	9%	365
108	RYE FIELD BERM	18" SS	8%	280
109	RYE FIELD BERM	24" SS	8%	370

#	LOCATION	SIZE (IN)	TOTAL AVG SLOPE (%)	TOT SLOPE LENGTH ABOVE FILTER SOCK
200	IVY LANE	12" SS	2%	160 (FT)
201	IVY LANE	12" SS	2%	205
202	IVY LANE	12" SS	3%	265
203	IVY LANE	12" SS	3%	335
204	IVY LANE	12" SS	3%	400
205	IVY LANE	18" SS	3%	485
206	IVY LANE	24" SS	5%	460
206a	IVY LANE	18" SS	2%	525
207	IVY LANE	24" SS	4%	625
208	IVY LANE	18" SS	8%	225
209	IVY LANE	12" SS	7%	185
210	EAST LOT 1-6	12" SS	3%	320
211	SOUTH LOT 1-17	24" SS	4%	500
212	SOUTH LOT 1-18	24" SS	6%	440
213	SOUTH LOT 1-18	24" SS	5%	410
214	SOUTH LOT 1-18	24" SS	5%	375

#	LOCATION	SIZE (IN)	TOTAL AVG SLOPE (%)	TOT SLOPE LENGTH ABOVE FILTER SOCK
300	TYLER LANE	12" SS	6%	194 (FT)
301	TYLER LANE	12" SS	6%	212
302	TYLER LANE	18" SS	6%	248
303	TYLER LANE	18" SS	7%	265
304	TYLER LANE	18" SS	6%	307
304A	TYLER LANE	24" SS	4%	490
306	TYLER LANE	18" SS	7%	236
307	TYLER LANE	18" SS	6%	285
308A	TYLER LANE	18" SS	9%	235
308	TYLER LANE	24" SS	8%	335
313	TYLER LANE	12" SS	6%	229
314	TYLER LANE	18" SS	8%	277
315	TYLER LANE	18" SS	9%	254
315A	TYLER LANE	24" SS	10%	270
315B	TYLER LANE	18" SS	10%	208
316	NRA-17	18" SS	12%	195
317	NRA-17	18" SS	12%	208
318	NRA-17	18" SS	13%	213
319	NRA-17	24" SS	12%	287
320	NRA-17	12" SS	4%	70
321	NRA-17	32" SS	12%	322
322	TYLER LANE	18" SS	12%	186
323	TYLER LANE	18" SS	10%	247
324	TYLER LANE	32" SS	10%	304

#	LOCATION	SIZE (IN)	TOTAL AVG SLOPE (%)	TOT SLOPE LENGTH ABOVE FILTER SOCK
400	AYRSHIRE DRIVE	18" SS	10%	246 (FT)
401	AYRSHIRE DRIVE	24" SS	8%	338
402	AYRSHIRE DRIVE	18" SS	11%	270
403	AYRSHIRE DRIVE	24" SS	11%	311
404	AYRSHIRE DRIVE	24" SS	10%	396
405	AYRSHIRE DRIVE	32" SS	11%	444
406	AYRSHIRE DRIVE	18" SS	6%	250
410	AYRSHIRE DRIVE	12" SS	6%	150
410A	AYRSHIRE DRIVE	12" SS	6%	150
412	AYRSHIRE DRIVE	18" SS	12%	226
413	AYRSHIRE DRIVE	18" SS	11%	189
414	AYRSHIRE DRIVE	18" SS	11%	161
415	AYRSHIRE DRIVE	12" SS	10%	162
418	MAR LOT 5-3	32" SS	9%	352
418A	AYRSHIRE DRIVE	32" SS	13%	380
419	AYRSHIRE DRIVE	32" SS	7%	492
421	AYRSHIRE DRIVE	12" SS	6%	189
422	AYRSHIRE DRIVE	24" SS	11%	265
425	ALONG MH5 TO MH71	18" SS	15%	216
426	ALONG MH5 TO MH71	12" SS	3%	61
427	ALONG MH5 TO MH71	12" SS	3%	325
428	ALONG MH5 TO MH71	18" SS	13%	188
429	ALONG MH5 TO MH71	18" SS	12%	219
430	ALONG MH5 TO MH71	18" SS	11%	174
431	ALONG MH5 TO MH71	18" SS	10%	172
432	ALONG MH5 TO MH71	18" SS	9%	243
433	AYRSHIRE DRIVE	12" SS	3%	66
434	ALONG MH5 TO MH71	18" SS	13%	231
435	ALONG MH5 TO MH71	24" SS	12%	261
436	ALONG MH5 TO MH71	18" SS	12%	221
437	ALONG MH5 TO MH71	18" SS	8%	275
438	ALONG MH5 TO MH71	18" SS	9%	259
439	ALONG MH5 TO MH71	18" SS	11%	209
440	ALONG MH5 TO MH71	24" SS	13%	267
441	BINNEY LANE	12" SS	3%	350
442	BINNEY LANE	18" SS	6%	287
447	BINNEY LANE	12" SS	5%	111
448	BINNEY LANE	12" SS	6%	35
450	BINNEY LANE	12" SS	8%	123
451	BINNEY LANE	32" SS	5%	742
454	BINNEY LANE	24" SS	15%	248
455	BEHIND LOT 4-1	18" SS	7%	236
456	BEHIND LOT 4-2	24" SS	5%	419
457	BEHIND LOT 4-2	18" SS	7%	290
D	AYRSHIRE DRIVE	12" SS	8%	80
E	AYRSHIRE DRIVE	12" SS	7%	57



NOTES:

MAXIMUM DRAINAGE AREA = 1/2 ACRE.

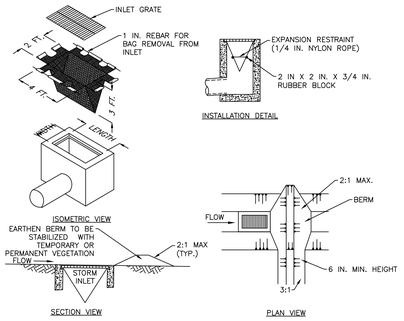
INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.

ROLLED EARTHEN BERM SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. SIX INCH MINIMUM HEIGHT ASPHALT BERM SHALL BE MAINTAINED UNTIL ROADWAY SURFACE RECEIVES FINAL COAT.
AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS, A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.

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

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

STANDARD CONSTRUCTION DETAIL #4-15
FILTER BAG INLET PROTECTION - TYPE C INLET
NOT TO SCALE



NOTES:

MAXIMUM DRAINAGE AREA = 1/2 ACRE.

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

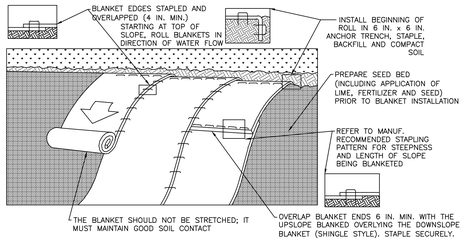
ROLLED EARTHEN BERM IN ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM ON ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. EARTHEN BERM IN CHANNEL SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED OR REMAIN PERMANENTLY.

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

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

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

STANDARD CONSTRUCTION DETAIL #4-16
FILTER BAG INLET PROTECTION - TYPE M INLET
NOT TO SCALE



NOTES:

SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET.

PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.

SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.

BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.

THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

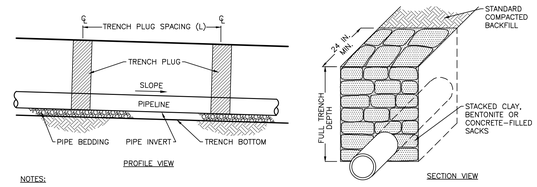
BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.

STANDARD CONSTRUCTION DETAIL #11-1
EROSION CONTROL BLANKET INSTALLATION
NOT TO SCALE

PA DEP EROSION CONTROL MANUAL TABLE 13.1
MAXIMUM SPACING AND MATERIALS FOR TRENCH PLUGS

TRENCH SLOPE (%)	SPACING L (FT)	PLUG MATERIAL
< 5	1000	* CLAY, BENTONITE, OR CONCRETE FILLED SACKS
5 - 15	500	* CLAY, BENTONITE, OR CONCRETE FILLED SACKS
15 - 25	300	* CLAY, BENTONITE, OR CONCRETE FILLED SACKS
25 - 35	200	* CLAY, BENTONITE, OR CONCRETE FILLED SACKS
35 - 100	100	* CLAY, BENTONITE, OR CONCRETE FILLED SACKS
> 100	50	CEMENT BAGS (WETTED) OR MORTARED STONE

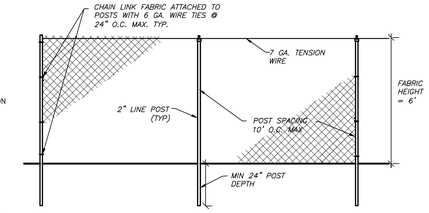
* TOPSOIL MAY NOT BE USED TO FILL SACKS



NOTES:

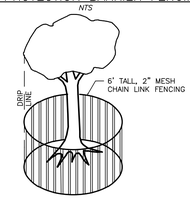
IMPERVIOUS TRENCH PLUGS ARE REQUIRED FOR ALL STREAM, RIVER, WETLAND, OR OTHER WATER BODY CROSSINGS.

STANDARD CONSTRUCTION DETAIL #13-4
TRENCH PLUG INSTALLATION
NOT TO SCALE



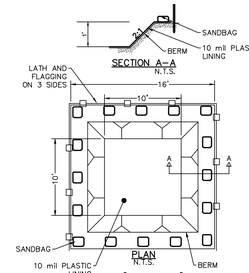
1. PROTECTION BARRIERS SHALL BE 6 FEET HIGH, CONSTRUCTED OF 2" CHAIN LINK MESH FABRIC.
2. FABRIC SHALL BE SECURED TO 2" POSTS WITH 6 GA. ALUMINUM WIRE TIES AT 24" O.C.
3. POSTS SHALL BE A MINIMUM OF 2 FEET IN THE GROUND AND SPACED TO FEET ON CENTER MAX.
4. PLASTIC ZIP-TIES MAY NOT BE USED TO SECURE FABRIC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

TREE PROTECTION BARRIER FENCING
NTS



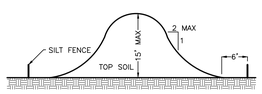
TREE PROTECTION FENCE PLACEMENT
NTS

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



10'X10' CONCRETE WASHOUT
N.T.S.

NOTES:
1. ACTUAL LAYOUT DETERMINED IN THE FIELD

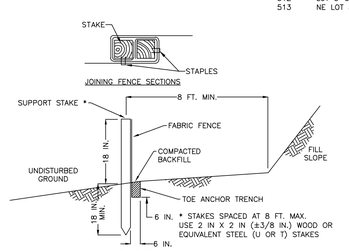


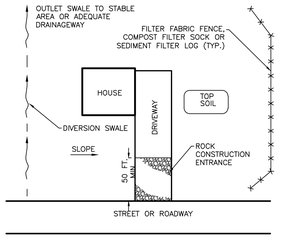
TYPICAL SOIL STOCKPILE CROSS SECTION
N.T.S.

NOTE: SILT FENCE MUST COMPLETELY ENCIRCLE STOCKPILES

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

#	LOCATION	SIZE (IN)	TOTAL AVG SLOPE (%)	TOT SLOPE LENGTH ABOVE FILTER SOCK
500	LOT 5-2	12" SS	10%	50 (FT)
501	LOT 5-2	12" SS	10%	60
502	LOT 5-2	12" SS	10%	120
503	LOT 5-2	12" SS	10%	140
504	LOT 5-2	24" SS	10%	280
505	LOT 5-2	32" SS	10%	320
506	LOT 5-2	32" SS	10%	320
507	LOT 5-2	32" SS	18%	225
508	LOT 5-5	32" SS	14%	320
510	NE LOT 5-5	18" SS	7%	240
511	NE LOT 5-5	32" SS	24%	140
512	LOT 5-3	12" SS	14%	75
513	NE LOT 5-2	32" SS	14%	340


STAKE
STAPLES
JOINING FENC



PLAN VIEW

NOTES:

THE AREA DOWNSLOPE OF THE FILTER FENCE/COMPOST SOCK BARRIER/SEDIMENT FILTER LOG MAY NOT BE UNDER DEVELOPMENT OR OTHERWISE DISTURBED.

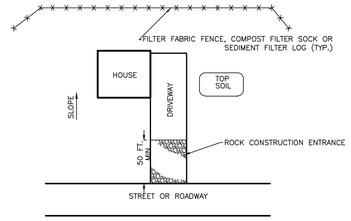
THE UPSLOPE DIVERSION CHANNEL SHOULD BE INSTALLED WHEREVER RUNOFF FROM AREAS ABOVE THE LOT ARE NOT OTHERWISE DIVERTED AWAY FROM THE LOT. THE CHANNEL SHOULD BE PROPERLY SIZED AND PROVIDED WITH A SUITABLE PROTECTIVE LINING. THE DESIGNER AND/OR CONTRACTOR MUST EXERCISE CAUTION TO PROTECT ALL DOWNSTREAM PROPERTY OWNERS WHEN SELECTING A DISCHARGE POINT FOR THIS CHANNEL.

IN AREAS WHERE SLOPE IS AT AN OBLIQUE ANGLE TO THE ROADWAY, BMPS SHALL BE ADJUSTED ACCORDINGLY.

DIVERSION CHANNEL MAY OUTLET TO ROADSIDE DITCH OR STORM SEWER SYSTEM, BUT NOT ONTO STREET OR ROADWAY.

STANDARD CONSTRUCTION DETAIL #10–3
TYPICAL ON–LOT BMPs FOR LOT ALONG ASCENDING OR DESCENDING ROADWAY

NOT TO SCALE



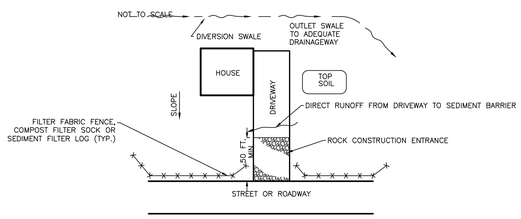
PLAN VIEW

NOTES:

THE AREA DOWNSLOPE OF THE FILTER FENCE/COMPOST SOCK BARRIER/SEDIMENT FILTER LOG MAY NOT BE UNDER DEVELOPMENT OR OTHERWISE DISTURBED.

STANDARD CONSTRUCTION DETAIL #10–2
TYPICAL ON–LOT BMPs FOR LOT BELOW ROADWAY

NOT TO SCALE



PLAN VIEW

NOTES:

THE UPSLOPE DIVERSION CHANNEL SHOULD BE INSTALLED WHEREVER THE LOT EXTENDS MORE THAN 150 FEET ABOVE THE ROADWAY OR WHERE RUNOFF FORM 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 AND/OR CONTRACTOR MUST EXERCISE CAUTION TO PROTECT ALL DOWNSTREAM PROPERTY OWNERS WHEN SELECTING A DISCHARGE POINT FOR THIS CHANNEL.

STANDARD CONSTRUCTION DETAIL #10–1
TYPICAL ON–LOT BMPs FOR LOT ABOVE ROADWAY

NOT TO SCALE

HYDROSEEDING SPECIFICATIONS:

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

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

PROCEDURE: SURFACE TO BE HYDRO–SEEDED SHALL BE CLEANED OF ALL DEBRIS AND OTHER MATTER HARMFUL TO UNIFORM GERMINATES. A WATER–SLURRY MIXTURE COMPOSED OF THE BELOW MENTIONED "MATERIALS" SHALL BE SPRAYED UNIFORMLY OVER THE AREAS TO BE HYDRO–SEEEDED.

MATERIALS:

PERMANENT SEEDING

NAME	DESCRIPTION	APPLICATION RATE (PER ACRE)
1) SEED MIXTURE % BY WEIGHT	60% PENNSTAR KENTUCKY BLUEGRASS	130 LBS
	30% PENNLAWN RED RESCUE	
	10% PENNFINE PERRENIAL RYEGRASS	
2) COMMERCIAL FERTILIZER	**10/20/2020**	1,000 LBS
3) LIME	GROUND AGRICULTURAL LIMESTONE (MAY BE APPLIED SEPARATELY)	2 TONS
4) MULCH	HAY OR STRAW	3 TONS
5) SOIL STABILIZER	TERRA TACK OR EQUIVALENT	20 LBS

TEMPORARY SEEDING

1) SEED	ANNUAL RYEGRASS (95% PURE)	40 LBS
2) COMMERCIAL FERTILIZER	5–5–5	1,000 LBS
3) LIME	GROUND AGRICULTURAL LIMESTONE (MAY BE APPLIED SEPARATELY)	1 TON
4) MULCH	HAY OR STRAW	3 TONS

RECYCLING OR DISPOSAL OF MATERIALS:

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 ANY BUILDING MATERIAL OR WASTES AT THE SITE.

CONSTRUCTION/DEMOLITION WASTE –SOLID WASTE RESULTING FROM THE CONSTRUCTION OR DEMOLITION OF BUILDINGS AND OTHER STRUCTURES, INCLUDING, BUT NOT LIMITED TO, WOOD, PLASTER, METALS, ASPHALTIC SUBSTANCES, BRICKS, BLOCK AND UNSEGREGATED CONCRETE. THE TERM DOES NOT INCLUDE THE FOLLOWING IF THEY ARE SEPARATE FROM OTHER WASTE AND ARE USED AS CLEAN FILL:

(I) UNCONTAMINATED SOIL, ROCK, STONE, GRAVEL, BRICK AND BLOCK, CONCRETE AND USED ASPHALT; AND

(II) WASTE FROM LAND CLEARING, GRUBBING AND EXCAVATION, INCLUDING TREES, BRUSH, STUMPS AND VEGETATIVE MATERIAL.

MANAGEMENT OF CONSTRUCTION AND DEMOLITION WASTE

SALVAGING – BY DEFINITION, MATERIALS SALVAGED FOR USE IN THEIR INTENDED FUNCTION ARE NOT WASTES. EXAMPLES INCLUDE: BATHROOM FIXTURES, CEILING PANELS, DOORS, FLOORING, LIGHTING FIXTURES, WINDOWS, ETC.

SOURCE SEPARATED RECYCLABLE MATERIALS ARE ALSO NOT WASTES. FOR CONSTRUCTION, RENOVATION AND DEMOLITION ACTIVITIES THIS INCLUDES: CARDBOARD, GLASS, METALS, PAPER AND PLASTICS.

ALL CONCRETE TRUCKS SHALL UTILIZE THE CONCRETE WASHOUT AREA AS INDICATED ON THE EROSION & SEDIMENT CONTROL PLAN FOR CLEANING OUT TRUCKS. ACCUMULATED MATERIAL SHALL BE DISPOSED OF PROPERLY IN ACCORDANCE WITH THE REGULATIONS NOTED ABOVE.

IN THE EVENT A POLLUTION INCIDENT OCCURS WHICH CAUSES OR THREATENS TO CAUSE SURFACE OR GROUNDWATER POLLUTION, THE OWNER SHALL:
(1) PROMPTLY NOTIFY THE DEPARTMENT BY TELEPHONE OF THE LOCATION AND NATURE OF THE DANGER,
(2) NOTIFY ALL KNOWN DOWNSTREAM USERS OF THE WATER,
(3) IMMEDIATELY TAKE ALL NECESSARY STEPS TO PREVENT INJURY TO PROPERTY AND DOWNSTREAM USERS, AND PROTECT WATERS FROM POLLUTION OR DANGER OF POLLUTION,
(4) REMOVE ANY CONTAMINATION FROM AFFECTED GROUND OR SURFACE WATER TO THE EXTENT REQUIRED BY THE DEPARTMENT.

NOTES:

1. 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 UTILITIES SUCH AS: UTILITIES AND ROADWAYS.

2. CHAPTER 93 STREAM CLASSIFICATION: CWF, MF
RECEIVING WATER: CAMP RUN / WIG WAM RUN DARBY CREEK

3. ANY AREA DISTURBED ON SLOPING LANDS GREATER THAN 15% AND WHERE TREES HAVE BEEN REMOVED SHALL BE IMMEDIATELY STABILIZED WITH JUTE NETTING OR AN EROSION CONTROL BLANKET.

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

5. WHERE POTENTIAL THERMAL IMPACTS TO SURFACE WATERS EXISTS, APPROPRIATE MEASURES SHALL BE TAKEN TO AVOID/MINIMIZE/OR MITIGATE THESE IMPACTS INCLUDING BUT NOT LIMITED TO MINIMIZING IMPERVIOUS, MINIMIZING THE EXTENT AND DURATION OF SITE DISTURBANCE, PROTECTING EXISTING SHADE TREES, INSTALLING NEW PLANTINGS AS SOON AS FEASIBLE, MAXIMIZING VEGETATED SWALES, MINIMIZING DENUDED AND CONCRETE CHANNELS AND MAXIMIZING DETENTION FACILITY AREAS WHILE MINIMIZING POOL DEPTHS.

CONSTRUCTION TIMING AND SEQUENCE GENERAL NOTES:

1. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES (INCLUDING CLEARING AND GRUBBING), THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, AND A REPRESENTATIVE FROM THE DELAWARE COUNTY CONSERVATION DISTRICT TO AN ON–SITE PRECONSTRUCTION MEETING.

2. UPON 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.

3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1–800–242–1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.

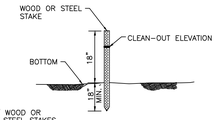
4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED BY THE DELAWARE COUNTY CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION. EACH STEP OF THE SEQUENCE SHALL BE COMPLETED BEFORE PROCEEDING TO THE NEXT STEP, EXCEPT WHERE NOTED.

5. THE CONTRACTOR SHALL MINIMIZE THE EXTENT AND DURATION OF EARTH DISTURBANCE TO THE EXTENT FEASIBLE BY STAGING CONSTRUCTION ACTIVITIES, WHERE POSSIBLE, ONLY DISTURBING AREAS NEEDED FOR EACH STAGE AND IMMEDIATELY STABILIZING AREAS WHERE CONSTRUCTION HAS CEASED.

PCSM CRITICAL STAGES:

- ADDITIONAL INFILTRATION TESTING
- ALL PCSM FACILITIES
  - POST CONSTRUCTION STORMWATER MANAGEMENT SYSTEM INSTALLATION
  - BIORETENTION RAIN GARDEN INSTALLATION
  - VEGETATED SWALES (GRADED SWALE) INSTALLATION

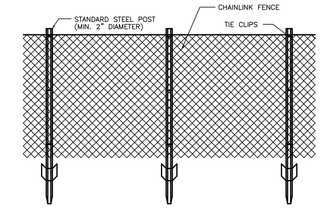
THE PROJECT ENGINEER SHALL BE NOTIFIED AT LEAST 24 HOURS PRIOR TO THE INITIATION OF ANY E&S OR PCSM CRITICAL STAGE OF CONSTRUCTION AS NOTED ON THE EROSION & SEDIMENTATION CONTROL PLAN AND POST CONSTRUCTION STORMWATER MANAGEMENT PLAN. CRITICAL STAGES INCLUDE THOSE LISTED ABOVE AND MORE GENERALLY THE INSTALLATION OF UNDERGROUND TREATMENT OR STORAGE BMPS, STRUCTURALLY ENGINEERED BMPS, OR OTHER BMPS "AS DEEMED APPROPRIATE BY THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT." THE DESIGN ENGINEER SHALL BE RESPONSIBLE FOR PERFORMING ON–SITE INSPECTIONS FOR ALL CRITICAL STAGES IN ORDER TO ENSURE GENERAL PCSM PLAN COMPLIANCE TO FACILITATE FINAL CERTIFICATION THAT THE SITE WAS CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PCSM PLAN.



LOCATION	STAKE LENGTH	CLEAN–OUT ELEVATION
SEDIMENT TRAP #T1.1	4'	364.42
SEDIMENT TRAP #T1.2	4'	386.50
SEDIMENT BASIN #B1.3	4'	336.50
SEDIMENT TRAP #T1.4	4'	398.42
SEDIMENT TRAP #T3.1	4'	342.42
SEDIMENT TRAP #T3.2	4'	328.33
SEDIMENT TRAP #T4.1	4'	324.42
SEDIMENT TRAP #T4.2	4'	286.42
SEDIMENT TRAP #T4.3	4'	333.42
SEDIMENT TRAP #T4.4	4'	330.42
SEDIMENT TRAP #T4.5	4'	302.42
SEDIMENT TRAP #T4.6	4'	322.50

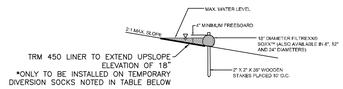
CLEAN–OUT STAKE SCHEDULE

N.T.S.



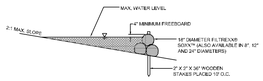
TEMPORARY CONSTRUCTION FENCING

N.T.S.



SINGLE INSTALLATION SECTION

NTS



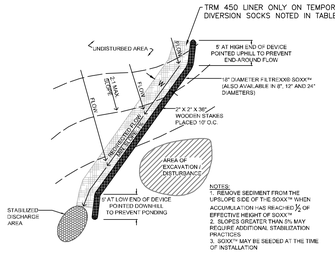
PYRAMID INSTALLATION SECTION

NTS

FILTREXX® RUNOFF DIVERSION SECTIONS

NTS TEMPORARY DIVERSION SOCK

DIVERSION SOCK	* LINING
SOCK #1.1	TRM 450
SOCK #1.6	TRM 450
SOCK #1.7	TRM 450
SOCK #1.8	TRM 450
SOCK #3.2	TRM 450
SOCK #4.1	TRM 450
SOCK #4.3	TRM 450
SOCK #4.4	TRM 450
SOCK #4.5	TRM 450
SOCK #4.11	TRM 450
SOCK #5.1	TRM 450



NOTES:
1. REMOVE SEDIMENT FROM THE UPSLOPE SIDE OF THE SOXX™ WHEN ACCUMULATION HAS REACHED ½ OF EFFECTIVE HEIGHT OF SOXX™
2. SLOPES GREATER THAN 5% MAY REQUIRE ADDITIONAL STABILIZATION PRACTICES.
3. SOXX™ MAY BE SIBDIED AT THE TIME OF INSTALLATION

FILTREXX® RUNOFF DIVERSION

TEMPORARY DIVERSION SOCK

FILTREXX INTERNATIONAL STANDARD SPECIFICATIONS FOR GROWINGMEDIA TM

COMPOSTED PRODUCTS USED FOR FILTREXX GROWINGMEDIA TM SHALL BE WEED FREE AND DERIVED FROM A WELL–DECOMPOSED SOURCE OF ORGANIC MATTER. THE COMPOSTED PRODUCTS SHALL BE PRODUCED USING AN AEROBIC COMPOSTING PROCESS MEETING USEPA CFR 503 REGULATIONS (IN CANADA: M.O.E. 101, C.C.M.E. TYPE 'A' AND TYPE 'AA' REGULATIONS), INCLUDING TIME AND TEMPERATURE DATA INDICATING EFFECTIVE WEED SEED, PATHOGEN AND INSECT LARVAE KILL. THE COMPOSTED PRODUCTS SHALL BE FREE OF ANY REFUSE, CONTAMINANTS OR OTHER MATERIALS TOXIC TO PLANT GROWTH. NON–COMPOSTED PRODUCTS WILL NOT BE ACCEPTED. TEST METHODS FOR THE ITEMS BELOW SHOULD FOLLOW USCC TMECC GUIDELINES FOR LABORATORY PROCEDURES:

SECTION

A. PH –5.0–8.0 IN ACCORDANCE WITH TMECC 04.11–A, 'ELECTROMETRIC PH DETERMINATIONS FOR COMPOST'

B. MOISTURE CONTENT OF LESS THAN 60% IN ACCORDANCE WITH STANDARDIZED TEST METHODS FOR MOISTUREDETERMINATION.

C. GROWINGMEDIA TM TO BE USED WITH FILTERSOXX TM WHERE SEEDING AND/OR LIVE STAKES ARE SPECIFIED; ON LOW GRADE SLOPES WHERE VEGETATION ESTABLISHMENT IS THE PRIORITY; OR WHERE RAINWATER ABSORPTION, WATER HOLDING CAPACITY, RUNOFF REDUCTION AND INFILTRATION ARE THE PRIORITY SHALL MEET THE FOLLOWING PARTICLE SIZE DISTRIBUTION. EXAMPLES INCLUDE RUNOFF DIVERSION SOXX TM , CHANNELSOXX TM , EDGESAVER TM , LIVINGWALL TM , GREENLOXX TM , FILTERCELL FLOW DIVERSION SOXX TM , COMPOST VEGETATED COVER TM , COMPOST EROSION CONTROL BLANKET TM , COMPOST STORM WATER BLANKET TM , COMPOST ENGINEERED SOIL TM , COMPOST BIORETENTION SYSTEM TM , GREEN ROOF GROWINGMEDIA TM .PARTICLE SIZES – 100% PASSING A 2 IN (50MM) SIEVE, 99% PASSING A 1 IN (25MM) SIEVE, MINIMUM OF 60% PASSING A ½ IN (12.5MM) SIEVE IN ACCORDANCE WITH TMECC 02.02–B, 'SAMPLE SIEVING FOR AGGREGATE SIZE CLASSIFICATION'.

D. MATERIAL SHALL BE RELATIVELY FREE (<1% BY DRY WEIGHT) OF INERT OR FOREIGN MAN MADE MATERIALS.

E. A SAMPLE SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO BEING USED AND MUST COMPLY WITH ALL
LOCAL, STATE AND FEDERAL REGULATIONS.

OPTION A: EROSION CONTROL

FOR VEGETATED NON FILTERSOXX TM APPLICATIONS WHERE SLOPE GRADES ARE GREATER THAN 3:1, WHERE SHEET RUNOFF RATE OR VELOCITY MAY BE HIGH, OR RAINFALL RATE/INTENSITY MAY BE HIGH.

SUBSTITUTION FOR SECTION C. PARTICLE SIZE OF FILTREXX GROWINGMEDIA TM SHALL USE THE FOLLOWING PARTICLE SIZE DISTRIBUTION SPECIFICATION: 99% PASSING A 1 IN (25MM) SIEVE, MAXIMUM OF 50% PASSING A 1/2 IN (12.5MM) SIEVE.

OPTION B: NON–VEGETATED TEMPORARY EROSION CONTROL

FOR NON–VEGETATED NON FILTERSOXX TM APPLICATIONS WHERE SLOPE GRADES ARE GREATER THAN 3:1, WHERE SHEET RUNOFF RATE OR VELOCITY MAY BE HIGH, OR RAINFALL RATE/INTENSITY MAY BE HIGH.

SUBSTITUTION FOR SECTION C. PARTICLE SIZE OF FILTREXX GROWINGMEDIA TM SHALL USE THE FOLLOWING PARTICLE SIZE DISTRIBUTION SPECIFICATION: 99% PASSING A 3 IN (75MM) SIEVE AND A MAXIMUM OF 30% PASSING A 1/2 IN (12.5MM) SIEVE.

RATIONALE FOR OPTIONS: RESEARCH CONDUCTED AT THE UNIVERSITY OF GEORGIA AND AUBURN UNIVERSITY (FAUCETTE ET AL, 2006; FAUCETTE, 2006) TO EVALUATE THE PERFORMANCE OF PARTICLE SIZES IN COMPOST EROSION CONTROL BLANKETS FOUND THAT DISTRIBUTIONS WITH PREDOMINANTLY SMALL PARTICLES ABSORBED MORE RAINFALL, REDUCED A GREATER VOLUME OF RUNOFF, INCREASED THE DELAY OF RUNOFF COMMENCEMENT, AND EXHIBITED GREATER VEGETATION GROWTH, RELATIVE TO COMPOST EROSION CONTROL BLANKETS WITH LARGE PARTICLE SIZES. HOWEVER, COMPOST EROSION CONTROL BLANKETS WITH DISTRIBUTIONS OF PREDOMINANTLY LARGE PARTICLES SLOWED RUNOFF RATE AND REDUCED SOIL LOSS PRIOR TO VEGETATION ESTABLISHMENT OVER COMPOST EROSION CONTROL BLANKETS WITH SMALLER PARTICLES SIZES.

SPECIFIC GEOLOGIC AND SOIL CONDITIONS:
NO SPECIAL SOIL OR GEOLOGIC ISSUES ARE KNOWN.

SOIL AMENDMENT	PERMANENT SEEDING APPLICATION RATE MIN.			NOTES
	PER ACRE	PER 1,000 SQ. FT.	PER 1,000 SQ. YD.	
AGRICULTURAL LIME	6 TONS	240 LB.	2,480 LB.	OR AS PER SOIL TEST; MAY NOT BE REQUIRED IN AGRICULTURAL FIELDS
10–10–20 FERTILIZER	1,000 LB	25 LB.	210 LB.	OR AS PER SOIL TEST; MAY NOT BE REQUIRED IN AGRICULTURAL FIELDS
	TEMPORARY SEEDING APPLICATION RATE MIN.			
AGRICULTURAL LIME	1 TON	40 LB.	410 LB.	TYPICALLY NOT REQUIRED FOR TOPSOIL
10–10–10 FERTILIZER	500 LB	12.5 LB	100 LB.	TYPICALLY NOT REQUIRED FOR TOPSOIL

MULCH TYPE	APPLICATION RATE MIN.			NOTES
	PER ACRE	PER 1,000 SQ. FT.	PER 1,000 SQ. YD.	
STRAW	3 TONS	140 LB.	1,240 LB.	EITHER WHEAT OR OAT STRAW, FREE OF WEEDS, NOT CHOPPED OR FINELY BROKEN
HAY	3 TONS	140 LB.	1,240 LB.	TIMOTHY, MIXED CLOVER AND TIMOTHY OR OTHER NATIVE FORAGE GRASSES
WOOD CHIPS	4–6 TONS	185 – 275 LB.	1,650 – 2,500 LB.	MAY PREVENT GERMINATION OF GRASSES AND LEGUMES
HYDROMULCH	1 TON	47 LB.	415 LB.	SEE LIMITATIONS ABOVE

DEPTH IN.	PER 1,00 SQ. FT.	PER ACRE
1	3.1 CY	134 CY
2	6.2 CY	268 CY
3	9.3 CY	403 CY
4	12.4 CY	537 CY
5	15.5 CY	672 CY
6	18.6 CY	806 CY
7	21.7 CY	940 CY
8	24.8 CY	1,074 CY

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REGISTERED PROFESSIONAL ENGINEER
DAVID R. FIORELLO
PE-073478-E

MOMENEE, INC.
a Karins Company
ENGINEERING | PLANNING | SURVEYING

CONSTRUCTION DETAILS

PHASE IV LOT LINE CHANGE
THE ARDROSSAN FARM
RADNOR TOWNSHIP * DELAWARE COUNTY * PENNSYLVANIA

APPLICANT
ESIII LP
107 TWADDELL MILL ROAD
WILMINGTON, DE 19807

ONE–CALL:	203–0820
DRAWN BY:	TCD
CHECKED BY:	DRF

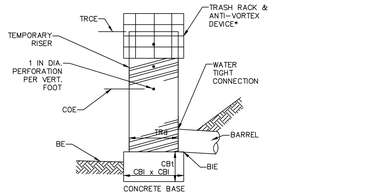
REV.	DATE	COMMENTS

FILE NO.: 06–012

SHEET 32 OF 33

DATE: NOVEMBER 4, 2016

SCALE: 1" =



* SEE STANDARD CONSTRUCTION DETAIL #7–5, TRASH RACK AND ANTI–VORTEX DEVICE
** LOWEST HOLE AT SEDIMENT CLEAN–OUT ELEVATION

TRAP NO.	TEMPORARY RISER				CONCRETE BASE			BARREL			
	DIA TRd (IN)	CREST ELEV TRCE (FT)	MAT'L	CLEAN OUT ELEV COE (FT)	LENGTH CBI (IN)	WIDTH CBw (IN)	THICK. CBt (IN)	INLET ELEV BIE (FT)	MAT'L	LENGTH (FT)	OUTLET ELEV BOE (FT)
T1.1	24	366.50	CMP	364.42	48	48	12	364.00	HDPE	54	363.00
T1.2	24	388.50	CMP	386.50	48	48	12	386.00	HDPE	54	385.00
T1.4	30	400.50	CMP	398.42	48	48	12	398.00			
T3.1	30	344.50	CMP	342.42	48	48	12	337.50			
T3.2	24	330.50	CMP	328.33	48	48	12	328.00			
T4.1	30	326.50	CMP	324.42	48	48	12	324.00			
T4.2	30	288.50	CMP	286.42	48	48	12	385.00			
T4.3	30	335.50	CMP	333.42	48	48	12	332.00			
T4.4	24	332.50	CMP	330.42	48	48	12	330.00			
T4.5	30	304.50	CMP	302.42	48	48	12	300.75			
T4.6	24	324.50	CMP	322.50	48	48	12	321.00			

NOTES:

PLACE A MINIMUM OF 2–#8 REBAR AT RIGHT ANGLES AND PROJECTING THROUGH SIDES OF RISER TO ANCHOR IT TO CONCRETE BASE. REBAR SHALL PROJECT A MINIMUM OF 1/4 RISER DIAMETER BEYOND OUTSIDE OF RISER.

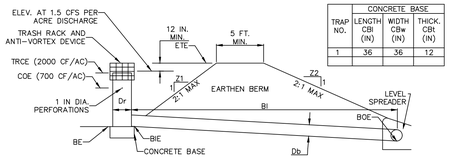
CONCRETE BASE SHALL BE POURED IN SUCH A MANNER SO AS TO INSURE THAT CONCRETE FILLS BOTTOM OF RISER TO INVERT OF THE OUTLET PIPE TO PREVENT RISER FROM BREAKING AWAY FROM THE BASE. MINIMUM BASE WIDTH EQUALS 2 TIMES RISER DIAMETER.

EMBEDDED SECTION OF ALUMINUM OR ALUMINIZED PIPE SHALL BE PAINTED WITH ZINC CHROMATE OR EQUIVALENT.

CLOGGED OR DAMAGED SPILLWAYS SHALL BE REPAIRED IMMEDIATELY. TRASH AND OTHER DEBRIS FROM THE TRAP AND RISER SHALL BE REMOVED.

STANDARD CONSTRUCTION DETAIL #8–3
SEDIMENT TRAP TEMPORARY RISER

NOT TO SCALE



TRAP NO.	CONCRETE BASE		
	LENGTH CBI (IN)	WIDTH CBw (IN)	THICK. CBt (IN)
1	36	36	12

TRAP NO.	Z1 (FT)	Z2 (FT)	RISER				BARREL				EMBANKMENT		CLEAN OUT ELEV COE (FT)	BOTTOM ELEV BE (FT)
			MAT'L	DIA Dr (IN)	CREST ELEV RCE (FT)	BOT PERF ELEV EFF (FT)	MAT'L	DIA Bd (IN)	INLET ELEV BIE (FT)	LENGTH BI (FT)	OUTLET ELEV BOE (FT)	TOP ELEV ETE (FT)	TOP WIDTH Etw (FT)	
T1.1	2.0	3.0	CMP	24	366.50	364.42	HDPE	15	364.00	50	362.50	368.00	5.0	364.42	363.00
T1.2	2.0	3.0	CMP	24	388.50	386.50	HDPE	15	386.00	100	381.50	390.00	5.0	386.50	385.00
T1.4	2.0	3.0	CMP	30	400.50	398.42	HDPE	15	398.00	48	396.08	402.00	5.0	398.42	397.00
T3.1	2.0	3.0	CMP	30	344.50	342.42	HDPE	15	337.50	106	335.92	346.00	5.0	342.42	341.00
T3.2	2.0	3.0	CMP	24	330.50	328.33	HDPE	12	328.00	64	325.50	332.00	5.0	328.33	327.00
T4.1	2.0	3.0	CMP	30	326.50	324.42	HDPE	15	324.00	18	322.00	328.00	5.0	324.42	323.00
T4.2	2.0	3.0	CMP	30	288.50	286.42	HDPE	15	385.00	75	276.75	290.00	5.0	286.42	285.00
T4.3	2.0	3.0	CMP	30	335.50	333.42	HDPE	15	332.00	115	330.25	337.00	5.0	333.42	332.00
T4.4	2.0	3.0	CMP	24	332.50	330.42	HDPE	15	330.00	54	328.25	334.00	5.0	330.42	329.00
T4.5	2.0	3.0	CMP	30	304.50	302.42	HDPE	24	300.75	32	300.00	306.00	5.0	302.42	301.00
T4.6	2.0	3.0	CMP	24	324.50	322.50	HDPE	15	321.00	64	318.25	326.00	5.0	322.50	321.00

NOTES:

SEE TEMPORARY RISER DETAILS OF THE TEMPORARY RISER CONSTRUCTION.

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.

ALL SEDIMENT TRAPS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT.

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

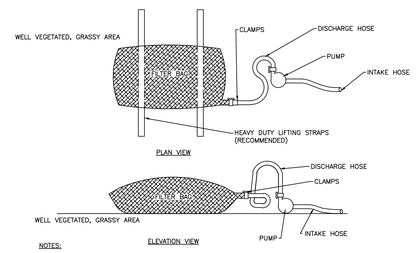
A CLEAN OUT STAKE SHALL BE PLACED NEAR THE CENTER OF EACH TRAP. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED THE CLEAN OUT ELEVATION ON THE STAKE AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS. DISPOSE OF MATERIALS REMOVED FROM THE TRAP IN THE MANNER DESCRIBED IN THE E&S PLAN.

CHECK EMBANKMENTS, SPILLWAYS, AND OUTLETS FOR EROSION, PIPING AND SETTLEMENT. CLOGGED OR DAMAGED SPILLWAYS AND/OR EMBANKMENTS SHALL BE IMMEDIATELY RESTORED TO THE DESIGN SPECIFICATIONS.
DISPLACED RIPRAP WITHIN THE OUTLET PROTECTION SHALL BE REPLACED IMMEDIATELY.

ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISTURBED AREAS INSIDE THE TRAP SHALL BE STABILIZED BEFORE CONVERSION TO A STORMWATER MANAGEMENT FACILITY. TO ASSIST IN REMOVING SEDIMENT, WHICH MAY BE SATURATED, A DEVICE SUCH AS IS SHOWN IN STANDARD CONSTRUCTION DETAIL #7–18 MAY BE USED TO DEWATER THE SEDIMENT PRIOR TO ITS REMOVAL.

STANDARD CONSTRUCTION DETAIL #8–2
BARREL/RISER SEDIMENT TRAP

NOT TO SCALE



NOTES:

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

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D–4884	60 LB/IN
GRAB TENSILE	ASTM D–4632	205 LB
PUNCTURE	ASTM D–4833	110 LB
MULLEN BURST	ASTM D–3786	350 PSI
UV RESISTANCE	ASTM D–4355	70%
AOS % RETAINED	ASTM D–4751	80 SIEVE

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

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

NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

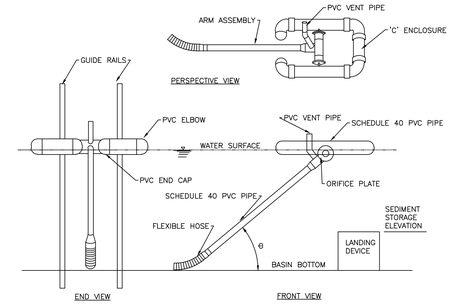
THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

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

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

STANDARD CONSTRUCTION DETAIL #3–16
PUMPED WATER FILTER BAG

NOT TO SCALE



BASIN NO.	WATER SURFACE ELEVATION (FT)	ARM LENGTH (FT)	ARM DIA. (IN)	ORIFICE DIA. (IN)	TOP OF LANDING DEVICE ELEVATION (FT)	FLEXIBLE HOSE LENGTH (IN)	FLEXIBLE HOSE ATTACHMENT ELEVATION (FT)
B1.3	339.75	6.0	3.0	1.0	336.50	8.0	336.17

NOTES:

ORIFICE DIAMETER MUST BE EQUAL TO OR LESS THAN ARM DIAMETER

A ROPE SHALL BE ATTACHED TO THE SKIMMER ARM TO FACILITATE ACCESS TO THE SKIMMER ONCE INSTALLED.

SKIMMER SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT.
ANY MALFUNCTIONING SKIMMER SHALL BE REPAIRED OR REPLACED WITHIN 24 HOURS OF INSPECTION.

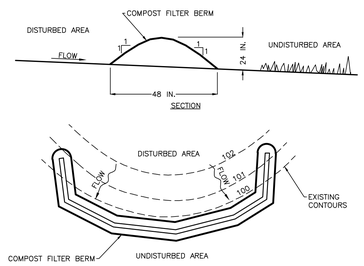
ICE OR SEDIMENT BUILDUP AROUND THE PRINCIPAL SPILLWAY SHALL BE REMOVED SO AS TO ALLOW THE SKIMMER TO RESPOND TO FLUCTUATING WATER ELEVATIONS.

SEDIMENT SHALL BE REMOVED FROM THE BASIN WHEN IT REACHES THE LEVEL MARKED ON THE SEDIMENT CLEAN–OUT STAKE OR THE TOP OF THE LANDING DEVICE.

A SEMI–CIRCULAR LANDING ZONE MAY BE SUBSTITUTED FOR THE GUIDE RAILS (STANDARD CONSTRUCTION DETAIL # 7–3).

STANDARD CONSTRUCTION DETAIL #7–1
SKIMMER

NOT TO SCALE



NOTES:

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

COMPOST FILTER BERMS SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BERM SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BERM ALIGNMENT.

THE MAXIMUM SLOPE LENGTH ABOVE A COMPOST FILTER BERM SHALL NOT EXCEED THAT SHOWN IN TABLE 4.4 OF THE PA DEP EROSION CONTROL MANUAL FOR THE STANDARD SILT FENCE (18 IN. HIGH FENCE).

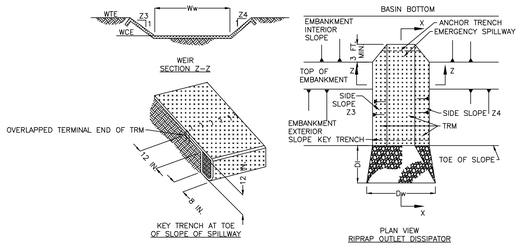
TALL GRASS SHALL BE CUT PRIOR TO INSTALLATION TO MINIMIZE POTENTIAL FOR UNDERCUTTING. BERM SHALL BE NETTED OR OTHERWISE ANCHORED AFTER INSTALLATION.

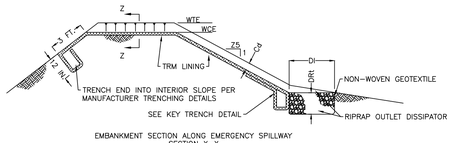
SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH 1/3 THE ABOVE GROUND HEIGHT OF THE BERM.

ANY SECTION COMPOST FILTER BERM WHICH HAS BEEN UNDERMINED OR TOPPED SHALL BE IMMEDIATELY REPLACED. CONCENTRATED FLOWS SHALL NOT BE DIRECTED TOWARD ANY COMPOST FILTER BERM.

STANDARD CONSTRUCTION DETAIL #4–2
COMPOST FILTER BERM

NOT TO SCALE





BASIN NO.	WEIR					LINING		CHANNEL		DISSIPATOR			
	Z3 (FT)	Z4 (FT)	TOP ELEV WTE (FT)	CREST ELEV WCE (FT)	WIDTH Ww (FT)	TRM TYPE	STAPLE PATTERN	Z5 (FT)	DEPTH Cd (FT)	LENGTH Dl (FT)	WIDTH Dw (FT)	RIPRAP SIZE (R–__)	RIPRAP THICK. DRt (IN)
B1.3	3	3	342.50	340.50	20	TRM 450	2 ANCHORS/YD²	3	2	10	20	R–6	18

NOTES:

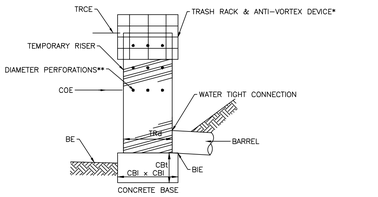
HEAVY EQUIPMENT SHALL NOT CROSS OVER SPILLWAY WITHOUT PRECAUTIONS TAKEN TO PROTECT TRM LINING.

DISPLACED LINER WITHIN THE SPILLWAY AND/OR OUTLET CHANNEL SHALL BE REPLACED IMMEDIATELY.

RIPRAP AT TOE OF EMBANKMENT SHALL BE EXTENDED A SUFFICIENT LENGTH IN BOTH DIRECTIONS TO PREVENT SCOUR.

THE USE OF BAFFLES THAT REQUIRE SUPPORT POSTS ARE RESTRICTED FROM USE IN BASINS REQUIRING IMPERVIOUS LINERS.

STANDARD CONSTRUCTION DETAIL #7–13
SEDIMENT BASIN EMERGENCY SPILLWAY WITH TRM LINING



* SEE STANDARD CONSTRUCTION DETAIL #7–5, TRASH RACK AND ANTI–VORTEX DEVICE
** LOWEST ROW OF HOLES AT SEDIMENT CLEAN–OUT ELEVATION

BASIN NO.	TEMPORARY RISER			PERFORATIONS				CONCRETE BASE		BARREL
	DIA TRd (IN)	CREST ELEV TRCE (FT)	MAT'L	LOWEST ROW OF HOLES ELEV (FT)	NO. ROWS**	NO. HOLES PER ROW	VERT. SPACING OF ROWS (FT)	LENGTH AND WIDTH CBI (IN)	THICKNESS CBt (IN)	INLET ELEV BIE (FT)
B1.3	36	339.75	CMP	336.50	4	1	1.0	48	12	336.00

NOTES:

A MINIMUM OF 2–#8 REBAR SHALL BE PLACED AT RIGHT ANGLES AND PROJECTING THROUGH SIDES OF RISER TO ANCHOR IT TO CONCRETE BASE. REBAR SHALL PROJECT A MINIMUM OF 1/4 RISER DIAMETER BEYOND OUTSIDE OF RISER.

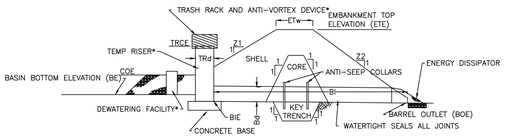
CONCRETE BASE SHALL BE POURED IN SUCH A MANNER SO AS TO INSURE THAT CONCRETE FILLS BOTTOM OF RISER TO INVERT OF THE OUTLET PIPE TO PREVENT RISER FROM BREAKING AWAY FROM THE BASE. MINIMUM BASE WIDTH EQUALS 2 TIMES RISER DIAMETER.

EMBEDDED SECTION OF ALUMINUM OR ALUMINIZED PIPE SHALL BE PAINTED WITH ZINC CHROMATE OR EQUIVALENT.

CLOGGED OR DAMAGED SPILLWAYS SHALL BE REPAIRED IMMEDIATELY. TRASH AND OTHER DEBRIS SHALL BE REMOVED FROM THE BASIN AND RISER.

STANDARD CONSTRUCTION DETAIL #7–7
SEDIMENT BASIN TEMPORARY RISER

NOT TO SCALE



* 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)	INLET ELEV BIE (FT)	MAT'L	LENGTH (FT)	OUTLET ELEV BOE (FT)
B1.3	2	3	36	339.75	CMP	24	336.00	HDPE	54	333.50

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)		
342.50	8	3	4	336.50	335.50

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.

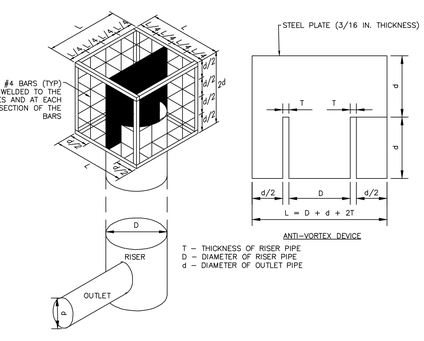
ACCESS SHALL BE PROVIDED FOR SEDIMENT REMOVAL AND OTHER REQUIRED MAINTENANCE ACTIVITIES.

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.

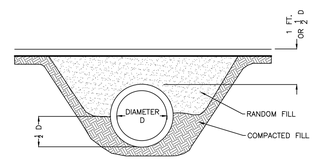
STANDARD CONSTRUCTION DETAIL #7–6
SEDIMENT BASIN EMBANKMENT AND SPILLWAY DETAILS
PERFORATED RISER

NOT TO SCALE



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

NOT TO SCALE



NOTES:

MINIMUM DIAMETER FOR ANY CULVERT IS 12", OTHERWISE CULVERT SHALL BE SIZED FOR ANTICIPATED PEAK FLOW. PLACE CULVERT SO BOTTOM IS AT SAME LEVEL AS BOTTOM OF DITCH OR ADJOINING SLOPE. CULVERTS SHALL BE PLACED WITH A SLOPE OF 2 TO 4%. LOWER END SHALL BE AT LEAST 2" BELOW UPPER END.

EXTEND CULVERT 12" BEYOND BASE OF ROAD FILL ON BOTH SIDES. FIRMLY PACK FILL AROUND CULVERT, ESPECIALLY THE BOTTOM HALF.

PROVIDE SUITABLE OUTLET PROTECTION* AND, WHERE APPROPRIATE, INLET PROTECTION.

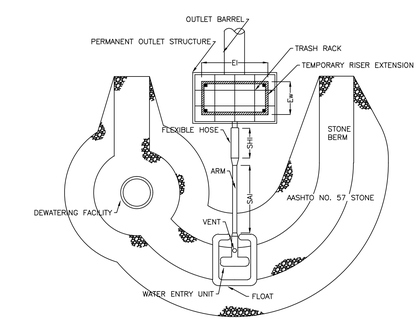
INSPECT CULVERT WEEKLY: REMOVE ANY FLOW OBSTRUCTIONS AND MAKE NECESSARY REPAIRS IMMEDIATELY.

THIS DETAIL MAY BE USED FOR DITCH RELIEF CULVERTS AND FOR CROSSINGS OF ROADSIDE DITCHES. IT IS NOT APPROPRIATE FOR STREAM CROSSINGS.

* FOR STEEP SLOPE (>2H:1V) OUTFALLS, A MINIMUM 20 FOOT LONG R–5 APRON IS RECOMMENDED FOR TEMPORARY ACCESS ROADS WHERE THE RECOMMENDED CULVERT SPACING IS USED. FOR PERMANENT ACCESS ROADS, A MINIMUM R–6 ROCK SIZE IS RECOMMENDED.

STANDARD CONSTRUCTION DETAIL #3–10
DITCH RELIEF CULVERT

NOT TO SCALE



NOTES:

NO GUIDE RAILS SHALL BE REQUIRED FOR THIS INSTALLATION.

THIS DETAIL SHALL BE USED IN CONJUNCTION WITH STANDARD CONSTRUCTION DETAILS #7–2 AND #7–4.

STANDARD CONSTRUCTION DETAIL #7–3
SKIMMER WITH STONE LANDING BERM

NOT TO SCALE

DESIGNER, ENGINEER, SURVEYOR, PLANNER, OWNER, OPERATOR, SELLER, LENDER, OR ANY OTHER PERSON OR ENTITY HAVING ANY RIGHT, TITLE OR INTEREST IN THE PROPERTY OR FACILITY REFERRED TO OR DEPICTED IN THIS PLAN OR PLAT WAIVES ANY AND ALL CLAIMS AGAINST MOMENEE, INC. ARISING OUT OF OR RELATED TO THE PREPARATION, USE, OR MODIFICATION OF THIS PLAN OR PLAT.

Serial Number: 201-203-0820
CALL BEFORE YOU DIG!
PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PLACE AND 10 WORKING DAYS NOTICE FOR DESIGN.
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REGISTERED PROFESSIONAL ENGINEER
DAVID R. FIORELLO
PE-073478-E

MOMENEE, INC.
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ENGINEERING | PLANNING | SURVEYING

CONSTRUCTION DETAILS
PHASE IV LOT LINE CHANGE
THE ARDROSSAN FARM
RADNOR TOWNSHIP • DELAWARE COUNTY • PENNSYLVANIA

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CHECKED BY:	DRF

APPLICANT
ESIII LP
107 TWADDELL MILL ROAD
WILMINGTON, DE 19807

REV.	DATE	COMMENTS

FILE NO.: 06–012
SHEET 33 OF 33
DATE: NOVEMBER 4, 2016
SCALE: 1" =

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