Map Symbol AaB2	Soil Name Albrights channery loam, 3 to 8 percent slopes moderately eroded	Cutbanks Cave Concrete/ Steel	Droughty Easily Erodible	Depth to Saturated Hydric / Zone/ Hydric Seaonal High Water Table X X X	Low Strength / Landslide Prone X X X X	Poor Source of Topsoil Actio	2	Potential Sinkhole Ponding Wetness	Min. Depth to Bedrock
AbA AbB2 AcB	Albrights silt loam, 0 to 3 percent slopes Albrights silt loam 3 to 8 percent slopes moderately eroded Albrights very stony loam, 0 to 8 percent slopes Allenwood gravelly loam and silt loam, 3 to 8 percent slopes, moderately eroded	X     C/S       X     C/S       X     C/S       X     C/S       X     C/S       X     C/S	X X X X X X X X	X X X X X X X X	X     X     X       X     X     X       X     X     X       X     X     X       X     X     X       X     X     X       X     X     X       X     X     X	X     X       X     X       X     X       X     X       X     X       X     X       X     X			X X X X X
Ag AlB	Allenwood silt loam, 3 to 8 percent slopes Alluvial land Alton gravelly loam, 3 to 8 percent slopes Allenwood gravelly silty clay loam, 8 to 15 percent slopes, severely eroded	X     C/S       X     C/S       X     C       X     C/S	X	X X X	X X X X X X X X X	X X X X X X X X		X X	X X X
AnA AnB	Andover-Buchanan gravelly loams, 0 to 3 percent slopes, severely eroded Andover-Buchanan gravelly loams, 0 to 3 percent slopes Andover-Buchanan gravelly loams, 0 to 8 percent slopes, extremely stony	X     C/S       X     C/S       X     C/S       X     C/S	X X X X X X	X X X X X X X X	X     X     X       X     X     X       X     X     X       X     X     X       X     X     X	X     X       X     X       X     X       X     X		X X X X	X X X X
ArD AsA	Arnot-Rock outcrop complex, 0 to 8 percent slopes Arnot-Rock outcrop complex, 8 to 25 percent slopes Alvira and Shelmadine silt loams, 0 to 3 percent slopes	X     C       X     C       X     C/S       X     C	X X X X X X X X	X X	X X X X X X X X X X	X X X X X X X X		X	X X X
At AtB	Arnot-Rock outcrop complex, steep Atherton silt loam, gray subsoil variant Alvira and Shelmadine very stony silt loams, 0 to 8 percent slopes Bedington-Berks complex, 3 to 8 percent slopes	X     C       X     S       X     C/S       X     C	X X X X X X	X X X X X	X X X X X X X X X X X	X X X X X X X X		X X X X	X X X X
BkA BkB	Buchanan very stony loam, 8 to 25 percent slopes Berks-Weikert complex, 0 to 3 percent slopes Berks-Weikert complex, 3 to 8 percent slopes	X     C/S       X     C       X     C       X     C       X     C	X X X X X X X X X X	X X X X X	X X X X X X X X X X X	X X X X		X	X X X X
BkD BkF	Berks-Weikert complex, 8 to 15 percent slopes Berks-Weikert complex, 15 to 25 percent slopes Berks-Weikert complex, 25 to 60 percent slopes Braceville gravelly loam, 3 to 8 percent slopes	X C X C X C X C/S	X X X X X X X X X X	X X X X X	X     X       X     X       X     X       X     X       X     X	X X X X X X		X	X X X X
BtA BtB	Braceville gravelly loam, 8 to 15 percent slopes Brinkerton-Comly silt loams, 0 to 3 percent slopes Brinkerton-Comly silt loams, 3 to 8 percent slopes Buchanan gravelly loam, 3 to 8 percent slopes	X     C/S       X     C/S       X     C/S       X     C/S       X     C/S	X X X X X X X X X X	X X X X X X X X	X     X     X       X     X     X       X     X     X       X     X     X       X     X     X	X X X X X X X X	X X		X X X X
BvB	Buchanan gravelly loam, 0 to 8 percent slopes Califon loam, 3 to 8 percent slopes Califon loam, 0 to 8 percent slopes, extremely stony	X     C/S       X     C/S       X     C/S       X     C/S	X X 	X X X X X	X     X     X       X     X     X       X     X     X       X     X     X				X X X X
ChB	Cut and fill land Chenango gravelly loam, 3 to 8 percent slopes Chenango gravelly loam, 8 to 15 percent slopes Chippewa silt loam, 0 to 3 percent slopes	NO DATA NO DATA   X C   X C/S	NO DATA     NO DATA       X     X       X     X       X     X	NO DATA     NO DATA       X     X       X     X       X     X	NO DATA     NO DATA     NO DATA       X     X     X       X     X     X       X     X     X	NO DATA NO DA X X X X X X		NO DATA NO DATA NO DATA	NO DATA X X X
CIB CmB	Clarksburg silt loam, 3 to 8 percent slopes Clarksburg silt loam, 3 to 8 percent slopes Comly silt loam, 3 to 8 percent slopes	X     C/S       X     C/S       X     C/S	X X X X	X X X X X X X X	X X X X X X X X X	X X X X X X X X	X	X X X X	X
CoB CpA	Chippewa very stony silt loam, 0 to 8 percent slopes Cokesbury-Califon channery silt loams, 0 to 8 percent slopes, very stony Comly silt loam, 0 to 3 percent slopes	X C/S X X C/S	X X X X	X X X X X	X X X X X X X	X X X X	X	X	X X X
CrB CtA	Comly silt loam, 3 to 8 percent slopes Comly silt loam, 0 to 8 percent slopes, extremely stony Conotton gravelly loam, 0 to 3 percent slopes Delaware fine sandy loam, 0 to 3 percent slopes	X     C/S       X     C/S       X     C/S       X     C/S       X     C	X X X X X X X X	X X X X X X X X	X X X X X X X	X X X X X X X X			X X X
DaB DdB DdD	Delaware fine sandy loam, 3 to 8 percent slopes Dekalb extremely stony sandy loam, 0 to 8 percent slopes Dekalb extremely stony sandy loam, 8 to 25 percent slopes	X C X C X C	X X X	X	X X X X X X X X X X X X X X X X X X X	X X X X X X			X
DEF DeF DgC	Dekalb very stony loam, 8 to 25 percent slopes Dekalb extremely stony sandy loam, steep Dekalb very stony loam, 25 to 100 percent slopes Duffield-Ryder silt loams, 8 to 15 percent slopes	X     C       X     C       X     C       X     C       X     C/S	X X X X	X	X     X     X       X     X     X       X     X     X       X     X     X       X     X     X	X X X X X X X X	X	XXX	X X X X
DrA DrB2 DsB	Drifton loam, 0 to 3 percent slopes Drifton loam, 3 to 8 percent slopes, moderately eroded Drifton very stony loam, 0 to 8 percent slopes Duffield silt loam, 0 to 3 percent slopes	X     C/S       X     C/S       X     C/S       X     C/S       X     C/S	X X X X	X X X X X X X X	X     X       X     X       X     X       X     X       X     X       X     X	X X X X X X X X X X	X		X X X X
DuB DxB DxE	Duffield silt loam, 3 to 8 percent slopes Dekalb extremely stony loam, 0 to 8 percent slopes Dekalb extremely stony loam, 25 to 80 percent slopes	X C/S X C X C	X X X X X X X X X X X X X X X X X X X	Х	X     X     X       X     X     X       X     X     X       X     X     X	X X X X X X X X	X		X X X X
FtC2 FvD	Fluvaquents Fleetwood sandy loam, 8 to 15 percent slopes, moderately eroded Fleetwood very stony loam, shallow, 8 to 25 percent slopes Fleetwood very stony loam, shallow, 25 to 100 percent slopes	X     C/S       X     C       X     C       X     C       X     C	X X X X X X	XXX	X X X X X	X X X X X X X X X X X X X X X X X X X			X X X
FwB FwD Gb	Fleetwood very stony sandy loam, 0 to 8 percent slopes Fleetwood very stony sandy loam, 8 to 25 percent slopes Gibraltar silt loam	X     C       X     C       X     C       X     C/S	X X X	X X	X X X X	X X X			X X X
	Gladstone gravelly loam, 3 to 8 percent slopes Gladstone gravelly loam, 8 to 15 percent slopes Gladstone gravelly loam, 8 to 25 percent slopes, very bouldery Gladstone gravelly loam, 25 to 55 percent slopes, very bouldery	X     C       X     C       X     C       X     C       X     C	X X X X X	X X X X X	X X X X X	X X X X X	X X X X		X X X X
GnD GP GrB	Gladstone-Parker gravelly loams, 15 to 25 percent slopes Gravel pits Glenville silt loam, 3 to 8 percent slopes	X     C       NO DATA     NO DATA       X     C/S	X NO DATA NO DATA NO DATA	Х	X     NO DATA     NO DATA     NO DATA       X     X     X     X	NO DATA NO DA X X X	X	NO DATA NO DATA NO DATA X	X NO DATA X
HaB2 HaC2	Hartleton channery silt loam, 0 to 3 percent slopes Hartleton channery silt loam, 3 to 8 percent slopes, moderately eroded Hartleton channery silt loam, 8 to 15 percent slopes, moderately eroded Hartleton channery silt loam, 8 to 15 percent slopes, severely eroded	X     C       X     C       X     C       X     C       X     C	X X X X X X X X X X X X X X X X X X X		X     X     X       X     X     X       X     X     X       X     X     X       X     X     X	X X X X X X X X			X X X X
HeB HeD HgF	Hazleton very channery loam, 0 to 8 percent slopes, extremely stony Hazleton very channery loam, 8 to 25 percent slopes, extremely stony Hazleton-Rubble land complex, 25 to 60 percent slopes	X C X C X C	X X X X X X X X X X X X X X X X X X X		X X X X X X X X X	X X X X X X			X X X
HtA HtB HtB2	Holly silt loam Hazleton loam, 0 to 3 percent slopes Hazleton loam, 3 to 8 percent slopes Hazleton loam, 3 to 8 percent slopes, moderately eroded	X     C/S       X     C       X     C       X     C       X     C	X X X X X X X X	X X X X X X	X     X     X       X     X     X       X     X     X       X     X     X       X     X     X	X     X       X     X       X     X       X     X       X     X			X X X X
HvB HvD Hy	Hazleton very stony loam, 0 to 8 percent slopes Hazleton very stony loam, 8 to 25 percent slopes Hally silt loam Klinesville channery silt loam, 3 to 8 percent slopes, moderately eroded	X     C       X     C       X     C       X     C/S       X     C/S	X X X X X X X X X X X X X X X X X X X		X     X     X       X     X     X       X     X     X       X     X     X       X     X     X       X     X     X	X     X       X     X       X     X       X     X       X     X       X     X       X     X		X X	X X X X
KcC2 KcC3 KcD2	Klinesville channery silt loam, 8 to 15 percent slopes, moderately eroded Klinesville channery silt loam, 8 to 15 percent slopes, severely eroded Klinesville channery silt loam, 15 to 25 percent slopes, moderately eroded	X     C/S       X     C/S       X     C/S	X X X X X X X X	X X X	X X X X X	X X X X X X			X X X X
KcD3 KcE2 KcE3	Klinesville channery silt loam, 15 to 25 percent slopes, severely eroded Klinesville channery silt loam, 25 to 35 percent slopes, moderately eroded Klinesville channery silt loam, 25 to 35 percent slopes, severely eroded Klinesville channery silt loam, 35 to 80 percent slopes	X     C/S       X     C/S       X     C/S       X     C/S       X     C/S	X X X X X X X X X X	X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X			X X X X
KvF LaB LaC	Klinesville very stony silt loam, 25 to 80 percent slopes Lackawanna channery silt loam, 3 to 8 percent slopes Lackawanna channery silt loam, 8 to 15 percent slopes	X C/S X C X C	X X X X X X X X X X X X X X X X X X X	X X X X X X	X X X X	X X X X X X			X X X
LbB LbD	Lackawanna channery silt loam, 15 to 25 percent slopes Laidig very gravelly loam, 0 to 8 percent slopes, extremely stony Laidig very gravelly loam, 8 to 25 percent slopes, extremely stony Laidig very gravelly loam, 25 to 65 percent slopes, extremely stony	X     C       X     C/S       X     C/S       X     C/S       X     C/S	X X X X X X X X	X X X X X X X X	X     X     X       X     X     X     X       X     X     X     X       X     X     X     X	X X X X X X X X		X	X X X X
LcB LcD LdB	Lackawanna very stony silt loam, 3 to 8 percent slopes Lackawanna very stony silt loam, 8 to 25 percent slopes Laidig very stony loam, 3 to 8 percent slopes	X     C       X     C       X     C/S	X X X X	X X X X X X	X X X X	X X X X X X		X X	X X X X
LeA LeB2	Laidig very stony loam, 8 to 25 percent slopes Leck kill channery silt loam, 0 to 3 percent slopes Leck kill channery silt loam, 3 to 8 percent slopes, moderately eroded Leck kill channery silt loam, 8 to 15 percent slopes, moderately eroded	X     C/S       X     C       X     C       X     C       X     C	X X	X X	X     X     X       X     X     X       X     X     X       X     X     X       X     X     X	X X X X X X X X		X X X X	X X X X
LeC3 LeD3 LEF	Leck kill channery silt loam, 8 to 15 percent slopes, severely eroded Leck kill channery silt loam, 15 to 25 percent slopes, severely eroded Lackawanna and Bath very stony silt loams, steep	X C X C X C	X	X X	X X X X X X X	X X X X X X		X X X	X X X
LkD	Leck kill very stony loam, 0 to 8 percent slopes Leck kill very stony loam, 8 to 25 percent slopes Leck kill very stony loam, 25 to 100 percent slopes Linden soils	X     C       X     C       X     C       X     C       X     C	X	XX	X     X     X       X     X     X       X     X     X       X     X     X       X     X     X	X X X X X X X X			X X X X
LtA LvD LvF	Lickdale and Tughill very stony loams, 0 to 8 percent slopes Lordstown very stony silt loam, 8 to 25 percent slopes Lordstown very stony silt loam, 25 to 80 percent slopes	X     C/S       X     C       X     C	X X X X X X X X X X X X X X X X X X X	XXX	X     X       X     X     X       X     X     X	X X X X	X		X X X
Mb MbA MbB2	Mardin channery silt loam, 3 to 8 percent slopes Middlebury silt loam Meckesville channery loam, 0 to 3 percent slopes Meckesville channery loam, 3 to 8 percent slopes, moderately eroded	X     S       X     S       X     C/S       X     C/S	X X X	X X X X X X	X     X     X       X     X     X       X     X     X       X     X     X       X     X     X	X X X X X X X	X	X X X X	X X X X
MbC2 McB McD	Meckesville channery loam, 8 to 15 percent slopes, moderately eroded Mardin very stony silt loam, 3 to 8 percent slopes Mardin very stony silt loam, 8 to 25 percent slopes	X     C/S       X     S       X     S	X X X X X X X X X X X X X X X X X X X	X X X X X X X	X     X     X       X     X     X     X       X     X     X     X	X X X X			X X X X
MeC MfC Mg	Middlebury silt loam, 3 to 8 percent slopes Meckesville gravelly loam, 8 to 15 percent slopes Meckesville very stony loam, 8 to 25 percent slopes Mine dump		X NO DATA NO DATA		X     X     X       X     X     X     X       X     X     X     X       NO DATA     NO DATA     NO DATA     NO DATA			X X NO DATA NO DATA NO DATA	X X X NO DATA
Mh Mm MoB	Mine dump, burned Mine wash Morris channery silt Ioam, 0 to 8 percent slopes	NO DATA     NO DATA     N       NO DATA     NO DATA     N       X     C/S	NO DATA NO DATA NO DATA NO DATA NO DATA NO DATA X X	NO DATA NO DATA NO DATA NO DATA X X	NO DATA     NO DATA     NO DATA       NO DATA     NO DATA     NO DATA       X     X	NO DATA NO DA NO DATA NO DA X X	TA NO DATA	NO DATA NO DATA NO DATA NO DATA NO DATA NO DATA NO DATA NO DATA NO DATA X	NO DATA NO DATA X
MoC2 MoD2 MoD3	Montevallo channery silt loam, 3 to 8 percent slopes, moderately eroded Montevallo channery silt loam, 8 to 15 percent slopes, moderately eroded Montevallo channery silt loam, 15 to 25 percent slopes, moderately eroded Montevallo channery silt loam, 15 to 25 percent slopes, severely eroded	C/S C/S C/S C/S	X X X X X X X X X X X X X X X X X X X	X X X X	X X X X	X X X X X X X X			X X X X
MoE2 MoF2 MrB	Montevallo channery silt loam, 25 to 35 percent slopes, moderately eroded Montevallo channery silt loam, 35 to 100 percent slopes, eroded Morris very stony silt loam, 0 to 8 percent slopes	C/S C/S X C/S	X X X X	X X X X	X X X X	X X X X X X		X	X X X
MsC Mu	Morris very stony silt loam, 0 to 8 percent slopes Morris very stony silt loam, 8 to 15 percent slopes Muck Norwich very stony loam, 0 to 8 percent slopes	X     C/S       X     C/S       S     X       X     C/S	X X X X X X X X	X X X X X X X X X X	X X X X X X X X	X X X X X X		X X X X X X X	X X X X
OIB OIC OID	Oquaga and Lordstown channery silt loams, 3 to 8 percent slopes Oquaga and Lordstown channery silt loams, 8 to 15 percent slopes Oquaga and Lordstown channery silt loams, 15 to 25 percent slopes	X     C       X     C       X     C	X X X X X X X X X X X X X X X X X X X	X X X X		X X X			X X X
OXF	Oquaga and Lordstown extremely stony silt loams, 3 to 8 percent slopes Oquaga and Lordstown extremely stony silt loams, 8 to 25 percent slopes Oquaga and Lordstown extremely stony silt loams steep Papakating silty clay loam	X     C       X     C       X     C       X     C       X     C/S	X X X X X X X X	X X X X X	X X X X X X X	X X X X X X		х х	X X X X
Pr Ps RdB	Pits, quarry Pope soils Rexford loam, 3 to 8 percent slopes	NO DATA     NO DATA     NO       X     C/S     X       X     C/S     X	NO DATA NO DATA NO DATA X X X X X		NO DATA     NO DATA     NO DATA       X     X     X       X     X     X	NO DATA NO DA X X X X	TA NO DATA	NO DATA NO DATA NO DATA	
RzF ShA	Ryder-Duffield silt loams, 3 to 8 percent slopes Ryder-Rock outcrop complex, 25 to 75 percent slopes Shelmadine silt loam, 0 to 3 percent slopes Strip mine	X     C/S       X     C/S       X     C/S       NO DATA     NO DATA	X NO DATA NO DATA NO DATA	X X NO DATA NO DATA	X     X     X       X     X     X     X       X     X     X     X       NO DATA     NO DATA     NO DATA     NO DATA	X X X X NO DATA NO DA		X X NO DATA NO DATA NO DATA	X X X NO DATA
SmB SwB SwD	Shelmadine very stony silt loam, 0 to 8 percent slopes Swartswood very stony loam, 0 to 8 percent slopes Swartswood very stony loam, 8 to 25 percent slopes	X C/S X C X C	X X X X X X X X	X X X X	X     X     X       X     X     X     X       X     X     X     X	X X X X X			X X X
TuB	Tioga silt loam Tioga and Middlebury very stony loams, 0 to 8 percent slopes Tunkhannock gravelly loam, 3 to 8 percent slopes Tunkhannock gravelly loam, 8 to 15 percent slopes	X     C       X     C       X     C       X     C       X     C	X X X X X X	X X X X X X	X X X X X X X X X X X X X X X X X X X	X			X X X X
UbB UgD UhD	Udorthents, limestone, 0 to 8 percent slopes Udorthents, schist and gneiss, 8 to 25 percent slopes Udorthents, shale and sandstone, 8 to 25 percent slopes	X     C/S       X     C/S       X     C/S	X X X X X X X X X X X X X X X X X X X		X X X X X X	X X X X X X			X X X
UID UkaB UoB	Urban land-Berks complex, 8 to 25 percent slopes Urban land, 0 to 8 percent slopes Urban land-Duffield complex, 0 to 8 percent slopes Urban land-Gladstone complex, 0 to 8 percent slopes	X     C       NO DATA     NO DATA       X     C/S       X     C	X X NO DATA NO DATA NO DATA X X	NO DATA NO DATA X	X     X       NO DATA     NO DATA     NO DATA       X     X     X       X     X     X       X     X     X	X NO DATA NO DA X X	TA NO DATA X X	NO DATA NO DATA NO DATA X	X X X X
	Longen rang Gradetone complex, o to o percent slopes			Ă.		X	۸	1	Λ

LIMITING SOIL CHARACTERISTICS LEGEND

## SOIL LIMITATIONS NARRATIVE

THE SOILS IMPACTED BY THE PROJECT CAN BE SEEN IN THE LIMITING SOIL CHARACTERISTICS TABLE. AS A RESULT OF THE LIMITING CHARACTERISTICS OF THE SOILS, MANY EROSION AND SEDIMENT CONTROLS WERE IMPLEMENTED.

THE FOLLOWING IS A LIST OF PRECAUTIONS TAKEN TO PREVENT NEGATIVE EFFECTS FROM OCCURRING:

THE GRADING OF THE CUT AND FILL SLOPES WERE LIMITED TO NOT EXCEED 2H:1V SLOPES.

EROSION CONTROL MATTING IS PROPOSED FOR ALL SLOPES GREATER THAN 3H:1V. ANY TRENCHING WILL FOLLOW OSHA APPROVED GUIDELINES FOR TRENCHING.

OVERALL SITE HAS BEEN DESIGNED AND GRADED TO SAFELY CONVEY STORM WATER RUNOFF FROM THE CONSTRUCTION PROJECT AREA.

Map Symbol	Soil Name	Cutb
UudB	Urban land-Udorthents, limestone complex, 0 to 8 percent slopes	NO
UudD	Urban land-Udorthents, limestone complex, 8 to 25 percent slopes	NO
UupB	Urban land-Udorthents, schist and gneiss complex, 0 to 8 percent slopes	NO
UupD	Urban land-Udorthents, schist and gneiss complex, 8 to 25 percent slopes	NO
UusB	Urban land-Udorthents, shale and sandstone complex, 0 to 8 percent slopes	NO
VeF	Very stony land, 25 to 120 percent slopes	NO
VoB	Volusia channery silt loam, 0 to 8 percent slopes	1
VsB	Volusia very stony loam, 0 to 8 percent slopes	1
VrB	Volusia very stony silt loam, 0 to 8 percent slopes	
VrC	Volusia very stony silt loam, 8 to 15 percent slopes	
WaA	Washington silt loam, 0 to 3 percent slopes	]
WaD	Washington silt loam, 15 to 25 percent slopes	
WaB	Washington silt loam, 3 to 8 percent slopes	1
WaC	Washington silt loam, 8 to 15 percent slopes	3
WsB2	Watson silt loam, 3 to 8 percent slopes, moderately eroded	
W	Water	NO
Wa	Wayland silt loam	1
WeB	Weikert and Klinesville channery silt loams, 3 to 8 percent slopes	1
WkD	Weikert-Berks complex, 15 to 25 percent slopes	]
WkB	Weikert-Berks complex, 3 to 8 percent slopes	
WkC	Weikert-Berks complex, 8 to 15 percent slopes	
WKE	Weikert and Klinesville soils, steep	
WID	Wellsboro channery silt loam, 15 to 25 percent slopes	1
WIB	Wellsboro channery silt loam, 3 to 8 percent slopes	
WIC	Wellsboro channery silt loam, 8 to 15 percent slopes	1
WmB	Wellsboro very stony silt loam, 3 to 8 percent slopes	]
WmD	Wellsborovery stony silt loam, 8 to 25 percent slopes	]
WrD	Wurtsboro channery loam, 15 to 25 percent slopes	3
WrB	Wurtsboro channery loam, 3 to 8 percent slopes	
WrC	Wurtsboro channery loam, 8 to 15 percent slopes	1
WtB	Wurtsboro extremely stony loam, 3 to 8 percent slopes	
WtD	Wurtsboro extremely stony loam, 8 to 25 percent slopes	
WvB	Wurtsboro very stony loam, 0 to 8 percent slopes	
WyD	Wyoming gravelly loam, 15 to 25 percent slopes	
WyF	Wyoming gravelly loam, 25 to 60 percent slopes	

THE SOIL LIMITATIONS SHALL BE ADDRESSED AS FOLLOWS:

LIMITATIONS AND RESOLUTIONS:

X

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X

X

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LIMITATION: CUTBANKS CAVE, LOW STRENGTH - CUTBANKS HAVE POTENTIAL TO CAVE AND MANY SOILS ARE LOW STRENGTH. RESOLUTION: CONTRACTOR SHALL BE AWARE OF POTENTIAL ISSUES AND FOLLOW OSHA GUIDELINES FOR OPEN TRENCHING. LOW SOIL STRENGTH IS NOT A CONCERN DUE TO THE PROPOSED PROJECT. UTILITY TRENCHING WILL NOT BE ADVERSELY EFFECTED BY POOR SOIL STRENGTH.

**<u>LIMITATION:</u>** CORROSIVE TO STEEL - SOILS CORROSIVE TO STEEL. RESOLUTION: IF STEEL PIPE IS USED RUST PROTECTION BY COATINGS AND/OR USE OF CATHODIC PROTECTION IS RECOMMENDED

LIMITATION: DROUGHTY - SOILS EXHIBITING A POOR MOISTURE-HOLDING CAPACITY, WHICH MAY LIMIT THE VEGETATIVE STABILIZATION ABILITY OF THE SOIL. RESOLUTION: FOR DROUGHTY SOILS, CONTRACTOR TO REFER TO "TABLE 11-3: PLANT TOLERANCES OF SOIL LIMITATION FACTORS" TO SELECT APPROPRIATE VEGETATION. EROSION CONTROL BLANKETS SHOULD ALSO BE CONSIDERED IN SOIL CONDITIONS THAT MAKE REVEGETATION DIFFICULT (E.G. DROUGHTY). WHEN INSTALLED PROPERLY, EROSION CONTROL BLANKETS CAN HELP HOLD SOIL PARTICLES IN PLACE AND RETAIN SOIL MOISTURE, PROMOTING SEED GERMINATION. LIMITATION: EASILY ERODIBLE

RESOLUTION: SPECIAL ATTENTION SHALL BE GIVEN TO MAINTAINING EXISTING VEGETATION IN EASILY ERODIBLE SOILS, TO THE EXTENT POSSIBLE. VEGETATIVE FILTER STRIP BETWEEN THE WATERBAR AND A RECEIVING SURFACE WATER, THE WATERBAR SHOULD BE PROVIDED WITH A TEMPORARY PROTECTIVE LINER. **<u>LIMITATION:</u>** FLOODING - ANY SOIL SUBJECT TO INUNDATION DURING A 2-YEAR/24HR STORM EVENT. RESOLUTION: (SEE WET SOILS)

LIMITATION: HIGH WATER TABLE, POTENTIALLY HYDRIC - HIGH WATER TABLE IS TO BE EXPECTED AND MANY OF THE SOILS ARE POTENTIALLY HYDRIC. RESOLUTION: FOLLOW E&S PLAN WITH REGARD TO PUMPING AND DEWATERING. DISCHARGE OF SEDIMENT LADEN WATER IS PROHIBITED UNLESS WITHOUT FIRST PASSING THRU A "PUMPED WATER FILTER BAG". LIMITATION: HYDRIC / HYDRIC INCLUSIONS - A SOIL THAT IS SATURATED, FLOODED, OR PONDED LONG ENOUGH DURING THE GROWING SEASON TO DEVELOP ANAEROBIC-CONDITIONS. WHEN SUCH A SOIL IS LOCATED IN AN AREA THAT HAS HYDROPHYTIC VEGETATION AND WETLAND HYDROLOGY, A WETLAND IS PRESENT. RESOLUTION: HYDRIC SOILS THAT ARE DELINEATED WETLANDS, SHOULD BE AVOIDED TO THE EXTENT POSSIBLE. STAGING AREAS SHOULD BE LOCA DS, THE USE OF TEMPORARY TIMBER MATS SHALL BE USED DUE TO THE POTENTIAL FOR RUTTING. TRENCH PLUGS SHALL BE INSTALLED TO PREVENT THE TRENCH FROM DRAINING THE WETLANDS OR CHANGING THE HYDROLOGY. LIMITATION: LOW STRENGTH / LANDSLIDE PRONE - SOILS WITH LOW STRENGTH HAVE A LESSER ABILITY TO RESIST SLOPE FAILURE, SUCH AS SLUMPING, FLOWING, ETC. MATERIALS WITH LOW SHEAR STRENGTH ARE MORE SUSCEPTIBLE TO LANDSLIDES AND EMBANKMENT FAILURES. RESOLUTION: PRECAUTIONS SHOULD BE TAKEN TO PREVENT SLOPE FAILURES DUE TO IMPROPER CONSTRUCTION PRACTICES SUCH AS OVER-STEEPENING AND OVERLOADING SLOPES, REMOVAL OF LATERAL SUPPORT, AND FAILURE TO PREVENT SATURATION OF SLOPES. SETBACKS SHOULD COMPLY WITH THE STANDARDS CONTAINED IN CHAPTER 16 OF THE, "PADEP - EROSION AND SEDIMENT CONTROL PROGRAM MANUAL," UNLESS IT CAN BE SHOWN THAT PROPOSED CUTS AND FILLS DO NOT POSE A HAZARD TO PUBLIC SAFETY OR SURFACE WATERS. ALSO, ROAD FILL MATERIAL WILL LIKELY NEED TO BE IMPORTED IN AREAS WHERE SOILS HAVE LOW

STRENGTH. **<u>LIMITATION:</u>** SLOW PERCOLATION - PERMEABILITY RATE LESS THAN OR EQUAL TO 0.2 INCHES/HR. RESOLUTION: BMPS TO BE INSPECTED AFTER RUNOFF EVENTS, MAKE SURE THERE IS AN ADEQUATE AREA FOR PUMPED WATER DISCHARGE. LIMITATION: PIPING RESOLUTION: PIPING POTENTIAL IN THE SOIL WILL BE MINIMIZED BY THE USE OF TRENCH PLUGS. FURTHERMORE, ANY PLANNED EMBANKMENTS OR PERMANENT IMPOUNDMENTS SUSCEPTIBLE TO PIPING SHALL UTILIZE ANTI-SEEP COLLARS OR FILTER DIAPHRAMS ON OUTLET BARRELS.

LIMITATION: LIMITED AVAILABLE TOPSOIL RESOLUTION: ANY EXCAVATED TOPSOIL WILL BE STOCKPILED AND REUSED. IF NECESSARY, ADDITIONAL TOPSOIL WILL BE BROUGHT ON-SITE. LIMITATION: FROST ACTION - THE LIKELIHOOD OF UPWARD OR LATERAL EXPANSION OF THE SOIL CAUSED BY THE FORMATION OF SEGREGATED ICE LENSES, OR FROST HEAVE, AND THE SUBSEQUENT COLLAPSE OF THE SOIL AND LOSS OF STRENGTH ON THAWING, WHICH CAN DAMAGE ROADS, BUILDINGS, AND OTHER STRUCTURES AS WELL AS PLANT ROOTS.

RESOLUTION: PRECAUTIONS ARE NEEDED TO PREVENT DAMAGE TO ROADWAYS.

**<u>LIMITATION: WET SOILS -</u>** SOME SOILS MAY EXHIBIT A HIGH WATER TABLE OR PONDING. RESOLUTION: IF HIGH WATER TABLE IS ENCOUNTERED, TRENCH DEWATERING WILL BE EMPLOYED.

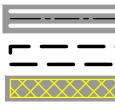
LIMITATION: MIN. DEPTH TO BEDROCK - SOME SOILS HAVE A MIN DEPTH OF BEDROCK LESS THAN THE THE TYPICAL TRENCH DEPTH OF 7 FT (ASSUMES 3 FT OF COVER, PIPE DIAMETER, AND BEDDING DEPTH OF 1 FT). RESOLUTION: CONTRACTOR TO PLAN FOR ROCK REMOVAL DURING TRENCHING OPERATIONS. FOR SEDIMENT BARRIERS REQUIRING STAKING (E.G. SILT FENCES, ETC.), DEPTH TO BEDROCK LESS THAN 2 FT CAN IMPACT ABILITY TO DRIVE STAKE AND/OR POLE (FOR SUPER SILT FENCE). IN THESE AREAS, COMPOST FILTER SOCK OR OTHER APPLICABLE BMP NOT REQUIRING STAKING MAY BE CONSIDERED.

LIMITATION: pH - SOME SOILS HAVE pH VALUES LESS THAN 5.5, WHICH MAY LIMIT THE VEGETATIVE STABILIZATION ABILITY OF THE SOIL. RESOLUTION: AS IS TYPICAL FOR THESE TYPE OF SOILS, LIME WILL BE ADDED AS NEEDED TO PRODUCE VEGETATIVE STABILITY. LIMITATION: LOW FERTILITY

IZER OR NUTRIENT SUPPLEMENTS WILL BE ADDED TO THE SOIL TO PRODUCE VEGETATIVE STABILITY. FOR LOW FERTILITY SOILS, CONTRACTOR TO REFER TO "TABLE 11-3: PLANT TOLERANCES OF SOIL LIMITATION FACTORS" TO SELECT RED IN SOIL CONDITIONS THAT MAKE REVEGETATION DIFFICULT (E.G. LOW FERTILITY). WHEN INSTALLED PROPERLY, EROSION CONTROL BLANKETS CAN HELP HOLD SOIL PARTICLES IN PLACE AND RETAIN SOIL MOISTURE, PROMOTING SEED

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O 4.0R2
ESCGP



PROPOSED

PLAN VIEW

PROPOSED PIPELINE

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	M.P. 4.0R2	MILEPOST MARKER			-			APPROXIMATE 100 YEAR FLOODWAY	——— E ———	ELECTRIC LINE	
		PROPOSED PERMANENT EASEMENT			_			RIPARIAN ZONE	-00000000000000000000000000000000000000	∞- ROCK WALL	
			007		-	-11		EXISTING PIPELINE	(PE-LU-001.00	LINE LIST NUMBER	
		FACILITY LOCATION (REFER TO FACILITY F CONSTRUCTION STORMWATER MANAGME	NT PLAN)		_	— w — w		EXISTING WATER PIPELINE		WATERBODY (DELINE)	ATED)
		LIMITS OF DISTURBANCE			_	OH		EXISTING OVERHEAD LINE		WATERBODY (PUBLIC)	-
	ESCGP	ESCGP PERMIT BOUNDARY			-		+++++	RAILROAD CENTERLINE		WATERCOURSE THRC EXISTING CULVERT	
		ACCESS ROAD			-			ROAD CENTERLINE			SEMENT
	<u></u> 1	FUTURE DEVELOPMENT (PROPOSED BY OTHE	RS)					ROAD EDGE	ChB	NRCS SOILS BOUNDAF	RY
		EROSION CONTROL MATTING; SEE FIG. 14A, 14	3, &15								
		PERMANENT WATERBAR (WITH SUMP AND COMPOST FILTER SOCK E TREATMENT) SEE FIG. 9 & 10	ND								
		PROFILE									
		PERMANENT WATERBAR (WITH SUMP AND COMPOST FILTER SOCK END SEE FIG. 9 & 10	TREATMENT			MIC	PROFESSIO CHAEL DE PEO8651	NICHILO	PENNSYLVANIA M AND PENNDOT PE	TY LINE SOURCE: PENNDO UNICIPALITY BOUNDARIES NNSYLVANIA COUNTY BOU /AILABLE AT WWW.PASDA	, DATED 01/2017 UNDARIES,
		REVISIONS					PREPARED I	OR	PEN	INEAST PIPELINE PRO	DJECT
		REVISIONS	DATE	DRAWN	СК	APPR			S	ITE RESTORATION PL	AN
А	ISSUED FOR PADEP		10/2018	JL (MM)	AJD (MM)	MDN (MM)				LEGENDS	
B	REVISED FOR PADEP		10/2019	AJD (MM)	MWF (MM)	MJD (MM)		PennEast			
									SCALE	DRAWING NO.	REVISION
									AS SHOWN	000-01-01-002	В



## EXISTING

TRAIL CENTERLINE

WETLAND (PUBLIC)

WETLAND (DELINEATED)

## LINETYPE LEGENDS

1260'

D DEVELOP ANAEROBIC-CONDITIONS.	WHEN SUCH A SOIL IS LOCAT	ED IN AN AREA THAT HAS HYL	DROPHYTIC VEGETATION A	ND WEILAND HYDROLOGY,	A WEILANL
CATED 50 FEET FROM THE EDGE OF WE	ETLAND. MOVEMENT OF VEH	IICLES ACROSS WETLAND MUS	ST BE MINIMIZED. WHERE	VEHICLES NEED TO CROSS	WETLANDS,

PROPERTY LINE

STREAM (PUBLIC)

EXISTING MAJOR CONTOURS

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