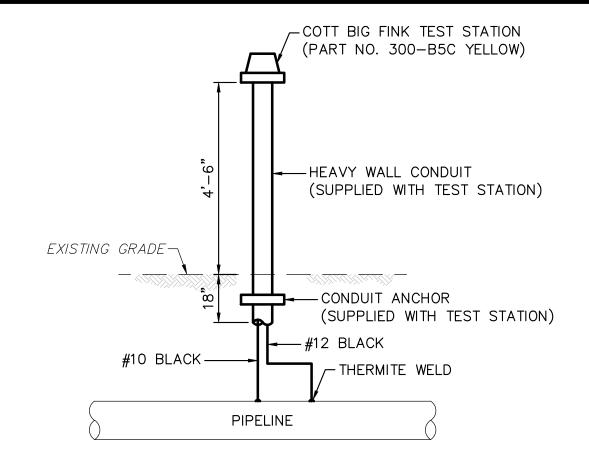
	Stream Name	Coordinates	Flow Regime	Bank to Bank Width (feet)	Crossing Method	PAFBC Stream Designation	Siltation Impaired	E&S Plan Sheet Numbe
S-A57	UNT to East Branch Conestoga River	-75.8633, 40.1701	Perennial	5	HDD/ Open Cut Floodw ay	n/a	No	ES - 1.68
	East Branch Conestoga							
S-A58	River	-75.8627, 40.1698	Perennial	8	HDD	n/a	No	ES - 1.68
S-A59	UNT to East Branch Conestoga River	-75.8628, 40.1701	Perennial	5	HDD	n/a	No	ES - 1.68
S-A60	UNT to East Branch Conestoga River	-75.8624, 40.1699	Ephemeral	3	HDD	n/a	No	ES - 1.68
S-A61	UNT to East Branch	-75.8629, 40.1693	Ephemeral	2	HDD	n/a	No	ES - 1.68
3-A01	Conestoga River	-70.0029, 40.1093				IVA		ES - 1.00
S-A62	UNT to East Branch Conestoga River	-75.8635, 40.1696	Ephemeral	5	HDD Floodw ay	n/a	No	ES - 1.68
S-A63	UNT to East Branch Conestoga River	-75.8633, 40.1695	Ephemeral	3	HDD Floodw ay	n/a	No	ES - 1.68
S-A64	UNT to East Branch	-75.8631, 40.1694	Ephemeral	3	HDD Floodw ay	n/a	No	ES - 1.68
	Conestoga River		 					
S-A65	UNT to East Branch Conestoga River	-75.8623, 40.1689	Intermittent	4	HDD	n/a	No	ES - 1.68
S-A72	UNT to Little Cocalico Creek UNT to Little Cocalico	-76.0933, 40.2897	Intermittent	4	Open Cut Floodway	Drains to STS	No No	ES - 1.03
S-A73	Creek UNT to Little Cocalico	-76.0928, 40.2905	Intermittent	3	Dry Crossing	Drains to STS	No	ES - 1.03
S-A74	Creek	-76.0922, 40.2905	Ephemeral	3	Open Out Floodway	Drains to STS	No	ES - 1.03
S-H26	UNT to East Branch Conestoga River UNT to Little Cocalico	-75.8634, 40.1694	Intermittent	3	HDD Floodw ay	n/a	No	ES - 1.68
S-B16 S-B17	Creek UNT to Little Cocalico	-76.1011, 40.2863 -76.1010, 40.2867	Perennial Intermittent	8 3	Dry Crossing	Drains to STS Drains to STS	No No	ES - 1.01 ES - 1.01
S-B17 S-B21	Creek UNT to Cacoosing Creek	-76.1010, 40.2667 -76.0872, 40.2927	Ephemeral	5	Open Out Floodw ay Open Out Floodw ay	Drains to STS Drains to TNR	No No	ES - 1.01
S-B22	Cacoosing Creek	-76.0871, 40.2930	Perennial	18	Dry Crossing	TNR	No	ES - 1.04
S-B23	UNT to Cacoosing Creek	-76.0869, 40.2930	Intermittent	10	Open Cut Floodw ay	Drains to TNR	No	ES - 1.04
S-B24	UNT to Cacoosing Creek	-76.0869, 40.2931	Ephemeral	3	Open Cut Floodw ay	Drains to TNR	No	ES - 1.04
S-B25	UNT to Cacoosing Creek	-76.0829, 40.2950 -75.9544, 40.2275	Ephemeral Intermittent	3	Open Cut Floodway	Drains to TNR Drains to ATW	No No	ES - 1.05
S-B27	UNT to Allegheny Creek	-75.9544, 40.2275	Intermittent	6	Dry Crossing		No 	ES - 1.45
S-B28	UNT to Allegheny Creek	-75.9547, 40.2279	Perennial	10	Dry Crossing	Drains to ATW	No	ES - 1.45
S-B29 S-B30	Allegheny Creek UNT to Allegheny Creek	-75.9551, 40.2282 -75.9648, 40.2344	Perennial Intermittent	15 3	Dry Crossing Dry Crossing	ATW Drains to ATW	No No	ES - 1.45 ES - 1.42
S-B31 S-B32	UNT to Wyomissing Creek UNT to Wyomissing Creek	-76.0062, 40.2719 -76.0033, 40.2688	Perennial Perennial	9 10	Dry Crossing Dry Crossing	Drains to ATW, TNR Drains to ATW, TNR	No No	ES - 1.30 ES - 1.31
S-B33	UNT to Wyomissing Creek	-75.9953, 40.2612	Intermittent	8	Dry Crossing	Drains to ATW, TNR	No	ES - 1.33
S-BB34	Wyomissing Creek	-75.9942, 40.2616	Perennial	15	Temporary Bridge	ATW, TNR	No	ES - 1.33
S-B40	UNT to Wyomissing Creek	-76.0201, 40.2774	Intermittent	10	HDD	Drains to ATW, TNR	No No	ES - 1.27
S-B41	UNT to Wyomissing Creek	-76.0202, 40.2772	Ephemeral Perennial	3	HDD	Drains to ATW, TNR	No	ES - 1.27
S-B42 S-B43	Little Muddy Creek UNT to Cacoosing Creek	-76.0280, 40.2805 -76.0315, 40.2868	Intermittent	15 9	Dry Crossing Dry Crossing	n/a Drains to TNR	No No	ES - 1.25 ES - 1.23, 1.24
S-B45	UNT to Cacoosing Creek	-76.0299, 40.2898	Ephemeral	8	Dry Crossing	Drains to TNR	No	ES - 1.23
S-B46	UNT to Cacoosing Creek	-76.0295, 40.2903	Perennial	10	Dry Crossing	Drains to TNR	No	ES - 1.23
S-K76	UNT to Cacoosing Creek	-76.0292, 40.2900	Intermittent	7	Dry Crossing	Drains to TNR	No	ES - 1.23
S-K77	UNT to Cacoosing Creek	-76.0286, 40.2902	Intermittent	10	Dry Crossing	Drains to TNR	No	ES - 1.23
S-B47 S-B48	UNT to Cacoosing Creek UNT to Cacoosing Creek	-76.0795, 40.2971 -76.0738, 40.2995	Ephemeral Ephemeral	5	Dry Crossing Open Out Floodw ay	Drains to TNR Drains to TNR	No No	ES - 1.06 ES - 1.07
			ł					
S-B48 S-B49	UNT to Cacoosing Creek UNT to Cacoosing Creek	-76.0738, 40.2995 -76.0645, 40.3042	Ephemeral Intermittent	3 2	Open Out Floodway Dry Crossing	Drains to TNR Drains to TNR	No No	ES - 1.07 ES - 1.09
S-B48 S-B49 S-B50	UNT to Cacoosing Creek UNT to Cacoosing Creek Cacoosing Creek	-76.0738, 40.2995 -76.0645, 40.3042 -76.0425, 40.3158	Ephemeral Intermittent Perennial	3 2 25	Open Cut Floodway Dry Crossing Dry Crossing	Drains to TNR Drains to TNR TNR	No No No	ES - 1.07 ES - 1.09 ES - 1.14
S-B48 S-B49 S-B50 S-C1	UNT to Cacoosing Creek UNT to Cacoosing Creek Cacoosing Creek UNT to Allegheny Creek	-76.0738, 40.2995 -76.0645, 40.3042 -76.0425, 40.3158	Ephemeral Intermittent Perennial Intermittent	3 2 25 3	Open Cut Floodway Dry Crossing Dry Crossing Dry Crossing	Drains to TNR Drains to TNR TNR Drains to ATW	No No No No	ES - 1.07 ES - 1.09 ES - 1.14 ES - 1.37, 1.38
S-B48 S-B49 S-B50 S-C1 S-C2	UNT to Cacoosing Creek UNT to Cacoosing Creek Cacoosing Creek UNT to Allegheny Creek UNT to Allegheny Creek	-76.0738, 40.2995 -76.0645, 40.3042 -76.0425, 40.3158 -75.9823, 40.2464	Ephemeral Intermittent Perennial Intermittent Intermittent	3 2 25 3	Open Cut Floodway Dry Crossing Dry Crossing Dry Crossing Dry Crossing Dry Crossing	Drains to TNR Drains to TNR TNR TNR Drains to ATW Drains to ATW	No No No No	ES - 1.07 ES - 1.09 ES - 1.14 ES - 1.37, 1.38
S-B48 S-B49 S-B50 S-C1 S-C2 S-C3	UNT to Cacoosing Creek UNT to Cacoosing Creek Cacoosing Creek UNT to Allegheny Creek UNT to Allegheny Creek UNT to Allegheny Creek	-76.0738, 40.2995 -76.0645, 40.3042 -76.0425, 40.3158 -75.9823, 40.2464 -75.9824, 40.2461	Ephemeral Intermittent Perennial Intermittent Intermittent Intermittent Intermittent	3 2 25 3 5	Open Cut Floodway Dry Crossing Dry Crossing Dry Crossing Dry Crossing Dry Crossing Open Cut Floodway	Drains to TNR Drains to TNR TNR Drains to ATW Drains to ATW Drains to ATW Drains to TNR, STS	No No No No No	ES - 1.07 ES - 1.09 ES - 1.14 ES - 1.37, 1.38 ES - 1.38
S-B48 S-B49 S-B50 S-C1 S-C2 S-C3 S-C4	UNT to Cacoosing Creek UNT to Cacoosing Creek Cacoosing Creek UNT to Allegheny Creek UNT to Allegheny Creek UNT to Allegheny Creek UNT to Allegheny Creek	-76.0738, 40.2995 -76.0645, 40.3042 -76.0425, 40.3158 -75.9823, 40.2464 -75.9823, 40.2461 -75.9823, 40.2462	Ephemeral Intermittent Perennial Intermittent Intermittent Intermittent Ephemeral	3 2 25 3 5 7	Open Cut Floodway Dry Crossing Dry Crossing Dry Crossing Dry Crossing Open Cut Floodway Open Cut Floodway	Drains to TNR Drains to TNR TNR Drains to ATW Drains to ATW Drains to TNR, STS Drains to TNR, STS	No No No No No	ES - 1.07 ES - 1.09 ES - 1.14 ES - 1.37, 1.38 ES - 1.38 ES - 1.38
S-B48 S-B49 S-B50 S-C1 S-C2 S-C3 S-C4 S-C7	UNT to Cacoosing Creek UNT to Cacoosing Creek Cacoosing Creek UNT to Allegheny Creek	-76.0738, 40.2995 -76.0645, 40.3042 -76.0425, 40.3158 -75.9823, 40.2464 -75.9824, 40.2461 -75.9823, 40.2462 -75.9827, 40.2374	Ephemeral Intermittent Perennial Intermittent Intermittent Intermittent Ephemeral Perennial	3 2 25 3 5 7 3	Open Cut Floodway Dry Crossing Dry Crossing Dry Crossing Dry Crossing Open Cut Floodway Open Cut Floodway Dry Crossing	Drains to TNR Drains to TNR TNR Drains to ATW Drains to ATW Drains to TNR, STS Drains to TNR, STS Drains to ATW Drains to ATW Drains to ATW Drains to ATW, Class A,	No	ES - 1.07 ES - 1.09 ES - 1.14 ES - 1.37, 1.38 ES - 1.38 ES - 1.38 ES - 1.41
S-B48 S-B49 S-B50 S-C1 S-C2 S-C3 S-C4 S-C7 S-C109 S-C8	UNT to Cacoosing Creek UNT to Cacoosing Creek Cacoosing Creek UNT to Allegheny Creek	-76.0738, 40.2995 -76.0645, 40.3042 -76.0425, 40.3158 -75.9823, 40.2464 -75.9823, 40.2461 -75.9823, 40.2462 -75.9697, 40.2374 -75.9703, 40.2371 -75.9899, 40.2549	Ephemeral Intermittent Perennial Intermittent Intermittent Intermittent Ephemeral Perennial Intermittent Epremeral Perennial	3 2 25 3 5 7 3 4 6	Open Cut Floodw ay Dry Crossing Dry Crossing Dry Crossing Dry Crossing Open Cut Floodw ay Open Cut Floodw ay Dry Crossing Open Cut Floodw ay HDD	Drains to TNR Drains to TNR TNR Drains to ATW Drains to ATW Drains to TNR, STS Drains to TNR, STS Drains to ATW Drains to ATW, TNR	No N	ES - 1.07 ES - 1.09 ES - 1.14 ES - 1.37, 1.38 ES - 1.38 ES - 1.38 ES - 1.38 ES - 1.41 ES - 1.41 ES - 1.41
S-B48 S-B49 S-B50 S-C1 S-C2 S-C3 S-C4 S-C7 S-C109 S-C8 S-C9	UNT to Cacoosing Creek UNT to Cacoosing Creek Cacoosing Creek UNT to Allegheny Creek UNT to Wyomissing Creek UNT to Wyomissing Creek	-76.0738, 40.2995 -76.0645, 40.3042 -76.0425, 40.3158 -75.9823, 40.2464 -75.9823, 40.2461 -75.9823, 40.2462 -75.9697, 40.2374 -75.9703, 40.2371 -75.9898, 40.2550	Ephemeral Intermittent Perennial Intermittent Intermittent Intermittent Ephemeral Perennial Intermittent Ephemeral Ephemeral Ephemeral Ephemeral	3 2 25 3 5 7 3 4 6	Open Cut Floodw ay Dry Crossing Dry Crossing Dry Crossing Dry Crossing Open Cut Floodw ay Open Cut Floodw ay Dry Crossing Open Cut Floodw ay HDD Bore	Drains to TNR Drains to TNR TNR Drains to ATW Drains to ATW Drains to TNR, STS Drains to TNR, STS Drains to ATW Drains to ATW Drains to ATW, TNR Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR	No N	ES - 1.07 ES - 1.09 ES - 1.14 ES - 1.37, 1.38 ES - 1.38 ES - 1.38 ES - 1.41 ES - 1.41 ES - 1.41 ES - 1.35 ES - 1.35
S-B48 S-B49 S-B50 S-C1 S-C2 S-C3 S-C4 S-C7 S-C109 S-C8 S-C9 S-C10	UNT to Cacoosing Creek UNT to Cacoosing Creek Cacoosing Creek UNT to Allegheny Creek UNT to Wyomissing Creek UNT to Wyomissing Creek	-76.0738, 40.2995 -76.0645, 40.3042 -76.0425, 40.3158 -75.9823, 40.2464 -75.9823, 40.2461 -75.9823, 40.2462 -75.9697, 40.2374 -75.9703, 40.2371 -75.9888, 40.2550 -75.9896, 40.2550	Ephemeral Intermittent Perennial Intermittent Intermittent Intermittent Ephemeral Perennial Intermittent Perennial Ephemeral Ephemeral Ephemeral	3 2 25 3 5 7 3 4 6 3 2	Open Cut Floodway Dry Crossing Dry Crossing Dry Crossing Dry Crossing Open Cut Floodway Open Cut Floodway Dry Crossing Open Cut Floodway HDD Bore Open Cut Floodway	Drains to TNR Drains to TNR TNR Drains to ATW Drains to ATW Drains to TNR, STS Drains to TNR, STS Drains to ATW Drains to ATW Drains to ATW, TNR Drains to ATW, Class A, TNR	No N	ES - 1.07 ES - 1.09 ES - 1.14 ES - 1.37, 1.38 ES - 1.38 ES - 1.38 ES - 1.41 ES - 1.41 ES - 1.35 ES - 1.35 ES - 1.35
S-B48 S-B49 S-B50 S-C1 S-C2 S-C3 S-C4 S-C7 S-C109 S-C8 S-C9 S-C10	UNT to Cacoosing Creek UNT to Cacoosing Creek Cacoosing Creek UNT to Allegheny Creek UNT to Wyomissing Creek UNT to Wyomissing Creek UNT to Wyomissing Creek UNT to Wyomissing Creek Wyomissing Creek	-76.0738, 40.2995 -76.0645, 40.3042 -76.0425, 40.3158 -75.9823, 40.2464 -75.9823, 40.2461 -75.9823, 40.2462 -75.9697, 40.2374 -75.9703, 40.2371 -75.9888, 40.2550 -75.9896, 40.2550 -75.9913, 40.2558	Ephemeral Intermittent Perennial Intermittent Intermittent Intermittent Ephemeral Perennial Intermittent Ephemeral Ephemeral Ephemeral Ephemeral Ephemeral	3 2 25 3 5 7 3 4 6 3 2 3	Open Cut Floodway Dry Crossing Dry Crossing Dry Crossing Dry Crossing Open Cut Floodway Open Cut Floodway Dry Crossing Open Cut Floodway HDD Bore Open Cut Floodway HDD	Drains to TNR Drains to TNR TNR Drains to ATW Drains to ATW Drains to TNR, STS Drains to TNR, STS Drains to ATW Drains to ATW Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR ATW, TNR Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR	No N	ES - 1.07 ES - 1.09 ES - 1.14 ES - 1.37, 1.38 ES - 1.38 ES - 1.38 ES - 1.38 ES - 1.36 ES - 1.41 ES - 1.41 ES - 1.35 ES - 1.35 ES - 1.35
S-B48 S-B49 S-B50 S-C1 S-C2 S-C3 S-C4 S-C7 S-C109 S-C8 S-C9 S-C10 S-C11 S-C13 S-C29	UNT to Cacoosing Creek UNT to Cacoosing Creek Cacoosing Creek UNT to Allegheny Creek UNT to Wyomissing Creek	-76.0738, 40.2995 -76.0645, 40.3042 -76.0425, 40.3158 -76.9823, 40.2464 -75.9823, 40.2461 -75.9823, 40.2462 -75.9897, 40.2374 -75.9898, 40.2549 -75.9898, 40.2550 -75.9896, 40.2550 -75.9913, 40.2569 -76.0326, 40.3100	Ephemeral Intermittent Perennial Intermittent Intermittent Intermittent Ephemeral Perennial Intermittent Ephemeral Ephemeral Ephemeral Ephemeral Ephemeral Ephemeral Ephemeral Ephemeral	3 2 25 3 5 7 3 4 6 3 2 3 7	Open Cut Floodw ay Dry Crossing Dry Crossing Dry Crossing Dry Crossing Open Cut Floodw ay Open Cut Floodw ay Dry Crossing Open Cut Floodw ay HDD Bore Open Cut Floodw ay HDD Open Cut Floodw ay Open Cut Floodw ay	Drains to TNR Drains to TNR TNR Drains to ATW Drains to ATW Drains to TNR, STS Drains to TNR, STS Drains to ATW Drains to ATW Drains to ATW, Class A, TNR ATW, TNR Drains to ATW, Class A, TNR	No N	ES - 1.07 ES - 1.09 ES - 1.14 ES - 1.37, 1.38 ES - 1.35
S-B48 S-B49 S-B50 S-C1 S-C2 S-C3 S-C4 S-C7 S-C109 S-C8 S-C9 S-C10 S-C11 S-C13 S-C29 S-C30 S-C31 S-C32 S-C33	UNT to Cacoosing Creek UNT to Cacoosing Creek Cacoosing Creek UNT to Allegheny Creek UNT to Wyomissing Creek UNT to Cacoosing Creek UNT to Cacoosing Creek UNT to Cacoosing Creek UNT to Cacoosing Creek	-76.0738, 40.2995 -76.0645, 40.3042 -76.0425, 40.3158 -75.9823, 40.2464 -75.9823, 40.2461 -75.9823, 40.2462 -75.9823, 40.2374 -75.9703, 40.2374 -75.9899, 40.2549 -75.9896, 40.2550 -75.9896, 40.2550 -75.9913, 40.2558 -75.9911, 40.2569 -76.0326, 40.3100 -76.0256, 40.3031 -76.0237, 40.2946 -76.0233, 40.2969 -76.0233, 40.2969 -76.0249, 40.2946	Ephemeral Intermittent Perennial Intermittent Intermittent Intermittent Ephemeral Perennial Ephemeral	3 2 25 3 5 7 3 4 6 3 2 3 7 2 1 8 3 2 15	Open Cut Floodway Dry Crossing Dry Crossing Dry Crossing Dry Crossing Open Cut Floodway Open Cut Floodway PDD Bore Open Cut Floodway HDD Open Cut Floodway	Drains to TNR Drains to TNR TNR Drains to ATW Drains to ATW Drains to TNR, STS Drains to TNR, STS Drains to ATW Drains to ATW Drains to ATW, TNR Drains to ATW, Class A, TNR ATW, TNR Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to TNR	No N	ES - 1.07 ES - 1.09 ES - 1.14 ES - 1.37, 1.38 ES - 1.38 ES - 1.38 ES - 1.36 ES - 1.35 ES - 1.21 ES - 1.21 ES - 1.21
S-B48 S-B49 S-B50 S-C1 S-C2 S-C3 S-C4 S-C7 S-C109 S-C8 S-C9 S-C10 S-C11 S-C13 S-C29 S-C30 S-C31 S-C32 S-C33 S-C101	UNT to Cacoosing Creek UNT to Cacoosing Creek Cacoosing Creek UNT to Allegheny Creek UNT to Wyomissing Creek UNT to Cacoosing Creek UNT to Cacoosing Creek UNT to Cacoosing Creek	-76.0738, 40.2995 -76.0645, 40.3042 -76.0425, 40.3158 -75.9823, 40.2464 -75.9823, 40.2461 -75.9823, 40.2462 -75.9823, 40.2374 -75.9703, 40.2374 -75.9899, 40.2549 -75.9896, 40.2550 -75.9911, 40.2568 -75.9911, 40.2569 -76.0326, 40.3031 -76.0237, 40.2985 -76.0237, 40.2985 -76.0237, 40.2985 -76.0237, 40.2985	Ephemeral Intermittent Perennial Intermittent Intermittent Intermittent Intermittent Ephemeral Perennial Ephemeral	3 2 25 3 5 7 3 4 6 3 2 3 7 2 1 8 3 2	Open Cut Floodw ay Dry Crossing Dry Crossing Dry Crossing Dry Crossing Open Cut Floodw ay Open Cut Floodw ay Dry Crossing Open Cut Floodw ay HDD Bore Open Cut Floodw ay HDD Open Cut Floodw ay	Drains to TNR Drains to TNR TNR Drains to ATW Drains to ATW Drains to TNR, STS Drains to TNR, STS Drains to ATW Drains to ATW Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to TNR	No N	ES - 1.07 ES - 1.09 ES - 1.14 ES - 1.37, 1.38 ES - 1.38 ES - 1.38 ES - 1.38 ES - 1.36 ES - 1.35 ES - 1.35 ES - 1.35 ES - 1.35 ES - 1.36 ES - 1.36 ES - 1.36 ES - 1.37 ES - 1.20 ES - 1.21
S-B48 S-B49 S-B50 S-C1 S-C2 S-C3 S-C4 S-C7 S-C109 S-C8 S-C9 S-C10 S-C11 S-C13 S-C29 S-C30 S-C31 S-C32 S-C33 S-C101 S-C102	UNT to Cacoosing Creek UNT to Cacoosing Creek Cacoosing Creek UNT to Allegheny Creek UNT to Wyomissing Creek UNT to Cacoosing Creek	-76.0738, 40.2995 -76.0645, 40.3042 -76.0425, 40.3158 -75.9823, 40.2464 -75.9823, 40.2461 -75.9823, 40.2462 -75.9823, 40.2374 -75.9838, 40.2550 -75.9838, 40.2550 -75.9838, 40.2550 -75.9931, 40.2558 -75.9931, 40.2568 -75.9933, 40.2939 -76.0226, 40.3031 -76.0237, 40.2985 -76.0238, 40.2946 -75.9415, 40.2193	Ephemeral Intermittent Perennial Intermittent Intermittent Intermittent Intermittent Ephemeral Perennial Ephemeral Ephemeral Ephemeral Ephemeral Ephemeral Ephemeral Ephemeral Perennial Ephemeral Perennial Perennial Ephemeral Perennial Ephemeral Perennial Ephemeral Perennial Ephemeral Ephemeral Perennial Ephemeral Ephemeral Ephemeral Ephemeral Ephemeral	3 2 25 3 5 7 7 2 1 8 3 3 2 15 4 4 4 4 4	Open Cut Floodway Dry Crossing Dry Crossing Dry Crossing Dry Crossing Open Cut Floodway Open Cut Floodway Dry Crossing Open Cut Floodway HDD Bore Open Cut Floodway HDD Open Cut Floodway Dry Crossing Dry Crossing Dry Crossing Dry Crossing Dry Crossing Dry Crossing	Drains to TNR Drains to TNR TNR Drains to ATW Drains to ATW Drains to TNR, STS Drains to TNR, STS Drains to ATW Drains to ATW Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to ATW Drains to ATW	No N	ES - 1.07 ES - 1.09 ES - 1.14 ES - 1.37, 1.38 ES - 1.38 ES - 1.38 ES - 1.38 ES - 1.36 ES - 1.35 ES - 1.36 ES - 1.36 ES - 1.37 ES - 1.37 ES - 1.37 ES - 1.41 ES - 1.41
S-B48 S-B49 S-B50 S-C1 S-C2 S-C3 S-C4 S-C7 S-C109 S-C8 S-C9 S-C10 S-C11 S-C13 S-C29 S-C30 S-C31 S-C32 S-C33 S-C101	UNT to Cacoosing Creek UNT to Cacoosing Creek Cacoosing Creek UNT to Allegheny Creek UNT to Wyomissing Creek UNT to Cacoosing Creek	-76.0738, 40.2995 -76.0645, 40.3042 -76.0425, 40.3158 -75.9823, 40.2464 -75.9823, 40.2461 -75.9823, 40.2462 -75.9823, 40.2374 -75.9703, 40.2374 -75.9898, 40.2550 -75.9896, 40.2550 -75.9913, 40.2569 -76.0326, 40.3100 -76.0256, 40.3031 -76.0237, 40.2985 -76.0239, 40.2996 -76.0249, 40.2996 -75.9415, 40.2193	Ephemeral Intermittent Perennial Intermittent Intermittent Intermittent Ephemeral Perennial Ephemeral Perennial Perennial Ephemeral Perennial Ephemeral Perennial Ephemeral Ephemeral Ephemeral	3 2 25 3 5 7 3 4 6 3 2 3 7 2 1 8 3 2 15 4	Open Cut Floodway Dry Crossing Dry Crossing Dry Crossing Dry Crossing Open Cut Floodway Open Cut Floodway Dry Crossing Open Cut Floodway HDD Bore Open Cut Floodway HDD Open Cut Floodway Open Cut Floodway Open Cut Floodway Dry Crossing	Drains to TNR Drains to TNR TNR Drains to ATW Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to TNR	No N	ES - 1.07 ES - 1.09 ES - 1.14 ES - 1.37, 1.38 ES - 1.38 ES - 1.38 ES - 1.38 ES - 1.36 ES - 1.41 ES - 1.35 ES - 1.41
S-B48 S-B49 S-B50 S-C1 S-C2 S-C3 S-C4 S-C7 S-C109 S-C8 S-C9 S-C10 S-C11 S-C13 S-C29 S-C30 S-C31 S-C32 S-C33 S-C101 S-C102 S-C102	UNT to Cacoosing Creek UNT to Cacoosing Creek Cacoosing Creek UNT to Allegheny Creek UNT to Wyomissing Creek UNT to Cacoosing Creek UNT to Allegheny Creek	-76.0738, 40.2995 -76.0645, 40.3042 -76.0425, 40.3158 -75.9823, 40.2464 -75.9823, 40.2461 -75.9823, 40.2462 -75.9823, 40.2374 -75.9703, 40.2371 -75.9899, 40.2550 -75.9896, 40.2550 -75.9913, 40.2569 -76.0326, 40.3100 -76.0256, 40.3031 -76.0237, 40.2985 -76.0239, 40.2999 -76.0249, 40.2996 -75.9415, 40.2193 -75.9412, 40.2192 -75.9370, 40.2160	Ephemeral Intermittent Perennial Intermittent Intermittent Intermittent Intermittent Ephemeral Perennial Ephemeral Ephemeral Ephemeral Ephemeral Ephemeral Ephemeral Ephemeral Perennial Ephemeral Perennial Ephemeral Intermittent Ephemeral Ephemeral Ephemeral Ephemeral Intermittent Intermittent Intermittent Intermittent	3 2 25 3 5 7 3 4 6 3 2 3 7 2 1 8 3 2 15 4 4 4 4 4	Open Cut Floodway Dry Crossing Dry Crossing Dry Crossing Dry Crossing Open Cut Floodway Open Cut Floodway Pry Crossing Open Cut Floodway HDD Bore Open Cut Floodway HDD Open Cut Floodway Open Cut Floodway Open Cut Floodway Dry Crossing	Drains to TNR Drains to TNR TNR Drains to ATW Drains to ATW Drains to TNR, STS Drains to TNR, STS Drains to ATW Drains to ATW Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to TNR	No N	ES - 1.07 ES - 1.09 ES - 1.14 ES - 1.37, 1.38 ES - 1.38 ES - 1.38 ES - 1.38 ES - 1.36 ES - 1.41 ES - 1.35 ES - 1.41
S-B48 S-B49 S-B50 S-C1 S-C2 S-C3 S-C4 S-C7 S-C109 S-C8 S-C9 S-C10 S-C11 S-C13 S-C29 S-C30 S-C31 S-C32 S-C33 S-C101 S-C102 S-C103 S-C104 S-C105	UNT to Cacoosing Creek UNT to Cacoosing Creek UNT to Allegheny Creek UNT to Wyomissing Creek UNT to Cacoosing Creek UNT to Allegheny Creek UNT to Allegheny Creek UNT to Allegheny Creek UNT to Muddy Creek UNT to Muddy Creek	-76.0738, 40.2995 -76.0645, 40.3042 -76.0425, 40.3158 -75.9823, 40.2464 -75.9824, 40.2461 -75.9823, 40.2462 -75.9823, 40.2374 -75.9703, 40.2374 -75.9898, 40.2550 -75.9896, 40.2550 -75.9896, 40.2558 -75.9911, 40.2569 -76.0326, 40.3100 -76.0256, 40.3031 -76.0237, 40.2985 -76.0239, 40.2946 -75.9412, 40.2193 -75.9412, 40.2192 -75.9370, 40.2160 -75.9364, 40.2160	Ephemeral Intermittent Perennial Intermittent Intermittent Intermittent Intermittent Ephemeral Ephemeral Ephemeral Ephemeral Ephemeral Ephemeral Ephemeral Perennial Ephemeral Perennial Ephemeral Intermittent Intermittent Intermittent Intermittent Intermittent Intermittent Intermittent Ephemeral	3 2 25 3 3 5 7 3 4 6 3 2 3 7 2 1 8 3 2 15 4 4 4 4 4 4	Open Cut Floodw ay Dry Crossing Dry Crossing Dry Crossing Dry Crossing Open Cut Floodw ay Open Cut Floodw ay Dry Crossing Open Cut Floodw ay HDD Bore Open Cut Floodw ay HDD Open Cut Floodw ay Open Cut Floodw ay Open Cut Floodw ay Dry Crossing Open Cut Floodw ay Open Crossing Ory Crossing Ory Crossing Ory Crossing Ory Crossing Ory Crossing Open Cut Floodw ay	Drains to TNR Drains to TNR TNR Drains to ATW Drains to ATW Drains to TNR, STS Drains to TNR, STS Drains to ATW Drains to ATW Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to TNR	No N	ES - 1.07 ES - 1.09 ES - 1.09 ES - 1.14 ES - 1.37, 1.38 ES - 1.38 ES - 1.38 ES - 1.38 ES - 1.36 ES - 1.41 ES - 1.41 ES - 1.41 ES - 1.45 ES - 1.35 ES - 1.36 ES - 1.49
S-B48 S-B49 S-B50 S-C1 S-C2 S-C3 S-C4 S-C7 S-C109 S-C8 S-C9 S-C10 S-C11 S-C29 S-C30 S-C31 S-C32 S-C33 S-C101 S-C102 S-C103 S-C104	UNT to Cacoosing Creek UNT to Cacoosing Creek Cacoosing Creek UNT to Allegheny Creek UNT to Wyomissing Creek UNT to Cacoosing Creek UNT to Allegheny Creek UNT to Muddy Creek	-76.0738, 40.2995 -76.0645, 40.3042 -76.0425, 40.3158 -75.9823, 40.2464 -75.9824, 40.2461 -75.9823, 40.2462 -75.9829, 40.2374 -75.9703, 40.2371 -75.9898, 40.2550 -75.9896, 40.2550 -75.9913, 40.2558 -76.0326, 40.3100 -76.0256, 40.3031 -76.0237, 40.2985 -76.0239, 40.2999 -76.0249, 40.2946 -75.9415, 40.2193 -75.9412, 40.2192 -75.9370, 40.2160 -75.9368, 40.2158	Ephemeral Intermittent Perennial Intermittent Intermittent Intermittent Ephemeral Perennial Ephemeral Ephemeral Ephemeral Ephemeral Ephemeral Perennial Ephemeral Perennial Perennial Perennial Intermittent Intermittent Intermittent Intermittent	3 2 2 25 3 5 7 7 3 3 4 6 6 3 3 2 2 15 4 4 4 4 4 4 4 4 4	Open Cut Floodway Dry Crossing Dry Crossing Dry Crossing Dry Crossing Open Cut Floodway Open Cut Floodway Dry Crossing Open Cut Floodway HDD Bore Open Cut Floodway HDD Open Cut Floodway Open Cut Floodway Open Cut Floodway Dry Crossing	Drains to TNR Drains to TNR TNR Drains to ATW Drains to ATW Drains to TNR, STS Drains to ATW Drains to ATW Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to ATW Drains to TNR	No N	ES - 1.07 ES - 1.09 ES - 1.09 ES - 1.14 ES - 1.37, 1.38 ES - 1.38 ES - 1.38 ES - 1.38 ES - 1.36 ES - 1.41 ES - 1.35 ES - 1.36 ES - 1.41 ES - 1.45 ES - 1.48 ES - 1.48 ES - 1.49 ES - 1.49
S-B48 S-B49 S-B50 S-C1 S-C2 S-C3 S-C4 S-C7 S-C109 S-C8 S-C9 S-C10 S-C11 S-C13 S-C29 S-C30 S-C31 S-C32 S-C33 S-C101 S-C102 S-C102 S-C103 S-C104 S-C105 S-C106 S-C107 S-C108	UNIT to Cacoosing Creek UNIT to Cacoosing Creek UNIT to Allegheny Creek UNIT to Wyomissing Creek UNIT to Cacoosing Creek UNIT to Allegheny Creek UNIT to Allegheny Creek UNIT to Allegheny Creek UNIT to Muddy Creek	-76.0738, 40.2995 -76.0645, 40.3042 -76.0645, 40.3042 -76.0425, 40.3158 -75.9823, 40.2464 -75.9823, 40.2461 -75.9823, 40.2462 -75.9697, 40.2374 -75.9703, 40.2371 -75.9898, 40.2550 -75.9896, 40.2550 -75.9896, 40.2550 -75.9913, 40.2568 -76.0326, 40.3100 -76.0256, 40.3031 -76.0237, 40.2985 -76.0239, 40.2946 -75.9415, 40.2193 -75.9412, 40.2192 -75.9370, 40.2160 -75.9364, 40.2159 -75.9364, 40.2159 -75.9364, 40.2159 -75.9364, 40.2159 -75.9364, 40.2159 -75.9370, 40.2160 -75.9364, 40.2159 -75.9364, 40.2159	Ephemeral Intermittent Perennial Intermittent Intermittent Intermittent Intermittent Ephemeral Ephemeral Ephemeral Ephemeral Ephemeral Ephemeral Perennial Ephemeral Perennial Ephemeral Intermittent Intermittent Ephemeral Ephemeral Ephemeral Ephemeral Ephemeral	3 2 255 3 3 5 7 3 4 6 3 2 3 7 2 1 8 3 2 15 4 4 4 4 4 4 4 4 4 4 4 4 6 6	Open Cut Floodw ay Dry Crossing Dry Crossing Dry Crossing Dry Crossing Open Cut Floodw ay Open Cut Floodw ay Dry Crossing Open Cut Floodw ay HDD Bore Open Cut Floodw ay HDD Open Cut Floodw ay Dry Crossing Dry Crossing Dry Crossing Dry Crossing Dry Crossing Dry Crossing Ory Crossing Open Cut Floodw ay	Drains to TNR Drains to TNR TNR Drains to ATW Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to TNR	No N	ES - 1.07 ES - 1.09 ES - 1.09 ES - 1.14 ES - 1.37, 1.38 ES - 1.38 ES - 1.38 ES - 1.38 ES - 1.36 ES - 1.35 ES - 1.36 ES - 1.41 ES - 1.42 ES - 1.48 ES - 1.49 ES - 1.51
S-B48 S-B49 S-B50 S-C1 S-C2 S-C3 S-C4 S-C7 S-C109 S-C8 S-C9 S-C10 S-C11 S-C13 S-C29 S-C30 S-C31 S-C32 S-C33 S-C101 S-C102 S-C103 S-C105 S-C106 S-C106 S-C107 S-C108 S-H12	UNT to Cacoosing Creek UNT to Allegheny Creek UNT to Wyomissing Creek UNT to Cacoosing Creek UNT to Allegheny Creek UNT to Allegheny Creek UNT to Allegheny Creek UNT to Muddy Creek	-76.0738, 40.2995 -76.0645, 40.3042 -76.0425, 40.3158 -75.9823, 40.2464 -75.9823, 40.2461 -75.9823, 40.2462 -75.9897, 40.2374 -75.9703, 40.2371 -75.9899, 40.2549 -75.9898, 40.2550 -75.9913, 40.2558 -75.9914, 40.2569 -76.0326, 40.3100 -76.0256, 40.3031 -76.0237, 40.2945 -75.9412, 40.2193 -75.9412, 40.2193 -75.9412, 40.2160 -75.9364, 40.2160 -75.9364, 40.2159 -75.9364, 40.2159 -75.9364, 40.2159 -75.9364, 40.2159 -75.9364, 40.2159 -75.9364, 40.2159 -75.9364, 40.2159 -75.9364, 40.2159 -75.9364, 40.2159 -75.9364, 40.2159 -75.9364, 40.2159 -75.9382, 40.2115 -75.9282, 40.2108 -75.9117, 40.2004	Ephemeral Intermittent Perennial Intermittent Intermittent Intermittent Intermittent Intermittent Ephemeral Perennial Ephemeral Ephemeral Ephemeral Ephemeral Ephemeral Perennial Intermittent Intermittent Intermittent Intermittent Intermittent Intermittent Intermittent Intermittent Ephemeral Ephemeral Perennial Perennial Intermittent	3 2 25 3 3 5 7 7 2 1 1 8 3 3 2 15 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Open Cut Floodway Dry Crossing Dry Crossing Dry Crossing Dry Crossing Open Cut Floodway Open Cut Floodway Dry Crossing Open Cut Floodway HDD Bore Open Cut Floodway HDD Open Cut Floodway Open Cut Floodway Open Cut Floodway Dry Crossing Open Cut Floodway	Drains to TNR Drains to TNR TNR Drains to ATW Drains to ATW Drains to TNR, STS Drains to TNR, STS Drains to ATW Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to TNR	No N	ES - 1.07 ES - 1.09 ES - 1.09 ES - 1.14 ES - 1.37, 1.38 ES - 1.38 ES - 1.38 ES - 1.38 ES - 1.35 ES - 1.36 ES - 1.41 ES - 1.42 ES - 1.48 ES - 1.48 ES - 1.49 ES - 1.51 ES - 1.55
S-B48 S-B49 S-B50 S-C1 S-C2 S-C3 S-C4 S-C7 S-C109 S-C8 S-C9 S-C10 S-C11 S-C13 S-C29 S-C30 S-C31 S-C32 S-C33 S-C101 S-C102 S-C102 S-C103 S-C104 S-C105 S-C106 S-C107 S-C108	UNIT to Cacoosing Creek UNIT to Cacoosing Creek UNIT to Allegheny Creek UNIT to Wyomissing Creek UNIT to Cacoosing Creek UNIT to Allegheny Creek UNIT to Allegheny Creek UNIT to Allegheny Creek UNIT to Muddy Creek	-76.0738, 40.2995 -76.0645, 40.3042 -76.0645, 40.3042 -76.0425, 40.3158 -75.9823, 40.2464 -75.9823, 40.2461 -75.9823, 40.2462 -75.9697, 40.2374 -75.9703, 40.2371 -75.9898, 40.2550 -75.9896, 40.2550 -75.9896, 40.2550 -75.9913, 40.2568 -76.0326, 40.3100 -76.0256, 40.3031 -76.0237, 40.2985 -76.0239, 40.2946 -75.9415, 40.2193 -75.9412, 40.2192 -75.9370, 40.2160 -75.9364, 40.2159 -75.9364, 40.2159 -75.9364, 40.2159 -75.9364, 40.2159 -75.9364, 40.2159 -75.9370, 40.2160 -75.9364, 40.2159 -75.9364, 40.2159	Ephemeral Intermittent Perennial Intermittent Intermittent Intermittent Intermittent Ephemeral Ephemeral Ephemeral Ephemeral Ephemeral Ephemeral Perennial Ephemeral Perennial Ephemeral Ferennial Intermittent Intermittent Ephemeral Ephemeral Ephemeral Ephemeral Ephemeral	3 2 2 5 3 3 5 7 7 2 1 1 8 3 2 2 1 1 5 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Open Cut Floodw ay Dry Crossing Dry Crossing Dry Crossing Dry Crossing Open Cut Floodw ay Open Cut Floodw ay Dry Crossing Open Cut Floodw ay HDD Bore Open Cut Floodw ay HDD Open Cut Floodw ay Dry Crossing Dry Crossing Dry Crossing Dry Crossing Dry Crossing Dry Crossing Ory Crossing Open Cut Floodw ay	Drains to TNR Drains to TNR TNR Drains to ATW Drains to ATW Drains to TNR, STS Drains to TNR, STS Drains to ATW, STS Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to TNR Drains to Class A, ATW Drains to Class A, ATW,	No N	ES - 1.07 ES - 1.09 ES - 1.09 ES - 1.14 ES - 1.37, 1.38 ES - 1.38 ES - 1.38 ES - 1.38 ES - 1.36 ES - 1.35 ES - 1.36 ES - 1.41 ES - 1.42 ES - 1.48 ES - 1.49 ES - 1.51
S-B48 S-B49 S-B50 S-C1 S-C2 S-C3 S-C4 S-C7 S-C109 S-C8 S-C9 S-C10 S-C11 S-C13 S-C29 S-C30 S-C31 S-C32 S-C33 S-C101 S-C102 S-C103 S-C105 S-C106 S-C106 S-C107 S-C108 S-H12 S-H13 S-H14	UNT to Cacoosing Creek UNT to Allegheny Creek UNT to Wyomissing Creek UNT to Cacoosing Creek UNT to Allegheny Creek UNT to Allegheny Creek UNT to Muddy Creek UNT to Hay Creek UNT to Hay Creek	-76.0738, 40.2995 -76.0645, 40.3042 -76.0425, 40.3158 -75.9823, 40.2464 -75.9823, 40.2461 -75.9823, 40.2462 -75.9823, 40.2462 -75.9899, 40.2574 -75.9899, 40.2550 -75.9898, 40.2550 -75.9911, 40.2568 -75.9911, 40.2569 -76.0326, 40.3100 -76.0236, 40.3100 -76.0237, 40.2985 -76.0237, 40.2985 -76.0238, 40.2193 -75.9412, 40.2193 -75.9412, 40.2193 -75.9364, 40.2160 -75.9364, 40.2159 -75.9364, 40.2159 -75.9364, 40.2159 -75.9364, 40.2159 -75.9364, 40.2159 -75.9388, 40.2159 -75.9399, 40.2115 -75.93282, 40.2108 -75.9117, 40.2004 -75.9117, 40.2004	Ephemeral Intermittent Perennial Intermittent	3 2 25 3 3 5 7 7 2 1 1 8 3 3 2 1 1 5 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Open Cut Floodway Dry Crossing Dry Crossing Dry Crossing Dry Crossing Open Cut Floodway Open Cut Floodway HDD Bore Open Cut Floodway HDD Open Cut Floodway Dry Crossing Dry Crossing Dry Crossing Dry Crossing Dry Crossing Dry Crossing Open Cut Floodway Open Cut Floodway Open Cut Floodway Open Crossing Ory Crossing Ory Crossing Ory Crossing Ory Crossing Ory Crossing Open Cut Floodway	Drains to TNR Drains to TNR TNR Drains to ATW Drains to ATW Drains to TNR, STS Drains to TNR, STS Drains to ATW Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to TNR Drains to Class A, ATW TNR Drains to Class A, ATW, TNR Drains to Class A, ATW,	No N	ES - 1.07 ES - 1.09 ES - 1.09 ES - 1.14 ES - 1.37, 1.38 ES - 1.35 ES - 1.36 ES - 1.41
S-B48 S-B49 S-B50 S-C1 S-C2 S-C3 S-C4 S-C7 S-C109 S-C8 S-C9 S-C10 S-C11 S-C13 S-C29 S-C30 S-C31 S-C32 S-C33 S-C101 S-C102 S-C102 S-C105 S-C106 S-C106 S-C107 S-C108 S-H12 S-H13	UNT to Cacoosing Creek UNT to Allegheny Creek UNT to Wyomissing Creek UNT to Cacoosing Creek UNT to Allegheny Creek UNT to Allegheny Creek UNT to Allegheny Creek UNT to Muddy Creek	-76.0738, 40.2995 -76.0645, 40.3042 -76.0425, 40.3158 -75.9823, 40.2464 -75.9823, 40.2461 -75.9823, 40.2461 -75.9823, 40.2462 -75.9829, 40.2374 -75.9838, 40.2550 -75.9838, 40.2550 -75.9836, 40.2550 -75.9911, 40.2558 -76.0326, 40.3100 -76.0256, 40.3031 -76.0237, 40.2985 -76.0237, 40.2985 -76.0238, 40.2193 -75.9412, 40.2193 -75.9412, 40.2192 -75.9370, 40.2160 -75.9364, 40.2159 -75.9364, 40.2159 -75.9364, 40.2159 -75.9388, 40.2159 -75.9388, 40.2159 -75.9388, 40.2159 -75.9388, 40.2159 -75.9388, 40.2159 -75.9388, 40.2159 -75.9388, 40.2159 -75.9388, 40.2159 -75.9388, 40.2159 -75.9388, 40.2159 -75.9388, 40.2159 -75.9388, 40.2159 -75.9388, 40.2159 -75.9388, 40.2159 -75.9388, 40.2159 -75.9388, 40.2159 -75.9388, 40.2159 -75.9388, 40.2159	Ephemeral Intermittent Perennial Intermittent Intermitten	3 2 25 3 3 5 7 3 4 6 3 2 3 7 2 1 8 3 2 15 4 4 4 4 4 4 2 1 1 4 6 2 8	Open Cut Floodway Dry Crossing Dry Crossing Dry Crossing Dry Crossing Open Cut Floodway Open Cut Floodway HDD Bore Open Cut Floodway HDD Open Cut Floodway Dry Crossing Dry Crossing Dry Crossing Dry Crossing Dry Crossing Ory Crossing Open Cut Floodway	Drains to TNR Drains to TNR TNR Drains to ATW Drains to ATW Drains to TNR, STS Drains to ATW Drains to ATW Drains to ATW, Class A, TNR Drains to TNR Drains to Class A, ATW TNR Drains to Class A, ATW TNR Drains to Class A, ATW, TNR	No N	ES - 1.07 ES - 1.09 ES - 1.14 ES - 1.37, 1.38 ES - 1.35 ES - 1.36 ES - 1.41 ES - 1.42 ES - 1.48 ES - 1.49 ES - 1.55 ES - 1.55
S-B48 S-B49 S-B50 S-C1 S-C2 S-C3 S-C4 S-C7 S-C109 S-C8 S-C9 S-C10 S-C11 S-C13 S-C29 S-C30 S-C31 S-C32 S-C33 S-C101 S-C102 S-C102 S-C103 S-C104 S-C105 S-C106 S-C107 S-C108 S-H12 S-H13 S-H14 S-H15	UNT to Cacoosing Creek UNT to Allegheny Creek UNT to Wyomissing Creek UNT to Wyomissing Creek UNT to Wyomissing Creek UNT to Wyomissing Creek UNT to Cacoosing Creek UNT to Allegheny Creek UNT to Allegheny Creek UNT to Muddy Creek UNT to Hay Creek UNT to Hay Creek UNT to Hay Creek	-76.0738, 40.2995 -76.0645, 40.3042 -76.0425, 40.3158 -75.9823, 40.2464 -75.9823, 40.2461 -75.9824, 40.2461 -75.9829, 40.2374 -75.9839, 40.2550 -75.9838, 40.2550 -75.9836, 40.2550 -75.9911, 40.2558 -75.9911, 40.2569 -76.0326, 40.3100 -76.0256, 40.3031 -76.0237, 40.2985 -76.0238, 40.2160 -75.9415, 40.2193 -75.9412, 40.2192 -75.9370, 40.2160 -75.9364, 40.2159 -75.9364, 40.2159 -75.9282, 40.2108 -75.917, 40.2004 -75.917, 40.1999	Ephemeral Intermittent Perennial Intermittent Intermittent Intermittent Intermittent Ephemeral Ephemeral Ephemeral Ephemeral Ephemeral Ephemeral Ephemeral Perennial Ephemeral Perennial Ephemeral Intermittent Ephemeral Ephemeral Intermittent Ephemeral	3 2 2 5 3 3 5 7 7 3 3 4 6 6 3 3 2 2 15 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Open Cut Floodway Dry Crossing Dry Crossing Dry Crossing Dry Crossing Open Cut Floodway Open Cut Floodway HDD Bore Open Cut Floodway HDD Open Cut Floodway Dry Crossing Dry Crossing Dry Crossing Dry Crossing Dry Crossing Dry Crossing Open Cut Floodway	Drains to TNR Drains to TNR TNR Drains to ATW Drains to ATW Drains to TNR, STS Drains to ATW Drains to ATW Drains to ATW, STS Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to Class A, ATW, TNR	No No No No No No No No	ES - 1.07 ES - 1.09 ES - 1.14 ES - 1.37, 1.38 ES - 1.38 ES - 1.38 ES - 1.38 ES - 1.35 ES - 1.41 ES - 1.42 ES - 1.43 ES - 1.44
S-B48 S-B49 S-B50 S-C1 S-C2 S-C3 S-C4 S-C7 S-C109 S-C8 S-C9 S-C10 S-C11 S-C13 S-C29 S-C30 S-C31 S-C32 S-C30 S-C31 S-C32 S-C30 S-C31 S-C32 S-C30 S-C104 S-C105 S-C106 S-C107 S-C108 S-H12 S-H13 S-H14 S-H15 S-H16 S-H17	UNIT to Cacoosing Creek UNIT to Cacoosing Creek UNIT to Allegheny Creek UNIT to Wyomissing Creek UNIT to Wyomissing Creek UNIT to Wyomissing Creek UNIT to Wyomissing Creek UNIT to Cacoosing Creek UNIT to Cacoosing Creek UNIT to Cacoosing Creek UNIT to Cacoosing Creek UNIT to Allegheny Creek UNIT to Allegheny Creek UNIT to Muddy Creek UNIT to Hay Creek	-76.0738, 40.2995 -76.0645, 40.3042 -76.0425, 40.3158 -75.9823, 40.2464 -75.9824, 40.2461 -75.9823, 40.2462 -75.9823, 40.2374 -75.9703, 40.2374 -75.9898, 40.2550 -75.9896, 40.2550 -75.9896, 40.2558 -75.9911, 40.2569 -76.0326, 40.3100 -76.0256, 40.3031 -76.0237, 40.2985 -76.0238, 40.2193 -75.9412, 40.2193 -75.9415, 40.2193 -75.9370, 40.2160 -75.9364, 40.2159 -75.9364, 40.2159 -75.9364, 40.2159 -75.9370, 40.2160 -75.9364, 40.2159 -75.9370, 40.2160 -75.9364, 40.2159 -75.9371, 40.2199 -75.9371, 40.2199 -75.917, 40.1999 -75.917, 40.1999 -75.9058, 40.1964 -75.9974, 40.1910	Ephemeral Intermittent Perennial Intermittent Intermittent Intermittent Intermittent Ephemeral Ephemeral Ephemeral Ephemeral Ephemeral Ephemeral Perennial Ephemeral Perennial Ephemeral Ephemeral Ephemeral Ephemeral Ephemeral Perennial Intermittent Ephemeral Ephemeral Ephemeral Ephemeral Ephemeral Ephemeral	3 2 255 3 3 5 7 3 4 6 3 2 3 7 2 11 8 3 2 15 4 4 4 4 4 4 4 4 4 4 3 2 11 4 6 2 8 4 3 2 11 4 6 2 8 4 3 2 11 4 6 2 8 4	Open Cut Floodway Dry Crossing Dry Crossing Dry Crossing Dry Crossing Open Cut Floodway Open Cut Floodway HDD Bore Open Cut Floodway HDD Open Cut Floodway Dry Crossing Dry Crossing Dry Crossing Dry Crossing Dry Crossing Dry Crossing Open Cut Floodway Open Crossing Ory Crossing Ory Crossing Ory Crossing Open Cut Floodway	Drains to TNR Drains to TNR TNR Drains to ATW Drains to ATW Drains to TNR, STS Drains to ATW Drains to ATW Drains to ATW, STS Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to TNR Drains to TNR Drains to TNR Drains to TNR Drains to TNR Drains to Class A, ATW, TNR	No No No No No No No No	ES - 1.07 ES - 1.09 ES - 1.09 ES - 1.14 ES - 1.37, 1.38 ES - 1.38 ES - 1.38 ES - 1.38 ES - 1.36 ES - 1.41 ES - 1.41 ES - 1.41 ES - 1.45 ES - 1.35 ES - 1.48 ES - 1.49 ES - 1.55 ES - 1.56 ES - 1.56
S-B48 S-B49 S-B50 S-C1 S-C2 S-C3 S-C4 S-C7 S-C109 S-C8 S-C9 S-C10 S-C11 S-C13 S-C29 S-C30 S-C31 S-C32 S-C33 S-C101 S-C102 S-C102 S-C103 S-C104 S-C105 S-C106 S-C107 S-C108 S-H12 S-H13 S-H14 S-H15 S-H16	UNT to Cacoosing Creek UNT to Allegheny Creek UNT to Wyomissing Creek UNT to Wyomissing Creek UNT to Wyomissing Creek UNT to Wyomissing Creek UNT to Cacoosing Creek UNT to Allegheny Creek UNT to Allegheny Creek UNT to Muddy Creek UNT to Hay Creek	-76.0738, 40.2995 -76.0645, 40.3042 -76.0645, 40.3042 -76.0425, 40.3158 -75.9823, 40.2464 -75.9823, 40.2461 -75.9823, 40.2462 -75.9897, 40.2374 -75.9899, 40.2549 -75.9898, 40.2550 -75.9896, 40.2550 -75.9913, 40.2558 -75.9911, 40.2569 -76.0326, 40.3100 -76.0256, 40.3031 -76.0237, 40.2985 -76.0233, 40.2946 -75.9412, 40.2193 -75.9412, 40.2193 -75.9412, 40.2192 -75.9364, 40.2160 -75.9364, 40.2160 -75.9364, 40.2159 -75.9364, 40.2159 -75.9370, 40.2160 -75.9364, 40.2159 -75.9364, 40.2159 -75.9371, 40.2004 -75.9117, 40.2004 -75.9117, 40.2004 -75.9117, 40.1999 -75.9058, 40.1964 -75.9058, 40.1964 -75.8974, 40.1910 -75.8961, 40.1907	Ephemeral Intermittent Perennial Intermittent Intermitten	3 2 255 3 3 5 7 3 4 6 3 2 3 7 2 11 8 3 2 15 4 4 4 4 4 4 4 4 3 2 11 4 6 2 8 4 3 2	Open Cut Floodw ay Dry Crossing Dry Crossing Dry Crossing Dry Crossing Open Cut Floodw ay Open Cut Floodw ay HDD Bore Open Cut Floodw ay HDD Open Cut Floodw ay Ory Crossing Dry Crossing Dry Crossing Ory Crossing Ory Crossing Ory Crossing Open Cut Floodw ay	Drains to TNR Drains to TNR TNR Drains to ATW Drains to ATW Drains to TNR, STS Drains to ATW Drains to ATW Drains to ATW, STS Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to Class A, ATW, TNR	No No No No No No No No	ES - 1.07 ES - 1.09 ES - 1.09 ES - 1.14 ES - 1.37, 1.38 ES - 1.38 ES - 1.38 ES - 1.38 ES - 1.36 ES - 1.35 ES - 1.36 ES - 1.41 ES - 1.42 ES - 1.48 ES - 1.48 ES - 1.49 ES - 1.49 ES - 1.49 ES - 1.55
S-B48 S-B49 S-B50 S-B50 S-C1 S-C2 S-C3 S-C4 S-C7 S-C109 S-C8 S-C9 S-C10 S-C11 S-C13 S-C29 S-C30 S-C31 S-C32 S-C33 S-C101 S-C102 S-C103 S-C105 S-C106 S-C106 S-C107 S-C108 S-H12 S-H13 S-H14 S-H15 S-H16 S-H17 S-H18	UNIT to Cacoosing Creek UNIT to Cacoosing Creek UNIT to Allegheny Creek UNIT to Wyomissing Creek UNIT to Wyomissing Creek UNIT to Wyomissing Creek UNIT to Wyomissing Creek UNIT to Cacoosing Creek UNIT to Cacoosing Creek UNIT to Cacoosing Creek UNIT to Cacoosing Creek UNIT to Allegheny Creek UNIT to Allegheny Creek UNIT to Muddy Creek UNIT to Hay Creek	-76.0738, 40.2995 -76.0645, 40.3042 -76.0425, 40.3158 -75.9823, 40.2464 -75.9824, 40.2461 -75.9823, 40.2462 -75.9823, 40.2374 -75.9703, 40.2374 -75.9898, 40.2550 -75.9896, 40.2550 -75.9896, 40.2558 -75.9911, 40.2569 -76.0326, 40.3100 -76.0256, 40.3031 -76.0237, 40.2985 -76.0238, 40.2193 -75.9412, 40.2193 -75.9415, 40.2193 -75.9370, 40.2160 -75.9364, 40.2159 -75.9364, 40.2159 -75.9364, 40.2159 -75.9370, 40.2160 -75.9364, 40.2159 -75.9370, 40.2160 -75.9364, 40.2159 -75.9371, 40.2199 -75.9371, 40.2199 -75.917, 40.1999 -75.917, 40.1999 -75.9058, 40.1964 -75.9974, 40.1910	Ephemeral Intermittent Perennial Intermittent Intermittent Intermittent Intermittent Ephemeral Ephemeral Ephemeral Ephemeral Ephemeral Ephemeral Perennial Ephemeral Perennial Ephemeral Ephemeral Ephemeral Ephemeral Ephemeral Perennial Intermittent Ephemeral Ephemeral Ephemeral Ephemeral Ephemeral Ephemeral	3 2 255 3 3 5 7 7 3 4 6 3 2 11 8 3 2 15 4 4 4 4 4 4 4 4 4 4 4 4 4 7 2 11 4 6 2 8 4 4 7 10	Open Cut Floodway Dry Crossing Dry Crossing Dry Crossing Dry Crossing Open Cut Floodway Open Cut Floodway HDD Bore Open Cut Floodway HDD Open Cut Floodway Dry Crossing Dry Crossing Dry Crossing Dry Crossing Dry Crossing Dry Crossing Open Cut Floodway Open Crossing Ory Crossing Ory Crossing Ory Crossing Open Cut Floodway	Drains to TNR Drains to TNR TNR Drains to ATW Drains to ATW Drains to TNR, STS Drains to ATW Drains to ATW Drains to ATW, STS Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to TNR Drains to TNR Drains to TNR Drains to TNR Drains to TNR Drains to TNR Drains to TNR Drains to TNR Drains to TNR Drains to TNR Drains to TNR Drains to TNR Drains to TNR Drains to TNR Drains to TNR Drains to TNR Drains to Class A, ATW TNR Drains to Class A, ATW, TNR	No No No No No No No No	ES - 1.07 ES - 1.09 ES - 1.09 ES - 1.14 ES - 1.37, 1.38 ES - 1.38 ES - 1.38 ES - 1.38 ES - 1.36 ES - 1.35 ES - 1.35 ES - 1.35 ES - 1.35 ES - 1.41 ES - 1.42 ES - 1.43 ES - 1.45 ES - 1.45 ES - 1.55
S-B48 S-B49 S-B50 S-C1 S-C2 S-C3 S-C4 S-C7 S-C109 S-C8 S-C9 S-C10 S-C11 S-C13 S-C29 S-C30 S-C31 S-C32 S-C30 S-C31 S-C32 S-C30 S-C31 S-C32 S-C30 S-C104 S-C105 S-C106 S-C106 S-C106 S-C107 S-C108 S-H12 S-H13 S-H14 S-H16 S-H17 S-H18 S-H19 S-H20 S-H20 S-H21	UNT to Cacoosing Creek UNT to Allegheny Creek UNT to Wyomissing Creek UNT to Wyomissing Creek UNT to Wyomissing Creek UNT to Wyomissing Creek UNT to Cacoosing Creek UNT to Cacoosing Creek UNT to Cacoosing Creek UNT to Cacoosing Creek UNT to Allegheny Creek UNT to Allegheny Creek UNT to Muddy Creek UNT to Hay Creek	-76.0738, 40.2995 -76.0645, 40.3042 -76.0645, 40.3042 -76.0425, 40.3158 -75.9823, 40.2464 -75.9824, 40.2461 -75.9823, 40.2462 -75.9897, 40.2374 -75.9898, 40.2549 -75.9898, 40.2550 -75.9898, 40.2550 -75.9913, 40.2558 -75.9914, 40.2569 -76.0326, 40.3100 -76.0256, 40.3031 -76.0237, 40.2985 -76.0233, 40.2946 -75.9412, 40.2193 -75.9412, 40.2193 -75.9412, 40.2192 -75.9364, 40.2160 -75.9364, 40.2160 -75.9364, 40.2159 -75.9364, 40.2160 -75.9364, 40.2175 -75.9282, 40.2108 -75.9117, 40.2004 -75.9117, 40.1999 -75.9117, 40.1999 -75.9058, 40.1907 -75.8961, 40.1907 -75.8961, 40.1907 -75.8961, 40.1907 -75.8961, 40.1907 -75.8961, 40.1907 -75.8961, 40.1907 -75.8961, 40.1907 -75.8961, 40.1907 -75.8961, 40.1907 -75.8961, 40.1907 -75.8961, 40.1907 -75.8961, 40.1907 -75.8961, 40.1902 -75.8977, 40.1883 -75.9176, 40.2040	Ephemeral Intermittent Perennial Intermittent Intermitten	3 2 2 5 3 3 5 7 7 3 3 4 4 6 6 3 3 2 15 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Open Cut Floodw ay Dry Crossing Dry Crossing Dry Crossing Dry Crossing Open Cut Floodw ay Open Cut Floodw ay HDD Bore Open Cut Floodw ay HDD Open Cut Floodw ay Dry Crossing Dry Crossing Dry Crossing Dry Crossing Dry Crossing Dry Crossing Open Cut Floodw ay	Drains to TNR Drains to TNR TNR Drains to ATW Drains to ATW Drains to TNR, STS Drains to TNR, STS Drains to ATW Drains to ATW Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to TNR Drains to TNR Drains to Class A, ATW, TNR	No	ES - 1.07 ES - 1.09 ES - 1.09 ES - 1.09 ES - 1.14 ES - 1.37, 1.38 ES - 1.35 ES - 1.35 ES - 1.35 ES - 1.35 ES - 1.41 ES - 1.42 ES - 1.44 ES - 1.49 ES - 1.55
S-B48 S-B49 S-B50 S-B49 S-B50 S-C1 S-C2 S-C3 S-C4 S-C7 S-C109 S-C8 S-C9 S-C10 S-C11 S-C13 S-C29 S-C30 S-C31 S-C32 S-C33 S-C101 S-C102 S-C102 S-C103 S-C104 S-C105 S-C106 S-C107 S-C108 S-H12 S-H13 S-H14 S-H15 S-H16 S-H17 S-H18 S-H19 S-H20 S-H21 S-H21	UNIT to Cacoosing Creek UNIT to Cacoosing Creek UNIT to Allegheny Creek UNIT to Wyomissing Creek UNIT to Cacoosing Creek UNIT to Allegheny Creek UNIT to Allegheny Creek UNIT to Allegheny Creek UNIT to Muddy Creek UNIT to Hay Creek	-76.0738, 40.2995 -76.0645, 40.3042 -76.0425, 40.3158 -75.9823, 40.2464 -75.9824, 40.2461 -75.9823, 40.2462 -75.9829, 40.2374 -75.9839, 40.2549 -75.9838, 40.2550 -75.9836, 40.2550 -75.9911, 40.2569 -76.026, 40.3031 -76.0237, 40.2985 -76.0238, 40.3100 -76.0256, 40.3031 -76.0237, 40.2985 -75.9412, 40.2193 -75.9412, 40.2193 -75.9412, 40.2192 -75.9370, 40.2160 -75.9364, 40.2160 -75.9368, 40.2158 -75.9370, 40.2160 -75.9369, 40.2159 -75.9370, 40.2159 -75.9371, 40.2040 -75.9117, 40.2004 -75.9117, 40.2004 -75.9117, 40.1999 -75.9058, 40.1964 -75.8961, 40.1907 -75.8961, 40.1907 -75.8961, 40.1907 -75.8961, 40.1907 -75.8961, 40.1907 -75.8961, 40.1907 -75.8961, 40.1907 -75.8961, 40.1907 -75.8961, 40.1907 -75.8961, 40.1900	Ephemeral Intermittent Perennial Intermittent Intermitent Intermitent Intermittent	3 2 2 5 3 3 5 7 7 3 3 4 6 6 3 3 7 7 2 1 1 8 8 3 3 2 1 1 5 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Open Cut Floodw ay Dry Crossing Dry Crossing Dry Crossing Dry Crossing Open Cut Floodw ay Open Cut Floodw ay Dry Crossing Open Cut Floodw ay HDD Bore Open Cut Floodw ay HDD Open Cut Floodw ay Dry Crossing Dry Crossing Dry Crossing Dry Crossing Dry Crossing Dry Crossing Open Cut Floodw ay	Drains to TNR Drains to TNR TNR Drains to ATW Drains to ATW Drains to TNR, STS Drains to ATW Drains to ATW Drains to ATW, STS Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to TNR Drains to TNR Drains to TNR Drains to TNR Drains to TNR Drains to TNR Drains to TNR Drains to TNR Drains to TNR Drains to TNR Drains to Class A, ATW TNR Drains to Class A, ATW, TNR Drains to TNR	No No No No No No No No	ES - 1.07 ES - 1.09 ES - 1.09 ES - 1.09 ES - 1.14 ES - 1.37, 1.38 ES - 1.35 ES - 1.55 ES - 1.56 ES - 1.59
S-B48 S-B49 S-B50 S-C1 S-C2 S-C3 S-C4 S-C7 S-C109 S-C8 S-C9 S-C10 S-C11 S-C13 S-C29 S-C30 S-C31 S-C32 S-C30 S-C31 S-C32 S-C30 S-C31 S-C32 S-C30 S-C104 S-C105 S-C106 S-C106 S-C106 S-C107 S-C108 S-H12 S-H13 S-H14 S-H16 S-H17 S-H18 S-H19 S-H20 S-H20 S-H21	UNIT to Cacoosing Creek UNIT to Cacoosing Creek Cacoosing Creek UNIT to Allegheny Creek UNIT to Wyomissing Creek UNIT to Wyomissing Creek UNIT to Wyomissing Creek UNIT to Wyomissing Creek UNIT to Cacoosing Creek UNIT to Allegheny Creek UNIT to Allegheny Creek UNIT to Muddy Creek UNIT to Hay Creek	-76.0738, 40.2995 -76.0645, 40.3042 -76.0645, 40.3042 -76.0425, 40.3158 -75.9823, 40.2464 -75.9824, 40.2461 -75.9823, 40.2462 -75.9897, 40.2374 -75.9898, 40.2549 -75.9898, 40.2550 -75.9898, 40.2550 -75.9913, 40.2558 -75.9914, 40.2569 -76.0326, 40.3100 -76.0256, 40.3031 -76.0237, 40.2985 -76.0233, 40.2946 -75.9412, 40.2193 -75.9412, 40.2193 -75.9412, 40.2192 -75.9364, 40.2160 -75.9364, 40.2160 -75.9364, 40.2159 -75.9364, 40.2160 -75.9364, 40.2175 -75.9282, 40.2108 -75.9117, 40.2004 -75.9117, 40.1999 -75.9117, 40.1999 -75.9058, 40.1907 -75.8961, 40.1907 -75.8961, 40.1907 -75.8961, 40.1907 -75.8961, 40.1907 -75.8961, 40.1907 -75.8961, 40.1907 -75.8961, 40.1907 -75.8961, 40.1907 -75.8961, 40.1907 -75.8961, 40.1907 -75.8961, 40.1907 -75.8961, 40.1907 -75.8961, 40.1902 -75.8977, 40.1883 -75.9176, 40.2040	Ephemeral Intermittent Perennial Intermittent Intermitten	3 2 2 5 3 3 5 7 7 3 3 4 4 6 6 3 3 2 15 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Open Cut Floodw ay Dry Crossing Dry Crossing Dry Crossing Dry Crossing Open Cut Floodw ay Open Cut Floodw ay HDD Bore Open Cut Floodw ay HDD Open Cut Floodw ay Dry Crossing Dry Crossing Dry Crossing Dry Crossing Dry Crossing Dry Crossing Open Cut Floodw ay	Drains to TNR Drains to TNR TNR Drains to ATW Drains to ATW Drains to TNR, STS Drains to TNR, STS Drains to ATW Drains to ATW Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to TNR Drains to TNR Drains to Class A, ATW, TNR	No	ES - 1.07 ES - 1.09 ES - 1.09 ES - 1.09 ES - 1.14 ES - 1.37, 1.38 ES - 1.35 ES - 1.35 ES - 1.35 ES - 1.35 ES - 1.41 ES - 1.42 ES - 1.44 ES - 1.49 ES - 1.55
S-B48 S-B49 S-B50 S-B49 S-B50 S-C1 S-C2 S-C3 S-C4 S-C7 S-C109 S-C8 S-C9 S-C10 S-C11 S-C13 S-C29 S-C30 S-C31 S-C32 S-C33 S-C101 S-C102 S-C103 S-C104 S-C105 S-C106 S-C107 S-C108 S-H12 S-H13 S-H14 S-H15 S-H16 S-H17 S-H18 S-H19 S-H20 S-H21 S-H22 S-H23	UNIT to Cacoosing Creek UNIT to Cacoosing Creek Cacoosing Creek UNIT to Allegheny Creek UNIT to Wyomissing Creek UNIT to Wyomissing Creek UNIT to Wyomissing Creek UNIT to Wyomissing Creek UNIT to Cacoosing Creek UNIT to Allegheny Creek UNIT to Allegheny Creek UNIT to Muddy Creek UNIT to Hay Creek	-76.0738, 40.2995 -76.0645, 40.3042 -76.0425, 40.3158 -75.9823, 40.2464 -75.9824, 40.2461 -75.9823, 40.2462 -75.9897, 40.2374 -75.9899, 40.2549 -75.9898, 40.2550 -75.9913, 40.2558 -75.9914, 40.2569 -76.0326, 40.3100 -76.0256, 40.3031 -76.0237, 40.2985 -76.0233, 40.2946 -75.9412, 40.2193 -75.9412, 40.2193 -75.9412, 40.2192 -75.9364, 40.2150 -75.9364, 40.2150 -75.9364, 40.2150 -75.9364, 40.2159 -75.9364, 40.2159 -75.9364, 40.2159 -75.9364, 40.2159 -75.9364, 40.2159 -75.9364, 40.2159 -75.9364, 40.2100 -75.9369, 40.2100 -75.9364, 40.2100 -75.9364, 40.2100 -75.9364, 40.2100 -75.9364, 40.2100 -75.9364, 40.2100 -75.9364, 40.2100 -75.9364, 40.2100 -75.9364, 40.2100 -75.9364, 40.2100 -75.9364, 40.2100 -75.9364, 40.2100 -75.9364, 40.2100 -75.9364, 40.2100 -75.9364, 40.2100 -75.9364, 40.2004 -75.976, 40.2004 -75.9776, 40.2004 -75.9258, 40.2090 -75.9261, 40.2094	Ephemeral Intermittent Perennial Intermittent Intermitten	3 2 2 5 3 3 5 7 7 3 3 4 4 6 6 3 3 2 15 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Open Cut Floodw ay Dry Crossing Dry Crossing Dry Crossing Dry Crossing Open Cut Floodw ay Open Cut Floodw ay HDD Bore Open Cut Floodw ay HDD Open Cut Floodw ay Dry Crossing Dry Crossing Dry Crossing Dry Crossing Dry Crossing Dry Crossing Open Cut Floodw ay	Drains to TNR Drains to TNR TNR Drains to ATW Drains to ATW Drains to TNR, STS Drains to TNR, STS Drains to ATW Drains to ATW, STS Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to TNR Drains to TNR Drains to TNR Drains to TNR Drains to TNR Drains to TNR Drains to TNR Drains to TNR Drains to TNR Drains to Class A, ATW, TNR	No	ES - 1.07 ES - 1.09 ES - 1.09 ES - 1.09 ES - 1.14 ES - 1.37, 1.38 ES - 1.38 ES - 1.38 ES - 1.38 ES - 1.35 ES - 1.50 ES - 1.55 ES - 1.55 ES - 1.55 ES - 1.55 ES - 1.59 ES - 1.52 ES - 1.52
S-B48 S-B49 S-B50 S-C1 S-C2 S-C3 S-C4 S-C7 S-C109 S-C8 S-C9 S-C10 S-C11 S-C13 S-C29 S-C30 S-C31 S-C32 S-C30 S-C31 S-C32 S-C30 S-C31 S-C32 S-C30 S-C31 S-C32 S-C33 S-C101 S-C102 S-C102 S-C103 S-C104 S-C105 S-C106 S-C106 S-C107 S-C108 S-H12 S-H13 S-H16 S-H17 S-H18 S-H17 S-H18 S-H19 S-H20 S-H21 S-H22 S-H23 S-H23 S-H23	UNT to Cacoosing Creek UNT to Cacoosing Creek UNT to Allegheny Creek UNT to Allegheny Creek UNT to Allegheny Creek UNT to Allegheny Creek UNT to Allegheny Creek UNT to Allegheny Creek UNT to Allegheny Creek UNT to Wyomissing Creek UNT to Cacoosing Creek UNT to Allegheny Creek UNT to Allegheny Creek UNT to Allegheny Creek UNT to Muddy Creek UNT to Hay Creek	-76.0738, 40.2995 -76.0645, 40.3042 -76.0425, 40.3158 -75.9823, 40.2464 -75.9823, 40.2461 -75.9823, 40.2462 -75.9823, 40.2462 -75.9899, 40.2549 -75.9898, 40.2550 -75.9896, 40.2550 -75.9911, 40.2558 -75.9911, 40.2569 -76.0326, 40.3100 -76.0256, 40.3031 -76.0237, 40.2985 -76.0238, 40.2160 -75.9412, 40.2193 -75.9415, 40.2192 -75.9370, 40.2160 -75.9364, 40.2159 -75.9364, 40.2159 -75.9370, 40.2160 -75.9364, 40.2159 -75.9370, 40.2160 -75.9388, 40.2159 -75.9371, 40.2094 -75.9117, 40.2004 -75.9117, 40.2004 -75.9117, 40.1999 -75.9291, 40.2115 -75.9282, 40.2108 -75.917, 40.1999 -75.9588, 40.1964 -75.8961, 40.1907 -75.8961, 40.1907 -75.8961, 40.1907 -75.8961, 40.1902 -75.8927, 40.1883 -75.9176, 40.2090 -75.9261, 40.2090 -75.9261, 40.2090 -75.9261, 40.2090 -75.9261, 40.2090 -75.9261, 40.2090	Ephemeral Intermittent Perennial Intermittent Intermitent Intermitent Intermittent	3 2 25 3 3 5 7 3 4 6 3 2 3 7 2 3 7 2 11 8 3 3 2 15 4 4 4 4 4 4 2 11 4 6 2 11 4 6 2 11 4 6 2 11 4 6 2 11 4 6 2 11 4 6 2 11 4 6 2 11 4 6 2 11 4 6 2 11 4 6 2 11 4 6 10 2 4 4 8 10 4	Open Cut Floodw ay Dry Crossing Dry Crossing Dry Crossing Dry Crossing Open Cut Floodw ay Open Cut Floodw ay HDD Bore Open Cut Floodw ay HDD Open Cut Floodw ay Dry Crossing Dry Crossing Dry Crossing Dry Crossing Dry Crossing Open Cut Floodw ay	Drains to TNR Drains to TNR TNR Drains to ATW Drains to ATW Drains to TNR, STS Drains to ATW Drains to ATW Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to ATW, Class A, TNR Drains to TNR Drains to TNR Drains to TNR Drains to TNR Drains to TNR Drains to TNR Drains to Class A, ATW, TNR Drains to TNR Drains to TNR	No No No No No No No No	ES - 1.07 ES - 1.09 ES - 1.14 ES - 1.37, 1.38 ES - 1.38 ES - 1.38 ES - 1.38 ES - 1.35 ES - 1.55 ES - 1.49 ES - 1.49 ES - 1.49 ES - 1.49 ES - 1.55 ES - 1.56 ES - 1.56 ES - 1.59 ES - 1.50

Wetland ID	USFWS Cowardin Classification	Coordinates	Crossing Method	Exceptional Value	E&S Plan Sheet Numbe
Pond-B3	PuB	-75.9507, 40.2254	HDD	n/a	ES - 1.46
W35	PEM	-75.8733, 40.1758	Open Cut	Possible BT	ES - 1.65
W48	PEM	-75.9959, 40.2609	Open Cut	Wild Trout	ES - 1.33
W301	PEM	-75.9117, 40.2000	Open Cut	Possible BT	ES - 1.55
W302	PEM	-75.9567, 40.2292	Open Cut	Possible BT	ES - 1.44
AM2	PEM	-75.9911, 40.2575	Open Cut	n/a	ES - 1.35
A37	PEM	-75.8835, 40.1823	HDD	n/a	ES - 1.68
A45	PEM	-75.8550, 40.1648	Open Cut/Temporary Matting	n/a	ES - 1.70
A49	PEM	-76.0929, 40.2901	Open Cut	n/a	ES - 1.03
B16	PEM	-76.1013, 40.2865	Open Cut	n/a	ES - 1.01
B18	PEM	-76.1009, 40.2864	Open Cut	n/a	ES - 1.01
B21	PEM	-76.0879, 40.2928	Open Cut	Wild Trout	ES - 1.04
B22	PEM	-76.0871, 40.2933	Open Cut	Wild Trout	ES - 1.04
B24	PEM	-76.0829, 40.2952	Open Cut	Wild Trout	ES - 1.05
B27	PEM	-75.9554, 40.2285	Open Cut	n/a	ES - 1.44, 1.45
B28	PEM	-75.9556, 40.2283	Open Cut	n/a	ES - 1.45
B29	PEM	-75.9565, 40.2289	Open Cut	n/a	ES - 1.44
B30	PEM	-75.9566, 40.2294	Open Cut	n/a	ES - 1.44
B31	PEM	-75.9572, 40.2297	Open Cut	n/a	ES - 1.44
B32	PEM	-75.9652, 40.2348	Open Cut	n/a	ES - 1.42
B33	PEM	-75.9648, 40.2341	Open Cut	n/a	ES - 1.42
D.40	PFO	-76.0286, 40.2811	Open Cut	n/a	ES - 1.25
B40	PEM	-76.0287, 40.2810	Open Cut	n/a	ES - 1.25
B42	PEM	-76.0795, 40.2969	Open Cut	Wild Trout	ES - 1.06
B43	PEM	-76.0738, 40.2997	Open Cut	Wild Trout, Possible BT	ES - 1.07
B44	PEM	-76.0640, 40.3048	Open Cut	Wild Trout	ES - 1.09
B48	PEM	-76.0598, 40.3069	Open Cut	n/a	ES - 1.10
B49	PSS	-76.0422, 40.3161	Open Cut	Wild Trout	ES - 1.14
BA10	PEM	-75.8578, 40.1666	Open Cut	n/a	ES - 1.69
C1	PEM	-75.9826, 40.2473	Open Cut	n/a	ES - 1.37
C2	PEM	-75.9822, 40.2464	Open Cut	n/a	ES - 1.37
C5	PEM	-75.9610, 40.2371	Open Cut	n/a	ES - 1.41
C6	PSS	-75.9893, 40.2549	Bore	n/a	ES-
C12	PEM	-76.0237, 40.2985	Open Cut	Wild Trout	ES - 1.20
C13	PEM	-76.0251, 40.2948	Open Cut	Wild Trout	ES - 1.21
H21	PEM	-75.9058, 40.1966	Open Cut	Wild Trout	ES - 1.56
H23	PEM	-75.9253, 40.2087	Open Cut	n/a	ES - 1.52
H25	PEM	-75.9257, 40.2089	Open Cut	Wild Trout	ES - 1.52
H26	PEM	-75.9259, 40.2090	Open Cut	Wild Trout	ES - 1.52
J48	PEM	-75.8604, 40.1681	HDD	n/a	ES - 1.68, 1.69
J 4 0	PFO	40.1677, -75.8592	HDD	n/a	ES - 1.68, 1.69
K25	PEM	-76.0806, 40.2962	Open Cut	n/a	ES - 1.06
Q80	PFO	-75.8884, 40.1886	Bore	Wild Trout	ES - 1.60



NOTES:

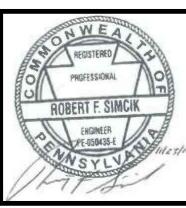
- 1. TEST WIRES SHALL BE STRANDED COPPER WITH THW OR MTW INSULATION.
- 2. TEST WIRES SHALL BE OF THE GAUGE INDICATED AND PROVIDED WITH WIRE LABELS (WITHIN TEST STATION) TO IDENTIFY THE PIPELINE ATTACHMENT LOCATION. THE NO. 1 TEST WIRE SHALL BE ATTACHED TO THE PIPELINE AT THE LOWER STATION NO. WITH THE ADDITIONAL TEST WIRE ATTACHED AT THE SPACING INDICATED AND IN ORDER OF ADVANCING STATION NOS.
- 3. TEST WIRES ARE TO BE CONNECTED USING THE THERMITE WELD
- 4. COAT THERMITE WELD CONNECTION & ALL BELOW GRADE EXPOSED COPPER AS SPECIFIED FOR EXISTING PIPELINE COATING OR AS SPECIFIED FOR BARE PIPE.
- 5. INSTALL TEST WIRES WITHIN PIPE TRENCH AT THE FIVE OR SEVEN O'CLOCK POSITION OF THE PIPE. TEST WIRES SHALL NOT BE IN IMMEDIATE CONTACT WITH THE PIPE.
- 6. BACK-FILL AROUND WIRES MUST BE FREE OF SHARP MATERIALS WHICH COULD DAMAGE THE TEST WIRE INSULATION.

TYPICAL CATHODIC PROTECTION TEST STATION NOT TO SCALE

TE TETRA TECH

NO. BY DATE REMARKS 661 ANDERSEN DRIVE — FOSTER PLAZA 7 PITTSBURGH, PA 15220 T: (412) 921-7090 | F: (412) 921-4040

REVISIONS



SUNOCO PIPELINE L.P. PHILADELPHIA, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT CONSTRUCTION SPREAD 5

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINE

BERKS COUNTY CONSERVATION DISTRICT EROSION & SEDIMENT CONTROL & SITE RESTORATION PLAN NOTES & DETAILS

DATE:	NOVEMBE	R 2016
PROJECT N	NO.: 1120	05958
DESIGNED	BY:	JB
DRAWN BY	':	ВН
CHECKED	BY:	RS
COPYRIGHT	TETRA TECH	I INC.

ES-0.02

STANDARD EROSION AND SEDIMENT CONTROL PLAN NOTES:

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING, CUTS, FILLS, TRENCHING, AND TEMPORARY ROAD CONSTRUCTION OR IMPROVEMENT, SHALL BE DONE IN ACCORDANCE WITH AN APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.

UNTIL THE PROBLEM IS CORRECTED

- 2. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING.
- 3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
- 4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS.
 DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE
 DEPARTMENT PRIOR TO IMPLEMENTATION.
- 5. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
- CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.
- 7. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND/OR FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
- 8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAPS(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2H: 1V OR FLATTER. SEGREGATION OF TOPSOIL SHALL OCCUR WHERE TOPSOIL EXISTS WITHIN THE WORK AREA.
- 9. 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 LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
- 10. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1, AND 287.1 ET. SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
- 11. ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
- 12. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP-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.
- 13. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS.

STANDARD EROSION AND SEDIMENT CONTROL PLAN NOTES (CONTINUED):

- 14. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, RE-MULCH AND RE-NETTING MUST BE PERFORMED IMMEDIATELY. IF THE E&S BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
- 15. NO SOIL AMENDMENTS SUCH AS AGRICULTURAL LIME, FERTILIZER, ETC. WILL BE USED WITHIN WETLAND AREAS.
- 16. A LOG SHOWING DATES THAT E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
- 17. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE AT THE END OF EACH DAY, OR AS NEEDED, OR AS DIRECTED BY THE CONSERVATION DISTRICT OR LOCAL MUNICIPALITY, AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
- 18. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
- 19. IN AREAS OF TOPSOIL SEGREGATION THE TOPSOIL SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES 6 TO 12 INCHES ON COMPACTED SOILS PRIOR TO THE RESTORATION OF THE TOPSOIL. AREAS TO BE REVEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILLOUT SLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
- 20. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
- 21. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 8 INCHES IN THICKNESS.
- 22. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY
- 23. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED 17. INTO FILLS.
- 24. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
- 25. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
- 26. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 100 FEET OF A SPECIAL PROTECTION SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.
- 27. UPON TEMPORARY CESSATION OF AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY WHERE CESSATION OF EARTH DISTURBANCE ACTIVITIES IN NON-SPECIAL PROTECTION WATERSHEDS WILL EXCEED 4 DAYS, THE SITE SHALL BE IMMEDIATELY SEEDED, MULCHED OR OTHERWISE PROTECTED FROM ACCELERATED EROSION AND SEDIMENTATION PENDING FUTURE EARTH DISTURBANCE ACTIVITIES IN A SPECIAL PROTECTION WATERSHEDS TEMPORARY STABILIZATION SHALL BE IMMEDIATE.
- 28. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
- 29. E&S BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
- 30. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPS.
- 31. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE 7. REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORM WATER MANAGEMENT BMPS. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPS SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.
- 32. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
- 33. 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.
- 34. ALL CHANNELS SHALL BE KEPT FREE OF OBSTRUCTIONS INCLUDING BUT NOT LIMITED TO FILL, ROCKS, LEAVES, WOODY DEBRIS, ACCUMULATED SEDIMENT, EXCESS VEGETATION, AND CONSTRUCTION MATERIAL/WASTES.
- 35. UNDERGROUND UTILITIES CUTTING THROUGH ANY ACTIVE CHANNEL SHALL BE IMMEDIATELY BACKFILLED AND THE CHANNEL RESTORED TO ITS ORIGINAL CROSS—SECTION AND PROTECTIVE LINING. ANY BASE FLOW WITHIN THE CHANNEL SHALL BE CONVEYED PAST THE WORK AREA IN THE MANNER DESCRIBED IN THIS PLAN UNTIL SUCH RESTORATION IS COMPLETE.
- 36. EROSION CONTROL BLANKETING SHALL BE INSTALLED ON ALL SLOPES 3H:1V OR GREATER AND ALL AREAS, REGARDLESS OF SLOPE WITHIN 50 FEET OF NON-SPECIAL PROTECTION AND 100 FEET OF A SPECIAL PROTECTION SURFACE WATER AND ON ALL OTHER DISTURBED AREAS SPECIFIED ON THE PLAN MAPS AND/OR DETAIL SHEETS.
- 37. UPON COMPLETION OR TEMPORARY CESSATION OF THE EARTH DISTURBANCE ACTIVITY IN A SPECIAL PROTECTION WATERSHED, THAT PORTION OF THE PROJECT SITE TRIBUTARY TO THE SPECIAL PROTECTION WATERS MUST BE IMMEDIATELY STABILIZED.
- 38. IF COAL OR OTHER ACID—PRODUCING ROCK IS ENCOUNTERED AT THE PROJECT SITE, THE ACID PRODUCING ROCK WILL EITHER BE REMOVED FROM THE SITE OR HANDLED ONSITE. IF COAL OR OTHER ACID—PRODUCING ROCK MUST BE HANDLED ON SITE IS SHOULD BE SAMPLED AND ANALYZED FOR TOTAL PERCENT SULFUR IN ACCORDANCE WITH PADEPS GUIDANCE. ON—SITE HANDLING METHODS SHOULD BE BASED ON TESTING AND PADEP GUIDANCE.
- 39. IF A SINKHOLE IS ENCOUNTERED, REPAIR SHOULD BE DONE UNDER THE DIRECT OBSERVATION AND SUPERVISION OF A PROFESSIONAL GEOLOGIST OR LICENSED GEOTECHNICAL ENGINEER. SITE SPECIFIC SINKHOLE REPAIRS SHOULD BE DEVELOPED ON A CASE BY CASE BASIS.
- 40. IN-STREAM WORK TO OCCUR IN MINOR WATER BODIES (>10 FEET WIDE) WITHIN 24 HOURS, AND IN MAJOR WATER BODIES (10 TO 100 FEET WIDE) WITHIN 48 HOURS UNLESS APPROVED IN WRITING BY THE DEPARTMENT.

CONSTRUCTION SEQUENCE:

REFER TO THE E&SC PLAN DRAWINGS FOR THE LOCATION OF THE PROPOSED WORK AND THE ASSOCIATED BMPS. A GENERALIZED CONSTRUCTION SEQUENCE IS PROVIDED BELOW. THE CONSTRUCTION SEQUENCE IS INTENDED TO PROVIDE A GENERAL COURSE OF ACTION IN ORDER TO CONFORM TO THE APPLICABLE REGULATORY AGENCY REQUIREMENTS FOR TEMPORARY AND PERMANENT SOIL EROSION AND SEDIMENTATION CONTROLS. NECESSARY PARTS FOR PROPER AND COMPLETE EXECUTION OF WORK PERTAINING TO THIS PLAN, WHETHER SPECIFICALLY MENTIONED OR NOT, ARE TO BE PERFORMED BY THE CONTRACTOR. IT IS NOT INTENDED THAT THE DRAWINGS AND THIS REPORT SHOW DETAILED INFORMATION ON METHODS AND MATERIALS. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS LISTED IN THIS SECTION. THE CONTRACTOR MAY BE REQUIRED TO ALTER CONTROLS BASED ON EFFECTIVENESS OF CONTROLS OR DIFFERING CONDITIONS ENCOUNTERED IN THE FIELD.

- 1. MAKE ALL APPROPRIATE NOTIFICATIONS AS INDICATED IN GENERAL NOTES ON PLAN SHEET ES-0.01.
- 2. FLAG OR FENCE PROJECT LIMITS OF DISTURBANCE AND APPROVED ACCESS. SIGN AND FLAG WETLAND BOUNDARIES AND STREAMS.

- 3. ORANGE CONSTRUCTION FENCE WILL BE PROVIDED AND INSTALLED AT WETLAND AREAS ADJACENT TO THE LOD AND NOT PLANNED TO BE IMPACTED TO IDENTIFY AND DETER CONSTRUCTION EQUIPMENT, VEHICLES AND PERSONNEL FROM ENTERING WETLAND.
- 4. LOCATE STAGING AREAS AND ACCESS POINTS INCLUDING CONSTRUCTION ENTRANCES. INSTALL COMPOST FILTER SOCKS DOWN SLOPE OF THESE AREAS.
- EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN 5. INSTALL ROCK CONSTRUCTION ENTRANCES AS NEEDED. REFER TO THE ROCK CONSTRUCTION ENTRANCE DETAIL ON PLAN SHEET ES-0.06.
 - 6. CONSTRUCT THE PROPOSED ACCESS ROADS AND IMPLEMENT TEMPORARY IMPROVEMENTS AS IDENTIFIED IN ACCESS ROAD SUMMARY TABLE AND DETAILED ON THE PLAN SHEETS.
 - 7. INSTALL COMPOST FILTER SOCKS AS SHOWN ON THE CONSTRUCTION DRAWINGS. INSTALLATIONS SIZING, AND SPACING MUST CONFORM TO THE CHART AND DETAILS PROVIDED ON PLAN SHEET ES-0.06. APPROPRIATELY SIZED SILT FENCE IS AN APPROVED ALTERNATIVE IN AREAS THAT ARE NOT SPECIAL PROTECTION WATERSHEDS AND MUST CONFORM TO THE CHART AND DETAILS PROVIDED ON PLAN SHEET ES-0.07.
 - 8. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL COMMENCE ALONG THE PIPELINE ROUTE AND BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE.
 GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR
 THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN. FOR CLEARING, GRUBBING, AND TOPSOIL REMOVAL IN ALL STREAM, RIVER, WETLAND OF
 OTHER WATER BODY CROSSINGS, REFER TO CONSTRUCTION SEQUENCE NOTES BELOW. TOPSOIL WILL BE SEGREGATED AT LOCATIONS THROUGHOUT THE PROJECT WHERE TOPSOIL EXISTS.
 - OTHER WATER BODY CROSSINGS, REFER TO CONSTRUCTION SEQUENCE NOTES BELOW. TOPSOIL WILL BE SEGREGATED AT LOCATIONS THROUGHOUT THE PROJECT WHERE TOPSOIL EXISTS.

 9. TEMPORARY WATERBARS OR APPROVED INTERCEPTOR DYKES WILL BE INSTALLED ALONG THE ALIGNMENT PRIOR TO PIPE INSTALLATION AT THE END OF EACH WORK DAY. DURING THE PERIODS

 OF TIME WHERE PIPE TRENCH IS OPEN CONTRACTORS WILL PROVIDE POSITIVE CONTROL OF ALL STORM WATER ON SITE, TEMPORARY WATERBARS WILL BE CONSTRUCTED BY THE END THE WORK DAY. OR DURING EACH WORK DAY IF REQUIRED CONTRACTOR WILL INSTALL SILT FENCE TO CONTROL EROSION UNTIL 70% VEGETATION GROWTH HAS BEEN ACHIEVED.
 - 10. MINIMIZE TOTAL AREA OF DISTURBANCE. MAINTAIN TEMPORARY SOIL STOCKPILES WITHIN EXISTING SOIL EROSION AND SEDIMENT CONTROLS. SHOULD EXCAVATION ENTER STREAMS, FOLLOW SPECIFIC DETAILS FOR THESE AREAS SHOWN ON THE DRAWINGS AND INCLUDE THE STEPS DETAILED IN THE SPECIFIC SECTIONS BELOW. PULLBACK AREAS FOR HDDS WILL BE CLEARED AND PREPARED AS NEEDED TO SUPPORT STAGING, WELDING AND TESTING OF THE HDD PIPE SECTIONS. AREAS NOT UTILIZED FOR CONSTRUCTION ACTIVITIES SHOULD BE AVOIDED TO MINIMIZE
 - 11. INSTALL PIPE AND TRENCH PLUGS IN ACCORDANCE WITH DETAILS ON PLAN SHEET ES-0.08. WHEN OPEN CUTTING DRIVEWAYS AND ACCESS ROADS, CONTRACTOR SHALL HAVE ROAD PLATES AVAILABLE TO MAINTAIN ACCESS FOR LANDOWNERS. THE 20-INCH PIPELINE WILL BE INSTALLED FIRST, FOLLOWED BY THE 16-INCH LINE. ANY TEMPORARY STABILIZATION REQUIRED BETWEEN THE TWO INSTALLATIONS WILL BE IMPLEMENTED IN ACCORDANCE WITH THIS E&S PLAN. BOTH PIPELINES WILL BE INSTALLED WITHIN THE SAME LIMIT OF DISTURBANCE AND IN THE SAME
 - 12. FOR OPEN—CUT AREAS, THE LENGTH OF TIME REQUIRED TO CLEAR AND GRADE THE AREA, EXCAVATE THE TRENCH, INSTALL THE PIPELINES, BACKFILL THE TRENCH AND BEGIN STABILIZATION OF DISTURBED AREAS WILL NOT EXCEED 30 CALENDAR DAYS FOR MOST INSTALLATIONS. LONGER TIME PERIODS MAY BE APPROVED ON A CASE—BY—CASE BASIS.
 - 13. BACKFILL EXCAVATED AREA AND COVER WITH TOPSOIL (WHERE TOPSOIL WAS SEGREGATED).
 - BEFORE RESTORATION OF GRADE, THE SECOND 16-INCH PIPELINE WILL BE INSTALLED. ALL TEMPORARY BMPS WILL BE IMPLEMENTED BETWEEN THE TWO INSTALLATIONS IN ACCORDANCE WITH THE NOTES AND DETAILS FOR TEMPORARY SEEDING AND COVER.
 - 5. RESTORE GRADE TO ORIGINAL SURFACE ELEVATIONS AS SOON AS PRACTICABLE FOLLOWING COMPLETION OF INSTALLATION OF PIPES. INSTALL PERMANENT WATERBARS IN ACCORDANCE WITH PLAN SHEET ES-0.08. IMMEDIATELY SEED AND MULCH DISTURBED AREAS OR PREPARE FOR PAVING IN ROADWAY AREAS.
 - 16. INSTALL EROSION CONTROL BLANKET ON ALL SLOPES 3:1 OR GREATER AND ALL AREAS, REGARDLESS OF SLOPE AND WITHIN 100 FEET OF SPECIAL PROTECTION WATERS OR 50 FEET OF
 - NON-SPECIAL PROTECTION SURFACE WATERS. LOCATIONS ARE SHOWN ON PLAN SHEETS.

 17. IN AREAS THAT USED STONE OR TIMBER MATS FOR TEMPORARY STABILIZATION AND/OR ACCESS, THE STONE OR MATS WILL BE REMOVED AND, IF NEEDED, THE SOIL WILL BE SCARIFIED OR RIPPED TO A DEPTH OF 8-12 INCHES TO DE-COMPACT THE SOIL. AFTER REESTABLISHING PRECONSTRUCTION CONTOURS, TOPSOIL WILL BE REPLACED TO A MINIMUM DEPTH OF 4-8 INCHES
 - 18. MAINTAIN EROSION AND SEDIMENTATION CONTROL DEVICES UNTIL SITE WORK IS COMPLETE AND A UNIFORM 70% PERENNIAL VEGETATIVE COVER IS ESTABLISHED. REMOVE SOIL AND EROSION SEDIMENT CONTROL MEASURES UPON ESTABLISHMENT OF A UNIFORM 70% PERENNIAL VEGETATIVE COVERAGE OVER THE DISTURBED AREA. RE—GRADE AND REVEGETATE AREAS DISTURBED DURING THE REMOVAL OF THE SOIL EROSION AND SEDIMENT CONTROLS.
 - 19. AS PART OF THE ONGOING STORM WATER BMP INSPECTION AND MAINTENANCE PROGRAM ANY STRUCTURAL BMP RECORDED ON THIS PROJECT WILL BE INSPECTED MAINTAINED, AND REPAIRED IN ACCORDANCE WITH THE PLAN FILED WITH THE DEED.

IN ACCORDANCE WITH 25 PA CODE 102.7, UPON COMPLETION OF ALL CONSTRUCTION ACTIVITIES, A NOTICE OF TERMINATION FORM WILL BE SUBMITTED TO TERMINATE THE AUTHORIZATION OF

COVERAGE INDICATING ALL ACTIVITIES UNDER THIS PERMIT HAVE BEEN COMPLETED.

21. FOR ALL EV WETLAND AND STREAM CROSSINGS, SPLP WILL INSTALL THE SECOND PIPELINE IMMEDIATELY FOLLOWING THE INSTALLATION OF THE FIRST PIPELINE, AS LONG AS NO UNANTICIPATED, EXTRANEOUS CIRCUMSTANCES OR SAFETY ISSUES ARE ENCOUNTERED. THE TWO PIPES WILL BE INSTALLED IN A SINGLE DISTURBANCE THAT WILL NOT REQUIRE INTERIM TEMPORARY STABILIZATION/RESTORATION.

ACCELERATED EROSION AND SEDIMENTATION PENDING FUTURE EARTH DISTURBANCE ACTIVITIES IN A SPECIAL FOR STREAM, RIVER, WETLANDS OR OTHER WATER BODY UTILITY CROSSINGS THAT WILL BE OPEN CUT:

AND SEEDED AND MULCHED. VEHICULAR TRAFFIC AFTER RESTORATION SHOULD BE RESTRICTED FROM AREAS TO PREVENT SOIL COMPACTION.

- 1. NO WORK SHALL COMMENCE THROUGH A STREAM, RIVER, WETLANDS OR OTHER WATER BODY DURING INCLEMENT WEATHER.
- 2. A UTILITY LINE CROSSING OF A STREAM CHANNEL 10 FEET IN BOTTOM WIDTH OR LESS SHALL BE COMPLETED WITHIN 24 HOURS FROM START TO FINISH INCLUDING TRENCH BACKFILL, STABILIZATION OF STREAM BANKS AND STABILIZATION OF THE AREA 50 FEET BACK FROM THE TOP OF EACH STREAM BANK.
- 3. A UTILITY LINE CROSSING OF A STREAM CHANNEL BETWEEN 10 FEET AND 100 FEET IN BOTTOM WIDTH SHALL BE COMPLETED WITHIN 48 HOURS FROM START TO FINISH INCLUDING TRENCH BACKFILL, STABILIZATION OF STREAM BANKS AND STABILIZATION OF THE AREA 50 FEET BACK FROM THE TOP OF EACH STREAM BANK.
- . WETLAND CROSSINGS ARE TO BE COMPLETED ALONG WITH THE MAINLINE INSTALLATION AND WILL BE DEPENDENT UPON THE LENGTH OF THE CROSSING.
- 5. FACILITIES FOR REMOVING SEDIMENT FROM PUMPED WATER SHOULD BE AVAILABLE AT THE STREAM CROSSING SITE BEFORE TRENCHING COMMENCES AND MAINTAINED UNTIL TRENCH BACKFILLING IS COMPLETED. ASSEMBLY AREAS, TEMPORARY EQUIPMENT AND NON—HAZARDOUS MATERIAL STORAGE AREAS SHALL BE LOCATED AT LEAST 50 FEET BACK FROM THE TOP OF ANY BANK.
- 6. INSTALL TEMPORARY EQUIPMENT CROSSINGS AT STREAMS AND TEMPORARY TIMBER MATS AT WETLAND CROSSINGS IN ACCORDANCE WITH NOTES AND DETAILS.
- 7. FOR DRY STREAM CROSSINGS INSTALL PUMP BYPASS, DRY FLUME, OR COFFERDAM IN ACCORDANCE WITH NOTES AND DETAILS.
- 8. DEWATERING WORK AREA. WATER FROM THE EXCAVATION SHALL BE PUMPED TO A SEDIMENT FILTER BAG. WHERE POSSIBLE, EXCAVATION SHALL BE FROM THE TOP OF THE STREAM BANK, WHERE TECHNICALLY FEASIBLE.
- 9. STABILIZE CHANNEL EXCAVATION AND STREAM BANKS PRIOR TO REDIRECTING STREAM FLOW

FOR CONVENTIONAL AND HDD BORE CROSSINGS:

CONVENTIONAL BORES

- 1. CONVENTIONAL BORES WILL BE CONDUCTED ALONG WITH MAIN LINE INSTALLATION TO LIMIT THE TIME OF DISTURBANCE IN THOSE AREAS.
- 2. INSTALL COMPOST FILTER SOCKS DOWNGRADIENT OF THE BORE AND RECEIVING PITS.
- 3. EXCAVATE PITS AS SHOWN IN THE TYPICAL STREAM CROSSING DETAIL ON PLAN SHEET ES-0.17
- 4. BORE BENEATH STREAMS WHERE INDICATED ON THE CONSTRUCTION DRAWINGS.
- 5. WATER FROM THE BORE PITS AND WORK AREAS SHALL BE PUMPED TO A PUMPED WATER FILTER BAG IN ACCORDANCE WITH DETAIL ON PLAN SHEET ES-0.08.
- 6. UPON COMPLETION, BACKFILL ALL PITS.
- HDD BORES
-)
 IN 1. INSTALL COMPOST FILTER SOCKS AT STAGING AND PULLBACK AREAS IN ACCORDANCE WITH E&S PLAN SHEETS. WHERE APPLICABLE TEMPORARY GRADING OF STAGING AREAS IS PROVIDED ON IN PLAN SHEETS.
- 3. THE HDD BORE ALIGNMENT SHALL BE MONITORED FOR INADVERTENT RETURNS. AN INADVERTENT RETURN PLAN HAS BEEN DEVELOPED FOR THIS PROJECT. THIS PLAN IS TO BE REVIEWED,
- ONSITE, AND IMPLEMENTED FOR EACH DRILL CONDUCTED.
- 4. UPON COMPLETION OF HDD BORE, RESTORE BORE AND PULLBACK AREAS TO PRE-CONSTRUCTION CONDITIONS IN ACCORDANCE WITH E&S PLANS AND DETAILS.

BORE AND PULLBACK AREAS SHALL BE LOCATED A MINIMUM OF 50 FEET BACK FROM EACH TOP OF STREAM BANK UNLESS AUTHORIZED BY PADEP.

FOR WORKING WITHIN A WETLAND AREA:

- 1. LOCATE STAGING AREAS AND ACCESS POINTS. STAGING AREAS SHOULD BE LOCATED AT LEAST 50 FEET FROM THE EDGE OF THE WETLAND. INSTALL SEDIMENT BARRIERS DOWN SLOPE OF THESE AREAS
- 2. INSTALL ROCK CONSTRUCTION ENTRANCE AS NEEDED. REFER TO THE ROCK CONSTRUCTION ENTRANCE DETAIL ON DRAWINGS FOR SUGGESTED DIMENSIONS.
- 3. INSTALL ORANGE FLAGGING AROUND PERIMETER OF WETLAND AND SEDIMENT BARRIERS ALONG THE PERIMETERS OF THE SITE AS SHOWN ON THE CONSTRUCTION DRAWINGS.
- 4. MATS, PADS, OR SIMILAR DEVICES SHALL BE USED DURING THE CROSSINGS OF WETLANDS. ORIGINAL GRADES THROUGH WETLANDS MUST BE RESTORED AFTER TRENCHING AND BACKFILLING.
 ANY EXCESS FILL MATERIALS MUST BE REMOVED FROM THE WETLAND AND NOT SPREAD ON—SITE.
- 5. SOIL EXCAVATED FROM WETLAND AREAS SHALL BE CAREFULLY REMOVED WITH THE ROOTS INTACT. THIS SOIL SHOULD BE PLACED IN A SEPARATE STOCKPILE TO BE REUSED DURING THE WETLAND SURFACE RESTITUTION.
- 6. DEWATER WORK AREA; WATER FROM THE EXCAVATION SHALL BE PUMPED TO A SEDIMENT TRAP OR A FILTER BAG.
- 7. INSTALL PIPE.
- 8. INSTALL TRENCH PLUGS IN WETLAND AREAS TO PREVENT THE TRENCH FROM DRAINING THE WETLAND OR CHANGING ITS HYDROLOGY.
- 9. BACKFILL PIPE TRENCH. BACKFILL THE TOP 12-INCHES OF THE EXCAVATED TRENCH WITH THE STOCKPILED WETLAND SOIL TO MATCH ORIGINAL SURFACE GRADES.
- 10. NO SOIL AMENDMENTS SUCH AS AGRICULTURAL LIME, FERTILIZER, ETC. WILL BE USED WITHIN WETLAND AREAS.
- 11. COMPACT BACKFILL AND GRADE THE SURFACE OF THE TRENCH AREA TO ALLOW FOR POSITIVE DRAINAGE TO SOIL EROSION AND SEDIMENT CONTROLS AND TO PREPARE DISTURBED AREAS FOR PERMANENT TRENCH RESTORATION.
- 12. MAINTAIN ALL EROSION AND SEDIMENTATION CONTROL DEVICES UNTIL SITE WORK IS COMPLETE AND A UNIFORM 70% PERENNIAL VEGETATIVE COVER IS ESTABLISHED.
- 13. REMOVE ALL SOIL AND EROSION SEDIMENT CONTROL MEASURES UPON ESTABLISHMENT OF A UNIFORM 70% VEGETATIVE COVER OVER THE DISTURBED AREA. RE-GRADE AND REVEGETATE AREAS DISTURBED DURING THE REMOVAL OF THE SOIL EROSION AND SEDIMENT CONTROLS.

FOR TEMPORARY EQUIPMENT STREAM AND WETLAND CROSSINGS:

- 1. INSTALL TEMPORARY EQUIPMENT CROSSINGS AND TEMPORARY TIMBER MAT WETLAND CROSSINGS IN ACCORDANCE WITH PLAN SHEETS ES-0.18.
- 2. TEMPORARY STREAM CROSSINGS SHALL BE INSPECTED ON A DAILY BASIS. DAMAGED CROSSINGS SHALL BE REPAIRED WITHIN 24 HOURS OF THE INSPECTION AND BEFORE ANY SUBSEQUENT USE. SEDIMENT DEPOSITS ON THE CROSSING OR ITS APPROACHES SHALL BE REMOVED WITHIN 24 HOURS OF THE INSPECTION.
- AS SOON AS THE TEMPORARY CROSSING IS NO LONGER NEEDED, REMOVE TEMPORARY CROSSING. ALL MATERIALS SHALL BE DISPOSED OF PROPERLY AND DISTURBED AREAS STABILIZED. REMOVE ALL SOIL AND EROSION SEDIMENT CONTROL MEASURES UPON ESTABLISHMENT OF A UNIFORM 70% VEGETATION COVER OVER THE DISTURBED AREA.

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PHILADELPHIA, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT CONSTRUCTION SPREAD 5

BERKS COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN
NOTES & DETAILS

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINE

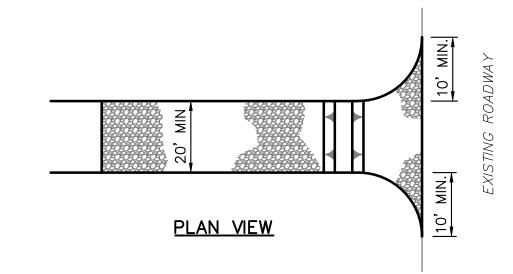
DATE: NOVEMBER 201
PROJECT NO.: 112C0595
DESIGNED BY: J
DRAWN BY: B
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SHEET 0.04 OF 102

-PIPE AS NECESSARY

MIN 8" AASHTO #1-**PROFILE**

GEOTEXTILE



* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE IF NEEDED.

NOTES:

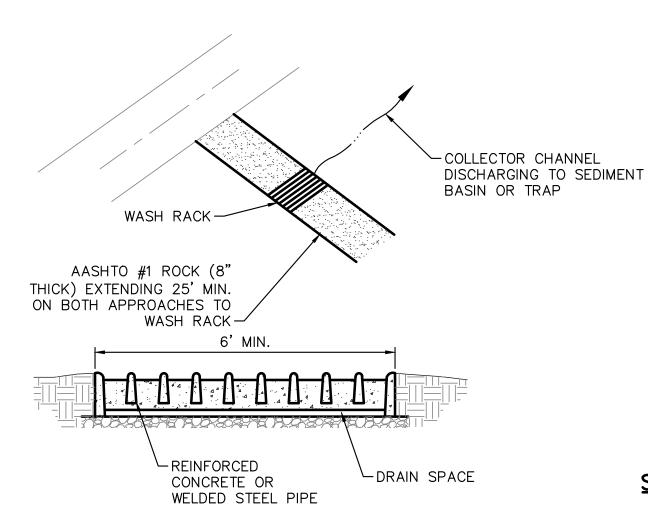
REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

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

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

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

> ROCK CONSTRUCTION ENTRANCE NOT TO SCALE



NOTES:

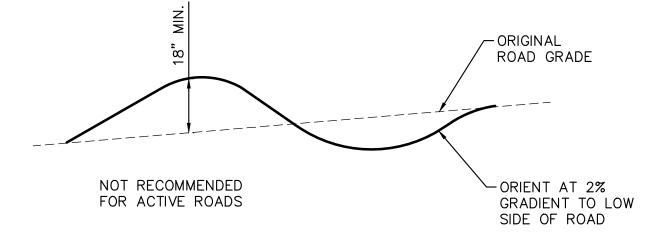
WASH RACK SHALL BE 20 FEET (MIN.) WIDE OR TOTAL WIDTH OF ACCESS.

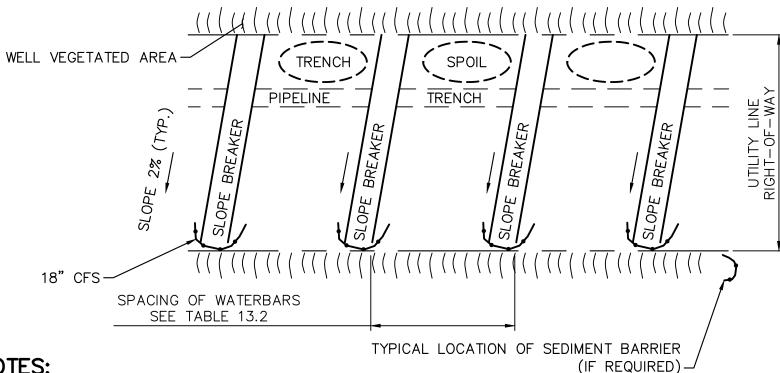
WASH RACK SHALL BE DESIGNED AND CONSTRUCTED TO ACCOMMODATE ANTICIPATED CONSTRUCTION VEHICULAR TRAFFIC.

A WATER SUPPLY SHALL BE MADE AVAILABLE TO WASH THE WHEELS OF ALL VEHICLES EXITING THE SITE.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE OF ROCK MATERIAL SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. DRAIN SPACE UNDER WASH RACK SHALL BE KEPT OPEN AT ALL TIMES. DAMAGE TO THE WASH RACK SHALL BE REPAIRED PRIOR TO FURTHER USE OF THE RACK. ALL SEDIMENT DEPOSITED ON ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

ROCK CONSTRUCTION ENTRANCE WITH WASH RACK (3)





NOTES:

ACHIEVED.

WATERBARS SHALL DISCHARGE TO A STABLE AREA.

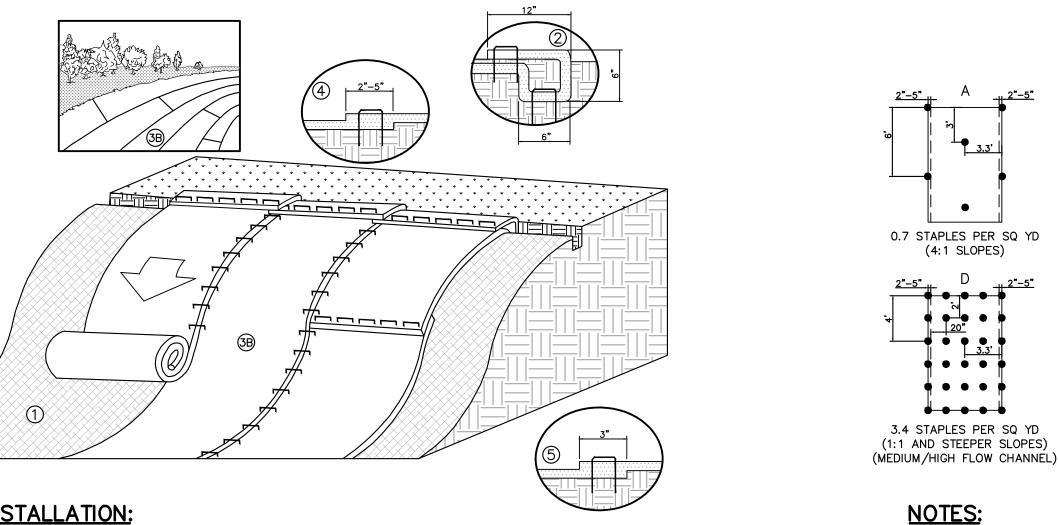
WATERBARS SHALL BE INSPECTED WEEKLY (DAILY ON ACTIVE ROADS) AND AFTER EACH RUNOFF EVENT. DAMAGED OR ERODED WATERBARS SHALL BE RESTORED TO ORIGINAL DIMENSIONS WITHIN 24 HOURS OF INSPECTION.

MAINTENANCE OF WATERBARS SHALL BE PROVIDED UNTIL ROADWAY, SKIDTRAIL, OR RIGHT—OF—WAY HAS ACHIEVED PERMANENT STABILIZATION. WATERBARS ON RETIRED ROADWAYS, SKIDTRAILS, AND RIGHT-OF-WAYS SHALL BE LEFT IN PLACE AFTER PERMANENT STABILIZATION HAS BEEN

SEE TABLE 13.2 ABOVE FOR WATERBAR SPACING.

PERMANENT WATERBARS ARE REQUIRED AT ALL STREAM, RIVER, AND OTHER WATER-BODY CROSSINGS AS WELL AS UPSLOPE FROM ROADWAY AND RAILROAD CUT SLOPES.





SLOPE INSTALLATION:

REVISIONS

REMARKS

- 1. PREPARE SOIL BEFORE INSTALLING RECPS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER AND SEED.
- 2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECPS IN A 6 IN. DEEP X 6 IN. WIDE TRENCH WITH APPROXIMATELY 12 IN. OF RECPS EXTENDED BEYOND THE UPSLOPE PORTION OF THE TRENCH. ANCHOR THE RECPS WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12 IN. APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO THE COMPACTED SOIL AND FOLD THE REMAINING 12 IN. PORTION OF RECPS BACK OVER THE SEED AND COMPACTED SOIL. SECURE RECPS OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12 IN. APART ACROSS THE WIDTH OF THE RECPs.
- 3. ROLL THE RECPS (3A) DOWN OR (3B) HORIZONTALLY ACROSS THE SLOPE. RECPS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECPS MUST BE SECURELY FASTENED TO SOIL SURFACE BY REPLACING STAPLES/STAKES
- IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. 4. THE EDGES OF PARALLEL RECPs MUST BE STAPLED WITH AN APPROXIMATELY 2 IN. - 5 IN. OVERLAP DEPENDING ON THE
- 5. CONSECUTIVE RECP SPLICED DOWN THE SLOPE MUST BE END-OVER-END (SHINGLE STYLE) WITH AN APPROXIMATE 3 IN. OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12 IN. APART ACROSS ENTIRE RECPS WIDTH.

TABLE 13.2

MAXIMUM SPACING

FOR PERMANENT

NATERBARS ON A UTILITY

LINE RIGHT-OF-WAY

ERCENT SLOPE SPACING (FT

5-15

15-30

>30

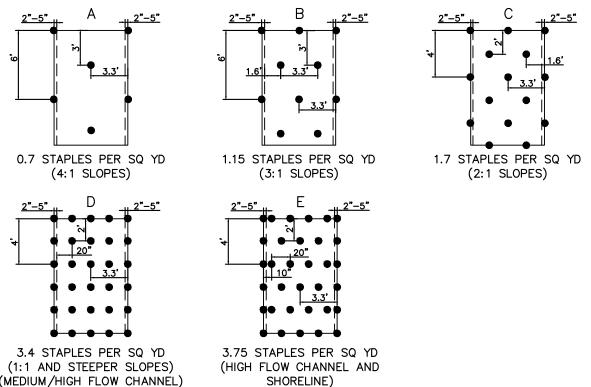
250

150

100

50

STAPLE PATTERN GUIDE



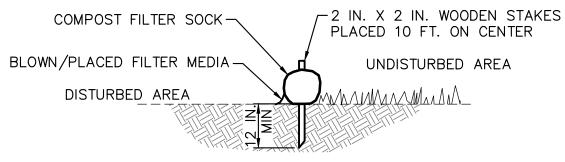
- 1. FOR SLOPES BETWEEN 3:1 AND 1:1, USE NORTH AMERICAN GREEN ERONET SC 150 OR
- OWNER APPROVED EQUAL MATERIAL/METHOD. 2. IN AREAS WHERE LIVESTOCK ARE KEPT, USE NORTH AMERICAN GREEN BIONET SC 150 BN OR OWNER APPROVED EQUAL MATERIAL/METHOD.
- DRAWINGS PRIOR TO INSTALLING THE BLANKET.

3. SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN

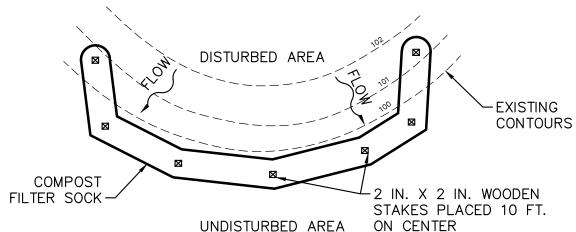
- 4. PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE
- 5. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.
- 6. BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE PROJECT LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.
- 7. THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS,
- 8. BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.

DIAMETER 1000

MAXIMUM SLOPE LENGTHS FOR COMPOST FILTER SOCK SLOPE DIAMETER DIAMETER 2 (OR LESS) 520 700 250 340 500 250 300 150 100 200 250 140 200 70 100 140 45 100 35 40 60 90 60 40 45 50 40



<u>SECTION</u>



PLAN VIEW

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 EPA DEP EROSION CONTROL MANUAL.

COMPOST FILTER SOCK SHALL BE PLACED AT EXITING 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 SOCK 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.

TABLE 4.1

COMPO	COMPOST SOCK FABRIC MINIMUM SPECIFICATIONS						
MATERIAL TYPE	3 MIL HDPE	5 MIL HDPE	5 MIL HDPE	MULTI-FILAMENT POLYPROPYLENE (MFPP)	HEAVY DUTY MULTI-FILAMENT POLYPROPYLENE (HDMFPP)		
MATERIAL CHARACTERISTICS	PHOTO— DEGRADABLE	PHOTO- DEGRADABLE	BIO- DEGRADABLE	PHOTO— DEGRADABLE	PHOTO— DEGRADABLE		
SOCK DIAMETERS	12" 18"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"		
MESH OPENING	3/8"	3/8"	3/8"	3/8"	1/8"		
TENSILE STRENGTH		26 PSI	26 PSI	44 PSI	202 PSI		
ULTAVIOLET STABILITY % ORIGINAL STRENGTH (ASTM G-155)	23% AT 1000 HR.	23% AT 1000 HR.		100% AT 1000 HR.	100% AT 1000 HR.		
MINIMUM FUNCTIONAL LONGEVITY	6 MONTHS	9 MONTHS	6 MONTHS	1 YEAR	2 YEARS		
		TWO-F	PLY SYSTEMS				
				HDPE BIAXIAL N			
INNER C	ONTAINMENT 1	NETTING		FUSION-WELDED JUNCTURES			
			3/4" >	3/4" X 3/4" MAX. APERTURE SIZE			
OUTER	R FILTRATION	MESH	(WOVEN L	SITE POLYPROPYL AYER AND NON-Y ALLY FUSED VIA N	WOVEN FLEECE		
0001/ 5155100 01	2400000 00 0	NIDI AD AAAA		16" MAX. APERTU			
SUCK FABRICS CO	DMPOSED OF E	BURLAP MAY B	BE USED ON PROJ	JECTS LASTING 6 N	MONTHS OR LESS.		

TABLE 4.2

COMPOST STANDARDS						
ORGANIC MATTER CONTENT	25%-100% (DRY WEIGHT BASIS)					
ORGANIC PORTION	FIBROUS AND ELONGATED					
PH	5.5-8.5					
MOISTURE CONTENT	30%-60%					
PARTICLE SIZE	30%-50% PASS THROUGH 3/8" SIEVE					
SOLUBLE SALT CONCENTRATION 5.0 DS/M (MMHOS/XM) MAXIMUM						

COMPOST FILTER SOCK

EROSION CONTROL BLANKET - SLOPE INSTALLATION (4) NOT TO SCALE



SUNOCO PIPELINE L.P. PHILADELPHIA, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT CONSTRUCTION SPREAD 5

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINE

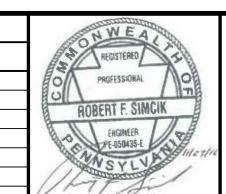
BERKS COUNTY CONSERVATION DISTRICT EROSION & SEDIMENT CONTROL & SITE RESTORATION PLAN NOTES & DETAILS

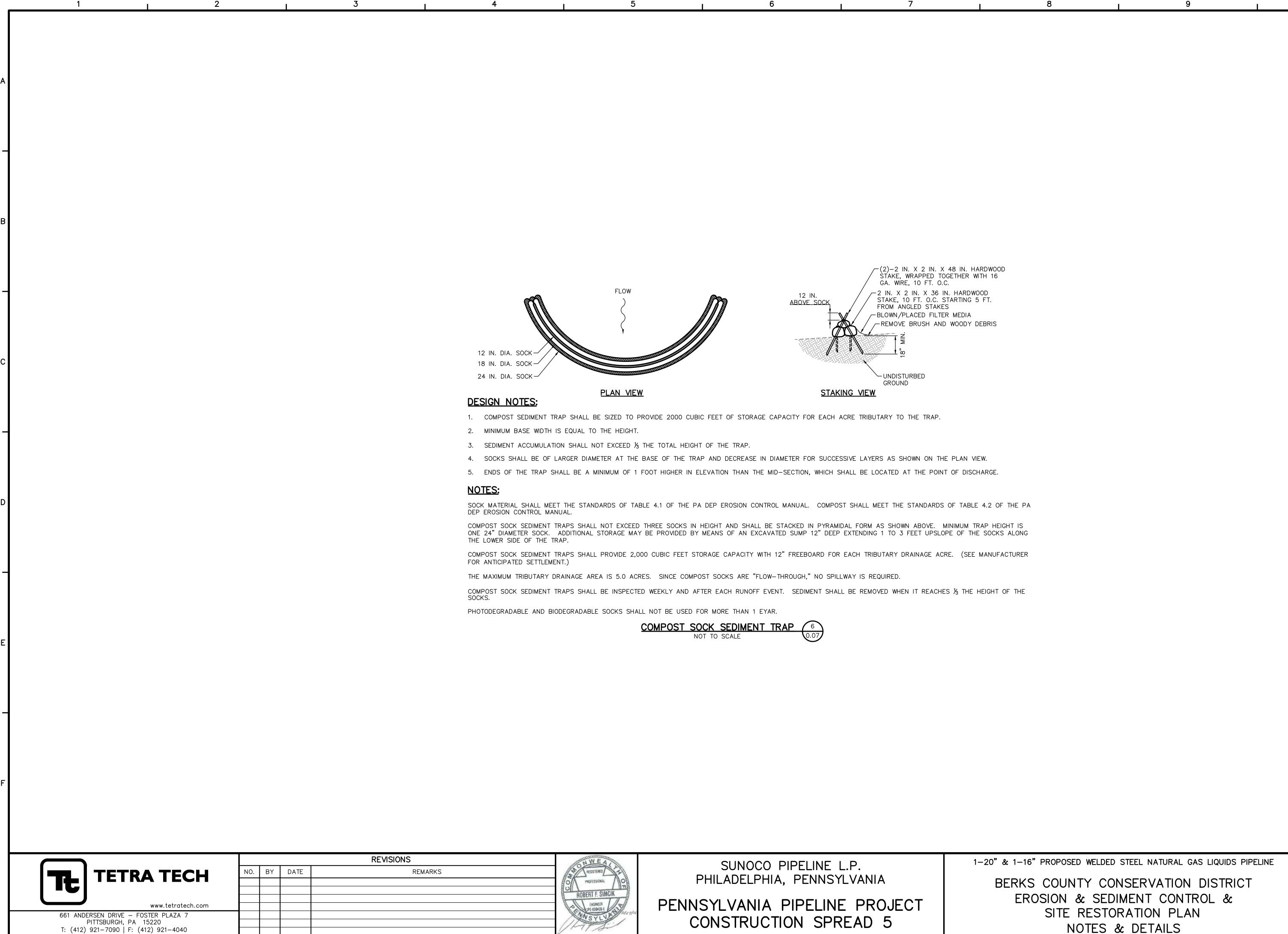
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DESIGNED	BY:		JB
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SHEET 0.07 OF 102

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DATE: NOVEMBER 2016

PROJECT NO.: 112C05958

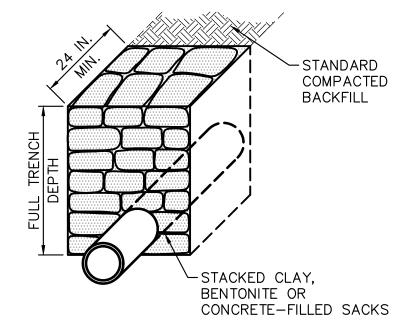
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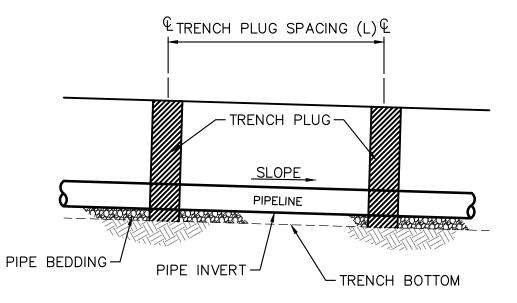
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DESIGNED BY:

CHECKED BY:

DRAWN BY:





SECTION VIEW

ELEVATION

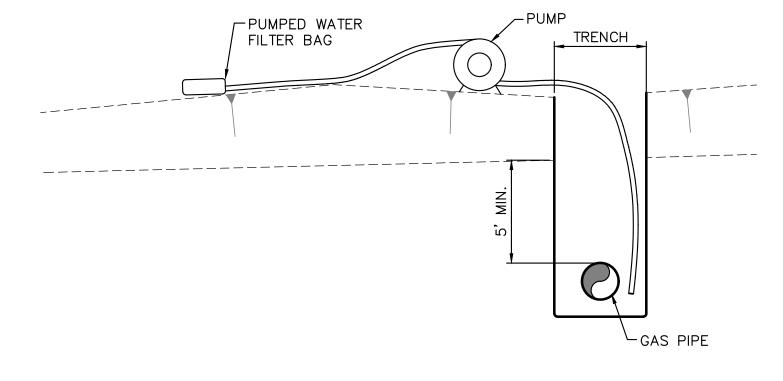
REQUIRED SPACING & MATERIALS FOR TRENCH PLUGS						
TRENCH SLOPE (%)	SPACING L (FT)	PLUG MATERIAL				
<5	1,000	* CLAY, BENTONITE OR CONCRETE-FILLED SACKS				
5-15	500	* CLAY, BENTONITE OR CONCRETE-FILLED SACKS				
15-25	300	* CLAY, BENTONITE OR CONCRETE-FILLED SACKS				
25-35	200	* CLAY, BENTONITE OR CONCRETE-FILLED SACKS				
35-100	100	* CLAY, BENTONITE OR CONCRETE-FILLED SACKS				
>100	50	CEMENT BAGS (WETTED) OR MORTARED STONE				

* TOP SOIL MAY NOT BE USED TO FILL SACKS

NOTES:

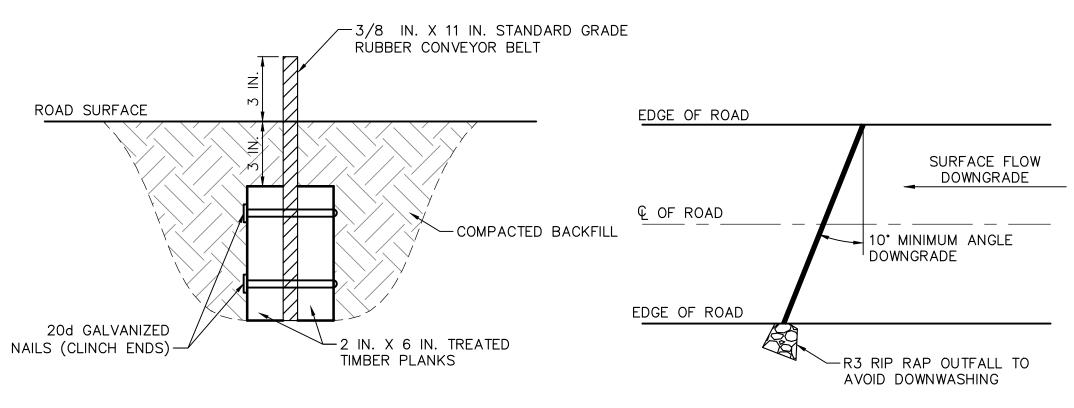
IMPERVIOUS TRENCH PLUGS ARE REQUIRED FOR ALL STREAM, RIVER, WETLAND, OR OTHER WATERBODY CROSSINGS.





TRENCH DEWATERING DETAIL

NOT TO SCALE



NOTE:

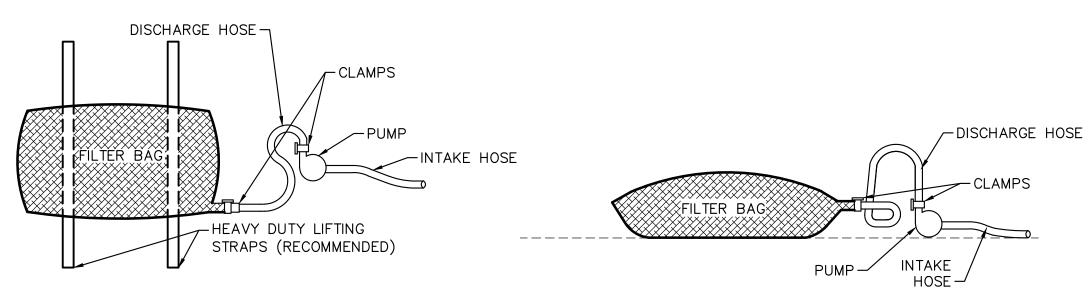
- 1. DEFLECTOR SHALL BE INSPECTED WEEKLY AND
- AFTER EACH RUNOFF EVENT.
- 3. BELT SHALL BE REPLACED WHEN WORN AND NO

2. ACCUMULATED SEDIMENT SHALL BE REMOVED FROM DEFLECTOR WITHIN 24 HOURS OF INSPECTION.

- LONGER EFFECTIVE.
- 4. MAXIMUM SPACING OF DEFLECTORS SHALL BE AS SHOWN IN TABLE.

ROAD GRADE (PERCENT)	SPACING BETWEEN DIPS, CULVERTS,OR DEFLECTORS (FEET)
<2	300
3	235
4	200
5	180
6	165
7	155
8	150
9	145
10	140





ELEVATION VIEW

PLAN VIEW

79•

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-3751	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 ½ 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 NO POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACE DON 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 PLACE UNDER THE GAB TO REDUCE SLOPE STEEPNESS.

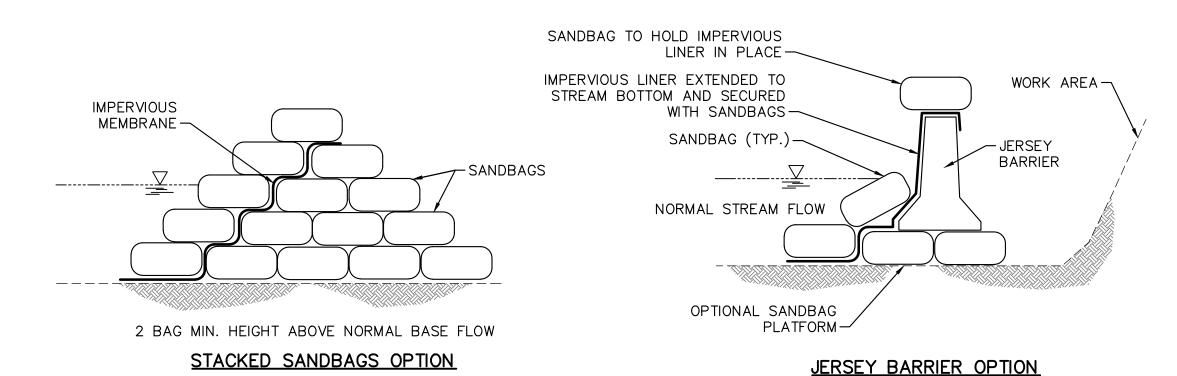
NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

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 ½ 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.





NOTES:

CONSTRUCT DAMS WITH SAND BAGS, JERSEY BARRIERS OR SIMILAR MATERIAL WITH AN IMPERVIOUS LINER EXTENDED TO THE STREAM BOTTOM AND SECURED WITH SANDBAGS MAINTAINING AMBIENT DOWNSTREAM FLOW RATES.

SANDBAG OR DIVERSION DAM NOT TO SCALE 13 0.08

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			REVISIONS	
NO.	BY	DATE	REMARKS	
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SUNOCO PIPELINE L.P. PHILADELPHIA, PENNSYLVANIA

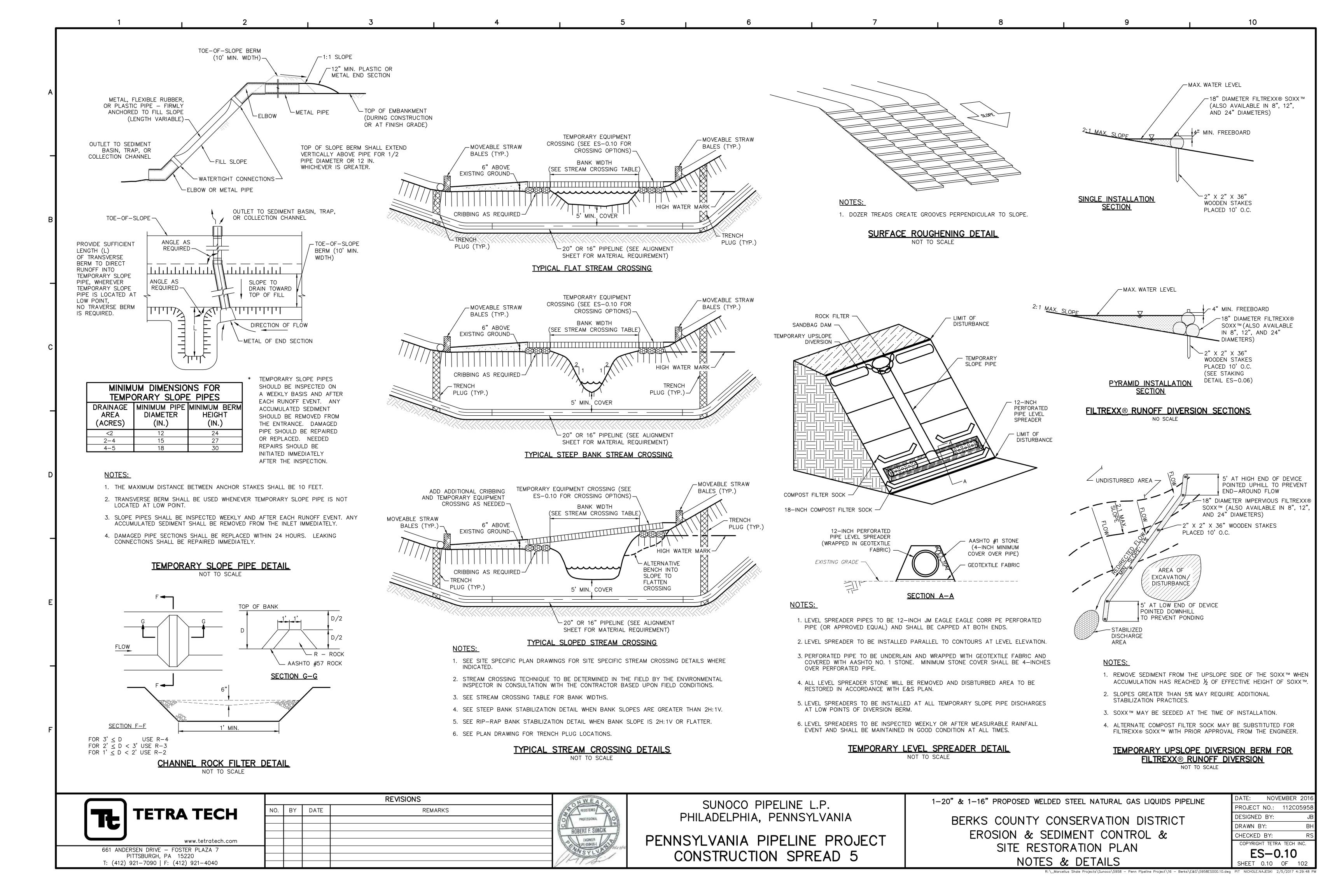
PENNSYLVANIA PIPELINE PROJECT CONSTRUCTION SPREAD 5

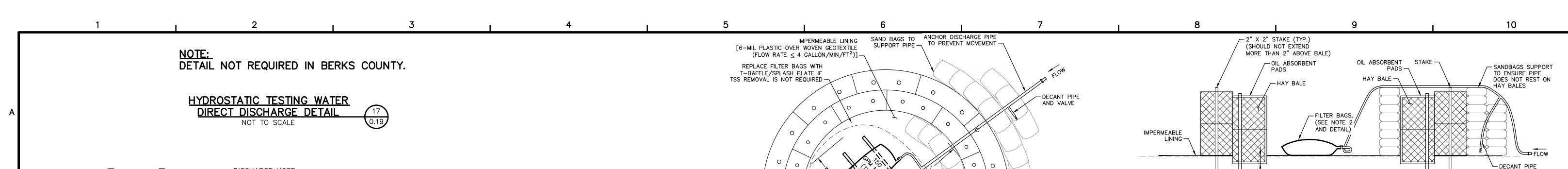
1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINE

BERKS COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN
NOTES & DETAILS

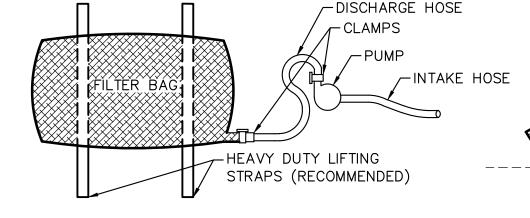
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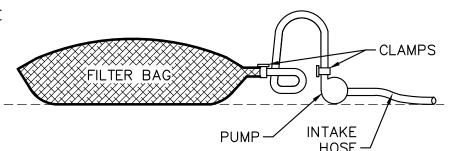
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FILTER BAGS (SEE DETAIL





PLAN VIEW

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:

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AOS % RETAINED	ASTM D-3751	80 SIEVE

ELEVATION VIEW

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FILTER BAG DETAIL USE IN HAY BALE DISCHARGE STRCTURE

	BERKS COUNTY HDD TESTING DISCHARGE LOCATION INFORMATION														
OUTFALL NO.	LATITUDE			LONGITUDE			HDD	ANTIC	IPATED DISCHARG	E EVENTS		RECEIVING WATER NAME	CH. 93	PAFBC	DRAINS TO
JUTFALL NO.	DEGREES	MINUTES	ES SECONDS [DEGREES MINUTES SECONDS NUMBER	NUMBER	MAXIMUM FLOW (GPM)	DURATION (HRS)	VOLUME (GAL)*	NO./YEAR	RECEIVING WATER NAME	EXISTING USE	DESIGNATION	EV WETLANDS?		
054	40	10	14.12	-75	51	48.28	S3-0250	2,000	1.71	204,734	1	UNT TO EAST BRANCH CONESTOGA RIVER	WWF	N/A	NO
055	40	9	57.73	-75	51 24.77 2,000 1.71 204,734 1 EAST BRANCH CONESTOGA RIVER		WWF	UNKNOWN (OUT OF ROW)	NO						
															•

* VOLUME DISPLAYS MAXIMUM POSSIBLE DISCHARGE VOLUME FOR EACH DISCHARGE LOCATION. NOT ALL DISCHARGE LOCATIONS WILL BE USED

NOT TO SCALE

FOR HYDROSTATIC TEST WATER NOT TO SCALE

* VOLUME DISPLAYS MAXIMUM POSSIBLE DISCHARGE VOLUME FOR EACH DISCHARGE LOCATION. NOT ALL DISCHARGE LOCATIONS WILL BE USED.



BERKS COUNTY (SPREAD	1) HDD
TESTING DISCHARGE LOCATION	INFORMATION
NOT TO SCALE	



							BERKS COUNTY	MAINLINE TESTIN	G DISCHARGE LO	CATION INF	ORMATION				
OUTFALL NO.		LATITUDE		LONGITUDE			ANTICIPATED DISCHARGE EVENTS				ANTICIPATED DISCHARGE EVENTS DISCHARGE TYPE RECEIVING WATER NAME CH. 93 PAFBC DRAINS TO				DRAINS TO
OUTFALL NO.	DEGREES	MINUTES	SECONDS	DEGREES	MINUTES	SECONDS	MAXIMUM FLOW (GPM)	DURATION (HRS)	VOLUME (GAL)*	NO./YEAR	DISCHARGE ITPE	RECEIVING WATER NAME	EXISTING USE	DESIGNATION	EV WETLANDS?
070	40	9	26.41	-75	50	41.30	2,000	23.2	2,780,059	1	HAY BALE STRUCTURE	UNT TO CONESTOGA RIVER	WWF	N/A	No

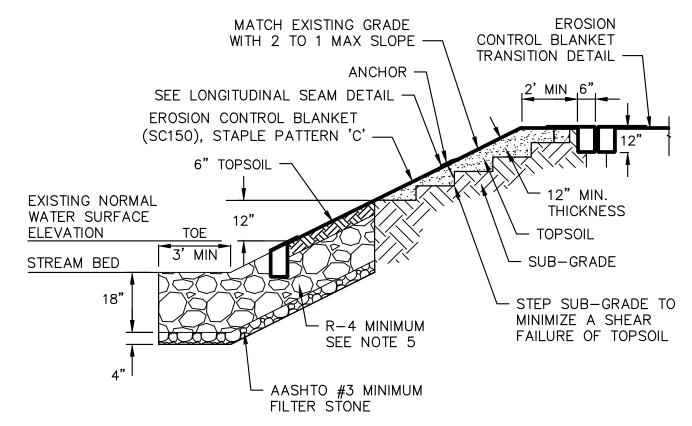
BERKS COUNTY (SPREAD 1) MAINLINE TESTING DISCHARGE LOCATION INFORMATION

NOT TO SCALE



STREAMBANK STABILIZATION TABLE

					1000		AL REGIOI	SHEAR				
		SPECIAL				SHEAR	SHEAR	STRESS OF		IF "RIP RAP"	THICKNESS (IN)	
		PROTECTION	NORMAL	SLOPE	VELOCITY	100000000000000000000000000000000000000			RIP RAP	REQ'D, SIZE	OF RIP RAP	
COUNTY	STREAM	WATER	DEPTH (ft)	(ft/ft)	(ft/sec)	(lb/sf)		SOIL (lb/sf)		(Table 6.6)	(Table 6.6)	 FILTER STONE TYF
Berks	S-A73	yes	0.1	0.03	1.09	0.19	yes	0.07	yes	R-3 (1)	9	AASHTO #57
Berks	S-B22	yes	2.23	0.049	9.62	6.82	no	0.07	yes	R-5	27	AASHTO #3
Berks	S-B45		0.84	0.099	7.96	5.19	no		yes	R-4	18	AASHTO #3
Berks	S-B46		0.75	0.033	6.1	4.12	no		yes	R-3 (1)	9	AASHTO #57
Berks	S-K76		0.36	0.13	6.14	2.92	no		yes	R-3 (1)	9	AASHTO #57
Berks	S-B50		2.86	0.014	7.37	2.50	no		yes	R-4	18	AASHTO #3
Berks	S-C33		2.3	0.035	10.01	5.02	no		yes	R-5	27	AASHTO #3
Berks	S-B31	yes	1.57	0.012	4.48	1.18	no		yes	R-3 (1)	9	AASHTO #57
Berks	S-BB43	yes	0.67	0.012	5.93	3.68	no		yes	R-3 (1)	9	AASHTO #57
Berks	S-B42	yes	1.96	0.014	6.14	1.71	no		yes	R-3 (1)	9	AASHTO #57
Berks	S-C1	yes	1.42	0.027	5.25	2.39	no		yes	R-3 (1)	9	AASHTO #57
Berks	S-B27		0.49	0.072	5.58	2.20	no		yes	R-3 (1)	9	AASHTO #57
Berks	S-B28		3.36	0.028	11.5	5.87	no		yes	R-5	27	AASHTO #3
Berks	S-B29		2.99	0.003	3.28	0.56	no		yes	R-3 (1)	9	AASHTO #57
Berks	S-C103	yes	1.05	0.022	3.87	1.44	no		yes	R-3 (1)	9	AASHTO #57
Berks	S-C104	yes	0.68	0.015	2.51	0.64	no		yes	R-3 (1)	9	AASHTO #57
Berks	S-C108	yes	1.76	0.067	10.82	7.36	no		yes	R-5	27	AASHTO #3
Berks	S-H22	yes	0.53	0.026	3.06	0.86	no		yes	R-3 (1)	9	AASHTO #57
Berks	S-H23	yes	2.61	0.027	10.13	4.40	no		yes	R-5	27	AASHTO #3
Berks	S-H13	yes	2.32	0.061	11.33	8.83	no		yes	R-5	27	AASHTO #3
Berks	S-Q90	yes	1.98	0.054	9.33	6.67	no		yes	R-5	27	AASHTO #3
Berks	S-Q89	yes	4.23	0.013	8.48	3.43	no		yes	R-4	18	AASHTO #3



NOTES:

1. A SUITABLE WOVEN OR NON-WOVEN GEOTEXTILE UNDERLAYMENT MUST BE USED IN ACCORDANCE TO MANUFACTURER'S RECOMMENDATIONS.

(TYP.)

T-BAFFLE/SPLASH

PLATE DETAIL

HDPE PIPE -

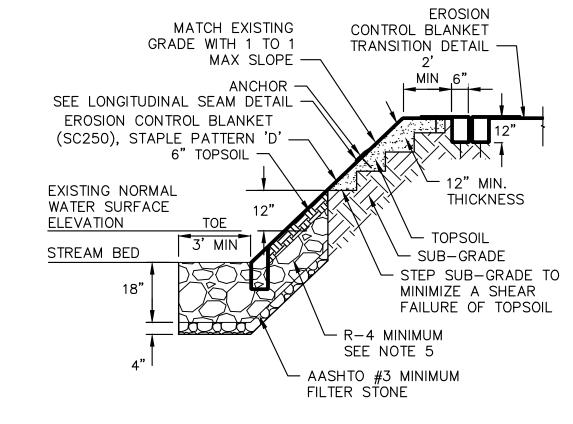
- CIRCULAR HAY BALE STRUCTURE,

WITH 30 FOOT INSIDE DIAMETER

2 LAYERS THICK AND STAGGERED

- 2. REFER TO NORTH AMERICAN GREEN DETAILS.
- 3. MATTING WILL EXTEND FROM TOP OF BANK 50' PERPENDICULARLY AWAY FROM TOP OF BANK OR 100' IN HQ/EV WATERSHEDS.
- 4. NATURAL STREAM BED MATERIAL TO BE STRIPPED AND SEGREGATED FROM SUBSURFACE MATERIAL FOR FINAL STREAMBED
- 5. WHERE NATURAL STONE IS REMOVED FROM THE STREAM CROSSING, NATURAL STONE SHALL BE INSTALLED AS TOP 6 INCHES OF

RIP-RAP BANK STABILIZATION DETAIL NOT TO SCALE



PROFILE VIEW

FILTER BAG(S) IF TSS REMOVAL NOT REQUIRED AND REPLACE WITH T-BAFFLE/ SPLASH PLATE.

CHANNEL WIDTH, WHICHEVER IS GREATER, FROM THE TOP OF BANK OF A RECEIVING STREAM.

SEDIMENT CONTROL PROGRAM MANUAL, TECHNICAL GUIDANCE NUMBER 363-2134-008, MARCH 2012.

CAN BE FOUND ON THE PENNSYLVANIA FISH AND BOAT COMMISSION'S WEBSITE: WWW.FISH.STATE.PA.US.

TO REDUCE THE POTENTIAL FOR EROSION (E.G., 150 GPM).

9. DO NOT DISCHARGE HYDROSTATIC TEST WATER TO EV OR HQ WATERS.

1. NOTICE OF INTENT MUST BE SUBMITTED AND NOTIFICATION OF PERMIT COVERAGE RECEIVED PRIOR TO DISCHARGING HYDROSTATIC TEST WATER.

HYDROSTATIC TEST WATER DISCHARGE STRUCTURE WILL BE LOCATED WITHIN THE PROJECT RIGHT—OF—WAY OR OTHER ESTABLISHED RIGHT—OF—WAY APPROVED BY SUNOCO AND LANDOWNER. INCREASE SIZE OF DISCHARGE STRUCTURE AND NUMBER OF FILTER BAGS TO MATCH REQUIRED DISCHARGE RATE AND TSS REMOVAL AS LONG AS REQUIRED LAND IS AVAILABLE. ADD ADDITIONAL SMALLER DISCHARGE STRUCTURES IF SPACE IS LIMITED. ELIMINATE

HYDROSTATIC WATER DISCHARGE STRUCTURE WILL BE LOCATED AT LEAST 100 FEET FROM THE EDGE OF A DELINEATED WETLAND, AND 50 FEET OR THE

HYDROSTATIC WATER DISCHARGE STRUCTURE WILL BE LOCATED SUCH THAT IT DRAINS TO A WELL-VEGETATED AREA WITH SLOPES BETWEEN 1% AND 5%

5. HYDROSTATIC TEST WATER MUST BE SAMPLED AND ANALYZED TO CONFIRM COMPLIANCE WITH PARAMETERS IDENTIFIED IN PADEP PAG-10 GENERAL PERMIT FOR DISCHARGE FROM HYDROSTATIC TESTING OF TANKS AND PIPELINES AND THE APPROVED SAMPLING AND ANALYSIS PROGRAM FOR HYDROSTATIC TEST

6. THE DISCHARGE RATE TO THE STRUCTURE SHOULD BE LIMITED TO THE LOWEST POSSIBLE RATE TO MINIMIZE ANY POTENTIAL IMPACT ON AQUATIC LIFE AND

7. IF MUNICIPAL WATER IS USED FOR TESTING, HOLD THE WATER IN THE PIPE FOR AT LEAST 24 HOURS PRIOR TO DISCHARGE TO MEET TOTAL RESIDUAL

8. IMPLEMENT ADDITIONAL EROSION AND SEDIMENT CONTROLS AS REQUIRED IN PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION EROSION AND

10. DO NOT DISCHARGE HYDROSTATIC TEST WATER TO TROUT STOCKED STREAMS FROM MARCH 1 TO JUNE 15. THE LISTING OF TROUT STOCKED STREAMS

11. A PREPAREDNESS, PREVENTION, AND CONTINGENCY (PPC) PLAN MUST BE DEVELOPED IN ACCORDANCE WITH PA DEP'S "GUIDELINES FOR THE DEVELOPMENT

AND IMPLEMENTATION OF ENVIRONMENTAL EMERGENCY RÉSPONSE PLANS" (DEP ID 400-2200-001) AND ITS NPDES-SPECIFIC ADDENDUM. THE PPC PLAN MUST BE MAINTAINED ON-SITE AND BE MADE AVAILABLE UPON REQUEST.

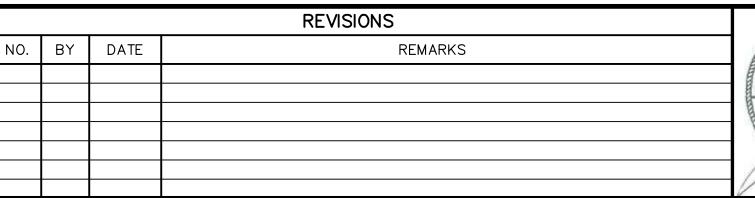
NOTES:

- 1. A SUITABLE WOVEN OR NON-WOVEN GEOTEXTILE UNDERLAYMENT MUST BE USED IN ACCORDANCE TO MANUFACTURER'S RECOMMENDATIONS.
- 2. REFER TO NORTH AMERICAN GREEN DETAILS.
- 3. MATTING WILL EXTEND FROM TOP OF BANK 50' PERPENDICULARLY AWAY FROM TOP OF BANK OR 100' IN HQ/EV WATERSHEDS.
- 4. NATURAL STREAM BED MATERIAL TO BE STRIPPED AND SEGREGATED FROM SUBSURFACE MATERIAL FOR FINAL STREAMBED RESTORATION.
- 5. WHERE NATURAL STONE IS REMOVED FROM THE STREAM CROSSING, NATURAL STONE SHALL BE INSTALLED AS TOP 6 INCHES OF RIPRAP.
- 6. FOR SLOPES GREATER THAN 1:1 REFER TO SITE SPECIFIC PLANS FOR APPROPRIATE CONTROLS.

STEEP BANK STABILIZATION DETAIL NOT TO SCALE

TETRA TECH

www.tetratech.com 661 ANDERSEN DRIVE - FOSTER PLAZA 7 PITTSBURGH, PA 15220 T: (412) 921-7090 | F: (412) 921-4040



SUNOCO PIPELINE L.P. PHILADELPHIA, PENNSYLVANIA PROFESSIONAL ROBERT F. SIMCIK

ENGINEER PE-050435-E PENNSYLVANIA PIPELINE PROJECT CONSTRUCTION SPREAD 5

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINE

BERKS COUNTY CONSERVATION DISTRICT EROSION & SEDIMENT CONTROL & SITE RESTORATION PLAN NOTES & DETAILS

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SITE RESTORATION GENERAL NOTES:

- 1. TOPOGRAPHIC MAPPING AND FEATURES COMPILED FROM WWW.PASDA.PSU.EDU.
- 2. THE PROJECT TAKES PLACE WITHIN BERKS COUNTY, PENNSYLVANIA.
- 3. TOWNSHIP BOUNDARIES TAKEN FROM WWW.PASDA.PSU.EDU.
- 4. 100-YEAR FEMA FLOODPLAINS TAKEN FROM WWW.PASDA.PSU.EDU.
- 5. SEE SHEET ES-0.02 FOR STREAM AND WETLAND CROSSING TABLE.

6. PIPELINE LOCATION AND RIGHT-OF-WAY FROM SUNOCO PIPELINE L.P.

- 7. USE COMPOST FILTER SOCK AS REQUIRED TO PREVENT RUNOFF FROM SPOIL AREA.
- 8. AT ALL STREAM CROSSINGS, RUNOFF MUST BE DIRECTED TO A SEDIMENT REMOVAL AREA (I.E. COMPOST FILTER SOCKS).
- 9. THE RIGHTS—OF—WAYS AND EASEMENTS SHOWN ON THIS PLAN ARE THE RESPONSIBILITY OF SUNOCO PIPELINE L.P. TO SECURE WITH THE INDIVIDUAL PROPERTY OWNER. THE RIGHTS—OF—WAY AND EASEMENTS SHOWN ON THIS PERMIT DRAWING REPRESENT THE BEST AVAILABLE PROPERTY INFORMATION AS PROVIDED TO TETRA TECH, INC. BY SUNOCO PIPELINE L.P. THE RIGHTS—OF—WAY AND EASEMENTS SHALL BE VERIFIED AND LOCATED IN THE FIELD BY SUNOCO PIPELINE L.P.
- 10. PAST AND PRESENT LAND USE CONSISTS OF AGRICULTURAL, FORESTED AND RESIDENTIAL AREAS. POST CONSTRUCTION LAND USE WILL BE A MAINTAINED, VEGETATED RIGHT—OF—WAY.
- 11. DRAWINGS REPRESENT THE FINAL PLAN FOR CONSTRUCTION.
- 12. THE EROSION & SEDIMENT CONTROL PLAN AND SITE RESTORATION PLAN, INSPECTION REPORTS, AND MONITORING REPORTS MUST BE AVAILABLE AT THE PROJECT SITE FOR REVIEW AND INSPECTION BY THE DEPARTMENT OR CONSERVATION DISTRICT.

SITE RESTORATION SCHEDULE:

- 1. AGRICULTURAL LIME APPLICATION RATES WILL BE DETERMINED BY FIELD PH TESTING. TESTING WILL BE PERFORMED AT A RATE OF 1 TEST/ACRE (MIN). IN ABSENCE OF FIELD TESTING, APPLY AT 6 TONS/ACRE.
- 2. APPLY 10-20-20 FERTILIZER AT THE RATE OF 1,000 LB/ACRE, OR AT A RATE DETERMINED BY FIELD TESTING.
- 3. WORK IN LIME AND FERTILIZER TO A DEPTH OF 4 IN. USING SUITABLE EQUIPMENT.
- 4. SEED PER PERMANENT SEED MIXTURE.
- 5. STRAW MULCH SHALL BE APPLIED AT THE RATE OF THREE TONS PER ACRE. CHEMICALLY TREATED OR SALTED STRAW IS NOT ACCEPTABLE AS MULCH.

SITE RESTORATION:

FOLLOWING COMPLETION OF PIPELINE INSTALLATION AND TRENCH BACKFILLING, THE AREA SHALL BE RETURNED TO GENERAL PRECONSTRUCTION GRADES PRESENT PRIOR TO PIPELINE INSTALLATION IN ORDER TO MAINTAIN PRECONSTRUCTION DRAINAGE PATTERNS. GROUNDS DISTURBED BY ANY OF THE OPERATIONS NECESSARY TO COMPLETE THE WORK FOR THIS PROJECT ARE TO BE PERMANENTLY SEEDED, OR IF SPECIFIED, SODDED, UNLESS OCCUPIED BY STRUCTURES, PAVED, OR DESIGNATED AS A PERMANENT ACCESS ROAD. THE ENTIRE RIGHT—OF—WAY WILL BE RESTORED BACK TO A MEADOW CONDITION OR LAWN IN ACCORDANCE WITH THE PERMANENT REVEGETATION PLAN ON ES—0.04. A TEMPORARY CESSATION OF EARTH DISTURBANCE ACTIVITIES THAT LASTS FOUR DAYS OR LONGER REQUIRES TEMPORARY STABILIZATION. DISTURBED AREAS, WHICH ARE AT FINAL GRADE, SHALL BE SEEDED AND MULCHED IMMEDIATELY, WITH THE EXCEPTION OF THE PERMANENT ACCESS ROADS. IF SEEDING CANNOT BE COMPLETED IMMEDIATELY AFTER THE AREA REACHES FINAL GRADE DUE TO WEATHER CONDITIONS, THE DISTURBED AREA SHALL BE STABILIZED AND MULCHED WITH STRAW AT THE RATE OF THREE TONS PER ACRE. THIS STRAW SHALL BE ANCHORED USING A METHOD DESCRIBED UNDER MULCHING OF THIS NARRATIVE. TEMPORARY ACCESS ROADS WILL REMAIN IN PLACE FOLLOWING CONSTRUCTION.

				REVISIONS	
TETRA TECH	NO.	BY	DATE	REMARKS	
					-
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SUNOCO PIPELINE L.P.
PHILADELPHIA, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT CONSTRUCTION SPREAD 5

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINE

BERKS COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN
NOTES & DETAILS

DATE: NOVEMBER 2016
PROJECT NO.: 112C05958
DESIGNED BY: JB
DRAWN BY: BH
CHECKED BY: RS
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ES-0.20

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- 7. AT ALL STREAM CROSSINGS, RUNOFF MUST BE DIRECTED TO A SEDIMENT REMOVAL AREA (i.e. COMPOST FILTER SOCKS).
- 8. THE RIGHTS-OF-WAYS AND EASEMENTS SHOWN ON THIS PLAN ARE THE RESPONSIBILITY OF SUNOCO PIPELINE L.P. TO SECURE WITH THE INDIVIDUAL PROPERTY OWNER. THE RIGHTS-OF-WAY AND EASEMENTS SHOWN ON THIS PERMIT DRAWING REPRESENT THE BEST AVAILABLE PROPERTY INFORMATION AS PROVIDED TO TETRA TECH. INC. BY SUNOCO PIPELINE L.P. THE RIGHTS-OF-WAY AND EASEMENTS SHALL BE VERIFIED AND LOCATED IN THE FIELD BY SUNOCO PIPELINE L.P.
- 9. PAST AND PRESENT LAND USE CONSISTS OF AGRICULTURAL, FORESTED AND RESIDENTIAL AREAS. POST CONSTRUCTION LAND USE WILL BE A MAINTAINED, VEGETATED RIGHT-OF-WAY.
- 10. DRAWINGS REPRESENT THE FINAL PLAN FOR CONSTRUCTION.
- 11. THE EROSION & SEDIMENT CONTROL PLAN AND SITE RESTORATION PLAN, INSPECTION REPORTS, AND MONITORING REPORTS MUST BE AVAILABLE FOR REVIEW AND INSPECTION BY THE DEPARTMENT OR CONSERVATION DISTRICT.
- 12. THE LICENSED PROFESSIONAL OR DESIGNEE SHALL BE PRESENT ON SITE FOR THE CONSTRUCTION OF THE INFILTRATION BERMS AND TRENCHES.
- 13. A RECORDED INSTRUMENT WILL BE RECORDED AT THE RECORDER OF DEEDS TO PROVIDE FOR NECESSARY ACCESS FOR LONG TERM OPERATION AND MAINTENANCE FOR PCSM BMP'S. THE DEED WILL PROVIDE NOTICE THAT THE RESPONSIBILITY FOR THE LONG TERM OPERATION AND MAINTENANCE OF THE PCSM BMP'S IS A COVENANT THAT RUNS WITH THE LAND AND IS BINDING AND ENFORCEABLE BY SUBSEQUENT GRANTEES.

SITE RESTORATION

FOLLOWING COMPLETION OF PIPELINE INSTALLATION AND TRENCH BACKFILLING, THE PIPELINE RIGHT OF WAY, ASSOCIATED WORKSPACES, AND TEMPORARY ACCESS ROADS SHALL BE RETURNED TO THE GENERAL GRADE PRESENT PRIOR TO PIPELINE INSTALLATION IN ORDER TO MAINTAIN PRECONSTRUCTION DRAINAGE PATTERNS. AFTER COMPLETION OF MAJOR CONSTRUCTION WORK, TOPSOIL THAT WAS STOCKPILED DURING CONSTRUCTION WILL BE PLACED ALONG THE ROW. GROUNDS DISTURBED BY ANY OF THE OPERATIONS NECESSARY TO COMPLETE THE WORK FOR THIS PROJECT ARE TO BE PERMANENTLY SEEDED, OR IF SPECIFIED, SODDED, UNLESS OCCUPIED BY STRUCTURES, PAVED OR DESIGNATED AS A PERMANENT ACCESS ROAD. DISTURBED AREAS, WHICH ARE AT FINAL GRADE, SHALL BE SEEDED AND MULCHED ONCE FINAL GRADES ARE ACHIEVED. THE PERMANENT SEED MIXTURE WILL RESTORE DISTURBED AREAS TO A MEADOW IN GOOD CONDITION OR BETTER. IF SEEDING CANNOT BE COMPLETED WITHIN A FOUR (4) DAY PERIOD DUE TO WEATHER CONDITIONS. THE DISTURBED AREA WILL BE MULCHED WITH STRAW AT THE RATE OF THREE (3) TONS PER ACRE. THIS STRAW WILL BE ANCHORED USING A METHOD OUTLINED ON DRAWING PCS-0.03.

SITE RESTORATION CONSTRUCTION SEQUENCE

A GENERALIZED CONSTRUCTION SEQUENCE IS PROVIDED BELOW. THE CONSTRUCTION SEQUENCE IS INTENDED TO PROVIDE A GENERAL COURSE OF ACTION TO CONFORM TO THE APPLICABLE REGULATORY AGENCY REQUIREMENTS FOR SITE RESTORATION AND POST—CONSTRUCTION STORMWATER MANAGEMENT OF THE SITE. NECESSARY STEPS FOR PROPER AND COMPLETE EXECUTION OF WORK PERTAINING TO THIS PLAN, WHETHER SPECIFICALLY MENTIONED OR NOT, ARE TO BE PERFORMED BY THE CONTRACTOR. THE CONTRACTOR WILL COMPLY WITH ALL REQUIREMENTS LISTED IN THIS SECTION. THE CONTRACTOR MAY BE REQUIRED TO ALTER CONTROLS BASED ON THE EFFECTIVENESS OF CONTROLS OR DIFFERING CONDITIONS ENCOUNTERED IN THE FIELD. THE APPROPRIATE COUNTY CONSERVATION DISTRICT AND DEP SHALL BE CONTACTED AND MUST APPROVE ANY DEVIATION TO THE AUTHORIZED PLANS.

A PRE-CONSTRUCTION MEETING IS REQUIRED PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY. THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (PADEP) OR APPLICABLE COUNTY CONSERVATION DISTRICT, CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, AND THE PLAN PREPARER MUST BE INVITED TO THIS MEETING AT LEAST 7 DAYS IN ADVANCE.

- 1. GRADE SURFACE TO FINISHED GRADE ELEVATIONS AS SOON AS PRACTICABLE FOLLOWING COMPLETION OF PIPE INSTALLATION.
- SURFACE ROUGHENING WILL BE UTILIZED TO ROUGH THE SOIL SURFACE WITH HORIZONTAL DEPRESSIONS FOR THE PURPOSE OF REDUCING RUNOFF VELOCITY, INCREASING INFILTRATION, AIDING THE ESTABLISHMENT OF VEGETATION, AND REDUCING EROSION. SURFACE ROUGHENING SHOULD BE APPLIED TO SLOPES 3H:1V OR STEEPER UNLESS A STABLE ROCK FACE IS PROVIDED OR IT CAN BE SHOWN THAT THERE IS NOT A POTENTIAL FOR SEDIMENT POLLUTION TO SURFACE WATERS. FOR ROUGHENED SURFACES WITHIN 50 FEET OF A SURFACE WATER. AND WHERE BLANKETING OF SEEDED AREAS IS PROPOSED AS THE MEANS TO ACHIEVING PERMANENT STABILIZATION, SPRAY-ON TYPE BLANKETS ARE RECOMMENDED. SURFACE ROUGHENING SHALL BE ACCOMPLISHED USING DOZERS AFFIXED WITH GROUSER TRACKED EQUIPMENT. DOZERS SHALL RUN UP AND DOWN THE SLOPES LEAVING HORIZONTAL GROOVES PERPENDICULAR TO THE SLOPE. DOZER BLADES SHALL BE RAISED AND NOT USED DURING SURFACE ROUGHENING. WHERE COMPACTION DOES OCCUR. CONTRACTOR SHALL SCARIFIY THE SOIL OR PROVIDE ADDITIONAL ROUGHENING SUCH AS DEEP RIPPING OR CHISEL RIPPING TO RESTORE THE AREA TO A MINIMAL COMPACTED STATE. IN AREAS OF PROPOSED INFILTRATION, SOILS SHALL BE AMENDED TO 2' BELOW GRADE. SEE SOIL AMENDMENT AND RESTORATION CONSTRUCTION SEQUENCE BELOW.
- PLACE TOPSOIL FROM TOPSOIL STOCKPILES AS THE UPPER LAYER OF BACKFILL. TOPSOIL SHALL NOT BE PLACED WHEN THE SUBGRADE IS FROZEN OR WHEN IT IS EXCESSIVELY WET OR DRY AND SHALL NOT BE HANDLED WHEN IN A FROZEN OR MUDDY CONDITION.
- REMOVE GRAVEL AND GEOTEXTILE FROM THE TEMPORARY ACCESS ROADS AND SCARIFY THE SOIL. REFER TO STEP 2 OF THIS SEQUENCE TO ADDRESS COMPACTION AT ACCESS ROADS. AFTER ADDRESSING COMPACTION CONCERNS, PLACE TOPSOIL THAT WAS STRIPPED PRIOR TO INSTALLATION OF THE ACCESS ROADS
- 5. IMMEDIATELY SEED AND MULCH DISTURBED AREAS IN ACCORDANCE WITH THE PERMANENT SEEDING SCHEDULE ONCE FINAL GRADE IS
- ESTABLISHED AND TOPSOIL IS PLACED. 6. MAINTAIN EROSION AND SEDIMENTATION CONTROL DEVICES UNTIL SITE WORK IS COMPLETE AND A UNIFORM 70-PERCENT PERENNIAL VEGETATIVE COVER IS ESTABLISHED. REGRADE AND REVEGETATE AREAS DISTURBED DURING THE REMOVAL OF THE EROSION AND SEDIMENT CONTROLS.

GEOWEB CONSTRUCTION SEQUENCE

- 1. GRADE SURFACE TO SUBGRADE ELEVATIONS AS SOON AS PRACTICABLE FOLLOWING COMPLETION OF PIPE INSTALLATION. DO NOT
- 2. IF NEEDED, SCARIFY THE SOIL OR PROVIDE ADDITIONAL ROUGHENING SUCH AS DEEP RIPPING OR CHISEL RIPPING TO RESTORE THE AREA TO A MINIMAL COMPACTED STATE.
- 3. INSTALL GEOTEXTILE SEPARATION LAYER IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- 4. EXPAND GEOWEB TO REQUIRED DIMENSIONS AND ANCHOR EDGES WITH ATRA ANCHORS, IF NEEDED. JOIN ADJACENT SECTIONS WITH ATRA
- KEYS. 5. ANCHOR GEOWEB ON SLOPES GREATER THAT 5% WITH 24" ATRA ANCHORS PLACED ON A 3X8 CELL PATTERN
- 6. MIX AND PLACE ENGINEERED INFILL MATERIAL (2/3 AASHTO #57 STONE AND 1/3 SCREENED TOPSOIL) INTO THE GEOWEB CELLS. INFILL MATERIAL SHALL BE FREE-FLOWING AND NOT FROZEN WHEN PLACED IN THE GEOWEB SECTIONS. LIMIT DROP HEIGHT TO 3 FEET TO AVOID DAMAGING OR DISPLACEMENT OF THE CELL WALL. SLIGHTLY OVERFILL THE CELLS AND LEVEL OFF MATERIAL ONCE SETTLEMENT IS NEGLIGIBLE. DO NOT COMPACT.
- SEED AND MULCH FILLED SECTIONS IN ACCORDANCE WITH THE PERMANENT SEEDING SCHEDULE ONCE INFILL IS PLACED.
- 8. MAINTAIN EROSION AND SEDIMENTATION CONTROL DEVICES UNTIL SITE WORK IS COMPLETE AND A UNIFORM 70-PERCENT PERENNIAL VEGETATIVE COVER IS ESTABLISHED.

SOIL AMENDMENT AND RESTORATION CONSTRUCTION SEQUENCE

- 1. GRADE SURFACE TO FINISHED GRADE ELEVATIONS AS SOON AS PRACTICABLE FOLLOWING COMPLETION OF PIPE INSTALLATION.
- 2. IN THE DESIGNATED SOIL AMENDMENT AREA, TILL THE GROUND AND MIX IN THE COMPOST AT A RATIO OF 2:1 (SOIL: COMPOST) TO A DEPTH OF 24 INCHES.
- 3. IMMEDIATELY SEED AND MULCH DISTURBED AREAS ONCE FINAL GRADE IS ESTABLISHED IN ACCORDANCE WITH THE PERMANENT SEEDING SCHEDULE.
- 4. MAINTAIN EROSION AND SEDIMENTATION CONTROL DEVICES UNTIL SITE WORK IS COMPLETE AND A UNIFORM 70% PERENNIAL VEGETATIVE COVER IS ESTABLISHED.

POST CONSTRUCTION STORMWATER MANAGEMENT CONSTRUCTION SEQUENCE

- 1. GRADE SURFACE TO FINISHED GRADE ELEVATIONS AS SOON AS PRACTICABLE FOLLOWING COMPLETION OF PIPE INSTALLATION.
- 2. INSTALL POST CONSTRUCTION BMPS AFTER COMPLETION OF PIPELINE CONSTRUCTION:

INFILTRATION BERM

- 1. INSTALL TEMPORARY SEDIMENT AND EROSION CONTROL BMPS AS PER THE PENNSYLVANIA EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL
- 2. INSTALL ORANGE CONSTRUCTION FENCING AROUND THE PONDING AREA OF THE INFILTRATION BERM AS SHOWN ON THE PCSM PLAN DRAWINGS. COMPLETE SITE GRADING AND STABILIZE WITHIN THE LIMIT OF DISTURBANCE EXCEPT WHERE THE INFILTRATION BERM WILL BE CONSTRUCTED AND THE EXTENT OF THE PONDING AREA; MAKE EVERY EFFORT TO MINIMIZE BERM FOOTPRINT AND NECESSARY ZONE OF DISTURBANCE (INCLUDING BOTH REMOVAL OF EXISTING VEGETATION AND DISTURBANCE OF EMPTY SOIL) IN ORDER TO MAXIMIZE INFILTRATION. IF EQUIPMENT MUST TRAVEL THROUGH THE PONDING AREA, TIMBER MATTING SHALL BE PLACED TO MINIMIZE COMPACTION. AND EQUIPMENT TRAFFIC SHALL BE MINIMIZED.
- 3. LIGHTLY SCARIFY THE SOIL IN THE AREA OF THE PROPOSED BERM BEFORE DELIVERING SOIL TO SITE.
- 4. BRING IN FILL MATERIAL TO MAKE UP THE MAJOR PORTION OF THE BERM. SOIL SHOULD BE ADDED IN 8—INCH LIFTS AND COMPACTED AFTER EACH ADDITION ACCORDING TO DESIGN SPECIFICATIONS. THE SLOPE AND SHAPE OF THE BERM SHOULD BE GRADED OUT AS SOIL IS ADDED.
- 5. PROTECT THE SURFACE PONDING AREA AT THE BASE OF THE BERM FROM COMPACTION.
- 6. COMPLETE FINAL GRADING OF THE BERM AFTER THE TOP LAYER OF SOIL IS ADDED. TAMP SOIL DOWN LIGHTLY AND SMOOTH SIDES OF THE BERM. THE CREST AND BASE OF THE BERM SHOULD BE AT LEVEL GRADE.
- 7. PLANT BERM WITH TURF, MEADOW PLANTS, SHRUBS OR TREES, AS DESIRED,
- 8. MULCH PLANTED AND DISTURBED AREAS WITH COMPOST MULCH TO PREVENT EROSION WHILE PLANTS BECOME ESTABLISHED.

INFILTRATION TRENCH

- 1. INSTALL AND MAINTAIN PROPER EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION.
- 2. GRADE SURFACE TO FINISHED GRADE ELEVATIONS AS SOON AS PRACTICABLE.
- 3. PROTECT INFILTRATION TRENCH AREA FROM COMPACTION PRIOR TO INSTALLATION. INSTALL ORANGE CONSTRUCTION FENCE AROUND THE TRENCH AND, IF APPLICABLE, THE PONDING AREA OF THE DOWNSLOPE BERM.
- 4. IF POSSIBLE, INSTALL INFILTRATION TRENCH DURING LATER PHASES OF SITE CONSTRUCTION TO PREVENT SEDIMENTATION AND/OR DAMAGE FROM CONSTRUCTION ACTIVITY. AFTER INSTALLATION, PREVENT SEDIMENT LADEN WATER FROM ENTERING INLETS AND PIPES. IF IT IS NOT POSSIBLE TO INSTALL THE INFILTRATION TRENCH DURING THE LATER PHASES OF CONSTRUCTION, PLACE COMPOST FILTER SOCK UPSLOPE OF THE TRENCH TO PREVENT SEDIMENT FROM REACHING AND CLOGGING THE TRENCH.
- 5. EXCAVATE INFILTRATION TRENCH BOTTOM TO A UNIFORM, LEVEL UNCOMPACTED SUBGRADE FREE FROM ROCKS AND DEBRIS. DO NOT COMPACT SUBGRADE. THE CONSTRUCTION EQUIPMENT SHALL REMAIN OUTSIDE OF THE INFILTRATION TRENCH WHILE EXCAVATING IT.
- 6. PLACE NONWOVEN GEOTEXTILE ALONG BOTTOM AND SIDES OF TRENCH. NONWOVEN GEOTEXTILE ROLLS SHOULD OVERLAP BY A MINIMUM OF 16 INCHES WITHIN THE TRENCH. FOLD BACK AND SECURE EXCESS GEOTEXTILE DURING STONE PLACEMENT.
- 7. INSTALL UPSTREAM AND DOWNSTREAM CONTROL STRUCTURES, CLEANOUTS, ETC.
- 8. PLACE UNIFORMLY GRADED, CLEAN—WASHED AGGREGATE IN 8—INCH LIFTS, LIGHTLY COMPACTING BETWEEN LIFTS. LIGHT COMPACTION SHALL ENSURE THE AGGREGATE WON'T SETTLE BELOW THE INTENDED TOP ELEVATION OF THE TRENCH. CARE SHALL BE TAKEN SO AS NOT TO COMPACT THE SUBGRADE.
- 9. INSTALL CONTINUOUSLY PERFORATED PIPE AS INDICATED ON PLANS. BACKFILL WITH UNIFORMLY GRADED. CLEAN-WASHED AGGREGATE IN 8-INCH LIFTS, LIGHTLY COMPACTING BETWEEN LIFTS. LIGHT COMPACTION SHALL ENSURE THE AGGREGATE WON'T SETTLE BELOW THE INTENDED TOP ELEVATION OF THE TRENCH. CARE SHALL BE TAKEN SO AS NOT TO COMPACT THE SUBGRADE.
- 10.FOLD AND SECURE NONWOVEN GEOTEXTILE OVER INFILTRATION TRENCH, WITH MINIMUM OVERLAP OF 16- INCHES.
- 11. PLACE 6-INCH LIFT OF APPROVED TOPSOIL OVER INFILTRATION TRENCH, AS INDICATED ON PLANS.
- 12. SEED AND STABILIZE TOPSOIL. 13.ANY SEDIMENT THAT ENTERS INLETS DURING CONSTRUCTION IS TO BE REMOVED WITHIN 24 HOURS.
- 14.IMMEDIATELY SEED AND MULCH DISTURBED AREAS ONCE FINAL GRADE IS ESTABLISHED IN ACCORDANCE WITH THE
- PERMANENT SEEDING SCHEDULE 15.MAINTAIN EROSION AND SEDIMENTATION CONTROL DEVICES UNTIL SITE WORK IS COMPLETE AND A UNIFORM 70%
- PERENNIAL VEGETATIVE COVER IS ESTABLISHED. 16.REMOVE EROSION SEDIMENT CONTROL MEASURES UPON ESTABLISHMENT OF A UNIFORM 70% VEGETATIVE COVER OVER THE DISTURBED AREA. RE-GRADE AND REVEGETATE AREAS DISTURBED DURING THE REMOVAL OF THE EROSION AND

SOIL AMENDMENT AND RESTORATION

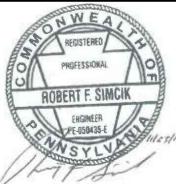
SEDIMENT CONTROLS.

- 1. GRADE SURFACE TO FINISHED GRADE ELEVATIONS AS SOON AS PRACTICABLE FOLLOWING COMPLETION OF PIPE INSTALLATION.
- 2. IN THE DESIGNATED SOIL AMENDMENT AREA, TILL THE GROUND AND MIX IN THE COMPOST AT A RATIO OF 2:1 (SOIL: COMPOST) TO A DEPTH OF 24 INCHES.
- 3. IMMEDIATELY SEED AND MULCH DISTURBED AREAS ONCE FINAL GRADE IS ESTABLISHED IN ACCORDANCE WITH THE PERMANENT SEEDING SCHEDULE.
- 4. MAINTAIN EROSION AND SEDIMENTATION CONTROL DEVICES UNTIL SITE WORK IS COMPLETE AND A UNIFORM 70% PERENNIAL VEGETATIVE COVER IS ESTABLISHED.

SLOW RELEASE TRENCH

- 1. INSTALL AND MAINTAIN PROPER EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION
- 2. GRADE SURFACE TO FINISHED GRADE ELEVATIONS AS SOON AS PRACTICABLE.
- 3. IF POSSIBLE, INSTALL SLOW RELEASE TRENCH DURING LATER PHASES OF SITE CONSTRUCTION TO PREVENT SEDIMENTATION AND/OR DAMAGE FROM CONSTRUCTION ACTIVITY. AFTER INSTALLATION, PREVENT SEDIMENT LADEN WATER FROM ENTERING INLETS AND PIPES. IF IT IS NOT POSSIBLE TO INSTALL THE SLOW RELEASE TRENCH DURING THE LATER PHASES OF CONSTRUCTION. PLACE COMPOST FILTER SOCK UPSLOPE OF THE TRENCH TO PREVENT SEDIMENT FROM REACHING AND CLOGGING THE TRENCH.
- 4. EXCAVATE SLOW RELEASE TRENCH BOTTOM TO A UNIFORM, LEVEL SUBGRADE FREE FROM ROCKS AND DEBRIS.
- 5. INSTALL AN IMPERMEABLE LINER WITHIN THE SLOW RELEASE TRENCH. SECURE IMPERMEABLE LINER DURING STONE PLACEMENT WITH AN ANCHOR TRENCH.
- 6. INSTALL UPSTREAM AND DOWNSTREAM CONTROL STRUCTURES. CLEANOUTS. ETC.
- 7. PLACE UNIFORMLY GRADED, CLEAN—WASHED AGGREGATE IN 8—INCH LIFTS, LIGHTLY COMPACTING BETWEEN LIFTS. LIGHT COMPACTION SHALL ENSURE THE AGGREGATE WON'T SETTLE BELOW THE INTENDED TOP ELEVATION OF THE TRENCH.
- 8. INSTALL CONTINUOUSLY PERFORATED PIPE AND UNDERDRAIN OUTLET AS INDICATED ON PLANS. BACKFILL WITH UNIFORMLY GRADED, CLEAN-WASHED AGGREGATE IN 8-INCH LIFTS, LIGHTLY COMPACTING BETWEEN LIFTS. LIGHT COMPACTION SHALL ENSURE THE AGGREGATE WON'T SETTLE BELOW THE INTENDED TOP ELEVATION OF THE TRENCH.
- 9. PLACE 6-INCH LIFT OF APPROVED TOPSOIL OVER SLOW RELEASE TRENCH, AS INDICATED ON PLANS.
- 10.SEED AND STABILIZE TOPSOIL.
- 11. ANY SEDIMENT THAT ENTERS INLETS DURING CONSTRUCTION IS TO BE REMOVED WITHIN 24 HOURS.
- 12.IMMEDIATELY SEED AND MULCH DISTURBED AREAS ONCE FINAL GRADE IS ESTABLISHED IN ACCORDANCE WITH THE PERMANENT SEEDING SCHEDULE.
- 13.MAINTAIN EROSION AND SEDIMENTATION CONTROL DEVICES UNTIL SITE WORK IS COMPLETE AND A UNIFORM 70% PERENNIAL VEGETATIVE COVER IS ESTABLISHED.
- 14.REMOVE EROSION SEDIMENT CONTROL MEASURES UPON ESTABLISHMENT OF A UNIFORM 70% VEGETATIVE COVER OVER THE DISTURBED AREA. RE-GRADE AND REVEGETATE AREAS DISTURBED DURING THE REMOVAL OF THE EROSION AND SEDIMENT CONTROLS.

REVISIONS TETRA TECH NO. BY DATE REMARKS www.tetratech.com 661 ANDERSEN DRIVE - FOSTER PLAZA 7 PITTSBURGH, PA 15220 T: (412) 921-7090 | F: (412) 921-4040



SUNOCO PIPELINE L.P. PHILADELPHIA, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT CONSTRUCTION SPREAD 5

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINE

BERKS COUNTY CONSERVATION DISTRICT EROSION & SEDIMENT CONTROL & SITE RESTORATION PLAN NOTES & DETAILS

NOVEMBER 201 PROJECT NO.: 112C0595 DESIGNED BY: DRAWN BY: CHECKED BY: COPYRIGHT TETRA TECH INC. ES-0.21

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VEGETATED SURFACE

INFILL MATERIAL (AASHTO #57 STONE MIXED WITH TOPSOIL)

PERFORATED GEOWEB (GW30V4)

SUBGRADE

ISOMETRIC

PREPARE THE SUBGRADE AS SHOWN ON THE CONSTRUCTION DRAWINGS.

PROVIDE WOVEN HIGH STRENGTH STABILIZATION GEOTEXTILE (WINFAB 270HP).

VEGETATED SURFACE

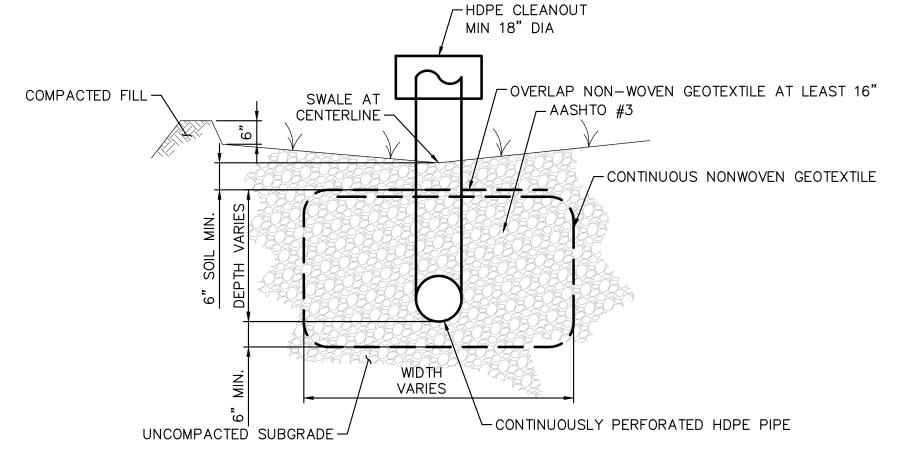
VEGETATED SURFACE

GEOWEB FILLED WITH

AASHTD #57 STONE & TOPSOIL

SUBGRADE GEOTEXTILE

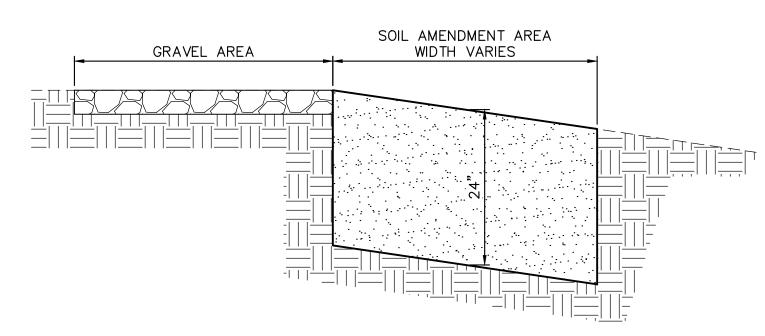
SECTION



NOTES:

- 1. HEAT-SET OR HEAT-CALENDARED FIBERS ARE NOT PERMITTED.
- 2. ACCEPTABLE NON-WOVEN GEOTEXTILE TYPES INCLUDE MIRAFI 140N, AMOCO 4547, AND GEOTEX 451.

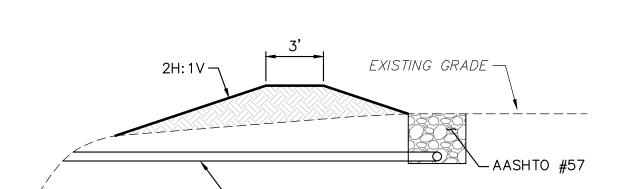
INFILTRATION TRENCH DETAIL NOT TO SCALE



NOTES:

- 1. SOIL AMENDMENT MEDIA SHOULD CONSIST OF SOIL AND COMPOST AT A RATIO OF 2:1 (SOIL: COMPOST).
- 2. SOIL AMENDMENT SHOULD NOT BE USED ON SLOPES GREATER THAN 30%.
- 3. COMPOST CAN BE SUBSTITUTED WITH MULCH, MANURE, SAND.
- 4. NO VEHICULAR TRAFFIC WILL BE PERMITTED TO DRIVE IN UNPROTECTED SOIL AMENDMENT AREAS TO MINIMIZE THE POSSIBILITY OF COMPACTION
- 5. ALL CONSTRUCTION SHOULD BE COMPLETED AND STABILIZED BEFORE BEGINNING SOIL RESTORATION.
- 6. SOIL AMENDMENT TO BE INSTALLED BY TILLING.

SOIL AMENDMENT DETAIL NOT TO SCALE



ROUGH GRADE CONTOURS DEPICT THE TOP OF SUBGRADE IN AREAS WHERE GEOWEB IS TO BE INSTALLED.

8. TOP OF GEOWEB IS AT ELEVATION 4 INCHES ABOVE ROUGH GRADE SHOWN ON GRADING PLAN. 9. ON SLOPES GREATER THAN 5%, ANCHOR GEOWEB WITH 24" ATRA ANCHORS IN A 3x8 CELL PATTERN.

EXPAND THE GEOWEB SECTIONS INTO POSITION AND CONNECT THE END TO END AND INTERLEAF CONNECTIONS WITH ATRA KEYS.

PLACE THE SPECIFIED INFILL MATERIAL INTO CELLS AND TRACK UNTIL CELL IS FILLED AND SETTLEMENT OF INFILL IS NEGLIBILE.

BLOCK VALVE GEOWEB DETAIL

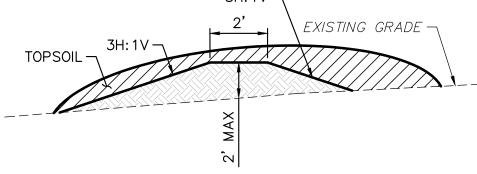
NOT TO SCALE

GEOWEB CELL INFILL MATERIAL SHALL BE A MIX OF AASHTO #57 STONE AND SCREENED TOPSOIL IN AN APPROXIMATE RATIO OF 2/3 #57 AND 1/3 TOPSOIL.

SLOW RELEASE TRENCH DETAIL

~4" ø UNDERDRAIN OUTLET

NOT TO SCALE



NOTES:

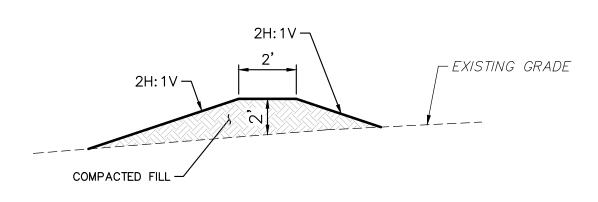
DO NOT COMPACT SUBGRADE.

NOTES:

1. FILL WITH TOPSOIL TO ACHIEVE DESIRED SHAPE.

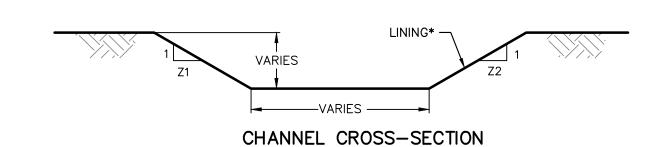
INFILTRATION BERM DETAIL

NOT TO SCALE



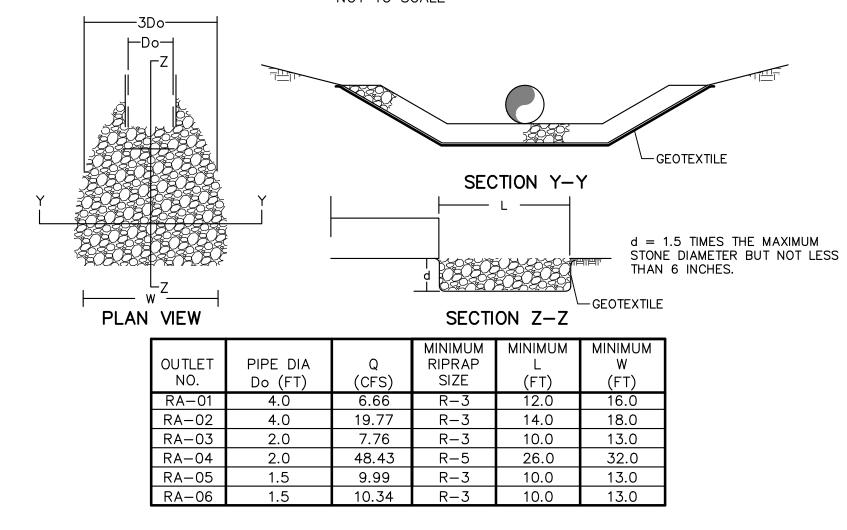
DIVERSION BERM DETAIL

NOT TO SCALE



CHANNEL NO.	BOTTOM WIDTH B (FT)	DEPTH D (FT)	Z1 (FT)	Z2 (FT)	LINING*
Α	4.0	2.0	2	2	NAG S150 ECB WITH CLASS C FINAL STABILIZATION
В	4.0	2.0	2	2	NAG P300 ECB WITH CLASS C FINAL STABILIZATION
С	4.0	2.0	2	2	NAG S150 ECB WITH CLASS C FINAL STABILIZATION
D	4.0	2.0	2	2	NAG S150 ECB WITH CLASS C FINAL STABILIZATION
Ε	6.0	2.0	2	2	NAG P300 ECB WITH CLASS C FINAL STABILIZATION
F	4.0	2.0	2	2	NAG S150 ECB WITH CLASS C FINAL STABILIZATION
G	2.0	2.0	2	2	NAG S150 ECB WITH CLASS C FINAL STABILIZATION

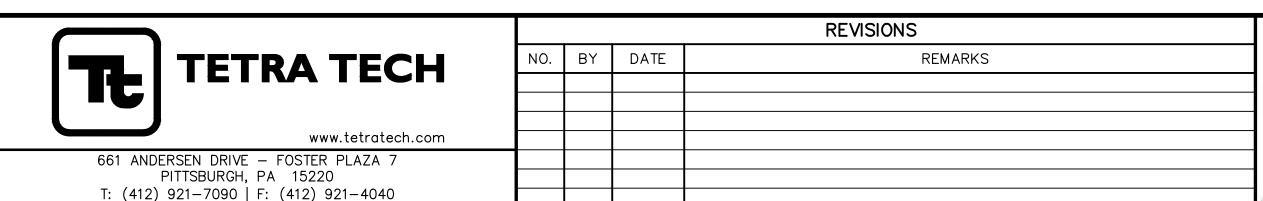
PERMANENT CHANNEL DETAIL NOT TO SCALE



RIPRAP APRONS AT PIPE OUTLETS WITH FLARED END SECTIONS

NOT TO SCALE

PCSM DETAILS





SUNOCO PIPELINE L.P. PHILADELPHIA, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT CONSTRUCTION SPREAD 5

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINE

BERKS COUNTY CONSERVATION DISTRICT EROSION & SEDIMENT CONTROL & SITE RESTORATION PLAN NOTES & DETAILS

DATE:	NOVE	MBER	2016
PROJECT	NO.:	112C0	5958
DESIGNED	BY:		JB
DRAWN B	Y:		ВН
CHECKED	BY:		RS
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