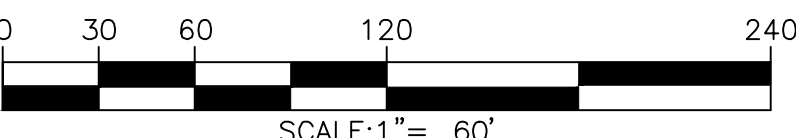


- LEGEND
- EX. FENCE
  - EX. TRACT LINE
  - EX. BOUNDARY
  - PR BOUNDARY
  - EX. RIGHT-OF-WAY
  - SETBACKS
  - 35' BUFFER YARD SETBACK
  - EX. MONUMENTATION
  - EX. UTILITY POLE
  - EX. STORM INLET
  - PR. MONUMENTATION(STEEL PINS)
  - APPROXIMATE LOCATION OF WATERS OF THE COMMONWEALTH
  - WETLANDS
  - WETLAND AND RIPARIAN BUFFER AND EASMENT
  - TEST PITS
  - EXISTING AND PROPOSED WELLS
  - EX. WOODLAND
  - PR FENCE
  - EX TREES
  - PHASE 2 - FUTURE



NATIONAL RESOURCE PROTECTION STANDARDS												
RESOURCE	OPEN SPACE RATIO	ACRES OF LAND IN RESOURCES (LOT 1)	REQUIRED RESOURCE PROTECTION (LOT 1)	PROPOSED RESOURCE PROTECTION (LOT 1)	ACRES OF LAND IN RESOURCES (LOT 2)	REQUIRED RESOURCE PROTECTION (LOT 2)	PROPOSED RESOURCE PROTECTION (LOT 2)	ACRES OF LAND IN RESOURCES (LOT 3)	REQUIRED RESOURCE PROTECTION (LOT 3)	PROPOSED RESOURCE PROTECTION (LOT 3)	ACRES OF LAND IN RESOURCES (LOT 4)	REQUIRED RESOURCE PROTECTION (LOT 4)
STEEP SLOPES 15-25% OR MORE	70%	0			8798 SF	6158 SF	7459 SF	983	688	0	0	
WOODLANDS (R-2M)	80%	2.72 AC	2.18 AC	2.37 AC	5.00 AC	4.00 AC	4.01 AC	4.01AC	3.20 AC	3.20 AC	0.68 AC	0.68 AC
WETLANDS	100%	8343 SF	8343 SF	8343 SF	0			2155 SF	2155 SF	2155 SF	0 SF	0 SF
WETLAND MARGINS	80%	42129 SF	33703 SF	41390 SF	39194 SF	31355 SF	39194 SF	19247 SF	22826 SF	22826 SF	4318 SF	5397 SF
RIPARIAN CORRIDOR LAND WITH RESOURCE RESTRICTIONS	100%	0			0			0			0	
RESOURCE PROTECTION LAND												
FLOODWAY	100%	0			0			0			0	
FLOOD FRINGE		0			0			0			0	
APPROX. 100-YEAR FLOOD BOUNDARY	100%	0			0			0			0	
FLOODPLAIN SOILS	100%	0			0			0			0	
POND SHORELINES	80%	0			0			0			0	
WATERCOURSES	100%	0			0			0			0	
STREAMS, PONDS												

TAX PARCEL NUMBER  
47-00-03758-00-2

ZONING DATA R-2M									
	REQUIRED	EXISTING	LOT 1	LOT 2	LOT 3	LOT 4	SWAN CIRCLE	LOT 4 LAYFIELD ROAD ULTIMATE ROW	LOT 1,2,3 LAYFIELD ROAD ULTIMATE ROW
LOT AREA(GROSS)		22.10 ACRES	2.72 ACRES	5.09 ACRES	4.48 ACRES	7.93 ACRES	0.38 ACRES	0.71 ACRES	0.81
LOT AREA(NET)	2 ACRES	21.69 AC (EX ROW) 20.58 AC (ULT ROW)	2.72 ACRES	4.95 ACRES	4.48 ACRES	7.93 ACRES			
LOT WIDTH	250 FT.	>250 FT.	311 FT.	25 FT.	251 FT.	585 FT.			
FRONT YARD	40 FT.	>40 FT.	73 FT.	71 FT.	357 FT.	387 FT.			
REAR YARD	60 FT.	>60 FT.	255 FT.	167 FT.	267 FT.	221 FT.			
SIDE YARD	30 FT.	>30 FT.	60 FT.	173 FT.	60 FT.	122 FT.			
BUILDING COVERAGE	15%	<15%	1.5%	1.1%	1.2%	1.7%			
BUILDING HEIGHT	35 FT.	<35 FT.	<35 FT.	<35 FT.	<35 FT.	<35 FT.			
MAX WOODLAND DISTURBANCE	20%	20%	20%	20%	20%	20%			
MIN BUILDING ENVELOPE	8500 SF.	>8500 SF.	>8500 SF.	>8500 SF.	>8500 SF.	>8500 SF.			
STREAM CORRIDOR SETBACK	50 FT.	N/A	N/A	N/A	N/A	N/A			

NO.	REVISION	DATE	BY	APP.
4.	FINAL PLAN - PHASE 1	2017-06-06	WJD	BOB
3.	PER MONTGOMERY COUNTY CONSERVATION DISTRICT 3/1/16, PENNDOT 12/5/16, GILMORE 12/6/16, MCMAHON 12/12/16, KMS DESIGN 12/8/16 REVIEW LETTERS	1-12-17	JOE	BOB
2.	PER GILMOREASSOCIATES, INC 3/11/16, KMS DESIGN GROUP, LLC 3/16/16, MCMAHON ASSOCIATES, INC. 2/11/16 REVIEW LETTERS.	10-25-16	WJD	BOB
1.	PER GILMOREASSOCIATES, INC 6/5/2015, KMS DESIGN GROUP, LLC 6/4/2015, MCMAHON ASSOCIATES, INC. 6/5/2015, AND MONTGOMERY COUNTY PLANNING COMMISSION 6/30/2015 REVIEW LETTERS.	10-21-15	WJD	BOB

SEAL

SEAL



CLIENT  
FDEV LLC  
1150 FIRST AVE STE 920  
KING OF PRUSSIA, PA  
19406

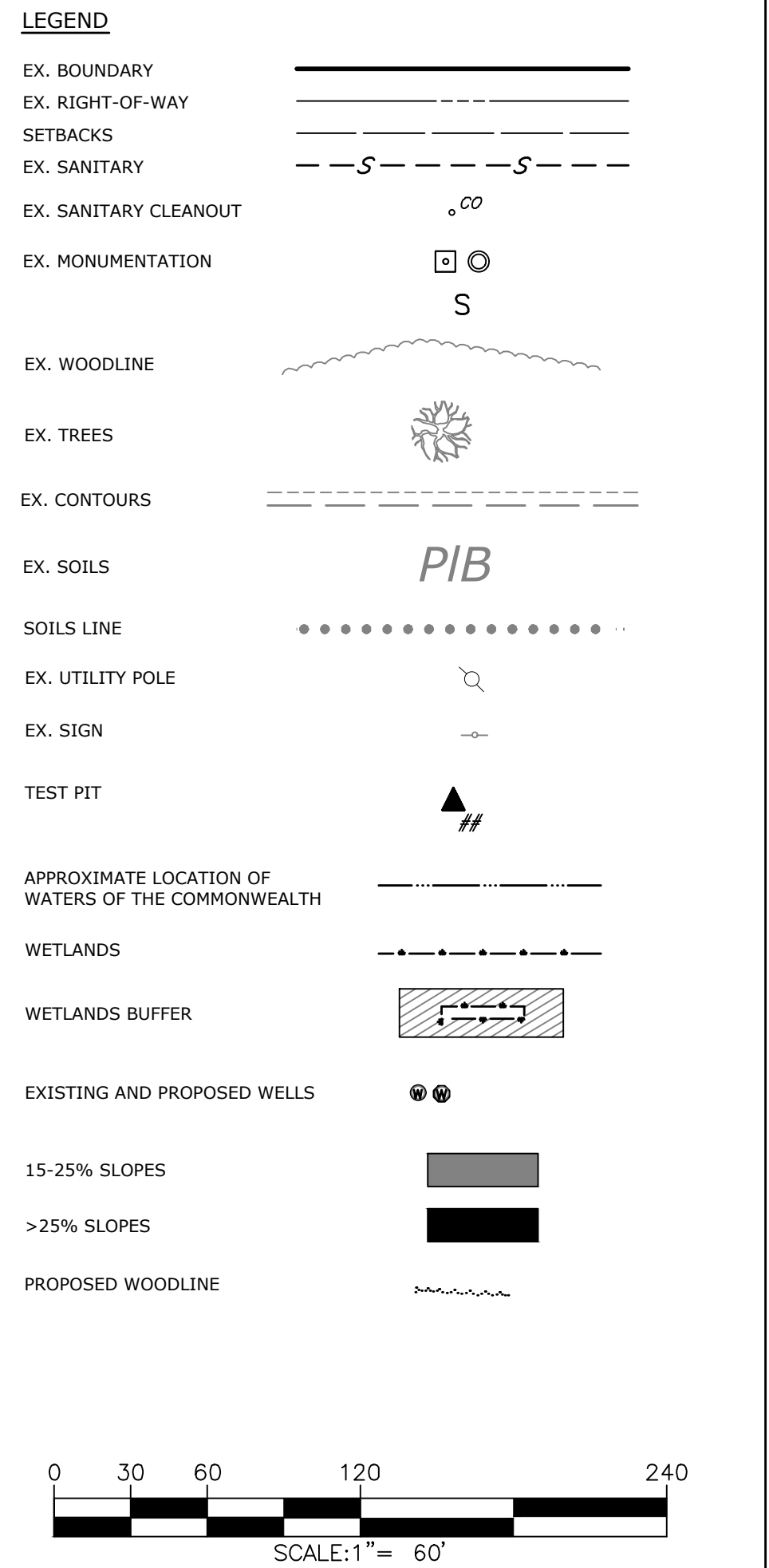
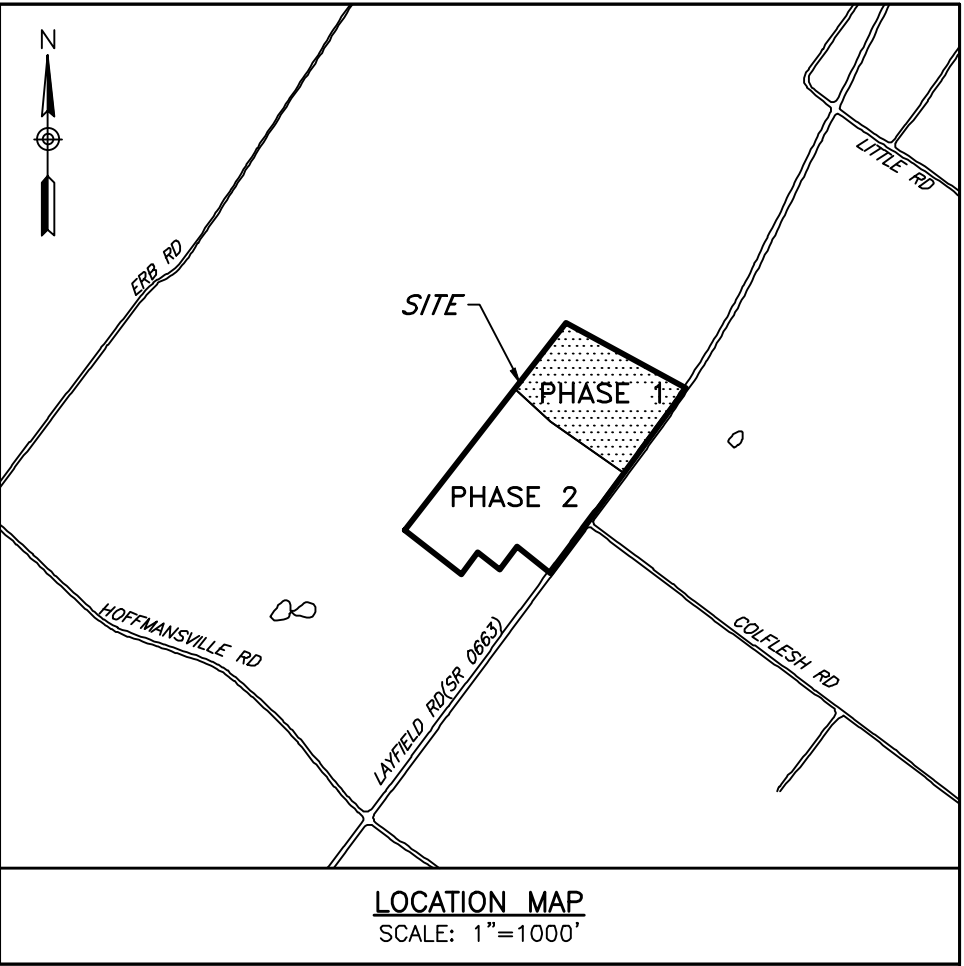
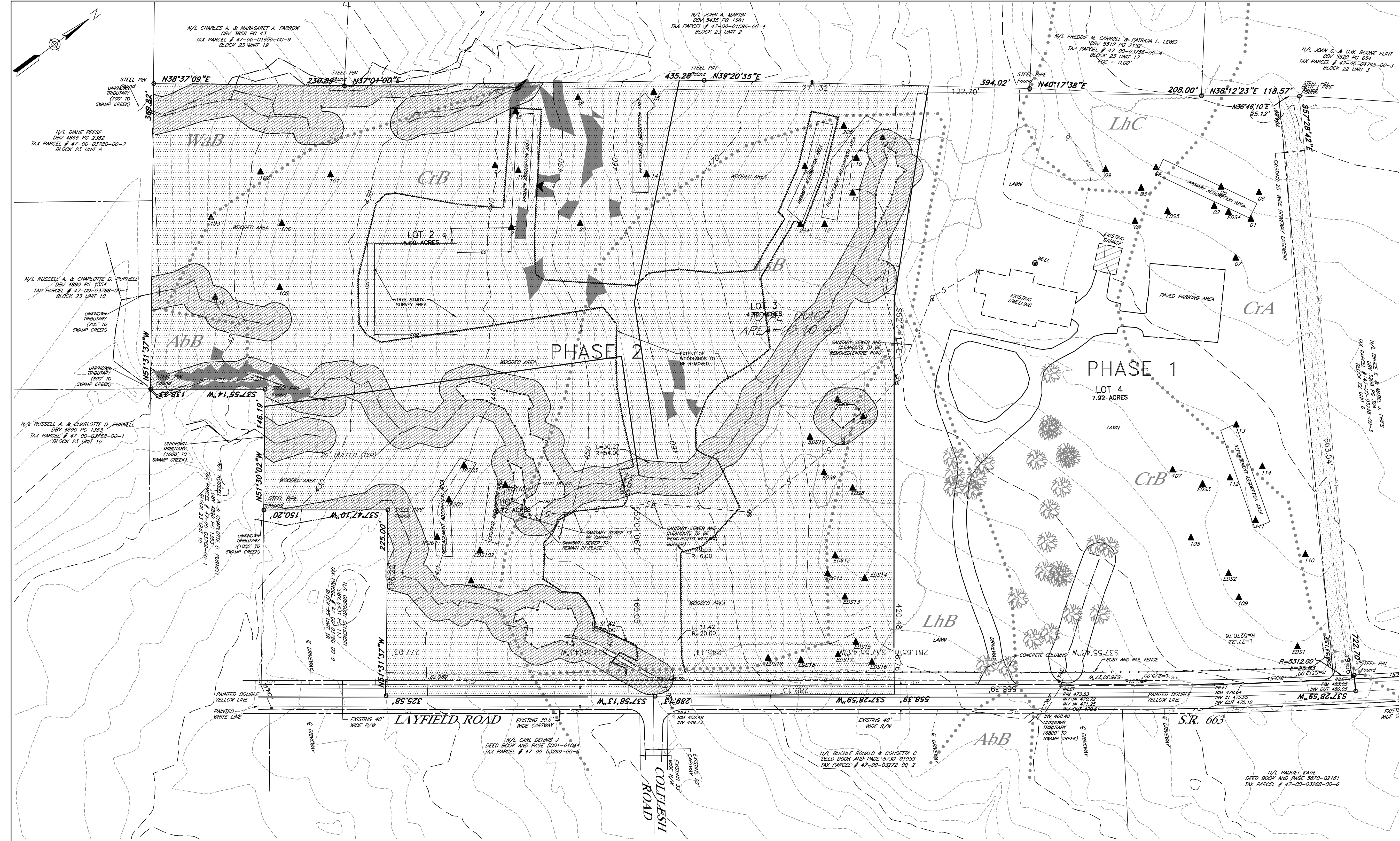
SUBJECT  
FINAL PLAN  
FDEV SUBDIVISION  
PHASE 1  
NEW HANOVER TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA

1860 WEAVERTOWN ROAD, SUITE 100  
DOUGLASSVILLE, PA 19518  
PHONE: 610-689-8021  
FAX: 610-689-4538

DESIGN BOB  
DRAWN BY WJD  
DATE 4/22/15  
CHKD. BY  
SCALE 1"=60'

PROJECT NO.  
14-146  
DWG. NO.  
FP114146  
SHEET NO.  
2 OF 13





PROJECTS 14-148 State Property\VP114146 - PHASE 1.dwg, 2017-06-08 13:03 PM

**Soil Characteristics**

pit - The topsoil shall be tested prior to applying the seed and mulch. Line shall be added to the soil until it reaches a pH of 7 to 7.5.

Winter Grading - The soils shall be stabilized with mulch until it is appropriate to apply the seed.

Frost Action - Soils containing frost shall not be utilized as structural backfill.

Topsoil - The topsoil shall have line applied as necessary to have a pH of 7 to 7.5. Compost shall be mixed with the topsoil per the amended soil specification to increase its organic content and water holding capacity. Any topsoil that needs to be imported shall be from a site with an approved erosion control plan.

Road Fill - Suitable material shall be found onsite or imported from a site with an approved erosion control plan.

Highway Location - Limitations include wetness and low strength. If bedrock is encountered it shall be removed to an appropriate depth and the stone base for the road shall be installed. Roads shall not be constructed when the temperature is below freezing unless the frozen soils are removed.

Pipeline Construction - Limitations may include high water table. Utility trenches shall be pumped to keep the working area dry. All pumped water shall be discharged to a sediment filtering device.

Detection Basin Embankments - The limitation is the low strength. Any soil that is imported shall come from a site with an approved erosion control plan.

Terraces and Waterways - Appropriate stabilization materials shall be used as specified in the plans.

Landscape and Lawn - Limitations include poor and limited amounts of topsoil and wet soils. Soil amendment with compost and sand shall be used to provide adequate planting soil. Any soil that is imported shall come from a site with an approved erosion control plan. Sloped areas shall be mulched and have the appropriate netting installed where necessary to prevent erosion.

Soil Name	CrB - Croton Silt Loam, 3 to 8% Slopes	LhB - Lehigh Silt Loam, 3 to 8% Slopes	LhC - Lehigh Silt Loam, 8 to 15% Slopes
Depth to Seasonal Water Table (ft)	0 to 6	6 to 36	6 to 36
Depth to Bedrock (in)	40 to 60	40 to 60	40 to 60
PI	Variable Use Soil tests to determine	Variable Use Soil tests to determine	Variable Use Soil tests to determine
Suitability for Winter Grading	Poor (wetness)	Fair (Depth to Saturated Zone)	Fair (Depth to Saturated Zone)
Suitability for Frost Action	High (wetness)	High (Depth to Saturated Zone)	High (Depth to Saturated Zone)
Topsoil Suitability	Poor (wetness)	Poor (Rock Fragments)	Poor (Rock Fragments)
Road Fill Suitability	Poor (wetness)	Fair (Depth to Saturated Zone)	Fair (Depth to Saturated Zone)
Highway Location	Very Limited (prevailing, Depth to Saturated Zone)	Very Limited (Depth to Saturated Zone, Road Addition)	Very Limited (Depth to Saturated Zone)
Shallow Excavations	Very Limited (prevailing, Depth to Saturated Zone)	Very Limited (Depth to Saturated Zone)	Very Limited (Depth to Saturated Zone)
Embankment Suitability for Detention Basins	Very Limited (prevailing, Depth to Saturated Zone)	Very Limited (Depth to Saturated Zone)	Very Limited (Depth to Saturated Zone)
Landscape and Lawn Suitability	Very Limited (Depth to Saturated Zone)	Somewhat Limited (Depth to Saturated Zone)	Somewhat Limited (Depth to Saturated Zone)
On-site Sewage Disposal Suitability	Very Limited (Depth to Saturated Zone)	Very Limited (Show Percolation)	Very Limited (Show Percolation)
Home Site Suitability with Basement	Very Limited (prevailing, Depth to Saturated Zone)	Very Limited (Depth to Saturated Zone)	Very Limited (Depth to Saturated Zone)
Corrosion of Concrete	Moderate	Low	Low
Mechanical Site Preparation (Deep)	Well Suited	Well Suited	Well Suited
Hydrologic Soil Group	D	C/D	C/D

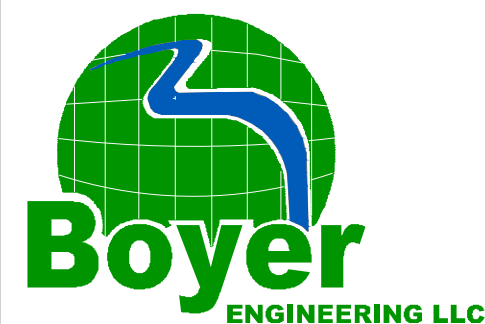
**TREE STUDY REFERENCE:**  
A TREE STUDY ON NOVEMBER 06, 2015 PERFORMED BY BOYER ENGINEERING

A TYPICAL SAMPLE AREA OF 100 BY 100, LOCATED APPROXIMATELY 66 SOUTHEAST, AND 18 SOUTHEAST OF TEST PIT #21, 21 TREES WITH A DIAMETER OF 10" AND ABOVE, MEASURED AT A DBH OF 4.5" WERE FOUND. 4 TREES WITH A DIAMETER OF 6"-10", MEASURED AT A DBH OF 4.5" WERE FOUND.

SYMBOL	NAME/DESC
AaB	ABBOTTSTOWN SILT LOAM 3-8% SLOPES
CrA	CROTON SILT LOAM 0-3% SLOPES
CrB	CROTON SILT LOAM 3-8% SLOPES
LhB	LEHIGH SILT LOAM, 3-8% SLOPES
LhC	LEHIGH SILT LOAM 8-15% SLOPES
LsB	LEHIGH SILT LOAM 0-8% SLOPES
Wab	WATCHUNG SILT LOAM 3-8% SLOPES

NO.	REVISION	DATE	BY	APP.
4.	FINAL PLAN - PHASE 1	2017-06-08	WJD	BOB
3.	PER MONTGOMERY COUNTY CONSERVATION DISTRICT 3/1/16, PENNDOT 12/5/16, GILMORE 12/5/16, MCMAHON 12/12/16, KMS DESIGN 12/8/16 REVIEW LETTERS.	1-12-17	JCE	BOB
2.	PER GILMOREASSOCIATES, INC 3/14/16, KMS DESIGN GROUP, LLC 3/16/16, MCMAHON ASSOCIATES, INC. 2/11/16 REVIEW LETTERS.	10-25-16	WJD	BOB
1.	PER GILMOREASSOCIATES, INC 6/5/2015, KMS DESIGN GROUP, LLC 6/4/2015, MCMAHON ASSOCIATES, INC. 6/5/2015, AND MONTGOMERY COUNTY PLANNING COMMISSION 6/30/2015 REVIEW LETTERS.	10-21-15	WJD	BOB

SEAL	SEAL
------	------

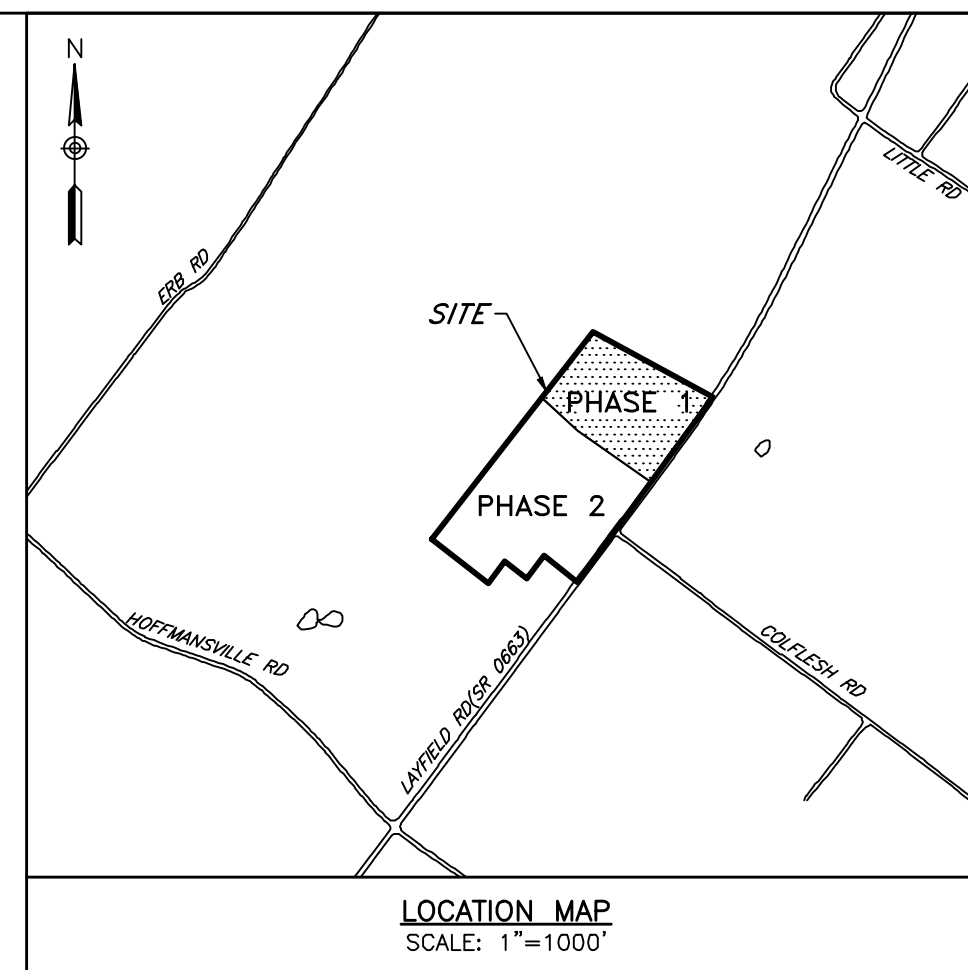
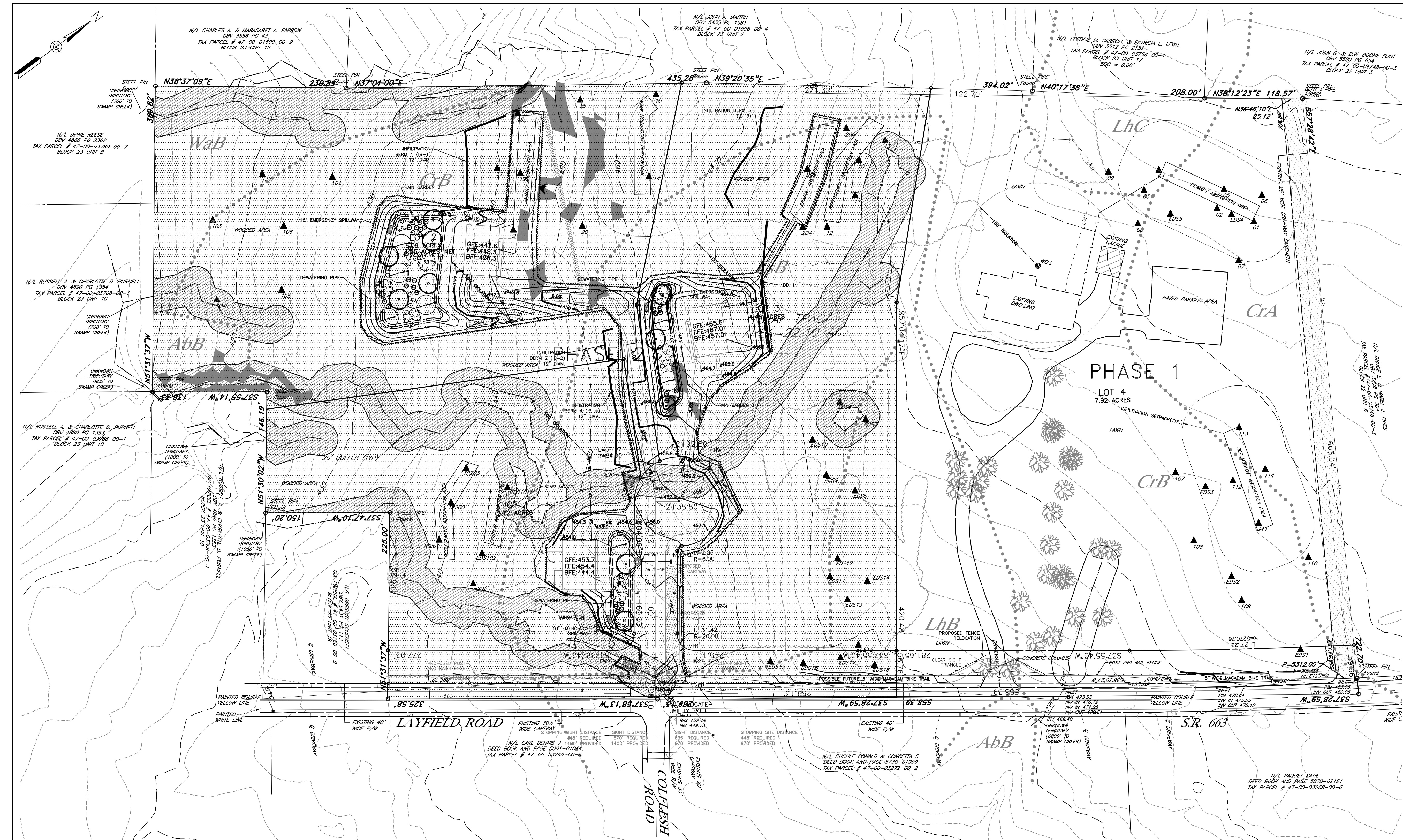


DESIGN	BOB	CHKD. BY	WJD
DRAWN BY	WJD	CHKD. BY	WJD
DATE	4/22/15	SCALE	1"=60'

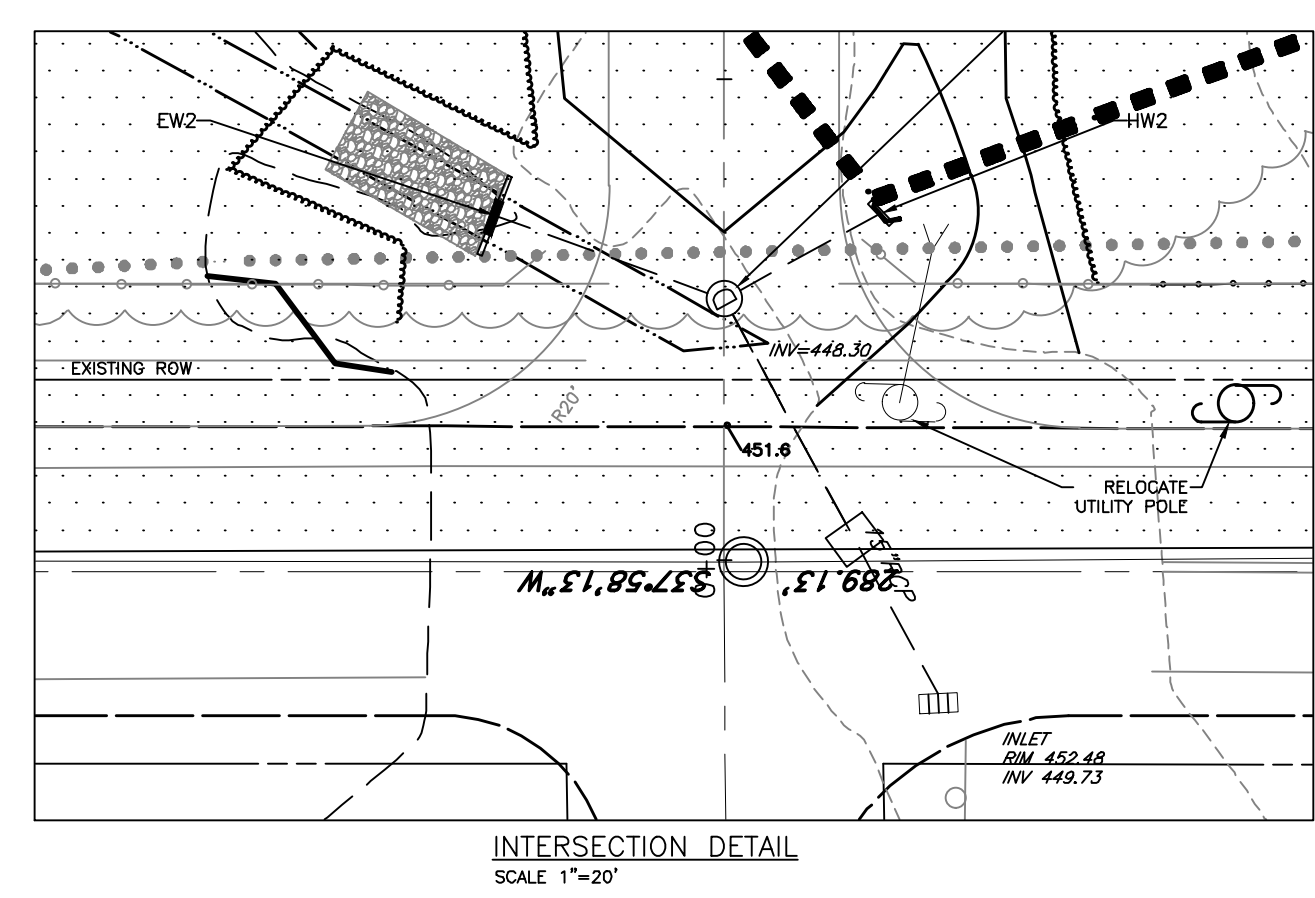
PROJECT NO.	14-146
DWG. NO.	EF114146
SHEET NO.	3 OF 13

NEW HANOVER TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA
1860 WEAVERTOWN ROAD, SUITE 100 DOUGLASSVILLE, PA 19518 PHONE: 610-689-8021 FAX: 610-689-4538





- LEGEND**
- EX. TRACT LINE
  - EX. BOUNDARY
  - EX. RIGHT-OF-WAY
  - SETBACKS
  - EX. SANITARY
  - EX. GAS
  - PR. CLEANOUT
  - EX. MONUMENTATION
  - EX. UTILITY POLE & GUY WIRE
  - EX. SANITARY MANHOLE
  - EX. SOILS
  - EX. CONTOURS
  - PR. CONTOURS
  - PR. INTERIM CONTOURS
  - PR. SANITARY LATERAL
  - PR. STORM PIPE
  - TEST PIT
  - APPROXIMATE LOCATION OF WATERS OF THE COMMONWEALTH
  - WETLANDS
  - WETLANDS BUFFER
  - EXISTING AND PROPOSED WELLS
  - 15-25% SLOPES
  - >25% SLOPES
  - EXISTING WOODLINE
  - PROPOSED WOODLINE
  - TREE PROTECTION FENCE



RAIN GARDEN PLANTING SCHEDULE					
Common Name	Scientific Name	Quantity	Plant Type	Symbol	
Sweet Pepper Bush	Clethra alnifolia	13	Shrub	○	
Elderberry	Sambucus canadensis	13	Shrub	⊙	
Arrowwood	Viburnum prunifolia	12	Shrub	⊙	
Pussy Willow	Salix discolor	13	Shrub	⊙	
Sweetbay Magnolia	Magnolia virginia	7	Tree	⊙	
Shadblow Serviceberry	Amelanchier canadensis	8	Tree	⊙	
River Birch	Betula Nigra	9	Tree	⊙	

NO.	REVISION	DATE	BY	APP.
4.	FINAL PLAN - PHASE 1	2017-08-06	WJD	BOB
3.	PER MONTGOMERY COUNTY CONSERVATION DISTRICT 3/1/16, PENNDOT 12/5/16, GLMOR 12/6/16, MCMAHON 12/12/16, KMS DESIGN 12/8/16 REVIEW LETTERS.	1-12-17	JCE	BOB
2.	PER GLMORASSOCIATES, INC 3/14/16, KMS DESIGN GROUP, LLC 3/16/16, MCMAHON ASSOCIATES, INC. 2/11/16 REVIEW LETTERS.	10-25-16	WJD	BOB
1.	PER GLMORASSOCIATES, INC 6/5/2015, KMS DESIGN GROUP, LLC 6/4/2015, MCMAHON ASSOCIATES, INC. 6/5/2015, AND MONTGOMERY COUNTY PLANNING COMMISSION 6/30/2015 REVIEW LETTERS.	10-21-15	WJD	BOB

CLIENT

FDEV LLC  
1150 FIRST AVE STE 920  
KING OF PRUSSIA, PA  
19406

SUBJECT

GRADING AND UTILITY PLAN

FDEV SUBDIVISION

NEW HANOVER TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA

PROJECT NO.

14-146

DWG. NO.

GR114146

SHEET NO.

4 OF 13

DESIGN

BOB

CHKD. BY

WJD

DATE

4/22/15

SCALE

1"=60'

SEAL

SEAL

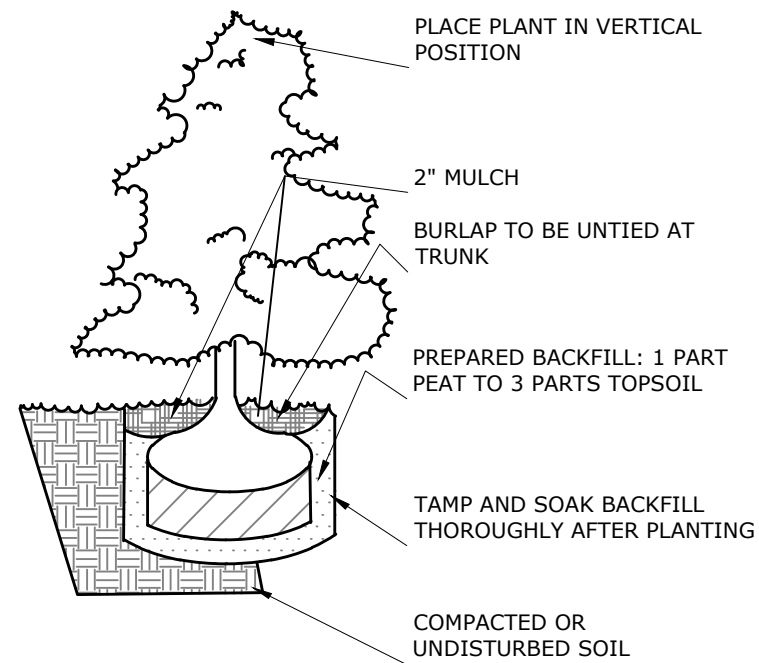
SEAL

Boyer

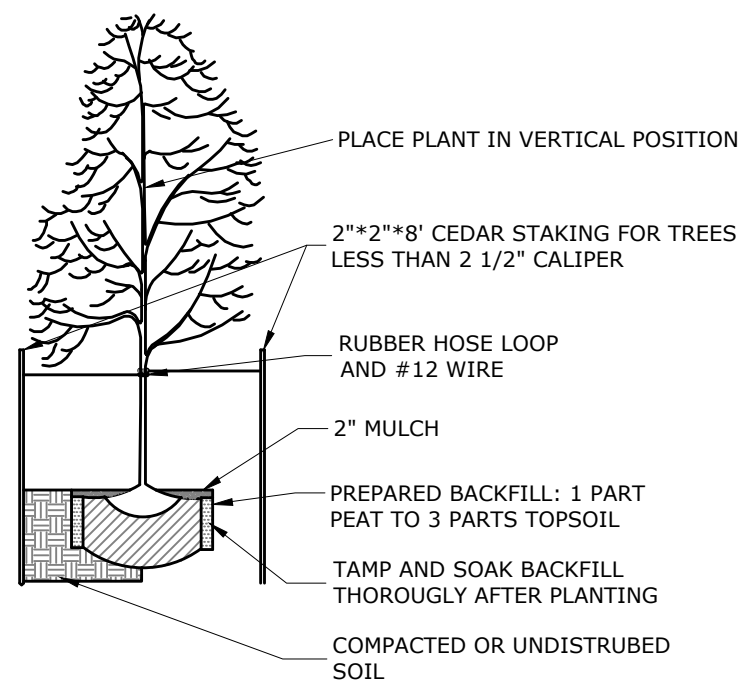
ENGINEERING LLC

1860 WEAVERTOWN ROAD, SUITE 100  
DOUGLASSVILLE, PA 19518  
PHONE: 610-689-8021  
FAX: 610-689-4538

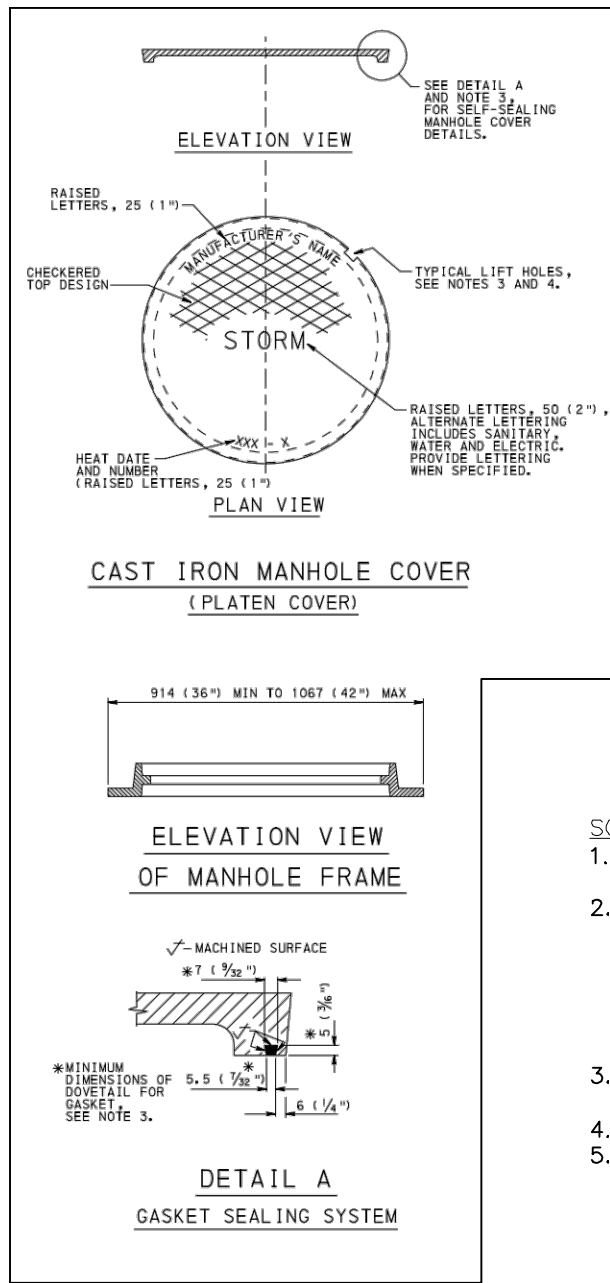
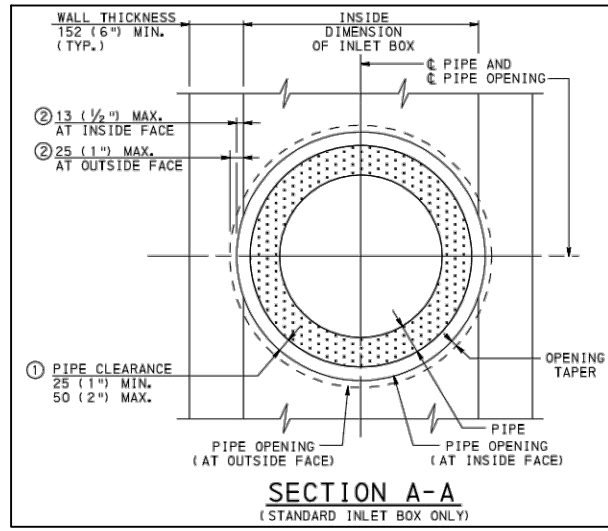
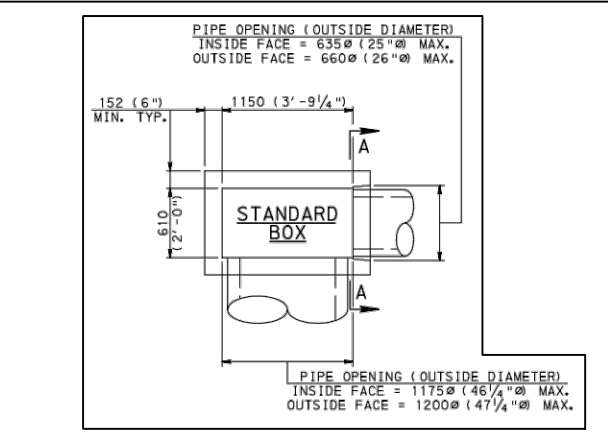
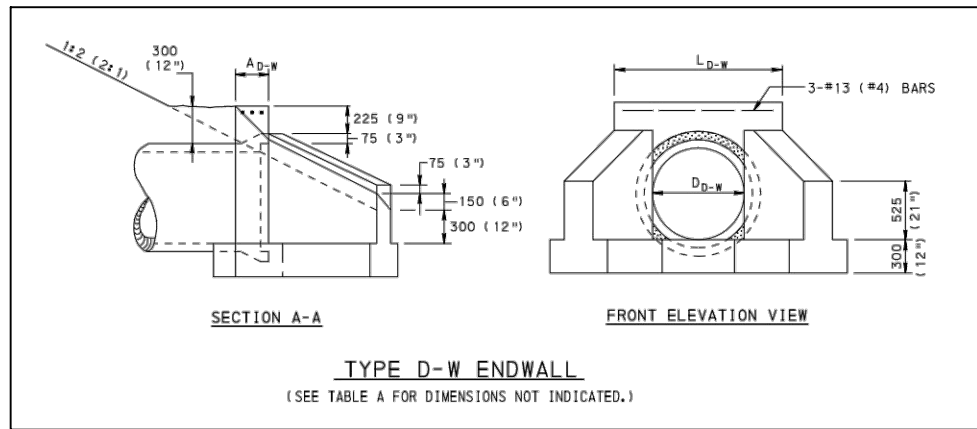




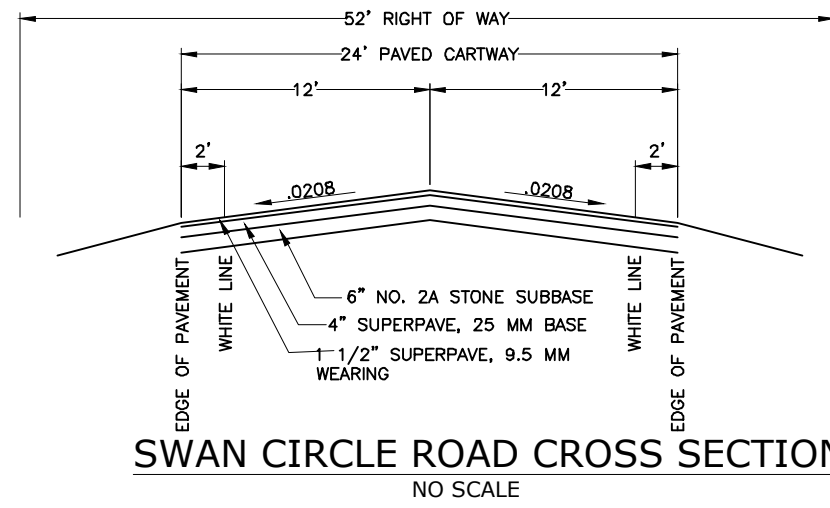
CONIFEROUS TREE PLANTING DETAIL DECIDUOUS TREE PLANTING DETAIL  
NO SCALE



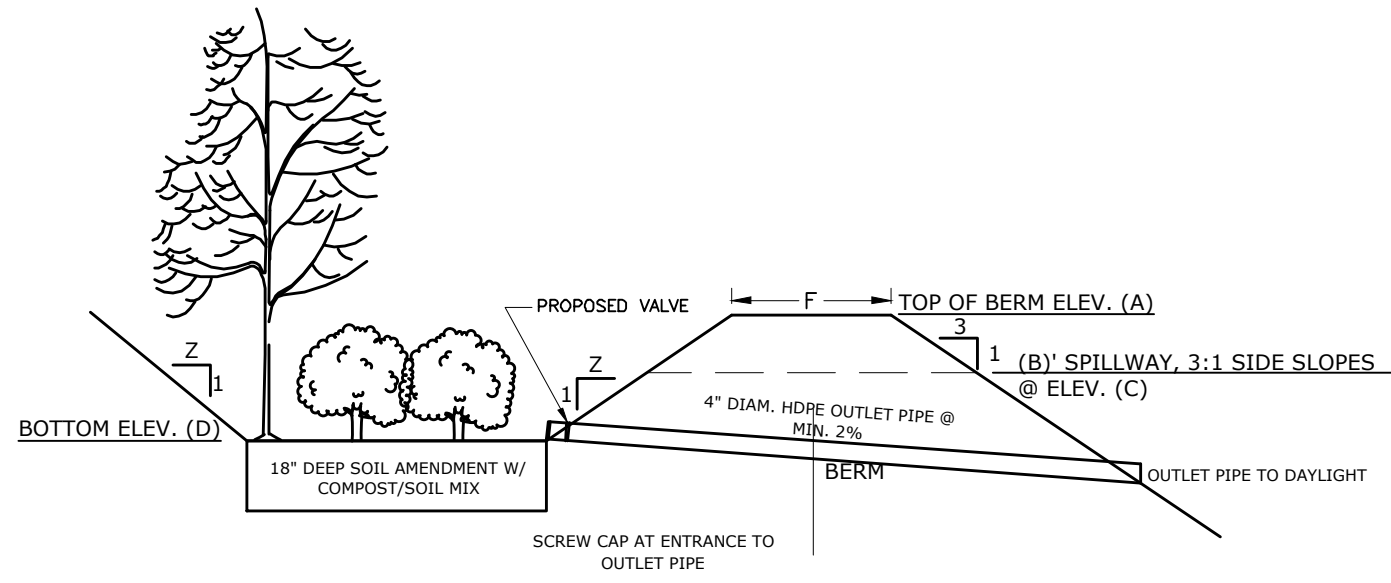
NO SCALE



- SOIL AMENDMENT
1. SUB SOIL SHALL BE IN A LOOSE, FRIABLE CONDITION TO A DEPTH OF 20" BELOW FINAL GRADE.
  2. SOIL AMENDMENT SPECIFICATION: COMPOST SHALL BE ADDED TO TOPSOIL AT A RATE OF 2:1 (SOIL:COMPOST). THE COMPOST SHALL HAVE A PH BETWEEN 5.0 AND 8.5, HAVE A MOISTURE CONTENT BETWEEN 30% AND 60% AND AN ORGANIC CONTENT BETWEEN 25% AND 65%. THE COMPOST SHALL HAVE 100% PASSING A 3" MESH, 90%+ PASSING A 1" MESH, 65% PASSING A 3/4" MESH, UP TO 75% PASSING THE 1/4" MESH.
  3. SPREAD 4" OF THE COMPOST/SOIL MIX. ROTOTILL THE COMPOST AND SOIL INTO THE SUBSOIL. ADD ADDITIONAL COMPOST/SOIL MIX TO BRING TO FINAL GRADE.
  4. PLANT SEED, PAKE, AND STABILIZE WITH MULCH.
  5. MULCH SHALL BE A NATURAL SHREDDED HARDWOOD, PINE MATERIAL SHALL NOT BE USED.



SWAN CIRCLE ROAD CROSS SECTION  
NO SCALE



RAIN GARDEN CROSS-SECTION  
NO SCALE

	(A)	(B)	(C)	(D)	(F)	(Z)
RG 1	453.2	10	452.70	452.2	5	4
RG 2	436.2	10	435.7	435.2	5	4
RG 3	461.2	10	460.70	460.2	5	4

EACH RAIN GARDEN SHALL BE OWNED AND MAINTAINED BY THE INDIVIDUAL LOT OWNER

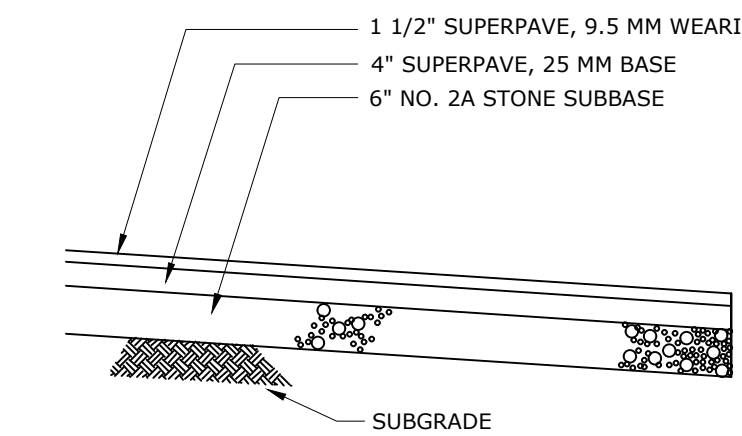
#### RAIN GARDENS/BIORETENTION BEDS

##### CONSTRUCTION SEQUENCE

1. THE RAIN GARDEN SUBSOIL SHALL NOT BE COMPACTED OR RECEIVE EXCESSIVE HEAVY EQUIPMENT TRAFFIC. THEY SHALL BE PROTECTED FROM SEDIMENT AT ALL TIMES DURING CONSTRUCTION. THE RAIN GARDEN AREA SHALL BE PROTECTED DURING THE INSTALLATION OF THE UNIT BY USING TAPE, FENCING OR OTHER SUITABLE METHOD.
2. THE EXCAVATION OF THE RAIN GARDENS SUB-GRADE CAN BE PERFORMED DURING SITE GRADING. THE RAIN GARDEN SHALL NOT BE GRADED TO WITHIN ONE FOOT OF THE FINAL BOTTOM SUB-GRADE ELEVATION UNTIL AFTER THE HOME CONSTRUCTION IS COMPLETED. THE ROOF DRAINS SHALL NOT BE DIRECTED TO THE RAIN GARDENS UNTIL AFTER THEY ARE CONSTRUCTED AND PLANTED (ITEM 10).
3. ANY SEDIMENT ENTERING THE RAIN GARDENS SHALL BE REMOVED WITH LIGHT EQUIPMENT. THE UNDERLYING SOIL SHALL BE SCARIFIED A MINIMUM OF SIX INCHES WITH A YORK RAKE OR ROTOTILLER.
4. THE RAIN GARDENS SHALL BE BROUGHT TO GRADE PER THE DETAILS. ANY AREAS THAT ARE DAMAGED BY EROSION, HAVE WATER PONDING OR ARE COMPACTED SHALL BE REGRADED. THE BOTTOM AREA SHALL BE GRADED LEVEL.
5. INSTALL THE EMERGENCY DEWATERING OUTLET PIPE AND SCREW CAP.
6. IF UNFORESEEN CONDITIONS SUCH AS BEDROCK OR SINKHOLES ARE UNCOVERED, THE ENGINEER SHALL BE CONSULTED.
7. THE 18" OF SOIL MODIFIED WITH COMPOST SHALL BE PLACED IN ACCORDANCE WITH THE DETAILS. THE SOIL SHALL BE LIGHTLY COMPACTED WITH THE BACKHOE BUCKET. THE SOIL SHALL HAVE A PH SHOULD BE BETWEEN 5.5 AND 6.5, A MAXIMUM CLAY CONTENT OF 10%, BE FREE OF TOXIC SUBSTANCES AND UNWANTED PLANT MATERIALS AND HAVE AN ORGANIC CONTENT OF APPROXIMATELY 10%.
8. THE RAIN GARDEN AREA SHALL BE PRE-SOAKED AND THEN THE 6" OF TOPSOIL MODIFIED WITH COMPOST SHALL BE PLACED IN ACCORDANCE WITH THE DETAILS. THE SOIL SHALL BE LIGHTLY COMPACTED WITH THE BACKHOE BUCKET. THE SOIL SHALL HAVE AN ORGANIC CONTENT OF 20-30% (COMPOST) AND 70-80% TOPSOIL.
9. THE PLANTS SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS FROM MID-MARCH THROUGH MID-NOVEMBER.
10. THE 2" LAYER OF SHREDDED HARDWOOD MULCH (AGED A MINIMUM OF 6 MONTHS) OR COMPOST MULCH SHALL BE INSTALLED.
11. THE ROOF DRAIN CAN BE DIRECTED TO THE RAIN GARDEN AT THIS TIME.
12. WHEN THE DRAINAGE AREA TO EACH RAIN GARDEN IS STABILIZED (70% GRASS COVER) THE SEDIMENT CONTROL DEVICES CAN BE REMOVED.
13. WATER EACH RAIN GARDEN AT THE END OF EVERY DAY FOR TWO WEEKS.

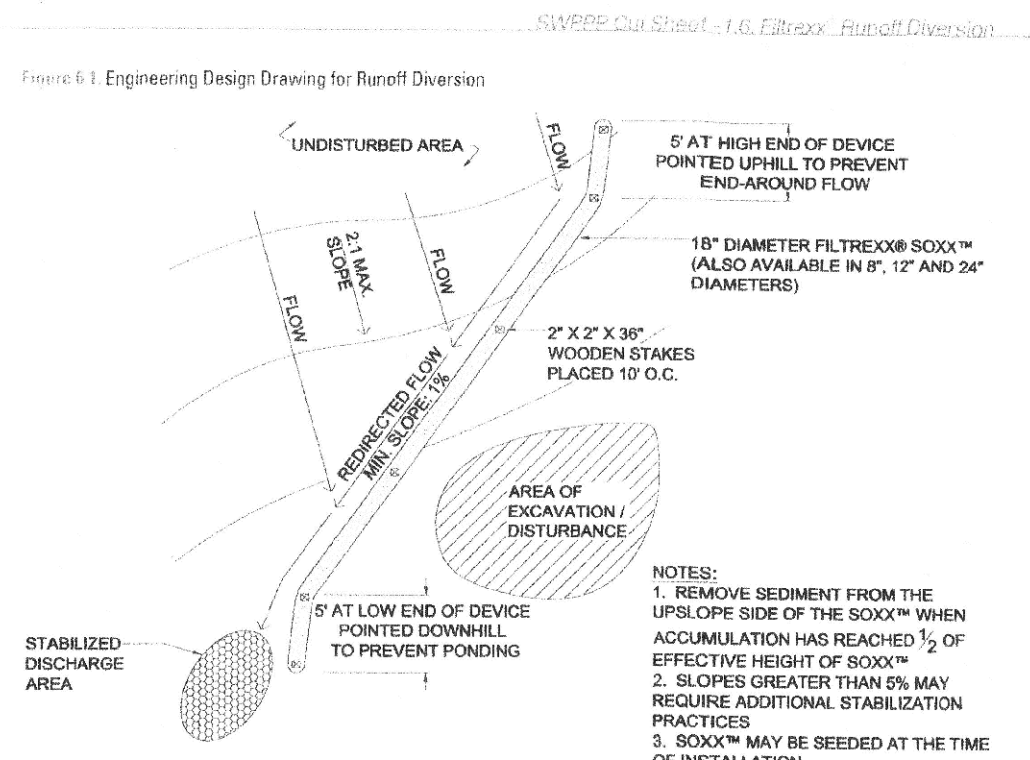
##### MAINTENANCE NOTES

1. DO NOT ADD FERTILIZERS TO THE RAIN GARDENS.
2. WEEDING AND PRUNING MAY BE REQUIRED WHILE THE VEGETATION IS BEING ESTABLISHED. WEEDS SHALL BE REMOVED BY HAND.
3. DEAD PLANT MATERIAL SHALL BE REMOVED EVERY YEAR.
4. PERENNIAL PLANTINGS SHALL BE CUT BACK AT THE END OF THE GROWING SEASON.
5. MULCH SHALL BE RE-SPREAD WHEN IT ERODES AND BE REPLISHED AS NECESSARY. THE AREA SHALL HAVE THE MULCH REPLACED EVERY 2 TO 3 YEARS, IF REQUIRED.
6. THE RAIN GARDENS MAY NEED TO BE WATERED DURING EXTENDED DROUGHT PERIODS.
7. THE RAIN GARDENS SHALL BE INSPECTED AT LEAST TWO TIMES PER YEAR FOR SEDIMENT BUILDUP, EROSION, VEGETATIVE CONDITIONS, ETC.
8. SEDIMENT SHALL BE REMOVED IF IT EXCEEDS ONE INCH. TRASH AND DEBRIS SHALL BE REMOVED PERIODICALLY AND DISPOSED IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.
9. IF INFILTRATION BECOMES SIGNIFICANTLY REDUCED (GREATER THAN 72 HOURS) OR THE VOLUME OF THE RAIN GARDEN IS REDUCED, THE TOP FEW INCHES OF SOIL SHALL BE REMOVED AND REPLACED. THE AREA SHALL BE TILLED OR AMENDED AS NECESSARY AND REPLANTED PER THE ORIGINAL DETAILS.
10. DEWATERING OF THE RAIN GARDEN SHALL OCCUR VIA THE OUTLET PIPE SHOULD STORED WATER REMAIN AFTER THE MAXIMUM 72 HOUR DETENTION PERIOD.

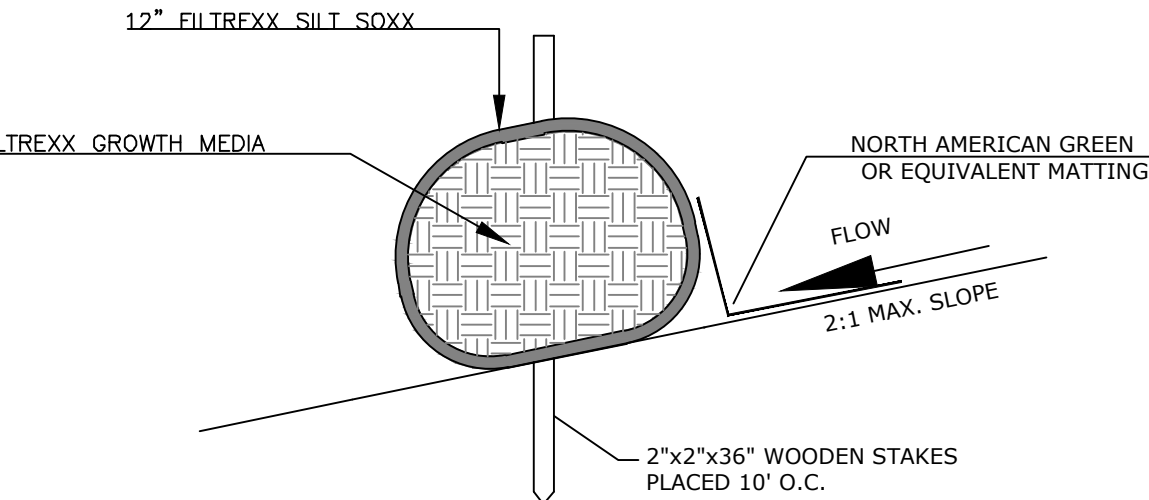


ALL CONSTRUCTION SHALL CONFORM TO PENNDOT 408, LATEST REVISION

#### TYPICAL DRIVEWAY CROSS-SECTION



#### FILTREXX® RUNOFF DIVERSION



1. THE SILT SOXX SHALL BE FILLED WITH FILTREXX GROWTH MEDIA OR OTHER APPROVED SOIL CAPABLE OF ESTABLISHING SEED GROWTH.
2. REFER TO SILT SOXX AT WWW.FILTREXX.COM

##### INFILTRATION BERMS

###### CONSTRUCTION SEQUENCE

1. LIGHTLY SCARIFY SOIL IMMEDIATELY UPSLOPE OF THE BERM. PERFORM INFILTRATION TEST. PROTECT FROM COMPACTION.
2. PLACE BERM AT THE LOCATION SHOWN ON THE PLAN AVOIDING REMOVAL OF TREES. STAKE.
3. PLACE AMENDED SOIL MIX 3" DEEP UPSLOPE OF THE BERM AND COVER WITH LINING MATERIAL.
4. SEED WITH PERMANENT SEEDING.
5. MULCH WITH COMPOST MULCH TO PREVENT EROSION.

##### MAINTENANCE NOTES

1. INSPECT AFTER EVERY RAINFALL EVENT. MONITOR DRAWDOWN TIME AFTER MAJOR STORM EVENTS.
2. SEDIMENT SHALL BE REMOVED IF IT EXCEEDS ONE INCH. TRASH AND DEBRIS SHALL BE REMOVED PERIODICALLY AND DISPOSED IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.
3. IF INFILTRATION BECOMES SIGNIFICANTLY REDUCED (GREATER THAN 72 HOURS) THE OWNER SHALL CONTACT A LICENSED PROFESSIONAL TO DETERMINE A COURSE OF ACTION TO CORRECT THE SITUATION.
4. DO NOT USE HEAVY EQUIPMENT ON THE INFILTRATION AREA AT THE UPSIDE BASE OF THE BERM.
5. MOW AND MAINTAIN THE LAWN AREAS. REMOVE INVASIVE SPECIES AS NEEDED. REMULCH AS NEEDED.
6. INSPECT FOR FLOW CHANNELIZATION AND RESTORE LEVEL GRADIENT IMMEDIATELY AFTER DEFICIENCIES ARE OBSERVED.

BERM#	HEIGHT	SLOPE	LENGTH	AMENDED SOIL LENGTH ABOVE BERM
1	8"	EXISTING	88'	12"
2	8"	EXISTING	32'	12"
3	8"	EXISTING	117'	12"
4	8"	EXISTING	115'	12"

INFILTRATION BERM CROSS-SECTION  
N.T.S.

##### VEGETATED CHANNELS

###### CONSTRUCTION SEQUENCE

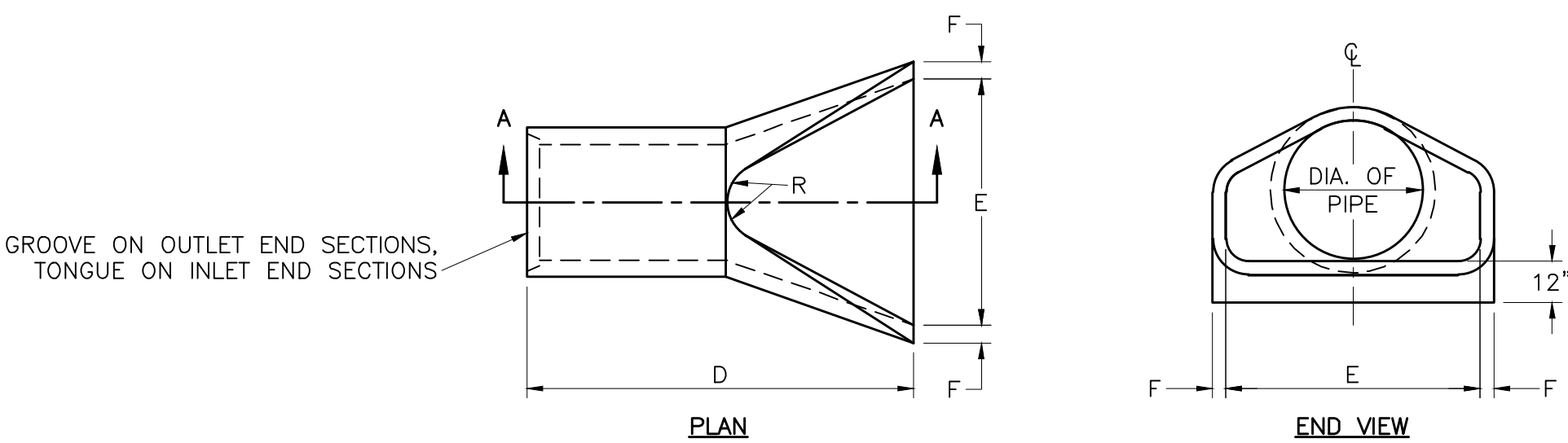
1. INSTALL AT THE LOCATIONS SHOWN ON THE PLAN.
2. PLACE THE SPECIFIED LINING MATERIAL.
3. SEED WITH PERMANENT SEEDING.
4. MULCH WITH COMPOST MULCH TO PREVENT EROSION.

##### MAINTENANCE NOTES

1. INSPECT AFTER EVERY SIGNIFICANT RAINFALL EVENT.
2. SEDIMENT SHALL BE REMOVED IF IT EXCEEDS 1/3 THE DEPTH OF THE CHANNEL. TRASH AND DEBRIS SHALL BE REMOVED PERIODICALLY AND DISPOSED IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.
3. DO NOT USE HEAVY EQUIPMENT ON THE CHANNEL.
4. MOW AND MAINTAIN THE LAWN AREAS. REMOVE INVASIVE SPECIES AS NEEDED. REMULCH AS NEEDED.
5. INSPECT FOR FLOW CHANNELIZATION AND RESTORE GRADIENT IMMEDIATELY AFTER DEFICIENCIES ARE OBSERVED.

NO.	REVISION	DATE	BY	APP.
4.	FINAL PLAN - PHASE 1	2017-06-08	WJD	BOB
5.	PER MONTGOMERY COUNTY CONSERVATION DISTRICT 3/1/16, PENNDOT 12/5/16, GILMORE 12/6/16, MCMAHON 12/12/16, KMS DESIGN 12/8/16 REVIEW LETTERS.	1-12-17	JCE	BOB
6.	PER GILMOREASSOCIATES, INC 3/14/16, KMS DESIGN GROUP, LLC 3/16/16, MCMAHON ASSOCIATES, INC. 2/11/16 REVIEW LETTERS.	10-25-16	WJD	BOB
7.	PER GILMOREASSOCIATES, INC 6/5/2015, KMS DESIGN GROUP, LLC 6/4/2015, MCMAHON ASSOCIATES, INC. 6/5/2015, AND MONTGOMERY COUNTY PLANNING COMMISSION 6/30/2015 REVIEW LETTERS.	10-21-15	WJD	BOB

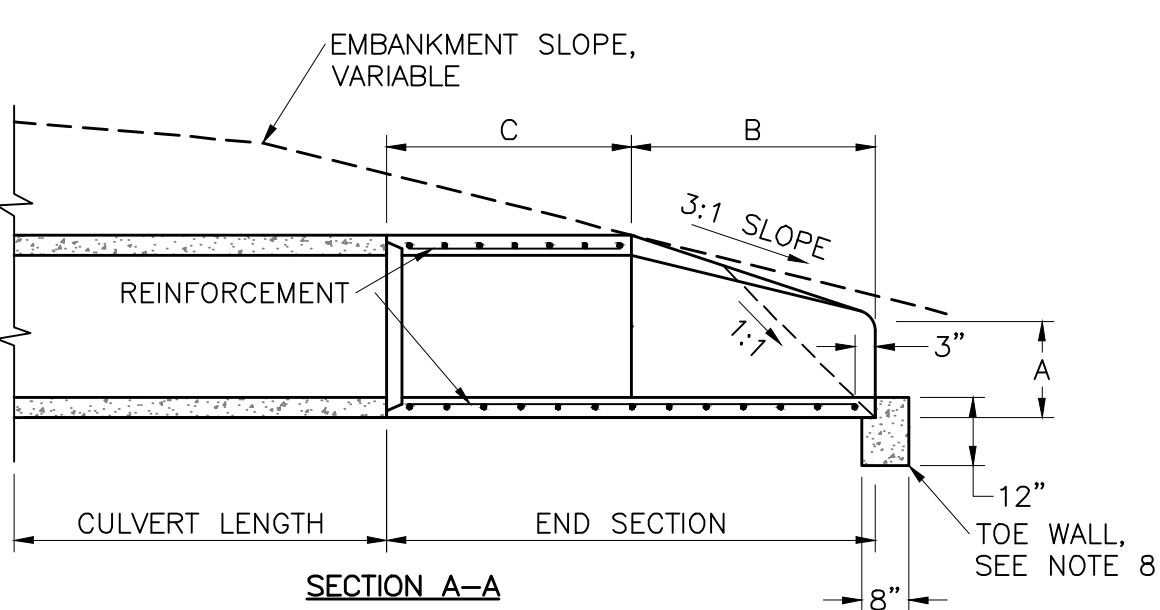
- TREE PROTECTION NOTES:
1. GRADE CHANGES AND EXCAVATIONS SHALL NOT ENCR OACH UPON THE TREE PROTECTION ZONE.
  2. NO TOXIC MATERIAL, INCLUDING PETROLEUM BASED AND/OR DERIVED PRODUCTS, SHALL BE STORED WITHIN 100' OF A TREE PROTECTION ZONE.
  3. THE AREA WITHIN THE TREE PROTECTION ZONE SHALL NOT BE BUILT UPON, NOR SHALL ANY MATERIALS BE STORED, TEMPORARILY OR PERMANENTLY. VEHICLES AND EQUIPMENT SHALL NOT BE PARKED IN THE TREE PROTECTION ZONE.
  4. WHERE TREE STUMPS ARE LOCATED WITHIN 100' OF THE TREE PROTECTION ZONE, THE STUMPS SHALL BE REMOVED BY MEANS OF A STUMP GRINDER TO MINIMIZE THE EFFECT ON SURROUNDING ROOT SYSTEMS.
  5. TREE ROOTS, WHICH MUST BE SEVERED, SHALL BE CUT BY A BACKHOE OR SIMILAR EQUIPMENT ALIGNED RADIIALLY TO THE TREE. THIS METHOD REDUCES THE LATERAL MOVEMENT OF THE ROOTS DURING EXCAVATION, WHICH COULD DAMAGE THE INTERTWINED ROOTS OF ADJACENT TREES IF DONE BY OTHER METHODS.
  6. WITHIN 4 HOURS OF ANY SEVERANCE OF THE ROOTS, ALL TREE ROOTS THAT HAVE BEEN EXPOSED AND/OR DAMAGED SHALL BE TRIMMED CLEANLY AND COVERED TEMPORARILY WITH MOIST PEAT MOSS, MOIST BURLAP OR OTHER MOIST BIODEGRADABLE MATERIAL TO KEEP THE ROOTS FROM DRYING OUT UNTIL PERMANENT COVER IS INSTALLED.



##### CONCRETE END SECTIONS NOTE

1. PROVIDE TOE WALL OF CLASS A CONCRETE.

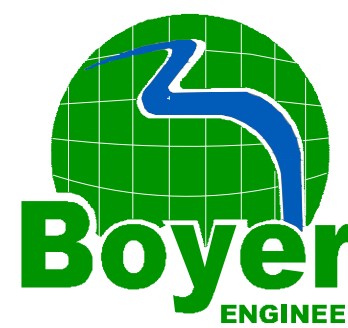
DIAM.	A	B	C	D	E	G	R
18"	9"	2'-3"	3'-10"	6'-1"	3'-0"	2"	7"
21"	9"	3'-0"	3'-1"	6'-1"	3'-6"	2"	8"
24"	9"	3'-7"	2'-6"	6'-1"	4'-0"	3"	8"
27"	10"	4'-0"	2'-10"	6'-1"	4'-6"	3"	9"
30"	12"	4'-6"	1'-7"	6'-1"	5'-0"	3"	8"
33"	13"	4'-10"	3'-10"	8'-0"	5'-6"	3"	9"
36"	15"	5'-3"	2'-9"	8'-0"	6'-0"	4"	10"
42"	21"	5'-3"	2'-9"	8'-0"	6'-6"	4"	11"
48"	24"	6'-0"	2'-0"	8'-0"	7'-0"	5"	12"



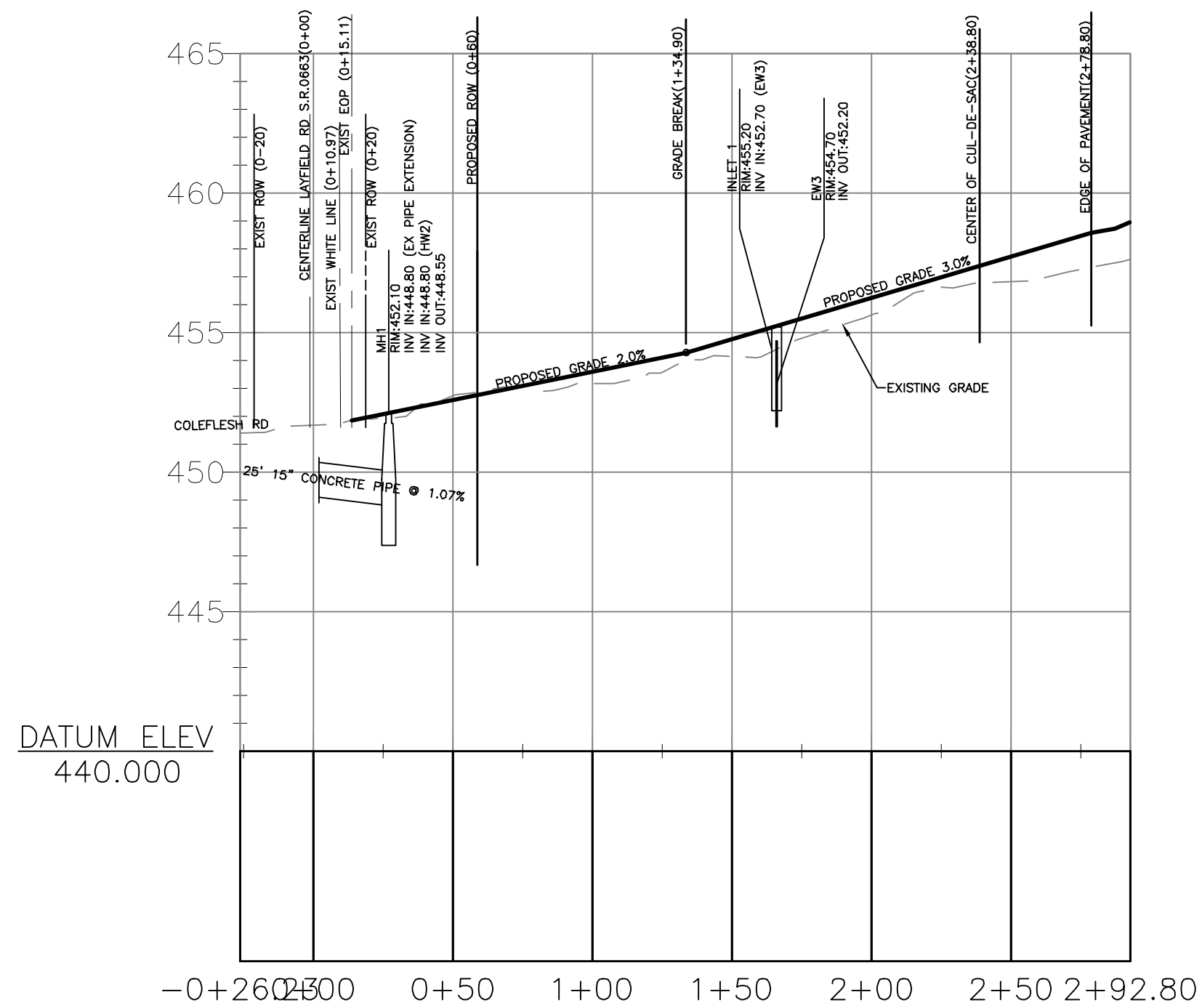
CONCRETE END SECTIONS SLOPE DETAIL  
NO SCALE

#### POST CONSTRUCTION STORM WATER MANAGEMENT PLAN SET INCLUDES DRAWINGS PC114146, DE114146, DA114146, DA214146, AND DA314146.

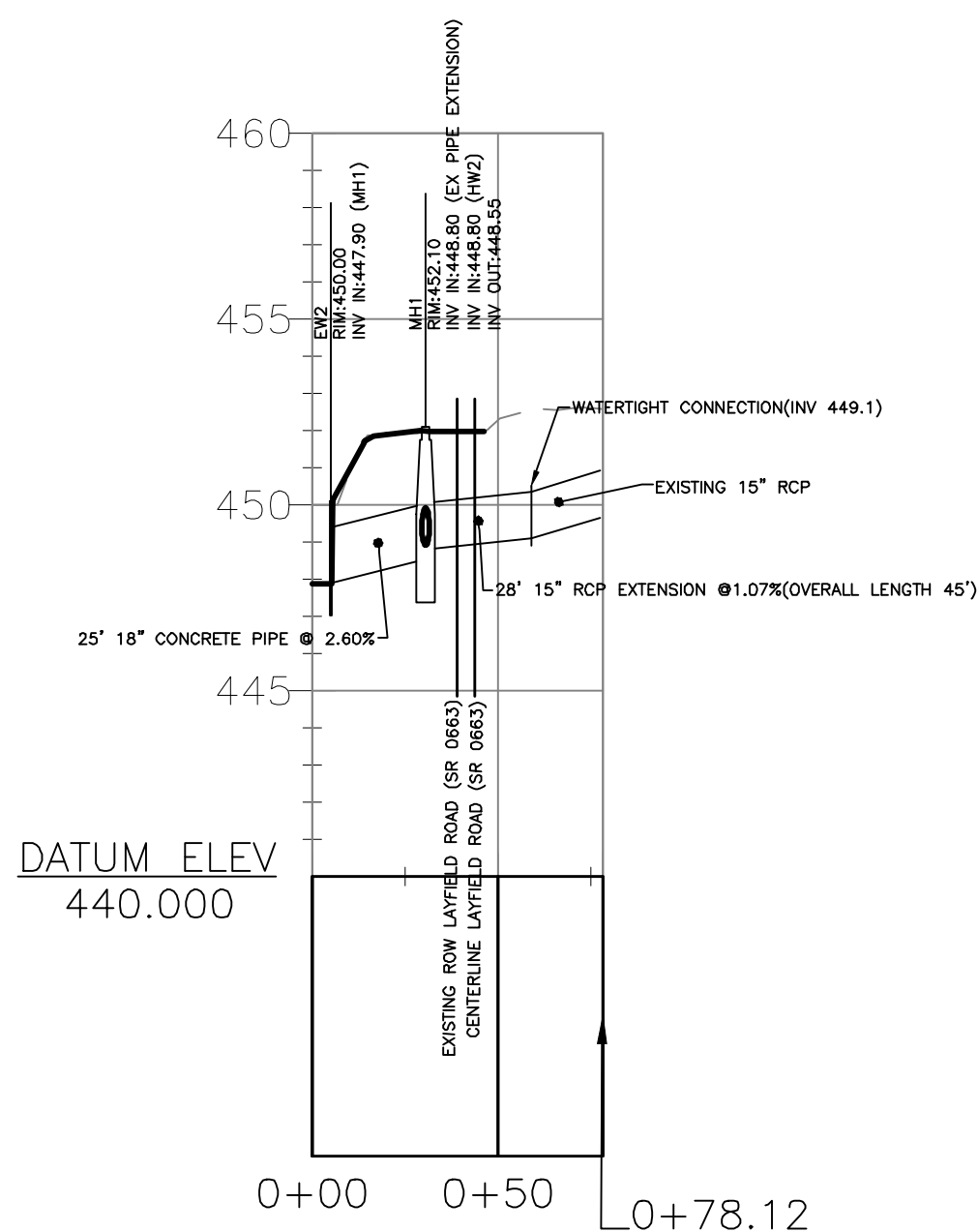
CLIENT		SUBJECT	
FDEV LLC 1150 FIRST AVE STE 920 KING OF PRUSSIA, PA 19406		LAND DEVELOPMENT & POST CONSTRUCTION STORMWATER MANAGEMENT DETAIL SHEET	
		FDEV SUBDIVISION	
		NEW HANOVER TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA	
		PROJECT NO. 14-146	
		DWG. NO. DE114146	
		SHEET NO. 5 OF 13	
		DATE 4/22/15	
		SCALE 1"=60'	



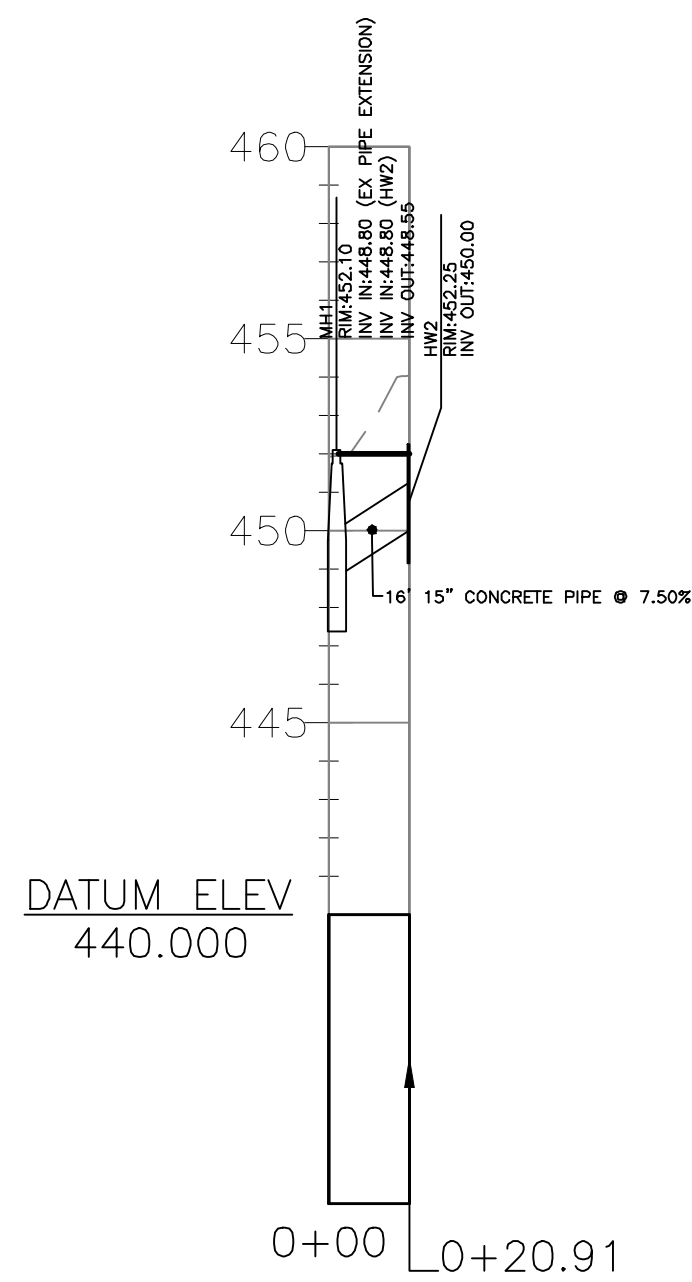




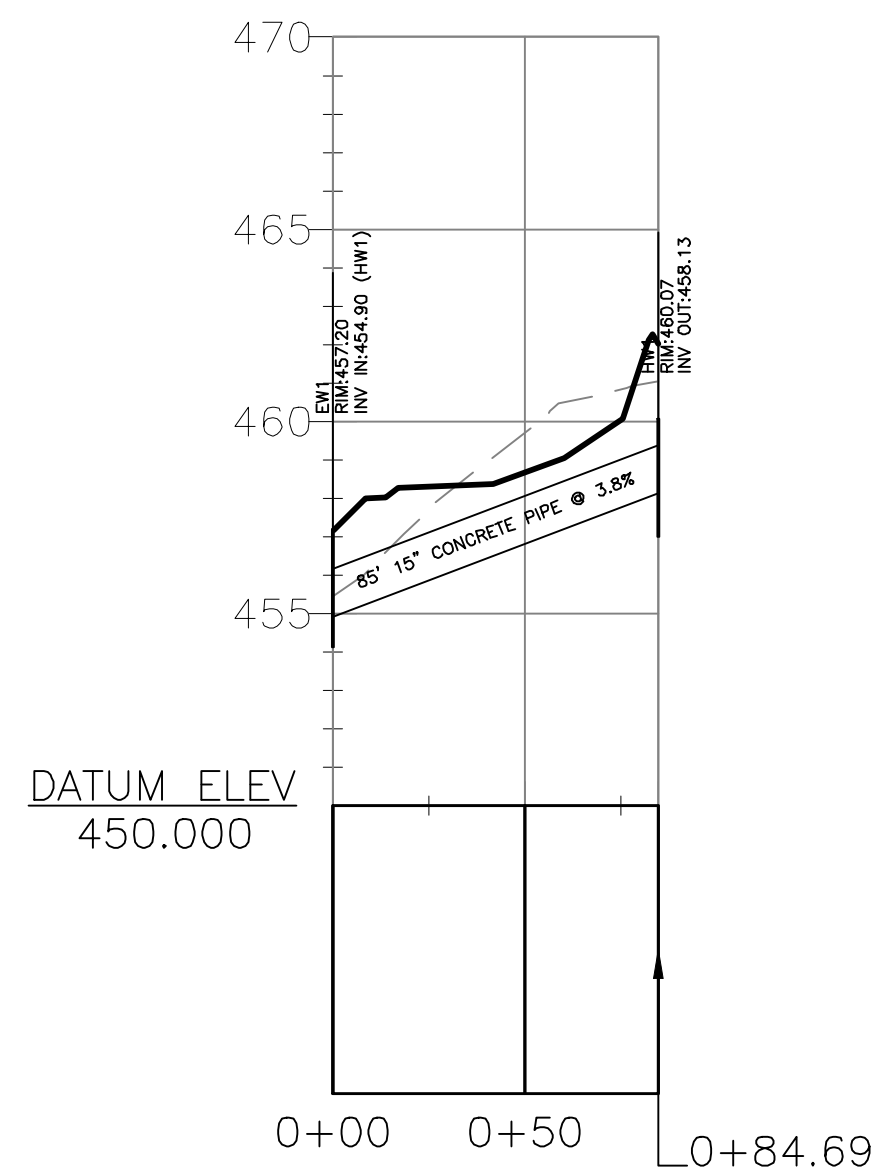
PROFILE: SWANN CIRCLE  
SCALE: 1" = 50' (HORIZ.) 1" = 5' (VERT.)



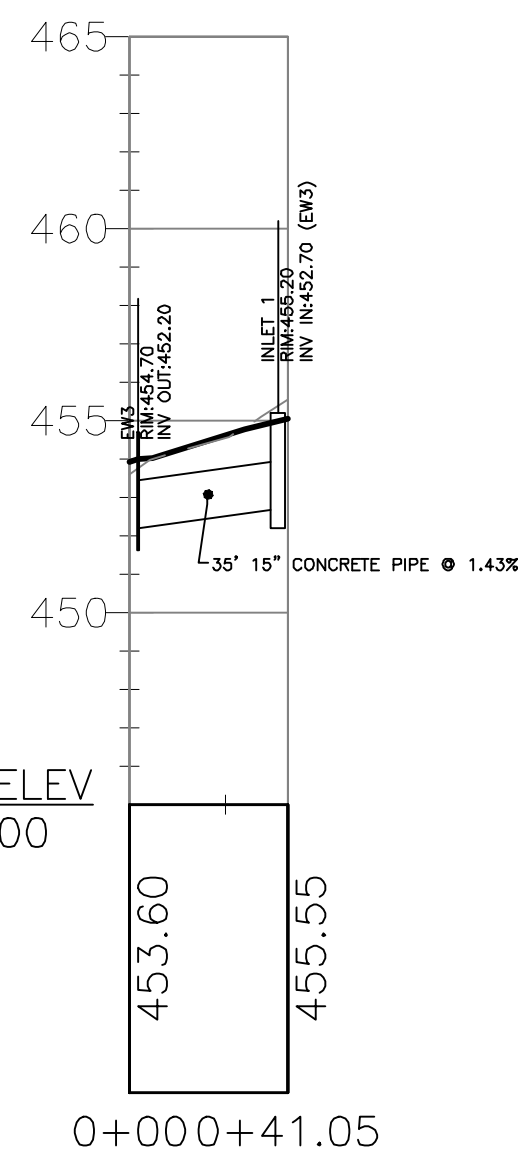
PROFILE: EX PIPE TO EW2  
SCALE: 1" = 50' (HORIZ.) 1" = 5' (VERT.)



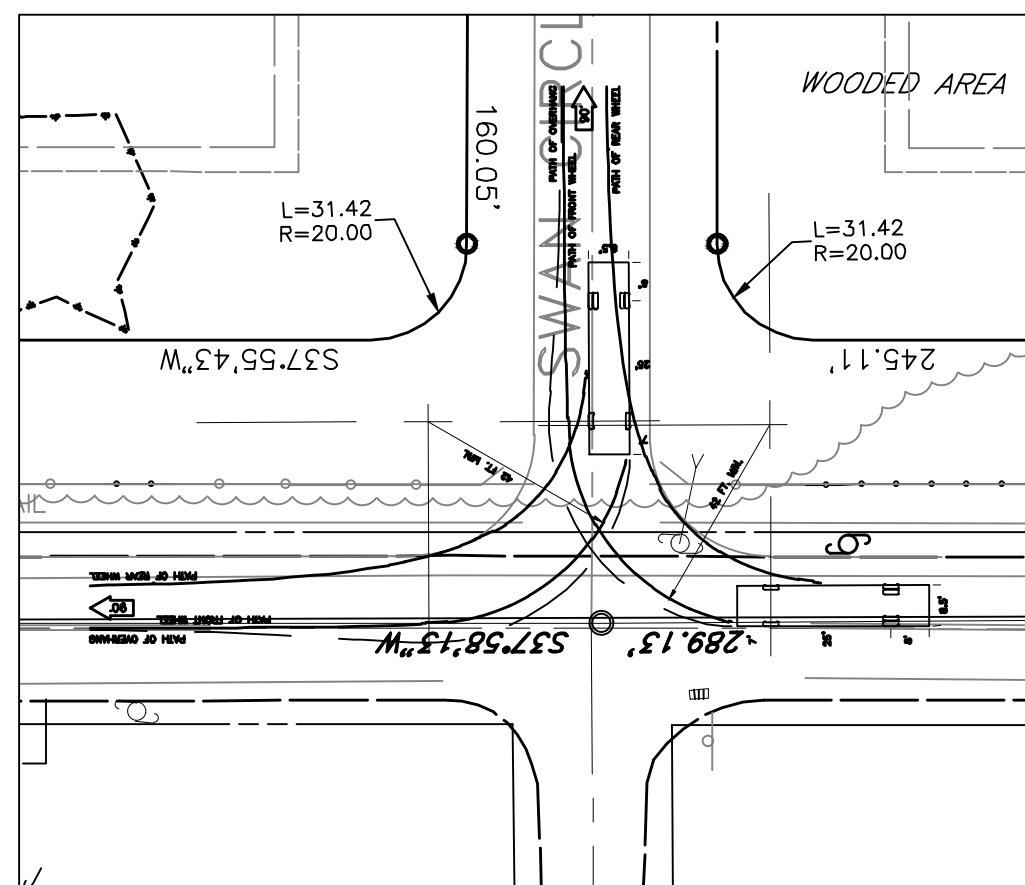
PROFILE: MH1-HW2  
SCALE: 1" = 50' (HORIZ.) 1" = 5' (VERT.)



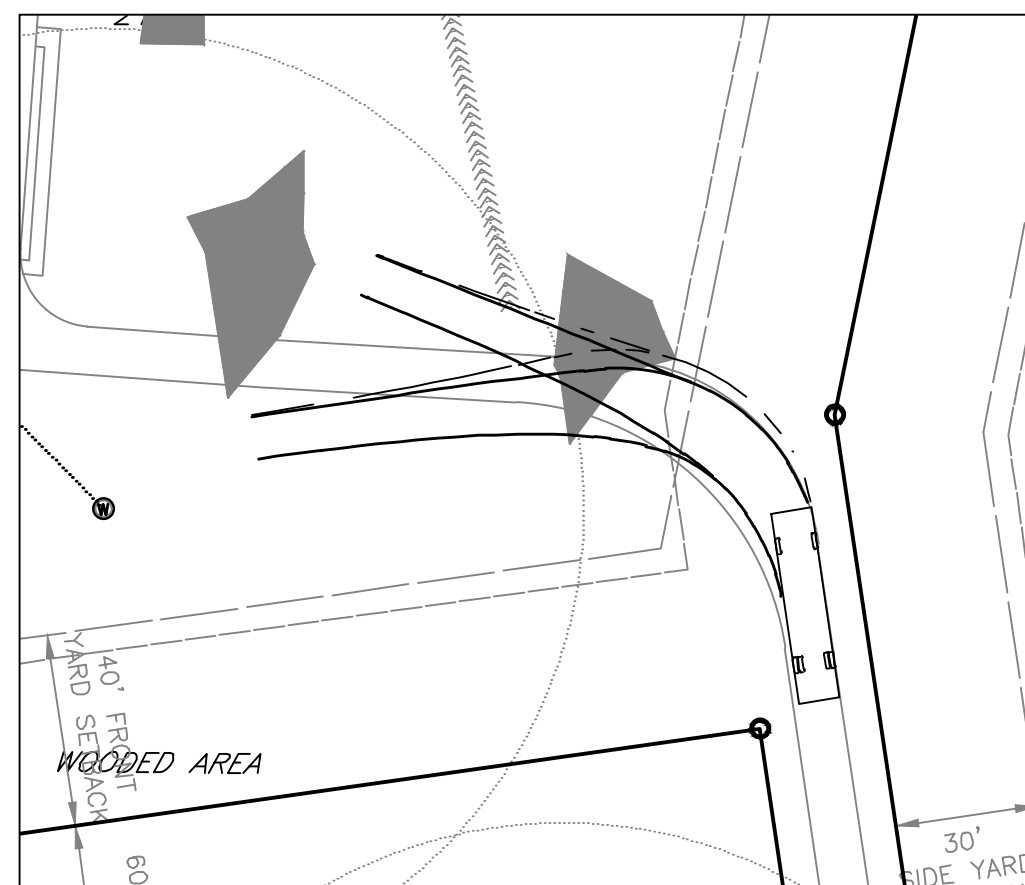
PROFILE: EW1-HW1  
SCALE: 1" = 50' (HORIZ.) 1" = 5' (VERT.)



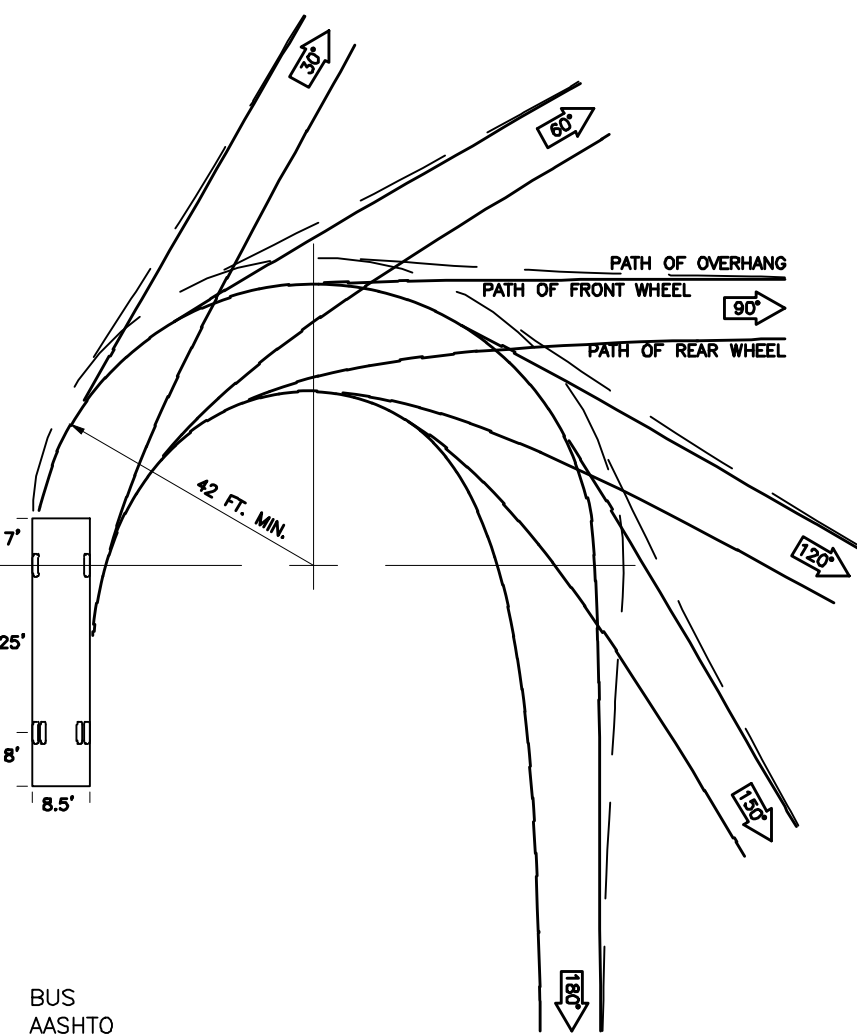
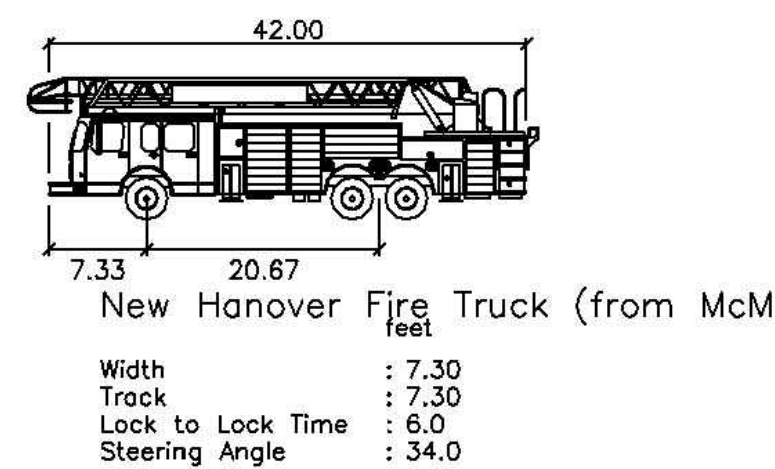
PROFILE: EW3-CB1  
SCALE: 1" = 50' (HORIZ.) 1" = 5' (VERT.)



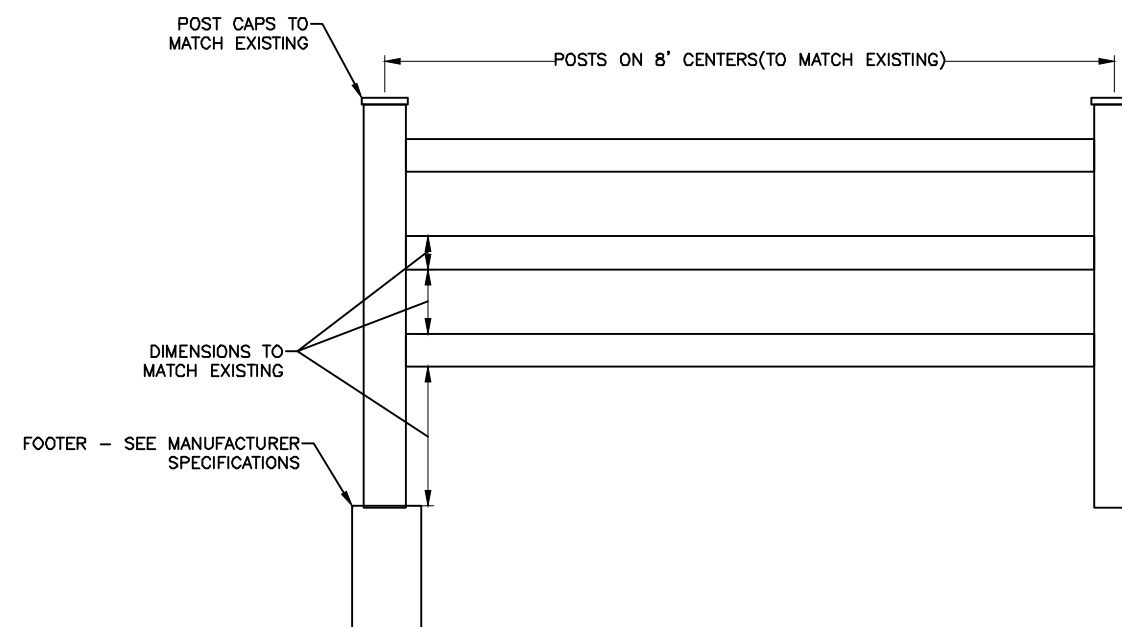
TRUCK TURNING DETAIL  
SCALE 1"=40'



LOT 2 TRUCK TURNING DETAIL  
SCALE 1"=40'

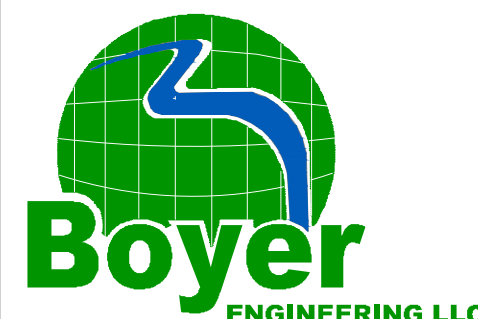


BUS  
AASHTO



VINYL 3 RAIL FENCE DETAIL  
NTS

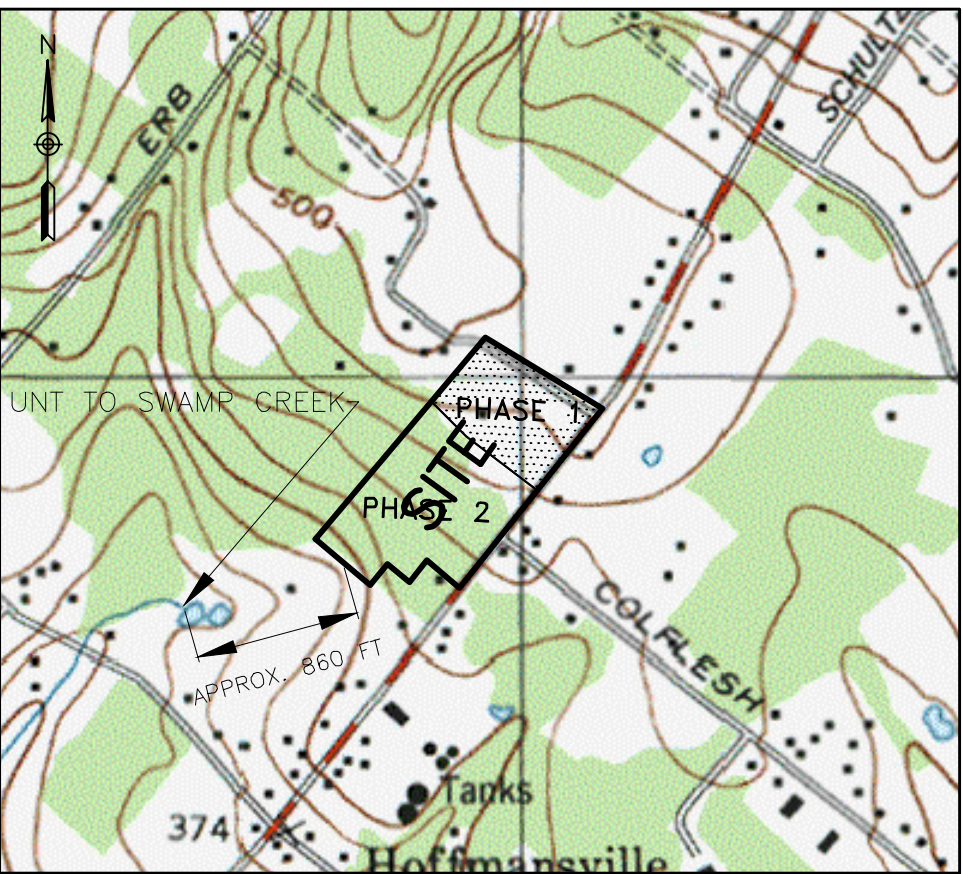
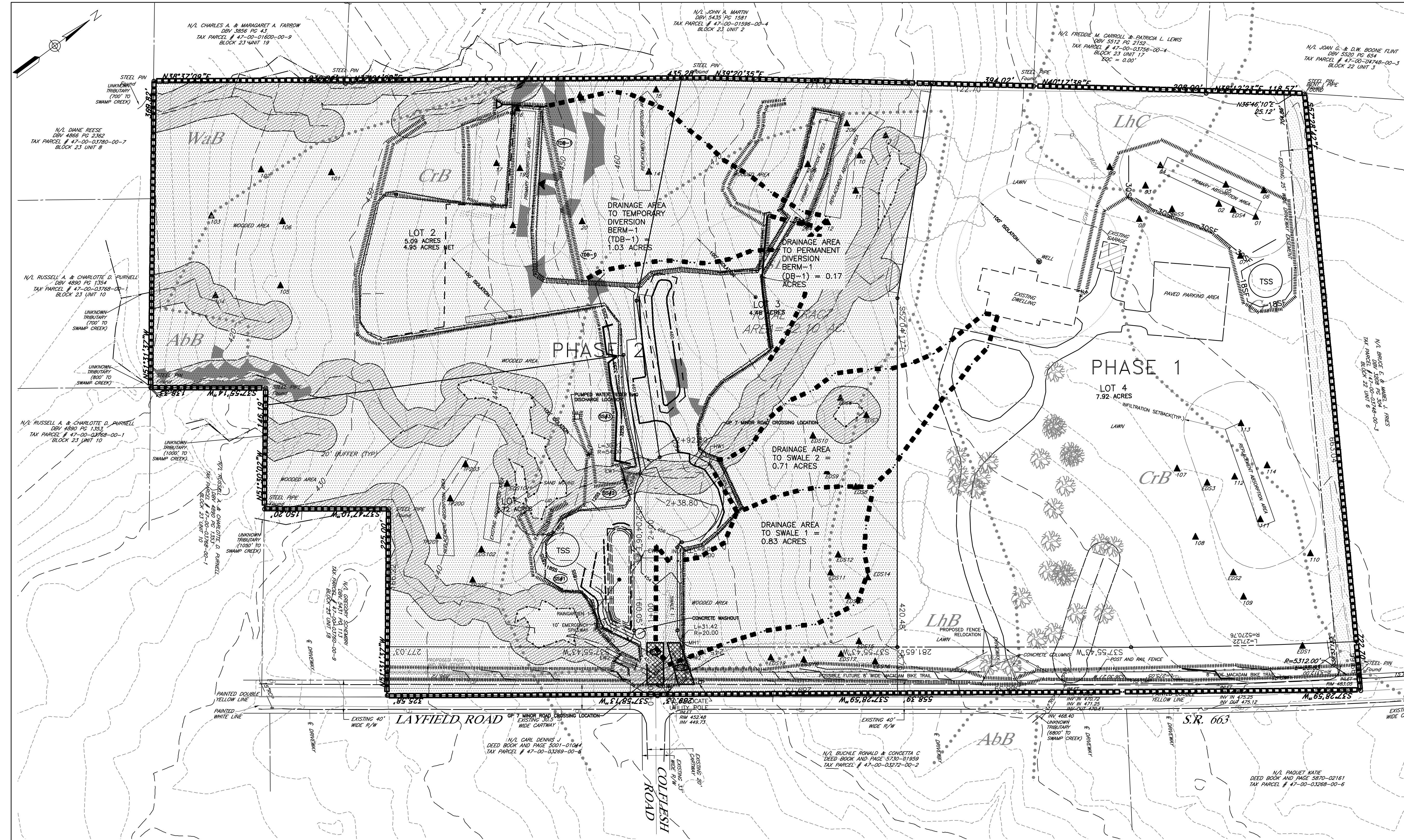
CLIENT			SUBJECT		
FDEV LLC 1150 FIRST AVE STE 920 KING OF PRUSSIA, PA 19406			PROFILE SHEET		
			FDEV SUBDIVISION		
			NEW HANOVER TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA		
			PROJECT NO. 14-146		
			DWG. NO. PR114146		
			SHEET NO. 6 OF 13		
			DESIGN BOB	CHKD. BY	
			DRAWN BY WJD	CHKD. BY	
			DATE 4/22/15	SCALE 1"=60'	



1860 WEAVERTOWN ROAD, SUITE 100  
DOUGLASSVILLE, PA 19518  
PHONE: 610-689-8021  
FAX: 610-689-4538

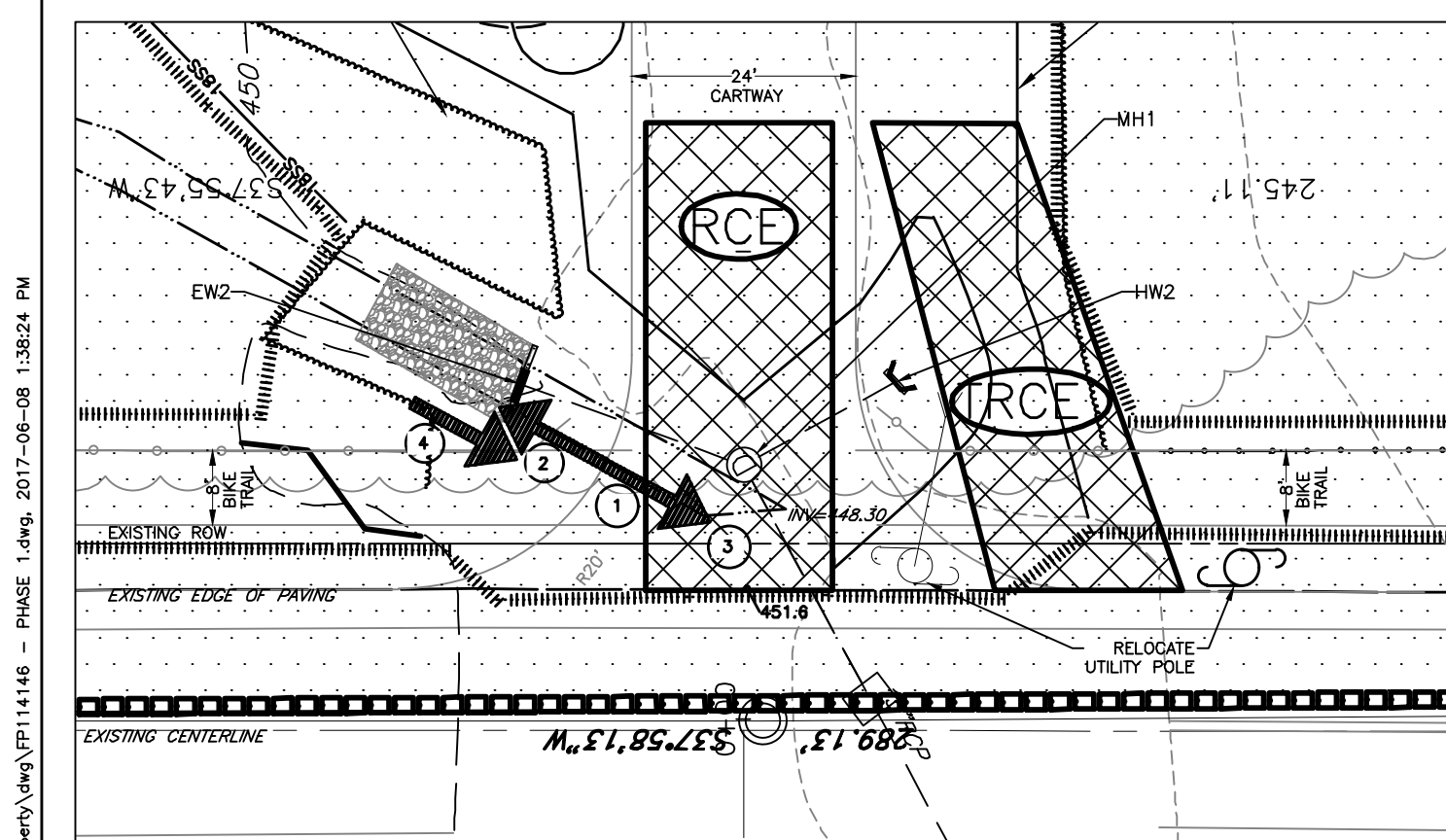
NO.	REVISION	DATE	BY	APP.
4.	FINAL PLAN - PHASE 1	2017-06-06	WJD	BOB
3.	PER MONTGOMERY COUNTY CONSERVATION DISTRICT 3/1/16, PENNDOT 12/5/16, GILMORE 12/6/16, MCMAHON 12/12/16, KMS DESIGN 12/8/16 REVIEW LETTERS.	1-12-17	JCE	BOB
2.	PER GILMOREASSOCIATES, INC 3/14/16, KMS DESIGN GROUP, LLC 3/16/16, MCMAHON ASSOCIATES, INC. 2/11/16 REVIEW LETTERS.	10-25-16	WJD	BOB
1.	PER GILMOREASSOCIATES, INC 6/5/2015, KMS DESIGN GROUP, LLC 6/4/2015, MCMAHON ASSOCIATES, INC. 6/5/2015, AND MONTGOMERY COUNTY PLANNING COMMISSION 6/30/2015 REVIEW LETTERS.	10-21-15	WJD	BOB



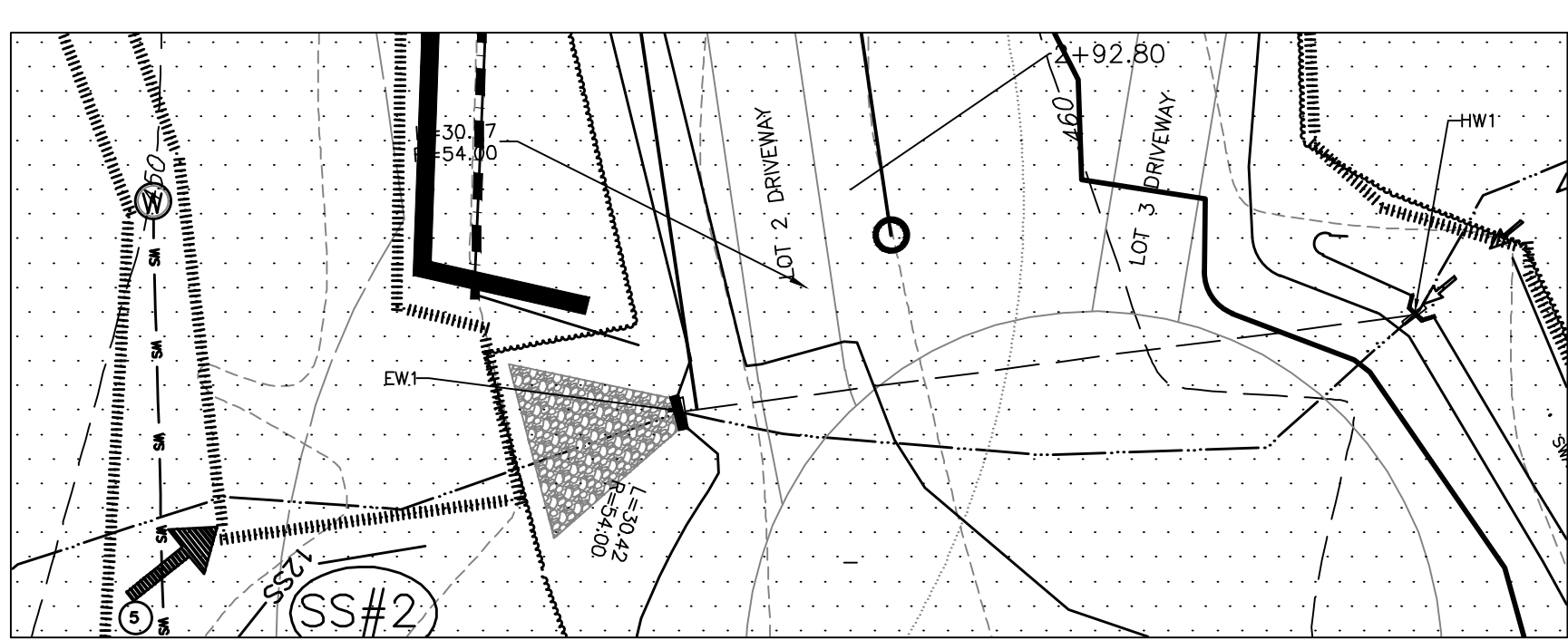


LOCATION MAP  
SCALE: 1"=1000'  
USGS Quad ID: e40075c5  
USGS Quad Name: Sassenonville

LEGEND	
EX. TRACT LINE	---
EX. BOUNDARY	---
EX. RIGHT-OF-WAY	---
SETBACKS	---
EX. SANITARY	---
EX. GAS	---
PR. LOT LINE	---
PR. CLEANOUT	---
EX. MONUMENTATION	---
EX. UTILITY POLE & GUY WIRE	---
EX. UNDERGROUND WIRE	---
EX. POST & RAIL FENCE	---
EX. SANITARY MANHOLE	---
EX. SOILS	---
EX. CONTOURS	---
PR. CONTOURS	---
PR. SANITARY LATERAL	---
PR. WATER LATERAL	---
INFILTRATION SETBACK	---
PR. STORM PIPE	---
PR. INFILTRATION BERM	---
PR. STORM HEADWALL/ENDWALL	---
PR. STORM INLET 2X4	---
PR. RIPRAP	---
TEST PIT	---
APPROXIMATE LOCATION OF WATERS OF THE COMMONWEALTH	---
WETLANDS LIMIT	---
WETLANDS BUFFER	---
STREAM BUFFER	---
EXISTING AND PROPOSED WELLS	---
15-25% SLOPES	---
>25% SLOPES	---
EXISTING WOODLINE	---
PROPOSED WOODLINE	---
TREE PROTECTION FENCE	---
PHOTO LOCATION	---



DETAIL OF GP7A  
SCALE: 1"=20'



DETAIL OF GP5 & GP7B  
SCALE: 1"=20'

NOTES  
1. AREAS PROPOSED FOR INFILTRATION SHALL BE PROTECTED FROM SEDIMENTATION AND COMPACTION DURING CONSTRUCTION THROUGH THE USE OF ORANGE CONSTRUCTION FENCING.  
2. INFILTRATION BMP'S SHALL NOT BE CONSTRUCTED NOR RECEIVE RUNOFF UNTIL THEIR TRIBUTARY AREAS ARE PERMANENTLY STABILIZED.

#### EROSION CONTROL LEGEND

LIMIT OF DISTURBANCE	-----	18" STANDARD SILT FENCE	-----
NPDES LIMIT	-----	30" REINFORCED SILT FENCE	-----
DRAINAGE AREA	-----	TEMP GRADING	-----
TEMP. GRADING	-----		
12" DIAM. SILT SOCK	-----		
18" DIAM. SILT SOCK	-----		
24" DIAM. SILT SOCK	-----		
32" DIAM. SILT SOCK	-----		
PROTECTION FENCE	-----		
TEMP. DIVERSION BERM	-----		
ROCK CONSTRUCTION ENTRANCE	-----		
CHANNEL LINING	-----		
SILT SOCK LABEL	-----		
TOPSOIL STOCKPILE	-----		

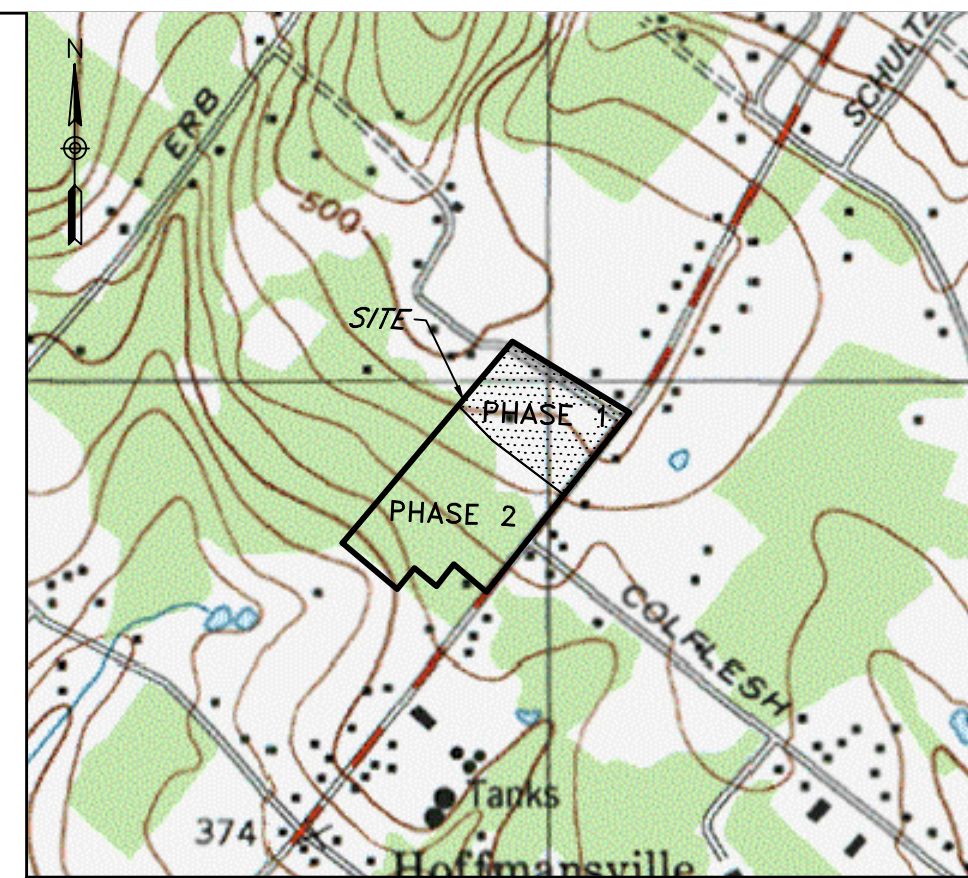
NO.	REVISION	DATE	BY	APP.
4.	FINAL PLAN - PHASE 1	2017-06-06	WJD	BOB
3.	PER MONTGOMERY COUNTY CONSERVATION DISTRICT 3/1/16, PENNDOT 12/5/16, GLIMORE 12/6/16, MCMAHON 12/12/16, KMS DESIGN 12/8/16 REVIEW LETTERS.	1-12-17	JCE	BOB
2.	PER GLIMORE ASSOCIATES, INC. 3/14/16, KMS DESIGN GROUP, LLC 3/16/16, MCMAHON ASSOCIATES, INC. 2/11/16 REVIEW LETTERS.	10-25-16	WJD	BOB
1.	PER GLIMORE ASSOCIATES, INC. 6/5/2015, KMS DESIGN GROUP, LLC 6/4/2015, MCMAHON ASSOCIATES, INC. 6/5/2015, AND MONTGOMERY COUNTY PLANNING COMMISSION 6/30/2015 REVIEW LETTERS.	10-21-15	WJD	BOB






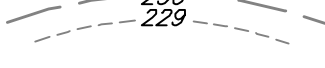
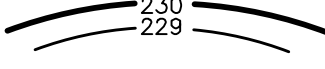



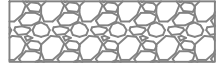


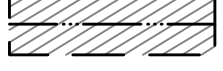






SEAL	SEAL
------	------

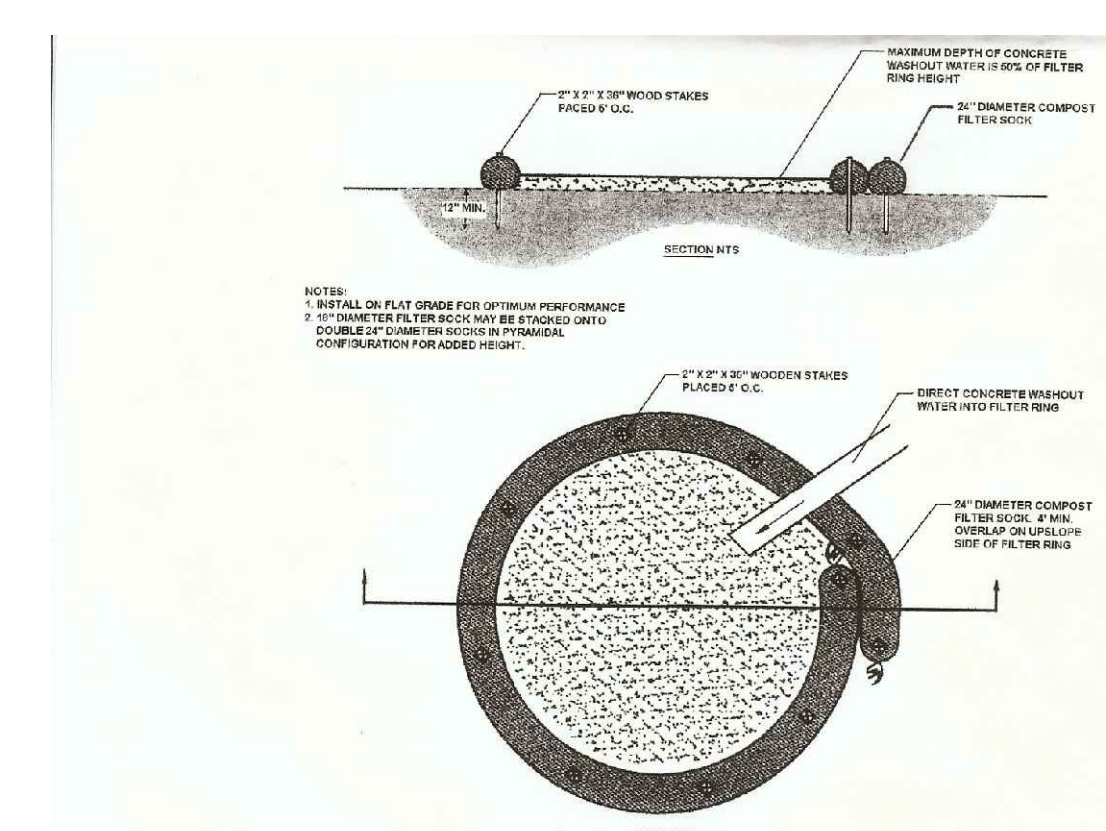
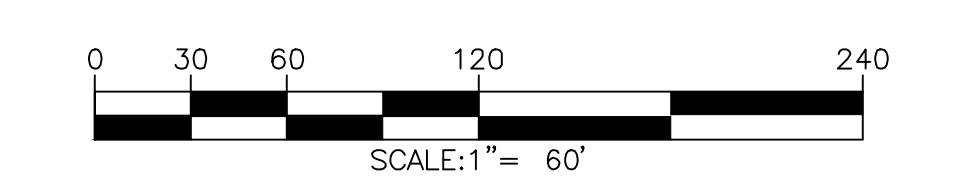


CLIENT		SUBJECT	
FDEV LLC 1150 FIRST AVE STE 920 KING OF PRUSSIA, PA 19406		EROSION CONTROL PLAN - PROPOSED ROAD/LOT 4	
NEW HANOVER TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA		FDEV SUBDIVISION	
1860 WEAVERTOWN ROAD, SUITE 100 DOUGLASSVILLE, PA 19518 PHONE: 610-689-8021 FAX: 610-689-4538		PROJECT NO. 14-146	
DESIGN BOB		DWG. NO. ES114146	
DRAWN BY WJD		SHEET NO. 7 OF 13	
DATE 10/29/15		SCALE 1"=60'	





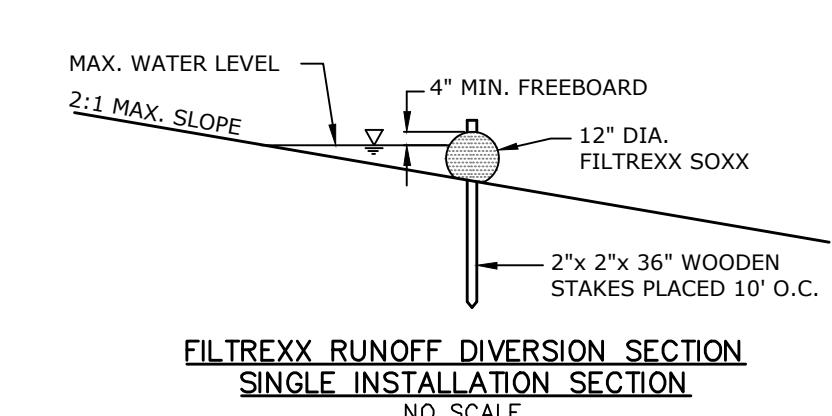
<b>LEGEND</b>	
EX. TRACT LINE	— — — — —
EX. BOUNDARY	=====
EX. RIGHT-OF-WAY	— · — · — · — · —
SETBACKS	
EX. SANITARY	— S — — S — — S — — S —
EX. GAS	— G — — G — — G — — G —
PR. LOT LINE	=====
PR. CLEANOUT	
EX. MONUMENTATION	
EX. UTILITY POLE & GUY WIRE	
EX. UNDERGROUND WIRE	— UGW — — UGW — —
EX. POST & RAIL FENCE	— ○ — ○ — ○ — ○ —
EX. SANITARY MANHOLE	
EX. SOILS	
EX CONTOURS	
PR CONTOURS	
PR. SANITARY LATERAL	— L — L — L — L —
PR. WATER LATERAL	— W — W — W — W —
INFILTRATION SETBACK	— — — — —
PR. STORM PIPE	— — — — —
PR. INFILTRATION BERM	=====
PR. STORM HEADWALL/ENDWALL	 
PR. STORM INLET 2X4	
PR. RIPRAP	
TEST PIT	
APPROXIMATE LOCATION OF WATERS OF THE COMMONWEALTH	— · — · — · — · —
WETLANDS LIMIT	— · — · — · — · —
WETLANDS BUFFER	
STREAM BUFFER	
EXISTING AND PROPOSED WELLS	 
15-25% SLOPES	
>25% SLOPES	
EXISTING WOODLINE	
PROPOSED WOODLINE	



A suitable impervious geomembrane shall be placed at the location of the washout prior installing the socks.  
Adapted from Filtrix

363-2134-008 / March 31, 2012 / Page 5

CONCRETE WASHOU



FILTREXX RUNOFF DIVERSION SECT  
SINGLE INSTALLATION SECTION

10 SCALE

EROSION CONTROL LEGEND



**Boyer**  
ENGINEERING LLC

FDEV LLC  
50 FIRST AVE STE 920  
KING OF PRUSSIA, PA  
19406

	SUBJECT
	EROSION CONTROL PLAN - LOTS 1, 2, AND 3

## FDEV SUBDIVISION

NEW HANOVER TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA

1860 WEAVERTOWN ROAD, SUITE 100	PROJECT NO.
---------------------------------	-------------

DOUGLASSVILLE, PA 19518 PHONE: 610-689-8021	14-146
--	--------

FAX: 610-689-4538		DWG. NO.
DESIGN	DATE: 01/11/2011	

DESIGN	CHKD. BY	ES214146
BDB		

DRAWN BY WJD	CHKD. BY	SHEET NO.
-----------------	----------	-----------

DATE	SCALE	8 OF 13
10/29/15	1" = 60'	

P:\PROJECTS\14-146 Swann Property.dwg - PHASE 1.dwg. 2017-06-08 1:38:28 PM



IV. 102.4(b)(5)(iii) - THE TYPES, DEPTH, SLOPE, LOCATIONS AND LIMITATIONS OF THE SOILS.

THE SOILS BOUNDARIES, TYPES, DEPTH ARE SHOWN ON THE EROSION CONTROL PLAN. THE SOILS MAPPING AND INFORMATION HAS BEEN OBTAINED FROM THE UNITED STATES DEPARTMENT OF AGRICULTURE'S NATIONAL RESOURCES CONSERVATION SERVICE SOIL SURVEY FOR MONTGOMERY COUNTY, PA. THREE SOIL TYPES (CRB, LSB, AND LHB) ARE LOCATED IN THE AREAS OF PROPOSED DEVELOPMENT. THE CROTON AND LEHIGH SOILS ARE CLASSIFIED AS BEING HYDRIC OR HAVING HYDRIC COMPONENTS, ACCORDING TO THE EROSION CONTROL MANUAL. A COPY OF THE SOIL REPORT IS INCLUDED IN APPENDIX B.

Soil Name	CRB - Croton Silt Loam, 3 to 8% slopes	LHB - Lehigh Silt Loam 3 to 8% Slopes	LHC - Lehigh Silt Loam 8 to 15% slopes
Depth to Seasonal Water Table (in)	40 to 60	40 to 60	40 to 60
Depth to bedrock (in)	40 to 60	40 to 60	40 to 60
Subsiliability for Winter Grading	Variable	Variable	Variable
Susceptibility for Frost Action	Variable	Variable	Variable
Topsoil Substability	Variable	Variable	Variable
Root Fill Substability	Variable	Variable	Variable
Highway Location	Variable	Variable	Variable
Shallow Excavations	Variable	Variable	Variable
Embarkment Substability for Detention Basins	Variable	Variable	Variable
Landscapeing and Lawn Substability	Variable	Variable	Variable
On-site Sewage Disposal Substability	Variable	Variable	Variable
Home Site Substability with Basement	Variable	Variable	Variable
Corrosion of Concrete	Variable	Variable	Variable
Mechanical Site Preparation (Deep)	Variable	Variable	Variable
Hydrologic Soil Group	D	C/D	C/D

#### SOIL RESOLUTIONS

PH - THE TOPSOIL SHALL BE TESTED PRIOR TO APPLYING THE SEED AND MULCH. LINE SHALL BE ADDED TO THE SOIL UNTIL IT REACHES A PH OF 7 TO 7.5.

WINTER GRADING - THE SOILS SHALL BE STABILIZED WITH MULCH UNTIL IT IS APPROPRIATE TO APPLY THE SEED.

FROST ACTION - SOILS CONTAINING FROST SHALL NOT BE UTILIZED AS STRUCTURAL BACKFILL.

TOPSOIL - THE TOPSOIL SHALL HAVE LINE APPLIED AS NECESSARY TO HAVE A PH OF 7 TO 7.5. COMPOST SHALL BE MIXED WITH THE TOPSOIL PER THE AMENDED SOIL SPECIFICATION TO INCREASE ITS ORGANIC CONTENT AND WATER HOLDING CAPACITY. ANY TOPSOIL THAT NEEDS TO BE IMPORTED SHALL BE FROM A SITE WITH AN APPROVED EROSION CONTROL PLAN.

ROAD FILL - SUITABLE MATERIAL SHALL BE FOUND ONSITE OR IMPORTED FROM A SITE WITH AN APPROVED EROSION CONTROL PLAN.

HIGHWAY LOCATION - LIMITATIONS INCLUDE WETNESS AND LOW STRENGTH. IF BEDROCK IS ENCOUNTERED IT SHALL BE REMOVED TO AN APPROPRIATE DEPTH AND THE STONE BASE FOR THE ROAD SHALL BE INSTALLED. ROADS SHALL NOT BE CONSTRUCTED WHEN THE TEMPERATURE IS BELOW FREEZING UNLESS THE FROZEN SOILS ARE REMOVED.

PIPELINE CONSTRUCTION - LIMITATIONS MAY INCLUDE HIGH WATER TABLE. UTILITY TRENCHES SHALL BE PUMPED TO KEEP THE WORKING AREA DRY. ALL PUMPED WATER SHALL BE DISCHARGED TO A SEDIMENTATION AND STABILIZATION BASIN.

DETENTION BASIN EMBANKMENTS - THE LIMITATION IS THE LOW STRENGTH. ANY SOIL THAT IS IMPORTED SHALL COME FROM A SITE WITH AN APPROVED EROSION CONTROL PLAN.

TERRACES AND WATERWAYS - APPROPRIATE STABILIZATION MATERIALS SHALL BE USED AS SPECIFIED IN THE PLANS.

LANDSCAPING AND LAWN - LIMITATIONS INCLUDE POOR AND LIMITED AMOUNTS OF TOPSOIL AND WEY SOILS. SOIL AMENDMENT WITH COMPOST AND SAND SHALL BE USED TO PROVIDE ADEQUATE PLANTING SOIL. ANY SOIL THAT IS IMPORTED SHALL COME FROM A SITE WITH AN APPROVED EROSION CONTROL PLAN. SLOPED AREAS SHALL BE MULCHED AND OTHER APPROPRIATE NETTING AND MULCHING SHALL BE USED TO PREVENT EROSION.

V. 102.4(b)(5)(iii) - THE CHARACTERISTICS OF THE EARTH DISTURBANCE ACTIVITY, INCLUDING THE PAST, PRESENT AND PROPOSED LAND USES AND THE PROPOSED ALTERATION TO THE PROJECT SITE.

THE PRESENT LAND USE IS SINGLE FAMILY RESIDENTIAL. THE PAST LAND USE IS SINGLE FAMILY RESIDENTIAL. THE PROPOSED LAND USE IS SINGLE FAMILY RESIDENTIAL. THE LAND WILL BE REGARDED TO CONSTRUCT THE IMPROVEMENTS.

VI. 102.4(b)(5)(iv) - THE AMOUNT OF RUNOFF FROM THE PROJECT AREA AND ITS UPSTREAM AREA.

THE MAXIMUM DURING CONSTRUCTION DRAINAGE AREAS TOTAL 4.55 ACRES. THE ENTIRE DRAINAGE AREA IS CONTROLLED BY SILT/SOXX DURING CONSTRUCTION. IN POST-CONSTRUCTION RAIN GARDENS AND INFILTRATION BERMS CONTROL THE RUNOFF, WHILE THE REMAINDER IS CONSIDERED BYPASS. OFFSITE RUNOFF FROM THE PROJECT AREA IS CONSIDERED. PEAK FLOWS ARE REDUCED FROM POSTDEVELOPED CONDITIONS TO PREDEVELOPED CONDITIONS FOR ALL STORMS. ACCORDING TO THE TOWNSHIP'S ORDINANCE REQUIREMENTS.

VII. 102.4(b)(5)(v) - THE LOCATION OF WATERS OF THE COMMONWEALTH WHICH MAY RECEIVE RUNOFF WITHIN OR FROM THE PROJECT SITE AND THEIR CLASSIFICATION PURSUANT TO CHAPTER 93 OF THIS TITLE.

THE SITE IS TRIBUTARY TO THE SWAMP CREEK, PA CODE CHAPTER 93 CLASSIFICATION OF TSF.

VIII. 102.4(b)(5)(vi) - A WRITTEN DEPICTION OF THE LOCATION AND TYPE OF PERMITTER AND ON SITE BMP'S USED BEFORE, DURING, AND AFTER THE EARTH DISTURBANCE ACTIVITY.

THE LOCATION OF THE PROPOSED TEMPORARY AND PERMANENT BMP'S AND THEIR CONSTRUCTION DETAILS ARE SHOWN ON THE EROSION CONTROL PLANS AND DETAIL SHEET. THE WORKSHEETS AND CALCULATIONS ARE PROVIDED IN APPENDIX C.

#### GENERAL NOTES

- ONLY LIMITED DISTURBANCE WILL BE PERMITTED TO PROVIDE ACCESS TO (CONSTRUCT SEDIMENT TRAPS, DIVERSION TERRACES, ETC.) FOR GRADING AND ACQUIRING BORROW TO CONSTRUCT THOSE CONTROLS.
- EROSION AND SEDIMENTATION CONTROLS MUST BE CONSTRUCTED, STABILIZED, AND FUNCTIONAL BEFORE SITE DISTURBANCE WITHIN THE TRIBUTARY AREAS OF THOSE CONTROLS.
- AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENTATION CONTROLS MUST BE REMOVED. AREAS DISTURBED DURING REMOVAL OF THE CONTROLS MUST BE STABILIZED IMMEDIATELY.
- VEHICLES AND EQUIPMENT MUST USE THE DESIGNATED DRIVEWAY ENTRANCES BEFORE PARK AVENUE AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE OF THE LINE OF THE EROSION CONTROL PLAN.
- AT THE END OF EACH WORKING DAY, ANY SEDIMENT TRACKED OR CONVEYED ONTO A PUBLIC ROADWAY OR SIDEWALK WILL BE REMOVED AND RE-DEPOSITED ONTO THE CONSTRUCTION SITE. REMOVAL CAN BE COMPLETED THROUGH USE OF MECHANICAL OR HAND TOOLS, BUT MUST NEVER BE WASHED, SHOVELED, OR SWEEP INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
- SEDIMENT REMOVED FROM EROSION CONTROLS & FACILITIES SHALL BE DISPOSED OF IN LANDSCAPED AREAS OUTSIDE OF WETLANDS OR DRAINAGE SWALES AND IMMEDIATELY STABILIZED OR PLACED ON TOPSOIL STOCKPILES.
- ALL PUMPING OF SEDIMENT LADEN WATER SHALL BE THROUGH A DIRT BAG FILTRATION DEVICE OR EQUIVALENT SEDIMENT REMOVAL FACILITY. OVER NON-DISTURBED VEGETATED AREAS. DISCHARGE POINTS SHOULD BE ESTABLISHED TO PROVIDE FOR MAXIMUM DISTANCE TO ACTIVE WATERWAYS.
- AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS, AND OTHER OBSTRUCTABLE MATERIAL.
- ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS. FILLS SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
- FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOO, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILL.
- SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
- ALL EXCAVATION FOR UTILITY LINE INSTALLATION SHALL BE LIMITED TO THE AMOUNT THAT CAN BE EXCAVATED, INSTALLED, BACKFILLED AND STABILIZED WITHIN ONE WORKING DAY. ALL EXCAVATED MATERIAL SHALL BE DEPOSITED ON THE UPSLOPE SIDE OF THE TRENCH.
- IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE MONTGOMERY COUNTY CONSERVATION DISTRICT AND/OR REGIONAL DEP. OFFICE. STOCKPILES OF WOOD CHIPS, HAY BALES, CRUSHED STONE AND OTHER MULCHES SHALL BE HELD IN READINESS TO DEAL IMMEDIATELY WITH EMERGENCY PROBLEMS OF EROSION AND SEDIMENTATION.
- THE CONTRACTOR IS ADVISED TO BECOME THOROUGHLY FAMILIAR WITH THE PROVISIONS OF THE APPENDIX #4, EROSION CONTROL RULES AND REGULATIONS, TITLE 25, PART 1, DEPARTMENT OF ENVIRONMENTAL PROTECTION, SUBPART C, PROTECTION OF NATURAL RESOURCES, ARTICLE III, WATER RESOURCES, CHAPTER 102, EROSION CONTROL.
- A COPY OF THIS EROSION AND SEDIMENTATION CONTROL REPORT AND PLANS MUST BE POSTED AT THE CONSTRUCTION SITE.
- FAILURE TO CORRECTLY INSTALL E&S BMPs, FAILURE TO PREVENT SEDIMENT LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPs MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO \$10,000 PER DAY IN CIVIL PENALTIES, UP TO \$10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO \$25,000 IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.

#### TEMPORARY CONTROL MEASURES AND FACILITIES FOR USE DURING EARTHMOVING

- SILT SOXX AND/OR SILT FENCE SHALL BE INSTALLED AT LOCATIONS NOTED ON THE PLAN PRIOR TO ANY DISTURBANCE OF THE EXISTING GROUND COVER. DURING THE CONSTRUCTION PHASE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING OR REPLACING SILT SOXX AND SILT FENCE AFTER EACH RAINFALL EVENT TO INSURE CONTINUED OPERATION.
- SEDIMENTATION DETENTION BASINS/TRAPS SHALL BE CONSTRUCTED AND MUST BE STABILIZED PRIOR TO ANY EARTHMOVING. SWALES SHOULD BE CONSTRUCTED AND STABILIZED AT THIS TIME, UNLESS OTHERWISE NOTED.
- STONE BASE COURSE FOR ROADS AND DRIVEWAYS SHALL BE PLACED AS SOON AS PRACTICAL.
- STOCKPILES OF MULCHES, SUCH AS WOOD CHIPS, CRUSHED STONE, STRAW AND JUTE MESH SHALL BE KEPT ONSITE AND BE AVAILABLE TO DEAL WITH EROSION CONDITIONS AS THEY ARISE.
- ALL CUT AND FILL SLOPE AREAS WHOSE SURFACES ARE SUBJECT TO EROSION ACTION SHALL BE PROTECTED WITH ONE OF THE MULCHES IN ITEM 4 ABOVE.
- IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES HAVE CEASED IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS, DURING THE NON-GERMINATING PERIODS, MULCH OR PROTECTIVE BLANKETING MUST BE APPLIED AT THE RECOMMENDED RATE. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE RE-DISTURBED WITHIN ONE YEAR MAY BE SEEDED AND MULCHED WITH A QUICK-GROWING TEMPORARY SEEDING MIXTURE AND MULCH. DISTURBED AREAS WHICH ARE EITHER AT FINISHED GRADE OR WILL NOT BE RE-DISTURBED WITHIN ONE YEAR MUST BE SEEDD AND MULCHED WITH A PERMANENT SEED MIXTURE AND MULCH. ALL UN-STABILIZED, DISTURBED AREAS ARE TO BE PREPARED AND SEEDD FOLLOWING THE FINAL GRADING.
- ALL TEMPORARY CONTROLS ARE TO REMAIN IN PLACE DURING THE ENTIRE CONSTRUCTION PHASE UNTIL THE SOIL HAS BEEN STABILIZED, UNLESS OTHERWISE NOTED.

#### STABILIZATION NOTES

- TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION SHOWN ON THE PLAN. IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADINGS OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED BY A COMPOST FILTER SOCK. STOCKPILE HEIGHTS MUST NOT EXCEED 3'. STOCKPILE SLOPES MUST BE 2:1 OR FLATTER.
- AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES, 6 TO 12 INCHES ON COMPACTED SOILS, PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM OF 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
- UPON TEMPORARY CESSATION OR COMPLETION OF AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY WHERE A CESSATION OF EARTH DISTURBANCE ACTIVITIES EXCEED 4 DAYS, THE OPERATOR SHALL IMMEDIATELY SEED AND MULCH OR OTHERWIS RE-DISTURBED AREAS OUTSIDE OF THE LINE OF THE EROSION CONTROL PLAN.
- DURING EARTH DISTURBANCE ACTIVITIES, DURING NON-GERMINATING PERIODS, MULCH MUST BE APPLIED AT THE SPECIFIED RATES.
- DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE RE-DISTURBED WITHIN ONE YEAR MAY BE SEEDD AND MULCHED WITH A QUICK-GROWING TEMPORARY SEEDING MIXTURE AND MULCH. DISTURBED AREAS WHICH ARE EITHER AT FINISHED GRADE OR WILL NOT BE RE-DISTURBED WITHIN 1 YEAR, MUST BE STABILIZED IN ACCORDANCE WITH TEMPORARY SEEDING SPECIFICATIONS. DISTURBED AREAS, WHICH ARE EITHER AT FINISHED GRADE OR WILL NOT BE RE-DISTURBED WITHIN 1 YEAR, MUST BE STABILIZED IN ACCORDANCE WITH PERMANENT SEEDING SPECIFICATIONS.

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

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

6. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDD AREAS WITHIN 50 FEET OF A SURFACE WATER, OR OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE PLAN.

7. UNTIL THE SITE HAS ACHIEVED FINAL STABILIZATION WITH AN APPROVED EROSION CONTROL PLAN, ANY REQUIRED FILL IMPORTED TO THE SITE SHALL MEET THE CLEAN FILL REQUIREMENTS AND THE SITE SHALL HAVE AN APPROVED EROSION CONTROL PLAN.

8. MAINTAIN ALL THE BEST MANAGEMENT PRACTICES. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENTATION CONTROL AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING REPAIR, REPLACEMENT, 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.

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

10. MULCH WITH MULCH CONTROL NETTING OR EROSION CONTROL BLANKETS MUST BE INSTALLED ON ALL SLOPES GREATER THAN 3:1.

#### PERMANENT CONTROL MEASURES AND FACILITIES FOR LONG TERM PROTECTION

THE FOLLOWING ACTIVITIES SHALL BE UNDERTAKEN TO ACHIEVE PERMANENT STABILIZATION OF ALL EXPOSED AND DISTURBED SOIL AREAS AS REQUIRED OR DIRECTED.

#### PERMANENT VEGETATIVE SURFACE STABILIZATION

SITE PREPARATION - INCORPORATE LINE AND FERTILIZER (RATE BASED UPON SOIL TESTING) AS DEEPLY INTO THE SOIL AS POSSIBLE. IF SOIL IS UNDESIRABLE, APPLY FOUR TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 10-20-20 FERTILIZER AT A RATE OF 500 POUNDS PER ACRE.

SEEDING - ALL DISTURBED AREAS SHALL BE PREPARED AND SEEDD WITH THE SPECIES THE NOTED SEEDING RATE FOLLOWING THE FINAL GRADING.

#### TEMPORARY AND PERMANENT STABILIZATION SPECIFICATIONS

##### TEMPORARY SEEDING

% PURE LIVE SEED: 89%  
APPLICATION RATE: 40 LBS. PER ACRE  
FERTILIZER TYPE: 10-20-20  
FERTILIZER APPLICATION RATE: 150 LBS. PER ACRE  
LIMING RATE: AGRICULTURAL GRADE LIMESTONE A AT 1 TON PER ACRE  
MULCH TYPE: HAY OR STRAW  
MULCHING RATE: 3 TONS PER ACRE  
ANCHOR MATERIAL: NONE  
ANCHORING METHOD: CLEAT WITH DEEP CLEATS  
SEEDING SEASON DATES: MARCH THROUGH JUNE, SEPTEMBER, OCTOBER

##### PERMANENT SEEDING

SPECIES: TALL FESCUE (39%), FINE FESCUE (38%), ALSIKE CLOVE (20%), REDTOP (3%)  
% PURE LIVE SEED: 89%  
APPLICATION RATE: 20, 10, 20 AND 12 LBS. PER ACRE, RESPECTIVELY  
FERTILIZER TYPE: AS PER SOIL TESTING RESULTS  
FERTILIZER APPLICATION RATE: AS PER SOIL TESTING RESULTS  
LIMING RATE: AGRICULTURAL GRADE LIMESTONE A AT 4 TON PER ACRE  
MULCH TYPE: HAY OR STRAW  
MULCHING RATE: 3 TONS PER ACRE  
ANCHOR MATERIAL: EAST COAST BLANKETS ECSC-2 OR EQUAL  
ANCHORING METHOD: CLEAT WITH DEEP CLEATS  
SEEDING SEASON DATES: MARCH THROUGH JUNE, SEPTEMBER, OCTOBER

##### PERMANENT STEEP SLOPE SEEDING

SPECIES: TALL FESCUE, ALSIKE  
% PURE LIVE SEED: 89%  
APPLICATION RATE: 20 AND 10 LBS. PER ACRE, RESPECTIVELY  
FERTILIZER TYPE: AS PER SOIL TESTING RESULTS  
FERTILIZER APPLICATION RATE: AS PER SOIL TESTING RESULTS  
LIMING RATE: AGRICULTURAL GRADE LIMESTONE A AT 4 TON PER ACRE  
MULCH TYPE: HAY OR STRAW  
MULCHING RATE: 3 TONS PER ACRE  
ANCHOR MATERIAL: EAST COAST BLANKETS ECSC-2 OR EQUAL  
ANCHORING METHOD: CLEAT WITH DEEP CLEATS  
SEEDING SEASON DATES: MARCH THROUGH JUNE, SEPTEMBER, OCTOBER

#### CHANNEL NOTES

- ALL CHANNELS MUST BE KEPT FREE OF OBSTRUCTIONS SUCH AS FILL GROUND, FALLEN LEAVES & WOODY DEBRIS, ACCUMULATED SEDIMENT, AND CONSTRUCTION MATERIALS/WASTES. CHANNELS SHOULD BE KEPT MOVING AND/OR FREE OF ALL WEEDY, BRUSHY OR WOODY OBSTRUCTIONS. THE BOTTOM OF THE EXCAVATION SHALL NOT BE COMPACTED AND SHALL BE FREE FROM ROCKS AND DEBRIS. A LICENSED PROFESSIONAL SHOULD PROVIDE OVERSIGHT DURING THE EXCAVATION OF THE RAINGARDENS.
- ANY SEDIMENT ENTERING THE RAINGARDENS SHALL BE REMOVED WITH LIGHT EQUIPMENT. THE UNDERLYING SOIL SHALL BE SCARIFIED A MINIMUM OF TWELVE (12) INCHES WITH A YORK RAKE, SUBSOILER OR OTHER SUITABLE EQUIPMENT. A LICENSED PROFESSIONAL SHOULD PROVIDE OVERSIGHT DURING THE SCARIFYING OF THE SUBGRADE.
- THE BOTTOM OF THE RAIN GARDEN SHALL HAVE THE AMENDED SOIL INSTALLED.
- STABILIZE THE DISTURBED AREAS WITH PERMANENT SEEDING AND PLANTINGS, AND MULCH IMMEDIATELY UPON COMPLETION.

#### UTILITY LINE TRENCH EXCAVATION

- LIMIT ADVANCE CLEARING AND GRUBBING OPERATIONS TO A DISTANCE EQUAL TO TWO TIMES THE LENGTH OF PIPE INSTALLATION THAT CAN BE COMPLETED IN ONE DAY.
- WORK CREWS AND EQUIPMENT FOR TRENCHING, PLACEMENT OF PIPE, PLUG CONSTRUCTION AND BACKFILLING WILL BE SELF CONTAINED AND SEPARATE FROM CLEARING AND GRUBBING AREAS UNDERNEATH OR ADJOINING SMALL STREAMS.
- LIMIT THE DAILY TRENCH EXCAVATION TO THE LENGTH OF PIPE PLACEMENT, PLUG INSTALLATION AND BACKFILLING THAT CAN BE COMPLETED THE SAME DAY.
- WATER WHICH ACCUMULATES IN THE OPEN TRENCH WILL BE COMPLETELY REMOVED BY PUMPING BEFORE PIPE PLACEMENT AND/OR BACKFILLING BEGINS. THE SEEPAGE MUST BE PUMPED TO A FACILITY FOR REMOVAL OF SEDIMENT. THIS FACILITY MUST BE LOCATED OUTSIDE OF THE CHANNEL IF EXCAVATION TRENCHES ARE UNDERNEATH OR ADJOINING SMALL STREAMS.
- ON THE DAY FOLLOWING PIPE PLACEMENT AND TRENCH BACKFILLING, THE DISTURBED AREA WILL BE GRADED TO FINAL GRADE. SEEDING AND MULCHING OF ALL DISTURBED AREAS SHALL BE COMPLETED AT THE END OF EACH WEEK.
- IN CERTAIN CASES TRENCHES CANNOT BE BACKFILLED UNTIL THE PIPE IS HYDROSTATICALLY TESTED, OR ANCHORS AND OTHER PERMANENT FEATURES ARE INSTALLED. IN THESE CASES, ALL OF THE REQUIREMENTS UNDER ITEMS 1 THROUGH 5 WILL REMAIN IN EFFECT WITH THE FOLLOWING EXCEPTIONS:
  - DAILY BACKFILLING OF THE TRENCH MAY BE DELAYED FOR SIX DAYS. ALL PRESSURE TESTING AND THE COMPLETE BACKFILLING OF THE OPEN TRENCH MUST BE COMPLETED BY THE SEVENTH WORKING DAY.
  - IF DAILY BACKFILLING IS DELAYED, THE DISTURBED AREA WILL BE GRADED TO FINAL CONTOURS, APPROPRIATE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES/FACILITIES WILL BE INSTALLED AND THE AREA SEEDD AND MULCHED WITHIN THE NEXT TWO CALENDAR DAYS.

#### RAIN GARDEN INSTALLATION PROCEDURES

- THE RAIN GARDEN SHALL BE EXCAVATED TO THE PRESCRIBED DEPTH SHOWN ON THE PLAN DETAILS. THE BOTTOM OF THE EXCAVATION SHALL BE GRADUALLY TESTED AND EQUIPMENT POSSIBLE. THE BOTTOM OF THE EXCAVATION SHALL NOT BE COMPACTED AND SHALL BE FREE FROM ROCKS AND DEBRIS. A LICENSED PROFESSIONAL SHOULD PROVIDE OVERSIGHT DURING THE EXCAVATION OF THE RAINGARDENS.
- ANY SEDIMENT ENTERING THE RAINGARDENS SHALL BE REMOVED WITH LIGHT EQUIPMENT. THE UNDERLYING SOIL SHALL BE SCARIFIED A MINIMUM OF TWELVE (12) INCHES WITH A YORK RAKE, SUBSOILER OR OTHER SUITABLE EQUIPMENT. A LICENSED PROFESSIONAL SHOULD PROVIDE OVERSIGHT DURING THE SCARIFYING OF THE SUBGRADE.
- THE BOTTOM OF THE RAIN GARDEN SHALL HAVE THE AMENDED SOIL INSTALLED.
- STABILIZE THE DISTURBED AREAS WITH PERMANENT SEEDING AND PLANTINGS, AND MULCH IMMEDIATELY UPON COMPLETION.

IX. 102.4(b)(5)(vii) - A SEQUENCE OF BMP INSTALLATION AND REMOVAL IN RELATION TO THE SCHEDULING OF EARTH DISTURBANCE ACTIVITIES, PRIOR TO, DURING AND AFTER EARTH DISTURBANCE ACTIVITIES.

APPROXIMATE START DATE FOR CONSTRUCTION - MARCH 2018

APPROXIMATE END DATE FOR CONSTRUCTION - DECEMBER 2019

#### CONSTRUCTION SEQUENCE NOTES

- ALL EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS, BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED, AND DATED BY THE MONTGOMERY COUNTY CONSERVATION DISTRICT) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE MONTGOMERY COUNTY CONSERVATION DISTRICT SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE MONTGOMERY COUNTY CONSERVATION DISTRICT MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW.
- EACH STAGE SHALL BE COMPLETED IN COMPLIANCE WITH CHAPTER 102 REGULATIONS BEFORE ANY FOLLOWING STAGE IS INITIATED. CLEARING AND GRUBBING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH STAGE.
- 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 PREPARED, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE BMP'S, AND A REPRESENTATIVE OF THE MONTGOMERY COUNTY CONSERVATION DISTRICT TO AN ON-SITE PRE-CONSTRUCTION MEETING.
- AT LEAST 3 DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
- ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE MONTGOMERY COUNTY CONSERVATION DISTRICT.
- CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING, AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPs SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THE E&S PLAN.
- 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 E SEQ., 271.1 E SEQ. AND 287.1 E SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
- BEFORE DISPOSING OF SOIL OR RECEIVING BORROW FOR THE SITE, THE OPERATOR MUST ASSURE THAT EACH POOL OR BORROW AREA HAS AN EROSION AND SEDIMENT CONTROL PLAN APPROVED BY THE LOCAL COUNTY CONSERVATION DISTRICT OR THE DEPARTMENT OF ENVIRONMENTAL PROTECTION, AND WHICH IS FULLY IMPLEMENTED AND MAINTAINED ACCORDING TO CHAPTER 102 REGULATIONS PRIOR TO BEING ACTIVATED. THE OPERATOR SHALL ALSO NOTIFY THE MONTGOMERY COUNTY CONSERVATION DISTRICT IN WRITING OF ANY CHANGES TO THE E&S PLAN.
- THE OPERATOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT TO THE SITE IS CLEAN FILL. FORM PH-001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.

THE GENERAL SEQUENCE OF CONSTRUCTION IS AS FOLLOWS. IF ANY MODIFICATIONS ARE NECESSARY OR DESIRED BY THE CONTRACTOR, THEY MUST BE APPROVED BY THE MONTGOMERY COUNTY CONSERVATION DISTRICT PRIOR TO IMPLEMENTING THE CHANGES.

#### A. SITE IMPROVEMENTS-LOT 4

- THE LIMIT OF DISTURBANCE (LOD) SHALL BE MARKED WITH SURVEY STAKES, POSTS AND ROPE, CONSTRUCTION FENCE OR SOME OTHER ACCEPTABLE MATERIAL PRIOR TO DISTURBANCE ACTIVITIES.
- THE CONSTRUCTION ENTRANCE SHALL BE ESTABLISHED WHERE SHOWN ON THE PLAN, INCLUDING THE TIRE WASH AREA. THIS SHALL BE THE ONLY ENTRANCE AND EXIT FROM THE SITE FOR THE CONSTRUCTION VEHICLES.
- THE SILT SOCK #1 AND #2 SHALL BE INSTALLED WHERE SHOWN ON THE PLAN. SILT FENCE MUST BE PROPERLY FUNCTIONING BEFORE THE CONSTRUCTION OF TRIBUTARY IMPROVEMENTS.

UPON THE INSTALLATION OR STABILIZATION OF ALL PERIMETER SEDIMENT CONTROL BMP'S AND AT LEAST 3 DAYS PRIOR TO PROCEEDING WITH THE BULK EARTH DISTURBANCE ACTIVITIES, THE PERMITTEE OR CO-PERMITTEE SHALL PROVIDE

#### NOTIFICATION TO THE MONTGOMERY COUNTY CONSERVATION DISTRICT.

- THE CONTRACTOR SHALL ENSURE THAT THE RUNOFF FROM ALL POSSIBLE EARTH DISTURBANCE ACTIVITIES SHALL CONSTANTLY BE DIRECTED INTO EROSION CONTROLS WHERE APPLICABLE.
- STRIP THE TOPSOIL FROM CONSTRUCTION AREA AND PLACE WHERE SHOWN ON THE PLAN. ANY EXCESS TOPSOIL MAY BE HAULED OFFSITE TO A FACILITY WITH AN APPROVED EROSION CONTROL PLAN. ANY REQUIRED FILL IMPORTED TO THE SITE SHALL MEET THE CLEAN FILL REQUIREMENTS AND THE SITE SHALL HAVE AN APPROVED EROSION CONTROL PLAN.
- CONSTRUCT THE NEW SEWAGE ABSORPTION AREA, CONNECT TO EXISTING HOUSE.
- STABILIZE DISTURBED AREAS WITH TEMPORARY SEEDING AND MULCH IN LAWN AREAS. NO MORE THAN 15,000 SQUARE FEET OF DISTURBED AREA SHALL REACH FINAL GRADE BEFORE INITIATING STABILIZATION OPERATIONS.
- REMOVE THE EXISTING SEWER LATERAL RUN TO THE EXISTING SEWAGE ABSORPTION AREA. FOLLOW UTILITY LINE TRENCH EXCAVATION/REMOVAL PROCEDURES:
  - LIMIT ADVANCE CLEARING AND GRUBBING OPERATIONS TO A DISTANCE EQUAL TO TWO TIMES THE LENGTH OF PIPE REMOVAL THAT CAN BE COMPLETED IN ONE DAY. ALL EFFORTS TO PRESERVE EXISTING TREES SHALL BE MADE.
  - WORK CREWS AND EQUIPMENT FOR TRENCHING, REMOVAL OF PIPE, AND BACKFILLING WILL BE SELF-CONTAINED AND SEPARATE FROM CLEARING AND GRUBBING AREAS UNDERNEATH OR ADJOINING SMALL STREAMS.
  - LIMIT THE DAILY TRENCH EXCAVATION TO THE LENGTH OF PIPE REMOVAL AND BACKFILLING THAT CAN BE COMPLETED THE SAME DAY.
  - WATER WHICH ACCUMULATES IN THE OPEN TRENCH WILL BE COMPLETELY REMOVED BY PUMPING BEFORE BACKFILLING BEGINS. THE SEEPAGE MUST BE PUMPED TO A FACILITY FOR REMOVAL OF SEDIMENT. THIS FACILITY MUST BE LOCATED OUTSIDE OF THE CHANNEL. IF EXCAVATION TRENCHES ARE UNDERNEATH OR ADJOINING SMALL STREAMS, THE AREA OF THE RAIN GARDEN SHALL BE NOT BE COMPACTED OR RECEIVE EXCESSIVE HEAVY EQUIPMENT TRAFFIC. THE AREA SHALL BE PROTECTED BY USING TAPE, FENCING OR OTHER SUITABLE METHOD.
  - ON THE DAY FOLLOWING TRENCH BACKFILLING, THE DISTURBED AREA WILL BE GRADED TO EXISTING CONTOURS. SEEDING AND MULCHING OF ALL DISTURBED AREAS SHALL BE COMPLETED AT THE END OF EACH WEEK.
  - IF DAILY BACKFILLING IS DELAYED, THE DISTURBED AREA WILL BE GRADED TO FINAL CONTOURS, APPROPRIATE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES/FACILITIES WILL BE INSTALLED AND THE AREA SEEDD AND MULCHED WITHIN THE NEXT TWO CALENDAR DAYS.

WHEN ALL OF THE DISTURBANCES ON LOT 4 ARE COMPLETELY STABILIZED (A MINIMUM OF 70% UNIFORM PERENNIAL VEGETATIVE COVER), ALL TEMPORARY BMP'S SHOULD BE REMOVED FROM THE SITE (INCLUDING ALL SILT FENCE) AND ANY DISTURBANCE CREATED WHEN REMOVING THEM SHALL IMMEDIATELY BE PERMANENTLY SEEDD AND MULCHED. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING GERMINATING SEASON.

#### B. SITE IMPROVEMENTS-PROPOSED ROAD

- THE LIMIT OF DISTURBANCE (LOD) SHALL BE MARKED WITH SURVEY STAKES, POSTS AND ROPE, CONSTRUCTION FENCE OR SOME OTHER ACCEPTABLE MATERIAL PRIOR TO DISTURBANCE ACTIVITIES. CONSTRUCTION FENCE SHALL BE USED IN WOODED AREAS TO ACT AS TREE PROTECTION FENCE AND TO DELINEATE THE EXTENT OF EARTH MOVING AREAS. THE AREA OF THE RAIN GARDEN SHALL BE NOT BE COMPACTED OR RECEIVE EXCESSIVE HEAVY EQUIPMENT TRAFFIC. THE AREA SHALL BE PROTECTED BY USING TAPE, FENCING OR OTHER SUITABLE METHOD.
- THE CONSTRUCTION ENTRANCE SHALL BE ESTABLISHED UPSLOPE OF THE PROPOSED ROAD LOCATION. THIS SHALL BE THE ONLY ENTRANCE AND EXIT FROM THE SITE FOR CONSTRUCTION VEHICLES FOR THE CONSTRUCTION OF THE UTILITY CROSSINGS ASSOCIATED WITH CHAPTER 105 GENERAL PERMITS (GP).
- INSTALL SILT SOCKS #1, #2 AND #3 WHERE SHOWN ON THE PLAN. SILT SOCK MUST BE PROPERLY FUNCTIONING BEFORE THE CONSTRUCTION OF TRIBUTARY IMPROVEMENTS.

UPON THE INSTALLATION OR STABILIZATION OF ALL PERIMETER SEDIMENT CONTROL BMP'S AND AT LEAST 3 DAYS PRIOR TO PROCEEDING WITH THE BULK EARTH DISTURBANCE ACTIVITIES, THE PERMITTEE OR CO-PERMITTEE SHALL PROVIDE NOTIFICATION TO THE MONTGOMERY COUNTY CONSERVATION DISTRICT.

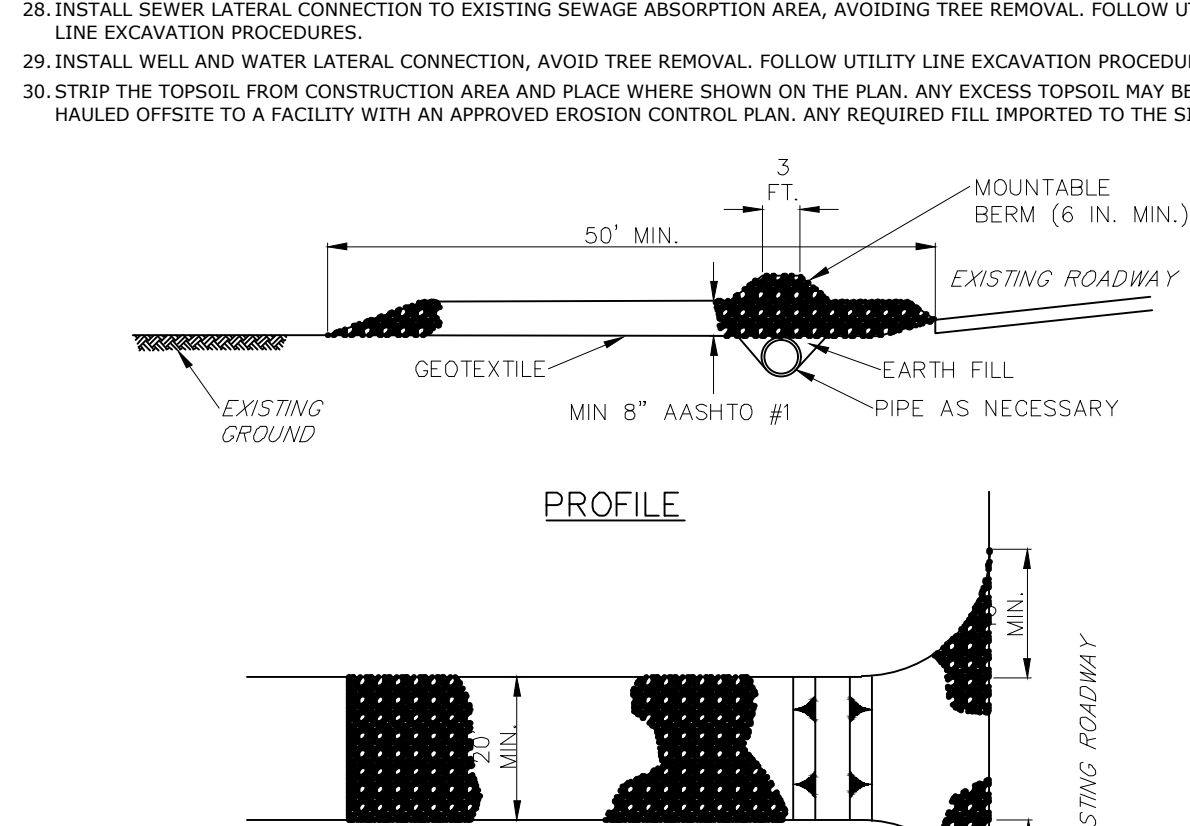
- INSTALL THE CONCRETE WASHOUT.
- CLEAR AND GRUB AREAS OF GP STORM SEWERS AND SWALE 1 & 2.
- INSTALL STORM SEWER PIPES, STRUCTURES, AND RIPRAP ASSOCIATED WITH PIPE RUN EW2-HW1-HW2 AND THE CONNECTION TO THE EXISTING PIPE CROSSING LAYFLEED ROAD.
- INSTALL AND STABILIZE SWALE 1.
- INSTALL STORM SEWER PIPES, STRUCTURES, AND RIPRAP ASSOCIATED WITH PIPE RUN EW1-HW1.
- INSTALL AND STABILIZE SWALE 2.
- CLEAR AND GRUB AREAS FOR PROPOSED ROAD CONSTRUCTION. 5. STRIP THE TOPSOIL FROM CONSTRUCTION AREA AND PLACE WHERE SHOWN ON THE PLAN. ANY EXCESS TOPSOIL MAY BE HAULED OFFSITE TO A FACILITY WITH AN APPROVED EROSION CONTROL PLAN. ANY REQUIRED FILL IMPORTED TO THE SITE SHALL MEET THE CLEAN FILL REQUIREMENTS AND THE SITE SHALL HAVE AN APPROVED EROSION CONTROL PLAN.
- ROUGH GRADE PROPOSED ROAD AND FIRST 25 FEET OF PROPOSED DRIVEWAYS ON LOTS 1 & 3 AND THE FIRST 215 FEET ON LOT 2. STABILIZE THESE AREAS.
- CONSTRUCT RAIN GARDEN 1 ACCORDING TO THE RAIN GARDEN INSTALLATION PROCEDURES. THE AREA OF THE RAIN GARDEN SHALL BE NOT BE COMPACTED OR RECEIVE EXCESSIVE HEAVY EQUIPMENT TRAFFIC. THE AREA SHALL BE PROTECTED BY USING TAPE, FENCING OR OTHER SUITABLE METHOD.
- INSTALL STORM SEWER PIPES, STRUCTURES, AND RIPRAP ASSOCIATED WITH PIPE RUN EW3-INLET 1.
- FINAL GRADE ROAD AND INSTALL SUB-BASE. INSTALL SOIL AMENDMENT WITH SWALE 1 AND STABILIZE WITH PERMANENT LINING AS SPECIFIED ON THE PLANS.
- STABILIZE REMAINING DISTURBED AREAS WITH TEMPORARY SEEDING AND MULCH IN LAWN AREAS. NO MORE THAN 15,000 SQUARE FEET OF DISTURBED AREA SHALL REACH FINAL GRADE BEFORE INITIATING STABILIZATION OPERATIONS.

#### C. SITE IMPROVEMENTS-INDIVIDUAL LOTS

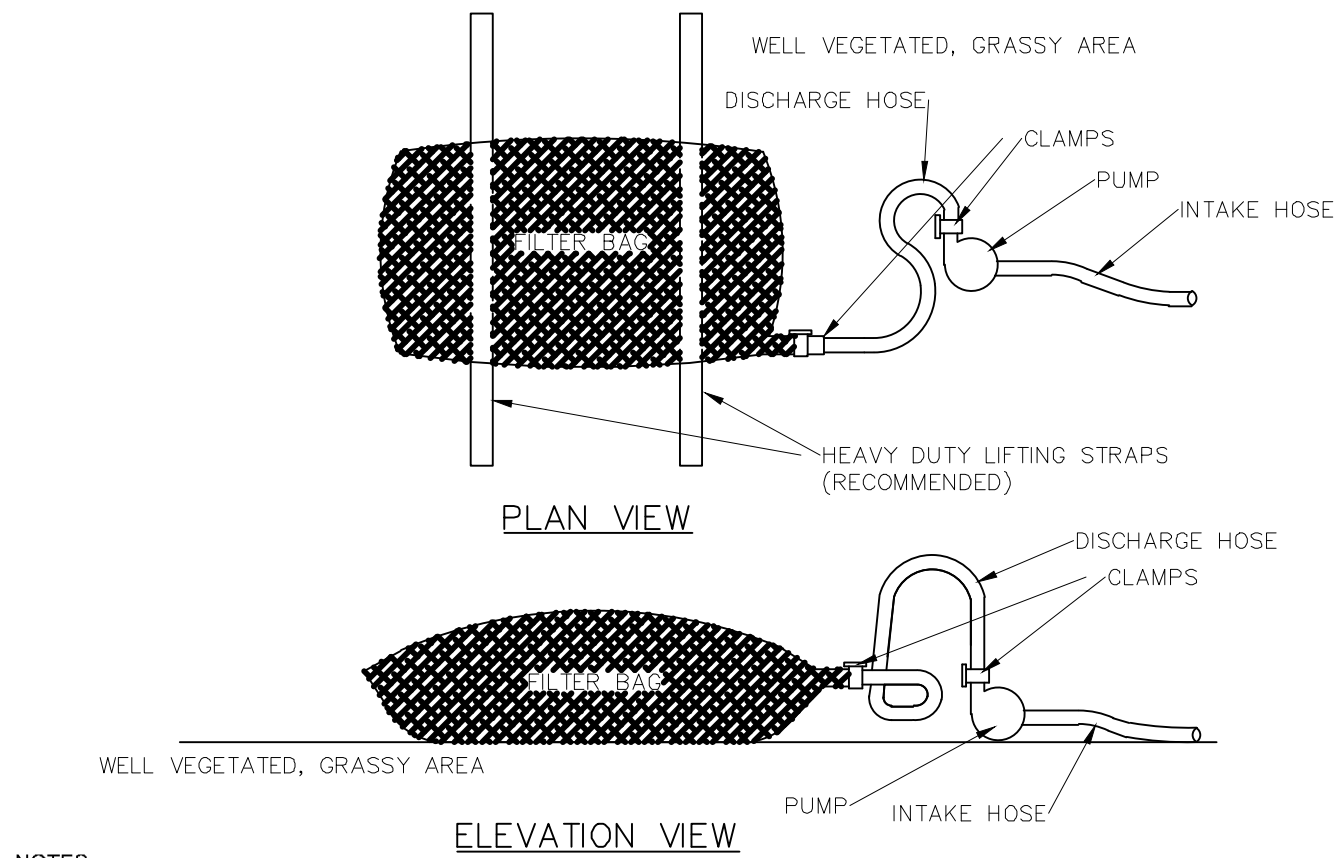
INDIVIDUAL LOT CONSTRUCTION CAN OCCUR SIMULTANEOUSLY OR IN ANY ORDER.

#### LOT 1

- THE LIMIT OF DISTURBANCE (LOD) SHALL BE MARKED WITH SURVEY STAKES, POSTS AND ROPE, CONSTRUCTION FENCE OR SOME OTHER ACCEPTABLE MATERIAL PRIOR TO DISTURBANCE ACTIVITIES. CONSTRUCTION FENCE SHALL BE USED IN WOODED AREAS TO ACT AS TREE PROTECTION FENCE AND TO DELINEATE THE EXTENT OF EARTH MOVING AREAS. THE AREA OF THE RAIN GARDEN SHALL BE NOT BE COMPACTED OR RECEIVE EXCESSIVE HEAVY EQUIPMENT TRAFFIC. THE AREA SHALL BE PROTECTED BY USING TAPE, FENCING OR OTHER SUITABLE METHOD.
- THE CONSTRUCTION ENTRANCE SHALL BE ESTABLISHED WHERE SHOWN ON THE PLAN, INCLUDING THE TIRE WASH AREA. THIS SHALL BE THE ONLY ENTRANCE AND EXIT FROM THE LOT FOR THE CONSTRUCTION VEHICLES.
- THE SILT SOCK #6 SHALL BE INSTALLED WHERE SHOWN ON THE PLAN. SILT SOCK MUST BE PROPERLY FUNCTIONING BEFORE THE CONSTRUCTION OF TRIBUTARY IMPROVEMENTS.
- SILT SOCK #1 SHALL BE REMOVED.
- INSTALL SEWER LATERAL CONNECTION TO EXISTING SEWAGE ABSORPTION AREA, AVOIDING TREE REMOVAL. FOLLOW UTILITY LINE EXCAVATION PROCEDURES.
- INSTALL WELL AND WATER LATERAL CONNECTION, AVOID TREE REMOVAL. FOLLOW UTILITY LINE EXCAVATION PROCEDURES.
- STRIP THE TOPSOIL FROM CONSTRUCTION AREA AND PLACE WHERE SHOWN ON THE PLAN. ANY EXCESS TOPSOIL MAY BE HAULED OFFSITE TO A FACILITY WITH AN APPROVED EROSION CONTROL PLAN. ANY REQUIRED FILL IMPORTED TO THE SITE SHALL MEET THE CLEAN FILL REQUIREMENTS AND THE SITE SHALL HAVE AN APPROVED EROSION CONTROL PLAN.







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.

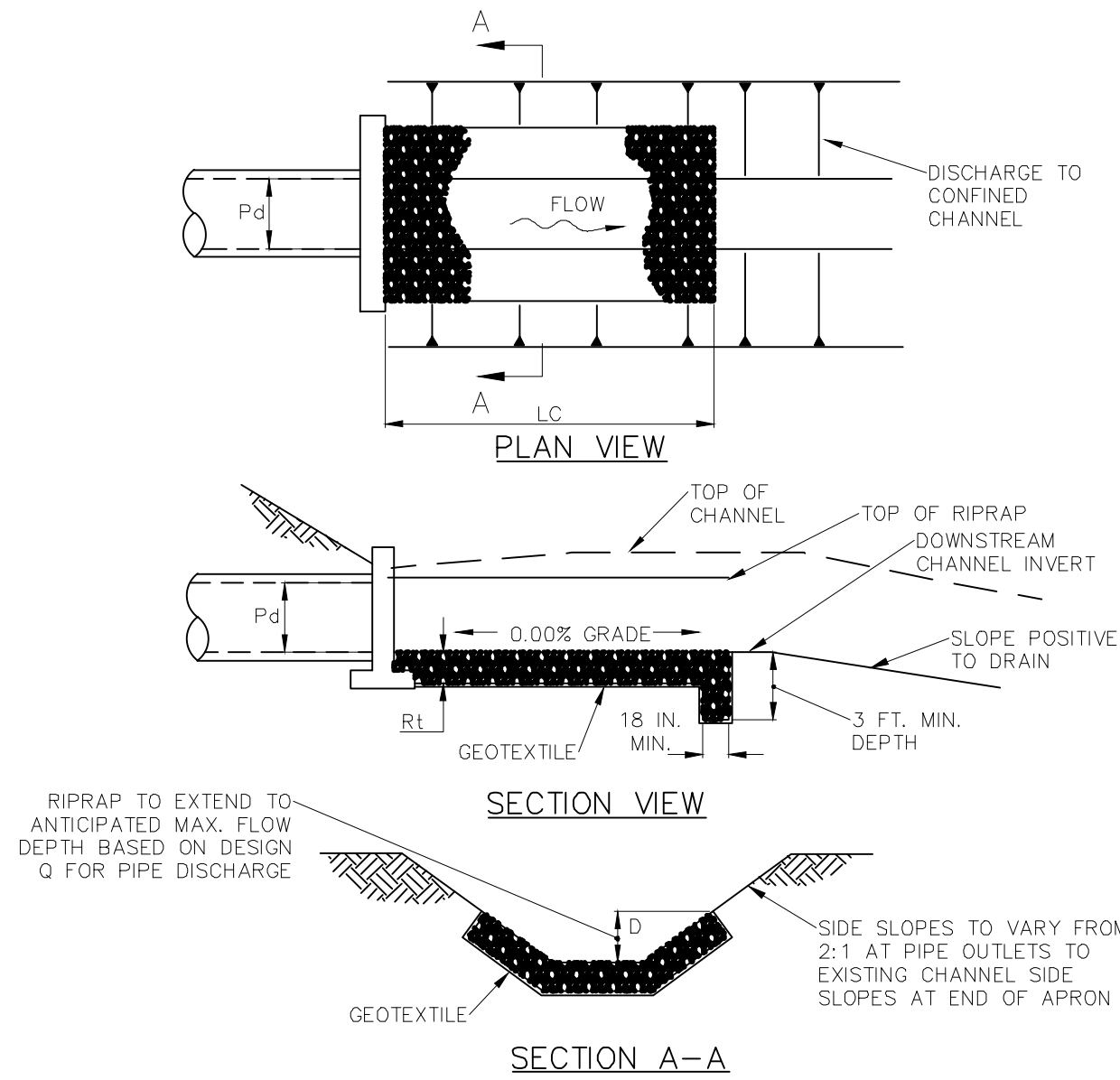
THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

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

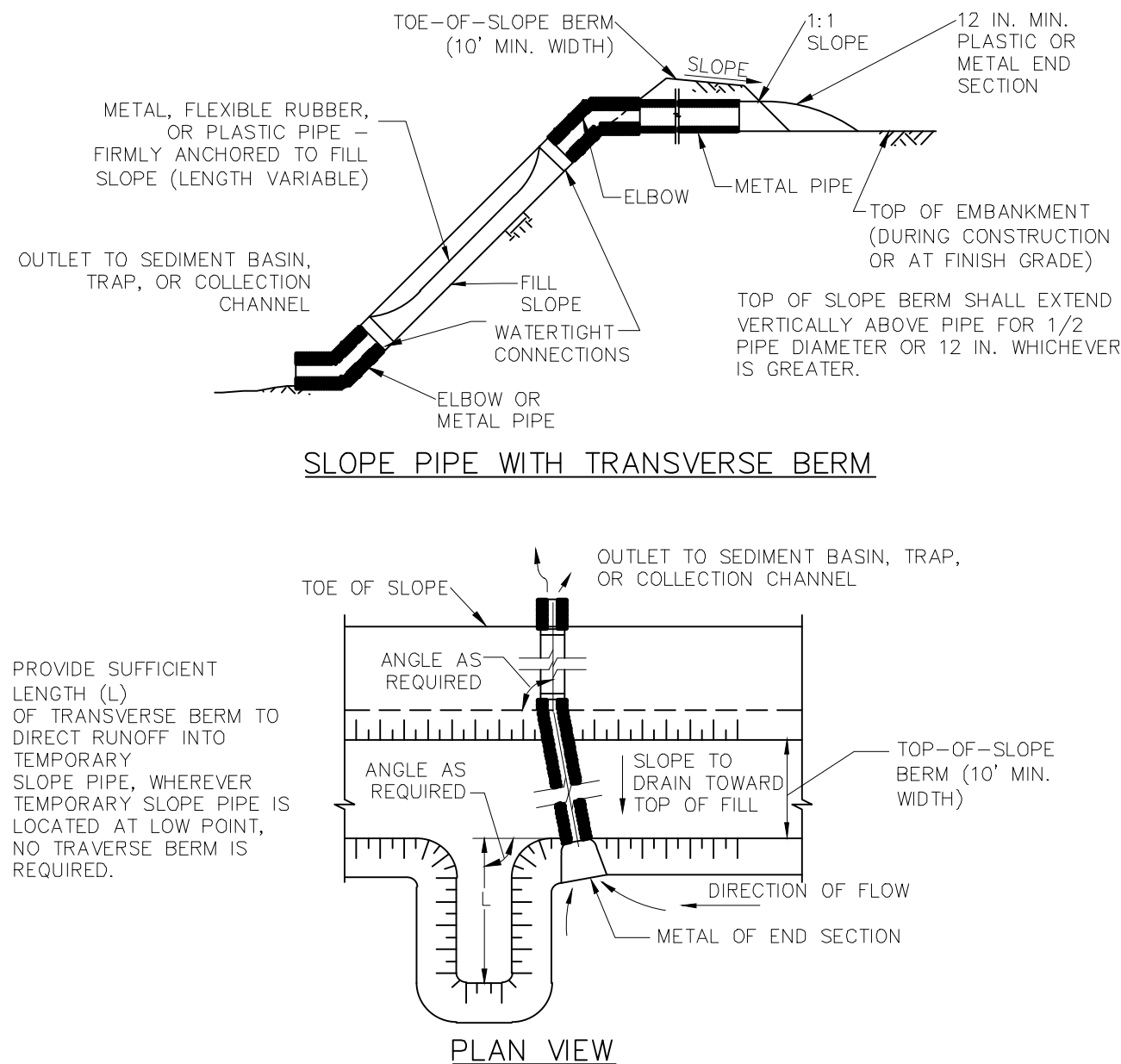


OUTLET NO.	PIPE DIA Pd (IN)	RIPRAP			APRON				SIDE SLOPES H:V
		SIZE R--	THICK. Rt (IN)	LENGTH Lc (FT)	INITIAL BOTTOM WIDTH (AT ENDWALL) (FT)	END WIDTH (FT)	INITIAL TOP WIDTH (AT ENDWALL) (FT)	END TOP WIDTH (FT)	
EW2	18	5	15	16	5	5	9	9	2:1

NOTES:  
ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.  
ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.

#### STANDARD CONSTRUCTION DETAIL #9-3 RIPRAP APRON AT PIPE OUTLET TO AN EXISTING CHANNEL

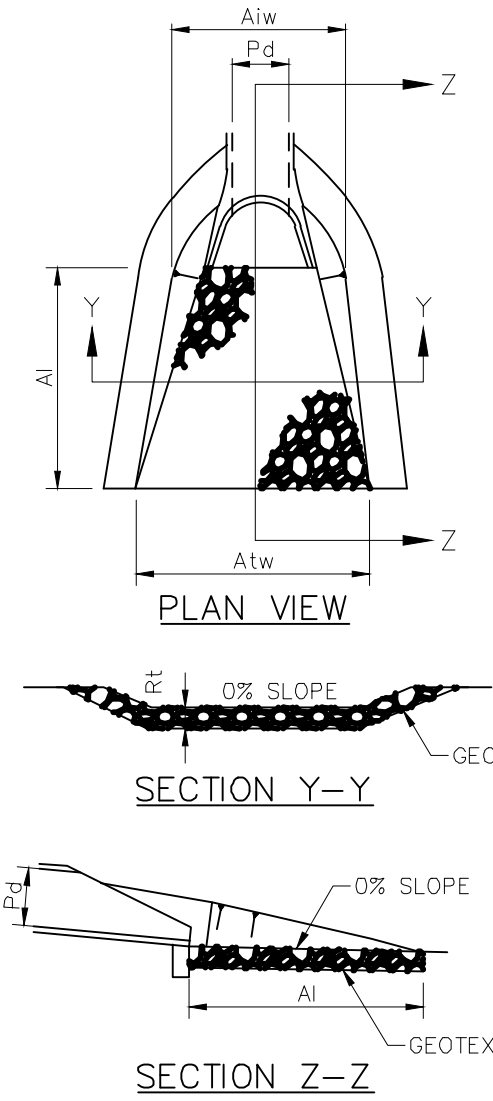
NOT TO SCALE



NOTES:  
THE MAXIMUM DISTANCE BETWEEN ANCHOR STAKES SHALL BE 10 FEET.  
TRANSVERSE BERM SHALL BE USED WHENEVER TEMPORARY SLOPE PIPE IS NOT LOCATED AT LOW POINT.  
SLOPE PIPES SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. ANY ACCUMULATED SEDIMENT SHALL BE REMOVED FROM THE INLET IMMEDIATELY.  
DAMAGED PIPE SECTIONS SHALL BE REPLACED WITHIN 24 HOURS. LEAKING CONNECTIONS SHALL BE REPAIRED IMMEDIATELY.

#### STANDARD CONSTRUCTION DETAIL #6-5 TEMPORARY SLOPE PIPE

NOT TO SCALE



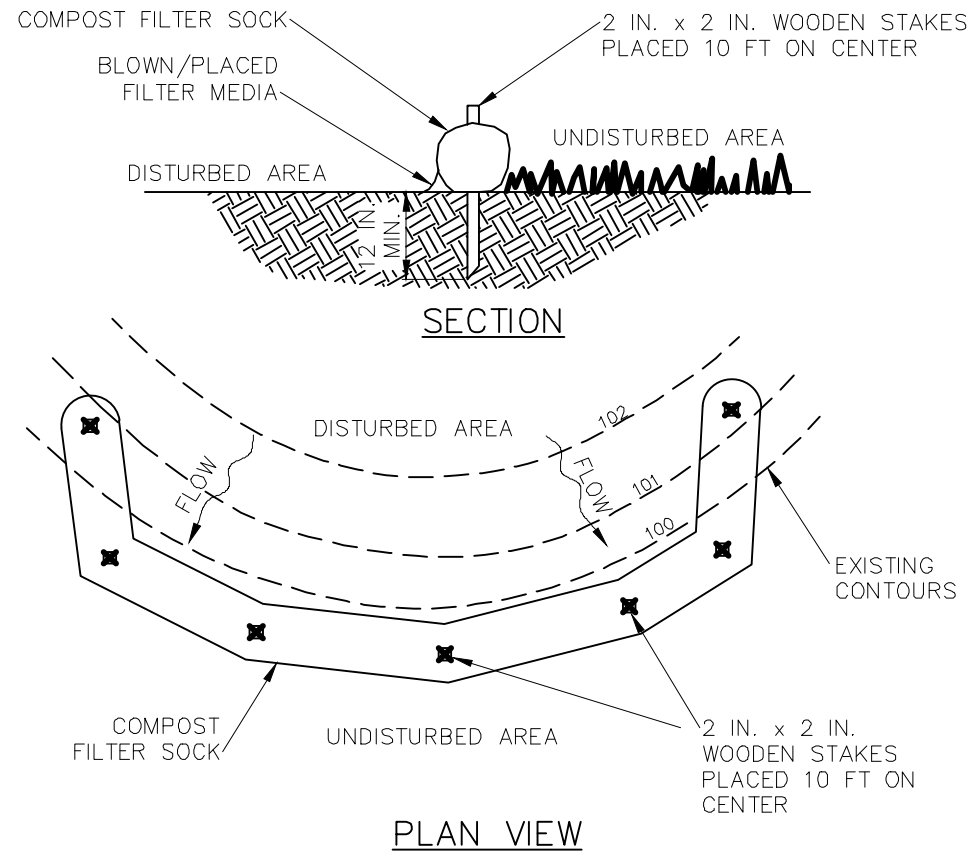
OUTLET NO.	PIPE DIA Pd (IN)	RIPRAP			APRON		TERMINAL WIDTH Aw (FT)
		SIZE R--	THICK. Rt (IN)	LENGTH Al (FT)	INITIAL WIDTH Aw (FT)	TERMINAL WIDTH Aw (FT)	
EW1	15	6	18	17	3.75	20.75	

NOTES:  
ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.  
ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.

#### STANDARD CONSTRUCTION DETAIL #9-1 RIPRAP APRON AT PIPE OUTLET WITH FLARED END SECTION OR ENDWALL

NOT TO SCALE

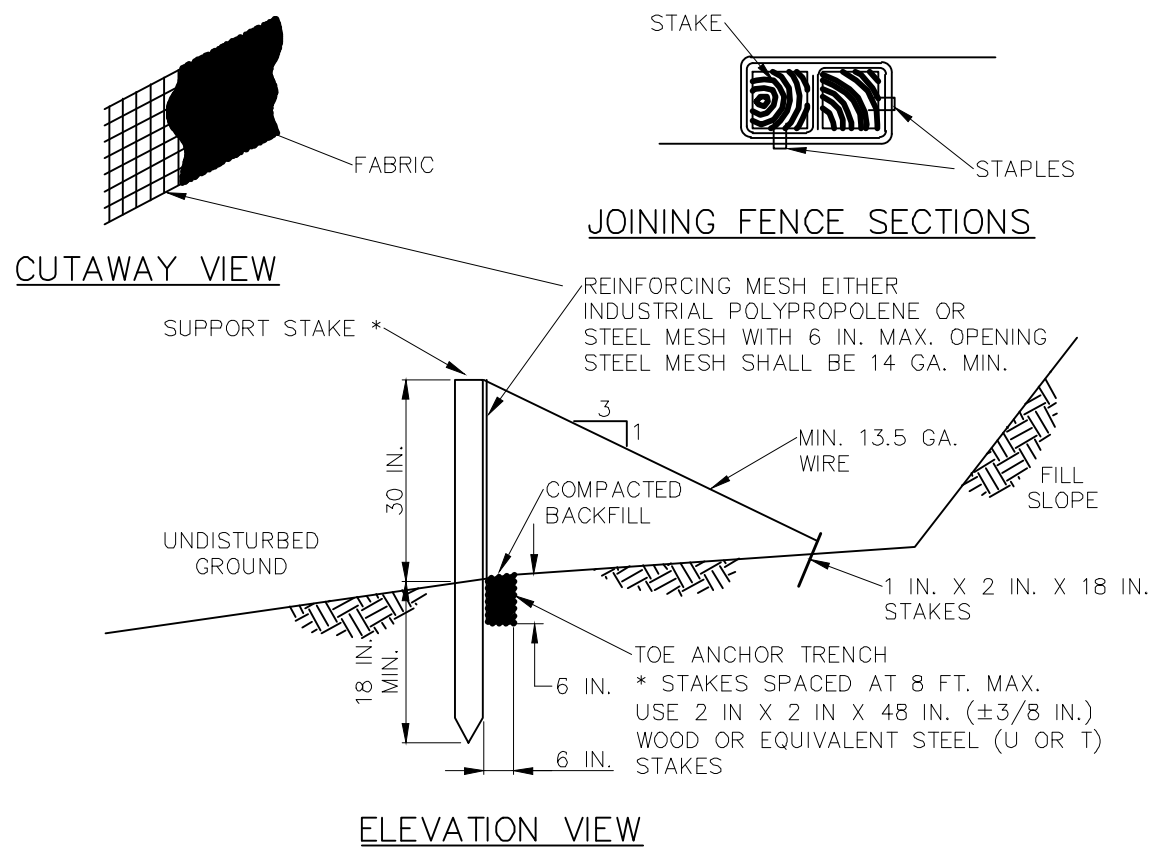
NO.	REVISION	DATE	BY	APP.
4.	FINAL PLAN - PHASE 1	2017-06-06	WJD	BOB
3.	PER MONTGOMERY COUNTY CONSERVATION DISTRICT 3/1/16, PENNDOT 12/5/16, GLMORE 12/6/16, MCMAHON 12/12/16, KMS DESIGN 12/8/16 REVIEW LETTERS.	1-12-17	JCE	BOB
2.	PER GLMOREASSOCIATES, INC 3/14/16, KMS DESIGN GROUP, LLC 3/16/16, MCMAHON ASSOCIATES, INC. 2/11/16 REVIEW LETTERS.	10-25-16	WJD	BOB
1.	PER GLMOREASSOCIATES, INC 6/5/2015, KMS DESIGN GROUP, LLC 6/4/2015, MCMAHON ASSOCIATES, INC. 6/5/2015, AND MONTGOMERY COUNTY PLANNING COMMISSION 6/30/2015 REVIEW LETTERS.	10-21-15	WJD	BOB



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

#### STANDARD CONSTRUCTION DETAIL #4-1 COMPOST FILTER SOCK

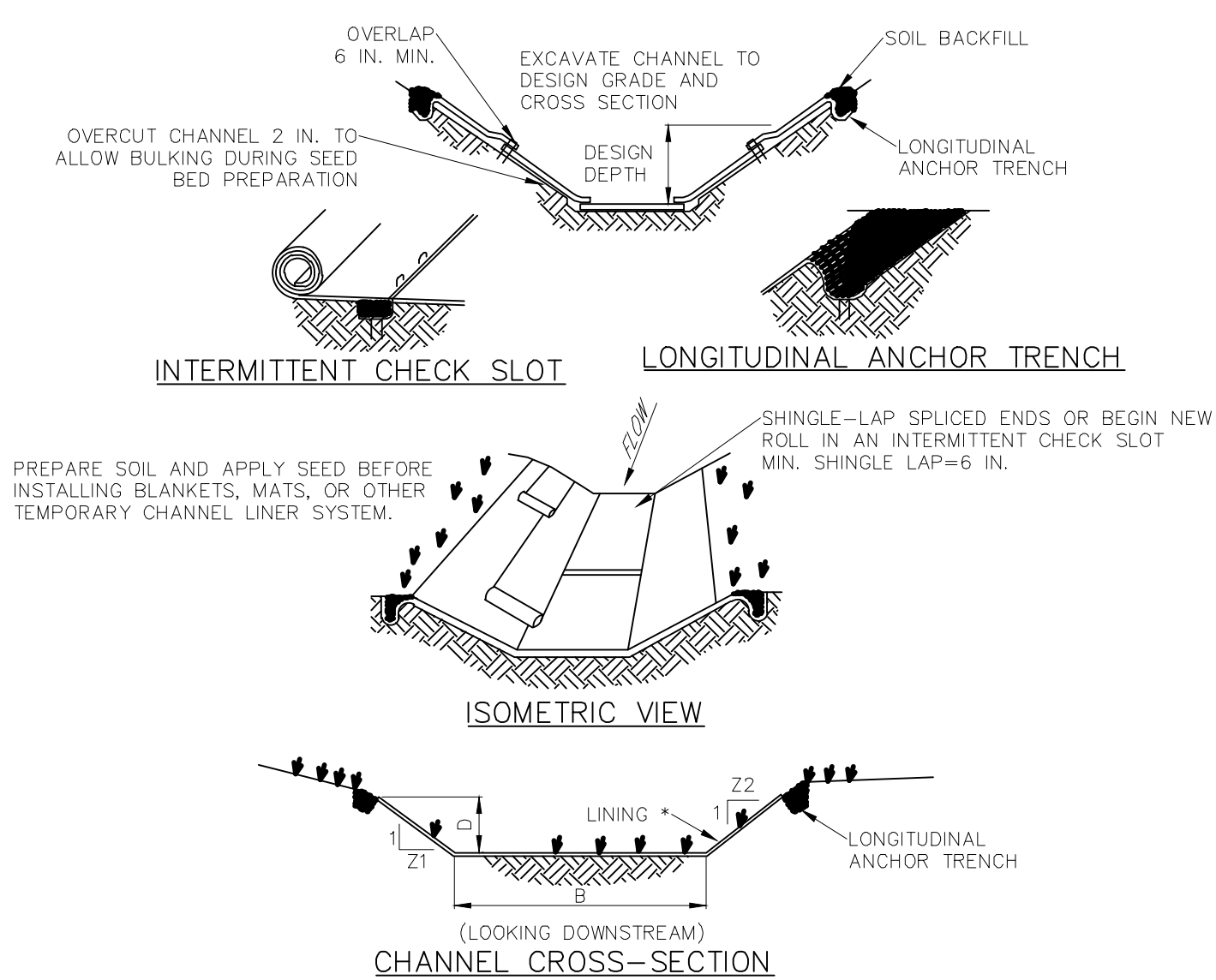
NOT TO SCALE



NOTES:  
FABRIC SHALL HAVE THE MINIMUM PROPERTIES AS SHOWN IN TABLE 4.3 OF THE PA DEP EROSION CONTROL MANUAL. FABRIC WIDTH SHALL BE 42 IN. MINIMUM. STAKES SHALL BE HARDWOOD OR EQUIVALENT STEEL (U OR T) STAKES. AN 18 IN. SUPPORT STAKE SHALL BE DRIVEN 12 IN. MINIMUM INTO UNDISTURBED GROUND.  
SILT FENCE SHALL BE PLACED AT LEVEL EXISTING GRADE. BOTH ENDS OF THE FENCE SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT.  
SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH HALF THE ABOVE GROUND HEIGHT OF THE FENCE.  
ANY SECTION OF SILT FENCE WHICH HAS BEEN UNDERMINED OR TOPPED SHALL BE IMMEDIATELY REPLACED WITH A ROCK FILTER OUTLET (STANDARD CONSTRUCTION DETAIL # 4-6).  
FENCE SHALL BE REMOVED AND PROPERLY DISPOSED OF WHEN TRIBUTARY AREA IS PERMANENTLY STABILIZED.

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

NOT TO SCALE



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

CHANNEL NO.	STATIONS	BOTTOM WIDTH B (FT)	DEPTH D (FT)	TOP WIDTH W (FT)	Z1 (FT)	Z2 (FT)	LINING *
1	ALL	2	0.7	37	25	25	ECS-1
2	ALL	2	0.8	6.8	3	3	ECS-1
3	ALL	2	0.8	6.8	3	3	ECS-1
4	ALL	1.5	0.8	6.8	3	3	ECS-1

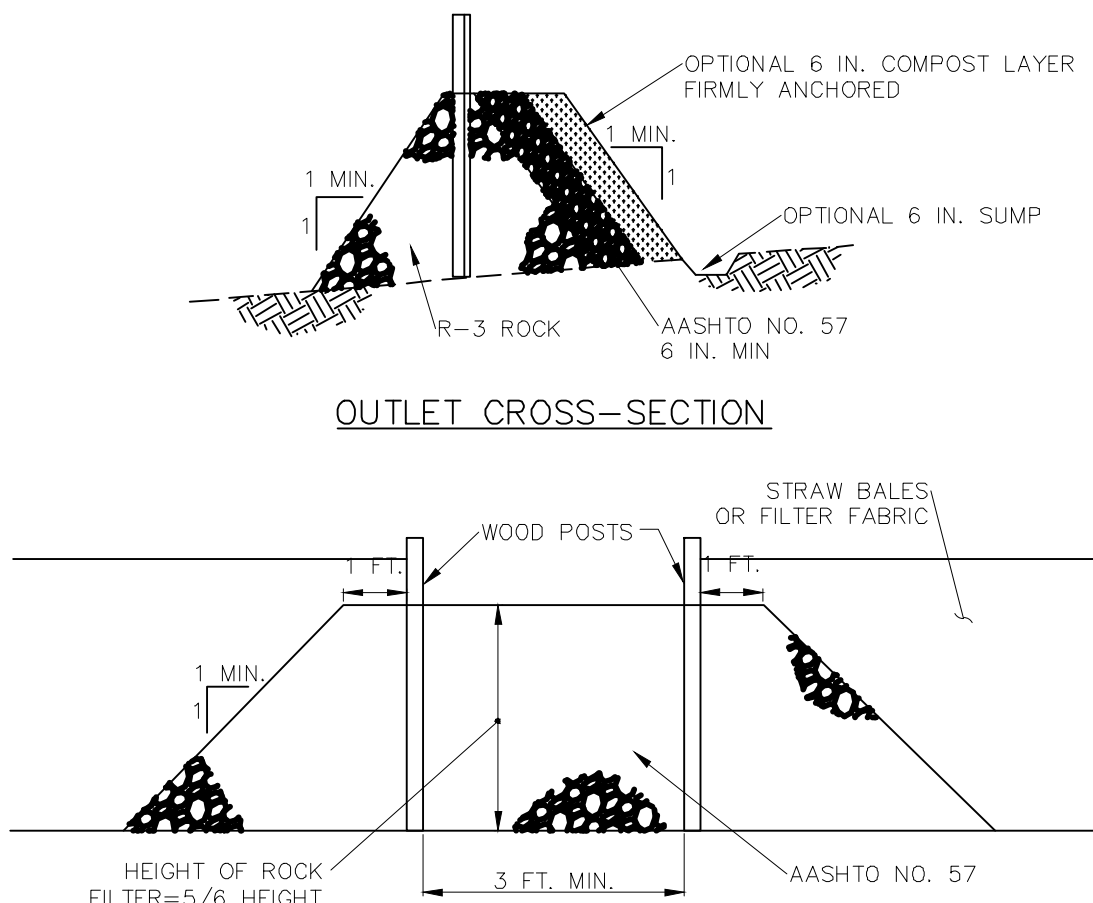
NOTES:  
ANCHOR TRENCHES SHALL BE INSTALLED AT BEGINNING AND END OF CHANNEL IN THE SAME MANNER AS LONGITUDINAL ANCHOR TRENCHES.

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

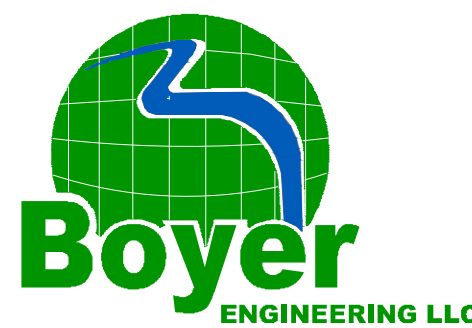


NOTES:  
A ROCK FILTER OUTLET SHALL BE INSTALLED WHERE FAILURE OF A SILT FENCE OR STRAW BALE BARRIER HAS OCCURRED DUE TO CONCENTRATED FLOW. ANCHORED COMPOST LAYER SHALL BE USED ON UPSLOPE FACE IN HQ AND EV WATERSHEDS.  
SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH 1/3 THE HEIGHT OF THE OUTLET.

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

NOT TO SCALE

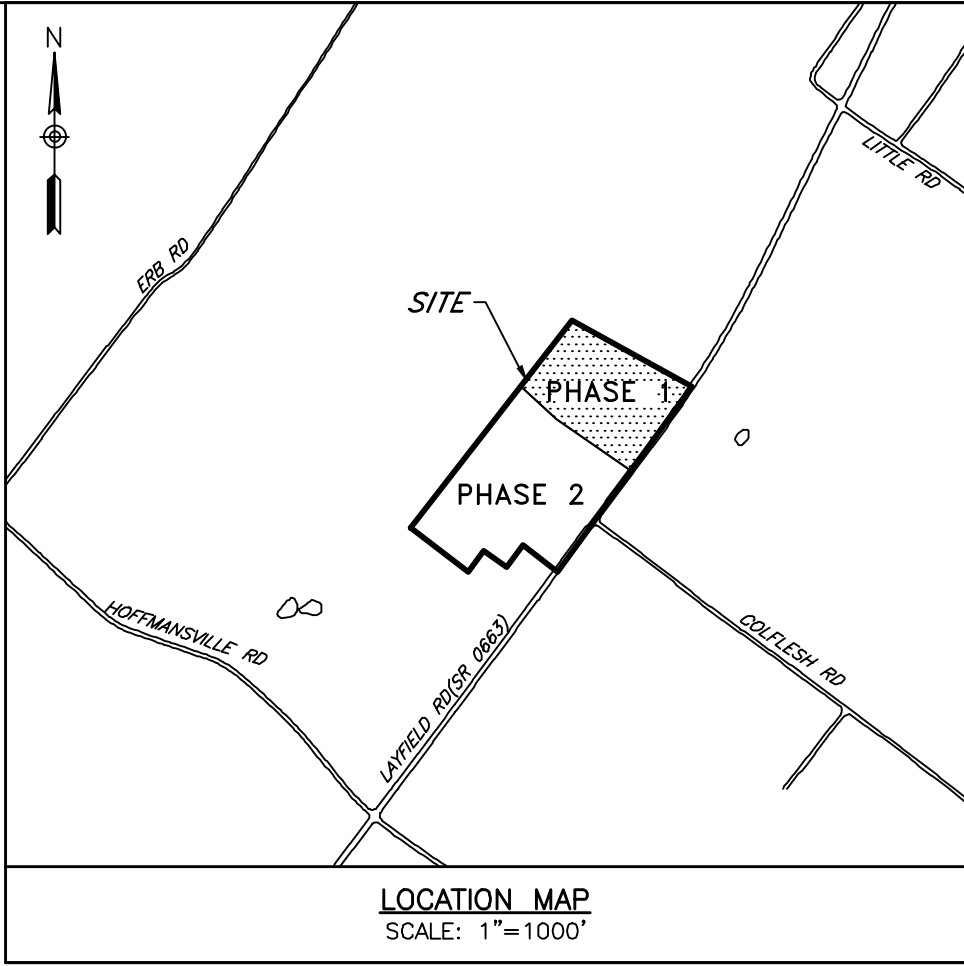
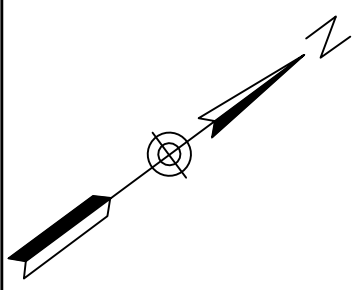
CLIENT		SUBJECT	
FDEV LLC 1150 FIRST AVE STE 920 KING OF PRUSSIA, PA 19406		EROSION CONTROL DETAILS	
		FDEV SUBDIVISION	
		NEW HANOVER TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA	
		PROJECT NO. 14-146	
		DWG. NO. ES414146	
		SHEET NO. 10 OF 13	
		1860 WEAVERTOWN ROAD, SUITE 100 DOUGLASSVILLE, PA 19518 PHONE: 610-689-8021 FAX: 610-689-4538	
		DESIGN BOB	CHKD. BY
		DRAWN BY WJD	CHKD. BY
		DATE 10/29/15	SCALE 1"=60'











LEGEND  
EX. BOUNDARY



P:\PROJECTS\14-146 Sewer Property\dwg\FPI14146 - PHASE 1.dwg, 2017-06-08 1:38:48 PM

NO.	REVISION	DATE	BY	APP.
4.	FINAL PLAN - PHASE 1	2017-06-06	WJD	BOB
3.	PER MONTGOMERY COUNTY CONSERVATION DISTRICT 3/1/16, PENNDOT 12/5/16, GILMORE 12/6/16, MCMAHON 12/12/16, KMS DESIGN 12/9/16 REVIEW LETTERS	1-12-17	JCE	BOB
2.	PER GILMORE ASSOCIATES, INC. 3/14/16, KMS DESIGN GROUP, LLC 3/16/16, MCMAHON ASSOCIATES, INC. 2/11/16 REVIEW LETTERS.	10-25-16	WJD	BOB
1.	PER GILMORE ASSOCIATES, INC. 6/5/2015, KMS DESIGN GROUP, LLC 6/4/2015, MCMAHON ASSOCIATES, INC. 6/3/2015, AND MONTGOMERY COUNTY PLANNING COMMISSION 6/30/2015 REVIEW LETTERS.	10-21-15	WJD	BOB

SEAL

SEAL



FDEV LLC  
1150 FIRST AVE STE 920  
KING OF PRUSSIA, PA  
19406

AERIAL PLAN

FDEV SUBDIVISION

NEW HANOVER TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA

1860 WEAVERTOWN ROAD, SUITE 100  
DOUGLASSVILLE, PA 19518  
PHONE: 610-689-8021  
FAX: 610-689-4538

PROJECT NO.

14-146

DWG. NO.

AP114146

SHEET NO.

12 OF 13

DESIGN

BOB

CHKD. BY

DRAWN BY

WJD

CHKD. BY

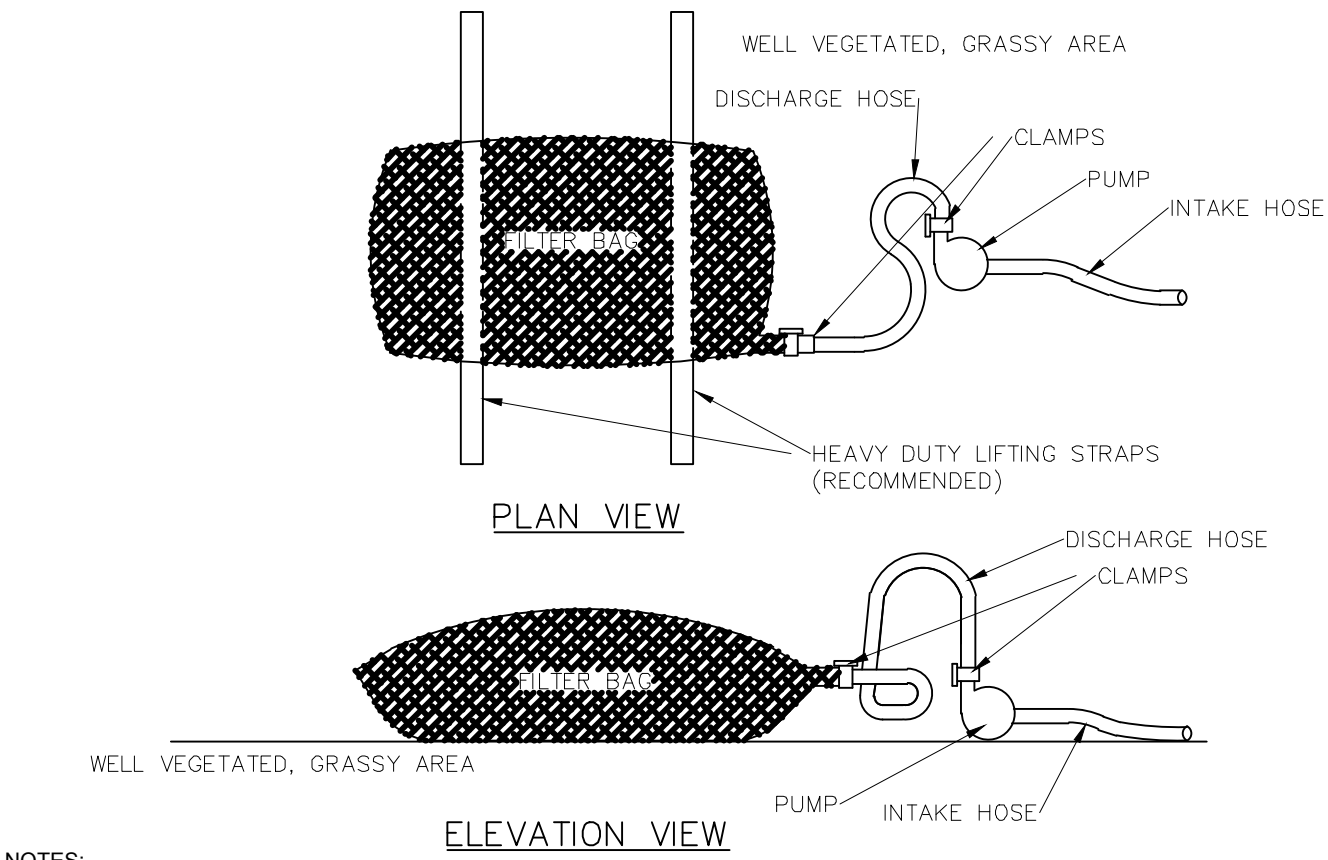
DATE

4/22/15

SCALE

1"=60'





#### 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.

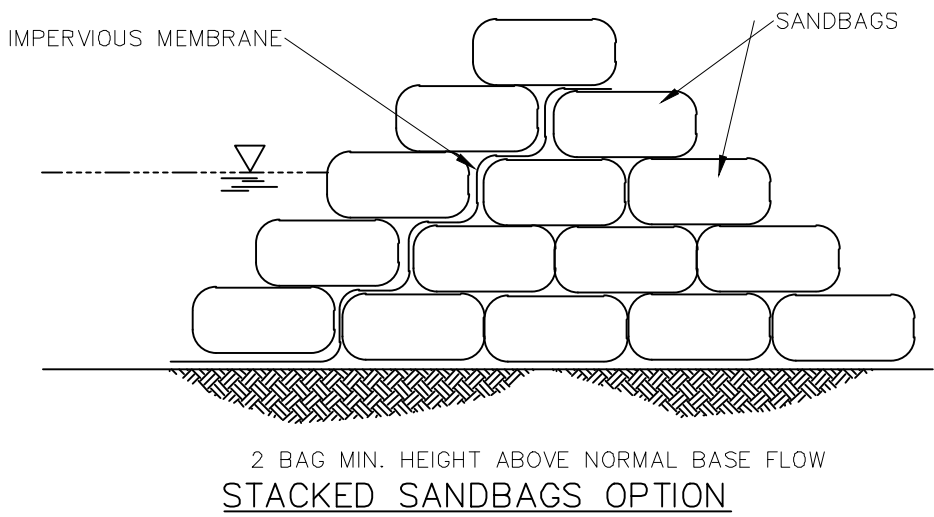
THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

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.

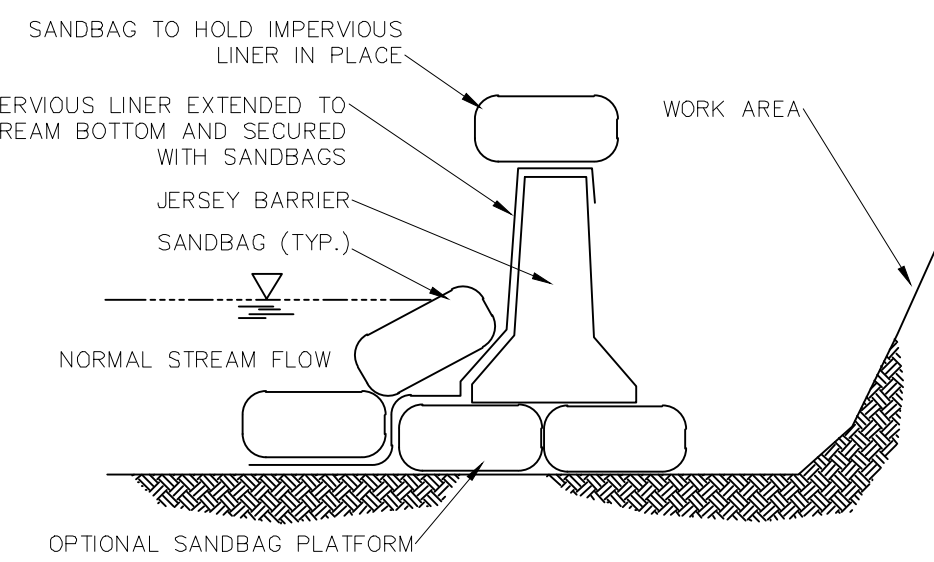
FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

#### STANDARD CONSTRUCTION DETAIL #3-16 PUMPED WATER FILTER BAG

NOT TO SCALE



#### STACKED SANDBAGS OPTION



#### JERSEY BARRIER OPTION

#### STANDARD CONSTRUCTION DETAIL #3-15 SANDBAG DIVERSION DAM OR COFFERDAM

NOT TO SCALE

#### NOTES:

GRUBBING SHALL NOT TAKE PLACE WITHIN 50 FEET OF TOP-OF-BANK UNTIL ALL MATERIALS REQUIRED TO COMPLETE CROSSING ARE ON SITE AND PIPE IS READY FOR INSTALLATION.

BYPASS PUMP INTAKE SHALL BE MAINTAINED A SUFFICIENT DISTANCE FROM THE BOTTOM TO PREVENT PUMPING OF CHANNEL BOTTOM MATERIALS.

TRENCH PLUGS SHALL BE INSTALLED WITHIN THE TRENCH ON BOTH SIDES OF THE STREAM CHANNEL (STANDARD CONSTRUCTION DETAIL #13-4).

WATER ACCUMULATING WITHIN THE WORK AREA SHALL BE PUMPED TO A PUMPED WATER FILTER BAG OR SEDIMENT TRAP PRIOR TO DISCHARGING INTO ANY SURFACE WATER.

HAZARDOUS OR POLLUTANT MATERIAL STORAGE AREAS SHALL BE LOCATED AT LEAST 100 FEET BACK FROM THE TOP OF STREAMBANK.

ALL EXCESS EXCAVATED MATERIAL SHALL BE IMMEDIATELY REMOVED FROM THE STREAM CROSSING AREA.

ALL DISTURBED AREAS WITHIN 50 FEET OF TOP-OF-BANK SHALL BE BLANKETED OR MATTED WITHIN 24 HOURS OF INITIAL DISTURBANCE FOR MINOR STREAMS OR 48 HOURS OF INITIAL DISTURBANCE FOR MAJOR STREAMS UNLESS OTHERWISE AUTHORIZED.

APPROPRIATE STREAMBANK PROTECTION SHALL BE PROVIDED WITHIN THE CHANNEL.

#### STANDARD CONSTRUCTION DETAIL #13-2 TYPICAL UTILITY LINE STREAM CROSSING WITH PUMP BYPASS

NOT TO SCALE

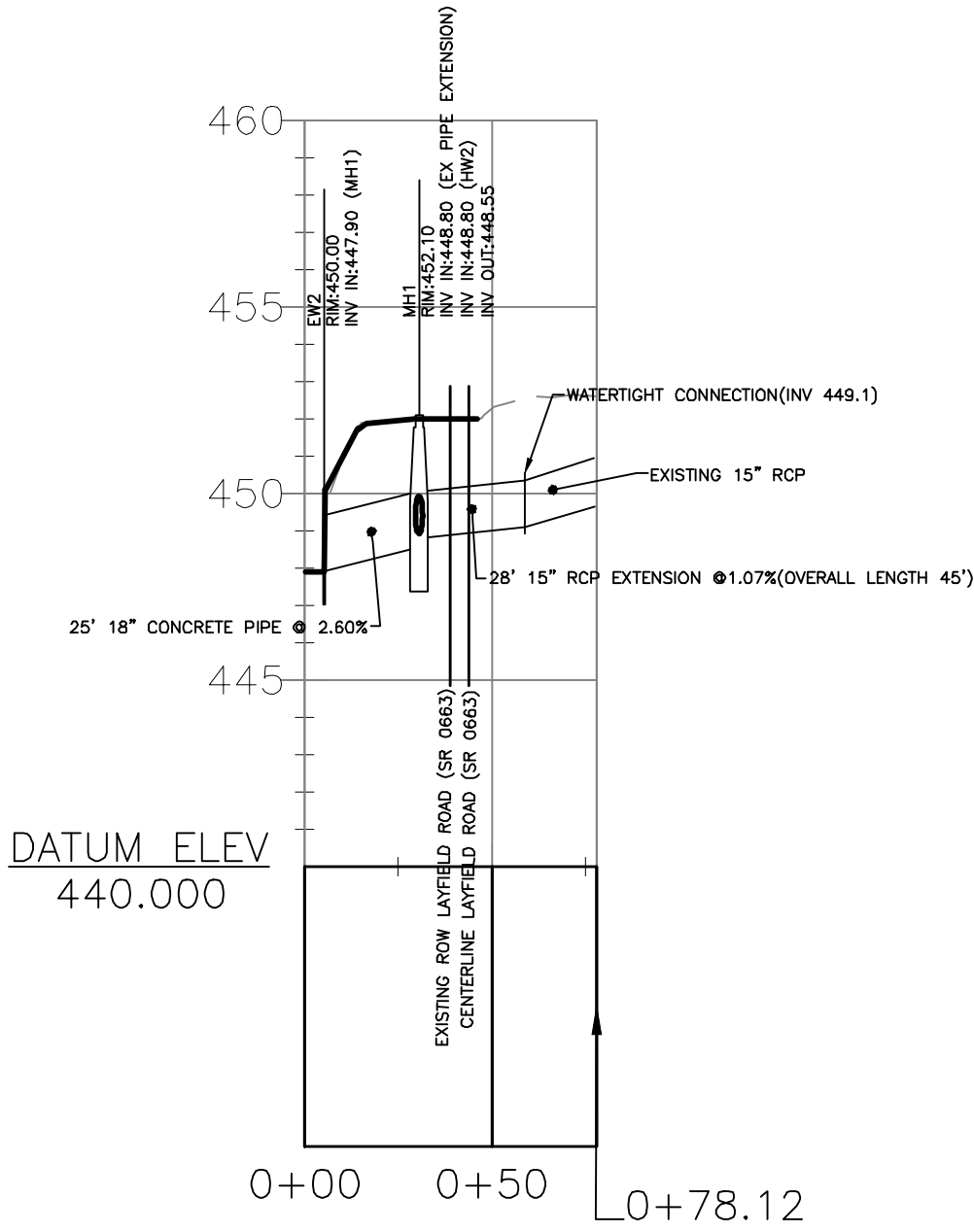
#### STABLE SIDE SLOPES.

- SPACING OF CULVERTS SHALL BE A MINIMUM OF TEN (10) FEET ON CENTER.
- DEPTH OF FILL COVERING CULVERTS SHALL NOT EXCEED TWELVE (12) INCHES.
- CROSSINGS OF WETLANDS SHALL BE AVOIDED IF AN ALTERNATE LOCATION IS POSSIBLE. IF THE CROSSING OF WETLANDS CANNOT BE AVOIDED, THE CROSSING MUST BE UNDERTAKEN AT THE NARROWEST POINT OF THE WETLANDS AND SHALL NOT EXCEED 100 FEET IN LENGTH AND 0.1 ACRE OF DISTURBANCE.
- THE TOTAL WETLAND IMPACT FOR ALL MINOR ROAD CROSSINGS INSTALLED BY AN OWNER ON AN INDIVIDUAL PROPERTY OR PROJECT INCLUDING PHASED PROJECTS SHALL NOT EXCEED 0.25 ACRE. A PROJECT SHALL INCLUDE THE AGGREGATE OF ALL STAGES OF DEVELOPMENT AND ALL PARCELS WITHIN A SUBDIVISION PLAN, WHICH ARE UNDER CONTROL OF THE REGISTRANT.
- ALL WETLANDS IMPACTED THROUGH THE USE OF A GENERAL PERMIT MUST BE REPLACED ADJACENT TO OR IN THE IMMEDIATE PROXIMITY OF THE MINOR ROAD CROSSING AND AT A RATIO OF 1:1 FOR FUNCTION, VALUE, OR AREAL EXTENT (ACREAGE).
- THE USE OF THIS GENERAL PERMIT SHALL NOT PREJUDICE ANY FUTURE DEPARTMENTAL DECISIONS RELATED TO REGULATED ACTIVITIES ON THIS PROPERTY.
- ANY ARCHAEOLOGICAL ARTIFACTS DISCOVERED DURING THE PERFORMANCE OF WORK AUTHORIZED UNDER THIS GENERAL PERMIT MUST BE ADEQUATELY PROTECTED AND THEIR DISCOVERY PROMPTLY REPORTED TO THE BUREAU FOR HISTORIC PRESERVATION, PENNSYLVANIA HISTORIC AND MUSEUM COMMISSION, 400 MARKET STREET, SECOND FLOOR, HARRISBURG, PA 17120-0053, TELEPHONE (717)783-8946.
- OWNER SHALL INVESTIGATE FOR DRINKING WATER INTAKES OR RESERVOIRS FOR PUBLIC WATER SUPPLIES AND PERMITTED PUBLIC BATHING BEACHES WITHIN FIVE (5) MILES DOWNSTREAM OF THE SITE OF THE MINOR ROAD CROSSING. WRITTEN NOTICES SHALL BE GIVEN TO OPERATORS OF INTAKES OR RESERVOIRS, OR PUBLIC BATHING BEACHES AT LEAST TEN (10) DAYS PRIOR TO CONSTRUCTION OF THE MINOR ROAD CROSSING. OWNER MUST NOTIFY OPERATORS IMMEDIATELY AND NO LONGER THAN ONE (1) HOUR AFTER AN OCCURRENCE AT THE CROSSING SITE WHICH RESULTS IN THE RELEASE OF SUSPENDED SOLIDS AND TURBIDITY TO THE STREAM.
- THE OWNER SHALL REMOVE ALL OR ANY PORTION OF THE MINOR ROAD CROSSING UPON WRITTEN NOTIFICATION TO THE OWNER BY THE DEPARTMENT IN THE EVENT THE PROJECT IS CAUSING AN ADVERSE IMPACT ON PUBLIC HEALTH, SAFETY OR THE ENVIRONMENT OR IN ANY OTHER MANNER VIOLATES THE CONDITIONS OF THIS GENERAL PERMIT OR CHAPTER 105.
- THE OWNER SHALL NOTIFY THE PENNSYLVANIA FISH AND BOAT COMMISSION'S REGIONAL FIELD OFFICE MANAGER RESPONSIBLE FOR BERKS COUNTY TEN (10) DAYS PRIOR TO THE START OF CONSTRUCTION. WRITTEN NOTIFICATION IS SUGGESTED. THE PROJECT SITE SHALL AT ALL TIMES BE AVAILABLE FOR INSPECTION BY AUTHORIZED OFFICERS AND EMPLOYEES OF THE PENNSYLVANIA FISH AND BOAT COMMISSION.
- WORK MUST BE DONE IN COMPLIANCE WITH CHAPTER 102 OF THE DEPARTMENT'S RULES AND REGULATIONS RELATING TO EROSION CONTROL. THE PROJECT SITE SHALL AT ALL TIMES BE AVAILABLE FOR INSPECTION BY AUTHORIZED OFFICERS AND EMPLOYEES OF THE BERKS COUNTY CONSERVATION DISTRICT.

#### GENERAL PERMIT FOR UTILITY LINE/STREAM CROSSING (GP-5) NOTES

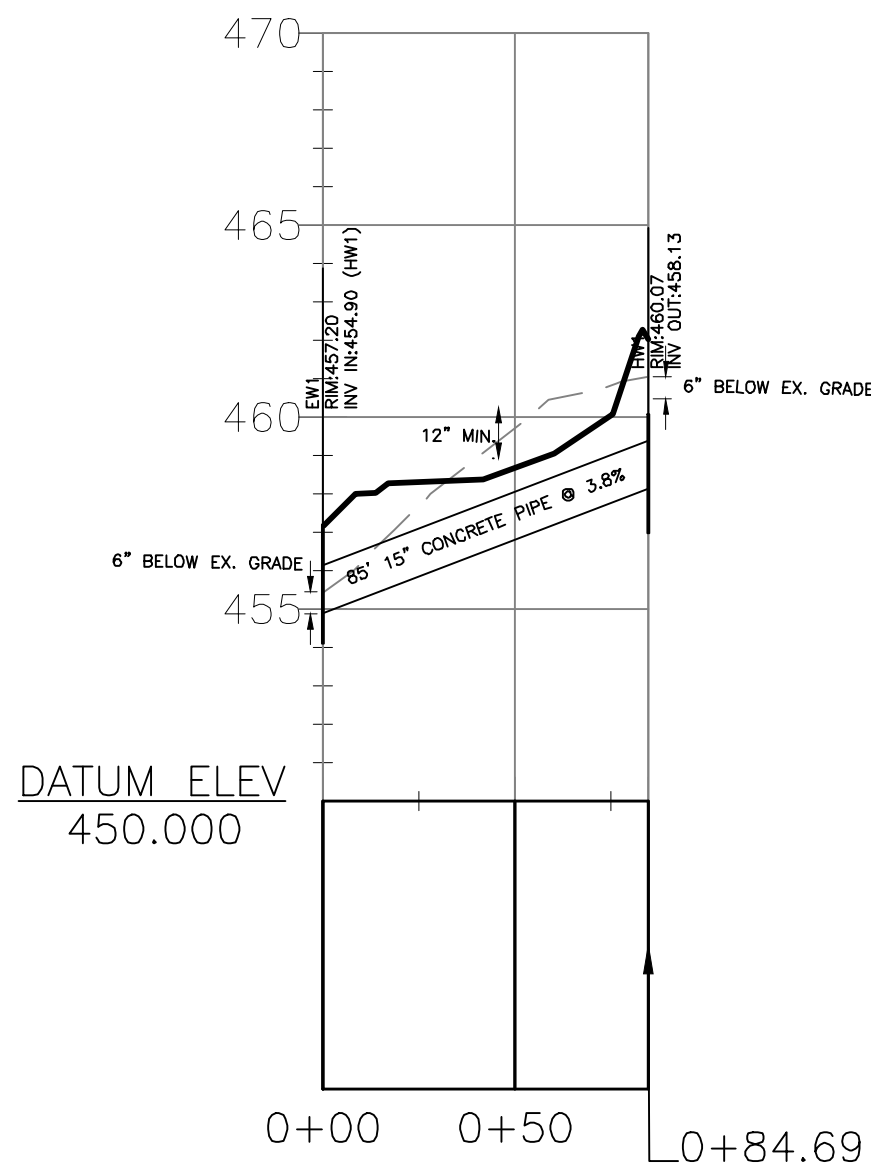
THE UTILITY LINE STREAM CROSSING SHALL COMPLY WITH THE FOLLOWING CONDITIONS:

- THE MAXIMUM SIZE UTILITY LINE ALLOWED IS 36 INCHES IN DIAMETER.
- ALL UTILITY LINES UNDER STREAMBEDS SHALL BE LOCATED SUCH THAT THERE WILL BE A MINIMUM OF THREE (3) FEET OF COVER BETWEEN THE TOP OF THE UTILITY LINE OR ENCASEMENT AND THE LOWEST POINT IN THE NATURAL CONTOUR OF THE STREAMBED, UNLESS THE UTILITY LINE IS IN ROCK, WHERE A MINIMUM COVER OF ONE (1) FOOT SHALL BE PROVIDED.
- TRENCHES EXCAVATED FOR THE INSTALLATION OF UTILITY LINES SHALL BE THE MINIMUM WIDTH NECESSARY. AS SOON AS THE UTILITY LINE IS INSTALLED AND TESTED TO ASCERTAIN NO LEAKAGE, APPROPRIATE NEW OR PREVIOUSLY EXCAVATED BACKFILL MATERIAL SHALL BE PLACED IN THE TRENCH PRIOR TO CONSTRUCTION OF THE CROSSING. OWNER MUST NOTIFY PUBLIC AND PRIVATE WATER SUPPLY OPERATORS IMMEDIATELY AND NO LONGER THAN ONE (1) HOUR AFTER AN OCCURRENCE AT THE CROSSING SITE WHICH RESULTS IN THE RELEASE OF SUSPENDED SOLIDS AND TURBIDITY TO THE STREAM.
- ADAPTED MEASURES SHALL BE USED TO PREVENT SEDIMENTATION FROM THE TRENCH FROM ENTERING THE STREAM.
- THE BACKFILLING OF THE TRENCH IN WHICH THE PIPE WILL BE LAID SHALL BE DONE SO AS TO ELIMINATE THE FORMATION OF A PERMANENT RIDGE IN THE STREAMBED.
- DURING CONSTRUCTION ACTIVITIES, ALL PUBLIC AND PRIVATE PROPERTY INCLUDING EXISTING VEGETATION, LANDSCAPE FEATURES, AND MONUMENTS WITHIN, ALONG, AND ADJACENT TO THE WORK AREA, SHALL BE PROTECTED AND PRESERVED TO THE MAXIMUM DEGREE POSSIBLE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, PRECAUTIONS TAKEN TO MINIMIZE DAMAGE, EROSION, INJURY, OR DESTRUCTION; PREVENT PROTECTION OF ALL TREES AND OTHER WOODY PLANTS; SPECIAL CARE BEING TAKEN TO PROTECT THE NATURAL VEGETATION AND SURROUNDINGS TO INCLUDE ALL NATURAL DRAINAGEWAYS, PONDS, LAKES, SWAMPS, WOODS AND FIELDS; AND STORAGE OF MATERIALS IN SUCH MANNER TO PREVENT LEACHING WHICH WOULD BE INJURIOUS TO SOILS AND TO PLANTS. PRECAUTIONS SHOULD BE TAKEN TO PREVENT DAMAGE TO PIPES, CONDUITS, AND OTHER UNDERGROUND UTILITIES.
- ANY ARCHAEOLOGICAL ARTIFACTS DISCOVERED DURING THE PERFORMANCE OF WORK AUTHORIZED UNDER THIS GENERAL PERMIT MUST BE ADEQUATELY PROTECTED AND THEIR DISCOVERY PROMPTLY REPORTED TO THE BUREAU FOR HISTORIC PRESERVATION, PENNSYLVANIA HISTORIC AND MUSEUM COMMISSION, 400 MARKET STREET, SECOND FLOOR, HARRISBURG, PA 17120-0053, TELEPHONE (717)783-8946.
- OWNER SHALL INVESTIGATE FOR DRINKING WATER INTAKES OR RESERVOIRS FOR PUBLIC WATER SUPPLIES WITHIN FIVE (5) MILES DOWNSTREAM OF THE UTILITY CROSSING. WRITTEN NOTICES SHALL BE GIVEN TO OPERATORS OF ANY SUCH INTAKES OR RESERVOIRS AT LEAST TEN (10) DAYS PRIOR TO CONSTRUCTION OF THE CROSSING. OWNER MUST NOTIFY PUBLIC AND PRIVATE WATER SUPPLY OPERATORS IMMEDIATELY AND NO LONGER THAN ONE (1) HOUR AFTER AN OCCURRENCE AT THE CROSSING SITE WHICH RESULTS IN THE RELEASE OF SUSPENDED SOLIDS AND TURBIDITY TO THE STREAM.
- WAYS, PADS, AND OTHER SIMILAR DEVICES SHALL BE USED WHERE CROSSINGS OF WETLANDS ARE BY CONSTRUCTION EQUIPMENT CANNOT BE AVOIDED. ORIGINAL GRADES THROUGH WETLANDS MUST BE RESTORED AFTER TRENCHING AND BACKFILLING. ANY EXCESS FILL MATERIAL MUST BE REMOVED FROM THE WETLANDS AND NOT RESPADES ON-SITE. MOUNDING OF FILL MATERIAL TO ALLOW FOR SETTLEMENT IN THE TRENCH WILL BE PERMITTED IN ACCORDANCE WITH THE BEST CONSTRUCTION METHODS.
- DEPOSITION OF DREDGED OR EXCAVATED MATERIALS AND ALL EARTHWORK OPERATIONS WILL BE CARRIED OUT IN SUCH A WAY AS TO MINIMIZE EROSION OF THE MATERIAL AND PRECLUDE ITS ENTERING INTO ANY WETLAND ADJACENT TO THE UTILITY CROSSING.
- UTILITY LINE CROSSINGS OF STREAMS SHOULD BE ACCOMPLISHED SO THAT THE LINE IS AT A RIGHT ANGLE TO THE STREAM WHERE POSSIBLE.
- WHENEVER POSSIBLE, IN ACCORDANCE WITH THE BEST CONSTRUCTION METHODS UTILITY LINE CROSSINGS ARE TO BE MADE "IN THE DRY" BY INSTALLING SANDBAGS AND PIPING STREAM FLOW THROUGH THE AFFECTED AREA.
- PRIOR TO THE USE OF EXPLOSIVES IN A WATERCOURSE OR BODY OF WATER THE PERMITTEE SHALL SECURE A WRITTEN PERMIT FROM THE FISH AND BOAT COMMISSION UNDER PENNSYLVANIA FISH AND BOAT CODE PA C.S. §2906 (RELATING TO PERMITS FOR USE OF EXPLOSIVES). REQUESTS SHOULD BE DIRECTED TO THE FISH AND BOAT COMMISSION, DIVISION OF ENVIRONMENTAL SERVICES (SEE EXHIBIT A).
- AS A CONDITION OF USE OF THIS GENERAL PERMIT, AND OF THE OWNER'S AUTHORITY TO CONDUCT THE ACTIVITIES AUTHORIZED BY THIS GENERAL PERMIT, THE OWNER HEREBY AUTHORIZES AND CONSENTS TO THE DEPARTMENT, WITHOUT ADVANCE NOTICE OR A SEARCH WARRANT, AT ANY REASONABLE TIME AND UPON PRESENTATION OF APPROPRIATE CREDENTIALS, AND WITHOUT DELAY, TO HAVE ACCESS TO AND TO INSPECT ALL AREAS WHERE THE PROJECT IS BEING CONSTRUCTED, OPERATED OR MAINTAINED. THE AUTHORIZATION AND CONSENT SHALL INCLUDE CONSENT



#### PROFILE: EX PIPE TO EW2

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



#### PROFILE: EW1-HW1

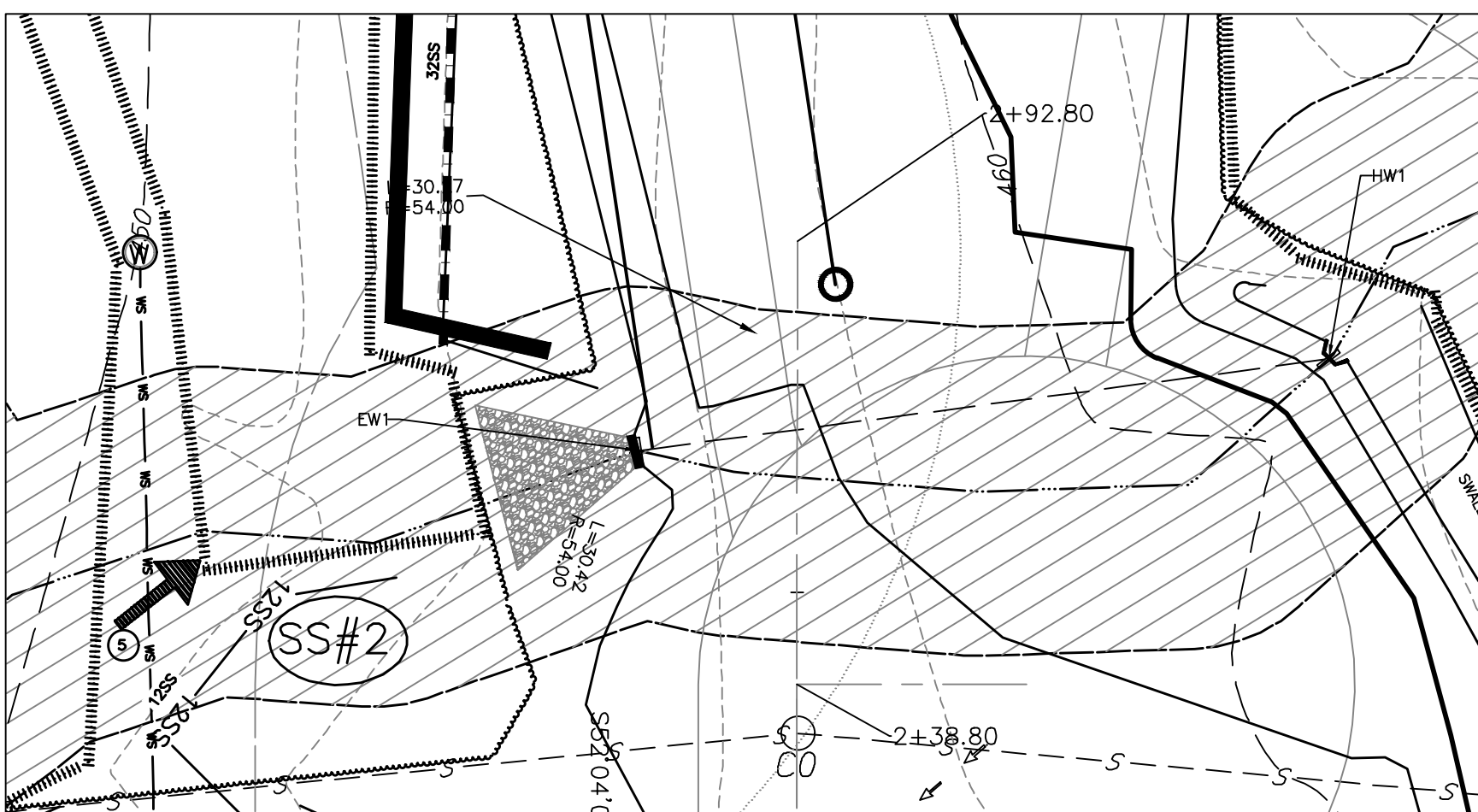
SCALE: 1" = 50' (HORIZ.) 1" = 5' (VERT.)

#### LEGEND

EX. RIGHT-OF-WAY	---
EX. SANITARY	---
PR. LOT LINE	---
EX. UTILITY POLE & GUY WIRE	---
EX. UNDERGROUND WIRE	---
EX. POST & RAIL FENCE	---
EX CONTOURS	---
PR CONTOURS	---
PR. WATER LATERAL	---
PR. STORM PIPE	---
PR. INFILTRATION BERM	---
PR. STORM HEADWALL/ENDWALL	---
PR. STORM INLET 2X4	---
PR. RIPRAP	---
APPROXIMATE LOCATION OF WATERS OF THE COMMONWEALTH	---
WETLANDS LIMIT	---
WETLANDS BUFFER	---
STREAM BUFFER	---
EXISTING AND PROPOSED WELLS	---
EXISTING WOODLINE	---
PROPOSED WOODLINE	---
LIMIT OF DISTURBANCE	---
DRAINAGE AREA	---
TEMP. GRADING	---
12" DIAM. SILT SOCK	---
18" DIAM. SILT SOCK	---
24" DIAM. SILT SOCK	---
32" DIAM. SILT SOCK	---
PROTECTION FENCE	---
TEMP. DIVERSION BERM	---
ROCK CONSTRUCTION ENTRANCE	---
CHANNEL LINING	---
SILT SOCK LABEL	---
TOPSOIL STOCKPILE	---

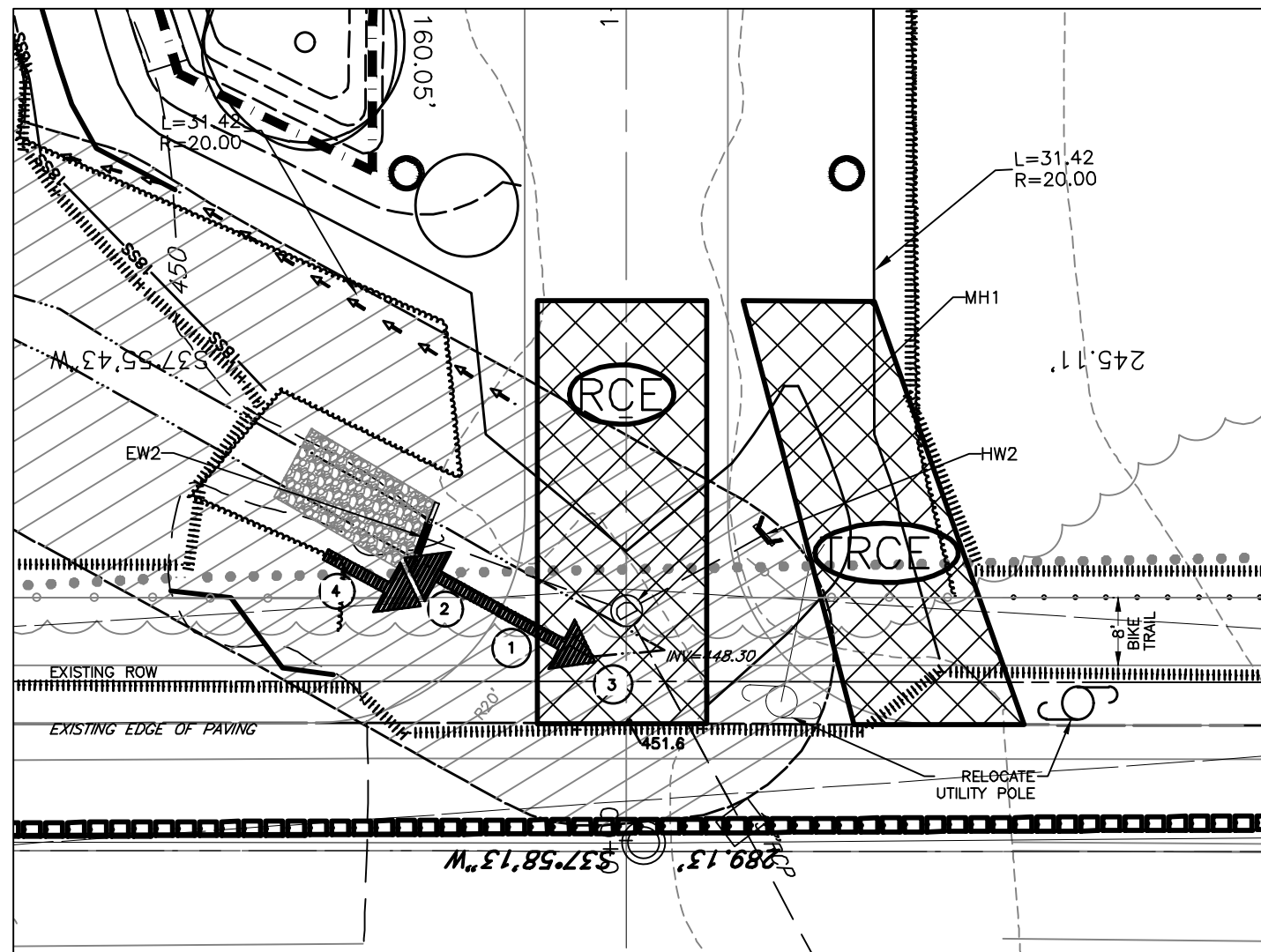
#### WATER SERVICE STREAM BUFFER CROSS SECTION

LOT 1  
SCALE: NTS



#### DETAIL OF GP5 & GP7.B

SCALE: 1"=20'



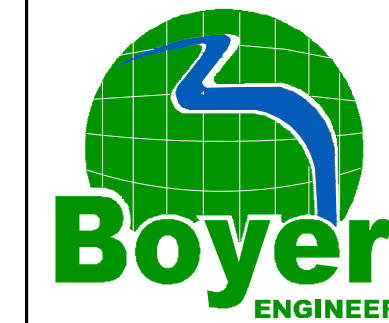
#### DETAIL OF GP7.A

SCALE: 1"=20'

#### GENERAL PERMIT FOR MINOR ROAD CROSSING (GP-7) NOTES

THE MINOR ROAD CROSSING SHALL COMPLY WITH THE FOLLOWING CONDITIONS:

- THE CONSTRUCTION OF A MINOR ROAD CROSSING SHALL BE COMPLETED WITHIN THREE (3) YEARS OF THE DATE OF THE DEPARTMENT'S ACKNOWLEDGEMENT LETTER. IF ALL CONSTRUCTION IS NOT COMPLETED WITHIN THIS TIME FRAME, THE OWNER SHALL REINSTATE ALL OF THE MINOR ROAD CROSSING AND RESTORE THE WATERCOURSE AND FLOODPLAIN TO THEIR FORMER CONDITIONS.
- MINOR ROAD CROSSINGS SHALL NOT CREATE OR CONSTITUTE A RISK OF LIFE, PROPERTY, OR THE ENVIRONMENT.
- NO FILL SHALL BE PLACED IN ANY FLOODWAY, WATERCOURSE, OR BODY OF WATER, INCLUDING APPROACHES TO THE MINOR ROAD CROSSING, EXCEPT AS SPECIFICALLY AUTHORIZED IN THIS GENERAL PERMIT.
- EACH MINOR ROAD CROSSING SHALL BE CONSTRUCTED IN SUCH A MANNER SO THAT THERE IS NO INTERFERENCE WITH THE MIGRATION OF FISH.
- THE CROSSING SHALL BE DESIGNED TO PREVENT THE RESTRICTION OF AND TO WITHSTAND EXPECTED HIGH FLOWS. CULVERT CROSSINGS SHALL HAVE A WATERWAY OPENING SUFFICIENT TO ADEQUATELY DISCHARGE, AT A MINIMUM, THE BANK-FULL FLOW OF THE WATERCOURSE OR STREAM. THE WATERWAY OPENING SHALL BE LARGE ENOUGH TO MINIMIZE AND CONFINE ANY BACKWATER TO THE OWNER'S PROPERTY.
- CULVERTS SHALL BE OF SUFFICIENT WIDTH AND SIZE SO AS NOT TO NARROW THE EXISTING STREAM CHANNEL.
- HEADWALLS, WINGWALLS, AND RIPRAP SHALL BE INSTALLED FOR BRIDGES AND CULVERTS AS REQUIRED TO PASS FLOOD FLOWS WITHOUT LOSS OF STABILITY.
- CULVERTS SHALL NOT INCREASE VELOCITY OR DIRECT FLOW SO AS TO RESULT IN EROSION OF STREAM BEDS AND BANKS.
- CULVERTS SHALL BE INSPECTED BY THE OWNER ON A REGULAR BASIS TO PROVIDE FOR CONTINUED OPERATION AND MAINTENANCE DURING THE LIFE OF THE STRUCTURE.
- APPROACHES TO CULVERTS SHALL BE CONSTRUCTED AT ORIGINAL GRADES WHERE POSSIBLE. WHERE NECESSARY, DEPTH OF FILL IN THE APPROACHES SHALL BE MINIMIZED TO ALLOW OVERFLOW OF THE ROADWAY DURING PERIODS OF HIGH WATER.
- CULVERTS INSTALLED IN STREAM CHANNELS SHALL BE ALIGNED WITH THE STREAM FLOW.
- CULVERTS SHALL BE INSTALLED WITH THE INVERT 6 INCHES BELOW NATURAL STREAM BED SO THAT THE GRADIENT OF THE INVERT SHALL NOT DEVIATE FROM THAT OF THE NATURAL STREAM BED.
- THE LENGTH OF THE CULVERTS INSTALLED SHALL BE ONLY THAT WHICH IS NECESSARY TO PROVIDE ADEQUATE ROAD WIDTH WITH



CLIENT		SUBJECT	
FDEV LLC 1150 FIRST AVE STE 920 KING OF PRUSSIA, PA 19406		CH. 105 GENERAL PERMIT SHEET  FDEV SUBDIVISION	
NEW HANOVER TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA		PROJECT NO.	14-146
1860 WEAVERSTOWN ROAD, SUITE 100 DOUGLASSVILLE, PA 19518 PHONE: 610-689-8021 FAX: 610-689-4538		DWG. NO.	GP114146
DESIGN	BOB	CHKD. BY	
DRAWN BY	WJD	CHKD. BY	
DATE	11/19/15	SCALE	1"=60'
		SHEET NO.	
		13 OF 13	

NO.	REVISION	DATE	BY	APP.
4.	FINAL PLAN - PHASE 1	2017-06-08	WJD	BOB
3.	PER MONTGOMERY COUNTY CONSERVATION DISTRICT 3/1/16, PENNDOT 12/5/16, GILMORE 12/6/16, MCMANION 12/12/16, KMS DESIGN 12/8/16 REVIEW LETTERS.	1-12-17	JCE	BOB
2.	PER GILMOREASSOCIATES, INC 3/14/16, KMS DESIGN GROUP, LLC 3/16/16, MCMANION ASSOCIATES, INC. 2/11/16 REVIEW LETTERS.	10-25-16	WJD	BOB
1.	PER GILMOREASSOCIATES, INC 6/5/2015, KMS DESIGN GROUP, LLC 6/4/2015, MCMANION ASSOCIATES, INC. 6/5/2015, AND MONTGOMERY COUNTY PLANNING COMMISSION 6/30/2015 REVIEW LETTERS.	10-21-15	WJD	BOB

SEAL	SEAL
------	------